Supplementary Planning Document Number 11

University of Bristol

Strategic Masterplan: Appendices 1-10

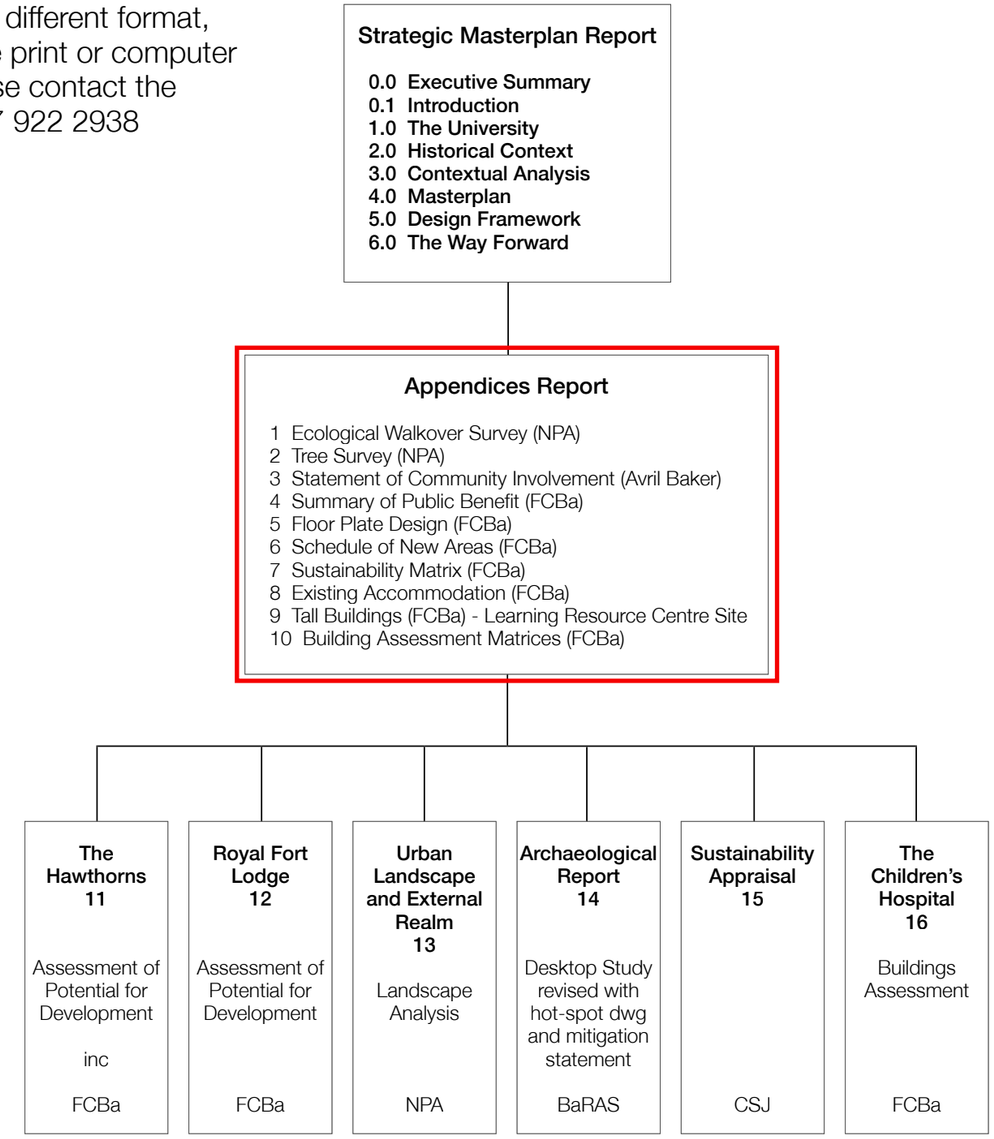
November 2005

University of BRISTOL

BRISTOL CITY COUNCIL

Contents

If you would like this information in a different format, for example Braille, audio tape, large print or computer disc, or community languages, please contact the Central Area Planning Team on 0117 922 2938



Appendix One
Ecological Walkover Survey - Nicholas Pearson Associates

Summary

To inform the development of a University of Bristol Masterplan, an ecological walkover survey of the existing Precinct was undertaken by an experienced Ecologist on Thursday 16 September 2004.

The survey comprised a walkover of the site, including all open spaces. Whilst a comprehensive list of plant species and habitats present was not made, an assessment of the suitability of the site to support species of animal and bird protected under UK and European legislation was undertaken.

It was considered that whilst the Precinct is largely of low ecological value, some of the older Victorian buildings may support roosting bats within their roof spaces and/or other suitable crevices and the gardens behind the Oldbury and Osborne Villas may support legally protected reptile species, such as Slow Worms.

The landscaped park area is likely to support breeding bird species between March and August, whilst opportunities for habitat enhancement were considered to exist within this area, particularly in respect of the pond. Opportunities for habitat creation proposals also exist.

Further surveys for bats and Slow Worms are recommended once the re-development proposals have been agreed.

Introduction

The University of Bristol requires a considerable increase in available floor space in order to accommodate increased research and to maintain its standing both within a UK context and internationally.

To achieve this, a Masterplan is being developed, which it is hoped will form Supplementary Planning Guidance (SPG) and will allow areas of the Precinct to be demolished and re-developed.

An assessment of the current ecological value of the Precinct was required to inform this process. Primarily focussing on the suitability of the site to support legally protected and notable species, opportunities for the enhancement and creation of habitats as part of the proposed re-development were also considered.

A walkover survey was carried out by an experienced Ecologist on 16 September 2004. Whilst comprehensive lists of plant species and habitats were not prepared, the site was assessed in terms of its potential to support species protected under the Wildlife and Countryside Act 1981 (as amended) and/or the Conservation (Natural Habitats, &c.) Regulations 1994. The potential for the site to support species listed in the UK and local Biodiversity Action Plans (BAPs) was also assessed.

Scope of Survey

An initial walkover survey was carried out to determine whether any areas of the site should be subject to further ecological survey, particularly for protected species. This survey provided an initial appraisal only, and will be used to inform both further surveys and recommendations for habitat enhancement and/or creation opportunities on-site as the Masterplanning process continues.

Survey Methodology

The survey was undertaken on 16 September by an experienced Ecologist. The area of the Precinct surveyed is shown on Figure 1, but briefly comprised the area enclosed by St. Michael's Hill, Royal Fort Road, Tankards Close, University Walk, Woodland Road, Elton Road, St. Michael's Park and Osborne Villas.

The walkover survey highlighted areas of habitat with the potential to support species protected under the Wildlife and Countryside Act 1981 (as amended) and/or the Conservation (Natural Habitats, &c.) Regulations 1994. The potential for the site to support species listed in the UK and local Biodiversity Action Plans (BAPs) was also assessed.

Results were collected as a series of target notes.

Discussion of Walkover Survey Results

The majority of the University Precinct is considered to be of negligible or low ecological value owing to the large proportion of hardstanding and post-war flat-roofed buildings present across the site. Much of the planting is in the form of ornamental beds and single trees, (with the exception of the large park area adjacent to University Walk and Tankards Close), which are generally of low ecological value. However, suitable habitat was identified for the following species:

Bats
The older buildings present within the Precinct may offer suitable roosting habitat for bats, although no internal inspections were undertaken as part of the current walkover survey. All species of UK bat are fully protected through their inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Any of the older buildings, particularly Osborne and Oldbury Villas, highlighted for demolition as part of the future re-development proposals for the University Precinct, should be surveyed internally for the presence of bats prior to their demolition, to avoid an offence under both domestic and European legislation being committed. In addition, a mature tree is present within the park area close to Tankards Close which contained suitable cracks and fissures for roosting bats. This tree should be surveyed further prior to any works being carried out on it.

Slow Worms
Slow Worms are legally protected through their inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), in respect of intentional killing or injuring or the sale of animals.

The gardens of the terraced properties which comprise Osborne and Oldbury Villas were considered to offer suitable habitat for this species, and further surveys and possible translocation of individual animals to suitable receptor sites may be required should the buildings be identified for demolition.

Birds
Suitable habitat for nesting birds was identified within mature trees and shrubs across the site. Breeding birds receive varying levels of legal protection whilst they are building or occupying a nest, and further surveys will be required prior to the removal of any vegetation on site. The timing of this type of work will be governed by the bird breeding season.

Badgers
No suitable habitat for badgers was identified during the walkover survey.

Appendix One
Ecological Walkover Survey - Nicholas Pearson Associates

Opportunities and Recommendations

Although the Precinct is considered to be of low ecological value overall, there are areas of the site which offer suitable habitat for species protected by law. Once the re-development proposals have been agreed, further surveys of buildings to be demolished and vegetation to be removed will be required in order to confirm the presence of any such protected species. Mitigation proposals can then be developed for agreement by the Local Planning Authority and English Nature, as appropriate.

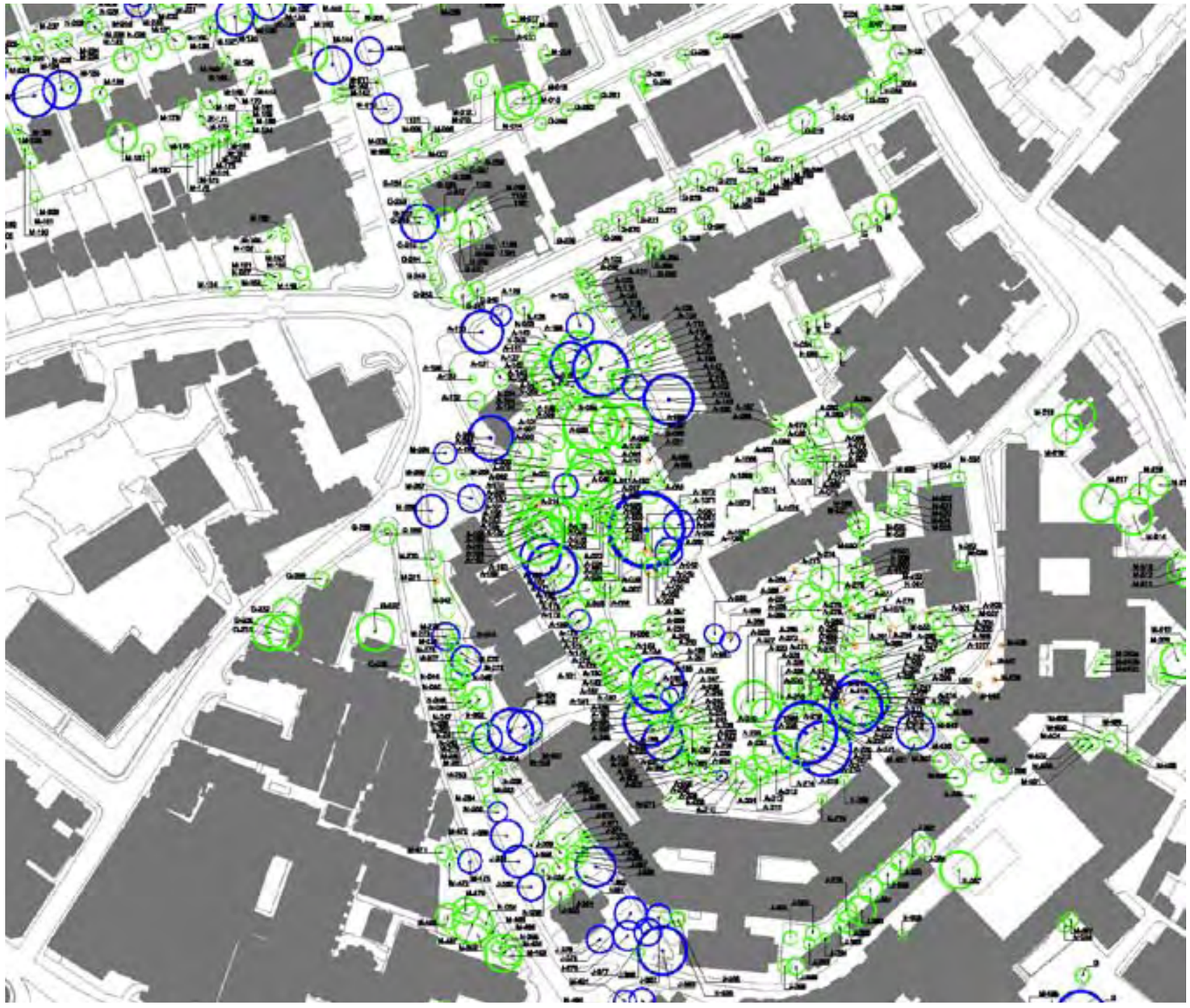
Areas of the site are also considered to be suitable for habitat enhancement works and habitat creation in order to increase the value of the site for local wildlife. This should also be considered as a potential resource for the students and staff of the University.

Ecological opportunities can be developed further once the re-development proposals have been progressed, although one obvious area is the landscaped park adjacent to University Walk, particularly the pond.

Conclusions

- Overall, the Precinct is considered to be of low ecological value, although opportunities exist to create and enhance habitats to provide an area of much higher value.
- Further surveys to confirm the presence of protected species including bats and Slow Worms will be required once the re-development proposals have been agreed. This will be particularly important within the roof spaces of the Victorian buildings within the Precinct and in the gardens behind Oldbury and Osborne Villas.

Appendix Two
Tree Survey



Part plan of tree survey. Full and detailed schedules are included in Appendix 13.

The study area contains a rich variety of trees in the public and private realm. They are of varying age, size, form, maturity and health. They contribute individually and collectively to the local and wider urban landscape and fulfil a range of functions. These include being attractive features in their own right, softening of the street scene, providing a counterpoint to built form, giving spatial definition of the landscape, and offering shade and shelter. They are often intrinsic and important elements of the urban landscape as perceived locally and in views to the area from near and distant points.

The trees are given specific protection in terms of their location within Conservation Areas and therefore an understanding of their role and value in the townscape as well as individual form and health has been an important element informing the emerging Strategic Master Plan and future design decision-making. As a result, an appraisal of the tree resource has been carried out drawing upon, verifying, updating and mapping the University's schedule of trees.

Appendix Three
Statement of Community Involvement - Avril Baker

CONSULTING WITH STAKEHOLDERS

Three rounds of stakeholder masterplanning workshops have been held:

- 22 September 2003 at the University Senate House
- 1 December 2003 at the University Sports Centre
- 2 November 2004 at University Senate House

A special focus group meeting attended by a smaller group of stakeholders also took place on 9 December 2004 in Senate House to discuss traffic and movement issues.

Invitees:
An initial group of stakeholders was drawn up to include amenity groups - particularly those with an interest in conservation/built environment, representatives of business and traders associations, other key organisations in the area plus local councillors as representatives of residents in their wards and a number of departments of the City Council. During the process additional stakeholders were involved as shown.

- Avon & Somerset Constabulary (*second & third session*)
- Bristol Civic Society
- Bristol Grammar School
- Business West
- CABE
- Christmas Steps & St Michael's Association
- City Council - Planning & urban design teams
- City Council's policy unit (third session)
- City Council - Scrutiny & Equalities Team
- City Council - Sustainable Development Group
- City Council - transport & highways team (third session)
- Conservation Advisory Panel (third session)
- Cotham Grammar School *(second & third session)*
- English Heritage
- Kingsdown Conservation Group
- Local ward councillors for Cabot and Cotham
- Redland & Cotham Society
- Transport 2000/First Bus
- United Bristol Healthcare Trust

A total of 20 people (including the Project Team) took part in the first workshop, 17 in the second and 21 in the third.

At the November 2004 workshop much of the debate was around a possible new option for managing traffic and movement, based on the concept of shared surfaces and traffic calming. As a result a special focus group meeting, attended by a small core group of six stakeholders, was held on Thursday 9 December 2004 in Senate House, Tyndall Avenue.

ENGAGING WITH OTHER CONSULTEES

The Project Team have also had specific briefings/meetings with key consultees including:

- 27 October 2003 meeting with **Civic Society** and English Heritage.
- 25 November 2003 **Bristol City Council members briefing**.
- 16 November 2004 presentation to the **Conservation Advisory Panel** (Bristol City Council).
- Ongoing dialogue with **University of Bristol Healthcare Trust (UBHT)** – University & UBHT have a joint Estates Working Group which meets quarterly. The Masterplan was specifically discussed on 24 October 2003 and 29 January 2004.
- Ongoing dialogue with **Bristol City Council** officers of the planning, policy, highways and sustainable cities teams.
- Ongoing dialogue with **Bristol Grammar School**.
- Ongoing informal discussions with **CABE**. Pin-up review to take place on 16 February 2005.

UNIVERSITY CONSULTATIONS

The Bursar has led an ongoing programme of consultation at a number of levels within the University. This began in 2000 in relation to the proposed acquisition of the Children's Hospital site and discussions have continued since. The aim of consultation was to test out the University's long-term estate needs and secondly to engage both staff and students in the dialogue about the end result of the development of the University.

Consultation and feedback has taken place through a range of channels including; formal meetings, presentations, briefings and publications. These include:

- **University Council** – ongoing briefing plus specific presentations in February 2004 and February 2005.
- **University Departments** – discussions at faculty level, through the Planning & Resources Committee and through the Heads of Department Forum with specific presentations to the Forum in February 2004 and December 2004.
- **The University Community** – through the formal structure which runs from Council to the Vice-Chancellor, the Registrar of Deans, Heads of Department to staff and students plus major features in December 2003 and March 2004 editions of the University newsletter and in the student newspaper Epigram.
- **Estates Committee** – has been the main body that has steered the development of the Masterplan with the Bursar.
- **General communications** – informal briefings as part of day-to-day management activity and through a programme of briefings and presentations to Faculty Board - these are still ongoing.

Feedback from the University consultations to date has been suarised by the Bursar as follows:
In general, a consistent thrust was that the University wanted to portray a distinctive presence appropriate for an organisation of some importance locally, nationally, and internationally. The first versions of the plan were not enthusiastically received in all areas. It was felt that the "style" presented was rather "pastiche" and that in order to attract very best staff to the University it was important to make a bold and forward-looking statement with buildings. A second key thrust was the need to create a sense of arrival for visitors to the University. A more obvious focal point was suggested which would make it clear that one is in the University. This centre was seen to be best created on Tyndall Avenue. Amongst the wider staff community there was a concern about car parking and that this was regarded as a potential barrier to recruitment in the future. There was a desire that there should be no further reductions in the number of spaces available. There was general support for the CPZ proposals for the streets adjacent to the University.

INVOLVING THE LOCAL COMMUNITY

In parallel with, and to complement the stakeholder workshops, public drop-in sessions were held on:

- Thursday 4 December 2003 at Wills Memorial Building
- Saturday 6 December 2003 at Victoria Rooms
- Thursday 11 December 2003 at Physics Department, Tyndall Avenue

A follow up one-off session was held on 8 January 2005 at the Victoria Rooms where a large block model of the area proved extremely helpful.

Catchment area & notification:
The 'local community' was defined as residents, businesses and organisations located within the actual Precinct area. This was extended out to include occupiers in neighbouring streets. Over 1,300 letters/invitations were hand-delivered to occupiers/premises:

- Within the designated Precinct area.
- Along the southern boundary along Perry Road, Lower Park Row and Park Row.
- Along the eastern boundary up St Michael's Hill, also further east taking in Horfield Road, Southwell Street, Myrtle Road, Little Paul Street up to Cotham Road.
- Along the northern boundary along Cotham Road running westwards to junction of West Park.
- Along western boundary all of Belgrave Road, Tyndall's Park Road, Elmdale Road, Queen's Avenue, remainder of Elton Road and University Road running westwards as far as Whiteladies Road/Queen's Road.
- Via chairs of High Kingsdown residents associations.
- Via Christmas Steps & St Michael's Association and Kingsdown Conservation Group.

A public notice was placed in the Evening Post on 27 November 2003 and in the Bristol Evening Post and the Western Daily Press on 4 January 2005.

Appendix Three
Statement of Community Involvement - Avril Baker

Attendees:
Around 100 people attended the December 2003 drop in sessions and 52 people attended the single session held in January 2005. Virtually all were residents with strong representation from High Kingsdown and Kingsdown Parade.

FEEDBACK FROM STAKEHOLDERS AND PUBLIC CONSULTATIONS

Stage 1

In general the key issues raised and the feedback given at both the stakeholder workshops and the three public drop-in sessions during 2003 were fairly consistent.

Comments and discussions focused on the following specific areas:

- The nature of the Precinct.
- How to balance the needs of local residents with those of University students/staff.
- How the University links in with the rest of the city.
- Increasing permeability/routes through the Precinct.
- Traffic calming, car parking and resulting impact of reducing or closing roads on neighbouring streets.
- Increasing permeability and access.
- Security and safety.
- Urban design and architecture with differing views about the suggested style of architecture.

Specific issues raised included:

Precinct boundaries and edges
The need to manage the interface between the Precinct edge and surrounding area. To create a 'sense of place' without physical boundaries, to ensure that out of University hours it is a lively active place to avoid it becoming a sterile, isolated area.

Urban design and townscape
Broad support for the approach to repair of streetscape fabric and the conservation approach to historic buildings. Agreement with the proposal for 3½– 4½ storeys on street frontages with transitional height increases for central plots plus the use of buildings to frame spaces and views. Concern that the master plan could focus activity in the north area of the Precinct creating a different focus between north and south.
Welcomed the creation of spaces and routes through the Precinct and the re-creation of the 'grain' of the area.

Architectural language and built form
Agreement to new development that will harmonise with existing, quality buildings and the use of design codes to guide future development. Stakeholders did not want to see landmark buildings. Conflicting opinions regarding architectural treatment with some supporting the traditional sketch designs whilst others wanted a more modernist approach.

Pedestrian and vehicular routes and road closures
Support for encouraging pedestrian and cycle permeability through the Precinct. Understanding of the positive and negative aspects of prohibiting private cars access through Tyndall Avenue and/or St Michael's Park.

As proposals for traffic options evolved different views were expressed regarding the proposal to close St Michael's Park and Tyndall Avenue. There was concern that this would separate Kingsdown from the far side of the Precinct, and affect traders, but it was agreed that the Precinct needed to be made safer if more students were being brought into the area. Concern was raised regarding the use of all routes and entrances 24/7. Agreed a balance needed to be struck between non-residential rat running, pedestrian accessibility and highway safety.

Security and safety
Support for designing out crime through increased lighting and natural surveillance in quieter areas.

Use
Support for more retail uses and commercial operations to help increase vitality and to emphasise the relationship between the Precinct and St Michael's Hill, Christmas Steps and Perry Road. Concern at the University's ongoing purchase of private residences which have not be returned to private residential use. View that University is focussing on needs of academic activities at expense of student accommodation and needs of residents.

Would like to see more residential use in the Precinct hence concern if Hawthorns is no longer to be used for residential purposes as it would sterilise the area. Suggestion to look at sitting accommodation on upper floors and increase post graduate accommodation. University and City Council should work together to allocate more student accommodation across the city e.g. Stokes Croft.

Accessibility
Concern about safety of shared pedestrian and bus surfaces. Flagged up the need for disabled friendly pavements and disabled access to University buildings and buses. Want to see better accessibility and clearer pick up zones for buses, taxis and coaches within the Precinct.

Sustainability
Keen that the Masterplan should focus on sustainable development principles at an early stage. This should include parking, transport and building form, energy efficient design, waste management, use of combined heat & power and locally-sourced materials.

Stage 2

At the November 2004 Stakeholder workshop there was broad agreement on the following:

- **Hawthorns site** is, in principle, suitable for redevelopment.
- Support for **horseshoe pedestrian route** around University Walk & Royal Fort.
- Need to do more work on **density and proposed development in Tyndall Avenue** and on possible links across/bridges between buildings. However support for more open/less cloistered approach.
- Acceptance that in terms of **massing** overall this approach is proposing slightly less development than before.
- Re **traffic options** agreement to work up a third option around shared spaces and traffic calming.

Underpinning the third option for managing traffic and movement there was firm agreement by residents representatives on the following key desired outcomes:

- To work on preserving a maximum traffic flow of 500 vehicles per hour and explore to what degree it is practicable to reduce this flow.
- To look at calming traffic to ensure pedestrian safety by such means as defining shared spaces.
- To aim to achieve a maximum traffic speed of 20 mph as this is acknowledged as the critical speed below which fatal accidents are palpably reduced.
- To allow residents and occupiers free access through no road closures and no rising bollards/control systems and, ideally, keep both roads open to two way traffic.

Specific key issues raised at the meeting were as follows:

Transport/traffic movement
Differing views on traffic flows – a safe flow of traffic is essential to keep the area lively against having a traffic free area e.g. Tyndall Avenue could provide space for outdoor events. Importance of connectivity for residents is different to the public wanting to get across the city and possible rat-running. Residents did not support one stakeholder's suggestion for using electronic systems such as rising bollards to control vehicular access.

Pedestrian movement
Broad support for proposal to complete the pedestrian loop around Royal Fort and the need to understand where key pedestrian movements are.

Nature of Precinct
Residents resent anything which will further privatise the nature of the campus and want the University to be integrated within the city. Concern about losing contact with Queen's Road.

Public realm
Support for more input on public realm and providing a high quality environment. Specific interest in how softer areas of landscaping will be treated e.g. gardens around Royal Fort and any proposals for the Royal Fort lodge site.

Appendix Three
Statement of Community Involvement - Avril Baker

Built form
In principle a new tall building was accepted on Hawthorns site but not over 12 storeys. Unclear about the concept of the Hawthorns as a gateway building/site. Concern about the idea of demolishing the Computer Centre & Library buildings so soon after they were built.

Land use
Don't want to see large increase in student numbers and reassured by University assurance on this, but accept that new accommodation is needed for teaching and social space.

Security & Safety
Generally more comfortable with new approach to open space and accept that the previous design was very compact with cloistered areas.

Feedback from December 2004 Focus Group meeting

This specially convened design meeting concentrated on the traffic movement and management option of shared/social space. Discussion was based on the desired outcomes agreed at the November 2004 stakeholder meeting. There was broad support for the option of introducing the concept of shared spaces as a way of better managing traffic and pedestrian movement. Stakeholders were happy for this support to be fed back to the City Council to help with ongoing discussions with the traffic management and highways teams.

Specific issues raised were as follows:

Routes
The challenge is to make the Precinct more permeable without 'sterilising' existing routes and to explore ways of increasing quality and richness of buildings and the environment to help to slow down traffic to below 20mph. Would like to see improved links between the Wills Building /Queens Road and Tyndall Avenue. Keen to see more analysis of existing pedestrian routes and better awareness and visibility of these through design tools such as lighting, pavement treatment, public art.
Questioned the impact, for local residents, of providing a link through Highbury Villas (if Oldbury Villas was to be redeveloped in the future).

Public realm
Any new treatment of public realm should not be bespoke to the University but capable of being extended along key routes beyond the Precinct area. University intends to bring in positive parking policy to improve setting of significant buildings.

Should consider improvements to the public realm around the Grammar School to help with traffic calming and to reduce vehicles speed. Need to bring more life into area in evenings as some streets, such as University Road, are targets for crime.

Feedback from January 2005 public drop-in session
In general both written and verbal feedback was much more positive than a year ago.

The majority of comments related to:

- Vehicular access and traffic calming in the Tyndall Avenue area.
- Massing and layout of proposed buildings.
- Treatment of 'public' space.
- Relocation of Students' Union facilities and loss of the University swimming pool.

Routes and traffic
There was strong support for the concept of shared spaces and traffic calming instead of the previous proposals to close Tyndall Avenue or introduce one way system. People believe this will help keep area lively as well as welcoming and accessible by local residents and public. Concern about how any highways proposals would be received or taken forward by City Council. Keen to see more coherent and well used pedestrian routes down towards Perry Road.

Massing and layout of proposed buildings
Some attendees who had been to the previous drop in session were surprised that there was less presentation material showing likely architectural treatment of buildings but others appreciated the further analysis work that the team had undertaken. There were polarised views over the proposal for two new towers – those with an architectural interest in principle supported the towers, whilst in the main the general public were less supportive. Concern that the proposed development in St Michael's Hill could be oppressive in this sensitive location.

Public realm
Suggestion for including a commercial activity, such as a café or retail facility, in public areas such as Royal Fort, to make the area more friendly, especially out of hours/term time and to encourage people to walk through the Precinct.

Students & relocation of Students' Union
Mixed views at moving Students' Union building into the area, some concerned it will mean more late night student activity others see benefits of bringing more life into the area outside University hours. Concern at the loss of the University pool. Continuing comments about more students adding to existing parking problems for residents.

OUTCOME OF CONSULTATION PROGRAMME

Generally stakeholders and the public have appreciated being consulted and understood the challenge of involving the community at this early stage in a master planning exercise. The stakeholders and public gave their views in a constructive manner and they are thanked for their input by the University and the project team. This was not a cosmetic exercise and as a result of this feedback a number of important changes have been made to the draft Masterplan.

Traffic and movement
The most significant change was the decision not to pursue the option of either closing or instigating a one-way system around Tyndall Avenue/St Michael's Park. Instead the project team is now exploring a new option around shared spaces and has appointed a specialist consultant in urban design and movement to specifically work with the team on this.

Architectural treatment and public realm
Differing views on the suggested style of buildings presented in the first stage of the Masterplan plus the need to improve the design and quality of the public realm helped inform the University's decision to look for new urban designers/master planners and the appointment of landscape architects to strengthen the project team. Generally progress with the analysis, strategy and master planning principles in this area has been supported.

Nature of the precinct and permeability and access
Residents and amenity groups do not want the University to further privatise this area and most want to maintain and enhance access and links through the precinct. After concerns were raised about the cloistered nature of the earlier designs the built form and public realm has been revised to allow a more open feel which addresses both issues of security and safety and also permeability. Further work however needs to be done to ensure that any new routes do not have an adverse affect on the existing shops and services and that there are shops or retail opportunities on these new routes to give a reason for people to walk through.

Impact of students on residents
During the consultation residents grasped the opportunity to have a direct dialogue with the University regarding concerns about the problems they experience living alongside students, in particular parking and unacceptable behaviour. The Bursar has decided to set up a residents' forum which will help ensure that individual residents can voice their concerns without dominating the Masterplan consultation process.

CONTINUED STAKEHOLDER AND PUBLIC INVOLVEMENT

Although the second phase of consultation has drawn to a close comments are still being received together with requests from amenity groups and associations for the team to address meetings.

The University is committed to continuing to engage with and update stakeholders, the University and the community as the Masterplan process progresses and will work with and help support the City Council when formal consultation on the Masterplan begins.

Appendix Four

Areas of Public "Benefit" Provided by the University of Bristol

Public Events & Lectures

There are a wide range of events each year, which take place in venues such as the Victoria Rooms, the Wills Memorial Building the Glynne Wickham Theatre; and elsewhere in main lecture theatres. The events are varied but include music concerts, Theatre productions, guest speaker lectures and exhibitions. In addition other organisations can and do use buildings, such as the Victoria Rooms in particular, for major events and exhibitions.

Library and Collections

The University Libraries' main purpose is to support the study and research work of University staff and students, thus their stock is not of general interest to the public. However members of the public can become members of any of the University Libraries if they wish to use the resources available to support their own study or research.

There are special collections that are of more potential interest to the general public and these too are available to be examined. Most important of these to Bristol is the Brunel Collection. The University has progressively acquired a wide array of original Brunel papers including engineering drawings and correspondence relevant to his various projects carried out in the late Victorian period. The collection is extremely valuable and cannot at present be put on general show but plans are being made to move the collection to a more suitable home, perhaps in the Victoria Rooms, thus giving it a more public profile and perhaps making it more generally accessible in the process.

The Theatre Collection is a similar archive of materials relevant to the history of the performing arts. Housed in the Van Dyck Building on Perry Road this collection is already available to the public and has a high reputation nationally. Again it is possible that this collection will move to the Victoria Rooms but this possibility is at the very early stages of planning.

The national Penguin Collection resides in the University and is the home to any Penguin book that is published. This is primarily a long-term "historic" archive and is used mainly in support of personal research.

Sporting Facilities and Activities

Members of the public can, through paid membership, use the indoor sports facilities within the University. The swimming pool is used heavily by local residents and is also made available to several local schools.

There are several Health and Well Being initiatives, which are open to the Public. Their aim is to provide education, particularly to elderly citizens, on the balance between health, diet and exercise. Some of this work supports research done by the University in the area of Sport, Health and Exercise. Professor Ken Fox has established strong connections with the City Council on Health and Well Being issues and has contributed to the City's agenda in this area.

The University of Bristol Students' Union, UBU, has a wide area of contact with the City of Bristol and is the student body is the most public part of the University. Many students give up their free time to do good things within the local area and wider community. A few examples are:

- Students raising tens of thousands of pounds each year for local and national charities.
- Student volunteers going out into the community and helping in local schools.
- Student led projects such as volunteering in local hostels, working with underprivileged children, helping asylum seekers and the many other projects which operate around Bristol on a weekly basis.

Students also work within widening participation, raising aspirations in local Bristol schools. Some students act as mentors for children, helping them with their A-Levels studies. Other activities students partake in include going out into the countryside and helping to conserve the local area.

The Public Programmes Office provides a range of courses aimed at the general public. These courses vary from very specialized interest fields where Bristol Academics can provide teaching based upon their own in acquired depth knowledge, to building tours where the University's built heritage can be explored by small groups of people. Tours of the Wills Memorial Building Tower and the Great George Bell are immensely popular and provide a unique insight into this iconic building.

Gardens and Grounds

In general terms the gardens and grounds of the main University are fully open to the public. The main area that the public can easily enjoy is the gardens of the Royal Fort. This garden surrounds Royal Fort House and Stuart House, and is accessible from several points around the campus. An area exists within the main garden, called the centenary garden, which is well used by members of the public in search of an area for their own quiet contemplation. All the trees in the garden are labelled and registered by the University's own grounds staff. A very active management programme ensures that new trees are constantly being planted to replace older moribund trees that are inevitable in a garden of this age.

Stoke Bishop Area and Clifton Halls of Residence

The grounds around Stoke Bishop, adjacent to Durdham Downs, are very popular amongst the general public. Natural woodland around the edges of the estate provides a good natural habitat for many species of wildlife common to urban areas such as badgers, foxes, hedgehogs and a variety of woodland birds. The University's Botanic Garden is in the process of relocating from Leigh Woods to the grounds of the Holmes on Stoke Park Road. This unique collection of rare botanic specimens will continue to be open to the public and will also provide educational courses of interest to the keen gardener. The landscape design of the garden will provide an environment where the general public can simply wander and enjoy the garden through the changing seasons.

Whereas not generally open to the public there are several attractions that are made available to the public on specific advertised occasions. Goldney Grotto provides a fascinating glimpse into the life of the Bristol Merchant Sir Thomas Goldney. The underground grotto is decorated with tropical shells brought back from the West Indies by trading ships.

Appendix Five
Standardised Floorplate Design

Floorplate Dimensions for New Buildings

Introduction

As part of the Masterplanning study, Feilden Clegg Bradley Architects inherited the concept of a typical floorplate width of 15m and a floor to floor height of 4.125m. It was suggested that the floorplate depth could be reduced in certain areas, primarily because it was found that the courtyards on the Children's Hospital site were becoming too small, and reducing building depths would make them more open and better proportioned. The following is a study of alternative internal building depths of 12m, 13.5m and 15m and at structural engineering, environmental considerations and issues of subdivision for academic use.

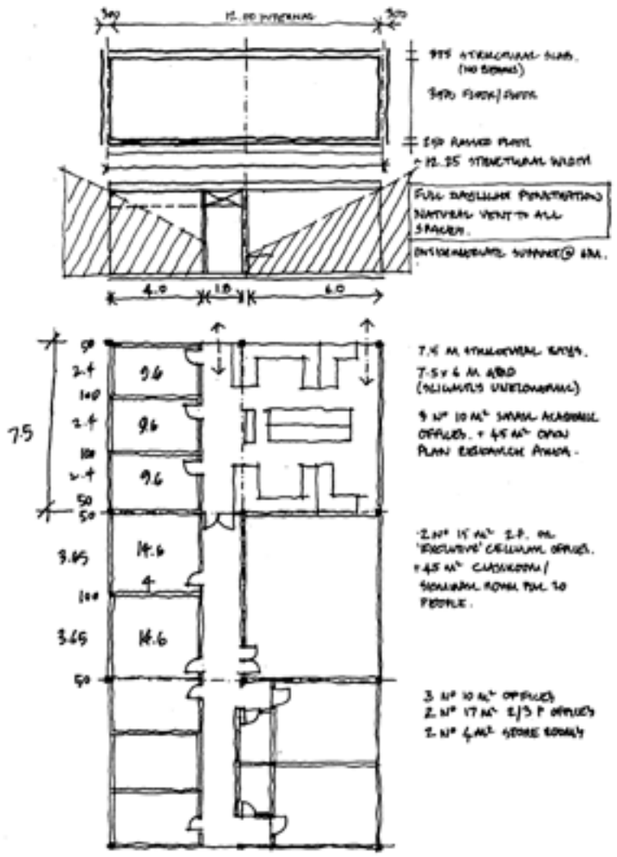
Design Parameters

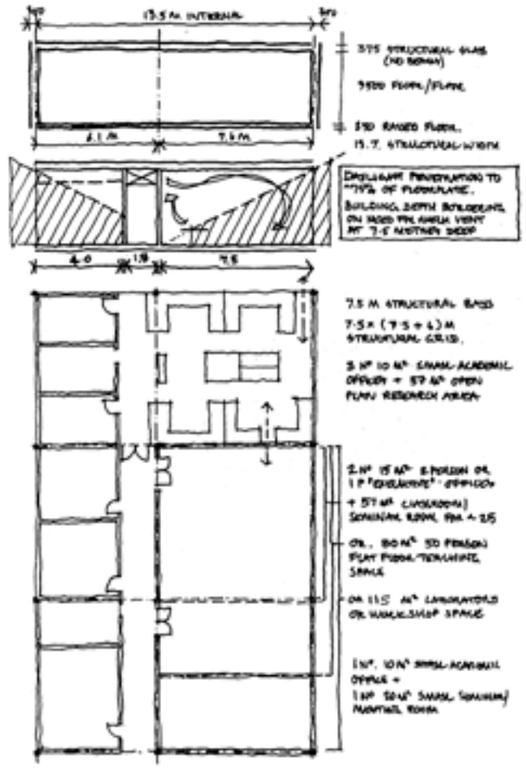
The studies have assumed a 250mm raised floor zone and a 375mm flat structural slab with no downstand beams. A thinner slab and downstand beams would be marginally cheaper but would decrease flexibility. It has been assumed that suspended ceilings will be avoided where possible to expose the thermal mass of the ceiling and reduce cooling loads, increasing internal floor to ceiling height and therefore daylight penetration. The resultant floor to ceiling height, given this construction, is 3.5m clear which should allow for a separate zone for ceiling mounted services if necessary, and would be satisfactory visually for spaces up to 15m wide.

The 3.5m floor to ceiling height in small, single person offices would be a little high but this could be modified by a lowered ceiling, though it would be preferable if this was thermally transparent to allow for the benefit of structural cooling. Similarly corridors and WCs are likely to have suspended ceilings for services distribution.

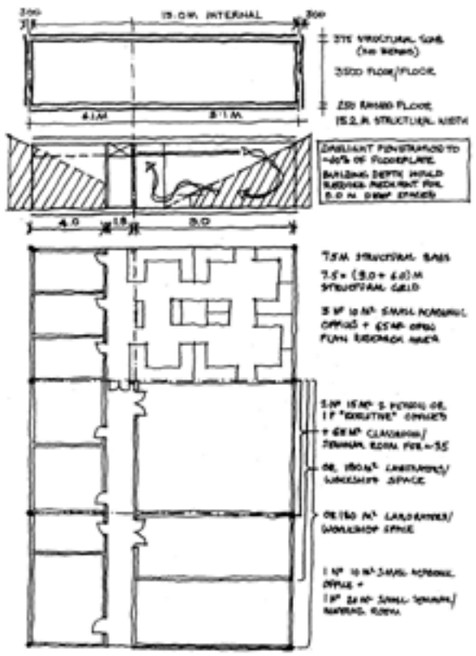
It would be desirable to have windows relatively high in external walls to maximise daylight penetration. Good savings in artificial lighting would be achieved with room depths of up to 6m. Beyond that artificial lighting would be required for most of the time. 7m is the approximate maximum depth for achieving single-sided ventilation to a reasonably highly occupied space. Beyond that mechanical systems would be required.

Structural grids tend to be economic in the range of 7.5m-9.0m. The plans illustrate a 7.5m grid along the length of the building with an intermediate column at 6m from one side. The off-centre arrangement is good for maximising column free spaces down one side of the building and achieving a useful corridor plus single office space down the other. The wider the building depth the greater the degree of flexibility, with the option of the corridor zone moving to the other side of the column to give smaller seminar/teaching rooms on each side.





Appendix Five
Standardised Floorplate Design



For maximum flexibility it is suggest that the external column zone would be within the zone of the external walls, though this means that the walls need to be thick enough to accommodate cold bridge insulation around the column. 300mm external walls have been shown which allow for 200mm of insulation with either lightweight cladding on the inside or outside. Greater flexibility would be achieved if this zone was increased to 400mm.

Conclusions

The internal depth of 15m gives optimal flexibility with reasonable quality daylighting, and a sense of view to the outside. Increasing the building depth above 15m tends to lead to the perception of a “deep plan building”.

A 12m depth floorplate would in general be too small unless a very substantial amount of cellular academic office space was required. To maximise the efficiency of double loaded corridor cellular office layouts the building depth would have to be reduced to around 10m but this would limit future flexibility.

Full width laboratory spaces are possible with any building depth though circulation zones need to be planned into them and fire escape distances could need to be addressed.

Reducing the plan depth of 13.5m does not seriously impede flexibility since it is possible to achieve a 7.5 m deep large classroom and even laboratory spaces serviced off a corridor, or larger spaces the full width of the building. The 13.5m building depth has the potential advantage of not requiring mechanical ventilation except in areas of high intensity use.

Where atria are incorporated, the depth of the floorplates should be reduced to 12m to take into account the reduced daylight penetration from the atrium roof.

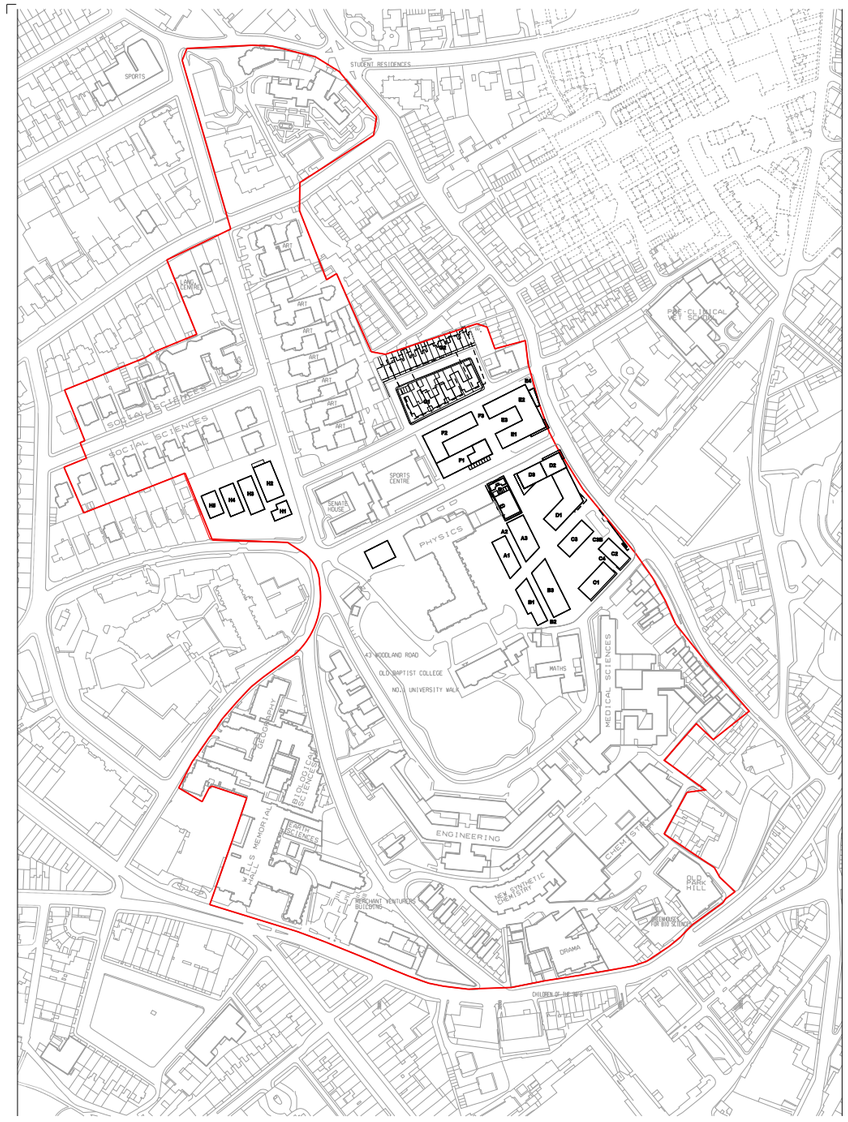
It is recommended that the bulk of the buildings be 15m deep in plan, with 13.5m building depths incorporated where necessary to optimise the planning of external spaces.

Appendix Six
New Building Areas

Schedule of Areas

	Allocation	Gross Floor Area m²	Quantity (Floors)	Sub Total m²	Total
	A1	400	3	1200	
A	A2	150	1 (3 void)	150	3430
	A3	520	4	2080	
	B1	430	3	1290	
B	B2	260	1 (3 void)	260	5000
	B3	690	5	3450	
	C1	540	4	2160	
C	C2	370	3	1100	
	C3	490	3	1470	5210
	C3B	110	1 (3 void)	110	
	C4	370	1 (3 void)	370	
	D1	850	4	3400	
D	D2	250	4	1000	5800
	D3	350	4	1400	
	E1	350	5	1750	
E	E2	1000	4	3200	6130
	E3-F(Atrium)	800	1 (4 void)	1000	
	E4	60	3	180	
	F1	various	14	4300	
F	F2	750	4	3000	7580
	F3 (bridge)	140	2	280	
	G1	720	3	2160	
G	G2	1700	2	3400	5560
	H1	240	7	2640	
	H2	530	6	3180	
H	H3	550	5	550	9180
	H4	440	4	1760	
	H5	350	3	1050	

Building Gross Area		Gross internal (-6%)	Net useable (-30%)
A	3430	3225	2400
B	5000	4700	3500
C	5210	4900	3650
D	5800	5450	4060
E	6130	5760	4290
F	7580	7125	5310
G	5560	5225	3850
H	9180	8630	6430
J	1400	1315	980
	49290 m²	**46330 m²**	**34470 m²**



Bristol University Masterplan

Notes on Bristol City Council Sustainable Development Criteria: Preliminary Responses 2nd September 2004

1. NEIGHBOURHOOD AND SOCIAL ISSUES		
Objective 1.1	**Ensure there are opportunities and facilities for community engagement during development and following occupation**	
1.1.1	Has consideration been given to how and in what ways the community should be involved?	Preliminary community consultation documented as part of Masterplan brief. Further stakeholder workshop to be held in early October. Public drop in session to be held in early December.
1.1.2	How will adequate time and resources be built into the development process for effective community involvement?	Above process regarded as adequate.
1.1.3	How have any previous consultations carried out in the area of the development been taken into account?	Early consultation forms part of current briefing.
1.1.4	How will the community interests that should be involved in the development process be identified?	Through careful management and minuting of the consultation exercises using a professional facilitator.
1.1.5	How will balanced, accessible information be made available to local people to enable them to make informed choices?	Through mail out responses and public exhibitions.
1.1.6	How will areas of conflict be addressed?	Through careful facilitation.
1.1.7	How will local people get involved in decisions during the design and construction process?	Through the consultation process (NB Construction not applicable).
1.1.8	How will people's views and needs be considered throughout the construction process?	Not applicable under this phase of work.
Objective 1.2	**Maximise the mix of housing types and tenures and availability of affordable housing**	
1.2.1	How will the development contribute to a diverse mix of housing in the area in terms of type, size, tenure and affordability?	Not applicable.
1.2.2	What percentage of housing will be accessible to disabled people?	Not applicable.
Objective 1.3	**Maximise access to community, cultural and leisure facilities**	
1.3.1	In what ways will the development have any positive impact on the provision of, or access to, leisure, sporting and cultural facilities?	A masterplan development will include a study of existing social facilities and recommendations for a major new student union facility.
1.3.2	In what ways will the development contribute to, or improve access to, public and welfare services for the community?	The University itself provides perfect public and community service. Discussions need to take place over the extent of public access and integration of University and community.
1.3.3	How will the development contribute to the viability and balance of local services and amenities?	One of the features of the Masterplan would be to improve permeability of the central precinct site and links to adjacent local services and amenities.
1.3.4	Will the development contribute to Bristol's role as a regional centre for culture and leisure? And if so, how will sustainability concerns be addressed?	The plan will contribute to the cultural role of the region. New library facilities will involve the separation of special collections such as the Brunel & Theatre collection from the main student facilities. These will then be openly available to the public. These initiatives will be self sustaining as they are already supported by the University and this move merely makes existing collections more accessible. The possibility exists also to create a performing Arts Centre in the heart of the campus. This will provide an improved outlet for the work of the departments of Drama and Music and also will widen the type of events that can be staged by students - currently at the Union building. These operations will only be promoted if the University can sustain them and will be complementary to the type of events already staged in the Victoria rooms.

Appendix Seven
Sustainability Criteria

Objective 1.4	**Reduce car use and the need to travel by linking development to public transport and providing high quality pedestrian and cycle routes and facilities**	
1.4.1	How will the development provide high quality pedestrian routes and facilities to and through the site?	The Masterplan will address issues of pedestrian access routes through the site.
1.4.2	How will traffic management and calming measures be linked to the site, contributing to reductions in speed and safety improvements?	Traffic management will form an integral part of the study particularly in relation to Tyndalls Avenue and St Michael's Park.
1.4.3	How will the development provide high quality cycle routes to and through the site?	The Masterplan will incorporate a system of revised cycle routes and will form part of the masterplanning strategy together with consideration of lockable cycle parking areas.
1.4.4	How will the development encourage the use of public transport to the site?	The Masterplan incorporates a study of bus routes and recommendations improving bus stop facilities.
1.4.5	How will the development limit parking provision?	The Masterplan study will look at removing car spaces from certain key areas of the site.
1.4.6	Will a Travel Plan be prepared for the site?	The University has won awards for its progressive work on Travel planning and creating modal shifts away from dependency on the car. The current plan will be updated as part of this masterplan.
Objective 1.5	**Provide high quality inclusive design, which is fully accessible to disabled people**	
1.5.1	How will the design of the development meet requirements to be fully accessible to all, including disabled people, based on the Council's Environmental Access Standard and British Standard 8300?	Part of the Masterplanning strategy is to ensure easy and level access routes throughout the campus, following the contours on what is a very sloping site.
2. LOCAL ECONOMY AND EMPLOYMENT ISSUES		
Objective 2.1	**Maximise opportunities for local businesses, local labour and training**	
2.1.1	How will the development affect the local economy in terms of numbers and diversity of new businesses and jobs created and lost?	Expansion in University research will have a direct spin-off in support jobs in the local economy. It is difficult to estimate but it is estimated that for every £1m of additional turnover in the HE sector an extra £800k is generated in the local economy. It is most unlikely that any net jobs will be lost by implementation of the plan.
2.1.2	How would the development enhance the viability of local businesses?	In addition the opportunity exists to include small businesses within parts of the developed central core of the campus. By moving the students union a more sustainable environment for business is generated because of the increased footfall. Some small businesses related to student needs are contemplated, but not in competition with St Michael's Hill or Park Street. There is already a bookshop and bank on Tyndall Avenue, businesses of a similar kind are possible. Businesses already in existence on St Michael's Hill in particular will gain benefit from the increased footfall and potentially longer trading period resulting from the development of the centre of the campus.
2.1.3	How will the development provide new opportunities for training and developing the skills of local people?	Whereas the majority of students come to Bristol from outside the region it is the case that many do stay in the region in order to take up full time employment. Bristol has the highest proportion of graduate trained residents of any of the core cities in the UK and is one of the reasons why the region sustains such a strong knowledge and technology based economy. A more efficient use of space in the core of the University means that existing adult education classes run by the University will be much easier to organise and will be more "attractive" to potential students.
Objective 2.2	**Maximise opportunities for local procurement and small business involvement**	
2.2.1	How will the development make use of local companies and suppliers throughout the design and construction process?	All the participants in the Masterplanning exercise are Bristol or Bath based companies. Construction is not part of the process.

3. ENVIRONMENTAL ISSUES		
Objective 3.1	**Maximise efficient use of land and buildings**	
3.1.1	What are the findings of any site appraisal?	The Masterplan exercise is one of site appraisal. Findings will emerge throughout the process.
3.1.2	Will the design be assessed against an accredited scheme to assess the building's sustainability such as the Building Research Establishment Environmental Assessment Method, Ecohome Assessment of equivalent?	The Masterplan will include recommendations that all new buildings should meet BREEAM "very good" or "excellent" standard. (The bespoke system would be used rather than the offices system alone. Also meeting BREEAM will help address land use and ecology, therefore will address points 3.1.3 to 3.1.6. For example building on sites of old building attains credits under BREEAM).
3.1.3	How will the development use land effectively?	The Masterplan is in effect a study of effective use of land within the central precinct.
3.1.4	How will the development use previously developed or derelict land?	There is very little under-developed or derelict land on the site except small areas that do exist will be identified for redevelopment.
3.1.5	How will the re-use or refurbishment of any existing buildings or structures on the site be incorporated into the design?	The study will include an assessment of the potential for reuse and refurbishment of the existing buildings.
3.1.6	How will any archaeological, historical or cultural remains, features or buildings on the site be safeguarded? Please make reference to any expert advice gained.	The Masterplan process has included an extensive assessment of the archaeological, historical and cultural significance of the Precinct area. This work has included preparation of an archaeological study of the whole site (including a 'hot-spot' drawing), assessment of individual buildings and landscapes, and design studies on key development sites. This information is included within the Masterplan report and the Appendices. This level of understanding has underpinned the development of the balance of proposals to date, and will guide their implementation in due course.
Objective 3.2	**Contribute positively to a high quality urban environment**	
3.2.1	How will the design of the development contribute to community safety and conform with Section 17 of the Crime and Disorder Act (1998)?	The University works very closely with the local police force and already has a dedicated beat officer covering the main campus. Through expertise in its own Security office the University is able to ensure that building developments are carefully thought out in terms of safety and security. The OPDM guidance note "Safer Places" will be used as a key reference by the designers as they develop the built form of the plan.
3.2.2	How has the design taken into account the current and potential future impacts of climate change?	Bristol University along with Edinburgh founded the Environmental Association for Universities and Colleges (EAUC) and takes its responsibilities for climate change very seriously. Several awards have been won for work done so far and future grants for renewable energy sources are being developed. The University measures and manages its environmental impact in particular its CO2 load. It has set a 20% reduction target for CO2 load per m2 of building over the period up to 2010. Already significant reductions have been made as a result of active environmental management. The University has adopted an environmental policy with key objectives and targets, the masterplan will develop with reference to these targets. The buildings within the masterplan will adhere to the University's Outcome Specification, which includes several sections on a range of energy saving features that will be included within any development. The building development brief will encourage the use of natural daylight ventilation but buildings will be designed to be able to incorporate mechanical ventilation and cooling should this become inevitable.
3.2.3	How will the design of the development enhance and complement local character, landscape and open spaces?	A full landscape study will form part of the Masterplanning exercise and this will incorporate references to local landscape character.
Objective 3.3	**Maximise sustainable energy supply and efficient use of energy**	
3.3.1	How will the design ensure the efficient use of energy?	The use of BREEAM targets and outcome specification will ensure this.
3.3.2	How will passive solar design principles be embraced in the development?	Passive solar design options will be assessed for feasibility and included where appropriate.. BREEAM targets incorporate the use of daylight.
3.3.3	How will the design incorporate the use of sustainable energy supplies?	Renewable energy, in particular photovoltaic and solar thermal generation will be encouraged through a series of sustainability guidelines for new buildings.
3.3.4	Will any housing element of the development exceed a rating of 80 on the Building Research Establishment SAP Rating?	Not applicable.

Appendix Seven
Sustainability Criteria

Objective 3.4	**Minimise waste and maximise recycling both during construction and after occupation**	
3.4.1	How will the development provide space or facilities for the separate collection of all materials that can be recycled, or easy access to recycling facilities?	The University has a very progressive waste management and recycling system already in place covering paper, cardboard, bottles and cans, furniture, electronic goods, computers & printer cartridges, fridges and freezers, metals and lead batteries. Space will be created within the masterplan for a recycling centre which will consolidate the University's activities allowing them to handle greater quantities than it does at the present time. Its aim is to reduce by 60% the amount of material in its waste output stream by 2010. Localised storage spaces for recycling facilities will also be required.
3.4.2	How will the development re-use demolition, construction or other reclaimed wastes on or close to the site and/or from elsewhere?	Development guidelines will form part of the Masterplan and these will encourage careful demolition where appropriate as well as the use of waste construction material. The BREEAM will inform these guidelines.
3.4.3	How will waste of new construction materials be minimised during construction?	Development guidelines will encourage this. The BREEAM will inform these guidelines.
Objective 3.5	**Conserve water resources and minimise vulnerability to flood risk**	
3.5.1	How will any vulnerability to current or future risks of flooding be minimised?	Flooding not an issue on a steeply sloping hilltop site.
3.5.2	How will mains water be conserved and how will discharges of waste water into the main drainage system be minimised?	All new developments are built under guidelines which incorporate Suds. Water conservation measures will also be built into development guidelines.
3.5.3	How will discharges of sewage and polluted water be minimised?	Sewage will be discharged into mains drains. Water conservation are minimised discharges. Grey and rainwater recovery will be assessed for feasibility for inclusion within new developments.
Objective 3.6	**Minimise polluting emissions to water, air and soil and minimise noise and light pollution**	
3.6.1	How will the development clean up any contamination on site and/or avoid land contamination in future?	Contamination does not exist as far as we know. The University's own policies of statutory legislation will ensure no future contamination. BREEAM will address points 3.6.1 to 3.6.5
3.6.2	How will pollution of all kinds be minimised during construction?	Construction Good Practice Regulations should ensure this.
3.6.3	How will the development impact on external air quality?	Minimising any additional car traffic should ensure minimal impact on air quality. The hilltop site will be used to encourage natural ventilation and dissipation of its CO2 etc. from new buildings.
3.6.4	How will noise pollution be minimised within the development and from external sources?	New buildings will meet BREEAM and Building Regulations targets. University work does not generally involve noise pollution.
3.6.5	How will light pollution be minimised in and around the development?	Light pollution will be minimised by careful specification of external luminaries and blinds: reference to this will be made within Development Guidelines of the Masterplan 371.
Objective 3.7	**Maximise use of materials from local and sustainable sources**	
3.7.1	How will materials be specified to help to maintain local character and ensure long life?	Development Guidelines will suggest reference to key local materials such as stone and render to ensure that the buildings are routed in the local architectural character.
3.7.2	How will materials be specified to ensure low environmental impact and to maintain good internal air quality?	Development Guidelines will refer to specification of materials only incorporating a Grade A rating within the BRE Green Guide specification.
3.7.3	How will PVC be avoided where an alternative is available?	Development Guidelines will suggest the complete avoidance of PVC within all new buildings.
Objective 3.8	**Protect and enhance biodiversity**	
3.8.1	How will the development have a positive ecological impact? Landscape Masterplan will ensure that there will be enhanced tree planting and ecological diversity.	
3.8.2	What are the findings of an ecological assessment of the existing site and proposed development, including off-site impacts?	Landscape Masterplan will undertake an ecological assessment of the site including off-site impacts, and put forward proposals for any mitigation necessary as a result of proposed new developments.

Appendix Eight
The Estate Today

Faculty / Generic Function	Building/s	Functions	Area (gross)	Area (net)	Date	Architectural Quality				
						Fabric	flexibility	Access	Environmental	Building condition
Engineering and Computer Science	Queens Building and Tower View	Heavy Engineering	18718	13872		***	****	****		
	University Gate	Engineering	9666	6033		*****	****	****		
	Park Row 15, Lunsford House	Grinding technology	517	347		**	*	*		
Arts	Woodland Road 3-21 odd	Art	10236	6910		****	***	*		
	Victoria Rooms	Music	3949	3103		****	***	*		
	Park Row 17-21	Drama	2956	2118		**	**	*		
	Tyndalls Park Road 30-36 even	Language	2194	1606		***	***	*		
	No 1 University Walk (43 Woodland)	Arts residential	1657			***	**	*		
Social Sciences and Law	Priory Road and Woodland Road	Social Sciences	3815	2806		***	***	*		
	Social sciences complex	Social Sciences	7516	5139		***	***	*		
	Wills Memorial Building	Law	12851	8865		****	**	*		
Maths, Earth Science & Geography	Maths Building	Maths	2559	1725		***	****	*		
	Geography Building	Geography	1342	1077		***	**	*		
	Inner Court Laboratories	Earth Sciences	1364	930		****	***	*		
	Queens Road (Browns first floor)	Geography	514	420		***	**	*		
Biology, Chemistry and Physics	Biological Sciences	Biology	11675	9058		***	**	*		
	Chemistry Building	Chemistry & Synthetic	22398	15128		****	****	****		
	Physics Building	Physics	137356	9204		***	****	****		
	Oldbury House (St Michaels Hill 121)	Physics	655	453		***	**	*		
Medical and Veterinary Science	Pre Clinical Vet School	Pre Clinical Vet School	na	na		na	na	na		
	Medical School	Medical Sciences	23339	162131		***	****	****		
	Cotham House	Medical Sciences	na	na		na	na	na		
	St Michaels Hill 39,41,47,49,65,69,73	Medical Sciences	3457	3249		***	*	*		
Clinical Medicine and Dentistry	St Michael's Hospital	Clinical Medicine	na	na		na	na	na		
	Tyndalls Avenue 22,24, 26, 28	Clinical Medicine	2312	1815		***	**	*		
Admin and Student facilities	Old Park Hill 1-9	Estates	3451	2755		***	**	*		
	Senate House	Administration	6499	4293		****	****	****		
	Royal Fort House		1483	886		****	****	*		
	Royal Fort Lodge		154	105		****	*	*		
	St Michael's Park 34	Nursery	153	115		***	*	*		
	Hawthorn	Food (& residential)	5427			****	***	****		
	Student's Union	Student bars, pool, theat	7911			**	***	****		
	Sports Centre	Sports facilities, no pool	4710	3929		*****	**	****		
	Computer Centre	Computer facilities	2559	1859		****	****	****		
	Berkley Square, 5, 8 10 and 35	Social Sciences, Law and	4703			***	***	*		
	Stuart House	Residential				****	**	*		
	Osbourne Villas	Residential				***	**	*		
	Woodland Road 81,83,93,95	Residential	831	622		***	**	*		
	St Michaels Park 26,27,34	Residential	423			***	**	*		
	Park Row 23,25,25 and 27		1487	980		**	**	*		
	University Library	Arts Library	6799	5170		***	**	***		

Table showing existing Estate and associated areas

Appendix Nine
Tall Buildings

The Opportunity for a Tall Building

Introduction

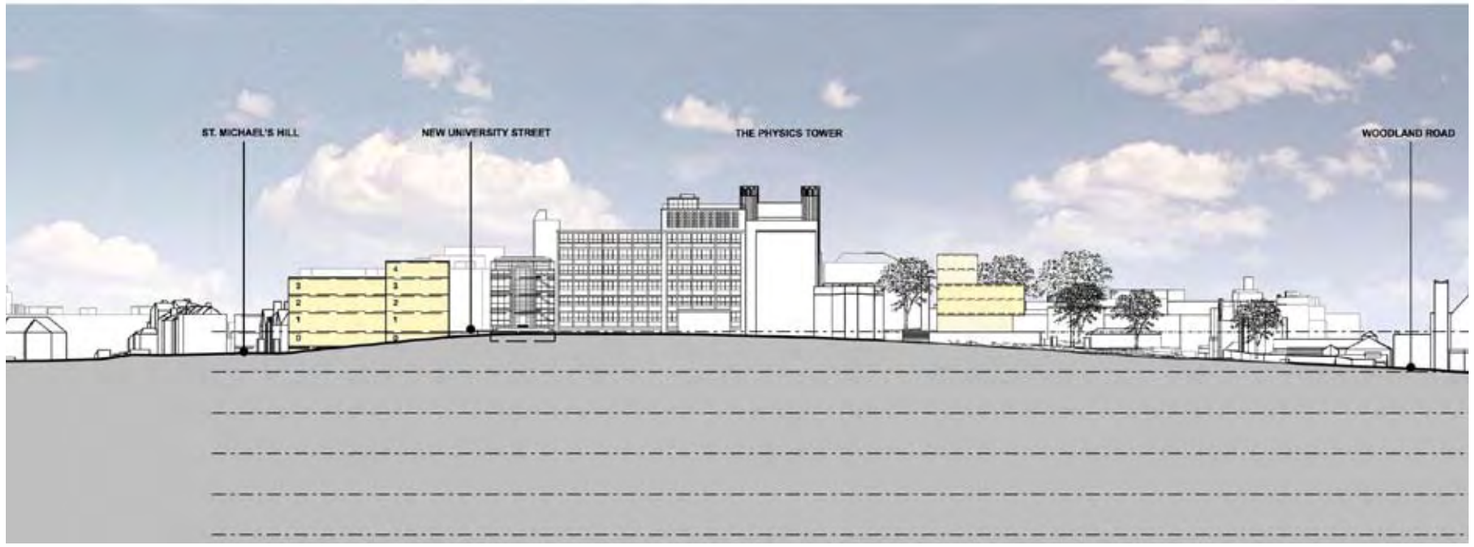
During the strategic masterplan process, design studies have explored the potential for the different kinds of buildings required for the future. This work has included responses which are generated by the type and quantum of space required, the response to the character of particular development sites, and the coherence or 'shape' of the overall emerging masterplan. In summary, the proposals seek to meet the demands for flexible, sustainable and accessible floor space with specific respect for the sensitive context of each of the proposed buildings.

Wherever possible, we have also been keen to explore opportunities to contribute to the public realm in an exciting and dynamic way. We believe one such opportunity exists within the brief for the new Learning Resource Centre, which will help provide a new social heart to the University on Tyndall Avenue as part of Strategic Move 8. As part of the assessment of the design potential for this site we have concluded that an opportunity exists for a new tall building on Tyndall Avenue.

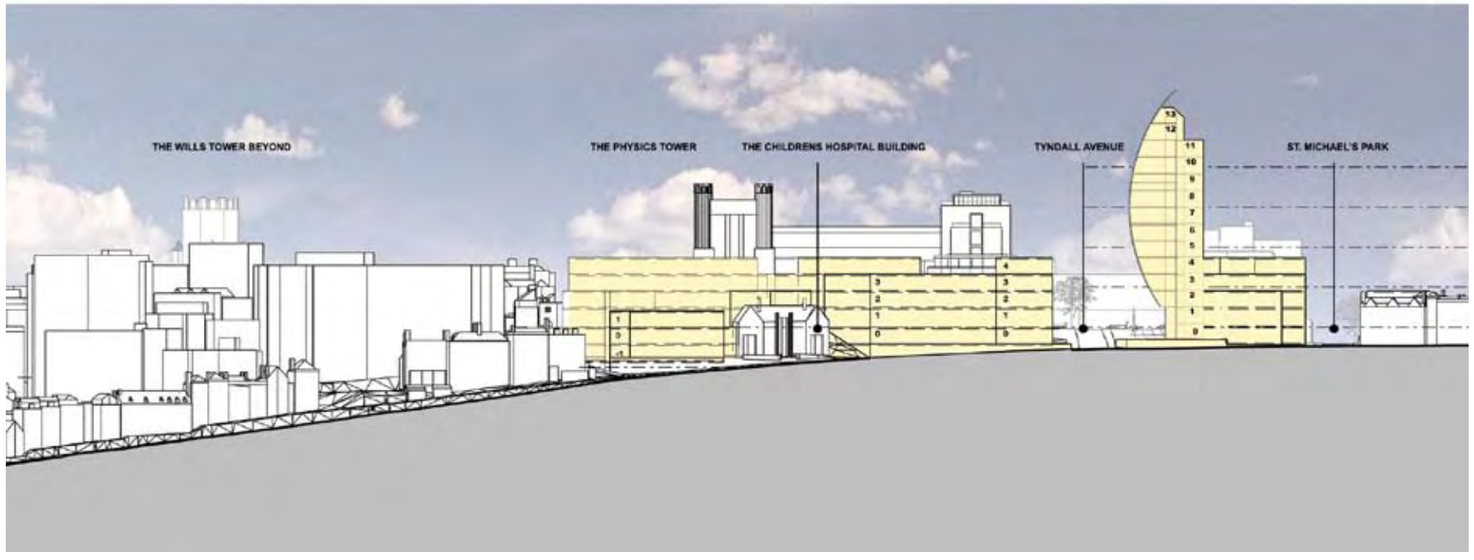
This section provides a summary of the design work which has been undertaken as part of the strategic masterplan to assess the opportunity for a new tall building as part of the new Learning Resource Centre.

Tall Buildings Policy

As noted within section 3.8 of the Masterplan, SPD1 Tall Buildings (January 2005) deals with the development of tall buildings within Bristol. It allocates an area within the designated Precinct as suitable for an iconic tall building on the St Michael's Hill / Kingsdown Escarpment. In accordance with this Supplementary Planning Document, a new tall building must be of a contemporary and memorable design, work sensitively within its context and not undermine existing landmark buildings within the Precinct.

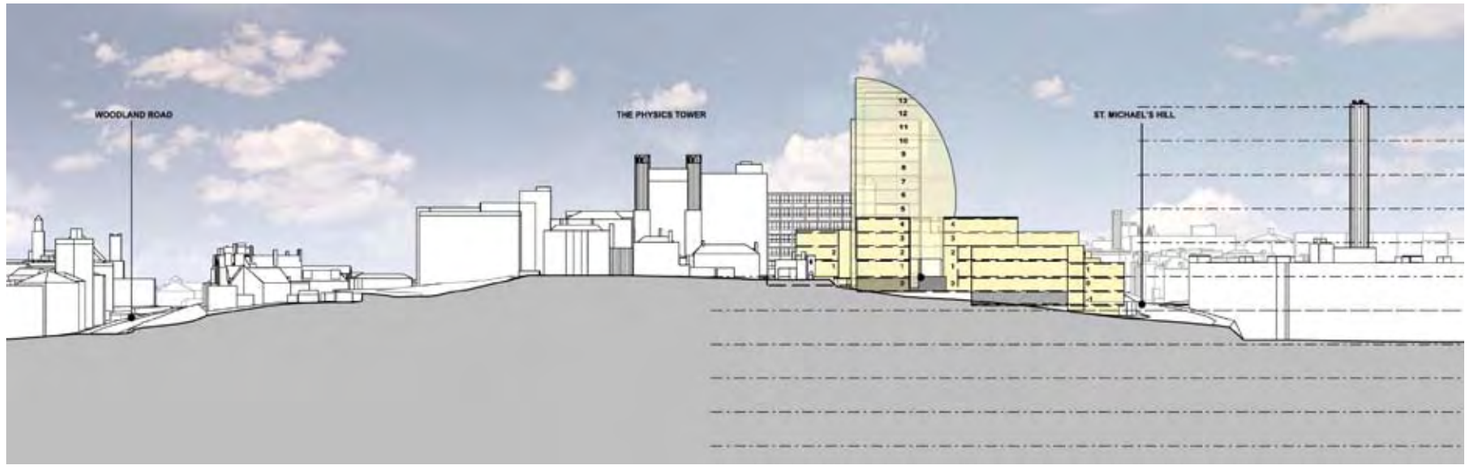


Section through Tyndall Avenue looking south

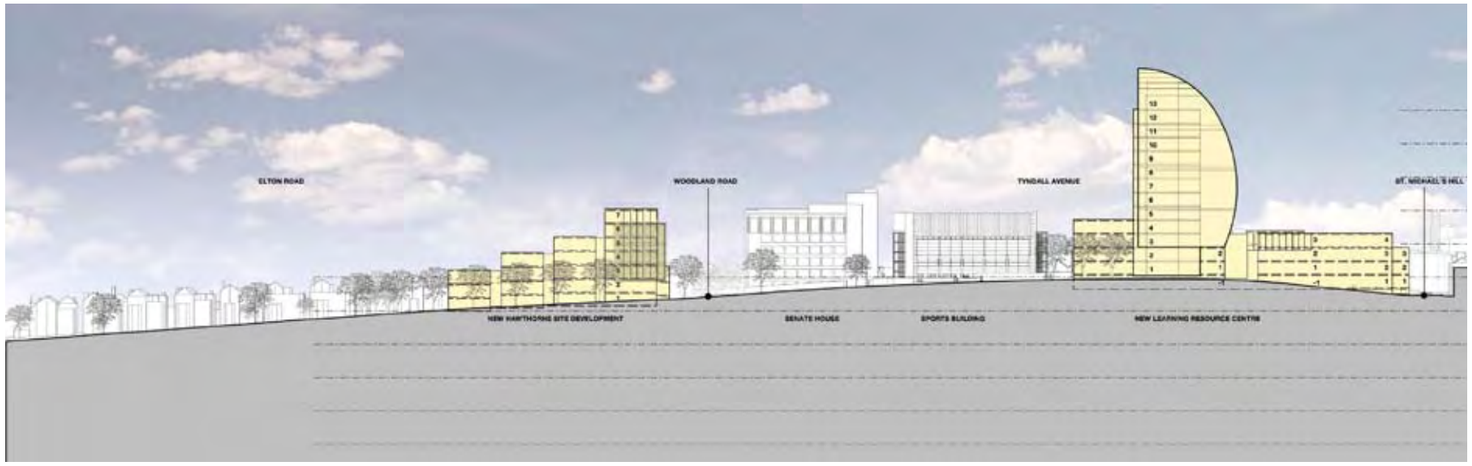


Section north to south through St Michael's Hill

Appendix Nine
Tall Buildings



Section east to west through University Walk looking at the New Learning Resource Centre tower.



Section through Tyndall Avenue looking North

Design Parameters

The architectural form will respond to the scale of the surrounding University buildings and could, in acordance with the Council's adopted Tall Buildings Policy incorporate a tower that signifies the importance of the building and emphasises its location and seminal function within the Precinct. This also accords with the University's desire to combine a number of closely related student based activities into one cohesive environment. The local planning authority and the University agree that there is an opportunity here to achieve a tower provided that it is of exceptional and iconic quality.

During the strategic masterplan process we have assessed the potential impact and merits of a new tall building on Tyndall Avenue in a number of ways, including the following:

1. The Relationship to the Masterplan
2. Relationship to 10 Key Views
3. Environmental Constraints & Physical Form

A summary of our findings under each of these headings is considered further below:

1. The Relationship to the Masterplan
The site for the new Learning Resources Centre is proposed to be at the heart of the new campus and near to the centre of Tyndall Avenue. The building will have a key relationship with proposals for pedestrian and vehicular movements at ground floor on Tyndall Avenue. It will also be the focal point for pedestrians both on Tyndall Avenue, and the new Kings Walk on the east side of the precinct. We believe the site could fittingly mark the 'social centre' of the new campus, and that the building's function as the Learning Resource Centre would have a suitably important function to merit a distinctive and dynamic architectural response.

It is proposed that a building on this site should have a range of 'active uses' at lower floor levels, which help contribute to the liveliness of Tyndall Avenue. This could include shops, banking facilities and catering outlets, and potentially other publicly accessible functions.

It is also recognised that a tall building would present the opportunity for an unparalleled new view-point of the city as a whole. It is therefore proposed that a function to maximise this potential at the top floor (e.g. a restaurant or a viewing point) should be explored carefully as part of further design development.

N.B. Please note that the drawings on these pages are for illustrative purposes only and are not detailed designs

Appendix Nine
Tall Buildings

2. Relationship to 10 Key Views
A key requirement for the new building would be for it to avoid visual conflicts with existing landmarks in key views to the site, as stated within the City Council's own Tall Buildings Policy above. It is noted that the Kingsdown ridge already contains a collection of distinctive and attractive landmark buildings including the Wills Memorial Tower, Cabot Tower and the Physics tower. It is also noted that Bristol's tallest landmark, the hospital chimney, currently blights virtually all of the longer views to site. As such, it is an unfortunate 'key landmark' on this part of the city's skyline, and there is clearly room for improvement.

During the masterplan design process we have worked with City Council officers and English Heritage to establish 9 key views to the site within which the proposal for a tall building should be tested. The 9 views are taken from a range of directions and perspectives to the site, as follows:

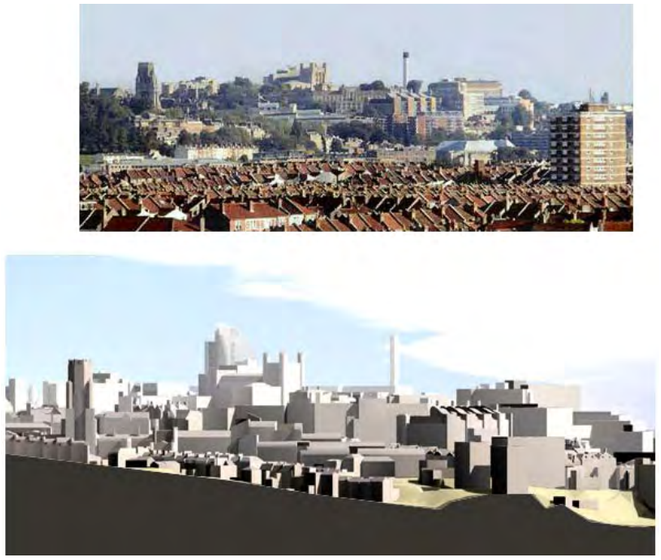
1 Bedminster Down
2 Windmill Hill
3 A37 Wells Road
4 Bristol Industrial Museum
5 Bristol City Centre
6 Cabot's Tower
7 Redland Green
8 Montpelier
9 Ashton Court
10 M32 Approach

During the preliminary design work to date we have tested the proposed location of the tall building within the Computer Aided Design (CAD) model of the site. The results have shown that the proposed site for a tall building avoids conflict with the other key buildings on the Kingsdown ridge. Indeed it could be argued that a new tall building would reduce the impact of the existing chimney in some of the key views to the site.

The images shown here compare the existing key views to the site (no's 1-8) with sketch views showing the proposed location of a new tall building on Tyndall Avenue.

1. 
5. 
2. 
6. 
3. 
7. 
4. 
8. 
9. 
10. 

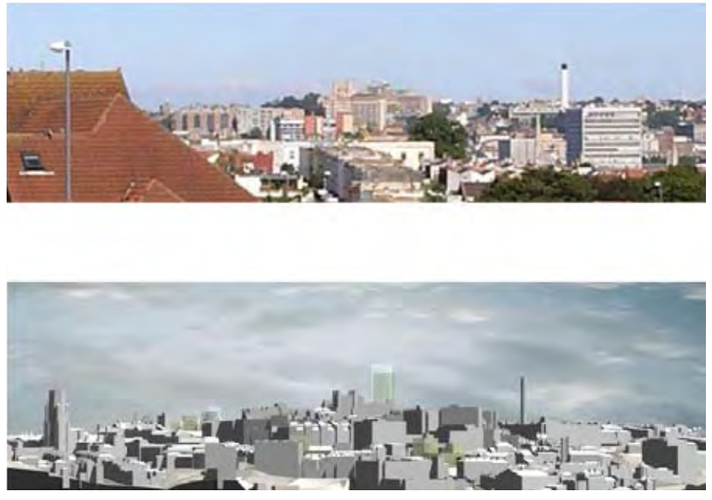
The 10 key views to be assessed as part of a tall building proposal



View 1: Bedminster Down as existing (top) and including tall building

View 3: A37 Wells Road as existing and including tall building

View 2: Windmill Hill as existing and including tall building



View 4: Bristol Industrial Museum as existing and including tall building

Appendix Nine
Tall Buildings

View 5: Bristol City Centre as existing and including tall building

View 7: Redland green as existing and including tall building

View 6: Cabot's Tower as existing and including tall building

View 8: Montpelier as existing and including tall building

Indicative View 9: Ashton Court view including Design Study D: 'Spinnaker'

Indicative View 10: From M32 approach showing proposals

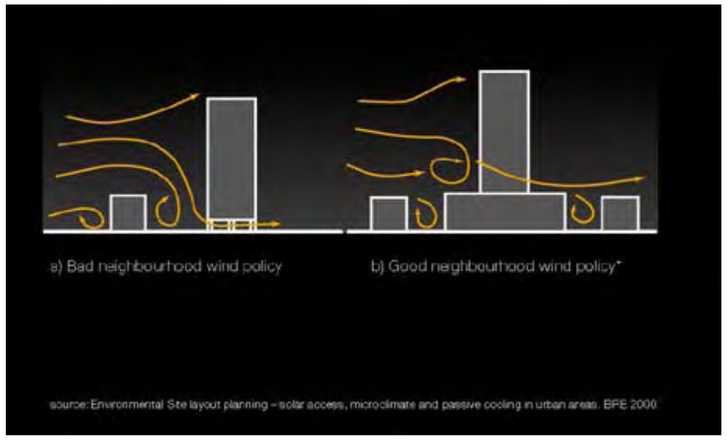
Appendix Nine
Tall Buildings

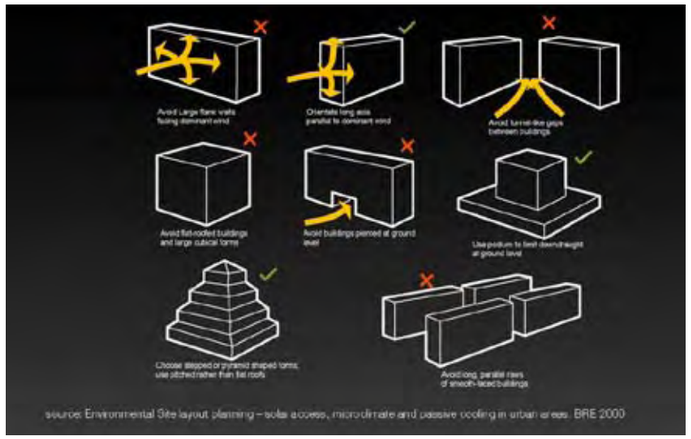
3. Environmental Constraints & Physical Form
The physical form of a new tall building can have important effects on the environmental conditions around it, and it is important that these are considered in detail as part of the further design development of the tall building proposal.

It is important to note, for example, that a tall building can have an important effect on the wind characteristics of a place. Negative wind characteristics can be mitigated by a series of initial design moves and these include the basic orientation, form and scale of the building. In our initial studies we have sought to minimise any potential negative aspects by exploring forms which are comparatively slender and which create a 'plinth' at street level.

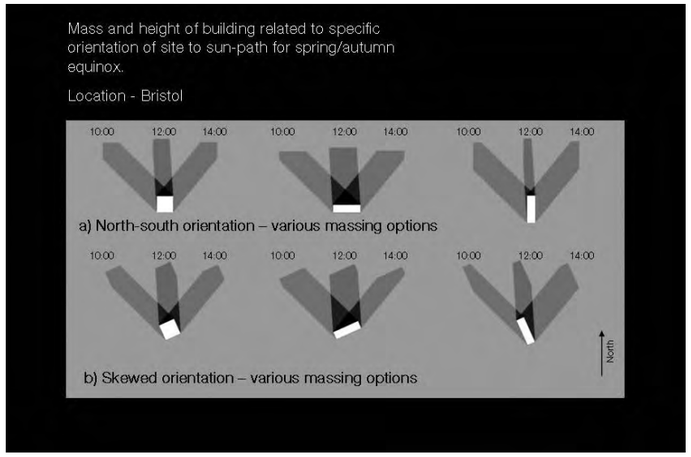
A robust strategy is also required in dealing with the solar constraints, including solar gain to the building, and its shadow cast. In our preliminary design studies we have explored the form and orientation of the tower in order to minimise the effect of shadow cast beyond the precinct boundary. We have also explored ways in which the shading effect of the tower may be used for beneficial effect for the new Learning Resource Centre, for example by minimising the effect of unwanted heating to an atrium space within the building.

Lastly there are also issues and design decisions regarding the envelope of the building itself, and again there are a range of opportunities here to be explored. It is obviously important for the envelope of the building to withstand the environmental effects of wind and solar loads on the building, and to offer suitable accommodation for its intended function in terms of comfort, day-lighting and views out. It is fully recognised that a new tall building for such a prominent site would be required to be of very high architectural quality.



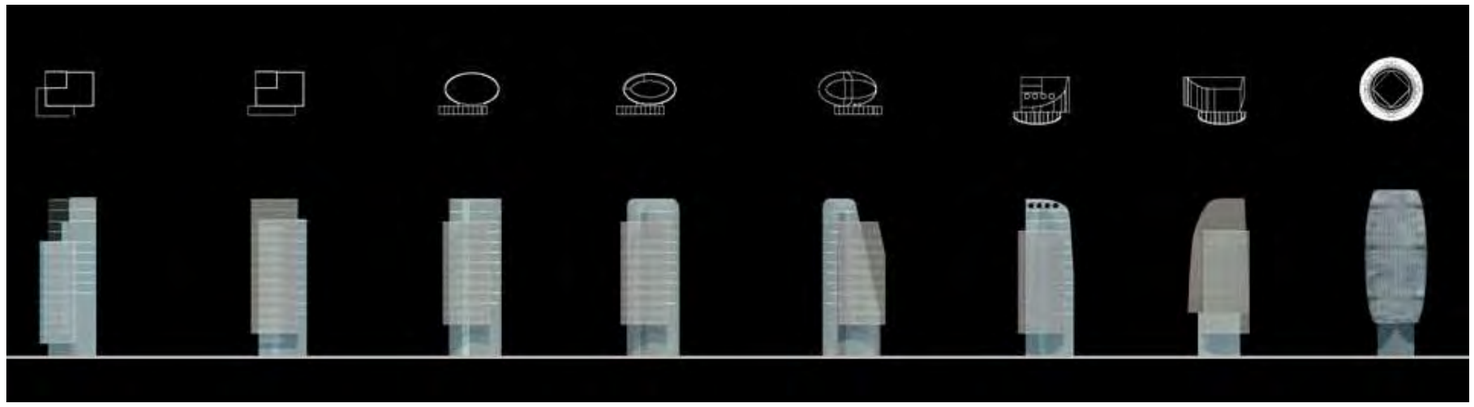


It is important for tall building design to mitigate against the potentially negative wind characteristics



Overshadowing characteristics of different physical forms have been tested

Appendix Nine
Tall Buildings



A range of physical forms have been explored to test the changing effect of mass, floor area and silhouette within the Design Studies

Design Studies

The proposed site for the new Learning Resource Centre is located at the centre of Tyndall Avenue, and it is anticipated that the building will play a critical role in establishing the 'social centre' of the future precinct.

During our preliminary studies we have explored a range of sketch options for the Learning Resource Centre including different options for a tall building element. Four design studies (A-D) are summarised on the following pages.

Appendix Nine
Tall Buildings

Schemes A-D explore different options for the form of a new tower (together wit a range of associated teaching, learning and social spaces). Each of the options explores provision of the following characteristics:

- a degree of public access
- an active ground floor use
- architectural quality and distinctiveness
- minimise negative wind effect
- minimise solar gain

Study A: 'Window Wall'
This study explores an idea to provide a series of spaces within the new library within a 'window wall', creating numerous far-reaching views across to the city centre to the south. The tower has a slender form, and is pushed forward slightly to project into Tyndall Avenue to raise its prominence. The main elevation is orientated towards University Walk. Unlike the other towers on the skyline, the use of glazing on the south elevation creates an opportunity for the tower to have a different character during day and night.

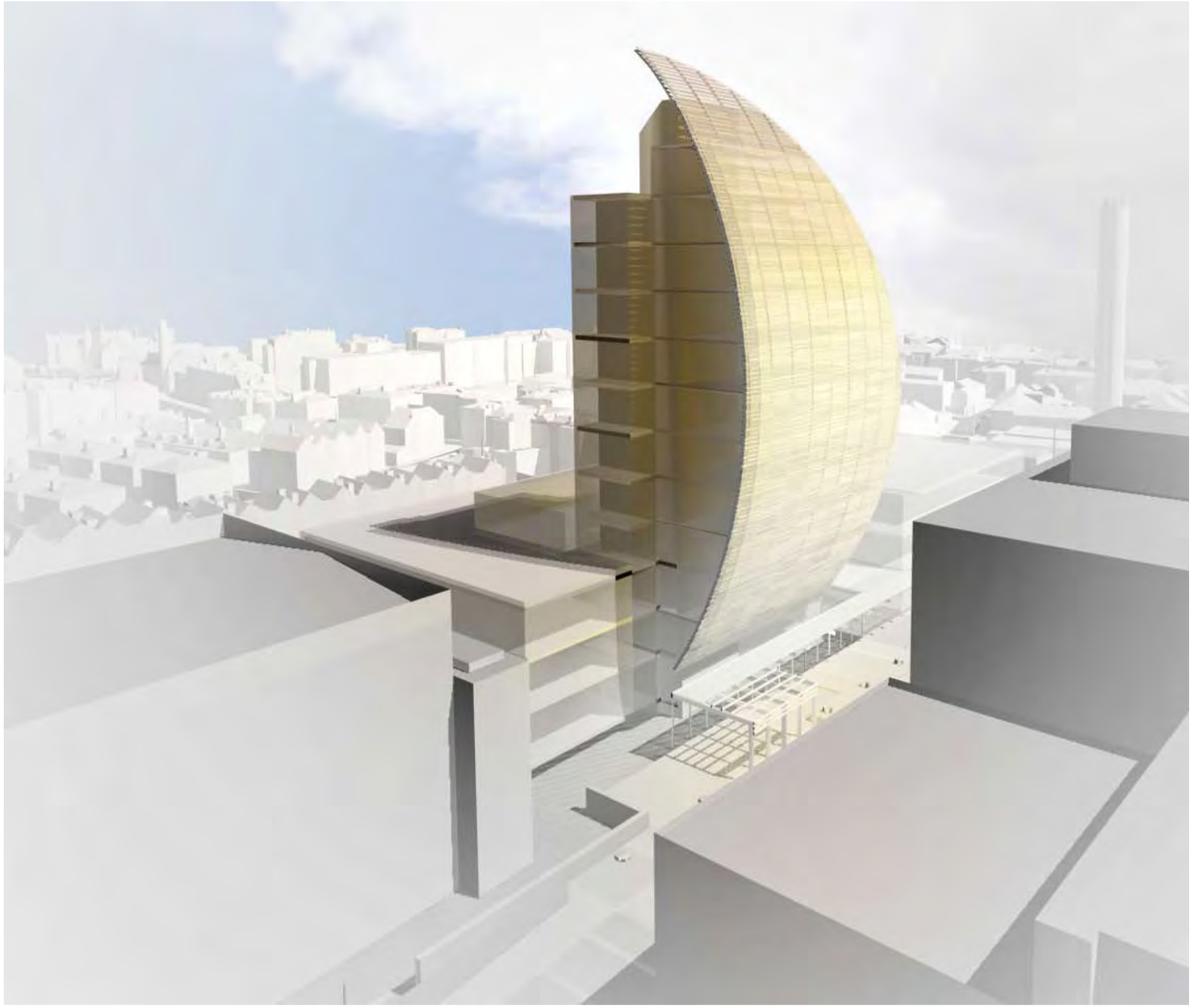
Study B: 'Roof Deck'
This study explores an idea of creating a distinctive 'cap' to the tower which could accommodate a viewing platform of a public space. The scheme provides a completely transparent glass façade to the viewing platform with a lightweight canopy to provide solar shading. There are many ways in which the cap of the tower could be articulated.

Study C: 'Ellipse'
This study explores a dramatic curved elevation to the building as part of an elliptical plan form. The scheme shows the elevation unified by a single material 'veil' in order to accentuate the curved form of the façade. This could present the opportunity for a changing appearance of the building during daytime and night time conditions. An elliptical floor plate to the building would not be preferred from a functional point of view by the University.

Design Study A: 'Window Wall'

Design Study C: 'Ellipse'

Design Study B: 'Roof Deck'



Design Study D: 'Spinnaker'

Study D: 'Spinnaker
This 'spinnaker' study explores the potential for a more sculptural form to the building, which could have important implications for the way the building is perceived from different view points around the city. Whilst based on a rectangular floor plate, the curved form of the elevation creates the opportunity to shape its appearance in both horizontal and vertical planes. The sculptural form could also make a more distinctive silhouette on the city skyline.

Appendix Nine
Tall Buildings

View from Cabot's Tower

The same view showing the impact of the masterplan proposals on the skyline of Bristol

Appendix Nine
Tall Buildings

Conclusions

The purpose of this exercise has been to explore the potential for a Tall Building as part of the design of the new Learning Resource Centre on Tyndall Avenue, and as an exciting new landmark for the City. The design studies described here have considered the possibility of a new building in a number of ways, which have indicated the following key points:

- a tall building in its proposed location would be fittingly symbolic of the shift of the social centre of the University to Tyndall Avenue, as proposed by the strategic masterplan;
- the proposed site for the building avoids conflict with existing landmarks within the 10 key views as agreed with the City Council and English Heritage and, subject ot furthe rconsideration of the form, massing and design has the potential to make a positive contribution to the townscape;
- the physical form of the building has important implications for the way it is perceived from a range of different directions;
- the function of the building presents important opportunities to enliven the public realm on Tyndall Avenue, and to create a changing appearance of the building where appropriate;
- the prominence of the site demands a building of outstanding architectural quality but will also need to satisfy all assessment criteria in SPD1: Tall Buildings.

The prospect of a tall building for the University as part of the strategic masterplan presents an opportunity for both the City and the University. Nearly 100 years after the construction of the Wills Memorial Tower, it is considered that a new tall building could make a dramatic new contribution to the city's skyline.

References

- Environmental Site Layout Planning – solar access, microclimate and passive cooling in urban areas. BRE 2000
- SPD 1 Tall Buildings. Bristol City Council, January 2005.

Appendix Ten
Buildings Assessment Matrices

Introduction

The masterplan area includes a broad range of existing buildings and structures of varying historic and architectural merit. These include listed and unlisted buildings, some of which are located within conservation areas. As part of preparations for development, it is important that buildings on sites which are to be affected by the masterplan proposals have been properly assessed, in order to ensure that each receives due consideration of its individual merit.

In liaison with Bristol City Council officers and English Heritage, we have agreed a range of buildings whose merit should be further assessed (as shown on the diagram opposite), as follows:

1. Children's Hospital – front block (see also Appendix 16)
2. Children's Hospital – rear wards (see also Appendix 16)
3. Former Nurse's House
4. 73-77 St Michael's Hill
5. 22-24 Tyndall Avenue
6. Nurse's Accommodation / Institute of Child Health
7. Intensive Care Unit
8. Short Stay Family Accommodation
9. Bone Marrow Transport Unit
10. Outpatient's Building
11. Lift Tower
12. Hawthorns (see also Appendix 11)

Most of the buildings are concentrated on an area to the west of St Michael's Hill, which was formerly mostly occupied by the former Children's Hospital (as shown on figure 1 adjacent). This site includes buildings ranging from the isolated groups of terraced houses on St Michaels Hill and Tyndalls Avenue, through to the most significant building, the former Royal Children's Hospital, which is listed Grade II.

The other building agreed to be assessed is the Hawthorns, which is located at the junction of Woodland Road and Tyndall Avenue.

It should be noted that more comprehensive assessments of the Hawthorns and Children's Hospital sites are presented in Appendix reports 11 and 16 respectively.

Building 1: Former Children's Hospital front block. Listed Grade II

Building 10: Outpatients Building. Not listed but in conservation area

Building 11: Lift Tower

Building 12: Hawthorns. Not listed

Appendix Ten
Buildings Assessment Matrices

1. Children's Hospital – Front
2. Children's Hospital – Wards
3. Former Nurses House
4. 73-77 St Michael's Hill
5. 22-24 Tyndall Avenue
6. Nurse's Accommodation /Institute of Child Health
7. Intensive Care Unit
8. Short Stay Family Accommodation
9. Bone Marrow Transplant Unit
10. Outpatients Building
11. Lift Tower

Plan showing the location of buildings 1-11 as covered by the Buildings Assessment Matrices

Building Assessment Matrices

The Building Assessment Matrices seek to provide a summary overview of the significance of each of the buildings in question, which is presented as two matrix sheets. The format of the matrices has been discussed and agreed with BCC Officers and English Heritage as part of the development of the proposals.

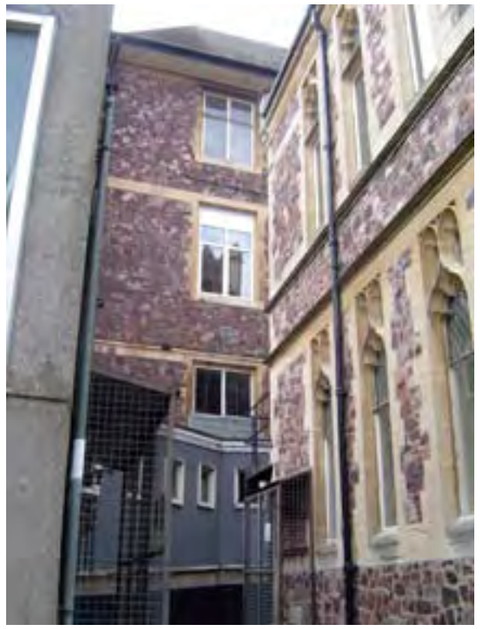
Assessment Sheet 1 describes the name, age and condition of the building together with a summary comment on its potential for re-use.

Assessment Sheet 2 provides an assessment of each building's significance by responding to answers to questions in two sections. Section A considers the Building Integrity and comprises a single question relating to the extent to which the historic form and quality has survived. Section B considers the assessment of the Positive Contribution to the Conservation Area in response to 10 key questions. In each case, the questions are answered 'yes', 'no', or 'partly' and a justification statement is provided for each answer.

It should be re-iterated that it is recognised that the issues relating to the Hawthorns and Children's Hospital sites are more complex, and that they have therefore been presented in more depth as part of separate appended reports (see Appendix 11 and 16). Copies of the summary Building Assessment Matrices for these buildings are however also included within this section of the masterplan report for the sake of completeness.

Appendix Ten
Buildings Assessment Matrices
10.1 Children's Hospital - Front

Site 1:	Hospital Entrance Building on St. Michael's Hill Two storeys, with cellular room arrangement.
Historical Development:	Built 1885.
Architectural Merit:	Listed Grade II.
Materials:	Rubble stone walling (Brandon Pennant stone) with bath stone features including stonework porch and oriel window. Red plain roof tiles.
Relationship to context:	Strong relationship to listed front boundary structures. Links to Ward and Outpatients buildings are piecemeal and haphazard. Strong street presence.
Condition:	Good
Function:	Entrance, reception and administration
Re-use potential:	Suitable for administrative functions.
Site potential:	Prominent street front location representing history of site as children's hospital so not appropriate for redevelopment.



Appendix Ten
Buildings Assessment Matrices
10.1 Children's Hospital - Front

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**Yes**	The former children's hospital buildings set back from St. Michael's Hill are the result of extensive phases of expansion, which have resulted in the loss of their historic interest and integrity. Extensive functional alterations have damaged the character and appearance of the buildings within the Conservation Areas in a number of ways, introducing numerous inappropriate construction materials and forms into the context and compromising the historic setting.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	The original hospital buildings were constructed in 1885-8 under architect Robert Curwen. Ward blocks to the rear were altered in 1929-31 with further extensions and alterations undertaken by the hospital following bomb damage in 1947.
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**No**	The original ward building was built from Pennant and Brandon stone. Alterations and additions to the building have significantly altered the external elevations. The alterations were made using inappropriate construction styles and materials such as concrete and upvc windows resulting in much of the original fabric both outside and inside being replaced or obscured over time.
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**Partly**	The ward building was constructed just after the listed entrance building to the hospital using the same Pennant and Brandon Stone, though it was an ordinary and functional building of its time, lacking the ornate stone work found on the entrance building. The mixture of different styles and materials serve to clutter the setting of the listed building.
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**Partly**	The continuous work to expand and alter the hospital since it opened is a clear reminder of the development of the site. This is not however considered an enhancement of the site's architectural or historic merit due to the extensive disruption of original building fabric, the use of inappropriate materials, the plain functional style of construction and sprawling unconsidered nature of growth throughout.
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	The ward buildings sit behind the entrance building which addresses St Michael's Hill and do not relate to any established historic features in and around the site.
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	Only parts of the extended ward building are identifiable from the street and these inappropriate elements frame and detract from the recognisable quality of the listed frontage building.
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**Partly**	The building reflects the use of the site as the former hospital for sick children, though this is represented more suitably through the listed entrance building facing the road than the ward buildings which are inaccessible and hardly visible from the street.
B8	Has it significant historic associations with local people or past events?	**No**	The original building had historic associations with local people as a functioning hospital by being located on the site of the Girl's Preventative Home and School and being constructed through the donations of a local family. These associations are not physically visible in the remaining fabric of the former ward buildings and social associations for the use of the building have now been transferred to the nearby new local children's hospital.
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable.
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable.

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.2 Children's Hospital - Rear

Site 2:	Main hospital complex located behind entrance building on St. Michael's Hill. Three storey with mezzanine level above ground floor. Original wards divided into cellular room arrangement.
Historical Development:	Built 1888.
Architectural Merit:	Of no particular value. The historic form of the building has been seriously eroded by unsympathetic alteration.
Materials:	Part rubble stone walling (Brandon Pennant stone) and part red brickwork with bath stone features. Wide variety of extensions and alterations using brick, pvc and concrete. Red interlocking clay roof tiles with some plain red tiles.
Relationship to context:	No notable relationships except the front entrance building is vital to provide this building with an acceptable façade.
Condition:	Poor.
Function:	Hospital Wards, treatment rooms, etc.
Re-use potential:	Depth of plan, light floor load capacity of suspended timber upper floors and limited vertical circulation space constrain new uses to which the buildings could be put. The extensive alterations and extensions in variety of construction types and materials would make the rationalisation and adaptation of the building for new uses uneconomic.
Site potential:	Excellent location for new development.

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**Yes**	The former children's hospital buildings set back from St. Michael's Hill are the result of extensive phases of expansion, which have resulted in the loss of their historic interest and integrity. Extensive functional alterations have damaged the character and appearance of the buildings within the Conservation Areas in a number of ways, introducing numerous inappropriate construction materials and forms into the context and compromising the historic setting.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	The original hospital buildings were constructed in 1885-8 under architect Robert Curwen. Ward blocks to the rear were altered in 1929-31 with further extensions and alterations undertaken by the hospital following bomb damage in 1947.
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**No**	The original ward building was built from Pennant and Brandon stone. Alterations and additions to the building have significantly altered the external elevations. The alterations were made using inappropriate construction styles and materials such as concrete and upvc windows resulting in much of the original fabric both outside and inside being replaced or obscured over time.
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**Partly**	The ward building was constructed just after the listed entrance building to the hospital using the same Pennant and Brandon Stone, though it was an ordinary and functional building of its time, lacking the ornate stone work found on the entrance building. The mixture of different styles and materials serve to clutter the setting of the listed building.
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**Partly**	The continuous work to expand and alter the hospital since it opened is a clear reminder of the development of the site. This is not however considered an enhancement of the site's architectural or historic merit due to the extensive disruption of original building fabric, the use of inappropriate materials, the plain functional style of construction and sprawling unconsidered nature of growth throughout.
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	The ward buildings sit behind the entrance building which addresses St Michael's Hill and do not relate to any established historic features in and around the site.
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	Only parts of the extended ward building are identifiable from the street and these inappropriate elements frame and detract from the recognisable quality of the listed frontage building.
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**Partly**	The building reflects the use of the site as the former hospital for sick children, though this is represented more suitably through the listed entrance building facing the road than the ward buildings which are inaccessible and hardly visible from the street.
B8	Has it significant historic associations with local people or past events?	**No**	The original building had historic associations with local people as a functioning hospital by being located on the site of the Girl's Preventative Home and School and being constructed through the donations of a local family. These associations are not physically visible in the remaining fabric of the former ward buildings and social associations for the use of the building have now been transferred to the nearby new local children's hospital.
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable.
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable.

