Potterrow Development
for University of Edinburgh

Planning Report August 2004

Bennetts Associates with **Reiach and Hall**
Architects

Contents

1.0 Introduction and Masterplan Context

The purpose of the Planning Report is to provide the Planning Committee with an explanatory statement regarding the proposed development at Potterrow for the University of Edinburgh. The statement begins by explaining the importance of the building to the University and then shows how the proposals have been developed in response to a range of different issues such as urban design and sustainability.

This project is one of the major components of the University's masterplan framework for George Square / Bristo Square. The framework, prepared by RMJM Associates, was endorsed by the City of Edinburgh Council Planning Committee in June 2004, and the Potterrow Development is a significant step towards its realisation. The new building totals approximately 25,000m^2, there are three principal users, the School of Informatics, the College of Humanities and Social Science and University Student Support Services. The accommodation requires to be phased because of funding. The first phase will be the School of Informatics. The second phase will consist of academic accommodation for the College of Humanities and Social Science and University Student Support Services.

The School of Informatics is one of the 'jewels in the crown' of the University of Edinburgh and makes a significant economic contribution both to the University and the City. It is the only five star A rated School of computing in the UK and is regarded as the forth most important such department in the world (the other three are in the United States). Presently the School occupies five buildings in different parts of the city and requires to consolidate to improve academic interaction and allow growth. Informatics, the Science of Information, also forms a bridge linking Humanities and Science. The University if therefore keen to locate it in the George Square area.

Further Phases will house academic accommodation for the College of Humanities and Social Science and several University student support services functions. Presently the different components are scattered across a wide variety of buildings including former Georgian town houses within the George Square / Buccleuch Place area. The accommodation is not only inflexible and inefficient but will also encounter significant problems in terms of compliance with legislation such as the Disability Discrimination Act. Bringing together the service departments, in particular, offers an opportunity to support both students and the general public by contributing to the creation of a more coherent University precinct linking between George Square and Bristo square and providing a concentration of useful services in one location ideally located adjacent to important central University facilities such as the Teviot Row Union and McEwan Hall.

Whilst essential to the University corporate plan the Potterrow development is also consistent with delivering the objectives identified in the masterplan framework. These include sensitive insertion in the traditional hub of the University and seeking to contribute to the physical regeneration of the southside by repairing the urban gain and creating a more coherent precinct whilst improving the urban realm for the benefit of Town and Gown.

2.0 Economic Case

The University commissioned Biggar Economics to provide an economic appraisal of the proposed Informatics development in 2003. This is the executive summary of their report.

The University of Edinburgh is a leading university with a worldwide reputation for teaching, research and commercialisation in informatics, and in medicine and the life sciences.

The changes currently taking place in science offer significant opportunities to build on this expertise for the benefit of the University of Edinburgh and the Scottish economy. As many areas of science deal with problems in managing and analysing huge volumes of data, there is an increasing need for a multi-disciplinary approach, with a role for informatics in all areas of science. These changes can be seen in the life sciences with developments such as bioinformatics, systems biology and e-Health.

The facilitation and encouragement of greater interaction between the Division of Informatics and other disciplines at the University of Edinburgh has the potential to generate significant benefits for the Scottish economy.

The Division of Informatics achieved the highest possible rating in the 2001 Research Assessment Exercise and is the only 5*A rated computer science department in the UK. The Division has also been successful in commercialising its research, creating four spin-out companies in the last two years.

A proposal has been developed to bring informatics and associated disciplines such as linguistics together in a ‘building for interaction’ to fully realise the potential contribution that can be made to scientific, economic and social development. The preferred site for the new centre is at Crichton Street in the centre of Edinburgh.

Biggar Economics was commissioned by the University to update an earlier economic impact study of the Division of Informatics and the proposed new ‘building for interaction’.

The creation of a new centre for informatics in a flagship building in the centre of Edinburgh will provide a powerful marketing tool in increasing the profile of Scotland as a knowledge economy and the excellence within the University of Edinburgh. The increased profile of the University of Edinburgh and Scotland more generally as a leading international location for informatics could be important for:

- the international image of Edinburgh and Scotland;
- the image of the University held by local and international companies;
- increased public awareness of the activities and strengths of Informatics at Edinburgh;
- influencing young people and potential students; and
- retaining and attracting the highest quality of staff.

Excellence in teaching and research will continue to be the key determinants of academic and economic success in informatics. However, other universities in the UK and internationally are investing in informatics, including the provision of state-of-the-art facilities. If Edinburgh can not match that investment, its competitive position will be eroded, compromising its ability to retain and attract the best staff, students and research.

The economic impacts set out in this report will be realised somewhere since the markets for informatics skills and technologies are growing rapidly. The question for the University of Edinburgh and Scotland is whether these impacts can be delivered in Scotland.

The study found that impact of the new development on the Scottish economy could be substantial. The approach taken was to compare the potential impact of the Division of Informatics in 15 years time if the new building went ahead with what might happen if the project was not implemented.

The economic impact assessment found that, if the proposed project goes ahead, the potential economic impacts of the Division of Informatics in 15 years time (excluding those impacts that might be expected to occur if the project did not go ahead) might include:

- an employment impact of 213 fte jobs (including employees and the wider economic impact of employment);
- an additional 71 under-graduates, 104 MScs and 42 PhDs per annum;
- an income effect of £13.4 million per annum;
- economic impacts associated with spin-out companies of £215 million per annum, supporting 2,700 jobs;
- economic impacts associated with start-up companies of £35 million per annum, supporting 450 jobs;
- economic impacts from inward investment attracted of £21 million per annum, supporting 267 jobs;
- a business tourism impact of £1.78 million per annum, supporting 71 jobs; and
- supporting 167 construction jobs during the development phase

The study also demonstrated that the proposed new informatics centre fits well with the University of Edinburgh's strategy, the priorities of the Scottish Executive, the objectives of the Scottish Higher Education Funding Council, the economic development strategy for Scotland and the research priorities of leading research funders. At the local level the proposed development is consistent with the economic development strategies of the City of Edinburgh Council and Scottish Enterprise Edinburgh and Lothian.

