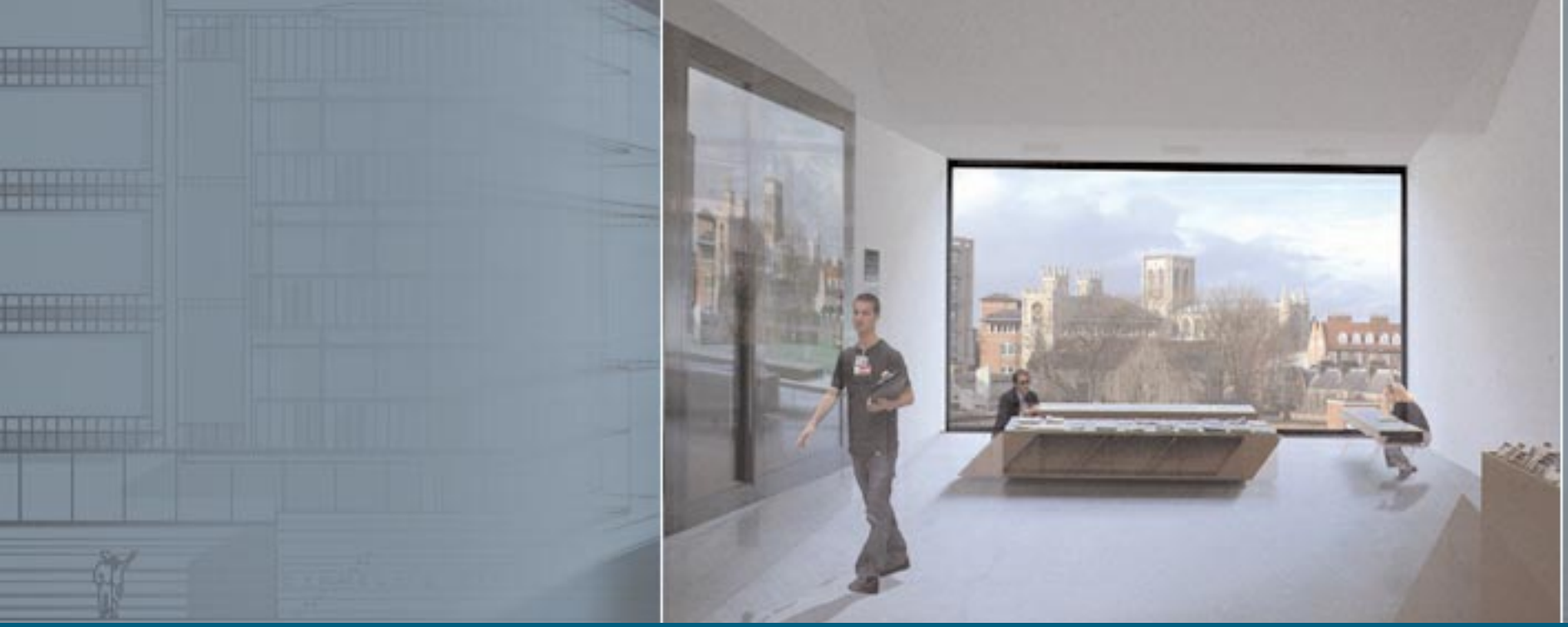

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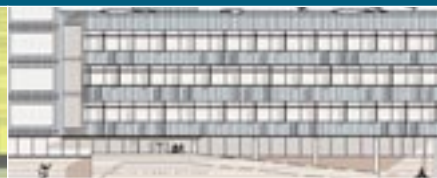
FOUNDATION

Designing the 21st century office

A competition for a new workspace in York







Contents

Designing the modern workplace

York with the Carmelite Street site bottom left
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The Joseph Rowntree Foundation (JRF) is the freehold owner of a vacant site in the Hungate area of York just outside the city's shopping centre. The site is close to the River Foss, but separated from it by a council-operated, multi-storey car park, owned and built by the Foundation on land it holds on a long lease.

In 2001, the Foundation launched a competition to secure a high quality design for an office building on the site and to identify a potential development partner. The initiative was seen as an opportunity to encourage development in a neglected inner area of York, to explore new ideas about the modern workplace, and to establish a high standard, contemporary architectural design appropriate to the historic city.

The process was launched in the autumn of 2001 with an open invitation to teams of developers and architects to put their case, within a ten-page submission, for being one of four teams to be invited to prepare detailed proposals. Those selected would have a period of three months to

produce a scheme with a development appraisal and would receive an honorarium of £6,000 towards their expenses.

Twenty-six submissions were received, and considered by an Assessment Panel comprising the Chair and a Trustee of the Foundation, the Chief Executive of the British Property Federation and an architect and an engineer from private practice, both senior figures in their field.

In order to include a range of competitors – both well-established organisations and emerging ones showing promise – the assessors selected five, rather than four, teams. They had all demonstrated in their initial submissions an understanding about the changing requirements for successful office accommodation, an enthusiasm for modern construction methods and sustainability considerations in design, and a high standard of architecture in previous projects.

The competitors were issued with a competition brief (see page 5) setting out the objectives to be addressed, the information required back, and the timetable. An opportunity was afforded for questions on the brief, the answers being given to all competitors.

The submissions from the five competitors were circulated to the assessors before they met again in February 2002, for a day of presentations and interviews with each team. The assessors stressed to the five competing teams that they were not expecting to end up with a proposal that could be taken straight to site. Rather they would be selecting the team that showed the greatest understanding and imagination in relation to the brief, and in whom they felt the greatest confidence that the individuals involved could work with the Foundation and deliver as a team.

The assessors selected Panter Hudspith Architects with Complex Development Projects Ltd. The assessors' views on all the schemes, and their reasons for selecting the winning team, are set out in the assessors' report (see page 15).

The competition brief

Competition objectives

The Joseph Rowntree Foundation (JRF) is seeking a proposal for a new workspace in York that will be commercially successful and will respond to all the requirements of a modern working environment.

Competitors should reflect upon the emerging conditions for office work in the 21st century. These include the demand for different types of accommodation, the implications of 'hot desking' and video-conferencing and the creation of social conditions in offices that will counteract the trend towards

The Carmelite Street site from York Minster
© Panter Hudspith Architects

home-working and stimulate creative team work. Competitors should also address sustainability considerations, including natural lighting and ventilation, energy performance and the avoidance of materials involving high energy use and pollution in their manufacture.

In particular, we shall be looking for a building in which:

- the external shell will be a long-term asset, a permanent and successful addition to the fabric of the historic city, durable and aesthetically pleasing

- the interior will be highly adaptable to respond to different occupiers' requirements and working practices, thereby ensuring that the building remains viable and commercially successful over a long period of time

- the mechanical, electrical and information technology services in the building will provide tenants with a high quality environment at affordable charges

- the construction of the building will take advantage of technological innovations that may include elements of off-site fabrication and will embrace the philosophy of partnering set out in *Rethinking construction,* the report of the Construction Industry Taskforce led by Sir John Egan.

- the building would be designed to have as much space as possible available for letting to maximise income.

Competition requirements

The JRF will be looking for a project that offers a minimum of 3,720 square metres of lettable space with a good net lettable to gross floor area ratio. Competitors should include a full financial appraisal, with a breakdown of building and development costs and estimated rental levels.

The appraisal should indicate a residual site value that the developer would be prepared to offer to the JRF if it were minded to sell the site outright. The appraisal should also indicate the projected yield based on a site value of £1 million, which the JRF could consider if it were minded to retain the completed development in its investment property portfolio. Proposals in terms of various joint venture arrangements will be welcome.

Agents advising JRF have indicated good demand for office space in sizes up to 929 square metres with particular interest in units up to 465 square metres. A local medical

practice has shown interest in ground floor accommodation on the site.

In addition to the financial appraisal, competitors should provide:

- a full set of plans, elevations and sections of the proposed development at a scale of not less than 1:200, preferably in A3 booklet form
- artists' impressions and/or computer projections providing accurate, coloured three-dimensional representations of the development, as seen from a pedestrian's eye level in adjoining public streets
- a report setting out the design strategy for the building, covering planning and aesthetic issues, the internal layout, services, flexibility, and the form of construction. A brief specification of key external and internal finishes should be included
- two A1 panels, illustrating the proposals in a format suitable for public exhibition.

Submissions will be assessed by a panel comprising:

Kenneth Dixon	*Chairman, JRF*
Nigel Naish	*Trustee, JRF*
Alan Baxter	*Alan Baxter Associates, Engineers*
Douglas Brown	*DEGW Architects*
William McKee	*Chief Executive, British Property Federation*

The site

The site was acquired freehold by the JRF in 1989. It is an area of former industry, fronting Carmelite Street, with the sides of buildings on the south-west to Garden Place (which provides access to the adjacent Shambles multi-storey car park) and to Hungate on the north-east. All three adjoining roads are adopted highways.

The site as it is now
© Cartwright Pickard Architects

The Shambles car park is owned by the Foundation on a long lease, but managed by City of York Council. The Shambles is one of the better permanent car parks close to York's central shopping area, and the council expects to see it retained. It is not, therefore, envisaged that it would become part of a comprehensive redevelopment at the present time, but if it were, the equivalent number of public car parking spaces would have to be reinstated elsewhere on the site or on an adjoining site with the agreement of another landowner.

The site of the car park and the triangle of open land between this structure and the competition site are in BT's freehold ownership, but they are held by the Foundation for car parking on a long lease with over 100 years to run. Competitors should show in detail how the JRF's freehold site could be developed in isolation. They should also indicate how such a development could usefully encompass the open triangle of land, subject to agreement with BT, and how at some future date the scheme could be expanded to the riverside by adapting or redeveloping the Shambles car park.

Ground conditions

Manholes sunk on land some two blocks to the north showed the ground to be soft fill down to 1 metre below the surface, giving way to soft organic clay, probably down to 4.5 metres. Below this are banded sands and clays becoming firm at 7 metres. The upper layers of soil in this area are likely to be very compressible and unsuitable for foundations. Piling will probably be necessary, but a full site investigation must be undertaken before decisions can be taken.

Given that this has been an industrial area in the past, a study of existing information, and further site investigations, will be needed to establish whether any part of the site might be contaminated. Attention is also drawn to the section of this brief dealing with archaeology.

Planning permission was granted in 1992 for a four-storey office block with semi-basement car parking on the site. This permission, for 3,720 square metres of office accommodation, has now lapsed.

The Hungate Development Area Planning Brief

Carmelite Street is within the Hungate part of York, the largest remaining redevelopment opportunity within the city walls and close to the retail heart of the city and to the inner ring road.

The council has been seeking a comprehensive redevelopment of the Hungate area, which it believes has great potential for the development of offices, residential and leisure uses, with a framework of urban and green open spaces. A planning brief produced in October 1999 sets out a development framework, and key planning, economic development, environmental, highways and transport objectives, to maximise the potential of the area. The brief covered an area of 3.9 hectares (excluding public highways) in the ownership of City of York Council, Land Securities, the JRF and a number of private companies.

The key objectives of the planning brief include:

- a mix and variety of uses
- achievement of the council's economic development, inward investment and tourism promotion objectives
- high quality urban and architectural design
- an attractive new riverside environment to enhance the River Foss as a wildlife corridor and landscaped amenity
- enhanced pedestrian links to the city centre core, and to the Coppergate Centre and its proposed extension
- a relatively vehicle-free environment, with minimum provision of new on-site parking for visitors and deliveries, with commuter parking based in existing car parks
- enhanced access for pedestrians, cyclists and public transport
- an overall site masterplan for the area to secure its redevelopment in a comprehensive, rather than a piecemeal, manner.

The Shambles car park from the River Foss
© Cartwright Pickard Architects

The planning brief emphasises the opportunities for a landmark office development that could provide an organisation's headquarters. For this, a development in the order of 13,935 square metres, preferably on a riverside site, would be appropriate. Although the competition site could not meet this requirement, the brief generally encourages new office provision as part of the mix of uses in Hungate.

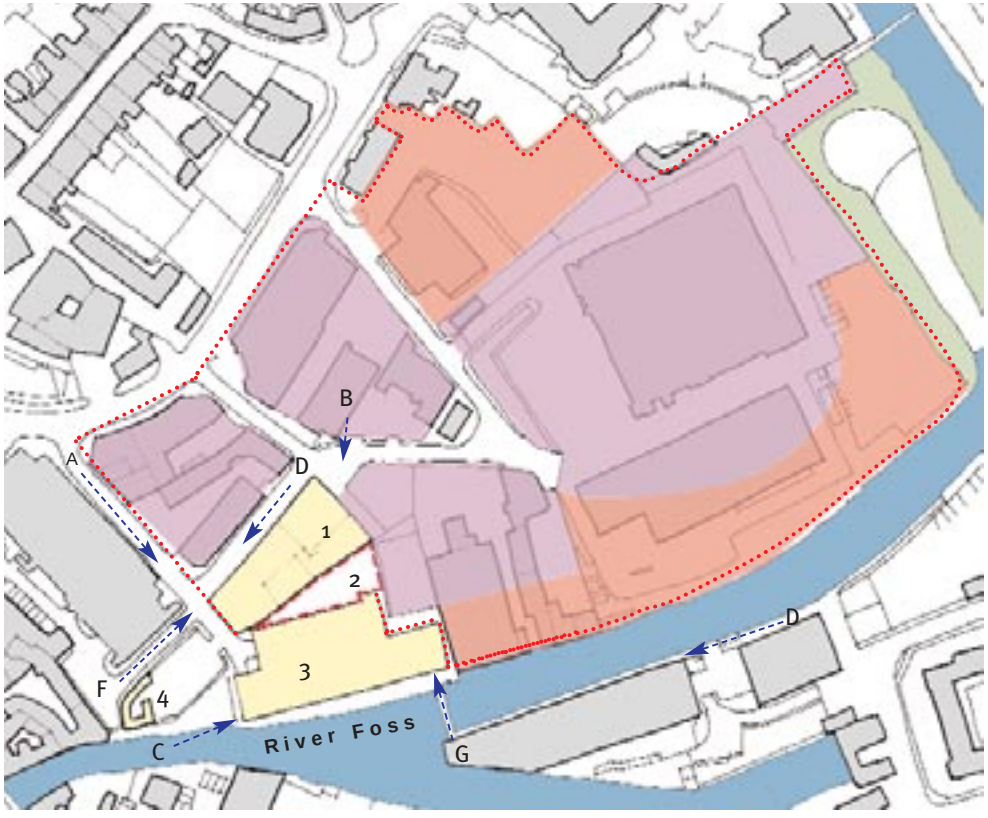
The York Inward Investment Board (IIB) is keen to work in partnership with prospective developers in the Hungate area to market office development to new investors and firms moving in. Target markets are financial and management services, 'Science City' sectors, manufacturing and the public sector. 'Science City' is a concept for the strategic development of the York economy, focused on three types of activity – bioscience and healthcare, information and communications technology, and heritage and arts technology. The IIB may make contributions from its marketing budget towards incentives, to be complemented by the developer's own contributions through rent-free periods or profit-sharing. The IIB also offers assistance with recruitment, planning and relocation, and provides tailored background information, including socio-economic data, and introductions to key players in the York community.

In addition to offices, the planning brief requires in the region of 180 residential dwellings, high quality and high value leisure uses (bars, restaurants, health and fitness facilities), possibly a hotel, and a small amount of retailing. Residential development may take the form of high-density flats and would be required to include 30 per cent of the accommodation as affordable dwellings provided by a housing association.

In seeking a mixed-use character for the area, the council is hoping to avoid stand-alone blocks of single uses, in favour of mixed-use within blocks and between floors of buildings, such as offices or housing over ground-floor retail or restaurants.

The council requires a high standard of architecture and urban design throughout the development of Hungate. It is adjacent to the Central Historic Core Conservation Area. The council considers four storeys to be the maximum acceptable height in the area, with occasional elements up to five storeys near the River Foss, reflecting the height of Rowntree Wharf. The higher elements of any buildings may be visible from a large area, and materials should therefore be considered carefully.

The Local Plan identifies a proposed pedestrian/cycle bridge across the Foss, a short distance to the east of the competition site. This will link into the new pedestrian and cycle links across the Hungate development area. A plan in the brief identifies Palmer Lane, which passes close to the northern corner of the competition site, as a proposed pedestrian route.



site context

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Key

1. Development Site
2. British Telecom Site
3. Shambles Car Park
4. British Telecom Site

Boundary of Hungate Development Site

The council expects the Hungate development to focus on the riverside, and to incorporate a landscaped walkway and public spaces along the Foss. The river forms part of a wildlife corridor from its confluence with the River Ouse out to the surrounding countryside.

The Environment Agency does not require flood storage in buildings along the River Foss. If emergency waterproofing to the walls and floors is required, it should be taken to a level of 10 metres above ordnance datum (AOD). The Environment Agency will need to be consulted on proposed finished floor levels.

The council is also encouraging developers to include public art in the Hungate area. This could be in open positions, visible to the public, or within a development where it would be enjoyed by visitors and employees.

Sustainability and accessibility

City of York Council is urging developers to incorporate sustainable development principles and practices in design, construction, development and future maintenance. They refer to the 15 Principles for Sustainable York that have emerged from the Local Agenda 21 process. Specific reference is made to the minimisation of waste and the use

of non-renewable resources; the potential of passive solar gain and insulation; storage for waste that can be recycled; recycling grey water; use of solar power; and the use of local and sustainable materials.

Development should be accessible to all, including people with mobility problems, people who are visually or hearing impaired, and carers with young children. Safe and convenient access for these people will help to provide a safe and convenient environment for everyone. Developers are expected to follow the guidance in the York Access Design Guide and to demonstrate the provision for disabled people in any planning application.

Parking and transport

The council requires covered and secure cycle parking for employees in commercial premises of not less than 1 space per 60 square metres of business (B1) accommodation. A payment will be charged in lieu of car parking at the rate of £3,000 per space, the number of spaces being calculated on the basis of the difference between the car parking standard for B1 uses in the city centre and the operational parking requirement for visitors and deliveries. The relevant car parking standard is one car space per 45 square metres of accommodation, with operational parking at one space per 200 square metres. All floor areas relate to gross floor areas. Thus, for a building of 4,000 square metres gross, the parking standards would require 89 spaces and the operational figure would be 20 spaces. If all the operational spaces were provided on the site, the commuted sum would be (89 – 20) x £3,000 = £207,000.

Only operational parking may be provided on site. The commuted sum payment will be used by the council for appropriate transport improvements, such as the proposed Park and Ride on the Malton Road corridor, and improving public car parks such as Foss Bank and the Shambles.

On-site parking in the Hungate area should be below the operational figure referred to above, in view of the availability of public transport and public car parks in the area. The council and the Inward Investment Board will work with the developer to compile a transport plan to ensure that there is sufficient on-site car parking for efficient operational purposes.

Transport policy statements are required from individual companies for any development where more than 50 people will be employed. These identify ways in which sustainable transport practices can be developed and promoted by the company for its employees and visitors. Where the occupier is not identified in advance, a condition will be imposed on the planning permission, requiring any subsequent occupiers

to submit and agree their statement prior to the occupation of the premises.

Archaeology

A study of existing information about the Hungate Development Area was carried out in 1999 by the York Archaeological Trust on behalf of Land Securities. This showed evidence of the likely preservation of archaeological deposits, increasing in depth to over 6 metres towards the River Foss.

The site, which would have been within the Roman settlement, is now included in the York City Centre Area of Archaeological Importance, designated under the Ancient Monuments and Archaeological Areas Act 1979. The banks of the River Foss were likely to have been used for trade in the Anglo-Scandinavian period. In the 13th century there was an important Carmelite Friary with the usual range of friary buildings on the edge of the fishpool that resulted from the 11th century damming of the Foss to create a wet ditch around York Castle. The Carmelite Friary received a royal grant in 1314 to reclaim an area of the fishpool for construction of a wharf. In the 16th century the fishpool was used as a public rubbish dump. Following the canalisation of the Foss in the late 18th century, the Hungate area was developed with industry and what became slum housing.

Panter Hudspith's winning proposal as seen from Garden Place
© Panter Hudspith Architects

Evaluation and bore hole surveys were carried out on the site of the Shambles car park in 1989 and on the competition site in 1991. These demonstrated the existence of well-preserved, waterlogged organic medieval deposits that appear to have been associated with organised reclamation of the fishpool. The well-preserved remains of part of the medieval quay were also found while excavation of the public rubbish dump could probably provide valuable insights into late medieval living conditions. These medieval and post-medieval deposits may seal Anglo-Scandinavian and Roman deposits further below.

Planning Policy Guidance Note 16: Archaeology and Planning favours the preservation of archaeological remains in situ. Development that can be shown to disturb or destroy not more than 5 per cent of any archaeological deposits on the site will normally be granted planning permission in accordance with archaeological policy in the City of York Local Plan. Further information may be required by the City Archaeologist during the planning application process.

Earlier excavations indicate that the top of medieval deposits is within 1.5 metres of the present surface and well-preserved, archaeologically significant, post-medieval dumps occur up to 1 metre below the present surface. Therefore, preservation in-situ to comply with PPG16 and the Local Plan precludes any accommodation below ground level.

If it is thought to be commercially advantageous to provide basement accommodation, then early discussions must take place with the York Archaeological Trust. The designation under the 1979 Act requires the presentation of an Operations Notice to the Trust. If the City Archaeologist felt that there was a need for an archaeological excavation of archaeological remains that could be destroyed during site development, the excavation work involved would be put out to tender. It is recommended that the selected developer appoint an archaeological consultant to advise on the project.

Assessors' report

Introduction

The Carmelite Street competition was set up by the Joseph Rowntree Foundation to identify imaginative ideas and a competent development team to design and produce a high quality commercial development to assist in the regeneration of the Hungate area of York.

The Foundation saw the competition as an opportunity to explore issues surrounding the future of office work in the 21st century, including the social conditions of office life. The details of what was wanted were set out in the competition brief (see page 5).

The development options

The competition brief asked competitors to produce proposals for the land in the Foundation's freehold ownership, with suggestions for extending the development up to the multi-storey car park. The competitors were also invited to indicate how the car park itself could be redeveloped at some later date to extend the development to the riverside.

Allford Hall Monaghan Morris/Lake Estates confined their detailed proposals to the land in the Foundation's freehold ownership. Cartwright Pickard/Landmark Development Projects Ltd, on the other hand, drew up proposals for the comprehensive redevelopment of the whole block including

Cartwright Pickard's ambitious project for the riverside
© Cartwright Pickard Architects

the multi-storey car park. The other three teams chose to produce detailed proposals for all the land between Carmelite Street and the north wall of the car park, advising that this would produce the best results in architectural and financial terms.

The Cartwright Pickard/Landmark Development Projects Ltd approach did not find favour with the assessors. The financial appraisal was regarded as misleading because it did not allow for the income lost by the Foundation following demolition of the multi-storey car park or the cost of replacing the public car park on another site.

The architectural design was on a grand scale and exquisitely presented, but was found to have a number of defects, including the use of the whole Carmelite Street frontage for car parking on ground and first floor levels. The concept of a comprehensive mixed-use building rising from four to eight storeys on the riverside was felt to be excessive in scale, and the development could not be built in phases, but would depend on a wholesale site clearance. There would therefore be no immediate way forward and no prospect of kick-starting the regeneration of Hungate with a manageable first phase project.

Therefore, despite the quality of presentation and the breadth of ambition, the assessors felt obliged to rule out the submission from Cartwright Pickard/Landmark Development Projects Ltd. The remainder of this report addresses the other four submissions.

Financial appraisals

Direct financial comparisons between the remaining four schemes were difficult to make and unreliable because of the wide range of financial projections and the number of variables that were included or excluded. For example, it wasn't always clear whether Section 106 commuted sums for car parking had been built into the calculations.

The proposal that produced the best financial return in terms of a land purchase offer to the Foundation was the Allford Hall Monaghan Morris/Lake Estates proposal at £1.332 million, despite setting the lowest projected rental level at £13.50 per square foot. The project was able to achieve this through its low cost/no frills approach to the development, creating what it described as 'robust, workmanlike spaces'. Developer's profit was set at 15 per cent.

The Markland Klaschka/Knowstone CD project was the least encouraging. The team admitted that, based on initial costing and current rents, the scheme would not be viable. With an optimistic rent of £15.50 per square foot and a developer's profit of 13 per cent, the team came up with a projected land purchase price of £100,000.

The other two projects were in the middle of the range. Feilden Clegg Bradley/Munroe K Ltd arrived at a land purchase price of £330,749 based on an office rental level of £15 per square foot and a 20 per cent developer's profit. Panter Hudspith/Complex Development Projects offered £408,090 for land purchase based on a rental of £14.50 per square foot and a developer's profit of 17.5 per cent.

The assessors treated all these figures as rough guidelines only, bearing in mind the limited information on which they were based and the inevitable inconsistencies between them. They noted that all the rental levels would be optimistic by current York standards, but were reassured by some of the market research undertaken by competitors that suggested higher rents may be achievable for state-of-the-art modern office buildings in the city.

Accommodation

The brief called for a development providing a minimum of 3,720 square metres of lettable space with a good net to gross ratio. The four schemes all achieved this target within four-storey buildings with net/gross ratios ranging from 85

Fielden Clegg Bradley's reinterpretation of the Georgian terrace
© Fielden Clegg Bradley Architects

per cent (Panter Hudspith/Complex Development Projects) to 91.1 per cent (Allford Hall Monaghan Morris/Lake Estates).

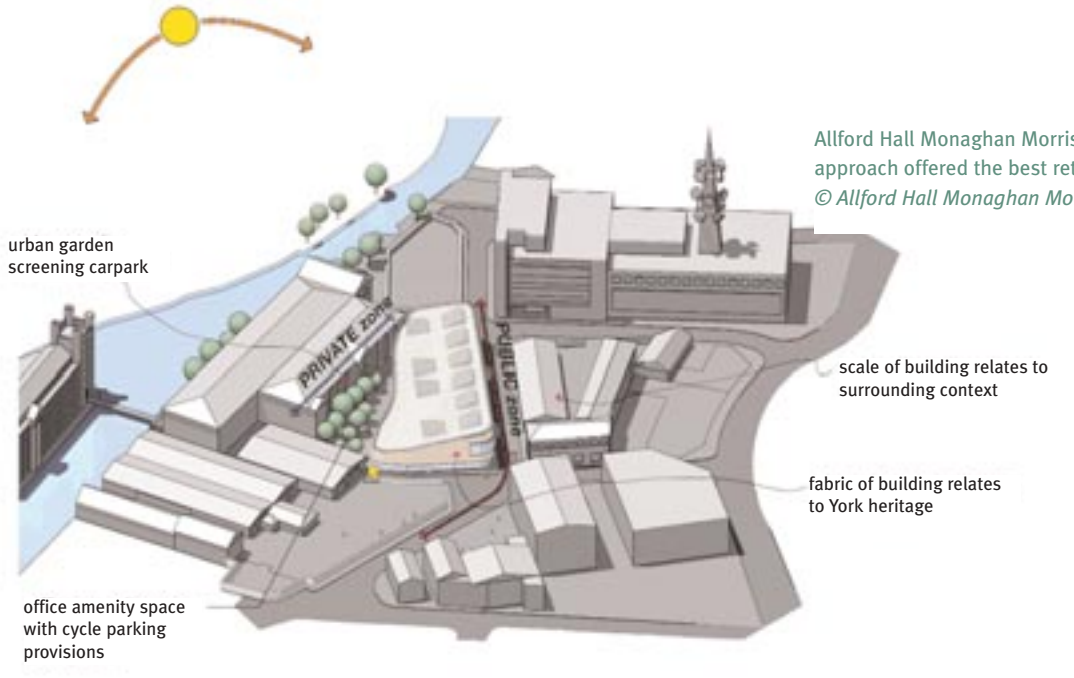
The brief also placed great importance on a flexible form of accommodation that could be subdivided in many alternative ways to suit a wide range of tenants. The four schemes achieved this in different ways, with various floor plates and circulation cores.

The proposal submitted by Markland Klaschka/Knowstone CD was considered least successful in this respect. They subdivided the development into three blocks, separated by two atria running back to front across the site. The scheme might have worked for a tenant occupying one or more floors within a block, but for larger organisations the bridge links across the atria were seen as restrictive. Moreover, the layout incorporated a fixed cellular side to each of the blocks that would restrict flexibility and obstruct daylight.

Allford Hall Monaghan Morris/Lake Estates proposed a deep plan building covering the whole of the (freehold) site with two circulation/service cores, and with the second and third floors as mezzanines each occupying just over half the building's footprint. They demonstrated alternative arrangements for subdividing the building between up to eight tenants. Both Panter Hudspith/Complex Development Projects and Feilden Clegg Bradley/ Munroe K Ltd opted for L-shaped buildings with limited office depth of 15m and 12m respectively.

Feilden Clegg Bradley explored the issue of flexibility most thoroughly, producing a design that could be subdivided both vertically and horizontally, and between different uses. Retail, restaurants, and a health clinic could be provided on the ground floor and residential across the top floor, with the possibility of live/work units in the centre of the building with their own front doors and internal stairwells independent of the communal service cores. Feilden Clegg Bradley modelled their approach on the flexibility of the Georgian terrace, which, over 200 years, has been able to accommodate a remarkable range of uses in different combinations. Their project offered a building that could adapt to economic and social changes over many years.

The assessors were particularly interested in the working conditions for occupants of the offices. They favoured the layouts by Feilden Clegg Bradley and Panter Hudspith, which offered the majority of workers views from their desks to the outside world. These two schemes also incorporated meeting rooms on upper floors at advantageous positions on the perimeter of the building where large windows could



Allford Hall Monaghan Morris Architects' no frills approach offered the best return
© Allford Hall Monaghan Morris Architects

provide excellent views, enhanced by projecting these rooms beyond the general façade line. They also proposed imaginative uses for the roof space. Feilden Clegg Bradley suggested a large summerhouse for meetings, lunches and social events, with a roof garden offering spectacular views across the city. Panter Hudspith proposed a roof terrace with an environmental theme, providing planting boxes, rainwater collection and composting facilities for staff to cultivate plants, again enjoying the spectacular view.

Allford Hall Monaghan Morris and Panter Hudspith proposed a courtyard garden for staff in the space between the building and the multi-storey car park. Panter Hudspith proposed the addition of mesh over the car park to support greenery, encourage wildlife and disguise the building's appearance. Feilden Clegg Bradley allocated the equivalent area in their scheme for 23 parking spaces, a practical use that would add to the commercial value of the development. Panter Hudspith included semi-basement car parking in their

scheme, along with cycle storage space, lockers and shower facilities for cyclists. The inclusion of the semi-basement, however, had the unfortunate effect of raising the entrance level of the building, necessitating the use of steps and a ramp, and creating, in the assessors' view, a somewhat hostile relationship with Carmelite Street.

Environmental controls

All the competitors identified the need to provide good temperature control without recourse to full air-conditioning. The common approach was to opt for natural ventilation with various natural cooling systems, which tenants could supplement with localised cooling if they wished, using the mass of the building as a thermal flywheel and optimising the benefits of heat from the sun.

Feilden Clegg Bradley/Munroe K Ltd proposed to circulate river water through pipe work in the concrete floor slabs to assist summer cooling. Low and high level opening windows could be augmented by spandrel panel vents warmed by perimeter floor convectors in winter.

Panter Hudspith/Complex Development Projects went for a similar approach, but with proprietary hollow, pre-cast concrete floor planks through which tempered air would be pumped to warm and cool the building. Air handling plant at roof level would allow fresh air coming in to be heated by used air from the building.

Markland Klaschka/Knowstone CD opted for a high thermal mass building that would heat up and cool slowly to moderate the effect of the temperature outside. Small windows were proposed to limit solar gain, with the atria providing tempered outdoor spaces and daylight to interiors. This design would be dependent on artificial lighting to supplement the natural lighting, and tenants would have limited views out of the building.

Allford Hall Monaghan Morris/Lake Estates proposed natural ventilation and perimeter heating with the possibility of air-conditioning as a tenant upgrade. The deep plan form of the building would mean a dependence on artificial lighting in substantial areas of the building.

Other ideas to emerge included the installation of solar panels and roof turbines to drive mechanical ventilation, rainwater storage, and various systems for handling sunlight through shading and reflection to maximise lighting and minimise heat gain.

Markland Klaschka's proposed view east along Carmelite Street
© Markland Klaschka Architects

Generally, the assessors were impressed with the attention given to this issue, particularly by Panter Hudspith/Complex Development Projects and Feilden Clegg Bradley/Munroe K Ltd, whose proposals were the most consistent and thorough. The reliance on artificial lighting in the context of this small office development counted against the other two schemes.

Construction

The competitors came up with different ideas for the building structure. Feilden Clegg Bradley/Munroe K Ltd was the most radical in proposing a laminated timber frame construction, supporting thin pre-cast permanent floor formers with a concrete topping incorporating recycled aggregates. Allford Hall Monaghan Morris/Lake Estates went for a warehouse type, portal frame structure enclosing the whole site, with internal floors supported on a separate structure. Others went for a more conventional steel or pre-cast concrete frame with pre-cast floor panels.

External cladding proposals were even more varied: Feilden Clegg Bradley talked about terracotta, reclaimed bricks and slumped glass, Markland Klaschka selected stainless steel and stone blocks, Panter Hudspith proposed a proprietary recycled glass cladding panel on the north, and timber on the south, Allford Hall Monaghan Morris opted for brickwork.

Conclusions

Overall, the assessors were somewhat disappointed with the architectural appearance of the schemes, and they were not confident that any of them would prove fully acceptable to

the Trustees of the Foundation, the local planning authority, or the general public. Nevertheless, they expected that their preferred choice could be developed further to achieve a building of character and interest that could set high architectural standards for redevelopment in the Hungate area.

The financial appraisals were not conclusive either in arriving at a final preferred choice. However, the proposals from Markland Klaschka/Knowstone CD were sufficiently unconvincing, along with a number of serious shortcomings in the scheme, to rule them out of contention.

The proposal from Allford Hall Monaghan Morris/Lake Estates generated considerable interest, offering as it did a low cost solution that could pioneer the regeneration of a run down area, attracting companies that would prefer its unusual working environment with mezzanine floors and double height spaces to a more conventional office building. However, the assessors anticipate a considerable uplift in Hungate over the next few years as the regeneration of the area gets underway, and therefore favoured a higher quality building in preference to the Allford Hall Monaghan Morris/Lake Estates approach.

The final choice lay between Panter Hudspith/Complex Development Projects and Feilden Clegg Bradley/Munroe K Ltd. These two projects were the most similar in many important respects – building layout, financial appraisal, quality of accommodation and a thorough approach to environmental issues. The assessors were mindful, however, that none of the schemes were likely to proceed exactly as submitted, and that their responsibility to the Trustees was to recommend a winning team as much as a winning scheme. This tilted the final decision in favour of Panter Hudspith/Complex Development Projects Ltd. The assessors were particularly impressed by their team performance at the interview, with strong contributions from developer, architect and engineer, whereas the developer's involvement in the Feilden Clegg Bradley/Munroe K Ltd presentation was disappointing. The assessors were also impressed by the thoroughness of the Panter Hudspith submission – possibly the most detailed of all the proposals – and the evidence of local research carried out which surpassed any of the other submissions. The assessors felt confident that this team would forge a strong working relationship with the Foundation, the local council and the developers involved in the larger Hungate project, and had demonstrated their ability to produce a development of high quality for Carmelite Street.

Postscript

Following the competition, the winning team Panter Hudspith/Complex Development Projects worked up their option for development of the freehold site owned by the Joseph Rowntree Foundation and refined their development appraisal. This led to a firm offer for the acquisition of the site, together with alternative arrangements based on a joint venture with the Foundation.

As the competition was nearing its closing stages, the owners of the surrounding Hungate development area appointed John Thompson and Partners to conduct a public consultation programme and draw up a masterplan. Following a well-attended planning weekend, John Thompson and Partners produced proposals for this wider area, which they and their clients presented to the Foundation and Panter Hudspith/Complex Development Projects. This has thrown up some issues and opportunities for co-operation that are now being discussed by the respective development teams.

The submissions

The submissions

Allford Hall Monaghan Morris Architects

CARMELITE STREET, YORK
Architect Developer Competition - Stage 2
February 2002

Design team

architect

Allford Hall Monaghan Morris Architects
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Design and development strategy

Design Concept

The design strategy has been to occupy the site with a building that will offer long-term flexibility to provide offices designed to meet the demands of a York city centre occupier. The proposed building is arranged on three floors – a ground floor, a first floor and a mezzanine floor.

The essence of the proposal is large flexible floor plates with maximum floor to ceiling heights. The monopitch section allows for distinct characters of office space which work together as open plan or more cellular areas. The envelope of the building is perceived as a long term investment in the city while the office spaces within can adapt and change to market trends.

Areas

The ground and first floor cover the site, each providing a gross area of approx 14,000 sq ft (1,300 sq meters) with a nett lettable area of approx 13,000 sq ft (1220 sq meters) per floor. The second floor is a mezzanine floor occupying approx 50% of the site area and providing a gross area of approx 7,800 sq ft (720 sq meters) with a nett lettable area of approx 7,000 sq ft (650 sq meters). The total building will provide nett lettable floor space of 33,600 sq ft (3,000 sq meters).

The building model could be configured to take a third floor mezzanine which would add a further 7,000 sq ft nett and 7,500 sq ft gross. This would provide a building of approx 40,600 sq ft nett. We have provided a development appraisal of both schemes. We feel that this option should be tested with the Planners.

Height

We have considered the previous planning consent for 40,000 sq ft of offices. This proposal was not built to the height standard that would meet sustainable office standards today. As our scheme is designed to BCO standards of floor to floor heights of 3.60 meters with a mono pitch roof, the height on the façade to Carmelite Street will be approx 12.50 meters. This is the equivalent of the previous 4 storey design. We consider that this is the maximum size of building envelope that could be accommodated strictly within the profile of the previously approved scheme. Our design and competition submission is based on the three storey building.

Garden

It is proposed that the open triangle of land between the site and the car park be developed into an amenity space for the office user's benefit. Trees would be used to screen the existing car park building and offer a tranquil south facing garden. This small garden in the city could be further developed through masterplanning to open up onto the river walk and create new public spaces along the River Foss.

Subdivisions

The floor plates have been designed with 2 independent service and stair cores allowing the flexibility of the subdivision of the building into a maximum of 8 units. This would enable units to be offered in a range of sizes including 3,000, 3,500, 4,500, 5,000, 5,500, 6,000, 7,000, 7,500, 8,000, 8,500, 9,000 and 10,500 sq ft. If the building were simply divided into 2 the unit size would be approx 14,500 sq ft and 19,000 sq ft. With the configuration of 2 cores each of these unit subdivisions would be self contained.

In discussion with local surveyor Richard Flanagan of Laurence Hanna and Skelton we have been careful to ensure that the concept behind the building allows for maximum subdivision to accommodate the strength of demand from the local office market. In

each of these sub divisions there would be no changes required to the external envelope that would remain fixed.

The accommodation would be offered on a shell and core basis with fit out being undertaken in accordance with occupier requirements.

Specification

The perimeter wall to the building is considered as a 'sinuous, continuous ribbon' constructed in flush pointed brickwork with recessed clear glazing at its base and projecting bands of windows over Carmelite Street and the rear garden. The flush pointed brickwork relates to the heritage of railway architecture in York.

The interior has been designed to provide robust workmanlike spaces, exposing the steel portal frame, and with hard wearing finishes throughout. We consider that this 'look' meets the demand of the user and helps reduce cost in use and thus service charges.

The 2 cores to the building provide common parts lavatories - these have been provided in accordance with the British Council of Offices 2000 guide. Stub risers are installed to allow for tenant fit out options for future expansion or special needs. The design shows further external escape stairs from the rear of the first floor that exit out over the garden area. If this is not achieved the nett floor area will be reduced by approx 40 sq meters.

The design development would designed to accord with Breeam 98 for offices.