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.3 Former Nurse's House

Site 3:	Ancillary Accommodation on Royal Fort Road Single Storey at west end, three storey at east end Traditional domestic scale building with cellular room arrangement.
Historical Development:	Built c1900.
Architectural Merit:	Simple building of townscape merit.
Materials:	Rubble stone walling (Brandon Pennant stone) with bath stone features. Red interlocking clay roof tiles with plain red ridge tiles.
Relationship to context:	Relationship to strong boundary wall of Royal Fort Road.
Condition:	Adequate
Function:	Administrative and Ancillary
Re-use potential:	Suitable for small-scale administration, workshop or residential use only.
Site potential:	Excellent location for new development.

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**Partly**	Whilst the form of the buildings at the eastern end of the site have survived intact, the buildings within the wall have experienced a range of modifications.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	No
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**Yes**	The St Michael's Hill & Christmas Steps conservation area is described as being 'a harmonious jumble of building styles and details with no two buildings being the same'. The conservation area includes notable Jacobean, Georgian and Victorian and St Michael's Hill is particularly noted for the 'ornate gabled frontage of the Royal Children's Hospital, and the grander Regency and Victorian properties'. The retaining wall of Brandon stone makes a strong contribution to the area's character.
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**Yes**	The buildings relate to the Children's Hospital building entrance building. The buildings are well designed and well constructed, with the south façade probably being covered by the listed building status of the retaining wall to the north side of Royal Fort Road.
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**Partly**	
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**Partly**	The buildings relate to the former Children's Hospital occupation of the site
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**Partly**	The buildings are part of the listed wall of Royal Fort Road and maintain their historic identity
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**Yes**	The buildings are of ancillary use
B8	Has it significant historic associations with local people or past events?	**No**	The buildings are of ancillary use
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.4 73-77 St Michael's Hill

Site 4:	Group of 3 terraced houses on St Michael's Hill Two storey plus basement Traditional domestic scale buildings with cellular room arrangement.
Historical Development:	Built c1895.
Architectural Merit:	Simple buildings of average townscape merit.
Materials:	Coursed rubble stone walling (Brandon Pennant stone) with bath stone features. Cement render to side and rear elevations. Red interlocking clay roof tiles with plain red ridge tiles.
Relationship to context:	Somewhat isolated within context and dominated by neighbouring buildings on St Michael's Hill.
Condition:	Poor
Function:	Administrative and Ancillary
Re-use potential:	Suitable for small-scale administration, workshop or residential use only.
Site potential:	Excellent location for new development.

Appendix Ten
Buildings Assessment Matrices
10.4 73-77 St Michael's Hill

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**Partly**	The buildings are 3 terraced houses which were built some time between 1882 and 1903. The buildings are in fair condition.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	The buildings are typical of many Victorian terraced dwellings elsewhere across this area of Bristol.
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**Partly**	The Tyndall's Park conservation area is described as being 'an educational precinct for the University containing notably high quality Edwardian buildings in a landscaped setting'. The conservation is described as including the 'tightly knit Victorian terraces abutting St Michael's Park' and the 'grandly massed Edwardian buildings' of Woodland Road'. Whilst not making a critical contribution in either their scale or location, 73-77 buildings are built of coursed rubble and Brandon pennant stone.
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	The buildings do not relate to the more modern buildings on either side (which are not listed).
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**No**	The buildings are an isolated terrace of 3 properties.
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	The buildings are an isolated terrace of 3 properties.
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	The buildings are an isolated terrace of 3 properties.
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**Partly**	The buildings are characteristic of many other terraced properties within this part of Bristol, though not within the St Michael's Hill and Christmas Steps conservation area.
B8	Has it significant historic associations with local people or past events?	**No**	
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.5 22-24 Tyndall Avenue

Site 5:	Pair of semi-detached houses,. 2 storey Traditional domestic scale building with cellular office arrangement.
Historical Development:	Built c1910.
Architectural Merit:	Simple building of townscape merit. Extensively modified to rear. Isolated by loss of association with earlier terrace buildings (now demolished)
Materials:	Random rubble stone walling of red and grey Brandon Pennant stone with bath stone features. Cement render to side and rear elevations. Red interlocking clay roof tiles with plain red ridge tiles. Decorative moulding to balconies, fascias, etc..
Relationship to context:	Somewhat isolated within context and dominated by neighbouring buildings on St Michael's Hill. Further isolated by new Nonatechnology building adjacent.
Condition:	Adequate
Function:	Offices
Re-use potential:	Suitable for small-scale administration, workshop or residential use only.
Site potential:	Excellent location for new development.

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**Partly**	Whilst the elevations to Tyndall Avenue have survived intact, the properties have been extensively modified by large extensions and modifications to the rear.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	The buildings are typical of many Victorian terraced dwellings elsewhere across this area of Bristol.
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**Partly**	The Tyndall's Park conservation area is described as being 'an educational precinct for the University containing notably high quality Edwardian buildings in a landscaped setting'. The conservation is described as including the 'tightly knit Victorian terraces abutting St Michael's Park' and the 'grandly massed Edwardian buildings' of Woodland Road'. Whilst not making a critical contribution in either their scale or location, 22-24 buildings are built of coursed rubble and Brandon pennant stone.
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	The buildings do not relate to the more modern buildings on either side (which are not listed). Their setting is further undermined by the scale of the new Nanotechnology buildings which is currently being built to the west of the site.
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**No**	The buildings are an isolated pairing of 2 semi-detached properties.
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	The buildings are an isolated pairing of 2 semi-detached properties.
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	The buildings are an isolated pairing of 2 semi-detached properties.
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**Partly**	The buildings are characteristic of many other semi-detached properties within this part of Bristol, though not within the Tyndall's Park conservation area. They survive as an isolated pair of houses in a former street of 11/12.
B8	Has it significant historic associations with local people or past events?	**No**	
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.6 Nurse's Accommodation

Site 6:	Nurses Accommodation / Institute of Child Health 4 storey block with mansard roof
Historical Development:	Built c1935.
Architectural Merit:	Robust and simple building of no architectural merit.
Materials:	Mixed red brick walls. Red plain tiled roof
Relationship to context:	Very limited (use of brick in common with rear of some buildings)
Condition:	Adequate
Function:	Administration and teaching
Re-use potential:	Suitable for administration or residential use only.
Site potential:	Excellent location for new development.

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**No**	This is a simple, inoffensive building which, however, contributes little to the character of the conservation area.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**No**	
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**No**	
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**No**	
B8	Has it significant historic associations with local people or past events?	**No**	
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.7 Intensive Care Unit

Site 7:	Intensive Care Unit Single Storey building at west end of former ward block.
Historical Development:	Built c1965.
Architectural Merit:	None.
Materials:	Rendered blockwork / other. Flat felt roof.
Relationship to context:	Very poor.
Condition:	Poor.
Function:	Ancillary medical work.
Re-use potential:	None desirable.
Site potential:	Excellent location for new development.

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**N/A**	The Intensive Care Unit is a single storey extension of no architectural merit.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**No**	
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**No**	
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**No**	
B8	Has it significant historic associations with local people or past events?	**No**	
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.8 Short Stay Family Accommodation

Site 8:	Short Stay Family Accommodation on Royal Fort Road
Historical Development:	Built c1980.
Architectural Merit:	None.
Materials:	Red brick walling. Flat roof.
Relationship to context:	Very poor.
Condition:	Adequate
Function:	Multi-purpose accommodation
Re-use potential:	Suitable for small-scale administration, workshop or residential use only.
Site potential:	Excellent location for new development.

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**N/A**	The building is a flat-roofed 1980s structure providing multi-purpose accommodation.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**No**	
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**No**	
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**No**	
B8	Has it significant historic associations with local people or past events?	**No**	
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not Applicable
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not Applicable

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.9 Bone Marrow Transplant Unit

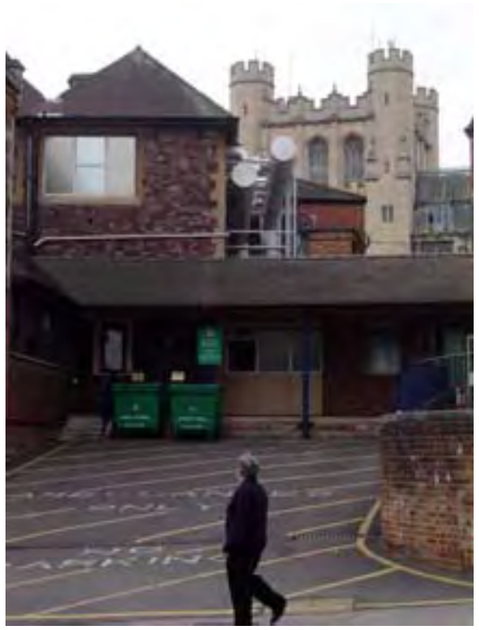
Site 9:	Bone Marrow Transplant Unit 2 storey block with profiled metal shed to rear. Front entrance facing onto Royal Fort Road to the south.
Historical Development:	Built c1989.
Architectural Merit:	Front elevation of low architectural merit. Metal shed of no architectural merit.
Materials:	Rubble stone walling (Brandon Pennant stone) with cement render over. Profiled metal sheet cladding to rear.
Relationship to context:	Relationship to boundary wall of Royal Fort Road.
Condition:	Good
Function:	Medical treatment and sncillary uses
Re-use potential:	Limited re-use potential for other functions.
Site potential:	Excellent location for new development.

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**N/A**	The building is a profiled-metal clad shed with a render and rubble stone elevation to Royal Fort Road, built in 1989.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**Partly**	The elevation to Royal Fort Road presents a band of rubble stone to the lower part of the elevation, which is a continuation of the historic wall on Royal Fort Road. The upper section is finished in cement render in a manner which is uncharacteristic of the conservation area.
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**No**	
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**No**	
B8	Has it significant historic associations with local people or past events?	**No**	
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.10 Outpatient's Building

Site 10:	Outpatients Building. 5 storey concrete building with roof level plant rooms.
Historical Development:	Built c1965.
Architectural Merit:	None.
Materials:	Concrete framed structure with concrete cladding panels and brick cladding to side elevations. Flat roof to structure. Steel framed metal windows.
Relationship to context:	Very poor.
Condition:	Adequate
Function:	Hospital out-patients department, administration and treatment accommodation.
Re-use potential:	Suitable for a range of re-uses but replacement preferred due to the negative impact of the building on the conservation area.
Site potential:	Excellent location for new development.



Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**N/A**	The building is a 5 storey concrete framed building, built in the 1960s, or no architectural merit.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**No**	
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**No**	
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**No**	
B8	Has it significant historic associations with local people or past events?	**No**	
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.11 Lift Tower

Site 11:	Stair and Lift Tower for underground tunnel. 2 storey.
Historical Development:	Built c1965.
Architectural Merit:	Very limited.
Materials:	Pre-cast and in-situ concrete.
Relationship to context:	Very poor.
Condition:	Adequate
Function:	Circulation
Re-use potential:	None.
Site potential:	Limited due to proximity to listed building adjacent.

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**N/A**	The structure is a concrete stair and lift tower serving an underground tunnel, which was built in the 1960s and is of no architectural merit.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**No**	
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**No**	
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**No**	
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**No**	
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**No**	
B8	Has it significant historic associations with local people or past events?	**No**	
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Appendix Ten
Buildings Assessment Matrices
10.12 Hawthorns

For a detailed description of the condition of the Hawthorns building pease refer to Appendix 11

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**Yes**	The existing buildings on the site are the result of extensive phases of refurbishment and redevelopment which has largely resulted in the loss of their historic interest and integrity. Furthermore, the phases of change have caused an uncomfortable relationship with their context of the Whiteladies Road Conservation Area in a number of ways, including design quality of buildings and landscape.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	The original villas were built in 1888 by Virgo and Ford. The transformation of the properties was largely undertaken by an inexperienced architect Mr Jack Chaffe, for local hotelier and chef Mr John Dingle.
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**Partly**	The original 3 villa buildings were built to match the 5 adjacent properties, however the work undertaken in the 1920-30s has significantly obscured this. The changes to the property have been undertaken in Pennant and Brandon stone which is similar to the earlier work.
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	Whilst the Bristol Grammar School opposite is a listed building, it is an earlier building and is built from a redder Brandon stone. Furthermore the Hawthorns is separated from the School by Elton Road and adjacent landscape and is therefore not considered to be within the immediate context of the Hawthorns.
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**Partly**	Whilst the work undertaken in the 1920-30s is an obvious reminder of the re-development of the site it is not considered an enhancement of the site's architectural or historic merit.
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**Partly**	Part of the site addresses the corner of Elton Road and Woodland Road.
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**Partly**	The site has an important relationship to the junction of Elton Road and Woodland Road to the south. Whilst the extension work undertaken in the 1920-30s (using local materials) enlarged the scale of the original buildings on the site, it did not enhance the site's architectural merit in any way.
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**No**	Not Applicable.
B8	Has it significant historic associations with local people or past events?	**No**	The site has been adapted for use as a range of fairly mundane uses (boarding house / hotel / Berni Inn / student residence). None is considered to represent a significant historic association.
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable.
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable.

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Supplementary Planning Document Number 11

University of Bristol

Strategic Masterplan: Appendix 11

The Hawthorns

Assessment of Potential for Development

November 2005

University of BRISTOL

BRISTOL CITY COUNCIL

0.0 Contents

If you would like this information in a different format, for example Braille, audio tape, large print or computer disc, or community languages, please contact the Central Area Planning Team on 0117 922 2938

1.0 Executive Summary

This report explores the potential for development of a prominent corner site which is occupied by a group of University buildings known as 'The Hawthorns'. The report presents the following key conclusions:

1. The existing buildings on the site are the result of extensive phases of refurbishment and redevelopment which has largely resulted in the loss of their historic interest and integrity.

2. The phases of change have caused an uncomfortable relationship with their context of the Whiteladies Road Conservation Area in a number of ways, including design quality of buildings and landscape.

3. The kind of existing accommodation currently on the site does not meet with needs of the University for the next 10-15 years (as identified by the Strategic Masterplan Study).

4. A new building on the Hawthorns site could improve the relationship of the building with the neighbouring junction and contribute to ideas for a new 'Tyndall Place' at the junction of Woodland Road and Tyndall Avenue.

5. Design studies indicate that while the site can comfortably accommodate buildings which offer more useful space than is currently available, there is also an opportunity to create a new distinctive 'landmark building' as part of the strategic masterplan for the future.

6. In view of the very important and prominent location of the site, the new building will need to be of the highest architectural quality. Particularly careful attention will be needed in the selection of materials and the design of landscape to ensure compatibility with the character of the wider Conservation Area.

2.0 Purpose and Scope of the Report

View of the Hawthorns from the west end of Tyndall Avenue

Feilden Clegg Bradley Architects (FCBA) have been commissioned by Bristol University to prepare a study of the collection of buildings at the junction of Woodland Road and Elton Road known as 'The Hawthorns'. This study is primarily designed to assist the Strategic Masterplan Study for which FCBA have been acting as Design Team Leaders since September 2004. It is also intended that the study will form the basis of some key principles for the potential for future development on the site.

Although the Hawthorns buildings are not listed, the site lies within the Whiteladies Road Conservation Area and is adjacent to the Tyndalls Park Conservation Area. Furthermore, the site is at the heart of University activity and circulation and is therefore likely to play an important role in the future development of the University as outlined in the Strategic Masterplan.

This building report comprises two principal objects of study:

- Building Audit: this provides a detailed analysis of the history and evolution of the buildings, a description of its current use and an evaluation of its contribution to the Conservation Area.

- Options for Change: this section demonstrates the different possibilities for re-use and re-development of the site.

A thorough search of the documentary and planning archives has resulted in an increased understanding of the evolution of the site. A physical site survey has further enhanced this understanding, although it should be noted that a full condition survey of the buildings has been beyond the scope of this particular report.

The options for change have been developed within the broader context of change outlined in the Strategic Masterplan.

3.0 Building Audit
3.1 Understanding the Site

1826 Donne's map of Bristol

Detail of 1883 OS map showing junction of future Elton Road and Woodland Road

First appearance of Virgo and Ford's villas on Elton Road and Woodland Road built c1888

Villas merged to create large hotel by 1949 OS map

The Hawthorns site lies at the very heart of Bristol University, diagonally opposite the entrance to the Royal Fort Gardens and at a key junction of roads including Elton, Woodland, Tyndall Avenue and University Walk. The land itself was first built on in 1888 but was for many years part of the Tyndall Estate. This estate was laid out during the C18 from the ruins of the Royal Fort, which had been destroyed by Oliver Cromwell in 1655 (see left: 1826 Donne's map of Bristol).

Thomas Tyndall's land consisted of 68 acres of prime real estate and during the property development boom of c1790 Tyndall sold his parkland for £40,000 to a consortium of property developers. Although some work had begun, by 1793 the war with France led to a rapid collapse in property and in 1798 the Tyndall family regained ownership of the park. [1]

During the C19 however, pressure on land revived and in 1830 plans were drawn up for the layout of new roads and villas in the western part of the park. Woodland Road and Tyndall's Park Road were constructed during the 1860s and Elton Road some twenty years later. However, it is possible to see the early tracks which were to become roads and even the current junction on maps as early as Donne's 1826 plan of Bristol and on the 1883 OS map of Bristol.

The villas which were built by Virgo and Ford on Elton Road first appear on the Ordnance Survey map of 1901 but building plans show that the houses were approved for construction in 1888. The layout can be seen on the 1901 OS map (bottom left), and the beginnings of their subsequent merging are evident on the 1949 OS map (bottom right).

3.0 Building Audit
3.2 History of the Building

1888 - 1924

The series of Victorian villas which currently make up the Hawthorns was built as part of a much bigger development which began in 1888 at the west end of Elton Road, extended east to Woodland Road and then eventually north as far as Cotham Brow. The first eight houses on Elton Road were built in 1888 by Virgo and Ford, all to the same design. [2] Walls are solid masonry construction of grey Pennant Stone and reddish Brandon grit with oolitic limestone dressings. The Pennant and Brandon stones are likely to have been quarried at the top of nearby Jacobs Well Road.

Each large detached house is of 3 storeys with a basement and side entrance. One half of the house projects forward of the other and has bay windows to the ground and basement floors and a gable above. All other windows are of two lights (see photograph of extant house opposite).

The houses are typical of the detached villas that were built throughout Redland and Clifton during the second half of the C19 and would have been occupied by fairly well-to-do families. The villas on Elton Road which were to become the Hawthorns first appeared in directories from 1892 and an early occupant was the eminent botanist James White (1846-1932). While running a pharmacy business White also carried out his own research and today is best known for his comprehensive work “The Flora of Bristol.” In 1927 he was appointed Special Lecturer to the University and awarded an Honorary Masters Degree. [3]

White’s neighbour was Mark Whitwell, a wealthy ship-owner who also founded Bristol Children’s Hospital (a C19 building which has also ended up in University ownership.) Neither of these two civic-minded gentlemen left any physical mark on the villas that were to be merged into one great hotel which became the Hawthorns. That transformation was the work of the ambitious and thrifty John Dingle and his inexperienced architect Jack Chaffe. Dingle (1889-1970) was a chef and hotelier who bought the Hawthorns Residence in 1924 when it was a single villa at no.12 Elton Road. [4]

Dingle’s early career as a chef was marked by glamour and high quality, working in hotel kitchens in Monte Carlo, Paris, Lisbon and finally at the Ritz in New York. Sadly, these opulent formative years did nothing to inform his taste in his own surroundings. His refurbishments and extensions, mostly carried out between 1924 and 1938, although continuing until the late 1950s, were designed to create the maximum possible lettable space for the minimum expenditure. [5]

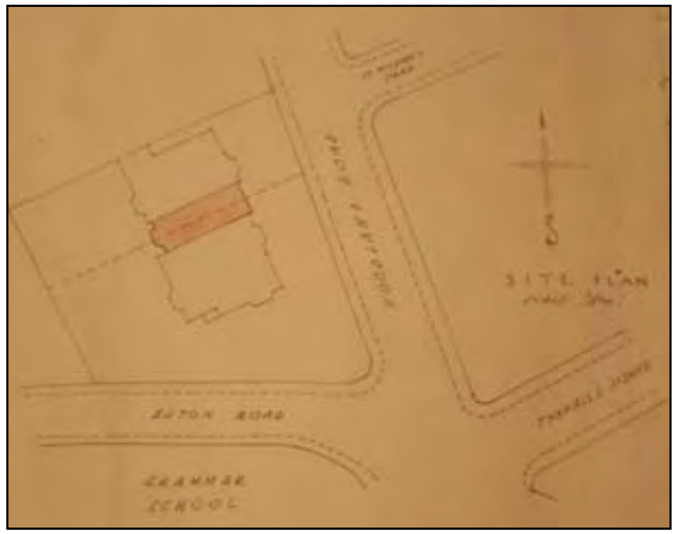
Existing villa on Elton Road

Archive plans for villa basement of No.10 Elton Road

Archive plans for ground floor of No.10 Elton Road

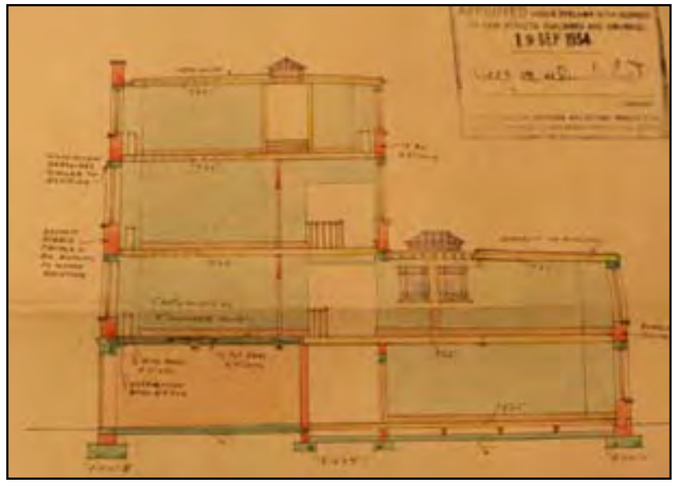
Archive plans for first floor of No.10 Elton Road

No.12 Elton Road in 1929 prior to alterations



The beginnings of extension into Woodland Road 1934

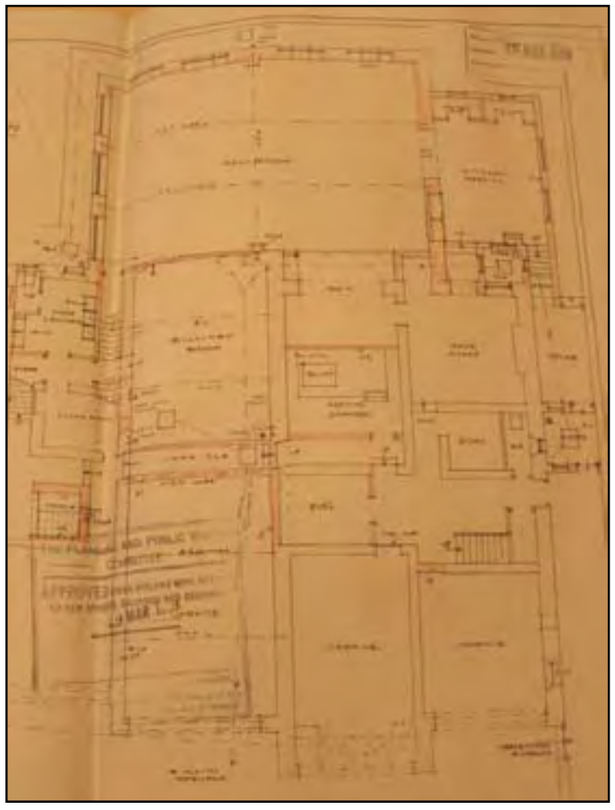
Infill between existing villas on Woodland Road 1934



Extension up and to the rear in 1934

1924 - World War Two

Dingle began by purchasing no.12 Elton Road in 1924 which was known as the Hawthorns Residential Hotel. He claimed that hotel was too smart a title since he thought the place was more of “common or garden boarding-house with eleven letting rooms” (see photograph opposite). [6] Between 1924 and 1938 three large villas on Woodland Road became available one by one and Dingle bought each one in order to turn it into hotel bedrooms and integrate it with the original. He extended into the gardens, raised the roof levels and opened up large spaces such as the ballroom and dining room (see below).



Plans for a new ballroom and dining room to the rear of the existing buildings c1939

3.0 Building Audit
3.2 History of the Building

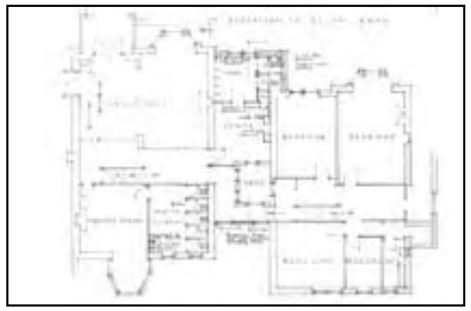
1939 - Today

With the second world war approaching, Dingle began to stock-pile building materials from nearby churches and dug the foundations for the rear extensions himself. The Ministry of Works requisitioned the three public rooms of the hotel but Dingle refused a further requisition order for the entire hotel. Later he struck a deal whereby the hotel was used for an army training school in return for permits and men required to finish the hotel extensions.

After the war, in 1947, nos 10 & 11 Elton Road came up for sale and were in turn subsumed into the Dingle empire. By 1954 the hotel consisted of 250 bedrooms, along with kitchens, dining and banqueting rooms. [7]

Chaffe and Dingle were nothing if not industrious. In this same post-war period they built a brick extension to the rear kitchens, a concrete and cement render extension to the front and south elevations and continued to create links between adjacent properties (see drawings and photos opposite).

In 1963 Berni Inns took over the hotel and ran it as their first fully residential Inn throughout the 1960s. By 1988 it belonged to a conglomerate called Baron Hotels and Leisure. Baron Hotel Group gained planning permission to remove all the 1950s extensions carried out first by Chaffe and later by Berni Inns but this work was never carried out. They went into receivership and a series of failed deals left the hotel up for sale in 1991. The University purchased the complex in November that year.



Ground floor of No.10 Elton Road in 1952 prior to alterations

Rear kitchen extension c1952

Lower and ground floor extension c1952

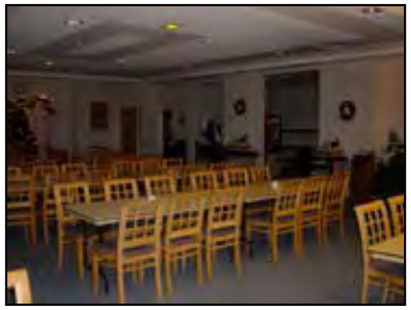
1952 roof-lines prior to alteraton

1953 roof-lines after alteration

The same elevation today

Typical student kitchen

Extension to Staff Dining Room



Staff Dining Room

Hospitality suite

Plant room on rear kitchen extension

Glazed 3-storey walkway linking 2 blocks of accommodation

Current Use of the Building

The Hawthorns has a number of uses, the principal ones being student accommodation on floors 1-3 and University catering on Lower Ground and Upper Ground floors. The total floor space is 5,425m^2.

There are approximately 116 student bedrooms, of which 45 are ensuite.

Further to the student accommodation there are also a number of guest rooms on the ground floor which are furnished to a higher standard and used to house visiting academics for one or two nights. Other operations run from the Hawthorns include the Conference Office which organises all external events, venue hire etc for the University.

The Hawthorns kitchens provide food for the student refectory on the lower ground floor, for the staff dining room on the ground floor as well as for five other catering points throughout the University. They also cater for conferences, weddings and other banquets which are organised and run by the operations office based in the Lower Ground Floor. On the ground floor is a café-bar, open to all members of the University and to the public, although this is not very well publicised. The department which runs the catering operation recently won the tender for providing catering for the whole University and is known as “Hawt Cuisine.”

Maintenance is ongoing but severely restricted by budgetary constraints. Recent works this year include new showers and toilets in some areas and new fire doors. The Clifton Wing is poorly-heated and there are damp problems in some of the bedrooms.

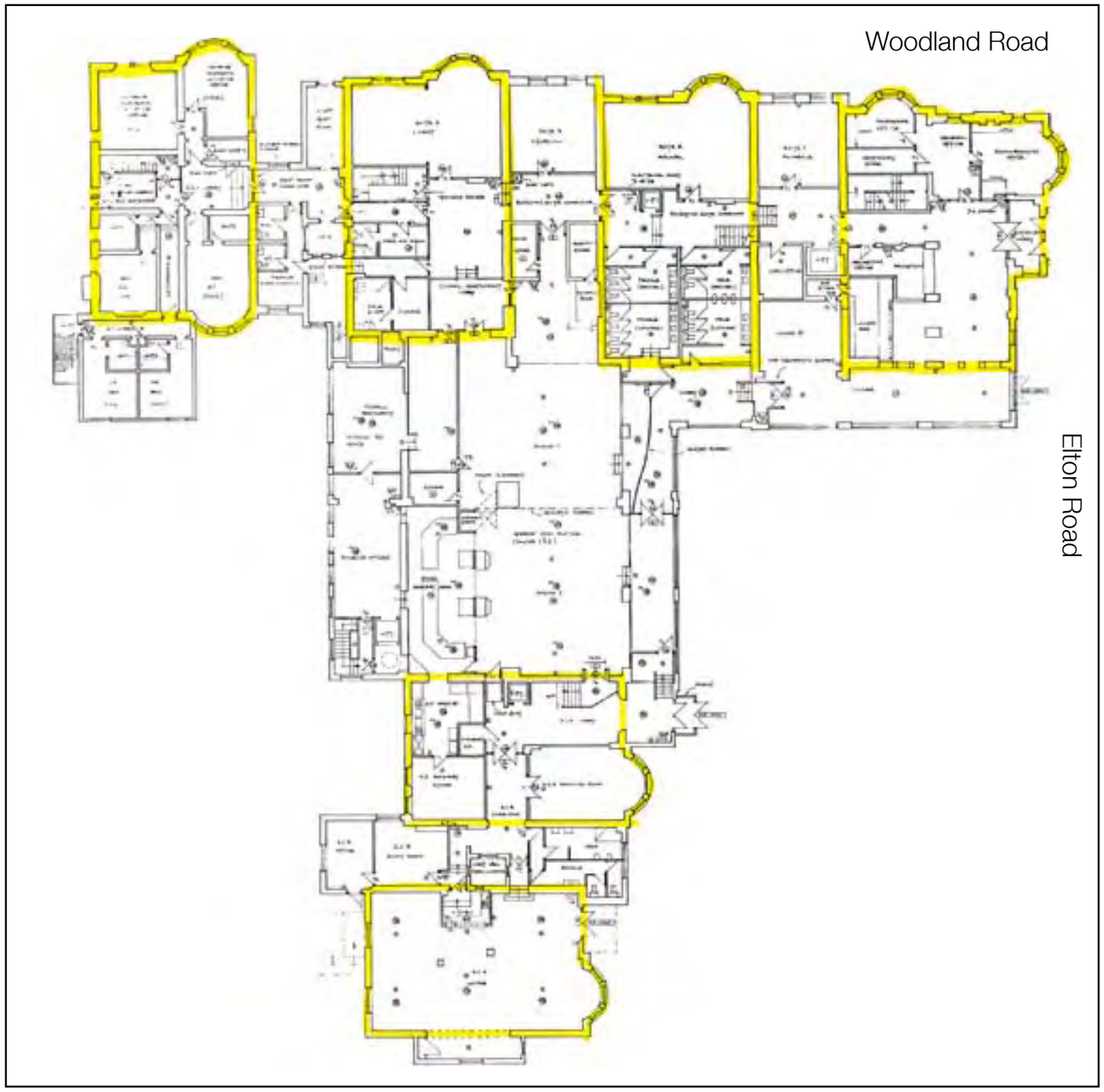
Car parking is run by the Security Department. There is one large car park for visitors to the rear of the building which is accessed from Woodland Road. Limited staff car parking is available around the perimeter of the building.

Disabled access is very limited although this is currently under review. There are no working passenger lifts available in the building although a small goods lift can sometimes be used by students first arriving with luggage at their accommodation. Wheelchair access is via a concrete path which runs from the Elton Road entrance through the garden and into a set of double doors adjacent to the Senior Common Room area and thence by a ramp to the staff dining room. However, access from here to the rest of the building is extremely limited.

3.0 Building Audit
3.3 Site Analysis

Functions of the Building

The plan shown here is of the Upper Ground Floor of the Hawthorns Building. Areas highlighted in yellow indicate the footprint of the original C19 villas. Infill and extensions are clearly visible. A more detailed analysis of the impact of these interventions upon the original buildings and upon the streetscape is explained in the following pages



East elevation

Side elevation of original Hawthorns Hotel. Roof-line has been raised and 2 storeys added	1880s villa	1950s infill	1880s villa with raised roof-lines and added storeys	1950s infill	2 lower storeys from original villas	1960s linking block with access to rear car park under	1880s villa modified with additional storeys and raised roof-line

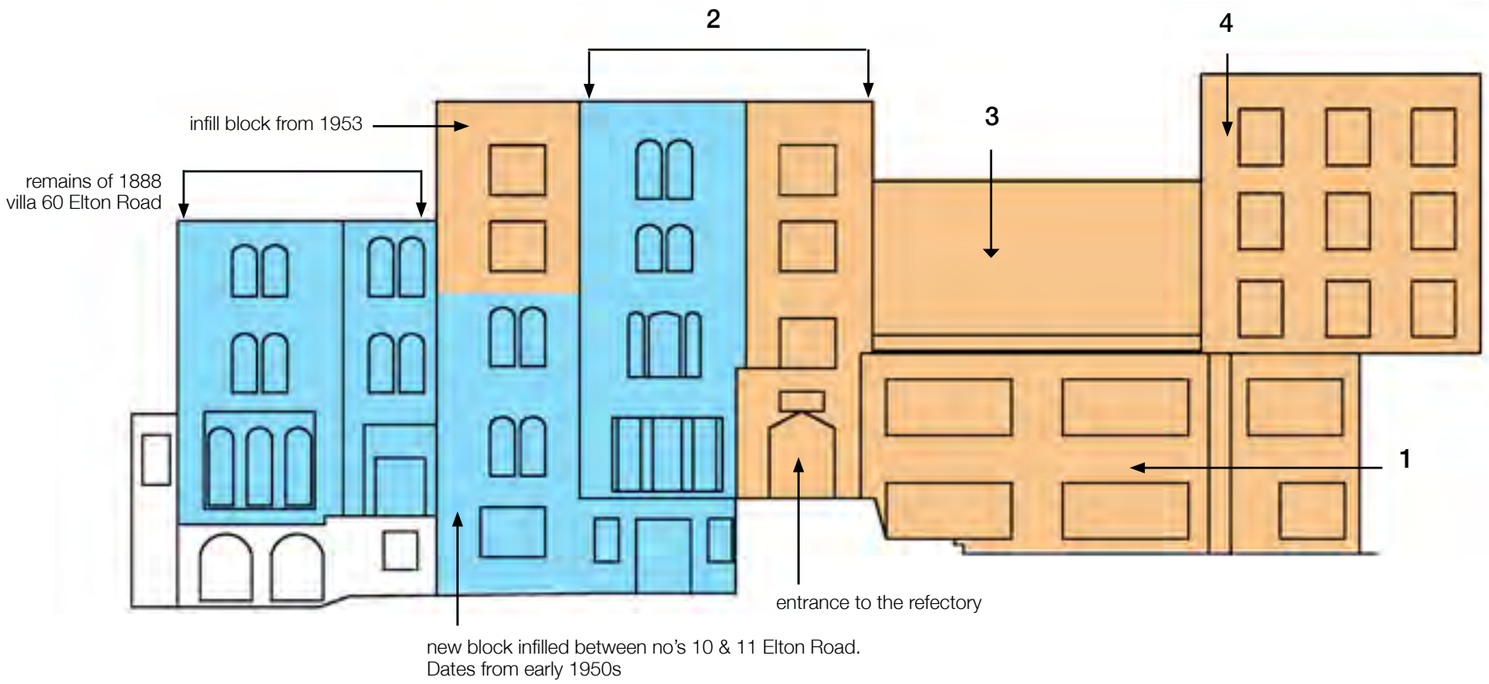
East elevation (from north)

East elevation of Hawthorns (from South)

3.0 Building Audit
3.3 Site Analysis

Hawthorns Front Entrance Elevation

This is the original building from which the Hawthorns Hotel grew. Built in the late 1880s it was last in a row built along Elton Road by Virgo & Ford. Comparison with the 1929 photograph shows how distorted the elevation has now become. The bay window and some carved window surrounds have been retained but additional storeys have altered the proportions of the original building and the loss of the Italianate roof pitches has not been compensated for. The use of cement render for this main elevation disrupts the material presence of this imposing building. The elevation is illegible, lacking any movement or charm and has a negative impact on the conservation area. A former chimney has been panelled with cement to carry the Hotel sign which further disfigures the elevation.



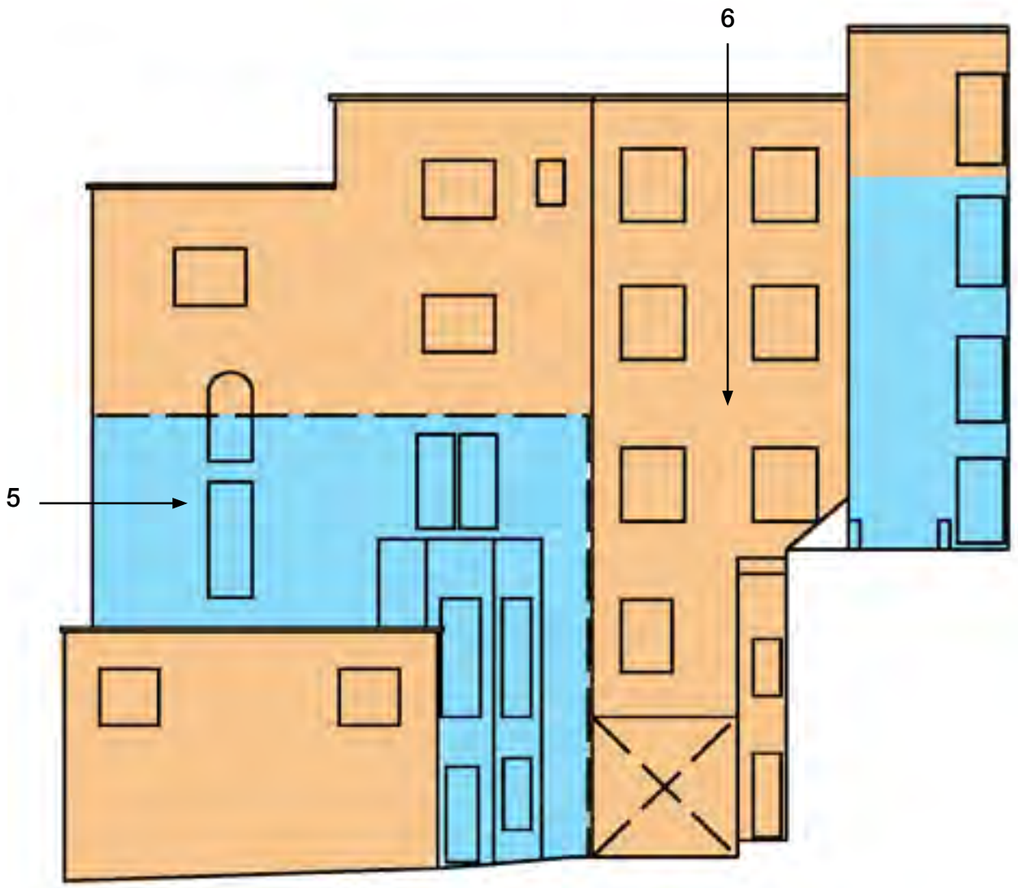
Hawthorns South Elevation

1 Part of 1962 extension to coffee bar. Built of concrete but tooled and painted to imitate ashlar. Two storeys, basement and ground floor, are topped with parapet roof. Basement windows are obscured by retaining wall of garden. Unsuccessful intervention.

2 Remains of 1888 villa, modified in 1953. Ground floor is obscured by 1962 extension, window surrounds are plain. Right-hand elevation has been cement rendered and two storeys added. Roof-line has been changed to parapet roof.

3 Glazed walkway on 3 levels. Georgian-wired glass and steel framed linking bridge between rear of Woodland Road properties and Elton Road.

4 A modified rear extension of original house on Woodland Road. Some attempt has been made to cohere with the historic context by the use of similar local materials. Windows have a slight vertical emphasis but the subtlety and movement of the original villas have been subsumed under poor detailing of metal casement windows.



Hawthorns Rear of East Elevation

5 Vestiges of Woodland Road villa (1880s). Bay window on ground floor is truncated by 1990s brick extension (laundry). Rear elevation is plainer than street elevation. Some Victorian sash openings remain. Two storeys added to original three c1950. Possibly brick with cement render, now painted cream, this building is in poor condition and has a negative impact on the streetscape and the rear courtyard. Roof-line has been raised to create parapet, as elsewhere on site.

6 Infill block dates from c1960. Plain cement render possibly over brick or blockwork. Metal casement windows. This block creates a link between the main body of the hotel and the last villa.

Hawthorns North Elevation

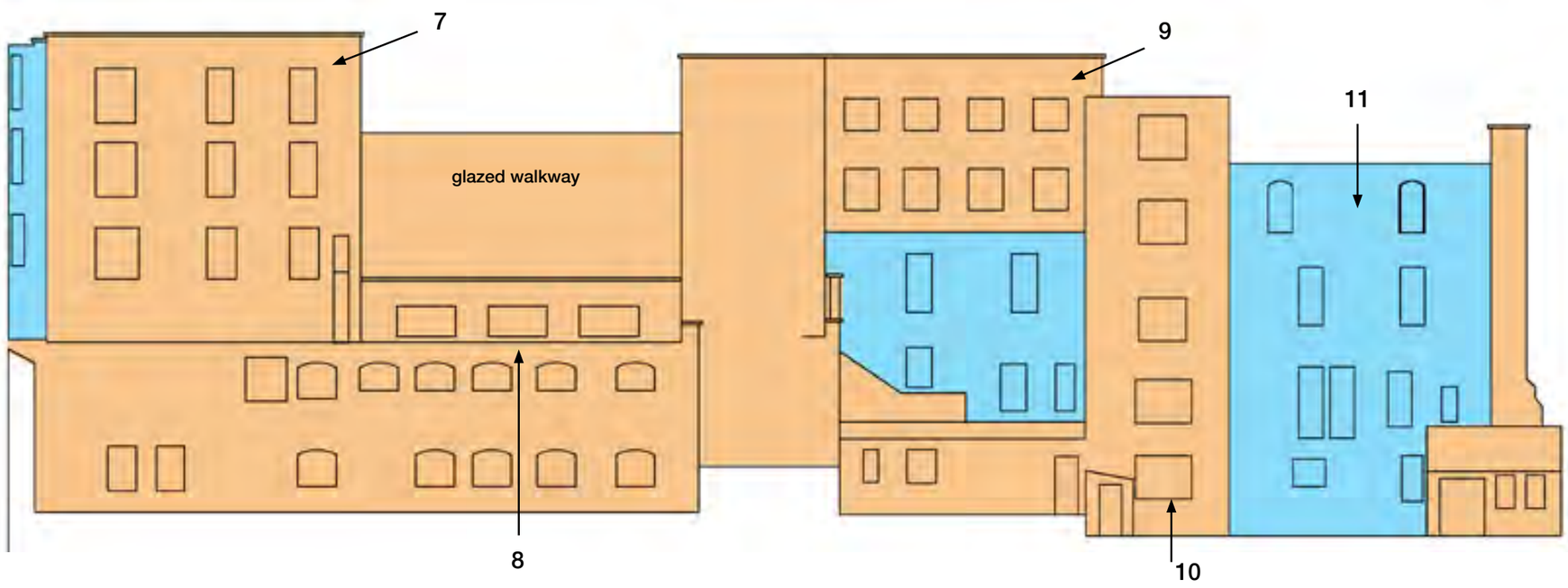
7 Rear extension from Woodland Road villa. Stone facing to elevation with brick window surrounds, poorly detailed.

8 Kitchen extension, brick construction with metal windows, brick window arches and rubble stone elevation. Flat roof houses plant.

9 Remains of original villa with 2 additional storeys, parapet roof and elevation obscured by plant/ventilation ducts.

10 Cement rendered infill block, rear elevation.

11 Rear of original villa. Roof-line altered and window surrounds are plain. Lean-to shed and fire escape obscure elevation. No rhythm to elevations due to changed position of windows.



3.0 Building Audit
3.4 Evaluation of Architectural and Historic Merit

Historic Features

While planning a complete re-working of the hotel for use as student accommodation and a staff refectory, the University discovered that the fabric of the building was in total disrepair. During refurbishment a number of historic features were discovered and conserved although it is very unlikely that any of these features belonged to the original building. There is a painted ceiling in what is now the Senior Common Room, windows of patterned, coloured glass with leaded lights and the remnants of an ornamental staircase. There is also a high Victorian marble fireplace in the reception area and a built-in wooden server or sideboard in the Chancellor's Room which has fluted pilasters and a niche with a shell hood.

Interventions

John Dingle wrote of his own life a sentence which fully captures the haphazard approach to design evident in the Hawthorns today: "It is perhaps right that in a career which has been built up as the result not of careful planning but of seizing the main chance, the Hawthorns should have evolved through a series of coincidences and improvisations." [8]

This improvisational approach may be effective if the designer is an established genius but in the case of Dingle it has resulted in an illegible and unhappy building. What began life as a reasonably well-designed, domestically-scaled row of villas has become an unsightly collage of building styles and patchwork. The original roof-lines have been destroyed and replaced with parapet walls which look awkward and ungainly. Badly-designed extensions upwards and outwards have had a devastating effect on the rhythm of the facades and ruined what balance and architectural definition existed in the original.

The insertion of 1930s-style casement metal windows with a horizontal emphasis jars uncomfortably with the original vertically-aligned openings. Cheap and characterless materials have been merged with the textured, local stone to leave a poorly-resolved relationship between new and old. All stone elevations have unsightly and inappropriate strap pointing. In a prime location on the busy junction of Tyndall Avenue, Elton Road and Woodland Road, the Hawthorns fails to do justice either to the well-defined domestic architecture of the Victorian suburb or to the grandiloquence of nearby institutional buildings such as Bristol Grammar School, Senate House and the Physics Building.

Altered roof-line and additional storeys have destroyed the original architectural movement of the villa

Thoughtless additions obscure architectural detail

Poor quality extensions and infill jar with the historic fabric of the buildings

Inappropriate design detracts from original quality

3.4 Evaluation of Architectural and Historic Merit

1950s materials decaying badly

Suspended ceiling and large internal volume detract from earlier architectural value

1990s brick laundry block truncates Victorian Bath stone bay window

Victorian fireplace in Reception

Although the building comprises six late C19 villas, any historic quality and charm they once had has been entirely eroded by 80 years of haphazard intervention. Since the University acquired the property in 1991 they have upgraded certain elements but the historic interiors are completely illegible. Suspended ceilings, raised floors, staircases removed, cheap flush doors, wall-mounted services all obscure the remains of the earlier buildings. Even where historic elements have been retained their relationship to the historic spaces have not. For example, large bay windows which would once have lit a large, formal space, are now truncated by partition walls and unsightly extensions.

Interiors

There is a marked contrast between the quality of finishes on the Ground Floor and the three floors of student accommodation. The Lower Ground Floor, which is principally a large service area, is of mixed quality. The Ground Floor houses reception and a number of meeting rooms, named after famous historical figures connected to Bristol: Plimsoll, Brunel, Cabot. Student accommodation is functional with each floor a maze of fire doors, fire screens, changes in level and narrow corridors.

Conclusion

It is not the alteration and modification of Victorian villas which creates a problem in itself but rather the quality of those modern interventions. In the case of the Hawthorns, the quality of both the new designs and the materials with which they have been executed is extremely poor. Where extensions express the architectural language of their time they may be considered of value and protected to the same degree as the original building. Although some attempt has been made to develop the modern style at the Hawthorns it has been done so poorly and cheaply as to fail in its architectural intent.

3.0 Building Audit
3.5 Assessment of Contribution to Conservation Area and Streetscape

The Hawthorns lies at the heart of the University Precinct to the edge of Tyndall's Park Conservation Area and inside the Whiteladies Road Conservation Area.

The Hawthorns' contribution to the Conservation Area is extremely compromised. The elegant villas of Elton and Woodland Roads are echoed in the materials of the Hawthorns but the additional storeys, the replacement of the original gables by parapet roofs, the increase in height and scale have all diminished the quality of the buildings and thereby diminished its contribution to the streetscape.

The buildings are set back from the wide pavement and the perimeter of the site is largely given over to staff car parking, with the exception of a small garden on Elton Road. The predominance of parked cars further detracts from the charm of the building.

The approach from Elton Road is dominated by Senate House until you actually arrive at the Hawthorns. There is a stark contrast between the relatively high-quality streetscape offered by the series of villas along Elton Road and the troubled south elevation of the Hawthorns. Here the building forms an L-shape and comprises an undistinguished collection of early rubble stone villas which have been modified and merged with modern cement rendered blocks. The area to the front is part soft landscaped as a garden and part hard landscaped for staff parking.

The approach from Woodland Road, Royal Fort Lodge/University Walk/ University Road is dominated by the angle of the Hawthorns Building on the corner of Woodland and Elton Roads. The poorly-resolved roof-lines, shabby mix of materials and the collection of single-storey extensions to the Woodland Road elevation make this a disappointing approach to what is actually the heart of the University Precinct.

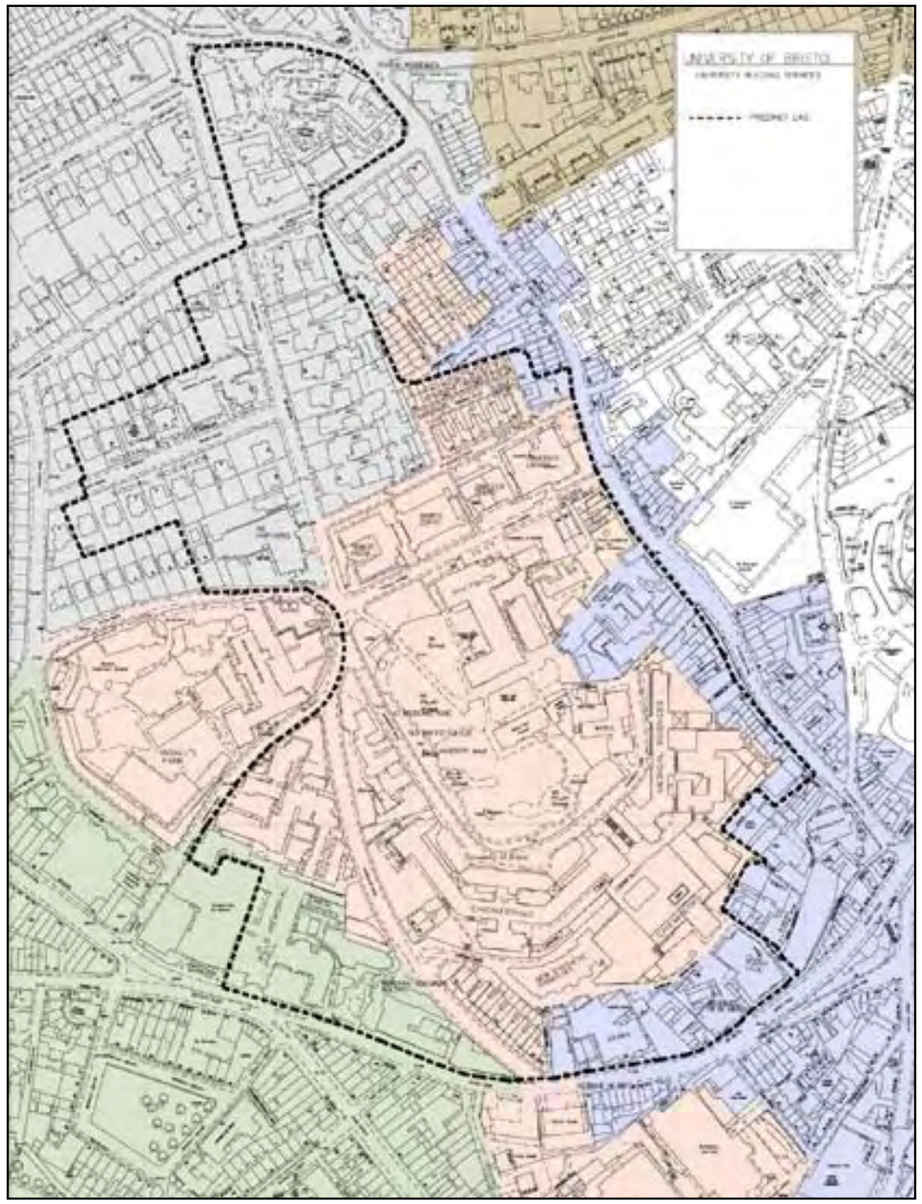
On the approach from Tyndall Avenue, the institutional buildings which now line either side of Tyndall Avenue give way to a more domestic scale where the avenue meets Woodland Road. This is manifest in both form and materials where the University has acquired whole streets of Victorian villas built of local stone. Many of these villas are charming, if impractical, for the current needs of the University. The Hawthorns, however, confuses this transition from institutional to domestic scale as its extensions and reworkings have created a hybrid which has resulted in a building which has neither the charm of the original villa nor the assurance of an institutional building.

In summary, in spite of the retention and re-working of some historic and local stone, the Hawthorns cannot be deemed to have a positive impact on the streetscape nor to the conservation areas.

Woodland Road elevation showing confused horizontal lines, poor rhythm and general lack of quality

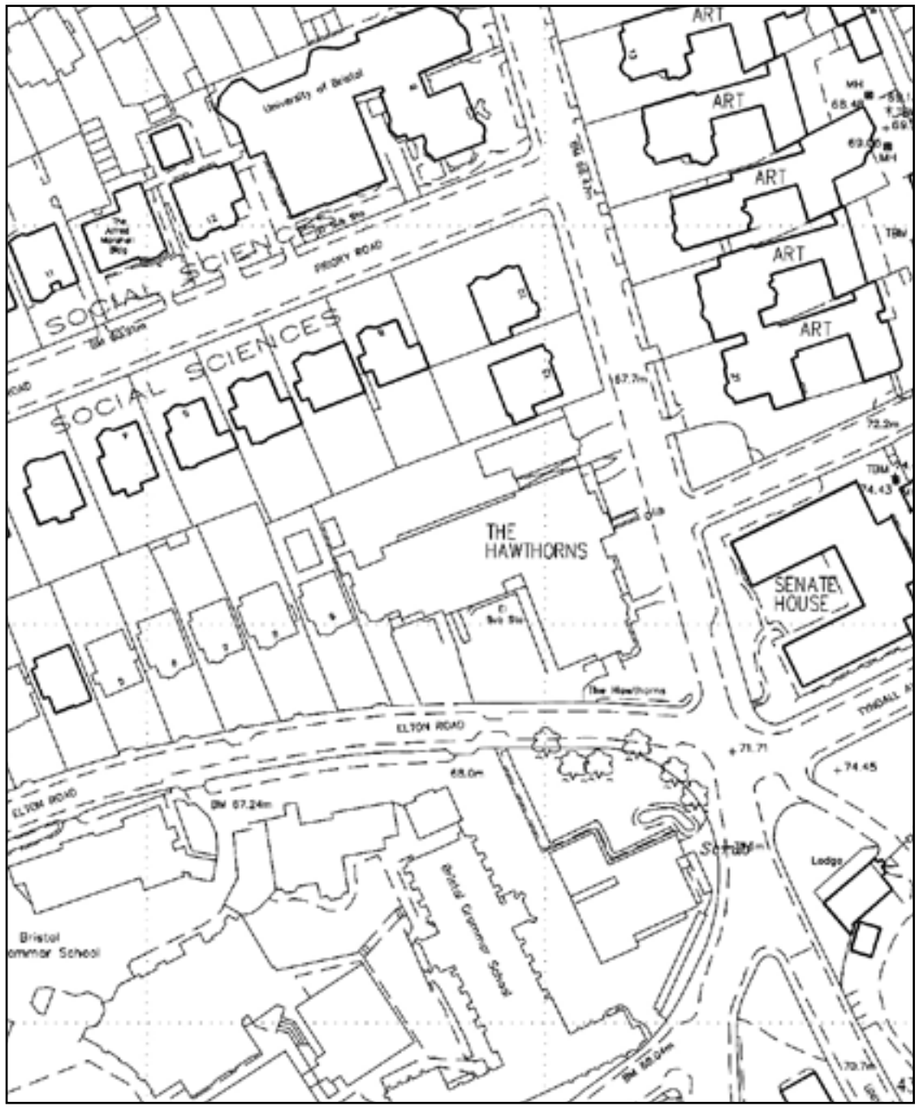
South elevation has lost rhythm through changed window openings from vertical to horizontal emphasis

Unattractive extensions and tarmac compromise the streetscape on Woodland Road



Plan showing the Precinct and the extent of individual Conservation Areas

4.0 Options for Change



Ordnance Survey plan of site

The historic importance of the accommodation on the Hawthorns site is considered to have declined through the comprehensive change that has taken place and now it is of very limited conservation merit or historic significance.

The buildings on the site are also of limited functional value for their owners, the University of Bristol, in terms of their flexibility, accessibility and economy of running costs. As such, the site is considered to offer important development potential for the future, especially in view of the University's needs for the future (as described within the Strategic Masterplan Study March 2005).

The intention of this part of the report is to consider the way in which the site may be redeveloped, and to demonstrate its suitability for a range of future re-use/options.

The site is located at a very prominent corner of the Whiteladies Road conservation area, and is adjacent to the Tyndalls Park conservation area. Inevitably, any building on the site of the Hawthorns will make a very important contribution to the character of the conservation area and it is essential that any new development on the site should ensure that its special significance is preserved and enhanced.

This section of the report considers potential options for such redevelopment, and is structured as follows:

1. Important factors which influence design
2. Approach to Design – 'Design Codes'
3. Design Options
4. Conclusions

4.0 Options for Change
4.1 Important Factors which Influence Design

There are a range of issues which influence the potential development of the site as follows:

The existing urban 'grain' of the conservation area

The essential character of the conservation area is one of detached Victorian villas, which creates a regular rhythm to the development along the streetscape of Elton Road and Woodland Avenue. It is important that the composition of a new building on the site responds to the nature of development on these streets and therefore avoids becoming too monolithic.

The importance of landscape

It is noted that the existing streets are effectively softened by mature vegetation, including the trees along Woodland Avenue and the front gardens of properties along Elton Road. An important contribution is also made by the gardens of the Bristol Grammar School site and the corner of the Grade 1 listed Royal Fort Gardens directly opposite. A mature horse chestnut tree on the corner of Tyndall Avenue and Woodland Avenue makes a particularly important contribution to the Tyndall Place.

Aerial View of the Hawthorns and University Precinct

4.0 Options for Change

4.1 Important Factors which Influence Design

Typical Victorian villa extant in the University Precinct

Senate House approached from Elton Road

Bristol Grammar School

The quality of surrounding buildings

The site of the Hawthorns is surrounded by 3 different types of buildings which dictate the character of the existing context, these are as follows:

The Victorian Villas
The existing Villas are essentially of 2-3 stories and built of coursed Brandon rubble stone, with Bath stone dressings. In many examples, there is a projecting bay window and decorative treatment at eaves and ridge levels.

Senate House
Senate house is a 6 storey block which stands on the corner of Tyndall Avenue and Woodland Road. The building is of concrete frame, with Bath stone facings. The accommodation is arranged in a 'square horse-shoe' plan which opens towards the site of the Hawthorns. It is interesting to note that the recent Pevsner guide to Bristol remarks upon the fact that the Hawthorns does not form an adequate 'focus' for the form of Senate House.

Bristol Grammar School
The Grammar School buildings are located opposite the Hawthorns site to the south. The buildings are largely built of coursed random rubble with Bath stone dressings. The buildings stand within the landscaped grounds of the site, bordered by Elton Road and University Road.

4.0 Options for Change
4.1 Important Factors which Influence Design

The Street Corner

The Hawthorns site forms an important corner at the ends of two distinctive streets, namely Woodland Avenue and Elton Road. Indeed it may be argued that this splits the site into consideration as at least two separate sites (i.e. one fronting onto each street).

Woodland Avenue
Firstly, the site marks an important end to the tree-lined avenue of Woodland Road. The form of existing development marks a blunt termination of the existing landscape here and improvements should be made through any redevelopment.

Elton Road
By contrast, Elton Road forms an elegant 'sweep' up hill in an easterly direction, forming a focus on the tree at the corner of the Royal Fort Gardens opposite the site. Redevelopment of the Hawthorns site presents an important opportunity for a building to harmonise better with the alignment of the Victorian villas towards the road junction at the corner.

Addressing the junction

The Hawthorns site has an important relationship with the junction of a number of roads to the south of the site, and forms a potentially important backdrop to activities within this space. In this respect, it also forms the focus of an approach from the south. It is considered that there is an important opportunity to mark the significance of the site in this respect, and to respond to the scale of the Senate House building opposite, and this has been explored further in the options described within part 3 of this section.

View of Elton Road approaching the junction with Woodland Road and Tyndall Avenue

View of the Lodge site approaching from the South

4.0 Options for Change
4.1 Important Features which Influence Design

Existing street furniture infront of the Hawthorns entrance

Parking in front of the Hawthorns from Woodland Road. The Tarmac surface extends to the frontage of the building

The character of the public realm in front of the Hawthorns

Improving the Public Realm

The standard of the existing public realm around the building is currently very disappointing with ad-hoc arrangements of car-parking, street furniture, road markings and surface treatments.

Re-development would present an important opportunity to rationalise and improve these features in all respects.

4.0 Options for Change
4.1 Important Features which Influence Design

Longer views to the site

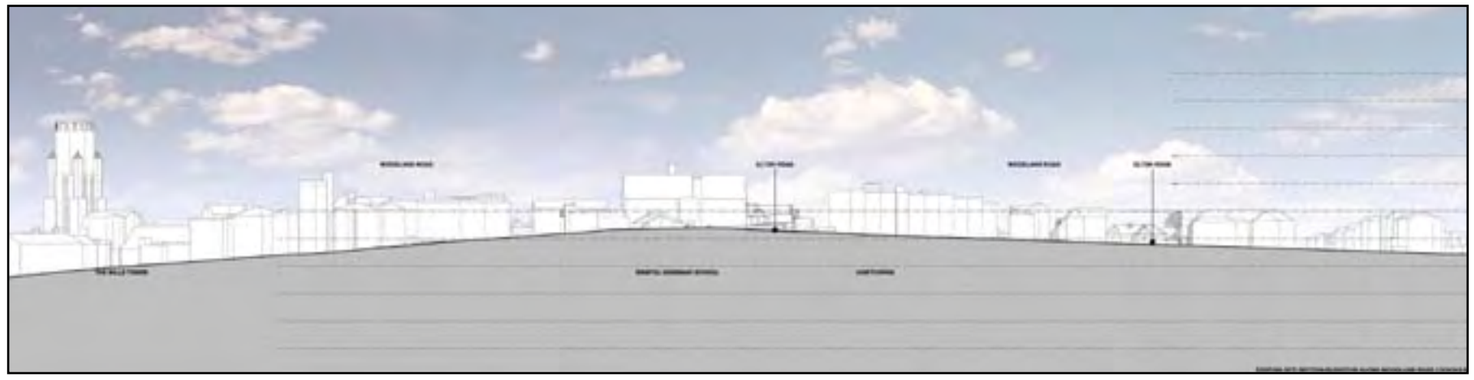
As with other sites occupied by the University with the central precinct area, the site of the building is visible from a wider area around the city. It is noted, for example, that there are particularly important views to the Hawthorns site from the Whiteladies Road area and the west of the city in particular. It will be important for the design for the site to be carefully evaluated in terms of its effect on these views.

Designing for Sustainability

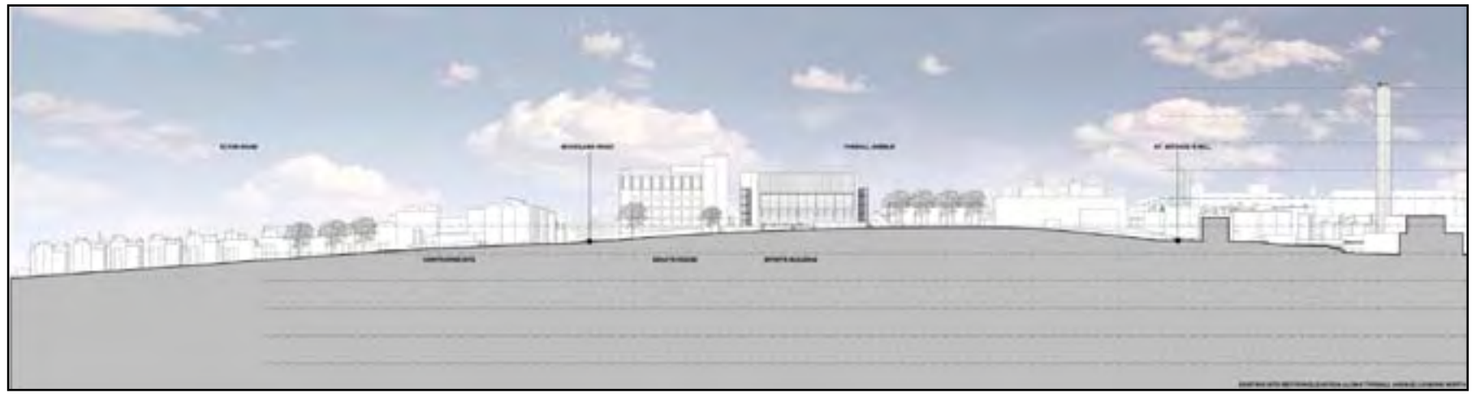
Any new building for the site must be designed in accordance with sustainable design principles (in the widest sense of the word). This includes ideas relating to flexible and accessible accommodation, which minimises energy consumption i.e. thermally efficient, maximum use of natural daylighting and natural ventilation, etc.). Extensive work has been undertaken as part of the University's strategic masterplan study with regard to the optimum building floorplate dimensions for a wide range of future uses with maximum efficiency. As a result a floorplate width of 13.5-15m, and a floor to floor height of approximately 4.1m has been explored within this Study.

Distant view of the University from Cabot's Tower

4.2 Approach to Design - 'Design Principles'



Existing section through Woodland Road looking west



Existing section through Tyndall Avenue looking north

A wide range of development possibilities have been explored for the site. As a result of these exercises, a range of 'design principles' have been established which help to define an appropriate architectural response to redevelopment of the site.

Scale and Massing

The design of new buildings for such an important site needs to be governed by an acceptable range of responses to the scale of the existing buildings neighbouring the Hawthorns site. In particular, these include a careful consideration of the following:

Development fronting onto Woodland Road
The scale of existing development along Woodland Road sets the main context for the east elevation of the building to the streetscape. It is considered that the scale of building on the Hawthorns site could be higher than that of neighbouring buildings; however there would be an advantage for any increased scale to be offset by the top storey being recessed from the building line.

Development fronting onto Elton Road
The scale of existing development along Elton Road sets the main context for the south elevation of the building to the streetscape. It is considered that the scale of building on the Hawthorns site could be higher than that of neighbouring buildings. There is a case for the scale of the buildings to follow the 'sweep' of the existing dwellings on Elton Road, and for there scale to increase as they approach the corner of Elton Road and Woodland Road. In order to avoid the scale of the new building becoming over-bearing, a scheme which creates a 'stepped' response to the pavement line could be appropriate.

This response addresses the change in scale from residential buildings to the east of the main university central Precinct. The rhythm and scale of existing buildings along Elton Road allow the opportunity for proposals to be broken up in elevation as a series of elements. These elements may increase in scale as they approach Senate House.

Addressing the corner
There is a key opportunity for the redevelopment of the Hawthorns site to include an element which addresses the junction of Woodland Road and Elton Road more purposefully. Indeed, as part of the Strategic Masterplan study, the opportunity to create a distinctive new 'Tyndall Place' (which marks the significance of the educational roles of the University and the Grammar School) is considered in some detail, and is also recorded as a strategic aim of the Masterplan.

4.0 Options for Change
4.2 Approach to Design - ‘Design Principles’

Materials

There is a strong case for the elevations of any new development to be carefully designed in order to respond to the smaller [domestic] scale of the existing buildings adjacent, this could include a case for ‘verticality’ and rhythm within the design of the elevations. The potential to use natural materials, including, if appropriate, recycled materials from the existing Hawthorns building, should be carefully explored.

External Spaces and Public Realm

The footprint of the new buildings should be set back to the existing building line, and spaces between the front of the building and the pavement edge carefully landscaped.

Plan of Hawthorns site showing potential building lines

Scheme B: Quadrangle option

Scheme C: Courtyard and Tower

Scheme D: Terrace and Tower

Scheme A - Restoration of the Villas

This would have the effect of reinstating the original scale of buildings on the site. This scheme does not embrace the redevelopment opportunities on the site, nor does it seek to deliver the specific requirements of the accommodation needs of the University for the future.

Scheme B - Quadrangle

This option explores the potential to create a quadrangular space at the heart of a new building on the site. In order to achieve this, development is pushed to the extents of the site, and forms a 'hard edge' to the streetscape, including the Tyndall Place junction.

Scheme C - Courtyard and Tower

This option explores the potential to create a new public space on Elton Road, and addresses the Tyndall junction with a tower of approximately 12 storeys.

Scheme D - Terrace and Tower

This option proposes a composition of buildings which respond to the three elements at the site. On Woodland Road, a block of 4 storeys is proposed. On Elton Road, 3 blocks are proposed, of 2, 3 and 4 stories, each separated by circulation cores. At the corner, a tower of 12 storeys is proposed which addresses the site of the new Tyndall Place. This option addresses the scale of the existing context while also providing an efficient use of the site. The tower on the corner of the site provides a visual focus and iconic statement for the University at this important junction.

.

4.0 Options for Change
4.3 Design Options

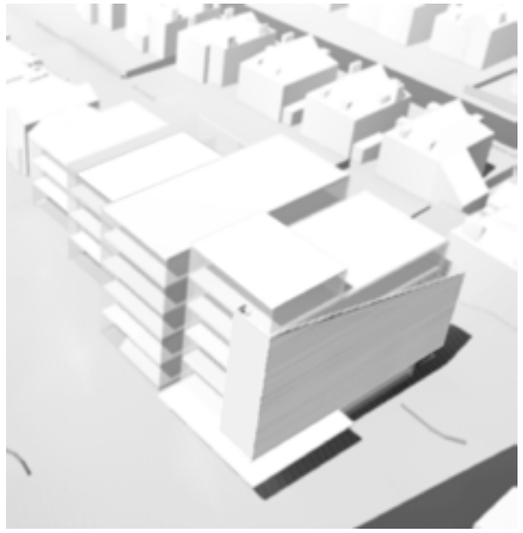
Scheme E - Urban Block

Scheme E proposed a combination of ‘terraced’ accommodation on Elton Road, together with an urban block facing onto the proposed corner of the new ‘Tyndall Place’.

On Elton Road, new blocks of 3, 4 and 5 stories are proposed, each of which are separated by new circulation cores. These step up towards a new corner block of 6-7 stories which matches the scale of Senate House opposite.

On Woodland Road, the new building’s line follows that of adjacent properties. A 5 storey block is proposed for this side, which would be unified with the corner block by its elevational treatment. This block steps down at its northern end to incorporate a new circulation core. This introduces a visual break and a ‘bridge’ to the scale of the street of villas of Woodland Road to the north.

It is hoped that the tree-lined avenue of Woodland Road may be extended towards Tyndall Place, and combine with a higher quality hard landscape on both sides of the new building.




WOODLAND ROAD
ELTON ROAD
WOODLAND ROAD
ELTON ROAD
THE WILLS TOWER
BRISTOL GRAMMAR SCHOOL
NEW HARTHORNE DEVELOPMENT


ELTON ROAD
WOODLAND ROAD
TYNDALL AVENUE
ST MICHAEL'S HILL
NEW HARTHORNE SITE DEVELOPMENT
BENJETY HOUSE
SPORTS BUILDING
NEW LEARNING RESOURCE CENTRE

5.0 Bibliography and References

Notes

1. For further information on the development of Tyndall's Park see Joseph Bettey's "The Royal Fort and Tyndall's Park: The Development of a Bristol Landscape". Bristol 1997

2. Plans consulted at Bristol Record Office: Volume 19, Folio 74 and Volume 22, Folio 34

3. Whittingham, Sarah. "The History of the Hawthorns". University of Bristol, 1997

4. Dingle, John. "A Pinch of Pound Notes". Rupert Hart-Davis, London 1954

5. Ibid

6. Ibid

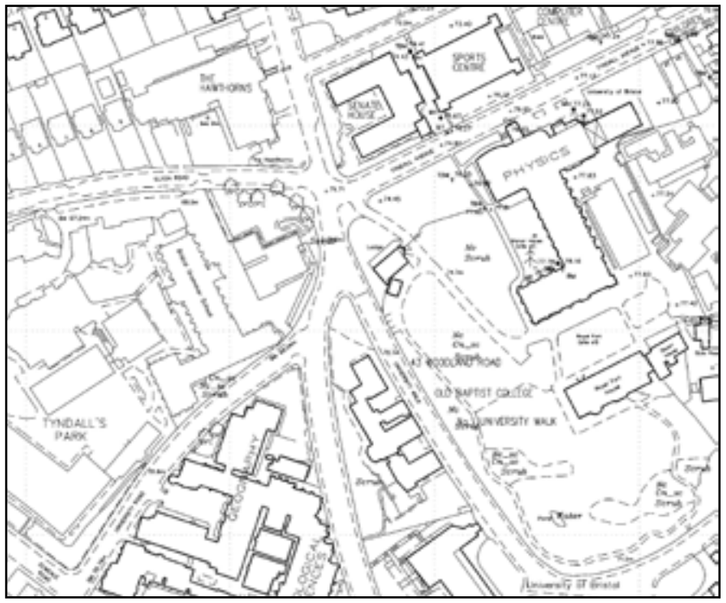
7. All post-war drawings were consulted at Bristol City Council Planning Office, Ref 2307 A/B/C

8. See note 6 above

Bibliography

Conservation Area Enhancement Statements: Bristol City Council
Local Plan Policy Advice Note 2. November 1993

Appendix One
Local Plan and Conservation Area Policies



Appendix: Relevant Policies for the Conservation Area

In preparing this study of development potential on the Hawthorns site the design team has been continually mindful of the importance of its location within the nominated Conservation Area known as Whiteladies Road. The Local Plan and the Conservation Area Enhancement Statements have been consulted. The following policies stood out as being particularly relevant and have been quoted in full as a reminder of some of the guiding principles which should be borne in mind throughout any future work.

Conservation Area Enhancement Statement
Summary of the Character of the Whiteladies Road Conservation Area:

- "To a considerable extent its character relies on the subtle combination of mainly domestic qualities: solidly built, substantial villas and terraces in local Brandon Hill and Bathstone with interesting and varied elevational use of classical architectural motifs; well constructed boundary walls in local stone complementing the buildings and harmonising the ground level environment; attractive gardens; trees of good stature in streets and gardens.."

- "Although the visual scene is one of architectural variety, there is an overall unity deriving from the predominant use of Bath stone and Brandon Hill rubble…"

Traffic Flow:

- "The high density roadside parking detracts from the quality of the street scene.

Land Use:

- "Pressure to demolish traditional buildings still continues. The domestic architecture styles have a consistency of design and materials contributing to the essential character of the Conservation Area.

- "Office development and conversion of large houses into flats has led to the loss of attractive front gardens, trees, boundary walls and gates and their replacement with hard standing for cars…"

Townscape:

- "The broad character of the area remains largely intact and consists of large scale terraces and some detached villas in traditional materials. This character has been marred by some post-war reconstruction, particularly where petrol-filling stations, car showrooms and garages have been erected…"

- "Trees planted in streets and front gardens are an integral part of the character of this Victorian suburb. In places the pattern of planting has been eroded, undermining the landscape structure of the area.

- "The introduction of unsympathetic paving materials such as tarmac in front of terraces and buildings with distinguished and prominent public frontages has undermined the character of these streets."

Enhancement Objectives:

- Environmental traffic management and parking scheme should include provision for cyclists..

- To resist the demolition of Listed Buildings or of any unlisted building which contributes to the character of the Conservation Area.

- New development within the Conservation Area will have to comply with Bristol City Council Conservation Principles P2-P10 and the Local Plan guidelines B1-B12.

Local Plan Policies (Bristol 1997):

- B12/4.4.35
- "The Local Plan aims to ensure that historic buildings and areas in Bristol are adequately protected, sensitively restored where necessary, and that new buildings within a historic context are well designed, following common sense rules of scale, alignment, massing and proportion, and that they utilise materials appropriate to the locality."

- "Successful conservation relies on change as well as preservation. Its aim is not to create museum pieces but to recognise the substantial contribution made by old buildings and their settings to the local scene, and to integrate new development which responds to this character while giving new interest and variety."

- B14/4.4.41
- "The distinct character of any Conservation Area will not only depend on the buildings that it contains, but also on the open space, areas of planting, floorscape, street furniture and other external features such as walls, railings, gates and advertisements. ..The protection of many features…rely on effective co-operation between the local planning authority and landowners, householders, statutory undertakers, developers, and other local authority departments.."

- B15 (l)
- "Townscape and landscape features that contribute to the character or appearance of streets and open spaces within Conservation Areas should be preserved or enhanced."

- 4.4.43
- "The city council will seek to maintain and strengthen the traditional form of individual streets and ensure that new development is in keeping with its surroundings both in character and appearance. As with traditional buildings within the historic street scene, new schemes should contain both the individuality of the designer and the need to respond to context. The best solutions are based on a knowledge of the locality together with attention to detail and craft tradition."

- 4.4.45
- "In particular, the design of new buildings in Conservation Areas should consider the height, scale, proportion and alignment of the surrounding traditional buildings, and have regard to the existing density and patterns of development. Special attention should also be given to features such as walls, fencing, landscape treatment and street furniture which will further help to assimilate new buildings appropriately into a Conservation Area.

- B16
- "In determining applications for new buildings within formal groups, account will be taken of the following:-
- The height in relation to surrounding properties. Where existing heights are varied, new development should remain within the range of heights of historic neighbouring properties;
- Roof forms complementing those that contribute to the character of the area;
- The use of materials that respect, retain and strengthen those that are predominant and form a fundamental component of the character of the area;
- The incorporation of locally distinctive patterns and features used on historic building facades which give a special identity to Bristol;
- The scale, proportion and hierarchy of windows that complement the historic context and are in balance with the design as a whole.

Appendix Two
Buildings Assessment Matrix

Assessment of Building Integrity			
A1	Has the historic form and quality of the building been seriously eroded by unsympathetic alteration?	**Yes**	The existing buildings on the site are the result of extensive phases of refurbishment and redevelopment which has largely resulted in the loss of their historic interest and integrity. Furthermore, the phases of change have caused an uncomfortable relationship with their context of the Whiteladies Road Conservation Area in a number of ways, including design quality of buildings and landscape.
Assessment of Positive Contribution to the Conservation Area			
B1	Is the building the work of a particular architect of regional or local note?	**No**	The original villas were built in 1888 by Virgo and Ford. The transformation of the properties was largely undertaken by an inexperienced architect Mr Jack Chaffe, for local hotelier and chef Mr John Dingle.
B2	Has it qualities of age, style materials or in any other characteristic which reflect those of at least a substantial number of the buildings in the conservation area?	**Partly**	The original 3 villa buildings were built to match the 5 adjacent properties, however the work undertaken in the 1920-30s has significantly obscured this. The changes to the property have been undertaken in Pennant and Brandon stone which is similar to the earlier work.
B3	Does it relate by age, materials or in any other historically significant way to adjacent listed buildings, and contribute positively to their setting?	**No**	Whilst the Bristol Grammar School opposite is a listed building, it is an earlier building and is built from a redder Brandon stone. Furthermore the Hawthorns is separated from the School by Elton Road and adjacent landscape and is therefore not considered to be within the immediate context of the Hawthorns.
B4	Does it, individually or as part of a group, serve as a reminder of the gradual development of the settlement in which it stands, or of an earlier phase of growth?	**Partly**	Whilst the work undertaken in the 1920-30s is an obvious reminder of the re-development of the site it is not considered an enhancement of the site's architectural or historic merit.
B5	Does it have a significant historic association with established features such as the road layout, burgage plots, a town park, or landscape feature?	**Partly**	Part of the site addresses the corner of Elton Road and Woodland Road.
B6	Does the building have landmark quality, or contribute to the quality or recognisable spaces?	**Partly**	The site has an important relationship to the junction of Elton Road and Woodland Road to the south. Whilst the extension work undertaken in the 1920-30s (using local materials) enlarged the scale of the original buildings on the site, it did not enhance the site's architectural merit in any way.
B7	Does it reflect the traditional functional character of, or former uses within, the area?	**No**	Not Applicable.
B8	Has it significant historic associations with local people or past events?	**No**	The site has been adapted for use as a range of fairly mundane uses (boarding house / hotel / Berni Inn / student residence). None is considered to represent a significant historic association.
B9	If a public building, does its function or enclosed public space contribute to the character or appearance of the conservation area?	**N/A**	Not applicable.
B10	If a structure associated with a designed landscape within the conservation area, such as walls, terracing or a minor garden building, is it of identifiable importance to the historic design?	**N/A**	Not applicable.

Source:
Conservation Area Appraisals: Defining the special architectural or historic interest of Conservation Areas, English Heritage, 1997.
Conservation Area Practice: English Heritage guidance on the management of conservation areas, 1995.

Supplementary Planning Document Number 11

University of Bristol

Strategic Masterplan: Appendix 12

The Royal Fort Lodge Site

Assessment of Potential for Development

November 2005

University of BRISTOL

BRISTOL CITY COUNCIL

0.0 Contents

If you would like this information in a different format, for example Braille, audio tape, large print or computer disc, or community languages, please contact the Central Area Planning Team on 0117 922 2938

1.0 Executive Summary

Aerial view of the Royal Fort Lodge site

The Royal Fort Lodge site is located at the heart of the University's central precinct, on Tyndall Avenue.

This report considers the development potential of the site as part of the strategic masterplan for the University, and presents the following key points:

1. The site is located within the Tyndall's Park conservation area. It is at the northern edge of the Grade 1 listed Royal Fort Gardens, which survive as a small fragment of a much larger C18th country estate.

2. Despite its central location, the area of landscape is underused as a public space, mainly due to the fact that it is separated from Tyndall Avenue by a low wall of rubble stone. The Lodge building, which marks the entrance to Royal Fort Gardens is also in a secluded location and is easy to miss.

3. There is a mature horse chestnut tree on the corner of the site which contributes a great deal to the character of the conservation area (and the western end of Tyndall Avenue) and should be maintained in any furture re-use.

4. A new building on the site could help create an important new pedestrian access to Royal Fort Gardens to the south.

5. It will be important for a new building on the site to have an 'active' use - perhaps as part of the provision of student services (e.g. a 'welcome / information centre for the University).

6. There are a range of potential forms for a new building, however a building which sits lightly on the site within the trees, with a glazed ground storey, seems to offer the best solution.

2.0 Purpose and Scope of the Report

Feilden Clegg Bradley Architects (FCBA) have been commissioned by Bristol University to prepare a detailed study of the site adjacent to Tyndall Avenue which includes the Royal Fort Lodge, a single-storey stone building which stands at the Tyndall Avenue entrance to the Royal Fort Gardens. This study is primarily designed to assist the Bristol University Masterplanning process for which FCBA have been acting as Design Team Leaders since September 2004.

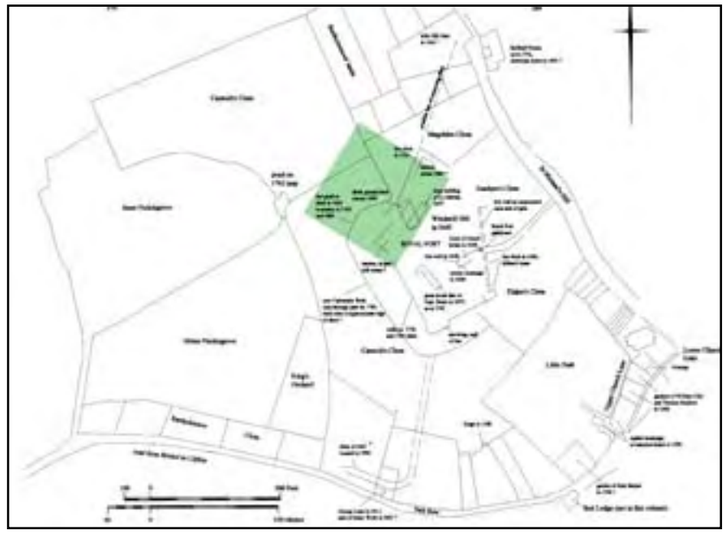
Although the Royal Fort Lodge is not listed, the site lies within the Tyndalls Park Conservation Area and is part of a historically significant area of north Bristol. Furthermore, the site is at the heart of University activity and circulation and should be taken into account when considering the future development of the University as outlined in the Strategic Masterplan.

This special report comprises two principal objects of study:

- **Building Audit**: this provides a description of the history and evolution of the building and the surrounding site, a description of its current use and an evaluation of its contribution to the Conservation Area.

- **Options for Change**: this section demonstrates the different possibilities for re-use and re-development of the site. The options for change have been developed within the broader context of change outlined in the Strategic Masterplan.

3.0 Understanding the Site
3.1 The Development of the Landscape



Conjectural map by Roger Leech showing the archaeological significance of the site of the Royal Fort Lodge

Landscaped area between the Lodge and the Physics Building

View of Bristol to the West of Royal Fort showing Repton's landscaping and screening of the growing city below

North East view of the Royal Fort by James Stewart in 1752

The Royal Fort Lodge and the green space to the north and east of the gates lie at the heart of today's University Precinct. The site is visually and physically connected to the important junction of Tyndall Avenue, University Walk and Woodland Road. Surrounding development has manifested in a piecemeal fashion so that while the Lodge would once have nestled within a fairly domestically-scaled environment, today it is dominated by powerful institutional buildings such as Oatley's Physics Building, Senate House and the other University buildings on Tyndall Avenue.

The site represents a small fragment of a huge C18 country estate which belonged in 1750 to the wealthy and locally influential Tyndall family. Originally ecclesiastical land, this area was bought by the Tyndalls in the mid-C18 and landscaped in the fashionable style by Humphry Repton in the early 1800s. The park was extensive and was the result of a great deal of demolition of C17 housing. Its boundaries reached as far as Whiteladies Road to the west, Park Row to the south and Cotham Hill to the north.

Joseph Bettey's study of the development of Tyndall's Park relates in great detail the ongoing land deals which saw the Tyndall family estate growing and shrinking in relation to the wealth of ambitious local property developers whose fortunes were, in turn, affected by the Napoleonic Wars and national property values. By the late C19, however, Tyndall's Park was finally reduced in size and much of it bought by house-builders providing accommodation for the fast-growing merchant and middle classes of Bristol. As pressure from suburban development grew, the fringes of the park were sold off and by the 1870s much of the northern half had become developed with detached villas and gardens. The governors of Bristol Grammar School purchased another large area of the park in 1877 to house a new school building.

By 1903 only a small pocket of parkland remained and this was rapidly absorbed into the University precinct during the C20. The current gatehouse, known as the Royal Fort Lodge, stands at the entrance to the driveway leading to Royal Fort House and marks the final shrinking of the Tyndall Estate. As such, the lodge could be said to represent the triumph of middle-class suburbia over the aristocratic landowners.

As well as its role in the history of Tyndall's Park, the Royal Fort Lodge is also adjacent to the historically significant site of the Royal Fort itself. The area of the Royal Fort is so called after its Civil War fortress that was demolished and redeveloped in the 1650s, leaving the gatehouse and access road from St Michael's Hill, now the Royal Fort Road. In the late 1600s it formed an island of houses and gardens amidst surrounding common land. Dr. Roger Leech has drawn a conjectural map of the area, and has superimposed on the modern streetscape some historic elements such as the Royal Fort Ditch, boundary walls from 1763 and 1884, as well as the C17 Cromwell House. While this map may only be used for interpretive purposes, it is nonetheless instructive and gives some idea of the nature of the ground on which Royal Fort Lodge now stands.

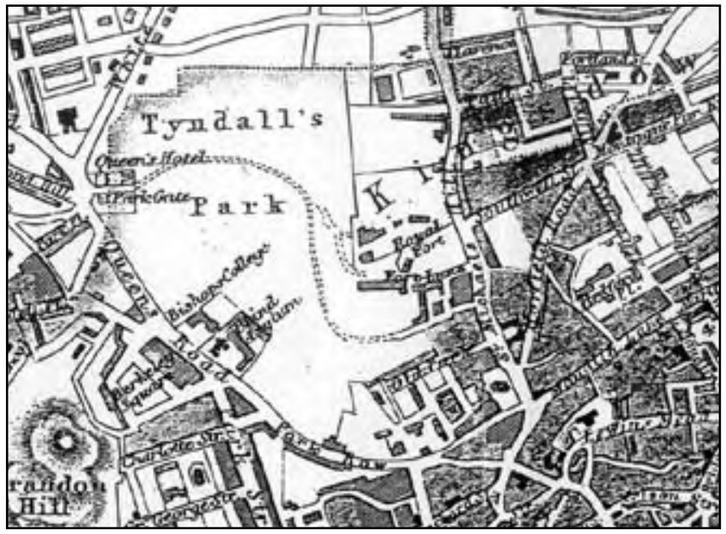
3.0 Understanding the Site
3.1 The Development of the Landscape

By the 1750s Thomas Tyndall had acquired the site and set about constructing a fashionable mansion and pleasure grounds on land previously occupied by the Royal Fort. Parkland to the west was planted with trees and crossed by a number of tracks which met at a nodal point at the centre. These routes included a drive to Park Row and later a lengthier driveway from Whiteladies Road to the Royal Fort. It is evident from Bartholomew's 1860 map of Bristol that the entrance to this driveway was flanked by two small lodge buildings. The drive then swept eastwards through the park along the line of what was to become Elton Road at the end of C19.

This sweeping drive then intersected with a pathway going north to south, which later became Woodland Road. Beyond the intersection the drive continued into an area of more dense landscaping and tree planting and thence in a south-easterly direction towards the Royal Fort House.

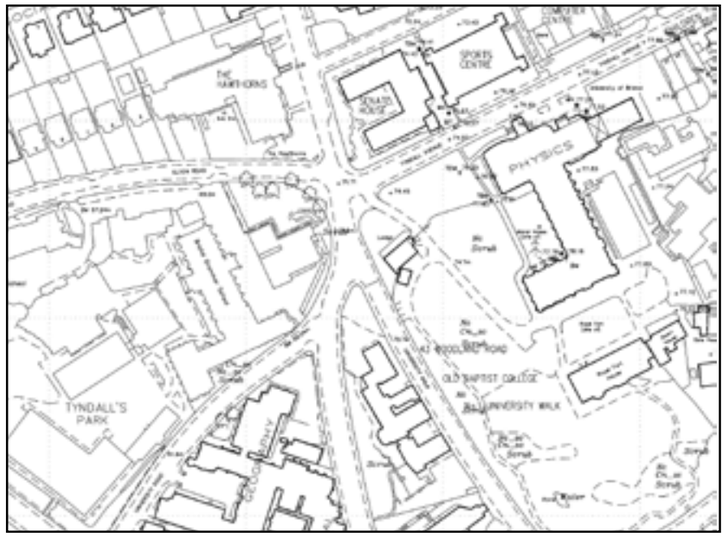
The junction of early paths through Tyndall's Park is still reflected in the street plan of today where Woodland Road, Elton Road, University Road, Tyndall Avenue and the University Walk meet. The exact route of the final part of the drive giving access to the house itself is more difficult to ascertain as the historic maps all show dense trees at this point in the park, however they appear to be on their original lines.

Donne's map of 1826 showing the large expanse of Tyndall's Park to the left of the frame



Bartholomew's map of 1860 shows the park gates at the west end of what is to become Elton Road

The Royal Fort Gardens are what remains of the Tyndall Estate today



The junction of historic tracks has developed into the road layout that exists today

OS map of 1885. Shows 2 Lodge buildings at the west end of Elton Road

OS map of 1903. First evidence of the Lodge in its current position

Gatehouse to the Civil War fort which appears to have been modified

OS map of 1949 showing an earlier building on the site

Royal Fort Lodge

The Lodge is a single-storey building of solid masonry construction. The walls are built of Brandon Grit and Pennant rubble stone. One bay window and three flat have Bath stone surrounds. The hipped roof is clad with slate with a 1970s flat-roof extension to the rear. Internally, the plan has been sub-divided to create office accommodation and a technology-led security centre.

The Royal Fort Lodge first appears on the 1903 Ordnance Survey map (see left) and marks the new threshold to Tyndall's Park, the remains of which are now known as Royal Fort Gardens. It is possible that this small Victorian building had previously stood at the original west entrance to Tyndall's Park on Whiteladies Road. The first Ordnance Survey map of 1885 shows two Lodge buildings at the beginning of this drive, at the west end of what was to become Elton Road. One of these lodges still stands today in the grounds of the Bristol Grammar School. It is possible that the other was moved from this location to the entrance to the newly-reduced Tyndall's Park. While there is no hard evidence for this move, it is nonetheless quite plausible.

Prior to the construction of this late Victorian structure, a much earlier gatehouse was situated at the eastern entrance to the gardens and marks the access from Royal Fort Road. This structure still stands today and whilst it appears to date from the early C17, careful inspection indicates that its original fabric has been extensively repaired and/or modified overtime. So, it would seem that until the early C20, the principal gatehouse to the Royal Fort House itself stood in the east.

It was not until Tyndall's Park diminished significantly in size at the end of C19 that the Lodge building appeared at the head of the western drive. In order to establish the exact construction date of the Royal Fort Lodge a thorough search of the documentary and planning archives was carried out. Unfortunately, but perhaps not surprisingly given the relative modesty of the building, the archive search proved disappointing and resulted in little archival or documentary evidence being found.

The Wills family acquired the land and buildings and began to survey the area in order to plan for its incorporation into the growing campus. There are a few surviving survey drawings from the time when Oatley was proposing a residential quadrangle be constructed on the Royal Fort Gardens.

The OS map of 1949 also shows a building on the site of the proposed development site, which has since been demolished.

3.0 Understanding the Site
3.2 Buildings and Structures

While these proposals were being discussed the Lodge continued to provide a home for the Head Gardener, Mr Collins. He and his wife raised six children in this tiny house while Collins ran the botanical gardens which were formerly on the site of Senate House. When the gardens closed down and Collins retired, Alfie Morgan, the head cleaner, moved into the building. It was in the 1960s that the lodge took on its current role as co-ordinator of all University security.

Although there are no surviving building control drawings to prove the exact dates, it is clear that the building has been extended since its late C19 single plan, single storey construction. According to surviving security officers who remember the building work taking place, a flat-roof, single storey extension was added to the rear of the building during the 1970s. Inspection of the fabric has revealed this date to be most likely. Building control files contained only one application for the proposed demolition of the corrugated tin shed which adjoins the rear of the Lodge. Drawings for a replacement terrapin building were rejected as they were deemed of an inappropriate design and of poor quality materials which would detract from the Conservation Area.

Gates

Built of ashlar block in oolitic limestone the gate piers and cast-iron gates are Grade II Listed. The two rusticated piers provide an imposing and elegant entrance to the Royal Fort drive. Of much greater architectural interest than the rather clumsy rubble-stone lodge adjacent, it seems likely that the piers were also part of the original western entrance to the long C18 driveway when Tyndall's Park was a huge landscaped estate. Bartholomew's map of Bristol from 1860 specifically features Park Gates (see left). Furthermore, a drawing from 1925, found at the Bristol University Special Collection Archive, suggest that the piers were to be reconstructed in their current location rather than built from scratch.

When first located there, the classical formality of the piers represented a threshold behind which the excessively wealthy had been forced to retreat. Today, the park gates and their piers are simply another vestige of the C18 influence of the Tyndall family on the evolution of north Bristol.

Boundary Walls

A dwarf rubble stone wall leads east from the gates towards the Physics Building and then turns southwards to go along-side the building. Standing approximately half a metre high, the wall is built of similar materials to the lodge, Brandon and Pennant rubble stone. There is no evidence to suggest that this wall is of historical significance as it does not appear on any early maps of Bristol. It is most likely to date from after 1925 when the Bath stone piers were relocated there. The wall currently serves to reinforce the boundary between the Royal Fort Gardens and Tyndall Avenue.

Archive photograph of Lodge (date unknown)

Corrugated shed adjacent to rear of Lodge

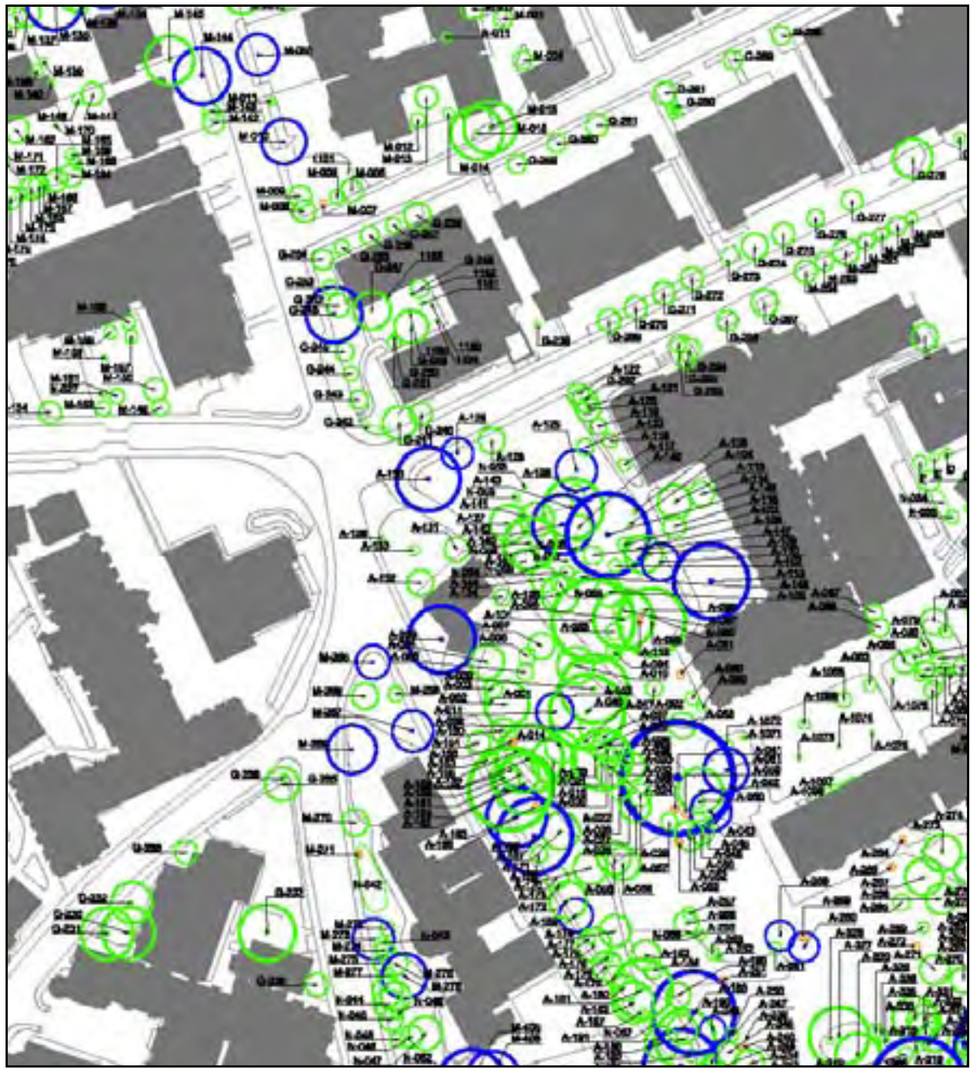
Grade II Listed pier adjacent to Lodge entrance

Rubblestone walls with oolitic ashlar window surrounds

1970s extension visible to right of windows

Boundary wall to north of Royal Fort gardens

3.0 Understanding the Site
3.3 Trees and Landscape Features



Survey of existing trees on and around the Royal Fort Lodge site

The landscape setting of the Lodge building comprises a gently sloping open, maintained grass space. The area is locally elevated above Tyndall Avenue and fronted by a rubble stone retaining wall. Within the area are a number of trees including a mature Horse Chestnut to the south western corner, and a centrally located semi-mature London plane. A number of other smaller tree specimens are also present within the space, with larger trees and large shrubs within Royal Fort Gardens to the south providing a green backdrop and contributing substantially to the overall tree canopy in the area.

This open space, including the trees, presents a material contribution to the character and visual amenity of Tyndall Avenue and at the entrance to Royal Fort Gardens, as well as providing part of its local setting. The Horse chestnut is a significant landmark in the local urban area, a dominant element in views along Woodland Road and Tyndall Avenue. The London plane is a good specimen and of a size to be a significant and attractive element in the space. The smaller trees are of correspondingly lesser significance in terms of their individual form and character and as individual specimens in their own right.

Glimpsed views are available across the space through to the Physics building, although the mature vegetation within Royal Fort Gardens provides significant screening. A local detractor to the space is the blank south westerly facing elevation of the lecture room to the west of the Physics building.

It is considered that the space has the potential to accommodate built form of appropriate scale, form and appearance, without detracting from the character of the street itself, providing that the key tree, the Horse chestnut, is retained.

3.0 Understanding the Site
3.4 Summary of Significance

- The landscape within which the Royal Fort Lodge sits in a fragment of the C18 estate which was created by the Tyndall family who leased and purchased land, demolished large amounts of housing and rebuilt Royal Fort House as their family home. The site is part of an archaeologically sensitive area which has undergone significant change, including a building on the proposed site, however elements of the Civil War defences may survive however and will require assessment.

- A large horse chestnut tree makes the green space to the east of the Lodge a pleasant space to be.

- There is no documentary evidence to determine the origin of the existing lodge building; however it is suspected that it was relocated from another site between 1883 and 1901.

- The Lodge itself is of little architectural or historical significance. Two separate extensions have altered the simplicity of the original plan and internal spaces have been radically altered to accommodate small offices, toilets and high-tech equipment. The building's association with the drive and gates adjacent is however symbolic of the former approach to the Royal Fort House and gardens.

- The Lodge stands at today's entrance to Royal Fort Gardens but neither its location nor the position of the driveway are original to Tyndall's Park. Both were a C20 response to a significant reduction in the size of the C18 estate.

- The Lodge could be said to contribute to the Conservation Area because of its domestic scale and simple detailing and because of the warmth of the local stone with which it is built. Historically, it represents the shift in identity of the area from that of a single Georgian landowner to multiple occupancy Victorian suburb.

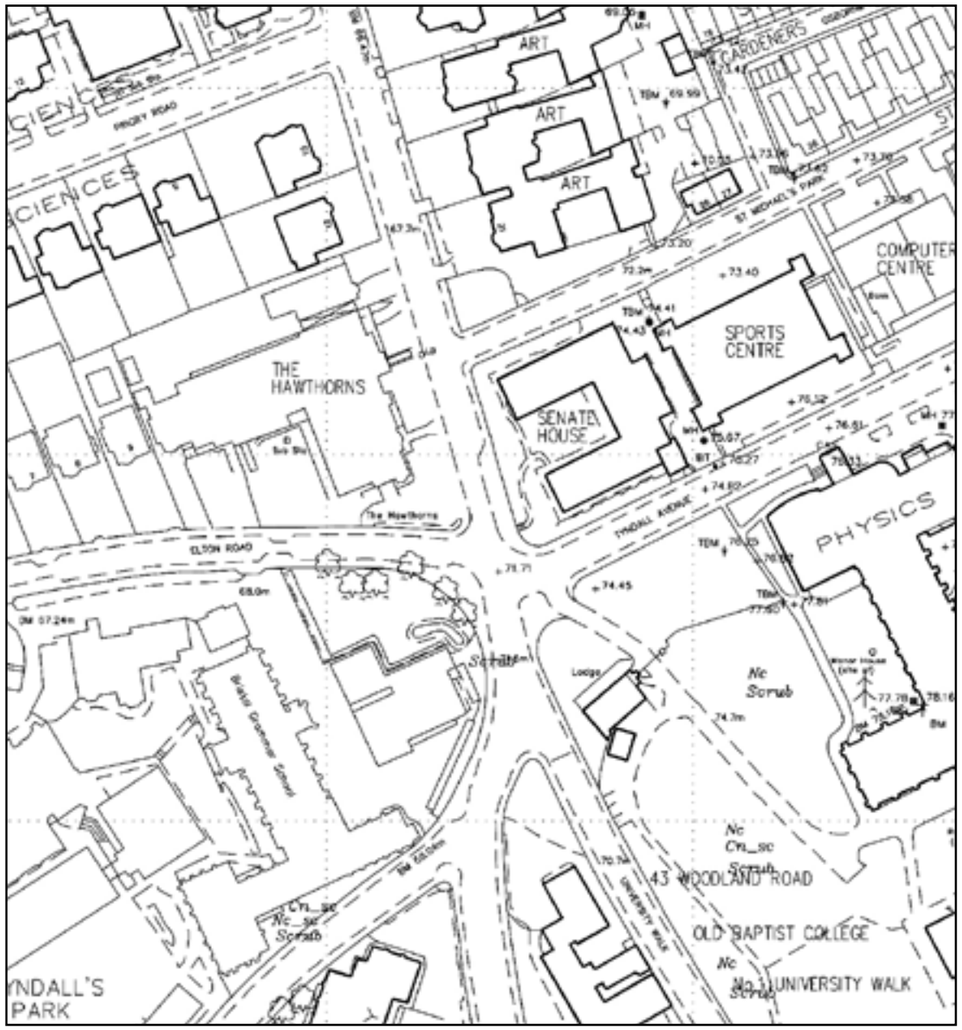
- Whilst the 'rear garden wall' facing Tyndall Avenue (i.e. that to the Royal Fort garden itself) appears to be on the line of a historic boundary and is of some historic interest, other walls are not. The 'front garden wall' (i.e. that to the pavement of Tyndall Avenue, was built in the C20th and is not of particular interest.