Given the scale of the potential impacts and the strategic fit of the proposed project, there is a clear economic case for investing in the proposed ‘building for interaction’ to support the further development of informatics at Edinburgh.

3.0 Architects Report

The Potterrow site lies just to the north of George Square in central Edinburgh and, apart from its use as a surface car park, it has lain empty for many years. As such, it is the legacy of Edinburgh University's struggle to consolidate its town centre campus - a process that began with incursions into George Square a century or so ago and continued throughout the 20th century, leading to major redevelopment of the south, east and north sides of the square in the 1960s and '70s and the acquisition of land between Potterrow and the McEwan Hall.

The tenements on Potterrow were demolished and Edinburgh Corporation re-routed traffic around its outer edges, only the northern part of the site was developed with new buildings, with the effect that the group of white concrete structures known as the Health Centre seem isolated and incomplete.

The masterplan framework prepared by RMJM Architects to repair this fragmented part of the University's estate, in a way that also integrates any new development with the City as a whole. It goes without saying that, because of its proximity to a World Heritage Site, any new development must be to the highest architectural and urban design standards.

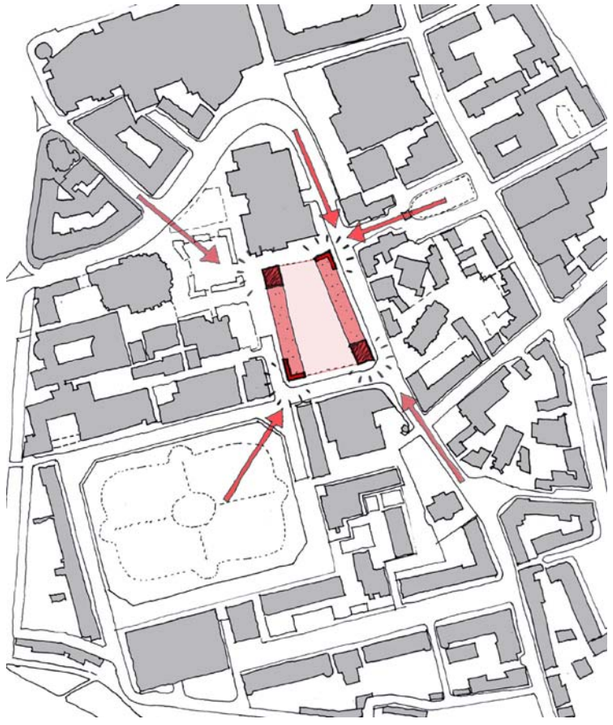
Potterrow Development within Masterplan Context Bennetts Associates with Reiach and Hall Architects

Examination of old street maps confirms that, whilst the Potterrow site is now broadly rectangular, it was once dissected across its diagonal by the continuation of Bristo Place. In consequence, the morphology of the area was dense and tight with buildings, with glimpses into George Square or towards the steeple further south on Potterrow. Clearly, any substantial new buildings are going to radically alter for the better the perception of what is presently a windswept, open area.

Bennetts Associates and Reiach and Hall were appointed jointly in Autumn 2003 to design the new Informatics building on the Potterrow site, together with future accommodation for other departments as described in the Introduction.

The masterplan identifies the Potterrow car park as the largest of several University development sites, measuring approximately 70m x 85.m, with pedestrian or vehicular streets on all four sides. Because it is unencumbered with existing buildings, it is in effect a "stand-alone" plot that can proceed at any time, although its physical relationship with the context of the existing Student Centre and Management School Buildings and with the future masterplan buildings that will eventually replace it are equally important considerations.

To the north of the site, therefore, is a primarily pedestrian route, Marshall Street, connecting Bristo Square to Nicholson Square that passes by the service entrance of the Health Centre in the short term and a potential new building of around five or six floors in the long term. To the east is Potterrow itself - a relatively busy street that adopts the alien character of a dual carriageway as it passes the Student Centre and Management School. The buildings on Potterrow itself comprise a mixed bag of tenement-type housing above shops and a new mosque that tends to underline the fragmented nature of the area. To the south is Crichton Street and the 1960s Appleton Tower, academically an extremely functional and effective University slab-block that rises well above the natural skyline to 11 floors. On the west side of the site is Charles Street, which adopts the role of a major pedestrian route between George Square, Bristo Square, the McEwan Hall, the Health Centre and other prominent landmarks beyond the immediate area such as the Old Quadrangle and Chambers Street.



The Four Corners

The four corners of the site also have particular significance. The combination of Charles Street, with the increasing use of Crichton Street (as nearby developments east of George Square come on stream,) means that the corner of the site at the intersection of these two routes has a high level of prominence, not only for pedestrian traffic but also from George Square itself, making it an obvious location for a major entrance. The opposite end of Charles Street has a similar level of importance, being highly visible from Bristo Square, albeit with a backdrop of the Appleton Tower, and the point that can provide the first impression of any new buildings when approached from the Old Town via Bristo Place. The north-east corner has the potential to form a pivot in the alignment of any new route between Nicholson Square and Bristo Square, whereas the south-east corner announces both the site and the point of entry to George Square on the approach from the south. This latter connection has further significance in that it represents the main link to the University's suburban campus at King's Buildings.

At high level, the views are exceptional. With Salisbury Crags to the east, the Pentland Hills to the south (somewhat obscured by the Appleton Tower) and the Castle to the north-west, the roofscape is not only an important resource but will also be visible from many surrounding points.