Structural principles

The structure has been considered as a steel portal frame on 6.00 m centres with an insulated monopitch roof. The first floor and the mezzanine is supported on a separate structure to the ground. The building depth occupying the entire site is built to an average of 21.00 meters. The building envelope is both efficient in its floor to wall ratio and in its nett to gross.

Services principles

The building specification will provide a 150mm raised floor zone with a 100 mm void throughout. This raised floor would accommodate all small power and IT cabling independently zoned in accordance with the occupier requirements. The mains entries and mains supplies would go through the common part cores ensuring independent control of each tenanted space. Broadband cabling would be available to service tenant units.

The raised floor would accommodate a gas fired central heating system that would be powered from independent condensing boilers located in each space. There would be 4 boilers for each core. The central heating system would be flued up and out through the roof. The units are designed for natural ventilation, the ground floor being through ventilation, front to back and the upper units with mezzanine taking advantage of both front to back and additional updraft through the roof cowls.

With both the retention of the garden aspect to the rear and a quiet Carmelite Street at the front the development would not initially have comfort cooling. However the design of the development has allowed the flexibility of providing this as a tenant upgrade. The introduction of a split system, with condensers on the roof and fan coil units mounted in a downstand bulkhead below the flat ceiling, will still allow for a minimum of 2.70 meters of clear head room throughout the development.

Lighting will be installed within the units on the combination of uplight and ceiling light provision. All lights will be Category 2 fittings. The design specification will offer lighting levels at around 300 lux.

Procurement

The project procurement would be a modified construction management route. The modifications enabling the management contractor to offer a fixed price contract, and permitting the developer with the professional team to agree work packages with each trade manufacturer, provides a form of 'partnering' and thus gains productivity efficiencies and reduces construction costs.

Development

We attach development appraisals relating to the proposal. Appraisal 1 models the submitted scheme of approx 33,500 sq ft nett and appraisal 2 models a larger scheme with approx 40,500 sq ft nett.

In both schemes the residual value of the site is fixed at £1 million. Construction costs have been estimated on the basis of £75.00 per sq ft. We consider this to be a realistic budget cost for the delivery of the proposed development finished in accordance with the specification outlined and to a shell and core finish. All other costs relating to professional fees, specialists, finance costs are budgeted to estimate the Total Development Cost.

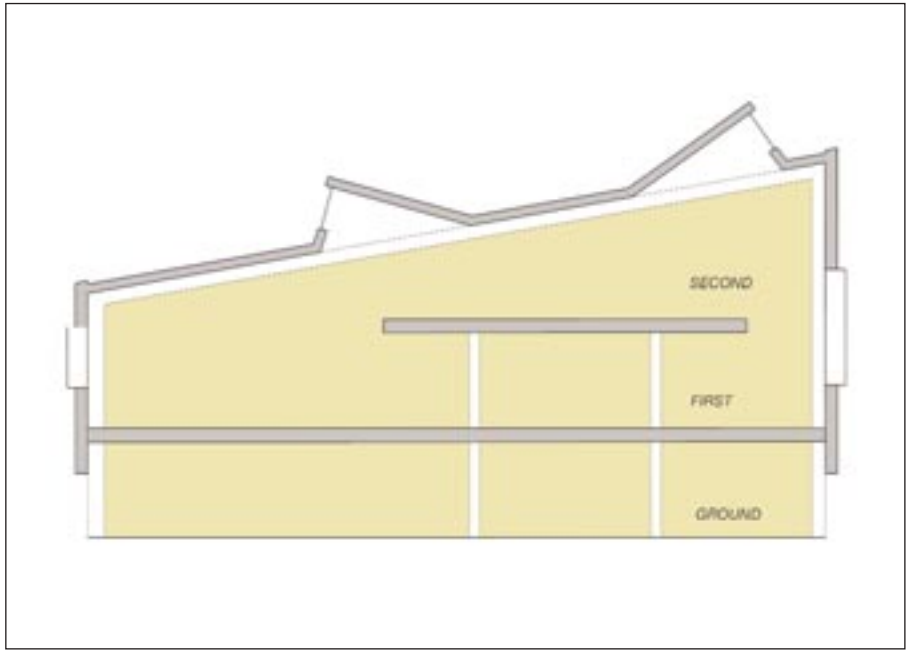
Rental has been estimated on an open market value of £13.50 per sq ft. Project value has been estimated on the basis of an investment yield of 7.75% nett of purchasers' costs.

A profit erosion formula has been applied. Under this formula JRF would receive their land receipt as a first charge against the profit from the development. Lake Estates Ltd would receive a payment equating to 15% return on total development costs. Any available surplus would be the subject of an overage split between JRF and Lake Estates Ltd on a 50 / 50 basis.

The appraisal assumes that JRF would provide forward funding to Lake Estates Ltd to complete the development and that they would either retain the completed investment in their portfolio or sell it on completion of the letting. The appraisal computes the annual return on total cost to JRF on completion.

Lake Estates Ltd would ensure that the development was completed and let to produce the pro forma returns, their profit being at risk for any shortfall, and their incentive being any improvement in final value achieved.

Financial appraisals



APPRAISAL 1

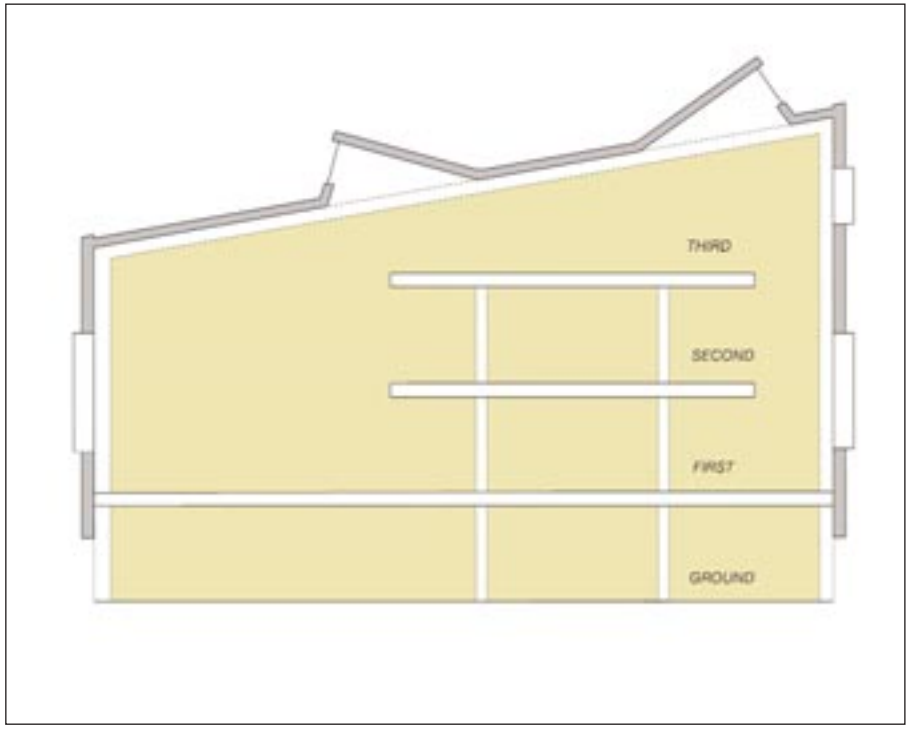
Floor Areas	Nett Sq M	Nett Sq ft	Gross Sq M	Gross Sq ft.
Ground	1,220	13,132	1,300	13,993
First	1,255	13,509	1,300	13,993
Second	650	6,997	729	7,847
Total Area	3,125	33,638	3,329	35,833
Nett to Gross Ratio	33,638	35,833	93.87%	
Plot Ratio - Development	1,300	3,329	2.56:1	

Gross Initial Costs	Site Area Sq M	Rate per Acre	Land Value by Parcel	Rate per Sq Ft Gross
Residual Value	1,300	3,112,308	£1,000,000	
Stamp Duty	4.00%	1,000,000	£40,000	
Legal Fees	0.65%	1,000,000	£6,500	
Cost of Commuted Car parking	75	3,000	£225,000	
Gross Initial Costs	35,833		£1,271,500	35.48

Interim Costs Construction Costs - Target	Gross Area Sq M	Rate per Sq M	Element Cost	
Substructure	3,329	30.00	£99,870	
Frame	3,329	60.00	£199,740	
Upper Floors	3,329	60.00	£199,740	
Roof	3,329	27.50	£91,548	
Stairs	3,329	23.50	£78,232	
External Walls, glazing and doors	3,329	180.00	£599,220	
Internal walls, partitions and doors	3,329	15.50	£51,600	
Floor finishes	3,329	20.00	£66,580	
Wall Finishes	3,329	25.00	£83,225	
Ceiling Finishes	3,329	15.50	£51,600	
Fittings	3,329	13.50	£44,942	
Services including 2 lifts	3,329	150.00	£499,350	
External works	3,329	11.50	£38,284	
Drainage	3,329	8.00	£26,632	
Incoming supplies	3,329	8.00	£26,632	
	3,329	648.00	£2,157,192	60.20
Preliminaries	15.00%	2,157,192	£323,579	
Construction Contingency	5.00%	2,157,192	£107,860	
Construction Management	3.00%	2,157,192	£64,716	
Total Construction Costs	3,329	805.04	£2,679,978	74.79

Professional Fees/Other Costs				
Architect	5.00%	2,679,978	£133,999	
Engineer	1.75%	2,679,978	£46,900	
QS+ CDM	1.75%	2,679,978	£46,900	
M&E	1.25%	2,679,978	£33,500	
Project Management	2.00%	2,679,978	£53,600	
Fund QS	1.00%	2,679,978	£26,800	
Rights of Light / Party Wall Consultant	£10,000		£10,000	
Planning Consultant	£15,000		£15,000	
Sub Total	3,329		£366,697	10.23
Disbursments/Expenses	5.00%		£18,335	
Archealogical Investigation	£10,000		£10,000	
Soil survey	£8,000		£8,000	
Site Survey	£5,000		£5,000	
Local Authority Fees - Planning / BC	£10,000		£10,000	
Insurances	£10,000		£10,000	
Total Professional Fees	3,329		£428,032	11.95
Final Fees				
Marketing / Print - Budget	£30,000		£30,000	
Legal Fees	£25,000		£25,000	
Agents Fees - Commercial Sales	1.00%	5,522,518	£55,225	
Agents Fees - Commercial Letting	15.00%	454,106	£68,116	
Total Final Fees	35,833		£178,341	4.98
Finance Costs				
Interim Costs	6.00%	3,108,010	1.50	139,860
Void cost (assume 6 months)	6.00%	3,108,010	0.50	93,240
Total Finance Costs	35,833			233,101
Project Income				
Nett Sq. Ft	33,638	£13.50	£454,106	
Total Project Income	33,638		£454,106	
Development Cost Summary				
Initial Costs	35,833		£1,271,500	35.48
Interim Cost - Construction	35,833		£2,679,978	74.79
Professional Fees	35,833		£428,032	11.95
Final Costs	35,833		£178,341	4.98
Finance Costs	35,833		£233,101	6.51
Total Development Cost	35,833		£4,790,952	£133.70

Project Value				
Yield	454,106	7.75%	£5,859,435	
Less Purchasers Costs		5.75%	£336,918	
Total Sale Value	35,833		£5,522,518	£154.12
Profitabilty Forecast				
Total Project Value	35,833		£5,522,518	£154.12
Total Development including land	35,833		£4,790,952	£133.70
Surplus from Sale including land	35,833		£731,566	£20.42
Surplus as percentage of Development Cost			15.27%	
Total Receipt			5,522,518	
Less Total Development costs excluding Land			3,519,452	
Balance			2,003,066	
JRF - Land receipt	33,638	38	1,271,500	
Developer Return	15%	4,790,952	718,643	
Balance remaining			12,923	
Overage Split			12,923	
Joseph Rowntree Foundation	50%	12,923	6,462	
Developer	50%	12,923	6,462	
Balance remaining			0	
Return to JRF				
Total Development costs - excluding land	33,638	105	3,519,452	
Total Developers Return	33,638	22	725,104	
Total JRF Cost	33,638	126	4,244,556	
Total income			454,106	
JRF Income as % of costs			10.70%	



APPRAISAL 2

Floor Areas	Nett Sq M	Nett Sq ft	Gross Sq M	Gross Sq ft.
Ground	1,220	13,132	1,343	14,456
First	1,255	13,509	1,343	14,456
Second	650	6,997	729	7,847
Third	650	6,997	729	7,847
Total Area	3,775	40,634	4,144	44,606
Nett to Gross Ratio	40,634	44,606	91.10%	
Plot Ratio - Development	1,343	4,144	3.09:1	

Gross Initial Costs	Site Area Sq M	Rate per Acre	Land Value by Parcel	Rate per Sq Ft Gross
Residual Value	1,343	3,012,658	£1,000,000	
Acquisition Fee	1.00%	1,000,000	£10,000	
Stamp Duty	4.00%	1,000,000	£40,000	
Legal Fees	0.65%	1,000,000	£6,500	
Cost of Commuted Car parking	92	3,000	£276,267	
Gross Initial Costs	44,606		£1,332,767	29.88

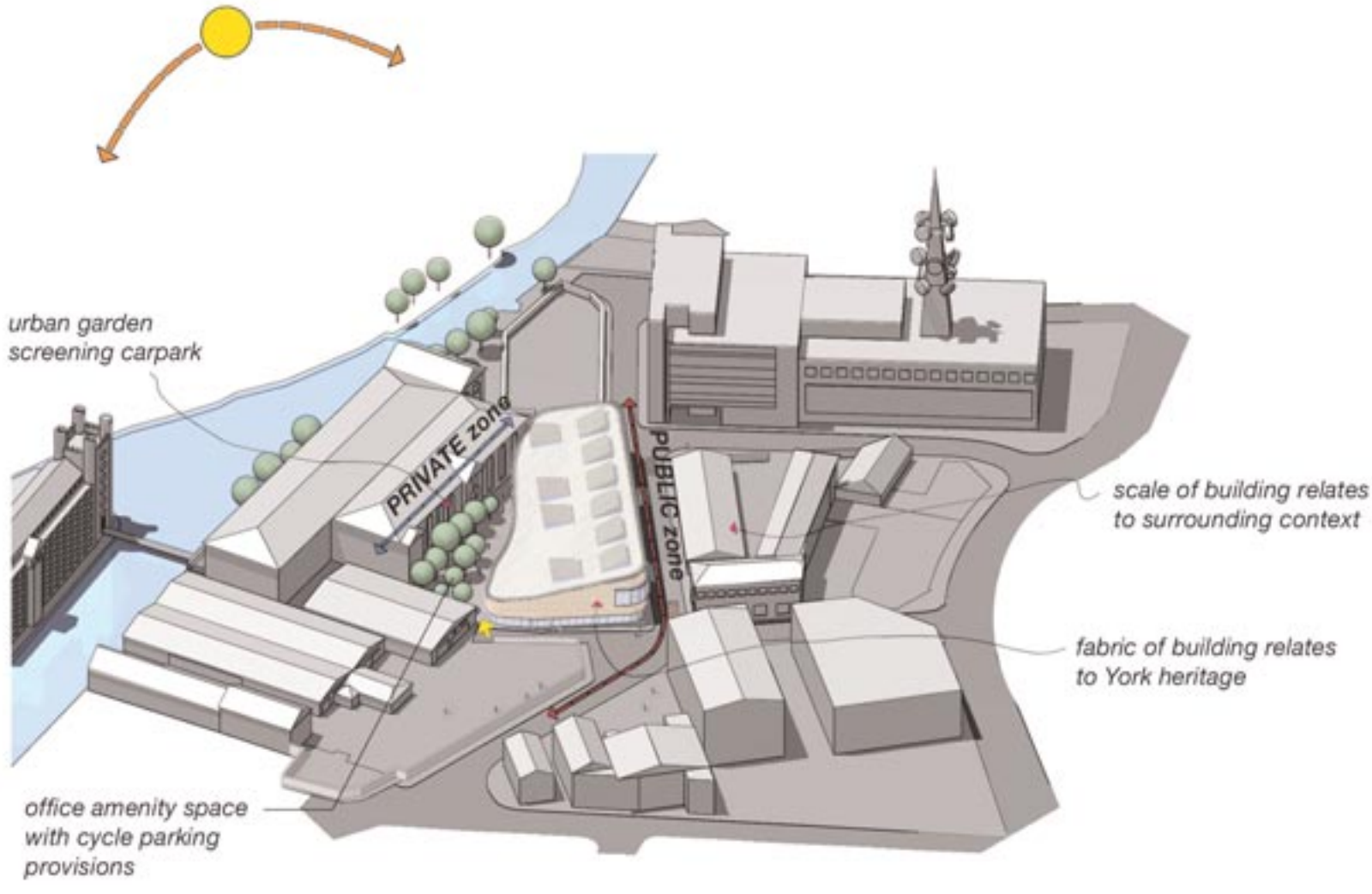
Interim Costs

Construction Costs - Target	Gross Area Sq M	Rate per Sq M	Element Cost	
Substructure	4,144	30.00	£124,320	
Frame	4,144	60.00	£248,640	
Upper Floors	4,144	60.00	£248,640	
Roof	4,144	27.50	£113,960	
Stairs	4,144	23.50	£97,384	
External Walls, glazing and doors	4,144	180.00	£745,920	
Internal walls, partitions and doors	4,144	15.50	£64,232	
Floor finishes	4,144	20.00	£82,880	
Wall Finishes	4,144	25.00	£103,600	
Ceiling Finishes	4,144	15.50	£64,232	
Fittings	4,144	13.50	£55,944	
Services including 2 lifts	4,144	150.00	£621,600	
External works	4,144	11.50	£47,656	
Drainage	4,144	8.00	£33,152	
Incoming supplies	4,144	8.00	£33,152	
	4,144	648.00	£2,685,312	60.20
Preliminaries	12.00%	2,685,312	£322,237	
Construction Contingency	5.00%	2,685,312	£134,266	
Construction Management	3.00%	2,685,312	£80,559	
Total Construction Costs	4,144	785.60	£3,255,526	72.98

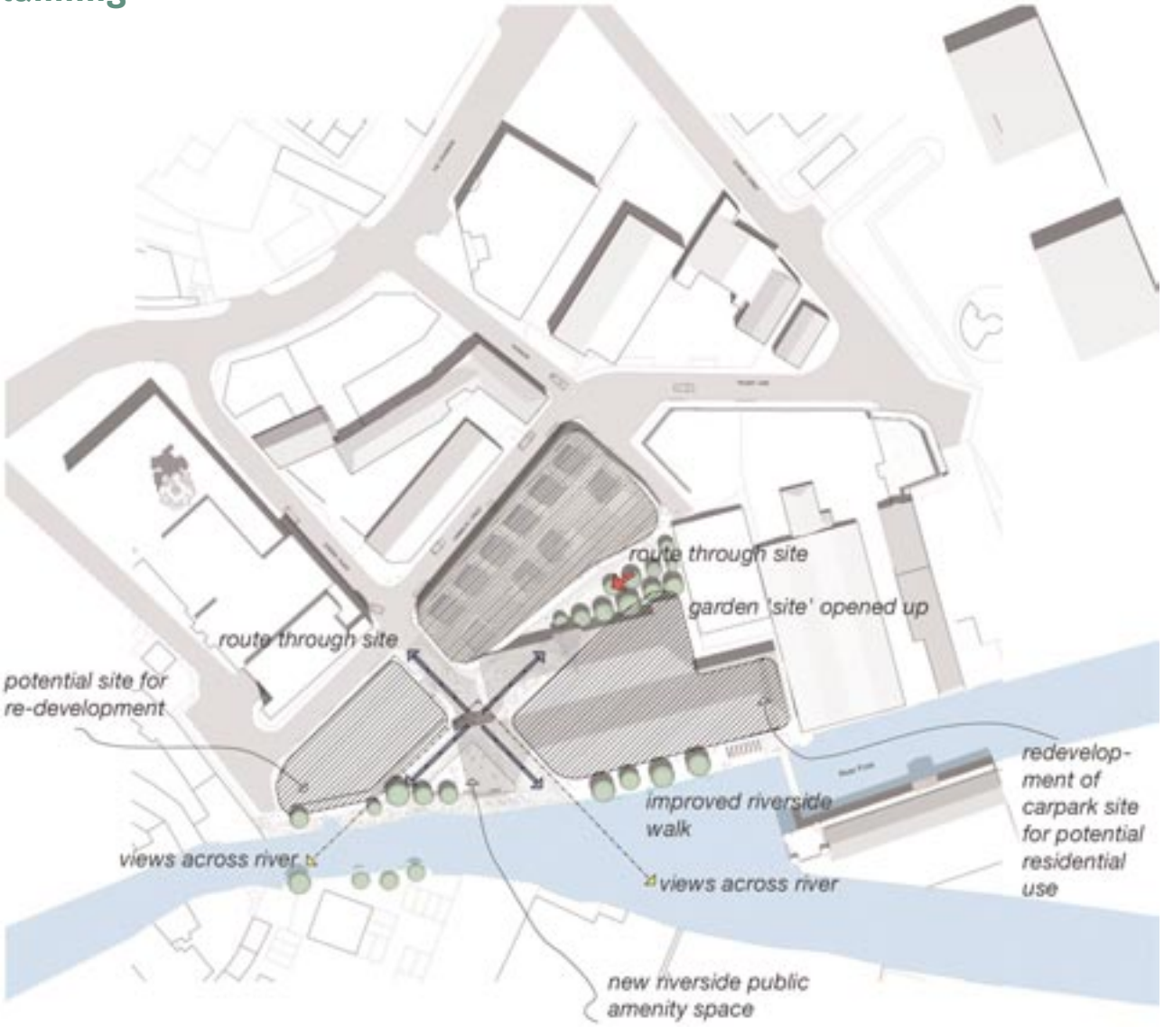
Professional Fees/Other Costs				
Architect	5.00%	3,255,526	£162,776	
Engineer	1.75%	3,255,526	£56,972	
QS+ CDM	1.75%	3,255,526	£56,972	
M&E	1.25%	3,255,526	£40,694	
Project Management	2.00%	3,255,526	£65,111	
Fund QS	1.00%	3,255,526	£32,555	
Rights of Light / Party Wall Consultant	£10,000		£10,000	
Planning Consultant	£15,000		£15,000	
Sub Total	4,144		£440,080	9.87
Disbursments/Expenses	5.00%		£22,004	
Archealogical Investigation	£10,000		£10,000	
Soil survey	£8,000		£8,000	
Site Survey	£5,000		£5,000	
Local Authority Fees - Planning / BC	£10,000		£10,000	
Insurances	£10,000		£10,000	
Total Professional Fees	4,144		£505,084	11.32
Final Fees				
Marketing / Print - Budget	£30,000		£30,000	
Legal Fees	£25,000		£25,000	
Agents Fees - Commercial Sales	1.00%	6,671,202	£66,712	
Agents Fees - Commercial Letting	15.00%	548,560	£82,284	
Total Final Fees	44,606		£203,996	4.57
Finance Costs				
Interim Costs	6.00%	3,760,610	1.50	169,227
Void cost (assume 6 months)	6.00%	3,760,610	0.50	112,818
Total Finance Costs	44,606			282,046
Project Income				
Nett Sq. Ft	40,634	£13.50	£548,560	
Total Project Income	40,634		£548,560	
Development Cost Summary				
Initial Costs	44,606		£1,332,767	29.88
Interim Cost - Construction	44,606		£3,255,526	72.98
Professional Fees	44,606		£505,084	11.32
Final Costs	44,606		£203,996	4.57
Finance Costs	44,606		£282,046	6.32
Total Development Cost	44,606		£5,579,418	£125.08

Project Value				
Yield	548,560	7.75%	£7,078,198	
Less Purchasers Costs		5.75%	£406,996	
Total Sale Value	44,606		£6,671,202	£149.56
Profitabilty Forecast				
Total Project Value	44,606		£6,671,202	£149.56
Total Development including land	44,606		£5,579,418	£125.08
Surplus from Sale including land	44,606		£1,091,783	£24.48
Surplus as percentage of Development Cost			19.57%	
Total Receipt			6,671,202	
Less Total Development costs excluding Land			4,246,652	
Balance			2,424,550	
JRF - Land receipt	40,634	33	1,332,767	
Developer Return	15%	5,579,418	836,913	
Balance remaining			254,870	
Overage Split			254,870	
Joseph Rowntree Foundation	50%	254,870	127,435	
Developer	50%	254,870	127,435	
Balance remaining			0	
Return to JRF				
Total Development costs - excluding land	40,634	105	4,246,652	
Total Developers Return	40,634	24	964,348	
Total JRF Cost	40,634	128	5,211,000	
Total income			548,560	
JRF Income as % of costs			10.53%	

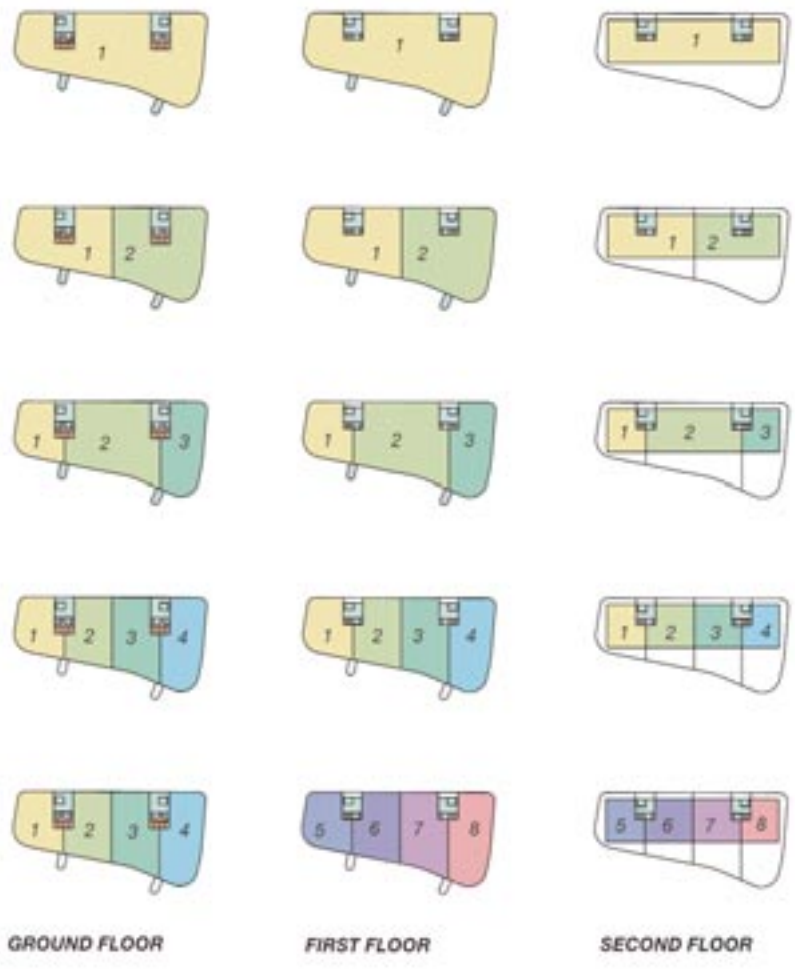
Concept sheets Building in the city



Master planning



Zoning /letting



SINGLE TENANT

	Total sq.m.	Total sq.ft.
Unit 1	3,125	33,638

2 TENANTS

	Total sq.m.	Total sq.ft.
Unit 1	1,327	14,284
Unit 2	1,798	19,354

3 TENANTS

	Total sq.m.	Total sq.ft.
Unit 1	611	6,577
Unit 2	1,693	18,224
Unit 3	821	8,837

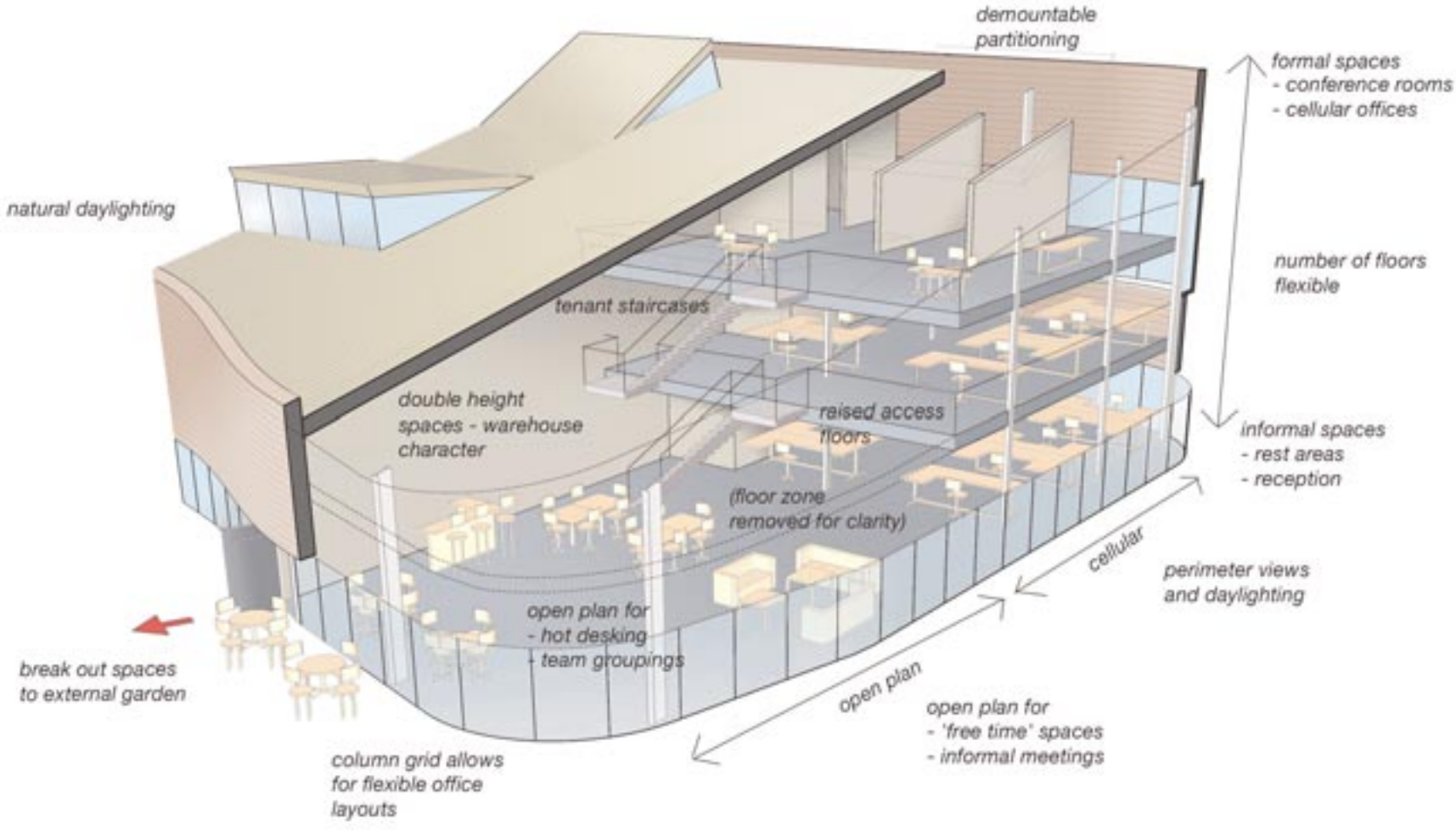
4 TENANTS

	Total sq.m.	Total sq.ft.
Unit 1	611	6,577
Unit 2	748	8,052
Unit 3	945	10,172
Unit 4	821	8,837

8 TENANTS

	Total sq.m.	Total sq.ft.
Unit 1	229	2,465
Unit 2	279	3,003
Unit 3	378	4,069
Unit 4	334	3,595
Unit 5	382	4,112
Unit 6	469	5,049
Unit 7	567	6,103
Unit 8	487	5,242