- The gate and piers are listed Grade II and contribute a certain elegance to the carriageway entrance

- As a vestige of green space within the dense north suburbs of Bristol the site is valued by many local residents.

The Royal Fort Lodge and Landscape today

4.0 Options for Change



Ordnance Survey plan of site

The Royal Fort Lodge site is located at the west end of Tyndall Avenue on the south side of the road. It currently comprises an under-used grassed space which is isolated from Tyndall Avenue by a rubble stone boundary wall. There are a number of trees on the site, most prominently an impressive mature horse chestnut tree, which is near the corner of the site.

The Masterplan Study has identified deficiencies in the current quality and under-use of the green space along the length of Tyndall Avenue, and has identified the possibility for an enhanced 'Tyndall Place' at the western end of Tyndall Avenue at the junction with Woodland Road.

This part of the report considers the capacity of the Royal Fort Lodge site to accommodate a new building and the potential form, function, and scale that a new building on the site might take.

This section of the report considers potential options for redevelopment and is structured as follows:

1. Important factors which influence design
2. Approach to Design – 'Design Principles'
3. Design Options
4. Conclusions

4.0 Options for Change
4.1 Important Factors which Influence Design

There are a range of issues which influence the potential development of the site as follows:

The significance of the green space

The current green space is important as it helps to mark the presence of the Royal Fort Gardens to the south, and the line of the former carriage drive to the Royal Fort House (however this route has been significantly truncated by the creation of Woodland Road). The horse chestnut tree is considered to be of particular significance and adds significant character to the conservation area.

The quality of surrounding buildings

The site of the Hawthorns is surrounded by 3 different types of buildings which dictate the character of the built form, as follows:

The Physics department / lecture theatre
To the east of the site is the 1950s Physics department building (desgined by Oatley and Brentnall). A lecture theatre stands between the site and the east end of the Physics building, which is one of the principle lecture theatres within the University, and which has recently been refurbished.
Senate House
The site stands opposite Senate House, which is a 5 storey block on the corner of Tyndall Avenue and Woodland Road. The building is of concrete frame, with Bath stone facings. The accommodation is arranged in a 'square horse-shoe' plan which opens towards Woodland Avenue.
Royal Fort Lodge (and gate piers)
The Royal Fort Lodge (which forms the gatehouse to the truncated drive to the Royal Fort Lodge) stands adjacent to the site, which has listed gate piers (Grade 2).

The 'gateway' to Tyndall Avenue

The site forms an important corner at the western end of Tyndall Avenue. It is believed that the form of development on the site can provide an important series of improvements to the public realm and the sense of arrival into Tyndall Avenue from the west.

West elevation of lecture theatre attached to 1950s extension to the H H Wills Physics Building

View of Senate House from the top of Elton Road

Grade II Listed C18 piers and wrought-iron gates

Western entrance to Tyndall Avenue with Lodge site to the right of frame

4.0 Options for Change

4.1 Important Factors which Influence Design

Plan showing the design of the urban realm around the Historic Lodge site

Creating 'active' uses

It will be important to encourage 'active' uses on the site as part of the key strategic aim of the University Masterplan to make Tyndall Avenue the 'heart' of the central precinct. Any new building on the Royal Fort Lodge site demands a public use, and it has been suggested that this may most appropriately be a centre for information services and / or provision of student facilities.

Creating a new gateway to the Royal Fort Gardens

There is an important opportunity for the scale, positioning and orientation of the building to contribute to the creation of better connectivity between Tyndall Avenue and the Royal Fort Gardens. The potential for a significant new pedestrian route has been explored as part of the design options below.

Designing for Sustainability

Any new building for the site must be designed in accordance sustainable design principles (in the widest sense of the word). This includes ideas relating to flexible and accessible accommodation, which minimises energy consumption i.e. thermally efficient, maximum use of natural daylighting and natural ventilation, etc.). Extensive work has been undertaken as part of the University's strategic masterplan study with regard to the optimum building floorplate dimensions for a wide range of future uses with maximum efficiency. As a result a floorplate width of 13.5-15m, and a floor to floor height of approximately 4.1m has been explored within this Study.

4.0 Options for Change
4.2 Approach to Design - ‘Design Principles’

A wide range of development possibilities have been explored for the site. As a result of these exercises, a range of ‘design principles’ have been established which help to define an appropriate architectural response to redevelopment of the site.

Scale and Massing

The design of a new building for such an important site needs to be governed by an acceptable response to the scale of the existing buildings neighbouring the site, and to the need to harmonise with a sensitive landscape setting.

This includes careful consideration of the following:

Respecting the tree
The footprint of the new building must be outside the canopy of the existing horse chestnut tree, which is to be retained.

The building line on Tyndall Avenue
The footprint of the new building must respect the building line (which is established by the line of the Physics building) and the position of the Lodge building.

Creating a new gateway to the gardens
There is an important opportunity for the positioning of the new building to create a new pedestrian entrance to Royal Fort Gardens from Tyndall Avenue. The proposed location of the building with ‘breathing space’ to the lecture theatre creates a gap for the new entrance route.

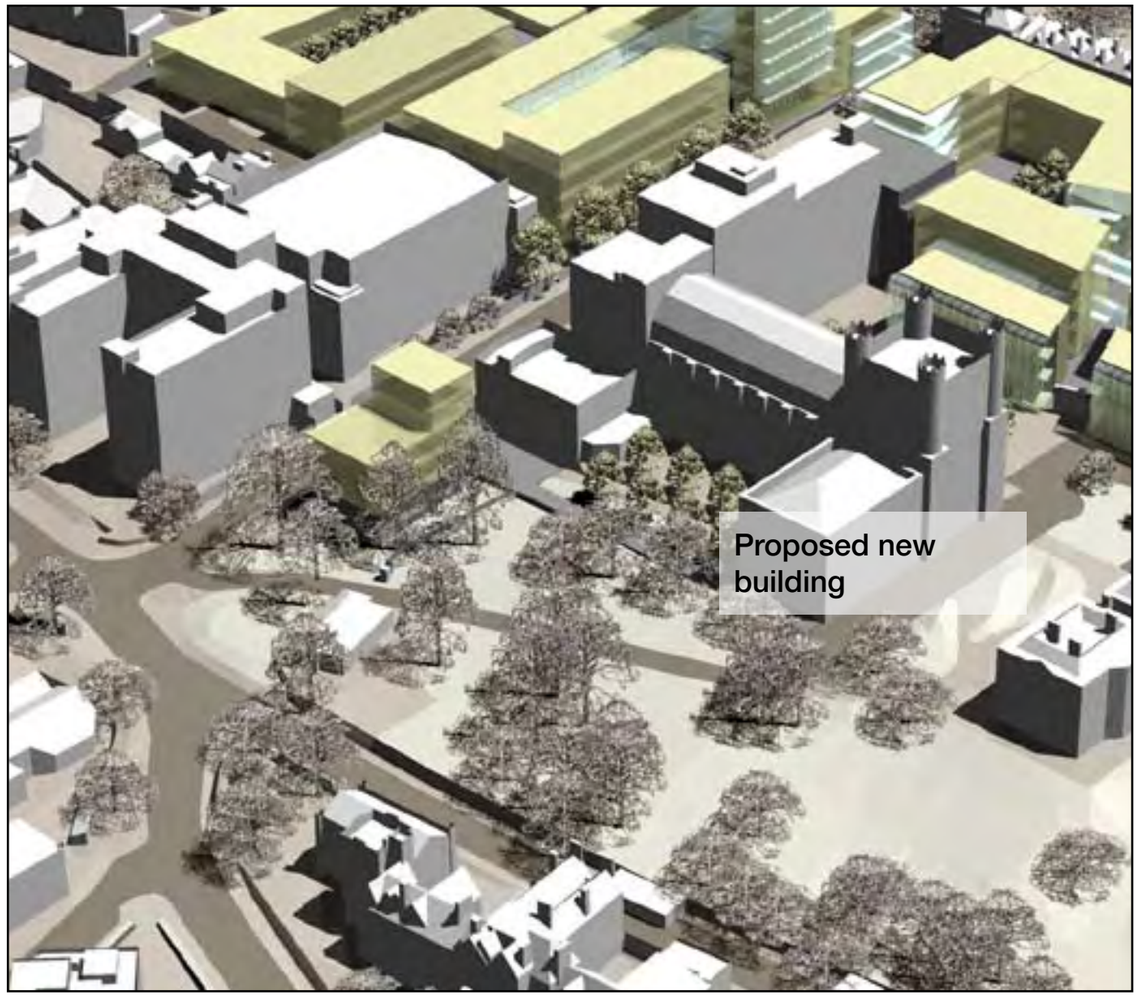
Creating a new gateway to Tyndall Avenue
There is an important opportunity for the positioning and scale of the new building (together with the realignment of boundary walls) to create a sense of arrival to the western end of Tyndall Avenue.

Form and Materials

There is a strong case for the elevations of any new development to be sensitively integrated within the `landscape setting. In view of the sensitive landscape setting of the building, the potential to use a combination of glass and timber in the design of the external envelope should be carefully explored as part of the range of options.

External Spaces and public realm

The footprint of the new buildings should be set back to the existing building line, and spaces between the front of the building and the pavement edge carefully landscaped. It is considered that a new pathway at the perimeter of the building could allow the function of the building to spill out onto the street.



Computer generated aerial view showing the new junction at Tyndall Place and the new building on the Royal Fort Lodge site

4.0 Options for Change
4.3 Design Options

Plan of the proposed scheme for the Royal Fort Lodge site

A range of design approaches have been explored as part of proposals for the redevelopment of the site. These are illustrated in options A-C below:

Scheme A -
External Refurbishment of the existing Lecture Theatre

This scheme proposes the refurbishment and adaptation of the existing Lecture Theatre adjacent to the Physics department in order to provide a more accessible and active facility as part of a new pedestrian entrance to the Royal Fort Gardens. The scheme achieves a number of key aspirations in terms of improving the level of activity associated with the building, and creating an enhanced sense of arrival. (It should be noted, however, that this option is not favoured by the University in view of the fact that substantial refurbishment works have only recently been completed to the Lecture Theatre).

By recladding and overhauling the exterior of the building and reducing the levels to give better access and provide an entrance court the quality and character of the entrance to the University is greatly improved.

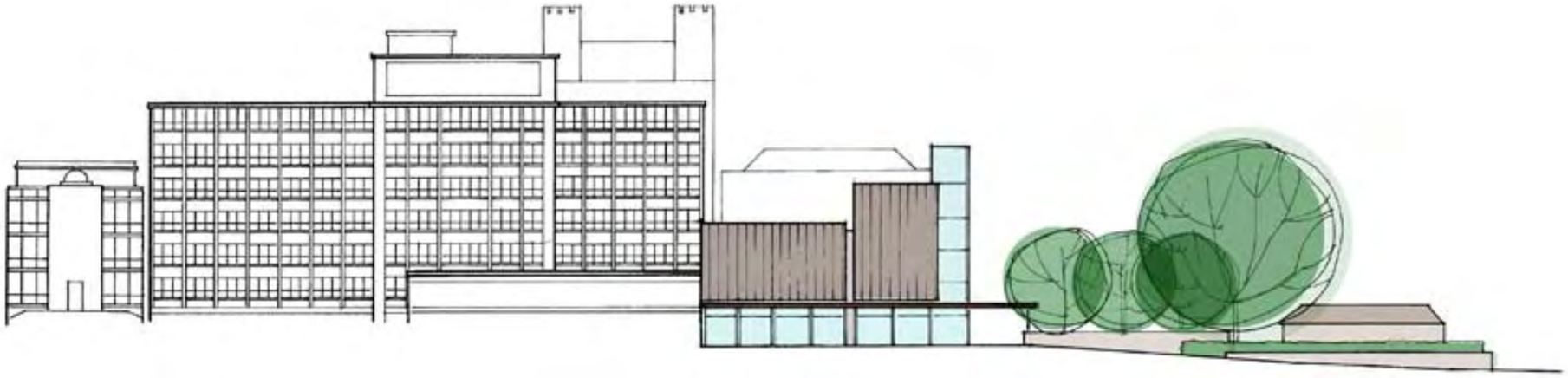
Elevation of the proposed scheme to Tyndall Avenue

4.0 Options for Change
4.3 Design Options

Scheme B –
New build adjacent to the Lecture Theatre

This scheme proposes a new taller building adjacent to the existing lecture theatre. This creates the possibility of a more prominent sense of arrival. The main disadvantage of the scheme is the fact that the location of the proposed building conflicts with the optimum location for a new pedestrian route to the Gardens beyond.

Plan of the proposed scheme for the Royal Fort Lodge site.



Elevation of the proposed scheme to Tyndall Avenue

Plan of the proposed scheme for the Royal Fort Lodge site.

Scheme C –
New building located west of the Lecture Theatre

This scheme proposes a new pavilion building between the Physics building and the horse chestnut tree. Locating the building here creates the opportunity for the new route to the Royal Fort Gardens in the desired location.

The scale and location of the Pavillion building addresses the form of the Lodge building which is retained within a raised garden area. The low form of the new building sits comfortably below the treeline and is a new humanly scaled entrance to the University and Royal Fort Gardens.

Elevation of the proposed scheme to Tyndall Avenue

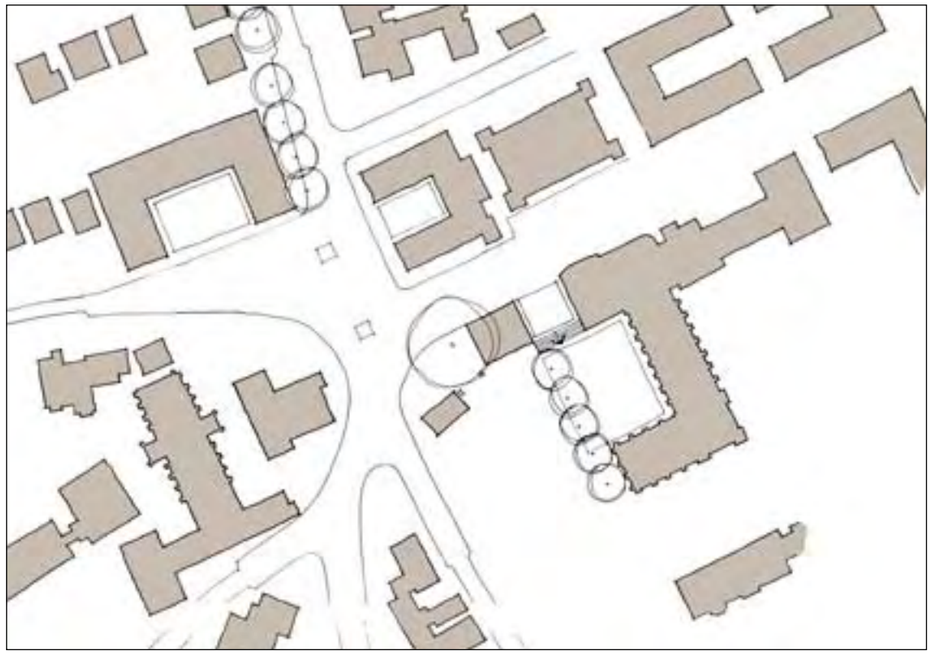
4.0 Options for Change
4.3 Design Options

Scheme D -
New building located west of Lecture Theatre

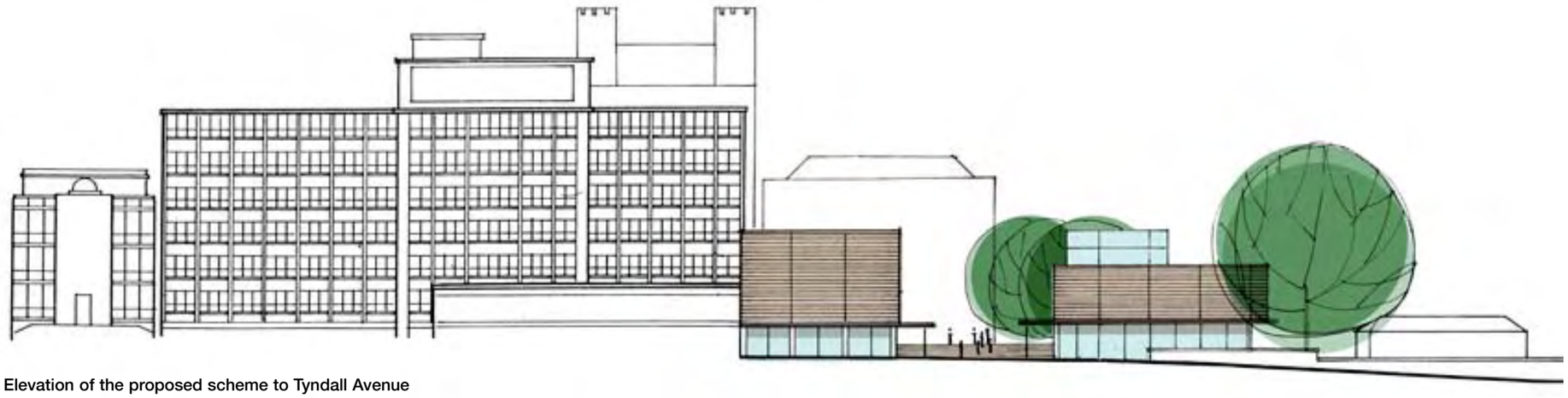
This scheme proposes a larger building between the Physics Building and the horse chestnut tree. As with Scheme C, locating a building here enables the route into the Royal Fort Gardens to be relocated and to be a more positive part of the urban realm works.

The scale of the building maximises the use of the site and addresses the scale of the adjacent buildings.

By recladding and overhauling the external appearance of the lecture theatre the new and existing buildings can both enhance the character of the University at such a key location.



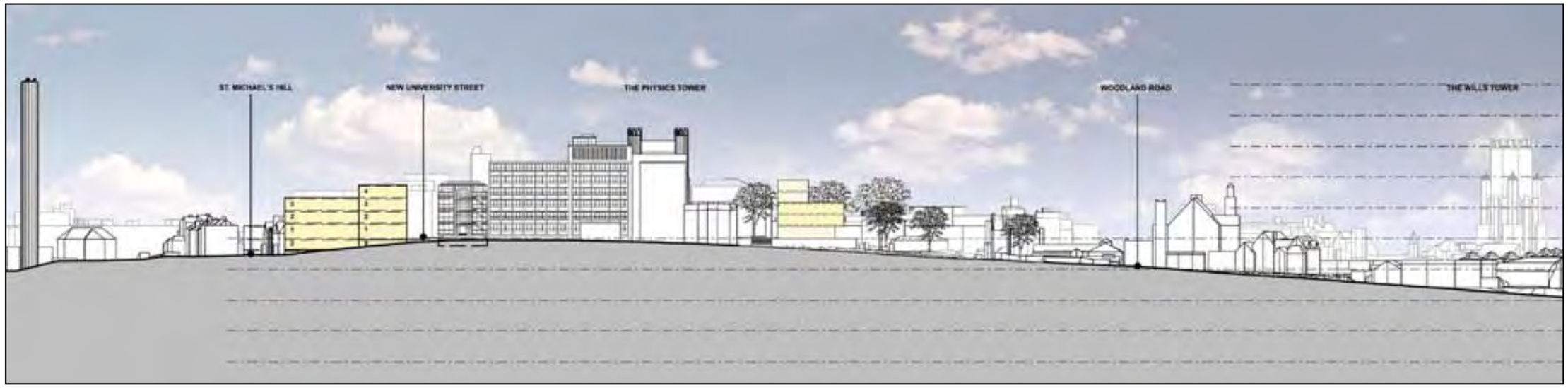
Plan of the proposed scheme for the Royal Fort Lodge site



Elevation of the proposed scheme to Tyndall Avenue

Physical model showing the massing and location of the proposed building on the Royal Fort Lodge site

3D computer generated image showing the appearance of the proposed building from Tyndall Avenue



Section through Tyndall Avenue showing the new development on the Royal Fort Lodge site

4.0 Options for Change
4.4 Conclusions - Key Principles

The following key principles have emerged as part of proposals for the site:

- To rework the levels and retaining elements to open up the site and create a positive external public space.
- To relocate the entrance into the Royal Fort gardens in order to more clearly link the gardens to the rest of the urban realm works.
- To retain the horse chestnut tree and incorporate it as part of the landscape and external realm works.
- To retain the Royal Fort Lodge and to repair and conserve it to enhance the significant historic elements.
- To provide a new building that creates a welcoming and interesting entrance to the University.
- To respect the scale of the adjascent buildings.
- To work to enhance the existing buildings and consider these as parts of the overall development.

5.0 Bibliography and References

Bettey, Joseph: “The Royal Fort and Tyndall’s Park: The Development of a Bristol Landscape.” Bristol Branch of the Historical Association, 1997

Foyle, Andrew: Bristol, Pevsner Architectural Guides. Yale University Press, New Haven and London, 2004

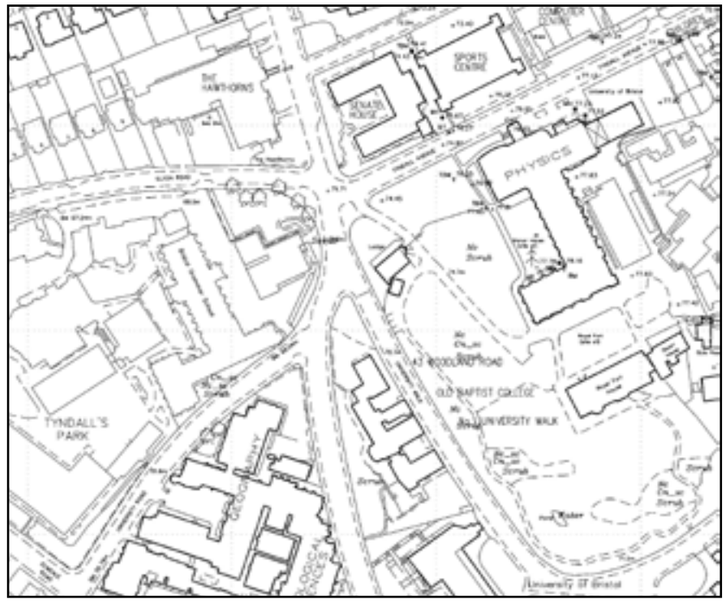
Leech, Roger H: The St Michael’s Hill Precinct of the University of Bristol. Bristol Record Society and University of Bristol, 2000

Bristol City Council: Conservation Area Enhancement Statements 1993. Local Plan Policy Advice note 2. November 1993

The following collections were consulted in the preparatino of this report:

- Bristol Record Office Building Indices and Plan Volumes
- Bristol City Council Planning Office: file no. 87905
- University of Bristol Special Collections Archive (The Tyndall Collection)
- Joseph Bettey "The Royal Fort and Tyndall’s Park: The Development of a Bristol Landscape". Bristol Branch of the Historical Association. 1997
- Historic Maps of Bristol, including Ordnance Survey

Appendix
Relevant Policies for the Conservation Area



In preparing this study of development potential on the Royal Fort Lodge site the design team has been continually mindful of the importance of its location within the nominated Conservation Area known as Tyndall's Park. The Local Plan and the Conservation Area Enhancement Statements have been consulted. The following policies stood out as being particularly relevant and have been quoted in full as a reminder of some of the guiding principles which should be borne in mind throughout any future work.

Tyndalls Park Conservation Area

Land Use:

- The concentration of two dominant land uses, educational and entertainment, results in pressure for large-scale development posing problems of density, build and visual intrusion to the existing context.
- Mature landscapes, particularly in the University, have been downgraded by the intrusion of car parking and laying out of car parking spaces.
- The remaining small residential buildings are under continuous pressure for conversion or acquisition for educational purposes.
- The limited amount of open space available and the need to expand educational facilities gives rise to pressure to build over traditional landscape settings resulting in over-intensification of use.

Townscape:

- The University buildings on the escarpment are of varying quality and many are not appropriate to their context. Lack of a coherent development plan has resulted in unrelated development which mars the skyline of this prominent site.
- The original concept of the University to create a coherent architectural concept has been downgraded since the war by piecemeal development utilising disparate materials.
- Private residential tower blocks and the enormous bulk of the entertainment centre have disfigured the traditional townscape of the south facing slopes.
- On the lower slopes, particularly, recent development has not provided a satisfactory quality of urban landscaping.

Local Plan Policies (Bristol 1997):

- B12/4.4.35
- "The Local Plan aims to ensure that historic buildings and areas in Bristol are adequately protected, sensitively restored where necessary, and that new buildings within a historic context are well designed, following common sense rules of scale, alignment, massing and proportion, and that they utilise materials appropriate to the locality."

- "Successful conservation relies on change as well as preservation. Its aim is not to create museum pieces but to recognise the substantial contribution made by old buildings and their settings to the local scene, and to integrate new development which responds to this character while giving new interest and variety."

- B14/4.4.41
- "The distinct character of any Conservation Area will not only depend on the buildings that it contains, but also on the open space, areas of planting, floorscape, street furniture and other external features such as walls, railings, gates and advertisements. ..The protection of many features…rely on effective co-operation between the local planning authority and landowners, householders, statutory undertakers, developers, and other local authority departments."

- B15 (l)
- "Townscape and landscape features that contribute to the character or appearance of streets and open spaces within Conservation Areas should be preserved or enhanced."

- 4.4.43
- "The city council will seek to maintain and strengthen the traditional form of individual streets and ensure that new development is in keeping with its surroundings both in character and appearance. As with traditional buildings within the historic street scene, new schemes should contain both the individuality of the designer and the need to respond to context. The best solutions are based on a knowledge of the locality together with attention to detail and craft tradition."

- 4.4.45
- "In particular, the design of new buildings in Conservation Areas should consider the height, scale, proportion and alignment of the surrounding traditional buildings, and have regard to the existing density and patterns of development. Special attention should also be given to features such as walls, fencing, landscape treatment and street furniture which will further help to assimilate new buildings appropriately into a Conservation Area.

- B16
- "In determining applications for new buildings within formal groups, account will be taken of the following:-
- The height in relation to surrounding properties. Where existing heights are varied, new development should remain within the range of heights of historic neighbouring properties;
- Roof forms complementing those that contribute to the character of the area;
- The use of materials that respect, retain and strengthen those that are predominant and form a fundamental component of the character of the area;
- The incorporation of locally distinctive patterns and features used on historic building facades which give a special identity to Bristol;
- The scale, proportion and hierarchy of windows that complement the historic context and are in balance with the design as a whole.

Supplementary Planning Document Number 11

University of Bristol

Strategic Masterplan: Appendix 13

Urban Landscape and External Realm

June 2006

University of BRISTOL

BRISTOL CITY COUNCIL

Contents

If you would like this information in a different format, for example Braille, audio tape, large print or computer disc, or community languages, please contact Central Area Planning Team on 0117 922 2938.

1. Introduction

This report, prepared by Nicholas Pearson Associates, as part of a multidisciplinary team working, for, with and on behalf of the University of Bristol. It provides a supplementary and supporting document to the Strategic Master Plan document prepared by Feilden Clegg Bradley Architects LLP, forming Appendix 13 of the full suite of documents.

The work included within this document has informed the evolution of the master plan proposals prepared by the multidisciplinary design team* and builds upon an earlier study prepared by Percy Thomas Partnership (now Capita) in February 2004.

Key elements of this report are included in the Master Plan document.

Purpose of the Master Plan

- The purpose of the Master Plan is to provide the University with a clear framework for the development of their estate over the next 10 years. In addition, the Master Plan document is to achieve the following objectives:
- To identify suitable development sites that will meet the University's requirements over the next 10 years.
- To conserve buildings and groups of buildings that make a positive contribution to the Conservation Areas.
- To improve and rationalise the urban realm and architectural built form.
- To improve the mix of uses within the Precinct to encourage greater activity.
- To improve and enhance the transport network and pedestrian spaces.
- To ensure the development is sustainable.

Document structure

This supporting document to the Master Plan is divided into four sections:

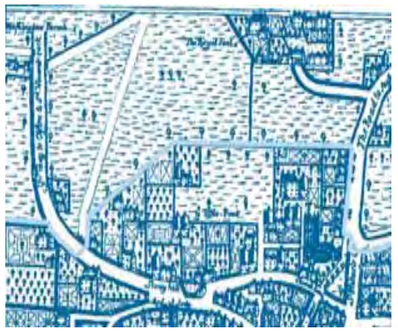
- *Historic landscape;* this, together with Appendix A, set outs an appraisal of the historic evolution of the area, focused on Royal Fort Gardens, which informs the development of the Strategic Master Plan and the external realm design.
- *Urban landscape;* the urban landscape has been analysed in terms of its use, and its spatial and material condition. A tree survey has also been undertaken.
- *Visual analysis;* this provides an appraisal of a number of key viewpoints from around the city and in the local context around and within the University.
- *External realm design;* this section sets out the design concept for enhancing the public realm of the core University area.

Document status

The content of this report has been prepared in parallel with the main Master Plan document. As such it draws upon from consultation with a range of consultees including Bristol City Council, English Heritage and local stakeholders.

It is the intention of the University that this report should be a supplementary supporting document to the main Master Plan document. As such it will be reviewed on a regular basis so that its contents remain an accepted guide for the development of the Precinct over the next 10 years.

**The multidisciplinary design team comprises*
- *Feilden Clegg Bradley Architects LLP – Architects and Masterplanners*
- *Northcroft - Project Manager*
- *CSJ Planning Consultants Ltd - Planning Consultants*
- *Arups - Transportation Engineers*
- *Nicholas Pearson Associates - Landscape Architects and Ecologists*
- *Avril Baker Consultants - Consultation Facilitator*
- *Hamilton - Baillie Associates Ltd – Shared Space Consultant*



c.1673

c.1710

c.1742

c.1826

c.1885

c.1903

2. The historic landscape

The study of the historic landscape of the area focuses on the evolution and development of Royal Fort Gardens as being the only remaining significant open green space of historic value. The history of the evolution of the landscape is summarised as follows, and full details are provided in Appendix A.

Middle Ages

- *Gorse covered common with few pastoral enclosures comprises area around St. Michael's Hill (Bettey 1997).*

17th Century

- *Defensive earthworks dug at Windmill Hill. Earthworks demolished in 1655. Gatehouse remains.*

I8th Century

- *Thomas Tyndall acquires fort and removes paddocks divided by stone walls. Area transformed into parkland with planted trees and impressive entrance at Park Row (Bettey 1997).*
- *1792: Large- scale works planned, but later abandoned leaving Tyndall park in disrepair.*
- *1798: Humphrey Repton commissioned to 'reinstate park to its former glory'. Repton adopts trenches and mounds from abandoned works and carefully sites clumps of trees to conceal unwanted intrusions (Bettey 1997). Much of this work survives.*

19th Century

- *1825: Construction of Aberdeen Road to far west.*
- *1877: Construction Bristol Grammar School causes five acres of park to be removed.*
- *1880: First buildings of university college constructed, leading to the dominance of academic buildings over former parkland.*
- *1885: Hospital for sick children built.*

20th Century

- *1921: Homeopathic hospital built over former parkland to north.*

The historic landscape

Repton's 'before' view from the Royal Fort.

Repton's 'after' view showing the implemented proposals.

Conclusion

The value of Royal Fort Gardens is considerable in terms of its historic importance and the extant elements of the design influence by Repton. This value is recognised in its protected status within the Conservation Area and in its very high standard of management and maintenance by the University.

The opportunity exists to enhance its overall quality and role within the urban area through careful and sensitive interventions to improve its material and spatial condition for use by both the University and the wider community.

Furthermore improvement adjacent and connecting spaces can enhance its immediate setting and improve its integration as a valued open space into the locality. See appendix A for further details.

3. Landscape and urban realm analysis Introduction

A detailed and comprehensive survey and analysis has been undertaken of the landscape and urban realm and its resources recorded. This has been carried out through analysis of aerial photographs, historic maps, as well as site survey.

Information gathered has been analysed and is set out and illustrated on the following pages. The assessment work has been divided into;

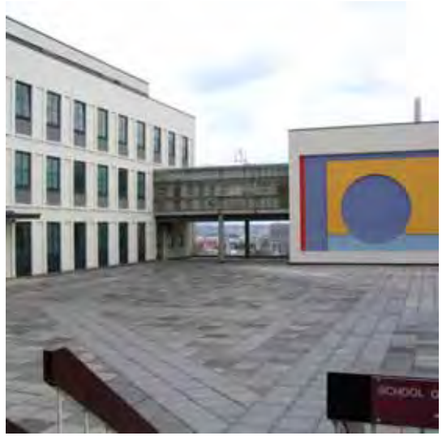
- Urban landscape character areas
- Land uses
- Material condition
- Spatial condition
- Audit of trees and tree condition

This information has been used to inform the development of the Strategic Master Plan and is recognised as important in future detail design.

3.1 Urban landscape character

For the purposes of the project the study area has been divided into a number of landscape (townscape) character areas and have been mapped accordingly, with summary descriptions provided below. It is recognised that the character areas identified extend beyond the land or property owned by the University into the surrounding urban area and community. In addition identified boundaries often overlap to varying degrees.

- **Zone A: Former homeopathic hospital**
- **Zone B: Woodland Road area**
- **Zone C: Osborne Villas**
- **Zone D: St Michael's Hill**
- **Zone E: Former Children's Hospital**
- **Zone F: Royal Fort Gardens**
- **Zone G: Tyndall Avenue**
- **Zone H: Wills Building and environs**
- **Zone I: Cantocks Area**
- **Zone J: Park Row**



3.2 Urban landscape character areas

- The urban landscape is experienced for the most part via use of and movement through the public realm. This is often is dominated and characterised by highway elements and features.

- **Zone A: Former homeopathic hospital**
- An area comprising buildings of varied form and style and associated external realm of enclosed gardens. Located on elevated ground, with high retaining walls, the mature treed landscape and built form provides a local focal point as part of an attractive urban landscape.
-
- **Zone B: Woodland Road area**
- An area of substantial generally detached villas, set within an attractive mature treed landscape and aligned along Woodland Road and Priory Road.

- **Zone C: Osborne Villas**
- A small area of terraces with adjoining public realm relating to St Michaels' Park. A strong relationship exists with adjacent larger scale development to the south.

- **Zone D: St Michael's Hill**
- An area of varied built form and soft landscape providing frontage along the steeply sloping St Michael's Hill. Variety is provided by varying relationships between set back distances, building form, age and scale. This presents a generally attractive streetscape although some individual buildings are local detractors.

- **Zone E: Former Children's Hospital**
- An enclosed area of varied built form to the rear of the original building fronting St Michael's Hill. The external realm presents little positive attributes to the local character.

3.2 Urban landscape character areas (continued)

- **Zone F: Royal Fort Gardens**
- An area of mature urban parkland strongly enclosed by mature vegetation and the boundary wall along University Walk. Royal Fort and the Physics tower provide major landmark buildings.

- **Zone G: Tyndall Avenue**
- An area dominated by varied large scale built form, with generally uncoordinated areas of public and private realm. Strong relationships exist with adjoining character areas.

- **Zone H: Wills Tower and environs**
- An area of dense, large scale urban development, of generally continuous road frontage. The Wills Memorial Tower provides a major landmark. External areas are generally low key.

- **Zone I: Chemistry Square**
- An area of large scale buildings and open spaces relating strongly to the steeply sloping landform. The external realm provides both important settings for the built form and movement corridors. Chemistry Square is an important open space of hard landscape that has the potential to provide greater benefits to the local character.

- **Zone J: Park Row**
- An area of disparate and uncoordinated built form and external spaces generally fronting Park Row.

3.3 Landscape use

Within the character areas the primary functions of the external landscape and external realm have been mapped and categorised. This exercise provides an understanding of the University's needs for, and uses of, the external realm, identifies interfaces between public and private spaces, potential and actual conflicts between uses and users, and the actual condition of the landscape resource.

It is recognised that many areas or spaces have a range of functions, however the primary use has been identified.

The following types of landscape uses have been identified

- **Public parkland**
- **Private gardens and greenspace**
- **Vehicular parking**
- **Main courtyard**
- **Other building frontages**
- **Undefined or incidental use**

3.3 Landscape use (continued)

- **Public parkland**
  This area relates to Royal Fort Gardens and generally functions as an informal recreational space. The area includes some incidental parking.

- **Private gardens and greenspace**
  These comprise a varied number of areas and spaces and include enclosed front and rear gardens to properties along Woodland Road, as well as generally planted or lawn surrounds to individual buildings. The areas are used for informal recreation or provide a setting to the buildings. Some of the areas are used for vehicular parking.

- **Vehicular parking**
  The areas identified are the main car parks. However they also often function as settings to associated buildings.

- **Main courtyard**
  Chemistry Square and the associated flight of steps comprises the only pedestrian hard landscape courtyard. It provides a setting and entrance for adjacent buildings and functions as a flexible, informal gathering and activity space.

- **Other building frontages**
  A number of other areas and spaces provide simple external frontages to individual or groups of buildings. They are sometimes used as informal gathering spaces or include seating and include hard and soft landscape areas.

- **Undefined or incidental use**
  These are other areas that do not necessarily provide a specific function and include residual spaces around a variety of buildings.

3.4 Survey of material condition

The external landscape is a combination of hard and loose materials, external built forms and street furniture, and the soft estate of trees, shrubs and grass. These elements which in combination with the buildings comprise the urban fabric, have been appraised in terms of their physical condition, their appropriateness to place, and their aesthetic contribution to the local urban landscape.

Within each area identified and assessed it is inevitable there may be some variation in terms of quality of materials, condition and aesthetic contribution. The categories provide a broad indication of the condition and the basis for detailed evaluation as part of the emerging development proposals. For example even within areas of generally good spatial condition there will be opportunities to enhance and improve particular elements and combinations of the same through the detailed design process. Conversely some higher quality elements exist in isolation within a generally poorer space

The following categories have been identified, and are illustrated on the plan:

- **Good material condition -** ***well maintained and good quality external fabric and elements that are generally appropriate for their function and to their location. In combination they provide a positive aesthetic contribution to the townscape.***
- **Average material condition -** ***external fabric and elements are of moderate quality, in a reasonable state of repair, but may not be fully appropriate in terms of choice of materials to suit function and location. Their aesthetic contribution is limited to perhaps individual elements as opposed an overall combined contribution to the place.***
- **Poor material condition -** ***generally average condition materials but often in poor repair or, when in combination, of inappropriate functional and aesthetic design.***

3.5 Survey of spatial condition

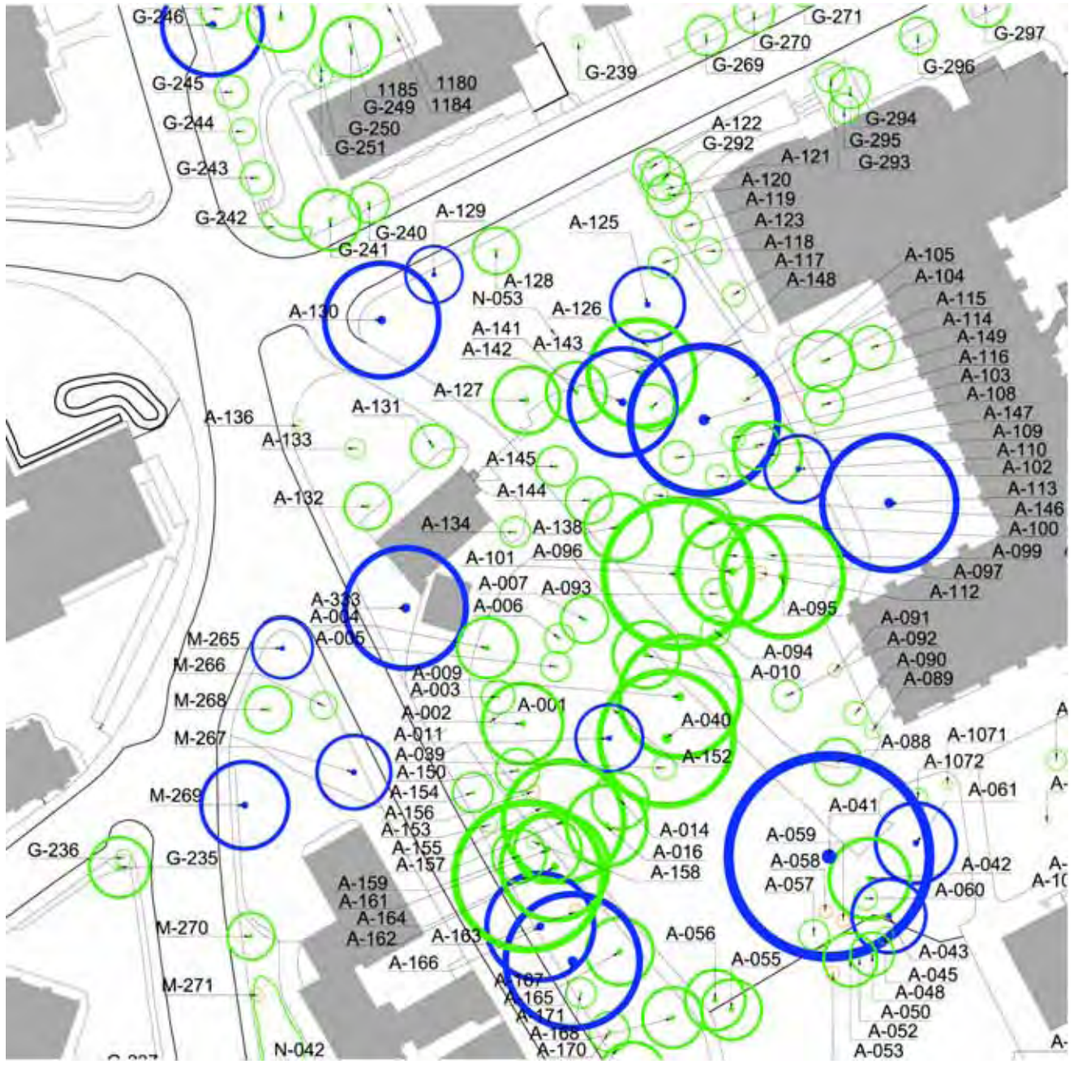
The condition of the spaces has been assessed overall in terms of a number of criteria. Such judgements are sometimes necessarily qualitative in nature and take into account a response to 'sense of place' and the material conditions that are evident. Again there is considerable local variation and very often one merges in with another rather than having clear-cut boundaries.

Consideration has been given to the presence of physical barriers, such as walls and hedges, and perceptual barriers such as control signage and gateways. The comfort of a space can be strongly influenced by both the quality of the immediate environment and its design, together with its illumination

An appreciation of this spatial condition will inform the detail design, the process of change and the potential use and articulation of the various external spaces. For example some spaces, such as Royal Fort Gardens, are of good spatial condition. Areas that are connected to it however, offer considerable opportunities for enhancement as part of a comprehensive Master Plan design approach.

The condition of these various external spaces has been assessed in terms of spatial structure, overall material condition, historic and cultural references, visual quality, coherence, legibility and 'sense of place', and is illustrated on the plan:

- **Good spatial condition -*Coherent, legible and aesthetically pleasing space, sometimes as part of a sequential experience or in relation to a particular building or frontage. The space generally has an established 'sense of place'.***
- **Average spatial condition -*Whilst generally legible in terms of its function the space lacks coherence in terms 'sense of place', material condition or relationship with adjoining spaces and built form.***
- **Poor spatial condition -*The space lacks coherence, overall legibility and 'sense of place'. It often contains an unsatisfactory mix of material and conflicting uses with an overall poor aesthetic quality.***



3.6 Audit of trees and tree condition

The study area contains a rich variety of trees in the public and private realm. They are of varying age, size, form, maturity and health. They contribute individually and collectively to the local and wider urban landscape and fulfil a range of functions. These include being attractive features in their own right, softening of the street scene, providing a counterpoint to built form, giving spatial definition of the landscape, and offering shade and shelter.

They are often intrinsic and important elements of the urban landscape as perceived locally and in views to the area from near and distant points.

The trees are given specific protection in terms of their location within Conservation Areas and therefore an understanding of their role and value in the townscape as well as individual form and health has been an important element informing the emerging Strategic Master Plan and future design decision-making.

As a result, an appraisal of the tree resource has been carried out drawing upon, verifying, updating and mapping the University's schedule of trees (names and locations). A visual appraisal was carried out and has considered the following

- **Tree species**
- **Removed or dead trees**
- **Spread of tree canopies**
- **Approximate age and health of trees**

Tree Survey Plans and Schedules are included as Appendix B

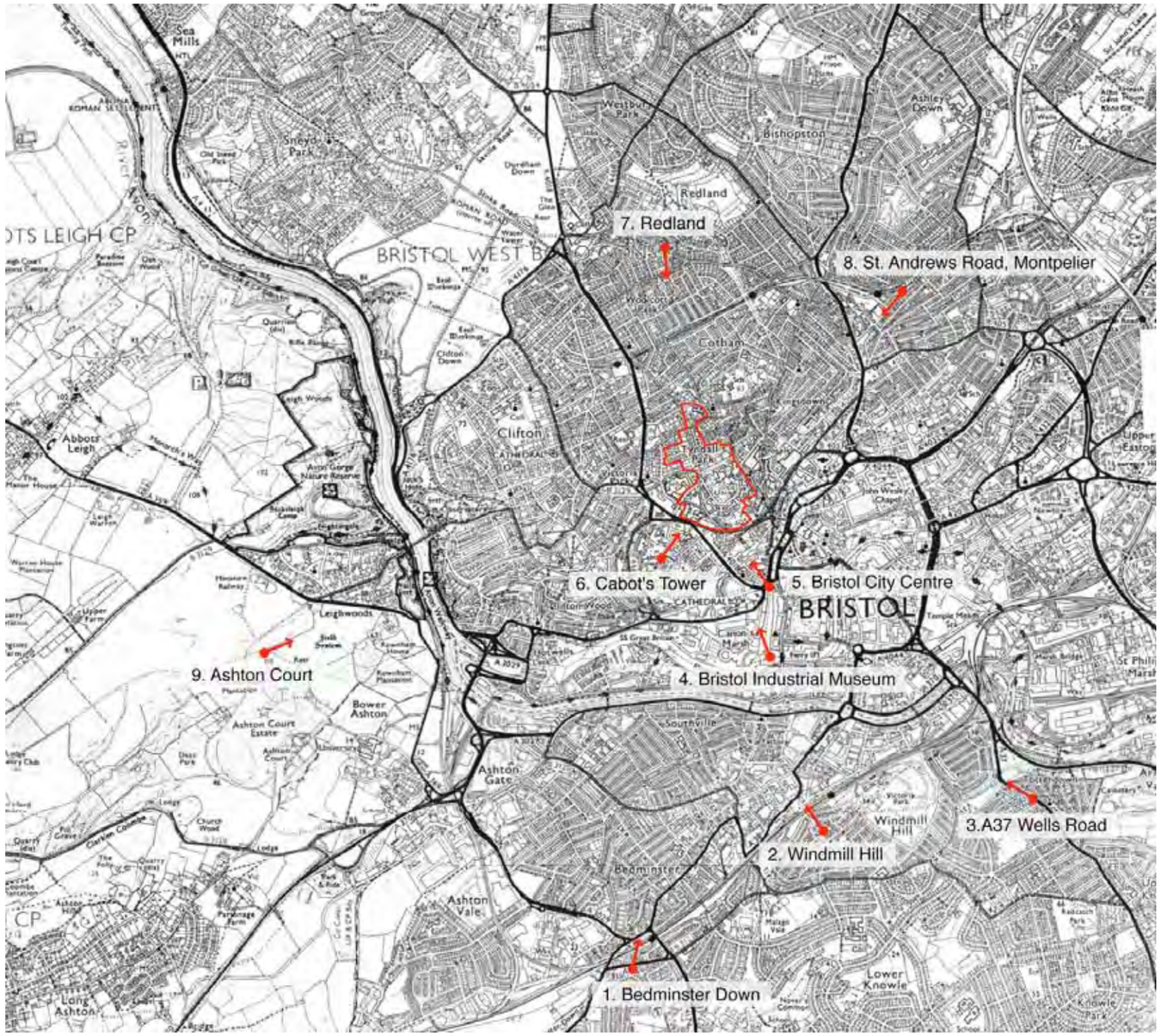
4. Visual appraisal and analysis Introduction

The interrelationship of topography and built form combines to give certain University buildings, both individually and in aggregation, a considerable degree of prominence in wider views of the city. Landmark buildings include the Wills Memorial Tower, the Physics building, and the Chemistry buildings.

Their contribution is a historic and valued one, and is a key contribution to the urban morphology and distinctive character of Bristol.

Bristol City Council (BCC) has carried out a study to identify key views across the city termed the Tall Buildings Study. This study recognised the importance of landmark buildings and the interrelationship, one with another, in the townscape. This provides an appreciation of the diverse character of the city and helps to inform future development.

Using the Tall Buildings Study as a baseline, an appraisal has been undertaken of those views in which the University of Bristol buildings are a material component. As part of the consultation exercise, additional key views gained within the locality and environs of the University been have also been identified and assessed with regard to the nature and extent of views to and of the University buildings.



Viewpoint Location Plan: Key City Viewpoints

4.1 Key City Viewpoints

For the purposes of Strategic Master Plan, and in consultation with Bristol City Council, nine key views have been selected as being representative of those views in which the University buildings feature.

These views, both distant to and in the vicinity of the University provide reference points for analysing potential change that might result from the introduction of new built form. The form, mass and appearance of the cityscape has been analysed as has the University building component within these views.

The nine viewpoint locations are:

1. Bedminster Down
2. Windmill Hill
3. A37 Wells Road
4. Bristol Industrial Museum
5. Bristol City Centre
6. Cabot's Tower
7. Redland
8. St Andrew's Road, Montpelier
9. Ashton Court

Key Viewpoint 1, Bedminster Down (Ilchester Crescent)

- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

- Statement of view - an open and broad, elevated panoramic view of the city, in which the built form on the skyline is a product of the north east/ south west ridge of Cotham Hill, Brandon Hill and high ground west of the Avon Gorge. A large part of the view is the richly textured roofscape of residential areas stretching to the mid distance. The distant urban skyline provides a counterpoint to this foreground to this ridge and is featured by a mix of built form and treescape, itself punctuated by a number of feature buildings and structures. These include Clifton Suspension Bridge, Cabot Tower, Wills Memorial Tower, and the BRI chimney, together with various high rise blocks to the east of the city centre. The effect of substantial woodland or tree massing is important to the texture of the ridge and its skyline.

- University component - The main University buildings, whist being at a distance of some 6km, form a closely related and cohesive cluster of layered large-scale built form, which together contribute to the skyline. Constituent vertical elements of note are the Wills Memorial building, and the Physics building tower, juxtapositioned with the more horizontal varied form of the other faculty buildings.

Key Viewpoint 2, Windmill Hill

- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

- Statement of view - an elevated panoramic view of the city, with a reduced depth of field, in which the foreground and mid distance of the city is interwoven with tree cover. The skyline is punctuated by a number of high rise blocks in the mid distance and in the distance by the Wills Memorial Tower, the BRI chimney and, eastwards, the spire of St Mary's Redcliffe. Within this view the wooded nature of the skyline is clearly apparent, including Tyndalls Park. Bristol Cathedral is visible just below the skyline.

- University component - the University buildings form the main feature towards and on the skyline in one part of the view. They are seen as closely clustered group of large-scale buildings complimentary to the Cathedral and other framing buildings below the skyline.

Key Viewpoint 3, A37 Wells Road

- Statement of view - a contained corridor view framed by urban development and with a limited depth of field. The majority of the urban form in the mid distance is made up of commercial and residential land use, whilst the skyline is a mixture of treescape and built form. The two vertical elements that punctuate the skyline are the Cabot Tower and the BRI chimney.

- University component - a number of the University buildings form a central distant component on the skyline, immediately framed by treescape including that of Royal Fort Gardens. The Wills Memorial Tower is screened by built form in the foreground. There is no clear definition between the University built form and that in its vicinity, apart from the new Synthetic Chemistry building which is attractively distinctive.

- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

Key Viewpoint 4, Bristol Industrial Museum

- Statement of view - a low level, inner urban panoramic view with the harbour and harbour side development prominent in the foreground. Views to the more distant skyline are often blocked by intervening built form, although a view is available of Cabot Tower rising above the wooded slopes of Tyndall Park. Bristol Cathedral is also visible with the Wills Memorial Tower seen beyond.

- University component - the main University buildings, as a group, are not a distinctive element in this view although the Wills Memorial Tower is visible as a landmark and the very top of the Physics Tower is just discernable on the skyline as are the upper storeys of part of the Chemistry Building.

- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

Key Viewpoint 5, Bristol City Centre

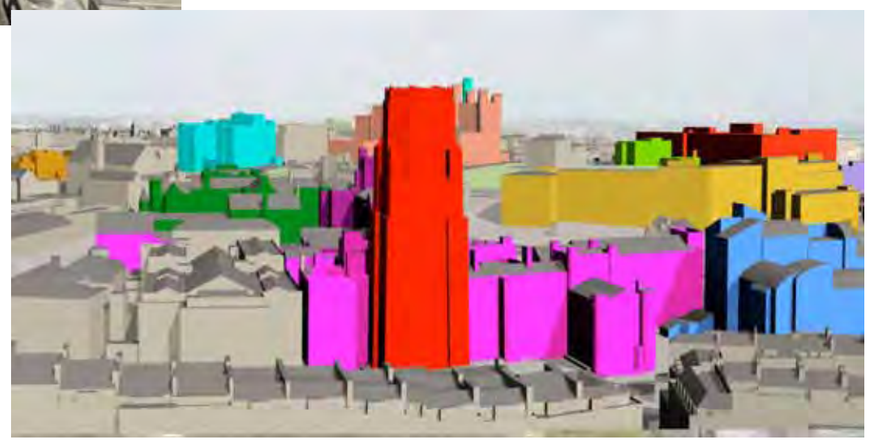
- Statement of view - a low level view enclosed by the varied development in the immediate foreground, fronting this key civic space in the city centre. Colston Tower forms an important vertical element in the view.
- University component - the upper storeys of the new Synthetic Chemistry, Engineering and Chemistry buildings are variously visible as built skyline in the mid distance rising above the city centre buildings. The very top of the Wills Memorial Tower is a discrete punctuation on the skyline. The large, mature poplar tree at the top of the Chemistry steps compliments the street trees of the foreground civic space.

- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

Key Viewpoint 6, Cabot's Tower

- Statement of view - An elevated open and broad panoramic view of Bristol looking eastwards from the top of Cabot's Tower. Prominent in the foreground is the Wills Memorial Tower, which is backed by a rich and varied urban mix of institutional, commercial and residential buildings (old and new), extending to the mid distance. At this close distance distinctive individual built form and architectural articulation are important components of the urban scene. Groups of mature trees together with street trees punctuate the built form and are important and attractive features.

- University component - The most significant building in the view is the Wills Memorial Tower. A number of other University buildings are clearly visible including Engineering, Medical science, Geography and Senate House. The Physic Tower is seen immediately behind the Wills Memorial Tower. Within this view the University elements are very much in scale form and appearance with those of the wider community including Bristol Grammar School and the commercial environs of Queen's Road.



- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

Key Viewpoint 7, Redland

- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

- Statement of view – A locally elevated view towards the University looking south from Redland. Residential development is prominent in the foreground providing local enclosure backed by the rising, high ground of St Michaels Hill and the University. This comprises a complex layered effect of built form and mature vegetation in the mid distance. The University contributes to this intermediate skyline whilst the far horizon comprises the northern Mendips in the distance. The BRI chimney is a prominent local landmark.

- University component - The University buildings comprise, from left to right in the view, the Physics building upper elevation and part elevation of Senate House. The Wills Memorial Tower is set apart from the main body of the University. All the buildings are seen within a framework of mature vegetation on the mid distance skyline.

  (Photograph of existing view provided by Bristol City Council)

Key Viewpoint 8, St Andrews Road, Montpelier

- Statement of view – A locally enclosed view towards the University looking broadly south westwards from the high ground of Montpelier towards the similar elevation of St Michaels Hill. The local horizon is formed by a mix of residential and suburban built form beyond which the BRI chimney forms a prominent local landmark. Beyond and set down in the view is the Physics Tower and the tower of St Michaels Church. Vegetation forms an element of this view, a complex urban scene in which topography has a significant influence.

- University component – In this view the built form of the University is not a significant element. Only the upper part of the Physics Tower being noticeable above the local skyline, although the Medical Sciences (upper three quarter elevation) will be more apparent in winter months. Many of the other buildings are all generally set at or below this skyline.

(Photograph of existing view provided by Bristol City Council)

- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

Key Viewpoint 9, Ashton Court

- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

- Statement of view – A locally elevated view towards the University looking east from the environs Ashton Court. The designed parkland landscape is prominent in the foreground and gives way in the mid distance to the built form of the city. The southern Cotswold hills provide a distant skyline against which the urban skyline is set. The trees of Royal Fort Gardens and street trees in the general area contribute significantly to the visual integration of built form and provide a perceived extension to the wooded foreground.

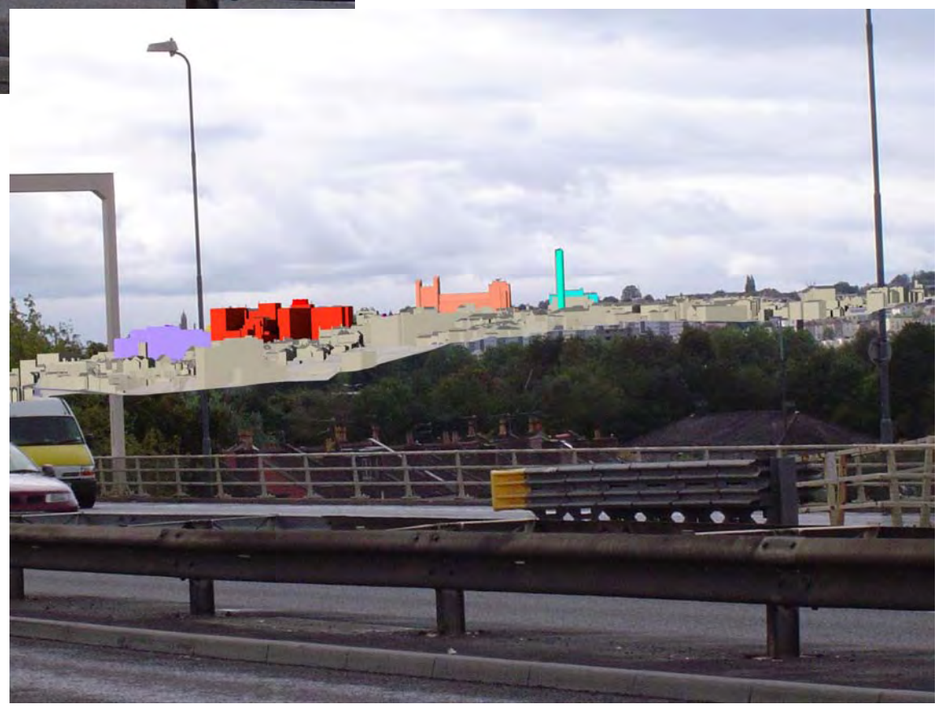
- University component – In this foreshortened view certain University buildings are prominent features. These comprise the Physics building and tower and the Wills Memorial Tower. More subtly the upper part of Senate House is discernable set against the immediate backdrop provided by the BRI Tower. To the right of the Physics building, the Maths and Chemistry buildings form a horizontal roofscape set just above the trees of Royal Fort Gardens.

(Photograph of existing view provided by Bristol City Council)

Key Viewpoint 10, M32 (in the vicinity of Junction 3)

- Statement of view – an open and broad, locally elevated panoramic view experienced as part of the approach into the city along the M32 corridor. The urban form comprises the overlapping, layered effect of buildings stepping up St Michael's Hill, above a mature tree canopy in the mid distance. The majority of the buildings are large scale and include a mix of residential and commercial properties, as well a number of University buildings, in contrast to the finer grain of smaller scale residential development on the right of the photograph. Urban massing has a predominantly horizontal form although vertical elements and patterns play an important role. The skyline is a strong and positive feature in this approach into the city, with the BRI chimney and the University's Physics building being particularly prominent.

- University component – Overall the University buildings play an important role in the view with a number of buildings clearly seen. As mentioned above the Physics building is a prominent element on the skyline. In addition the Medical Sciences buildings are a feature, with Chemistry and the roofline Senate House also visible as minor but contributing elements.



- Wills Memorial Tower
- Wills Memorial Hall
- Merchants Venturers' Building
- Engineering
- Physics
- BRI Chimney
- Chemistry
- Senate House
- New Synthetic Chemistry
- Medical Sciences
- Maths
- The Hawthorns
- Geography
- Biological Sciences

Viewpoint Location Plan: Local views

Local views

There is a multiplicity of views gained within the environs of the main University buildings, from and of the public and private realm. Clearly the level and variety of detail visible at this local scale is very considerable, and so it is possible to address the appearance of the external realm, as opposed to just its form and function. For the purposes of this study therefore, a number of these views have been grouped together and are analysed in terms of appearance, with key examples, as follows:

1a, b & c Views along Woodland Road

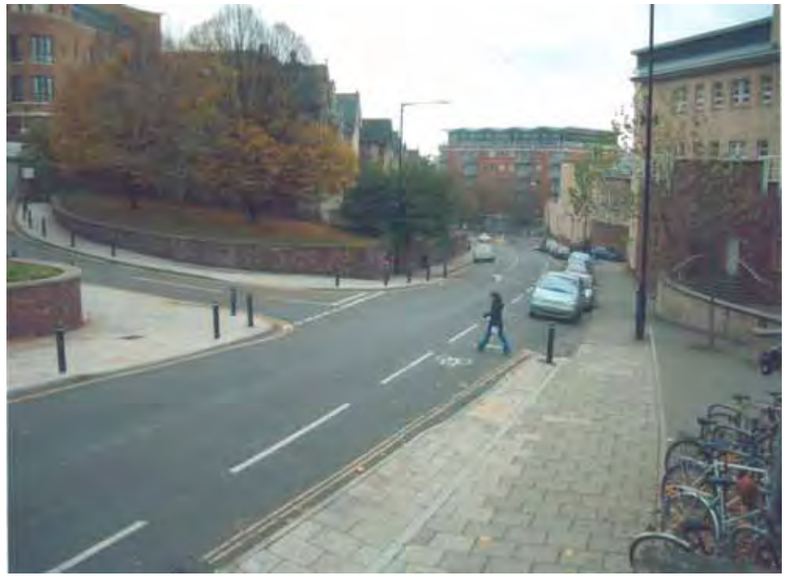
2. View at the junction of Tyndall Avenue with St Michaels Hill

3. Views of Tyndall Avenue

4. Views of Royal Fort Gardens

Local View 1, Woodland Road

View 1a – Junction with Cantock's Close looking south



View 1b – Junction with University Road looking north

View 1c – Junction with Tyndall Avenue looking north

Junction environs of Woodland Road, Elton Road, University Road and Tyndall Avenue

Predominantly views are gained from the public highway (roads and pavements) and are linear and enclosed in nature. This enclosure is variously provided by both built form and street trees together with boundary features and edges including walls, hedgerows and railings. In all views the dominant element of the external realm and streetscape is the somewhat utilitarian black top road and associated highway features.

In all views University buildings and land form a prime component. Key landmarks at the intersection of these roads are Senate House and the treed entrance to Royal Fort Gardens, with the Hawthorns located on a prominent corner opposite. Bristol Grammar School is generally not as visually prominent being set a lower elevation, and this perception also applies to the Geography and Biological Science buildings. This junction is the meeting point of some seven routes, and whilst of considerable importance, has a lack of visual definition and legibility, resulting in a confused and dysfunctional visual appearance.

Local View 2, St. Michael's Hill

View 2

Junction environs of St Michaels Hill and Tyndall Avenue

Views are channelled up and down St Michaels Hill by the built form of the urban area which is rich in visual variety and scale. This variety derives from the historic nature of the street, the topography and the changes of level between pavement and road.

On the southerly approach this visual enclosure is pronounced because of the former Children's Hospital buildings, whilst from the north due to a combination of elevation and street form, the enclosure is as pronounced although with a view over the city to the south west. In the immediate environs of Tyndall Avenue the presence of the University is announced by the Library building. There is an important, if glimpsed, view of the Physics Tower from St Michael's Hill through the former Children's Hospital.

Local View 3, Tyndall Avenue

View 3a

View 3b

View 3c

Tyndall Avenue

Views along Tyndall Avenue, from either direction are focused on the high point of the road itself, which is the prominent horizontal form in the view. The visual enclosure is defined by the variety of University buildings which follow a varied footprint and set back distance from the road. This results in turn in a series of different external spaces which visually confusing and unrelated one to another. The street trees whilst offering interest are generally not visually strong elements as they are not part of a coherent designed streetscape. An exception to this is the mature Horse chestnut opposite Senate house which is a key local visual landmark.

Local View 4, Royal Fort Gardens

View 4a

View 4b

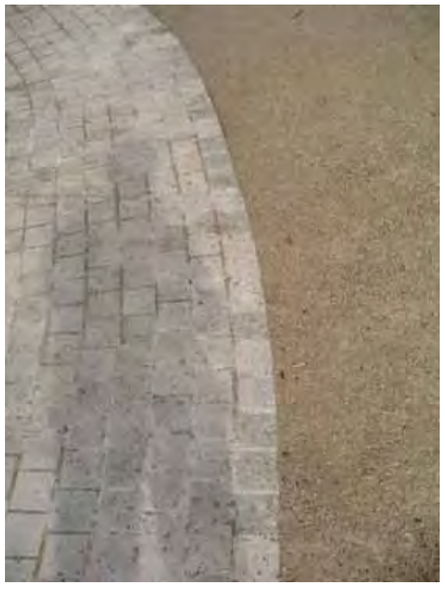
View 4c

Royal Fort Gardens

The designed views of Humphry Repton dating from the early 19th century have been significantly modified by the urban development of Bristol and by the maturing of vegetation in the city. Whilst there are few distant views gained from the park, there are attractive local views of the soft estate within the gardens and to the immediate environs.

The Royal Fort House itself and the Physics building within the park are important focal points in and backdrops to some of these views.

Views towards the former Children's Hospital and in the vicinity of the historic gatehouse are of variable quality due not least to the confused and sometimes degraded edges, boundaries, features and built form that currently exists.



5. External realm design

Introduction

The external realm design concept has been fully informed by a detailed understanding of the land use function and material and spatial condition of individual and composite spaces, as well as an analysis of the historic landscape.

A comprehensive approach has been taken to the design of the external realm of the environs of the University. This comprises the public realm, including highways, and private estate, hard and soft landscape areas, street furniture, signage and public art.

Following consultation with Bristol City Council an 'External Realm Design Code' was produced for Tyndall Avenue and its immediate environs. This Design Code is included within this section.

The external realm design concept will be further developed as design work progresses to provide a 'Design Handbook for the Public Realm' and will be included as appropriate in the design briefs for individual buildings.

'The community dynamic'

The following tangible and intangible points encapsulate the symbiotic relationship that exists in this part of the city:

- Throughout the design process, the constant and inseparable interaction between those who live and those who study in the area, has been fully recognised. The interaction is physical, visual and temporal.
- There is a natural graduation of University influence moving to and through the public realm. University influence is at its strongest in Tyndall Avenue and the local environs.
- Activity and movement is ever present by those who live, study and/ or travel through the area.

Proposed University signage re-branding

Trees

A tree audit has been carried out and is included as Appendix B. This brings together a considerable database of information from a variety of sources, central to which are the University's own records.

The University places considerable importance and value on the tree resource and to its conservation and enhancement and this ethos of care will be incorporated into the detail design process.

The principles of the external realm design

The principles of external realm design, led by the University's need for new buildings and facilities, are:

- The opportunity to consider the potential for the enhancement of the entire public and private external realm.
- The recognised importance of a comprehensive solution in terms of integrating new build with existing fabric.
- The creation of a 'sense of place', to achieve local distinctiveness.
- Providing a 'legible' external realm that improves physical and visual connectivity and movement, and ensures inviting and welcoming spaces.
- Considering the needs of both the University and the resident community.
- The opportunity for the introduction of solutions for the public highway led by a 'shared space' concept, giving the pedestrian increased priority and clearing the external realm of unnecessary visual and physical clutter.
- Using appropriate elements and mechanisms to provide the best practical solution for this part of Bristol.

Servicing

The design concept has also incorporated a 'Servicing Strategy' prepared by Arup. 'AutoTrack' has been used to check servicing manoeuvres are feasible with a large rigid vehicle.

Phasing

The external realm will be delivered as part of and directly linked with the phased development of the University. The details of design and boundaries between phases will be subject to agreement with Bristol City Council.

Nature Conservation

An ecology survey of the University area has been carried out. Overall, the area is considered to be of low ecological value, although opportunities exist to create and enhance habitats to provide an area of higher value.

Further surveys to confirm the presence of protected species including bats and Slow Worms will be required once the detailed development proposals have been agreed. The design principles will include habitat protection and conservation and will inform the future landscape management of the external realm.

University of BRISTOL

NICHOLAS PEARSON ASSOCIATES
ENVIRONMENTAL PLANNERS • LANDSCAPE ARCHITECTS • ECOLOGISTS

University of Bristol

External Realm Strategy

External Realm Design Code for Tyndall Avenue and environs

This external realm design code has been developed following detailed consultations with Bristol City Council Highways department. These consultations have concluded that the principle of a comprehensive redesign of the external realm, both public and private, is acceptable.

The design code has been fully informed by a detailed understanding of the land use function and material and spatial condition of individual and composite spaces, both within the area for the coding and adjacent to it.

The purpose of this design code is to provide sufficient information in terms of design intent and objectives to allow the principles to be agreed by all stakeholders as part of the overall Strategic Master Plan and to provide a clear guide for future detail design. The code has been set at a level such that it is sufficiently flexible to allow for changes in the form, extent and phasing of the overall Strategic Master Plan.

Bristol City Council as Highway Authority is to be kept fully involved in the design process as it continues through to detail design and implementation.

Area covered by design code

The area covered by the design code comprises:

- Tyndall Avenue
- Woodland Road; between University Road and St Michael's Park
- Elton Road in the vicinity of The Hawthorns
- The area to the north of the gatehouse lodge at the entrance to Royal Fort Gardens
- St Michael's Hill at the junction with Tyndall Avenue.

Design Code

The key Design Code elements will:

- Allow, as far as possible, free, safe pedestrian movement and activity throughout the entire area.
- Maintain existing vehicular movements through the area, but with reduced vehicle speeds
- Maintain or increase the provision of short-stay public car parking Ensure that, where possible, service vehicle access is via routes other than Tyndall Avenue

Design Code - Tyndall Avenue

The study has established that Tyndall Avenue, due to the presence of a number of University core activities and its elevated and central position is a key external space. It has been recognised that there is a significant and substantial opportunity to comprehensively redesign and enhance this space.

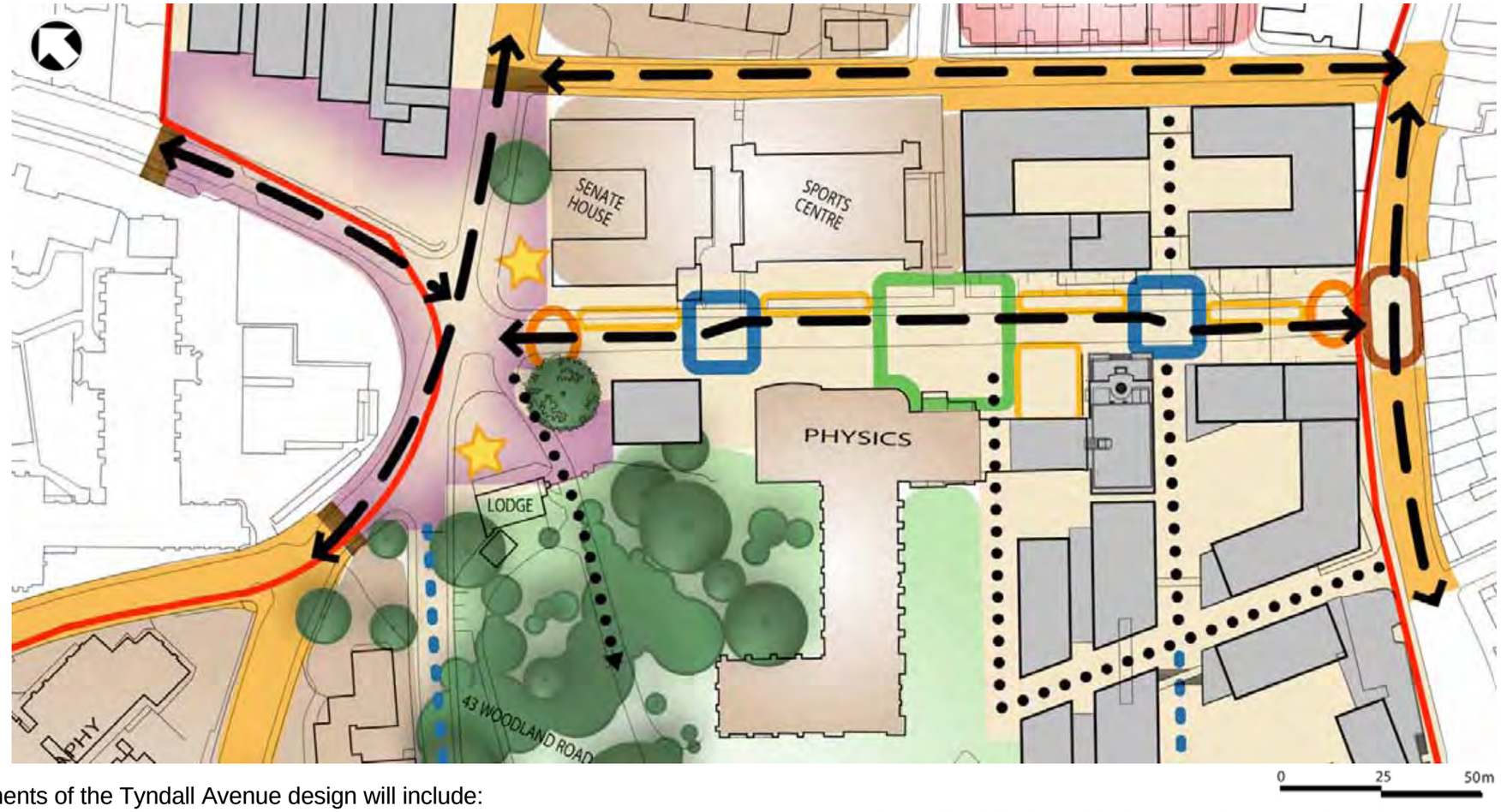
The proposal is that the entire streetscape of Tyndall Avenue is transformed to provide a defined focus and hub for University activities, as space that links with those adjoining, and a high quality environment for all users of the area.

The informing dynamic of this space is the interrelationship in terms of function, form and appearance between the horizontal and vertical plane. The key design objectives are:

1. To provide a distinctive character and special quality, which reflect the use and function of the place, including the existing fabric.
2. To provide a unified design for the space that seamlessly presents the entire external realm to the widest number of users.
3. To remove the prominence and dominance and concomitant priority of the road and associated vehicle movements, whilst maintaining the potential for vehicular movement through the space.
4. To provide a space that will stand the test of time, and be to a standard that is adoptable by the Highway Authority

These objectives will be achieved by;

- Establishing and agreeing with relevant authorities, the priority and use of the street.
- Clearly defining the physical and visual presence of vehicular routes through the space.
- Utilising features, treatments and events at appropriate locations to encourage vehicle speed reduction.
- Designing and treating the space comprehensively.
- Using minimal vertical changes of level and appropriate texture change between pedestrian and vehicular areas.
- Using a simple range of high quality and complementary paving materials, agreed with BCC Highways, throughout the space.



Key elements of the Tyndall Avenue design will include:

Central Plaza:

This central area will be designed as the external space focal point for Tyndall Avenue and the University, relate to the main entrance of adjacent buildings and the access route into Royal Fort Gardens. The intent of the design will be to create a defined high quality area through the use of paving materials and their bonding/ patterns/ trims, large-scale trees signage, seating, lighting, public art and other appropriate features.

Key crossing points and horizontal shift of vehicular route:

These are located at key locations on Tyndall Avenue adjacent to Senate House entrance and at the 'junction' with the extended University Walk. The intent of the design will be to:

- Horizontally shift the vehicular route by approximately 5m to assist with vehicle speed reduction in combination with paving differentiation;
- Provide a clearly defined paved area as a north/ south route across Tyndall Avenue.
- Provide other feature/s as agreed with the Highway Authority to assist with the reduction of traffic speeds

Gateways:

These will be located at either end of Tyndall Avenue and will include paving differentiation from that adjacent. The intent will be to design the area using a range of elements including signage, lighting, and bollards such that a defined threshold into/ out of Tyndall Avenue is created. This is to enhance the awareness of users, to ensure safety and reduce vehicle speeds.

Design Code - 'Tyndall Place'

The area defined as 'Tyndall Place' is located at the boundaries of adjacent townscape character areas and the conjunction of seven different and varying routes:

- Woodland Road (from the north)
- Tyndall Avenue
- Royal Fort Gardens access
- University Walk
- Woodland Road (from the south)
- University Road
- Elton Road

This location is significant, not only due to the above but also since it is immediately adjacent to the core University activity area on Tyndall Avenue, and the Grammar School. This results in an existing significant amount of pedestrian movement through and across the space that will increase with the proposed University development.

Currently the roads dominate the physical, visual and aesthetic character of the place. Highways design focuses on safe movement through the space and attempts to control pedestrian movement but does not provide the 'sense of place' the importance of the area deserves.

The proposed Master Plan presents an opportunity to comprehensively redesign this space to provide a high quality public realm linking with and complementing the redesigned Tyndall Avenue.

This will be achieved by:

- Establishing and agreeing with relevant authorities, the priority and use of the street.
- Clearly defining the physical and visual presence of vehicular routes through the space.
- Using minimal vertical changes of level and appropriate demarcation between pedestrian and vehicular areas.
- Defining the entire area as a 'shared space' area as far as possible.
- Designing and treating the space comprehensively but placing the safety of users as the highest priority.
- Using a range of high quality and complementary paving materials throughout the space that are functional and provide an appropriate aesthetic for the Conservation Area, and deliver a space that is built to an adoptable standard.
- The consideration of tree and shrub planting where appropriate, including the retention of existing elements.
- The use of architectural and other feature lighting.
- Consideration of parking and servicing demands in the area.

Key elements of the design for 'Tyndall Place' will include:

Thresholds:

These will be located at the entrances to 'Tyndall Place' and may comprise a gentle ramp up into the area and will include paving differentiation from that adjacent. The intent will be to design the area using a range of elements including signage, lighting, and other street furniture as may be appropriate such that a defined threshold into/ out of Tyndall Avenue is created.

Area for redefinition of paving and levels:

The entire area of Tyndall Place will be comprehensively redesigned to provide a high quality paved surface that provides an attractive surface treatment that resolves the varying movements, both vehicular and pedestrian, across and through the space.

Changes of level:

Significant changes of level between Woodland Road and both Senate House and the entrance area into Royal Fort Gardens present opportunities to improve permeability through the area and provide attractive informal seating.

Signage

The University has commissioned the preparation of a signage strategy. This will be incorporated into the external realm design as appropriate.

Design Code - St Michael's Hill Junction

The junction of Tyndall Avenue and St Michael's Hill has been identified as a key location where, when moving towards the main University area the presence of University activity becomes generally more dominant.

As part of the comprehensive review of the public realm it is very important that a clear and distinctive feature or treatment is incorporated in this location. Such treatment will announce that the location provides a boundary/ gateway into a different 'place,' where the prevailing approach to highway design has been altered.

The design will incorporate the full width of the highway and public realm.

The feature or treatment may be relatively simple, will be clearly visible and in contrast to surrounding elements and might, in combination with the 'Gateway' on Tyndall Avenue include:

- The use of contrasting paving surface or materials in terms of colour texture and pattern.
- The use of special lighting.
- The use of signage.
- The use of artwork.
- The use of vertical features, possible combining one or more elements of lighting, signage and artwork.

The former Children's Hospital site

The area and environs of the former Children's Hospital is identified for substantial redevelopment in the Master Plan. This presents the opportunity to provide significant new areas of high quality public realm.

The area has very limited and poor connectivity with adjoining areas with no significant landscape elements worthy of retention.

The objectives of the external realm design are to:

- Reinforce and build upon existing routes and movement corridors.
- Respond to existing visual links to and through the area.
- Provide new routes that link with the adjacent network significantly improving connectivity.
- Provide a variety of legible hierarchy of routes and spaces
- Provide a design that presents a unified approach to external space design, linking with adjacent areas.
- Provide for necessary service and emergency access.
- Positively utilise the topographic context of the site.

The key elements of the external realm design are:

- The provision of an extension of University Walk, from Royal Fort Road to Tyndall Avenue, designed as a primary pedestrian route.
- The creation of a new route between St Michael's Hill and Royal Fort Gardens, reinforcing and taking advantage of the existing view through to the Physics Tower.
- The creation of two new accessible open spaces, within the new development, adding to and complimenting the existing townscape spatial sequence.
- The inclusion of entrances to new development directly onto adjoining streets to maintain and improve street activity, including at the corner of St Michael's Hill and Royal Fort Road.
- The opportunity to enhance Royal Fort Road, in terms of paving material and aesthetic design and as a setting to the Royal Fort Gatehouse.

Royal Fort Gardens

Royal Fort Gardens provides the green 'heart' for the immediate environs of the University and the setting for key built elements (and Listed Buildings) of Royal Fort House, the Physics Tower and Stuart House. The historic appraisal and analysis undertaken (see Appendix A) confirms its value as an important landscape resource. A substantial area of the garden is of a high quality in terms of material and spatial condition. However some of the areas, in terms of use, material type and condition detract from the quality of this space. This particularly relates to the area between the Physics building, the former Children's Hospital, and Royal Fort House.

The proposed Strategic Master Plan provides an opportunity to remove the low rise laboratory building to the immediate east of the Physics building redesign the external realm to the south and east of the Physics building to:

- Present an enhanced landscape setting to adjacent Listed buildings (Royal Fort House, the Physics Tower and Stuart House) and the new development.
- Provide an enhanced link between Royal Fort Gardens, Tyndall Avenue and Royal Fort Road.
- Provide high quality attractive external spaces, enhancing the overall quality of the gardens.

The design of the space will include;

- A significant area of soft landscape to relate to the historic quality of the wider gardens.
- High quality hard landscape areas
- Considered use of large-scale tree species.
- Maintained and enhanced ecological value to the overall area.

It is also proposed to consider additional or enhanced links with University Walk to enhance connectivity and encourage more through use/ activity.

'Chemistry Square'

Chemistry Square in its current form is somewhat undervalued in terms of its inherent potential as a public open space and focus for University functions, notwithstanding its imposing artwork and the expansive views southwards over the city. When active the Square illustrates some considerable value as a gathering space. Its key existing detractor is its surfacing, its delineation and the unrelieved expanse of materials relative to the buildings that frame it. The opportunity exists to redesign this space such that it is visually interesting and attractive at all times of the year, whether empty or active, from ground level and elevated views alike. This would also enhance its role as part of the pedestrian circulation.

Precinct Approaches

The study has identified those sections of the following streets that function as 'approaches' to the core of the University's activity, or act as the public realm frontage to University faculties:

- Woodland Road (Cantock's Close to Tyndall Avenue)
- Woodland Road (Tyndall's Park Road to Tyndall Avenue)
- Elton Road
- Priory Road
- University Road (Elmdale Road to Woodland Road)
- St Michael's Hill (section between Royal Fort Road and St Michael's Park)
- St Michael's Park

The streets, as public rights of way, are recognised as intrinsic parts of the community, which is a combination of the three primary land uses and associated user types; the local residential area, the University and the Grammar School.

The rationale is to create a 'sense of place' which informs the users of the area of the special role that these streets have in the locality, either as an approach to the focus of the University activity and/ or as the immediate public realm setting to University faculties.

The treatment will also provide an indication of a change in the nature of the streetscape associated with Tyndall Place.

The informing dynamic of these streets is the interrelationship in terms of function, form and appearance between the horizontal and vertical plane, with the key design objectives being:

- The need for a distinctive character and special quality which reflects the use and function of the place, including the existing fabric.
- To reinforce the positive characteristics of the approaches, which are; the rising ground; the gentle curve of the streets;
  the sense of anticipation; and the high quality of some of the streetscape materials.
- To significantly reduce the prominence and dominance and concomitant priority of the road and associated vehicle movements.

These objectives will be achieved by;

- Establishing and agreeing with relevant authorities, the priority and use of the street.
- Reducing, where possible, the width of road for vehicular traffic to a minimum.
- Increasing, where possible, the width of pavements.
- The enhancement and considered redefinition of cycleways.
- Reducing the perceived width of the vehicular highway through the use of different materials, changes in colour and texture of materials.
- The identification of main entrances to buildings through paving treatment, signage and lighting.
- The consideration of tree and shrub planting where appropriate.
- The use of architectural and other feature lighting.

Primary gateway treatments

The study has identified the key locations where, when moving towards the main University area the presence of University activity becomes, or will become, noticeable and/ or dominant. These locations are at the following junctions:

- Woodland Road and Cantock's Close
- Tyndall's Park Road and Woodland Road
- Elmdale Road and Elton Road
- Elmdale Road and University Road
- Elmdale Road and Priory Road
- St Michaels Hill and St Michael's Park
- St Michaels Hill and Royal Fort Road

As part of the comprehensive review of the public realm it is very important that a clear and distinctive feature or treatment is considered in these locations. Such treatment will announce that the location provides a boundary/ gateway into a different 'place,' where the standard approach to highway priorities has been altered.

The design will consider incorporating the full width of the highway and public realm.

The feature or treatment may be relatively simple, will be clearly visible and in contrast to surrounding elements and might include:

- The use of contrasting paving surface or materials in terms of colour texture and pattern.
- The use of special lighting
- The use of signage
- The use of artwork
- The use of vertical features, possible combining one or more elements of lighting, signage and artwork.

Secondary gateway treatments

The study has identified a number of secondary and sometimes almost incidental entrances/ gateways where public access and a route is, or could be made, available in to the environs of the University. These are usually pedestrian routes, although some provide vehicular access, and are located along;

- St Michael's Hill (Tankards close, Park Place, Upper Church Lane)
- Perry Road (Old Park Hill, Woodland Rise)

In these locations the existing treatment often does not provide a clear sense of identity or legibility for the presence of University activities.

It is proposed that in these locations a consistent approach is provided to the immediate setting of the access location as a designed 'threshold' or 'doormat'

The treatment might include:

- A local change in material, with a consistent material and design/ pattern for each location.
- The use of a particular lighting fitting.
- The use of signage.
- The use of artwork.

Pedestrian routes

The study has identified a number of existing routes and links that provide various routes into and through the environs of the University. Often these routes are utilitarian and provide little relationship to the University, and where they provide vehicular access, are dominated by highway engineering elements or are little more than car parks reducing the attractiveness for pedestrian use.

The topography of the site has led to routes running with the contours with links up and down limited and poorly defined, especially those to and from the city to the south.

The opportunity exists as part of the comprehensive approach to the external realm to enhance these routes through new paving, lighting and signage, reducing the priority for vehicles and increasing pedestrian priority.

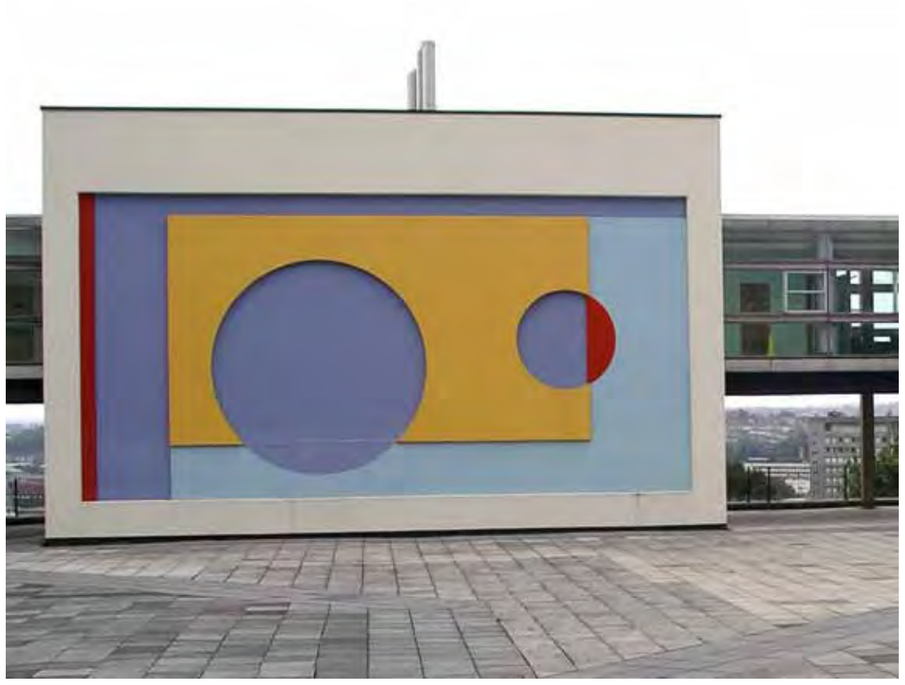
The key routes are;

- University Walk
- Cantock's Close
- Tankards Close
- Park Place
- Upper Church Lane
- Old Park Hill
- Woodland Rise

Signage

The University has prepared an integrated signage scheme with the aim of making the area more 'legible' and welcoming to residents, visitors and the University community. The signage scheme has been designed to complement and have strong visual associations with the award winning City of Bristol signage system.

It is the intention that the redevelopment of the external realm will incorporate appropriate elements of the signage scheme as an integrated part of the design.



Public art

Policies of the Bristol Local Plan along with the Council's Public Art Strategy, seek the inclusion of public art in development. This includes the involvement of artists in the formulation of Master plans, the design and detailing of architecture and landscape architecture, and the presentation of context specific temporary artworks within the public realm.

In accordance with Bristol City Council's Public Art Policy and Strategy developers are requested to appoint Public Art Consultants, Lead Artists and other artists to prepare and implement Public Art Plans. In respect of the SPD for the University of Bristol, a Public Art Plan will be submitted to and approved by Bristol City Council as Local Planning Authority prior to development and submission of any planning applications relating to the Strategic Moves identified within the SPD.

The appointment of a Public Art Consultant, Lead Artist, other artists and the preparation and implementation of the Public Art Plan will be done in consultation with the Senior Public Art Officer for the Council. The Public Art Plan will include:

- A description of opportunities identified by the Lead Artist for the Lead Artist and other artists to collaborate with other design professionals on the architecture and landscape architecture of the University. The design details (including detailed drawings and sample panels) for which will be submitted as part of any full or reserved planning applications;

- A programme of temporary public art commission that will investigate and promote the development of the University;

- Details of maintenance responsibilities, budget allocations, a timeframe for the commissions and a description of the commissioning process.

The content of the Public Art Plan will be integrated within the 'Design Handbook for the Public Realm' and the design briefs for buildings. The implementation of public art commissions identified within the Public Art Plan, and their design details which will be part of full or Reserved planning applications will be secured within section 106 agreements.

Appendices

A. Historic landscape analysis

B. Tree audit schedules and plans

C. Ecology survey

Landscape and external realm analysis
Appendix A: Historic landscape analysis

1.0 INTRODUCTION

The following report addresses the landscape history of the University of Bristol central precinct. It has been produced using a desk-based analysis of a selection of ten large-scale historic maps dating from 1673 to 1903. The objectives are to understand how the townscape has developed, to identify what salient features of this historical development remain in the current university landscape and pinpoint which of those features, if any, are of critical historic significance.

The University of Bristol precinct is an integrated unit that has been imposed on a pre-existing townscape. It is therefore misleading to address its history as that of an isolated campus, but instead identify and analyse the various historic character areas that made up the pre-university landscape, the urban patchwork which formed the basis of the current precinct.

The limitations of a map based study such as this means that only a very generalised history of the townscape can be achieved, and, indeed, a history that is subject to the possible inaccuracies of early map makers. It should be stressed that a comprehensive study of the site would need to include a greater number of maps, analysis of further illustrative material and historic documentation in conjunction with a survey of the townscape itself.

2.0 METHODOLOGY

2.1 Area Selection

In order to aid the understanding of the precinct's development, it has been divided into five historic areas. The designation of these areas was based on the following criteria:

- The period of time the area has been built upon between 1673 and 1903.
- The predominant land use between 1673 and 1903, i.e. residential, non-residential or greenspace.
- The extent of an area as defined by the street plan of 1903, thus the climax of the urban historic landscape before the major expansion of the university campus in the twentieth century.
- Historic landownership boundaries.

The areas are:

A. Lower St Michael's Hill –

This incorporates the quarter formerly known as the Old Park and the land south of The Royal Fort Road:

- Townscape from 1673 to 1903.
- Predominantly medium to high-density residential development from 1673 to 1903.
- 1903 - bounded by Park Row, St Michael's Hill, Royal Fort Road and the historic former boundary with Tyndall's Park to the west.

B. The Royal Fort and its surroundings –

The Royal Fort house, its adjacent outbuildings, houses and gardens, the pleasure grounds:

- Townscape from 1673 to 1903.
- Low density residential and greenspace from 1673 to 1903.
- 1903 - bounded by St Michael's Hill, Royal Fort Road, St Michael's Park and the western boundary with Tyndall's Park.

C. Cotham House (Homeopathic Hospital) Osbourne Villas and the land north of St Michael's Park –
This includes the unit of land encircled by Woodland Road, St Michael's Hill and Tyndall's Park Road as well as a block of the land to the south down to the Royal Fort:
- Partially developed townscape
- Higher density residential development
- 1903 - bounded by St Michael's Hill, St Michael's Park and the eastern boundary of Woodland Road properties.

D. The Blind Asylum Block –
This refers to most of the u-shaped block of land between University Road and Woodland Road:
- Townscape from 1673 to 1903
- Very low density followed by high density, non-residential development from the early nineteenth century onwards.
- 1903 - bounded by Park Row, University College Road, Woodland Road and a historic boundary to the east with Tyndall's Park.

E. Priory Road, Tyndall's Park Road, Elton Road and Woodland Road down to Park Row –
This encompasses the late nineteenth century housing in the northern half of Tyndall's Park as well as the corridor of land down to Park Row:
- Undeveloped greenspace until the nineteenth century associated with The Royal Fort; medium density residential development from the mid nineteenth century onwards with a corridor of undeveloped greenspace down to Park Row.
- 1903 - bounded by the Royal Fort gardens, Park Row the Blind Asylum, Whiteladies road and the eastern boundary of the Woodland Road properties.

2.2 Chronological Surveys

A chronological survey of each area was then made using a selection of large-scale maps. The surveys identify salient features including roads, principal buildings, greenspaces and general land use.

Maps consulted:
Millerd 1673
Millerd 1710
Rocque 1742
Thomas Tyndall's estate plan 1785
Donne 1826
Ashmead 1828
Chilcott 1845
Bartholmew1860s
O.S. 25 inch 1885
O.S. 25 inch 1903

2.3 Summary of phases in the development of individual areas

Phases of the urban landscape's evolution were identified using the observations and conclusions drawn from the chronological survey. In addition, a list of elements in today's landscape that originate from each phase was made in order to demonstrate how the modern townscape has formed.

2.4 Identification of features in the current landscape of critical historical significance

The components of the townscape that could be argued as having critical historical significance were identified and accounted for.

3.0 AREA BY AREA ANALYSIS

3.1 Area A: Lower St Michael's Hill

1673:

- Large houses with enclosed formal gardens and orchards surrounding an open area of grassland with five trees called *Y Little Park*.
- A route off Church Lane leads to *Y Little Park* and St Michael's Church.
- The area of housing is bounded by a wall to the north and separated from the Royal Fort by a field.

1710:

- A house has been built in the corner of *Y Little Park* and a strip of the parkland has been divided off along its northwest boundary.
- Further development has also spread into the open field between the houses and the Royal Fort.

1742:

- The clearly delineated boundaries of the built up area have been blurred and a network of roads established.
- *The Little Park* is now used to refer to the overall area, however the park itself has been reduced to a rectangular strip with trees, possibly those denoted on the earlier maps, and a square of ground with irregularly spaced trees and a central path leading to a small building. This latter observation may suggest that the area had an ornamental nature and formed a town square, a fashionable element of eighteenth century urban design.
- Shaded blocks indicate that a denser built up area existed and that it had spread northwards to fill the land up to the road to the Royal Fort.

1826:

- This reveals that a number individual townhouses and gardens remained in a triangle of land on the western side of the *Little/Old Park* quarter.
- It also records open space and plantations to the northwest while blocks of housing and a network of roads form much the same layout as they did in 1742.
- The open square also remains a central feature of the area with the adjacent narrow strip depicted as a row of front gardens.

1828:

- A more detailed depiction of the area reveals a variety of detached and terraced houses accompanied by gardens, most of which are of a formal nature typical of town garden design.
- Tree plantations are retained in the northwest corner resulting in the enclosure of this area of urbanisation. Cut into the boundary of trees is a square formal garden with buildings in each corner, a feature that is recorded on Thomas Tyndall's 1785 map suggesting that it was part of the Royal Fort property.
- The streets are now labelled as *Old Park* and *Park Place*.

1885:

- The overall street pattern and arrangement of housing remain much same albeit with some new development and the addition of an asylum, school and synagogue.
- The quarter is still known as the *Old Park* and retains the remaining fraction of this park at the centre.
- The plantation along the northwest boundary is now crossed by tracks that join with further routes through Tyndall's Park and the adjacent formal garden is also remaining.

1903:

- The nineteenth century layout of this area continues into the twentieth century with very few changes.
- Tyndall's formal garden is now a yard attached to the Industrial School and part of the adjacent plantation is retained.

Development Phases of Area A:

1. 1600s/early 1700s; Low density, probably high value housing characterised by large detached residences with a large number of gardens.
2. 1700s; Medium density housing with less greenspace and a more defined street plan.
3. 1850s-1900; Medium density residential and non-residential development based on the existing, seventeenth century street plan.

Historical elements remaining in the current townscape:

1. The science block courtyard – this seems to reflect the historic street plan by being located on the same spot as the Old Park square (still in existing to 1903).
2. Buildings along Park Row – there are a number of detached buildings along Park Row that appear to be survivors of the south west corner of the pre-twentieth century Old Park quarter.

3.2 Area B: The Royal Fort

1673:

- A walled area containing a number of houses, formal gardens, orchards and open space and entered via a gatehouse. The fort itself appears to be a cube-like structure with crenellations.
- The enclosure is surrounded by open grassland with isolated trees, and is linked by a road to *The Road to Wales*, the route we now know as Royal Fort Road.
- To the east is a single residence on St Michael's Hill.

1710:

- Additional gardens or cultivated plots have been laid out to the south.
- Further development of land on St Michael's Hill.

1742:

- The building on land to the south of the Royal Fort road has blurred its sharply defined boundaries, however, the western boundary has been retained by the block of open parkland acting as a barrier to further urban sprawl.
- This area along with the surrounding grassland is subdivided into a variety of irregularly shaped plots with trees, probably predominantly areas of cultivation with fruit trees.
- A garden with a formal layout of paths is situated to the northwest of the Fort, as is an area with a building in one corner that may represent further pleasure gardens. A large enclosure with a line of trees on two and half sides is situated to the east, probably a grazed paddock.

1785:

- The enclosed cultivated gardens to the east of the Fort are shown in more detail, revealing paths and small structures.
- The convoluted arrangement of small plots shown in 1742 is replaced with a new house which has outbuilding to the rear and is surrounded by an unmarked area labelled the *Garden*. The garden appears to occupy a clearly defined compound with a semi-circular protrusion in the southeast corner, possibly functioning as a viewing platform, mirrored by a semi-circular plantation to the north.
- Further buildings and various enclosures are also shown, although there does not appear to be the same number of houses as depicted by Millerd. One of the adjacent buildings is probably another large detached house with its own gardens, labelled as *Cromwell House* on later maps.

1828:

- A mixture of enclosures and outbuildings continue to dominate the rear of the area to the east of the Fort but the house and gardens have been dramatically altered.

- The house has been extended as have the gardens which now occupy land to the west, right up to north-south track through the parkland.
- The main drive from the park has been diverted so it forms a more gradual curve to the Royal Fort house across the park from White Ladies Road, bordered by on either side by shrubberies, lawn and trees as it approaches the house.
- The pleasure grounds appear to consist of rough grassland, isolated trees and shrubberies, bounded as a whole by a footpath and a denser screen of trees and shrubs. This was a naturalistic style of garden design typical of the period when the grandeur of the eighteenth century landscape park was reinterpreted to fit smaller scale suburban sites and incorporate new horticultural fashions such as exotic plant collecting.

1885:
- The overall layout of this garden remains the same, albeit in a slightly more mature, possibly overgrown state.
- The variety of other spaces and buildings are also still in existence around the Fort. Major changes to this area are visible to the north in the form of St Michael's Park road which follows the northern field boundary of the site, and its terrace of houses occupying the previously open ground to the south.

1903:
- The driveway has been shortened and a new lodge built as a consequence of the Woodland Road extension.
- Many of the shrubberies and plantations of the Royal Fort pleasure grounds have been thinned down, but the basic early nineteenth century layout remains.
- Cromwell House and the adjacent enclosures are also still in existence, however the plot on the corner of St Michael's Hill and Royal Fort Road has been built upon, as have two plots on the western side of St Michael's Hill.

Development Phases of Area B:
1. 1600s; Low density, probably high value housing incorporating the remnants of the Royal Fort. Isolated by surrounding open pasture/commonland.
2. Mid 1700s-mid 1800s; High value residence of the Tyndall family with adjacent property of Cromwell House. Characterised by a large detached house with gardens, outbuildings and grounds associated with an extensive landscaped park. Initially connected with a driveway to Park Row, but later linked by a longer drive to White Ladies Road.
3. Mid 1800s to 1900; Low density housing with extensive greenspace, no longer associated with adjacent parkland however retaining the rigid parkland/pleasure ground boundary along the western side.

Historical elements remaining in the current townscape:
- The Royal Fort gate house (listed grade II)
- The Royal Fort Road
- The Royal Fort house, grounds and views – Repton's layout of the immediate pleasure grounds of the The Royal Fort is virtually intact despite the major changes to the surrounding land, and the shortening of the driveway. It is still possible to benefit from the views to the south west, which were integral to his design and carefully engineered by Repton with strategically placed plantations in order to maximise the picturesque qualities.
- Garden walls in the Royal Fort area – possibly related to gardens of Cromwell House.
- Lodge of Royal Fort – rebuilt when the eighteenth century driveway from White Ladies Road was shortened.

3.3 Area C: Blind Asylum Block

1673:
- Open grassland/commonland with an isolated pair of houses and garden.

1710:
- Enclosed plots of grazing land with two or three detached houses and gardens.

1742:
- Enclosed plots of pasture and arable land.

1785:
- Not shown but labelled as *Kings Orchard*.

1826:
- Open grassland with a line of trees along the border with Park Row. Bounded on eastern boundary with a ha-ha, marking the boundary with Tyndall's Park.

1828:
- Two buildings, possibly former lodge houses for Tyndall's Park/The Royal Fort occupy a small plot in the south-eastern corner.

1845:
- *The Bishop's College* and *The Blind Asylum* form a pair of large utilitarian buildings on the site.

1860s:
- The asylum has been expanded.