The Architects' approach to the project is intended to balance the functional needs of the University's estate and its occupiers with those of urban design and the external community.

Function

Like many academic institutions, the focus of the University is on teaching and research, but only a modest proportion of its accommodation is purpose-made for lectures or unique activities such as science labs. The basic requirement for most purposes is more akin to regular office space, in that it can accommodate research, administration, small teaching or tutorial spaces, academic staff offices, meeting rooms and so on. Edinburgh University's own experience suggests that simple, flexible, daylit space such as the Appleton Tower is of greater value in functional terms than, say, the converted Georgian houses in Buccleuch St.

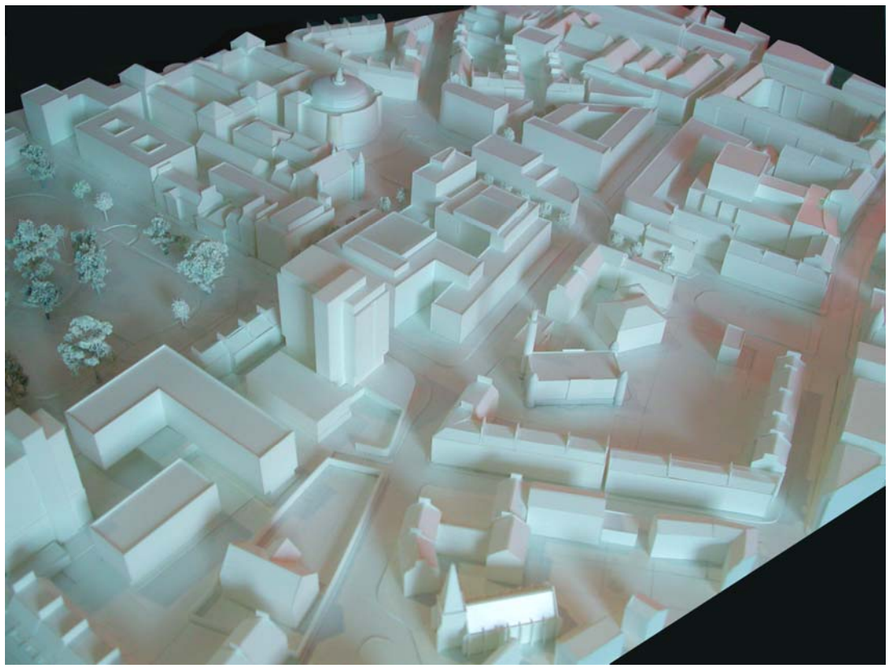
In consequence, the basic form of construction for most of the Potterrow development is a relatively standardised unit of floorspace that can be used for a range of academic purposes and can be readily adapted to a variety of non-academic uses over its lifespan. It has a generous floor-to-floor dimension consistent with modern office standards, its width is generally constant for ease of internal layout and good daylighting, and it is planned on a square module of 1.5m in common with most buildings in the commercial sector. Quite apart from its inherent economy of construction, this approach places a high priority on future adaptability, in recognition of the University estate's need to accommodate continual change in its departmental occupiers.

Therefore, whilst the site layout must adapt to a wide variety of external conditions such as views, adjacent buildings, routes, points of entry and so on, the internal arrangements of the project are of necessity repetitive and functional. The means of creating spatial interest and visual stimulus within this setting are described more fully below.

Site Layout

The design concept for the site as a whole comprises a family group of linked buildings, as opposed to one, single, large building or "superblock". There are several reasons for this.

First, the urban "grain" of Potterrow was historically far smaller (at least on plan, if not in height) than could be achieved by a single building. Second, the scale of a single building on this site has the potential to be unduly monolithic, overpowering other buildings in the area that might be considered to be more important. This is particularly true of the Old Quad - the architectural jewel in the University's crown and the centre of its governing functions. Third, the former street pattern indicated a public route across the site and there is evidence of a strong desire-line across the site today, with pedestrians picking their way between parked cars. Fourth, other urban blocks that survive in the immediate area (e.g.; the medical school) are characterised by routes, courtyards or alleys rather than a single building. Fifth, the Brief requires a development that can be phased, which can be problematic with a single building.



By using the standard unit of floorspace, each of two major buildings are arranged around a rectangular courtyard or atrium, one placed towards the north east and the other towards the south west extremity of the site. Each major building is supplemented by a further wing of space, running parallel either to Charles St or to Potterrow respectively, thereby creating an irregular geometry in the spaces between different elements of the site's composition. When viewed externally, the plan-forms created by these devices give the impression of two interlocking buildings of some complexity, in contrast to the simplicity of their internal organisation.

Public and Private Spaces

Whilst the atria of the two major buildings are enclosed and, therefore, private, the other spaces within the site are open to the sky, forming a diagonal pedestrian network that rekindles the memory of the street that once traversed the site. Each private atrium has a strong visual and physical link to the open courtyard at the centre of the pedestrian route in order to create a strong sense of focus and a memorable public space. The intention is that certain activities within each building can spill out into the courtyard when appropriate, such that a new threshold is formed between the University and the general public.

In broad terms, this network of spaces follows the slope of the ground, with its high point at Bristo Square and the low point at the south-east corner by Potterrow. Each major space is a level plateau, with gentle ramps forming the connections. It is therefore completely accessible to all, although the University will wish to control entry at designated times.

Studies have been undertaken to ensure that the form of the surrounding buildings takes account of the need for direct sunlight in the central courtyard and atria at key times of year.