Office culture



Scheme drawings Ground floor plan 1:200

First floor plan 1:200

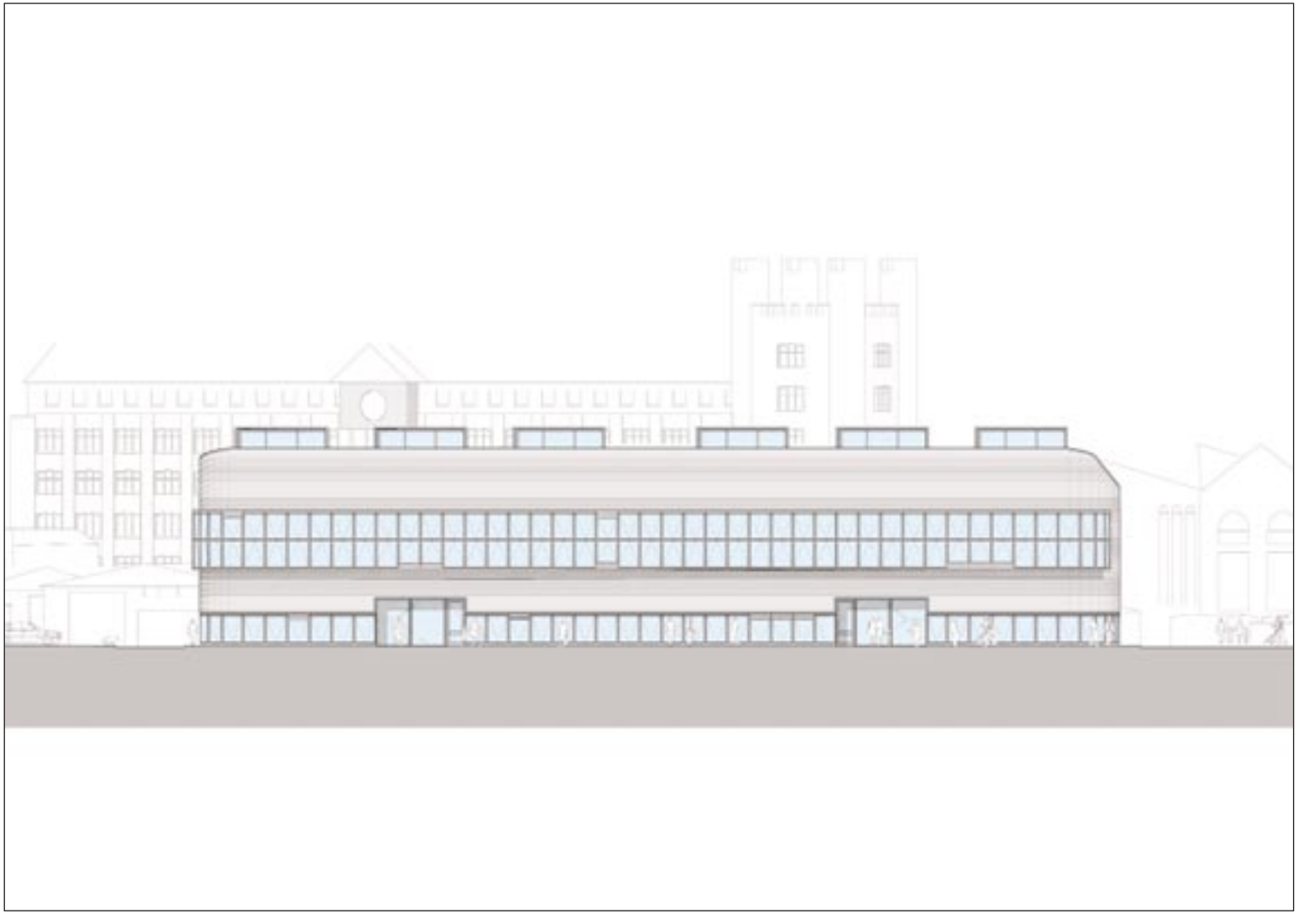
Second floor plan 1:200

Roof plan 1:200

Section through core 1:200

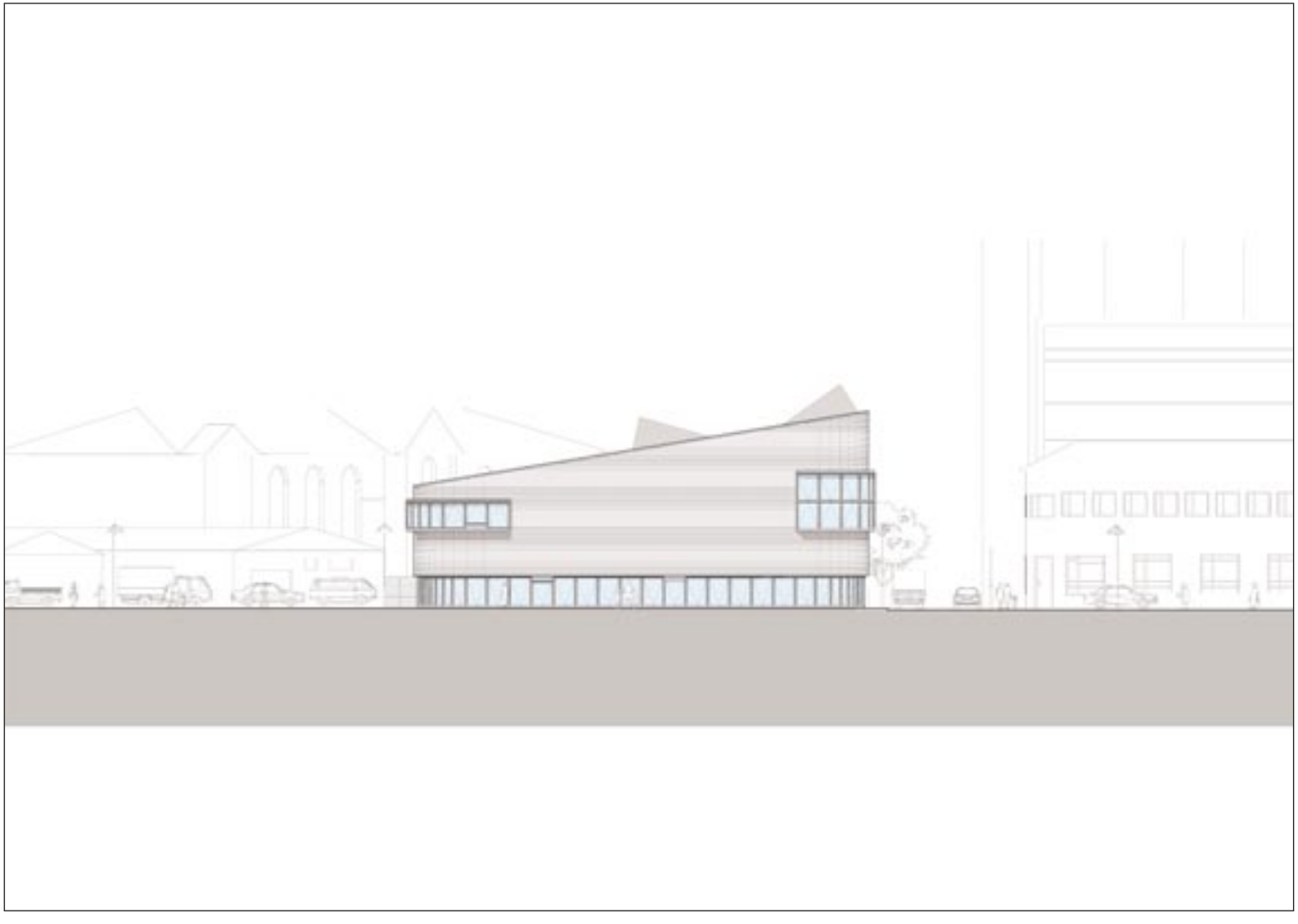
Section through office 1:200

North elevation 1:200



South elevation 1:200

East elevation 1:200

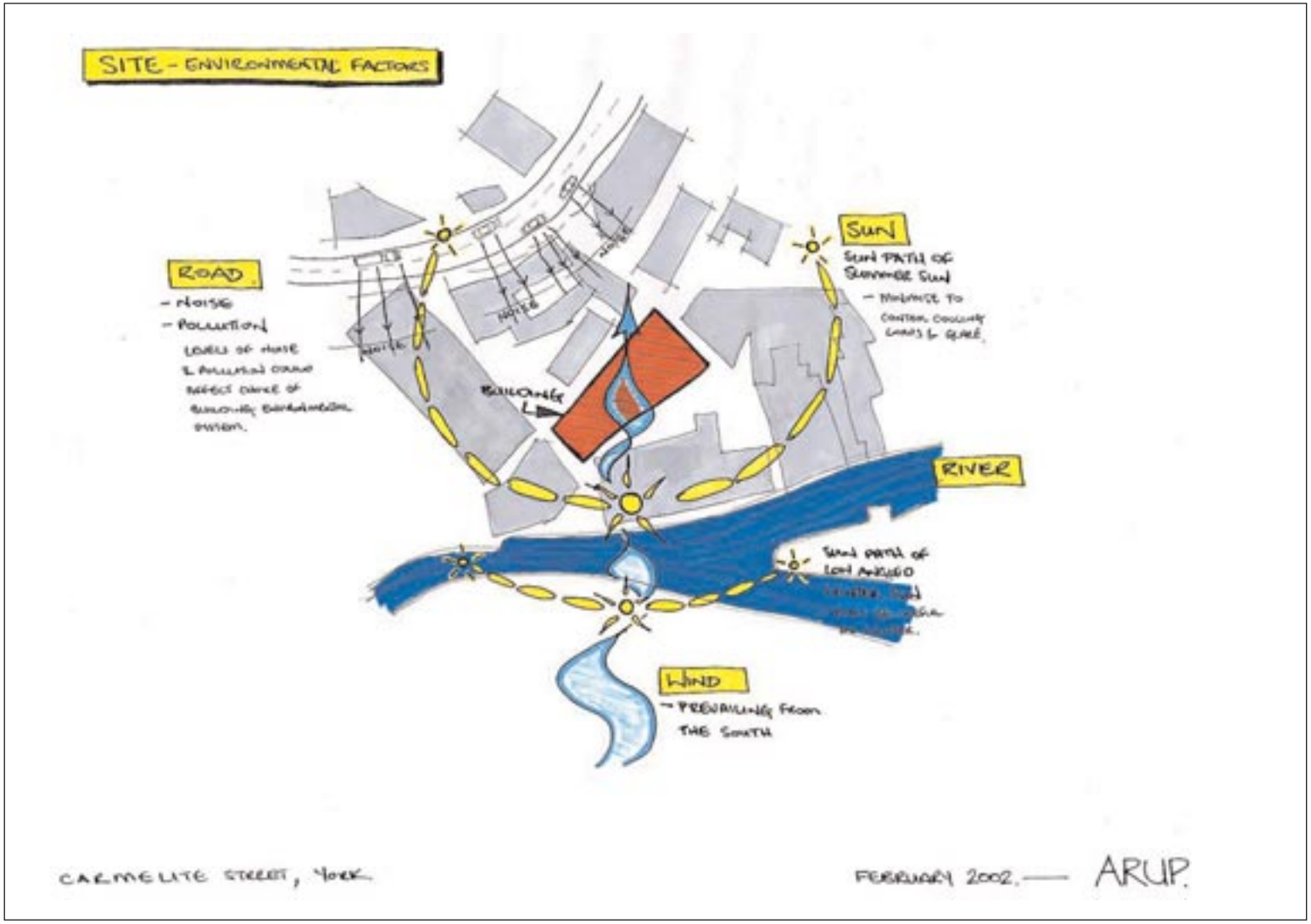


West elevation 1:200

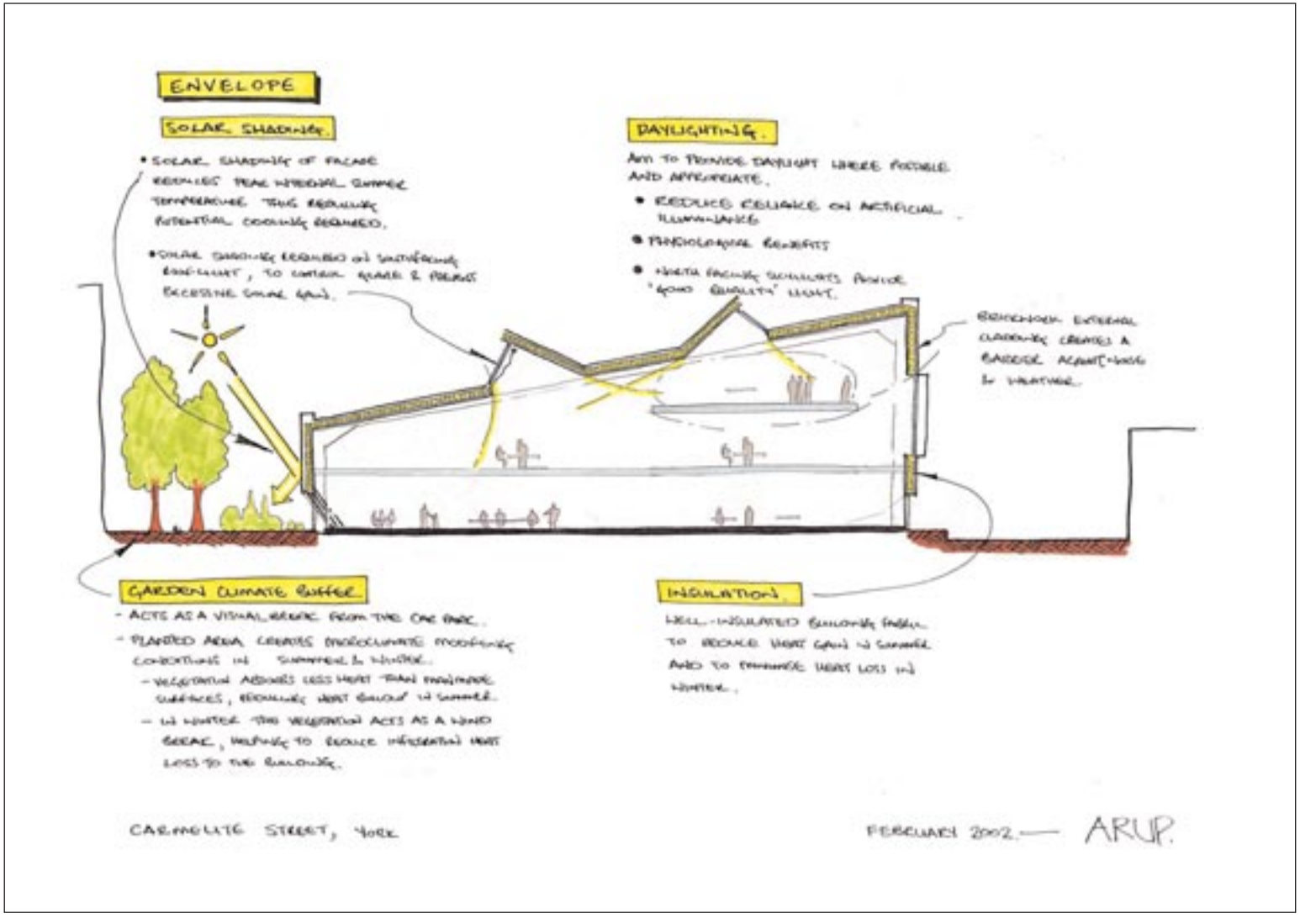
Street perspectives View from Hungate street

View from Garden Place

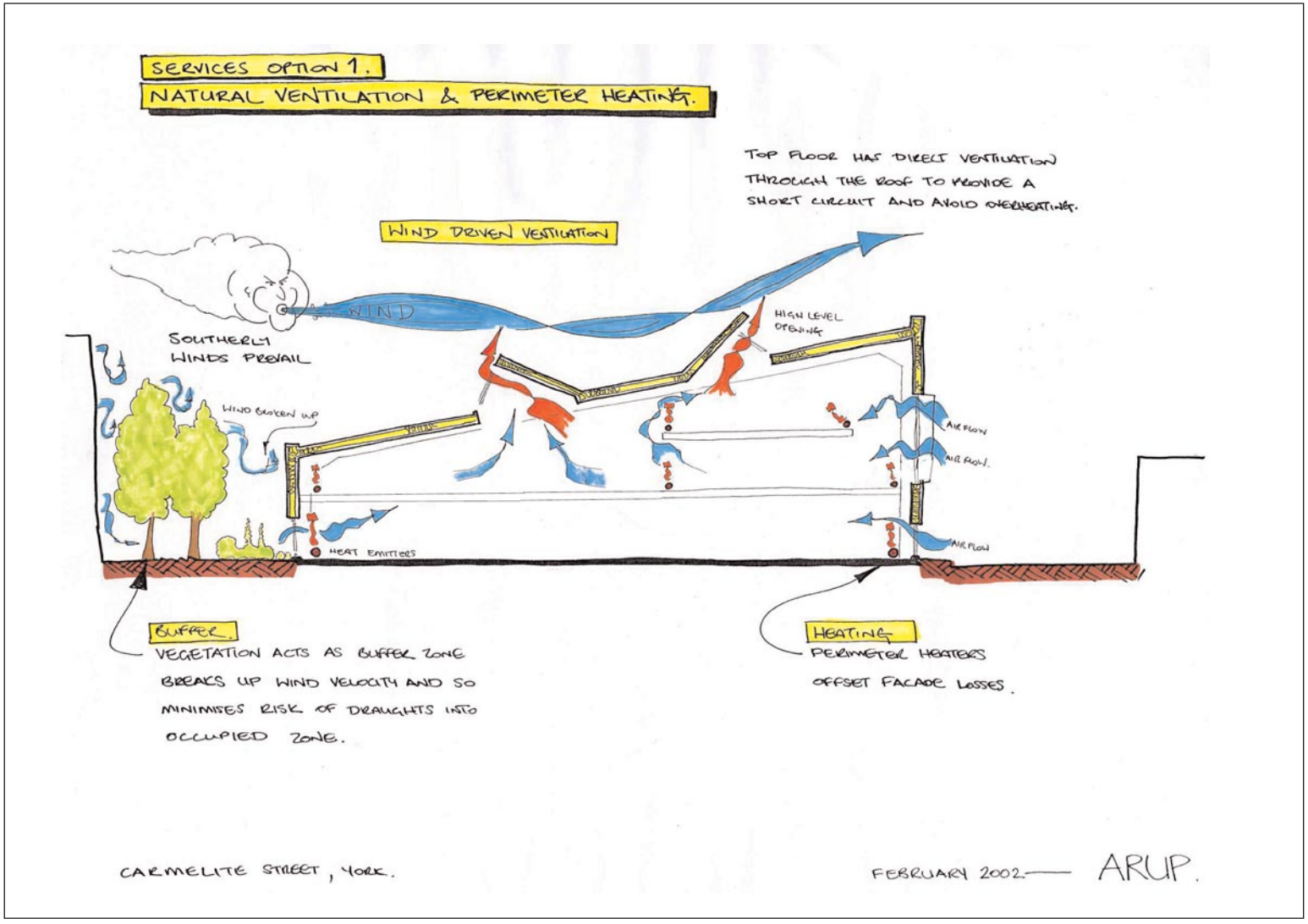
Environmental strategy Environmental factors



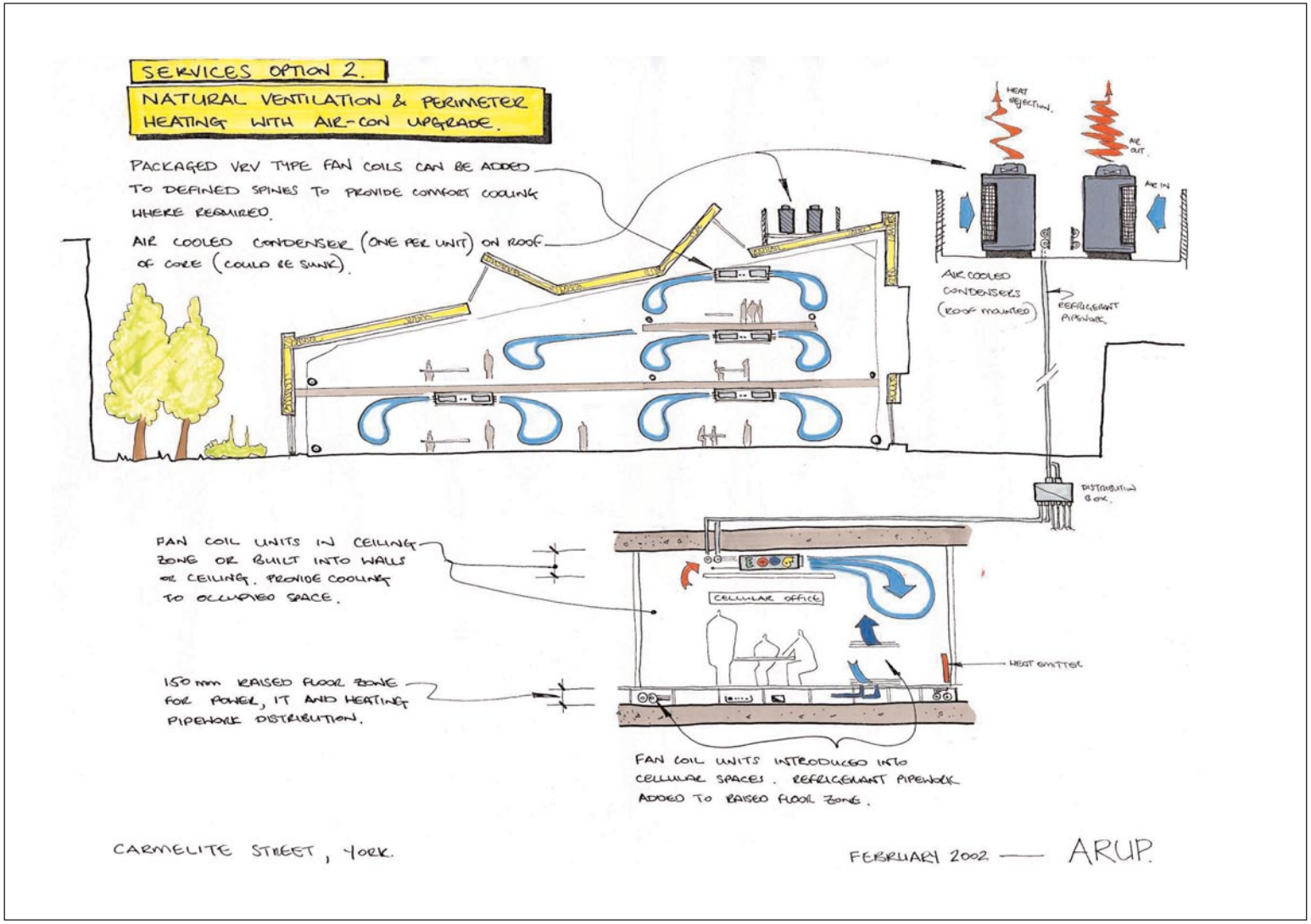
Envelope


ENVELOPE
SOLAR SHADING
DAYLIGHTING
GARDEN CLIMATE BUFFER
INSULATION
CARMELITE STREET, YORK
FEBRUARY 2002 — ARUP

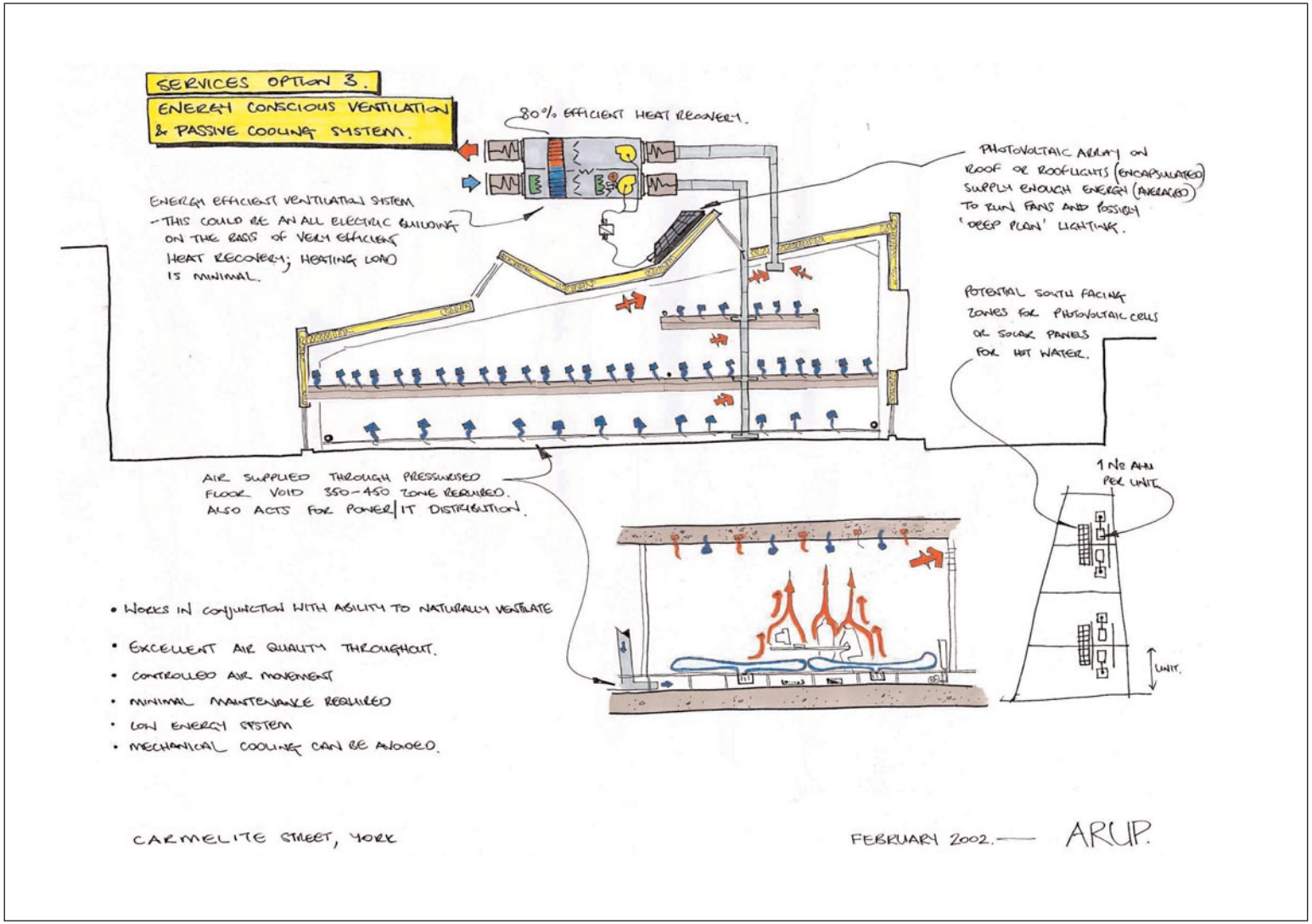
Services option 1



Services option 2



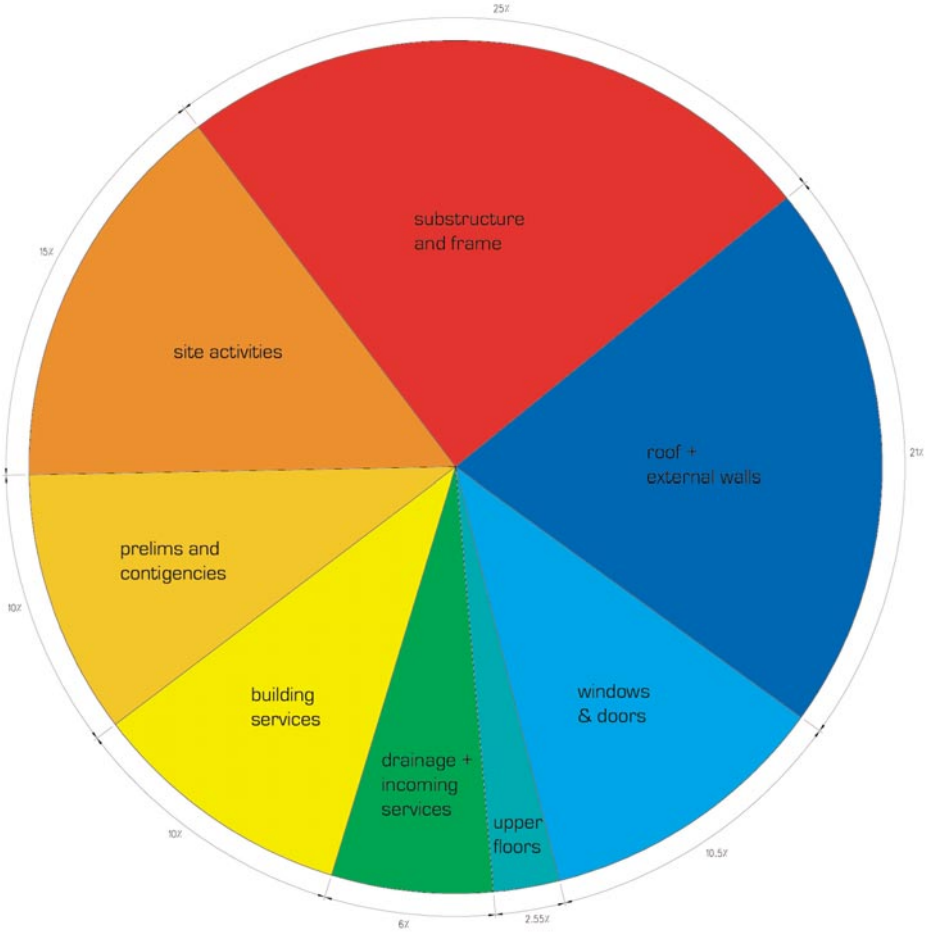
Services option 3



Structural strategy

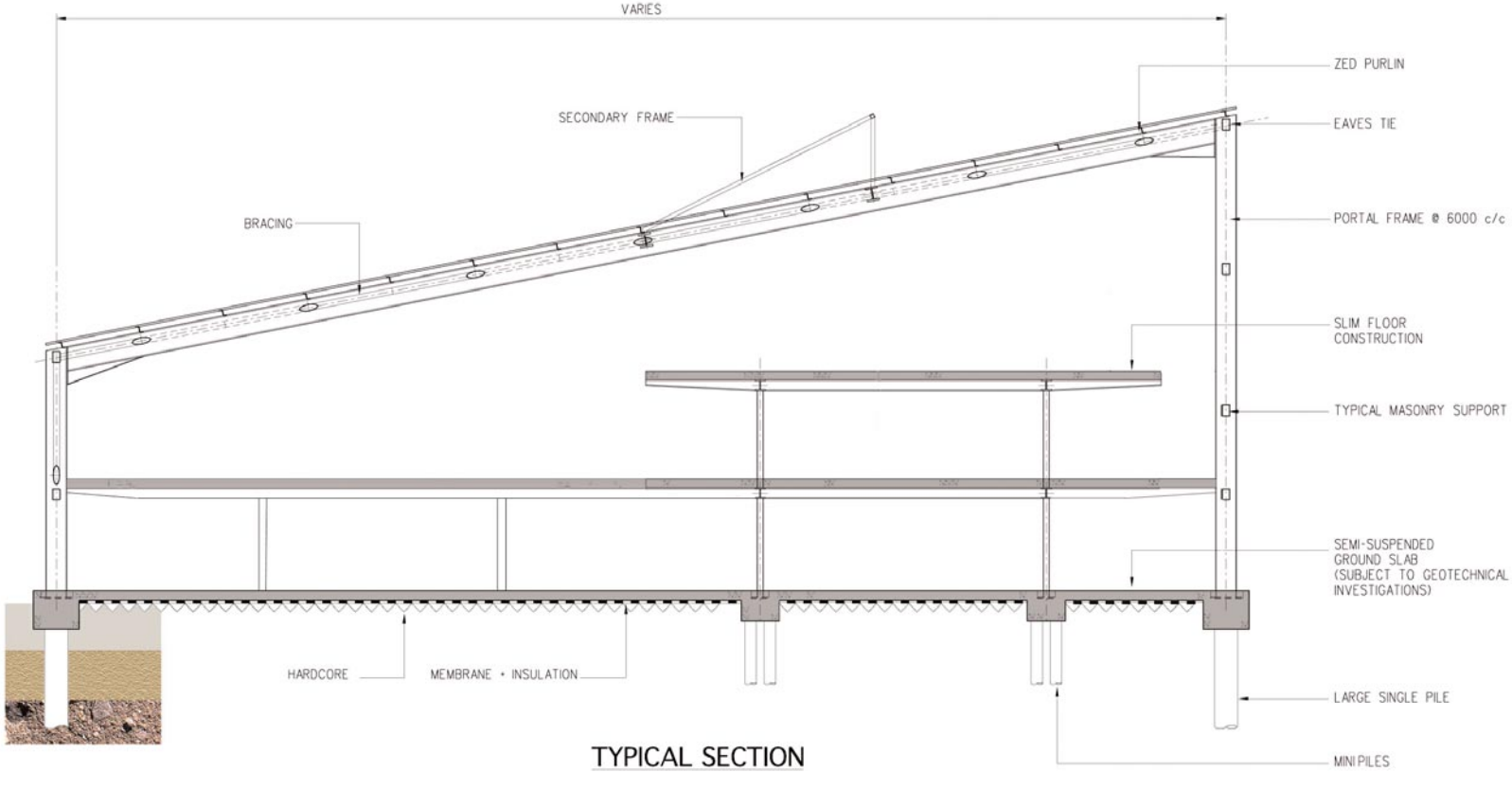
Superstructure

Structural steelwork is proposed as the principle structural material for the main 'shell'. The structure comprises of conventional 'portal' frame construction utilising 'lightweight' haunched rafters. The frames are at 6.0 metre centres and vary in span from 18m-30m allowing rafter depths to range from 457mm-610mm deep to maximise economies. Secondary steelwork is provided at the gables and on the elevations to support the 'masonry skin' whilst cold rolled and steel purlins are provided to support the roof cladding.



This structural concept offers the following strategic benefits:-

- lightweight construction with 'fast build' techniques in the construction of the shell.
- an efficient structural system with an 'inherent' stability from the framing action in the transverse direction.
- tried and tested fabrication and construction techniques for the construction of single storey 'warehouse' and bracing in the orthogonal plane type buildings.
- lightweight construction throughout simplifies site erection and reduces foundation loads minimising the impact on archaeology.



TYPICAL SECTION

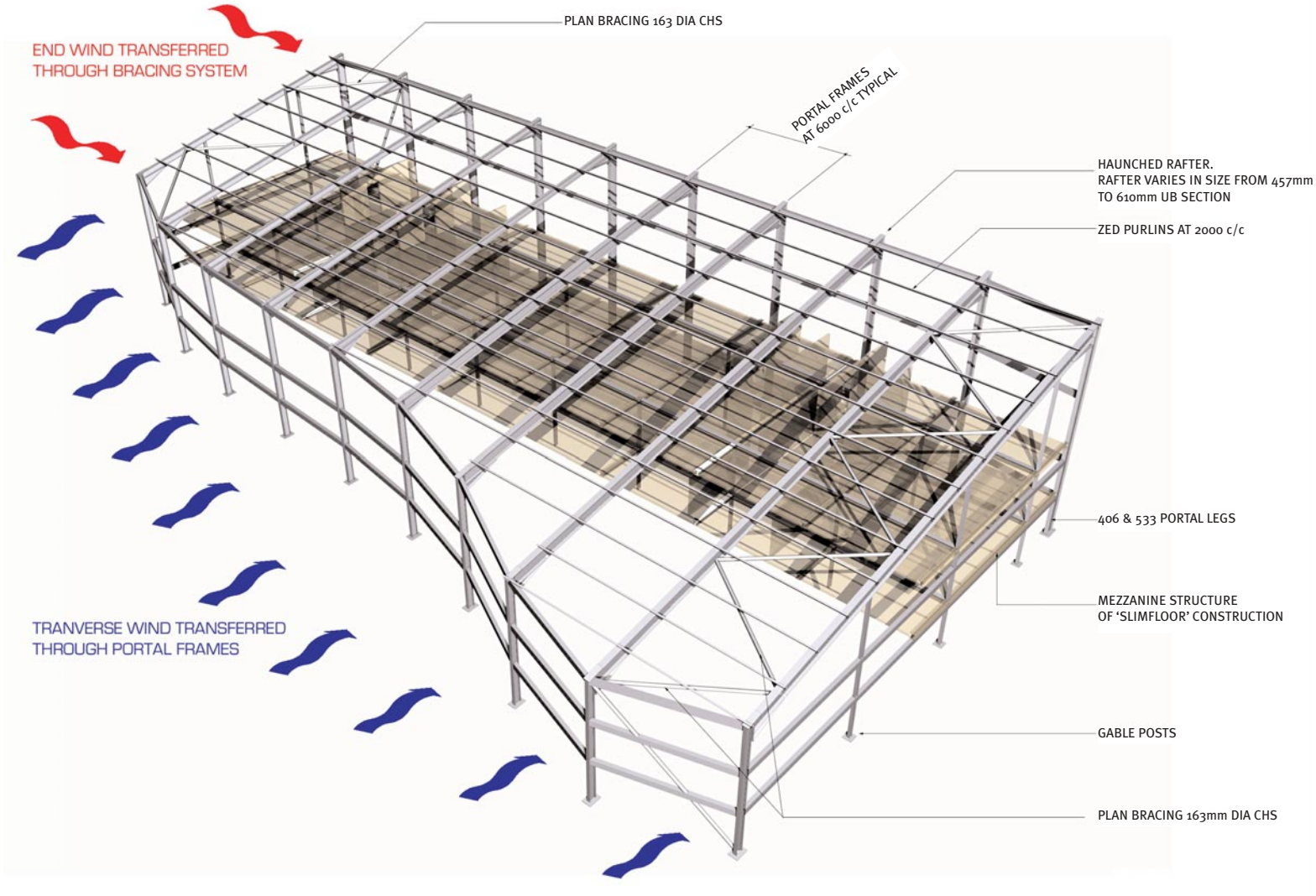
The internal structures are to be constructed using 'slimfloor' construction with exposed precast concrete planks. This approach also allows cantilever edges and offers the potential to demount structures whilst retaining steel as the primary structural material reducing the interfaces between trades. This approach minimises the number of columns with benefits in space planning and substructure. The internal floor plates are detached from the primary shell and can be stabilised independently from the cores.

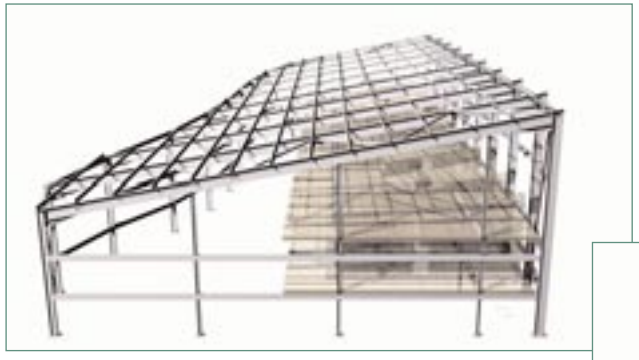
Substructure

Given the archeological sensitivity on site, a more detailed geotechnical investigation will be necessary to choose a foundation system that minimises the risks of damaging the archaeology.

At this stage it is intended that the portal frames are founded on large diameter single piles to keep the number of penetrations to a minimum. The ground slab will be utilised to tie the pile caps laterally. The ground slab will be of traditional 'semi suspended' reinforced concrete construction laid on compacted hardcore and insulation.

Structural concept and buildability





The submissions

Cartwright Pickard Architects

submission document for carmelite street, york

aerial view of site






1.0 introduction

The purpose of this document is to illustrate a development strategy for the Carmelite Street site in York.

The demands of the Site and Brief are many and varied and the task requires a deep understanding and rigorous analysis of all these issues that work together to make a successful scheme.

A detailed development strategy for this Site will require more time to enable a full analysis of the Site and Brief as part of an interactive process between the designers, the Joseph Rowntree Foundation and its advisers.

After investigating several options one has been developed to achieve the optimum response to the brief. The model has been tested for such aspects as Plan Organisation, Area and Cost Efficiency, Massing and Elevational Form, Environmental Design, Buildability and Health and Safety issues.

At this stage the proposal remains conceptual and we would not wish to prematurely exclude other options including those illustrated here.

We believe that this site is well located and is an ideal size and shape for the requirements of the brief and in particular to demonstrate how an office for the 21st century can work.

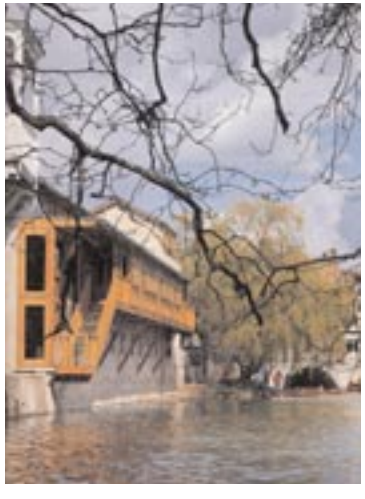
The Carmelite Street site has no adverse physical or planning constraints and should be a very straightforward site to build. We believe that the Carmelite Street site has great potential especially considering the initial discussions regarding the Hungate site which our scheme would look to complement in design, scale and vision.

Landmark Developments has selected a team of consultants who they believe offer a wide range of skills. Using our combined experience of office design and development they hope to provide an exciting new development for York, which will express innovation in office design for the 21st Century. The design team assembled has a solid track record of producing high quality buildings and award winning designs, which incorporate innovation and a holistic sustainable design approach. Only by taking a holistic view of the design, the construction process, maintenance and the cost in the use of the project, will a comprehensive brief and cost plan for a sustainable office environment be created. We believe by taking into account the above aspects together with our design skills and experience an office development of real quality can be realised.

Our unique combination of disciplines will provide a creative approach when producing a brief. After a process of evolution and analysis, we hope to take advantage of the prominent town centre location and deliver an imaginative solution responding to both the needs of the City and the requirements of a contemporary office building.

We believe our understanding of the location is important as is meeting the Joseph Rowntree Foundation's aspirations for what will be a key office site for York. Our design team's strong presence in the North can provide insight as well as being convenient for the design team to process and implement the project, should we be successful.



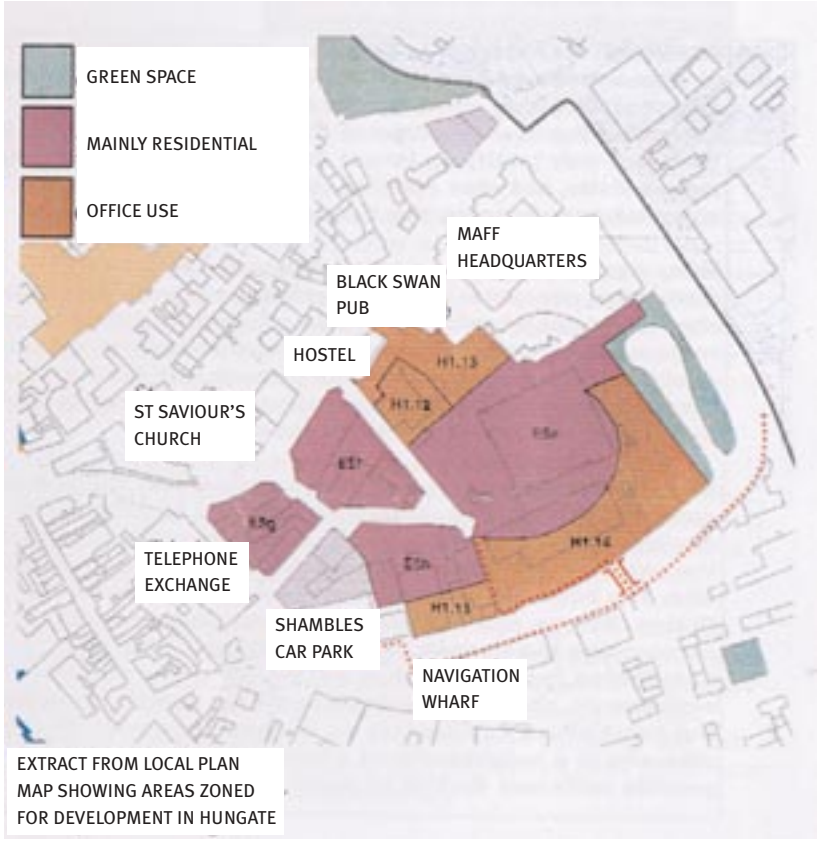
2.0 site analysis

2.1 planning context

York City Council's Planning Brief calls for a "comprehensive high-trip generating mixed use scheme" for Hungate. The planning brief also states that they would like to create "an exciting and attractive new office, leisure and residential quarter which adds to the vitality and viability of the city centre". Hungate is exceptional, offering a unique opportunity to develop a large parcel of land within York's city walls. The site is currently designated as "city centre" and is zoned for priority redevelopment.

land use zoning

The planning brief makes it quite clear that although the land use diagram denotes large single colour-coded parcels, it is not the intention to see such functional segregation in the development of the site. The brief stresses horizontal and vertical integration of uses, in order to achieve the blend of uses that will make this neighbourhood feel vibrant at all times of day and night, with the only possible exception being the large single-user office accommodation which needs to be a more high profile "architectural" building. We see no reason why a 21st century office building cannot have a certain degree of integration, and our proposals explore combinations of office, leisure and residential uses which are mutually beneficial.



EXTRACT FROM LOCAL PLAN MAP SHOWING AREAS ZONED FOR DEVELOPMENT IN HUNGATE

local plan

The local plan sets out an agenda for the development of the leisure facilities, and Hungate would seem to fall into this category of intended use.

urban context

The development should respond to the scale of original adjacent buildings and the proposals in Hungate. We believe that the front door and public face of the development should be at the south and west end of the site fronting on to the River Foss and Garden Place.

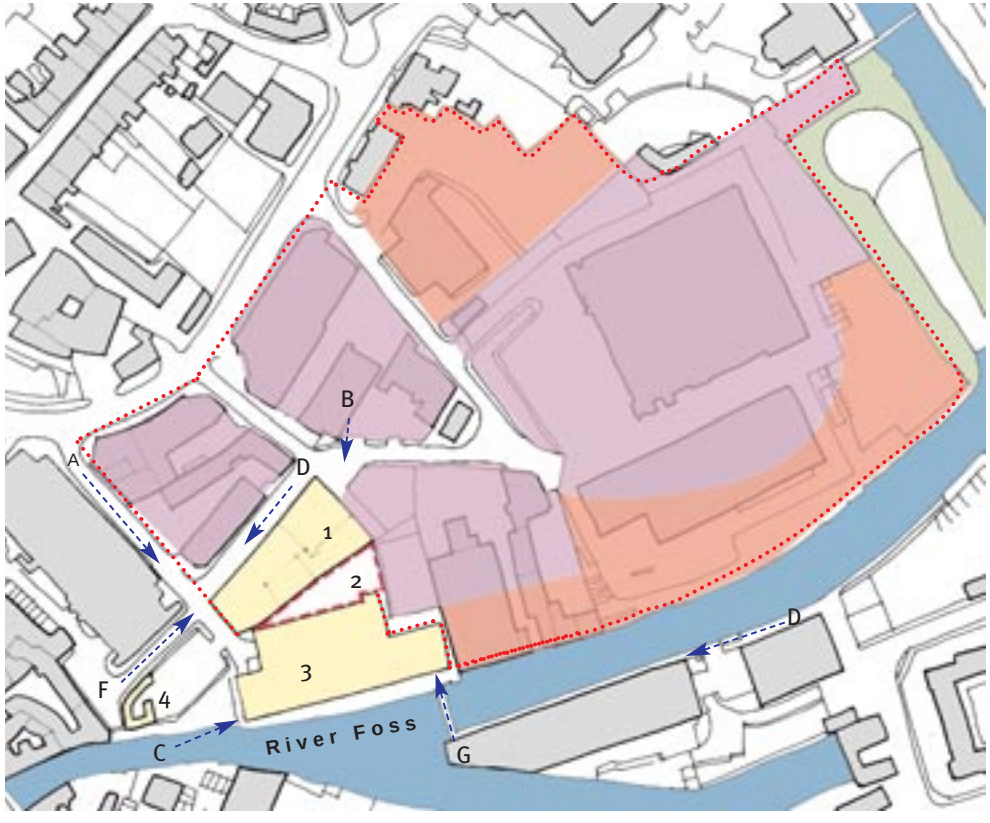
There is an opportunity through the quality of building design to reinvigorate this area of Hungate and to create a strong new Landmark that becomes recognised as a built example of Excellence and Best Practice.

potential

This site is not inhibited by the physical and planning constraints often associated with inner city sites. Initial discussions have mentioned four to five storey buildings. Therefore, here is an ideal opportunity for an imaginative solution responding directly to the needs and aspirations of the client to demonstrate how a true mixed use scheme can realise its potential.

identity & image

The development will need to create a strong Sense of Place, combining scale and identity suitable for the image and reputation of the Joseph Rowntree Foundation. The public face of the development should give a sense of openness and accessibility and be welcoming to visitors. A forward looking atmosphere with an emphasis on contemporary design will help give this a positive image.



site context

N

Key

1. Development Site
2. British Telecom Site
3. Shambles Car Park
4. British Telecom Site

..... Boundary of Hungate Development Site

A-G See page 68

2.2 site context

Economic

Initial investigations into the site area suggest that the potential for the Hungate area is encouraging, with a clear strategy for its development in the process of being developed. The present context of neglected undeveloped sites will change it into a vibrant new quarter that will set standards for the rest of the city and be suitable for this Millennium.