1885:
- *Bishop's College* has been replaced with the *Victoria Club*, *Drill Hall* and *Racquet Grounds*. The *Museum and Library* have been added next door, and the open space immediately north of the Drill Hall now consists of the Medical School and University College. Adjacent to these latter buildings is an area that may have formed a garden for the asylum, particularly as it incorporates two mature trees of Tyndall's Park.
- This whole block of development continues to be surrounded on two sides by parkland and on the other two sides by Park Row and the newly laid out Museum Road.

1903:
- The area remains much the same however it is enclosed within a triangle formed by University College Road (an extended Museum Road) to the west and Woodland Road to the east. (The top northern portion of this triangle, formed the University's botanic garden, opened in 1882 – a portion of this land remains today).

Development of Area C:
1. 1600s – early 1800s; Very low density, peripheral residential development along Park Row in conjunction with a large number of enclosures of cultivation or pasture.
2. Early 1800s; Site of major non-residential structures and gardens.
3. Late 1800s to 1900; Expansion and amalgamation of non-residential structures incorporated into a newly laid out street plan.

Historical elements remaining in the current townscape:
- The Blind Asylum building now incorporated into a university department.
- The Museum and Library building, now Brown's restaurant.

3.4 Area D: Priory Road, Tyndalls Park Road, Woodland Road down to the junction with Park Row, Elton Road

1742:

- Southern two-thirds of the area shown as rough grassland with a length of cultivated plots on the western border with *Washington Bridge* (now White Ladies Road).
- This open ground in crossed by a number of boundaries, possibly hedged, that met at a central point marked by a group of trees.
- A road or track runs north-south, briefly along side the Fort, and connects with the *Little Park* area. Coming off this track are further routes that run around the perimeter of the Royal Fort.

1785:

- The network of tracks across the parkland has expanded, the most notable edition being a route from the Royal Fort down to Park Row marked by a lodge and gatehouse.
- A belt of trees screens the cultivated plots and buildings on the western side of St Michael's Hill and an isolated clump are once again adjacent to the junction of the various tracks at the centre of the parkland.

1826:

- The area is still open ground but various features have been added. The nodal point of field boundaries is now clearly shown as the junction of four routes through the parkland. One appears to be a drive from White Ladies Road to the Royal Fort, marked by a lodge and gate where it meets the public road (named *Park Gate* on later maps). Another route leads northwards to Cotham House, while the southbound track leads down to the Old Park area and eventually down to Park Row, however, this is not the earlier driveway to the Fort implying that this was redundant by 1826. The fourth route provides a direct link with the immediate grounds of the Royal Fort.
- Other notable alterations to the area include the construction three lengths of ha-ha, the most northerly length including a structure of some sort, and an increase in the number of grouped and isolated mature trees. The boundary of the City of Bristol is also shown as bisecting the park.

1828:

- Ashmead records a similar situation to Donne except he suggests that there were slightly fewer trees. He also shows the structure on the northernmost Ha-Ha in more detail revealing three buildings surrounded by a small enclosure.
- The oval plantation southwest of the Royal Fort is more clearly delineated.

1860s:

- Tyndall's Park Road and part of Woodland Road have been laid out.

1885:

- Detached and semi-detached houses have been built either side of the western stretch of Tyndall's Park Road, as have properties along the eastern side of Woodland Road.
- Accompanying each property is a front and back garden, many of which are shown with trees and shrubs, paths and glasshouses. The gardens of the detached houses along Woodland Road are especially spacious and terminate in smaller structures, probably mews.
- There are three detached houses on the north side of Priory Road as well as a large number of gardens and glasshouses adjacent to a particularly large mansion called *Ferncliff*. These latter properties would have benefited from views across the still undeveloped parkland.

- The nodal point of parkland routes remains, as do its surrounding trees. The various tracks survive however the old drive across to White Ladies Road has been shortened due to the pressure of development on the western side of Tyndall's Park.
- The Grammar School has been built right in the centre of the Tyndall's Park.

1903:

- Woodland Road has been extended down to Park Row and Elton Road replaces the old driveway to the Grammar School.
- Detached houses and gardens have now been built on the south side of Priory Road, along the western lower section of Woodland Road and to the north of Elton Road.
- The nodal point of parkland tracks is partially retained despite the extension of Woodland Road and Museum/University College Road.
- Portions of park remain immediately around the Royal Fort extending from St Michael's Park to Park Row. In the lower section, the oval plantation of trees has been retained and along Park Row rougher grassland is preserved, with possibly one of the eighteenth century lodges, despite the development of a further terrace of houses.

Development phases of Area D:

1. 1600s, early 1700s; Open grazed grassland/commonland.
2. Mid 1700s to mid 1800s; Eighteenth century parkland associated with the house and grounds of The Royal Fort. The area includes characteristic parkland features of ha-has, tree plantations, designated route and structures, such as lodge houses.
3. Mid 1800s to 1900; Almost complete redevelopment by medium density detached and semi-detached Victorian houses with front and rear gardens.

Historical elements remaining in the current townscape:

- The houses and gardens on Woodland Road, Priory Road and Tyndall's Park Road.
- The houses and gardens of Osbourne Villas and part of St Michael's Park.
- Nodal point of routes through the parkland – the junction of Woodland Road, Elton Road, University Road and Tyndall Avenue is located on the same spot as the historic nodal point of field boundaries and later tracks across Tyndall's Park.
- University Walk – this follows the route of the eighteenth century track across Tyndall's Park, along the boundary of the The Royal Fort grounds and branching off to the Old Park quarter.

3.5 Area E: Old Cotham House, Osbourne Villas, land north of St Michael's Park.

(1600s and 1700s map information unavailable)

1826:

- Cotham House is shown with a large garden involving a lengthy circular walk, partially through woodland. It is bordered to the east by St Michael's Hill and to the west by a hedgerow.
- To the south are two large fields scattered with trees, possibly orchards, and a large L-shaped structure.
- The garden path of Cotham House extends into the top enclosure suggesting that this was part of the same property, despite being bisected by the city boundary – Cotham House being in the parish of Westbury-on-Trym.

1828:

- This provides more detail and implies that some further building had taken place in the lower field.
- One feature on this later map that is of particular note is the mound in the Cotham House garden, undoubtedly a man-made viewing mount, or snail-mound, a common component of seventeenth century garden design.

1885:

- Osbourne and Albert Villas now occupy the areas of partial open land.
- Cotham House remains and has a drive and lodge linking it to Tyndall Park Road. However, its garden has been considerably reduced in size by the new road and residential developments.

1903:

- A similar situation to the 1885 landscape (further information needed to confirm Cotham House state)

Phases of Development in Area E:

1. 1600s; Very low-density large houses with associated large gardens and enclosures.
2. 1700s to mid 1800s; Low density housing as part of fringe urban sprawl along the west side of St Michael's Hill
3. Mid 1800s; High-density Victorian middle-class housing with the single residence of Cotham House retained, although with a smaller garden.

Historical elements remaining in the current townscape:

- Cotham House and parts of its nineteenth century garden – now incorporated into the Homeopathic Hospital.

4.0 SUMMARY

Analysis of the individual areas that make up the precinct has revealed that the historic core of the built environment is Lower St Michael's Hill and The Royal Fort. Also developed at an early stage was the land west of St Michael's Hill north to Cotham House and plots on the north side of Park Row. The rest of the precinct's complex site occupies an urban area that was predominantly built in the nineteenth century on an eighteenth century suburban parkland.

5.0 LANDSCAPE SIGNIFICANCE OF ROYAL FORT GARDENS

The Strategic Master Plan recognises the surviving gardens and grounds of Royal Fort House as the most significant elements of designed historic landscape within the locality. Although not registered by English Heritage, the gardens are identified as, at least, of local and regional significance as:

- including elements of a landscape designed by Humphry Repton. Repton seems to have regarded his work at The Fort as his most dramatically successful manipulation of perspective using both planting and earthworks which survive within the gardens;
- the setting to listed buildings including Royal Fort House (LBI), the H.H. Wills Physics Laboratory (LBII), the Royal Fort Gatehouse (LBII), Stuart House (LB II), and adjacent buildings including Bristol Grammar School and nearby University buildings;
- a locally significant collection of fine, mature trees, both of historic origin and specimens planted by University garden staff;
- a locally significant green space and wooded landscape contributing to the wider tree canopy of St. Michael's Hill area;
- part of a townscape with historical, archaeological, literary, educational and cultural associations with the history of Bristol.

These factors together render the Royal Fort gardens of, at least, regional significance.

5.1 Condition and Vulnerability

The mature and historic trees which create much of the visual character, together with the carefully designed landform of the gardens, appear to be in good condition. However, the designed views and visual character are, to an extent, compromised by a long period of adjacent urban and University development, the proliferation of modern street furniture, servicing and access to the University buildings, and, to a lesser extent, a lack of understanding of the designed landscape. As identified above, Repton wrote in 1802 that "the late prodigious increase of buildings had so injured the prospect from this house, that its original advantage of situation were almost destroyed." The Strategic Master Plan proposals have sought to avoid direct effects on the surviving historic landscape. A number of potential impacts, which will need to be addressed and appropriately resolved at the detail design stage, are:

- Impacts on relict physical fabric
- Impacts on views from the historic landscape
- Impacts on views to the historic landscape
- Impacts on views within the historic grounds

5.2 Potential Impacts on Landscape Fabric

The redevelopment of the former Children's Hospital site east of the Wills Physics Laboratory could impact upon the relict early eighteenth century garden gateway which has survived from Cromwell House. The Strategic Master Plan could allow for its retention, together with an axial view. In practice, the decision on how to conserve the structure should be based on a detailed understanding of its condition. Consideration could be given to its relocation if this were practicable.

Enhancement of Tyndall Avenue will seek to retain what is a remnant of the former Tyndall Park (a single horse chestnut and lawn) flanking the entrance to the gardens. It is proposed that these lawn areas should be simplified but largely retained as the essential setting to the gardens, the garden wall and lodge which define the entrance into the grounds. While the low roadside walls appear to be of twentieth century origin, the garden wall, lawn and tree appear to pre-date 1885 and the garden wall was adopted as an important part of Repton's proposals. Part of the lawn area would be lost to the proposed new building on Tyndall Avenue, although this has the benefit of obscuring current unsatisfactory outwards views from the entrance drive towards the Sports Centre, and hospital chimney beyond.

Detailed external realm design east of Royal Fort House should take into account the curved pitched stone track, possibly part of the original Civil War artillery access. This feature merits further research, and preservation in situ could be considered.

5.3 Potential Impacts on Outward Views

Although dramatically altered by urban development, designed outward views from the gardens can still be gained, albeit today now framed by buildings, such as the Cabot and Wills Memorial Towers. In the main, historic views appear to have been in a 180° arc, from south-east, southerly, up to north-westerly, and it is still possible to see glimpses of the wider landscape. Strategic Master Plan proposals do not impact on these views, but more thorough research and analysis of the Royal Fort gardens should be used to inform conservation and restoration of the garden and its views as part of ongoing management.

A benefit to outward views would arise if, in concert with enhancements to Tyndall Avenue, two trees in the grounds of Bristol Grammar School could be removed to reopen views to the impressive first floor elevation and roofscape of the old school.

5.4 Potential Impacts on Inward Views

Views of the entrance to the gardens could be enhanced by the retention of the relict park fragment at the west end of Tyndall Avenue, incorporated into the redesign of existing detracting townscape and highway elements. It is proposed to retain the historic local character as a context to the approach to the gardens.

Views to the Royal Fort Gatehouse and Physics tower from Royal Fort Road will be changed by the redevelopment of the Children's Hospital site. Development will need to address the stabilisation of the historic wall, and provide enhancement to the street scene looking westwards up the lane to the impressive 'castle' architecture that spans three centuries.

5.5 Potential Impacts on Internal Views

Significant potential arises from the Strategic Master Plan to enhance the internal views of the northern elevation of Royal Fort House and the southern and eastern elevations of the Physics building. These two remarkable buildings are marred in close-hand views at present by low level engineering workshops, vehicle parking, hard surfaces, road markings and incongruous modern landforms and associated planting. Landscape enhancements will be informed by this historic landscape appraisal of the gardens, and seek to relocate service areas. The redesign of this space will then reveal the striking quality of the two, very different, buildings and create an enhanced landscape setting for the same. These detailed designs for the Royal Fort Gardens will considerably improve the historic landscape and aid public understanding and appreciation of this remarkable landscape at the heart of the City and University.

BRISTOL UNIVERSITY CENTRAL PRECINCT LANDSCAPE HISTORY

1. Old Park Quarter
This is the most historic area of urban development in the precinct. In the seventeenth century it was occupied by detached houses, with large formal gardens, situated around an open space called the *Little Park*. An open space is retained throughout the eighteenth and nineteenth centuries, forming an urban 'square', although, over time, the pressure from surrounding development gradually reduced its size. By the late nineteenth century the *Old Park* quarter, as it became known, gained an asylum, school and synagogue. The townscape remained virtually unaltered until the university redeveloped much of the area in the twentieth century. Some of the earlier buildings along Park Row and Victorian terraced housing remain, and the School of Chemistry courtyard reflects the past street plan by being approximately located in the same position as the earlier square.

2. Royal Fort
To the north of the *Old Park* quarter is the area of the Royal Fort. So called after its Civil War fortress that was demolished and redeveloped in the 1650s, leaving the gatehouse and access road from St Michael's Hill – the Royal Fort Road. In the late 1600s it formed an island of houses and gardens amidst surrounding common land. By the 1750s the wealthy and locally influential Tyndall family acquired the site and Thomas Tyndall set about constructing a fashionable mansion and pleasure grounds. In the early 1800s a leading landscape architect of the day, Humphry Repton, was commissioned to redesign the grounds forming a semi-formal garden with views towards Clifton and the port of Bristol, framed by strategically placed trees. By 1828 the mansion, gardens, adjacent paddocks and kitchen gardens are shown with another large detached dwelling called *Cromwell House*. The Royal Fort area continued to be predominantly open space until being incorporated into the university precinct during twentieth century, after which only the Royal Fort House pleasure grounds remained undeveloped.

3. Tyndall's Park
Thomas Tyndall acquired a large expanse of ground to the west of his Royal Fort residence and transformed it into a landscaped park. This former ecclesiastical land was planted with trees and crossed by a number track ways, which met at a nodal point at the centre. These routes included a drive to Park Row and later a lengthier driveway from White Ladies Road to the Royal Fort. This junction is still reflected in the street plan of today where Woodland Road, Elton Road, University Road, Tyndall Avenue and the University Walk meet. As pressure from suburban development grew, the fringes of the park were sold off and by the 1870s much of the northern half had become developed with detached villas and gardens. The governors of Bristol Grammar School purchased another large area of the park in 1877 to house a new school building. By 1903 only a small pocket of parkland remained although this was rapidly absorbed into the university precinct during the twentieth century.

4. Blind Asylum Block
Since the seventeenth century there has been a degree of development along Park Row although this was mainly limited to a few houses and cultivated or grazed enclosures. By the mid-nineteenth century a portion of this stretch had become the site of a *Blind Asylum* and *The Bishop's College*, thus large utilitarian buildings with gardens. These buildings gradually expanded to the west and north; the college was replaced with the *Victoria Club*, *Drill Hall* and *Racquet Grounds*, and a *Museum and Library* was constructed as well as the first University College building with an adjacent Medical School. This block was soon delineated by the new street plan and continues to be distinguished today by Park Row, Woodland Road and University Road.

5. Cotham House and land south to the Royal Fort
Cotham House appears on Rocque's map of 1742 and in 1828 is shown with a large garden, which included a viewing or 'snail' mound, as well as adjacent paddocks and kitchen gardens. Further fields and a few houses along St Michael's Hill existed until the construction of the Albert and Osbourne terraced villas by the mid-nineteenth century. The Cotham House garden was also reduced in size by the development of villas in the northern half of Tyndall's Park, resulting in a new entrance lodge and garden layout (probably – need more map info). In the twentieth century the house became part of the Bristol Homeopathic Hospital, which incorporated the nineteenth century garden as well as the Wills Memorial garden in the 1920s.

Appendix B: Tree audit schedules

Dead/removed tree
Tree not found
Tree species not wholly identified
Listed shrub

Prefix	Tag No	Latin Name	Family	Common Name	Origin	Location	Age	Condition	Approximate Canopy Spread	Additional Comments
A	1	Staphylea colchica	Staphyleaceae	Bladder Nut	Caucasus	Royal Fort	SM	Good	1.5m	
A	2	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Royal Fort	M	Good	12m	
A	3	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	SM	Good	8m	
A	5	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	SM	Good	4.5m	
A	6	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	SM	Good	4.5m	
A	7	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Royal Fort	M	Good	14m	
A	8	Laurus nobilis	Lauraceae	Sweet Laurel	Mediterranean	Royal Fort				
A	9	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Royal Fort	M	Good	22m	Significant tree
A	10	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	M	Good	10m	
A	11	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Royal Fort	M	Good	18m	Significant tree
A	12	Acaena sarmata	Rosaceae		Chile	Royal Fort				
A	13	Acaena sarmata	Rosaceae		Chile	Royal Fort				
A	14	Quercus robur	Fagaceae	Common Oak	Native	Royal Fort	M	Good	8.5m	
A	15	Malus spp	Rosaceae	Crab Apple	Hort. Origin	Royal Fort				
A	16	Populus alba	Salicaceae	White Poplar	Europe to Asia	Royal Fort	M	Good	12m	
A	17	Viburnum davidii	Caprifoliaceae		W China	Royal Fort	J	Good	2m	
A	19	Viburnum lantana	Caprifoliaceae	Wayfaring Tree	Native	Royal Fort	SM	Good	5.5m	
A	20	Viburnum davidii	Caprifoliaceae			Royal Fort	SM	Good	4.5m	
A	21	Quercus cerris	Fagaceae	Turkey Oak	S Europe, Asia Minor	Royal Fort	M	Good	18m	
A	22	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	SM	Good	8m	
A	23	Pyracantha spp.	Rosaceae	Firethorn	Europe	Royal Fort	SM	Good	1.5m	
A	24	Griselinia littoralis 'Variegata'	Griseliniaceae		New Zealand	Royal Fort	SM	Good	3m	
A	25	Stephanandra tanakae	Rosaceae		Japan	Royal Fort				
A	26	Ilex aquifolium 'Ferox'	Aquifoliaceae	Hedgehog Holly	Hort. Origin	Royal Fort	SM	Good	4.5m	
A	27	Ulmus glabra 'Exoniensis'	Ulmaceae	Fastigiate Elm	Hort. Origin	Royal Fort	J	Good	1.5m	
A	28	Garrya elliptica	Garryaceae		N America (W)	Royal Fort	SM	Good	8m	
A	29	Viburnum x bodnantense 'Dawn'	Caprifoliaceae		Hybrid Origin	Royal Fort	SM	Good	5m	
A	30	Betula pubescens	Betulaceae	Downy Birch	Native	Royal Fort	M	Good	6.5m	
A	31	Aucuba japonica 'Variegata'	Cornaceae		Japan	Royal Fort	M	Good	10m (Length)	
A	32	Quercus rubra	Fagaceae	Red Oak	N America (E)	Royal Fort	SM	Good	8m	
A	33	Myrtus communis	Myrtaceae	Common Myrtle	Europe, Mediterranean, Asia Minor	Royal Fort	SM	Good	1.5m	
A	35	Hibiscus syriacus	Malvaceae		E Asia	Royal Fort	SM	Good	2.5m	
A	36	Pittosporum tenuifolium	Pittosporaceae		New Zealand	Royal Fort	M	Good	8m	
A	37	Cornus stolonifera 'Flaviramea'	Cornaceae		Hort. Origin	Royal Fort				
A	39	Viburnum tinus	Caprifoliaceae		Mediterranean	Royal Fort	SM	Good	2.5m	
A	40	Acer saccharinum	Aceraceae	Silver Maple	America (East, North)	Royal Fort	M	Good	20m	Significant tree
A	41	Platanus orientalis	Platanaceae	Oriental Plane / Chennar Tree	S E Europe	Royal Fort	M	Good	30m	Significant tree
A	42	Osmanthus x burkwoodii	Oleaceae		Hort. Origin	Royal Fort	M	Good	12m	
A	43	Gleditsia triacanthos 'Sunburst'	Leguminosae	Honey Locust cv	Hort. Origin	Royal Fort	M	Good	11m	Significant tree
A	44	Hydrangea sargentiana	Hydrangeaceae	Sargent's Hydrangea	China	Royal Fort	J	Good	3m	
A	45	Magnolia 'Lanarth'	Magnoliaceae			Royal Fort	SM	Poor	2.5m	
A	46	Chaenomeles speciosa	Rosaceae		China	Royal Fort	SM	Good	3m	
A	48	Malus spp.	Rosaceae	Crab Apple	Hort. Origin	Royal Fort	M	Poor	6.5m	
A	49	Malus spp.	Rosaceae	Crab Apple	Hort. Origin	Royal Fort	M	Good	8.5m	
A	50	Sarcococcoa spp.	Buxaceae	Christmas Box		Royal Fort	SM	Good	0.5m	
A	52	Prunus laurocerasus	Rosaceae	Common Laurel	S Europe, Asia Minor	Royal Fort	M	Good	8m	
A	55	Prunus avium	Rosaceae	Wild Cherry	Native	Royal Fort	M	Good	9m	
A	56	Taxus baccata	Taxaceae	Common / English Yew	Native	Royal Fort	M	Good	9m	
A	57	Magnolia x soulangiana	Magnoliaceae	Cup and Saucer Magnolia	Hybrid Origin	Royal Fort	SM	Good	4.5m	
A	58	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's birch	Himalayas?	Royal Fort				
A	60	Ilex aquifolium 'Pyrimidalis Aureomarginata'	Aquifoliaceae	Holly		Royal Fort	SM	Good	3.5m	
A	61	Taxus baccata	Taxaceae	Common / English Yew	Native	Royal Fort	M	Good	12m	Significant tree
A	63	Carpinus betulus 'Columnaris'	Corylaceae	Fastigiate Hornbeam	Hort. Origin	Royal Fort	SM	Good	2.5m	
A	65	Salix babylonica var pekinensis 'Tortuosa'	Salixaceae	Dragon's Claw Willow		Royal Fort	SM	Good	6m	
A	66	Chamaecyparis lawsoniana 'Glauca'	Cupressaceae	Blue Lawson	Hort. Origin	Royal Fort	SM	Good	4.5m	
A	67	Chamaecyparis lawsoniana 'Lutea'	Cupressaceae	Golden Lawsons	Hort. Origin	Royal Fort	SM	Good	3m	
A	68	Chamaecyparis lawsoniana 'Allumii'	Cupressaceae	Lawson Cypress	Hort. Origin	Royal Fort	SM	Good	4.5m	
A	69	Chamaecyparis lawsoniana 'Allumii'	Cupressaceae	Lawson Cypress	Hort. Origin	Royal Fort	SM	Good	4m	
A	70	Chamaecyparis lawsoniana 'Glauca'	Cupressaceae	Blue Lawson	Hort. Origin	Royal Fort	SM	Good	4.5m	
A	71	X Cupressocyparis leylandii	Cupressaceae	Leyland Cypress	Hort. Origin	Royal Fort				
A	72	Magnolia grandiflora	Magnoliaceae	Bullbay Magnolia	N America (SE)	Royal Fort	SM	Good	4.5m	
A	73	Magnolia grandiflora	Magnoliaceae	Bullbay Magnolia	N America (SE)	Royal Fort	SM	Good	4.5m	
A	74	Taxus baccata	Taxaceae	English Yew	Native	Royal Fort	SM	OK	3m	
A	75	Taxus baccata	Taxaceae	English Yew	Native	Royal Fort	SM	OK	3m	
A	76	Ilex aquifolium 'Aurea Marginata'	Aquifoliaceae	Variegated Holly	Hort. Origin	Royal Fort	J	Good	1.5m	
A	77	Ilex aquifolium 'Aurea Marginata'	Aquifoliaceae	Variegated Holly	Hort. Origin	Royal Fort	J	Good	2.5m	
A	78	Buxus sempervirens 'Marginata'	Buxaceae	Common Box	Hort. Origin	Royal Fort	M	Good	3.5m	
A	79	Ilex x altaclarensis 'Golden King'	Aquifoliaceae	Highclere Holly	Hybrid Origin	Royal Fort	SM	Good	2.5m	
A	80	Ilex x altaclarensis 'Golden King'	Aquifoliaceae	Highclere Holly	Hybrid Origin	Royal Fort	SM	Good	3.5m	
A	81	Golinus coccygria 'Atropurpureus'	Anacardiaceae	Burning Bush	Hort. Origin	Royal Fort	SM	Good	7m	
A	82	Crataegus x prunifolia	Rosaceae	Plum Leafed Hawthorn	Hort. Origin	Royal Fort	M	Good	7m	
A	83	Berberis darwinii	Berberidaceae	Darwin's Barberry	Chile	Royal Fort	SM	Good	3.5m	
A	84	Viburnum lantana	Caprifoliaceae	Wayfaring Tree	Native	Royal Fort	SM	Good	4.5m	

Appendix B: Tree audit schedules

A	85	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Royal Fort	SM	Good	11m	
A	86	Cotoneaster simonsii	Rosaceae		Nepal	Royal Fort	SM	Good	6m	
A	87	Cotoneaster x watereri	Rosaceae		Hybrid Origin	Royal Fort	SM	Good	4.5m	
A	88	Malus x purpurea cv	Rosaceae	Crab Apple	Hort. Origin	Royal Fort	M	Good	7m	
A	89	Acer shirasawanum 'Aureum'	Aceraceae	Golden Japanese Maple	Japan	Royal Fort	M	Good	2.5m	
A	90	Acer shirasawanum 'Aureum'	Aceraceae	Golden Japanese Maple	Japan	Royal Fort	M	Good	3.5m	
R	91	Malus floribunda	Rosaceae	Japanese Crab apple	Japan	Royal Fort				
A	92	Davidia involucrata	Davidiaceae	Paper handkerchief Tree	China	Royal Fort	SM	Good	4.5m	
R	93	Fraxinus excelsior 'Pendula'	Oleaceae	Weeping Ash	Hort. Origin	Royal Fort	M	Poor	5.5m	
A	94	Fraxinus excelsior 'Pendula'	Oleaceae	Weeping Ash	Hort. Origin	Royal Fort	J	Good	4.5m	
A	95	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Royal Fort	M	Good	18m	
A	96	Platanus x hispanica	Platanaceae	London Plane	Hort. Origin	Royal Fort	M	Good	16m	
A	97	Acer japonicum cv	Aceraceae	Japanese Maple cv	Japan	Royal Fort	J	OK	5m	
R	98	Sorbus aucuparia	Rosaceae	Rowan	Native	Royal Fort				
A	99	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	J	Good	1.2m	
A	100	Prunus avium	Rosaceae	Wild Cherry	Native	Royal Fort	M	Good	7.5m	
A	101	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Royal Fort	M	Good	22m	
A	102	Cotoneaster affinis var bodifranii	Rosaceae	Himalayan Cotoneaster	Himalayas	Royal Fort	M	Good	1.5m	
A	103	Laburnum anagyroides	Leguminosae	Common Laburnum	Europe	Royal Fort	M	Poor	2.5m	
A	104	Euonymus japonicus	Celastraceae		Asia	Royal Fort	J	Good	0.5m	
A	105	Berberis gagnepainii	Berberidaceae		W China	Royal Fort	SM	Good	1.5m	
A	108	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	M	Good	7m	
A	109	Aesculus hippocastanum	Hippocastanaceae	Horse Chestnut	Greece	Royal Fort	M	Good	10m	
A	110	Ginkgo biloba	Ginkgoaceae	Maidenhair Tree	China	Royal Fort	M	Good	10m	Significant tree
R	112	Taxus baccata	Taxaceae	Common / English Yew	Native	Royal Fort				
A	113	Cedrus atlantica var glauca	Pinaceae	Blue Atlas Cedar	N Africa	Royal Fort	M	Good	20m	Significant tree
A	114	Fagus sylvatica 'Dawyck'	Fagaceae	Dawyck Beech	Hort. Origin	Royal Fort	M	Good	6.5m	Significant tree
A	115	Parrotia persica	Hamamelidaceae	Persian Ironwood	Iran	Royal Fort	M	Good	9m	
A	116	Parrotia persica	Hamamelidaceae	Persian Ironwood	Iran	Royal Fort	SM	Good	6m	
A	117	Elaeagnus macrophylla	Elaeagnaceae		Japan, Korea	Royal Fort	SM	Good	3.5m	
A	118	Olearia macrodontia	Compositae	New Zealand Holly	New Zealand	Royal Fort	SM	Good	4m	
A	119	Prunus x subhirtella 'Autumnalis'	Rosaceae	Autumn Cherry	Hort. Origin	Royal Fort	M	Good	8m	
A	120	Viburnum x burkwoodii	Caprifoliaceae		Hybrid Origin	Royal Fort	J	Good	1.5m	
A	121	Cotoneaster x watereri	Rosaceae		Hybrid Origin	Royal Fort	M	Good	6.5m	
A	122	Malus tschonoskii	Rosaceae	Crab Apple	Japan	Royal Fort	SM	Good	5.5m	
A	123	Betula pendula 'Dalecarlica'	Betulaceae	Dalecarlian Birch	Hort. Origin	Royal Fort	SM	Good	4.5m	
A	125	Platanus x hispanica	Platanaceae	London Plane	N America (E)	Royal Fort	SM	Good	11m	Significant tree
A	126	Pyrus calleryana 'Chanticleer'	Rosaceae	Chinese pear	Hort Origin	Royal Fort	SM	Good	4.5m	
A	127	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Royal Fort	M	Good	10m	
A	128	Malus tschonoskii	Rosaceae	Pillar Crab Apple	Japan	Royal Fort	SM	Good	7m	
A	129	Crataegus x lavallei 'Carriere'	Rosaceae		Hybrid Origin	Royal Fort	M	Good	8.5m	Significant tree
A	130	Aesculus hippocastanum	Hippocastanaceae	Horse Chestnut	Greece	Royal Fort	M	Good	21m	Significant tree
A	131	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Royal Fort	M	Good	12m	
A	132	Sorbus intermedia	Rosaceae			Royal Fort	M	Good	7.5m	
A	133	Liriodendron tulipifera	Magnoliaceae	Tulip tree	N America (E)	Royal Fort	SM	Good	9m	
A	134	Juniperus x media 'Pfitzeriana'	Cupressaceae	Pfitzer juniper	Hort. Origin	Royal Fort	M	Good	4.5m	
A	135	Viburnum plicatum 'Mariesii'	Caprifoliaceae	Japanese Snowball	Hort. Origin	Royal Fort	J	Good	1.5m	
A	138	Castanea sativa	Fagaceae	Sweet / Spanish Chestnut	S Europe, Asia Minor, N Africa	Royal Fort	SM	Good	10m	
R	139	Castanea sativa	Fagaceae	Sweet / Spanish Chestnut	S Europe, Asia Minor, N Africa	Royal Fort				
A	140	Aesculus hippocastanum	Hippocastanaceae	Horse Chestnut	Greece	Royal Fort	M	Good	14m	
A	141	Aesculus hippocastanum	Hippocastanaceae	Horse Chestnut	Greece	Royal Fort	M	Good	9m	
A	142	Aesculus hippocastanum	Hippocastanaceae	Horse Chestnut	Greece	Royal Fort	M	Good	16m	Significant tree
A	143	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Royal Fort	M	Good	18m	
A	144	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	M	Good	7m	
A	145	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	M	Good	6m	
A	146	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	M	Good	3.5m	
A	147	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	SM	Good	8m	
A	148	Taxus baccata	Taxaceae	Common / English Yew	Native	Royal Fort	J	Good	7m	
A	149	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Royal Fort	M	Good	22m	Significant tree
A	150	Corylus avellana	Corylaceae	Hazel	Native	Royal Fort	M	Good	6.5m	
A	152	Prunus laurocerasus	Rosaceae	Cherry laurel	S Europe, Asia Minor	Royal Fort	SM	Good	1.8m	
A	153	X Cupressocyparis ovensii	Cupressaceae	Cypress Hybrid	Hybrid Origin	Royal Fort	SM	Good	2.5m	
A	154	Castanea sativa	Fagaceae	Sweet / Spanish Chestnut	S Europe, Asia Minor, N Africa	Royal Fort	SM	Good	6m	
A	155	Osmanthus heterophyllus	Oleaceae		Japan, Taiwan	Royal Fort	SM	Good	0.8m	
A	157	Tilia tomentosa	Tiliaceae	Silver lime	Europe	Royal Fort	M	Poor	18m	
A	158									
A	159	Olearia nummularifolia	Compositae	New Zealand Daisy Bush	New Zealand	Royal Fort	M	Poor	2m	
A	159	Ilex aquifolium 'Aurea Marginata'	Aquifoliaceae		Hort. origin	Royal Fort	M	Good	8m	
A	161	Taxus baccata	Taxaceae	Common / English Yew	Native	Royal Fort	M	Good	10m	
A	162	Acer cappadocicum 'Rubrum'	Aceraceae	Cappadocian Maple cv	Hort. Origin	Royal Fort	SM	Good	16m	
R	163	Quercus cerris	Fagaceae	Turkey Oak	S Europe, Asia Minor	Royal Fort				
A	164	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Royal Fort	M	Good	22m	
A	165	Castanea sativa	Fagaceae	Sweet / Spanish Chestnut	S Europe, Asia Minor, N Africa	Royal Fort	M	Good	20m	Significant tree
A	166	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Royal Fort	M	Good	16m	Significant tree
A	167	Carpinus betulus	Corylaceae	Hornbeam	Native	Royal Fort	SM	Good	10m	
A	168	Betula pendula	Betulaceae	Common Silver Birch	Native	Royal Fort	M	Good	9m	
A	169	Liriodendron tulipifera	Magnoliaceae	Tulip Tree	N America (E)	Royal Fort	M	Good	9m	Significant tree
A	170	Fraxinus ornus	Oleaceae	Manna Ash	S Europe, Asia Minor	Royal Fort	SM	Good	6m	

Appendix B: Tree audit schedules

A	171	Koelreuteria paniculata	Sapindaceae	Goldenrain Tree / Pride of India'	China	Royal Fort	SM	Good	4.5m	
A	172	Mahonia aquifolium	Berberidaceae	Oregon Grape	N America (W)	Royal Fort	J	Good	10m	
A	173	Camellia spp.	Theaceae	Camellia	Asia	Royal Fort	J	Good	1.5m	
A	174	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	M	Good	8.5m	
A	175	X Cupressocyparis leylandii 'Castlewellan Gold'	Cupressaceae	Golden Leylandii	Hort. Origin	Royal Fort	M	Good	9m	
A	176	X Cupressocyparis leylandii 'Castlewellan Gold'	Cupressaceae	Golden Leylandii	Hort. Origin	Royal Fort	M	Good	8m	
A	177	Eucalyptus gunnii	Myrtaceae	Cider Gum	Tasmania	Royal Fort	SM	Good	1m	
A	178	Azara microphylla	Flacourtiaceae		S America	Royal Fort	J	Good	2.5m	
A	179	Taxus baccata	Taxaceae	Common / English Yew	Native	Royal Fort	SM	Good	6m	
A	180	Prunus lusitanica	Rosaceae		SW Europe	Royal Fort	M	Good	7m	
A	181	Acer pseudoplatanus 'Leopoldii'	Aceraceae	Variegated Sycamore	Europe (South, East)	Royal Fort	M	Good	16m	
A	182	Prunus laurocerasus	Rosaceae	Common / Cherry Laurel	Europe, Asia Minor	Royal Fort	M	Good	11m	
A	183	Acer platanoides 'Crimson King'	Aceraceae	Norway Maple cv	Hort. Origin	Royal Fort	SM	Good	8m	
A	184	Sequoia sempervirens	Taxodiaceae	California Redwood	N America (W)	Royal Fort	SM	Good	5.5m	
R	185	Fraxinus excelsior	Oleaceae	Ash	Europe	Royal Fort				
A	186	Corylus maxima 'Purpurea'	Corylaceae	Purple Filbert	Hort. Origin	Royal Fort	SM	Good	6.5m	
A	187	Liquidamber styraciflua	Hamamelidaceae	Sweet Gum	N America (E)	Royal Fort	SM	Good	2m	
A	188	Populus x canescens cv.	Salicaceae	Hybrid Ontario Poplar cv.	Hort. Orig	Royal Fort	M	Good	22m	Significant tree.
A	189	Ilex aquifolium 'Scotica'	Aquifoliaceae	Holly cv	Hort. Origin	Royal Fort	M	Poor	9m	
A	190	Quercus cerris	Fagaceae	Turkey Oak	S Europe, Asia Minor	Royal Fort	M	Poor	8m	
A	191	Quercus cerris	Fagaceae	Turkey Oak	S Europe, Asia Minor	Royal Fort	SM	Good	16m	
A	192	Prunus laurocerasus 'Otto Luyken'	Rosaceae	Common / Cherry laurel cv	Hort. Origin	Royal Fort	J	Good	3.5m	
A	194	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Royal Fort	M	Good	20m	Significant tree
A	195	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Royal Fort	SM	Good	2.5m	
A	196	Quercus cerris	Fagaceae	Turkey Oak	S Europe, Asia Minor	Royal Fort	SM	Good	16m	
A	197	Eucalyptus gunnii	Myrtaceae	Cider Gum	Tasmania	Royal Fort	J	Good	1.5m	
A	198	Robinia pseudoacacia	Leguminosae	False Acacia	N America (E)	Royal Fort	M	Good	10m	
A	199	Pittosporum tobira	Pittosporaceae		China, Japan	Royal Fort	J	Good	2.5m	
R	200	Corylus avellana 'Contorta'	Corylaceae	Corkscrew Hazel / Jermyn Laurel / Walking Stick	Hort. Origin	Royal Fort	SM	Good	4m	
A	202	Viburnum tinus 'variegata'	Caprifoliaceae		Hort. Origin	Royal Fort	SM	Good	2.5m	
A	204	Ilex aquifolium "Ferox"	Aquifoliaceae	Hedgehog Holly	Hort. Origin	Royal Fort	SM	Good	4.5m	
A	205	Ilex aquifolium 'Aurea Marginata'	Aquifoliaceae		Hort. Origin	Royal Fort	SM	Good	2.5m	
A	206	Ilex aquifolium 'Aurea Marginata'	Aquifoliaceae		Hort. Origin	Royal Fort	J	Good	2.5m	
A	207	Quercus cerris	Fagaceae	Turkey Oak	S Europe, Asia Minor	Royal Fort	M	Good	8.5m	
A	208	Cercidiphyllum japonicum	Cercidiphyllaceae	Katsura Tree	China	Royal Fort	M	Poor	4.5m	Significant tree
A	210	Arbutus unedo	Ericaceae	Strawberry Tree	Ireland, Mediterranean	Royal Fort	M	Good	11m	
A	211	Crataegus x prunifolia	Rosaceae	Plum Leafed Hawthorn	Hybrid Origin	Royal Fort	M	Good	10m	
A	212	Fagus sylvatica 'heterophylla'	Fagaceae		Hort. Origin	Royal Fort	SM	Good	7m	
A	213	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Royal Fort	SM	Good	4m	
A	214	Prunus sargentii	Rosaceae	Sargent's Cherry	China	Royal Fort	M	Good	8m	
R	215	Cotinus coggygria 'Grace'	Anacardiaceae	Burning Bush	Hybrid Origin	Royal Fort				
A	216	Tilia cordata	Tiliaceae	Small-leafed Lime	Native	Royal Fort	SM	Good	7m	Significant tree
A	218	Pinus sylvestris	Pinaceae	Scots pine	Native	Royal Fort	SM	Poor	3m	
A	219	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Royal Fort	M	Good	22m	Significant tree
A	220	Corylus maxima	Corylaceae	Filbert	Balkans	Royal Fort	SM	Good	3.5m	
A	221	Carpinus betulus	Corylaceae	Hornbeam	Native	Royal Fort	SM	Good	6.5m	
A	222	Morus nigra	Moraceae	Black Mulberry	W Asia	Royal Fort	M	Good	12m	
A	223	Prunus serrulata	Rosaceae	Japanese Cherry cv	Hort. Origin	Royal Fort	M	Good	10m	
A	224	Prunus serrulata	Rosaceae	Japanese Cherry cv	Hort. Origin	Royal Fort	SM	Poor	6m	
A	225	Prunus serrulata	Rosaceae	Japanese Cherry cv	Hort. Origin	Royal Fort	SM	Good	4.5m	
A	226	Quercus x hispanica 'Fulhamensis'	Fagaceae	Fulham Oak	Hort. Origin	Royal Fort	M	Good	21m	Significant tree
A	227	Quercus x hispanica 'Fulhamensis'	Fagaceae	Fulham Oak	Hort. Origin	Royal Fort	M	Good	22m	Significant tree
A	228	Quercus x hispanica 'Lucombeana'	Fagaceae	Lucombe Oak	Hort. Origin	Royal Fort	M	Good	23m	Significant tree
A	229	Populus x candicans 'Serotina Aurea'	Salicaceae	Golden Ontario Poplar	Hort. Origin	Royal Fort	SM	Poor	6.5m	
A	230	Fraxinus excelsior Westhofs Glory'	Oleaceae	Common Ash cv	Hort. Origin	Royal Fort	M	Good	16m	
A	231	Sorbus aria 'Lutescens'	Rosaceae		Native	Royal Fort	SM	Good	4.5m	
A	232	Magnolia x loebneri 'Leonard Messel'	Magnoliaceae	Magnolia hybrid cv	Hort. Origin	Royal Fort	J	Good	2.5m	
A	233	Magnolia x loebneri 'Leonard Messel'	Magnoliaceae	Magnolia hybrid cv	Hort. Origin	Royal Fort	SM	Good	5.5m	
A	234	Chamaecyparis lawsoniana 'Glauca group'	Cupressaceae	Blue Lawson	Hort. Origin	Royal Fort	M	Good	8m	
A	235	Sequoiadendron giganteum	Taxodiaceae	Wellingtonia	N America (W)	Royal Fort	J	Poor	3.5m	
A	236	Juniperus communis var suecica	Cupressaceae	Swedish Juniper	Scandinavia	Royal Fort	M	Good	4.5m	
A	237	Chamaecyparis lawsoniana 'Glauca group'	Cupressaceae	Blue Lawson cv	Hort. Origin	Royal Fort	M	Good	8m	
A	238	Thuja plicata	Cupressaceae	Western Red Cedar	N America (W)	Royal Fort	M	Good	6.5m	
A	239	Chamaecyparis pisifera 'Squarrosa'	Cupressaceae	Sawara Cypress cv	Hort. Origin	Royal Fort	SM	Good	0.5m	
R	240	Corylus maxima 'Purpurea'	Corylaceae	Purple Filbert	Hort. Origin	Royal Fort				
A	241	Chamaecyparis lawsoniana 'Glauca group'	Cupressaceae	Blue Lawson cv	Hort. Origin	Royal Fort	SM	Good	2.5m	
R	242	Sorbus aucuparia	Rosaceae	Mountain Ash	Europe, Asia	Royal Fort				
A	243	Cupressus sempervirens 'Stricta'	Cupressaceae	Italian / Mediterranean Cypress cv	Hort. Origin	Royal Fort	M	Good	3m	
A	244	Prunus serrulata 'Shirofuge'	Rosaceae	Japanese Cherry cv	Hort. Origin	Royal Fort	SM	Good	4.5m	
A	245	Chamaecyparis pisifera 'Squarrosa'	Cupressaceae	Sawara Cypress cv	Hort. Origin	Royal Fort	M	Good	6m	
A	246	Chamaecyparis lawsoniana 'Glauca group'	Cupressaceae	Blue Lawson	Hort. Origin	Royal Fort	M	Good	6m	
A	247	Chamaecyparis lawsoniana 'Glauca group'	Cupressaceae	Blue Lawson	Hort. Origin	Royal Fort	M	Good	4.5m	
A	248	Juniperus communis	Cupressaceae	Common Juniper	Native	Royal Fort	SM	Poor	3m	
A	249	Thuja plicata 'Zebrina'	Cupressaceae	Variegated Western Red Cedar	N America (W)	Royal Fort	M	Good	7m	Significant tree
A	250	Picea pungens 'Glauca Group'	Pinaceae	Colorado Spruce	Hort. Origin	Royal Fort	SM	Good	2.5m	
A	251	Corylus maxima	Corylaceae	Filbert	Europe (South, East)	Royal Fort	SM	Good	3m	
A	252	Ibo				Royal Fort	SM	Good	2m	
A	253	Cornus alternifolia 'Argentea'	Cornaceae	Variegated Pagoda Dogwood	Asia	Royal Fort	SM	Good	3.5m	

Appendix B: Tree audit schedules

A	254	Populus x candicans 'Aurora'	Salicaceae	Variegated Ontario Poplar	America (North)	Royal Fort	SM	Good	3m	
A	255	Prunus cerasifera 'Nigra'	Rosaceae	Purple Cherry Plum	Hort. Origin	Royal Fort	SM	Good	0.5m	
A	256	Taxus baccata 'Fastigiata'	Taxaceae	Irish Yew	Hort. Origin	Royal Fort	SM	Good	6.5m	
A	257	Hamamelis x intermedia	Hamamelidaceae	Witch Hazel		Royal Fort	SM	Good	2.5m	
A	258	Prunus avium	Rosaceae	Wild Cherry	Native	Royal Fort	M	Good	8m	Significant tree
R	259	Metasequoia glyptostroboides	Taxodiaceae	Dawn Redwood	China	Royal Fort				
A	260	Fagus sylvatica 'Dawyck'	Fagaceae	Dawyck Beech	Hort. Origin	Royal Fort	M	Good	8m	Significant tree
A	261	Parrotia persica	Hamamelidaceae	Persian Ironwood	Iran	Royal Fort	J	Good	2.5m	
A	262	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Royal Fort	M	Good	6.5m	
R	263	Solanum crispum 'Glasnevin'	Solanaceae	Chilean Potato Tree	Hort. Origin	Royal Fort				
R	264	Cercis siliquastrum	Leguminosae	Judas Tree	Mediterranean	Royal Fort				
A	265	Tilia tomentosa 'Petiolaris'	Tiliaceae	Weeping Silver Lime	Hort. Origin	Royal Fort	SM	Good	4.5m	
R	266	Prunus serrulata	Rosaceae	Japanese Cherry cv	Hort. Origin	Royal Fort				
A	267	Crataegus x lavallei 'Carriere'	Rosaceae	Hawthorn hybrid cv	Hybrid Origin	Royal Fort	M	Good	10m	
A	268	Betula pendula	Betulaceae	Common Silver Birch	Native	Royal Fort	M	Good	8m	
A	269	Acer davidii	Aceraceae	Pere Davids Maple	China	Royal Fort	J	Good	3m	
A	270	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Himalayas	Royal Fort	SM	Good	7m	
A	271	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Royal Fort	SM	Good	8m	
R	272	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Himalayas	Royal Fort				
A	273	Acer ginnala	Aceraceae	Amur Maple	China	Royal Fort	M	Good	10m	
A	274	Acer japonicum cv	Aceraceae	Japanese Half-Moon Maple cv	Hort. Origin	Royal Fort	M	Good	7.5m	
A	275	Liquidamber styraciflua	Hamamelidaceae	Sweet Gum	N America (E)	Royal Fort	SM	Poor	2.0m	
A	276	Acer palmatum cv	Aceraceae	Japanese Maple cv	Hort. Origin	Royal Fort	J	Good	1.5m	
A	277	Acer japonicum 'Aconitifolium'	Aceriaceae	Japanese Half-Moon Maple cv	Hort. Origin	Royal Fort	M	Good	8m	
R	278	Acer palmatum 'Filiferum'	Aceraceae	Japanese Maple cv	Hort. Origin	Royal Fort				
A	279	Acer palmatum 'Linearilobum'	Aceraceae	Japanese Maple cv	Hort. Origin	Royal Fort	SM	Poor	3m	
R	280	Liriodendron chinense	Magnoliaceae	Chinese Tulip Tree	China	Royal Fort				
A	281	Acer shirasawanum 'Aureum'	Aceraceae	Golden Japanese Maple	Hort. Origin	Royal Fort	J	Good	1m	
A	282	Acer palmatum	Aceraceae	Japanese Maple	Hort. Origin	Royal Fort	M	Good	5.5m	
A	283	Acer palmatum	Aceraceae	Japanese Maple	Hort. Origin	Royal Fort	M	Good	4.5m	Significant tree
R	284	Aesculus hippocastanum	Hippocastanaceae	Horse Chestnut	Europe	Royal Fort				
A	285	Chamaecyparis lawsoniana	Cupressaceae	Lawsons Cypress	N America (W)	Royal Fort	M	Good	4.5m	
A	286	Chamaecyparis lawsoniana	Cupressaceae	Lawsons Cypress	N America (W)	Royal Fort	M	Good	4.5m	
A	287	Chamaecyparis lawsoniana	Cupressaceae	Lawsons Cypress	N America (W)	Royal Fort	M	Good	4.5m	
A	288	X Cupressocyparis leylandii 'Castlewellan Gold'	Cupressaceae	Golden Leylandii	Hort. Origin	Royal Fort	SM	Good	3.5m	
A	289	X Cupressocyparis leylandii 'Castlewellan Gold'	Cupressaceae	Golden Leylandii	Hort. Origin	Royal Fort	SM	Good	5.5m	
A	290	X Cupressocyparis leylandii 'Leighton Green'	Cupressaceae	Leylandii cv	Hort. Origin	Royal Fort	M	Good	8m	
A	291	Laurus nobilis	Lauraceae	Bay Laurel	Mediterranean	Royal Fort	M	Good	8m	
R	292	Berberis spp.	Berberidaceae			Royal Fort				
A	293	Chamaecyparis lawsoniana 'Glauca group'	Cupressaceae	Blue Lawson	Hort. Origin	Royal Fort	M	Good	4m	
R	294	Garrya elliptica	Garryaceae		N America (W)	Royal Fort	J	Poor	4.5m	
A	295	Cercis siliquastrum	Leguminosae	Judas tree	Mediterranean	Royal Fort	M	Good	6.5m	
A	296	Magnolia x soulangeana	Magnoliaceae	Cup and Saucer Magnolia	Hybrid Origin	Royal Fort	SM	Good	3m	
A	297	Acer japonicum	Aceraceae	Japanese Half-Moon Maple	Japan	Royal Fort	M	Good	7m	
A	298	Magnolia x loebneri 'Leonard Messel'	Magnoliaceae		Hort. Origin	Royal Fort	M	Good	8m	
A	299	Thuja plicata 'Stricta'	Cupressaceae	Western Red Cedar cv	N America (W)	Royal Fort	M	Good	6.5m	
A	302	Choisya ternata	Rutaceae	Mexican Orange Blossom	Mexico	Royal Fort	SM	Good	3.5m	
A	303	Robinia pseudoacacia 'Frisia'	Leguminosae	False acacia	Hort. Origin	Royal Fort	M	Good	8m	
A	304	Acer negundo 'Elegans'	Aceraceae	Box Elder	Hort. Origin	Royal Fort	SM	Poor	9.5m	
R	305	Vitis vinifera	Vitaceae	Grape Vine	Asia Minor	Royal Fort	SM	Poor	2.5m	
A	306	Eriobotrya japonica	Rosaceae	Loquat	Japan, China	Royal Fort	SM	Good	6.5m	
R	307	X Fatshedera lizei	Araliaceae	Ivy hybrid	Hybrid Origin	Royal Fort	SM	Good	4m	
A	308	Griselinia littoralis	Griseliniaceae	Broadleaf	New Zealand	Royal Fort	SM	Good	5.5m	
A	309	Eucalyptus gunnii	Myrtaceae	Cider Gum	Tasmania	Royal Fort	SM	Good	2m	
R	310	Aesculus x ebbingea	Elaeagnaceae	Elaeagnus hybrid	Hort. Origin	Royal Fort	SM	Good	2.5m	
A	311	Maytenus boaria	Celastraceae		Chile	Royal Fort	M	Good	9m	
A	312	Hydrangea sargentiana	Hydrangeaceae	Sargent's Hydrangea	China	Royal Fort	SM	Good	10m	
A	313	Berberis x stenophylla	Berberidaceae	Berberis hybrid	Hort. Origin	Royal Fort	SM	Good	5.5m	
A	314	Clerodendrum trichotomum	Verbenaceae		China, Japan	Royal Fort	SM	Good	2.5m	Significant tree
A	315	Acer davidii	Aceraceae	Pere Davids Maple	China	Royal Fort	SM	Good	10m	Significant tree
R	316	Buxus sempervirens	Buxaceae	Common Box	Native	Royal Fort				
A	317	Prunus avium	Rosaceae	Wild Cherry	Native	Royal Fort	SM	Good	5.5m	
R	318	Juniperus x media 'Pfitzeriana Group'	Cupressaceae	Pfitzer Juniper hybrid	Hort. Origin	Royal Fort	SM	Good	1.5m	
A	319	Chamaecyparis pisifera 'Boulevard'	Cupressaceae	Sawara Cypress	Hort. Origin	Royal Fort	M	Good	4m	
A	320	Crataegus monogyna	Rosaceae	Common Hawthorn / May / Quick	Native	Royal Fort	M	Good	12m	Significant tree
A	321	Aesculus indica	Hippocastanaceae	Indian Horse Chestnut	Asia	Royal Fort	SM	Good	4.5m	
A	322	Robinia pseudoacacia	Leguminosae	False Acacia	N America (E)	Royal Fort	J	Good	1.5m	
A	323	Prunus avium	Rosaceae	Wild Cherry	Native	Royal Fort	M	Good	8m	
R	324	Aesculus x carnea 'Briotii'	Hippocastanaceae	Red Horse Chestnut cv	Hort. Origin	Royal Fort				
A	325	Chamaecyparis lawsoniana 'Stardust'	Cupressaceae	Lawson Cypress cv	Hort. Origin	Royal Fort	J	Good	3m	
A	326	Chamaecyparis pisifera 'Plumosa Aurea'	Cupressaceae	Sawara Cypress cv	Hort. Origin	Royal Fort	SM	Good	2.5m	
A	327	Quercus x hispanica 'Lucombeana Suberosa'	Fagaceae	Corky form of Lucombe Oak	Hort. Origin (Exeter)	Royal Fort	M	Good	16m	
R	328	Cytisus scoparius	Leguminosae	Broom	Europe	Royal Fort	SM	Good	2m	
A	329	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Royal Fort	SM	Good	4m	
A	330	Prunus avium	Rosaceae	Wild Cherry	'Native'	Royal Fort	M	Good	12m	
A	331	Ilex aquifolium 'Aurea Marginata'	Aquifoliaceae	Variegated Holly	Hort. origin	Royal Fort	M	Good	9m	
A	332	Robinia pseudoacacia	Leguminosae	False Acacia	N America (E)	Royal Fort	M	Good	8m	
A	333	Fagus sylvatica	Fagaceae	Common Beech	Native	Royal Fort	M	Good	18m	Significant tree

Appendix B: Tree audit schedules

A	1068	Liriodendron tulipifera	Magnoliaceae	Tulip Tree	N America (E)	Royal Fort	SM	Good	2m	
A	1069	Acer rubrum 'Fastigiatum'	Aceraceae	Fastigiate Red / Canadian Maple	Hort. Origin	Royal Fort	SM	Good	1.5m	
A	1070	Liquidamber styraciflua	Hamamelidaceae	Sweet Gum	N America (E)	Royal Fort	J	Good	1.5m	
A	1071	Acer rubrum 'Fastigiatum'	Aceraceae	Fastigiate Red / Canadian Maple	Hort. Origin	Royal Fort	SM	Good	2.5m	
A	1072	Tilia cordata	Tiliaceae	Small-Leaved Lime	Native	Royal Fort	SM	Good	3m	
A	1073	Olea europaea	Oleaceae	Olive	Mediterranean	Royal Fort	J	Good	1m	
A	1074	Olea europaea	Oleaceae	Olive	Mediterranean	Royal Fort	J	Good	1m	
A	1075	Olea europaea	Oleaceae	Olive	Mediterranean	Royal Fort	J	Good	1m	
A	1076	Gingko biloba	Gingkoaceae	Maidenhair Tree	Hort. Origin	Royal Fort	J	Good	1m	
A	1077	Gingko biloba	Gingkoaceae	Maidenhair Tree	China	Royal Fort	SM	Good	1.5m	
A	1079	Aesculus x carnea 'Briotii'	Hippocastanaceae	Horse Chestnut cv	Hybrid Origin	Royal Fort	SM	Good	2.5m	
A	1087	Ficus carica (x3)	Moraceae	Common Fig	W. Asia	Royal Fort	J	Good	2.5m	
A	1088	Parthenocissus tricuspidata	Vitaceae	Boston Ivy	China, Japan, Korea	Royal Fort	SM	Good	8.5m	
A	1089	Cryptomeria japonica	Taxodiaceae	Japanese Cedar	Japan	Royal Fort				
A	1100	Acer palmatum 'Sango-Kaku'	Aceraceae	Japanese Maple	Hort. Origin	Royal Fort	J	Good	2m	
A	1862	Cleroderendrum bungei				Royal Fort				
A	1863	Viburnum davidii				Royal Fort	SM	Good	2.5m	
A	1864	Deutzia mercatoris	Cornifolaceae	Deutzia	W China	Royal Fort				
A	1865	Morus nigra	Moraceae	Black Mulberry	W Asia	Royal Fort	J	Good	1m	
A	1866	Alnus incana	Betulaceae	Grey Alder	Native	Royal Fort	SM	Good	1.5m	
A	1867	Hydrangea aspera ssp sargentiana	Hydrangeaceae	Sargent's Hydrangea	China	Royal Fort	SM	Good	1m	
M	s20	Malus spp.	Rosaceae			Royal Fort	M	Good	4m	
M	s21	Malus spp.	Rosaceae			Royal Fort	M	Good	4m	
M	s22	Syringa vulgaris	Oleaceae	Common Lilac	E Europe	Royal Fort	M	Good	6m	
M	s23	Clerodendrum trichotomum	Verbenaceae		W China	Royal Fort	M	Good	6m	
M	s24	Clerodendrum trichotomum	Verbenaceae		W China	Royal Fort	M	Good	4m	
M	s25	Sorbus intermedia	Rosaceae			Royal Fort	SM	Good	3.5m	
M	s26	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Himalaya	Royal Fort	M	Good	8m	
M	s27	Betula pendula	Betulaceae	Common Silver Birch	Native	Royal Fort	M	Good	7m	
M	s28	Betula pendula	Betulaceae	Common Silver Birch	Native	Royal Fort	SM	Good	2m	
M	s29	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N America (W)	Royal Fort	SM	Good	2m	
M	s30	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N America (W)	Royal Fort	SM	Good	2m	
M	s31	Alnus cordata	Betulaceae	Italian Alder	S Italy, Corsica	Royal Fort	M	Good	6m	
M	s32	Acer platanoides 'Schwedleri'	Aceraceae	Norway Maple	Hort. Origin	Royal Fort	M	Good	10m	
M	s33	Corylus maxima 'Purpurea'	Corylaceae	Purple Filbert	Hort. Origin	Royal Fort	M	Good	5m	
	A	Betula pendula	Betulaceae	Common Silver Birch	Native	Osbourne Villas	M	Good	5m	
	B	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Osbourne Villas	M	Good	10m	
	C	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Osbourne Villas	M	Good	12m	
	D	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Osbourne Villas	M	Good	12m	
	E	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Osbourne Villas	M	Good	10m	
G	281	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Oldbury House	M	Good	10m	
G	282	Prunus laurocerasus	Rosaceae	Cherry Laurel	SE Europe	Oldbury House	M	Good	6m	
G	283	Taxus baccata	Taxaceae	Common / English Yew	Native	Oldbury House	SM	Good	6m	
G	298	Prunus Angelina 'Bundell'	Rosaceae		Hort. Origin	Oldbury House				
G	299	Crataegus monogyna	Rosaceae	Hawthorn		Oldbury House				
G	300	Prunus x subhirtella 'Autumnalis'	Rosaceae	Autumn cherry	Hort. Origin	Oldbury House				
M	1	Robinia pseudocacacia 'Frisia'	Leguminosae	False Acacia	N America (E)	21 Woodland Rd	M	Good	8m	
M	2	Crinodendron hookerianum	Elaeocarpaceae	Lantern Tree	Chile	21 Woodland Rd				
M	3	Pittosporum tobira 'Aurea'	Pittosporaceae		Hort. Origin	21 Woodland Rd				
M	4	Carpinus betulus 'Pyramidalis'	Corylaceae	Fastigiate Hornbeam	Hort. Origin	21 Woodland Rd	SM	Good	8m	
M	5	Prunus cerasifera 'Nigra'	Rosaceae	Purple Cherry	Hort. Origin	21 Woodland Rd	SM	Good	8m	
M	6	Crataegus monogyna	Rosaceae	Hawthorn sp		21 Woodland Rd	SM	Poor	4m	
M	7	Quercus ilex	Fagaceae	Holm Oak	S Europe	21 Woodland Rd				
M	8	Prunus cerasifera 'Nigra'	Rosaceae	Purple Cherry	Hort. Origin	21 Woodland Rd	SM	Good	6m	
M	9	Prunus cerasifera 'Nigra'	Rosaceae	Purple Cherry	Hort. Origin	21 Woodland Rd	SM	Good	6m	
M	10	Quercus ilex	Fagaceae	Holm Oak	S Europe	21 Woodland Rd	M	Good	12m	Significant tree
M	11	Pyrus salicifolia	Rosaceae	Willow-Leaved Pear	Caucasus	21 Woodland Rd	J	Good	2m	
M	12	Clerodendrum trichotomum	Verbenaceae		China, Japan	21 Woodland Rd	SM	Good	4m	
M	13	Betula pendula 'Youngii'	Betulaceae	Young's Weeping Birch	Hort. Origin	21 Woodland Rd	SM	Good	6m	
M	14	Griselinia littoralis	Griseliniaceae	Broadleaf	New Zealand	21 Woodland Rd	SM	Good	6m	
M	15	Fagus sylvatica	Fagaceae	Common Beech	Native	21 Woodland Rd	M	Good	14m	
M	16	Fagus sylvatica	Fagaceae	Common Beech	Native	21 Woodland Rd	M	Good	14m	
	1101	Betula utilis var. jacquemontii	Betulaceae	Himalayan Birch cv	Hort. Origin	21 Woodland Rd	J	Good	0.5m	Sapling
M	17	Betula pendula	Betulaceae	Common Silver Birch	Native	19 Woodland Rd	SM	Good	6m	
M	18	Carpinus betulus	Corylaceae	Hornbeam	Native	19 Woodland Rd	SM	Good	9m	
M	19	Sorbus intermedia	Rosaceae	Rowan		17 Woodland Rd	SM	Good	6m	
M	20	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Asia	17 Woodland Rd	SM	Good	4.5m	
M	21	Betula pubescens	Betulaceae	Downy Birch	Native	17 Woodland Rd	J	Poor	2.5m	
M	22	Sambucus nigra	Caprifoliaceae	Black Elder	Hort. Origin	17 Woodland Rd	SM	Good	2.5m	
M	23	Acer cappadocicum	Aceraceae	Cappadocian Maple	Europe	15 Woodland Rd	SM	Good	6m	
M	24	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	Hort. Origin	15 Woodland Rd	SM	Good	4m	
M	25	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	Hort. Origin	15 Woodland Rd	SM	Good	4m	
M	26	Betula pendula	Betulaceae	Common Silver Birch	Native	15 Woodland Rd	SM	Good	6m	
M	27	Pinus sylvestris	Pinaceae	Scots Pine	Native	15 Woodland Rd	J	Good	3.5m	
M	28	Malus spp.	Rosaceae	Pear		15 Woodland Rd	M	Good	9m	
M	29	Fatsia japonica				15 Woodland Rd	M	Good	6m	
M	30	Betula pendula	Betulaceae	Common Silver Birch	Native	11 Woodland Rd				
M	31	Griselinia littoralis	Griseliniaceae		New Zealand	11 Woodland Rd	M	Good	9m	

Appendix B: Tree audit schedules

M	32	Betula pendula	Betulaceae	Common Silver Birch	Native	11 Woodland Rd	M	Good	5m	
M	33	Viburnum plicatum 'Mariesii'	Caprifoliaceae		Hort. Origin	11 Woodland Rd	M	Good	8m	
M	34	Betula utilis	Betulaceae	Himalayan Birch	Asia	11 Woodland Rd	SM	Good	4m	
M	35	Acer negundo 'Variegatum'	Aceraceae	Variegated Box Elder	Hort. Origin	11 Woodland Rd	SM	Good	3.5m	
M	36	Pinus nigra var. maritima	Pinaceae	Corsican Pine	Corsica	11 Woodland Rd	J	Good	2m	
M	37	Pinus nigra var. maritima	Pinaceae	Corsican Pine	Corsica	11 Woodland Rd	J	Good	3m	Group of self-seeded pines
M	38	Ilex x altaclarensis 'Lawsoniana'	Aquifoliaceae	Highclere Holly	Hort. Origin	11 Woodland Rd	SM	Good	3m	
M	39	Ilex x altaclarensis 'Camelliifolia'	Aquifoliaceae	Highclere Holly	Hort. Origin	11 Woodland Rd	SM	Good	4.5m	
M	40	Ilex aquifolium 'Argentea Marginata'	Aquifoliaceae	Broad-leaved Silver Holly	Hort. Origin	11 Woodland Rd	SM	Good	3m	
M	41	Ilex x altaclarensis 'Golden King'	Aquifoliaceae	Highclere Holly	Hort. Origin	11 Woodland Rd	SM	Good	3m	
M	42	Laurus nobilis	Lauraceae	Bay Laurel	Mediterranean	11 Woodland Rd	SM	Good	3m	
M	43	Ilex x altaclarensis 'Wilsonii'	Aquifoliaceae	Highclere Holly	Hort. Origin	11 Woodland Rd	SM	Good	3m	
M	44	Chamaecyparis pisifera 'Filifera Aurea'	Cupressaceae	Sawara Cypress cv	Hort. Origin	11 Woodland Rd	SM	Good	3m	
M	45	Cupressus macrocarpa 'Lutea'	Cupressaceae	Golden Monterey Cypress	Hort. Origin	11 Woodland Rd	M	Good	5m	
M	46	Juniperus scopulorum 'Skyrocket'	Cupressaceae	Rocky Mountain Juniper	Hort. Origin	11 Woodland Rd				
M	47	Juniperus squamata 'Meyeri'	Cupressaceae	Juniper	Hort. Origin	11 Woodland Rd	SM	Good	3m	Group
M	48	Prunus x subhirtella 'Autumnalis'	Rosaceae	Autumn Cherry	Hort. Origin	11 Woodland Rd	M	Good	9m	
M	49	Magnolia x soulangeana	Magnoliaceae	Cup and Saucer Magnolia	Hybrid Origin	9 Woodland Rd	M	Good	7m	
M	50	Malus tschonoskii	Rosaceae	Flowering Crabapple	Japan	9 Woodland Rd	M	Good	7m	
	2001	Betula pubescens	Betulaceae	Downy Birch	Native	9 Woodland Rd	M	Good	4m	
	2002	Betula pendula	Betulaceae	Common Silver Birch	Native	9 Woodland Rd	M	Good	5m	
	2003	Sequoia sempervirens	Taxodiaceae	California Redwood	N America (W)	9 Woodland Rd	SM	Good	9m	
M	51	Acer platanoides	Aceraceae	Norway Maple	Europe	19 Woodland Rd	M	Good	11 m	Significant tree
M	52	Prunus serrulata 'Kanzan'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	17 Woodland Rd	M	Good	10m	
M	53	Prunus serrulata 'Kanzan'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	17 Woodland Rd	M	Good	9m	
M	54	Malus tschonoskii	Rosaceae	Flowering Crab Apple	Japan	17 Woodland Rd	SM	Good	2m	
M	55	Magnolia x soulangeana	Magnoliaceae	Cup and Saucer Magnolia	Hybrid Origin	17 Woodland Rd	SM	Good	6m	
M	56	Viburnum opulus	Caprifoliaceae			17 Woodland Rd	SM	Good	5m	
M	57	Taxus baccata	Taxaceae	Common / English Yew	Native	15 Woodland Rd	M	Good	8m	
M	58	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	15 Woodland Rd	M	Good	15m	
M	60	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	15 Woodland Rd	M	Good	18m	Significant tree
M	61	Clerodendrum trichotomum	Verbenaceae		China, Japan	15 Woodland Rd	SM	Good	6m	Significant tree
M	62	Cercis siliquastrum	Leguminosae	Judas Tree	Mediterranean	15 Woodland Rd	SM	Good	3m	
M	63	Prunus x subhirtella 'Autumnalis'	Rosaceae	Autumn Cherry	Hort. Origin	15 Woodland Rd	SM	Good	5m	
M	64	Drimys lanceolata	Winteraceae	Mountain Pepper	Australia					
M	65	Ginkgo biloba	Ginkgoaceae	Maidenhair Tree	China	17 Woodland Rd	SM	Good	9m	
M	66	Mahonia lomariifolia	Berberidaceae		W China	15 Woodland Rd	M	Good	2.5m	
M	67	Cedrus atlantica var glauca	Pinaceae	Blue Atlas Cedar	N Africa	13 Woodland Rd	M	Good	12m	
M	68	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	13 Woodland Rd	SM	Good	5.5m	
M	69	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	13 Woodland Rd	SM	Good	5.5m	
M	70	Ilex aquifolium 'Crispa'	Aquifoliaceae	Common Holly cv	Hort. Origin	13 Woodland Rd	SM	Good	5m	
M	71	Ilex aquifolium 'Aurea Marginata'	Aquifoliaceae	Common Holly cv	Hort. Origin	13 Woodland Rd	SM	Good	4m	
M	72	Clerodendrum trichotomum	Verbenaceae		China, Japan	13 Woodland Rd	SM	Good	3m	
M	73	Acer platanoides 'Columnare'	Aceraceae	Norway Maple cv	Hort. Origin	13 Woodland Rd	M	Good	5.5m	
M	74	Carpinus betulus	Corylaceae	Hornbeam	Native	11 Woodland Rd	M	Good	16m	Significant tree
M	75	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	11 Woodland Rd	M	Good	18m	
M	76	Syringa vulgaris	Oleaceae	Common Lilac	E Europe	11 Woodland Rd	SM	Good	4m	
M	77	Prunus serrulata 'Kanzan'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	11 Woodland Rd	SM	Good	7m	
M	78	Prunus 'Spire'	Rosaceae	Flowering Cherry	Hort. Origin	11 Woodland Rd	SM	Good	8m	
M	79	Betula utilis	Betulaceae	Himalayan Birch	Asia	11 Woodland Rd	SM	Good	4m	
M	80	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	11 Woodland Rd	M	Good	8m	
M	81	Ginkgo biloba	Ginkgoaceae	Ginkgo / Maidenhair Tree	China	11 Woodland Rd	M	Good	2.5m	
M	82	Viburnum opulus 'Mariesii'	Caprifoliaceae		Hort. Origin	11 Woodland Rd	M	Good	2.5m	
M	83	Crataegus spp.	Rosaceae			9 Woodland Rd	SM	Good	7m	
M	84	Crataegus prunifolia 'Rosea Flore Pleno'	Rosaceae	Midland Hawthorn	Hort. Origin	9 Woodland Rd	SM	Good	5m	
M	85	Corylus maxima 'Purpurea'	Corylaceae	Purple Filbert	Hort. Origin	9 Woodland Rd	SM	Good	6m	
M	86	Aesculus hippocastanum	Hippocastanaceae	Horse Chestnut	Greece	5 Woodland Rd	M	Good	15m	Significant tree
M	87	Corylus avellana 'Contorta'	Corylaceae	Corkscrew Hazel / Harry Lauder's Walking Stick	Hort. Origin	5 Woodland Rd	SM	Good	4m	
M	88	Morus nigra	Moraceae	Black Mulberry	W Asia	5 Woodland Rd	M	Good	9m	
M	89	Betula pendula	Betulaceae	Common Silver Birch	Native	5 Woodland Rd	SM	Good	5m	
M	90	Betula pendula	Betulaceae	Common Silver Birch	Native	5 Woodland Rd	SM	Good	6m	
M	91	Carpinus betulus 'Pyramidalis'	Corylaceae	Fastigiate Hornbeam	Hort. Origin	5 Woodland Rd	M	Good	10m	
M	92	Acer platanoides 'Crimson King'	Aceraceae	Norway Maple	Hort. Origin	3 Woodland Rd	M	Good	7.5m	
M	93	Cydonia oblonga	Rosaceae		W Asia	1 Woodland Rd	SM	Good	4.5m	
M	94	Prunus serrulata 'Amanogawa'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	1 Woodland Rd	SM	Good	2m	
M	95	Betula papyrifera	Betulaceae	Paper / Canoe Birch	N America	1 Woodland Rd	M	Good	8.5m	Significant tree
M	96	Viburnum opulus 'Dawn'	Caprifoliaceae		Hort. Origin	1 Woodland Rd	SM	Good	4m	
M	97	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	1 Woodland Rd	M	Good	18m	Significant tree
M	98	Syringa vulgaris 'Alba'	Oleaceae	White flowering Common Lilac	Hort. Origin	1 Woodland Rd	SM	Good	4m	
M	99	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	1 Woodland Rd	M	Good	13m	Significant tree
M	101	Amelanchier lamarckii	Rosaceae	Snowy mespilus	Unknown origin	1 Woodland Rd	J	Good	2.5m	
M	102	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin					
M	103	Pyrus salicifolia	Rosaceae	Willow-Leaved Pear	Caucasus	30/32 Tyndall's Park Rd	SM	Good	3m	
M	104	Pyrus calleryana 'Chanticleer'	Rosaceae	Chinese Pear cv	Hort. Origin	30/32 Tyndall's Park Rd	M	Good	5.5m	
M	105	Colomeaster glaucophyllus	Rosaceae		W China	30/32 Tyndall's Park Rd	M	Good	6m	
M	106	Pyrus calleryana 'Chanticleer'	Rosaceae	Chinese Pear cv	Hort. Origin	30/32 Tyndall's Park Rd	M	Good	6m	
M	107	Prunus x subhirtella 'Autumnalis'	Rosaceae	Autumn Cherry	Hort. Origin	30/32 Tyndall's Park Rd	M	Good	5m	
M	108	Pyrus calleryana 'Chanticleer'	Rosaceae	Chinese Pear cv	Hort. Origin	30/32 Tyndall's Park Rd	Mature	Good	4m	

Appendix B: Tree audit schedules

M	109	Carpinus betulus 'Pyramidalis'	Corylaceae	Fastigiate Hornbeam	Hort. Origin	30'32 Tyndall's Park Rd	Mature	Good	7m	
M	110	Betula pendula 'Trisilis'	Betulaceae	Common Silver Birch cv	Hort. Origin	30'32 Tyndall's Park Rd	Semi-mature	Good	3m	
M	111	Betula pendula 'Trisilis'	Betulaceae	Common Silver Birch cv	Hort. Origin	30'32 Tyndall's Park Rd	Semi-mature	OK	2m	
M	112	Pyrus communis	Rosaceae	Common Pear	Native	6 Woodland Rd	Mature	Good	8m	
M	113	Betula pendula 'Trisilis'	Betulaceae	Common Silver Birch cv	Hort. Origin	6 Woodland Rd	Semi-mature	OK	4.5m	
M	114	Mahonia aquifolium	Berberidaceae			6 Woodland Rd	Semi-mature	OK	2.5m	
M	115	Griselinia littoralis	Griseliniaceae		New Zealand					
M	116	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	8 Woodland Rd	Mature	Good	18m	Significant tree
M	117	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	8 Woodland Rd	Semi-mature	Good	6m	
M	118	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Asia	8 Woodland Rd	Semi-mature	Good	4m	
M	119	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Asia	8 Woodland Rd	Semi-mature	OK	3m	
M	120	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	8 Woodland Rd	Semi-mature	OK	3.5m	
M	121	Ilex aquifolium 'Argentea Marginata'	Aquifoliaceae	Broad-leaved Silver Holly	Hort. Origin	8 Woodland Rd	Semi-mature	Good	3.5m	
M	122	Ilex aquifolium 'Scotica'	Aquifoliaceae	Common Holly cv	Hort. Origin	8 Woodland Rd	Mature	Good	8m	
M	123	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Hort. Origin	8 Woodland Rd	Semi-mature	OK	3m	
M	124	Ilex x altaclarensis 'Atkinsonii'	Aquifoliaceae	Highclere Holly	Hort. Origin	8 Woodland Rd	Semi-mature	Good	4m	
M	125	Ilex aquifolium	Aquifoliaceae	Common Holly	Hort. Origin	8 Woodland Rd	Semi-mature	OK	2m	
M	126	Griselinia littoralis	Griseliniaceae		New Zealand	8 Woodland Rd	Semi-mature	Good	4m	
M	127	Taxus baccata	Taxaceae	Common / English Yew	Native	8 Woodland Rd	Semi-mature	OK	5.5m	
M	128	Ilex aquifolium 'Aurea Marginata'	Aquifoliaceae	Common Holly cv	Hort. Origin	8 Woodland Rd	Semi-mature	Good	4m	
M	129	Ilex aquifolium	Aquifoliaceae	Common Holly cv	Hort. Origin	8 Woodland Rd	Semi-mature	Good	3m	
M	130	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	8 Woodland Rd	Mature	Good	9m	
M	131	Aesculus hippocastanum	Hippocastanaceae	Horse Chestnut	Greece	10 Woodland Rd	Mature	Good	14m	Significant tree
M	132	Laburnum anagyroides	Leguminosae	Common Laburnum	Europe	10 Woodland Rd	Semi-mature	Poor	1.5m	
M	133	Laburnum anagyroides	Leguminosae	Common Laburnum	Europe	10 Woodland Rd	Mature	Good	7m	
M	134	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	10 Woodland Rd	Mature	Good	18m	Significant tree
M	135	Taxus baccata	Taxaceae	Common / English Yew	Native	10 Woodland Rd	Mature	Good	9m	
M	136	Ilex aquifolium 'Scotica'	Aquifoliaceae	Common Holly cv	Hort. Origin	10 Woodland Rd	Mature	Good	4.5m	
M	137	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	10 Woodland Rd	Mature	Good	18m	Significant tree
M	138	Betula pendula	Betulaceae	Common Silver Birch	Native	10 Woodland Rd	Mature	Good	7m	
M	139	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Asia	10 Woodland Rd	Juvenile	Good	2m	
M	140	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Asia	10 Woodland Rd	Juvenile	Good	2m	
M	141	Cotoneaster ovalifolium	Rosaceae			Woodland Rd				
M	142	Crataegus laevigata 'Paul's Scarlet'	Rosaceae	Midland Hawthorn cv	Hort. Origin	12 Woodland Rd	Mature	OK	6m	
M	143	Crataegus laevigata 'Paul's Scarlet'	Rosaceae	Midland Hawthorn cv	Hort. Origin	12 Woodland Rd	Mature	Poor	4.8m	
M	144	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	12 Woodland Rd	Mature	Good	18m	Significant tree
M	145	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	12 Woodland Rd	Mature	Good	13m	
M	147	Pyrus communis	Rosaceae	Common Pear	Native	12 Woodland Rd	Mature	Good	6m	
M	149	Fraxinus ornus	Oleaceae	Manna Ash	S Europe, Asia Minor	Hawthorns	Semi-mature	Good	4.5m	
M	150	Clerodendrum trichotomum	Verbenaceae		China, Japan	Hawthorns	Semi-mature	Good	6m	
M	151	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Hawthorns	Semi-mature	Good	4.5m	
M	153	Crataegus laevigata 'Paul's Scarlet'	Rosaceae	Midland Hawthorn cv	Hort. Origin	Hawthorns	Semi-mature	OK	4m	
M	154	Crataegus laevigata 'Paul's Scarlet'	Rosaceae	Midland Hawthorn cv	Hort. Origin	Hawthorns	Semi-mature	OK	6m	
M	155	Betula pendula	Betulaceae	Common Silver Birch	Native	Hawthorns	Semi-mature	Good	3.5m	
M	156	Betula pendula	Betulaceae	Common Silver Birch	Native	Hawthorns	Semi-mature	Good	3.5m	
M	157	Betula pendula	Betulaceae	Common Silver Birch	Native	Hawthorns	Semi-mature	Good	3.5m	
M	158	Fagus sylvatica 'Dawyck'	Fagaceae	Dawyck Beech	Hort. Origin	Hawthorns	Semi-mature	Good	1.5m	
M	159	Malus x purpurea	Rosaceae		Hort. Origin	8 Priory Rd	Semi-mature	OK	3m	
M	160	Malus x purpurea	Rosaceae		Hort. Origin	8 Priory Rd	Mature	OK	6m	
M	161	Osmanthus delavayi	Oleaceae		China	8 Priory Rd	Mature	Good	8m	
M	162	Malus domestica	Rosaceae	Orchard Apple	Hort. Origin	8 Priory Rd	Mature	Good	7m	
M	163	Tilia tomentosa 'Pelliolaris'	Tiliaceae	Weeping Silver Lime	Hort. Origin	8 Priory Rd	Mature	Good	6m	
M	164	Tilia tomentosa 'Pelliolaris'	Tiliaceae	Weeping Silver Lime	Hort. Origin	8 Priory Rd	Mature	Good	6m	
M	165	Tilia tomentosa 'Pelliolaris'	Tiliaceae	Weeping Silver Lime	Hort. Origin	8 Priory Rd	Mature	Good	6m	
M	166	Prunus laurocerasus	Rosaceae	Common / Cherry Laurel	E Europe, Asia Minor	8 Priory Rd	Semi-mature	OK	2m	
M	167	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N America (W)	8 Priory Rd	Mature	Good	5.5m	
M	168	Viburnum tinus	Caprifoliaceae	Laurustinus	Mediterranean	8 Priory Rd	Semi-mature	Good	3.5m	
M	169	Malus domestica	Rosaceae	Orchard Apple	Hort. Origin	8 Priory Rd	Semi-mature	OK	3m	
M	170	Prunus serrulata	Rosaceae	Japanese Flowering Cherry	Hort. Origin	8 Priory Rd	Juvenile	Good	1m	
M	171	Crataegus lavigata	Rosaceae	Midland Hawthorn cv	Hort. Origin	7 Priory Rd	Semi-mature	Good	6m	
M	172	Pittosporum tenuifolium	Pittosporaceae		New Zealand	7 Priory Rd	Semi-mature	Good	2m	
M	173	Taxus baccata	Taxaceae	Common / English Yew	Native	7 Priory Rd	Semi-mature	OK	2.5m	
M	174	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	7 Priory Rd	Mature	Good	6m	
M	175	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	7 Priory Rd	Mature	Good	6m	
M	176	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	7 Priory Rd	Mature	Good	6m	
M	177	Viburnum farrei	Caprifoliaceae		N China	7 Priory Rd				
M	178	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	7 Priory Rd	Mature	Good	6m	
M	179	Fremontodendron californicum	Sterculiaceae	Flannel Bush	N America (SW)	7 Priory Rd	Semi-mature	Good	4m	
M	180	Salix babylonica var. pekinensis 'Tortuosa'	Salicaceae	Weeping Willow	Hort. Origin	6 Priory Rd	Semi-mature	Good	5.5m	
M	181	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	6 Priory Rd	Mature	Good	12m	
M	183	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	6 Priory Rd	Mature	Good	10m	
M	184	Fraxinus excelsior	Oleaceae	Common Ash	Native	5 Priory Rd	Mature	Good	18m	Significant tree
M	185	x Fatshedera lizei	Araliaceae		Hybrid Origin	5 Priory Rd	Semi-mature	Good	5m	
M	186	Acer negundo	Aceraceae	Box Elder	N America	5 Priory Rd	Semi-mature	OK	6m	
M	187	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	4 Priory Rd	Mature	Good	17m	Significant tree
M	188	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	4 Priory Rd	Mature	Good	4m	
M	189	Taxus baccata	Taxaceae	Common / English Yew	Native	4 Priory Rd	Mature	OK	3m	
M	190	Taxus baccata	Taxaceae	Common / English Yew	Native	4 Priory Rd	Mature	OK	3m	

Appendix B: Tree audit schedules

M	191	Taxus baccata	Taxaceae	Common / English Yew	Native	4 Priory Rd	Mature	OK	6m	
M	194	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	3 Priory Rd	Semi-mature	Good	2m	
M	195	Pyrus salicifolia 'Pendula'	Rosaceae	Weeping Willow-Leaved Pear	Hort. Origin	3 Priory Rd	Semi-mature	Good	2.5m	
M	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
M	197	Laurus nobilis	Lauraceae	Bay Laurel	Mediterranean	3 Priory Rd	Mature	OK	7m	
M	198	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N.America (W)	3 Priory Rd	Mature	Good	4.5m	
M	199	Fraxinus excelsior	Oleaceae	Common Ash	Native	3 Priory Rd	Mature	OK	3.5m	Pollarded
M	200	Betula pendula	Betulaceae	Common Silver Birch	Native	3 Priory Rd	Semi-mature	Good	4.5m	
M	201	Prunus serrulata	Rosaceae	Japanese Flowering Cherry	Hort. Origin	2 Priory Rd	Semi-mature	Good	5m	
M	202	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	2 Priory Rd	Semi-mature	OK	4m	
M	203	Quercus rubra	Fagaceae	Red Oak	N America (E)	2 Priory Rd	Mature	Good	16m	Significant tree
M	204	Fagus sylvatica	Fagaceae	Common Beech	Native	2 Priory Rd	Mature	Good	14m	
M	205	Prunus avium	Rosaceae	Wild Cherry	Native	2 Priory Rd	Semi-mature	OK	2m	
M	206	Crataegus monogyna	Rosaceae	Hawthorn		1 Priory Rd	Mature	OK	6m	
M	207	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	1 Priory Rd	Mature	Good	12m	Significant tree
M	208	Betula pendula	Betulaceae	Common Silver Birch	Native	1 Priory Rd	Mature	OK	9m	
M	209	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	1 Priory Rd	Semi-mature	OK	3m	
M	210	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	1 Priory Rd	Mature	Good	13m	Significant tree
M	211	Carpinus betulus	Corylaceae	Hornbeam	Native	1 Priory Rd	Semi-mature	Good	5.5m	
M	212	Populus x canadensis	Salicaceae	Hybrid Poplar	Hybrid Origin	1 Priory Rd	Mature	OK	8m	
M	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
M	214	Hydrangea [illegible]	Hydrangeaceae	Hydrangea sp.	China	1 Priory Rd	Mature	Poor	1.5m	
M	215	Acer palmatum cv	Aceraceae	Japanese Maple cv	Hort. Origin	1 Priory Rd	Mature	Good	5.5m	
M	216	Carpinus betulus	Corylaceae	Hornbeam	Native	1 Priory Rd	Semi-mature	Good	7m	
M	217	Taxus baccata	Taxaceae	Common / English Yew	Native	10 Priory Rd	Semi-mature	Good	4m	
M	218	Ilex aquifolium 'Scotica'	Aquifoliaceae	Common Holly cv	Hort. Origin	10 Priory Rd	Semi-mature	Good	4.5m	
M	219	Ilex x altaclarensis 'Lawsoniana'	Aquifoliaceae	Highclere Holly	Hort. Origin	10 Priory Rd				
M	220	Acer palmatum 'Atropurpureum'	Aceraceae	Japanese Maple cv	Hort. Origin	10 Priory Rd	Juvenile	Poor	1m	
M	221	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	10 Priory Rd	Mature	Good	18m	Significant tree
M	222	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	10 Priory Rd	Juvenile	Good	1.5m	
M	223	Hebe spp.	Scrophulariaceae			Priory Rd				
M	224	Rhus typhina	Anacardiaceae	Stag's Horn Sumach	N America (E)	Priory Rd	Semi-mature	Good	2.5m	
M	225	Calocedrus decurrens	Cupressaceae	Incense Cedar	N America (W)	11 Priory Rd	Mature	Good	8m	
M	226	Malus tschonoskii	Rosaceae		Japan	11 Priory Rd	Mature	Good	3m	
M	227	Alnus cordata	Betulaceae	Italian Alder	S Italy, Corsica	11 Priory Rd	Mature	Good	10m	
M	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
M	229	Sorbus aucuparia	Rosaceae	Rowan	Native	11 Priory Rd	Semi-mature	Good	7m	
M	230	Fraxinus excelsior	Oleaceae	Common Ash	Native	Priory Rd / Alfred Marshall building	Semi-mature	Good	6m	
M	231	Alnus cordata	Betulaceae	Italian Alder	S Italy, Corsica	Priory Rd / Alfred Marshall building	Mature	Good	8m	
M	232	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Priory Rd / Alfred Marshall building	Mature	Poor	5.5m	
M	233	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Priory Rd / Alfred Marshall building	Semi-mature	Good	9m	
M	234	Carpinus betulus	Corylaceae	Hornbeam	Native	Priory Rd / Alfred Marshall building	Semi-mature	Good	5.5m	
M	235	Syringa vulgaris	Oleaceae	Common Lilac	E Europe	Priory Rd / Alfred Marshall building	Semi-mature	Good	4m	
M	236	Liriodendron tulipifera	Magnoliaceae	Tulip Tree	N America (E)	Priory Rd / Alfred Marshall building	Semi-mature	Good	6m	
M	237	Malus tschonoskii	Rosaceae		Japan	Priory Rd / Alfred Marshall building	Semi-mature	Good	2.5m	
M	238	Ilex x altaclarensis 'Belgica'	Aquifoliaceae	Highclere Holly	Hort. Origin	Priory Rd / Alfred Marshall building	Mature	Good	7m	
M	239	Ilex x altaclarensis 'Atkinsonii'	Aquifoliaceae	Highclere Holly	Hort. Origin	Priory Rd / Alfred Marshall building	Mature	Good	9m	
M	240	Laurus nobilis	Lauraceae	Bay Laurel	Mediterranean	Priory Rd / Alfred Marshall building	Semi-mature	Good	2m	
M	241	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Himalaya	12 Priory Rd	Semi-mature	Good	3m	
M	242	Acer campestre	Aceraceae	Field Maple	Native	12 Priory Rd	Mature	Good	12m	
M	243	Robinia pseudoacacia 'Frisia'	Leguminosae	False Acacia cv	Hort. Origin	12 Priory Rd	Semi-mature	Good	6.5m	
M	244	Griselinia littoralis	Griseliniaceae	Broadleaf	New Zealand	12 Priory Rd				
M	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
M	246	Magnolia grandiflora	Magnoliaceae	Bullbay Magnolia	N America (SE)	12 Priory Rd	Semi-mature	Good	3m	
M	247	Betula pendula	Betulaceae	Common Silver Birch	Native	13 Priory Rd	Semi-mature	Good	3m	
M	248	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	13 Priory Rd	Semi-mature	Good	4m	
M	249	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	13 Priory Rd	Semi-mature	Good	4m	
M	250	Taxus baccata	Taxaceae	Common / English Yew	Native	13 Priory Rd	Semi-mature	Good	9m	
M	251	Laurus nobilis	Lauraceae	Bay Laurel	Mediterranean	13 Priory Rd	Mature	Good	8.5m	
M	252	Carpinus betulus	Corylaceae	Hornbeam	Native	13 Priory Rd	Semi-mature	Good	9m	
M	253	Tilia platyphyllos	Tiliaceae	Broad-Leaved Lime	Native	13 Priory Rd	Mature	Good	10m	Significant tree
M	254	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	13 Priory Rd	Mature	Good	9m	Significant tree
M	255	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	13 Priory Rd	Mature	Good	9m	Significant tree
M	256	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	13 Priory Rd	Mature	Good	9m	Significant tree
M	257	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	13 Priory Rd	Semi-mature	Good	4m	
M	258	Sorbus hybrida	Rosaceae	Hybrid Whitebeam	N Europe	Tyndall Avenue	Semi-mature	Good	3m	
M	259	Prunus avium	Rosaceae	Wild Cherry	Native	Tyndall Avenue	Semi-mature	Good	9m	
M	260	Prunus avium 'Plena'	Rosaceae	Double Gean	Hort. Origin	Tyndall Avenue	Semi-mature	Good	3.5m	
M	261	Prunus avium	Rosaceae	Wild Cherry	Native	Tyndall Avenue	Mature	Good	5.5m	
M	262	Prunus avium 'Plena'	Rosaceae	Double Gean	Hort. Origin	Tyndall Avenue	Mature	Good	7m	
M	263	Prunus avium	Rosaceae	Wild Cherry	Native	Tyndall Avenue	Mature	Good	9m	
M	264	Prunus avium 'Plena'	Rosaceae	Double Gean	Hort. Origin	Tyndall Avenue	Mature	Good	6m	
M	287	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	Hampton House	SM	Good	4m	
M	288	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Hampton House	Mature	Good	8m	
M	289	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	Mature	Good	9m	
M	290	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Hampton House	Mature	Good	11m	
M	292	Ailanthus altissima	Simaroubaceae	Tree of Heaven	N China	Hampton House	Mature	Good	17m	
M	293	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	Hampton House	SM	Good	7m	

Appendix B: Tree audit schedules

M	294	Quercus cerris	Fagaceae	Turkey Oak	Asia Minor	Hampton House	Mature	Good	14m	
M	295	Ilex x altaclarensis 'Hendersonii'	Aquifoliaceae	Highclere Holly	Hort. Origin	Hampton House	SM	Good	3-4m	
M	296	Prunus serrulata 'Tai Haku'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Hampton House	SM	Good	9m	
M	297	Prunus serrulata 'Tai Haku'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Hampton House	SM	Good	9m	
M	298	Trachycarpus fortunei	Palmae	Chusan Palm	China	Hampton House	SM	Good	2.5m	
M	299	Magnolia grandiflora 'Exmouth'	Magnoliaceae	Bullbay Magnolia cv	Hort. Origin	Hampton House	SM	Good	6m	
M	300	Ilex x altaclarensis 'Golden King'	Aquifoliaceae	Highclere Holly	Hort. Origin	Hampton House	J	Good	1.5m	
M	301	Acer grosseri var. hersii	Aceraceae	Hers' Maple	China	Hampton House	SM	Good	4m	
M	302	Taxus baccata 'Fastigiata Aureomarginata'	Taxaceae	Golden Irish Yew	Hort. Origin	Hampton House	J	Poor	1m	
M	303	Mahonia x media 'Charity'	Berberidaceae		Hybrid Origin	Hampton House	SM	Good	3m	
M	304	Malus x purpurea	Rosaceae		Hybrid Origin	Hampton House	SM	Good	4m	
M	305	Taxus baccata 'Fastigiata Aureomarginata'	Taxaceae	Golden Irish Yew	Hort. Origin	Hampton House	Mature	Good	2.5m	
M	306	Taxus baccata 'Fastigiata Aureomarginata'	Taxaceae	Golden Irish Yew	Hort. Origin	Hampton House	Mature	Good	3m	
M	307	Taxus baccata 'Fastigiata Aureomarginata'	Taxaceae	Golden Irish Yew	Hort. Origin	Hampton House	Mature	Good	3m	
M	308	Taxus baccata 'Fastigiata Aureomarginata'	Taxaceae	Golden Irish Yew	Hort. Origin	Hampton House	Mature	Good	3m	
M	309	Taxus baccata 'Fastigiata Aureomarginata'	Taxaceae	Golden Irish Yew	Hort. Origin	Hampton House	Mature	Good	3m	
M	310	Taxus baccata 'Fastigiata Aureomarginata'	Taxaceae	Golden Irish Yew	Hort. Origin	Hampton House	Mature	Good	3m	
M	311	Prunus serrulata cv	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Hampton House	SM	Good	9m	
M	312	Taxus baccata 'Summergold'	Taxaceae	Yew	Hort. Origin	Hampton House	SM	Good	3m	
M	313	Viburnum plicatum	Caprifoliaceae		China, Japan, Korea	Hampton House				
M	314	Viburnum plicatum	Caprifoliaceae		China, Japan, Korea	Hampton House	SM	Good	4m	
M	315	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	SM	Good	8m	
M	316	Crataegus laevigata 'Paul's Scarlet'	Rosaceae	Midland Hawthorn cv	Hort. Origin	Hampton House				
M	317	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Hampton House	Mature	Good	7m	
M	318	Laburnum anagyroides	Leguminosae	Common Laburnum	Europe	Hampton House				
M	319	Prunus 'Kanzan' cv	Rosaceae	Rosacea	Hort. Origin	Hampton House				
M	320	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	Mature	Good	8m	
M	321	Ilex x altaclarensis 'Hodgins'	Aquifoliaceae	Highclere Holly	Hort. Origin	Hampton House	Mature	Good	4m	
M	322	Ilex x altaclarensis 'Belgica'	Aquifoliaceae	Highclere Holly	Hort. Origin	Hampton House	SM	Good	4m	
M	323	Chamaecyparis lawsoniana 'Elwoodii'	Cupressaceae	Lawson Cypress	Hort. Origin	Hampton House	SM	Good	1m	
M	324	Chamaecyparis lawsoniana 'Elwoodii'	Cupressaceae	Lawson Cypress cv	Hort. Origin	Hampton House	SM	Good	1m	
M	325	Pittosporum tenuifolium	Pittosporaceae		New Zealand	Hampton House	SM	Good	2m	
M	326	Sorbus hupehensis	Rosaceae	Hupeh Rowan	W China	Hampton House	J	Good	4m	
M	327	Sorbus hupehensis	Rosaceae	Hupeh Rowan	W China	Hampton House	J	Good	4m	
M	328	Betula pendula	Betulaceae	Common silver Birch	Native	Hampton House	J	Good	2.5m	
M	329	Salix alba	Salicaceae			Hampton House	J	Poor	1.5m	
M	330	Robinia pseudoacacia	Leguminosae	False Acacia	N America (E)	Hampton House	Mature	Good	10m	
M	331	Laurus nobilis	Lauraceae	Bay Laurel	Mediterranean	Hampton House	SM	Good	4m	
M	332	Ilex aquifolium 'Argentea Marginata'	Aquifoliaceae	Broad-leaved Silver Holly	Hort. Origin	Hampton House	SM	Good	4m	
M	333	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Hampton House	J	Good	1.5m	
M	334	Viburnum rhytidophyllum	Caprifoliaceae		China	Hampton House	SM	Poor	2.5m	
M	335	Prunus avium	Rosaceae	Wild Cherry	Native	Hampton House	Mature	Poor	10m	
M	336	Ilex x altaclarensis cv	Aquifoliaceae	Highclere Holly	Hort. Origin	Hampton House	J	Poor	2m	
M	337	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Hampton House	J	Poor	2m	
M	338	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	SM	Good	10m	
M	339	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Hampton House	Mature	Good	12m	
M	340	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	Mature	Good	8m	
M	341	Acer pseudoplatanus 'Erythrocarpum'	Aceraceae	Sycamore	Hort. Origin	Hampton House	Mature	Good	11m	
M	342	Solanum laciniatum 'Alba'	Solanaceae	Fingerroot, apple cv	Hort. Origin	Hampton House				
M	343	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	Hampton House	SM	Good	4m	
M	344	Amelanchier lamarckii	Rosaceae	Snowy mespilus	Unknown origin	Hampton House	J	Good	2.5m	
M	345	Amelanchier lamarckii	Rosaceae	Snowy mespilus	Unknown origin	Hampton House	J	Good	2.5m	
M	346	Amelanchier lamarckii	Rosaceae	Snowy mespilus	Unknown origin	Hampton House	J	Good	2.5m	
M	347	Prunus laurocerasus	Rosaceae	Rufi cherry	Europe	Hampton House				
M	348	Cupressus macrocarpa 'Lutea'	Cupressaceae	Golden Monterey Cypress	Hort. Origin	Hampton House	Mature	Good	10m	
M	349	Parrotia persica	Hamamelidaceae	Persian Ironwood	W Asia, Asia Minor	Hampton House	SM	Good	9m	
M	350	Prunus padus 'Colorata'	Rosaceae	Bird cherry cv	Hort. Origin	Hampton House	SM	Good	4m	
M	351	Magnolia x soulangeana	Magnoliaceae	Cup and Saucer Magnolia	Hybrid Origin	Hampton House	SM	Good	8m	
M	352	Malus app.	Rosaceae			Hampton House	Mature	Good	9m	Pollarded
M	353	Acer negundo	Aceraceae	Box Elder	N America	Hampton House	Mature	Good	10m	
M	354	Sorbus intermedia	Rosaceae	Rowan		Hampton House	J	Good	9m	
M	355	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	Hampton House	Mature	Poor	6m	
M	356	Sambucus nigra	Caprifoliaceae	Elder	Native	Hampton House	Mature	Poor	3m	
M	357	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Hampton House	Mature	Good	10m	
M	358	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Hampton House	Mature	Good	14m	
M	359	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	Mature	Good	8m	
M	360	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	Mature	Good	8m	
M	361	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	Mature	Good	8m	
M	362	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	Mature	Good	8m	
M	363	Quercus robur	Fagaceae	English / Common Oak	Native	Hampton House	J	Good	1m	
M	364	Ilex x altaclarensis 'Golden King'	Aquifoliaceae	Highclere Holly	Hort. Origin	Hampton House	J	Good	2.5m	
M	365	Prunus cerasifera 'Nigra'	Rosaceae	Purple Cherry	Hort. Origin	Hampton House	SM	Poor	4m	
M	366	Olearia macrodontia	Compositae	New Zealand Holly	New Zealand	Hampton House				
M	367	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Hampton House	Mature	Good	12m	
M	368	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Hampton House	Mature	Good	12m	
M	369	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Hampton House	Mature	Good	12m	
M	370	Ulmus minor	Ulmaceae	Field Elm, Smooth-leaved Elm	N Africa, Asia Minor, Europe	Hampton House	SM	Poor	4m	
M	371	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Hampton House	SM	Good	4m	