Massing

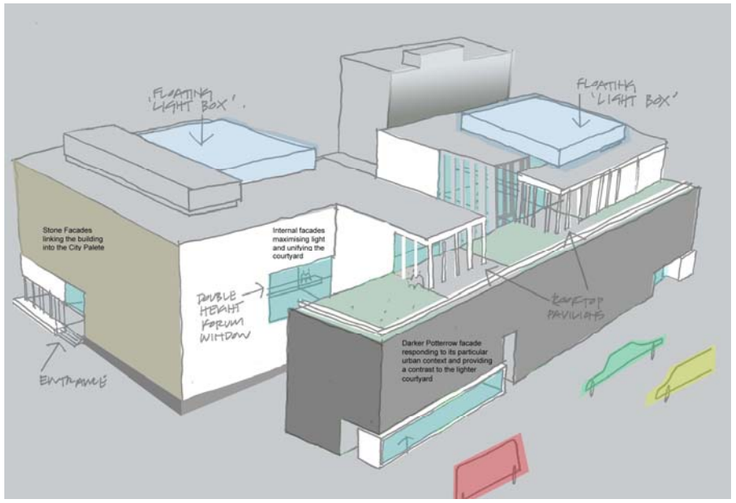
In terms of massing, complexity on plan is mirrored by variations in overall height. Whilst there is a general datum of six floors, most of the Potterrow elevation is reduced to four floors in response to the scale of the buildings opposite. Conversely, the northern end of the Charles St block is raised to eight floors so that it can hold its own beside Bristo Square and occupy the foreground in the view from Bristo Place currently dominated by the Appleton Tower. In between the taller volumes the height is reduced to three floors on the west side to allow sunlight to penetrate into the courtyard and provide visual punctuation in what would otherwise be a long façade. The skyline is further enlivened by pavilions, terraces or atrium roofs.

Elevational Approach

In order to provide flexibility for different room partition locations in future a 1500mm planning grid has been used and the smallest room width of 2 bays, 3000mm, therefore always has to accommodate a window.

It was not thought appropriate to utilise curtain walling or a horizontal fenestration approach as Edinburgh facades tend to have a vertical emphasis with a high percentage of solid to void. Thus the Potterrow fenestration pattern also tends to have windows with a vertical emphasis and a percentage of solid to void in the order of 60:40 to provide a relationship to the surrounding buildings and to reduce solar heat gain and achieve good daylighting to the interior.

We have stated elsewhere in this report that a monolithic superblock with similar elevations on all sides seemed a crude response to a very varied surrounding streetscape. It is also arguable that too much variation in terms of pattern and materials denies the function of the building and could be overly whimsical. Therefore the building strikes a balance between a consistency of overall approach whilst responding to the primary events in the context.



Elevational Approach

Thus the Charles Street elevation utilises a similar sandstone to that of George Square providing continuity but signals itself as a city block with its own identity by using an irregular window rhythm. The same materials and rhythm is used along the majority of Crichton Street and the north west portion of Marshall Street to provide not only continuity to the urban block but also emphasis the strong diagonal pedestrian route through the middle.

The Potterrow elevation uses a more regular orthogonal window rhythm and a different material, grey cast stone panels to calm down an existing street pattern which is very haphazard in terms of scale and materials. The same elevational treatment turns the corners into both Marshall Street and Crichton Street to emphasise the shape of the city block in exactly the same way as in Charles Street.

The internal courtyard facing elevations tend to have greater percentages of glazing, although with the same basic rhythm, as the courtyard context is different from the surrounding streets. The deliberately lighter cast stone panels are used to maximise light and provide a certain surprise and different feel to the more civic street facades.

Key events such as entrances, the café, special meeting rooms and roof terraces provide emphasis and contrast to all elevations.

Departmental Occupancy

The larger, southernmost of the two major buildings is the Informatics department, whilst the northernmost is allocated at present to Humanities, the Student Centre, incubator space and a new Health Centre. The location of each activity and its principle entrance reflects its identity and the need for interaction either with the University or with the public. In particular, the atrium of the Informatics building is seen as its "Forum" - a busy space in which to demonstrate its research programme and illustrate the meaning of Informatics to the wider public.

Internally, the atrium or Forum provides a strong departmental identity as well as a source of daylight. A series of double-height spaces at different positions around the perimeter of the atrium provide a sense of changing direction, encouraging vertical as well as horizontal connections. In other respects, the plan of each floor caters for a highly cellular arrangement, but with unbroken corridors kept to a minimum for visual and orientation reasons. One of these corridors is brought to the edge of the atrium and straight across the link to Potterrow, to increase legibility and add drama to the pattern of circulation.

Phasing

The first phase of construction, for which funding is largely secured, is to be the Informatics building, including its associated wing on Potterrow, plus a portion of the central pedestrian courtyard.

The timing of the second phase will depend on the availability of funding. The University is anxious to complete the full development and it is a possibility, for example, that Phase 2A, the student hub facing Charles Street will be constructed at the same time as Phase 1. The Application drawings indicate the phasing Options and the use of the residual land prior to the construction of the next phase.

Samples

Samples of all external materials will be submitted prior to the end of September.

4.0 Urban Design

Introduction

The opportunity to develop a new building in an urban campus is an opportunity to fulfil not only the university's functional requirements but also to contribute to the public realm and image of the university. This statement was prepared by the Enterprise LSE Cities (London School of Economics) on behalf of the University of Edinburgh.

The Public realm

The public realm in the context of a university should be seen to include not only the roadways, roadside pavements and distinct public spaces but also those areas that allow the public - more specifically, the student body – to move through a block occupied by a building or collection of buildings. What is especially important in a campus situation is the creation of sequences of public and semi-public spaces that link destinations, create short cuts between them and provide ample opportunity for positive student, staff and faculty interaction.