Historical

Visitors to the site and the general Hungate area would not be aware of the original tight-knit pattern of streets and buildings which were all generally demolished in the early part of the last century. Originally, the scale of riverside development was dominated by the Henry Leetham Saw Mill, which was bigger than the existing Navigation Wharf Building. The scale of this building sets a good precedent for a riverside development.

Site photographs


View A


View B


View C


View D


View E


View F


View G

Archeological

The Carmelite Street has been occupied and used for nearly 2000 years.Sometimes prosperous, sometimes destitute; always a mixture of residential, commercial and industrial. An area where York has disposed of its rubbish for nearly 1000 years, rubbish which represents archeological treasure.

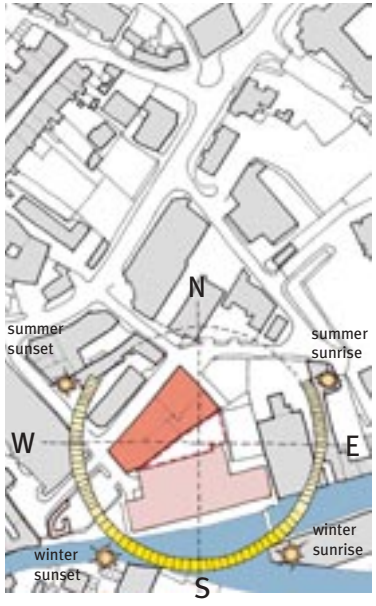
The deep waterlogged organically rich archeological deposits may prove as exciting for some future generation as the discovery today of a time capsule buried by some far-sighted Roman legionary. The development will ensure, through its careful design, choice of foundation and treatment of the ground, that these treasures are preserved where they lie for that future generation.

Hungate proposals

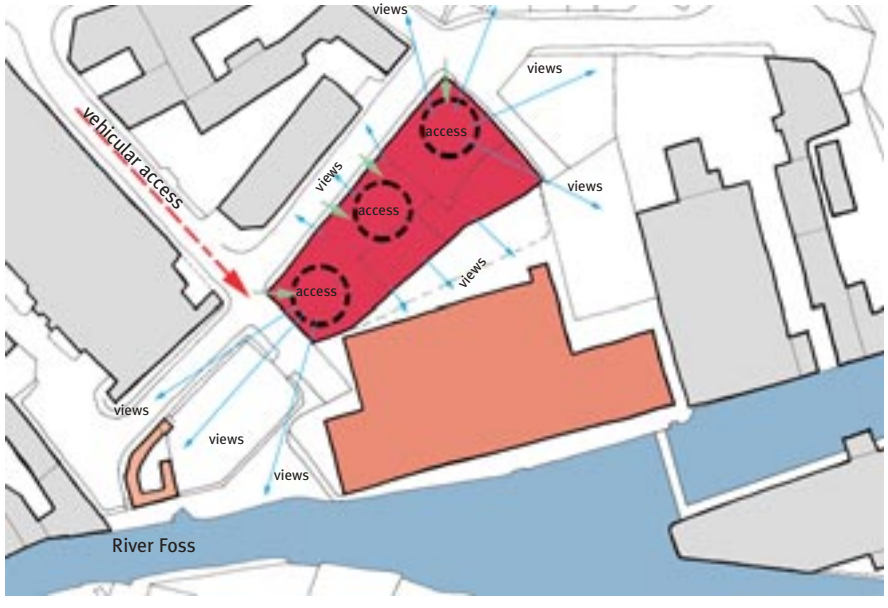
We are aware of the vision for Hungate to form a new quarter for York. The principals set down in the masterplan, we believe, will be complemented by our proposals. The consultation period with the community is anticipated to commence shortly and we feel it is vitally important our proposals are reviewed, to ensure a quality mixed use scheme is developed which is innovative, sustainable and helps to minimise traffic generation.

Site Constraints

In accordance with the Stage 2 competition brief, we have looked at the site acquired by JRF (Site 1, page 67). In addition to this, the small triangle of open space has been investigated (Site 2). The Shambles multi-storey car park is tested for adaptation and redevelopment (Site 3). Finally, the small area of land to the south of the British Telecom building presently used as a car park and cycle store, should be examined as, at present, it doesn't complement the riverside or other buildings (Site 4).



sunpath orientation



site information

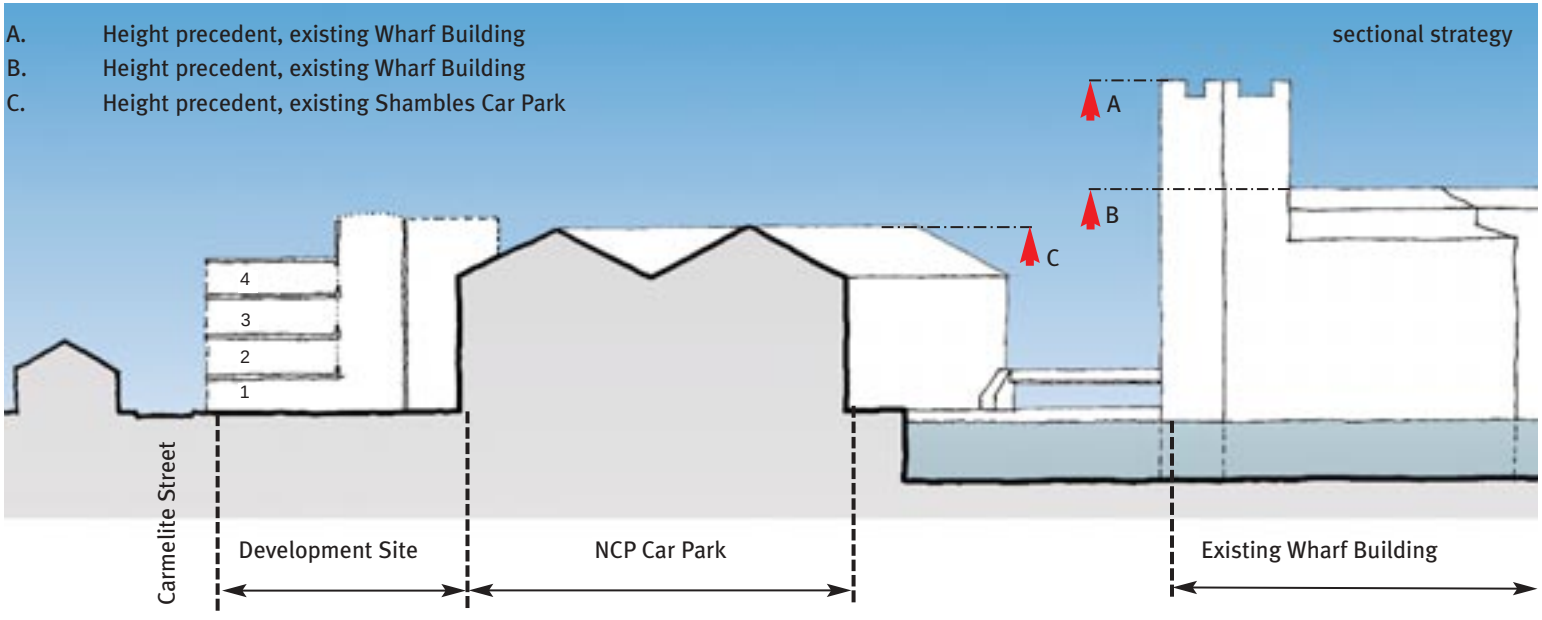
2.3 environmental conditions

Sun path and orientation

The main elevation of the site to Carmelite Street faces north. The east and western elevations offer good views until future development proposals are known. The southern elevation to the Shambles car park is poor, due to its height and any future development should seek to create its own environment due to its proximity and appearance. Careful consideration should be given to the levels of solar gain with the east and west facades the most problematic due to the effects of low sun angles. Our proposals address the issues of solar orientation as a significant influence on the plan organisation.

Noise

The noise from the traffic could be a problem due to the levels of cars entering the Shambles car park throughout the day. The building elevations will need to be designed to provide better than the minimum sound insulation levels required by Building Control. The existing levels of traffic could compromise ventilation proposals for the office building due to the requirements for opening windows.



existing sectional strategy with indicative new build levels

Wind

Meteorological analyses have established a prevailing wind direction from the southwest. This should be taken into consideration in the design proposals for the building and exploited where possible.

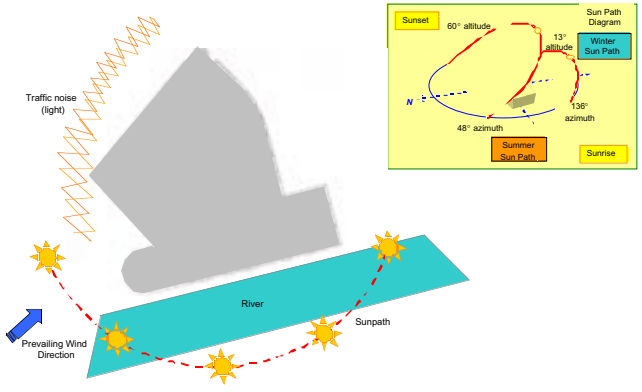
Views and aspect to site

Good views of the site are obtained from the corner of The Stonebow on Garden Place. Similarly once in the Hungate area, the corner of Carmelite Street should be emphasised. The general aspect to the south of the site is compromised by the Shambles car park. Therefore based on the above, the northern end of the development should be the most prominent and create a strong presence and impact on the surroundings. The views east and west will be created from the upper floors of the buildings.

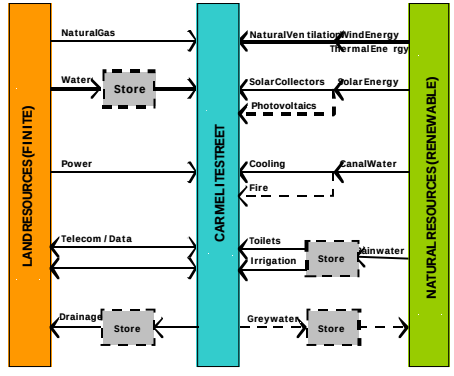
Scale

The context of the surrounding buildings varies from single storey up to six storeys on the British Telecom building. The Navigation Wharf Building is ten storeys and looks a good precedent when set against the riverside. The original Leetham Mills appear, from historical photographs, to be 9 storeys. We believe the Hungate proposals will have buildings from four storeys up to eight storeys to emphasise the corners and urban skyline.

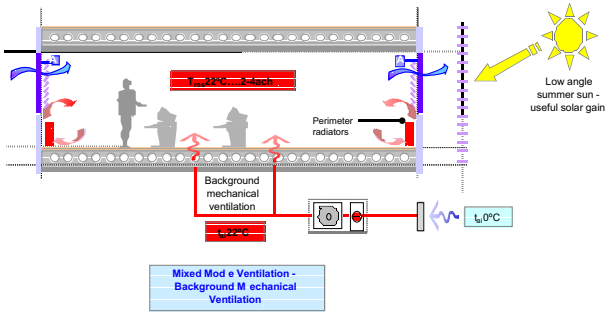
3.0 response to brief



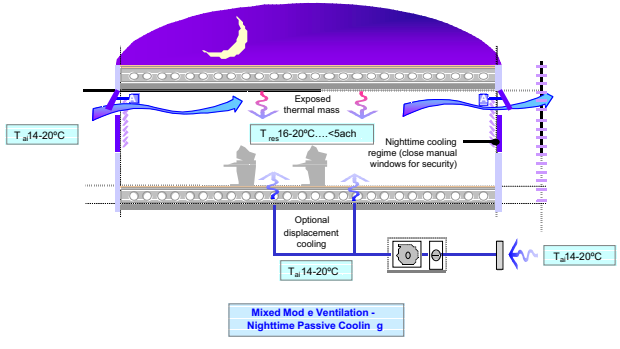
site analysis diagram



site resource diagram



summer day time section



night-time diagram

3.1 environmental strategy

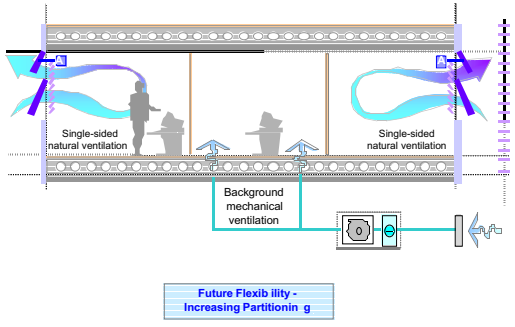
The environmental control within an office building must be carefully considered. The drawbacks and limitations of VAV air conditioning systems are now well understood. We know from experience that there are more viable environmentally friendly alternatives to these systems.

Low energy strategy

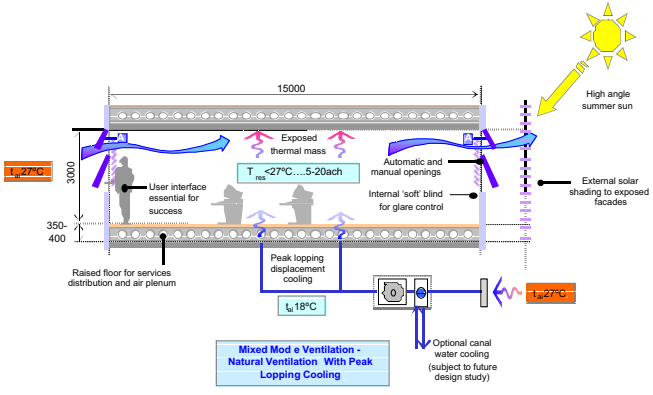
The building fully exploits daylight and natural ventilation but has been structured in such a way as to allow easy use of comfort cooling to part or all of the building, if so required. Approximately 50% of the building facades are glazed in order to optimise the energy costs of heating (and cooling) against savings in electrical energy for lighting. The elevations are fitted with sunscreens to shade the building in summer whilst allowing beneficial winter sun to offset heat losses.

Mechanical displacement ventilation is provided so that fresh air will be supplied for occupants and during the heating season the office exhaust air via plate heat exchangers preheats this air, in order to conserve energy to the building.

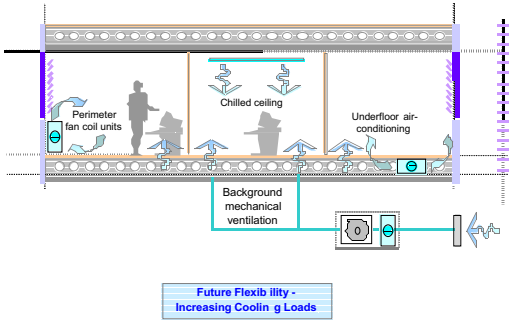
The building envelope will achieve 'U' values that are significantly more energy efficient than current UK Building Regulations.



future flexibility section



summer day-time diagram (mixed mode)



future flexibility section
(increased loading)

HVAC options

Floor widths are set at 15m to optimise flexible planning, allow natural cross ventilation and obtain reasonable daylight levels up to 6 metres from the façade so as to avoid the use of artificial lighting whenever possible. Presence detectors and light sensors control the operation of the lights.

Breeam

By the omission of ceilings the exposed soffits of the floor slabs will provide valuable thermal mass which will help to modify peak temperatures. The building will be designed to achieve the BREEAM energy rating of "Excellent".

Waste disposal

Waste will be stored in a number of different compactors before removal. Recyclable waste such as paper and glass will be stored separately. Space has been provided in our proposals for a refuse vehicle to turn around on the site to avoid reversing into the road. Waste collection from the office areas and goods supply can be made very efficiently at the rear of the building via a secure corridor.

Green issues

Daylighting, optimum window areas, sunshading, thermal mass and good insulation, together with high efficiency gas fired boilers and heat recovery devices all significantly contribute to conserving fuel reducing CO_2 emissions. The building does not have to be fully air-conditioned and, therefore, CFCs may not be required. However, where mechanical cooling has been added, then refrigeration plant using "ozone friendly" refrigerants are to be used. A ventilation system supplying fresh air to occupants together with openable windows reduces the incidence of sick building syndrome compared with sealed fully air conditioned buildings. Hazardous materials will be excluded from the specification. Mechanical plant is situated at roof level and is partially contained within a plant room.

Water consumption

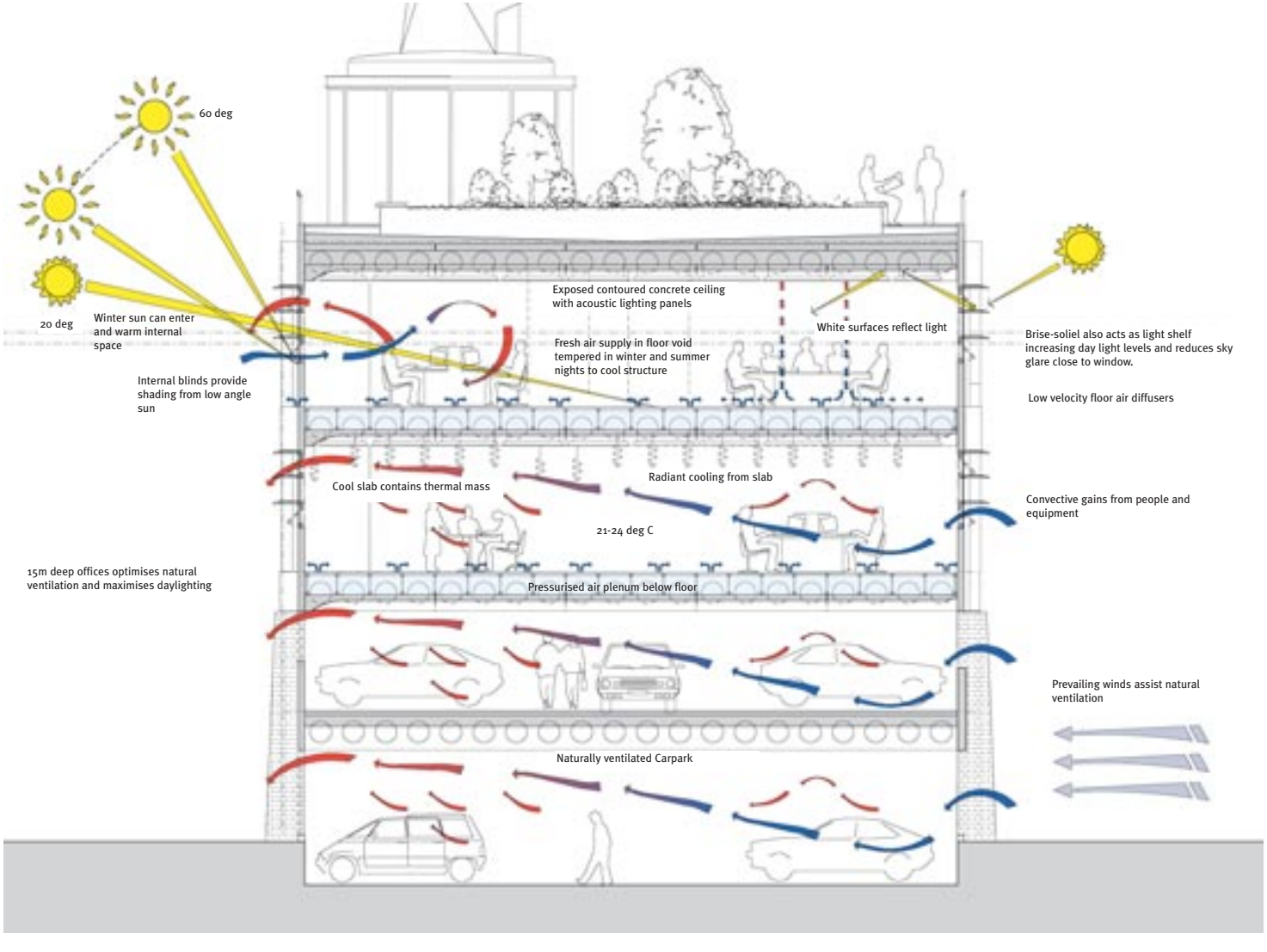
Low volume flushing WC cisterns can be incorporated along with the use of rainwater for the flushing of the WCs. Stored rainwater can also be used to water all the green plants and trees on the site.

Structure

Alternative structural solutions will be explored, however the structure illustrated consists of precast concrete units supported on cell form steel beam and column frame. The concrete elements are exposed on their underside and the precast units are coffered to provide some expression in the ceiling and to allow light fittings to be recessed. A deep raised floor allows for the distribution of all the services and removes the need for a screed over the in-situ floor. The diaphragm action of the concrete floor plate will be ensured by overlapping reinforcement between adjacent elements of the precast units and casting insitu concrete and steel beams running between the precast units.

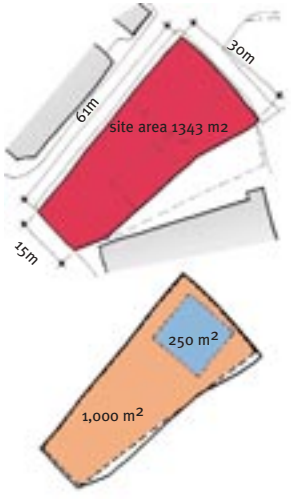
Decommissioning of the building

Prefabricated/ off-site assemblies are not only faster to erect on site but can also simplify decommissioning by avoiding demolition. The primary structural and cladding elements of the building may be dismantled and recycled if appropriate. Building services will be easily removed along with all obsolete mechanical equipment.



typical environmental section strategy

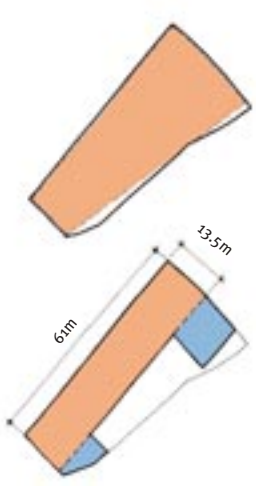
concept diagrams



This diagram illustrates the nett floor area and the remaining circulation/core area which taken together make up the gross figure.

Assuming an 80%-20% ratio an office of 4000m^2 nett would be 5000m^2 gross.

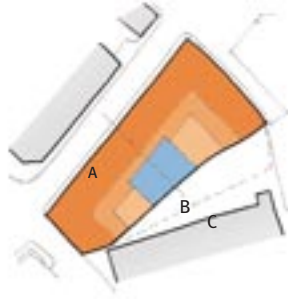
Over 4 floors this would be 1250m^2 per floor. The shaded area represents this gross area over laid onto the proposed site.



The floor plate dimension of 13.5m is governed by the need for natural ventilation from two sides, giving a nett floor area of 793m^2 per floor. This means that the building would have to have 5 floors to achieve a nett lettable area of 3965m^2 (42,671 sq ft)

Zone A is 9m deep and assumes single sided natural ventilation from the street facades of a building on the development site.
This provides a floor plate of approximately 797m^2 (8,577 sq ft) and will not provide the required nett floor space over 4 floors.

If zone A and B are combined a floor plate 13.5 m deep is formed, assuming that natural ventilation is from both sides. This provides a floor plate of approximately 1080m^2 (11,623 sq ft). Over 4 floors this could provide more than the minimum required if some of the associated core/circulation areas are housed in zone C.



The diagram above indicates the effect of inserting core areas into zone C.
The advantage of core items in this area is that the floor plate can be split into double
occupancy without compromising the diagram. Top lit atrium spaces can also be created either side of the core and at the rear of the site

3.2 option 1

OFFICE OF THE 21ST CENTURY

The office of the 21st Century needs to be highly flexible in terms of size and subdivision. Whilst the Joseph Rowntree Foundation are looking for approximately 40,000 sq ft nett lettable space, the agent advises office spaces of 5,000-10,000sq ft are of particular interest. Therefore, our scheme must create this flexibility through its organisation but must be mindful of JRF's own identity.

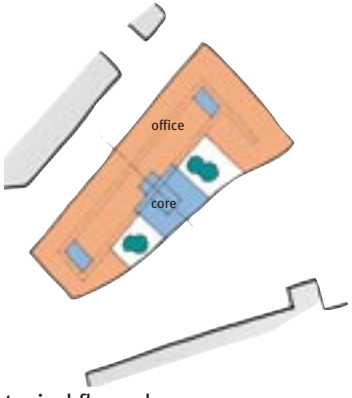
The plan organisation must lend itself to adaptability and change. A 15m deep office space for accommodation, which optimizes the building's efficiency and internal environmental solutions.

Option 1 Concept

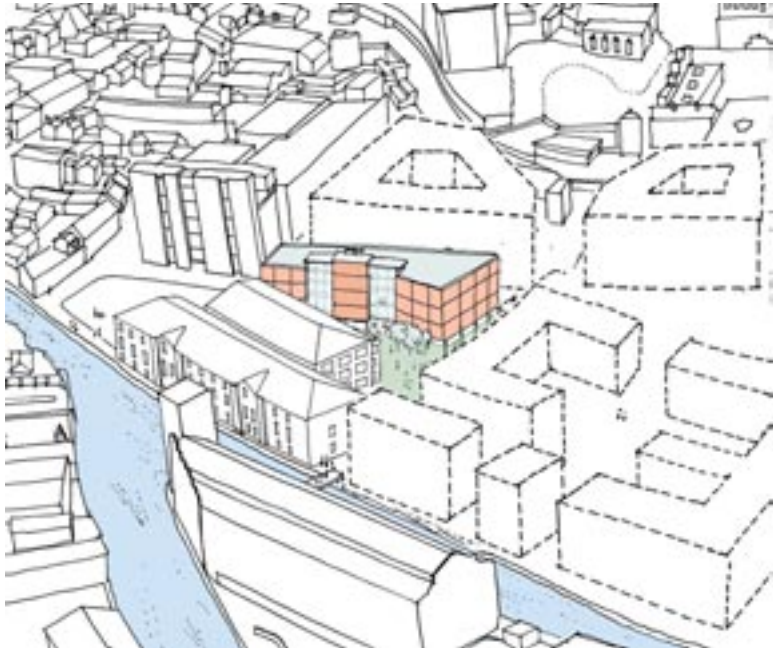
This option identifies the total site area available, the total area of building required and the acceptable number of storeys for massing.

Applying known acceptable floor depths and responding to the orientation, a diagram is developed which incorporates a central entrance splitting the building into two halves each approximately 5,000 sq ft.

proposed ground floor plan



typical floor plan



aerial perspective view of option 1

A central core serves the building and atrium spaces, each side of the core allows light into the building at lower levels and gives the opportunity for planting and break out spaces in an internal atrium.

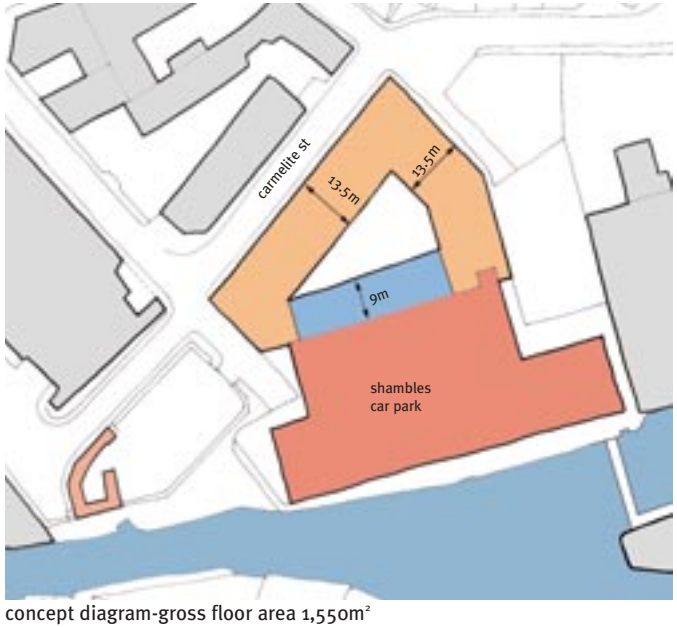
Summary

When considering the size and scale of the development set against the build costs and anticipated rental income, the design team felt a larger scheme would be more realistic.

A scheme of this scale would need the benefit of a completed Hungate project to support this development in our Design Teams opinion.

Area

Ground Floor	845m² nett floor space
Typical upper floor (3 no)	1008m²
Total over 4 floors	3868m² (41,627 sq ft)



concept diagram-gross floor area 1,550m²

ground floor plan 1,138m² nett floor

3.3 option 2

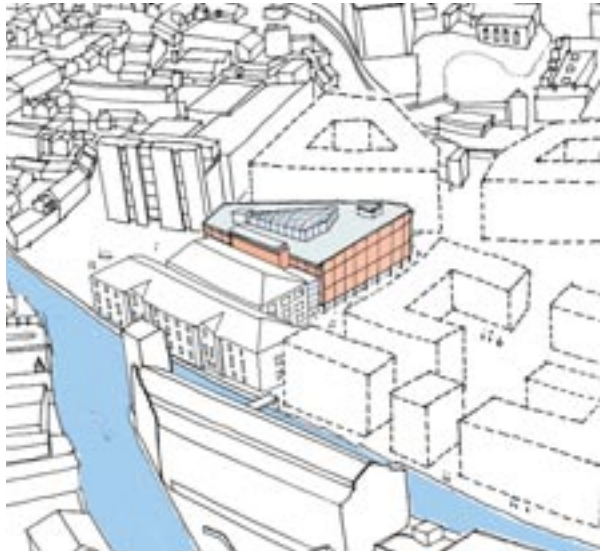
Option 2 Concept

This proposal incorporates the triangle piece of open land between the Shambles Car Park and the Site. Following the principal set down in Option 1, floor depths of 13.5-15.0m are identified wrapping around the site.
The elevation abutting the Shambles car park is shown at a depth of 9m as it is single sided and any natural daylight will be via an atrium space.

A central entrance off Carmelite Street is proposed and a vertical circulation tower is proposed within the atrium space. This design would offer the flexibility for a multi-tenant use, as well as creating a stunning atrium space creating a valuable amenity and social heart to the office complex.

The atrium could act as a climate modifier and help drive the natural ventilation.

typical upper floor



aerial perspective view of option 2

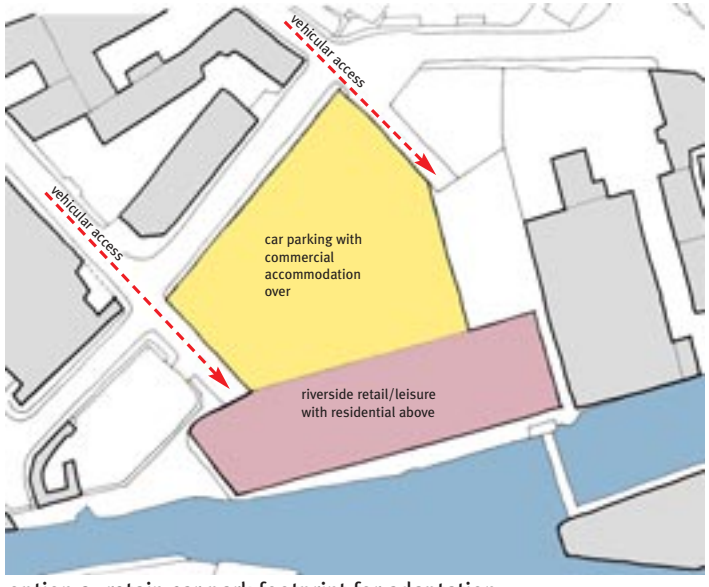
Summary

This option creates a 55,000sq ft building. Whilst the diagram is logical, our agent's advice on rental income set against the build costs again questions the viability of the scheme.

The principles of positioning the cores, circulation space and maximising the external elevation are positive design generators.

Area

Ground Floor	1138m² nett floor space
Typical upper floor (3 no)	1320m²
Total floor areas	5098m² (54865 sq ft)



option 3- retain car park footprint for adaptation

typical upper floor

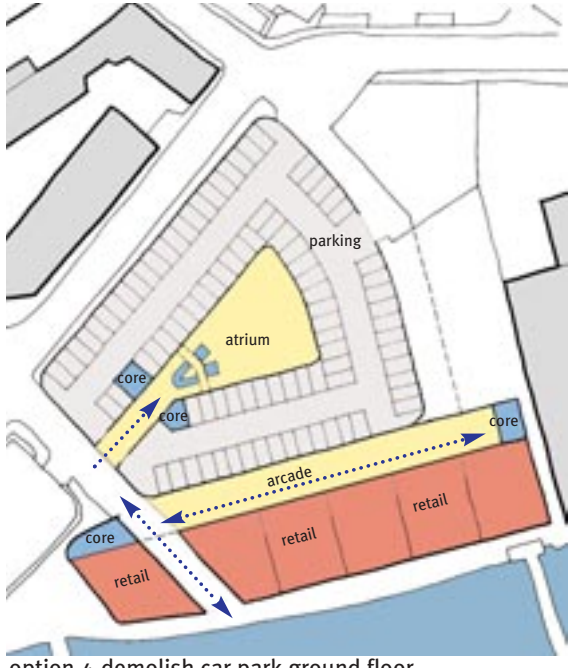
3.4 option 3/4

Option 3 Concept

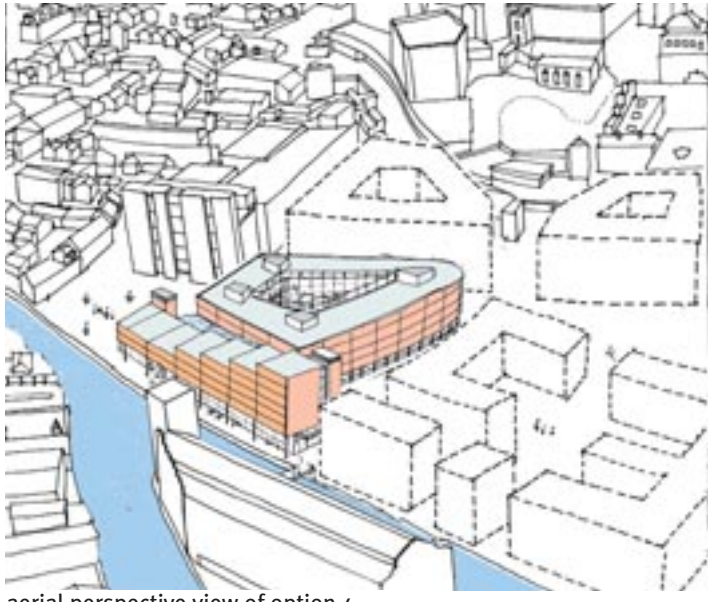
Having arrived at the decision that a larger development was necessary, the existing Shambles car park was tested to see if it could bring financial benefit to the scheme. A case for reducing the 285 car spaces is made in the transport section later in the report.

We understand the original concept of the Shambles Car Park was the existing floor levels should be designed for future adaptation. Therefore, the ground level looks suitable for retail and the upper levels for residential. The upper levels do not lend themselves to a commercial office space and therefore we have discarded this scheme on the basis that any office space should benefit from a riverside view.

The biggest design generator derived from this scheme is the fact that a mixed use scheme brings real value to the site and could support the adaptation or removal of the Shambles car park.



option 4-demolish car park ground floor


aerial perspective view of option 4

Option 4 Concept

Having come to the conclusion to demolish the Shambles car park, a diagram was developed which separated the components of a mixed-use scheme to increase the development's value. These components included retail/leisure/A3 use, car parking, commercial office space and residential for affordable and for private sale.

The scheme proposes an office atrium building with car parking to the north of the site benefiting from existing access infrastructure. This scheme has a central atrium and service tower which was accessed off Garden Place.

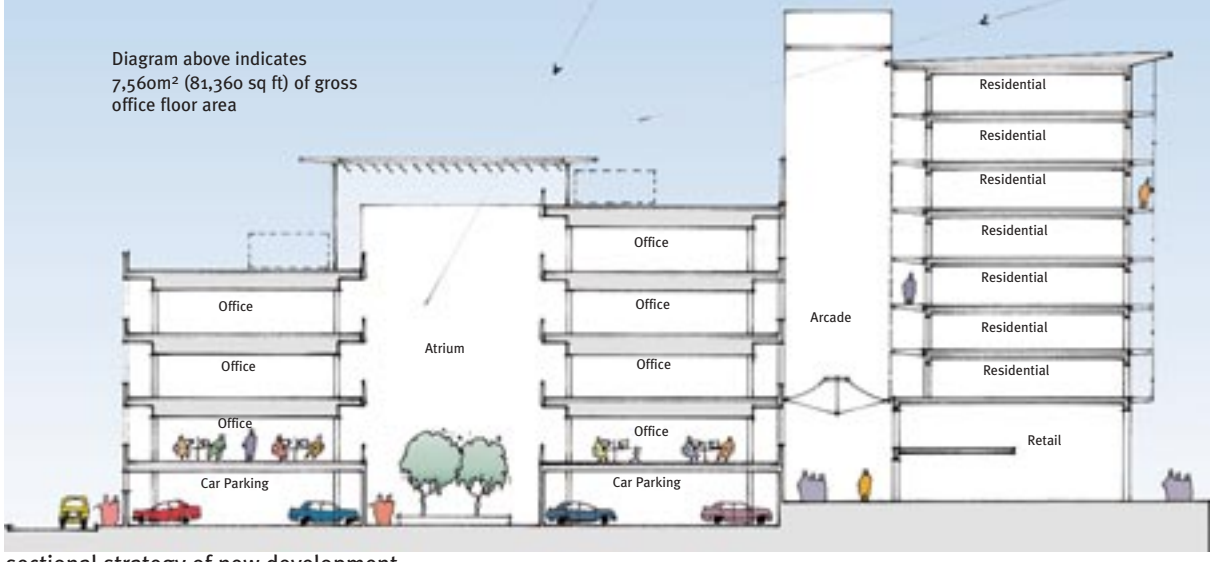
To the south of the site facing the river, an A3 leisure area is proposed, which will benefit from riverside views and works with the proposed riverside walk for the Hungate scheme.

Summary

Whilst it was felt to be a simple diagram and easy for funding, it was felt to be too conventional. It did not offer the office building any riverside views. Albeit the development appraisal was good creating approximately 60,000sq ft of nett lettable space with residential sales supporting the demolition costs of the car park.