Appendix B: Tree audit schedules

M	372	Crataegus laevigata	Rosaceae	Midland Hawthorn	Native	Hampton House	Mature	Good	4m	
M	373	Ilex aquifolium	Aquifdiaceae	Common Holly	Native	Hampton House	Mature	Good	3m	
M	374	Tilia platyphyllos	Tiliaceae	Broad-Leaved Lime	Native	Hampton House	Mature	Good	11m	
M	375	Ilex aquifolium 'Scotica'	Aquifdiaceae		Hort. Origin	Hampton House	SM	Good	2m	
M	376	Ailanthus altissima	Simaroubaceae	Tree of Heaven	N China	Hampton House	Mature	Good	9m	
M	377	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Hampton House	Mature	Good	10m	
M	378	Taxus baccata	Taxaceae	Common / English Yew	Native	Hampton House	SM	Good	3m	
M	379	Prunus avium	Rosaceae	Wild Cherry	Native	Hampton House				
M	380	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	Hampton House				
M	381	Sorbus hupehensis	Rosaceae	Hupeh Rowan	China	Hampton House	Mature	Good	6m	
M	382	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	Hampton House	Mature	Good	18m	
M	383	Tilia platyphyllos	Tiliaceae	Broad-Leaved Lime	Native	Hampton House	Mature	Good	11m	
M	384	Laburnum anagyroides	Leguminosae	Common Laburnum	Europe	Hampton House	SM	Poor	9m	
M	385	Prunus spinosa	Rosaceae	Sloe / Plum	Unknown origin	Hampton House				
M	387	Prunus lusitanica	Rosaceae	Portugal Laurel	SW Europe	Hampton House	SM	Poor	3m	
M	388	Philadelphus 'Belle Etoile'	Hydrangeaceae		Hort. Origin	Hampton House				
M	389	Viburnum opulus	Caprifoliaceae	Guelder Rose	Native	Hampton House				
M	390	Ginkgo biloba	Ginkgoaceae	Ginkgo / Maidenhair Tree	China	Hampton House	Mature	Good	6m	
M	391	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	Hampton House				
M	392	Ginkgo biloba 'Sentry'	Ginkgoaceae	Ginkgo / Maidenhair Tree	China	Hampton House	Mature	Good	4m	
M	393	Cornus mas	Cornaceae	Cornelian Cherry	Europe	Hampton House	SM	Good	4m	
M	394	Tsuga canadensis	Pinaceae	Eastern Hemlock	N America (E)	Hampton House				
	2008	Juglans regia	Juglandaceae	Common Walnut	SW Europe, China, Himalaya	Hampton House				
	2009	Ilex aquifolium	Aquifdiaceae	Common Holly	Native	Hampton House	SM	Good	9m	
	2010	Tilia cordata	Tiliaceae	Lime		Hampton House	Mature	Poor	2m	
	2011	Ilex x altaclarensis 'Wilsonii'	Aquifdiaceae	Highclere Holly	Hort. Origin	Hampton House				
	2012	Viburnum tinus / Hirtum	Caprifoliaceae	Large-leaved Laurustinus	Hort. Origin	Hampton House				
M	265	Taxus baccata	Taxaceae	Common / English Yew	Native	Precinct	Mature	Good	9m	Significant tree
M	266	Crataegus monogyna	Rosaceae	Common Hawthorn / (May) / Quick	Native	Precinct	SM	Good	4m	
M	267	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Precinct	Mature	Good	11m	Significant tree
M	268	Coriaria nepalensis	Coriariaceae		Himalaya	Precinct	Mature	Good	7m	
M	269	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	Precinct	Mature	Good	13m	Significant tree
M	270	Taxus baccata	Taxaceae	Common / English Yew	Native	Precinct	Mature	Good	7m	
M	271	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	Precinct				
M	272	Viburnum rhytidophyllum	Caprifoliaceae		China	Precinct	Mature	Good	4m	
M	273	Acer cappadocicum	Aceraceae	Cappadocian Maple	Caucasus, Asia Minor	Precinct	Mature	Good	11m	Significant tree
M	274	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	9m	
M	275	Ilex aquifolium	Aquifdiaceae	Common Holly	Native	Precinct	Mature	Good	4.5m	
M	276	Malus	Rosaceae			Precinct	Mature	Good	6.5m	
M	277	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	4.5m	
M	278	Prunus serrulata	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Precinct	Mature	Good	12m	
M	279	Ulmus minor	Ulmaceae	Field Elm, Smooth-leaved Elm	N Africa, Asia Minor, Europe	Precinct	Mature	Good	4m	
M	280	Ulmus minor	Ulmaceae	Field Elm, Smooth-leaved Elm	N Africa, Asia Minor, Europe	Precinct	Mature	Good	2m	
M	281	Crataegus laevigata 'Pleno'	Rosaceae	Midland Hawthorn cv	Hort. Origin	Precinct	Mature	Good	5.5m	
M	282	Ulmus minor	Ulmaceae	Field Elm, Smooth-leaved Elm	N Africa, Asia Minor, Europe	Precinct	Mature	Poor	9m	
M	283	Juglans regia	Juglandaceae	Common Walnut	SE Europe, Himalaya, China	Precinct	SM	Good	6m	
M	284	Crataegus laevigata 'Pleno'	Rosaceae	Midland Hawthorn	Hort. Origin	Precinct	Mature	Good	6m	
M	285	Juglans regia	Juglandaceae	Common Walnut	SE Europe, Himalaya, China	Precinct	Mature	Good	8m	
M	395	Betula pubescens	Betulaceae	Downy Birch	Native	Precinct	Mature	Good	7m	
M	396	Betula papyrifera	Betulaceae	Paper / Canoe Birch	N America	Precinct	SM	Good	6m	
M	397	Betula papyrifera	Betulaceae	Paper / Canoe Birch	N America	Precinct	SM	Good	6m	
M	398	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	7.5m	
M	399	Syringa vulgaris 'Alba'	Oleaceae	White flowering Common Lilac	Hort. Origin	Precinct	Mature	Good	7m	
M	400	Populus x canadensis	Salicaceae	Hybrid Poplar	Hybrid Origin	Precinct	Mature	Good	19m	Significant tree
M	401	Robinia pseudoacacia	Leguminosae	False Acacia	N America (E)	Precinct	Mature	Good	5.5m	
M	402	Alnus glutinosa	Betulaceae	Common Alder	Native					
M	403	Aesculus x carnea 'Briotii'	Hippocastanaceae	Red Horse Chestnut	Hybrid Origin					
M	404	Acer pseudoplatanus	Platanaceae	Sycamore	Hybrid Origin	Precinct	Mature	Good	18m	Significant tree
M	405	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Precinct	Mature	Good	18m	Significant tree
M	406	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Precinct	Mature	Good	14m	Significant tree
M	407	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N America (W)	Precinct	J	Poor	2m	
M	408	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N America (W)	Precinct	Mature	Good	3.5m	
M	470	Fagus sylvatica	Fagaceae	Common Beech	Native	Precinct	Mature	Good	9m	
M	471	Fagus sylvatica	Fagaceae	Common Beech	Native	Precinct	Mature	Good	6m	
M	472	Fagus sylvatica	Fagaceae	Common Beech	Native	Precinct	Mature	Good	4m	
M	474	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	9.5m	Significant tree
M	479	Fagus sylvatica	Fagaceae	Common Beech	Native	Woodland Rd	Mature	Good	10.5m	
M	483	Malus tschonoskii	Rosaceae		Japan	Woodland Rd	Mature	Good	3m	
M	484	Cupressus macrocarpa	Cupressaceae	Monterey Cypress	N America (SW)	Woodland Rd	Mature	Good	15m	
M	485	Betula pendula	Betulaceae	Common Silver Birch	Native	Woodland Rd	SM	Good	4m	
M	486	Betula pubescens	Betulaceae	Downy Birch	Native	Woodland Rd	SM	Good	3m	
M	487	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Woodland Rd	Mature	Good	16m	
M	488	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Woodland Rd	Mature	Good	10m	
M	489	Carpinus betulus 'Pyramidalis'	Corylaceae	Fastigiate Hornbeam	Hort. Origin	Precinct	Mature	Good	10m	Significant tree
M	490	Carpinus betulus 'Pyramidalis'	Corylaceae	Fastigiate Hornbeam	Hort. Origin	Precinct	Mature	Good	11m	Significant tree
M	491	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	9m	Significant tree
M	492	Acer campestre	Aceraceae	Field Maple	Native	Precinct	SM	Good	4m	
M	493	Acer campestre	Aceraceae	Field Maple	Native	Precinct	SM	Good	3m	

Appendix B: Tree audit schedules

M	494	Acer campestre	Aceraceae	Field Maple	Native	Precinct	SM	Good	4m	
M	495	Fagus sylvatica 'Dawyck'	Fagaceae	Dawyck Beech	Hort. Origin	Precinct	Mature	Good	3m	
M	496	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	1.5m	Significant tree
M	497	Garrya elliptica 'James Roof	Garryaceae		Hort. Origin	Precinct	Mature	Good	6m	
M	498	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	4m	
M	499	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	3m	
M	500	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	6m	
M	501	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	8m	
M	502	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	8m	
M	503	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	8m	
M	504	Betula albosinensis	Betulaceae	Chinese Birch	China	Precinct	Mature	Good	1m	Sapling
M	505	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Himalaya	Precinct	J	Good	1.5m	Sapling
M	506	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	4m	
M	507	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	5.5m	
M	508	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	13m	
M	510	Quercus robur	Fagaceae	English / Common Oak	Native	Precinct	SM	Good	6m	
M	511	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	St Michael's Hill	Mature	Good	8m	
M	512	Prunus avium	Rosaceae	Cherry		St Michael's Hill	Mature	Good	10m	
M	513	Betula pendula	Betulaceae	Common Silver Birch	Native	St Michael's Hill	SM	Good	3m	
M	514	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Precinct	Mature	Good	1.5m	
M	515	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	Precinct	Mature	Good	8m	
M	516	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	Precinct	Mature	Good	8m	
M	517	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	1.5m	
M	518	Fraxinus excelsior	Oleaceae	Common Ash	Native	Precinct	Mature	Good	12m	
M	519	Fraxinus excelsior	Oleaceae	Common Ash	Native	Precinct	Mature	Good	12m	
M	534	Tilia cordata	Tiliaceae	Small-Leaved Lime	Native	Precinct	SM	Good	3m	
M	535	Tilia cordata	Tiliaceae	Small-Leaved Lime	Native	Precinct	Mature	Good	6m	
M	536	Physocarpus opulifolius	Rosaceae	Nine Bark	N America (E)	Precinct	SM	Good	3m	
M	537	Fraxinus excelsior	Oleaceae	Common Ash	Native	Precinct	J	Good	2.5m	
M	538	Acer platanoides	Aceraceae	Norway Maple	Europe	Queen's Building				
M	539	Acer platanoides	Aceraceae	Norway Maple	Europe	Queen's Building				
M	540	Acer platanoides	Aceraceae	Norway Maple	Europe	Queen's Building				
M	541	Betula pubescens	Betulaceae	Downy Birch	Native	Queen's Building				
M	542a	Pinus strobus	Pinaceae	Weymouth Pine	N America (W)	Queen's Building	SM	Good	4m	
M	542b	Pinus strobus	Pinaceae	Weymouth Pine	N America (W)	Queen's Building	SM	Good	3m	
M	542c	Pinus strobus	Pinaceae	Weymouth Pine	N America (W)	Queen's Building	SM	Good	2m	
M	543	Amelanchier lamarckii	Rosaceae	Snowy mespilus	Unknown origin	Precinct	Mature	Good	5.5m	
M	544	Malus tschonoskii	Rosaceae		Japan	Precinct	SM	Good	3m	
M	545	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	SM	Good	7m	
M	546	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	Precinct	Mature	Good	6.5m	
M	547	Robinia pseudoacacia 'Frisia'	Leguminosae	False Acacia cv	Hort. Origin	Precinct	SM	Good	3.5m	
M	548	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	16m	Significant tree
M	549	Syncopsis sinensis	Hamamelidaceae		China	Precinct	Mature	Poor	3.5m	
M	550	Syncopsis sinensis	Hamamelidaceae		China	Precinct	Mature	Good	5m	
M	551	Parrotia persica	Hamamelidaceae	Persian Ironwood	W Asia, Asia Minor	Precinct	Mature	Good	9m	
M	552	Parrotia persica	Hamamelidaceae	Persian Ironwood	W Asia, Asia Minor	Precinct	Mature	Good	10m	
G	239	Pyrus 'Chanticleer'	Rosaceae	Chanticleer Pear	Hort. Origin	Senate House	Juvenile	Good	2m	Renumbered 2101
G	240	Malus x purpurea	Rosaceae	Purple Crab Apple	Hort. Origin	Senate House	Mature	OK	6m	
G	241	Prunus x serrulata 'Kanzan'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Senate House	Mature	Good	9m	
G	242	Juniperus x media 'Pfitzeriana Aurea'	Cupressaceae	Pfitzer Juniper hybrid	Hort. Origin	Senate House	Semi-mature	Good	7m	
G	243	Acer platanoides	Aceraceae	Norway Maple	N Europe	Senate House	Semi-mature	Good	9m	
G	244	Crataegus x prunifolia	Rosaceae	Plum leafed Hawthorn	Hybrid Origin	Senate House	Semi-mature	Good	4m	
G	245	Fraxinus ornus	Oleaceae	Manna Ash	S Europe, Asia Minor	Senate House	Semi-mature	Good	9m	
G	246	Sophora japonica	Leguminosae	Pagoda Tree	China	Senate House	Mature	Good	1.5m	Significant tree
G	247	Fraxinus mariesii	Oleaceae	Flowering Ash	China / Hort. Origin	Senate House	Mature	Good	10m	Pollarded
G	248	Metasequoia glyptostroboides	Taxodiaceae	Dawn Redwood	China	Senate House	Mature	Good	9m	
G	249	Gymnocladus dioica	Leguminosae	Kentucky Coffee Tree	N America	Senate House	Mature	OK	9m	
G	250	Thuja occidentalis 'Rheingold'	Cupressaceae	American Arbor-vitae cv	Hort. Origin	Senate House	Semi-mature	Good	2m	
G	251	Juniperus communis 'Prostrata'	Cupressaceae	Common Juniper		Senate House	Semi-mature	Good	1.5m	
G	252	Griselinia littoralis	Griseliniaceae	Broadleaf	New Zealand	Senate House	Mature	Good	6m	
G	253	Prunus x subhirtella 'Autumnalis'	Rosaceae	Autumn Cherry	Hort. Origin	Senate House	Semi-mature	Good	4m	
G	254	Betula pendula 'Fastigiata'	Betulaceae	Silver Birch cv	Hort. Origin	Senate House	Mature	Good	5.5m	
G	255	Betula pendula 'Fastigiata'	Betulaceae	Silver Birch cv.	Hort. Origin	Senate House	Mature	Good	4m	
G	256	Betula pendula 'Fastigiata'	Betulaceae	Silver Birch cv	Hort. Origin	Senate House	Mature	Good	5m	
G	257	Betula pendula 'Fastigiata'	Betulaceae	Silver Birch cv	Hort. Origin	Senate House	Mature	Good	4m	
G	258	Betula pendula 'Fastigiata'	Betulaceae	Silver Birch cv	Hort. Origin	Senate House	Mature	Good	7m	
G	259	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Senate House	Mature	Good	9m	Significant tree
G	260	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Senate House	Mature	Good	9m	Significant tree
G	261	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Senate House	Mature	Good	6m	Significant tree
G	269	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Senate House	Mature	Good	6m	Significant tree
G	270	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Senate House	Mature	Good	6m	Significant tree
G	271	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Senate House	Mature	Good	6m	Significant tree
G	272	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Senate House	Mature	Good	6m	Significant tree
G	273	Viburnum x bodnantense 'Dawn'	Caprifoliaceae	Winter Viburnum cv	Hybrid Origin	Senate House	Semi-mature	Good	9m	
G	274	Fagus sylvatica	Fagaceae	Common Beech	Native	Senate House	Semi-mature	Good	7m	Significant tree
G	275	Fagus sylvatica	Fagaceae	Common Beech	Native	Senate House	Semi-mature	Good	6m	Significant tree
G	276	Fagus sylvatica	Fagaceae	Common Beech	Native	Senate House	Semi-mature	Good	4.5m	Significant tree
G	277	Fagus sylvatica	Fagaceae	Common Beech	Native	Senate House	Semi-mature	Good	5.5m	Significant tree

Appendix B: Tree audit schedules

G	278	Robinia pseudoacacia	Leguminosae	False Acacia	N America (E)	Arts&Soc Library	Mature	Good	10.9m	
G	279	Ulmus glabra 'Exoniensis'	Ulmaceae	Fastigiate Elm	Hort. Origin	Arts&Soc Library	Semi-mature	Poor	3m	
G	280	Rhus typhina	Anacardiaceae	Stag's Horn Sumach	N America	Arts&Soc Library	Mature	Good	8m	
	2004	Tilia x euchlora	Tiliaceae	Lime hybrid	Hybrid Origin	Arts&Soc Library	Mature	Good	7m	
	2005	X Cupressocyparis leylandii	Cupressaceae	Leyland Cypress	Hybrid Origin	Arts&Soc Library	Mature	Good	8m	
	2006	Cotoneaster x watereri	Rosaceae	Hybrid Cotoneaster	Hybrid Origin	Arts&Soc Library	Mature	Good	7m	
	2007	Cotoneaster dammeri (X6)	Rosaceae	Cotoneaster sp	China	Arts&Soc Library	Mature	Good	4m	
G	284	Sorbus bristoliensis	Rosaceae	Bristol Whitebeam	Native	Arts&Soc Library	Mature	Good	4m	
G	285	Acer platanoides	Aceraceae	Norway Maple	Europe	Arts&Soc Library	Mature	Good	6m	
G	286	Chamaecyparis lawsoniana (x3)	Cupressaceae	Lawsons Cypress cv	Hort. Origin	Arts&Soc Library	Semi-mature	Good	2.5m	
G	287	Rhus typhina	Anacardiaceae	Stag's Horn Sumach	N America	Arts&Soc Library	Mature	Good	4.5m	
G	288	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Arts&Soc Library	Mature	Good	9m	Significant tree
G	289	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Arts&Soc Library	Mature	Good	9m	Significant tree
G	290	Amelanchier canadensis (X6)	Rosaceae	Snowy Mespilus	N America	Arts&Soc Library	Semi-mature	OK	4m	
G	291	Sorbus intermedia	Rosaceae	Swedish Whitebeam	Scandinavia	Arts&Soc Library	Mature	Good	6m	
G	292	Betula pendula	Betulaceae	Common Silver Birch	Native	Physics building	Mature	Good	6.5m	
G	293	Malus tschonoskii	Rosaceae	Japanese Crab Apple	Japan	Physics building	Semi-mature	Poor	2m	
G	294	Cotoneaster 'Rothschildianus'	Rosaceae	Yellowberried Cotoneaster	Hort. Origin	Physics building	Mature	Good	6m	
G	295	Viburnum opulus	Caprifoliaceae			Physics building	Mature	Good	4.5m	
G	296	Malus tschonoskii	Rosaceae	Japanese Crab Apple	Japan	Physics building	Mature	Good	9m	
G	297	Malus tschonoskii	Rosaceae	Japanese Crab Apple	Japan	Physics building	Mature	Good	7m	
	A	Cotoneaster x watereri	Rosaceae	Hybrid Cotoneaster	Hort. Origin	Physics building	Mature	Good	9m	
	B	Betula pendula	Betulaceae	Common Silver Birch	Native	Physics building	Semi-mature	Good	9m	
	C	Betula pendula	Betulaceae	Common Silver Birch	Native	Physics building	Mature	Good	7m	
	D	Cornus sanguinea	Cornaceae	Dogwood		Physics building	Semi-mature	Good	2.5m	
	E	Magnolia spp.	Magnoliaceae			Physics building	Semi-mature	Good	2.5m	
	F	Eucryphia spp.	Eucryphiaceae			Physics building	Semi-mature	Good	3.5m	
	G	Laburnum anagyroides	Leguminosae	Common Laburnum	Europe	Physics building	Mature	Good	5.5m	
	H	Prunus avium	Rosaceae		Hort. Origin	Physics building	Semi-mature	Good	3m	
	I	Betula pendula	Betulaceae	Common Silver Birch	Native	Physics building	Mature	Good	7m	
M	265	Taxus baccata	Taxaceae	Common / English Yew	Native	Precinct	Mature	Good	9m	Significant tree
M	266	Crataegus monogyna	Rosaceae	Common Hawthorn / Hey Thorn	Native	Precinct	Semi-mature	OK	4m	
M	267	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Precinct	Mature	Good	11m	Significant tree
M	268	Coriaria nepalensis	Coriariaceae		Himalaya	Precinct	Mature	Good	7m	
M	269	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	Precinct	Mature	Good	13m	Significant tree
M	270	Taxus baccata	Taxaceae	Common / English Yew	Native	Precinct	Mature	Good	7m	
M	271	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-leaved Plum	Hort. Origin	Precinct				
M	272	Viburnum rhytidophyllum (X2)	Caprifoliaceae		China	Precinct	Mature	Good	4m	
M	273	Acer cappadocicum	Aceraceae	Cappadocian Maple	Caucasus, Asia Minor	Precinct	Mature	Good	11m	Significant tree
M	274	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	9m	
M	275	Ilex aquifolium	Aquifoliaceae	Common Holly	Native	Precinct	Mature	Good	4.5m	
M	276	Malus tschonoskii	Rosaceae			Precinct	Mature	Good	6.5m	
M	277	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	4.5m	
M	278	Prunus serrulata	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Precinct	Mature	Good	12m	
M	279	Ulmus minor	Ulmaceae	Field Elm, Smooth-leaved Elm	N Africa, Asia Minor, Europe	Precinct	Mature	Good	4m	
M	280	Ulmus minor (X2)	Ulmaceae	Field Elm, Smooth-leaved Elm	N Africa, Asia Minor, Europe	Precinct	Mature	Good	2m	
M	281	Crataegus laevigata 'Plena'	Rosaceae	Midland Hawthorn cv	Hort. Origin	Precinct	Mature	Good	5.5m	
M	282	Ulmus minor	Ulmaceae	Field Elm, Smooth-leaved Elm	N Africa, Asia Minor, Europe	Precinct	Mature	Good	9m	
M	283	Juglans regia	Juglandaceae	Common Walnut	SE Europe, Himalaya, China	Precinct	Semi-mature	Good	6m	
M	284	Crataegus laevigata 'Plena'	Rosaceae	Midland Hawthorn cv	Hort. Origin	Precinct	Mature	Good	6m	
M	285	Juglans regia	Juglandaceae	Common Walnut	SE Europe, Himalaya, China	Precinct	Mature	Good	8m	Significant tree
M	395	Betula pubescens	Betulaceae	Downy Birch	Native	Precinct	Mature	Good	7m	
M	396	Betula papyrifera	Betulaceae	Paper / Canoe Birch	N America	Precinct	Semi-mature	Good	6m	
M	397	Betula papyrifera	Betulaceae	Paper / Canoe Birch	N America	Precinct	Semi-mature	Good	6m	
M	398	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	7.5m	
M	399	Syringa vulgaris 'Alba'	Oleaceae	White flowering Common Lilac	Hort. Origin	Precinct	Mature	Good	7m	
M	400	Populus x canadensis	Salicaceae	Hybrid Poplar	Hybrid Origin	Precinct	Mature	Good	19m	Significant tree
M	401	Robinia pseudoacacia	Leguminosae	False Acacia	N America (E)	Precinct	Mature	Good	5.5m	
M	402	Alnus glutinosa	Betulaceae	Common Alder	Native					
M	403	Aesculus x carnea 'Briotii'	Hippocastanaceae	Red HorseChestnut cv	Hybrid Origin					
M	404	Acer pseudoplatanus	Platanaceae	Sycamore	Hybrid Origin	Precinct	Mature	Good	12m	Significant tree
M	405	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Precinct	Mature	Good	18m	Significant tree
M	406	Tilia x europaea	Tiliaceae	Common Lime	Hybrid Origin	Precinct	Mature	Good	14m	Significant tree
M	407	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N America (W)	Precinct	Juvenile	Poor	2m	
M	408	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N America (W)	Precinct	Mature	Good	3.5m	
M	470	Fagus sylvatica	Fagaceae	Common Beech	Native	Precinct	Mature	Good	9m	
M	471	Fagus sylvatica	Fagaceae	Common Beech	Native	Precinct	Mature	Good	6m	
M	472	Fagus sylvatica	Fagaceae	Common Beech	Native	Precinct	Mature	Good	4m	
M	474	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	9.5m	Significant tree
M	479	Fagus sylvatica	Fagaceae	Common Beech	Native	Woodland Rd	Mature	Good	10.5m	
M	483	Malus tschonoskii	Rosaceae		Japan	Woodland Rd	Mature	Good	8m	
M	484	Cupressus macrocarpa	Cupressaceae	Monterey Cypress	N America (SW)	Woodland Rd	Mature	Good	19m	
M	485	Betula pendula	Betulaceae	Common Silver Birch	Native	Woodland Rd	Semi-mature	Good	4m	
M	486	Betula pubescens	Betulaceae	Downy Birch	Native	Woodland Rd	Semi-mature	Good	3m	
M	487	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Woodland Rd	Mature	Good	18m	
M	488	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Woodland Rd	Mature	Good	10m	
M	489	Carpinus betulus 'Pyramidalis'	Corylaceae	Fastigiate Hornbeam	Hort. Origin	Precinct	Mature	Good	10m	Significant tree
M	490	Carpinus betulus 'Pyramidalis'	Corylaceae	Fastigiate Hornbeam	Hort. Origin	Precinct	Mature	Good	11m	Significant tree

Appendix B: Tree audit schedules

M	491	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	9m	Significant tree
M	492	Acer campestre	Aceraceae	Field Maple	Native	Precinct	Semi-mature	Good	4m	
M	493	Acer campestre	Aceraceae	Field Maple	Native	Precinct	Semi-mature	Good	3m	
M	494	Acer campestre	Aceraceae	Field Maple	Native	Precinct	Semi-mature	Good	3m	
M	495	Fagus sylvatica 'Dawyck'	Fagaceae	Dawyck Beech	Hort. Origin	Precinct	Mature	Good	3m	
M	496	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	11m	Significant tree
M	497	Garrya elliptica 'James Roof'	Garryaceae		Hort. Origin	Precinct	Mature	Good	6m	
M	498	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	4m	
M	499	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	3m	
M	s00	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	6m	
M	s01	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	5m	
M	s02	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	5m	
M	s03	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	5m	
M	s04	Betula albosinensis	Betulaceae	Chinese Birch	China	Precinct	Sapling	Good	1m	
M	s05	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Himalaya	Precinct	Mature	Good	4m	
M	s06	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	4m	
M	s07	Betula pendula	Betulaceae	Common Silver Birch	Native	Precinct	Mature	Good	5.5m	
M	s08	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	13m	
M	s10	Quercus robur	Fagaceae	English / Common Oak	Native	Precinct	Semi-mature	Good	6m	
M	s11	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	St Michael's Hill	Mature	Good	8m	
M	s12	Prunus cerasus	Rosaceae			St Michael's Hill	Mature	Good	10m	
M	s13	Betula pendula	Betulaceae	Common Silver Birch	Native	St Michael's Hill	Semi-mature	Good	3m	
M	s14	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Precinct	Mature	Good	11m	
M	s15	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	Precinct	Mature	Good	8m	
M	s16	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	Precinct	Mature	Good	8m	
M	s17	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	11m	
M	s18	Fraxinus excelsior	Oleaceae	Common Ash	Native	Precinct	Mature	Good	12m	
M	s19	Fraxinus excelsior	Oleaceae	Common Ash	Native	Precinct	Mature	Good	12m	
M	s34	Tilia cordata	Tiliaceae	Small-Leaved Lime	Native	Precinct	Mature	Good	3m	Heavily pruned
M	s35	Tilia cordata	Tiliaceae	Small-Leaved Lime	Native	Precinct	Mature	Good	6m	Heavily pruned
M	s36	Physocarpus opulifolius	Rosaceae	Nine Bark	N America (E)	Precinct	Semi-mature	OK	3m	
M	s37	Fraxinus excelsior	Oleaceae	Common Ash	Native	Precinct	Juvenile	Good	2.5m	
M	s38	Acer platanoides	Aceraceae	Norway Maple	Europe	Queen's Building				
M	s39	Acer platanoides	Aceraceae	Norway Maple	Europe	Queen's Building				
M	s40	Acer platanoides	Aceraceae	Norway Maple	Europe	Queen's Building				
M	s41	Betula pubescens	Betulaceae	Downy Birch	Native	Queen's Building				
M	s42a	Pinus strobus	Pinaceae	Weymouth Pine	N America (W)	Queen's Building	Semi-mature	Good	4m	
M	s42b	Pinus strobus	Pinaceae	Weymouth Pine	N America (W)	Queen's Building	Semi-mature	Good	3m	
M	s42c	Pinus strobus	Pinaceae	Weymouth Pine	N America (W)	Queen's Building	Semi-mature	Good	2m	
M	s43	Amelanchier lamarckii	Rosaceae	Snowy mespilus	Unknown origin	Precinct	Mature	Good	5.5m	
M	s44	Malus tschonoskii	Rosaceae		Japan	Precinct	Semi-mature	Good	3m	
M	s45	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Semi-mature	Good	7m	
M	s46	Sorbus intermedia	Rosaceae	Swedish Whitebeam	N Europe	Precinct	Mature	Good	6.5m	
M	s47	Robinia pseudoacacia 'Frisia'	Leguminosae	False Acacia cv	Hort. Origin	Precinct	Semi-mature	Good	3.5m	
M	s48	Platanus x hispanica	Platanaceae	London Plane	Hybrid Origin	Precinct	Mature	Good	16m	Significant tree
	1865	Morus nigra	Moraceae	Black Mulberry	W Asia	Royal Fort	Juvenile	Good	0.8m	
	1866	Alnus incana	Betulaceae	Grey Alder	Native	Royal Fort	Semi-mature	Good	1.5m	
	1867	Hydrangea aspera sp. sargentiana	Hydrangeaceae	Sargent's Hydrangea	China	Royal Fort	Semi-mature	Good	4m	
M	s20	Malus spp.	Rosaceae			Royal Fort	Mature	Good	4m	
M	s21	Malus spp.	Rosaceae			Royal Fort	Mature	Good	4m	
M	s22	Syringa vulgaris	Oleaceae	Common Lilac	E Europe	Royal Fort	Mature	Good	6m	
M	s23	Clerodendrum trichotomum	Verbenaceae		W China	Royal Fort	Mature	Good	6m	
M	s24	Clerodendrum trichotomum	Verbenaceae		W China	Royal Fort	Mature	Good	4m	
M	s25	Sorbus 'Joseph Rock'	Rosaceae			Royal Fort	Semi-mature	Good	3.5m	
M	s26	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Himalaya	Royal Fort	Mature	Good	8m	
M	s27	Betula pendula	Betulaceae	Common Silver Birch	Native	Royal Fort	Mature	Good	7m	
M	s28	Betula pendula	Betulaceae	Common Silver Birch	Native	Royal Fort	Semi-mature	Good	2m	
M	s29	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N America (W)	Royal Fort	Semi-mature	Good	2m	
M	s30	Chamaecyparis lawsoniana	Cupressaceae	Lawson Cypress	N America (W)	Royal Fort	Semi-mature	Good	2m	
M	s31	Alnus cordata	Betulaceae	Italian Alder	S Italy, Corsica	Royal Fort	Mature	Good	6m	
M	s32	Acer platanoides 'Schwedleri'	Aceraceae	Norway Maple cv	Hort. Origin	Royal Fort	Mature	Good	10m	
M	s33	Corylus maxima 'Purpurea'	Corylaceae	Purple Filbert	Hort. Origin	Royal Fort	Mature	Good	6m	
M	s49	Sycopsis sinensis	Hamamelidaceae		China	Precinct	Mature	Poor	3.5m	
M	s50	Sycopsis sinensis	Hamamelidaceae		China	Precinct	Mature	Good	5m	
M	s51	Parrotia persica	Hamamelidaceae	Persian Ironwood	W Asia, Asia Minor	Precinct	Mature	Good	9m	
M	s52	Parrotia persica	Hamamelidaceae	Persian Ironwood	W Asia, Asia Minor	Precinct	Mature	Good	10m	
J	350	Juglans regia	Juglandaceae	Common Walnut	SW Europe, China, Himalaya	Queen's Building	Mature	Good	13m	Significant tree
J	351	Juglans regia	Juglandaceae	Common Walnut	SW Europe, China, Himalaya	Queen's Building	Mature	Good	13m	Significant tree
J	352	Juglans regia	Juglandaceae	Common Walnut	SW Europe, China, Himalaya	Queen's Building	Mature	Good	11m	Significant tree
J	353	Acer campestre	Aceraceae	Field Maple	Native	Queen's Building	Mature	Good	9m	
J	354	Prunus cerasifera 'Pissardii'	Rosaceae	Purple-Leaved Plum	Hort. Origin	Queen's Building	Mature	Good	9m	
J	355	Malus spp.	Rosaceae		Hort. Origin	Queen's Building				
J	356	Aesculus hippocastanum	Hippocastanaceae	Horse Chestnut	Greece	Queen's Building	Mature	Good	16m	Significant tree
J	357	Acer platanoides	Aceraceae	Norway Maple	Europe	Queen's Building	Mature	Good	7m	
J	358	Pyrus communis	Rosaceae	Common Pear	Native	Queen's Building	Mature	Good	6m	
J	359	Betula pendula 'Tristis'	Betulaceae	Common Silver Birch cv	Hort. Origin	Queen's Building	Mature	Good	9m	
J	360	Betula pendula	Betulaceae	Common Silver Birch	Native	Queen's Building	Mature	Good	4m	
J	361	Betula utilis var. jacquemontii	Betulaceae	Jacquemont's Birch	Himalaya	Queen's Building				

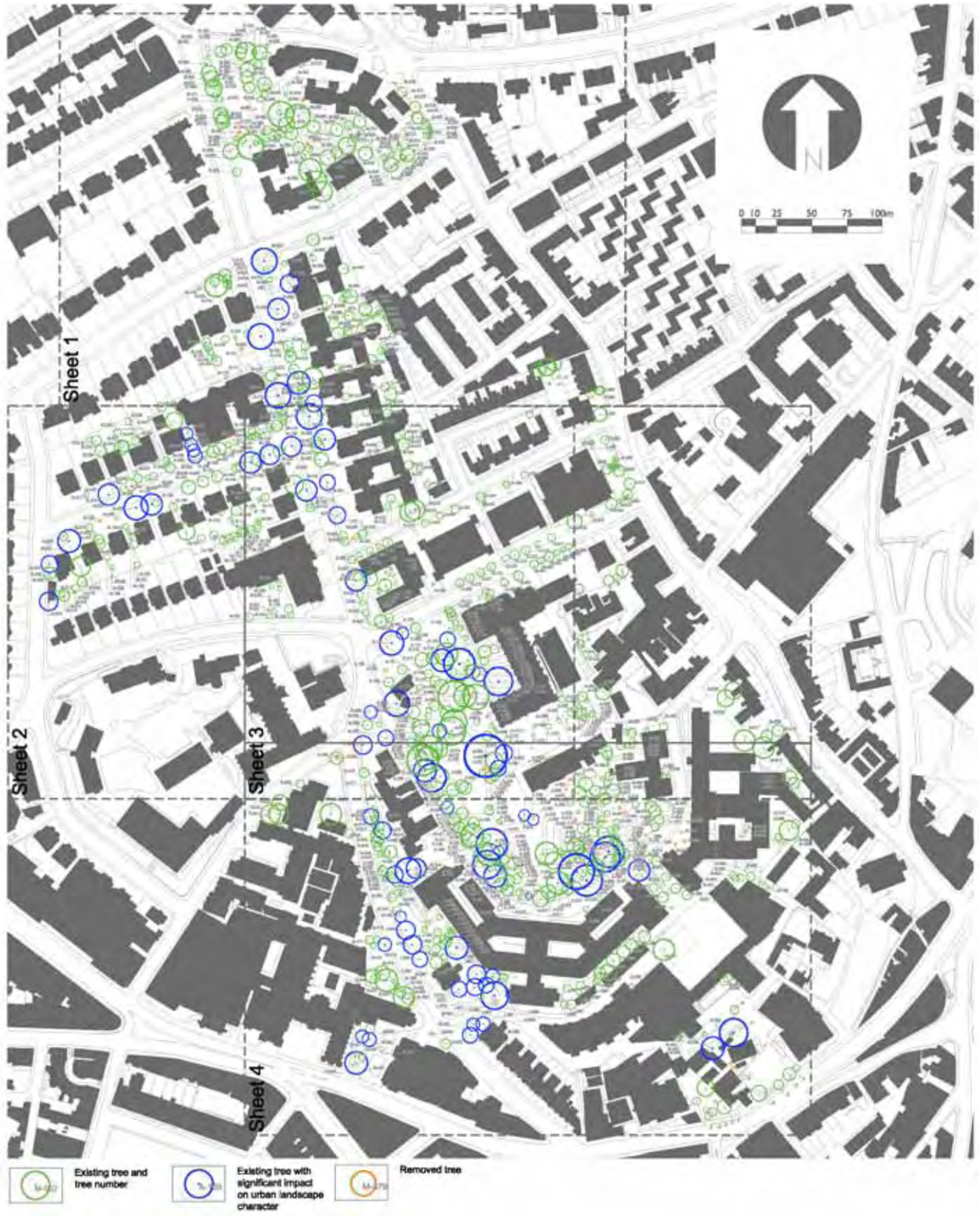
Appendix B: Tree audit schedules

J	362	Prunus avium	Rosaceae			Queen's Building	Juvenile	Good	2m	
J	363	Platycladus orientalis	Cupressaceae	Chinese Arbor-Vitae	N & W China, E Russia, Korea	Queen's Building	Semi-mature	Good	3.8m	
J	366	Thuja plicata	Cupressaceae	Western Red Cedar	N America (W)	Queen's Building	Mature	Good	4m	
J	367	Pinus sylvestris	Pinaceae	Scots Pine	Native	Queen's Building	Mature	Good	6m	
J	368	Pinus sylvestris	Pinaceae	Scots Pine	Native	Queen's Building	Mature	Good	6m	
J	369	Pinus sylvestris	Pinaceae	Scots Pine	Native	Queen's Building	Mature	Good	6m	
J	370	Amelanchier lamarckii	Rosaceae	Snowy mespilus	Unknown origin	Queen's Building	Mature	Good	5.5m	
J	371	Staphylea colchica	Staphyleaceae	Bladdernut	Caucasus	Queen's Building	Semi-mature	Good	4m	
J	372	Sorbaria sorbifolia	Rosaceae		N Asia					
J	373	Syringa reticulata ssp pekinensis	Oleaceae		N China	Queen's Building	Semi-mature	Poor	9m	
J	374	Staphylea colchica	Staphyleaceae	Bladdernut	Caucasus	Queen's Building	Semi-mature	Good	4m	
J	375	Acer davidii	Aceraceae	Pere David's Maple	China	Queen's Building	Mature	Good	13m	Significant tree
J	376	Tilia mongolica	Tiliaceae	Mongolian Lime	E Russia, Mongolia, China	Queen's Building	Mature	Good	12m	Significant tree
J	377	Liriodendron tulipifera	Magnoliaceae	Tulip Tree	N America (E)	Queen's Building	Mature	Good	11m	Significant tree
J	378	Sorbus intermedia	Rosaceae			Queen's Building	Mature	Good	11m	Significant tree
J	379	Liquidamber styraciflua	Hamamelidaceae	Sweet Gum	N America (E)	Queen's Building	Mature	Good	8m	
J	380	Parrotia persica	Hamamelidaceae	Persian Ironwood	W Asia, Asia Minor	Queen's Building	Mature	Good	10.5m	
J	381	Acer cappadocicum	Aceraceae	Cappadocian Maple	Asia Minor	Queen's Building	Mature	Good	10m	
J	382	Sorbus aria 'Majestica'	Rosaceae	Whitebeam cv.	Hort. Origin	Queen's Building	Mature	Good	9m	
J	383	Ligustrum lucidum	Oleaceae	Chinese Privet	China	Queen's Building	Mature	Good	8m	
J	384	Ligustrum lucidum	Oleaceae	Chinese Privet	China	Queen's Building	Mature	Good	6.5m	
J	385	Acer saccharinum	Aceraceae	Silver Maple	N America (E)	Queen's Building	Mature	Good	19.5m	Significant tree
J	386	Sorbus latifolia	Rosaceae	Service Tree of Fontainebleau	Europe	Queen's Building	Semi-mature	Good	4.5m	
J	387	Prunus avium	Rosaceae	Wild Cherry	Native	Queen's Building	Mature	Good	10m	
J	388	Sorbus aucuparia	Rosaceae		China	Queen's Building	Mature	Good	6m	
J	389	Betula pendula	Betulaceae	Common Silver Birch	Native	Queen's Building	Mature	Good	7m	
J	390	Cotinus coggygria var purpureus	Anacardiaceae	Burning Bush	Hort. Origin	Queen's Building	Mature	Good	5.5m	
J	391	Magnolia x soulangeana	Magnoliaceae	Cup and Saucer Magnolia	Hybrid Origin	Queen's Building	Mature	Good	5.5m	
J	392	Prunus avium	Rosaceae	Wild Cherry	Native	Queen's Building	Mature	Good	4.5m	
J	393	Prunus avium	Rosaceae			Queen's Building	Mature	Good	6m	
J	394	Sorbus intermedia	Rosaceae			Queen's Building	Semi-mature	Good	3.5m	
J	395	Ilex				Queen's Building	Semi-mature	Good	9m	
J	396	Arbutus unedo	Ericaceae	Killarney Strawberry Tree	SW Ireland, Mediterranean	Queen's Building	Mature	Good	9m	
J	397	Acer cappadocicum	Aceraceae	Cappadocian Maple	Asia Minor	Queen's Building	Semi-mature	Good	2m	
J	398	Cotoneaster x watereri	Rosaceae		Hybrid Origin	Queen's Building	Mature	Good	7m	
	1391	Sorbus intermedia	Rosaceae	Rowan		Queen's Building	Sapling	Good	1m	
	1392	Sorbus intermedia	Rosaceae	Rowan		Queen's Building	Sapling	Good	1m	
	A	Salix babylonica var pekinensis 'Tortuosa'	Salicaceae	Dragon's Claw Willow	Hort. Origin	Lunsford House / Medical Avenue	Mature	Good	12m	
	B	Chamaecyparis lawsoniana	Cupressaceae	Lawson's Cypress	N America (W)	Lunsford House / Medical Avenue	Mature	Good	5.5m	
	C	Chamaecyparis lawsoniana	Cupressaceae	Lawson's Cypress	N America (W)	Lunsford House / Medical Avenue	Semi-mature	Good	4m	
	D	Chamaecyparis lawsoniana	Cupressaceae	Lawson's Cypress	N America (W)	Lunsford House / Medical Avenue	Semi-mature	Good	5m	
	E	Quercus ilex	Fagaceae	Holm Oak	Mediterranean	Lunsford House / Medical Avenue	Semi-mature	Good	6m	
	F	Quercus ilex	Fagaceae	Holm Oak		Lunsford House / Medical Avenue	Semi-mature	Good	10m	
	G	Juniperus communis	Cupressaceae			Lunsford House / Medical Avenue	Mature	Good	6m	
	H	Platanus x hispanica	Platanaceae	London Plane	Hort. Origin	Lunsford House / Medical Avenue	Mature	Good	20m	Significant tree
	I	Sorbus bristoliensis	Rosaceae	Bristol Whitebeam	Native	Lunsford House / Medical Avenue	Semi-mature	Good	2.5m	
	J	X Cupressocyparis leylandii	Cupressaceae	Leyland Cypress	Hort. Origin	Lunsford House / Medical Avenue	Mature	Good	2.5m	
	K	X Cupressocyparis leylandii	Cupressaceae	Leyland Cypress	Hort. Origin	Lunsford House / Medical Avenue				
	L	Populus nigra	Salicaceae	Black Poplar	Native	Lunsford House / Medical Avenue				
	M	Acer pseudoplatanus	Aceraceae	Sycamore	Europe	Lunsford House / Medical Avenue	Mature	Good	11m	
	N	Fagus sylvatica 'Purpurea'	Fagaceae	Purple Beech	Hort. Origin	Lunsford House / Medical Avenue	Mature	Good	7m	
	O	Tilia x europaea	Tiliaceae	Common Lime	Hort. Origin	Lunsford House / Medical Avenue	Mature	Good	9m	
	P	Sorbus x intermedia	Rosaceae	Swedish Whitebeam	Europe (N)	Lunsford House / Medical Avenue	Mature	Good	9m	
G	230	Ginkgo biloba	Ginkgoaceae	Ginkgo / Maidenhair Tree	China	Adolph Leipner	Mature	Good	14m	
G	231	Prunus serrulata 'Ukon'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Adolph Leipner	Mature	Good	14m	
G	232	Prunus serrulata 'Ojochin'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Adolph Leipner	Mature	Good	11m	
G	233	Prunus serrulata 'Ichyio'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Adolph Leipner	Mature	Good	6m	
G	235	Prunus serrulata 'Schmitsu'	Rosaceae	Japanese Flowering Cherry	Hort. Origin	Adolph Leipner	Mature	Good	9m	
G	236	Crataegus monogyna	Rosaceae	Common Hawthorn / May / Quick	Native	Adolph Leipner	Semi-mature	Poor	2.5m	
G	237	Magnolia kobus var borealis	Magnoliaceae	Japanese Mountain Magnolia	Japan	Adolph Leipner	Mature	Good	1.5m	
G	238	Malus 'Profusion'	Rosaceae	Purple Crab Apple	Hort. Origin	Adolph Leipner	Mature	Good	6m	
N	11	Sorbus intermedia	Rosaceae		Europe (N)	Woodland Rd And Priory Roads	SM	Poor	2.5m	
N	12	Syringia vulgaris				Woodland Rd And Priory Roads	SM	Good	4m	
N	13	Taxus baccata				Woodland Rd And Priory Roads	SM	Good	6.5m	
N	14	Tilia cordata				Woodland Rd And Priory Roads	M	Good	16m	
N	15	Acer pseudoplatanus				Woodland Rd And Priory Roads	M	Good	9m	
N	16	Acer pseudoplatanus				Woodland Rd And Priory Roads	SM	Good	6m	
N	17	Ilex aquifolium				Woodland Rd And Priory Roads	SM	Good	3m	
N	18	Acer pseudoplatanus				Woodland Rd And Priory Roads	SM	Good	6m	
N	19	Acer pseudoplatanus				Woodland Rd And Priory Roads	SM	Good	4m	
N	20.	Ilex aquifolium				Woodland Rd And Priory Roads	SM	Good	2m	
N	21	Eucalyptus spp				Woodland Rd And Priory Roads	SM	Good	2.5m	
N	22	Cotoneaster glaucophyllus				Woodland Rd And Priory Roads	M	Good	9m	
N	23	Chamaecyparis lawsoniana		Lawson's Cypress		Woodland Rd And Priory Roads	SM	Good	2.5m	
N	24	Fagus sylvatica 'Purpurea'				Woodland Rd And Priory Roads	M.	Good	18m	Significant tree
N	25	Laurus nobilis				Woodland Rd And Priory Roads	M	Good	7m	
N	26	Crataegus monogyna				Woodland Rd And Priory Roads	M	Good	8m	
N	27	Crataegus monogyna				Woodland Rd And Priory Roads	J	Good	2m	

Appendix B: Tree audit schedules

N	28	Ilex x altaclarensis				Woodland Rd And Priory Roads	J	Good	2m	
N	29	Ilex x altaclarensis				Woodland Rd And Priory Roads	J	Good	2m	
N	30	Betula pendula				Woodland Rd And Priory Roads	J	Good	1m	
N	31	Tilia cordata				Senate House/Library	M	Good	8m	
N	32	Prunus avium				Senate House/Library	M	Good	7m	
N	33	Ilex				Senate House/Library	SM	Good	3.5m	
N	34	Ilex				Senate House/Library	SM	Good	5.5m	
N	35	Cotoneaster spp				Precinct	J	Good	2m	
N	36	Viburnum opulus				Precinct	M	Good	5m	
N	37	Sorbus intermedia		Swedish Whitebeam		Precinct	J	Good	1m	
N	38	Prunus avium				Precinct	SM	Good	5m	
N	39	Prunus serrula				Precinct	J	Good	4.5m	
N	40	Ulmus minor				Precinct	M	Good	3.5m	
N	41	Cotoneaster spp				Precinct	M	Good	5m	
N	42	Prunus laurocerasus				Precinct	SM	Good	4m	
N	43	Prunus laurocerasus				Precinct	SM	Good	4m	
N	44	Viburnum rhytidophyllum				Precinct	M	Good	3m	
N	45	Prunus laurocerasus				Precinct	M	Good	5m	
N	46	Viburnum spp.				Precinct	M	Good	5m	
N	47	Prunus avium				Precinct	M	Good	9m	
N	48	Taxus baccata				Precinct	M	Good	6m	
N	49	Ilex aquifolium				Precinct	M	Good	4m	
N	50	Crataegus monogyna				Precinct	M	Poor	4m	
N	51	Laburnum anagyroides				Precinct	M	Good	7m	
N	52	Magnolia spp.				Precinct	SM	Good	3m	
N	53	Quercus robur				Royal Fort Park	J	Good	1m	
N	54	Ilex aquifolium				Royal Fort Park	SM	Good	3.5m	
N	55	Ilex aquifolium				Royal Fort Park	M	Good	4.5m	
N	56	Fagus sylvatica				Royal Fort Park	J	Good	1.5m	
N	57	Fagus sylvatica				Royal Fort Park	J	Good	1m	
N	58	Taxus baccata				Royal Fort Park	J	Good	2.5m	
N	59	Fagus sylvatica				Royal Fort Park	J	Good	1.5m	
N	60	Ilex aquifolium				Royal Fort Park	J	Good	1.5m	
N	61	Viburnum opulus				Royal Fort Park	SM	Good	4m	
N	62	Prunus laurocerasus				Royal Fort Park	SM	Good	5m	
N	63	Ilex aquifolium				Royal Fort Park	J	Good	1.5m	
N	64	Acer saccharinum				Royal Fort Park	J	Good	2m	
N	65	Juniperus communis				Royal Fort Park	M	Good	2m	
N	66	Castanea sativa				Royal Fort Park	J	Good	1.5m	
N	67	Corylus avellana				Royal Fort Park	SM	Good	2m	
N	68	Populus x canadensis				Royal Fort Park	SM	Good	3m	
N	69	Platanus x hispanica				Precinct	SM	Good	3m	
N	70	Platanus x hispanica				Precinct	SM	Good	3.5m	
N	71	Platanus x hispanica				Precinct	SM	Good	3.5m	

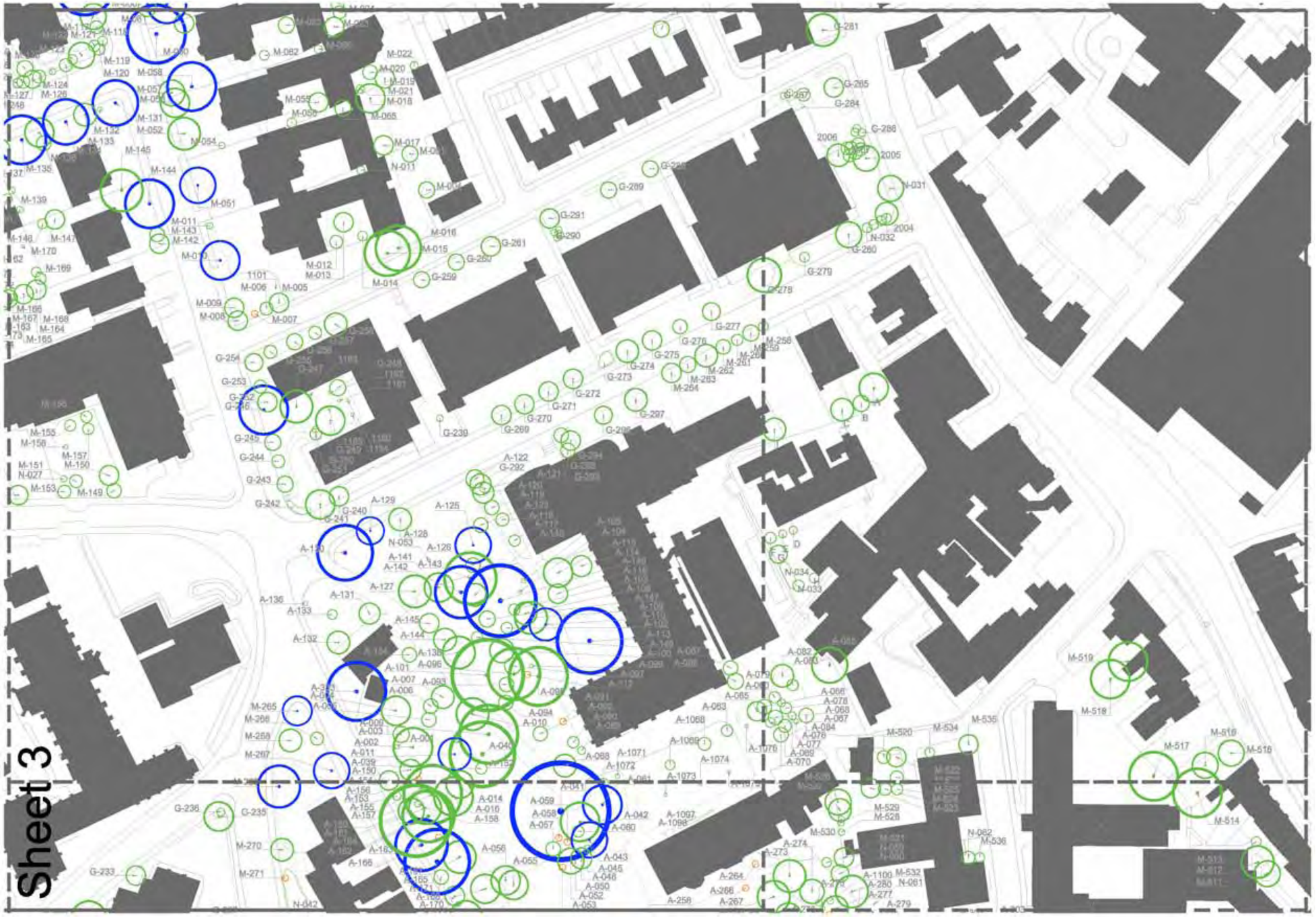
Appendix B: Tree audit plans (Master sheet)



Appendix B: Tree audit plans (Sheet 1)

Appendix B: Tree audit plans (Sheet 2)

Appendix B: Tree audit plans (Sheet 3)



Appendix B: Tree audit plans (Sheet 4)

Appendix C: Ecology survey

ECOLOGICAL REPORT

CONTENTS

1.0 SUMMARY

To inform the development of the University of Bristol Strategic Master Plan, an ecological walkover survey of the existing Precinct was undertaken by an experienced Ecologist on Thursday 16 September 2004.

The survey comprised a walkover of the site, including all open spaces. Whilst a comprehensive list of plant species and habitats present was not made, an assessment of the suitability of the site to support species of animal and bird protected under UK and European legislation was undertaken.

It was considered that whilst the Precinct is largely of low ecological value, some of the older Victorian buildings may support roosting bats within their roof spaces and/or other suitable crevices and the gardens behind the Oldbury and Osborne Villas may support legally protected reptile species, such as Slow Worms.

The landscaped park area is likely to support breeding bird species between March and August, whilst opportunities for habitat enhancement were considered to exist within this area, particularly in respect of the pond. Opportunities for habitat creation proposals also exist.

Further surveys for bats and Slow Worms are recommended once the re-development proposals have been agreed.

2.0 INTRODUCTION

The University of Bristol requires a considerable increase in available floor space in order to accommodate future student numbers and to maintain its standing both within a UK context and Internationally.

To achieve this, a Strategic Master Plan is being developed, which it is hoped will form Supplementary Planning Guidance (SPG) and will allow areas of the Precinct to be demolished and re-developed.

An assessment of the current ecological value of the Precinct was required to inform this process. Primarily focussing on the suitability of the site to support legally protected and notable species, opportunities for the enhancement and creation of habitats as part of the proposed re-development were also considered.

A walkover survey was carried out by an experienced Ecologist on 16 September 2004. Whilst comprehensive lists of plant species and habitats were not prepared, the site was assessed in terms of its potential to support species protected under the Wildlife and Countryside Act 1981 (as amended) and/or the Conservation (Natural Habitats, &c.) Regulations 1994. The potential for the site to support species listed in the UK and local Biodiversity Action Plans (BAPs) was also assessed.

3.0 SCOPING OF SURVEY

An initial walkover survey was carried out to determine whether any areas of the site should be subject to further ecological survey, particularly for protected species. This survey provided an initial appraisal only, and will be used to inform both further surveys and recommendations for habitat enhancement and/or creation opportunities on-site as the masterplanning process continues.

4.0 SURVEY METHODOLOGY

The survey was undertaken on 16 September by an experienced Ecologist. The area surveyed comprised the area enclosed by St. Michael's Hill, Royal Fort Road, Tankards Close, University Walk, Woodland Road, Elton Road, St. Michael's Park and Osborne Villas.

The walkover survey highlighted areas of habitat with the potential to support species protected under the Wildlife and Countryside Act 1981 (as amended) and/or the Conservation (Natural Habitats, &c.) Regulations 1994. The potential for the site to support species listed in the UK and local Biodiversity Action Plans (BAPs) was also assessed.

Results were collected as a series of target notes.

5.0 DISCUSSION OF WALKOVER SURVEY RESULTS

The majority of the University Precinct is considered to be of negligible or low ecological value owing to the large proportion of hard standing and post-war flat-roofed buildings present across the site. Much of the planting is in the form of ornamental beds and single trees, (with the exception of the large park area adjacent to University Walk and Tankards Close), which are generally of low ecological value. However, suitable habitat was identified for the following species:

Bats
The older buildings present within the Precinct may offer suitable roosting habitat for bats, although no internal inspections were undertaken as part of the current walkover survey. All species of UK bat are fully protected through their inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Any of the older buildings, particularly Osborne and Oldbury Villas, highlighted for demolition as part of the future re-development proposals for the University Precinct, should be surveyed internally for the presence of bats prior to their demolition, to avoid an offence under both domestic and European legislation being committed. In addition, a mature tree is present within the park area close to Tankards Close which contained suitable cracks and fissures for roosting bats. This tree should be surveyed further prior to any works being carried out on it.

Slow Worms
Slow Worms are legally protected through their inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), in respect of intentional killing or injuring or the sale of animals.

The gardens of the terraced properties which comprise Osborne and Oldbury Villas were considered to offer suitable habitat for this species, and further surveys and possible translocation of individual animals to suitable receptor sites may be required should the buildings be identified for demolition.

Birds
Suitable habitat for nesting birds was identified within mature trees and shrubs across the site. Breeding birds receive varying levels of legal protection whilst they are building or occupying a nest, and further surveys will be required prior to the removal of any vegetation on site. The timing of this type of work will be governed by the bird breeding season.

Badgers
No suitable habitat for badgers was identified during the walkover survey.

6.0 OPPORTUNITITES AND RECOMMENDATIONS

Although the Precinct is considered to be of low ecological value overall, there are areas of the site which offer suitable habitat for species protected by law. Once the re-development proposals have been agreed, further surveys of buildings to be demolished and vegetation to be removed will be required in order to confirm the presence of any such protected species. Mitigation proposals can then be developed for agreement by the Local Planning Authority and English Nature, as appropriate.

Areas of the site are also considered to be suitable for habitat enhancement works and habitat creation in order to increase the value of the site for local wildlife. This should also be considered as a potential resource for the students and staff of the University.

Ecological opportunities can be developed further once the re-development proposals have been progressed, although one obvious area is the landscaped park adjacent to University Walk, particularly the pond.

7.0 CONCLUSIONS

- Overall, the Precinct is considered to be of low ecological value, although opportunities exist to create and enhance habitats to provide an area of much higher value.
- Further surveys to confirm the presence of protected species including bats and Slow Worms will be required once the re-development proposals have been agreed. This will be particularly important within the roof spaces of the Victorian buildings within the Precinct and in the gardens behind Oldbury and Osborne Villas.

Archaeological Desktop Study

for

THE UNIVERSITY OF BRISTOL MASTERPLAN

Centred on
N.G.R. ST 5825 7345

Client: The University of Bristol
Agent: Northcroft

If you would like this information in a different format, for example Braille, audio tape, large print or computer disc, or community languages, please contact the Central Area Planning Team on 0117 922 2938.

St.Nicholas Church, St.Nicholas Street, Bristol BS1 1UE. Tel: (0117) 903 9010 Fax: (0117) 903 9011
E-mail: baras25@hotmail.com *or* bruce_williams@bristol-city.gov.uk
www.baras.org.uk

Archaeological Desktop Study

for

THE UNIVERSITY OF BRISTOL MASTERPLAN

for

The University of Bristol

Report No. 1352/2004
BUAD No. 4190

Bristol and Region Archaeological Services

St. Nicholas Church, St. Nicholas Street, Bristol, BS1 1UE. Tel: (0117) 903 9010 Fax: (0117) 903 9011

Archaeology

Introduction

This report examines the historic environment of the area defined as the 'University Area' in the Bristol Local Plan, plus associated areas in the vicinity, in other words the main 'precinct' of the University of Bristol. It has been prepared by Bristol and Region Archaeological Services (BaRAS) as part of a Masterplan for the University district.

The study involved examination of the readily available documentary and printed sources, maps and plans, photographs and other illustrative material, including a visit to Bristol Record Office (BRO) and use of maps held at Northampton Record Office (NRO). Roger Leech's study of the St. Michael's Hill precinct of the University was extensively consulted. Archaeological evidence recorded in the Bristol Urban Archaeological Database (BUAD) was examined. The area was visited in September 2004.

This report was compiled by John Bryant. One copy of this report will be deposited with the Bristol Urban Archaeological Database and one copy with the National Monuments Record at Swindon.

The Site

This study covers an extensive area of the inner city to the north-west of the historic heart of Bristol, centred on NGR ST 5825 7345. At its closest it lies only 200 metres from the line of the town's medieval walls. Park Row and Perry Road form the southern boundary and St. Michael's Hill generally the easternmost extent. Cotham Hill is at the northernmost extremity, with the western borders running somewhere east of Whiteladies Road and skirting around the Bristol Grammar School and City Museum & Art Gallery sites. In total the area contained amounts to approximately 21.5 hectares (53 acres). Maximum dimensions are 780m (N-S) by 560m (E-W).

Southern parts of the precinct sit on south and south-east draining slopes at the western end of the hill that also carries St. Michael's Hill and, further along, Kingsdown. The central and northern areas mostly slope westwards. In altitude, the area climbs from a low point of 37.7m aOD, at the junction of Park Row and Perry Road, to 75.4m aOD on the north side of the former Homeopathic Hospital. The junction of St. Michael's Hill and Tyndall Avenue is at 72.2m aOD, although the latter climbs westward to a maximum of just above 76m aOD. Woodland Road starts at 44.5m aOD at Park Row before climbing to 71.6m at its junction with University Walk, then drops to about 62.4m at its junction with Tyndalls Park Road before rising again to 65.8m aOD at Cotham Hill. Priory Road at its intersection with Elmdale Road lies at about 57.3m aOD.

The site lies within four conservation areas. Tyndall's Park and Whiteladies Road Conservation Areas between them cover much of the precinct. The St. Michael's Hill and Christmas Steps Conservation Area includes parts of the southern and eastern edges of the precinct; the Park Street and Brandon Hill ConservationArea includes Queens Road and Park Row west of Woodland Road. In the Local Plan the area is designated as the 'University Area', with the gardens of Royal Fort House identified as an open space and historic landscape.

There are no Scheduled Ancient Monuments within the precinct in the vicinity, the closest being several stretches of Civil War earthworks on Brandon Hill, 200m to the south-west.

A number of listed buildings are included within the precinct (Appendix 5). As might be expected, they are predominantly of Grade II status, but include a single example of Grade I and four of Grade II*. Royal Fort House is the lone Grade I structure. The University Tower and Wills Memorial Building, together with Lunsford House (15 Park Row) and Nos. 65 & 67 St. Michael's Hill are the Grade II* buildings. Close outside the precinct boundary are further buildings, including the Red Lodge and Colston's Almshouses (both Grade I). St. Michael's Manor House, Park Lane, Cotham Parish Church and the former Western College are all Grade II* buildings.

The gardens of Royal Fort House and the former Homeopathic Hospital are included in the gazetteer of historic parks and gardens in Avon (Harding & Lambert 1991, 21 & 17). Neither is on the English Heritage Register.

The One-inch geological map shows a mixed geology beneath the precinct. Upper Cromhall Sandstone from the Carboniferous period underlies the western end of University Walk and north-east as far as St. Michael's Park and Osborne Villas. Most of the St. Michael's Hill/University Walk area sits on Brandon Hill Grit, a tough quarzitic sandstone from later in the same period. Almost the entire precinct to the north of Tyndalls Park Road is on Rhaetic clay of the Triassic period. Priory Road, University Road and the majority of Woodland Road sits on Mercia Mudstone, which is also of the Triassic. A small area at the top of Cotham Hill has an outlier of Liassic limestone from the Jurassic period.

At present (November 2004) the ‘precinct’ area is principally occupied by a considerable number of buildings and sites associated with Bristol University and related organisations.

Across the area of the precinct and elsewhere in its vicinity are a number of Listed Buildings (see Appendix 5). However there are other features of interest apart from those already formally recognized: these include a number of sections of old rubble walling, but other structures are also of note.

On the north corner of the St. Michael’s Hill/Tyndalls Park Road intersection, against the Homeopathic Hospital garden wall, is a boundary stone. It is a small example made of Pennant Sandstone, now illegible, but very similar to that surviving at the top of Cotham Hill (which is still marked WP for Westbury Parish). Another now-illegible stone stands on the east side of Elmdale Road at the end of the wall dividing the Priory Road properties from those of Tyndalls Park Road. This was the site of the City boundary stone No. 14 recorded both in the 1803 perambulation and on the 1828 map. No other boundary stones are known to survive, but there is an outside chance that one of Nos. 15, 16 or 17 may remain. Lengths of old walling survive to the west and north-west of Nos. 20-27 Highbury Villas, and to the north and west of Osborne Villas.

Remains in the grounds of Royal Fort House include a mound incorporating the remnants of a bastion, to the south of the house, and another mound close to the north-west corner of the west wing of the Wills Laboratory. A footpath a little to the north of the latter crosses an exposed section of wall footings. To the east of the 1920s building is a surviving brick and stone gateway. The wall dividing the gardens of Royal Fort House and Stuart House is of some interest. To its south-east is an arched doorway in the wall alongside Tankards Close. Further walling of potential interest lies either side of the western part of Royal Fort Road.

More lengths of old walling line parts of Woodland Rise, with another stretch further to the east. Other examples may be seen on the south side of modern Medical Avenue. Higher up the slope, is Tower View, which has survived although very much boxed in and no longer with much of a view.

On the corner of Woodland Road and St Michael’s Park, outside the wartime Regional Commissioner’s Headquarters, is a brick pillbox. Behind Oldbury House, at the entrance to Osborne Villas, is a brick air-raid shelter.

East of Woodland Road, on the slope below the Queen’s Building, is a large boulder, one of two found at St Anne’s, Brislington, when the original Great Western railway line was cut through. There is an accompanying plaque.

Archaeological (Appendices 2-4)

Relatively few archaeological interventions in the more conventional sense have been identified for this extensive area. Most of those that have are in the St. Michael's Hill/ Royal Fort/Tyndall Avenue area, with two more at Park Row.

No. 53 St. Michael's Hill was partially surveyed in 1986 (BUAD 626; Mon. 154M). The same building, along with its since-demolished neighbours, 55 & 57 (Mons. 1452M, 1453M), was photographed in the 1950s (BUAD 3916). A 1951 photograph included much of the west side of the hill (BUAD 2291).

On the north corner of Fort Lane (modern Royal Fort Road), the girls' charity school was drawn by James Stewart in 1747 (BUAD 2766; Mon. 933M). Adjacent was the 18th-century Mansion House (Mon. 1426M), removed in the early 20th century prior to the First World War. These plots were later to become part of the Children's Hospital site (Mon. 1035M). A watching brief was carried out on part of the hospital site in 2002, but no features were found, although a layer of loose rubble was noted at the St. Michael's Hill frontage (BUAD 3842). Nine years earlier, a stone drain of probable 18th-century date was observed during building works on the north side of Royal Fort Road (BUAD 138). Further north on St. Michael's Hill, No. 121 (Oldbury House) was surveyed by Dr. R. Leech of the then Royal Commission for Historical Monuments (England) or RCHME (BUAD 2085). Oldbury House is BUAD Monument 580M, with the air-raid shelter to its rear as Mon. No. 1135M.

The Royal Fort itself was constructed in 1644-5 as a rebuild of the earlier and smaller Windmill Hill Fort, with an order for its building issued in June 1644 (BUAD 3175; No. 928M). James Millerd, on his 1673 map, depicted the fort as partially built over and converted into dwellings and gardens, although he also included in the map border a drawing of the fort as built (BUAD 2895); Millerd also recorded the fort gateway, as part of a gabled building (BUAD 2894). Rocque, in 1742, showed the remains of the Royal Fort, including three of the original five salients and also the gatehouse (BUAD 2784). About eight years later several Roman coins were reported as found on the site by Thomas Tyndall when creating a garden: included were those of Constantine, Constantius, Gordianus and Tetricus (BUAD 3034). James Stewart made two drawings of the remains of the Royal Fort and the houses and gardens within it in 1752 (BUAD 2756-6): two probable 17th-century dwellings were shown in addition to later examples. A report of 1823 referred to a former powder magazine in or near to the south-east bastion (BUAD 394; Mon. 124M). Also in 1823, Samuel Seyer noted the Royal Fort Gatehouse, said to have been the residence of the governor of the fort (BUAD 603; Mon. 131M).

In 1906 a 17th-century trade token was found in the garden of Royal Fort House (BUAD 3019). Remains of one of the fort bastions were reported in 1972 (BUAD 9). Two years later the foundations of the fort gatehouse were observed, as were cellars probably belonging to houses built on the site in the 17th and 18th centuries (BUAD 54). In 1985 two walls were observed in a trench to the north-west of Royal Fort House, and interpreted as probably belonging to a structure shown by Rocque (BUAD 3174). Observation of this and other activities in the gardens over a number of years had produced nothing confirmed to be earlier in date than the 18th century. A geophysical survey undertaken in the grounds of Royal Fort House in 1999 utilised various techniques, and revealed the inner edge of the ditch associated with the fort (BUAD 3479). Small excavations were carried out close to the house in June and September 2001 (BUAD 3736 & 3781). Royal Fort House (Mon. 1034M) and the Gatehouse (Mon. 131M) have been recorded in pictorial form on several occasions (BUAD 1621, 1669 & 2505).

Samuel Loxton made a drawing of Stuart House (Mon. 508M), probably in the early 20th century (BUAD 1681), and similarly the nearby Manor House (1674; Mon. 504M). Cromwell House was photographed in, probably, the late 19th century (BUAD 3982; Mon. 1412M). The 1883-surveyed OS 1:500 plan recorded part of the garden, including earthwork features, probably part of the north bastion and associated ditch from the Royal Fort (BUAD 3907). Ivy Cottage (Mon. 1427M) lay a short distance north of the Gatehouse and was removed only in the 20th century.

Tyndall Avenue was laid out as late as 1903, when John Pritchard only observed a few items, none earlier than the 17th century (BUAD 49). Another observation many years later, in 1999, recorded 0.5m of sub-base for the road, above an undisturbed red sandy-clay subsoil (BUAD 3596). Two years later, during excavations for the new Centre for Sport, heavily disturbed ground was noted, with a relict topsoil beneath 1.5m of overburden, also a rubble feature, probably an old retaining wall (BUAD 3765). On the south side of the avenue, a site at the eastern end of the Physics Building was the subject of a desk-based assessment in 2003 (BUAD 3961), followed a short time later by an evaluation (BUAD 4027). This latter revealed part of a cut feature and deposits containing late 17th-century finds. A more recent watching brief revealed nothing of interest (BUAD 4174).

During the creation of University Walk in 1915 “no relics of any kind” were observed (BUAD 228). In 2003 a watching brief was undertaken at the Engineering Faculty in the Walk (BUAD 3965). Further down the hill, in 1999 Roger Leech observed part of a surviving wall of a garden house of late 17th or early 18th century date on the south side of Medical Avenue: a brick arch was set into the rubble and brick wall (BUAD 3505; Mon. 1351M. Both the Tankards Close area and the top of Stile Lane were photographed when the older buildings still stood (BUAD 2295 & 2388; Mon. 866M). On the south side of Tankards Close stood the Victorian St. Michael’s Church Boys’ School (Mon. 834M).

The triangular site bounded by Park Row and the bottom of Woodland Road was evaluated in 1994, when a large ditch was found, probably part of the Civil War fortification known as ‘Essex Work’, also possibly part of a pond (BUAD 1129; Mon. 1029M). During the subsequent watching brief as part of the construction of the present Merchant Venturers Building, more of the ditch was observed, also some of the suspected pond (BUAD 578). Prior to construction a borehole had been drilled and trial pits dug (BUAD3228-33). An earlier building on the site was the Coliseum, recorded by drawing and photograph (BUAD 1539 & 2387). James Stewart made two drawings of a house and garden on the site in 1745-6 (BUAD 2762-3). Further eastwards along Park Row is No. 29, photographed in possibly the 1890s (BUAD 2690; Mon. 907M). Lunsford House (Mon. 1136M) is a rubble-built 17th-century building with 18th-century brick frontage. The Synagogue was illustrated internally and externally by Loxton (BUAD 1667-8; Mon. 1033M). Rowbotham recorded the junction of Church and Griffin Lanes in 1828 (BUAD 1490). Close to the west corner of Church Lane and Old Park Hill once stood a medieval manor house (Mon. 1142M). No. 16 in Old Park Hill is of 17th-century origin (Mon. 1350M).

On the site now occupied by the Wills Memorial Building stood the Blind Asylum (Mon. 45M), drawn by Loxton and photographed by others (BUAD 1514-6, 2435, 2515, 2682 & 2717). On occasion adjoining buildings were also included, including the Bishop’s College (BUAD 1782, 2514 & 2516; Mon. 905M). Loxton drew the interior of the Drill Hall (BUAD 1553; Mon. 67M). An oblique aerial photograph taken in perhaps the 1920s showed the University Road and Grammar School areas (BUAD 2436). Loxton recorded the Baptist College (BUAD 1518; Mon. 47M). To the south-west, the remains of 18th-century farm buildings, as well as pottery and numismatics, were revealed during the digging of foundations in 1910 (BUAD 3020). Finally, and well away from other sites, Cotham House was shown on Rocque’s 1742 map (BUAD 3331; Mon. 1222M).

Significant archaeological events outside the study area have mostly concerned the Old Park, Church Lane and St. Michael's Hill areas. They include an excavation between Lower and Upper Church Lanes in 2001 (BUAD 3735), and an earlier evaluation slightly to the north in the same area, in 1992 (BUAD 1132). Watching briefs were undertaken in the churchyard extension in 1996 (BUAD 539) and at St. Michael's Primary School in the following year (BUAD 3259). The Old Rectory in Lower Church Lane was surveyed in 1980 (BUAD 376). St. Michael's itself was the subject of a survey in 1998 (BUAD 3363) and some recording in the crypt in 2000 (BUAD 3587). At various times drawings have been made and photographs taken. In Park Lane, on the corner with Park Place, stands St. Michael's Manor House, recorded in two building surveys (BUAD 602 & 2084). The building was shown on Rocque's 1742 map (BUAD 2785) and photographed in the 1930s and 1950s (BUAD 2292-94, 2296).

Number 16, Old Park Hill was photographed in 1998 (BUAD 3503). Some houses on the west side of St. Michael's Hill were recorded pictorially in 1828 (BUAD 1495). Nos. 23-29), on the west side of the hill, and No.22 on the opposite side have been surveyed by Dr. Leech of the Royal Commission for Historic Monuments (England) (BUAD 3281 & 3411).

A field observation by John Pritchard in 1906 noted two old road surfaces at the top of St. Michael's Hill, by Highbury Place, together with late medieval and post-medieval finds (BUAD 3021). Dr. Estlin's house, nearby, was pictorially recorded in 1823 (BUAD 1488).

In 1993 an archaeological watching brief on the Bristol Grammar School site, north-west of University Road, revealed a large backfilled pit about 16m across, interpreted as a probable stone quarrying pit (BUAD 434).

Historical

[Dr. Roger Leech has looked at the history of the area inside the City and County boundary (active from 1373 until 1835) for the period up until the late 18th/early 19th century. The area is therefore not dealt with in detail for that period.]

Historically the majority of the study area lay inside the County of Bristol, as created by the Royal Charter of 8th August 1373 and its boundaries defined by the subsequent charter of 30th September (Harding 1930, 118-141 & 146-165). Outside to the north lay the parish of Westbury-on-Trym and the tything of Stoke Bishop. However, a tongue extended northwards out from Bristol, along the King's Highway as far as the spring of Bewelle (or Bewell), close to what is now the beginning of Hampton Road. This took in the highway as far as that point, also Bewell's Cross and the site of the gallows. Even as far back as 1188, Bewell had been recognised by John, Count of Moreton (later King John) as one of the metes or limits of the town of Bristol (ibid, 8-9).

The old road to Henbury and the Passages (for South Wales) climbed out of Bristol via St. Michael's Hill before dropping down Cotham Hill and then climbing again onto Durdham Down. This route defines the eastern and northern edges of the study area. Definition along the southern edge is provided by Park Row and a short length of Queens Road, which was the ancient route out to the village of Clifton, sufficiently old to have been utilised for the boundary between the medieval parishes of St. Michael and St. Augustine.

Early History

Bettey, in his 1993 article (p.19), described the southern slopes of St. Michael's Hill in the medieval period as being a gorse-covered common with a few enclosures for pasture. The de Cantock family owned property in Bristol and beyond, and when Roger Cantock died of the Black Death, *c*.1348-9, much of his estates passed to the Abbey of St. Augustine. Included amongst the estates were four enclosures on St. Michael's Hill, totalling 24 acres: before the end of the century part was occupied by a house and garden. After the Dissolution the land was given to the Dean and Chapter of the new Cathedral at Bristol, created out of the buildings of the former Abbey. Eastwards of Cantock's Closes were enclosures belonging to St. Bartholomew's Hospital and to St. Mary Magdalen's Nunnery, both located further down the hill towards the town. Other enclosures were also created towards the highway that climbed St. Michael's Hill, including Tinker's Close (corrupted later to Tankards Close) and Joachim' or Jochin's Close. Two fields named Inner and Hither Puckingrove lay to the west of Cantock's Closes: they would later become the sites for the Grammar School, City Museum and the original University quadrangle. Mede's Chantry had a close on the sites of the later Nos. 8-13 Park Row (now partly beneath the Drama Dept.) before the end of the 15th century. Adjacent to the west by 1463-4 was a house and garden belonging to the Corporation (Leech 2000, 109). Other dwellings and farm buildings were erected alongside both St. Michael's Hill and the road to Clifton (Park Row). At some point a windmill was probably erected on top of the hill, on its west side, since it became known as Windmill Hill (another example, to the east of the highway, may have existed by 1373).

The Royal Fort and Other Civil War Defences

As the second port of the kingdom and also one of the largest centres of population outside of the capital, Bristol was of huge strategic importance during the Civil War. Unfortunately, in practical terms it was also almost impossible to defend, situated as it was in a bowl

surrounded by hills. This meant that there was no alternative other than to include those hills in the defensive circuit, resulting in very long defensive lines. To the west and north of the City, forts were established on Brandon Hill, Windmill Hill and Priors Hill, with further defensive features in between them. By the time of the first siege in 1643 an earthwork sometimes known as Essex Work had appeared in the gap between Brandon Hill and Windmill Hill Forts, part of it probably found north of Park Row in 1994. This remained a weak point, however, and it was along this route that the Royalist forces forced the defences in 1643.

Improvements were made to the defences of this part of the line by the Royalists in the two years prior to the second siege of 1645, principally by the upgrading of the fort on Windmill Hill into the larger and stronger Royal Fort. This, according to the vignette published by Millerd in the border of his 1673 map, was of five unequal sides, equipped with five bastions; there was a gateway in one of the longer sides. Millerd's source was probably Philip Stainred's 1669 drawing (Leech 2000, 20). Prince Rupert had the new fortification built, possibly to the design of his engineer, Bernard de Gomme. Around the exterior was a substantial ditch. Rocque (1742) showed three bastions, plus some of the ditch; a fourth bastion may have been visible in 1883 at the time of the OS large-scale survey, in the garden to the north of Cromwell House. Today there is the length of wall identified by Russell, probably part of the south-west bastion (more of which may lie within the present mound; the north-west bastion may survive as part of a densely vegetated mound to the west of the 1920s Wills Physics Laboratory. At the top of Royal Fort Road stands a gatehouse with a vaulted gate-passage : whether it is *the* gateway into Prince Rupert's fort has been the subject of some debate (e.g. Russell 1995, 22). What seems certain is that in 1656 this was the gatehouse leased to Francis Milner together with some void ground (Leech op. cit, 60).

From the north bastion of the Royal Fort the defensive line probably ran north-north-eastwards, as far as the highway above the crest of St. Michael's Hill, before turning onto a more north-easterly route, heading towards Colston's Mount (or Redoubt) at the top of Horfield Road. Positioned beside St. Michael's Hill was a gun platform (equipped with two pieces of ordnance in 1643), in the vicinity of Alderman Jones' house, the latter's site now partly occupied by No. 114. Jones's house lay on the east side of the road, opposite what is now Oldbury House and diagonally across from Eusebius Brookes' house. The latter was built before 1667 but was removed in the 1820s and is now beneath Nos. 123-131, with the remainder under the street. Oldbury House was constructed between 1679 and 1689, purchased by Lady Phillipa Gore in 1692.

St Michael's Hill

After the temporary disruption of the Civil War, Bristol's suburbs once again crept up the northern slopes of the City. Millerd (1673) showed development on the west side of the sloping part of St. Michael's Hill and even on the flat area beyond the top of the climb, but only one on the east side of the gradient. This had spread by the revision of *c*.1715, with more houses added on both sides as well as Colston's Hospital (Almshouse) on the east side. Unfortunately, Millerd's map stopped not far beyond the end of Royal Fort Road. The Bucks' view from Totterdown (1734) showed a number of buildings on the hill above St. Michael's. Today the surviving old buildings on the west side of St Michael's Hill date from the early 17th to early 18th centuries.

Houses on the Royal Fort Site

The predecessor to the present Royal Fort House lay partly on the same site but with its long axis aligned north-west to south-east: Millerd showed it as a large building with a flat roof. This was the 'great house', formerly the dwelling of Captain Beale, leased by the Corporation to Daniel Brereton in 1655 (Leech op.cit, 54), and from 1737 leased to Thomas Tyndall (ibid, 55). It was replaced by the present mansion, *c*. 1760. To the north lay a pair of houses of differing design, the Manor House (west) and Cromwell House (east). James Stewart illustrated the pair in 1752: Manor House was of 2 storeys plus attic storey; Cromwell House was gabled, of 2½ storeys, with a smaller south wing. Manor House was occupied by Lieutenant Mabbs before 1657, but in that year was newly leased to John Harper; the house was removed *c*.1920 for the new Physics Laboratory. Cromwell House was up by 1665, when John Hicks leased it from the Corporation; it still stood in late 1883 but had gone by the time of the 1901 OS revision.

Richard Garway's house lay a short distance to the north of the Gatehouse. Stewart's 1752 illustrations showed a 3-storeyed, possibly double-pile house with projecting 2-storey porch. Held by Garway in 1679, Leech thinks that it was built after 1673. Later much extended, it was used as a Preventive Home for Girls, housing 43 'inmates' at the time of the 1881 Census, but was badly damaged during the Blitz, being shown as a ruin on the 1949 OS plan. Ivy Cottage, a smaller dwelling, lay immediately adjacent on the north side. Mentioned as the tenement of John Millard in 1683, it may have been contemporary with the Fort – it was precisely aligned on the line of the curtain wall (Leech op. cit, 45-46). Further south, at the top of Royal Fort Lane (now Road) Stewart's 1752 drawings illustrated a gabled house of several storeys built above the Fort gate, with a slightly lower 5-window building immediately to its south. John Elbridge was resident here in the early 18th century. The remaining parts of this building suffered the same fate as Garway's House. To the rear is now Stuart House, which was in 1657 the site of a rank of houses: the present structure may incorporate elements of these early buildings, although the official listing gives the house as early 19th-century (leech op.cit, 62).

Royal Fort House

John Tyndall leased the house at Royal Fort from 1737. After his death in 1743 it passed firstly to his brother Onesiphorous (d. 1757), and then his nephew Thomas, who rebuilt on the same site. Royal Fort House was erected on the same site as its' predecessor, but on a new alignment. It was also somewhat larger in plan, including a service block at the east end, adjacent to Stuart House. Built between 1758 and 1760, it appears to have been a joint effort, with the elevations perhaps designed by James Bridges (who produced the surviving model), but the majority of the masons' work done by the Patys (Mowl 1991, 71). Once resident in the new mansion the Tyndalls settled in for good, and only vacated the house in 1916. The house and gardens were purchased by the Wills family on behalf of the University in the following year.

Development moves outwards

Rocque's 1742 map indicated that either side of the hill was well built-up as far as Royal Fort Road/Robin Hood Lane with more scattered development, including gardens, to about the point where Paul Street now intersects. With the exception of one small building, nothing could be seen until just past the gallows, with buildings on the south side of Cotham Hill

(now Cotham House) and in the vicinity of Bewell's Well (top of Hampton Road). Back towards the south, Southwell Street had been laid out along the eastward crest of the hill as far as Upper Maudlin Lane (modern Horfield Road). To the east, in St. James' Parish, Rocque showed how development, predominantly housing, had already reached the lower slopes of Kingsdown and was about to be expanded uphill as far as Somerset Street. By the time of Donne's 1773 map the built-up area had reached the top of the hill, at both Southwell Street and Back of Kingsdown Parade and had begun to spill over into Westbury-on-Trym Parish. Paul Street and Oxford Street in Westbury Parish were both named by Donne, who showed them as already partially developed. On the west side of St. Michael's Hill a terrace had appeared to the north of the White Bear, with two single buildings to the north again, one in Westbury Parish and the other across the road in St. Michael's. Mathews's 1794 map recorded further streets in the Westbury part of high Kingsdown but no more development on the opposite side of St. Michael's Hill.

Cotham House

Rocque's 1742 map showed a house of L-shaped plan, accompanied by a garden, on the south side of Cotham Hill, with a pair of smaller buildings a short distance to its east. West of the house, but separated from it by a small open space, was a small area depicted as garden. Parts of several fields were shown outside the City boundary: they had been recorded as Mr Holmes's grounds by the 1736 survey of Cantock's Close (BRO DC/E/40/9). The house was Cotham House, although unnamed by Rocque: it was on the same site as shown by 19th-century maps, although not the exact same footprint. Rocque showed a level area to the south-east of the house, opposite the Gallows. Charles Partridge was resident here with Sybella his wife in the later 18th century. A 1785 survey of Tyndalls Park (BRO DC/E/40/68/1) labelled the property as "Mr Partridges", but left it otherwise blank, apart from two lines that apparently defined the southern and eastern edges of the garden. Charles and Sybella Partridge were mentioned in deeds relating to the Cotham Lodge area in April 1772 (BRO 40376).

Before the end of the 18th century Cotham House was occupied by Anthony Palmer Collings, as indicated on the edge of William Paty's 1791 plan (BRO 00568/9b). Collings was listed in Matthews 1794 directory as "Customer Outwards and Inwards" and in 1800 as "Collector". He was "late deceased" at the time of the sale of Cotham House on August 30th 1809, this being Lot 1 of a number of lots from Eusebius Brooke's Gift, a charity of St. Michael's parish (BRO P.StM/CH/10/e). The property was described as a "Capital Mansion House called Cotham-House" and included "suitable domestic Offices, Coach-houses, Stabling, Yards, Gardens, Green-houses, Pleasure-ground, Home-ground, and Shrubberies". In all there was about seven acres, mostly freehold; a handwritten note referred to "a small Plantation some years since enclosed out of the Waste".

Richard Ash was owner/occupier of Cotham House at the time of both the 1825 and 1838 surveys of Westbury-on-Trym parish (BRO P/HTW/V/2a-b). The first survey described the property as including offices and "Pleasure Grounds". Ash remained at the property in 1841, the Tithe Award listing the house, offices, yard & stabling, garden & pleasure ground. Total acreage for the house, etc., including the two cottages at St. Michael's Hill near to the parish boundary, came to 4 acres 1 rood 14 perches in 1825/38, but 4 acres 2 roods exact in 1841. By the time of the 1851 edition of Matthews Directory, Richard Ash had moved away and Francis Edwards, corn & flour factor, was in residence. Samuel Budgett was a later resident (e.g.1883). Cotham House was depicted with an irregular shape on 19th and 20th-century maps and plans, probably the result of piecemeal development. None of the cartographers up to and including Donne (1826) had shown any features of note in the grounds. However, in 1828

Plumley and Ashmead published their large-scale survey, which showed a substantial mound of roughly circular shape (35-40m diameter) to the south-east of the house. It was then ignored by surveyors, even Ashmead with his own 1854 1:600 survey, but strongly suggested by the OS in 1883, with the 1:500 plan showing winding paths apparently climbing to a summit in the centre of a circular tree-covered area of equivalent size to that of 1828. Both the 1901 and 1913 revisions of the OS 1:2500 also recorded the circular area of copse: it was later to disappear beneath the Homeopathic Hospital building and its terraces. A small keyhole-shaped feature shown to the west of the house, close to Woodland Road, by the 1883 OS plan and 1901 and 1913 revisions may represent an icehouse: it could still survive, although does not appear on modern maps.

Late in the 19th century George White purchased Cotham House. He had various improvements carried out, including rebuilding the servants' quarters, and, later, a remodelling of the house (although the projected billiard room extension (BRO Building Plan Book 38 fol. 48) was not built). Created a baronet in 1904 for his services to the community (he was a generous benefactor to local charities and good causes), Sir George played a significant part in Bristol's commercial and transport history, being heavily involved in the tramways company, and founding the British & Colonial Aeroplane Company (later Bristol Aeroplane Company). Sir George died on 22nd November 1916, typically working late at his desk, after which the house was purchased by Walter Melville Wills for the site of the new Homeopathic Hospital (see below).

Rocque's map showed a narrow strip of ground between the Parish/City & County boundary and the grounds of Cotham House. At the St. Michael's Hill end was a gate, from which a track ran parallel to the boundary and into a field, before turning southwards. Mere or boundary stones were shown by the gate and at various locations along the boundary, each on the Westbury Parish side of the line. A kink was shown in the boundary at about 45m west of the main road. The 1785 survey of Tyndalls Park recorded several structures of various sizes within the strip, and included it in the same parcel as the larger field to the west, which was occupied by Henry Hobhouse. William Paty's 1791 plan showed no detail within the strip, other than a "City Stone" (boundary stone) just inside the gate, but did label the plot as "Mr Tyndales Dog kennel &c". The 1803 perambulation mentioned the "great Gates", with stone C.B. No. 18 a distance of twenty feet below them (i.e. to the west). By 1828 the strip had been absorbed by the Cotham House garden. Two houses or cottages were listed in the 1825, 1838 & 1841 surveys, but by 1854 there remained only the one dwelling, adjacent to a pond against the west side of St. Michael's Hill (BRO 40870/Map/42. This latter source, part of Ashmead's 1:600 survey, recorded boundary stones 15, 16 & 18 at locations shown earlier by Rocque (no. 17 was at the other end of the kink). None of the buildings has survived.

Tyndalls Park

John Tyndall not only took over the house at Royal Fort, he also leased Cantock's Closes from the Dean and Chapter in 1742. Thomas Tyndall, John's nephew, extended the lease and leased or purchased adjacent lands, and laid out Cantock's and Tinker's Closes as garden and parkland. Tyndall's Park occupied an extensive area to the south, west and north-west of Royal Fort House. At its maximum extent it reached to Park Row, beyond Queens Road to take in what is now the Triangle, and along the east side of Whiteladies Road as far as the north-west corner of Belgrave Road. Eastwards it partly fronted onto St. Michael's Hill, but was more usually at a distance of 90-160 metres back from the highway, separated from it by large gardens. Fields and gardens were shown in the area between Park Row, the Royal Fort and Cotham Hill by Rocque on his 1742 map. Parcels were divided by a mixture of walls and hedgerows; footpaths or tracks were shown. Ditches around the southern and western edges

of the former fort were also recorded, in addition to some surviving bastions. As noted elsewhere, the City and County boundary stones were also indicated (by miniature drawings of them). The 1785 survey drawing of the Royal Fort included the entire park, providing considerable information about landscape features. Four lengths of ha-ha were shown, a long fence and various shorter sections, numerous copses or plantations (some square), paths and tracks, the carriage drive leading from Park Row, and several ponds. No detail of the Fort Lawn and Garden was given, but four glasshouses or cold frames were shown in the kitchen garden, and a partially fenced pond near to St. Michael's Hill. Halfway along the western ha-ha was a triple-gated access to the western field: this was later the site of an agricultural building (Sturge 1817 & 1825), identified in the 1825 survey as "Cowhouses", but partly residential by 1854. Outer areas on the 1785 map were labelled with the names of their owners, including the Society of Merchant Venturers, Francis Adams, Henry Hobhouse and Nathaniel Saunders. Nicholas Pocock's *c*.1762 view of the house from the west agrees in detail with the 1785 survey, and includes the ha-ha separating Cantocks Close from Puckingrove Hither/King's Orchard.

Towards the close of the 18th century Bristol was at the height of its prosperity. Development land close to the City became ever more valuable. In 1791 Thomas Tyndall was persuaded by a consortium of developers headed by T. G. Vaughan to accept £40,000 for his park; the Dean and Chapter were also keen to profit from development of the land. An Act of Parliament was obtained for construction of a crescent, square and circus and several streets, in total 500 new dwellings. Work commenced on excavation of foundations, but the outbreak of hostilities with France in the following year (1793) resulted in recession and collapse of the property boom, and the developers were bankrupted. Building work having been abandoned, the park became an unofficial public open space. Thomas died shortly afterwards, and it was left to his son, also Thomas, to recover the land in 1798. Early in the following year he invited the renowned landscape architect Humphry Repton to design a scheme for landscaping the property, although it took another two years and eight months to produce the Red Book (Daniels 1999, 238). Repton found "large chasms in the ground" and "immense heaps of earth & broken rock" (ibid. for quotation). His proposal included areas where some of the worst of the disruption was smoothed out rather than removed altogether. Carefully planned areas of tree planting closer to the house would mask the views of nearby urban sprawl. The site was effectively restored to parkland and grazed by cattle and sheep once more.

Donne's 1826 map showed all the ha-has, labelled as "Ha Ha". Plumley and Ashmead's larger scale map (1828) had the ha-has drawn as single lines only. Two ponds were shown either side of the old carriage entrance off Park Row, and a single example in the middle of the park (now the top end of the Grammar School site). A small building had appeared close to the top of the drive, a short distance to the north-east of the present lodge. Ashmead's 1854 1:600 survey also drew the field boundaries as single lines; two ponds were shown in the park centre, but none by Park Row. It may have seemed from the evidence of the 1828 and 1854 surveys that all the ha-ha features had disappeared, but the 1883 OS 1:500 plan recorded the short north-eastern length, now beneath Woodland Road and the Senate House, as extant. Two ponds were again shown nearby, in the centre of the park, but slightly differently shaped to those recorded in 1854 (which, in turn, had varied from those of 1785). They did not survive until the 1901 OS revision. Another two ponds were recorded near to St. Michael's Hill in 1883, one of them surviving until at least 1913, but they are now beneath the 1960s Children's Hospital block.

Development of Tyndalls Park

The old road to Henbury and the Passages climbed out of Bristol via St. Michael's Hill before dropping down Cotham Hill, but by the mid-18th century this route was causing difficulties, particularly for outbound traffic. A solution was found by laying out a new road between the old Clifton road (now Park Row and Triangle South) and the road to Henbury at Whiteladies Gate. The new road was authorised in 1761, and was shown by B. Donn on his 1769 map. Initially, apart from the occasional structure in Clifton Parish, there was no development along the line of the new road (later named Whiteladies Road). Donne (1773) failed to include the road at all and whereas Mathews (1794) did, there was only the one building on the west side. A plan of Tyndalls Park drawn in 1785 showed much of the new road, and also what is now the lower part of Queens Road (BRO DC/E/40/68/1.

The Sturges' 1817 map of Westbury Parish recorded a short terrace on the east side of Whiteladies Road, approximately on the site of the present Nos. 51-59. Eight years later and the Sturges were again mapping the parish: by now the West Park area was being developed in earnest. The earlier terrace, of five dwellings, lay to the north of its west end, with a shorter terrace of four opposite; two pairs of semi-detached houses had been built at the western end of the south side. Plumley and Ashmead (1828) showed the road fully laid out, the south side entirely developed and the north side empty but set out as seven plots. No other development was recorded on the east side of Whiteladies Road either in 1828 or on the 1833 Ashmead map. The 1841 Tithe Map showed terraces erected along most of the east side of the main road northwards as far as Whiteladies Gate, although the north side of West Park had still not been fully developed. South of West Park no buildings had been erected, either on the main road or on the fields behind.

Development of Whiteladies Road continued in to the 1850s, by which time villas were being erected along the Tyndalls Park stretch. A gap was left between the houses on the eastern side for the creation of a new road to link with the top of St. Michael's Hill. Plans were submitted in July 1857 for drainage of two new dwellings in "the New Road branching off Whiteladies Road, Tyndalls Park" (i.e. Tyndalls Park Road). Standing adjacent in the same road was already one existing house, that of Mr. Barnett (BRO Building Plan Book 4 fol. 111), and possibly others. At least one other pair of semi-detached villas was also approved in the same year. Development spread in both directions along the south side of Tyndalls Park Road in the next few years, often built by William Lee. Building followed on the opposite side of the road a little later, generally built from west to east. A second new road (Woodland Road) was laid out from Cotham Hill southwards, crossing the first and continuing to a point short of the Royal Fort. George Gay was responsible for the development along its eastern side; many of the larger houses were provided with coach-houses. This road was later extended southwards to meet Park Row. Further new roads were established as development crept south. Elmdale Road and Priory Road were added, and the bottom of the old drive to Royal Fort House was widened into Queens Avenue. Museum Road was formed adjacent to the new Museum and Library, off Queens Road, although initially it ran only as far as the gates of the new buildings of Bristol Grammar School. Later renamed University College Road, it is now University Road.

Priory Road saw building from the early 1870s, with three houses at the west end of the north side, although it would be more than a decade before construction commenced on the opposite side of the road, in the second half of the 1880s. Woodland Road saw further development along its east side into the early 1870s, but the opposite side south of Priory Road had to wait until the late 1880s and early 1890s.

Above St Michael's Hill

The area to the west of St. Michael's Hill had not been left behind by the suburban expansion. Eusebius Brookes's old house, immediately north of Oldbury House (No. 121) was removed before 1828, possibly in 1823, replaced by the five houses constituting St. Michael's Terrace, which are now listed Grade II. By mid-century Highbury House and the houses of Highbury Place had been erected to the north of The White Bear in St. Michael's Hill: Nos. 143, 145 & 147 are now Grade II. Within a few years two terraces of eight houses each had been constructed at Albert Villas to the rear of Highbury Place, with infill of four and five houses respectively only added late in the century. Much of the plot fronted by Oldbury House and St. Michael's Terrace was divided up for housing development in the late 1860s; a strip at the western end was incorporated into gardens of three Woodland Road villas. St. Michael's Park was laid out for a distance of almost 160m from St. Michael's Hill and 3-storey terraced housing built along its southern side, with more spacious accommodation at its western end. A smaller road in three legs, Osborne Villas, was created to the north of St. Michael's Park, with a single terrace along its northern side only. Eight attached houses or small villas occupied the north side of the Park between the access to the Villas). All the dwellings had been constructed by the time of the 1883 OS large-scale survey.

Domestic staff

Returns for the 1881 Census, listing residence for the night of 3/4 April, showed 25 residences on the south side of St. Michael's Park: 5 were uninhabited; 5 had 1 servant each; the others had no servants. Across the street, of the 8 houses in Oldbury Villas, precisely half had a single servant each. Of the 16 dwellings in Osborne Villas, only two had a servant (one each). At the end of St. Michael's Park, Oldbury House was divided into two dwellings, with 3 servants between them. Over in Woodland Road, the large detached houses had an average of just over 3 servants each. At Bannerleigh (modern No. 15) the Rector of St. Michael's and his wife were attended by cook, parlour maid, house maid and maid; at The Woodlands (No. 21) were a family of four plus cook, parlour maid and housemaid. In Priory Road, the Oaks (No. 11) housed a family comprising husband, wife, 3 sons and 4 daughters, served by cook, house maid, parlour maid, kitchen maid and 2 nurse maids. Across in Tyndalls Park, Cromwell House had 2 servants, as did the Manor House next door. 'The Fort' (i.e. Royal Fort House) had 7 servants in residence, but these may only have been a skeleton staff since the Misses Tyndall were absent. Gertrude Savill was Lady Superintendent at the Preventive Home, supported by 2 assistants, 2 matrons and 2 servants: there were 43 inmates. Around the corner in Tankards Close there was not a single servant in any of the numerous dwellings, while the four High Park buildings only had one between them. Downslope in Vine Row, of the 17 houses, only No. 15 had a (single) servant. Park Place, connecting with St. Michael's Hill, had not a single domestic servant resident.

Tyndall Avenue

On St. Michael's Hill there had survived an open stretch of land between the school on the north corner of Royal Fort Road and Oldbury House. Immediately north of the schoolhouse was the site chosen for the Children's Hospital. A gap was then left open before a terrace of three dwellings (approved April 1901) and a further terrace of five (July 1901). Between the two short terraces was left a space, through which a new road was laid westwards as far as the

intersection of Woodland and Elton Roads. Tyndall Avenue was the name chosen for the new thoroughfare; as noted in Chapter 3, it was under construction during 1903. Housing on the northern side of the road was approved in June and December 1903 (Nos. 1-15 and 17-27, odds, respectively). On the opposite side of the avenue, Nos. 2 and 4-24 were approved in early 1906. A vacant plot was left at the western end of Tyndall Avenue, bounded on the north by St. Michael's Park and the west by Woodland Road. Across the avenue the old Manor House and its garden occupied the west end. Tyndall Avenue was adopted by the City Council in early 1906 BRO 40287/8).

Royal Hospital for Sick Children and Women

A Dispensary for Sick Children and Women was opened in 1857 at Lower Castle Street, central Bristol by Dr. Mortimer Granville (Perry 1984a, 15). When Mark Whitwill joined the Dispensary committee, he persuaded them to found a hospital. Premises were located in Royal Fort Road, where a house was converted, being given the title of the Bristol Hospital for Sick Children and Women. Initially, there was just a single room with nine cots, but the facilities were soon expanded. Immediately prior to construction of the new facilities, several buildings were occupied on the south side of Royal Fort Road, including the old gatehouse building (OS 1:500 plan). Two of these remained in use until at least the mid-1950s, with alterations being made in the interim (Building Plan Books 34 fol. 44 & 44 fol. 74). The present site on St. Michael's Hill was purchased in the 1860s and a new hospital building opened in 1885 (Perry, ibid.). Plans had been submitted in late 1882 (BRO Building Plan Book 19 fol. 33. There was a Front Building facing onto St. Michael's Hill, with a Main Building behind (of E-shaped plan); a long corridor ran south to the Infectious Wards Block on Royal Fort Road. The 1882 Block Plan drawing showed a proposed new road to run northwards immediately west of the hospital, but this was never built. The new facility could accommodate 88 children or infants and seven women. In the year of Queen Victoria's Diamond Jubilee she gave permission for the 'Royal' to be added to the hospital's name.

Additions were made at the main site in 1905 and again in 1923 (BRO Building Plan Books 48 fol. 12 & 44 fol. 74). The earlier work involved erecting a new building on the site of the 18th-century house, which was to be removed, along with the old school house, for the widening of Royal Fort Road. At some point during the 20th century, perhaps during the Second World War, the middle wing of the Main Building was removed, but it had been replaced before the late 1960s. An accommodation block for the nursing staff was added on the site of a previous formal garden to the north-west of the main building before the end of the 1940s. Two small plots remained vacant on St. Michael's Hill in 1950 between the main building and no. 73, but were later developed with a 4-5 storey 1960s hospital building. In recent years the functions have been transferred to a new purpose-built Children's Hospital in Upper Maudlin Street. Back at St. Michael's Hill, on the east side the new Bristol Maternity Hospital (now St. Michael's Hospital) was opened in the mid-1970s on the south corner of Southwell Street. Later, that and the 1880s hospital building were connected beneath street level by a private subway.

Park Row

Pressure was also being applied to Tyndall's Park from the south and south-west, from the Park Row and Queens Road directions. Millerd (1673) had showed several buildings along the northern side of Park Row near its eastern end, where the area was already divided into gardens. Further west remained as fields, apart from a pair of houses within a small garden.

By the time of the *c.*1715 revision two houses had appeared to the west again, the originals replaced by a pair of hayricks; the park had been subdivided into smaller enclosures. The 1734 Buck view from Brandon Hill indicated no change, as also was the case with Rocque's 1742 map. Donne (1773) again showed the western part of Park Row as undeveloped, but did record the junction with what is now Queens Road. Mathews showed the whole of Whiteladies and Queens Roads (1794). Donne's 1821 map had the gate to Tyndall's Park with its accompanying lodge shown on the north-east side of Queens Road (modern Queens Avenue). The more detailed 1826 map by Donne again showed the lodge, with no other buildings on this side of Queens Road and none along Park Row until what is now Woodland Rise. Plumley and Ashmead's larger-scale 1828 map recorded just one small additional structure, beside the road opposite what is now No. 74 Park Row.

Eastern Park Row was already developed along its northern side by the time that it was illustrated by the Bucks in 1734 and mapped by Rocque in 1742. The latter picked out what is now Lunsford House for special attention, possibly because of its formal garden in front: this was then the residence of I. P. Fuhr Esqre. He also showed a pair of steps, probably those leading to the later sites of the Deaf & Dumb Institution and Park Row House, indicating that these sites sat above road level. Plumley and Ashmead's 1828 map (scale 1:2400) depicted the houses along this side of the street in more detail – and again showing the same pair of steps. Mr. Fuhr's was now the Park Academy; other houses were set back a shorter distance from Park Row. George Ashmead was also responsible for the 1854 1:600 survey of the City, which was coloured to indicate residences (pink), non-residential buildings (grey) and institutional buildings (purple). Street numbering was consecutive: dwellings were shown at Nos. 8, 9, 12, 13, 14 and Lunsford House, also the Institution for the Deaf and Dumb; a house on the site of modern No. 29 may then have been No. 7. A photograph of St. Augustine's Parade taken in 1864 showed most of these buildings in the distance (Winstone 1972, pl. 9). An L-shaped building a short distance to the north of Lunsford House was identified as the 'Medical School'. Bristol Medical School had been founded in 1833, and the following year moved into these premises, which it continued to occupy until new purpose-built facilities were provided at the new University College site in 1880. Shortly after Ashmead had carried out his survey, plans were drawn up for an asylum for discharged female prisoners, which was built on the site immediately east of the Deaf and Dumb Institution (Building Plan Book 2 fol. 291). This was known as Park Row House.