Occupying an entire block, the Potterrow development must respond to the condition of the four streets it edges. As it happens the streetscape of all four all stand in contrast to one another. Perhaps the most important in a local street hierarchy, with respect to the campus, is Charles Street. This street marks the major axis and access from the city to north- south for pedestrians and is fronted by diverse buildings. The Potterrow development proposes a generous pedestrianised surface, in contrast to that of the roadway, across the street emphasising the fact that this area already supports a high amount of pedestrian traffic – indeed, this new building will increase the amount of pedestrian activity. This paving extends north to forge links with Teviot House, Bristo Square, an existing public space, and turns onto Marshall Street, in recognition of the corner entrance. The pavement is generous on Marshall Street alongside the Potterrow development, giving pedestrians some distance from the loading bay of the Student Centre building.

As the most well-travelled pedestrian route it is logical that the Charles Street elevation presents the most 'public' face of the Potterrow development. The building façade is very permeable both in terms of actual entrances and views into the building and the courtyard and in terms of its ground floor activity. A café marks the courtyard entrance and blurs the distinction between the public and private realm. Again, this is visible as one walks towards the building from the north. A large meeting room on the ground floor is visible through a large window in the southern portion of the façade. At the same time as signalling the public or welcoming nature of the Potterrow development, an effort is made to ensure a sense of privacy for people in the ground floor rooms. This is achieved by creating a finished floor level that is above the pavement level. The south-west corner facing George Square is very significant location and this is the ideal place for a major building entrance to the School of Informatics.

Crichton Street provides an ample pavement, and most importantly, another generous entrance into the courtyard. The line of the pavement on Crichton Street follows the kerb at the north side of George Square. A recess within the pavement allows the incorporation of taxi drop off, service access and a bicycle shelter. The building pulls back from the corner of Crichton and Potterrow providing a useful meeting space and acknowledging the civic presence of the mosque.

Potterrow Street is where the campus can be said to intersect most directly with the city. This elevation is the least permeable, presenting an urban façade that contributes to a sense of enclosure along the street itself.

The Potterrow development is situated at a key location within the University of Edinburgh campus. It is pivotal in terms of occupying a block that sits between key public spaces, namely George Square, Bristo Square and Nicholson Square. It therefore must contribute to what can be seen as a sequence of public spaces, but also a diverse offering of public spaces. The courtyard of the Potterrow development is both intimate yet very accessible. It provides both a route through the block and can support small groups of people who may spill out of the meeting rooms or offices. One can also imagine, given its rather unique quality in the context of the campus, it becoming a destination for people seeking a quiet outdoor room. The sightlines through to the space and the amount of glazing facing onto the courtyard also ensure that even when the daylight is restricted the space will feel safe and secure. This courtyard will clearly contribute to the social sustainability of the University.

Movement and Connectivity

It is paramount that in general the University of Edinburgh provides strong and clear pedestrian connections through the campus as well as with the rest of the city beyond. The city and the campus have a mutually beneficial relationship both socially and economically – this should and can be reinforced spatially.

The role of the Potterrow development should be to reinforce existing favoured routes as well as create new ones. The major new route articulated by the Potterrow development is the provision of a diagonal access route through the block. Not only does this pick up on the historical street alignment of Bristo Place but also it acknowledges a desire line that stretches between Bristo Square and Potterrow Street. It is particularly appealing as an alternate route to walking along Potterrow and Marshall Streets.

The Potterrow development edges all of the primary or secondary routes into the campus precinct. In response to these routes, along Charles, Marshall, Potterrow and Crichton Streets, the development has responded in at least two ways: one is to provide a strong edge to the street (discussed further in Enclosure and Continuity section) and the other is to provide routes into and through the development at key locations. Along Charles Street the courtyard entrance is skewed slightly to ease movement and visibility from the Bristo Square direction. Also, given the nature of Teviot House and the amount of students travelling in and out of it, it is especially fitting that a courtyard entrance is place opposite this building. Access to the courtyard from along Crichton Street is also via a generous ‘funnel’ and ensures good views towards Potterrow Street and Reekie’s Court, a pedestrian route to the south. The Crichton Street entrance to the development is carefully located opposite the Appleton Tower corner, making a clear visual connection at the very least. An entrance to the Potterrow arm of the development is carefully situated on axis to Nicholson Square in the northeast corner.

Movement through the campus is quite strongly segregated between pedestrians and vehicles, with Marshall Street and the intersection of Crichton Street and Charles Street as minor exceptions. Service access is still required to Charles Street Lane but the new paving surface will signal to drivers that this is foremost a pedestrian precinct. The reduced width of Crichton Street will slow traffic down. Similarly, the new paving will alert service vehicles and cars accessing Marshall Street that they are on a shared surface. Bicycle racks are thoughtfully supplied in a visible and safe area along Crichton Street.

Further on the topic of vehicular transport, the bus stop for the University Bus Service on the north side of George Square will ensure a connection to Kings Buildings.

Legibility and Orientation

The University acts as a landmark within the greater city of Edinburgh. This occurs not only at the level of the prominent Appleton Tower but also due to the fact that its buildings form a district of a distinct, albeit diverse, character. It is in the University's interest to encourage a campus that is easily recognisable as well as easy to navigate to and through. The reinforcement of key views and vistas is a critical way in which to effect urban legibility.

The University of Edinburgh campus is visible from several important natural and/or historic viewpoints including Arthur's Seat, Edinburgh Castle, Salisbury Craggs and Calton Hill. The Potterrow development has acknowledged these prospects through habitable terraces and 'floating' rooftop light boxes. As one moves closer to the campus the McEwan Hall dome, Old College Dome, Register House Dome and Royal Infirmary Clocktower present further, albeit rare, views towards the Potterrow development. Of course, just as the new development will be visible from various landmarks around the city, the inverse will also be exploited, as the terraces will provide excellent views out towards these same landmarks, allowing people to orient themselves and gain an understanding of how the University is situated in the city.