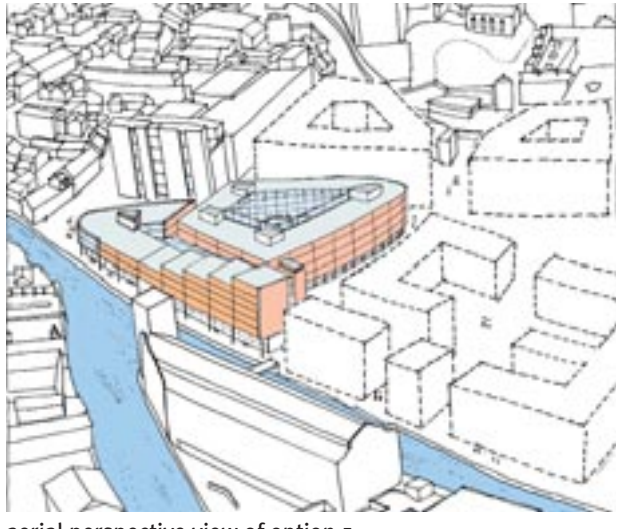
Areas

Typical office floor 216om^2



sectional strategy of new development

typical upper floor


aerial perspective view of option 5

3.5 option 5

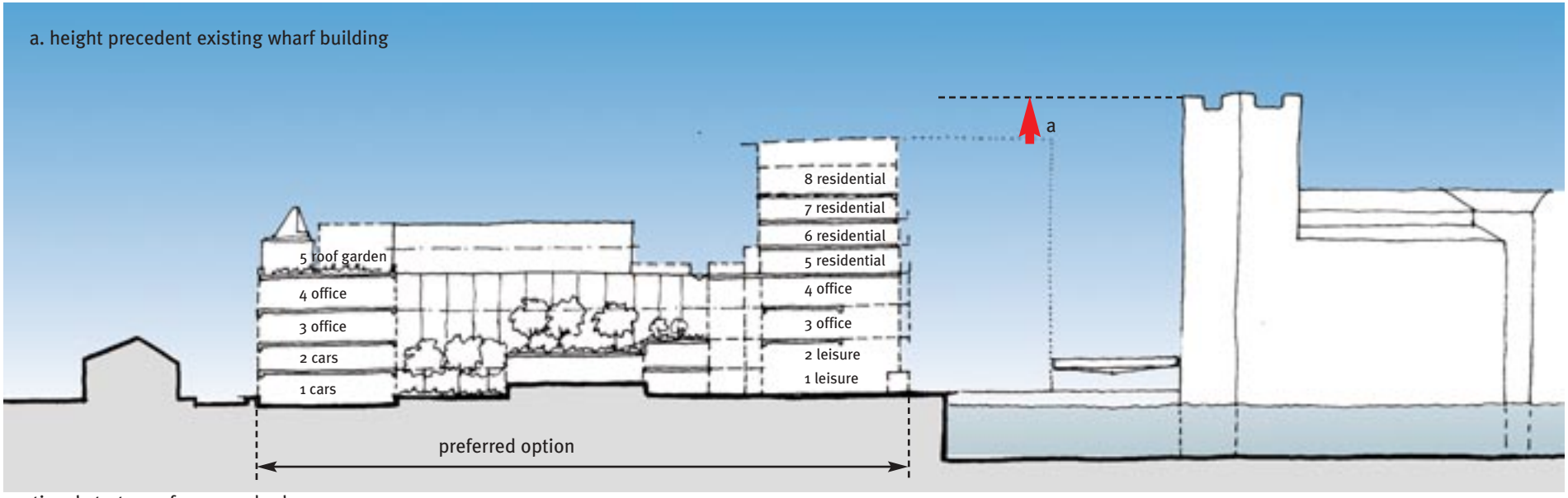
Option 5 Concept

Our next logical concept was that having agreed on the demolition of the Shambles car park, it was feasible that we should investigate the ownership of the surrounding sites to give an overview of what the potential 'bigger picture' could be. Once these factors were understood, the diagram for Option 4 was developed further to enhance the scheme and make use of the riverside site presently used for car and bicycle parking.

Summary

Whilst this scheme was felt to be useful, it was not overall deliverable at this stage. However, if the submission is successful, we believe there are real benefits of bringing this site into the development.

The criticism for this option is the office building is divorced from the mixed-use development and really a horizontal separation should be investigated.



sectional strategy of proposed scheme

3.6 preferred option 6

Option 6 concept

The preferred scheme is a mixed-use development that does not try and separate the building types. We believe a 21st century mixed use building must try and have all of these functions working together successfully. The benefits identified in the previous options regarding vehicular access, car parking and orientation are brought into play as design generators.

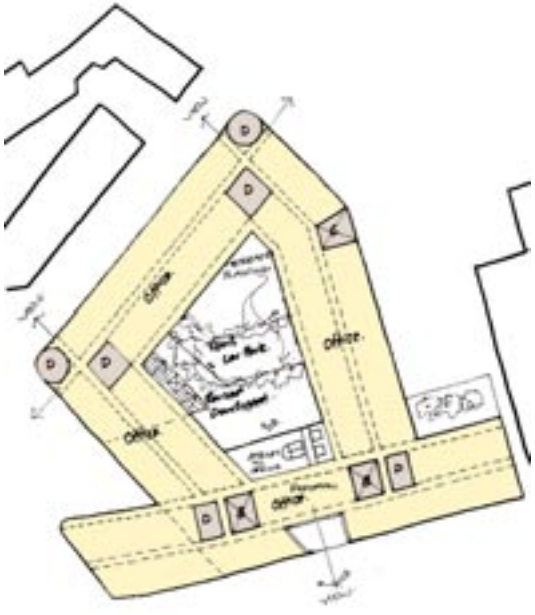
Car park

The building facing onto Carmelite Street, Hungate and Garden Place needs to work with the vehicle and service infrastructure and therefore is ideally suited for car parking. The car parking areas are set out from lower ground levels to work with our archeological advice.

At this stage, we are proposing two levels of car parking to cope with the development demand, but we have kept the floor to floor heights suitable for future adaptation to either commercial or retail/leisure space.

Leisure

The height of the car park decks coincides with the allocation of the leisure/A3 space facing onto the river. The ground floor leads onto an extended riverside promenade cantilevering over the existing riverbank. A mezzanine level within the A3 spaces offers space for WCs, kitchen and support facilities, as well as upper level dining recreation space.



typical office concept

aerial perspective view of option 6

Office

Above the ground floor levels, two levels of office space are inserted which wrap around the perimeter of the site creating a central space for landscaping and environmental benefits. This diagram allows the office space to benefit from the riverside and a southern aspect.

Residential

The residential accommodation is placed on top of the office space with the residential accommodation for sale located over the southern side of the building. A proportion of affordable accommodation is also provided on the eastern wing of the building, which minimises the impact of overlooking as well as maximising the amount of daylight into the courtyard space. The residential buildings are stepped upwards to the eastern elevation to minimise the solar shading of the scheme.

We believe the scale of this scheme will complement proposals for Hungate and buildings within the original Hungate precedent mill buildings.

Summary

Our preferred option 6 is the scheme developed further within our scheme design report.

4.0 Preferred option

4.1 Ground Floor Plan – leisure and parking

Vehicular access is off Hungate to the rear of the site for both car parking and service

Visitor drop off is at the end of Garden Place

The vista from Garden Place looks through the building to the River Foss beyond and the riverside walk.

The main entrance is shared for both residential and office and is accessed off the riverside walk and has a managed reception for security.

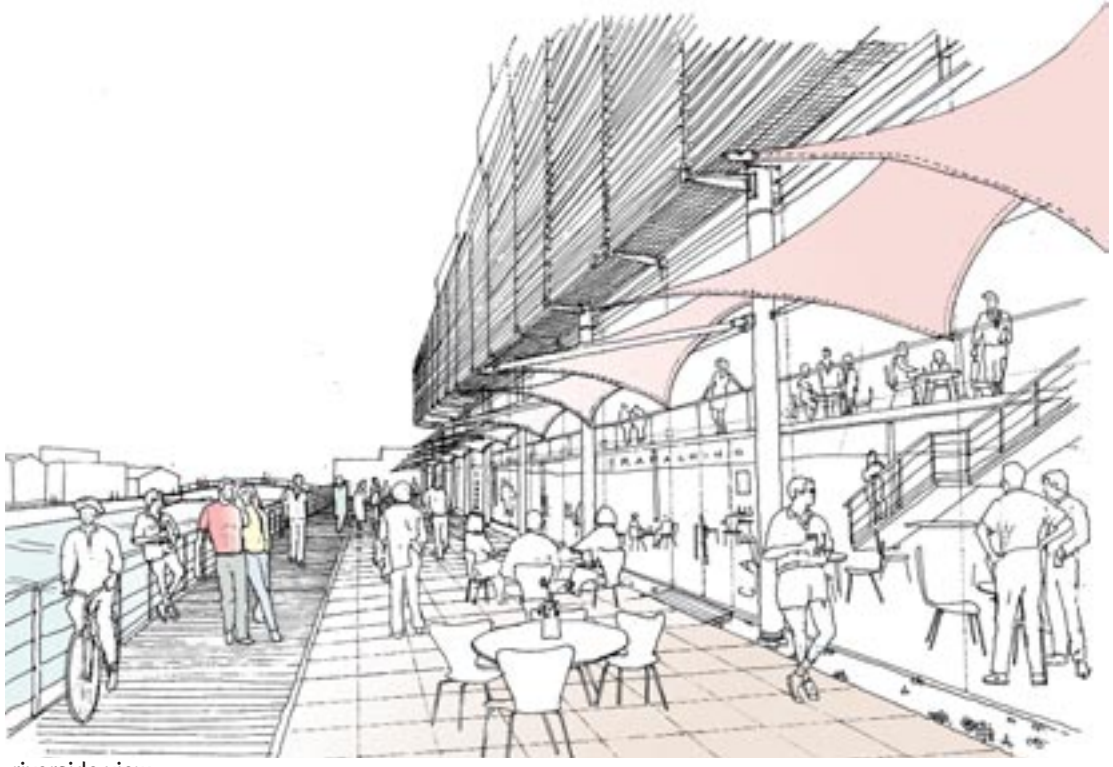
Two large A3/leisure units are created to complement the riverside amenity and bring the benefit of a mixed use to the scheme

Access from car parking can be directly to the vertical circulation in the main entrance area.

A cantilevered boardwalk increases the available space in front of the building

An entrance for the affordable accommodation access is off Hungate.

A central landscaped courtyard provides ventilation to the car park and acts as a reservoir for rainwater prior to natural drainage and minimises disruption to any medieval deposits below ground.



riverside view

ground floor plan 1:500

upper ground floor plan 1:500

4.2 Upper Ground Floor - leisure & parking

A link from the office courtyard to street level is shown which follows the slope of the access ramp in the car park below. This is heavily planted to provide a calm organic courtyard.

An upper level of car parking and leisure spaces is created. The car parking is designed at heights suitable for future adaptation to retail or leisure

Vertical escape routes from both the residential and office spaces are located to minimise disruption to the layouts for cars and tenants at lower levels.

A fabric canopy cantilevers out over the riverside walk to provide shading to sitting and dining areas.

view of raised courtyard

The ground and upper levels are highly glazed and transparent to encourage people inside and promote their services.

We believe the ground and upper ground levels can offer the Welfare provision for the offices and residential accommodation above.

second/third floor plan 1:500

4.3 Office Levels - second/third floor plan

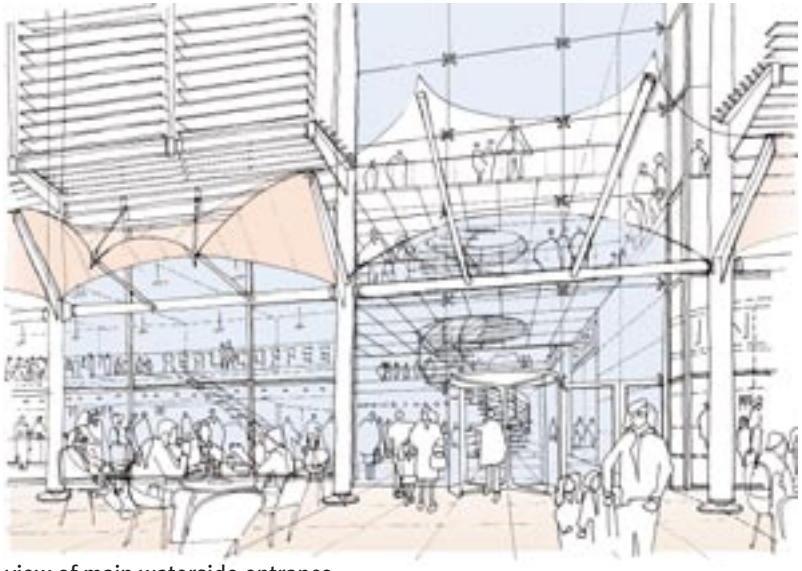
A healthy and well designed working environment improves productivity and people will be happier. Absenteeism and staff turnover are principals that can lower productivity.

A simple diagram of circulation and office space based on a 15m clear floor footplate give ultimate flexibility and the scope for change.

A well positioned floor reception and associated toilet and core facilities gives scope for single and multi tenancy splits.

A stunning full height atria space with a water feature links the ground floor levels up to the office space via glass backed wall climbing lifts.

The office cores are positioned in spaces to minimise impact on the floor plate and use space where light and views is restricted.



view of main waterside entrance

A highly glazed corner is proposed with a solar tracking light shade as indicated provides spectacular views to reinforce the image that this is an office for the 21st Century.

Office workers will have views into a highly planted and organic landscaped courtyard.

Solar control is offered on the south elevation via a secondary screen of brise-soleil which will be linked to the Building Management System (BMS).

Careful distribution of toilet facilities on floor can help multi tenancy options and with travel distances for the office workers.

fourth floor plan 1:500

4.4 Residential Level - fourth floor plan

A stunning roof garden to the top of the offices offers amenity space for the occupants as well as offering reservoirs for a sustainable drainage system.

Prefabricated modular residential units sit on top of the office structure and can be supplied fully complete and fitted out.

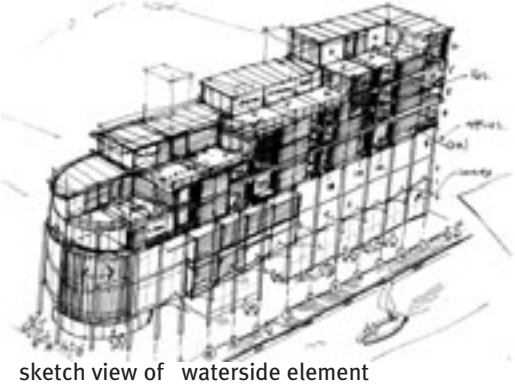
A variety of residential units is shown ranging from 1 bedroom to duplex units with roof top gardens.

Affordable residential units are provided to overlook the courtyard and set east west orientation to minimise overlooking with the other residential dwellings.

The residential units step up to the eastern elevation to minimise shading effects to the courtyard.

Roof top terraces provide amenity space and soften the edge of the building against the sky line.

The external materials should be sympathetic to the riverside location whilst set against a contemporary design and fenestration openings. Timber, glass and steel blend well and work very well with offsite prefabrication methods.

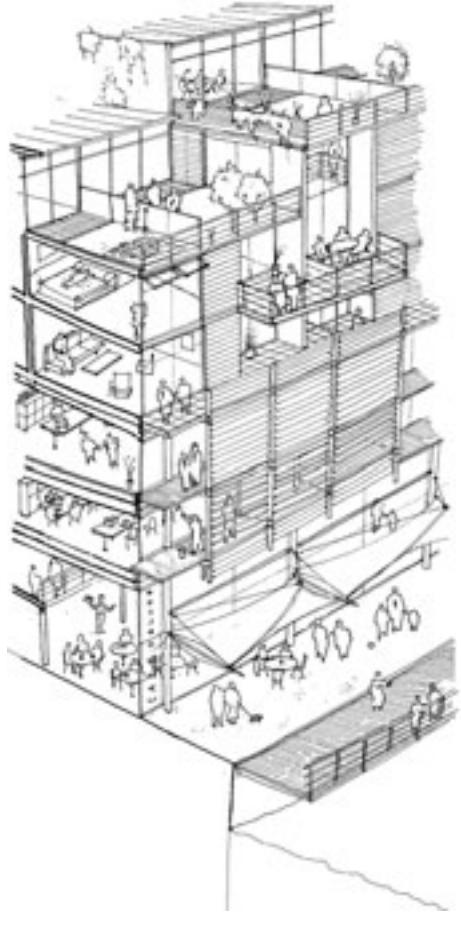


sketch view of waterside element

sixth to eighth floor plans (private residential only)

fifth floor plan (private and affordable residential)

4.5 Upper floor levels



sketch of waterside facade treatment

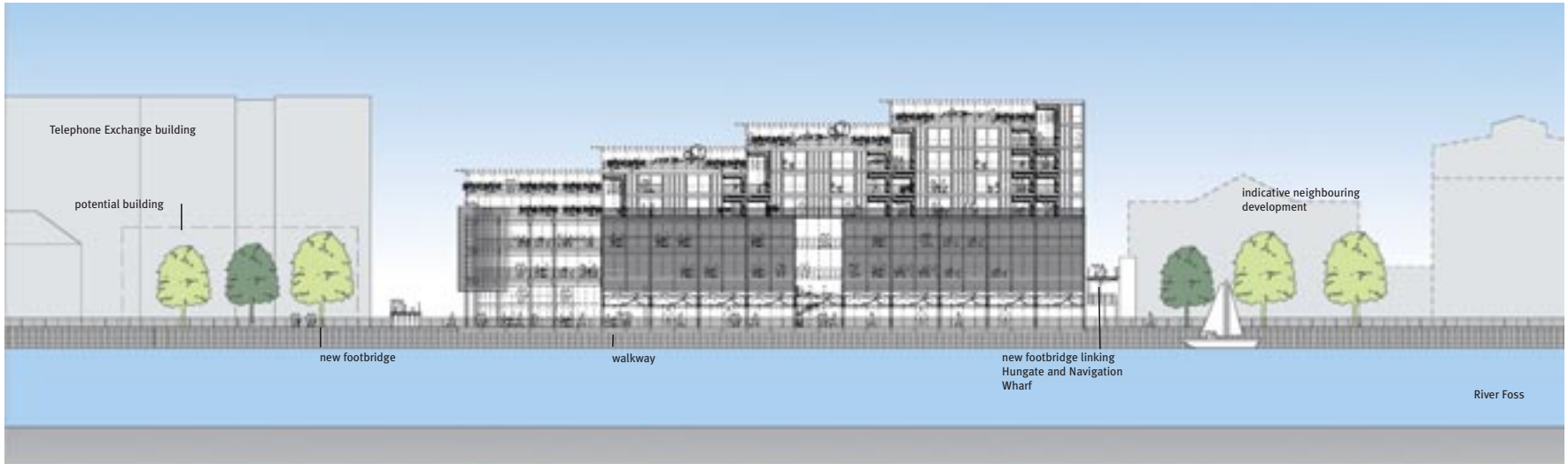

view over river foss from new footbridge

4.6 Computer generated images

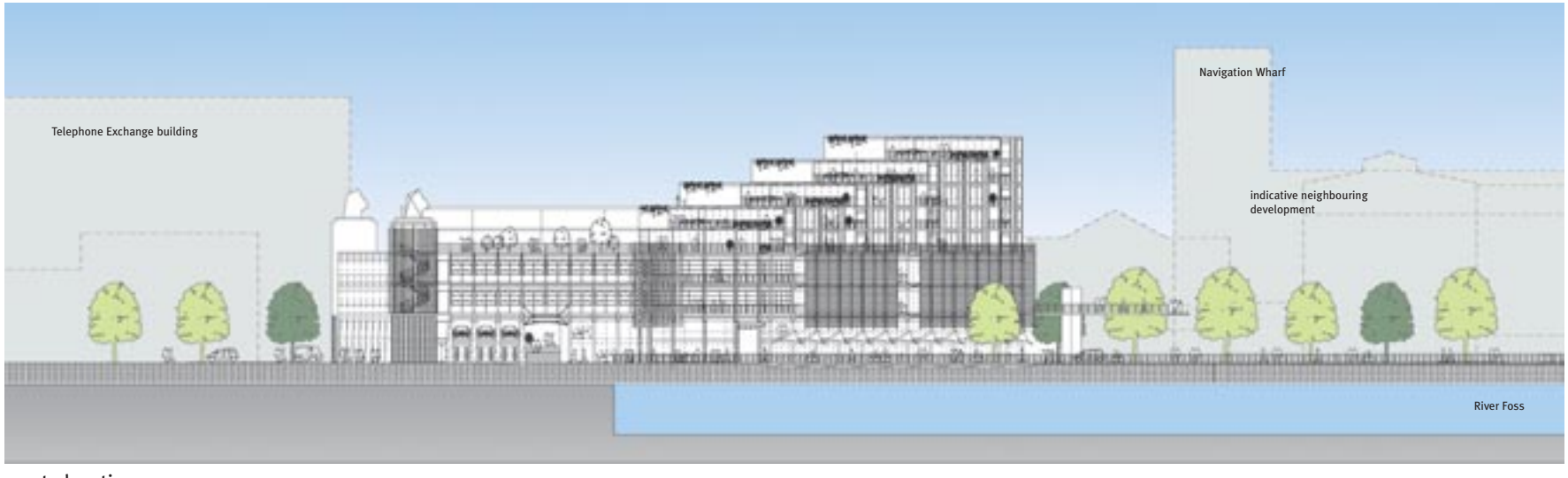

view over river foss looking north


view over river foss looking north east

4.7 Site elevations



south elevation- 1:500



west elevation- 1:500

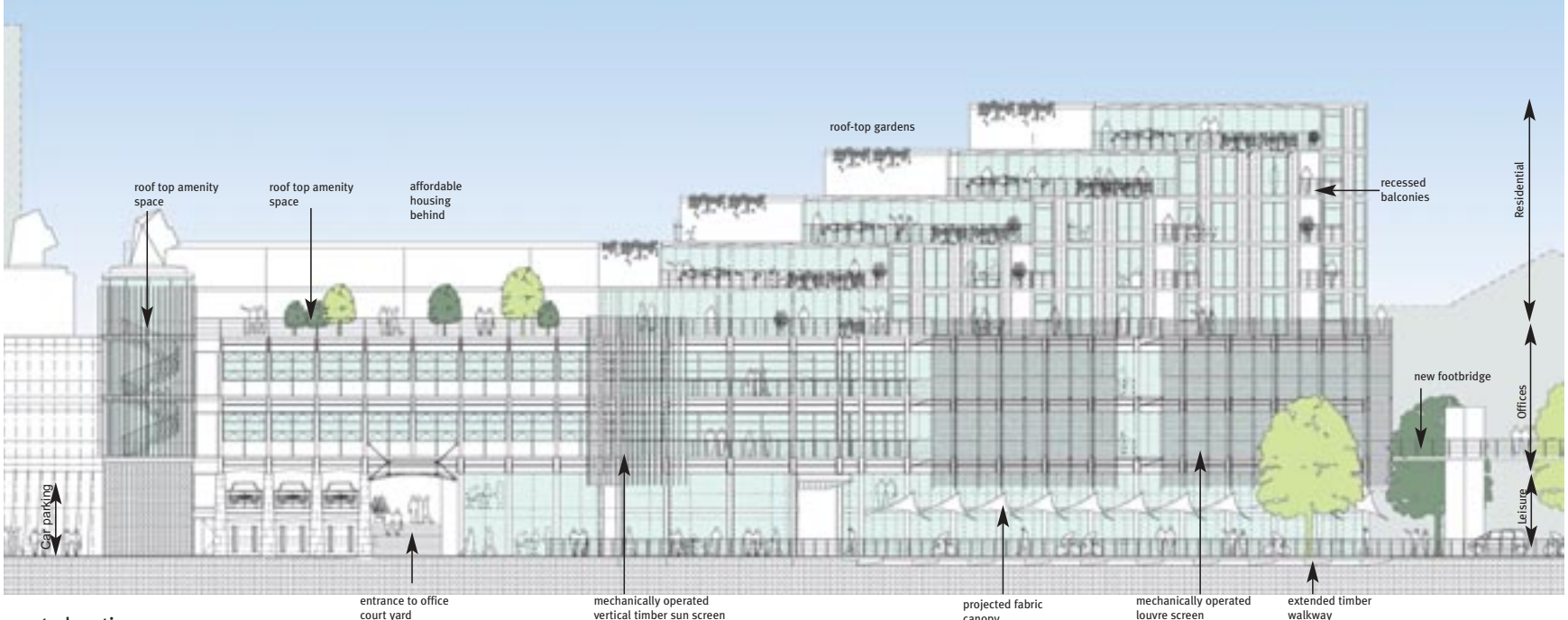
4.8 site sections

section A - A- 1:500

section B - B- 1: 500

4.9 elevation-west

view of proposals
looking east



west elevation 1:250

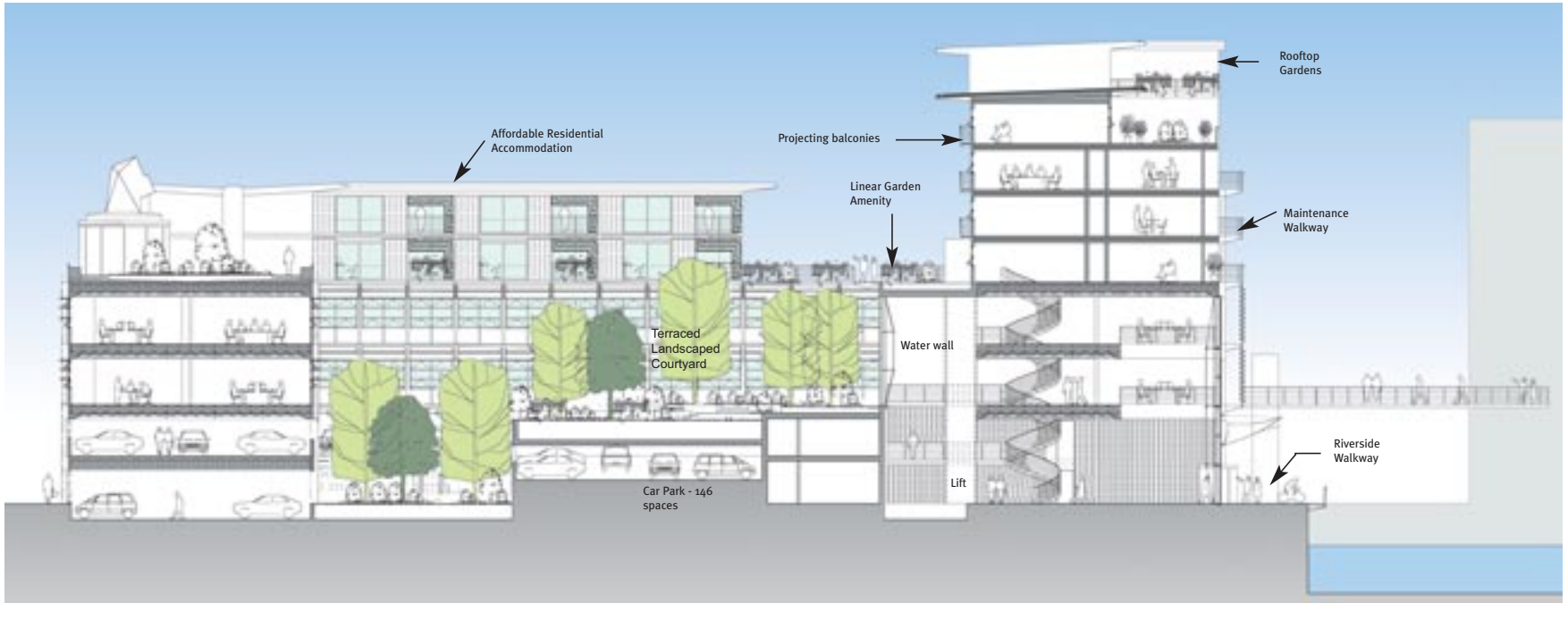
4.10 elevation-south

view north
over river foss

south elevation 1:250

4.11 section - north - south

view north east
over river foss

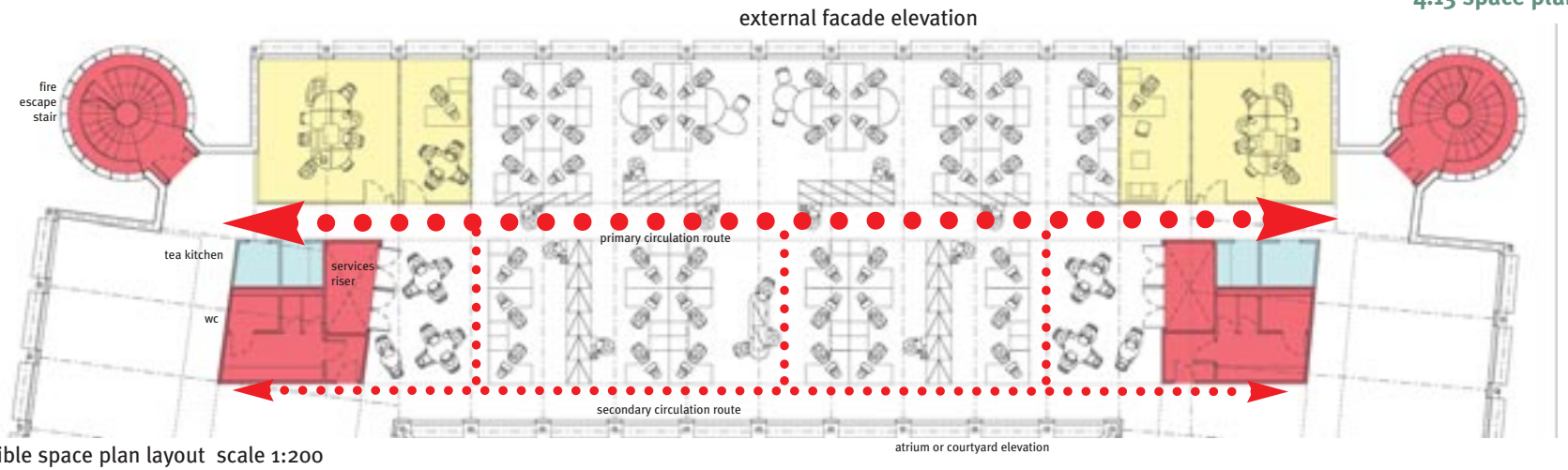


section B - B- 1: 250

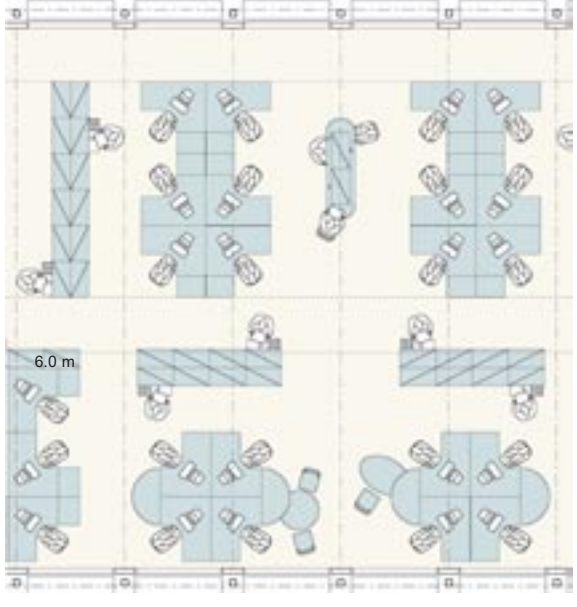
4.12 section east - west

view over new pedestrian footbridge

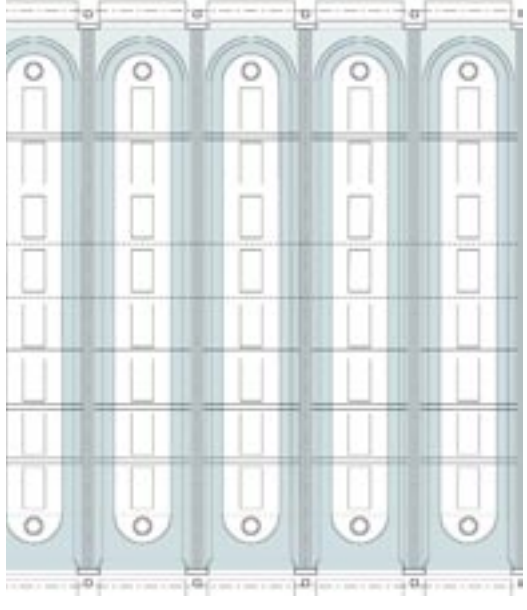
section A - A- 1: 250



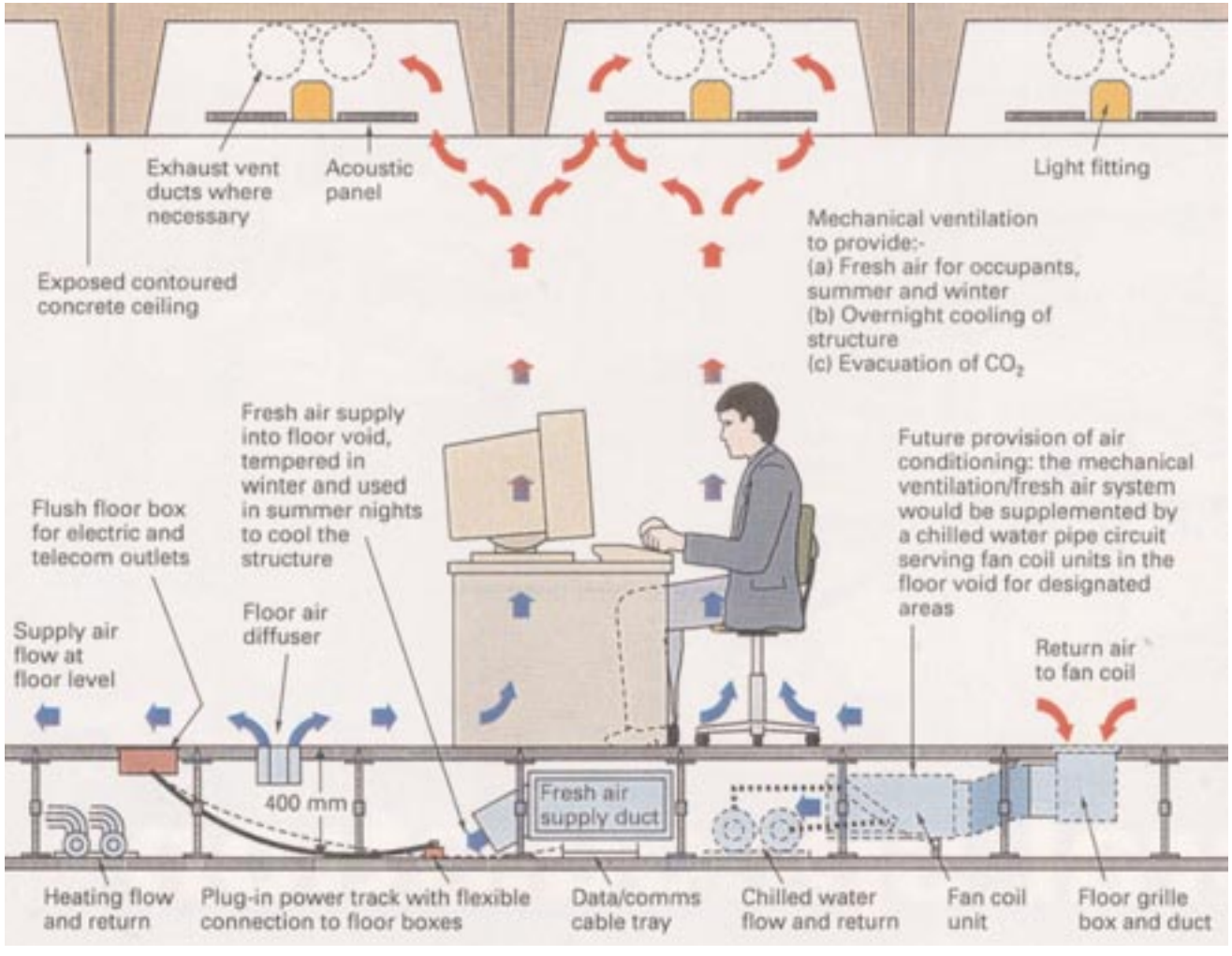
possible space plan layout scale 1:200



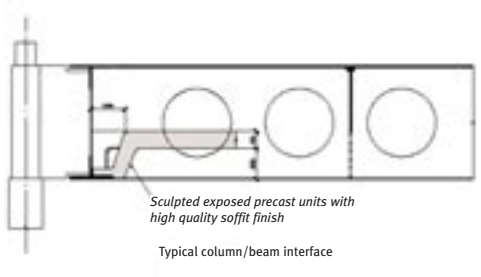
furniture plan scale 1:125



Reflected ceiling plan detail scale 1:125



schematic services section not to scale



structural diagram

4.14 north elevation study

Structure and Materials

The external image of the building should give the appearance of a forward thinking organisation that is committed to excellence and quality.

The materials for the exterior of the building should be attractive for the anticipated life of the building with minimum maintenance. Through careful detailing and material selection maintenance costs can be minimised.

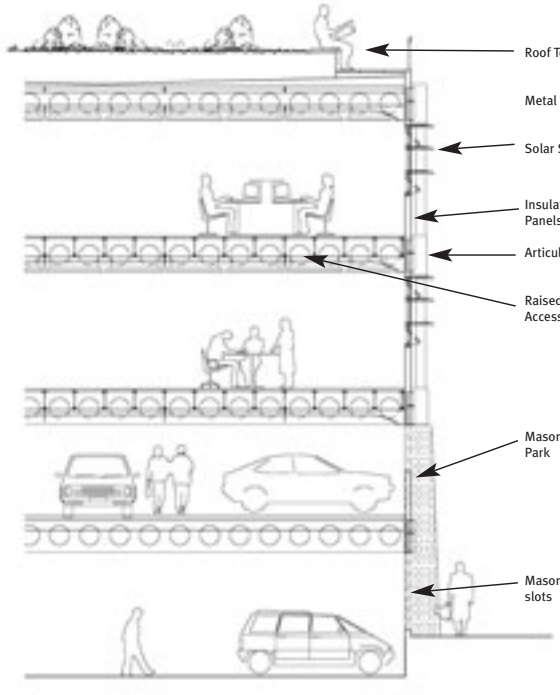
Internally the communal and semi-public area should be hardwearing and distinctive. Here again the impression should be of beautifully detailed high quality materials that create very human and attractive spaces. The natural quality of materials can be expressed in an honest way rather than covering up materials, for example high quality concrete finishes can be expressed and timber polished rather than painted.

Maintenance costs can be greatly reduced by the honest expression of base materials and minimising coverings and coatings.

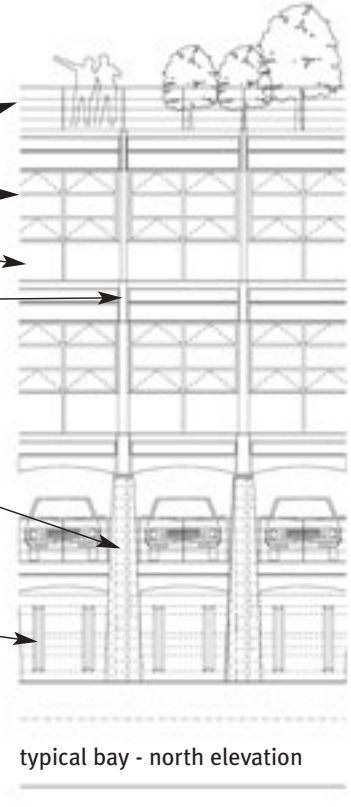
Materials will also be considered in terms of their health issues, embodied energy, eventual decommissioning of the building and their impact on achieving an excellent BREEAM rating.

Final choice of materials will take into account cost, buildability, aesthetics, environmental systems, robustness, maintenance requirements, embodied energy, environmental solutions and sustainability.

The grades of concrete and steel will be optimised to suit specific requirements throughout the project but taking into account economies of scale. A detailed design of the structural options has been developed by Buro Happold.