Applications were made in 1870 & 1871, respectively, to rebuild the fronts of Nos. 12 & 13 Park Row (BRO Building Plan Book 9 fols. 60 & 99). This was made necessary by the widening of Park Row, one of several street improvement schemes then being undertaken in this part of the City. For this stretch the northern side of the street was taken back by about 7-8 metres, taking off the fronts of Nos. 12 & 13, and necessitating the total removal of Nos. 7 & 14, and partial demolition of the Deaf & Dumb Institute. The Little Sisters of the Poor, who were at the latter site, decided to sell up and move elsewhere. In May 1869 an offer for the site was made by Samuel Platnauer, President of the Bristol Hebrew Congregation, with a view to erecting a new synagogue there, the existing accommodation in Temple Street being required for a new road scheme (Samuel 1997, 72). This would be the first purpose-built synagogue in Bristol: Hyman H. Collins of London was the architect, S. C. Fripp the architect in charge. Purchase and preparation of the sloping site and construction of the new buildings, at in excess of £4,000, was more than was received for the old premises, and it was some time before the interior decorations were completed. Consecration took place on Tuesday 5th September 1871. No. 7 was replaced by the present No. 29, which at various times has been occupied by a pianoforte maker, a carpet cleaner and a furniture manufacturer.

Bishop's College

Two buildings were erected, in the 1830s, on the sites now occupied by the City Museum and Art Gallery and the Wills Memorial Building. For some years there had been a desire to move the Red Maids School out from their old and unsuitable site at Denmark Street, and in September 1833 the Corporation sold 1 acre and 22 perches (part of Kings Orchard) to the school trustees for the sum of £1,270 (Latimer 1893, 202). A design of ambitious character was chosen and building work commenced, then suspended while the Municipal reform Bill made its way through Parliament. Early in 1837 it was discovered that the final cost of the new building project would total at about £17,000, which was more than could comfortably be afforded. Bishop Monk purchased the premises from the Charity Trustees for the sum of £9,750, and in October 1841 transferred the Bishop's College from its original site in Clifton (Latimer op.cit, 141). Ashmead 1854 showed a building of three ranges; to the west and north of this site was ground in use as a nursery and including several small structures. December 1861 saw the sale of the College to Messrs. William Wright and James Ford, officers in the volunteer rifle corps (Latimer op.cit, 390). The college building was converted into a headquarters for the corps, now called the Bristol Rifles' Headquarters Company, opening in September 1862. A new drill hall, costing £2,500, and then the largest in Britain, was opened in the following month. Latimer reported that there were also an armoury, orderly room, sergeants' room, store and other rooms. The OS 1:500 plan (1883) showed racquet courts in a rectangular building behind the drill hall, on a site that was cut into the hillside with retaining walls to north and west; a long passage or haulingway ran up the western edge of the property, with a gymnasium alongside. In 1883 the original college building was known by the name of the Victoria Club. Early in 1888 the building was taken over by the members of a Conservative Club and renamed the Salisbury Club, after Lord Salisbury, the Prime Minister, but this closed in 1896 (Latimer 1901, 7).

Blind Asylum

On the adjoining site to the east of the Bishop's College, the remainder of the Kings Orchard, had been bought from the Corporation for £1,850 as the site for a new Blind Asylum (Latimer op.cit, 202). Founded in 1792, this institution had had two previous homes, the latest in Lower Maudlin Street. A chapel of ample proportions was erected in front of the west end of the building, whose main elevation was set back a distance from the main thoroughfare. Designed both for the use of the residents (inmates) and as a chapel-of-ease to St. Michael's, it was opened on 20th November, 1838. Latimer says that the new asylum had cost £15,000 and the chapel itself £5,000. Ashmead's 1854 1:600 plan showed not only the main structure, around three sides of a quadrangle, but also further buildings on the west, north and east sides of a terrace above to the north. A two-storey block containing a sale room, schoolroom and music rooms was added to the west of the chapel in 1883 (BRO Building Plan Book 18, fol. 65b). The entire site of this building, which was also known as the School of Industry for the Blind, now sits beneath part of the Wills Memorial Building.

Queens Road and New Museum

Suburban development continued to move southwards down Whiteladies Road and into what now is the lower part of Queens Road. Plans were submitted in 1852 for the erection of a building on the north corner of Queens Avenue, later the Queens Hotel and now occupied by Habitat. On the opposite corner, the lodge to Tyndall's Park was replaced by a villa; a new lodge was erected on the eastern side of Elmdale Road at the end of what would become

Elton Road. Queens Road received its name in 1854. Royal Promenade, now Nos. 48-68 Queens Road, was designed by Foster and Wood in the Italianate style and erected 1859-68. Nos. 40 to 46, by C. F. Rumley, date from 1868: they occupied the last four plots west of Museum Road (now University Road). The Museum itself (now Brown's Restaurant) was on the opposite corner, on the west side of the Bishop's College. Designed by John Foster and Archibald Ponton in 1866, it was erected to house the Bristol Library and Philosophical Institution: upon completion in 1871 it was called the Bristol Museum and Library (Crick 1975, 29), hence the name of the new street alongside. Within a few years the building had been extended rearwards by the addition of Colman's 1874-designed Museum Lecture Theatre.

Museum Road was laid out up the centre line of the old nursery, as far as the entrance to the Grammar School (i.e. to just short of the modern top end of University Road). An element of the nursery managed to survive for a few years on the south corner of Elmdale Road. Bristol Grammar School moved into the building on their new site in February 1879, although the formal opening was not until three months later. The buildings included a schoolmaster's house, and, at on Elmdale Road, a lodge. Total outlay for the purchase of the land and construction of the buildings was about £20,000. Extensions to the original structure followed and have continued up until the present day. Elmdale Road was extended south-eastwards to meet Museum Road, although by the early 1880s only the Deaf & Dumb Institution building and one house had been erected (modern No. 1, corner of University Road). At this time there was only the one pair of houses along the northern half of the road (Nos. 19 & 20). Beside the new lodge to Tyndall's Park was a stub of new road that would shortly be extended eastwards uphill to intersect with an extended Woodland Road.

The University College

Nine o'clock on the morning of Tuesday, 10th October 1876 saw the first lecture at the newly opened University College, Bristol (Sherborne 1977, 1). Two professors and seven lecturers staffed the new institution – but there was as yet no Principal. Before the first term's end there were eleven lecturers. The College had been established with the aim of filling an obvious gap in the educational resources of what was an important British city. For the first year there were 99 day students and 238 evening students, with women outnumbering men by more than 2 to 1 in the first category, and well represented in the evenings, also (ibid, 3). A pair of houses in Park Row was rented for £50 per year to provide accommodation. It was only a few years before the first of a series of buildings was erected on the 'greenfield' site on the east side of Museum Road (now University Road), although this was considered 'temporary' (it is still standing – see below).

The lower part of the former nursery had been occupied by the bottom of Museum Road, the Museum itself, and the four buildings now the site of Nos. 40 to 46 Queens Road. Behind the Museum and Drill Hall the east side of Museum Road remained undeveloped until the end of the 1870s when the first buildings of the University College commenced construction. An acre of land had been purchased in 1876 for the erection of permanent buildings for the University College. First came the Medical School building, designed by Charles Hansom in July 1879 (BRO Building Plan Book 16, fol. 55) and opened in October of the same year, apparently intended only as a temporary structure. This was soon followed by a second block, 40m to the north-east, for the University College, the first portion of Hansom's projected quadrangle (Cottle & Sherborne 1959, 19). In October 1880 the Arts departments and the administration moved over from Park Row. The earlier building comprised two storeys, the latter structure three plus basement. By July 1881 the College had already spent £3,250 on land and more than £6,000 on buildings.

Charles Hansom also designed the block that would form the east side of the emerging quad. Approved in 1882 and completed in January 1883, this comprised four storeys including a full basement (BRO Building Plan Book 18, fol. 79). A new engineering wing costing £5,500 was added to the south end in 1892, forming a south-east corner to the quad, the drawings signed by W. Church, building contractor (BRO BPB 28, fol. 38). In the interim, an extension had been added at the west end of the 1879 Medical School building. Designed in 1891 by Jones and Bond, and comprising three storeys, it was opened in October 1892 (BRO BPB 27, fol. 10; Cottle & Sherborne, 24). The south side of the quadrangle was completed by the erection of a new examination hall and other facilities, the legacy of Vincent Stuckey Lean and named after him, designed by Frederick Bligh Bond in September 1899 (BRO BPB 37, fol. 27). On the opposite side of the quad, a small western extension including a tower (the Fry Tower) was also designed by Bond, in February 1904 (BRO BPB 46, fol. 6). By this time it had been decided not to close the fourth side of the quadrangle. Also, in 1905, the Medical School building was extended eastwards, again designed by Bond (BRO BPB 49, fol. 23). Bond was involved with some of the early archaeological work at Glastonbury Abbey.

University Status Achieved

After a number of years as a University College, full university status was finally achieved in 1909. A committee to promote a University was established in July 1906, but progress was slow, and for one nine month period no meetings were held at all. Then, at the end of a dinner held by the University College Colston Society in January 1908, it was announced by George Alfred Wills that his father, Henry Overton, had promised £100,000 towards the endowment of a university. By the end of that night other sums promised had brought the total to £150,000, and just over a year later it had reached more than twice the initial figure. On 24th May 1909 the Royal Charter creating the University of Bristol was signed. The first session of the University of Bristol commenced in October 1909, at which time there were 288 undergraduates and 400 “other students” (Cottle & Sherborne op.cit, 38).

To the rear of the University Road quad, on the site formerly occupied by the playing field of the Asylum for the Blind, a new chemistry and physiology building was erected at a cost in excess of £35,000, to a George Oatley design of 1909. Lord Winterstoke, one of the Wills family, opened the building in November 1910, although it had been completed two months earlier, constructed by the local firm of Cowlin & Son. Included in the building was a tower that was named after J. W. Arrowsmith in recognition of his services to the University. The triangular site at the top of University Road was laid out by Adolf Leipner in 1882 as a Botanical Garden for the University College, but much was swept away for Oatley’s Biology wing of 1939.

Further Residential Development on Tyndalls Park

During the second half of the 1880s the south side of Priory Road was developed, eight detached villas being erected, with a further six around the corner on the west side of Woodland Road. Through a ten-year period starting in 1883, Elton Road was developed from the short stub seen on the 1883 OS map to its present length, with housing built on the north side by Virgo and Ford, mostly approved two detached dwellings at a time by the Sanitary Committee. Woodland Road was expanded southwards past the top of the Grammar School site to meet the top of University College Road and onwards as far as Park Row. Construction of nine dwellings to a set of three designs was approved for the southern end of Woodland

Road, on its west side, in April 1890. Later to be numbered as 70 to 86 (evens), some would be removed for the Wills Memorial Building in the post- First World War period, but four survived until the 1950s, with the last two, 84 & 86, only demolished in the 1990s. Houses appeared on the opposite side of this end of the road in 1903 (Nos. 81-101, all of which survive), followed shortly later by four pairs of semi-detached (Nos. 65-79, of which the middle four were later removed for improved access to Cantocks Close). This row of houses was closed at the Park Row end by the tastefully designed public conveniences of 1904 [by F. Bligh Bond?], which replaced an earlier urinal.

Bristol Baptist College

Bristol Baptist College is the world's oldest of that denomination, having been founded in 1679. Based in Stokes Croft during the 19th century, the decision was taken in 1902 to move to a quieter location in Tyndall's Park (Moon 1979, 69). A one-acre site was purchased in Woodland Road opposite the top of the new University buildings, at a price of £3,000. Moving to Stokes Croft a century earlier had placed great strain on the college finances, and so it was determined not to commence construction until the majority of the money had been raised. An initial design was produced (1913) by George Oatley of Oatley & Lawrence, but was deemed too expensive, and a less ambitious option was agreed. The accepted design included lecture rooms, a library, museum, 22 study-bedrooms, domestic quarters, and a Principal's House. Messrs. Dallow of Birmingham were engaged to construct the new premises, with a contract for £18,444 (ibid, 70). November 1913 saw the stone-laying ceremony, but the war intervened, slowing down construction. Nevertheless, work was complete before the end of 1916, but there were only a few students now left in the college. This failure to fully occupy the new premises was fortunate for the University's Arts Faculty, whose accommodation had been requisitioned by the Army and were able to hire this building as a substitute. It was 1919 before the new building was officially opened for use, the ceremony on 23rd October of that year being performed by the President of the Baptist Union. Towards the close of the 20th century another move was made, to The Promenade in Clifton, since when the University has had the use of the building.

University Walk

Rocque (1742) showed a path running westward from the end of Tankards Close and then curving north-westward around the outside of the ditch of the Royal Fort: Mathews (1794) also showed the path, although not the ditch. Donne (1826) again recorded the path, but it was not until Plumley and Ashmead (1828) that it was possible to illustrate the path in sufficient detail. It was shown as running westwards immediately below the garden wall of Royal Fort House, before turning north-westwards to continue at a slight distance from that stretch of the wall. This path would become University Walk. Ashmead (1854) recorded the north-western portion as remaining at a distance from the garden boundary wall, but by 1883 it had been moved over to adjacent the wall. In 1915 the present street was laid out - for the first 185m from Woodland Road only. It was not until after the Second World War that the final stretch to the south and south-east of Royal Fort House was completed.

West end of Park Row

Ordnance Survey plans of 1883 and 1901 showed a strip on the northern side of Park Row, 32m deep, extending from the eastern boundary of the Blind Asylum as far as what would become the bottom of Woodland Road. In 1883 this was plain ground, separated from the street by a wall that was pierced in three places; a small acutely pointed triangular space between the west end and the Blind Asylum was occupied by a 4-stall urinal. It was on the large plot that E. J. Harrison proposed to erect a circus for John Sanger & Sons, both in September 1882 and again in October 1886, on a site 86 feet by 112 (110) feet, 20 feet back from the thoroughfare (BRO Building Plan Books 19 fol. 29 & 22 fol.8). These were presumably intended as winter quarters, but it is not known if they were ever constructed. On the later OS plan the area was shown as rough pasture with, near the west end, a pair of semi-detached buildings of unknown function; the urinal had gone, presumably replaced by that at the end of Woodland Road. Applications made in 1910 by J. G. Rowe for a "skating rink" on the whole site indicated that there was already an existing retaining wall at the rear (BRO BPB 58, fol.11). The original intention was for a rink in the main rectangular part of the site, with a café and facilities at the Woodland Road end, but, as built, the triangular east end was separated and utilised as a cinema, although the skating rink of 360 feet by 100 feet was still provided (Lyes 2002, 35). Named 'The Coliseum', the facility was opened in October 1910 by the Lady Mayoress. During the First World War the building, with its spacious interior uncluttered by supporting pillars, was requisitioned for aircraft manufacturing purposes. Parnall & Sons manufactured both their own aircraft (e.g. the Panther and the experimental Plover), also Avro 504Ks under licence (Winstone 1976, plates 121-125 & 184).

Art Gallery and Wills Memorial Building

In 1899 the Corporation's Finance Committee recommended the purchase of the site adjoining the Museum in Queens Road, latterly the Salisbury Club, which was for sale at a price of £10,000. By this time the Museum and Library were severely short of accommodation and the opportunity could not be ignored. Sir W. H. Wills offered £10,000 towards a new Art Gallery, an offer that he substantially increased early in the following year providing that the Corporation was prepared to invest £10,000 on the ground floor of the new building (Latimer 1901, 81 & 90). The new Art Gallery opened to the public in May 1904, although it would be February the following year before the official opening took place. Frank Wills, yet another member of the family, was the architect, with William Cowlin & Son the main contractor. A rear extension was added to the Art Gallery in 1930 by George Wills, on the site of the old drill hall.

A 6.5m-wide strip was retained along the east side of the Edwardian Art Gallery in order to provide access through to the drill hall behind. In 1913 George and Harry (H. H.) Wills obtained the drill hall site by undertaking to provide new facilities on the site of the former sugar house in Old Market. Earlier, in 1908, the University College had acquired the Blind Asylum and its grounds. Once the new replacement School for the Blind had been opened in Henleaze on what was then (1909) a spacious rural site, then the Queens Road site became available for redevelopment. Most of the drill hall site was to be utilised for an extension to the City Art Gallery, the remainder, together with the Blind Asylum site, for the purposes of constructing a grand new University building. Initially from 1911 the old Asylum buildings were used by the University. George Herbert Oatley's centrepiece for the University, the Wills Memorial Building, included the University Tower (BRO Building Plan Book 65 fols. 1 to 7; illustration in Gomme, Jenner & Little, pl. 255). The Wills brothers gave about £500,000

towards the new edifice (they also gave other amounts for an athletics ground at Coombe Dingle, for the construction of Wills Hall and for the purchase of the Victoria Rooms). Although designed in 1914 and approved in 1915, construction was delayed by the advent of the Great War, and it was not until 6th June 1925 that the formal opening ceremony could be held, performed by King George with Queen Mary in attendance. The old blind asylum had been demolished back in September 1915, almost ten years previously. Oatley was awarded a knighthood in the same month as the Royal opening. At this time the student population of the University, in round figures, was 250 in Arts, 220 in Science, 220 in Medicine (including dental surgery), 150 in Teaching and 120 in Engineering (University of Bristol 1925, 12).

Park Row Redevelopments

Two major buildings were erected in the eastern part of Park Row during the 20th century. E. W. Savory, fine art publishers, had their printing works constructed on the corner of Church Lane and Old Park Hill to the 1905 design of Mowbray Aston Green, a Bath architect. E. S. & A. Robinson later occupied the printing works; it has since come into University use. In the 1910s, the Vandyck Printing Works was built on the sites formerly occupied by the old Nos. 12-14. Mowbray Green was again the architect, the drawings dated August 1911. There was a partial ground floor (limited to the front part of the building), with a south-eastern extension, the main works being accommodated on the full first and second floors (Building Plan Book 60 fols. 16 & 17). An addition followed to the rear in 1920. In March 1968 the University Drama Department succeeded the Vandyck Printers. Park Row House continued into the 20th century as the 'Park Row Asylum for Hopeful Discharged Female Prisoners', but was later a 'Home for Girls'. It was the YMCA hostel annexe in 1949 and again in 1955, but the building had been removed by mid-1968. On the opposite side of the synagogue, Lunsford House was listed in the 1968-9 edition of Kelly's as Lecturers' Residences.

Wills Physics Laboratory

Mr. H. H. Wills acquired a vacant site at the western end of Tyndall Avenue in 1916 with a view to establishing a new Physics Laboratory there, but the plan was abandoned and the site given over to an extension of the Botanical Garden (see below). April 1917 saw the announcement that the Wills family were to purchase the Royal Fort from the Tyndall trustees for the use of the University, and subsequently Mr. H. H. Wills handed the deeds across. In the meantime, the Corporation had agreed in July to sell Stuart House to the University, at a cost of £2,500 (Lyes 2003a, 20). Stuart House had been used up to that time partly as a preventive home for girls.

The Henry Herbert Wills Physics Laboratory was built to a reverse L-shaped plan on the Royal Fort site in the 1920s, the tower becoming a Bristol landmark (it is sometimes, erroneously, referred to as **the** Royal Fort). It was the gift of the brothers Sir George A. Wills and Henry Herbert Wills as a Memorial to their father, Henry Overton Wills, founder of the University and its first Chancellor. Unfortunately, H. H. died in May 1922, and so did not live to see the work completed. He had given two gifts of £100,000 each towards construction and an endowment, and others had also contributed. Building commenced in 1921 with the formal opening, performed by Sir Ernest Rutherford (President of the Royal Society), on 21st October 1927. George Oatley was responsible for the design, which, due to the restrictions of the site, had its north-eastern corner cut back at an angle. Stone was used for the walls, concrete for the floors and a mixture of slate and lead for the roof. There are three full storeys including a basement, with further floors in the tower and longer wing. The booklet produced to

commemorate the opening stated that it was designed as "the first instalment of an extensive scheme of University buildings intended by the late Mr. Henry Herbert Wills to crown the top of a hill overlooking the city, and to be a distinctive feature in distant views of the city" (University of Bristol 1927, 7).

Extension of the original H. H. Wills Laboratory buildings was undertaken in the 1960s in two phases, Brentnall the architect of at least the first: the easternmost block (opposite the Computer Centre) is the more recent addition. To the east of the 1920s block a single-storey building with northlight roof was also erected. Work is shortly (October 2004) to commence on construction of a new Nanotechnology block between the Physics Building and No. 22 Tyndall Avenue.

Royal Fort House was home to the Department of Education in 1925, additionally also the Music Department by the late 1950s. Bristol University has maintained both the mansion and its historic Repton-designed grounds. In April 1969, for instance, the Music Room was restored. Unavoidable losses have occurred, however, such as in January 1971, when the Lucombe Oak in the grounds was lost to Honey Fungus.

The Homeopathic Hospital

Princess Helena Victoria undertook the formal opening of Bristol Homeopathic Hospital, on the corner of St. Michael's and Cotham Hills, on 20th May 1925 (Perry 1984a, 15). George Oatley was responsible for the design, the deposited drawings dated August 1920 with later amendments (BRO building Plan Book 68, fols. 73-75). Mr. W. Melville Wills had borne the entire cost of £130,000 in memory of his son, Captain Bruce Melville Wills, who had been killed in action in February 1915; a few months before the opening a second son was lost in a skiing accident. Cotham House was purchased as a site for the new facility, the Homeopathic Hospital being temporarily based in the house itself during building works. The new building comprised a basement and three other floors, together with a further partial storey. In 1957 the Wills' benefaction paid for the creation of a garden in memory of Harold Edgar Melville Wills.

Non-Residential Uses

Up on top of St. Michael's Hill and in the Tyndalls Park area the premises remained residential with very few exceptions. No. 121 (Oldbury House), combined with No. 123 next door, was listed as the Oldbury House Boys' School in Wright's 1910 directory. Across at Priory Road, No. 3 was St. Michael's Rectory (Rev. Clay), while No.10 was a women's college hostel, the male hostel being at the bottom of Elton Road. Many houses were clearly still in single occupancy. On the south-west side of St. Michael's Hill, Harry Jones, dairyman, was at Nos. 27 & 29 – everything else was residential. The same was true in Old Park, with the sole non-residential entry being the 'Prince of Wales' at No. 60, beer retailer: by 1923 the 'Old Park Tavern' in Medical Avenue was listed instead. Arthur Henry Jones succeeded at the St. Michael Hill premises, remaining in the directories until at least 1968-9.

Even in the early 1920s, the outer part of Woodland Road had already begun losing its residential function. The Ministry of Labour had offices at No.1, with the Ministry of Health next door at 27, Tyndalls Park Road and also at No. 34. Back in Woodland Road, the Ministry was at No. 3, as was National Insurance; the Min. of Labour was at No.11; Post Office Engineering was at No. 13. The Convent La Retraite was at No. 8 in 1923. At No. 3 Priory

Road the former rectory was now the School of Home Management. In Tyndalls Park Road, No.36 was partly in use as St. Mary's Parish Rooms, a function that it continued to fulfil for some decades.

By the mid-1930s there had been two further losses of housing to office use in Woodland Road, while some of the surviving dwellings there and elsewhere had become multiple-occupancy. Kelly's directory for 1935 listed Nos. 10 & 12 Elton Road as "Hawthorn Residential Hotel", J. L. Dingle proprietor, although the intervening property remained a private residence. The early post-war OS plan showed No.12 physically linked with Nos. 16 & 18, Woodland Road, but with Nos. 10 & 11 Elton Road included within the overall site. Kelly's for 1958 listed 12, 16 & 18 as "The Hawthorns Hotel", J. L. Dingle Ltd; Nos. 10 &11 had no entry in the directory. The OS 1:1250 revision of June 1968 showed a situation similar to today, where 10, 11 & 12 Elton Road and 14, 16 & 18 Woodland Road are all joined together to form a single block. Before the end of the 1960s the Hawthorns had been taken over by the Berni Inn chain of steak houses.

The Second World War

With war beginning to look inevitable in the late 1930s, Numbers 19 & 21 Woodland Road were taken over to form the headquarters of the Regional Commissioner for this, No. 7 (South-Western) Region, which covered Cornwall, Devon, Somerset, Gloucestershire and Wiltshire (Penny 2002, 26). General Sir Hugh Elles, an ex-World War One tank commander, took charge. His staff would have included a senior regional officer, a treasury officer and senior regional officers from the ARP, police and fire brigade, also liaison officers from assorted ministries. Bristol's war room was located in the basements, which were strengthened with additional steel girders and equipped with blast-proof doors, gas-filter plant and emergency escape hatches. A small brick and concrete pillbox was provided on the corner of Woodland Road. In the basement of the University Tower, a reserve ARP control centre was set up as back-up to the main control at 55 Broadmead.

Bristol was subjected to half a dozen severe air raids and countless smaller ones during the period of the Blitz. The first major raid took place on the night of 24th/25th November 1940, commencing on the Sunday night. Amongst the casualties were many of Bristol's most historic buildings – this was, from that point of view, the war's most destructive raid. Included in the damage and destruction was the Great Hall of the University. During either this or one of the subsequent raids, the Geography Department received damage. Worst hit of the Departments was Anatomy, whose 1900 block was wrecked. A second big raid occurred on Monday 2nd December, during which a stick of High Explosive bombs (HEs) fell across the Children's Hospital on St. Michael's Hill, apparently without fatalities, although 156 were killed in total across the city. A third big raid took place on 3rd January 1941, a Friday. Damage was sustained at the Homeopathic Hospital. An HE fell at the top of Tyndalls Park Road, destroying or severely damaging Nos. 44-52 (Winstone 1988, pl. 68). In Park Row, the major part of the Coliseum was destroyed by enemy action during the night of 11th/12th April 1941, the infamous Good Friday raid, the sixth and last large-scale attack on the City. Enemy action also affected the Old Park area, destroying, amongst others, the old Medical School building behind Lunsford House. Several ruined buildings were shown in the Old Park and Tankards Close areas by the early post-war OS plans.

Post-War Developments

Non-residential usage came to dominate Woodland Road after the Second World War. In 1958, in the entire stretch to the north of Tyndall Avenue there were only 6 residences, and 5 of those were divided up into apartments. Priory Road had a larger proportion of residential to non-residential. St. Michael's Hill and the streets to its west were all solidly residential with just a mere handful of exceptions. Many of the dwellings in Tankards Close and the Old Park Area remained occupied. Along the lower part of Woodland Road, only 3 of the 19 on the north-east side were non-residential (with 2 in University use); on the south-west side 3 of the 4 surviving houses were in residential use, with the University Air Squadron at No. 82. Lunsford House, No. 15 Park Row, was utilised as lecturers' residences.

After the Second World War the Great Hall was restored to its original design. Ralph Brentnall took charge of the work, which commenced in 1948 (Carleton 1984, 138). Of great assistance in the restoration was Lord Dulverton's decision immediately following the Hall's destruction to set aside oak timber for the replacement of the interior. To the east of the great Hall, a Biological Chemistry Laboratory replaced a burnt-out building, with, slightly later, a 3-storey block added to its immediate north. At the western end of Park Row the ruins of the majority portion of the former Coliseum were cleared away and replaced in 1948-50 by the School of Veterinary Science building, designed by Ralph Brentnall. This building was, in turn, removed in the 1990s and is now the site of the Merchant Venturers Building and University Gate, designed by Atkins Walters Webster (1996). Having survived the Blitz, the easternmost third of the Coliseum block was initially utilised as a garage but is now also in University use. Having been burnt out during the enemy raid of 24th/25thNovember 1940, Foster & Ponton's Museum building on the corner of Queens and University Roads was taken over by the University, Ralph Brentnall converting the gutted skeleton into a Refectory. Already serving this function before the end of the 1940s, the building continued in the same use for several decades, before a change of occupant to become Brown's Restaurant.

At the beginning of the 1950s, University Walk existed as a road only for a relatively short length in the Baptist College area. This was extended when the Queens Building was built. Winston Churchill, Chancellor of the University since 13th December 1929, laid the foundation stone of the new building in 1951. The October 1955 OS plan showed the building erected, but without its eastern wing. It was not until December 5th 1958 that the official opening took place, carried out by the Queen & Prince Philip. Ralph H. Brentnall, of Oatley & Brentnall, was the architect, with William Cowlin & Son the main contractor: Brentnall had to contend with steep slopes, an underground stream and a geological fault. The building follows the contour of the hill; pale Cheshire brick was used for the exterior, with Bath stone details. From the summer of 1958 all the central University buildings, together with city-centre hospitals, received heating, hot water and steam from a central boiler house at Southwell Street, a site later provided with a tall concrete chimney (the Kingsdown Chimney of *c*.1965).

Widening of University Walk was continued around as far as Royal Fort Road (but this section named Tankards Close) when the Medical School building was constructed in the early 1960s. Clearance of the Tankards Close area for the new building had begun by 1959. The first part of the new building was occupied in 1966 (Perry 1984b, 23). University Walk was closed as a public highway from 1971. Downslope from the Engineering and Medical blocks, new buildings were erected for the Chemistry Department in the early 1960s, designed by the Courtaulds Group. A lecture theatre was cantilevered out from the south-western block, reputedly because it had been added to the main design as an afterthought; some decorative features were included in the design of the buildings. Building work was

assisted by the removal of Nos. 31-37 St. Michael's Hill, which had sunk into a run-down condition (Harrison with Brooke 1999, 49 for illustration). Clearing the sites permitted access to the site from below, but was conditional on their reinstatement, which had been completed before late 1970. Losses further up the hill had also occurred, with Nos. 55 & 57 on the south side of Tankards Close Steps and No. 59 to the north: standing in mid-1968, they had gone by the end of 1970.

Old Park and Tankards Close remained intact into the 20th century. However, by 1949 gaps had begun to appear, especially in Tankards Close and along Vine Row, some of this at least due to enemy action. Little had altered by the mid-1950s, but this was shortly to change, with mass demolitions necessary in order to provide sites for the new Chemistry Department and Medical School blocks. What survived was effectively what still stands today, i.e. 12-18 Old Park Hill and 3 & 4 Old Park, St. Michael's Manor House, and Tower View, only the last-named being within the 'precinct' area defined by the Local Plan.

The Hiatt Baker Botanical Garden had been established between the western ends of Tyndall Avenue and St. Michael's Park in 1916 as an extension to the original garden at the top of University Road. When closure of the latter became imminent in 1938, the Tyndall Avenue site was replanned, and provided with a memorial to Hiatt Cowles Baker (d. 1934), the eminent botanist, and Pro-Chancellor from 1929-1934. Senate House, designed by Ralph Brentnall and built by Laing, replaced the garden in 1962. Houses on the north side of Tyndall Avenue were gradually removed, eventually to be replaced by three further University buildings, including Twist and Whitley's main Library building. Most of those on the south side were removed for the 1960s Physics Building, although Nos. 22 & 24 have survived. In 1947 a two-storey prefabricated block was erected on Tyndall Avenue to the west of the H. H. Wills Laboratory to house the laboratories of the Physiology and Pharmacology Departments, but had gone before the end of the 1960s. A smaller rectangular structure 50m to the south-east of Royal Fort House still stood in 1968 in an area that is now a lower part of the garden. To its north-east, on the west corner of Tankards Close and Royal Fort Road a new Mathematics Building was erected in the 1960s. At Cantocks Close, a Synthetic Chemistry Building has been a recent addition to the Chemistry Department facilities, designed by the Percy Thomas Partnership (1999).

Detached houses on the east side of Woodland Road were taken over by the University in the post-war period. In 1985 a series of 6 sympathetically-designed L-shaped low buildings were placed at the rears of Nos. 11-21 for the Arts Faculty, designed by MacCormac Jamieson Prichard. Further down the same road, Nos. 69-75 were taken out for the Cantocks Close entrance to Chemistry. On the opposite side, No. 82 had been removed between 1955 & 1968; No. 72 (70) went later, but site remains void. Nos. 84 & 86 were removed for the Merchant Venturers Building. Another event from the last two decades or so was the unscheduled restoration of the Geography Department building in University Road in the early 1980s, made necessary following a serious fire.

Mitigation

The geographical extent covered by this University Masterplan is sizable, amounting to about 21.5 hectares. Consequently, it has not been possible to cover the entire study area in great detail in this report. However, with the exception of the Tyndalls Park Road and Cotham Hill areas, the history up to the late 18th century has been dealt with by Dr. Roger Leech in his study of 2000 (Bristol Record Society, vol. 52).

Much of the archaeological resource must have been destroyed, or at least badly damaged, by the spread of development across most of the area during the 19th century, compounded by redevelopment within the University precinct after the Second World War. Additional are those number of areas where there is some potential for survival of archaeology, but where it is nevertheless considered of low potential. These areas are mainly between Park Row and University Walk, amongst the Post-War buildings, but also in the vicinity of Tyndall Avenue. It is considered unlikely that much will survive beneath Royal Fort House, Stuart House and the Royal Fort Gatehouse themselves.

Medium potential exists for some of the Old Park area and behind the St Michael's Hill buildings, on the former Children's Hospital site, and on the Cotham House site. Stretches of Civil War defensive ditches and Tyndalls Park ha-has may survive due to their depth beneath the modern surface.

Highest potential for the survival of archaeology lies on the Royal Fort site, i.e. approximately the area bounded by University Walk, Tyndall Avenue and the old Children's Hospital. Not only should there be remains of the Fort itself, but evidence of the later, demolished, houses and their gardens may also survive.

There should be a presumption against future development in those areas of highest potential. Any development proposals that are made will need to be argued. Where sufficient justification is proven, then more detailed archaeological background information will be required to a higher level than has been possible in this study. Such investigation should include an individual desktop assessment, probably combined with archaeological evaluation of the site and accompanied where necessary by geophysical survey. These measures will help enable accurate location of the most sensitive archaeological features and deposits, enabling any new development to be designed around them. Fortunately, most of the high potential zone identified on Figure 65a is either within the Royal Fort House garden or one of the other existing protected areas nearby.

Where areas are zoned as of medium potential there will generally be an assumption that development may proceed, although with certain safeguards. Depending on the individual site, further documentary research may be required, possibly in the form of a desktop assessment particular to that site. Archaeological evaluation trenches may be necessary in order to accurately locate specific features or to more generally test the ground. Geophysical survey may have a part to play in this process, although it may not be suitable in the Old Park and St Michael's Hill areas. Its use on the Cotham House/Homeopathic Hospital site, or by Tyndall Avenue may be more appropriate.

Low-potential areas should be suitable for development. Some archaeological investigation may be necessary, but archaeological intervention will often be limited to a watching brief during construction works.

Even where total or large-scale destruction has been indicated, some archaeology may have managed to survive, perhaps as patches around the edges of sites, or sometimes between closely spaced buildings. It would be prudent to consider an archaeological watching brief during redevelopment at such locations.

Bibliography and Sources Consulted

Maps and Plans

Millerd, J c1670 The Famous Citie of Bristoll with its Suburbes
Millerd, J 1673 An Exact Delineation of the Famous Citty of Bristoll and Suburbs
Millerd, J c1715 An Exact Delineation of the Famous Citty of Bristoll and Suburbs
Rocque, J 1742 A Plan of the City of Bristol
Donn, B 1769 Map of the Country 11 Miles round the City of Bristol
Donne, B 1773 Plan of the City of Bristol Delineated from Actual Survey
Anon 1785 The Royal Fort at Bristol With the Lands adjoining belonging to Thomas Tyndall Esqr (BRO DC/E/40/68/1)
Paty, W 1791 Plan of Garden Ground on St Mich^{s} hill adjoining Mr Tyndalls Park on Lease to Jos: Willett
Sturge, Y & J P 1817 Map of Westbury-on-Trym (Northants R. O.)
Sturge, Y & J P 1825 Plan of the Parish of Westbury upon Trym in the County of Glocester (BRO P/HTW/P/1a)
Donne, B 1826 Plan of Bristol, Clifton, Hotwells, etc.
Plumley, J and Ashmead, G 1828 Plan of the City of Bristol and its Suburbs
Ashmead, G 1833 Plan of Bristol and its Suburbs
Sturge, Y & J P 1841 Westbury-on-Trym Tithe Map (BRO EP/A/32/41)
Ashmead, G 1854 Survey of the City of Bristol (BRO 40870/Map)
Ashmead, G 1874 Survey of the City of Bristol (BRO)
Ordnance Survey 1882-3 1:500 plans
Ordnance Survey 1883 1:2500 plan
Ordnance Survey 1901 1:2500 plan
Ordnance Survey 1913 1:2500 plan
Ordnance Survey 1949-50 1:2500 plan
Ordnance Survey 1949-50 1:1250 plans
Ordnance Survey 1955 1:1250 plan
Ordnance Survey 1968 1:1250 plan
Ordnance Survey 1970 1:2500 plan
Ordnance Survey 1972-4 1:1250 plans

Published sources

Aldous, T 2000 C20 Bristol's Twentieth-Century Buildings, Bristol

Anderson, C 1983 A City and its Cinemas, Bristol

Bettey, J 1993 Cantock's Closes through the Ages. In Nonesuch: the University of Bristol Magazine, Autumn 1993, 18-21

Bettey, J 1997 The Royal Fort and Tyndall's Park: The Development of a Bristol Landscape, Bristol

Bryant, J 1994 Archaeological Desktop Study of Park Row and Woodland Road, Clifton, Bristol, Unpublished report (BaRAS report BA/C050)

Carleton, D 1984 A University for Bristol, Bristol

Cottle, B & Sherborne, J W 1959 The Life of a University, 2nd Edition, Bristol

Crick, C 1975 Victorian Buildings in Bristol, Bristol

Daniels, S 1999 Humphry Repton, New Haven

Dawson, D 1981 Archaeology and the Medieval Churches of Bristol, Abbots Leigh and Whitchurch. In Bristol Archaeological Research Group Review, No.2, 9-24

Evans, J 1824 A Chronological Outline of the History of Bristol, Bristol

Gomme, A, Jenner, M and Little, B 1979 Bristol: An Architectural History, London

Harding, N D 1930 Bristol Charters, 1155-1373. Bristol Record Society, Vol.I

Harrison, D with Brooke, G 1999 Bristol Times, Derby

Harvey, C & Press, J 1989 Sir George White of Bristol 1854-1916, Bristol

Ison, W 1952 The Georgian Buildings of Bristol, London

Jones, F C 1946 The Glory That Was Bristol, Bristol

Kelly various dates Bristol Directory, London

Lyes, J 2002 Bristol 1901-1913, Bristol

Lyes, J 2003a Bristol 1914-1919, Bristol

Lyes, J 2002b Bristol 1920-1926, Bristol

Latimer, J 1887 Annals of Bristol in the Nineteenth Century, Bristol

Latimer, J 1893 Annals of Bristol in the Eighteenth Century, Bristol

Latimer, J 1900 Annals of Bristol in the Seventeenth Century, Bristol

Latimer, J 1901 Annals of Bristol in the Nineteenth Century (concluded), Bristol

Leech. R H 2000 The St Michael's Hill Precinct of the University of Bristol. Bristol Record Society, vol. 52

Matthews, W various dates Bristol Directory, Bristol

McGrath, P 1975 The Merchant Venturers of Bristol, Bristol

Moon, N 1979 Education for Ministry: Bristol Baptist College 1679-1979, Bristol

Mowl, T 1991 To Build The Second City: Architects and Craftsmen of Georgian Bristol, Bristol

Neale, F. 2000 William Worcestre: The Topography of Medieval Bristol. Bristol Record Society, Vol.51

Penny, J 2002 Bristol At War, Derby

Perry, C Bruce 1984a The Voluntary Medical Institutions of Bristol, Bristol

Perry, C Bruce 1984b The Bristol Medical School, Bristol

Russell, J 1995 The Civil War Defences of Bristol, Privately published, Bristol

Samuel, J 1997 Jews in Bristol, Bristol

Sherborne, J W 1977 University College, Bristol, Bristol

Sketchley, J 1775 Sketchley's Bristol Directory, Bristol

Stone, G F 1909 Bristol As It Was and As It Is, Bristol

Townsend, A 2003 Archaeological Desktop Study of land at The H.H. Wills Physics Laboratory, Tyndall Avenue, Bristol, Unpublished report (BaRAS report 1136/2003)

University of Bristol 1925 University of Bristol 1925, Bristol

University of Bristol 1927 Henry Hubert Wills Physics Laboratory, Bristol

Wilkins, H J 1920 The Perambulation of the Ancient Parish of Westbury-on-Trym in May 1803 AD, Bristol

Winstone, J & R 1990 Bristol As It Was, 1963-1975, Bristol

Winstone, R 1957 Bristol As It Was, 1914-1900, Bristol

Winstone, R 1961 Bristol in the 1940's, Bristol

Winstone, R 1963 Bristol As It Was, 1939-1914, 3rd edition, Bristol

Winstone, R 1964 Bristol As It Was, 1950-1953, Bristol

Winstone, R 1966 Bristol As It Was, 1874-1866, Bristol

Winstone, R 1970 Bristol's Earliest Photographs, Bristol

Winstone, R 1971 Bristol in the 1920's, Bristol

Winstone, R 1972 Bristol As It Was, 1866-1860, 2nd edition, Bristol

Winstone, R 1973 Bristol Blitzed, Bristol

Winstone, R 1975 Bristol's History Volume Two, Bristol

Winstone, R 1976 Bristol As It Was, 1913-1921, Bristol

Winstone, R 1979 Bristol As It Was, 1928-1933, Bristol

Winstone, R 1983 Bristol As It Was, 1845-1900, Bristol

Winstone, R 1985 Bristol's Suburbs Long Ago, Bristol

Winstone, R 1986 Bristol As It Was, 1956-1959, 2nd edition, Bristol

Winstone, R 1986 Bristol As It Was, 1934-1936, Bristol

Winstone, R 1987 Bristol As It Was, 1937-1939, Bristol

Winstone, R 1988 Bristol As It Was, 1940-1960, Bristol

Wright, J various dates Bristol Directory, Bristol

Unpublished sources

Plans in the Corporation Plan Books (BRO)
Plans in the Building Plan Books (BRO)
Miscellaneous plans in Bristol Record Office (BRO), particularly 21508 & 41608
Other records in BRO
Survey of the Parish of Westbury-on-Trym, 1825 (BRO P/HTW/V(2)a)
Survey of the Parish of Westbury-on-Trym, 1838 (BRO P/HTW/V(2)b)
Tithe Award for Westbury-on-Trym, 1841 (BRO EP/A/32/41)

Acknowledgments

Bristol and Region Archaeological Services would like to thank the staff of Bristol Record Office for their assistance in providing access to the numerous sources consulted.

Appendix 2 BUAD Events within the University area

9	Royal Fort House	Field observation	1972
49	Tyndall Avenue	Field observation	1903
54	Royal Fort Gatehouse	Field observation	1974
138	Children's Hospital, St Michael's Hill	Field observation	1993
228	University Walk	Field observation	1915
394	Royal Fort	Personal observation	(1823)
578	Merchant Venturers Building, Park Row	Watching brief	1994
603	Royal Fort Gatehouse	Field observation	1823
626	53 St Michael's Hill	Building survey	1986
1129	Merchant Venturers Building	Evaluation	1994
1490	West end of Church Lane	Pictorial record	1828
1514	Blind Asylum, Queens Road	Pictorial record	1916
1515	Blind Asylum, Queens Road	Pictorial record	1915
1516	Blind Asylum, Queens Road	Pictorial record	19xx
1518	Baptist College, Woodland Road	Pictorial record	19xx
1539	Coliseum, Park Row	Pictorial record	19xx
1553	Drill Hall, Queens Road	Pictorial record	19xx
1621	Royal Fort Gatehouse	Pictorial record	19xx
1667	Synagogue, Park Row	Pictorial record	19xx
1668	Synagogue, Park Row	Pictorial record	19xx
1669	Royal Fort House	Pictorial record	19xx
1674	Manor House, Tyndall's Park	Pictorial record	1913
1681	Stuart House	Pictorial record	19xx
1782	Bishop's College (Blind Asylum)	Photograph	1880s?
2085	Oldbury House	Building survey	??
2291	31-53 St Michael's Hill	Photograph	1951
2295	Tankards Close area	Photograph	1953
2387	Coliseum, Park Row	Photograph	1930s
2388	Top of Stile Lane	Photograph	1932
2435	School of Industry for the Blind, Queens Road	Photograph	??
2436	University Road area	Photograph	1920?
2505	Royal Fort Gatehouse	Photograph	1952
2514	Queens Road	Photograph	1915
2515	School of Industry for the Blind	Photograph	1915
2516	Queens Road	Photograph	1914
2682	Blind Asylum, Queens Road	Photograph	1890s?
2690	29 Park Row	Photograph	1893
2717	Blind Asylum, Queens Road	Photograph	1860s
2756	Royal Fort and area	Pictorial record	1752
2757	Royal Fort and area	Pictorial record	1752
2762	House on Park Row	Pictorial record	1745-6
2763	House on Park Row	Pictorial record	1745-6
2766	Charity School, Royal Fort Road	Pictorial record	1747
2784	Royal Fort	Cartographic depiction	1742
2894	Royal Fort Gateway	Cartographic depiction	1673
2895	Royal Fort	Cartographic depiction	1673
3019	Royal Fort House	Stray find	1906
3020	10 & 11 (?) Elton Road	Personal observation	1910
3034	Royal Fort	Stray finds	1750
3174	Royal Fort House	Field observation	1985
3175	Royal Fort	Documentary source	1644
3228	Merchant Venturers Building	Borehole log	1993

3229	Merchant Venturers Building	Trial pit	1993
3230	Merchant Venturers Building	Trial pit	1993
3231	Merchant Venturers Building	Trial pit	1993
3232	Merchant Venturers Building	Trial pit	1993
3233	Merchant Venturers Building	Trial pit	1993
3331	Cotham House	Cartographic depiction	1742
3479	Royal Fort House	Geophysical survey	1999
3505	Medical Avenue	Field observation	1999
3596	Tyndall Avenue	Field observation	2000
3736	Royal Fort House	Excavation	2001
3765	Tyndall Avenue	Watching brief	2001
3781	Royal Fort House	Excavation	2001
3842	Children's Hospital, Royal Fort Road	Watching brief	2002
3907	Cromwell House, Royal Fort	Cartographic depiction	1883
3916	53-57 St Michael's Hill	Photograph	1950s
3961	Physics Dept, Tyndall Avenue	Desk-based assessment	2003
3965	Engineering Faculty, University Walk	Watching brief	2003
3982	Cromwell House	Photograph	1890s?
4027	Physics Dept , Tyndall Avenue	Evaluation	2003

Appendix 3 BUAD events outside of University area

236	St Michael's Church	Field observation	1976
376	The Old Rectory, Lower Church Lane	Building survey	1980
434	Bristol Grammar School	Watching brief	1993
539	St Michael's Churchyard (Extension)	Watching brief	1996
602	St Michael's Manor House	Building survey	1983
692	Museum Lecture Theatre	Building survey	1983
1002	Bottom of St Michael's Hill	Field observation	1895
1132	Upper Church Lane (south-east side)	Evaluation	1992
1485	St Michael's Church	Pictorial record	1825
1488	Dr. Estlin's House, St Michael's Hill	Pictorial record	1823
1491	Bottom of St Michael's Hill	Pictorial record	1828
1492	Bristol Steps/Lower Church Lane	Pictorial record	1828
1493	The Ship, Griffin Lane	Pictorial record	1828
1495	Bottom of St Michael's Hill	Pictorial record	1828
1553	Drill Hall, Queens Road	Pictorial record	19xx
1665	St Michael's Church	Pictorial record	19xx
1701	Bristol Museum	Pictorial record	19xx
1702	Rupert House, Lower Church Lane	Photographs	1860s?
2084	St Michael's Manor House	Building survey	??
2289	St Michael's Church	Photograph	1953
2292	St Michael's Manor House	Photographs	1931
2293	St Michael's Manor House	Photographs	1952
2294	St Michael's Manor House	Photograph	1954
2296	St Michael's Manor House	Photograph	1952
2452	Rupert House, Lower Church Lane	Photographs	1860s?
2684	Lower Church Lane/Perry Road	Photograph	1870s
2688	Perry Road	Photographs	1860s
2689	Museum and Library	Photograph	1898
2692	Bristol Grammar School	Photograph	1870s
2767	St Michael's Church	Pictorial record	1746-7
2785	St Michael's Manor House	Cartographic depiction	1742
2786	St Michael's Church	Cartographic depiction	1742
2867	St Michael's Church	Cartographic depiction	1673
2870	The Old Rectory, Lower Church Lane	Field observation	1910
3021	St Michael's Hill (Highbury Place)	Field observation	1906
3195	St Michael's Church	Documentary source	??
3259	St Michael's Primary School	Watching brief	1997
3281	23-29 St Michael's Hill	Building survey	??
3363	St Michael's Church	Building survey	1998
3411	22 St Michael's Hill	Building survey	1998
3503	16 Old Park Hill	Photograph	1998
3587	St Michael's Church	Field observation	2000
3735	Lower Church Lane	Excavation	2001

Appendix 4 BUAD monuments within the University area

45M	School of Industry for the Blind, Queens Road
47M	Bristol Baptist College, Woodland Road
67M	Drill Hall, Queens Road
124M	Powder Magazine, Royal Fort
131M	Gate House of Royal Fort
154M	53, St Michael's Hill
504M	Manor House, Tyndall's Park
834M	St Michael's Church Boys' School
866M	House at the top of Stile Lane
905M	The Bishop's College
907M	29, Park Row
928M	The Royal Fort
933M	Elbridge's Charity School
1029M	Essex Work
1033M	The Synagogue
1034M	Royal Fort House
1035M	Bristol Royal Hospital for Sick Children
1135M	Air Raid Shelter to the rear of Oldbury House, St Michael's Hill
1136M	Lunsford House, Park Row
1142M	Medieval manor house, Upper Church Lane
1222M	Cotham House
1350M	16, Old Park Hill
1351M	Garden house and garden at Medical Avenue
1412M	Cromwell House
1426M	The Mansion House, Royal Fort Road
1427M	Ivy Cottage
1452M	55, St Michael's Hill
1453M	57, St Michael's Hill

Appendix 5 Listed Buildings within the study area

Cantock's Close	Tower View	early 18th	II	
Cotham Hill	Cotham House	mid 19th	II	
Park Row	Lunsford House	1722, altd c1750	II*	
Queens Road	University Tower & Wills Memorial Building		e20th	II*
Royal Fort Road	The Gatehouse	17th	II	
St Michael's Hill	31-37 (odds)	mid 189th, rblt 1958	II	
St Michael's Hill	39 &41	mid 18th	II	
St Michael's Hill	43-49 (odds)	late 18th	II	
St Michael's Hill	51	mid 18th, altd early 19th	II	
St Michael's Hill	53	early 19th	II	
St Michael's Hill	61 & 63	late 18th	II	
St Michael's Hill	65 & 67	early 18th	II*	
St Michael's Hill	69	late 18th	II	
St Michael's Hill	71	late 18th	II	
St Michael's Hill	Royal Hospital for Sick Children	1885	II	
St Michael's Hill	ditto – perimeter walls & archway	1885	II	
St Michael's Hill	Oldbury House	*c*1670	II	
Tyndall Avenue	Royal Fort House	1758-61	I	
Tyndall Avenue	Stuart House	early 19th	II	
Tyndall Avenue	Physics Building	1929	II	
Tyndalls Park Road	30 & 32	*c*1860	II	
Tyndalls Park Road	34	*c*1860	II	
Tyndalls Park Road	36	mid 19th	II	
University Road	Dept. of Botany	1880	II	
University Road	ditto – walls, gates & piers	1905	II	
University Road	Dept. of Geography	1892	II	
University Walk	Royal Fort perimeter wall	18th	II	
Woodland Road	3 & 5	1862	II	
Woodland Road	7 & 9	1862	II	
Woodland Road	8	*c*1860	II	
Woodland Road	Royal Fort gates & piers	mid/late 18th	II	
Woodland Road	Former Bristol Baptist College	1913-15	II	
Woodland Road	Dept. of Chemistry	1909	II	

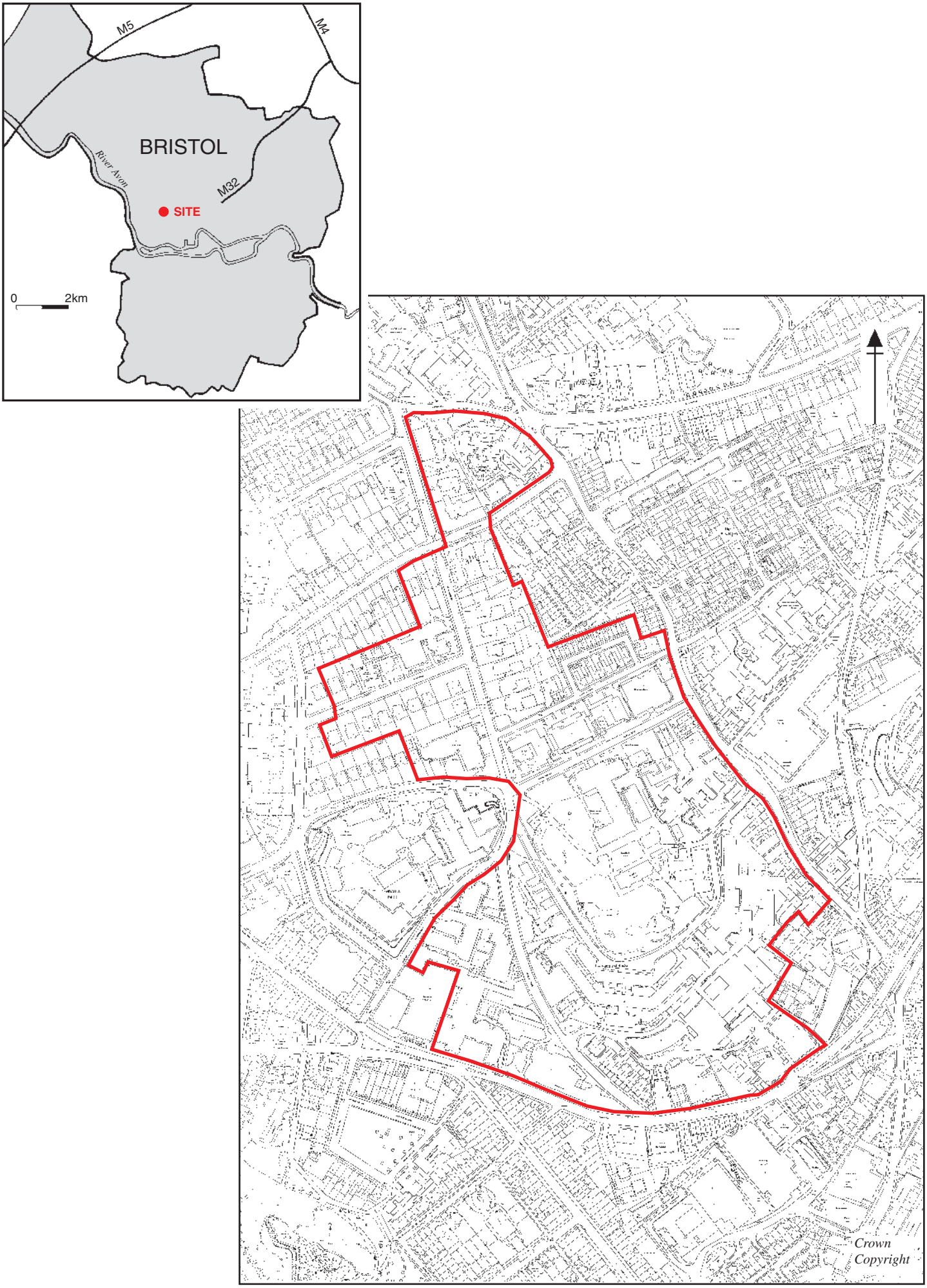


Fig.1 Site location plan and University area boundary

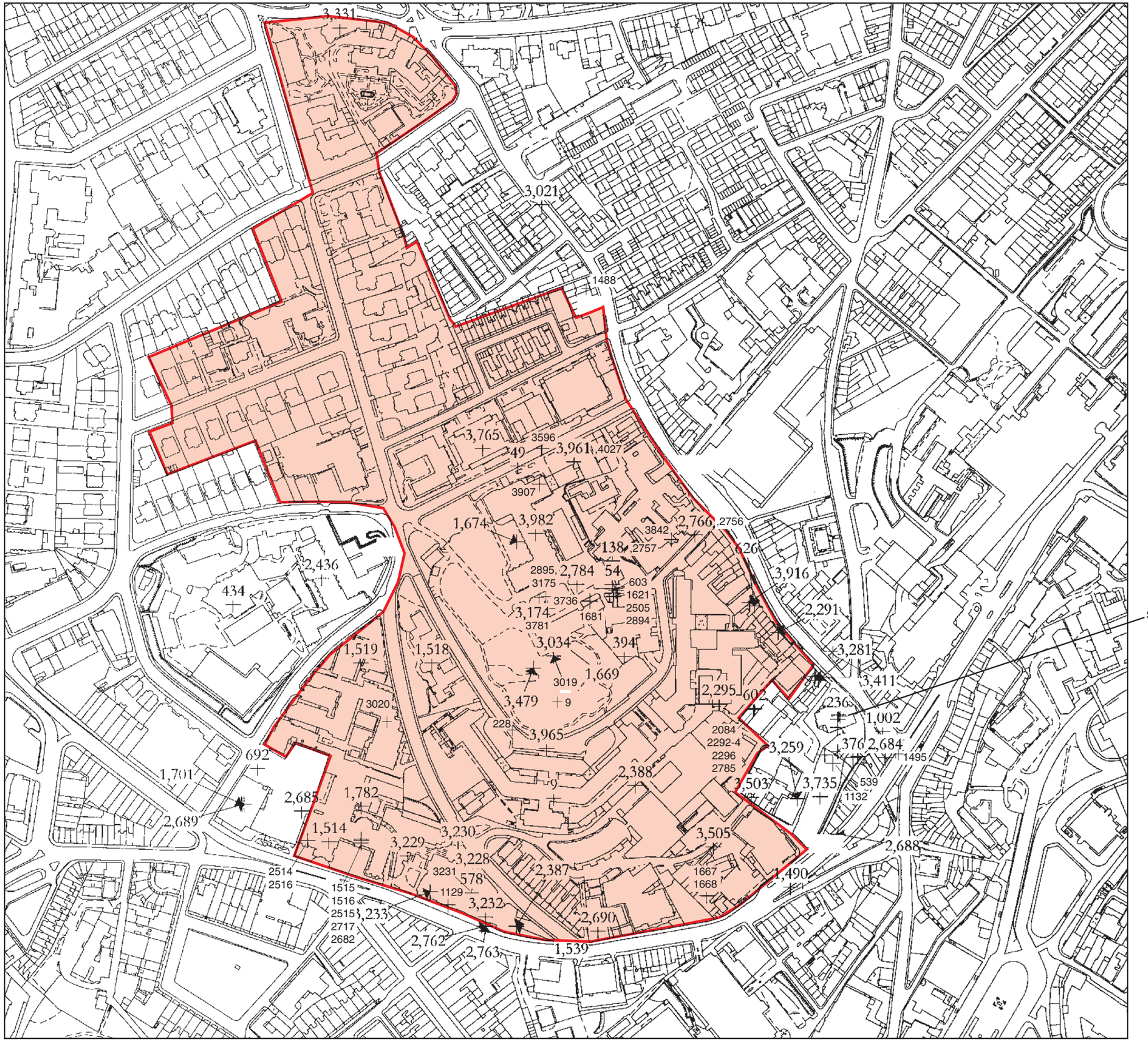


Fig.2 BUAD event numbers

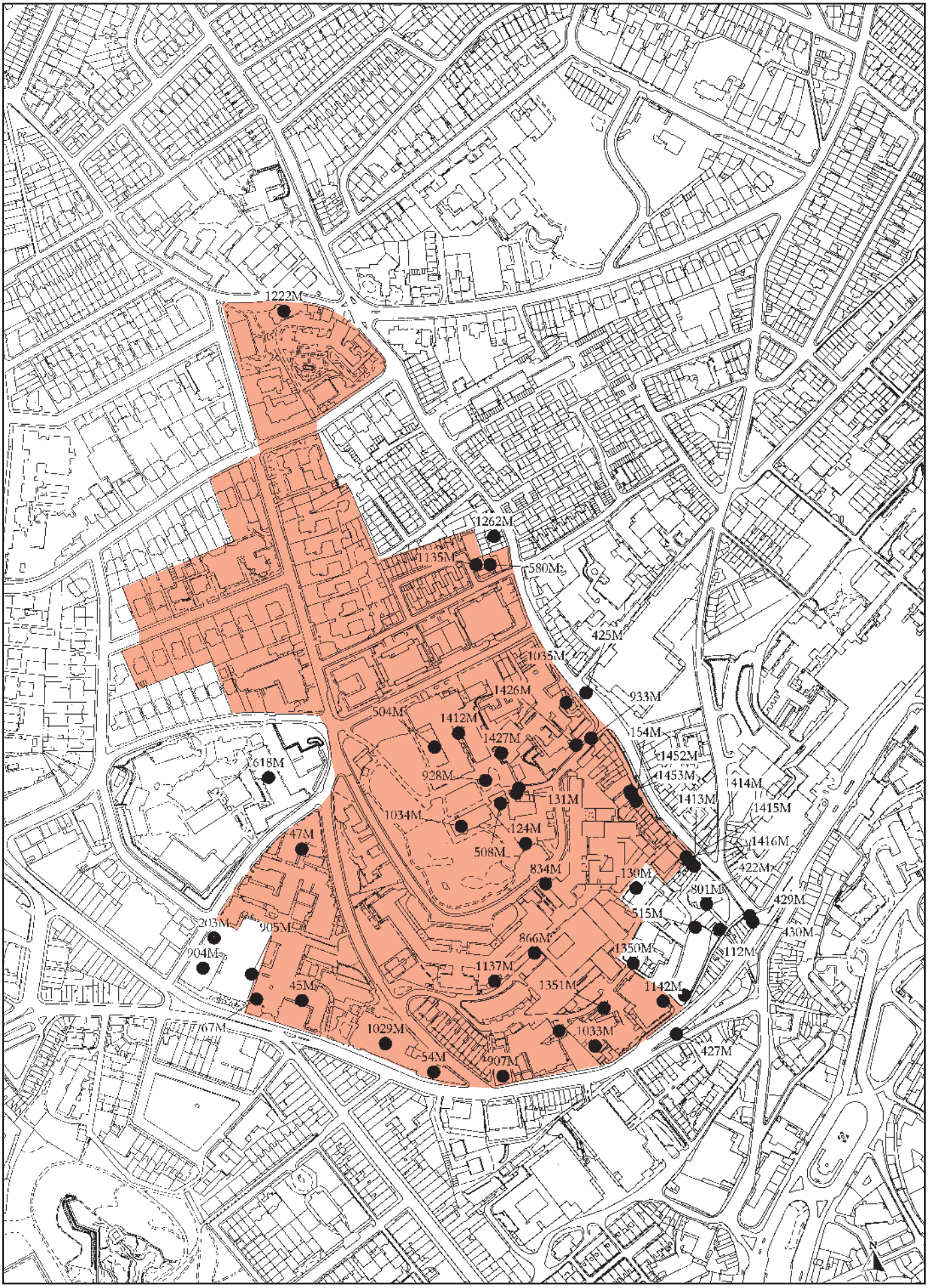


Fig.3 BUAD monument numbers

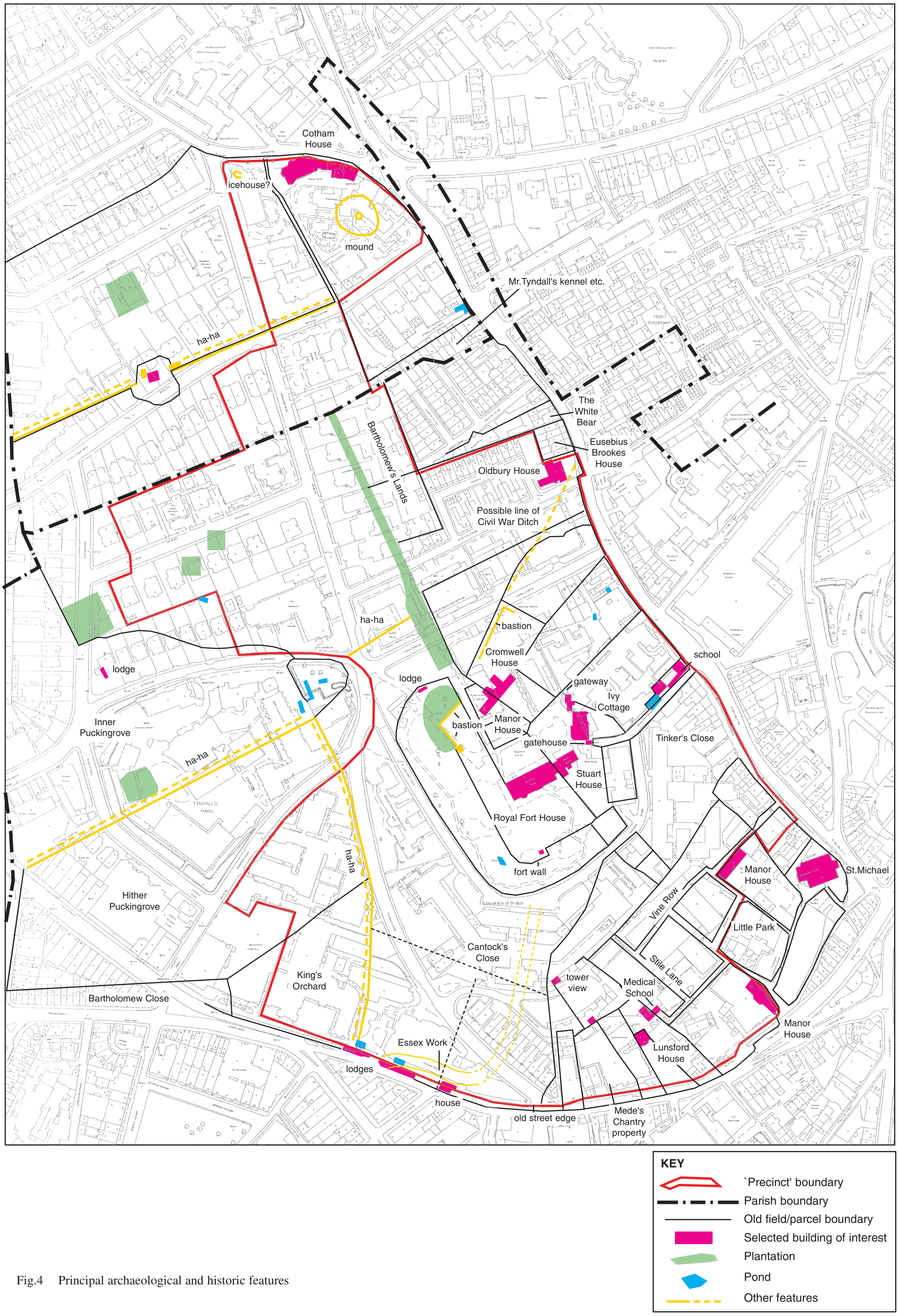


Fig.4 Principal archaeological and historic features

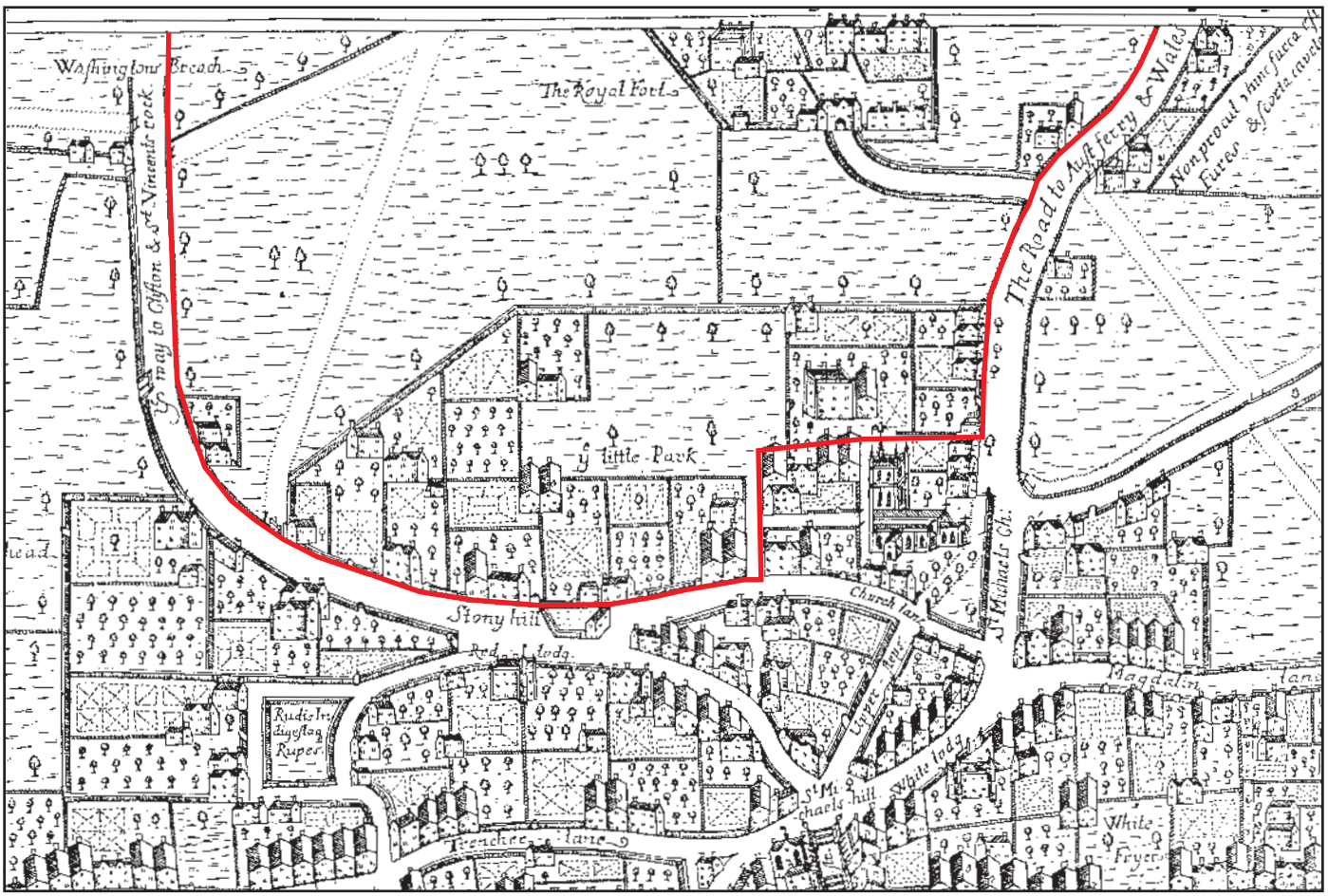


Fig.5 Millerd's map of 1673

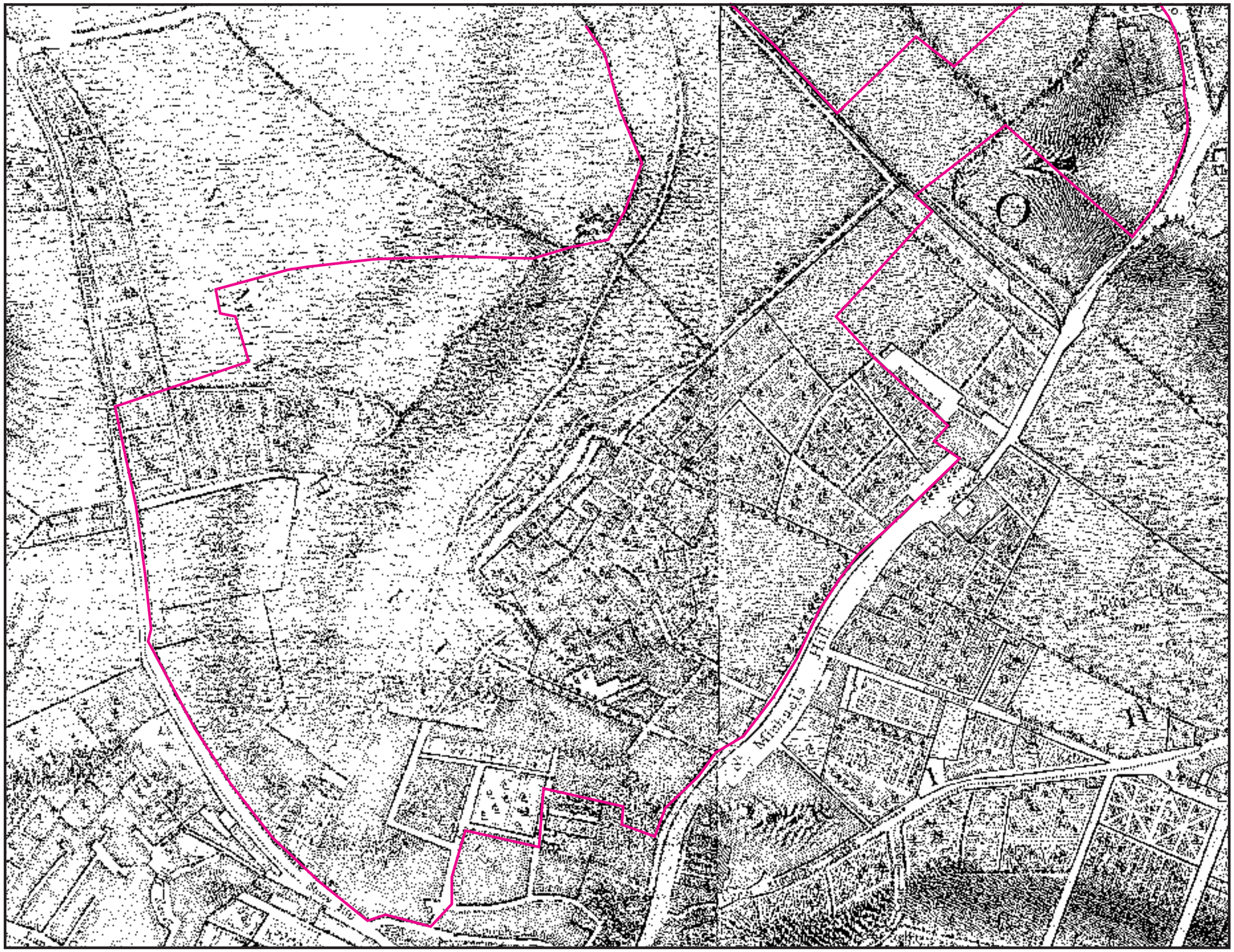


Fig.6 Rocque's 1742 map

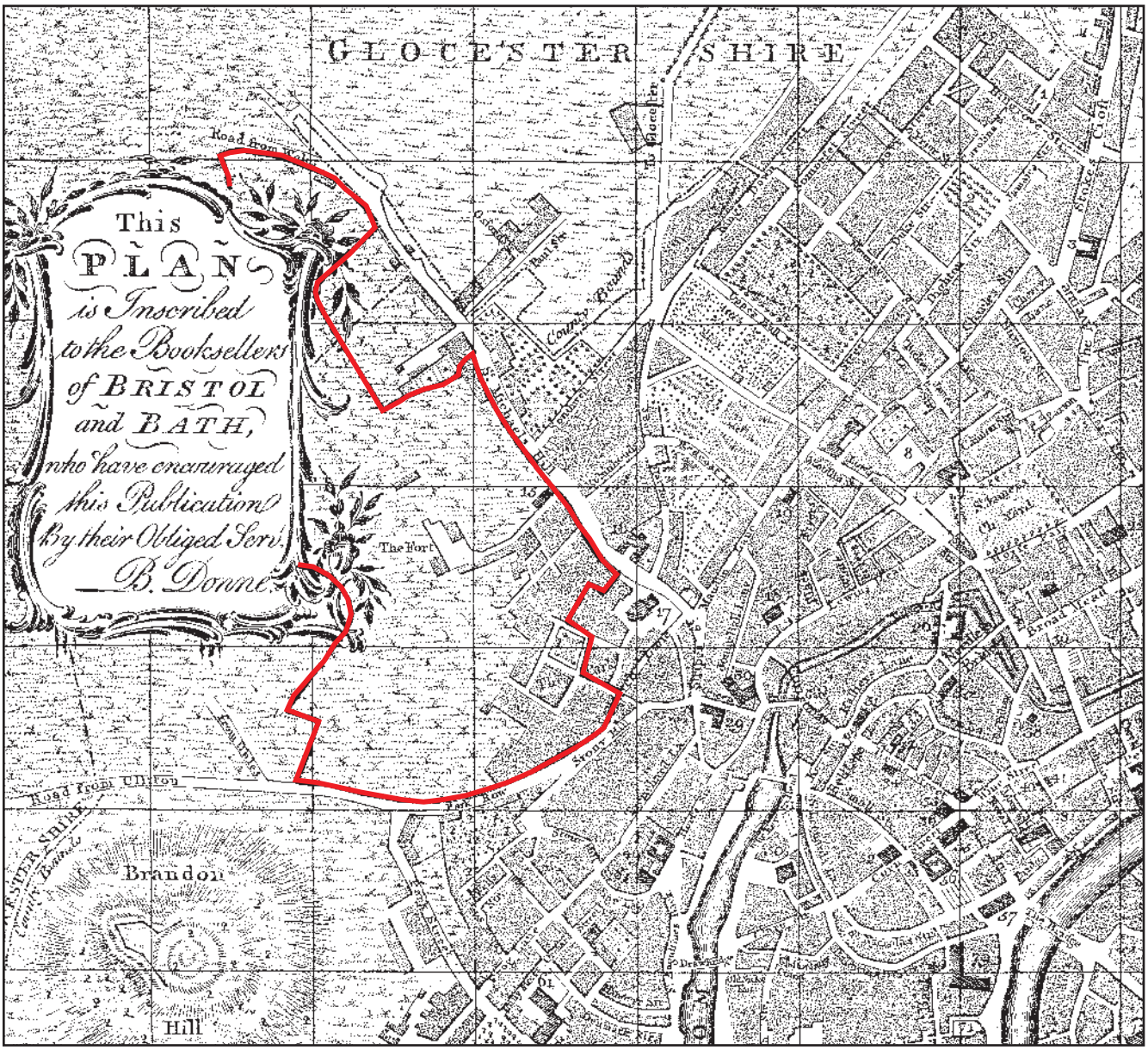


Fig.7 Donne's 1773 map

Fig.8 Tyndalls Park plan, 1785 – north and west areas of park

Fig.9 Tyndalls Park plan, 1785 – south-east corner of park

Fig.10 Tyndalls Park plan, 1785 – Royal Fort House area

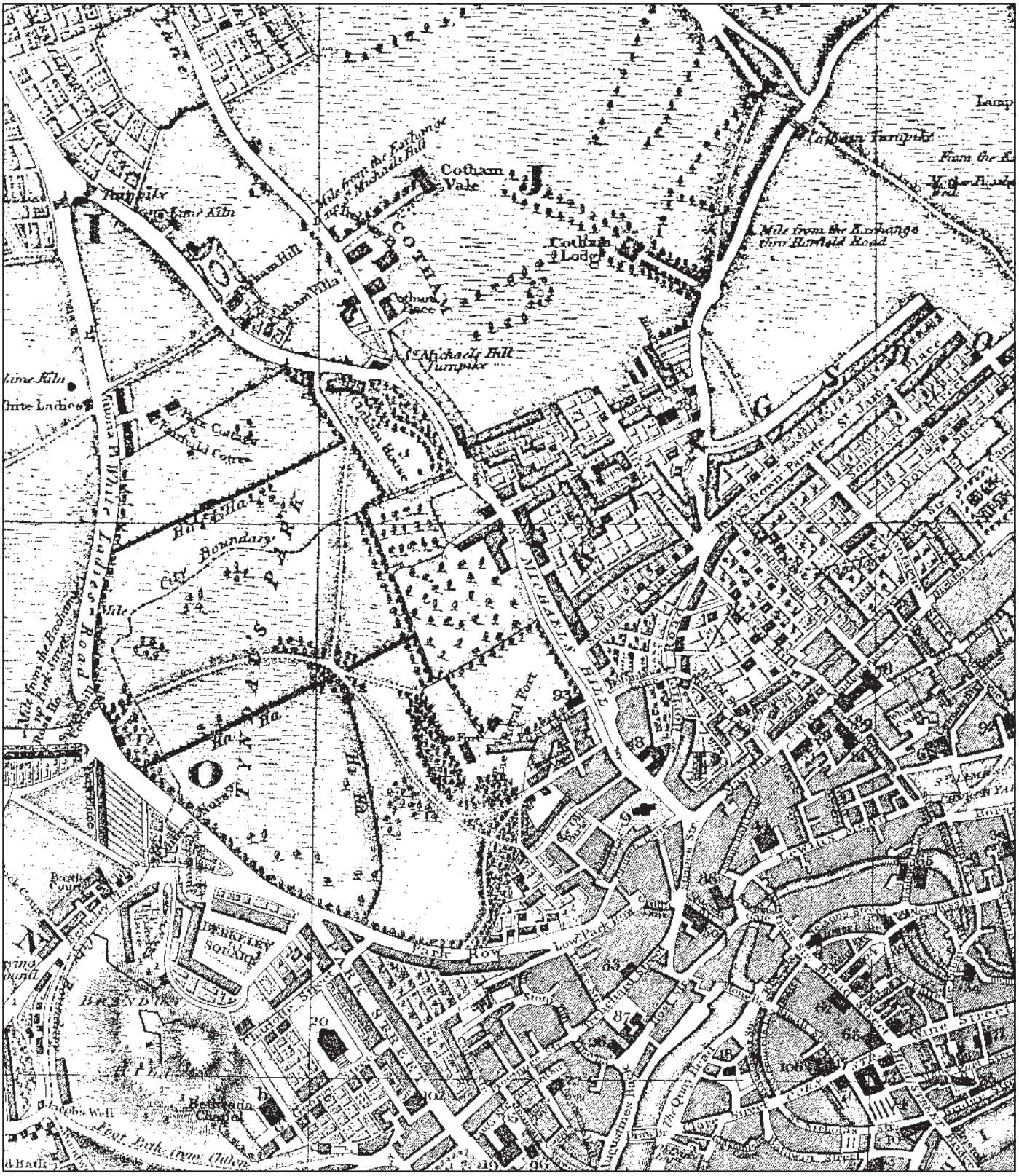


Fig.11 Donne's 1826 map

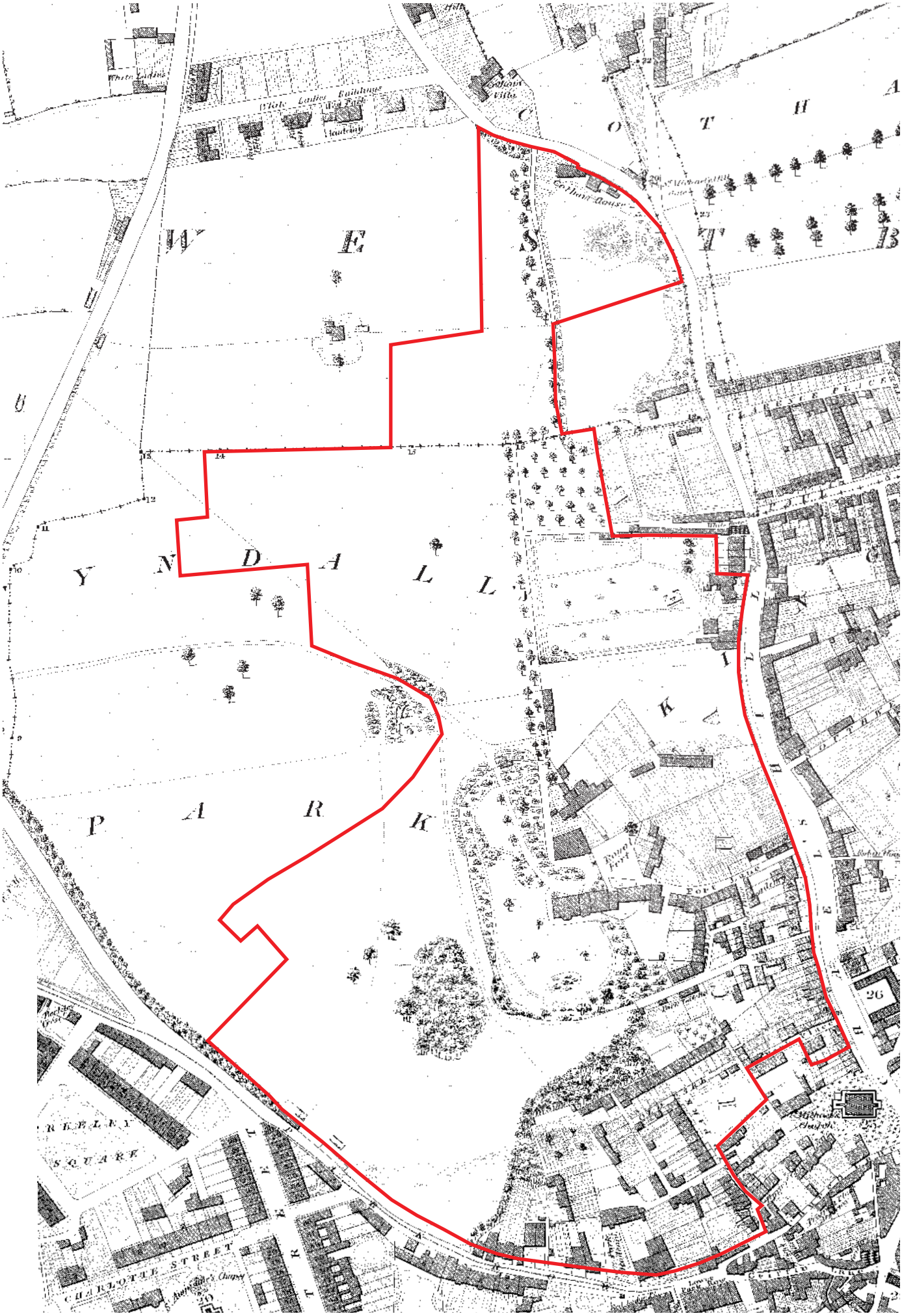


Fig.12 Plumley and Ashmead, 1828

Fig.13 Ashmead, 1854 – Cotham House and Cotham Hill

Fig.14 Ashmead, 1854 – south end of Cotham House grounds

Fig.15 Ashmead, 1854 – Bishop's College and Blind Asylum

Fig.16 Ashmead, 1854 – Blind Asylum

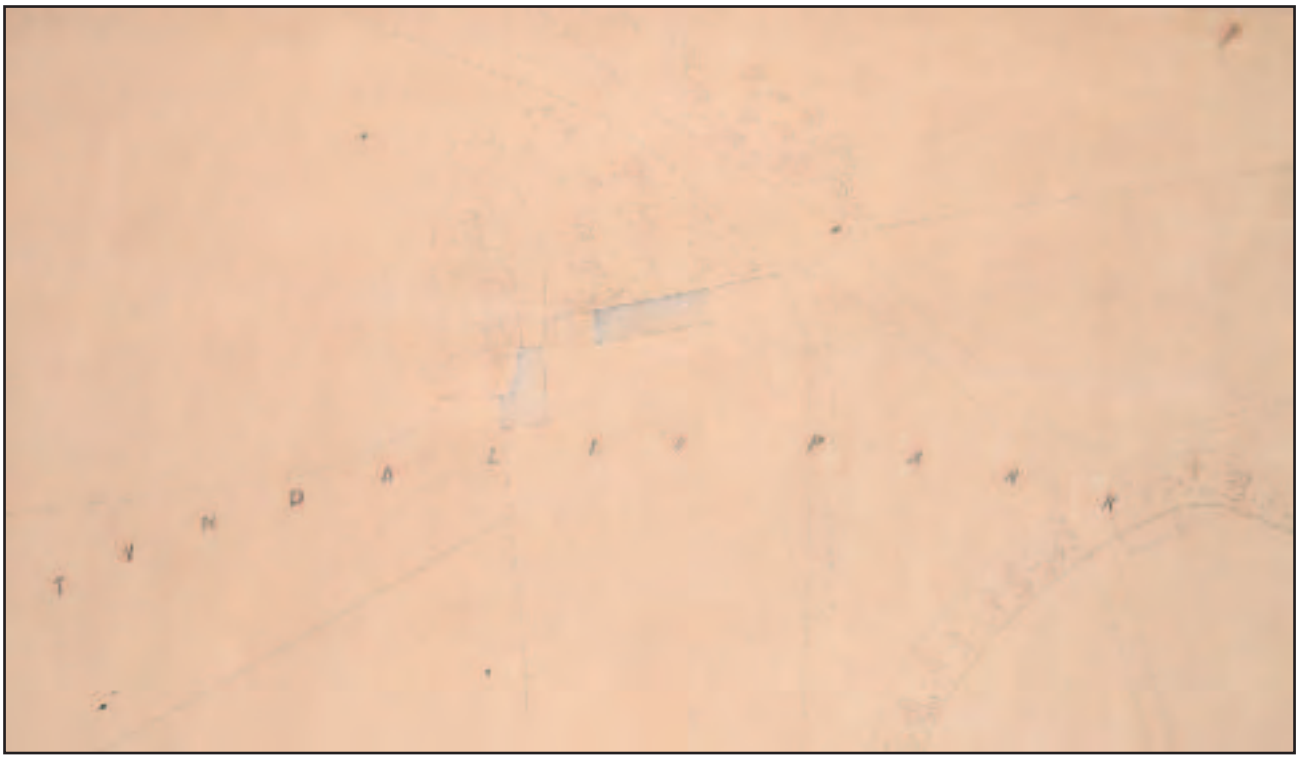


Fig.17 Ashmead, 1854 - Ponds in centre of park

Fig.18 Ashmead, 1854 - Royal Fort and Tankards Close

Fig.19 Ashmead, 1854 - St Michael's Hill and Old Park

Fig.20 Ashmead, 1854 - Park Row

Fig.21 Ashmead, 1874 - Museum, Drill Hall, etc.