There are several key vistas within the University precinct. The Potterrow development has made every effort to respect and reinforce these, maximising the legibility of the immediate area and allowing for easy orientation. A major vista is that which follows the route along Charles Street north towards Lauriston Place – i.e. the city – and south along the west side of George Square, terminating in the William Robertson Building and others at the southeast corner of George Square. The massing of the student hub and light box at the corner of Charles and Marshall Streets is especially important in guiding people into the campus and providing a foreground to the Appleton Tower. The main building entrance, at the base of the hub element, along Charles Street is very visible from the north, likely the most frequent approach. As one gets closer to the development the courtyard entrance becomes visible. The vista along Charles Street in many ways emphasises the spine of the University. The Potterrow development's strong Charles Street façade provides a frame for this vista. The slope in grade northward means that the roof garden planting will be visible from the ground giving an indication of semi-public spaces provided by Potterrow. Indeed the roofscape of the Potterrow development is in the foreground of key views from the Appleton Tower. The floating light boxes and roof gardens will certainly act as a pleasing foreground to the city beyond. The light boxes will act as 'beacons' from several directions. As one approaches the Potterrow development from the southwest – the Meadows parkland and George Square – the boxes along the Charles Street elevation will be visible.

The Potterrow building responds to entry points to the university precinct in all directions. The route along Crichton Street from the top of George Square is becoming increasingly busy as new development takes place at Quartermile to the west of George Square. The new building provides clear sightlines to the entrances along its southern elevation and to the bus stop from the north and east sides of George Square.

Enclosure and Continuity

Ultimately it is recommended that the buildings associated with a university perform in a manner similar to that of the buildings within any dense and pedestrian-accessible city. That is to say, they should create streets and spaces with a sense of enclosure, promoting comfortable public life. Continuous street walls and well-defined open spaces tend to create environments that are welcoming and human in scale. The issues of enclosure and continuity are, of course, directly related to those of legibility and orientation, framing the outdoor or unbuilt spaces within the urban fabric.

The Potterrow development, situated in a highly central position to the campus, is striving to be a good urban neighbour, providing consistency in building lines and massing and ultimately presenting a strong face to the rest of the city on behalf of the University. As mentioned above, the key north-south route into the University precinct, along Charles Street is edged consistently and solidly by the Potterrow development. This is especially important given the rather inconsistent building setbacks along the west side of Charles Street. Similarly, the Potterrow elevation provides a strong street wall, again opposite a somewhat undulating street edge to the east.

The courtyard, partially visible from Crichton and Charles Streets, as discussed above, offers a secure sense of enclosure. The 1.5 metre height differential from north to south is evident in the courtyard itself and aids legibility from this approach. From within the courtyard one can still have direct view of the abutting streets, yet is removed from their bustle.

Building Character

There is always the danger in the context of a university campus that is developed or redeveloped over time that each building is entirely self-referential, resulting in a collection of unrelated ‘object’ buildings. As articulated above, the sound position from an urban design perspective is rather to create new buildings in response to the existing context, no matter how diverse. This works both at the grand scale as well as that of a building’s massing, materiality and disposition with respect to environmental factors.

The Potterrow development strives to act both as a strong signature building for the University at the same time as mitigating the very diverse urban context in which it sits. This is achieved in part, as discussed above, through the massing. The development presents varied building heights and massing, overcoming any sense that it is a monolithic block. A common architectural vocabulary unifies the development, yet variations in cladding materials and architectural detail ensure responsiveness to the immediate context.

Along the Charles and Crichton facades a natural stone is employed. This is a harmonious continuation of the cream coloured stone of the George Square buildings. This is perhaps the most ceremonial of the elevations, recognising the primacy of Charles Street as a route through the campus and the proximity to McEwan Hall and Bristo Square, venues for gathering and ceremony. The elevation along Charles Street is varied in heights with the central mass being the lowest, reflecting the courtyard – i.e. semi-public space - captured in the centre of the development's mass. Similarly, the Crichton Street elevation and massing emphasises the route into the courtyard and steps down at the corner with Potterrow to match building heights across the street.

Potterrow presents a more variegated elevation. Grey cast stone panels are used, mitigating the rather busy array of materials one sees along the east side of the street. The Potterrow elevation is at a consistent height along its full length, again minimising variation and 'calming' the street.

The courtyard is light in all senses of the word. It is faced in a combination of glazing and white cast stone, maximising the reflection of light – something very important in this part of the world.

Conclusion

The Potterrow development will be a highly respectable addition to the University of Edinburgh campus, strengthening campus-wide connections and providing well-thought out venues for social interaction. However, furthermore it will mend a currently unsatisfying urban condition – replacing a car park with a building that is both architecturally interesting and at the same respectful of its urban context.

5.0 Landscape

Hard Landscape

The rationale behind the pavement lines is discussed in the previous section on urban design.

It is proposed to use a grey stone to the courtyard which flows out to the building perimeter to identify the pedestrian street and the main entrances. The grey stone also is used in the base of the two atria facing the courtyard to blur the difference between inside and outside. Irregular strips of a much lighter off white cast stone provide contrast and a relationship to the lighter colour courtyard facades.

Charles Street will be primarily granite setts to relate to setts used in George Square. The granite setts however will have a smoother surface than the existing setts to provide a better walking surface (similar to the new Royal Scottish Academy terrace) although thin strips of a slightly rougher texture will help deter skateboarders. Setts will also be used in Marshall Street.

The pavements will be a precast slab similar to Caithness stone as approved by City of Edinburgh Council.