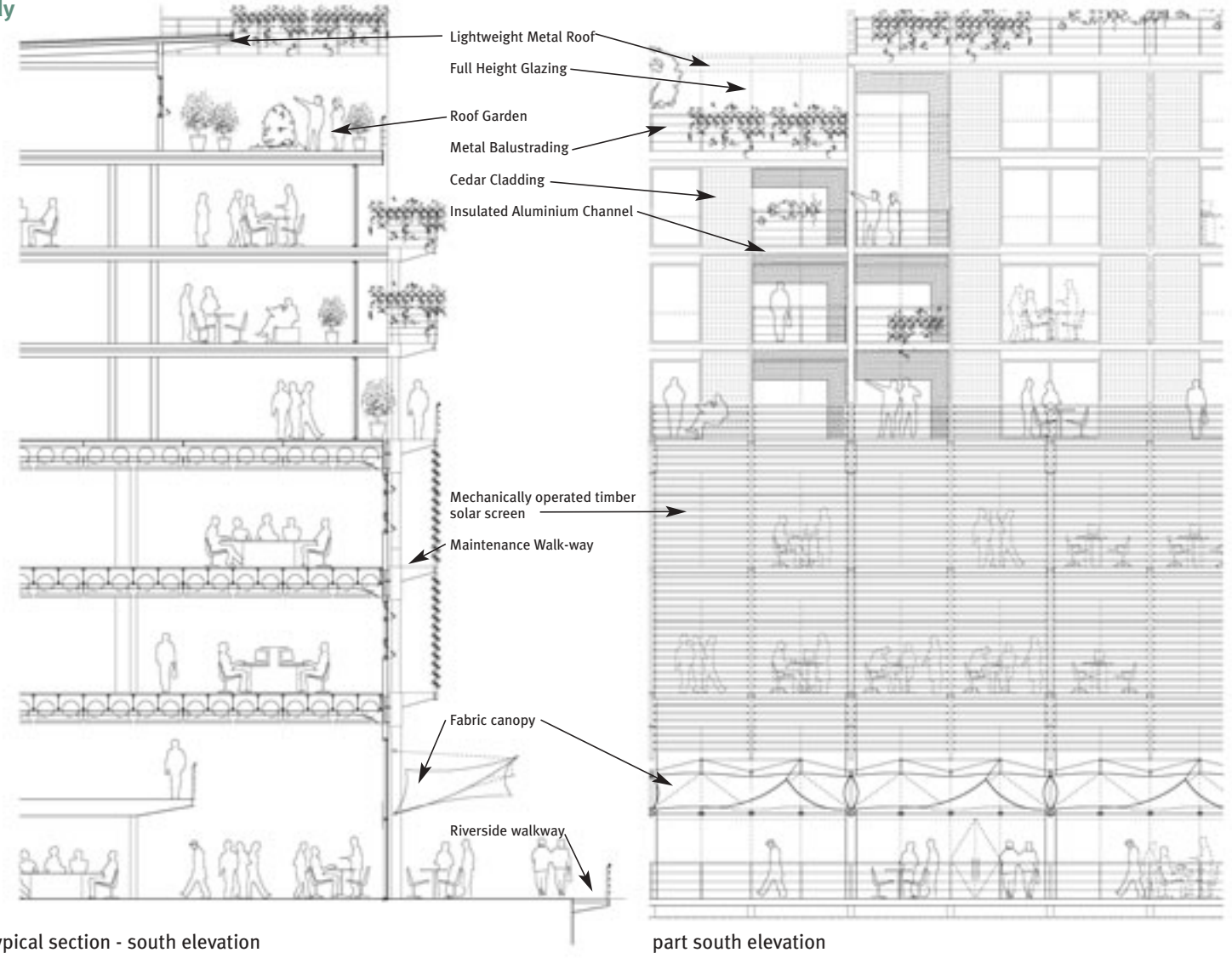


typical office section



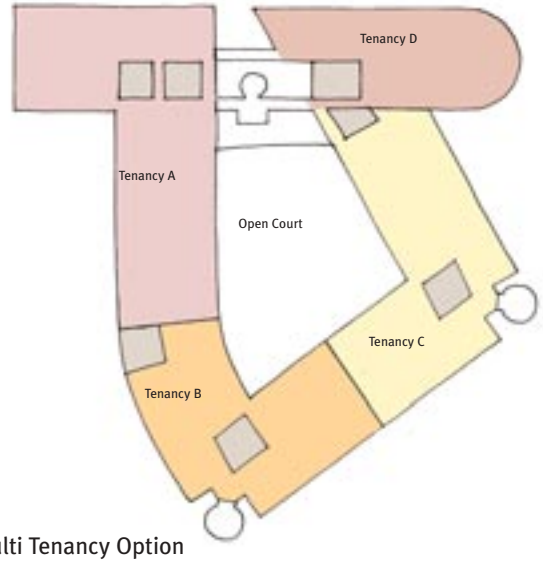
typical bay - north elevation

4.15 south elevation study

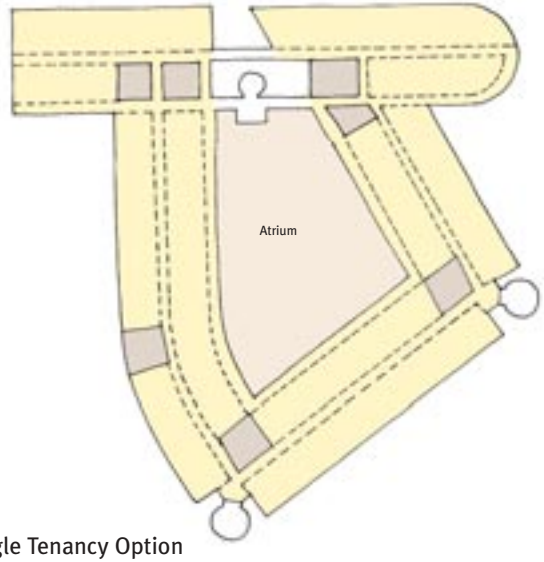


typical section - south elevation

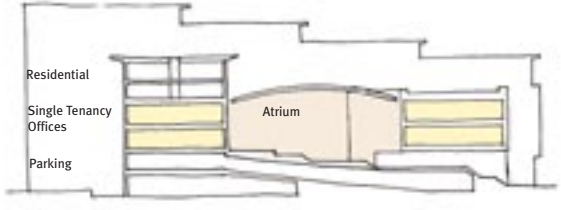
part south elevation



Multi Tenancy Option



Single Tenancy Option



5.0 working environment

5.1 Single & multi tenancy options

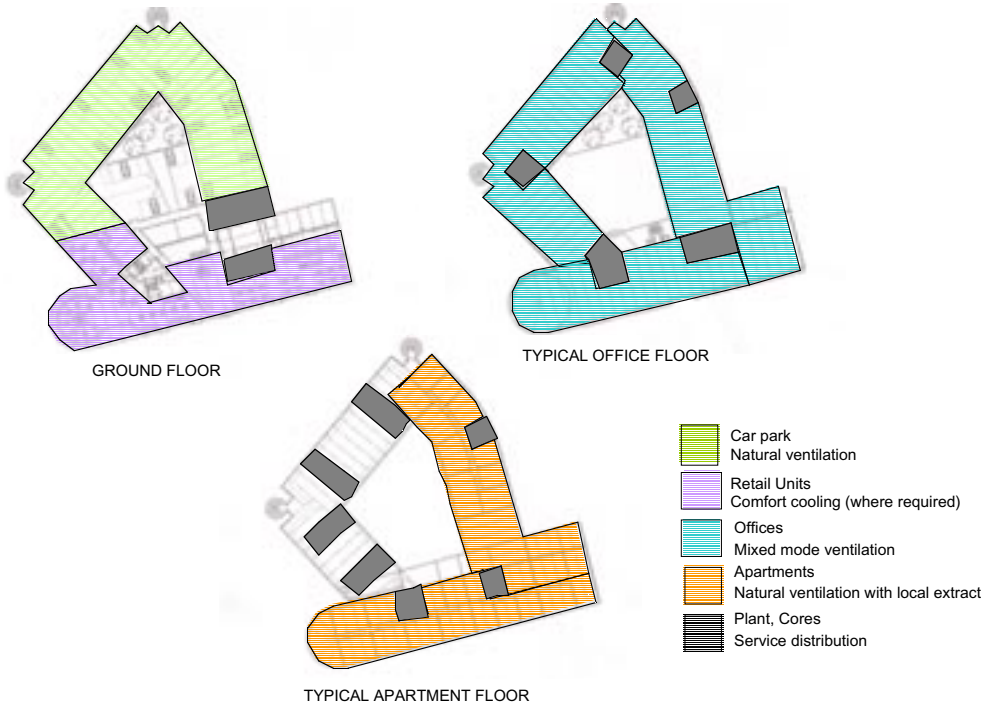
Workplace concepts

Highly flexible working environments can be achieved using a 1.5 metre planning grid and raised floor. Modular furniture can be coordinated with data and power floor outlets to allow layout changes to occur easily.

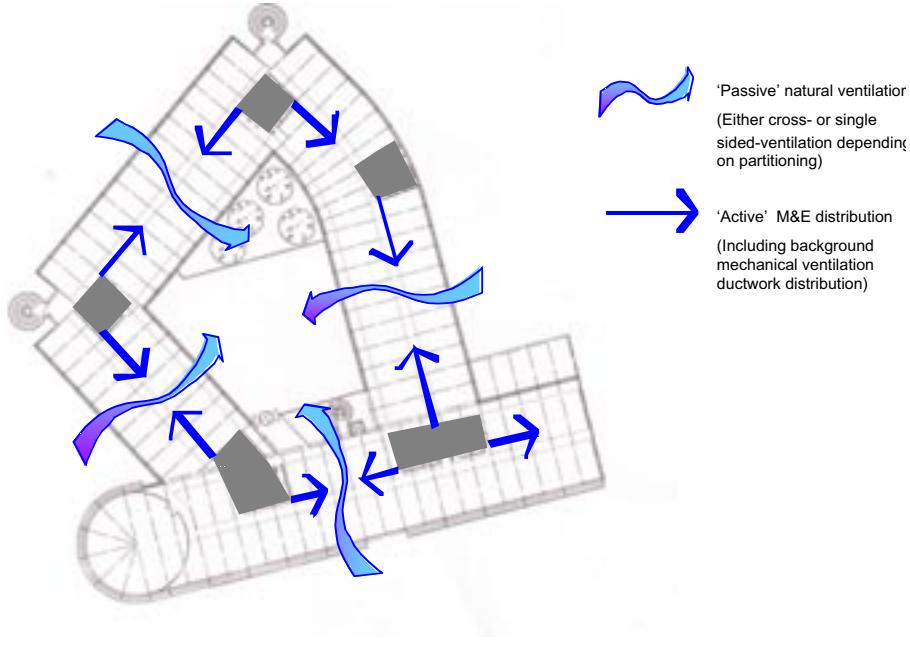
Low level screens between desks can provide some privacy and can also help to absorb unwanted noise.

The open plan linear nature of the office space proposed allows for expansion and contraction of individual teams. Very large teams or whole departments can be easily linked horizontally on one floor.

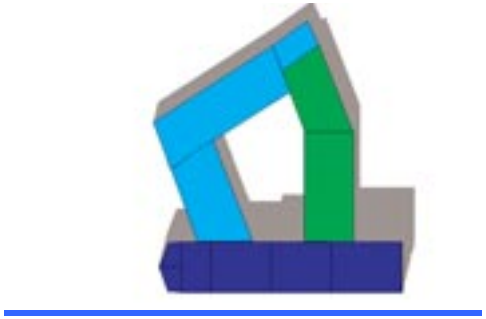
The use of central open landscaped spaces can help to create variety and visual interest which will improve orientation within large office complexes.



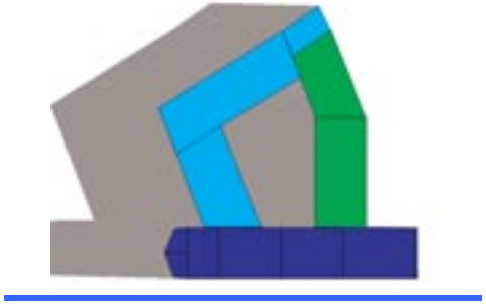
Typical layouts and environmental zoning



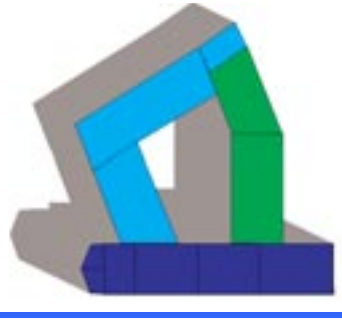
Typical M & E zoning



Sun Shadow in Summer
21 July 12:00 - Altitude 57° - Azimuth 0°

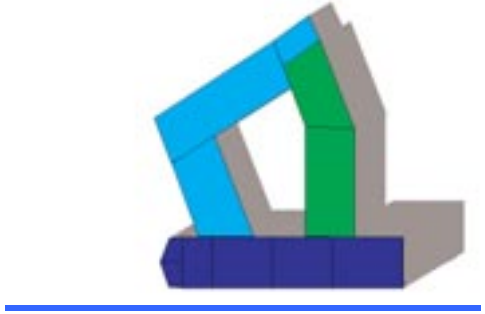


Sun Shadow in Summer
21 July 6:00 - Altitude 17° - Azimuth 257°

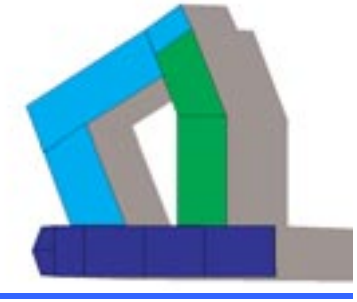


Sun Shadow in Summer
21 July 8:00 - Altitude 34° - Azimuth 282°

Sun Shadow in Summer
21 July 10:00 - Altitude 50° - Azimuth 314°



Sun Shadow in Summer
21 July 14:00 - Altitude 39° - Azimuth 47°



Sun Shadow in Summer
21 July 16:00 - Altitude 34° - Azimuth 78°

5.2 environmental considerations

Value for Money and Whole Life Costs

There are many contributing factors to achieving value for money. We have set out below some of the key issues that we have addressed:

-Efficient building organisation and layout that minimises the numbers of lifts and staircases.

-Efficient building form that optimises the wall to floor ratio.

-An efficient balance between useable office space and circulation space.

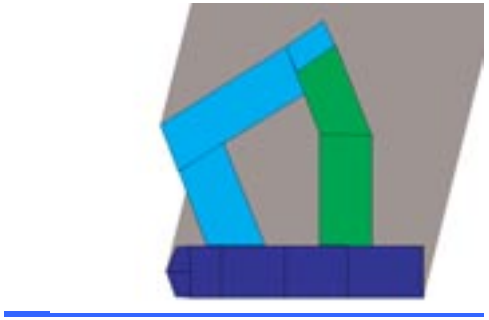
-Efficient floor-to-floor height that is not too excessive.

-Optimise the structural design to achieve high levels of efficiency without compromising flexibility.

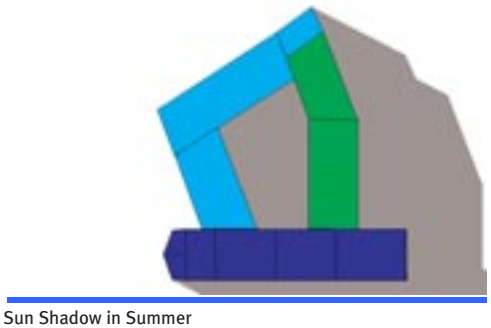
-Naturally ventilated below ground car parks.

-The specification and choice of materials for the roof and external cladding should result in a low maintenance long life strategy.

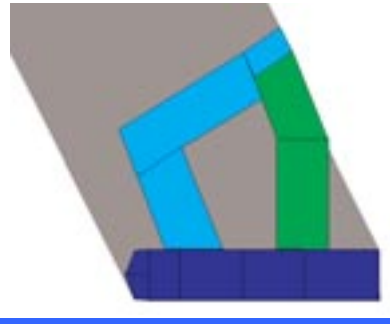
-Maintenance and cleaning should be carefully considered from the outset so that it is simple, safe and easy to carry out.



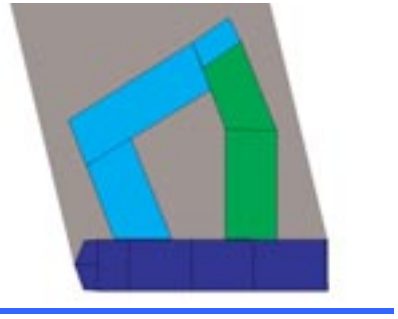
Sun Shadow in Winter
21 December 12:00 - Altitude 13° - Azimuth 0°



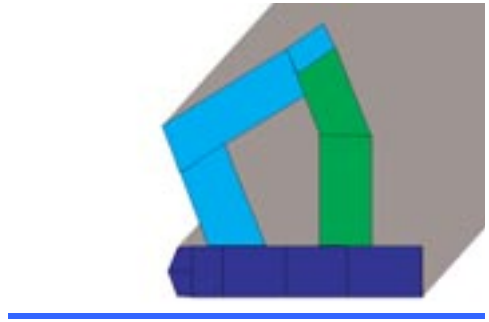
Sun Shadow in Summer
21 July 18:00 - Altitude 17° - Azimuth 103°



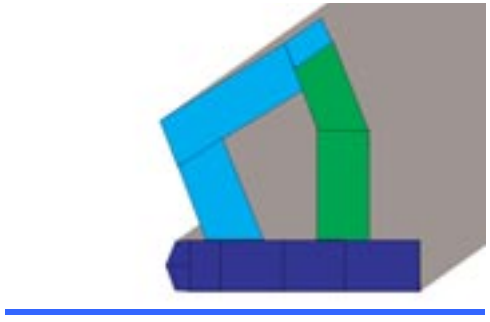
Sun Shadow in Winter
21 December 9:00 - Altitude 4° - Azimuth 310°



Sun Shadow in Winter
21 December 10:00 - Altitude 8° - Azimuth 330°



Sun Shadow in Winter
21 December 14:00 - Altitude 8° - Azimuth 30°



Sun Shadow in Winter
21 December 15:00 - Altitude 4° - Azimuth 41°

-Careful design of the building envelope and the optimisation of the percentage of glazing in facades can reduce the impact of solar gain and significantly reduce the cooling load requirements on plant and improve occupier comfort.

-A low energy strategy can minimise the capital cost of M & E services and greatly reduce running costs.

-The application of practical intelligent systems that can be controlled and monitored by a simple Building Management System. For example, the building can adjust its solar shading.

-Careful design of the external areas around the perimeter of the building can improve security and the sense of overlooking and natural surveillance in the surrounding streets. Crime, vandalism and graffiti can all be minimised through careful design, thus minimising the costs of security staff and equipment.

Business Efficiency Gains

We have carried out Government funded research into Office Occupier Productivity with the Building Research Establishment. The results of this work have been incorporated into the current version of the British Council for Offices Best Practice Specification Guide 2000.

We believe that if staff have a healthy and well designed working environment, they will be happier and more productive. Absenteeism and staff turnover are two of the principle causes of low productivity and high staff costs.

6.0 sustainability issues

A natural low energy approach to environmental control giving staff individual control over their environment is a key factor. Providing the right level of welfare and support services to staff is another important area that can influence staff productivity along with reducing stress by giving back to staff unproductive "down time".

Welfare Provision

Excellent welfare provision for staff is an important ingredient in our design proposals. A variety of relaxation and break areas are provided to create a richness of experience including secure outdoor landscaped spaces that will trap sunlight all year round at different times of the day. These communal spaces create the opportunity for staff to informally meet and will promote integration.

Close to the main entrance of the building, on the waterfront, we propose a public coffee bar area where staff can meet visitors in less formal surroundings.

Exemplary Approach to Health and Safety

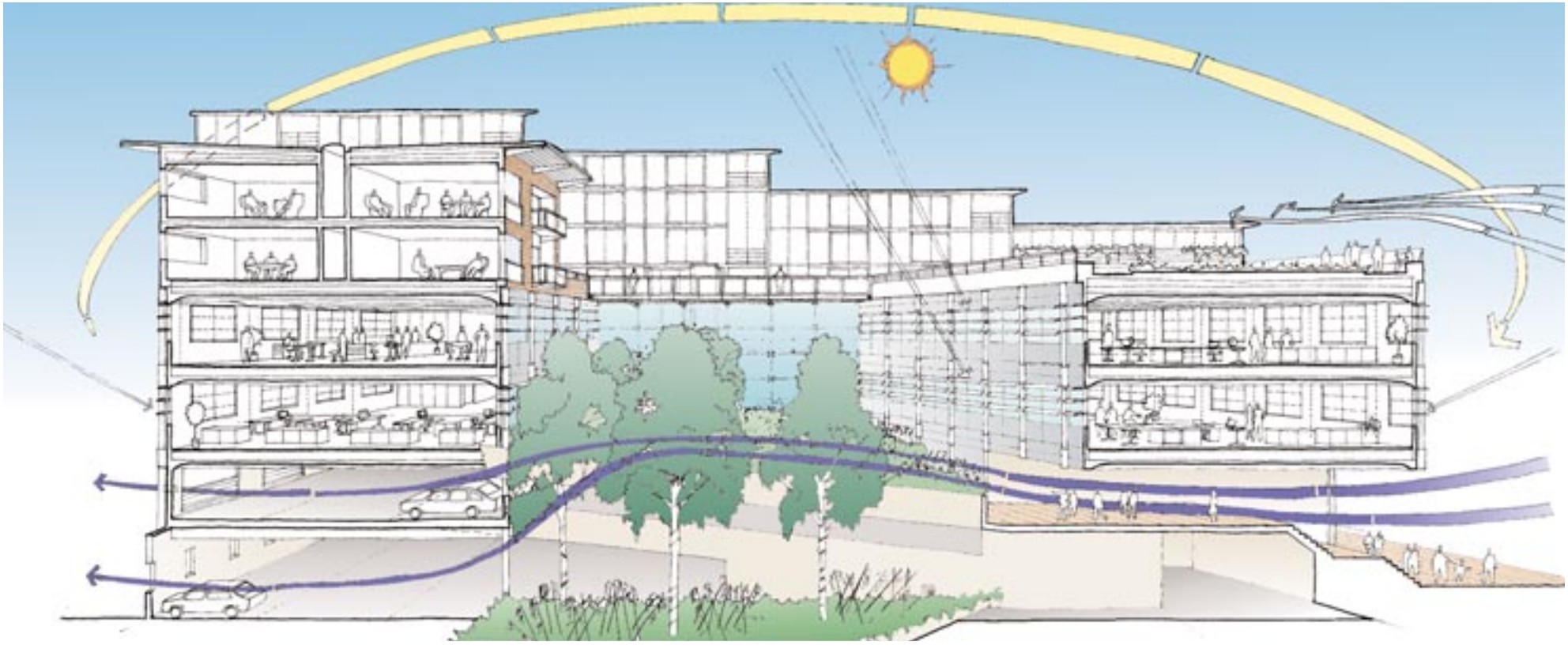
From the outset of the design process, it is critical that decisions are based on an informed and knowledge based awareness of the potential risks during construction on site, subsequent maintenance and occupation of the building.

The key to this is a holistic and highly integrated approach to design and construction. The team is committed to investigating the most appropriate forms of construction that will deliver the best performance and value for money over the long term.

Standardised components can be developed to provide a diverse and flexible kit of parts. Dimensional co-ordination will allow a wide variety of building forms and materials to be used economically within a structural framework. Pre-assembly of building units such as floors, walls and roof panels will allow factory conditions to prevail for the most important construction steps. Working under comfortable and safe conditions the quality of workmanship will be much higher than is conventionally achieved on a building site and accidents will be less likely. It will also reduce the time spent on site and hence the disruption to the community during construction.

The principal advantages with using manufacturing techniques are:

- Non-reliance on traditional skilled labour, which is in short supply.
- Optimises the location of work, mainly off site, resulting in increased productivity.
- Reduced levels of wastage of construction materials.
- Improved quality control through factory manufacture reduces future maintenance.
- Greatly improved air tightness and energy efficiency.
- Production process is under safer and cleaner conditions and less vulnerable to weather.
- Speed of delivery and opportunities for customisation give a marketing advantage.
- Fast track delivery improves developer's cash flow and profitability.
- Greatly reduced environmental impact, interruption and disturbance to surroundings.



holistic sectional perspective of courtyard

7.0 transport

Carmelite Street, York

The Carmelite Street development is located in the centre of York, approximately 5 minutes from the main shopping centre of the city.

The site is currently dominated by the Shambles car park. It provides 285 spaces for shoppers to the site, and is unavailable in the evenings. Its location makes it popular with visitors. Staff at the adjacent British Telecom office uses the basement of the car park on a private basis.

The site gives an opportunity to enhance the local area through the development of a high quality office and residential building. It will also provide the opportunity to remove some of the traffic coming into the area, through the re-allocation of spaces elsewhere in the City.

Traffic in York

Traffic in York is a key issue - the historic core of the city is not conducive to traffic and the Council has worked hard to prohibit most traffic from the centre. When explained why the Council takes this stance, the reasons are obvious:
-In a 'do nothing' situation peak hour local traffic is likely to increase by 30%;
-The result of this would be a reduction in morning peak vehicle speed from 17mph to 12.5mph; and
-Journey times would increase by over a third.

Air quality is also affected by increased traffic levels - and York has seen NO2 levels surpass EU limits in the last two years. Added to this, the two most important issues to York residents are congestion and a lack of parking.

To address these issues the Council wishes to hold the number of cars coming into the City in the morning peak at 1992 levels. This will ultimately require a reduction in peak hour car usage. To ameliorate this, there must be an increased use of other modes including public transport, cycling and walking. However the planning system can also help to reduce car use; Planning Policy Guidance 13: Transport encourages:
-Residential developments near to local centres;
-Higher density residential developments;
-Mixed use developments;
-Development in areas served by public transport; and
-Tightly controlled parking provision at new developments.

The Council's transport strategy (set out in the Local Transport Plan) wishes to see several issues addressed including:
-The need to widen travel choices including walking, cycling and public transport;
-Restraining the demand for car travel; and
-Managing traffic to improve road safety.
Additionally one of the objectives of the strategy is to "enhance and support the economic development and vitality of York through the promotion of sustainable development at appropriate locations that reduce the need to travel and minimise traffic generation".

The Development

The Carmelite Street development offers the opportunity to provide employment and residential facilities on one site. In sustainable terms, the ideal situation would be for people to live and work in the place which would fulfil the objectives of PPG13. However the reasons for choosing where one lives are complex - but this site does offer:
-the opportunity to live in the city;
-the opportunity to enjoy the facilities that can be found in York - without using a car; and
-access to a host of employment opportunities in the City - again without using a car.

To summarise it is important to see that the development is centrally located and so can provide residential accommodation to people who work in the city centre and thus reduce the need to drive to work. Also the office element of the development provides a centrally located employment site for people living elsewhere in the city. Employees will be able to access the site by public

transport. The site is approximately 10 to 15 minutes walk from the rail station, also park and ride services operate to The Pavement, a couple of minutes walk away.

Parking

The removal of the public parking on the site will reduce the amount of traffic on The Stonebow and onto Foss Islands Road. Also the level of traffic in the adjacent streets to the development may reduce due to the removal of people searching for spaces and may decrease the amount of traffic running through the Foss Island Road/ Layerthorpe junction.

The current site has 285 spaces. The maximum parking requirement (as per the Local Plan) is 60 spaces for apartments (this assumes there will be 60 one-two bed apartments) and 126 spaces for offices.

The proposals include 146 parking spaces, none of which are public. The spaces will be dedicated to the apartments and offices. This number represents 40 fewer spaces than required by the standards.

There will be a minimum of 90 spaces/stands for cyclists and there will be between one and five parking spaces designated to disabled drivers.

Promoting Sustainable Travel

In order to encourage the employees working at the office to use sustainable forms of transport, the occupiers of the development will produce a Transport Policy Statement. The provision of this document will be a planning condition imposed by the Council on any outline planning application made for the development.

The Statement will be produced in consultation with the Council and is likely to include initiatives such as:
- introducing flexible working hours;
- organising group purchase of season tickets for public transport (with a view to reducing cost);
-providing covered cycle storage;
-providing showers and lockers/ drying areas for clothes;
-promotion of cycling through initiatives such as free breakfasts;
-attractive mileage rates for cycling for business use;
-encouraging staff to work at home;
-providing information to visitors and staff on local public transport;
-encouraging car pooling rather than company cars;
-allocating parking to people car sharing with 2 or more others; and
-developing personal travel plans for individuals.

Other initiatives may also be included - these will depend very much on the occupiers of the offices, and the needs of their employees.

8.0 landscape & ecology

Concept

Set by the water - a landscape dominated by the river and views. Occasionally windy and with ever changing light and movement of people. Our proposals embrace the river and allow its animated panorama to penetrate the layers of the site along conduits for people, wildlife and water.

Landscape and Ecology

To create a robust, sustainable and flexible environment which integrates this historically significant site and its setting into the Hungate area, ergonomically, ecologically and visually.

Throughout, the landscape would be designed to allow the integration of SUDS (Sustainable urban drainage systems), grey water and other recycling systems, community art and ecological diversity.

Inhabited Ridge: Terraced roof gardens using blocks of indigenous pioneer species will complement the escarpment on the northern bank and create a green shelterbelt for the site's hinterland.

Riverside Walk: Existing riverside walk will be enhanced and accessed at points along the site edge. Views across the river will be maintained and a new bridge could be installed.

Urban Docklands: Subdivided into public and private areas. Robust hard detailing with dockside materials salvaged where possible. Street trees strategically placed to enhance views and create shade and shelter.

Boulevard and Street Trees: Tree lined central footpath cycleway reduces road width for the main vehicular route, reinforcing the predominant character of priority for pedestrians and cyclists. The connecting tree lined streets create green links into the site along view corridors. Traffic is slowed by raised tables at junctions.

Homezones: Shared surfaces designed along riverside principles acknowledge view corridors and create green links to the inner park. Deciduous trees are planted on the southern aspects to maximise solar gain in the winter and provide shade in the summer. Central gardens could be private or communal and provide opportunities for urban orchards, demonstration gardens or allotments.

Lowland Linear Park: This acts as a buffer between the new and old river edge with potential for, swales and reedbeds for the SUDS. Opportunity to create a unique linear wetland park, play zones and ecological wildlife corridor with links to the river from the existing housing.

Inner Ridge: Potential exists to enhance the existing parkland's ecological diversity with new planting and management regime that links with Hungate proposals.

9.0 appraisal & development cost plan

Illustrated is a residual appraisal for the above site. This calculates a total residual land value for the whole site which is then allocated as £1m for the 'original' site and the balance for the car park and the triangle of land in between.

We note the following:

1. If Landmark can buy the other ownerships for less than £1.163m then the balance goes to Joseph Rowntree.

2. If Landmark make more than 15% profit, then every overage is split 50/50 between ourselves and Joseph Rowntree.

3. If Joseph Rowntree want to retain the offices and retail as an investment then the appraisal shows a yield of 8% after allowing for costs and assuming it costs £1.163m to buy in the other sites required. Obviously the yield would improve if less than £1.163m, but also if Joseph Rowntree are prepared to take the letting risk Landmark would undertake the scheme for a lower profit margin, thereby further improving the yield.

If this latter option is of some interest, Landmark would like to discuss it in more detail at the presentation or at a future date.

LANDMARK DEVELOPMENT PROJECTS LTD - RESIDUAL LAND VALUE APPRAISAL

Project address	York - Carmelite Street
Date	12.02.02
File Name	Carmelite1

INVESTMENT VALUE					TOTALS
DEVELOPMENT	AREA	P.S.F.	TOTALS		
Restuarant Unit A	10,472	11.94	125,000		
Restuarant Unit B	8,910	12.35	110,000		
Offices (net area)	58,728	15.00	880,920		
Car parking for Offices	100	1250.00	125,000		
TOTAL				1,240,920	
Y.P.IN.PERP @	8.00 Percent		12.50		
GROSS INVESTMENT VALUE			15,511,500		
LESS COSTS @	5.75 Percent		891,911		
Sale of Affordable housing units					
Total net sales area	9,476 at £ per sq ft	90.00	852,840		
Sale of Private Residential Units inc 46 car aprking spaces					
Total net sales area	33,593 at £ per sq ft	220.00	7,390,460		
NET INVESTMENT VALUE					**22,862,889**
DEVELOPMENT COSTS					
(1) CONSTRUCTION COSTS					
DEVELOPMENT	AREA	£/P.S.F.			
Restaurant Units	20,096	60.00	1,205,760		
Car Parking	47,426	45.00	2,134,170		
Offices (net area)	58,728	105.00	6,166,440		
Private Residential	33,593	110.00	3,695,230		
Affordable Housing	9,476	85.00	805,460		
			0		
TOTAL				14,007,060	
Architects @	included above				
Q.S. @	included above				
Engineer @	included above				
M & E Fee @	included above				
Contingencies @	included above				
Archeological Investigation	say		5,000		
External Works	say		200,000		
External car parks	say		50,000		
Footbridges	say		150,000		
Demolition	say		150,000		
Ground Investigation	say		10,000		
Planning, Building regs	say		19,500		
TOTAL CONSTRUCTION COSTS				14,591,560	
(2) INTEREST CHARGES					
Finance Rate	6.00 percent				
Lead-in period	3.00 months				
Build period	12.00 months		437,747	437,747	
(3) LETTING AND FUNDING FEES					
Agents letting fees @	10.00 percent		124,092		
Legal Fees @	5.00 percent		62,046		
Promotion say			100,000		
Agents sale fees @	1.00 percent		228,629		
Legal fees @	0.50 percent		114,314	629,081	
(4) VOID TERM, RENT FREE ALLOWANCE AND CAPITAL INCENTIVES					
Finance Rate	6.00 percent				
Void term	6.00 months		453,879		
Rent Free Period	12.00 months		1,240,920	1,694,799	
(5) PROFIT					
Developers profit @	15.00 percent				2,982,116
DEVELOPMENT COSTS EXC. SITE VALUE AND PROFIT				17,353,187	
GROSS RESIDUAL SITE VALUE				2,527,585	
Less:-					
Site acquisition costs @	5.75 percent		124,374		
Site finance charges for total development period					
21.00 months @	6.00 percent		240,178	364,552	2,163,033
TOTAL RESIDUAL LAND VALUE					**2,163,033**
RESIDUAL SITE VALUE FOR ORIGINAL CARMELITE STREET SITE, FIXED @					1,000,000
RESIDUAL SITE VALUE AVAILABLE FOR SITE ASSEMBLY					1,163,033

Indicative Costs - 7 February 2002

		sq ft	£/sq ft			No of dwellings	Cost per unit
Ground & First							
Car park		44,821	90		4,033,890		
Retail	Shell	20,096	90		1,808,640		
Entrance		2,605	110		286,550		
Second & Third							
Offices	Shell	58,750	90		5,287,500		
Fourth & Fifth							
Affordable Residential	Modular	9,149	100		914,900	16	£57,181
Private Residential	Modular	19,881	120		2,385,720		
Sixth, Seventh & Eighth							
Private Residential	Modular	13,724	120		1,646,880		
		169,026	97	Total	**£16,364,080**	16	£657,597
			£1,042 /m2				

Summary

Construction Cost	70%	£11,454,856
Site Facilites/Temp Works/Tower Crane	12%	£1,963,690
Design Fees	10%	£1,636,408
Contractors OHP	5%	£818,204
Contingency	3%	£490,922
	100%	**£16,364,080**

EXCLUDES
External works
External car parks
Footbridges
Demolition of existing car park

Scheme Proposal - 7 February 2002

m2	car park	retail	entrance	offices nett	affordable nett	private nett	
Ground	2,082	1,012	242				
1st	2,082	855					
2nd				2,729			
3rd				2,729			
4th					425	967	
5th					425	880	
6th						645	
7th						413	
8th						217	
	4,164	1,867	242	5,458	850	3,122	**m2 15,703**

sq ft	car park	retail	entrance	offices nett	affordable nett	private nett	
Ground	22,411	10,893	2,605				
1st	22,411	9,203					
2nd				29,375			
3rd				29,375			
4th					4,575	10,409	
5th					4,575	9,472	
6th						6,943	
7th						4,446	
8th						2,336	
	44,821	20,096	2,605	58,750	9,149	33,605	**sq ft 169,027**

EXCLUDES
External works
External car parks
Footbridges
Demolition of existing car park

10.0 design team

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Feilden Clegg Bradley Architects LLP

A response to the competition by

Feilden Clegg Bradley Architects LLP

in association with Munroe K Limited and

Consultant Advisors:

Services and Structural Engineers: Buro Happold

Quantity Surveyors and Cost Consultants: Burnley Wilson Fish

Contents

1.0 The Site and its Context

The Hungate area has always been at the edge of the old city, yet remarkably close to its centre. The 13th Century Priory that gave its name to Carmelite Street had disappeared by the time John Speed drew his map in 1610, but the gardens that belonged to it are still evident in 1822. In the 19th Century however the area was colonised by slum housing and factories, flour mills and gasworks that produced a complex web of streets that have since largely disappeared - Rushby Street and Ryburne Place sub-divided the site in 1852. The scale of the whole area has changed in the 20th Century and is likely to change again with a new pattern of development that brings leisure and 21st Century employment to the town centre.

The development plan stresses the need for leisure, employment and domestic uses in a mixed use development, but perhaps does not stress sufficiently the need for a robust and flexible infrastructure to allow future change to take place on a more organic basis. Obviously the long term future of the competition site dominated as it is by the car park will be significantly affected by the Hungate development plan, and its development needs to be considered alongside the emerging brief for the area.

Regarding the Carmelite Street site, we have looked at a number of options but feel that the solution should be dominated by flexibility for future use. This not only applies to the type of work space generated but also the future flexibility of change of use to retail or leisure or community use on the ground floor and even leisure or domestic use on the top floor. We have therefore answered the Foundation's brief for the provision of high quality 21st Century office accommodation, but we have gone further and suggested that the form, details, materials, technology, structure and servicing of the buildings must allow for easy adaptation.

John Speed Map 1610

Edward Baines Map 1822

We feel that the adjacent car park is potentially a short life building. It occupies a highly significant area overlooking the river and fronting an important pedestrian link. It builds across the termination of both Hungate Street and Garden Place. It is architecturally unconvincing dressed up in domestic forms and details, and although it is extremely convenient for the city centre, the new development of Hungate would allow for more discreet car parking provision should that be more appropriate in the longer term.

We have therefore explored, as part of this exercise, a "cambilisation" of the car park - converting it by the insertion of a series of lightweight volumetric units into riverside housing, and displacing the parking that has been lost into the centre of site where it has less impact on the public realm and does not take up space with the useful south facing riverside outlook.

There are therefore two studies that we have undertaken. The first is to create a flexible framework building facing Carmelite Street that meets the Foundation's brief and creates a flexible, sustainable, low energy building - an exercise in the use of largely "natural" materials and the avoidance of those with high energy use and pollution in their manufacture. We have also looked at the conversion of the car park building, and how this could be relatively easily transformed to provide a range of living units from studio apartments at 40sqm to penthouse suites at 150sqm for which we believe there is a strong niche market this close to the town centre, given the obvious attributes of the site.

This presentation looks in detail at the key issues that are outlined in the competition objectives in relation to the development of the office-space building, and concludes with some notes on the possibilities of the domestic conversion to the car park which, as we see it, is one way of achieving greater commercial value out of the site.

Ordnance Survey Map of 1852

Ordnance Survey Map of 1909

2.0 Flexibility : Adaptability : Sustainability

Historic Flexibility

Arguably the urban planning form that has shown itself to be the most adaptable over centuries of use is the Georgian terrace. Whether in York, Edinburgh or Bath, there are many examples of four to five storey terrace developments which have long outlived the architecture that superseded them. The characteristics they have that have enabled them to do this are as follows:

- They present a high quality façade for the public realm.
- They generally have a good height to depth ratio (generally no more than 2.5:1) and high level glazing for good daylighting and natural ventilation.
- They possess surprisingly good fire resistance between floors.
- Regular staircases provide efficient circulation between linked premises.
- Masonry and timber construction is both robust and easily adaptable.
- External walls and rooves are constructed using long life low maintenance materials.