Fig.22 Ashmead, 1874 – Children's Hospital site

Fig.23 Ordnance Survey 1:2500 plan, 1883

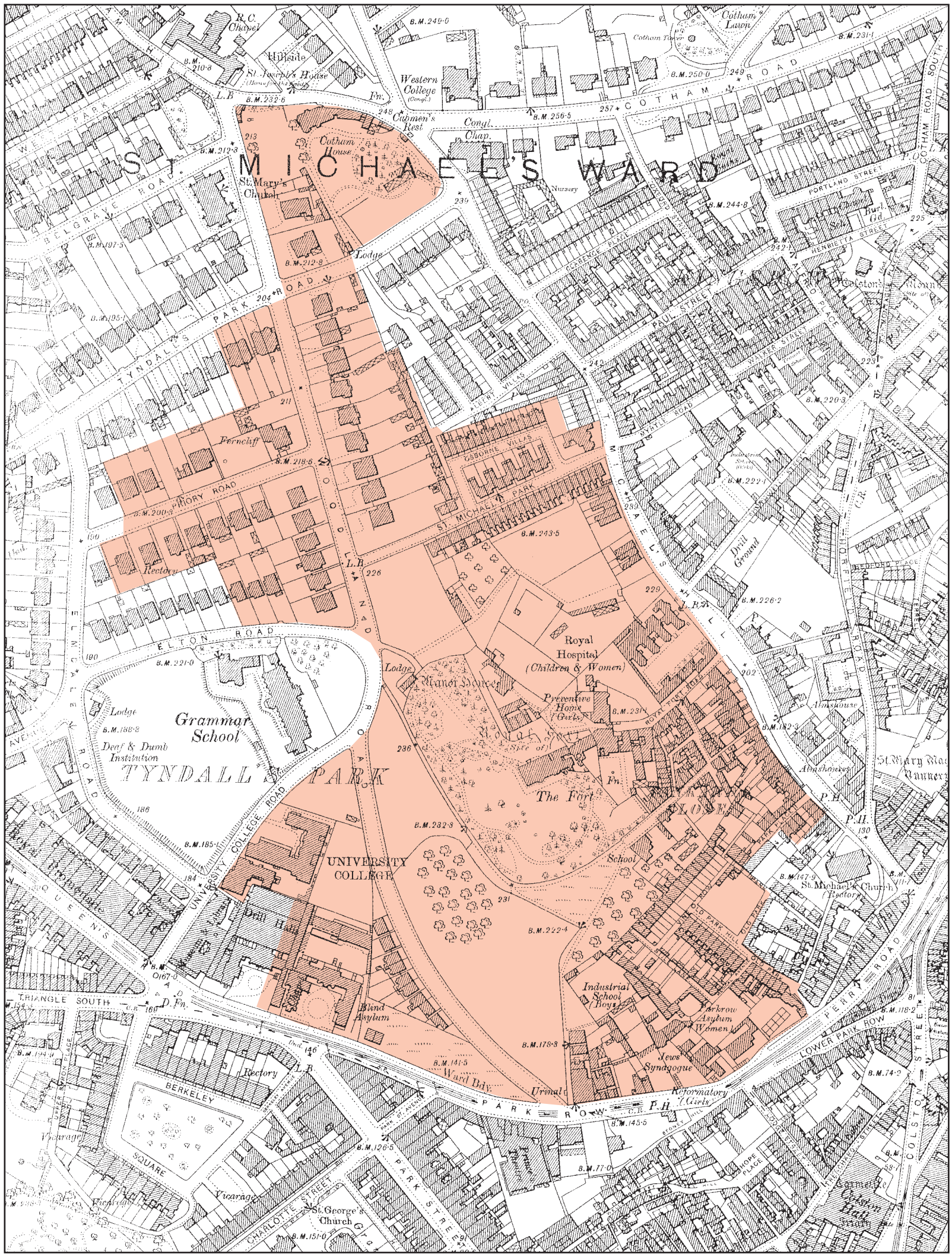


Fig.24 Ordnance Survey 1:2500 plan (reduced), 1901

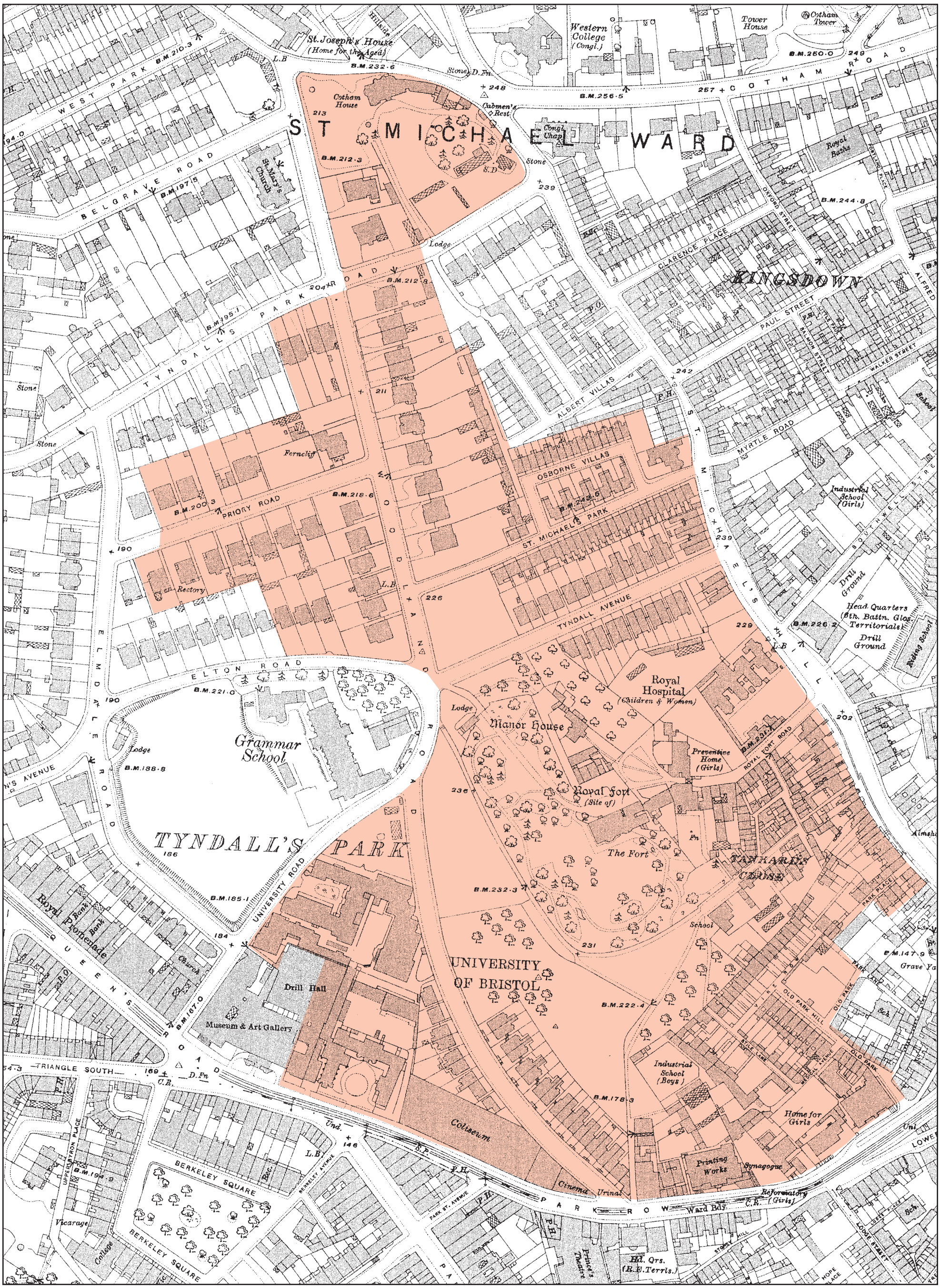


Fig.25 Ordnance Survey 1:2500 plan, 1913

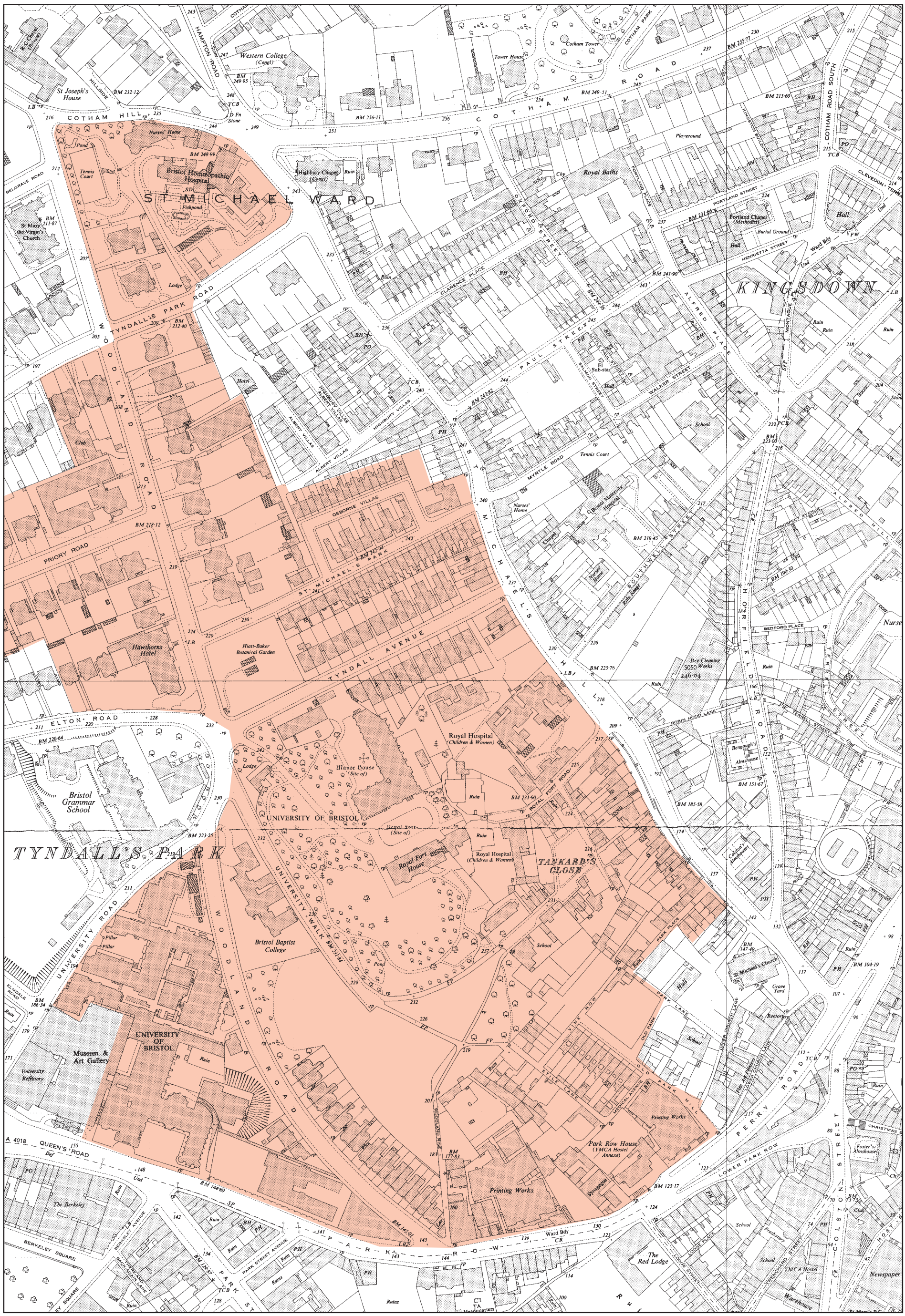


Fig.26 Ordnance Survey 1:2500 plan, 1949

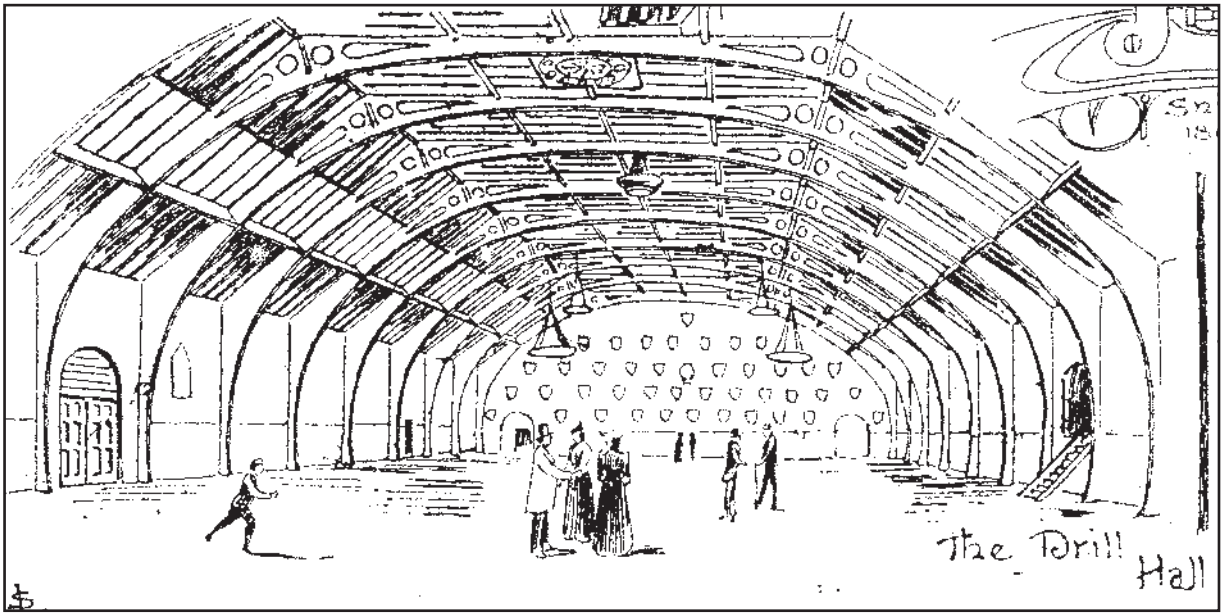


Fig.27 Interior of Drill Hall, 1893 (Loxton)

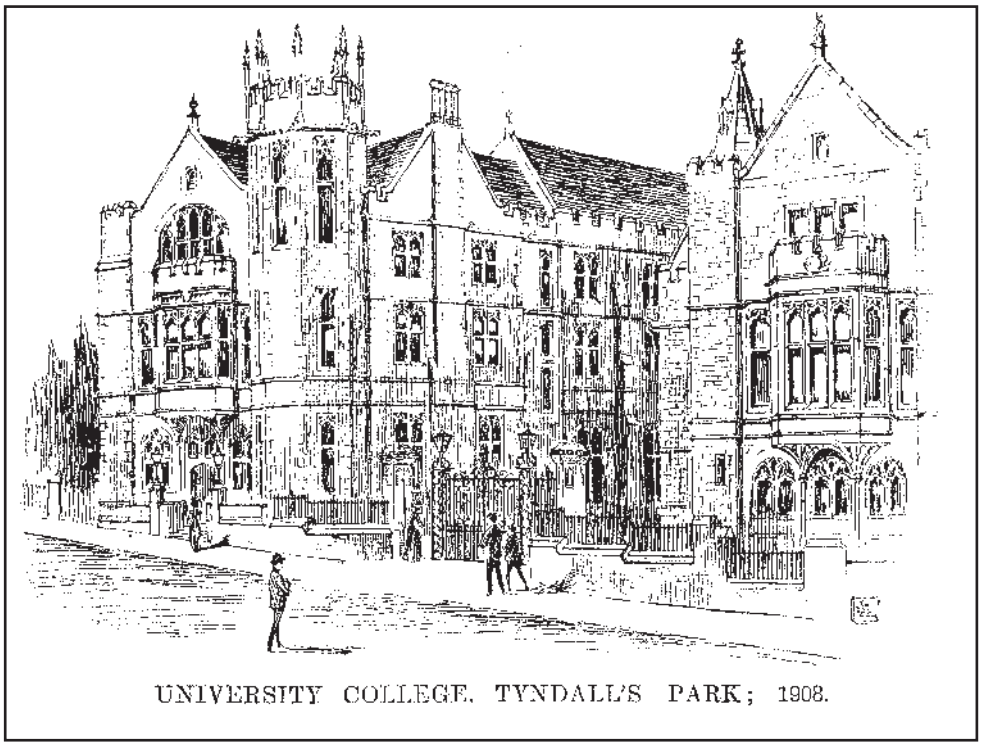


Fig.28 Fry Tower and University Quad, 1908 (Loxton)

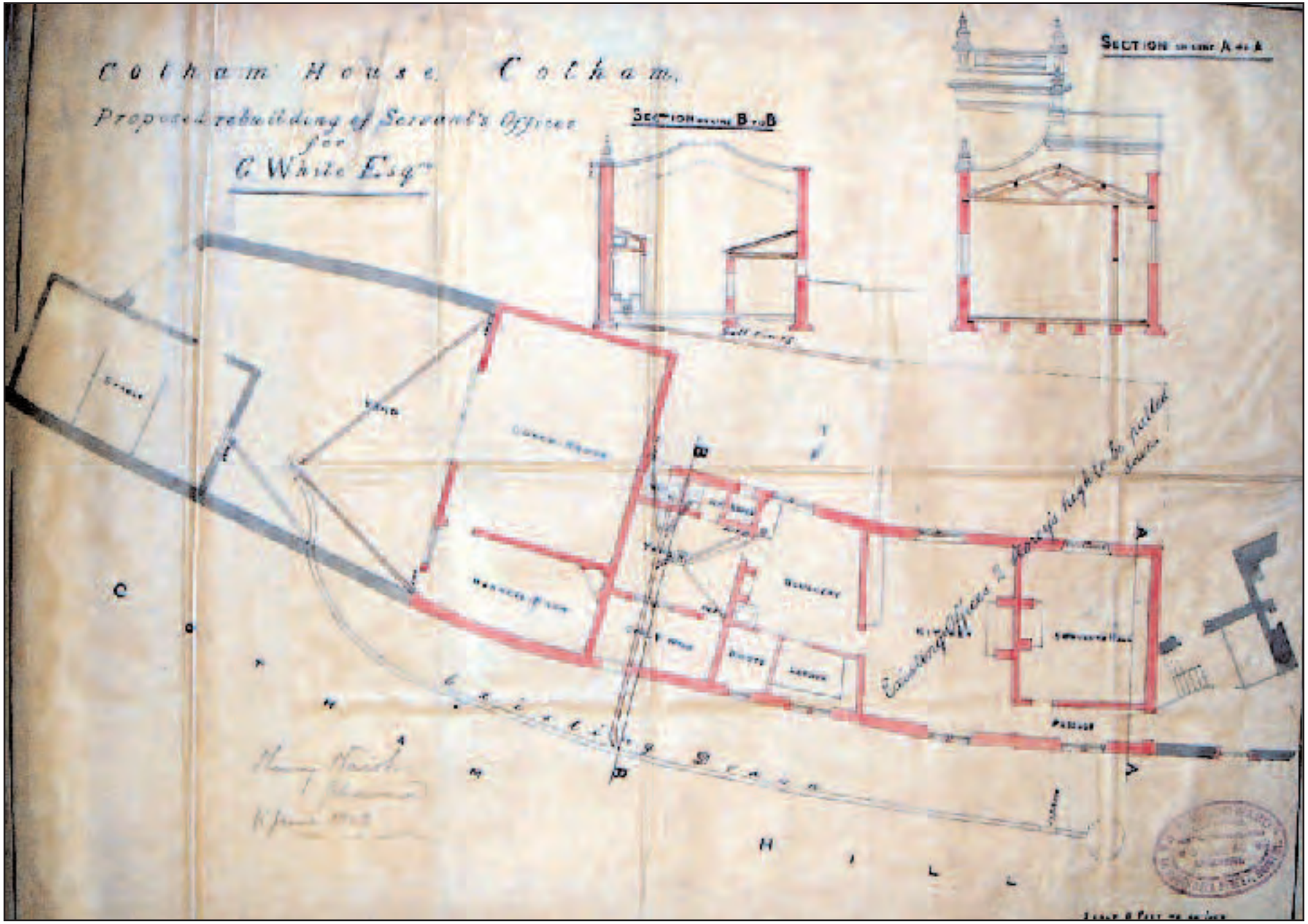


Fig.29 Cotham House: proposed service wing alterations, 1889

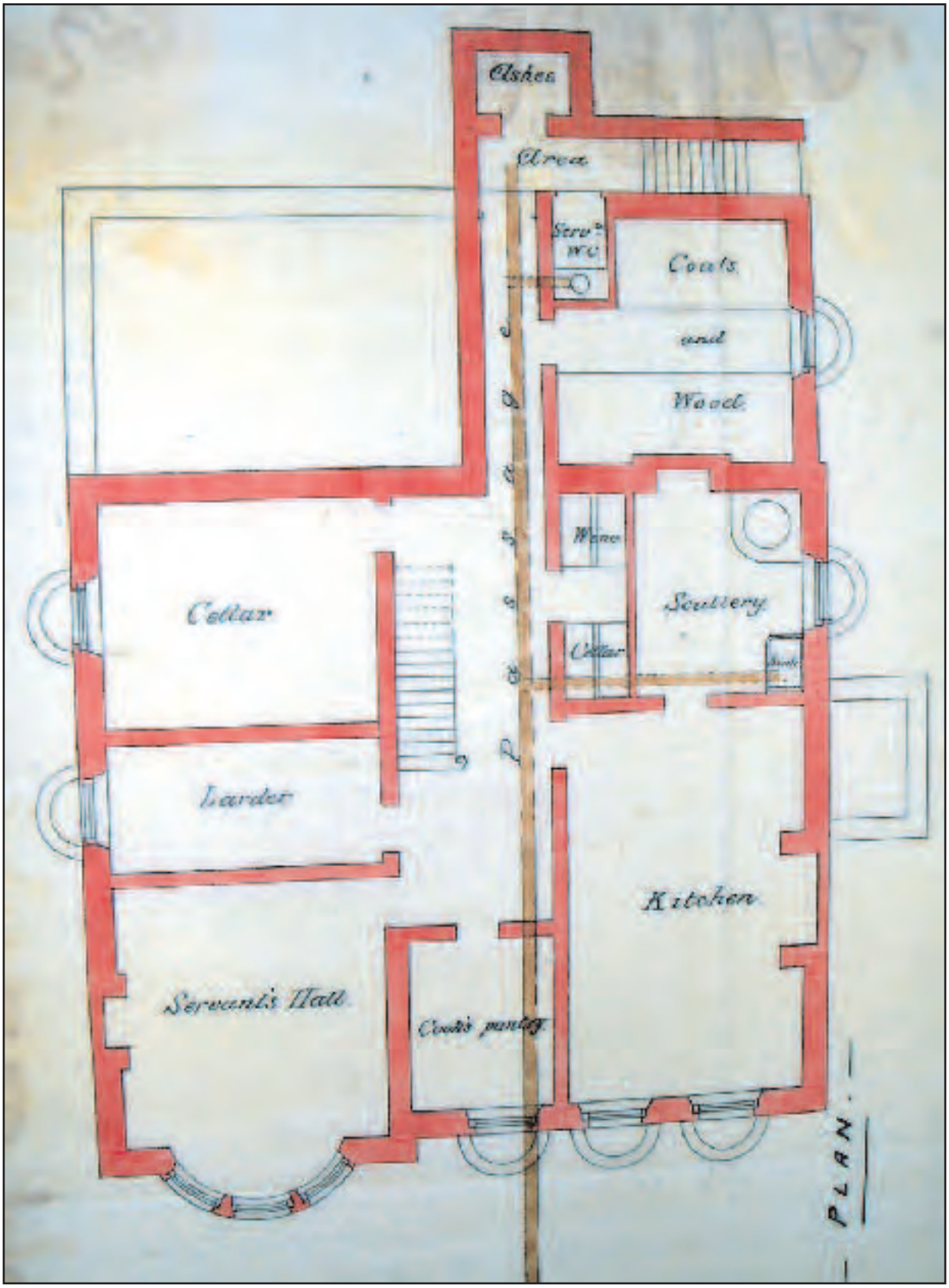


Fig.30 Basement plan of Parklands (now 27 Tyndalls Park Road), 1860

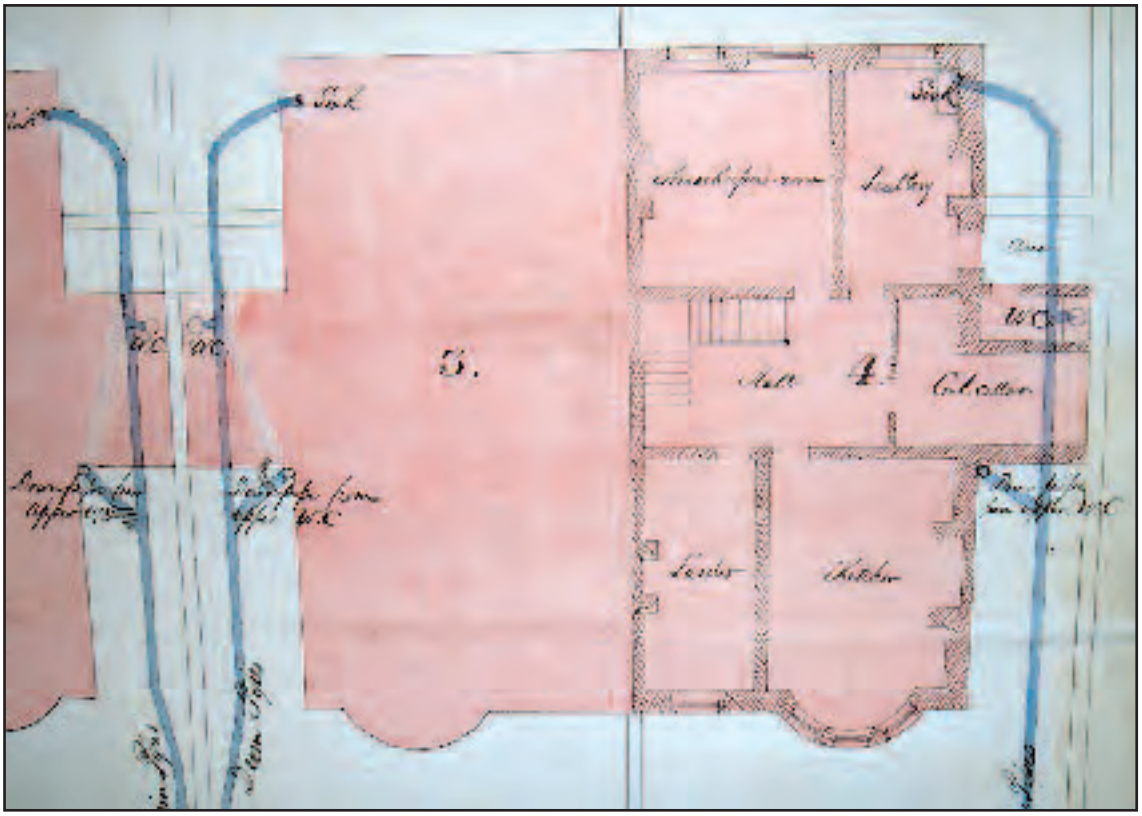


Fig.31 Basement plan of 7 & 9 Woodland Road, 1861

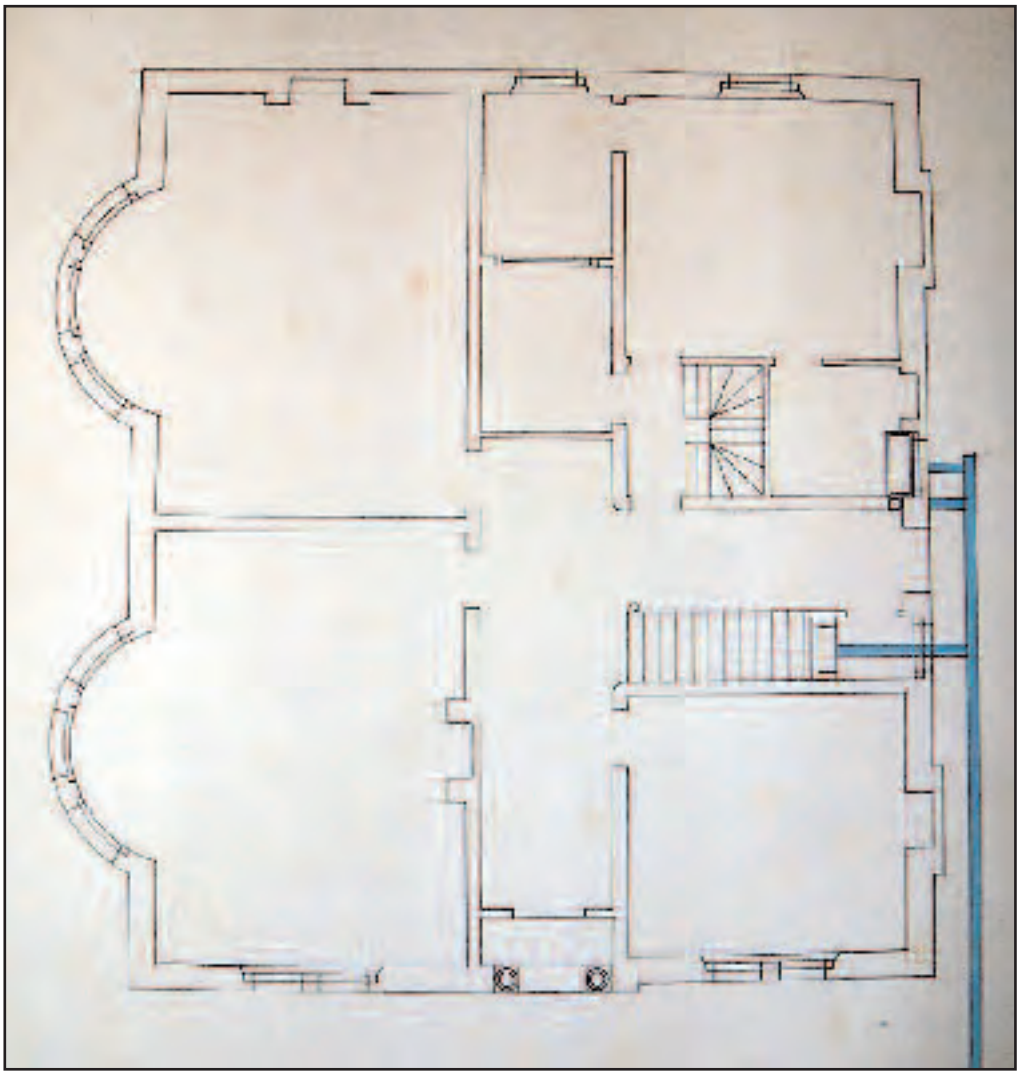


Fig.32 Ground floor plan of The Priory (9 Priory Road), 1872

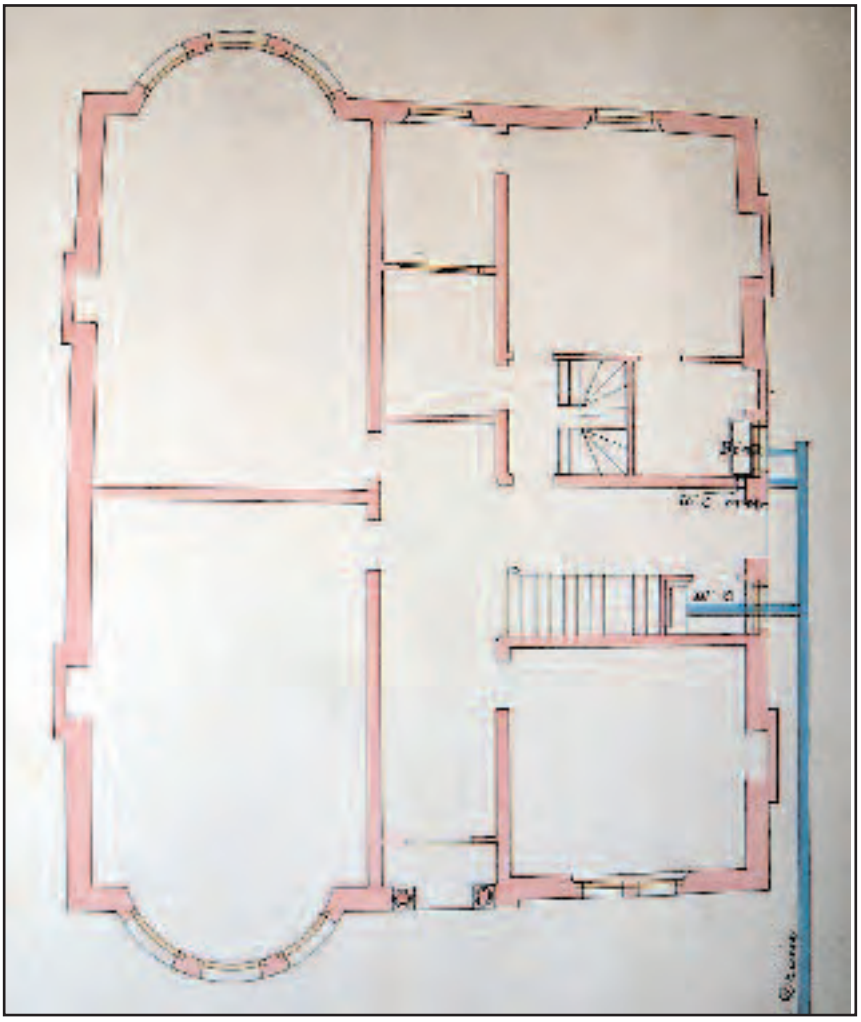


Fig.33 Ground floor plan of 10 & 11 Priory Road, 1872

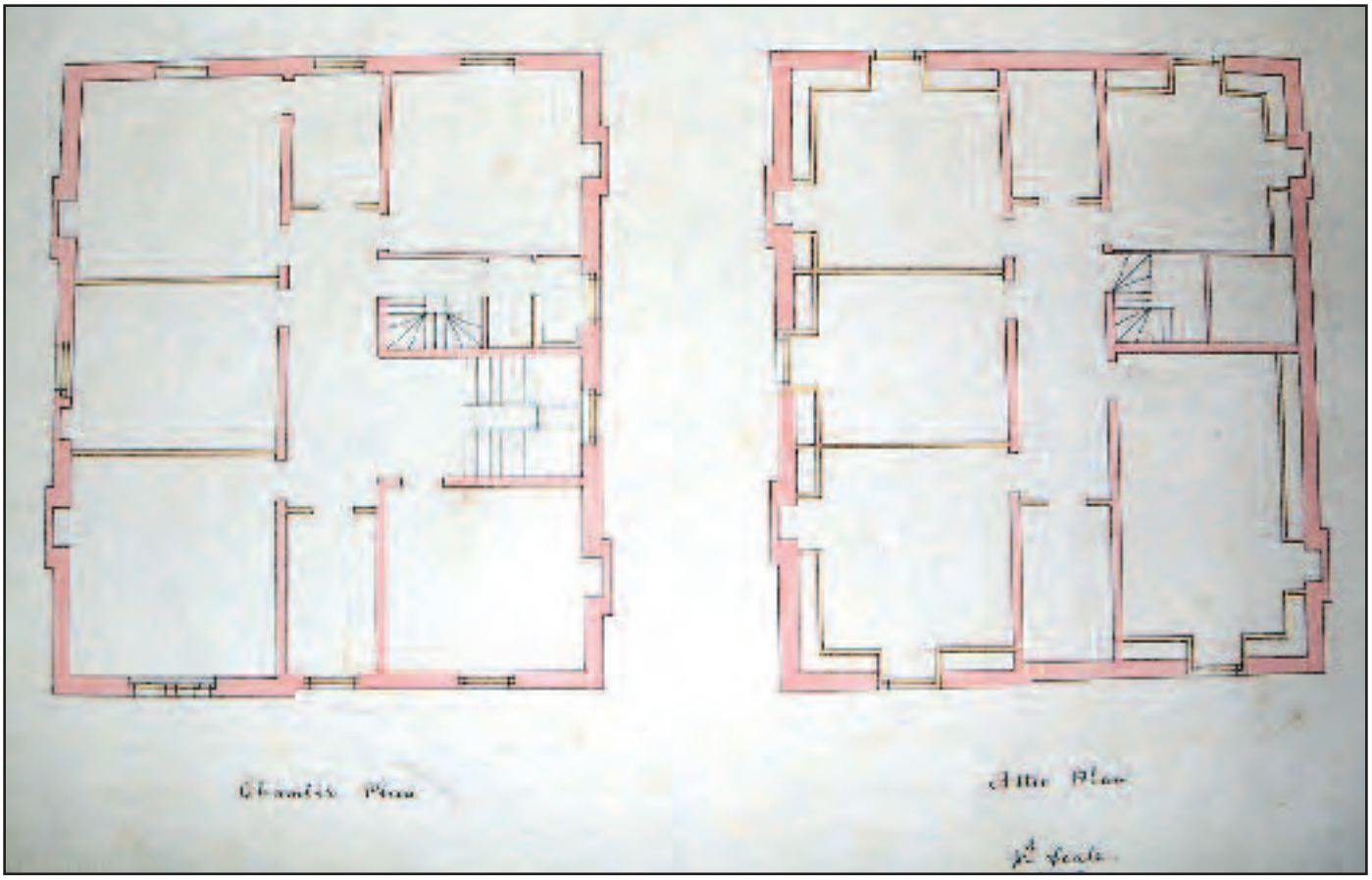


Fig.34 First floor and attic plans of 9-11 Priory Road, 1872

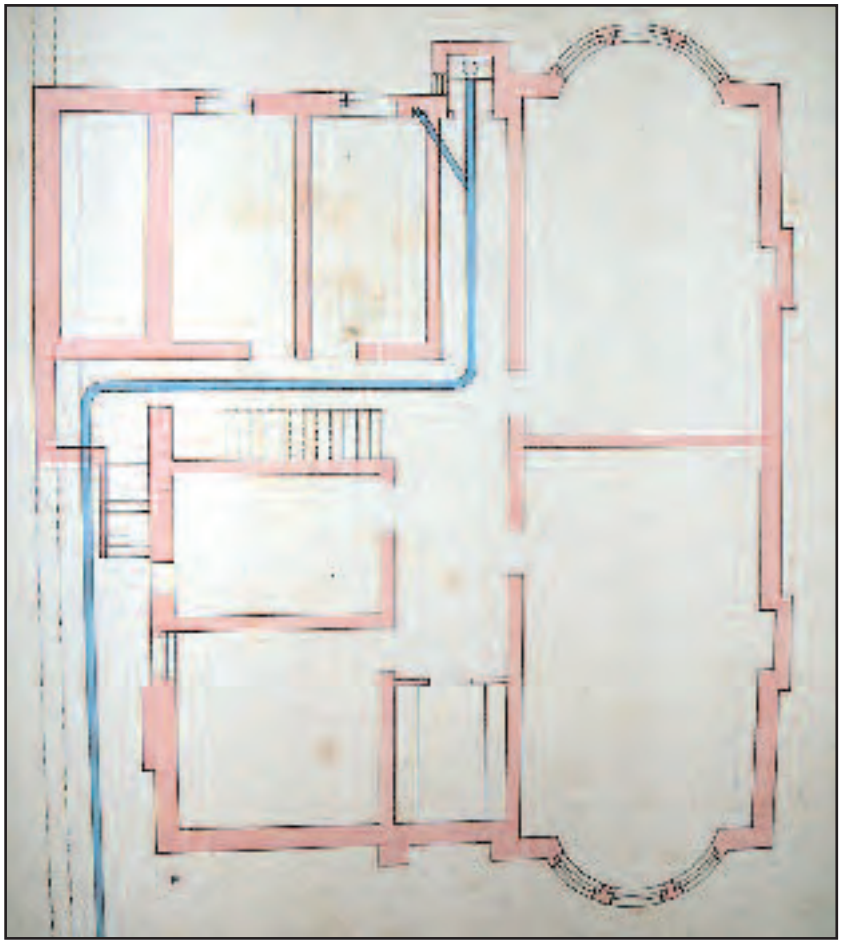


Fig.35 Basement plan of Gordon Lodge (17 Woodland Road), 1870

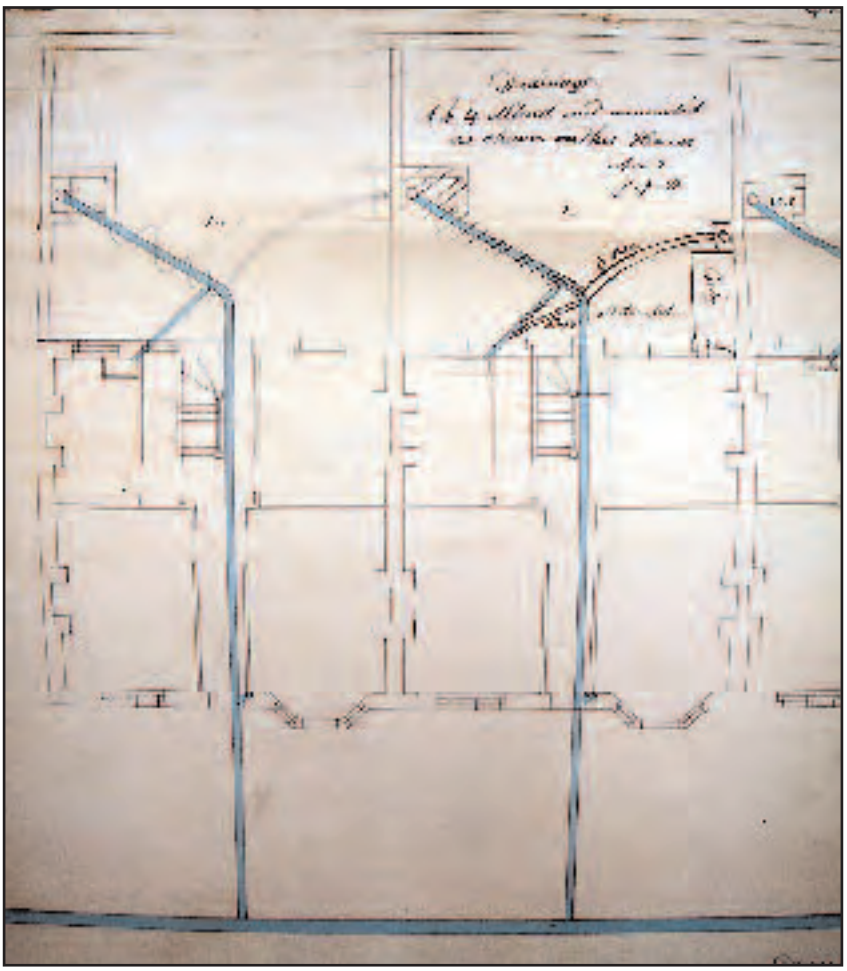


Fig.36 Ground floor plan design for 21-25 St Michael's Park, 1873

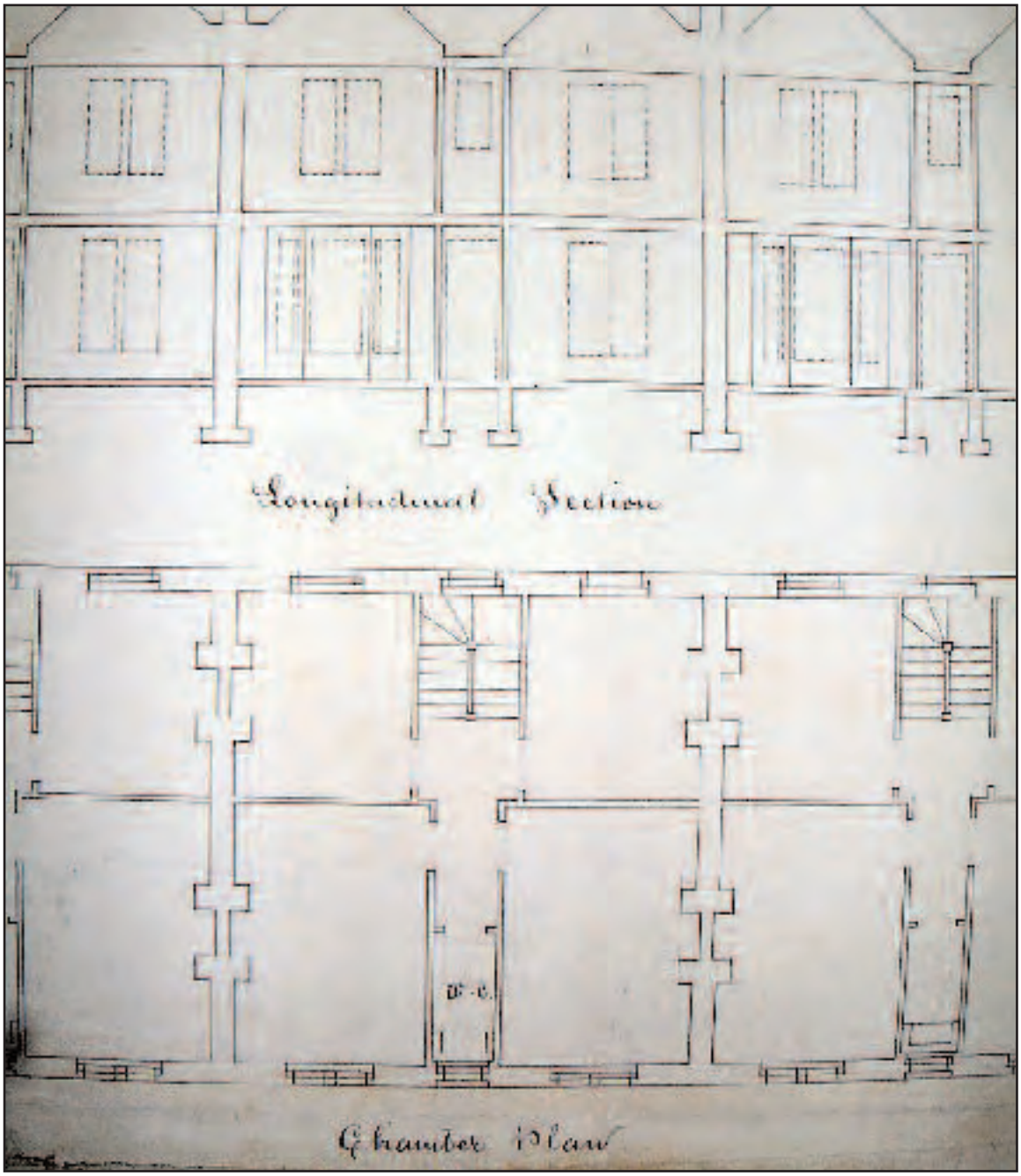


Fig.37 First floor & longitudinal section, 21-25 St Michael's Park, 1873

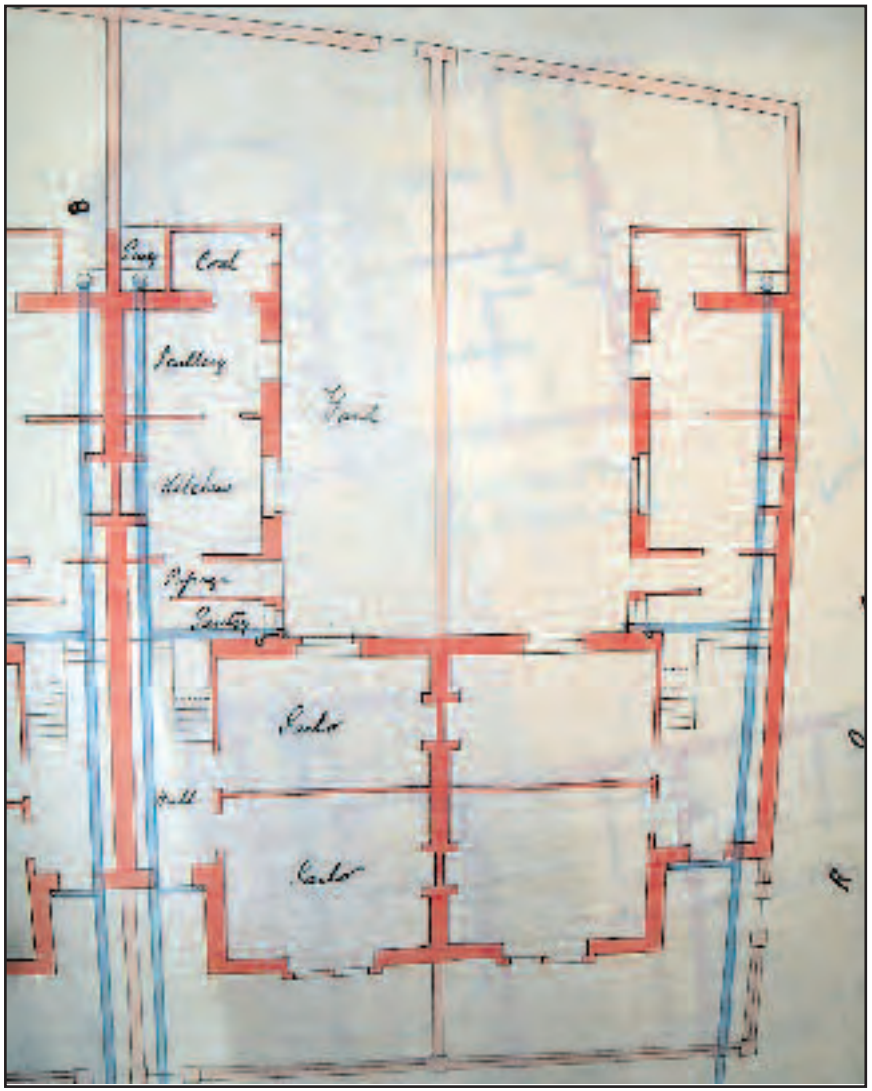


Fig.38 Ground floor plan, 34 & 35 St Michael's Park, 1874

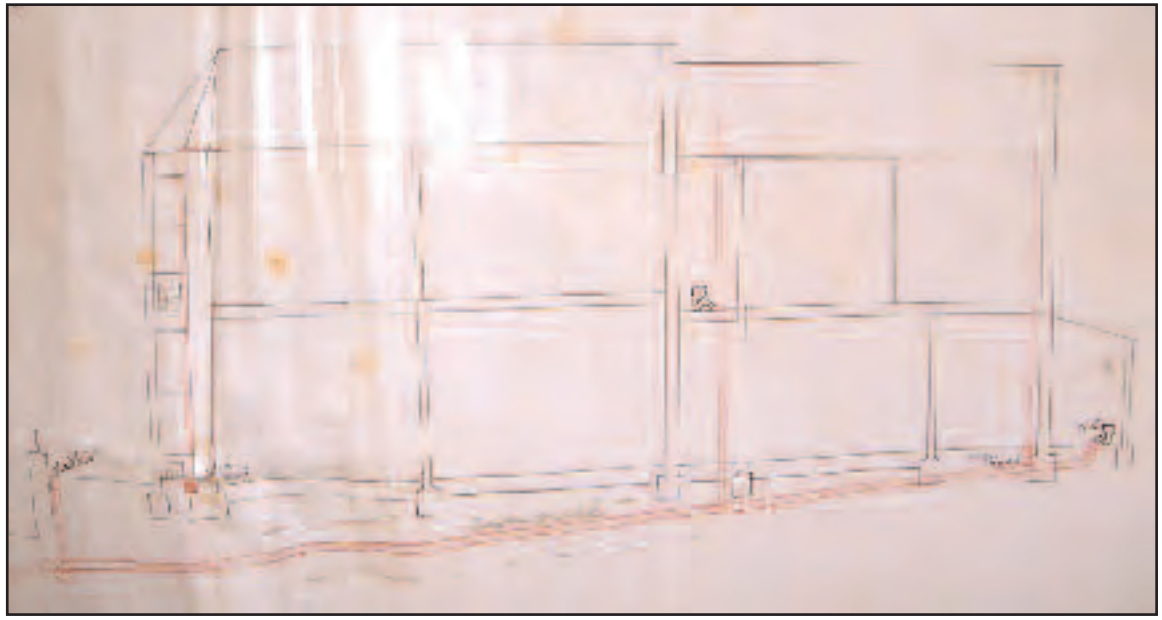


Fig.39 Section through house, 79-87 St Michael's Hill, 1901

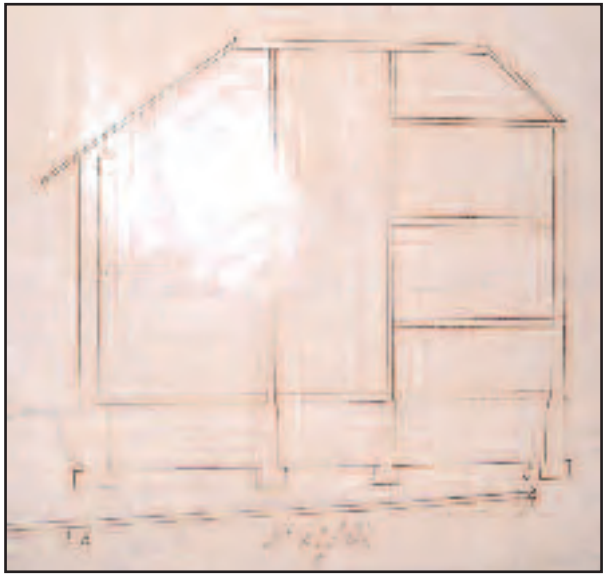


Fig.40 Section through house, 1-15 Tyndall Avenue, 1903

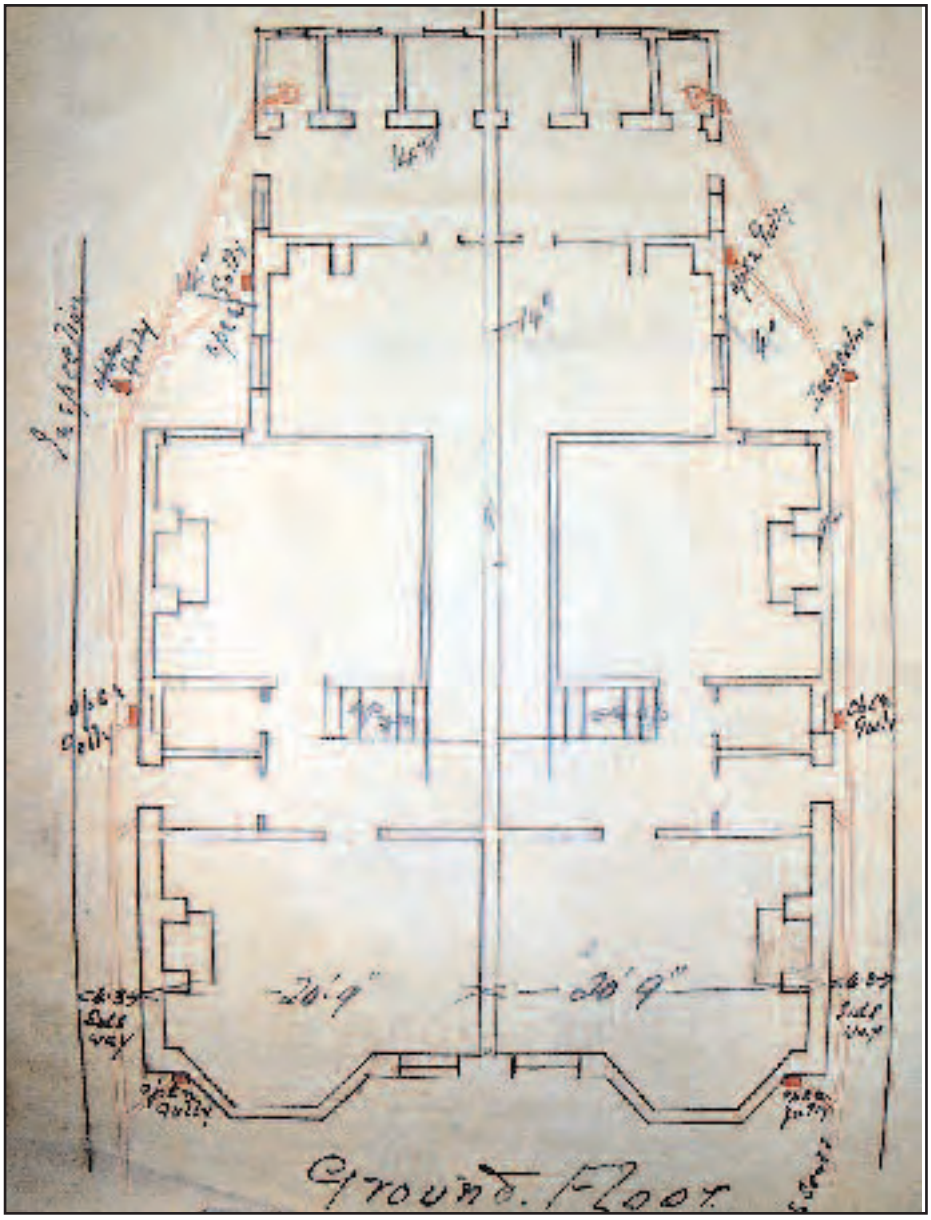


Fig.41 Ground floor plan, 17-27 Tyndall Avenue, 1903

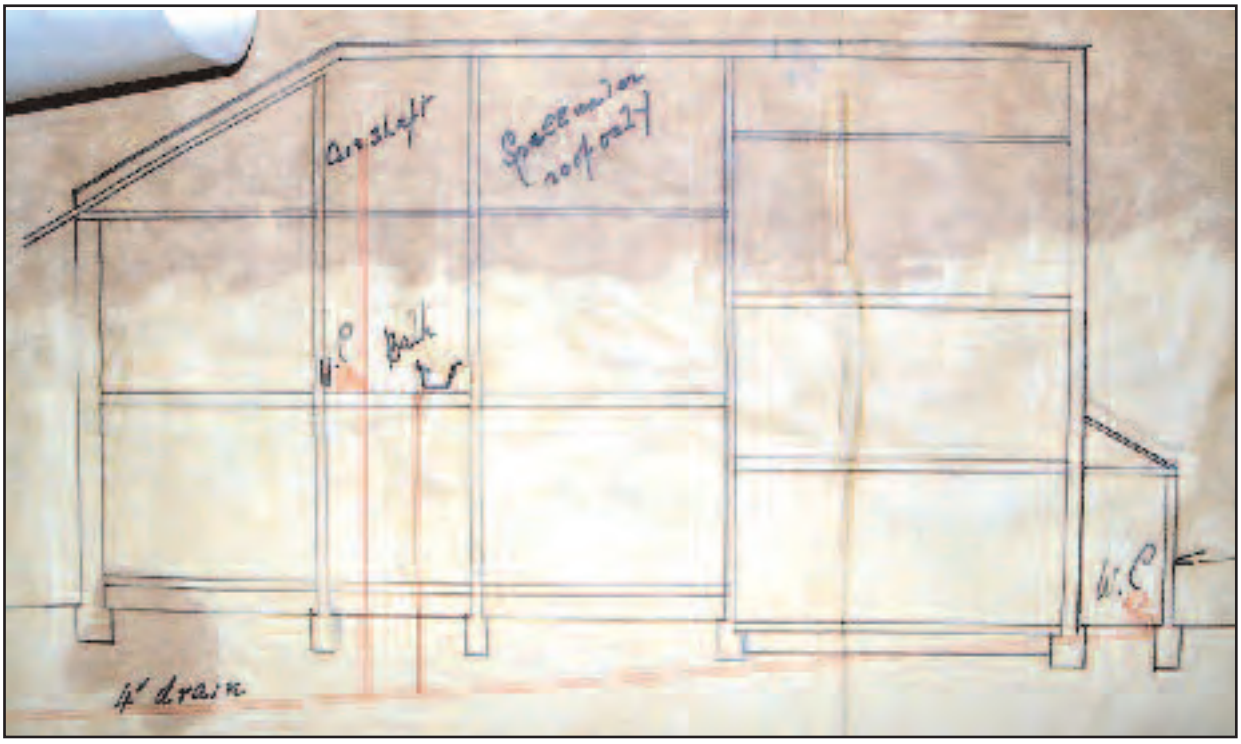


Fig.42 Section through house, 17-27 Tyndall Avenue, 1903

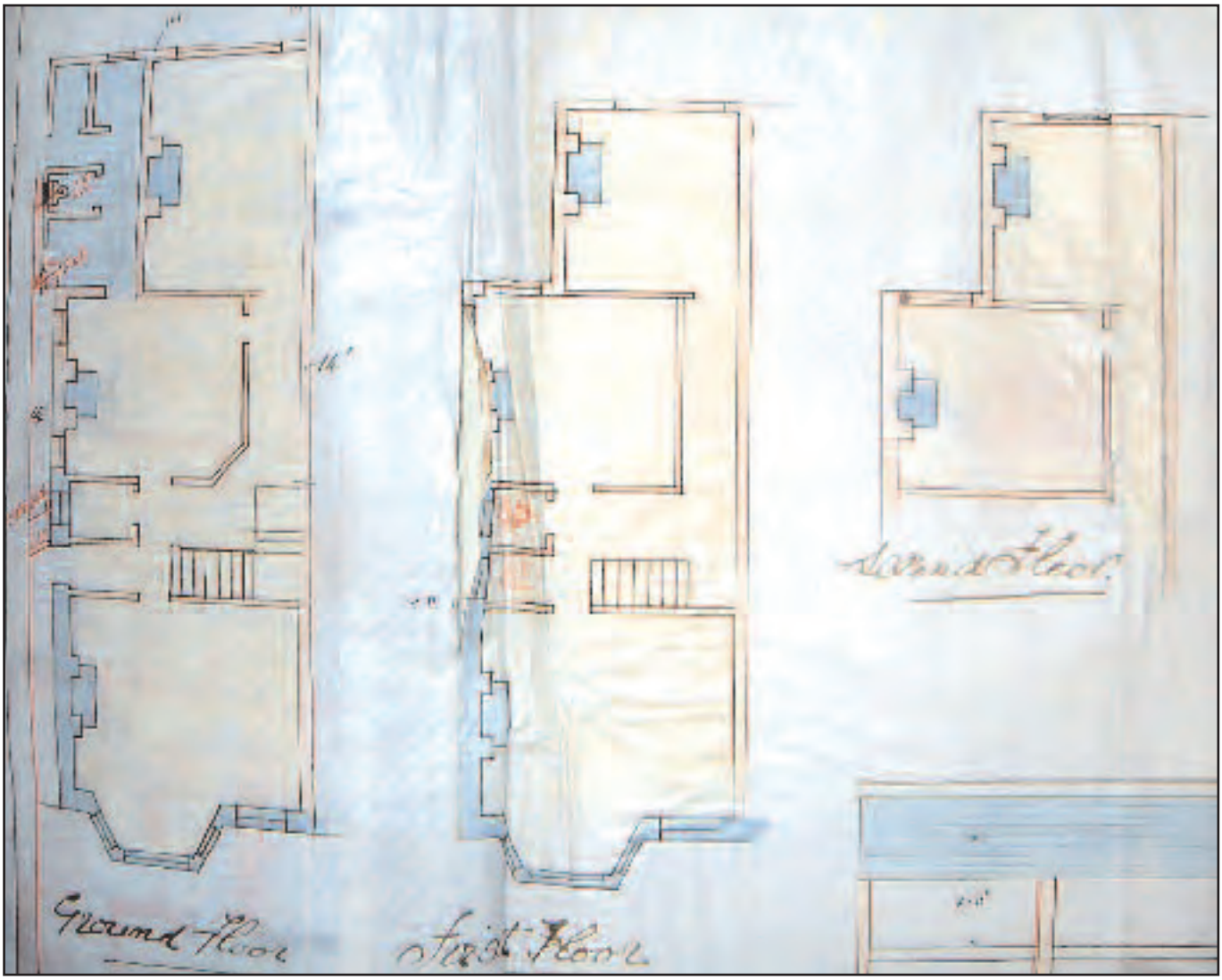


Fig.43 Floor plans, 4-24 Tyndall Avenue, 1905

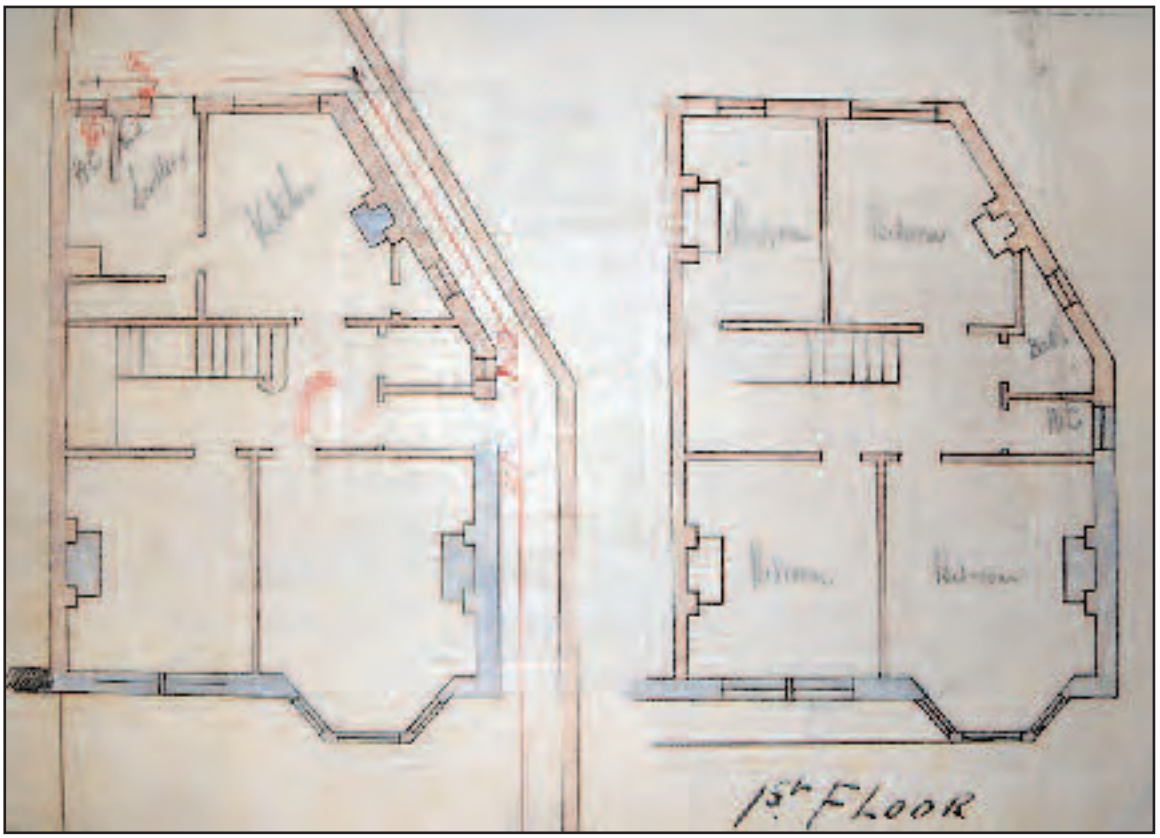


Fig.44 Floor plans, 2 Tyndall Avenue, 1906

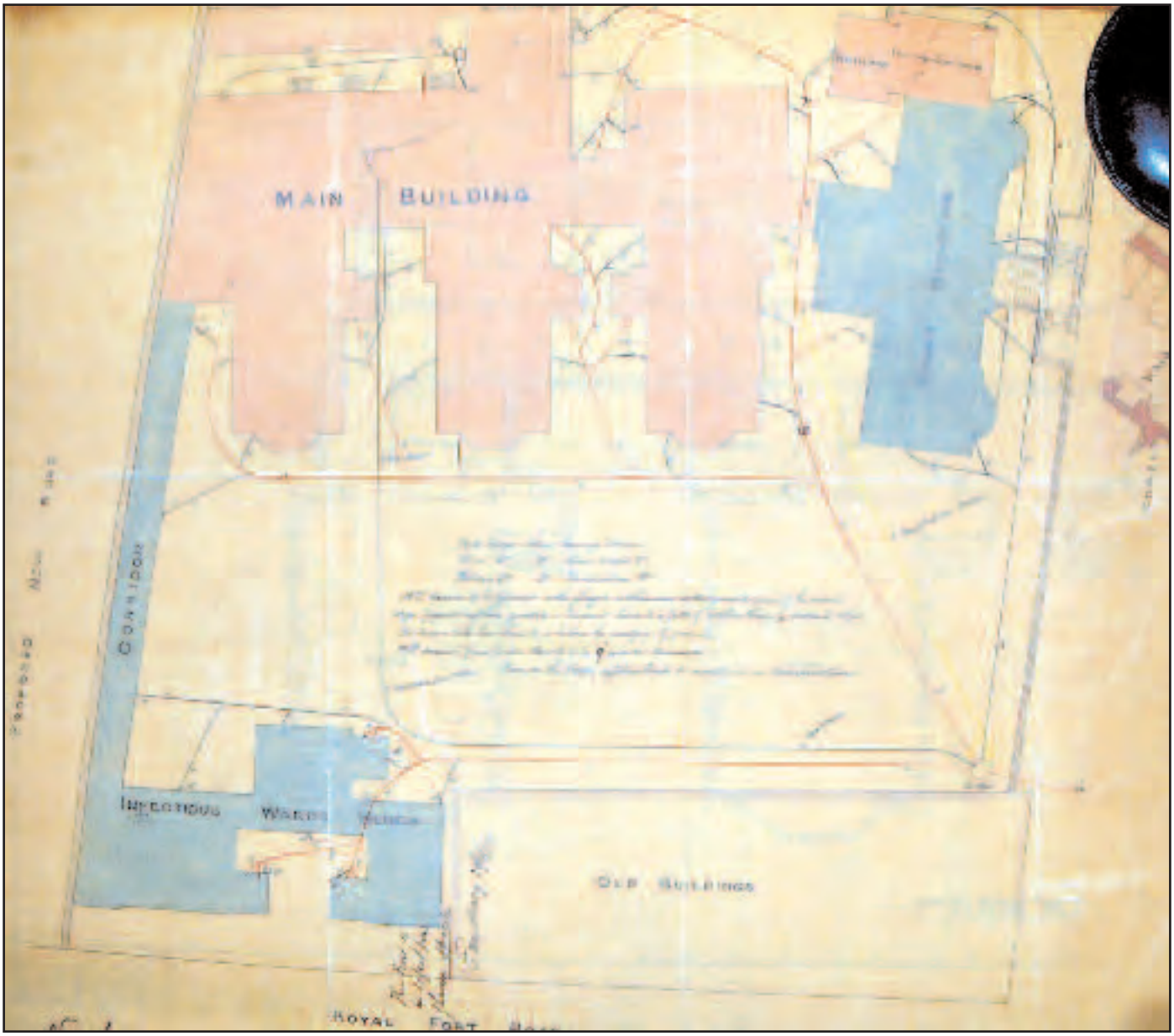


Fig.45 Children's Hospital, 1882 - block plan, including proposed new road

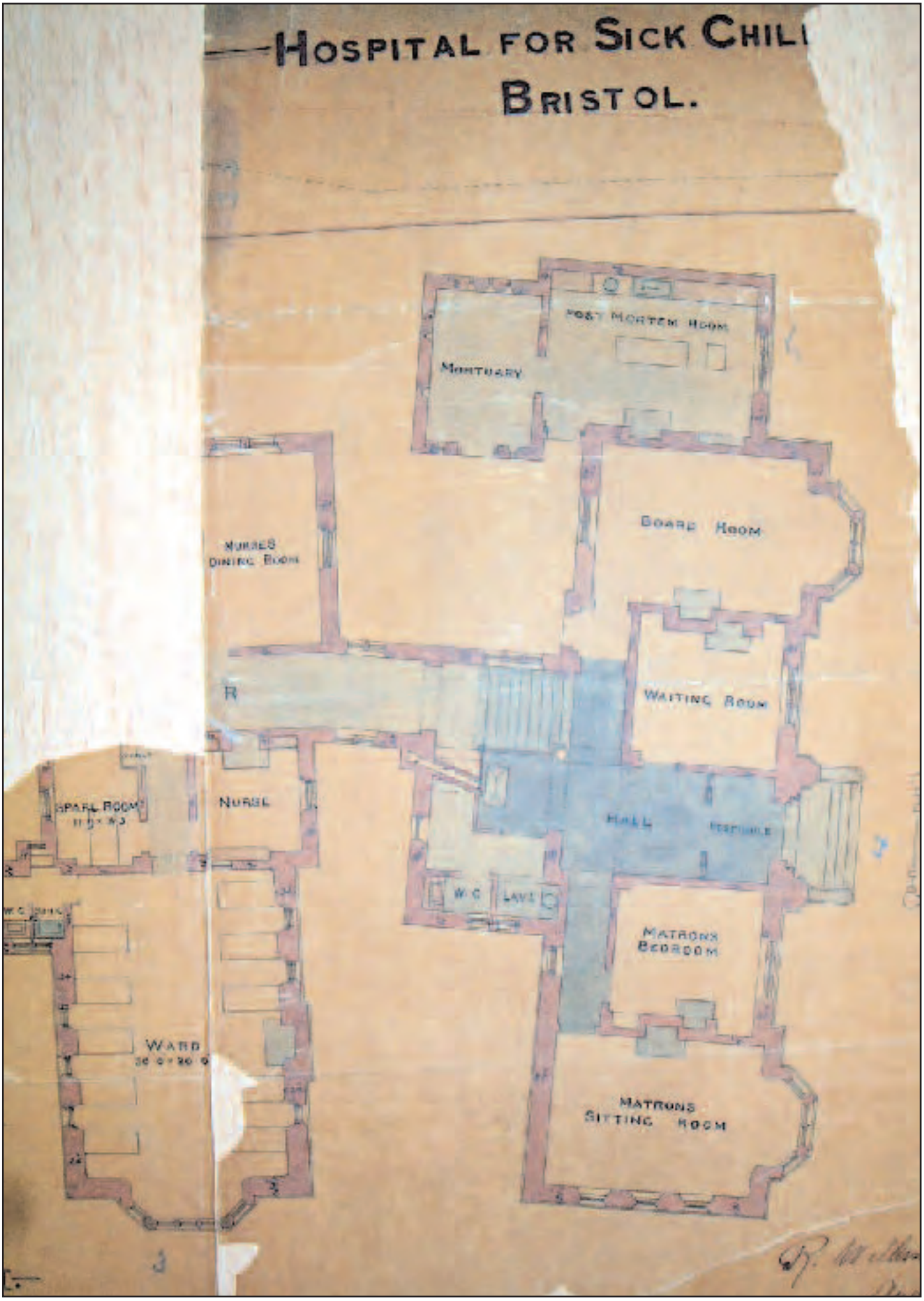


Fig.46 Children's Hospital, 1882 - ground floor of front building, etc.

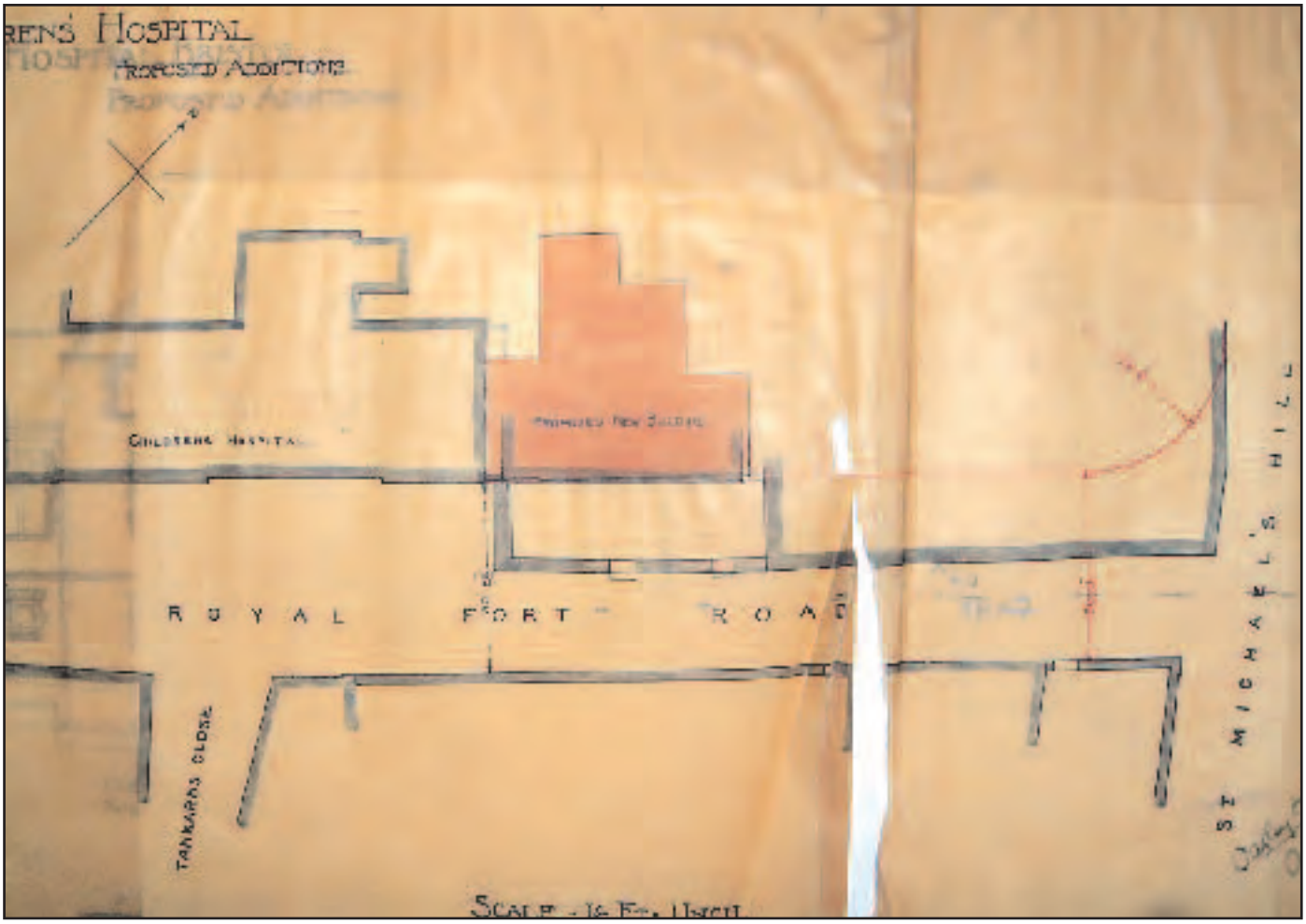


Fig.47 Children's Hospital, Royal Fort Road - proposed new building on old school site