Soft Landscape

The intention is to utilise only trees to provide a high quality urban environment and not use ground cover or shrubs which often become unsightly litter traps. A delicate leafed tree such as a silver birch will not reduce light to the courtyard and relate well to the lighter facades.

The Charles Street trees should ideally provide continuity with those further north adjacent to Bristo Square such as Turkish Hazel, or Acer campestre ‘Streetwise’.

Street Furniture

Stone benches are proposed in the courtyard and main entrances. Gates will be provided at the street facades to enable the courtyard to be closed for special events and at night.

Details

Detail drawings, specification and samples of all external materials will be provided prior to construction.

6.0 Sustainability

A broad and holistic response to sustainability is at the heart of the brief for the new Potterrow building. Objectives have been agreed for economic, social and environmental performance as summarised in the headings below.

Economic Sustainability

- Satisfying Edinburgh's economic needs.

  Efficient, large University buildings in the heart of the city will help ensure prosperity both for the University and the city. The integration of research and incubation will benefit future economic growth.

- Satisfying the University Estates Strategy

  Flexible, adaptable lower maintenance space will help reduce the University property costs.

- Value over the whole life of the building

  Consideration of running costs and life cycles is important to an appreciation of value rather than cost.

- Future Proofing

  Flexibility to allow future change including change of function, say, to offices, will help the building to hold its value.

Social Sustainability

- A shop window for the University.

  The building will house administrative functions such as lifelong learning and a Health Centre which are available to all. The building can help explain both the University and some of the functions within the building. The building will house international conferences and participate in the Edinburgh Festival.

- A heart to the College.

  The student community as a whole will access the building for information on careers etc. Putting a range of student services in close proximity will help to further develop links between the different services i.e. between Counselling and the Health Centre or the International Office and Admissions liason. There will also be a café and retail area.

- Access

  The public areas should be accessible to all with special consideration for people with disabilities.

- Research

  Several of the building users including Informatics and Linguistics hope to use spaces in the building to facilitate research.

- Crime

  The University support the use of ‘secured by design’ as a reference document regarding security issues.

- Culture

  Students and the public, are increasingly interested in green issues and environmental ethics.

- Considerate Contractors

  Construction can be disruptive. The tender documents will refer to registration of prospective tenderers within the Considerate Contractors Scheme.

- Consultation

  Consultation regarding the Potterrow building will be required with a wide variety of people including students, staff, neighbours and pressure groups.

- Learning

  The development of Potterrow offers a range of opportunities for learning both during construction (Architecture students?) and upon completion. Many of the users are actively interested in the interaction of people with each other and their environment.

- Integration

  The building will provide an active contribution to the public realm, including a courtyard to enhance the City’s social networks i.e. the opposite of exclusion.

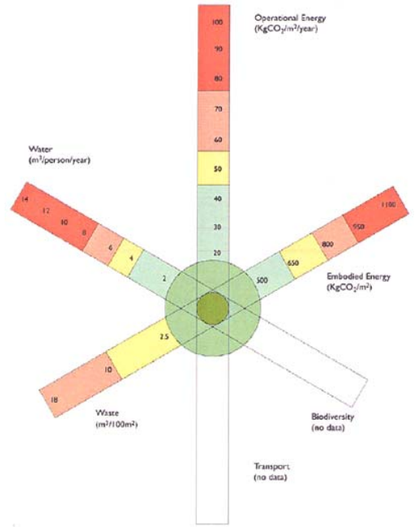
- Inclusion

  Both the outreach nature of some departments such as Lifelong Learning and the semi public nature of some of the ground floor functions will help foster inclusion by making the University more understandable to the wider community.

Environmental Sustainability

The University has adopted two key targets in pursuit of their environmentals strategy. In the first place the University wishes to see a 40% reduction in carbon emission by 2010. In the second place the University has an aspiration for all new buildings to achieve a BREEAM excellent rating.

The University also wishes the Potterrow Project to be benchmarked against the Environmental Performance Indicators promoted by the Movement for Innovation and this will require data on energy in use, embodied energy, waste, water, biodiversity and transport.



Environmental Performance Indicator

- BREEAM Features

  The University of Edinburgh (UofE) has declared its commitment to environmental issues in its Environmental Policy. These general aims have been developed in greater detail with respect to property, in general, and more specifically the Potterrow development. The requirements have guided the design development of the schemes for the Potterrow Development.

  In summary, the current designs meet the goals of the UofE Environmental Policy relating to:

  - minimisation of energy
  - minimisation of water consumption
  - reduction of harmful emissions
  - promotion of waste reduction, re-use and recovery
  - implementation of environmentally friendly transport plans

The UofE has an aspiration to achieve an Excellent rating under BREEAM 2004 for New Offices. This requirement is explicitly stated in the project brief.

These goals are to be met in the following ways:

Health, Welfare and Comfort

- The internal environments of all the buildings is comfortable and avoids risks to health (legionella, contaminants etc.). Features include:

  - Internal air quality has been carefully considered by positioning of air inlets for ventilation away from sources of external pollution.
  - Control of the internal environment has been provided for occupants wherever possible, including local control of lighting, local thermal zone control, openable windows, and control of glare in the form of internal blinds.

Transport Infrastructure

- Secure, covered spaces for bicycles are provided along with facilities for cyclists to change and shower.

- A transport plan is currently being developed which shall address frequency and quality of local transport to the development.

- Limited car parking spaces to encourage the use of the local transport links.

Land Use and Utilisation

- The development makes use of a large brownfield site which helps reduce pressure to use greenfield sites.

- The development has made efficient use of the site with a high density of people accommodated on the site.