We therefore find in Georgian Bath that what were constructed as substantial single family houses are easily adaptable to multiple domestic accommodation, offices or institutional uses and ground floor retail. Most of the centres of our Georgian cities now fall into the category of mixed development, with floors being relatively easily connected both horizontally and vertically.

Having practised in an office which gradually spread throughout three Georgian buildings, however, we became aware of the limitations of the 18th Century "system" building: firstly, individual floor plates did not allow sufficient flexibility for open plan working arrangements, and secondly there is little or no opportunity for upgrading energy performance of the building.

What we have attempted to show with the proposals for Carmelite Street in the 21st Century version is a four storey terrace that overcomes these problems and provides even greater flexibility not only for different types of office use but for different urban activities from housing through to catering, leisure and community uses.

Lifecycle Costs

If we look at the typical split in construction costs and lifetimes of various elements of a typical office building we find the following approximate proportions:

	% of Initial Construction Cost	Replacement Lifecycle
Substructure	7%	Indefinite
Frame and upper floors	15%	Indefinite
Cladding	25%	50-70 years
Roof	5%	30-40 years
M & E installation	25%	20-25 years
Internal partitions	8%	15-20 years
Internal finishes	15%	5-10 years

To design for sustainability, means that we should be attempting to increase the life span of all elements, but also ensure that where replacement is necessary, it is possible with a minimum of disruption particularly to the structural integrity of the building. But most important of all, we must ensure that the particularly long life elements i.e. the frame, substructure and cladding which form 50% of the building are able to adapt themselves easily to changes in use patterns. Flexibility and adaptability are key factors in creating a sustainable new urban architecture.

The Sustainability Agenda

The other issues in relation to the sustainability agenda are as follows:

- The building should minimise energy consumption (and therefore carbon dioxide emissions) in use.
- The building should minimise environmental damage resulting from the use of materials in its construction.
- The building should minimise the carbon dioxide emissions resulting from the "embodied energy" of its construction.
- The building should be designed to minimise water consumption.
- The building should be designed to facilitate recycling of waste generated by the activities that go on within it.
- The building should seek to increase biodiversity within the urban landscape.
- The building should seek to reduce energy consumption resulting from energy intensive transportation.
- The building should seek to meet the needs of the local population, addressing the issues of Agenda 21.

The last three of these issues tend to be outside the remit of this competition, though we have included within our brief adequate spaces for collection of waste material for recycling, and of cycle spaces to encourage bicycling as a means of transportation to work, and we have looked at increasing landscape coverage on the site.

Energy and water use issues are dealt with in Section 5 of this report. Materials issues are dealt with in Sections 3 and 6.

3.0 The Frame and External Shell

Slumped glass used at the “Floating Wall” at Yorkshire Artspace, Sheffield

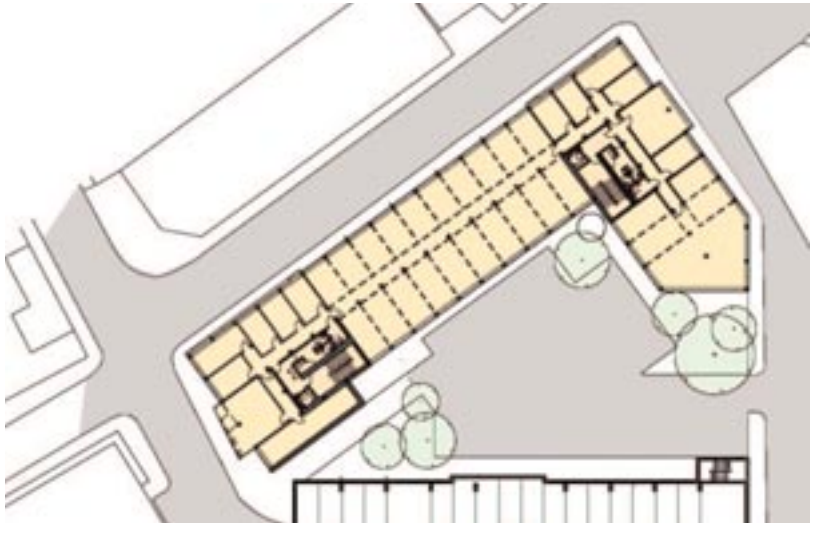
The frame of the building is designed to suit a standard BCO 1.5m partition grid, with a structural grid at 3m centres on the façade, and a building depth of 12m with a central 6m column. This four storey 12m deep extrusion runs the full length of Carmelite Street and turns the corners into Garden Place and Hungate. 1:200 plans and sections are shown in the Appendix. We have designed the building to utilise materials with a minimum amount of embodied energy, and to ensure that all the materials specified can be easily recyclable. Timber is used in preference to steel both for framing the office structures and for the prefabricated domestic units. A minimum of concrete is used in the office floor plates to guarantee fire resistance and provide thermal capacity to absorb heat during the day and release it during the night to avoid air conditioning in summer.

The ground floor has been designed assuming a range of uses that could include offices that are more likely to be adapted to a variety of uses including cafeterias and bars, retail uses, community uses (health centres etc) or even small scale workshops or live/work units. The floor to ceiling height is slightly higher to accommodate different servicing regimes that may be required of these uses. The external cladding is seen as a zone of ground supported cavity brickwork reusing the bricks that currently exist on the site and using lime mortar to ensure that the bricks are again recyclable. Openings could be made at intervals appropriate to the requirements for glazing and doors.

On the upper three floors of the building the elevation is dominated by glazing which is designed to maximise daylighting and optimise natural ventilation. On levels 1 and 2, there is approximately 65% glazing to allow daylight deep into the plan. On level 3 and on southerly elevations the percentage is reduced to approximately 35%. Natural illumination is likely to be much higher because of reduced obstruction to the sky, and too much south facing glazing can contribute to summer overheating.

The top floor we also feel could well be used, at least in the short term, for housing which is currently in greater demand in the city centre than large floor plate offices. As such it is likely to require less glazing.

The choice of the material for the opaque section of the walls has caused us considerable debate. Timber would be the most "sustainable" choice, though maintenance could be an issue and it does not feel appropriate to us in a very urban setting, though we have illustrated its use on the riverside housing concepts that we have



Office Extrusion: Carmelite Street

developed for the south side of the building, where the urban context is no longer one of roads and streets. Brick or terracotta would be possible as a suspended panel of material which might be regarded as more sympathetic to the local vernacular. We have instead chosen to illustrate the use of glass as an overcladding to the insulated panel construction.

We have been working recently with an artist who has completed an installation using "slumped" glass with a reflective aluminium foil finish behind it. This creates an intriguing specula reflectivity on the glass which obviously varies throughout the day and seasons according to the amount of sunlight striking it. In this case, with a building that is substantially north facing, the possibilities of brilliant reflections are minimised, though the walls will tend to reflect the light from the northerly sky down onto the street, and the juxtaposition between the pure areas of double glazing and the double skin areas of opaque glazing could enliven the façade.

We have also modulated the north facing façade to suggest the type of subdivision of uses that might happen inside the building, breaking down the natural horizontality of the façade with a series of vertical subdivisions which relate the building back more closely to 18th Century precedents discussed earlier.

Evidence of interior uses is also presented at each end where the two entrances to the building are marked by cantilevered glazed bay windows. The one that marks the principle entrance off Garden Street juts out into the air space above the pavement at a point where we envisage that the communal meeting rooms in each office might be located. Not only does this provide a symbol of the main entrance to the building but also it captures the views down onto the River Foss and across the city to the southwest.

The proposed building is within the planning guidelines for a maximum of four storeys, but we have added a roof plant room located on the south side of the building underneath a roof that is sloping at 30° due south. This is designed at the optimum pitch for solar collection either using photovoltaics or evacuated tube flat plate collectors for hot water heating.

The roof plant room runs between the two stair cores and will contain all boiler plant, heat reclaim plant, extract ventilation systems for WCs throughout the cores, and water storage that may be required by the mains water authority. We also hope to be able to use the remainder of the roof of the building as amenity space: part of this could be paved, and part could be covered with grass to create a roof garden. It may also be possible, dependent upon negotiations with the authority, to make part of the upper floor plant room into a roof "summer house" as an amenity for the building users. This could be used as a meeting room, relaxation space and picnic area.

Carmelite Street : Elevation

Exemplar cladding systems

Glass (BRE, Watford)

Glass (Open University, Milton Keynes)

Terracotta and Brick (Aston University, Birmingham)

Glass and Copper (RARE Headquarters, Twycross)

4.0 Interior Flexibility

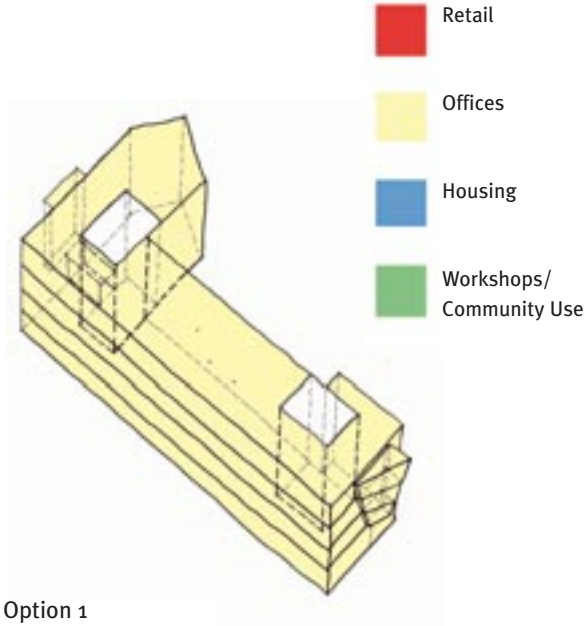
Flexibility within the Building

There are two levels of flexibility in the design of the building. The first ensures that a space can be subdivided into a number of different units and use types. The second ensures that a variety of different configurations for office accommodation can be provided to suit a range of requirements for cellular and open plan space.

Flexibility of sub division is illustrated in the following schematic drawings. These show a range of different configurations which would ensure that there are a number of different ways to let space within the building. The most conventional solution depends on access in the primary core at the western end of the building with a secondary core to the east. The presence of lifts and services in both cores means that each floor plate can be split to provide units of around 400sqm gross internal area.

Our research has shown that the demand for offices in York is stronger for smaller units where there is direct access from the street. We have therefore designed the scheme in such a way that the sub divisions can take place vertically as well as horizontally. Starting from the centre, and working back towards the cores, it will be possible to create two or three storey units of similar proportions to Georgian town houses that could be entered directly from the street and provided with rear access. This would entail replacing a single section floor slab over a 6mx3m grid with a structure that would take a stair and WC core. Since each section of floor plate is independent, with its own reinforcement and pipework connections, its removal would not affect the services or structure of the building to each side. From the outset the drainage connections would be supplied to all of the central units with SVPs running vertically within the south facing wall cladding. It is envisaged that the corner ground floor units would be marketable as retail or cafeteria/bar type uses.

The remaining properties on the Carmelite Street frontage might also be usable for these purposes, either as single storey ground floor units at 72sqm per 6m bay, or two storey units which could also become workshops or live/work units. Option 2 shows this process of sub division. Option 3 shows sub division into three storey offices with ground floor access and rear entrance.

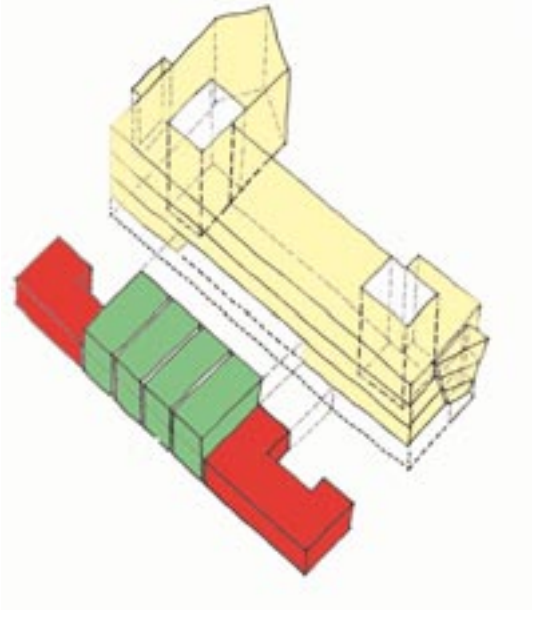


Option 1

Level 0	1 No. Office Suites @ 162m²
	1 No. Office Suites @ 620m²
Level 1/3	3 No. Office Suites @ 800 m²

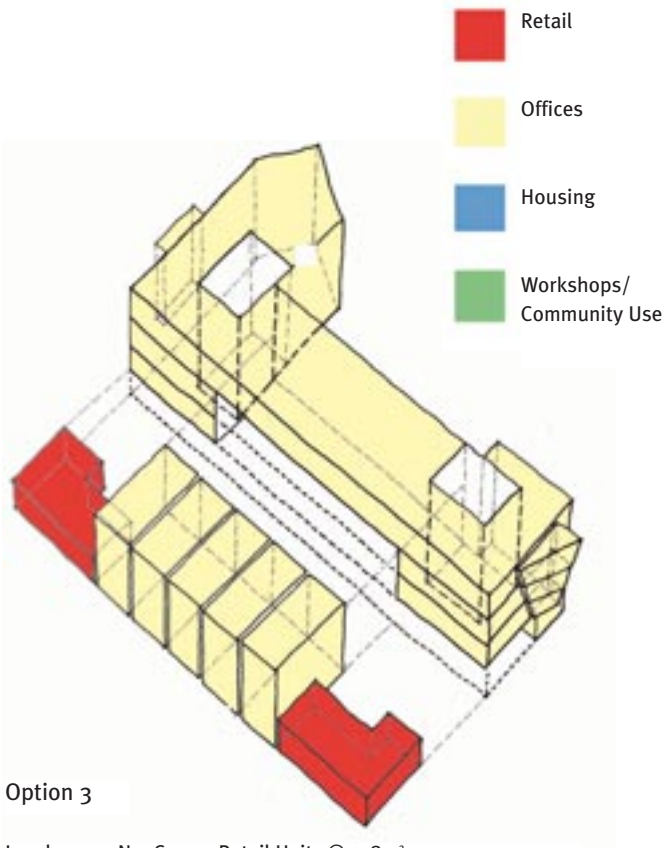
We understand that there may be a requirement for community/institutional units such as a Health Centre. Option 4 shows the two storey unit with corner entrance integrated into what is otherwise a linear office development.

Finally, we believe that there is more of a requirement for housing provision in the inner city centre and our scheme can be adapted to provide a variety of housing units, most appropriately on the top floor of the building. We believe that any city centre office building such as this needs to be designed to be adaptable, at least in part, to housing uses over its life, and we have shown in Option 5 the sub division of the top floor to provide 12 units of varying sizes, either wide frontage off a central corridor or dual aspect across the 12m deep plan. The raised floor zone could be used for services distribution. The SVPs mentioned previously will provide individual drainage connections.



Option 2

Level 0	1 No. Retail Unit @ 108m²
	1 No. Retail Unit @ 180m²
Level 0/1	4 No. Live/Work or Retail/ Workshop Units @ 144m²
	2 Storeys. Front half Retail Access
Level 1	1 No. Office Suite @ 212m²
	1 No. Office Suite @ 228 m²
Level 2/3	2 No. Office Suites @ 800m²



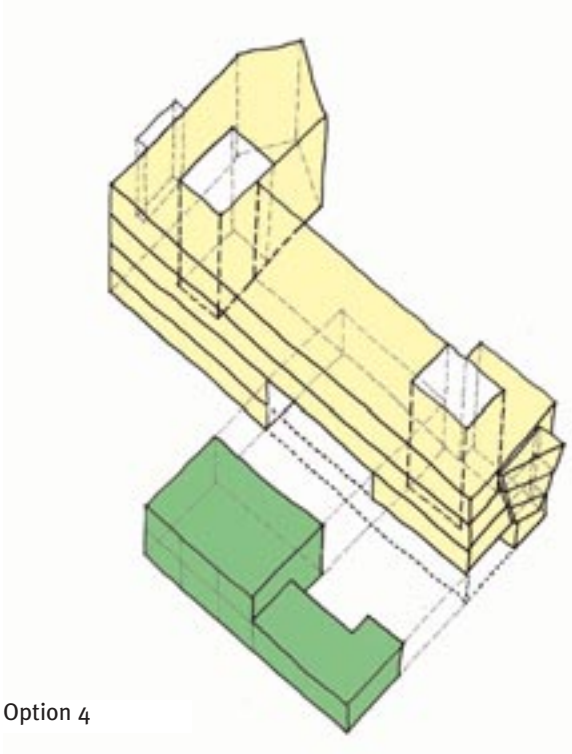
Option 3

Level 0	2 No. Corner Retail Units @ 108m²
Level 0/2	5 No. Ground Level Entry 3 Storey Offices with Front & Rear Access @ 216m²
Level 1/2	2 No. Offices @ 160m²
	2 No. Offices @ 270m²
Level 3	1 No. Office Suite @ 800m²

Flexibility with the Floor Plate

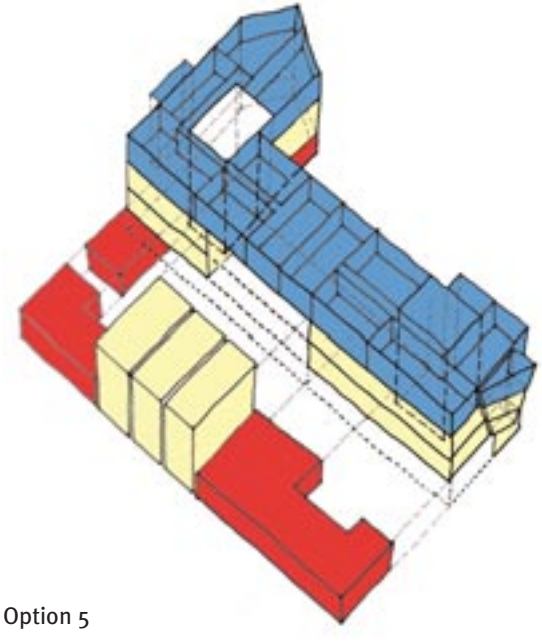
The second level of internal flexibility is the layout of the offices themselves. We have worked to a 1.5m bco partitions grid, though the beams at 3m centres make a more logical sub division of the space.

Some spaces, such as those areas adjacent to cores, lend themselves more naturally to sub division into cellular office accommodation. The cores are located in such a way that they imply a circulation zone to the north of the central column grid producing a 4.5m deep office zone to the north of the "corridor" and a 6m zone to the south. The 4.5m zone can accommodate two work stations per bay. The 6m zone can also accommodate two work stations per bay with a separate zone for filing cabinets and storage or the ability to take a central meeting table. In corporate workplaces, we find there is a tendency to move to open plan accommodation in which case the provision of meeting rooms of various sizes is very important. With the office subdivided on a floor by floor basis we envisage the provision of meeting spaces as well as social facilities at each end of the building, with the meeting rooms allocated the bay windows to give them greater significance and appeal. Corporate offices also tend to require central printing or photocopying facilities which can be a source of indoor air pollution,



Option 4

Level 0/1	1 No. Health Centre @ 558m²
	Front and Rear Access Corner Presence
Level 0	1 No. Suite @ 324m²
Level 1	1 No. Suite @ 324m²
	1 No. Suite @ 180m²
Levels 2/3	2 No. Suites @ 800m²



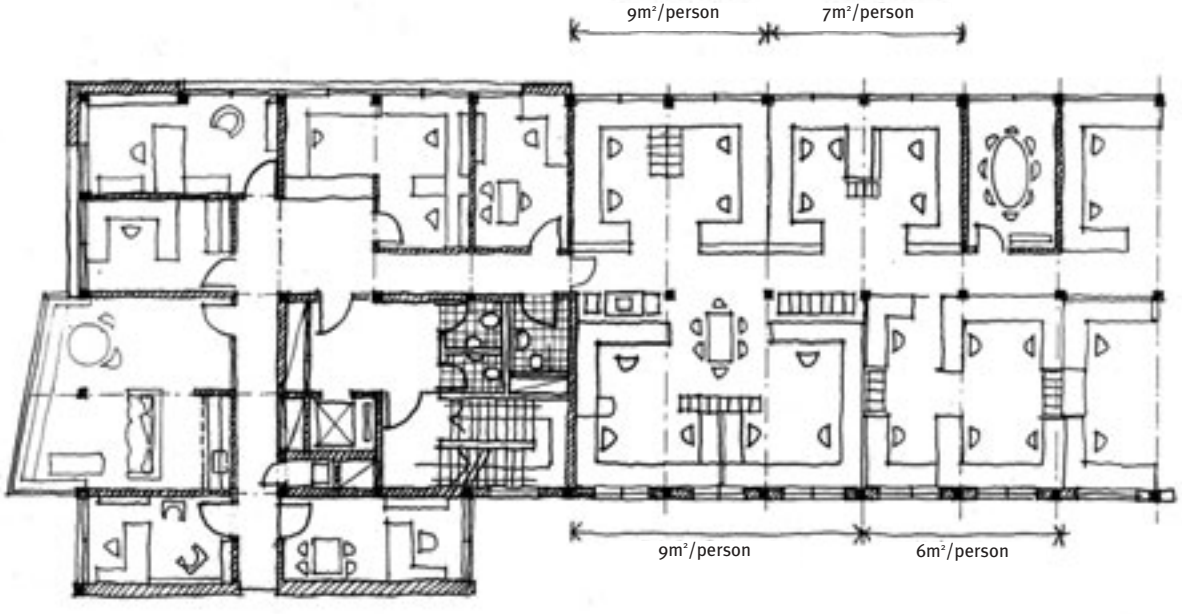
Option 5

Level 0	3 No. Retail Units: 1 @ 144m².
	1 @ 108mff. 1 @ 90m²
Level 0/2	3 No. 3 Storey Office Units.
	Ground Floor Access @ 216m²
	2 No. Office Suites @ 252m²
	2 No. Office Suites @ 304m²
Level 3	4 No. 3 Bed Units @ 72m²
	3 No. 2 Bed Units @ 60m²
	2 No. 2 Bed Units @ 54m²
	3 No. 1 Bed Units @ 41m²

and we have shown these located centrally and tied into the core extract ventilation system. Whilst we calculate that most office uses would not require any cooling other than night purging, there is always the provision for the replacement of the base board convectors with a four pipe system to provide localised cooling to certain areas such as server rooms.

The 21st Century office is very much an environment for meeting people and working with people: meeting rooms and social facilities therefore take on more importance. In an office building which may have many different organisations within it, the reception function gives a significant total dimension to the building. If the building users required it, then a building reception could be located at the primary entrance at the western end of the building. It could also be that the ground floor corner unit used as a cafeteria could also provide an appropriate venue for informal meeting spaces, such as we have seen operate at the Body Shop headquarters at Littlehampton. Meetings normally take place over coffee: why not produce a coffee shop for meetings to take place in?

In addition to the social and meeting facilities on each floor, we have also suggested that the roof of the building could become an amenity roof garden space, perhaps incorporating a small bookable rooftop meeting space with views back towards the Minster. This could also be used for lunches and social events, and help give the building and its users a focus for a shared identity.



Typical Mixed Open plan and Cellular Layout

5.0 Environmental Services

We have sought to devise an environmental scheme which meets the comfort and flexibility expectations of the commercial market without compromising a practical and sustainable approach.

Conventional natural ventilation via openable windows, when properly designed, can achieve good levels of ventilation and summertime temperature control. This is particularly true when natural ventilation is coupled with exposed thermal mass within the occupied space, typically in the form of an exposed concrete floor soffit. This technique has been applied to many developments but maximum benefit is achieved with relatively narrow, linear floor plans operating in an open plan arrangement. The flexibility demanded in the commercial sector, and the brief for this project is no exception, usually constrains the opportunity for good cross ventilation across the floor plate since a high degree of partitioning must be allowed for. Our approach seeks to retain the benefits of slab cooling whilst enabling a high degree of flexibility.

Rather than use cool night air to remove heat from the structure of the building we are proposing that river water at an average temperature of 10°C be used indirectly to cool the core of the concrete floor slabs. This will cool the surface of the floor slabs to roughly 19 °C, just above the internal dew point so as to avoid condensation yet cool enough to provide a good level of radiant cooling in summer. Performance would depend on occupation density and equipment usage. However it should be practical to limit resultant temperatures in the space to 24-25°C in summer purely by using the free cooling available from the river. The resulting solution is simple, has low installation and operating costs and is robust.

Concrete as an internal finish needs careful consideration. Our desire for thermal inertia dictates exposing the underside of the concrete floor slab. The use of precast elements raises the finish quality significantly but also introduces additional transportation. By using a thin precast element as the permanent form of finish, quality is assured, weight and hence transportation implications are reduced and the opportunity is created to use a recycled aggregate concrete topping from a sustainable source. The prefabrication process for the concrete forms can then easily be extended to include the installation of the PE pipework necessary for the slab cooling system.

The system could be further enhanced to include additional radiant cooling panels at the perimeter which could be insulated from the slab and hence would provide fast response to quickly changing cooling loads such as those resulting from solar radiation. For very high cooling loads the opportunity exists to install additional perimeter cooling units (fan coil units) within the floor void.

Ventilation will be provided by openable high and low level windows. However, so as to provide good winter ventilation without discomfort from draught, a vent within the spandrel panel will allow low level ventilation to pass into the space via the perimeter floor convector which will both warm the incoming fresh air and provide conventional space heating. The heat source will be via gas fired condensing boiler plant although the opportunity exists to explore the use of the system for abstracting river water for the slab cooling and interpose a water to water heat pump for generating low grade heat for space heating.

The building is being designed to optimise daylighting whilst striking the right balance between the use of glass and the need for insulation both in winter and in summer. The floor plate width and the relative position and height of the glazing in the façade ensure a reasonable daylight factor whilst the artificial lighting is arranged to allow staged switching under daylight control without adversely affecting partitioning flexibility.

Electrical power, lighting and communication cabling can be run in the raised floor void with sub-metering integrated into the tenant distribution panels at each level.

A non storage domestic water distribution is envisaged with direct gas fired water heaters working in series with vacuum tube solar collectors located on the south facing 25° pitched roof over the core areas.

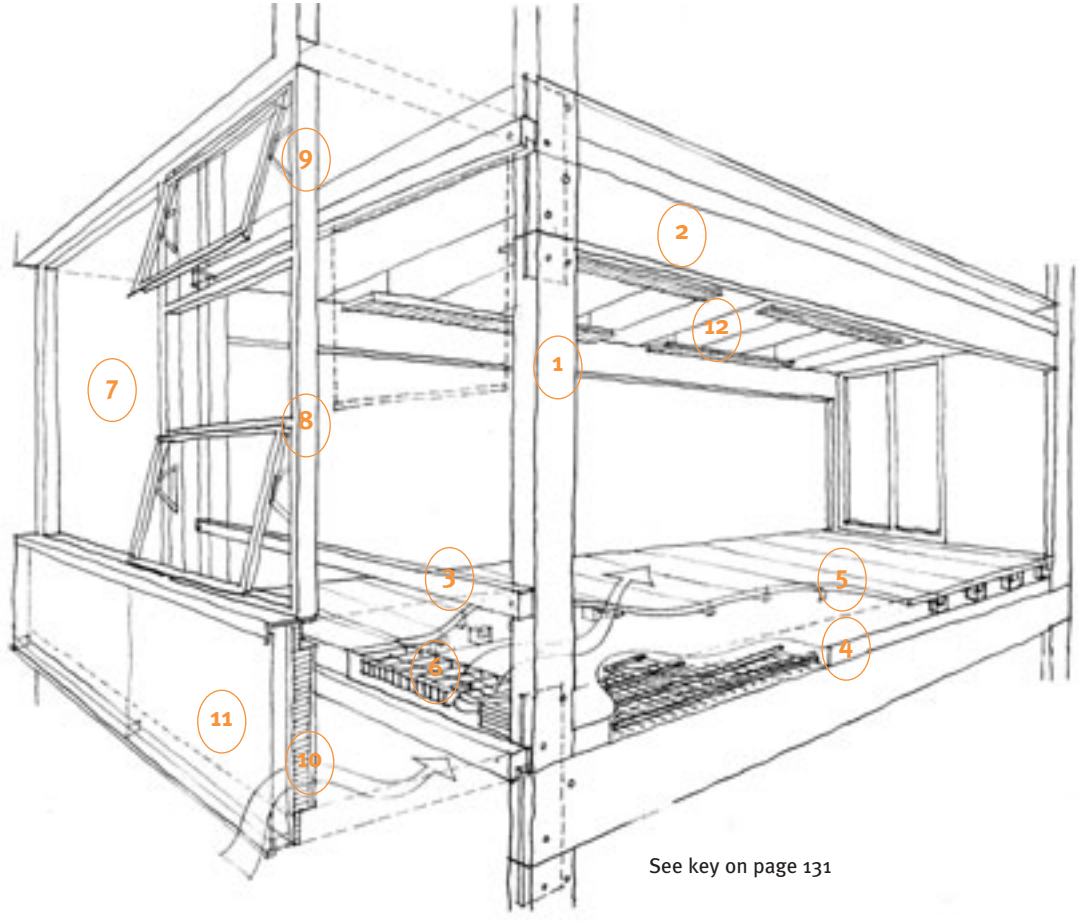
Embodied Energy of Building Materials

Range of Published Figures

Material	Density	Low value		High value	
	kg/m^3	GJ/tonne	GJ/m^3	GJ/tonne	GJ/m^3
Natural aggregates	1500	0.030	0.05	0.12	0.93
Cement	1500	4.3	6.5	7.8	11.7
Bricks	~1700	1.0	1.7	9.4	16
Timber (prepared softwood)	~500	0.52	0.26	7.1	3.6
Glass	2600	13	34	31	81
Steel (steel sections)	7800	24	190	59	460
Plaster	~1200	1.1	1.3	6.7	8.0

Source: Building Research Establishment, UK, 1994

6.0 Innovation and Construction Technology



See key on page 131

This building is a study in the reduction of embodied energy use in buildings. We have chosen structural laminated softwood as a primary framing system because it has less than one tenth of the embodied energy of a steel or concrete frame. The table on page 129 is reproduced from BRE data. We also believe that there will be a negligible cost increase for using timber rather than steel despite the fact that it is an unusual concept within this country. In continental Europe - Germany in particular - there are many examples of this form of construction. Timber inherently provides the one hour fire resistance that is required for the structure without the addition of cladding or intumescent coatings which are necessary for steel, and laminated columns and beams can come to site prefinished and polythene wrapped.

The timber also gives a warmer feel to the interior of the building and in open plan office situations the eye will read the downstands of timber to break up the ceiling panels. The window systems will also use timber on the inside with an aluminium flush frame on the outside for minimum maintenance and greater efficiency. Although the aluminium is an energy intensive material, when smelted using hydroelectric power, as it is for most Swedish systems, it has much lower embodied energy.

Structural and Environmental Systems

Key to drawing on page 130

1. 250x190mm laminated timber posts on a grid at 3mx6m centres.
2. 650x190mm laminated timber beams connected to posts using flitch plates and bolts.
3. 150x100mm rails at floor slab level and sill level to provide connections for exterior cladding, grooved to form rebate for blind, jointed at each beam with bolted plate connectors.
4. 150mm precast concrete slab 3mx6m containing mesh reinforcement and polythene tubing for slab cooling and heating, dense concrete below pipework, lightweight and insulated concrete above.
5. Low technology/low embodied energy raised access floor system using 600x1500mmx25mm square edged MDF boards supported on and screwed to 70x45mm joists at 600 centres supported on 150mm high rigid recycled plastic support blocks resting on precast floor.
6. Ventilation via electronic damper and finplate convector units within raised floor depth beneath opening windows, to enable both heating and trickle ventilation in winter.
7. Full height window frame from sill level at 800mm to ceiling height at 2.9m. Half fixed light, half opening. U value 1.2w/m2. Visible light transmission 65% solar transmission 35%.
8. Low level ventilation via manually operable window.
9. High level ventilation through motorised but manually controlled vent (time clock could be supplied to provide summer night time ventilation).
10. Pre-fabricated insulated spandrel panel with foil-faced mineral board facing outwards.
11. Clear single glass clipped in place as rain screen over mineral board to provide rain protection. Open joint at base of air space provides ventilation air intake.
12. High efficiency T5 lighting fittings (4 per office space) allows possibility of sub division at 1.5m centres. Light fittings have both movement and illumination detectors in order to guarantee they are off when not required.
13. Manually controlled blind for glare control.

We have also striven to reduce the concrete content of the building by minimising the amount of concrete for piles and ground beams and utilising a thin shell concrete slab to provide sufficient concrete in the floor structure to allow for thermal cooling, acoustical isolation and fire resistance between floors. We will investigate the use of both cement and aggregate substitutes in the concrete to reduce the environmental impact of the material further.

We would propose avoiding the use of petrochemical based insulation systems within the building, avoiding solvents, and avoiding the use of PVC.

The opaque elements of the building cladding would either be glass or terracotta, which have a relatively low embodied energy and are easily recyclable. Brickwork on the ground floor would be recycled from salvaged material available on site and second hand bricks, which are available locally, if additional material were required.

The structural grid is 6m x 3m, allowing the floor to be broken down into precast floor units, either 1.5m or 3m wide, to suit the partition grid or bay spacing. The main glulam beams spanning 6m between columns are approximately 200x675 deep; glulam columns are approximately 200x400. Perimeter glulam tie beams, approximately 200x200, are also indicated.

The floor deck itself is formed using Omnia planks: a 50-75 deep precast concrete permanent formwork system, incorporating lattice girder reinforcement and an in situ concrete topping to provide a rigid and efficient slab. Overall structural depth will be approximately 200mm. Simple screw connectors are indicated to give the necessary shear key into the glulam beams. Polystyrene void formers have been introduced to reduce self-weight and in situ material. Furthermore, the concrete topping is to be formed using recycled aggregates, thereby improving the sustainable re-use of materials.

Overall stability is provided by vertical bracing or shear walls within the cores, with the floor plates acting as diaphragms to transfer horizontal forces into them.

Chilled beams are cast within the depth of the concrete topping, utilising the thermal capacity of the exposed precast concrete deck slab, to passively cool the occupied space from above.

7.0 Commercial Viability

1.0 The Development appraisal

Simplistic Residual appraisals have been carried out for each of the three options provided. We have adopted an office rent of £161 psm (£15 psf) which we believe to be at the top end of the range of rental values that we would expect to achieve for high quality, low occupational cost, office space in this location.

Building costs have been provided by quantity surveyors Burnley Wilson and Fish and are believed to be realistic at this stage in the design process.

We believe that assuming the office attracted good quality regional/national covenants that a yield of 7.5% is appropriate at this point in time. As ever with development appraisals this scheme is very sensitive to yield changes and if market conditions were to improve for this type of investment then profitability would dramatically improve.

For each of the options we have assumed an 18 month build programme with a 6 month letting void and a total development period of 2.5 years from now to an assumed sale of the completed development.

2.0 Option Feasibility

Option one - This produces a positive land value of £233,500 based on the assumptions mentioned above. A yield of 6.43% would be needed to achieve a value of £1m. This scheme produces some 3,804 sqm of high quality space on ground and three floors.

Option two - This produces a land value of £330,749 again using the same assumptions. A yield of 6.7% would be required to achieve a land value of £1m. This scheme produces some 4,220 sqm of high quality space on ground and four floors.

Option three - This more complex scheme produces a negative land value of £303,386 and a yield of 6.7% would be needed to produce a land value of £1m. This is slightly artificial as the site is much expanded by use of the multi-storey car park and it must be expected that the owners/lessees of the car park would require to share the land value/developer's profit. Also the development period has been kept the same for ease of comparison with options 1 and 2, whereas in reality the site assembly and construction would be much longer.

3.0 Alternative options

We have not looked in any great detail at the market in York for Live/Work space but in cities such as London, Leeds and Manchester this concept is growing in demand. In this situation we could anticipate the office accommodation being split vertically with one or two floors of residential at upper level. This type of accommodation could then either be leased on conventional commercial terms or sold freehold/long leasehold. These could be particularly popular with start up and established local businesses and may realise more land value than conventional office development. We would need to do more research within the Leeds market to determine this however.

4.0 Partnership arrangements

We would be very happy to work in Partnership with the Joseph Rowntree Trust either on an equity partition basis with Munroe K acting as lead partner or as development consultant on a fee-earning basis. We have a team of trusted consultants who have worked with each other many times and have a proven and demonstrable track record of delivering quality buildings on time and on budget. In either case in order to raise bank debt a

pre - letting of at least 40 to 50% of the space would be required and in the case of the flats perhaps 30% sold 'off plan'.

Schedule of Accommodation

Option 1 (Building only on the JRF Site)

Gross Internal Floor Areas:

Level 0	910sqm
Levels 1-3	918sqm each
Roof Level Plant and Cores	144sqm
Total Gross Internal Floor Area	3,804sqm
Net Internal Floor Area	3,464sqm

The reduction of 340sqm makes allowance for ground floor reception at both ends of the building, core areas and roof plant space.

26 new car spaces are provided.

INCOME				
Offices - 3464 sqm net	3464	£ 161	£ 557,704	
Total Income			£ 557,704	
Yield @ say	7.50%		13.33	
Capital Value				£ 7,436,053
COST OF SCHEME				
Building Costs				
Offices - 3804 sqm @£1076 psm	3804	£ 1,076	£ 4,093,104	
Total Development Costs			£ 4,093,104	
Ancillary Costs				
Services, commuted sum, legals etc.	say		£ 200,000	
Professional fees as a % of development costs	12.5%		£ 511,638	
			£ 4,804,742	
Contingencies @ 3% of total costs	3.0%		£ 144,142	
			£ 4,948,884	
Financing costs for 1/2 period (9 months) @	7.0%		£ 257,607	
			£ 5,206,491	
Cost of 6 months letting delay @	7.0%		£ 179,145	
			£ 5,385,636	
Letting fees as a % of income	15.0%	£ 83,656		
Advertising and marketing costs as a % of income	5.0%	£ 27,885		
Fees for selling investment @	1.75%	£ 130,131	£ 241,672	
			£ 5,627,308	
Return for risk and profit as a % of capital investment	20.0%		£ 1,487,211	
TOTAL EXPECTED COSTS				£ 7,114,519
SITE VALUE ON COMPLETION				£ 321,535
PV£1	7.0%	for 2.5 years =	0.84	£ 271,499
Less acquisition costs @	5.75%			-£ 15,611
SITE VALUE TODAY				£ 255,888

Option 1:

3,808m² G.I.A.
3,464m² N.U.A.
26 car spaces

Option 2 (Building up against the Car Park)

Option 2 adds a further 828sqm gross internal floor area of which 72sqm would be additional core area resulting in an increase of net lettable space of 756sqm.

23 new car spaces are provided.

INCOME				
Offices - 4220 sqm net	4220	£ 161	£ 679,420	
Total Income			£ 679,420	
Yield @ say	7.5%		13.33	
Capital Value				£ 9,058,933
COST OF SCHEME				
Building Costs				
Offices - 4632 sqm @ £1,076 psm	4632	£ 1,076	£ 4,984,032	
Total Development Costs			£ 4,984,032	
Ancillary Costs				
Services, commuted sum, legals etc.	say		£ 200,000	
Professional fees as a % of development costs	12.5%		£ 623,004	
			£ 5,807,036	
Contingencies @ 3% of total costs	3.0%		£ 174,211	
			£ 5,981,247	
Financing costs for 1/2 period (9 months) @	7.0%		£ 311,345	
			£ 6,292,592	
Cost of 6 months letting delay @	7.0%		£ 216,516	
			£ 6,509,108	
Letting fees as a % of income	15.0%	£ 101,913		
Advertising and marketing costs as a % of income	5.0%	£ 33,971		
Fees for selling investment @	1.75%	£ 158,531	£ 294,415	
			£ 6,803,523	
Return for risk and profit as a % of capital investment	20.0%		£ 1,811,787	
TOTAL EXPECTED COSTS				£ 8,615,310
SITE VALUE ON COMPLETION				£ 443,624
PV£1	7.0%	for 2.5 years =	0.84	£ 374,589
Less acquisition costs @	5.75%			-£ 21,539
SITE VALUE TODAY				£ 353,050

Option 2:

4,632m² B.I.A.
4,220m² N.U.A.
23 car spaces

Option 3 (Building into the Car Park)

Option 3 provides the same gross and net internal office floor space as Option 1, but also provides the following:

Housing Units at Levels 2-4.