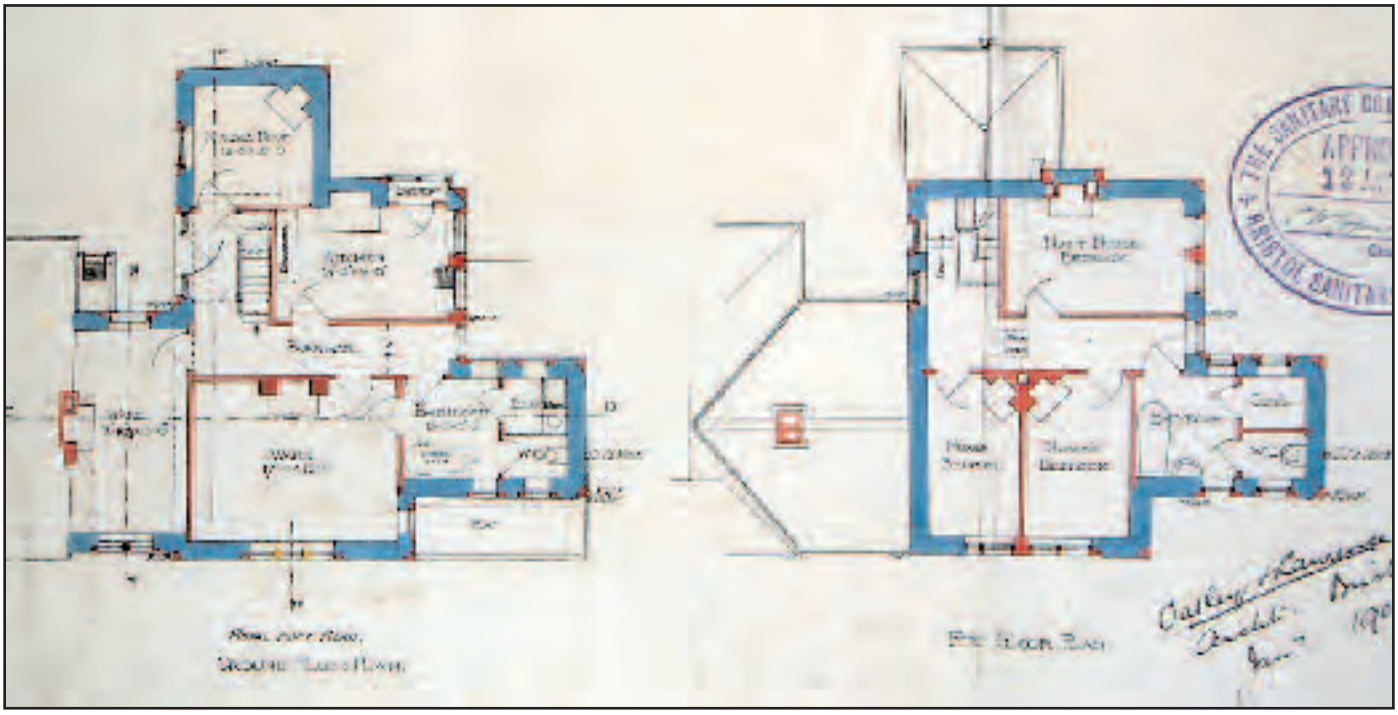


Fig.48 Children's Hospital, Royal Fort Road - floor plans, 1905

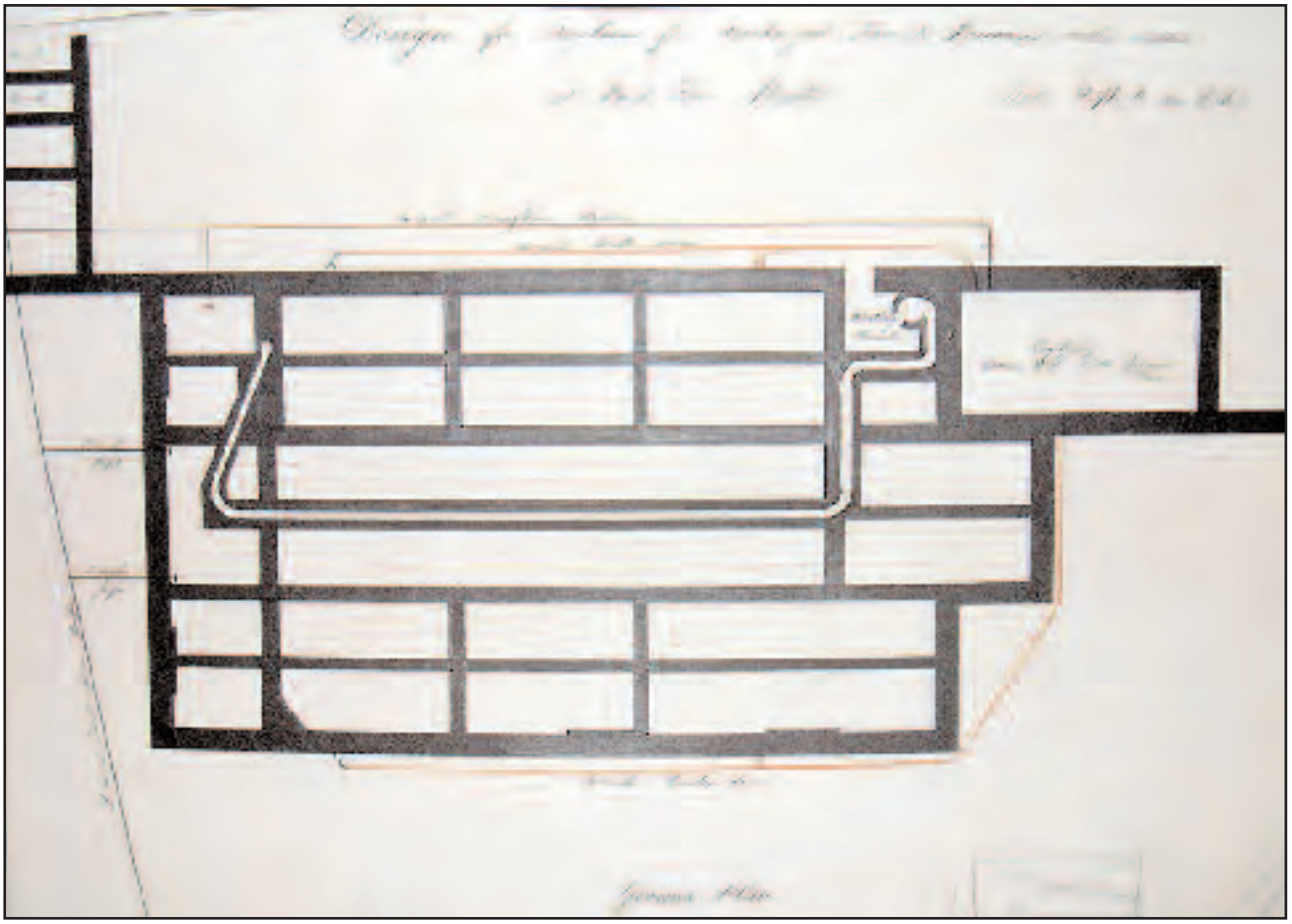


Fig.49 Foundation plan, Park Row House, 1854

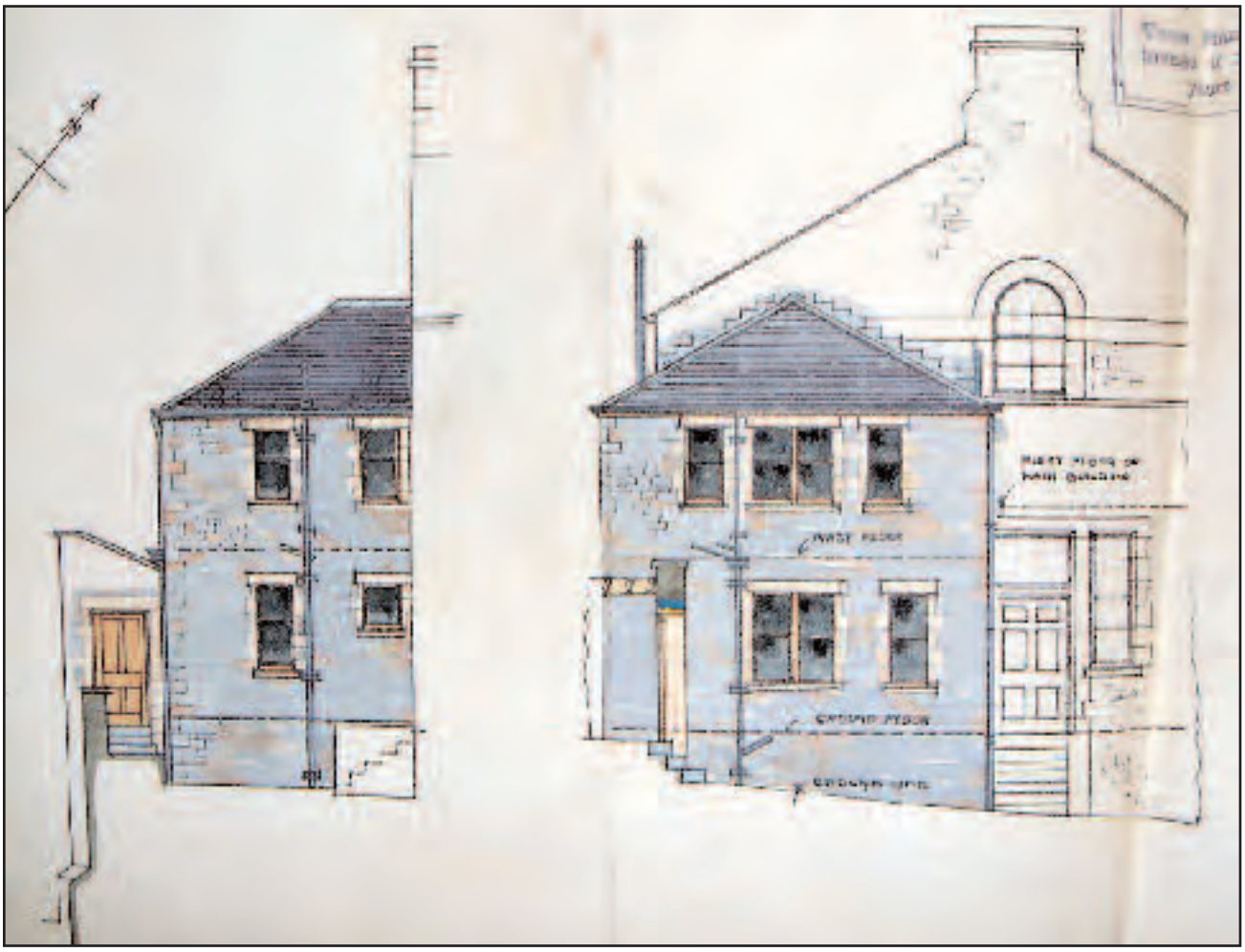


Fig.50 West end of Park Row House with proposed extension, 1926

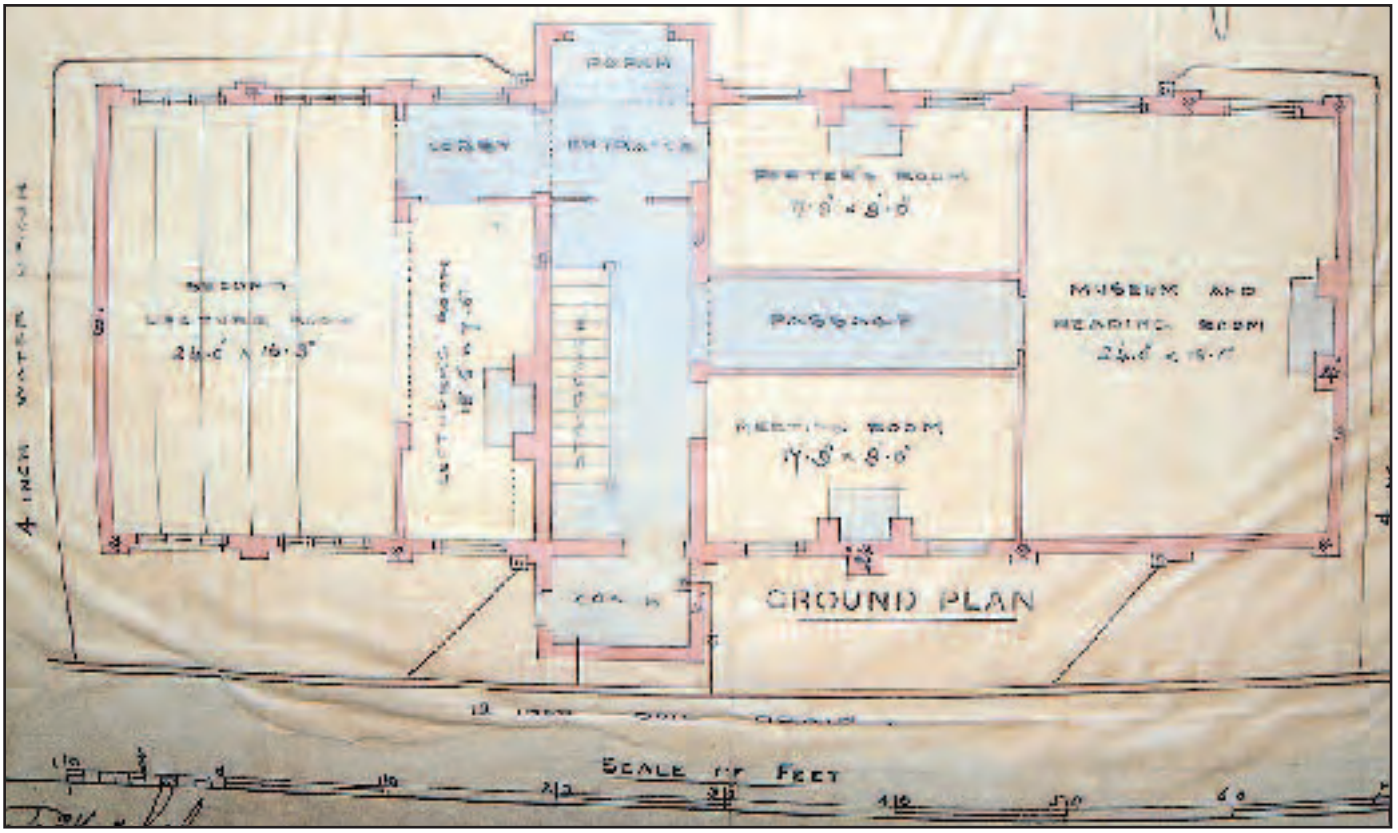


Fig.51 First University block, 1879 - ground floor plan

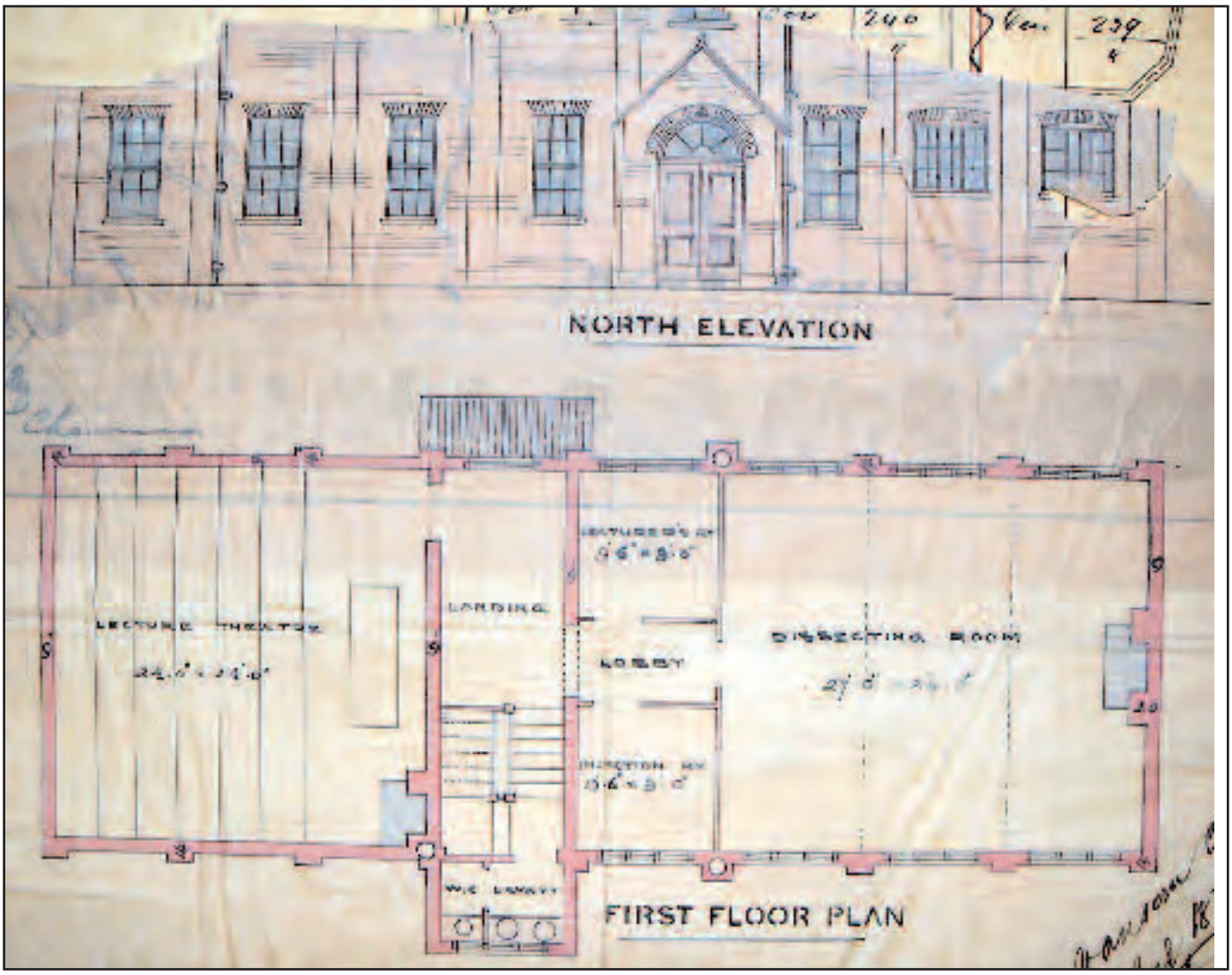


Fig.52 First University block, 1879 – first floor plan & north elevation

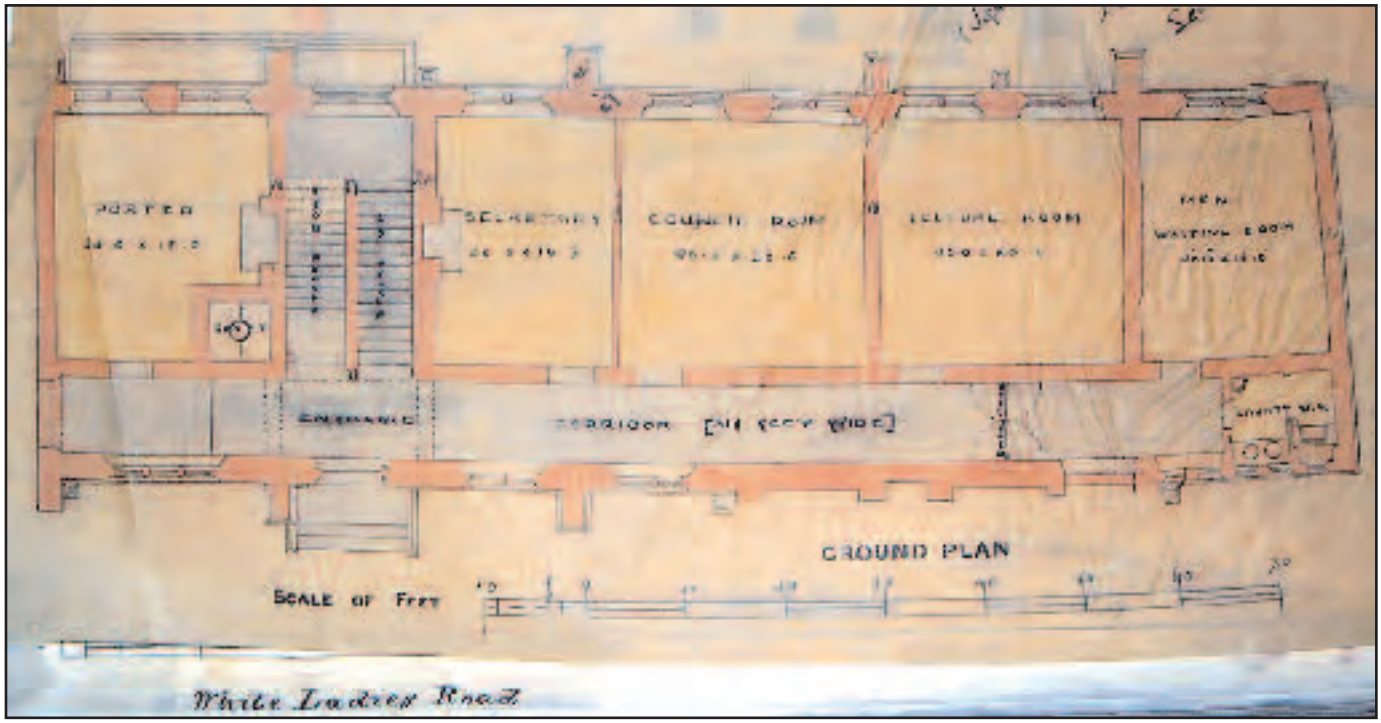


Fig.53 Second University block, 1880 - ground floor plan

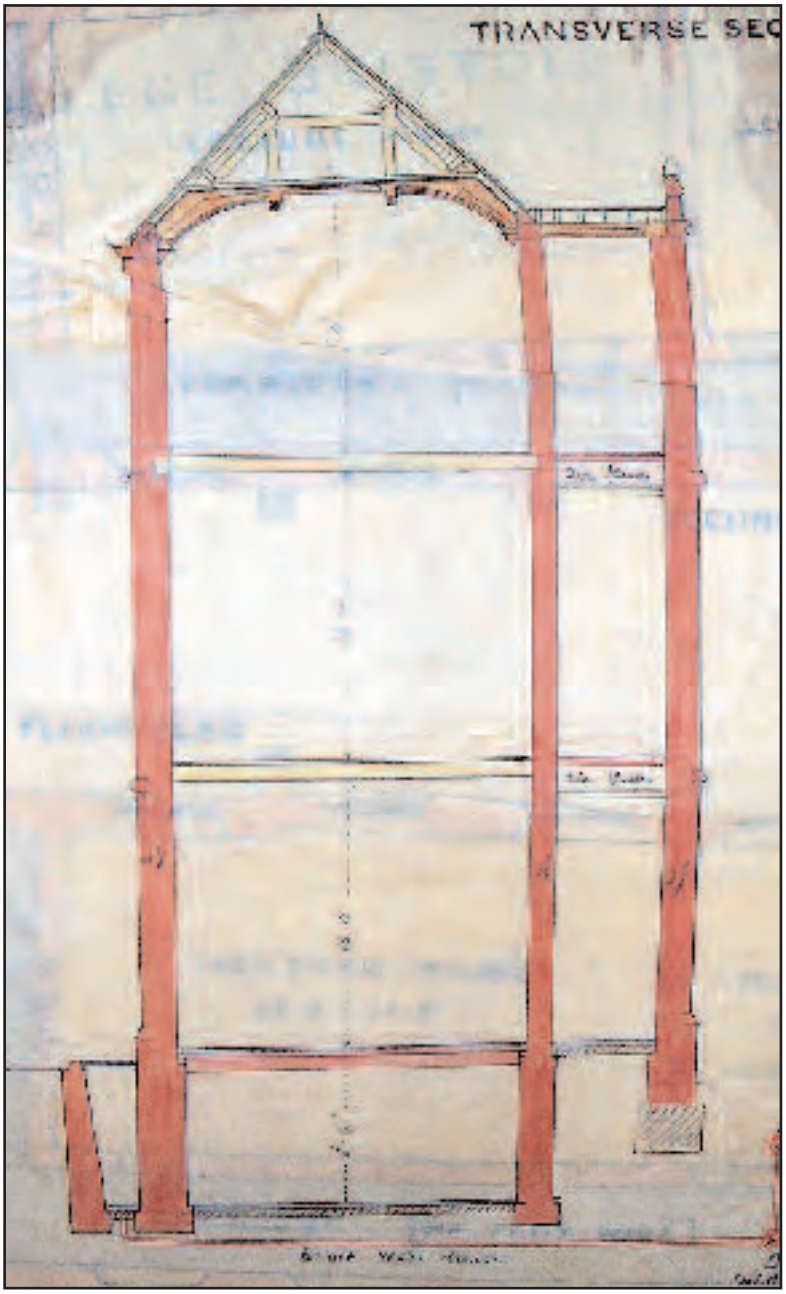


Fig.54 Second University block, 1880 - section

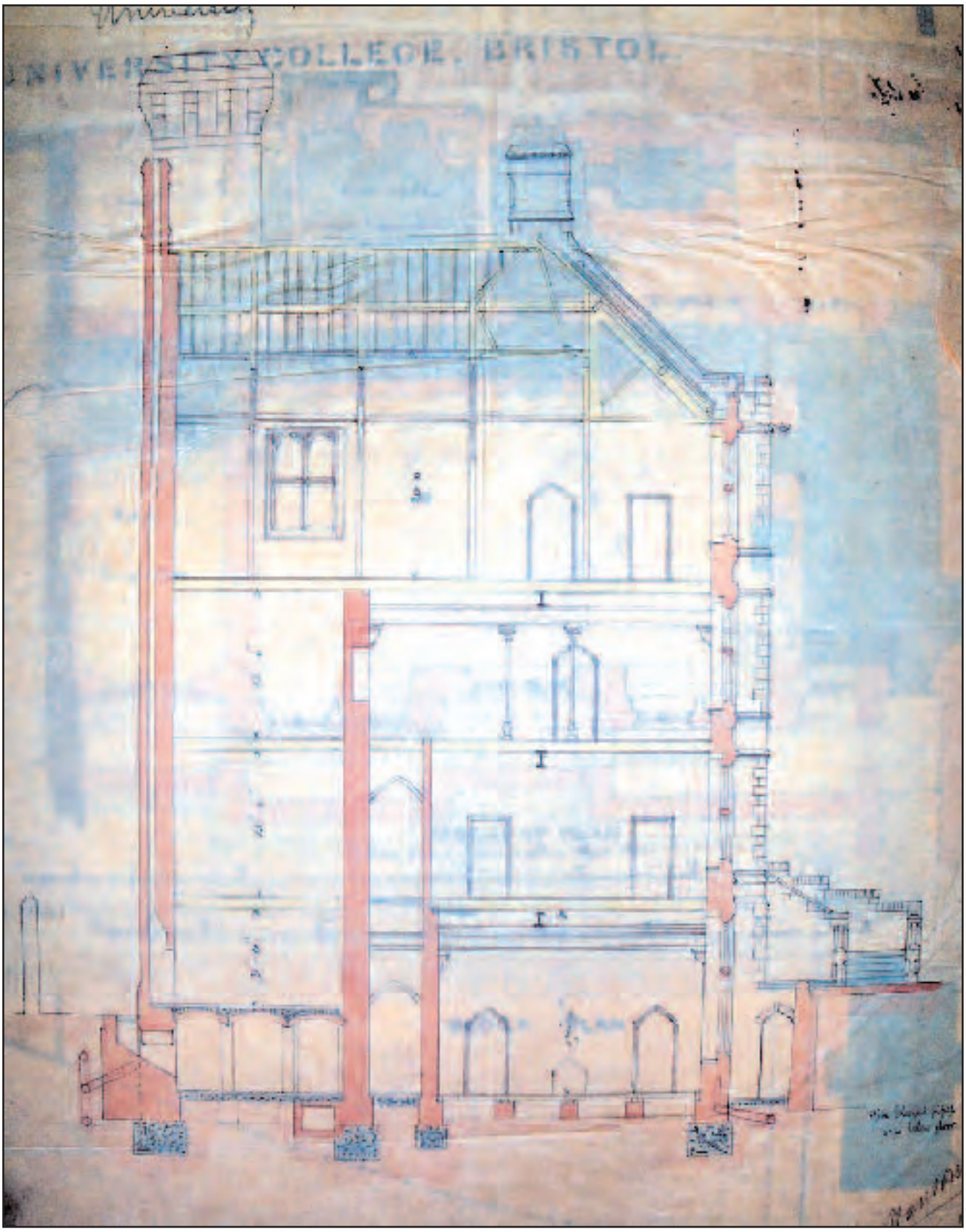


Fig.55 Block on east side of quad, 1882 - section

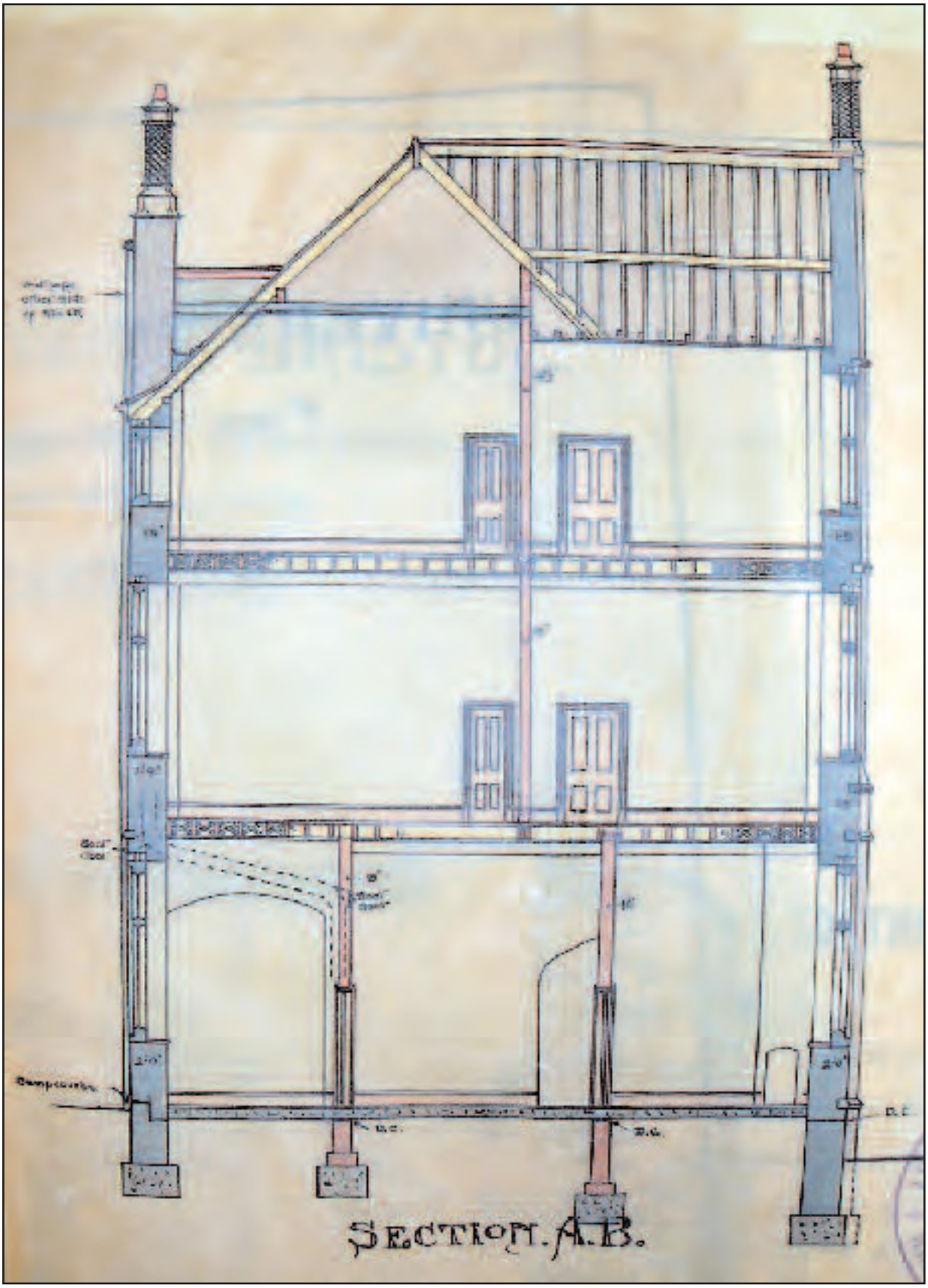


Fig.56 Extension and Fry Tower, 1904 - section

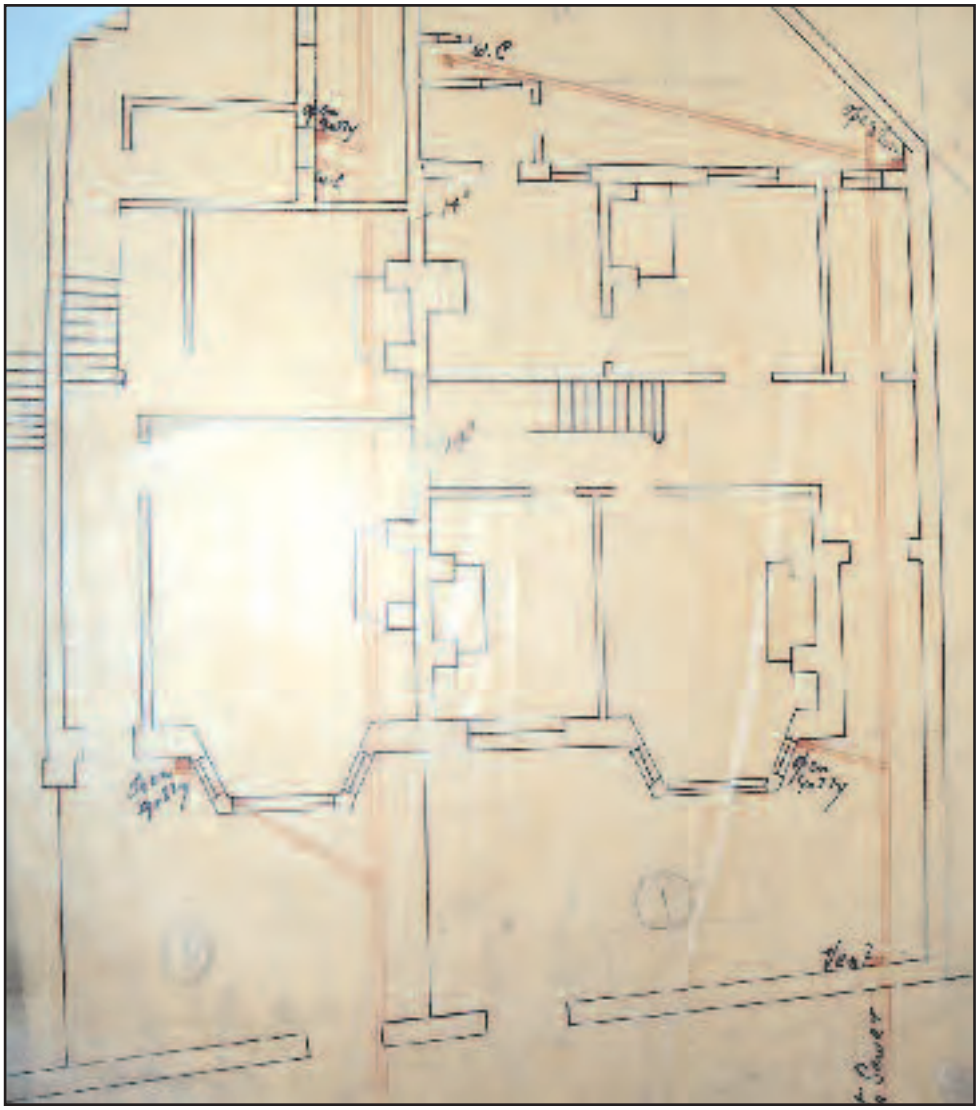


Fig.57 Ground floor plan of 99 & 101 Woodland Road, 1903

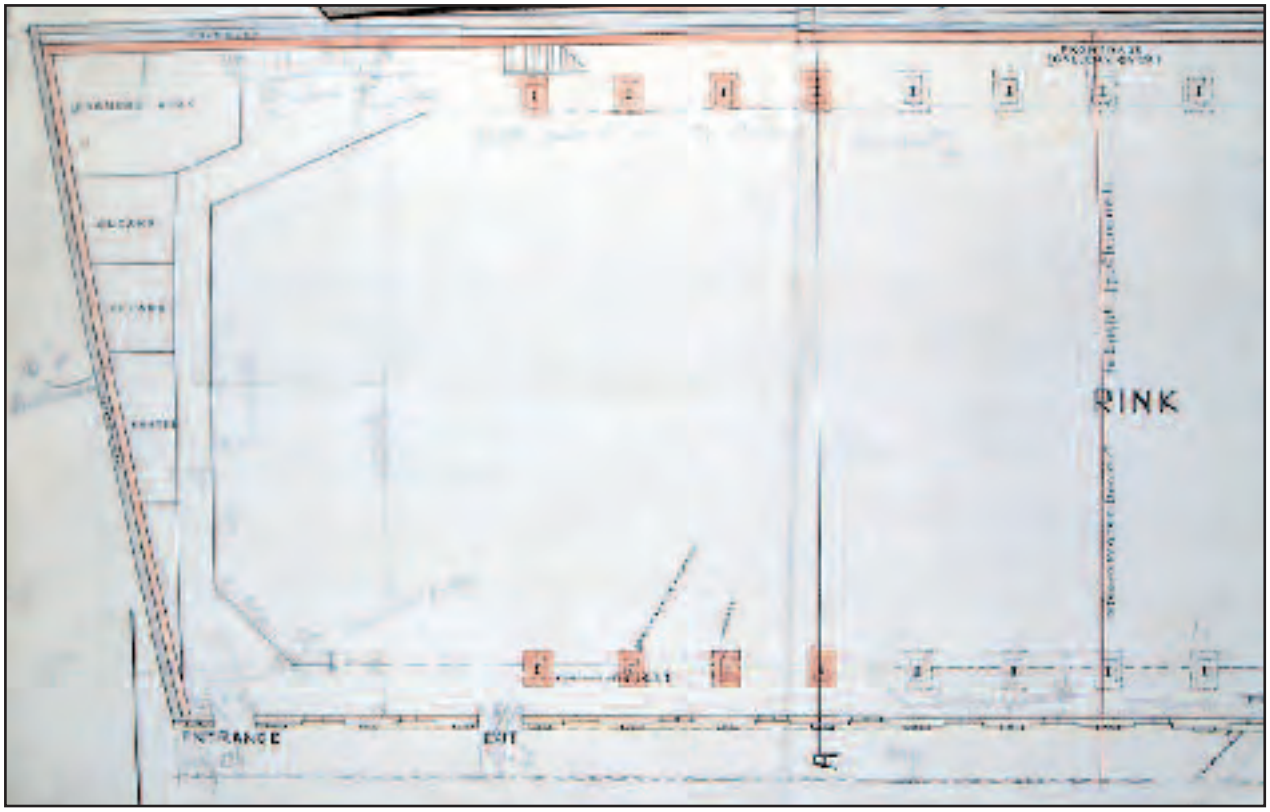


Fig.58 Coliseum, Park Row, 1910 - western end

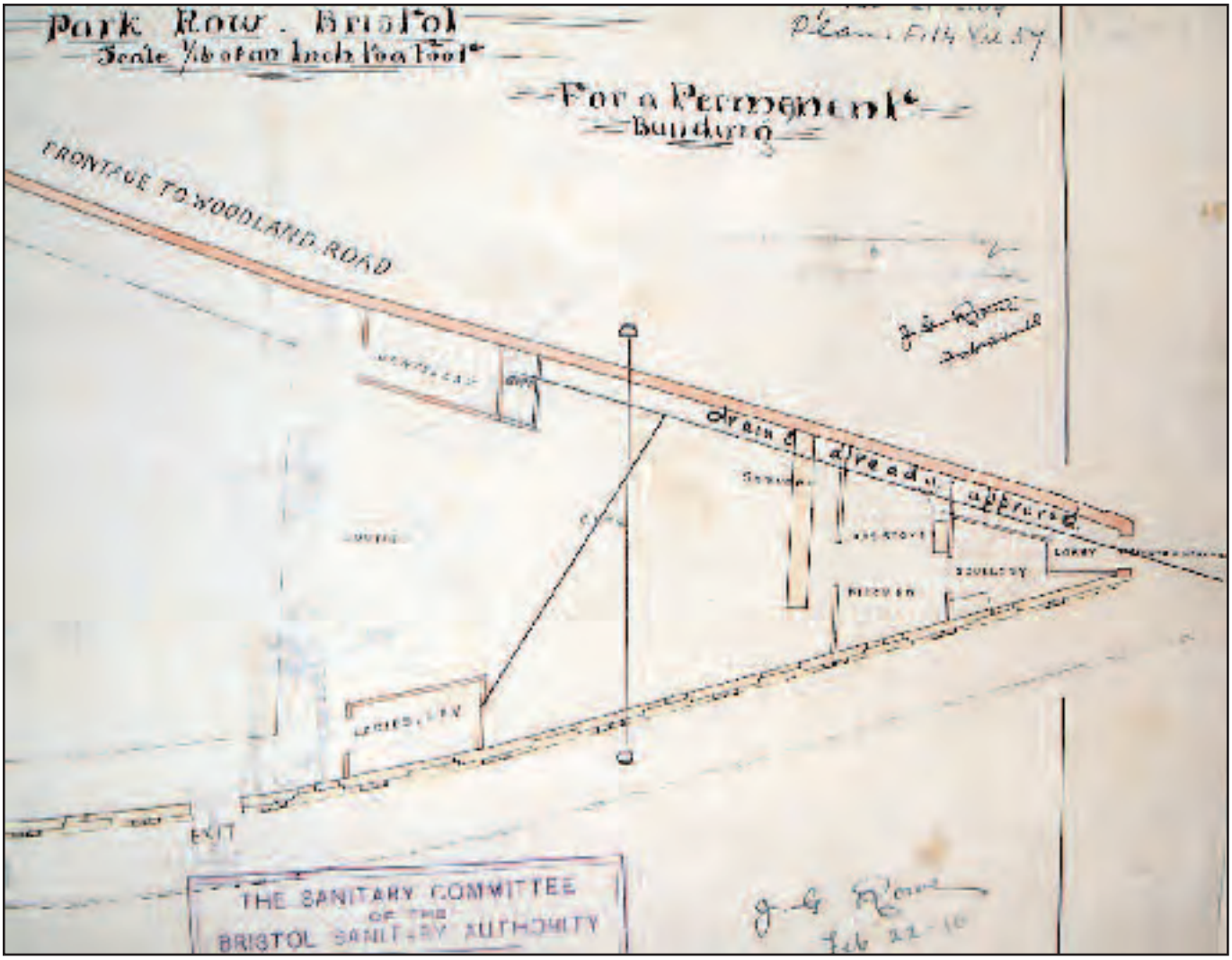


Fig.59 Coliseum, Park Row, 1910 - eastern end

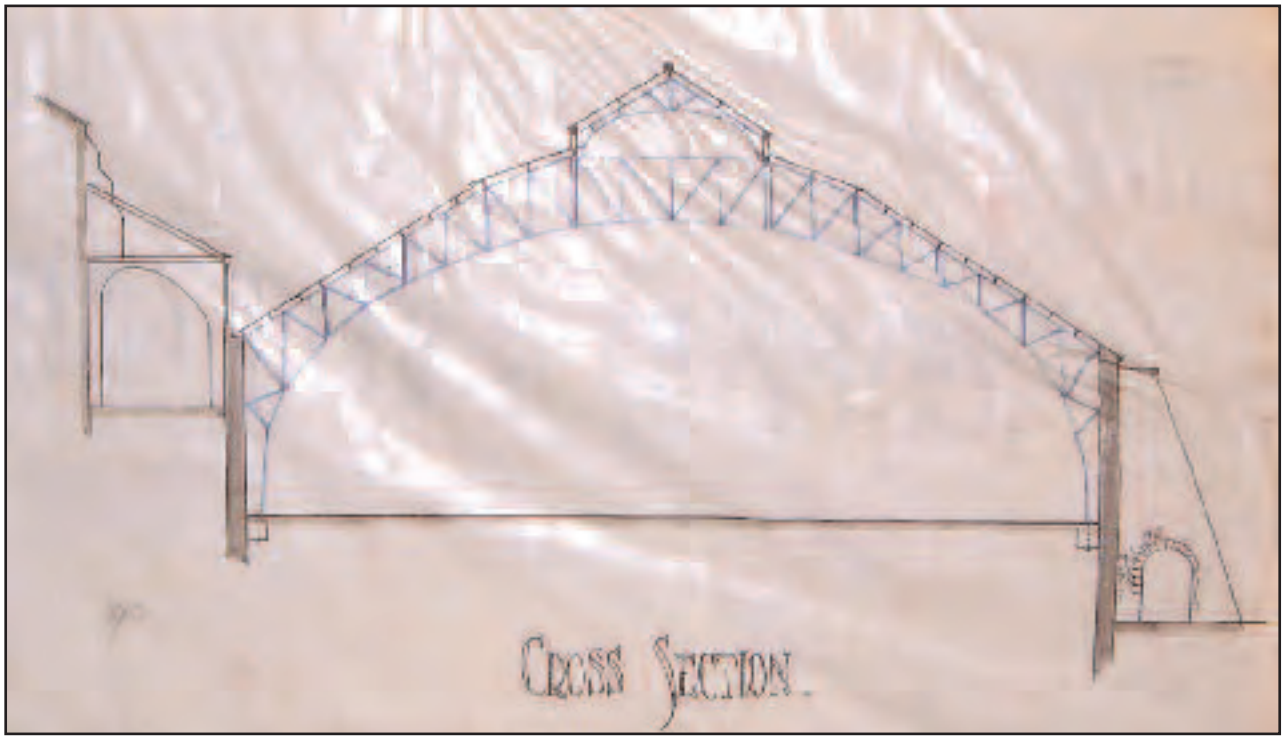


Fig.60 Section across Drill Hall, 1902

Fig.61 Vandyck Printing Works, 1911 - north-south section

Fig.62 Vandyck Printing Works, 1911 - west elevation

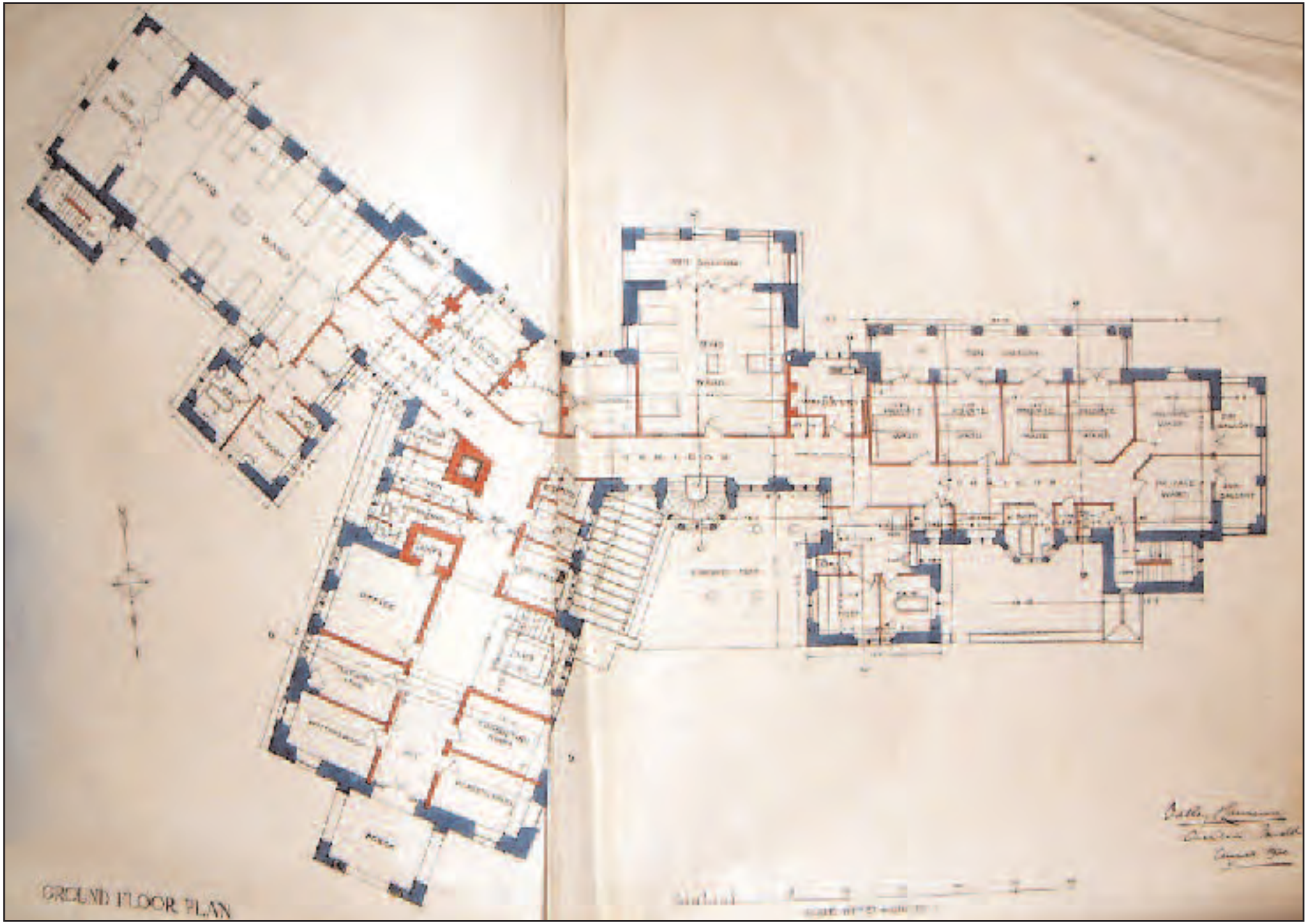


Fig.63 Homeopathic Hospital, 1920 - ground floor plan

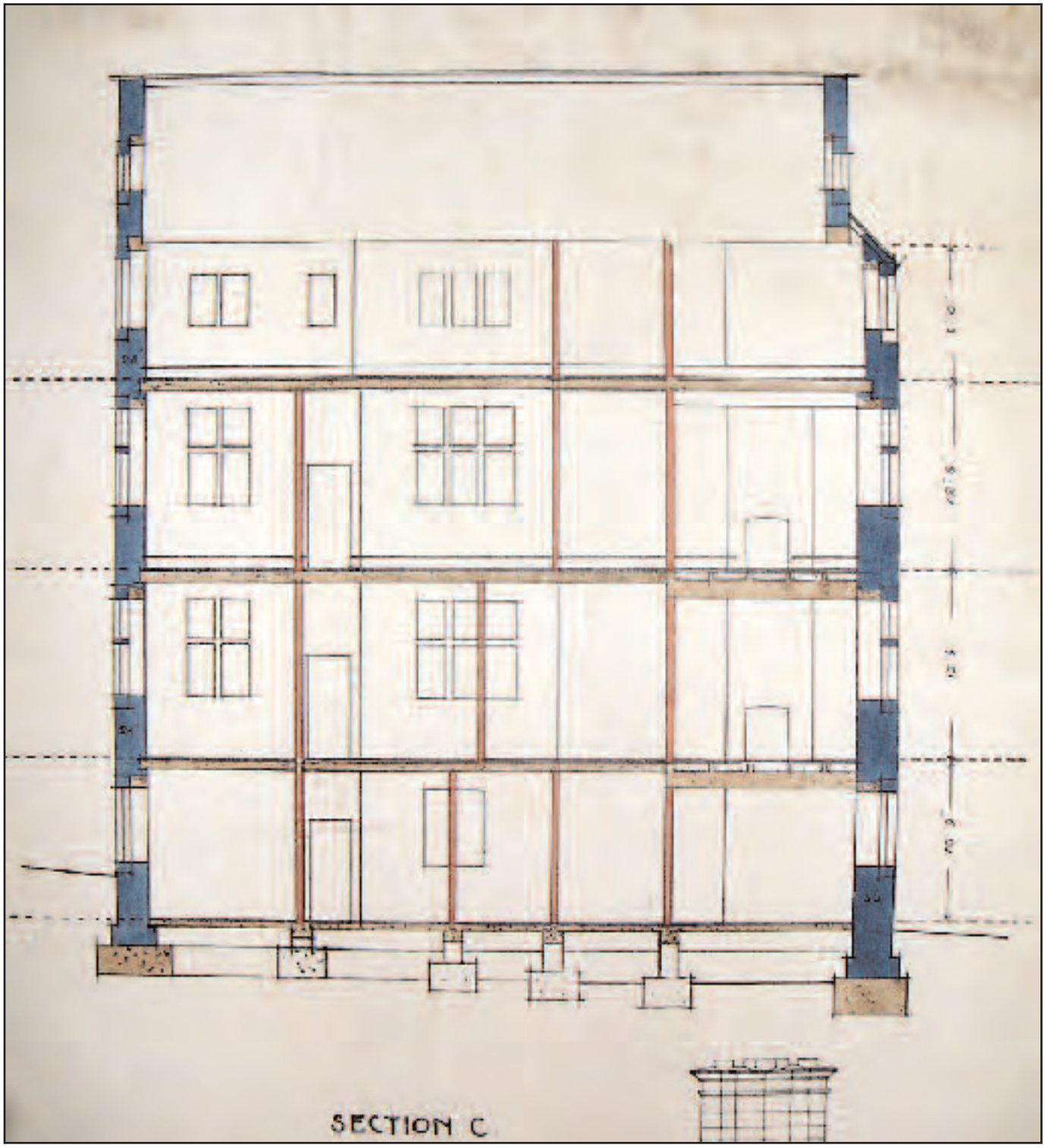


Fig.64 Homeopathic Hospital, 1920 - section C

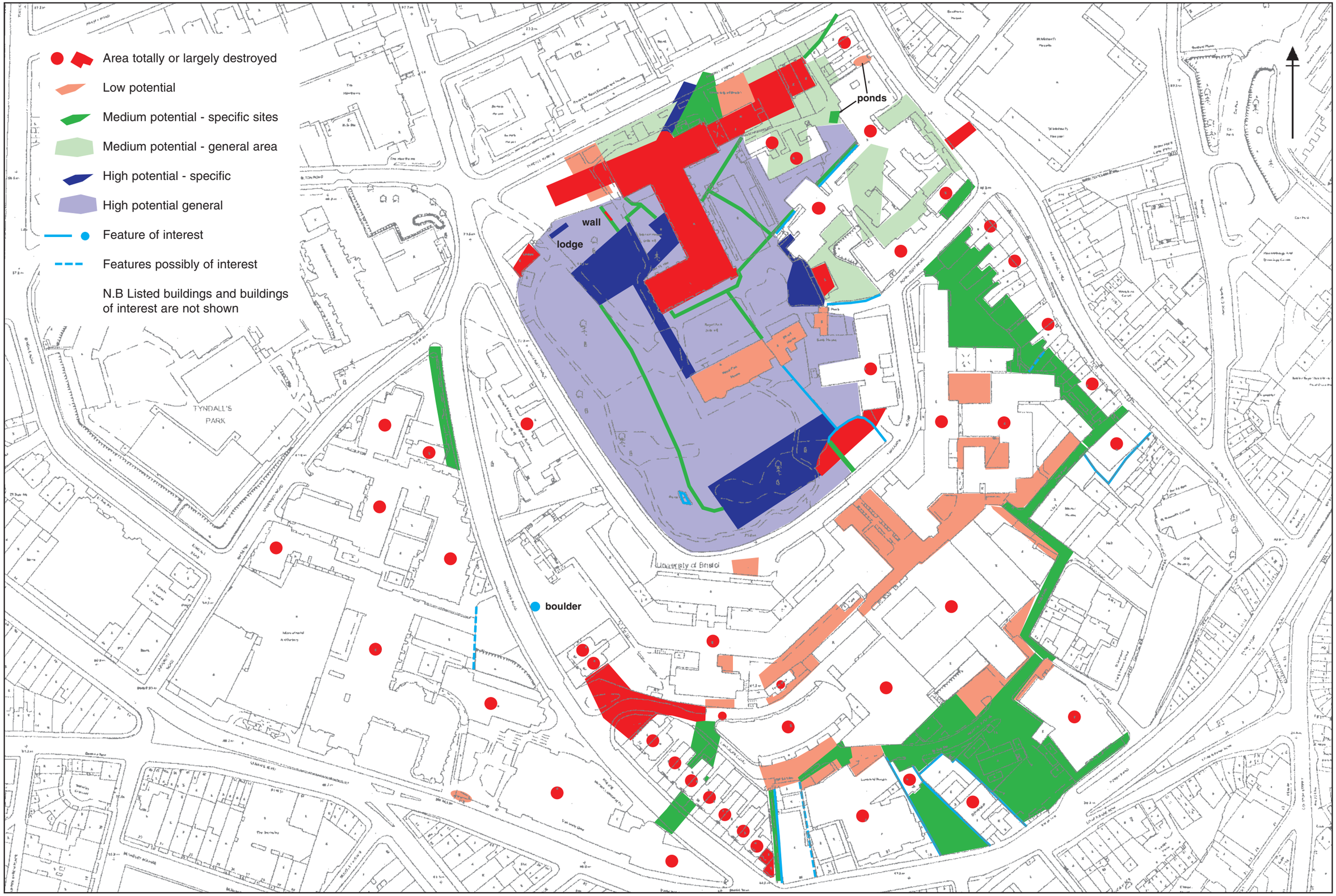


Fig.65a Archaeological potential, southern area

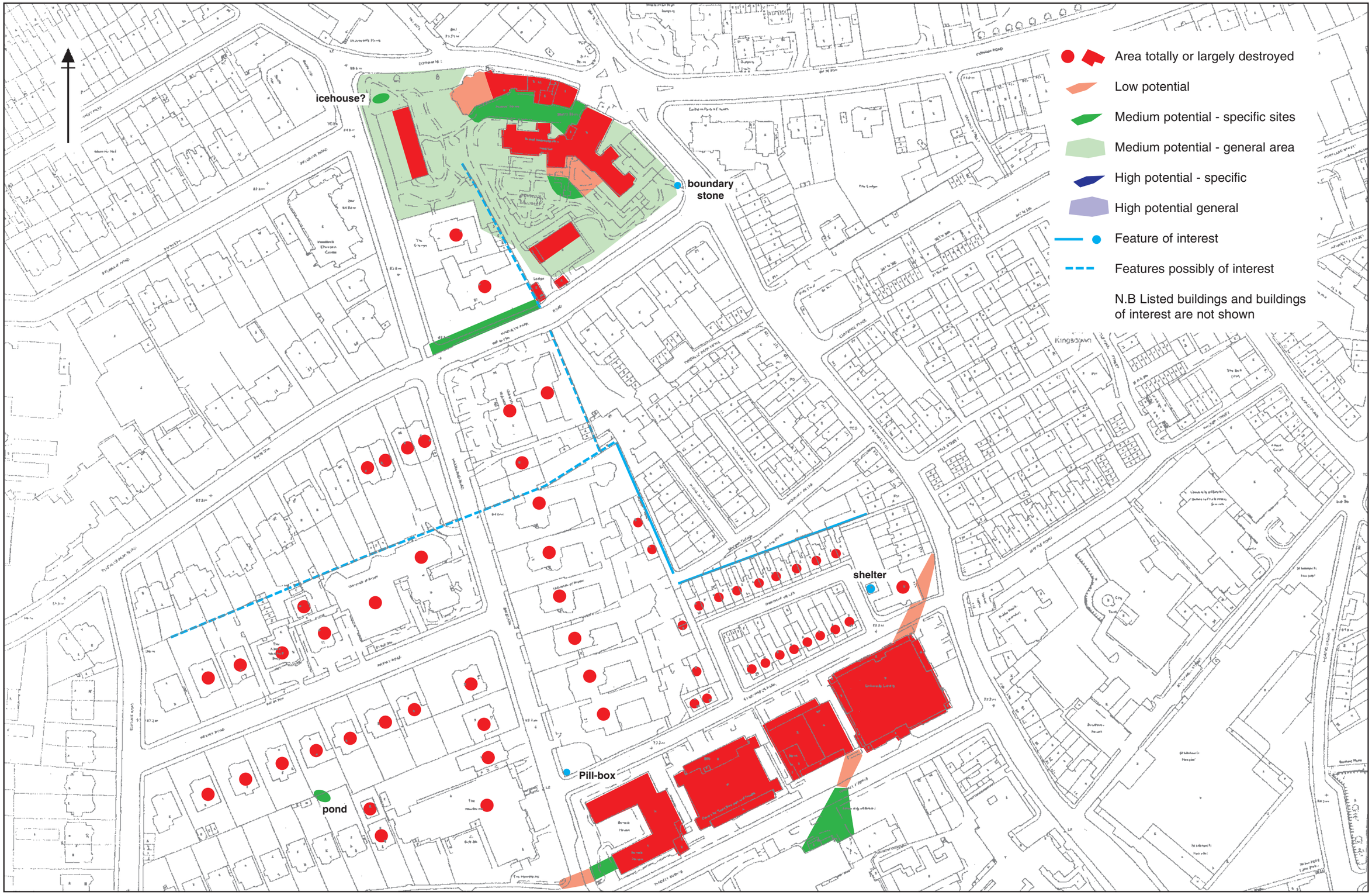


Fig.65b Archaeological potential, northern area

Plate 1 General view of University from the south-east (tower of St Nicholas)

Plate 2 Boundary stone at top of Tyndalls Park Road

Plate 3 Old walling at corner of Albert Villas

Plate 4 Remains of old wall at rear of Osborne Villas

Plate 5 Royal Fort: mound incorporating south-west bastion

Plate 6 Royal Fort: mound incorporating north-west bastion

Plate 7 Foundation of wall exposed in footpath, Wills Laboratory

Plate 8 Gateway formerly adjacent to Ivy Cottage, from south-west

Plate 9 Wall dividing Royal Fort House and Stuart House gardens, from west

Plate 10 University Walk: Royal Fort House garden wall, with blocked doorway

Plate 11 Wall on north side of Royal Fort Road

Plate 12 Wall on west side of Woodland Rise

Plate 13 Medical Avenue: old wall, from north-west

Plate 14
Medical Avenue:
old wall, from
south-east

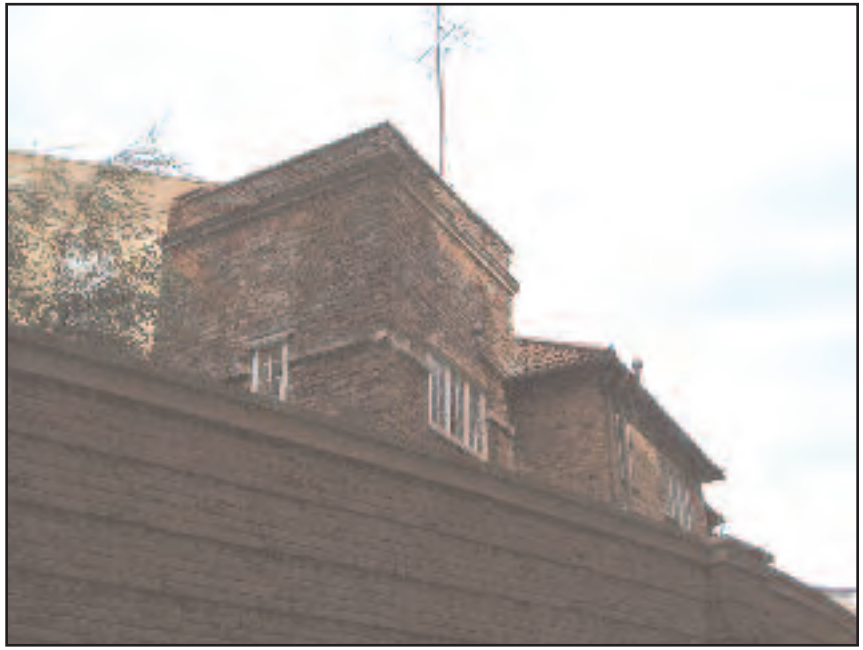


Plate 15 Tower View

Plate 16 Pillbox on corner of Woodland Road and St Michael's Park

Plate 17 Air-raid shelter behind Oldbury House

Plate 18 Boulder found at St Anne's, Brislington

Plate 19
No. 53 St Michael's Hill

Plate 20 Oldbury House

Plate 21 Oldbury House: south (side) elevation

Plate 22
Royal Fort
Gatehouse:
outside elevation

Plate 23
Royal Fort
Gatehouse:
inside elevation

Plate 24 Lunsford House, seen from site of Park Row House

Plate 25 Lunsford House: east side and rear

Plate 26 Nos. 23-35 St Michael's Hill, with the Medical School behind

Plate 27 Nos. 39-45 St Michael's Hill

Plate 28 Nos. 45-65 St Michael's Hill

Plate 29 Royal Fort House including service wing: north elevation

Plate 30 Royal Fort House including service wing: south elevation

Plate 31 Cotham House

Plate 32 West Park: south side

Plate 33 Nos. 30 & 32 Tyndalls Park Road

Plate 34 Nos. 7 & 9 Woodland Road

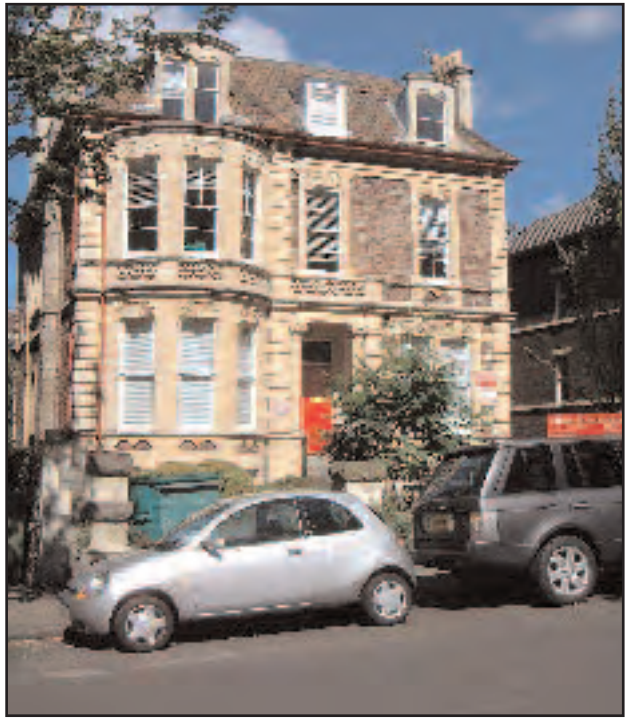


Plate 35
No. 11 Priory
Road

Plate 36 Nos. 19 & 21 Woodland Road

Plate 37 Nos. 16-20 St Michael's Park: rear elevations

Plate 38 Nos. 1, 2 & 3 Osborne Villas

Plate 39 Nos. 13-16 Osborne Villas

Plate 40 Nos. 34 & 35 St Michael's Park

Plate 41 Nos. 73-77 St Michael's Hill

Plate 42 Nos. 22 & 24 Tyndall Avenue

Plate 43 Former Children's Hospital: 1880s front building

Plate 44
The Synagogue

Plate 45
Fry Tower and north side of original quadrangle

Plate 46
Chemistry Building (1910); lower part of tower

Plate 47 Chemistry Building (1910)

Plate 48 Nos. 84 & 86 Woodland Road, Veterinary School & Queens Building

Plate 49 Woodland Road, Woodland Rise and Public Conveniences

Plate 50 Former Bristol Baptist College building

Plate 51 East end of the Coliseum

Plate 52 Coliseum: plaque recording sources of building stone

Plate 53
Coliseum: east end with statue of `Little Nipper'

Plate 54 Savory's printing works: front elevation

Plate 55 Savory's printing works: north-east (side) elevation

Plate 56 Vandyck printing works building

Plate 57 Homeopathic Hospital: south wing

Plate 58 Medical School building with St Michael's School in foreground

Plate 59 Chemistry building with St Michael's School in foreground

Plate 60 University buildings with Old Park and Old Park Hill buildings in foreground

Supplementary Planning Document Number 11

University of Bristol

Strategic Masterplan: Appendix 15

Sustainability Appraisal

May 2006

University of BRISTOL

BRISTOL CITY COUNCIL

Sustainability Appraisal

University of Bristol Masterplan SPD

University of Bristol/Bristol City Council

DATE ISSUED: May 2006
JOB NUMBER: JB2952

PREPARED BY:

Jeremy Bladon Director

Checked by

Graham Parker Director

CONTENTS

APPENDICES

If you would like this information in a different format, for example Braille, audio tape, large print or computer disc, or community languages, please contact the Strategic and City Wide Policy Team on 0117 903 6720.

1 Introduction

1.1. BACKGROUND

1.1.1. The University Masterplan Supplementary Planning Document 11 (SPD), will upon adoption, support the Bristol Local Plan (adopted December 1997) by providing supplementary guidance and setting out in greater detail the University's and the Council's approach to development within the University precinct area over the next 10 – 15 years.

1.2. NON-TECHNICAL SUMMARY

1.2.1. Sustainability Appraisal (SA) is a process used to assess the environmental, social and economic effects of plans and programmes. This report explains the SA process undertaken to evaluate the University Masterplan and the outcomes of the process.

1.3. SUMMARY AND OUTCOMES

1.3.1. The overarching objective of the Masterplan is to provide the University with a clear framework for development of their estate over the next 10 – 15 years.

1.3.2. Recent government guidance is explicit that SPD should be developed on the basis of a Sustainability Appraisal. In other words, an integral part of the process of preparing the Masterplan should include reference to, and testing of, the Masterplan's objectives against sustainability targets and objectives.

1.3.3. This report concludes that, overall, there will be a moderate positive effect on sustainability through the implementation of the University Masterplan.

1.4. HOW TO COMMENT ON REPORT

1.4.1. Comments on this SA can be forwarded to Jeremy Bladon, CSJ Planning, 1 Host Street, Bristol, BS1 5BU or by email to jb@csj-planning.co.uk.

1.4.2. A six week consultation period was undertaken between the 28 November 2005 and the 9 January 2006.

2 Appraisal methodology

2.1 PURPOSE OF THE SUSTAINABILITY APPRAISAL

2.1.1 The Planning and Compulsory Purchase Act 2004 (section 39) requires Local Development Documents to be prepared with the objective of contributing to the achievement of sustainable development.

2.1.2 A widely used definition of sustainable development is that which was drawn up by the World Commission on Environment and Development in 1987 (The Bruntland Commission):

> *"Development that meets the needs of the present without compromising the ability of future generations to meet their own need."*

2.1.3 In September 2004, the ODPM (now the Department for Communities and Local Government) provided draft guidance on SAs in a consultation paper "Sustainability appraisal of regional spatial strategies and local development frameworks". The guidance recommends that SAs are produced for future SPDs.

2.1.4 The Masterplan for the University falls within the definition of a SPD.

2.1.5 The ODPM (now the Department for Communities and Local Government) guidance defines a sustainability appraisal as:

> "*An iterative process that identifies and reports on the likely significant effects of a plan and the extent to which implementation of a plan will achieve the social, environmental and economic objectives by which sustainable development can be defined."*

2.1.6 Therefore, in accordance with the guidance, the purpose of this SA is to appraise the social, economic and environmental effects of the University Masterplan.

2.2 APPROACH

2.2.1 The SA and the Masterplan have been prepared in tandem in order to ensure a free crossflow of information throughout the process. This has informed the design

team when assessing options for the improvement and regeneration of the University precinct and how to deal with the very different areas that it contains.

2.2.2 The methodology adopted in this SA follows the guidance provided by ODPM (now the Department of Communities and Local Government), where applicable. The method is essentially objectives-led, with clearly articulated sustainability objectives used to test the main Masterplan objectives.

2.2.3 The Masterplan and sustainability objectives and criteria are the key starting points, since the former define all that is to be achieved in the SPD whilst the latter act as a benchmark of the likely performance of the SPD in sustainability terms. The assessment has enabled the team to judge the extent to which the Masterplan will contribute to the achievement of sustainable development and has enabled the plan to be improved through an iterative process.

2.2.4 The report also identifies areas where monitoring will be required.

2.3 PREPARATION OF THE SA AND CONSULTATION

2.3.1. There has been extensive stakeholder consultation throughout the preparation of the SPD, from September 2003 to date. A separate Statement of Community Involvement was produced in February 2005 by the Avril Baker Consultancy and is included in Appendix 3 of the Masterplan. Further consultation was carried out in conjunction with Bristol City Council between November 2005 and January 2006.

2.3.2 Led by CSJ Planning, work on the sustainability appraisal has been ongoing since the passing of the 2004 Act. During the first phase of the work, the higher and lower level objectives for the Masterplan were clarified and tested against defined sustainability criteria. This enabled the SA scoping report to be published in March 2005.

2.3.3 Between March and June 2005, the design team consulted statutory bodies, the Local Planning Authority and stakeholders with an interest in the University Masterplan.

2.3.4 Following agreement on the scope and content of the SA with officers of the Strategic and Citywide Policy Team at Bristol City Council, the scoping report was submitted to statutory and non-statutory consultees on 20 June 2005. (See list at

Appendix 1) No representations were received from any of the organisations consulted.

2.3.5 Key sustainability issues raised during the stakeholder process on the University Masterplan included parking, transport, crime and safety, energy efficiency, waste management, combined heat and power and locally sourced materials.

3 Masterplan Objectives

3.1 POLICY BASIS

3.1.1 The University Masterplan SPD provides additional detailed guidance to supplement the relevant policies of the adopted Bristol Local Plan (1997). In particular it builds upon Policy CC4 of the Local Plan which encourages the University to focus university related development within the defined precinct and on sites outside the precinct currently in institutional or commercial use.

3.1.2 The explanatory text accompanying Policy CC4 seeks to ensure that new development within the University precinct:

- Retains existing buildings and features that contribute to the area's character and, where necessary, secure the enhancement of their setting.
- Is of sympathetic design.
- Improves the pedestrian environment, increases safety and security, landscaping and traffic calming and reduces the visual impact of parked cars.
- Creates a lively, active environment outside academic hours.

3.2 OBJECTIVES

3.2.1 The key objective of the Masterplan is to provide the University with a clear framework for the development of their estate over the next 10 – 15 years.

3.2.2 Under this overarching objective, the following five operational objectives have been identified:

1. **To Deliver an Improved Physical Environment**:

1a By conserving and enhancing the historic environments and landscapes.

1b By concentrating University activity within the precinct.

1c By addressing empty plots and by rationalising the University's use of existing plots.

1d By creating first class new buildings which complement and enhance both the streetscape of the Conservation Areas and contribute toward distant views of the University skyline.

1e By increasing the social focus of the University into the evenings, thereby creating a safer environment.

2. **To Create a Better Mix of Spaces in the Central Precinct Areas**

2a By improving relationships between the existing and new Academic Departments.

2b By enlivening the public realm.

2c By creating a 'sense of place' which can be identified as the University.

2d By creating new facilities which are flexible for future needs.

3. **To Create Better Accessibility across and throughout the University**

3a By providing new routes and connections to improve permeability.

3b By reducing the impact of cars within the precinct and creating a balance between people and vehicles.

3c By promoting the use of sustainable forms of transport.

3d By introducing safe, accessible and legible routes in and around new development.

4. **To Design for a Sustainable Future**

4a By promoting the use of the latest green technologies and materials within new buildings.

4b By incorporating long life, loose fit principles within the design of new buildings.

4c By creating a robust financial future for the University.

4d By setting design codes for future development which will ensure that all proposals will be of a high quality and will read as part of the cohesive whole.

5. **To Create Better Relationships between the University and Neighbouring Communities**

5a By providing integration between the University and its neighbours.

5b By creating economic links between the University and local companies.

5c By providing access to the wider community through access to university accommodation and facilities for educational, community and leisure activities.

4 Sustainability objectives, base line and context

4.1 LINKS TO OTHER STRATEGIES, PLANS AND PROGRAMMES AND SUSTAINABILITY OBJECTIVES

4.1.1 When carrying out a SA regard has to be had to specific objectives and principles relating to sustainable development as outlined in International, European and National level guidance.

4.1.2 A number of Plans and Programmes are highly relevant to the formulation of the Masterplan, all of which are interrelated to a certain degree. The following have been identified:

4.2 NATIONAL POLICIES

The UK Strategy for Sustainable Development – 'A Better Quality of Life 1999'

4.2.1 The objective of this strategy is to enhance social progress which recognises the needs of everyone, provides effective protection of the environment, maximises prudent use of natural resources and maintains a high and stable level of economic growth and employment.

Planning and Compulsory Purchase Act, 2004

4.2.2 This sets out the framework for Planning Policy and Development Control.

Planning Policy Statement 1: Creating Sustainable Communities, 2004

4.2.3 This document sets out the Government's approach to planning and establishes sustainable development as a key principle.

PPG15: Planning and the Historic Environment, 1994

4.2.4 This sets out Government policy on the protection and enhancement of the historic environment and buildings within it.

By Design, Better Places to Live – A Joint DTLR and CABE publication 2001

4.2.5 This document sets out the principles of urban design in the context of the Government's objective to maximise the use of previously-developed land.

4.3 REGIONAL POLICIES

Regional Planning Guidance for the South West – RPG10 (2001).

South West Regional Environment Strategy, 2004.

4.3.1 These documents provide a sustainable development framework for the South West Region and provide a framework for other key regional and sub-regional policies.

4.4 LOCAL POLICIES

Joint Replacement Structure Plan adopted 2002

The Bristol Local Plan adopted 1997

Indicators of the Quality of Life in Bristol

4.4.1 The above policies are specifically relevant to the production of the Masterplan and have been used to check the Masterplan against sustainability objectives and issues under the broad headings of environment, social and economic issues.

4.4.2 Table 4.1 sets out the identified plans and programmes and their key requirements.

TABLE 4.1 – KEY PLANS AND PROGRAMMES RELEVANT TO SPD

KEY OBJECTIVES RELEVANT TO SPD AND SA	KEY TARGETS AND INDICATORS RELEVANT TO SPD	IMPLICATIONS FOR SPD	IMPLICATIONS FOR SA
UK strategy for sustainable development			
Enhance social progress which recognises needs of everyone.	Monitor engaged University strategy and widening participation.	Provide opportunities for educational excellence.	Ensure that Master Plan is inclusive.
Provide effective protection of the environment.	Monitor Master Plan implementation on public realm/bio-diversity.	Objectives must enhance quality of environment in and around University precinct.	SA objectives should reflect need to protect environmental quality of area whilst integrating change.
Prudent use of natural resources.	Monitor CO^2 emissions, energy and water management programme and Fair Trade.	Provide opportunities for sustainable building techniques and materials and renewables.	Ensure sustainability objectives reflect need to utilise sustainable materials and energy sources where possible.
High and stable level of economic growth and employment.	Monitor commercial spin off opportunities, University turnover and level of Graduates.	Provide high standards of educational facilities, highly skilled graduates and employment opportunities.	Allow education and future educational resources to flourish.

Planning and Compulsory Purchase Act 2004			
Provides legal framework for Development Control and Planning Policy Statements.	N/A	Sustainability enshrined as a core objective in land use planning.	Objectives to reflect need for sustainability to be evaluated within each part of Master Plan.
PPS1: Creating Sustainable Communities			
Make suitable land available for development in line with economic, social and environmental objectives.	Monitor use of previously-developed land.	Better use of existing land and buildings within the urban area.	Follow principles of PPS1.

Contribute to sustainable economic developments.	N/A	Provide enhanced facilities which in turn provide skilled graduates to a local economy.	Provide the conditions for the University to improve facilities and retain/expand links within local economy.
Protect and enhance the natural and historic environment.	N/A	Enhance the existing environment where possible, through high quality redevelopment and improvements to the public realm.	Include objectives that allow for environmental improvements and redevelopment whilst protecting historic environment.
Ensure high quality development through good design and efficient use of resources.	Test against BREEAM. Monitor locally sourced materials.	Where development is appropriate, ensure high quality design and efficient use of resources.	Include SA objectives on sustainable building techniques and materials.
PPG15: Historic Environment			
Conservation and sustainable economic growth are compatible objectives.	N/A	Make best use of existing important buildings where possible.	Reflect this in SA objectives.
Listed Buildings should be protected unless full justification for removal can be proved.	N/A	Justification for demolition in the context of the Master Plan required.	Redevelopment may provide sustainability benefits in certain instances.
Enhancement of Conservation Areas is central to their future preservation.	N/A	Provide framework for enhancement of Conservation Area.	SA objectives reflect need for enhancement.
By design, better places to live			
Character – Providing a place with its own identity.	N/A	Improve the sense of place associated with the University.	Provide SA objective on use of area.
Continuity and Enclosure – Clearly distinguished public and private spaces.	Monitor legibility programme. Improve permeability.	Improve relationship between public and private spaces.	Provide legibility between spaces.
Quality of public realm.	N/A	Enliven the public realm.	Encourage use of public realm.

Ease of Movement – A place that is easy to get to and move through.	N/A	Provide new routes and connections.	Encourage pedestrian and cycle movements.
Legibility – A place that has a clear image and is easy to understand.	N/A	Provide new routes and connections thereby improving permeability	Encourage pedestrian and cycle movement and provide appropriate signage.
Adaptability – A place that can change easily.	N/A	Provide long life, loose fit principles to the design of new buildings.	Encourage adaptation of buildings in the future.
Diversity – A place with variety and choice,	N/A	Concentrate University activity within the precinct.	Create an easily accessible core area of activity.
RPG10 – South West			
Provide high and stable levels of growth and employment.	Numbers employed. Student numbers.	Provide high standards of educational facilities, highly skilled graduates and employment opportunities.	Allow education and future educational resources to flourish.
Promote enterprise and innovation; raise the level of skills.	Adult education numbers graduate/postgraduate outturn. Commercial spin-out opportunities. University turnover	Invest in University facilities and centres of excellence.	Promote sustainable growth of University.
Ensure that development makes the most prudent use of resources created through past investment.		Rationalisation of existing buildings and plots and build upon current departmental linkages.	Renew and adapt the existing environment where possible and appropriate whilst providing new facilities where it provides better, more sustainable use.
Minimise waste and pollution.	Monitor CO_2 emissions provide re-cycling.	Minimise resource consumption and provide facilities for recycling.	Include sustainability objectives that promote conservation of resources.

Promote and enable focused economic development in ways and locations where it can best contribute to meeting local, regional and national needs.	N/A	Provide improved and new facilities that create the research and graduates that will then contribute and sustain the regional/national and local economy.	Provide objectives that facilitate economic development.
New and improved central urban facilities (Policy SS8).	N/A	Retain the University within the heart of the urban area of Bristol and renew and improve its facilities.	Provide objectives that facilitate renewal whilst improving sustainability.
Bristol Local Plan 1997			
Policy CC4 – University development for academic and ancillary uses will be permitted. Continued growth of University welcomed.	N/A	Produce a framework for growth to take place.	SA objective should reflect Policy CC4.
Policies B1 – B10 – High quality design which integrates well with its context; maximises pedestrian accessibility and minimises car movements.	N/A	Provide opportunities for walking, cycling and reduced use of motor vehicles. Create framework for high quality detailed design to come forward.	SA objective to reduce dependence on car and promote alternative modes of transport.

Joint Replacement Structure Plan			
Policy 1 lays down the sustainability objectives including:		Incorporate these objectives into the Master Plan framework.	Provide SA objectives that reflect these sustainability objectives.
• Maximising efficient use of brownfield land. • Creating integrated transport system. • High quality urban and			

detailed design. • Re-using existing buildings/ • Create sustainable communities. • Maximise access to cultural, leisure and community facilities. • Community involvement. • Maximise opportunities for local businesses labour and training.			

Indicators of the quality of life in Bristol			
Improve Energy Efficiency	Carbon Dioxide Emissions. Improve Energy Conservation.	Improvements to energy efficiency within re-use of buildings and new construction.	SA objective to monitor energy efficiency and carbon dioxide emissions.
Reduce Air Pollution.	Reduce car usage.	Accessibility; Green Travel Plan.	SA objective to improve conditions and monitor.
Re-use empty buildings	Re-use of buildings through refurbishment where possible.	Maximise use of existing buildings.	SA objective to improve and re-use existing buildings where appropriate.
Use Brownfield Sites	Maximise densities	Re-use of brownfield sites more efficiently.	SA objective to maximise efficient use of urban brownfield land.
Protect/enhance local distinctiveness	Meet criteria laid down in PPG15 – the Historic Environment and Local Plan Policies	High quality design within an agreed urban design framework.	Maximise use of land.
Create attractive, safe streets	Environmental improvements linked to traffic calming measures.	Implementation of improvements to public realm.	Encourage other modes of transport to the motor vehicle.
Reduce need to travel	Monitor usage of modes of transport. Reduce car parking.	Concentrate activities in urban area.	Reduce reliance on motor vehicle.
Better cycling, pedestrian facilities.	% of students/staff walking or cycling to work/study.	Provide improved cycle facilities and increase permeability. Concentrate activities.	

Waste minimisation.	% recycled; awareness campaigns	Provision of waste management facilities.	Reduce, re-use and recycle.
Improve economic growth	Increased employment opportunities at University.	Investment in building fabric and research/teaching facilities.	Effect on University on local economy.
Create a vibrant local economy	Expenditure into and involvement in the local economy.	Create facilities that are relevant and utilised by local people.	Investment in facilities and space.
Increase the opportunity for lifelong learning.	Courses available.	New and extended facilities.	Provide opportunities for lifelong learning.
Opportunities for culture, leisure and recreation are available.	Improve permeability increase public events.	Investment in facilities within University precinct and easily accessible to facilities elsewhere in City centre.	Provide opportunities for wider community.

Reduce crime and fear of crime.	Continue to monitor crime with local police.	Improve permeability, use of public realm, lighting and security.	Provide safer public realm.

4.5 SOCIAL, ENVIRONMENTAL AND ECONOMIC BASELINE CHARACTERISTICS

4.5.1 The University has an extensive and sophisticated planning and monitoring regime over a whole host of activities and issues. These include the following.

The University Plan

4.5.2 The University Plan is updated every year. This provides the overall vision for the University and the ways in which this vision is fulfilled. It includes research and teaching performance.

Energy and Environmental Management Unit (EEMU)

4.5.3 This Unit provides policy and monitoring for a whole range of environmental issues that impinge on the University's daily life. This includes monitoring of waste and recycling, $C0_2$ emissions, transport issues, environmental purchasing, education and awareness of the environment, and use of resources.

4.5.4 A wide range of initiatives have been put in place, to which the University Masterplan will contribute through its implementation. The Unit currently invests some £250K on energy conservation schemes each year.

University of Bristol Transport Plan

4.5.5 This is a living document which lays out policies on travel and parking and ways in which more sustainable modes of transport can be utilised. The initiatives are monitored by the Unit and are updated on a yearly basis.

University Annual Report

4.5.6 This provides monitoring data on financial performance, undergraduate admission, graduation and student destination data and staff numbers.

University Financial Report

4.5.7 This provides information and monitoring on total turnover, research income, teaching income and enterprise income.

Estates Reports

4.5.8 These provide annual reports and monitoring on crime statistics, space efficiency and utilisation, gardens and ground units (including an ecological diversity report).

Research and Enterprise Development

4.5.9 This provides information on commercial spin out activity.

Widening Participation Annual Report

4.5.10 This provides statistics on student admission and participation and links with local schools.

Public Programmes office

4.5.11 This provides an annual report on adult education activities undertaken.

Other data

4.5.12 In addition to the above, the SA has utilised published baseline data available to Bristol City Council. In particular it has utilised relevant indicators selected from the Annual Quality of Life Survey.

4.5.13 Also, a number of studies have been undertaken specifically as part of the Master Plan. These include:

- An analysis of the physical and social and architectural context within which the University sits.
- The wider context within which the University is located and its urban context.
- An analysis of existing movement and transportation.
- An analysis of the landscape and urban realm currently associated with the University precinct.
- A review of Planning and Development Control issues.
- Economic and social indicators related to the University and its impact on the local economy and local communities.

- Assessments of Potential for Development for The Royal Fort Lodge Site and The Hawthorns.
- Historic Buildings Assessment – Former Childrens Hospital.
- Tall Buildings.
- Archaeological Report.

4.5.14 The indicators associated with the above are included within the SA framework objectives.

4.5.15 These reports and studies are contained within the Appendices to the Masterplan or the Contextual analysis contained within the Masterplan.

4.5.16 Key issues of relevance to sustainability include the following:

- The need to increase the variety of uses within the heart of the University precinct thereby encouraging more activity in this area, particularly at night.
- The need to improve permeability through the precinct and into the surrounding city neighbourhoods.
- The continuation of the University's strategy to reduce the use of the motor vehicle, encourage the use of public transport and bus shuttles as well as walking and cycling.
- The enhancement of the public realm and the encouragement of habitat creation.
- The need for all proposals brought forward to meet six principal policy tests including sustainability.
- The assessments for potential development sites had as a core objective the need to design for sustainability. This includes providing flexible and accessible accommodation, minimising energy consumption and optimising building footplate dimensions.

- Building Assessments have been provided for a series of buildings of historical and/or architectural interest within the study area (agreed between English Heritage, Bristol City Council and the team). The assessment methodology was also agreed and are based upon English Heritage best practice. These studies highlighted the importance of the historic built environment in identifying redevelopment opportunities.

4.5.17 The objectives concerning the preservation and enhancement of the historic environment and sustainability will require careful consideration when individual planning applications come forward.

4.6 UPDATING THE BASELINE DATA

4.6.1 As stated above the University has a sophisticated monitoring and research capability and updates its plans, including environmental, social and economic, on an annual basis. This is supplemented by ongoing monitoring of specific indicators.

4.6.2 Supplementing this is the City Council's Quality of Life Survey which is also updated on an annual basis.

4.7 Agreed Selected Monitoring Indicators

4.7.1 Agreement has been reached between the University and Bristol City Council that selected indicators will be used to provide information to the City Council on a bi-annual basis which relates to the monitoring of the five key objectives laid out in Section 3 of the Sustainability Appraisal. This monitoring will help to assess the effectiveness in achieving these five key objectives.

4.7.2 Objectives 1 and 2 have been integrated for the purposes of monitoring. This is due to the monitoring indicators having relevance to both of these objectives in terms of monitoring. It is proposed that the following indicators are utilised.

- The use of crime statistics which can be provided through the University's Estates Report.
- The monitoring of space efficiency and utilisation, again provided by the University's Estates Report.

- The monitoring of comments from English Heritage and Urban Design Officers on individual planning applications coming forward. Jointly monitored by the University and Bristol City Council.
- The production of a photographic record of key vistas on a bi-annual basis. The baseline local views for this exercise are provided in Appendix 13, Urban Landscape and External Realm, page 25 – 29 of the Masterplan.
- Monitoring of the Faculty diagram provided on page 13 of Section 1 of the Masterplan and the Phasing diagram provided on page 86 of Section 5 of the Masterplan.

4.7.3 The Estates Report, 2006 and Appendix 13 are to be used as baseline indicators.

4.7.4 Objective 3 will be monitored through the following indicator.

- The changes and monitoring of modal shift and modal share information.

4.7.5 This can be extracted from the University's Travel Plan, using the 2005 Travel Plan Survey as a baseline indicator. Currently the Travel Plan is informed by a travel survey of staff, but the next travel survey Planned for 2007 will include under graduate and post graduate students.

4.7.6 Objective 4 will be monitored through the updating and monitoring of CO^2 emissions and energy consumption. This will be done on a bi-annual basis and the information will be extracted from the EEMU report using the 2006 report as the baseline indicator.

4.7.7 Objective 5 will be monitored through the provision of information on initiatives undertaken by the University with the immediate community. The Statement of Community Involvement contained within Appendix 3 will be used as the baseline indicator, as this contains comments made by residents/stakeholders at the start of the consultation process covering a range of issues associated with the activities of the University and their relationship with neighbouring communities. In addition, the University will provide information on the use of University facilities by the local community, and indeed the community at large.

4.7.8 The above information will be compiled and provided to the City Council on a bi-annual basis from the date of adoption of the SPD.

5 The Sustainability Appraisal Framework

5.1 INTRODUCTION

5.1.1 The SA Framework consists of objectives which may be expressed in the form of targets, the achievements of which will be measurable using identified indicators. Although the sustainability objectives are distinct from the objectives of the Masterplan, they do, of course, overlap.

5.1.2 The University Masterplan has relied on the policy objectives laid down for sustainability within the regional and local planning policy framework. These have been discussed, and agreed, with Bristol City Council. Where appropriate, targets and indicators have been identified against which the objectives can be tested.

5.1.3 Under the headings of Environmental, Social and Economic SA Objectives, the following have been identified with appropriate indicators or targets. The indicators or targets are provided after each objective. These have also been tested against the Masterplan objectives providing the commentary below. A matrix of the objectives is provided in Section 7.

5.2 ENVIRONMENTAL RESPONSIBILITY

Objective 1 - To improve air quality minimising carbon dioxide production from all aspects of construction, management and occupation, including transport.

5.2.1 The University spends £4.2m on energy and water per annum which releases 39,000 tonnes of carbon dioxide. There is a host of initiatives taking place to reduce this including Emissions Trading, Awareness raising, energy and water saving projects and Building Energy Management System (BEMS).

5.2.2 Monitoring and targeting is undertaken by the University's Energy and Environmental Management Unit (EEMU). Energy efficiency will be built into the Masterplan's implementation to reduce carbon dioxide emissions and energy consumption. EEMU monitors CO_2 emissions and invests some £250K on energy conservation schemes annually.

Objective 2 - To reduce vulnerability to flooding and sea level rise.

5.2.3 There is no direct effect on the University precinct from flooding due to height above sea level. Indirectly (1) above will contribute to a reduction in the risk of flooding elsewhere.

Objective 3 - To minimise noise and light pollution.

5.2.4 The Masterplan proposals include provision of lighting in the public realm which will utilise low lux technology. The required noise insulation will be provided in any new buildings.

Objective 4 To locate uses which generate high levels of activity in accessible locations.

5.2.5 The precinct is highly accessible given its City Centre location. The Masterplan will create a hub of activity in the precinct area.

Objective 5 To reduce motor vehicle dependency, the number and length of such journeys and increase walking, cycling and other sustainable forms of transport.

5.2.6 The University has an adopted Transport Plan which is being implemented in tandem with the Masterplan. This provides a host of initiatives and targets which are monitored consistently.

5.2.7 The Masterplan proposes reducing parking at the University by 5% during the Masterplan period. It promotes a modal shift away from single occupancy car use to increased cycle facilities and improved permeability.

5.2.8 The introduction of the Hospital and University Bus Shuttle (HUBS) along with good bus routes in the area and subsidised ticketing helps the shift away from the private car.

5.2.9 Improved cycle facilities have already been developed with the introduction of 10 – 15 locked cycle sheds, 500 cycle stands and shower facilities. A cycling allowance has been introduced for University business trips and interest free loans for the purchase of bicycles and motorbikes as well as bus and train season tickets.

5.2.10 There has been a 27% decrease in solo car use since 1998.

Objective 6 To ensure high quality and inclusive public realm (places, buildings, spaces, activity), preserving and enhancing valuable built and natural areas and features.

5.2.11 An in-depth analysis of the existing public realm has been undertaken and proposals brought forward for its improvement. These will form part of the packages of works implemented over the next 10 – 15 years, secured through Section 106 Planning Agreements tied to planning applications for individual development sites.

Objective 7 To ensure a broad based mixed use environment where appropriate.

5.2.12 The precinct proposals will introduce a further mix of uses in the area as it draws in student activity. The Masterplan area will always be a predominantly educational use area driven by teaching, research and ancillary uses.

Objective 8 To enhance biodiversity

5.2.13 An ecological walkover survey was undertaken as part of the Masterplan process. Although generally of low ecological value opportunities for habitat creation have been identified and will be implemented through the Masterplan and monitored by EEMU.

Objective 9 To ensure an efficient use of brownfield land.

5.2.14 All of the proposals being brought forward are on brownfield land and a key consideration in the redevelopment of the identified sites in the Masterplan is to make more efficient use of them, thereby providing more floorspace which is more adaptable. The target is to provide approximately 38,000 sqm (net) of new floorspace on brownfield land over the next 10 – 15 years.

Objective 10 To maximise the efficient use of energy.

5.2.15 See objective 1 above. The University is to install two Combined Heat and Power Units (CHP) in the precinct. This will reduce carbon dioxide emissions by 540 tonnes. The University has an annual programme of energy efficiency awareness and initiatives of £250K.

Objective 11 To minimise waste and maximise recycling.

5.2.16 The Masterplan will incorporate space for a recycling centre which will allow the University to handle greater quantities of waste thereby reducing the amount of waste currently created by 60% (based on 1998 figures) by the year 2010. It currently recycles some 40% of waste, which is the highest of any University in Britain. A recycling awareness scheme is run by EEMU, who also monitor waste and recycling.

Objective 12 To conserve water resources.

5.2.17 EEMU runs an ongoing energy and water management programme and monitoring regime. Water consumption has reduced by 5% since its introduction. Monitoring will continue. The Masterplan proposals incorporate sustainable drainage and water conservation measures.

Objective 13 To minimise the length of supply chains linking local production with local consumption, encouraging local and community based business and adopting the principles of environmental management.

5.2.18 The Estates Department is committed (as well as the University as a whole) to local sourcing of goods and services, where appropriate. The consolidation of student activity on the precinct will provide further local commercial activity in the area.

Objective 14 To use materials from local and sustainable sources.

5.2.19 Bristol University is a Fair Trade University, spending some £20m on goods and services per year. EEMU provides advice to all purchasing departments on Environmental Purchasing.

5.2.20 The Masterplan proposals include the specification of materials only incorporating a Grade A rating within BRE Green Guide Specification.

5.3 SOCIAL PROGRESS

Objective 15 To reduce poverty.

5.3.1 The University provides a host of charitable events and programmes and voluntary work within the community. It provides graduates and post-graduates for the local

economy and spin-off enterprise from research. It is one of the key economic engines of the City.

Objective 16 To encourage lifelong learning and promote participation in decision making.

5.3.2 The University has a very full programme of both credit-bearing and non-credit bearing courses which are open to the public.

5.3.3 The Masterplan supports the current level of activity and also enables a greater range of venues for the courses allowing expansion of the total offering where this is financially sustainable.

5.3.4 The University has recently approved the Engaged University Strategy (the first in Britain) which is concerned with enhancing and developing the University's presence and role in the City of Bristol and the sub-region. The effect of this will be to increase the involvement of local people in the University both through enhancement of existing activities and through development of new flexible pathways through University study such as foundation degrees which will support widening participation of local mature students.

5.3.5 The greater involvement of the local population as non-traditional students will raise demand for access to facilities, especially teaching space and library-based and IT learning resources on a 24 hour basis for local students who have to access them outside normal working hours.

5.3.6 The developments planned for Tyndall Avenue support this strategic initiative.

5.3.7 Currently approximately 14,000 learners per year enrol for short courses at the University of Bristol for access to:

- Unaccredited short courses delivered directly by the Public Programmes Office.
- Accredited lifelong learning courses offered by University departments.
- Outreach activities.
- Lunchtime lectures.

- Tours of the City and the University with associated lectures.

5.3.8 On its own the University runs over 100 short courses per year attracting up to 2500 local learners to evening courses and day schools.

5.3.9 As with the strategic rearrangement of several departments within faculties, the proposed new Learning Resource Centre on Tyndall Avenue will allow consolidation of this activity within the social centre of the University and will also enable expansion of activity by virtue of building multi-purpose flexible teaching space.

Objective 17 To improve physical and mental health encouraging healthy lifestyles.

5.3.10 An improved physical environment can only improve and encourage health. Life-science research leads to improved health from research and innovation. The University's Centre for Sport, Exercise and Health is open to the wider community, not just students and staff. It provides a sports medical clinic, a range of sports facilities and activities, it runs a range of sport and fitness related community programmes and a sports development facility.

Objective 18 To increase access to high quality open space, recreation and cultural facilities.

5.3.11 The Masterplan provides a strategy for improved permeability and legibility throughout the precinct's open space as well as improvements to its physical form and quality of the spaces.

5.3.12 The University runs a wide range of public events including theatrical productions, concerts, public lectures, permanent exhibitions, open days, doors open days and building tours. Implementation of the Masterplan will sustain the current level of overall activity and will potentially increase the number of public exhibition events within the main central campus area.

5.3.13 In addition there will be new, more obvious, pedestrian routes through the University's grounds which will enable the public to enjoy some of the existing and new open spaces that will be created. Although Royal Fort gardens has always been open to the public, public awareness of this facility and accessibility to this area will be improved through a better and more comprehensive signage system and the

creation of additional pedestrian and cycle routes, specifically the continuation of University Walk and the new route from St. Michaels Hill.

5.3.14 Many commercial and other public organisations use the University's facilities to stage their own events. Some of these are open to the public. The Masterplan will continue this and enable more venues for such events to take place within the main campus area.

5.3.15 It is proposed to relocate the Students Union into the heart of the precinct and that a new Student Services Centre and Welcome Centre will be integrated into an Information Centre for visitors to the City. It is proposed to provide a new centralised library facility (with continued public access) and the possibility of a Performing Arts Centre.

Objective 19 To improve road safety.

5.3.16 Tyndall Avenue will become a shared space as part of the Masterplan's proposals with the result of reducing traffic speed, giving priority to pedestrians and cyclists and improving safety for all users of the highway.

Objective 20 To reduce crime and the fear of crime.

5.3.17 Over the last several years, the University has worked very successfully with the local police division to reduce the incidence of crime in and around the University's estate. There has already been a significant downturn in the number of crimes being committed which can be attributed to:

i. Funding of a dedicated beat officer for the main campus.

ii. Increased arrest and conviction rates as a result of 'joined-up' working between the University's own security resources and the Police.

iii. Modification of in-house shift patterns to respond to crime trends.

iv. Attention to detailed design of buildings' exterior lighting and CCTV, and harmony with the City Centre stakeholder group.

5.3.18 A continuation of the current strategy and the application of good design principles to the proposed new developments and the increased length of activity throughout the

precinct should, at worst, maintain the level of crime at the current level, with the possible long term outcome being that crime levels will actually reduce.

5.3.19 The University is represented on the City's Crime Stoppers Board and the student Crime Reduction Board, and also plays its part in the CDRP initiatives as appropriate, with emphasis mainly on combating drugs. The student accommodation accreditation scheme is also supported and led by the University. Incidents of burglary from the University are down by 56%.

5.3.20 Key targets for the Masterplan are to reduce cycle theft and reduce theft from residential accommodation.

Objective 21 - To enable a decent home for all with a range of tenure and types.

5.3.21 The University controls and manages 5000 bed spaces in the City. They are a significant influence on the market and the University strives to achieve affordable rents on a non-profit basis. This has an influence on the private market, challenging providers to match the University's terms of provision.

Objective 22 - To enhance local diversity and distinctiveness respecting local character by using local skills, materials, produce and creativity.

5.3.22 The Masterplan has evolved in the context of an historic location which is covered by four Conservation Areas and contains a number of historic and Listed Buildings. Full justification has been given in the Masterplan where change is proposed. The University trains apprentices in specific Estate Management skills.

5.4 ECONOMIC STRENGTH

Objective 23 - To maintain high and stable levels of economic growth and employment within Bristol.

5.4.1 The regeneration of research facilities will increase the number of commercial spin-out opportunities from the University's own research activity. Currently, approximately three companies are spun out each year and this is expected to grow. This activity will also support the growth of the proposed Science Park at Key West.

5.4.2 The University's turnover is projected to grow by approximately £50m per year. This will continue to support the local economy, through increased direct activity and

support industries. It is accepted that the benefit to the local economy is approximately 1.8 times turnover.

5.4.3 The consolidation of student activity within the main campus will provide further commercial activity on an already very lively St Michael's Hill. Currently there are three commercial properties potentially available for retail outlets. It is expected that these will become active within the next three to five years.

5.4.4 Within the main campus itself there will be the opportunity for two or more embedded retail facilities within the student centre.

Objective 24 - To increase access to a diverse range of employment opportunities including voluntary work.

5.4.5 Each year, the University graduates some 3,000 students across a range of disciplines. As many as 900 of these remain within the Bristol area and find work here. In addition, the University is working with the Regional Development Agency to try to encourage graduates from other areas to see career opportunities in Bristol.

5.4.6 It is estimated that for every £1m of additional turnover in the higher education sector an extra £800,000 is generated in the local economy.

5.4.7 It is proposed to provide the opportunity to include small businesses within the central heart of the site where there will be intensified student activity.

Objective 25 - To enable disadvantaged groups access to employment opportunities.

5.4.8 The implementation of the Masterplan will improve the physical accessibility of the University's Estate such that all public spaces will not only be DDA compliant but also new buildings will be designed to best practice standards. In particular the buildings fronting St Michael's Hill will provide much more openly accessible facilities by fundamental design rather than having to adopt compromise solutions within existing unsatisfactory building stock.

5.4.9 The Masterplan also complements the University's current strategy for DDA compliance in learning and teaching and research areas. This strategy aims to

remove avoidable physical restrictions to study and research in all areas of the University.

5.4.10 The University operates an Equal Opportunities employment policy.

Objective 26 - To improve access to local shops, services and facilities.

5.4.11 The initiatives included in the Masterplan for legibility and permeability will increase what is already good access to local shops, services and facilities.

6 Plan issues and options

6.1 MAIN SOCIAL, ENVIRONMENTAL AND ECONOMIC ISSUES AND PROBLEMS IDENTIFIED

6.1.1 The key issues for the Masterplan were to identify opportunities after careful consideration of the background and contextual reports produced as part of the Masterplan process. (Section 4.5). These were then related to the SPD objectives. Where adverse sustainability impacts have been identified, these have been addressed in the Masterplan (See Section 7).

6.1.2 An underlying issue was the need to update and modernise the physical fabric of the precinct area in order to rise to the challenges of this major education institution over the next 10 – 15 years and to provide in the order of 38,000 sqm net of new floorspace over the next 10 years. This floorspace comprises core academic space as well as a new learning centre, a new students union and student services.

6.1.3 It was also identified that social facilities on the University site are dispersed and do little to enhance the overall social character of the University. There is also a need to create better relationships between the University and neighbouring communities.

6.1.4 The University also identified a major opportunity to improve the overall physical environment of the University through a Masterplan approach. This will create a better mix of uses within the precinct and will create better accessibility throughout the precinct as well as giving the opportunity to design for a sustainable future.

6.2 MAIN STRATEGIC OPTIONS CONSIDERED

6.2.1 At the inception of the SPD programme, two strategic options were considered.

Strategic option 1 – move the University elsewhere

6.2.2 Given the strategic and local policy background (especially Policy CC4) and the sheer unsustainability of abandoning the huge existing investment in the centre of Bristol in order to replicate one of the largest Universities in the country elsewhere, this was roundly discounted at a very early stage.

Strategic option 2 – consolidate the central precinct

6.2.3 Given the above, it was patently obvious that the only remaining strategic option was to improve and develop the University on its existing site, consolidating, rationalising and regenerating the University Precinct area.

6.3 MASTER PLAN OPTIONS

6.3.1 On the assumption that the University will remain on the current site, three Master Plan options were investigated. These were

- Do nothing
- Split the site
- Comprehensive redevelopment option
- Selective redevelopment option.

6.4 DO NOTHING

6.4.1 The University of Bristol is a relatively small HE institution in terms of the size of its student body – circa 12,000 – and it relies on its research excellence to generate the overall activity to sustain itself. For an institution of this size to compete with much larger British Universities - Oxford, Cambridge, University College London, Imperial College London - it must create a critical mass of research activity to make the ground breaking advances in research that contribute to its national and international reputation.

6.4.2 This mass is created not as one individual department but rather through a virtual research theme into which many departments contribute in a truly multidisciplinary way. To carry out ground-breaking research needs high class facilities, and talented undergraduate and postgraduate students. Changes in research funding methodologies will mean that only the very best research will be supported, and some Universities are at risk of having to increase their teaching load in order to compensate for a potential downturn in research funding.

6.4.3 Increasing the teaching load would involve more undergraduate students coming to study at Bristol which, in turn, would put great strains on the Bristol economy.

Undergraduates are only present for about 40 weeks a year and thus the ability of businesses to sustain themselves year round from this market is limited, whereas postgraduate students are present virtually all year round.

6.4.4 To do nothing at Bristol University would mean that some research activity would become unsustainable and might thus be stopped. It would not be possible within the current overall constraints of the estate, including residences, to expand undergraduate teaching and, thus, this could easily lead to the University becoming unsustainable and thus reducing in size even further. This would lead to Bristol losing its current high position in both national (5th) and international (60th) rankings.

6.4.6 In addition to the implications for the academic future of the University, a 'do nothing' option would not create the conditions to improve the building stock and to create a core of activity within the precinct.

6.4.7 It was, therefore, concluded that a 'do nothing' option was not compatible with the future vision for the University in academic terms nor would it help to meet any of the environmental, social and economic objectives agreed with the local planning authority. In short, to do nothing is not an option that the University is willing to consider – it would bring no benefit to the University or the wider city.

6.5 SPLIT SITE

6.5.1 The University could conceivably split itself onto more than one site and achieve the expansion space and regeneration that it needs. Two options were considered for this:

1. Using land in University ownership at Long Ashton.
2. Acquiring land – say at Key West, on which to create a second campus.

6.5.2 Other sites, not in University control, have not been considered. No land is available in sufficient quantities and locations as to make a viable and sustainable proposition.

6.5.3 To operate on two sites would give the University several key challenges. The main issue is that the University could only, realistically, move whole department units to other sites. The alternative would be total fragmentation of activities, which clearly is unacceptable.

6.5.4 Second, moving whole departments apart runs completely counter to the research strategy of the University which is to create critical mass by facilitating working within and between departments, removing both virtual and actual barriers.

6.5.5 Third, in the future, response to advances in research will need to be fast to ensure that Bristol stays ahead of its competitors. Choices made today as to which activities would be capable of moving to other sites will severely affect the University's ability to compete. Indeed, such is the pace of change that one can say confidently that decisions to split particular departments from each other will immediately limit Bristol's flexibility in the research market and will become increasingly invalid in the future.

6.5.6 Fourth, students today do many varied modules which provide them with a very broad education. Bristol's students exemplify this *par excellence,* making them particularly employable. To operate on split sites would limit the ability of students to take advantage of modules available, to the detriment of their educational achievement.

6.5.7 Fifth, and finally, split sites would inevitably result in considerably more travel between departments and modules, with obvious negative impacts on sustainable transportation both for staff and students.

6.5.8 Having set out these matters of principle, the University has examined the two locations potentially available to them.

Long Ashton

6.5.9 There is potentially enough land here to site a large University department. The principal option considered is moving the School of Biological Sciences, which already had some collaborative research underway with the former research station on that site.

6.5.10 This site is not well served by public transport and is too far away from the main University campus to allow sufficient time for travel. Furthermore, there is no social infrastructure of any significance that would support a major student and staff presence on the site and thus the University would have to create this for itself, on Greenfield land. As well as being very difficult in Green Belt, this would be extremely

unsustainable, particularly since there is sufficient Previously Developed Land available in a highly sustainable location (the existing precinct).

6.5.11 Indeed, the University's existing field station at Langford, home of the School of Veterinary Science, has exactly this problem and is very borderline in terms of long term sustainability, and the University has every reason to believe that the Long Ashton site would suffer similarly. (For the record, the Langford site itself would not be able to absorb a large academic department due to existing restrictions on the scale of development on that site.)

6.5.12 Overall, therefore, the University has concluded that developing a split site at Long Ashton would compromise the University's overarching aim to become more environmentally, socially and economically sustainable.

Key West

6.5.13 The University aspires to create a Science Park here, in partnership with SWRDA, Bath University and UWE. As a location for a 'split' department (as opposed to a Science Park), the site suffers from exactly the same problems as Long Ashton – remote linkages, commuting, lack of social infrastructure etc.

6.5.14 Furthermore, this land is not in the ownership of the University and indeed the Science Park will be created with capital from other sources than the University. Much of the land within the current campus in Bristol was bequeathed to the University at no capital cost. Without this support the University would not have come into being at all. The Government currently prices the value of teaching and research assuming that land costs have already been 'sunk,' and provides funding levels accordingly. Thus, to acquire – at great expense - new land in order to create a new 'split site' that would be both educationally, environmentally and economically unsustainable would require a financial commitment that the University could not possibly justify and would, potentially, put the whole financial future of the University at risk.

Split sites - Conclusion

6.5.15 Neither of the sites that might be available for split site working would provide the University with a sustainable business for the future. Thus, this option was discarded.

6.6 COMPREHENSIVE REDEVELOPMENT

Comprehensive redevelopment of the existing precinct

6.6.1 Comprehensive redevelopment would entail major demolition and renewal of the precinct area.

6.6.2 The Masterplan team came to the conclusion very quickly that such an approach would not meet the objectives of the City Council or the stakeholders in terms of improving and enhancing the Conservation Areas and the Listed Buildings within it. There would also be major issues concerning disruption during a comprehensive redevelopment.

6.6.3 In the long term, it is accepted that there may be some sustainability improvements due to the use of modern building techniques and sustainable materials and renewable energy sources. However, this needs to be weighed against the need to protect and enhance the historic environment of the area and against the waste that would result from unnecessarily demolishing buildings that have considerable useful life remaining.

6.6.4 On balance, therefore, it was concluded from operational, sustainability and urban design perspectives that such a course of action was not practicable.

Merger with another university

6.6.5 A final Comprehensive Redevelopment option involved a merger with, say, UWE.

6.6.6 There would be an immediate effect upon Bristol's research income by virtue of the dilution effect of merged research quality and rating. This would be very damaging financially during the 2008 research assessment and would not be corrected until, at the earliest, the research assessment round in 2013.

6.6.7 In addition, to take advantage of such a merger would require some form of switching of resources, physical and human, between the two sites to make 'headroom' for the necessary research quality improvements to occur.

6.6.8 Furthermore, there would still be the need to create the critical mass concentrations of research excellence and this would most certainly need to be based in Bristol,

much of UWE's physical assets being designed for lower intensity science than that which takes place in Bristol.

6.6.9 Thus, irrespective of any educational and research benefits, (which are simply not there) the need to regenerate the assets in Bristol would not be resolved and much of the estate in Bristol would still need major investment. In addition, to merge with UWE also has all the disadvantages of split site working as outlined above.

6.6.10 A merger with UWE has, thus, been ruled out as an option. Collaboration with UWE is happening and will continue to strengthen but it is not expected that this will yield up any major estate management benefits.

6.7 SELECTIVE REDEVELOPMENT

6.7.1 The final option looked at was that of selective redevelopment.

6.7.2 A number of studies were undertaken to ascertain the University's requirements over the next 10 – 15 years and the sites that could come forward for redevelopment during this period thereby fulfilling the University's operational objectives.

6.7.3 This option has many benefits over the other options looked at.

6.7.4 Firstly, it would make best use of the University's current landholdings and would create the conditions for providing core activities in the precinct area.

6.7.5 Secondly, it would utilise brownfield land and maximise the use of this brownfield land in the future.

6.7.6 Thirdly, it would provide the academic and institutional linkages that were required and would help in reducing levels of travel.

6.7.7 Fourthly, it would create the conditions for the enhancement and improvement of the Conservation Areas both through the design of individual buildings and the investment in the public realm between them.

6.7.8 Fifthly, it would achieve a number of sustainability objectives as laid out later in this report.

6.7.9 It was, therefore, decided that this option holds the best prospects for achieving the 'sustainability' benefits sought at all levels of planning policy from PPS 1 to the Development Plan:

- It meets the University's aspirations and operational requirements for education and research
- It will provide a sustainable future for the University's estate
- It will improve the environment of the precinct
- It will improve the social environment of the precinct
- It will improve the economic basis of the University
- It will maximise the benefits of the University for the City of Bristol and the surrounding region.

6.7.10 The next step involved testing this option in detail to establish the likelihood of these benefits actually being achieved. A number of studies were carried out to help the Masterplan team to develop a detailed preferred way forward in order to meet the University's requirements over the next 10 – 15 years.

6.7.11 The Masterplan process culminated in the definition of a series of Strategic Moves underpinned by improvement and enhancement of the public realm in the vicinity of each Strategic Move.

6.8 POTENTIAL NEGATIVE EFFECTS OF PREFERRED OPTION

- Less potential than the comprehensive option to replace unsustainable buildings with modern, more sustainable buildings which maximise previously developed land. However, this needs to be assessed in terms of the major disruption envisaged with comprehensive development, the refurbishment of existing buildings and the need to take into account the preservation and enhancement of the historic built environment.

- The issues of the effect of alteration/removal of certain Listed Buildings and buildings which form part of the historic environment and the introduction of possible tall buildings are dealt with within Appendices to the Masterplan. However, in purely sustainability terms both courses of action would provide sustainability benefits, as would the retention and refurbishment of existing buildings. Assessments will be made of the relative merits of these alternatives at individual application stage.

7 Assessment of SPD objectives against SA objectives

7.1 Table 7.1 provides an assessment of the SPD objectives against the core sustainability objectives laid out above in Section 5. The assessment takes account of the initiatives, targets and indicators provided within Section 5.

7.2 The following terms have been used where appropriate to assess the significance of effects, where they are predicted to occur:

- **Major positive or negative effect** – where the development would cause a significant deterioration (or improvement) to the existing environment;
- **Moderate positive or negative effect** – where the development would cause a noticeable deterioration (or improvement) to the existing environment;
- **Minor positive or negative effect** – where the development would cause a barely perceptible deterioration (or improvement) to the existing environment; and,
- **No change** – no discernible deterioration or improvement to the existing environment.

7.3 The above terms are widely used and recognised in the formulation of Environmental Impact Assessments and are relevant to Sustainability Appraisals. Each Masterplan objective has been assessed against each SA objective to ascertain its significance in terms of positive or negative effects. Below, the Masterplan and SA Objectives are laid down in Matrix form.

7.4 Two potential negative impacts have been identified. The first concerns conserving the historic environment set against maximising the efficient use of energy. However, it will be possible to mitigate this effect through refurbishment of existing historic buildings and the introduction of energy conservation measures.

7.5 The second identified negative impact concerns increasing the social focus of the University in the evenings set against minimising noise and light pollution. Management measures will be investigated to mitigate against any noise disturbance

and light pollution is not seen as being an issue as the area of activity is surrounded by other university buildings.

7.6 It is concluded that the implementation of the Masterplan will be overwhelmingly beneficial in meeting the sustainability objectives identified. Overall, there will be a moderate positive effect on sustainability through the implementation of the Masterplan.

MASTER PLAN OBJECTIVES

1 To deliver an improved physical environment

1a By conserving and enhancing the historic environments and landscapes.
1b By concentrating University activity within the precinct.
1c By addressing empty plots and by rationalising the University's use of existing plots.
1d By creating first class new buildings which complement and enhance both the streetscape of the Conservation Areas and contribute toward distant views of the University skyline.
1e By increasing the social focus of the University into the evenings, thereby creating a safer environment.

2 To create a better mix of spaces in the central precinct areas

2a By improving relationships between the existing and new Academic Departments.
2b By enlivening the public realm.
2c By creating a 'sense of place' which can be identified as the University.
2d By creating new facilities which are flexible for future needs.

3 To create better accessibility across and through out the university

3a By providing new routes and connections to improve permeability.
3b By reducing the impact of cars within the precinct and creating a balance between people and the vehicles.
3c By promoting the use of sustainable forms of transport.
3d By introducing safe, accessible and legible routes in and around new development.

4 To design for a sustainable future

4a By promoting the use of the latest green technologies and materials within new buildings.
4b By incorporating long life, loose fit principles within the design of new buildings.
4c By creating a robust financial future for the University.
4d By setting design codes for future development which will ensure that all proposals will be of a high quality and will read as part of the cohesive whole.

5 To create better relationships between the University and Neighbouring Communities

5a By providing integration between the University and its neighbours.
5b By creating economic links between the University and local companies.

SUSTAINABILITY APPRAISAL OBJECTIVES

Environmental Responsibility

1 To improve air quality minimising carbon dioxide production from all aspects of construction, management and occupation, including transport.
2 To reduce vulnerability to flooding and sea level rise.
3 To minimise noise and light pollution.
4 To locate uses which generate high levels of activity in accessible locations.
5 To reduce motor vehicle dependency, the number and length of such journeys and increase walking, cycling and other sustainable forms of transport.
6 To ensure high quality and inclusive public realm (places, buildings, spaces, activity), preserving and enhancing valuable built and natural areas and features.
7 To ensure a broad based mixed use environment where appropriate.
8 To enhance biodiversity.

Prudent Use of Natural Resources

9 To ensure an efficient use of brownfield land.
10 To maximise the efficient use of energy.
11 To minimise waste and maximise recycling.
12 To conserve water resources.
13 To minimise the length of supply chains linking local production with local consumption, encouraging local and community based business and adopting the principles of environmental management.
14 To use materials from local and sustainable sources.

Social Progress

15 To reduce poverty.
16 To encourage lifelong learning and promote participation in decision making.
17 To improve physical and mental health encouraging healthy lifestyles.
18 To increase access to high quality open space, recreation and cultural facilities.
19 To improve road safety.
20 To reduce crime and the fear of crime.
21 To enable a decent home for all with a range of tenure and types.
22 To enhance local diversity and distinctiveness respecting local character by using local skills, materials, produce and creativity.

Economic Strength

23 To maintain high and stable levels of economic growth and employment within Bristol.
24 To increase access to a diverse range of employment opportunities including voluntary work.
25 To enable disadvantaged group's access to employment opportunities.
26 To improve access to local shops, services and facilities.

TABLE 7.1 SA/MASTERPLAN OBJECTIVES MATRIX

SA objectives

Masterplan objectives

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1a																										
1b																										
1c																										
1d																										
1e																										
2a																										
2b																										
2c																										
2d																										
3a																										
3b																										
3c																										
3d																										
4a																										
4b																										
4c																										
4d																										
5a																										
5b																										

Key:

Major Positive significance	
Moderate Positive significance	
Minor Positive significance	
No Significance	
Minor Negative Significance	

See attached sheet for list of SA and Masterplan objectives

8 Implementation: Proposals for Monitoring

8.1 Local Authorities are required by Section 48 of the Town and Country Planning (Local Development) Regulations 2004 to prepare an annual monitoring report. This report is required to assess the implementation of the Local Development Scheme and the extent to which policies in local development documents are being achieved. The University Masterplan SPD will form part of Bristol's Local Development Scheme and the implementation of the SPD will be reported on in this Annual Monitoring Report. The Monitoring Function of the Strategic and Citywide Policy Team are responsible for producing the Annual Monitoring Report that reports on all policy within the Bristol Local Development Framework.

8.2 The monitoring should identify the significant effects of the implementation of the University Masterplan, in particular any unforeseen adverse effects, to enable appropriate remedial action to be taken through revisions to the SPD. Section 4 of this report sets out the SA framework, which includes objectives, criteria and indicators. These indicators in particular will be used to measure achievement of SA objectives. Section 4.7 lists the indicators that have been agreed with Bristol City Council for monitoring purposes on a bi annual basis.

8.3 The indicators monitor positive and negative effects of the SPD, with amendments to the SPD required if adverse effects are discovered. The target is to see improvements in all indicators after the adoption of SPD.

APPENDIX 1

1.1 Scoping Report - Consultees

Avon and Somerset Constabulary

Bristol City Council

Bristol Civic Society

Bristol Grammar School

Business West

CABE

The Countryside Agency

English Heritage

English Nature

Environment Agency

Kingsdown Conservation Group

Redland and Cotham Society

Transport 2000

UBHT

Supplementary Planning Document Number 11

University of Bristol

Strategic Masterplan: Appendix 16

The Former Children's Hospital

Historic Buildings Assessment

November 2005

University of BRISTOL

BRISTOL CITY COUNCIL

0.0 Contents

If you would like this information in a different format, for example Braille, audio tape, large print or computer disc, or community languages, please contact the Central Area Planning Team on 0117 922 2938

1.0 Executive Summary

This report examines the significance of the former ward and entrance buildings of the Children's Hospital on St Michael's Hill and Royal Fort Road. The report presents the following key conclusions:

1. The Grade II listed entrance (or 'front') building on St Michael's Hill, together with the wall and archway on Royal Fort Road are architecturally and historically important. The front building is of higher quality than the rear ward blocks both architecturally and materially and is worthy of retention.

2. The existing ward buildings on the site have undergone extensive phases of refurbishment and redevelopment, which has resulted in the loss of their historic interest and integrity, as well as creating an uncomfortable relationship between them and the setting of the listed building and conservation area. These buildings are not considered worthy of retention and demolition is justifiable.

3. The current accommodation within the existing ward buildings does not meet the existing or future needs of the university, and would require extensive restructuring to enable re-use.

4. The corner of St Michael's Hill and Royal Fort Road is a prominent site both in the conservation area and the context of the entrance building. Future plans will enhance its role as a 'gateway' to the university complex. Any new development must be of the highest architectural quality.

5. The site stands adjacent to the Grade I listed Royal Fort House and gardens and near to the site of the former Civil War fort. It will be important for future development on the site to be undertaken with an awareness of the archaeological conditions.

2.0 Purpose and Scope of the Report

The Former Royal Children's Hospital occupies a site between the east side of St Michael's Hill and the Grade I listed Royal Fort House, (which marks the centre of the University's 'central precinct'). Since its construction at the end of the C19th, the buildings on the Children's Hospital site have undergone extensive refurbishment and alteration which has largely obscured the clarity of the original hospital designs. The building became redundant when the Children's Hospital moved to a new building in 2001.

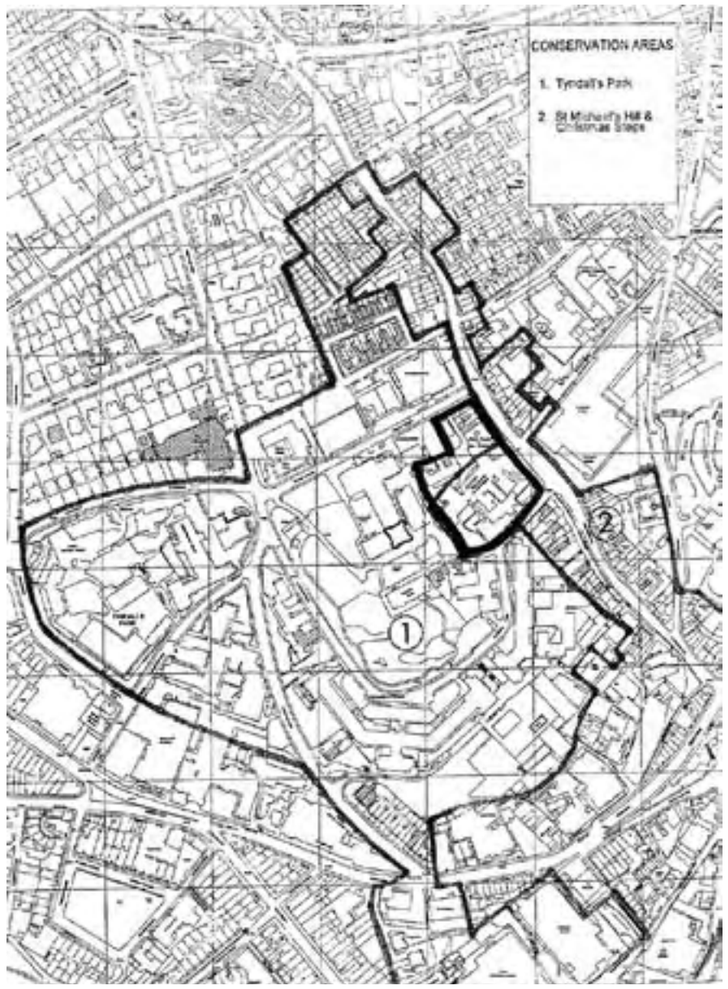
During the masterplan workshop discussion held with English Heritage and Bristol City Council on 26 July 2005 regarding the significance of the range of buildings on the Children's Hospital site, it was generally agreed that whilst the Grade II listed 'front building' has evidently survived fairly well intact the historic merit and interest of the 'rear ward blocks' has largely been lost through the scale of changes which have taken place.

It was agreed that FCBa should prepare a brief report to summarise the historical development and significance of the Children's Hospital buildings, including a summary of the changes which have taken place, and that this also should include an assessment of the significance of the building as an example of a Victorian Children's Hospital.

This report presents the findings of this further period of study and assessment, during which time we have consulted with the Victorian Society, the RIBA Library, the Bristol Records Office, English Heritage and the National Monuments Record. We have also undertaken further analysis of the extent of original fabric remaining.

The report concludes that whilst the 'front' block facing onto St Michael's Hill is worthy of repair and retention, the demolition of the former rear wards is justifiable as part of the strategic masterplan proposals. New development on the site has the potential to enhance the conservation area but must be respectful of its context. Indeed, it should be noted that the buildings are located across two conservation areas and on an archaeologically sensitive site.

3.0 The Former Children's Hospital
3.1 The Context of the Buildings



Plan showing conservation areas

1. Children's Hospital – Front
2. Children's Hospital – Wards
3. Former Nurses House
4. 73-77 St Michael's Hill
5. 22-24 Tyndall Avenue
6. Nurse's Accommodation /Institute of Child Health
7. Intensive Care Unit
8. Short Stay Family Accommodation
9. Bone Marrow Transplant Unit
10. Outpatients Building
11. Lift Tower

Current OS plan

The two buildings in discussion are located within a complex of buildings on the former Children's Hospital site contained by St Michael's Hill to the East, Royal Fort Road to the South and Tyndall Avenue to the North. They are identified on the plan as buildings One and Two.

The site is divided between two conservation areas; Tyndall's Park and St Michael's Hill & Christmas steps. The former entrance and ward buildings both fall within the latter.

The site has developed continuously since the first Ordnance Survey map of the area from 1883 (see over) which depicts a Preventative Home and separate School for Girls both located within the current site boundary. There was also a Hospital for Women and Children to the immediate south of the site.

Today the site is cluttered with a range of buildings of different types and styles, many of which are not considered worthy of retention as part of the strategic masterplan proposals. (An assessment of each of these buildings on the site is included within Appendix 10).

The buildings have become largely redundant since the opening of new purpose built accommodation on Upper Maudlin Street alongside the Bristol Royal Infirmary in 2001 and are in danger of falling into disrepair without regular maintenance.

3.0 The Former Children's Hospital
3.2 Bristol Children's Hospital

The first children's hospital in England is recorded by the Royal Commission on the Historic Monuments of England as that founded in 1852 by Dr Charles West in a house in Great Ormond Street, London, after he had studied European examples that had been developed much earlier.[1] Further hospitals specifically for the treatment of sick children were subsequently purpose built throughout England, and when the Bristol Children's Hospital ward block was constructed in 1888, there were thirty-eight children's hospitals in Britain.[2]

According to the official catalogue of the Bristol Industrial & Fine Art Exhibition of 1893, the Bristol Hospital for Sick Children and Women, which was popularly referred to as the Children's Hospital, had modest beginnings in a house on the south side of Royal Fort Road, accommodating only six cots in 1866. The idea was founded by a local man, Mr Mark Whitwill who was invited to join the committee of 'The Free Institution for the treatment of Diseases peculiar to Women and Children' after a visit to the children's hospital at Great Ormond Street. Local fundraising gradually enabled accommodation to increase and eventually allow provision for isolation wards. Number 6 Royal Fort Road was also subsequently purchased to provide better outpatient facilities.

By 1882, the growing demands on the Children's Hospital led to development of a project to build a new purpose built building incorporating all the details of the special needs of the child patients through knowledge that had been gained by actual experience from the early buildings. The committee managed to secure the site on the crest of St Michael's Hill for this purpose and it was described as being an

'unsurpassed site…which commanded views over the city and the surrounding country, and could not be closed in by other buildings. [8]

Money was raised again through local fundraising and through an architectural competition[4], the design of local architect Robert Curwen[5] was chosen and construction of the new hospital began. The catalogue entry goes on to describe Curwen's design as

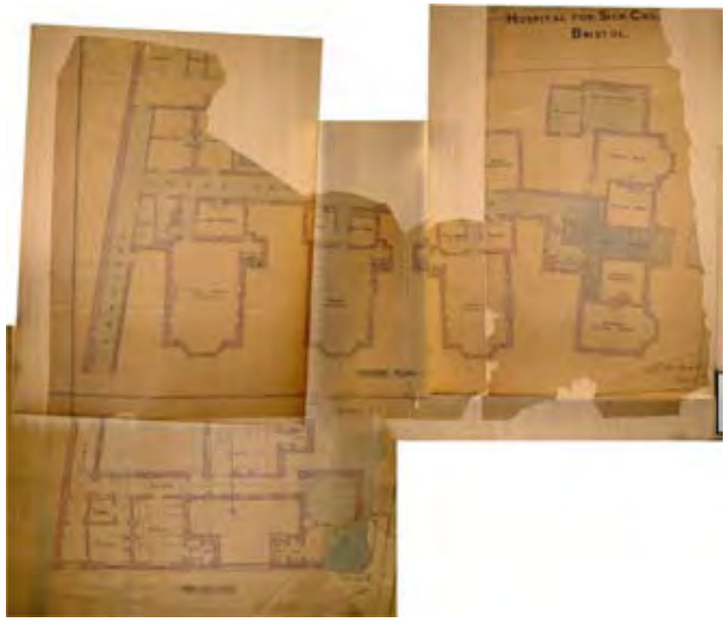
'adapt[ing] the building to the site, in arranging for ample light and free play of fresh air round every ward, and securing spacious lawns, a garden, and terrace walks on the south side.'

Current site outline shown in red with location of earlier Children's Hospital to the south. OS plan 1883

Great Ormond Street Hospital for Children, which was built in 1852 (photograph from 'English Hospitals 1660-1948' by the Royal Commission for Historic).

3.0 The Former Children's Hospital
3.2 Bristol Children's Hospital

The front elevation of the building shown in an early postcard. Whilst the elevation survives fairly well intact, the cupola over the main entrance has been lost.



Fragment of an original design drawing showing the arrangement of ward blocks along a central spine, which was a common plan arrangement of the time.

The front elevation facing St Michael's Hill is described as having a handsome façade being in the Tudor style and semi detached from the main hospital buildings and wards. These are described as three blocks of two storey semi-detached wards in Pavilion style. This style is explained as the introduction of three windows on each side of the wards as well as having large windows on the south front to enable the children to have views of the lawn and flower borders.[6]

It is clear that the original building by Curwen was a considered design incorporating the emerging hospital construction styles of the time like the pavilion style of large windows and landscaped gardens as well as local materials such as Pennant and Brandon stone with Bath stone embellishments. The wards radiating from a central spine or core was also a common design feature of the time[7] and was intended to allow the isolation of any of the wards from the rest of the building during an outbreak of infectious disease.

The architectural style is referred to as 'Late Perpendicular' in the description of the project in 'The Builder' from June 9 1883. This article also refers to the use of 'Captain Norton's patent' for a new ventilation system in the building whereby foul air was exhausted by means of an engine housed in the basement[8] and again describes the pavilion style of the wards exposing them to light and air on three sides.

The remains of the 1882 proposal drawing by Robert Curwen shows the Children's Hospital as a series of separate elements branching off main corridors. The Pavilion style can be identified in the drawings where the there are windows facing each other along the length of each ward with large glazed bays at the ends to allow for light and air on three sides. From the depth of the plans the wards also appear to have been designed originally to be of the same scale as the front entrance building on St Michael's Hill.

The Royal Commission on the Historical Monuments of England carried out an inspection of the hospital ward and entrance buildings in 1992 as part of their research on all purpose built medical buildings for their book *'English Hospitals 1660-1948'* published in 1998. A brief report of their findings was written in 1993 and is now kept at the National Monuments Record Office in Swindon by English Heritage. The Bristol Children's Hospital is not referred to in this book although the pavilion building style is noted as a popular design for hospitals of that time.

3.0 The Former Children's Hospital
3.3 Redevelopment

The following series of diagrams describes how the original fabric of the building constructed in 1888 to Robert Curwen's design has been affected by extensive change and development. What remains of the original fabric has been carefully assessed through site investigations and analysis of the plan and elevation drawings obtained from Bristol University and Bristol Record Office.

The periods of growth of the Children's Hospital are also recorded in Ordnance Survey plans and within the fabric of the building as it stands as shown adjacent.

From the colours on the block plan and various descriptions of the building it also appears that the hospital was built in phases with the front entrance being completed first followed by the main ward blocks and the isolated infectious wards to the south, which were connected to the rest of the building with a long corridor.

The current plan of the building indicates that the building has evolved into a large homogenous mass with a singular deep plan created through numerous extensions and additions over the years. The plan of the front entrance building is easily identified but the original outline of the wards has clearly been lost.

'Original Footprint'
To describe the extent and nature of change, the periods of development have been grouped and overlaid on the present day plan of the hospital buildings. The original 1888 footprint located over the present day plan demonstrates immediately the extent of transformation experienced by the ward buildings. It is also clear from this that the front entrance building not only retains most of it's original form, but also has much of its original fabric intact. These elements are shown hatched in the diagrams opposite.

OS plan 1901 showing the new Children's Hospital

OS plan 1913 showing the school on the corner as demolished

OS plan 1948 showing extensions to the hospital buildings

Original footprint 1888

Development 1901-1949

Development post 1949

Material and internal alterations

Plans showing the original footprint superimposed on the existing group of buildings. It will be noted that whilst the front building survives intact, the wards have been overwhelmed by later change.

'1901-1949'
Between 1901 and 1949 two of the main ward blocks were extended to the South together with an extension to the North behind the entrance block. These elements are coloured in red in the diagrams opposite. The mortuary and post-mortem block was lost from the front entrance building during this time and a new extension added to the rear.

Between 1903 and 1920 George Oatley carried out various small works to the Bristol Children's Hospital and between 1929-31 he carried out alterations. In 1933 he wrote a letter to a friend describing his work on the Children's Hopsital: "Nearly completed without exception I think the most difficult and vexatious work that I have ever had to deal with".[9] Changes included the addition of a third storey on the ward blocks that were described in early articles from 'The Builder' as being only two storeys high - similar to the front entrance.

Whilst of some anecdotal interest, the alterations on the site undertaken by Oatley and Laurence (the firm into which the university architect George Oatley's architectural practice evolved) during the 1920s and potentially in later phases are not considered significant enhancements of the buildings. Indeed in many ways they have added to the confusion of construction styles and have themselves been absorbed in later change.

'1949-1999'
The diagram depicting post 1949 works in blue indicates that initial development of the ward blocks was absorbed into these later works. The hospital was bomb damaged in the Second World War resulting in the loss of the central protruding ward and this area was subsequently filled with new construction. This has left the building with a deep plan formed by different construction styles and materials and there remains little evidence of the original plan that is dotted on the diagrams.

Extensive internal alterations dividing the former open spaces into cellular rooms and the addition of a mezzanine level, serve to dilute the concept of the original building design even further.

Further other work reveals that the ward blocks were not only extended but have also suffered extensive material alterations to the remaining original fabric. This includes the replacement of windows using upvc and compromises the ward block elevations.

4.0 The Hospital Today

The overall result of the changes is a large, clumsy building incorporating a jumble of different construction materials and styles, with a deep cellular plan that does not lend itself to further adaptation and re-use either easily or economically.

The numerous functional alterations have consistently eroded Curwen's original design concept that had emphasised the importance of abundant natural light and air, despite its continued use as a hospital until 2001. Consequently there remains almost no clue of the Pavilion and Perpendicular styles of the original hospital building that had been so enthusiastically depicted in the late nineteenth century in 'The Builder' and local fundraising catalogue, except in the front entrance building.

The same result is apparent on all floors of the building and on each of the elevations, which are largely obscured by alterations and extensions as indicated in Section 3.3. The level of intervention on each elevation means that there would be a large amount of material lost in order to strip the building back to the footprint of the original. This work would actually reveal very few remaining original features and each elevation would require substantial rebuilding with new material.

The unsympathetic alterations to the ward buildings frame the listed front entrance building and perimeter walls inappropriately and the glimpses of the incoherent additions to the building from the street also serve to detract from the setting of the conservation areas.

The diagrams illustrating the stages of development do however indicate that the same level of material loss does not apply for the front entrance building as it does for the wards.

Its Tudor style construction is still a prominent landmark on St Michael's Hill and it embodies an appropriate and pleasant reminder of the existence of the former Children's Hospital whilst fitting suitably into the setting of the conservation area. The reference to front block only in the listing description (last updated in 1994) reinforces this view.

Comparitive elevation photos of the building between approximately 1905 and 2005. It is interesting to note the scale of changes to the rear ward blocks, which are visually overbearing and of poor quality.

4.0 The Hospital Today

North Elevation showing a range of additions that obscure the modified ward blocks. The front entrance building to the left of the picture is the only visible original element.

West Elevation showing a range of ad-hoc additions.

The scale of change on the site has transformed the appearance of the buildings compared with Curwen's original design proposals.

The diagrams here show the scale of change within a number of key views to the site. It will be noted that whilst there have been major changes to roof lines, these are complicated by numerous later ad-hoc additions.

5.0 Masterplan Proposals

Extent of proposed demolitions

Masterplan proposals for the Children's Hospital site

The corner of St Michael's Hill and Royal Fort Road is a prominent site both in the conservation area and the context of the listed entrance building. It is also an important site within the strategic masterplan proposals and future plans aim to enhance its role as a 'gateway' to the university complex. It is clear that any new development must be of the highest architectural quality and will serve to improve the setting of the listed building and structures as well as complementing the conservation area and streetscape.

The existing hospital ward building has the following approximate floor areas:

- Ground Floor – 1333m2
- Mezzanine – 157m2
- First Floor – 1343m2
- Second Floor – 788m2

Accommodation currently envisaged as required by the university on this site is related to a new School of Biosciences. Design studies during the strategic masterplan have indicated that 9000m2 of accommodation may be able to be achieved on the site.

Reuse of this building is complicated by a number of constraints. These include the lightweight floors, which may restrict the variety of uses possible, as would the deep plan which leaves many central spaces within the building with little or no means of natural light or ventilation. The jumble of materials and construction styles would need to be addressed to provide the building with an appropriate presence within the conservation area.

6.0 Conclusions

Proposals to create new routes, views and vistas from St. Michael's Hill to Royal Fort Gardens

The research carried out in this report sets out a series of key issues that are important considerations when assessing the proposal to demolish the former ward block to make way for new development within the masterplan proposals.

The key findings are detailed in the Executive Summary and include the following:

- the setting of the listed building and structures is compromised
- there is a lack of accommodation suitable for a new use
- there is a lack of historic coherence and integrity within the former ward buildings

There are a range of other contemporary listed hospital buildings, many of which are both more complete and still operational, and this underlines the assertion that the former Children's Hospital is not of national significance.

It is considered that a clear case for the redevelopment of the site of the rear wards exists as part of proposals to deliver the objectives to the strategic masterplan. It is believed that sensitive redevelopment, which will include high quality buildings and landscapes, and increased public accessibility, would enhance the conservation area and deliver a range of longer term benefits.

7.0 Bibliography and References

Notes

2. Ibid

6. Ibid

Bibliography

1. Ed Richardson, H., 'English Hospitals 1660-1948', Royal Commission on the Historic Monuments of England, (1998), p.110

3. Official catalogue of the Bristol Industrial & Fine Art Exhibition, 'The Bristol Hospital for Sick Children and Women', (1893)

4. News of the competition result was published in 'The Builder' on 15 October 1881

5. Whilst the RIBA's records show that Robert Curwen practiced as an architect between 1865 and 1909, his output was fairly undistinguished. Little is known of any of his other work by either the RIBA Library or the Victorian Society, with the exception of a chapel and college at Leys School in Cambridge, and the Clevedon Wesleyan Chapel. The book 'Architects in Bristol – a Checklist of their Work' by Andor Gomme from 1979 lists a number of projects local to Bristol such as Cotham Wesleyan Church, the chancel at Redland Park congregational church and a Wensleyan mission church in St Philip's Marsh, which no longer exists. There is no record of him designing any other hospital buildings

7. Referred to in the book 'English Hospitals 1660-1948' by the Royal Commission of Historical Monuments of England and

8. Thom, C., 'Royal Hospital for Sick Children', NBR No. 101328, Royal Commission on the Historical Monuments of England, (1993). The Royal Commission on the Historical Monuments of England carried out an inspection of the hospital ward and entrance buildings in 1992 as part of their research on all purpose built medical buildings for their book *'English Hospitals 1660-1948'* published in 1998. A brief report of their findings was written in 1993 and is now kept at the National Monuments Record Office in Swindon by English Heritage. The Bristol Children's Hospital is not referred to in this book although the pavilion building style is noted as a popular design for hospitals of that time

9. Sarah Whittington, the University Historian uncovered the statement in family and office correspondence that is in the possession of descendants of George Oatley.

Appendix One
Other Listed Children's Hospital Buildings

The Children's Hospital is one of numerous listed hospital buildings in England with an association to children and of these, a broad range of Victorian hospitals survive, which are more complete than the Bristol building. Indeed many of them are still operating as hospitals for children, and they include the following:

Grade II*
- Belgrave Hospital (1903) by Charles Holden
- Teddington (1866).

Grade II
- Victoria House. Park Street, Kingston upon Hull (1890) by S Musgrave
- The Children's Ward, Bedford (1897) by H. Percy Adams
- Children's Hospital, Paddington Green (1895) by H. Percy Adams
- Belgrave Hospital for Children, Lambeth
- Olive Mount Children's Hospital, Liverpool (late C18th)
- Emily Jackson Hospital, Sevenoaks (1901) by TG Jackson
- Normansfield Hospital, Teddington (mid C18th)
- Children's Hospital, Sunderland (1910) by W & TR Milburn
- Great Ormond Street Hospital, London
- Springfield Hospital for Children, Wandsworth (1895) by Rowlande Plumbe