Use of Non-Renewable Energy Sources

- Measures for reducing energy demand during the operation of the development:

  - centralised CHP plant to improve energy efficiency;
  - use of efficient ventilation system using displacement ventilation with limited requirements for cooling being served from ground water cooling;
  - improved thermal insulation;
  - solar shading to reduce solar gain;
  - energy efficient lighting and controls local to the user.

Water Use

- The demand for water is being reduced through measures such as:

  - spray taps;
  - low-flush toilets;
  - a comprehensive leak detection system.

- A rainwater harvesting system is being investigated, storing rainwater from the roof for use to flush WCs. This shall allow a target figure of 3.5m^3/person/annum.

Materials Use

- Recycled aggregate (crushed concrete) could be used in the substructure.

- All solid timber and timber panel products are being obtained from sustainable, well-managed sources.

- It has been agreed to carry out a restricted ENVEST audit for embodied energy to inform the client and design team.

Waste

- Construction waste is separated of site at the Local Waste Transfer Station.

- Waste generated during building operation will be managed and reduced by waste-stream management, including:

  - the separation, storage and recycling of waste
  - the provision of storage space for recyclable materials (such as cans, cups, paper)

Global Atmospheric Impacts

- The energy efficient design will provide the required internal environment and services with a target energy value of 90-130kWh/m^2/annum generated in an environmentally sensitive manner to provide carbon dioxide emissions in the range of 31-45 kg/CO_2/m^2/annum.

- The chillers used in the building will contain refrigerants with an Ozone Depletion Potential of zero and there is a refrigerant leak detection system installed to reduce the risk of leaks.

Microclimate and Local Air Quality

- The heat for the development shall be generated from the waste heat from the CHP plant. Back up boilers shall be ultra-low NOx (Oxides of nitrogen). Oxides of nitrogen are emitted when gas is burned at high temperatures. These NOx emissions contribute to acid raid, climate change, and local air pollution.

Noise and vibration

- A comprehensive noise assessment shall be carried out to ensure that the operation of the buildings do not increase the background noise levels beyond the requirements set by the Local Authority.

- During the construction phase regular noise surveys are carried out and actions taken to ensure that the noise does not exceed the target levels.

- Low-noise plant has been selected where possible, for example a water injection piling technique has been used to minimise noise.

Water Environment

- A Sustainable Urban Drainage System shall be installed to reduce storm-water run-off by more than 50%. The system uses the rainwater harvesting tank and over sized pipes to store the excess run-off water.

Biodiversity & Ecology

- Ecological enhancement measures for the site include:

  - implementing good horticultural practice measures;
  - choosing species that are wildlife friendly;
  - installation of bird and bat boxes in appropriate location;
  - installation of a sedum (‘green’) roof over the Entrance building.

7.0 Transport

Central Area Travel Plan

Four copies of the University's Central Area Travel Plan have been enclosed with the Planning Application

Parking

29 spaces have been provided in the basement of Phase 2. These spaces are private and will either be used by the University or medical staff associated with the Health Centre. Access to the underground car park will be via Marshall Street. This will entail reopening the vehicular access from the junction with Potterrow.

The seven metered car spaces in Crichton Street have been relocated to the north side of the street to assist with the traffic calming by reducing the carriageway width by providing a generous pavement zone.

It is proposed that disabled parking spaces will be provided in accordance with need. The basement offers a flexible solution and spaces can be provided here. There is scope to provide spaces on street in two bays on Crichton Street.

A meeting was held with City of Edinburgh Council on 27 July 2004 to discuss any requirements that the Council may have for public car park provision. It was agreed that Buro Happold Transport will conduct a parking survey once term commences and this will assist all parties to get an up to date picture of the area to provide the basis of an agreement regarding any public car parking provision.

Service Access

The University has a compactor in Charles Street Lane and therefore waste will be manually removed every day from the Potterrow Development to the compactor where it will be taken away by waste vehicles.

Service access to Phase 1 will be a dedicated lay by in Crichton Street. Phase 2 will have a similar lay by in Marshall Street. The regular servicing requirement for the development is not onerous. It is envisaged that most servicing will be undertaken by smaller vehicles. When large deliveries are expected, special provision will be made.

Taxi drop off is provided in Crichton Street and Marshall Street.

Emergency vehicle access will be required along Crichton Street, Charles Street, Marshall Street and Potterrow.

Cycles

70 Sheffield type covered cycle racks have been located in Crichton Street to serve the anticipated occupants of Phase 1. There are also shower facilities within Phase 1.

It is anticipated that Phase 2 cycle racks will be in the basement. The number of spaces provided will be in accordance with City of Edinburgh Council standards when the final occupancy of Phase 2 is established.

8.0 Archaeology

Headland Archaeology have been appointed by the University to investigate potential archaeology on the Potterrow site. Headland have provided the following summary of results of the Archaeological Evaluation.

Summary

"An archaeological evaluation was undertaken by Headland Archaeology in July 2004 at the Potterrow Car Park, Edinburgh in advance of a proposed development. This area lay outside the medieval burgh and was developed in the mid 18th century but the name Potterrow suggests a tradition of pottery manufacturing in the area. In total 9 trenches were machine excavated. The foundations and basements of buildings that lay either side of Bristo Street which formerly ran diagonally through the area were identified. No pre-modern finds were recovered. However, a possible 'garden soil' lying above the natural clay was identified in two of the trenches in the south-eastern corner and one trench in the north-eastern corner of the site. Though 'garden soils' are commonly medieval in date, this deposit broadly corresponds to former garden areas lying to the rear of the late 18th/19th properties fronting onto Bristo Street. If earlier medieval deposits were to survive within the site, they would only survive in these areas.

The work was undertaken as part of a pre-planning application. The specification for the evaluation was agreed with the City of Edinburgh Council Archaeology Service, who advise the Council as planning authority on archaeology matters. The work was funded by the applicant, the University of Edinburgh."