- 12 no. one bed units at 40sqm.
- 6 no. two bed units at 72sqm.

Level 5 Housing above the Car Park.

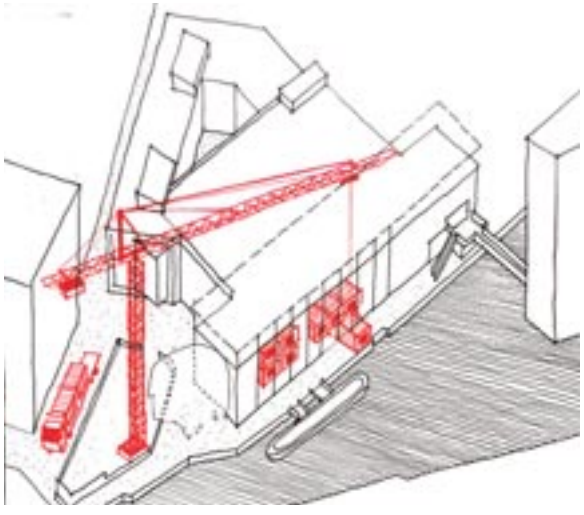
- 2 no. three bed units at 145sqm.
- 4 no. two bed units at 95sqm.
- 4 no. one bed units at 60sqm.
- A net increase of 65 car parking spaces.

INCOME				
Offices - 3464 sqm net	3464	£ 161	£ 557,704	
Total office Income			£ 557,704	
Yield @ say	7.5%		13.33	
Capital Value				£ 7,436,053
VALUE OF RESIDENTIAL FLATS				
	sqft	cap val psf		
12 no.40 sqm 1 bed flats	5167	£ 180	£ 930,096	
6 no.72 sqm 2 bed flats	4650	£ 185	£ 860,339	
2 no 145 sqm 3 bed flats	3122	£ 180	£ 561,933	
4 no 95 sqm 2 bed flats	4091	£ 200	£ 818,140	
4 no 60 sqm 1 bed flats	2584	£ 185	£ 477,966	
Residential Capital Value of Flats				£ 3,648,474
Total Capital Value				£ 11,084,527
COST OF SCHEME				
Building Costs				
Offices - 3804 sqm Gross	3804	£ 1,076	£ 4,093,104	
Residential flats - 19614 sqft Gross	19614	£ 85	£ 1,667,190	
Car park spaces	145	£ 6,500	£ 942,500	
Total Development Costs			£ 6,702,794	
Ancillary Costs				
Services, commuted sum, legals etc.	say		£ 300,000	
Professional fees as a % of development costs	12.5%		£ 837,849	
			£ 7,840,643	
Contingency as a % of total costs	3.0%		£ 235,219	
			£ 8,075,863	
Financing costs for 1/2 period (9 months) @	7.0%		£ 420,377	
			£ 8,496,240	
Cost of 6 months letting delay @	7.0%		£ 292,339	
			£ 8,788,579	
Office letting fees as % of income	15.0%	£ 83,656		
Office dvertising and marketing costs as a % of income	5.0%	£ 27,885		
Fees for selling office investment @	1.75%	£ 130,131		
Flat advertising and marketing costs as a % of income	say	£ 100,000		
Fees for selling flats @	1.75%	£ 63,848	£ 405,520	
			£ 9,194,099	
Return for risk and profit as a % of capital investment	20.0%		£ 2,216,905	
TOTAL EXPECTED COSTS				£ 11,411,004
SITE VALUE ON COMPLETION				-£ 326,477
PV£1	7.0%	for 2.5 years =	0.84	-£ 275,672
Less acquisition costs @	5.75%			£ 15,851
SITE VALUE TODAY				-£ 259,821

Option 3:

3,808m² B.I.A.
3,464m² N.U.A.
28 housing spaces

8.0 Future Developments on the Site



Insertion of Prefabricated Housing Units

The building that we have developed on the JRF freehold site meets the requirements of the brief in terms of the minimum area, and utilises the space between the freehold site and the car park building in order to provide 25 car parking spaces.

A second option would be to provide an additional 828sqm or so of office accommodation by extending the 12m deep flexible office extrusion southwards at the Hungate end, but we feel that this would produce more space of marginal viability, and might also prejudice future developments on the site. Mindful of the fact that a development planning exercise is being undertaken on the Hungate area in general, we feel that the results of this planning exercise should be examined before finalising the scheme for the JRF site. It may be that the configuration of the building might offer some suggestions as to the layout of roads and footpaths across the Hungate site. One possibility is that the land between the JRF site and the car park could be integrated into a pedestrian route back to the city centre. We envisage that the form of development is likely to be based upon a system of north/south vehicle access routes and east/west footpaths as indicated on the attached sketch plan (Option A).
There are obvious opportunities in the development of the whole area to open up the riverside walk and create a series of spaces adjacent to the riverside. On the assumption that the BT building is unlikely to remain in the medium term, the development of this site would hopefully release the space to the south of the building and the east of the car park to become an enlivened pedestrianised public space.

We have briefly explored the option of conversion of part of the south side of the car park into housing units. This proposal meets the current requirements of the brief and planning authority in that it relocates 80 of the car parking spaces on the south side of the building and replaces them in a new section of car park at the centre of the site between the offices and the car park, also incorporating 37 car spaces for the new offices, and 28 car spaces (one per unit) for the housing.

This solution depends on creating a series of prefabricated units which, once the external non load bearing walls of the car park have been removed, and the drainage and services installation have been installed, could be craned in from the riverside and slotted between the existing structural columns. The 3m floor to floor height of the car park should allow for adequate headroom in domestic units. The planning authority have indicated that they might be sympathetic to the five storey developments adjacent to the riverside, and this

would mean that a further floor of apartments could be added to the roof of the building thus making the economics of prefabrication more viable. Although this proposal would require a good deal more financial evaluation, we feel that a concept of eating away at a car park structure that is occupying a south facing riverside site is a sound conceptual idea.

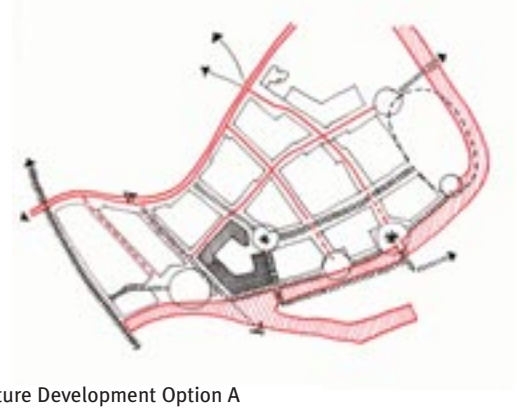
The scheme shows a variety of different sizes of housing units from 40sqm one bedroom units to 150sqm three bedroom penthouses. We have shown the smaller units with sliding glass doors onto the river elevation so that the room could be opened up to form a balcony. Larger units have separate balconies outside the line of the building. We have made a preliminary assessment of the structural capacity of the car park building, and estimate that providing the construction is of a lightweight nature which would be appropriate for prefabrication and energy conservation, both the superstructure and foundations would be adequate to take the additional load. We have inserted two new cores to serve the flats, and have also suggested that it might be worth considering removing the pitched roof from the northerly car park block in order to provide a larger roof terrace area for the housing.

Although we are reducing the car park ventilation from the south, we still have adequate cross ventilation from side to side of the car park plan so that mechanical ventilation can be avoided.

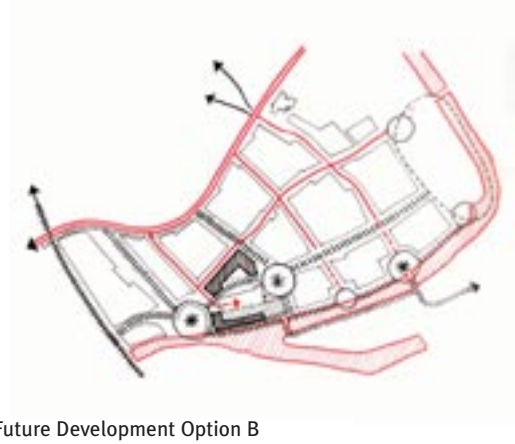
This produces a solution that generates more value out of the car parking site, and effectively encases the car park in habitable buildings, offices to the north and housing to the south - orientations that are ideally suited to the use of the buildings.

An alternative solution to the future of the car park would be to relocate it elsewhere in a less prestigious part of the Hungate development, and free up the car park space for more appropriate development. If this were done, we would suggest that the building line might alter and that Garden Street might become more open to the river as it originally was, with the opportunity of creating a real public space in this area which could also be enfronted by a new development which would replace the telephone exchange (Option B). Cutting back the protruding frontage of the car park would also help open up the riverside walk and the footpath connections to Foss Gate and eventually Parliament Street.

The scheme must be seen as part of the overall future of the Hungate area, providing a vital link between the City centre and the Foss riverside.

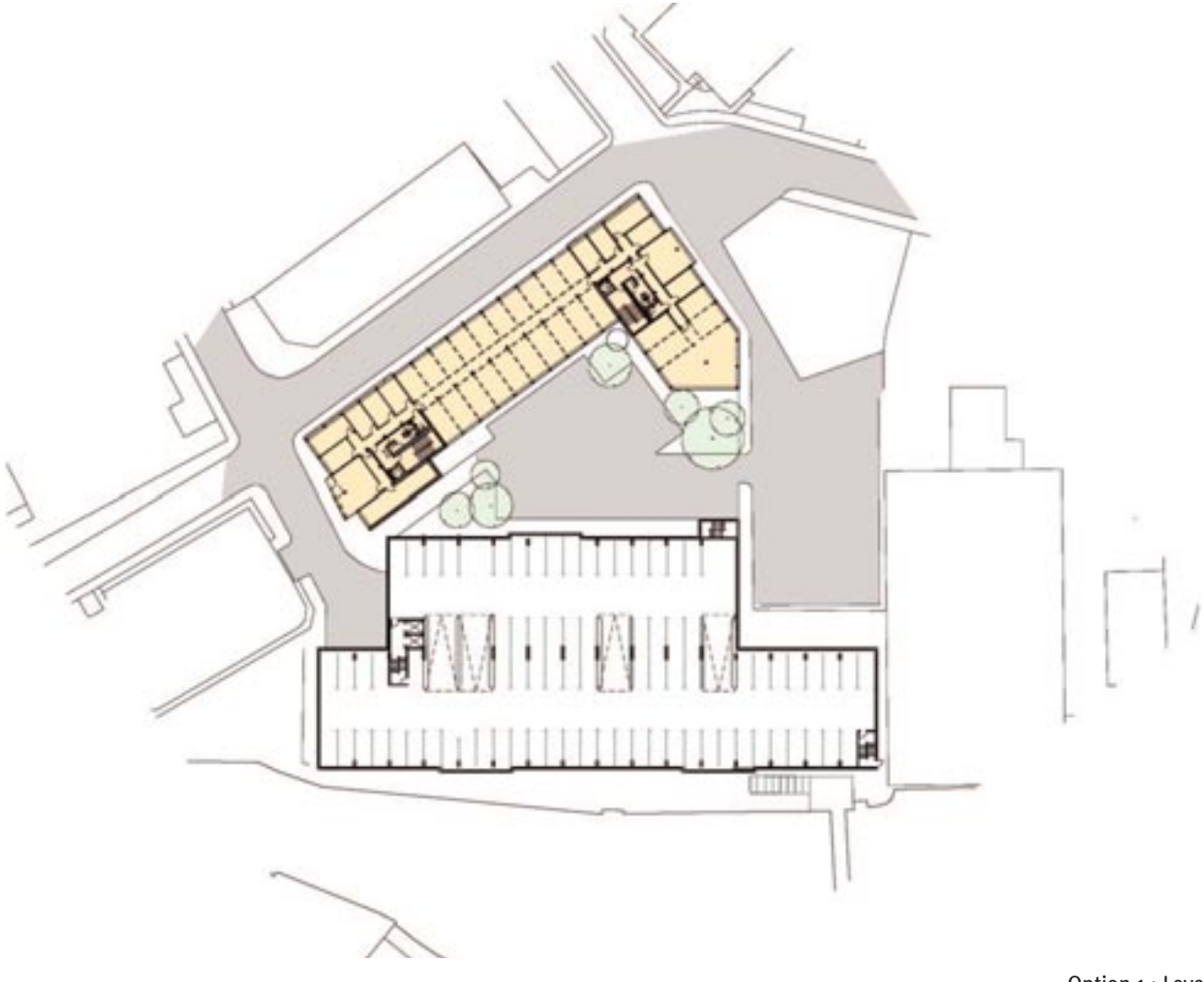


Future Development Option A



Future Development Option B

Option 1 : Level 0 1:2000



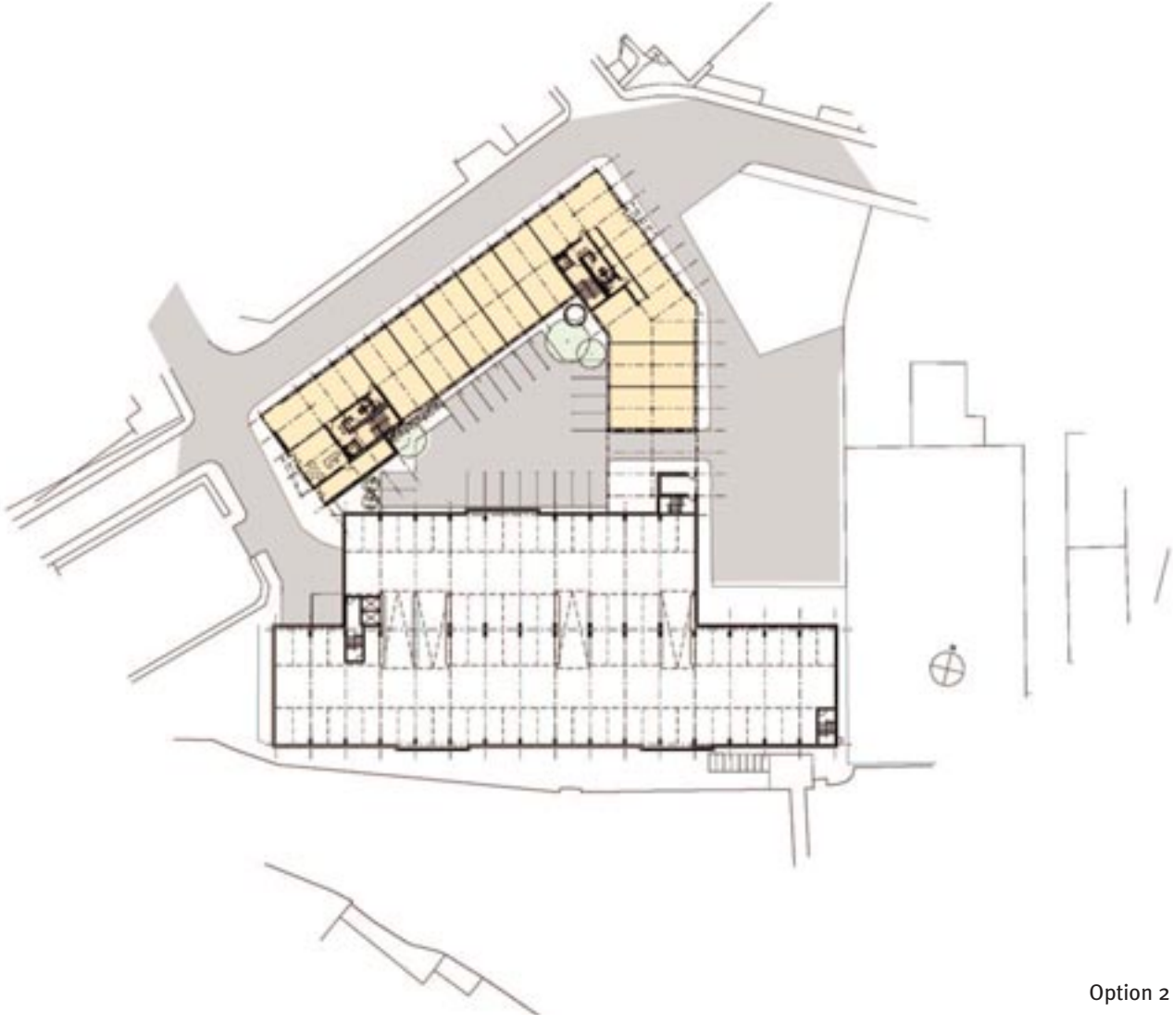
Option 1 : Levels 1-3 1:2000

Appendix: Drawings of the Scheme Proposals

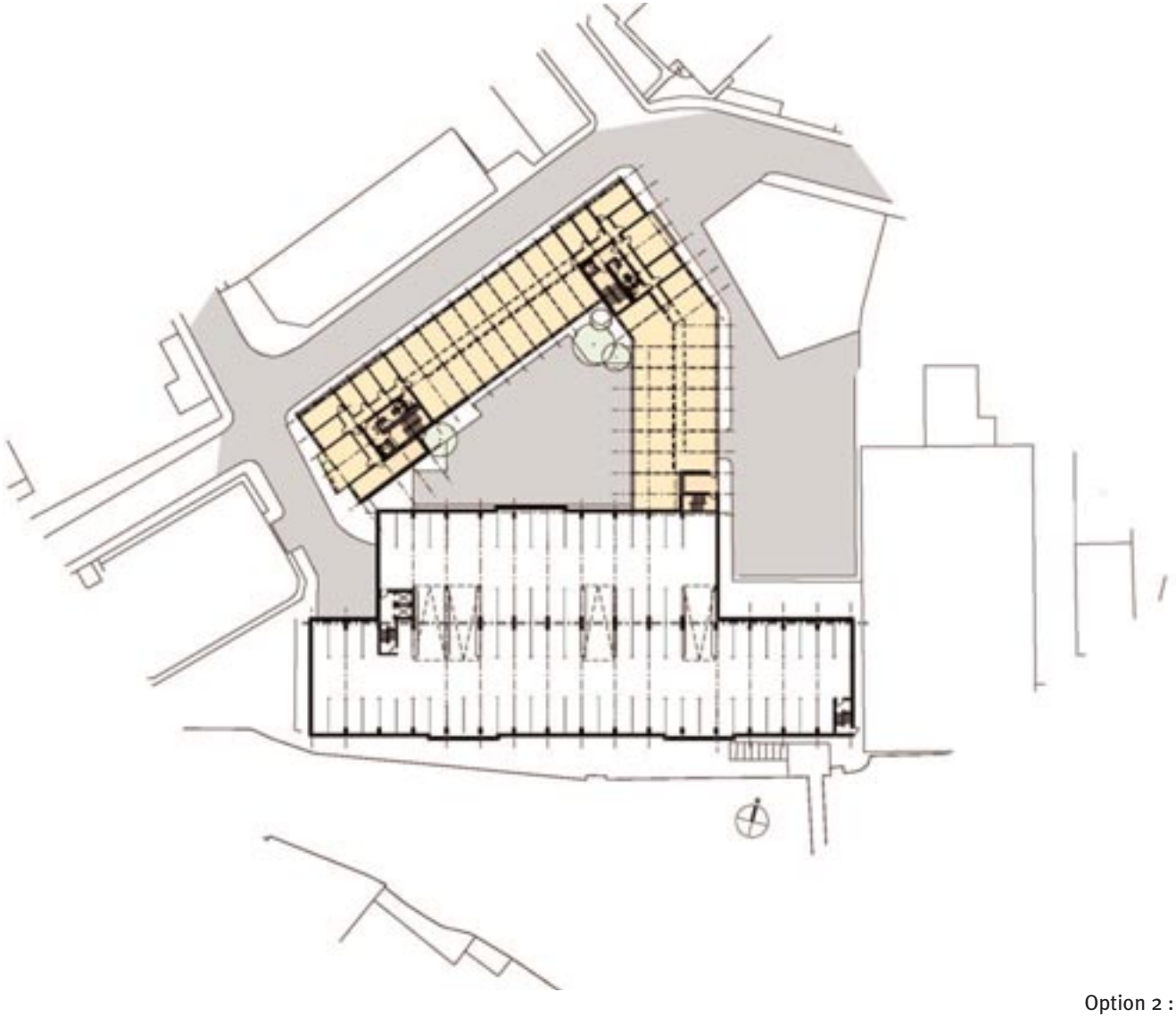
Options 1/2 North/South Section

Carmelite Street : Elevation

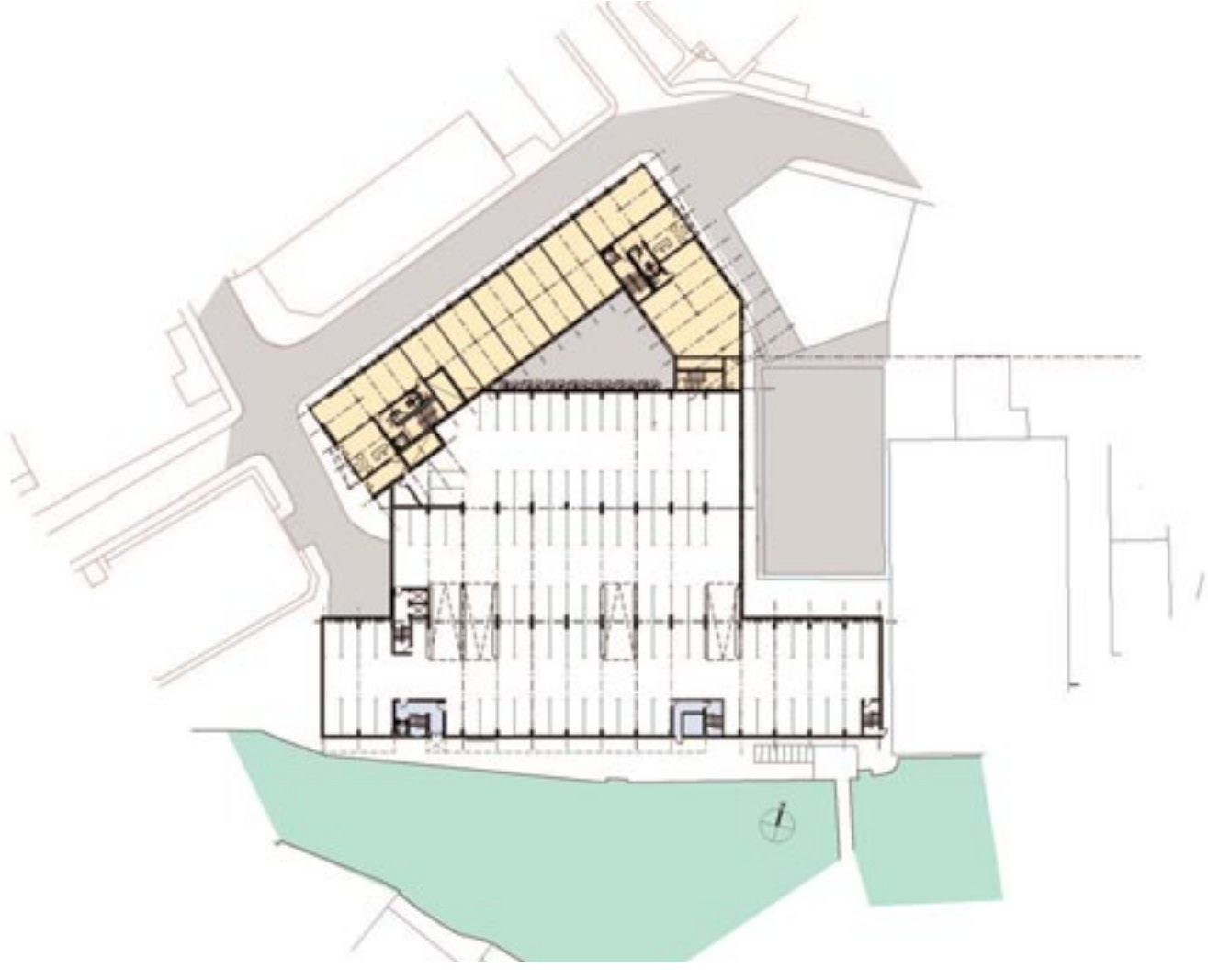
Garden Street Elevation



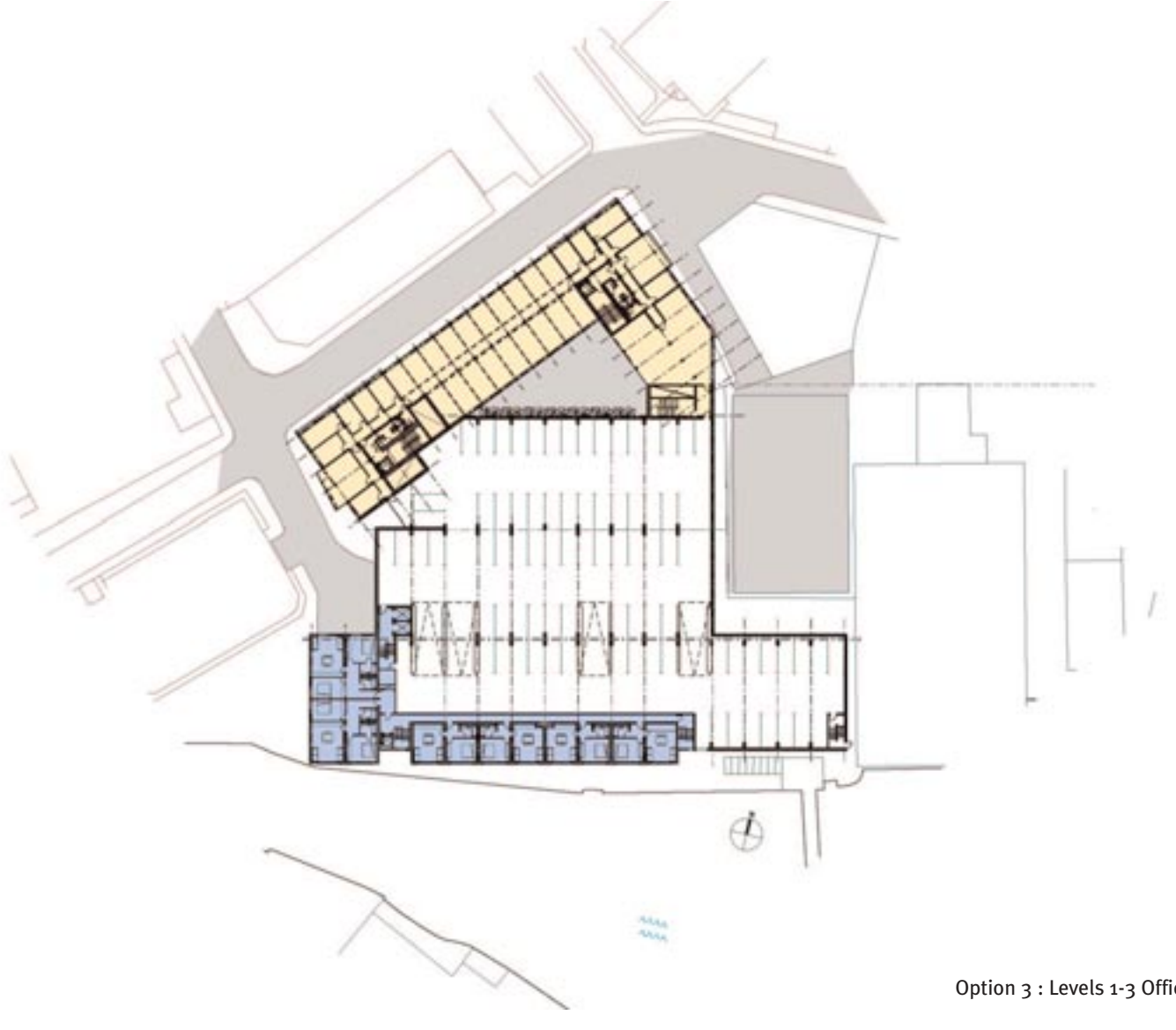
Option 2 : Level 0 1:2000



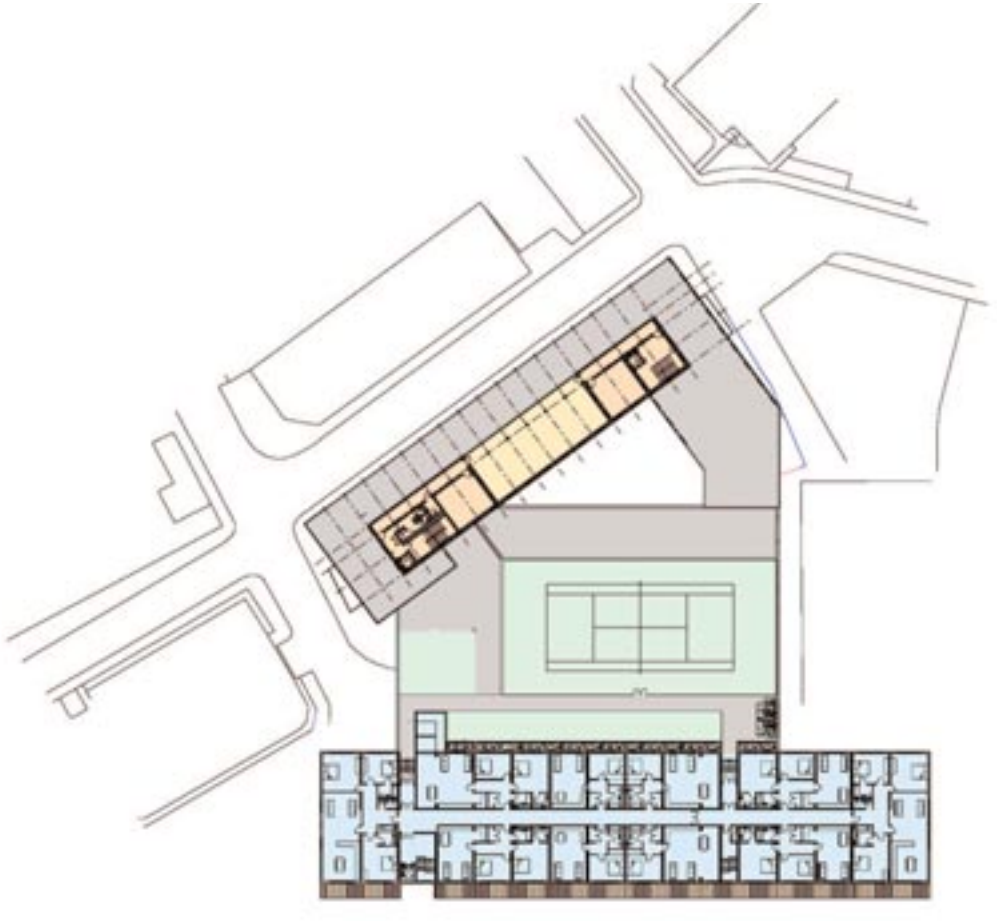
Option 2 : Levels 1-3 1:2000



Option 3 : Level 0 1:2000



Option 3 : Levels 1-3 Office Layout 1:2000



Option 3 : Level 4 Housing/Roof Terrace

Option 3 : Site Section

The submissions

Markland Klaschka Architects

Competition Report for New Office Development | Carmelite Street York

Joseph Rowntree Foundation | February 2002

Markland Klaschka Limited
Knowstone CD

The Professional Team

Developer	Knowstone CD
Architect	Markland Klaschka Limited
Structural Engineer	Price & Myers
Mechanical & Electrical Engineer	Ove Arup & Partners
Quantity Surveyor	Gardiner & Theobald
Property Consultant	Insignia Richard Ellis

Contents

1 Introduction

1.1 Meeting the JRF Aspirations

The professional team has sought to meet The Joseph Rowntree Foundation's aspirations through a process of investigation into both the design and commercial potential for the site. This report collects together the ongoing results on these investigations. While some conclusions have been drawn the intention has been to leave room to accommodate other factors that will, no doubt, arise during the progress of the project.

The team has sought to balance the often competing forces of idealism and realism to propose a scheme that is forward looking and innovative in design yet deliverable commercially.

1.2 The Design Approach

The specifics of the brief and location present a number of the problems facing contemporary architecture: renewal of a run-down urban area; response to a historic context; all-round sustainability; and changing work patterns and social habits. The challenge for the design team is to create a model that can synthesize the implications of these issues into a coherent architectural schema. The success of the design can, in some ways, be judged on how seamlessly this goal has be achieved.

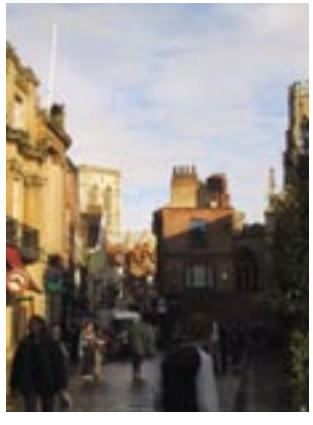
2 Design Information

2.1 Urban Analysis

York As Found

The historic core is organised around the Minster. Medieval timber frame buildings lining narrow pedestrian streets establish the character of the area. Later additions are knitted in and increase in frequency away from the Minster to the south; there is a harmony to the streetscape to the contemporary eye.
At a certain point from the centre this harmony starts to break down. Buildings largely using 20th century construction techniques with large span frames and lift assisted circulation break the bond with the past in terms of scale. The articulation of these buildings is generally less surely handled whether it is exploring the language of modernism or trying to re-establish historical motifs. Some of the more recent developments attempt to address their context in a more sensitive way.

The homogenisation of city centres by global brands is moderated in York both by the persistence of local businesses and by the continuity of the historic urban structure. However, the lack of local identity is more obvious at the periphery. Bland new shopping centres and office buildings succumb to the expedient demands of large flexible floor plates without really rising to the challenge of the local context (or indeed on their own terms to the context of late 20th century life). It is also at the edge of the historical core that motor vehicles start to play a significant role in the street scene - often with detrimental results.



2.2 Local Context

The site for the new office building lies within Hungate and forms part of the development area of this run-down semi-industrial quarter. The site is tantalisingly cut off from the nearby River Foss by the existing multi-storey car park to the rear. At the front the site faces on to the narrow Carmelite Street but this aspect is dominated by the Garden Place telephone exchange off to the west side.

One of the challenges for the new design is to respond to the local context with a building programme that has no precedent in the medieval buildings of the historic core.

A comparison of the montage below and the photographs on the previous page reveal the extent of the work to be done to create a complementary piece of city.

2.3 Physical Analysis

Shading and Solar Gain

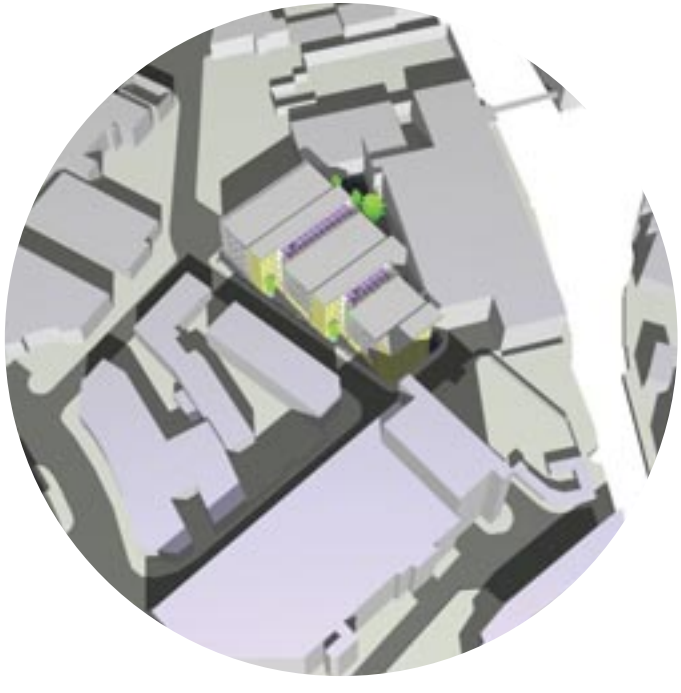
The main elevation to Carmelite Street faces north west. The street is narrow with a distance of only 10m to the building line opposite. At present this site is occupied predominantly by a single storey workshop which is not a significant source of overshadowing. However, should this site be developed with a larger structure overshadowing will be increased. The Garden Place telephone exchange, at up to approximately 22.5m in height, does overshadow the site from 3.30pm in mid-summer and earlier at other times of year.

The south east boundary of the site backs on to the existing multi-storey car park, the eaves of which are roughly the same height as the proposed 4-storey development. This causes heavy shading of the new building. Nevertheless, the upper floors of the new building will receive direct sunlight until about 3pm. The short sides of the site face south west and north east, respectively. The north east face has an open aspect on to a street and will receive solar gain in the early part of the morning while the south west face is most exposed and will be subject to the highest levels solar gain.

Ground Conditions

The proximity to the River Ouse and the archeological context of York make significant excavations potentially high risk in terms of both time and money. It is therefore prudent to avoid the use of basements in the design.

Telephone Exchange



2.4 The Office Typology

From its origins in Italian Renaissance banking houses, the office has come to be the dominant building type in city centres. The vast majority of what is constructed is still conceived as a kind of universal space developed speculatively and ready to take up the various programmes of end users. Such is the pervasiveness of the goal of uniform space that many bespoke offices follow the same model with a view to the long term flexibility of the building to house the changing needs of the occupier.

There is nothing wrong with this approach in principle but it can lead to anonymous and dull working environments through over-repetition of standard bays, a lack of generosity in floor to ceiling heights and disconnection with the outside in the centre of a deep plan.

The design procurement process also needs to be carefully controlled to produce successful working environments for this model, as the serialisation of the design process from shell to fit-out and its associated procurement environment tends to amplify conservative forces.

New Working Practices

The way offices are used has diversified and expanded over recent years with the IT revolution and the associated increase in the office population through a shift to a 'service economy'. Nevertheless, the essential activities of modern office work, computer input and meetings, remain the same. It is how, when and where these activities are conducted that is changing. For many, offices are coming to play a central role in social affairs.

The Urban Role of Offices

Broadly speaking cities are made up of foreground and background buildings. Offices can fit into either camp depending on their civic importance. However, by the nature of their ubiquity, they are more likely to form part of a general streetscape. Whatever the profile of the building, there is a responsibility for the designer to provide for the individual worker as well as meet the aspirations of the commissioning organisation: there are many examples of designs with great front doors that lead on to standard offices interiors.

Offices in Relation to York

The office is a relatively new building type compared with the age of York's historic core. Much of its evolution as a building type took place long after that of the centre of York was established. As such it tends to produce forms that are alien to much of what is existing. The question of how to respond to this needs to be answered in the design.

2.5 Design Concepts

The site is layered in three bands of 15.6m separated by 4.2m gaps. The resulting strips run from the front to the back of the site and mark out the basic office floors plans. This initial move has an number of implications:

- the scale of the building is broken down along Carmelite Street;
- the depth of the office floors is limited setting a maximum distance in the building from a daylit edge; and
- in tandem with the tapering of the site, three different floor plates are created per level.

The 15.6m module is then broken down into 10.8 and smaller 4.8m bay. This division is used to create a hierarchy of main office studio lined with smaller scale ancillary spaces. (Those who are familiar with planning dimensions will also have noted that the grid follows the basic layout for double banked parking. Part of the flexibility of the plan is that it can very efficiently accommodate on-site parking without significant disruption to the building design at whatever stage it is introduced.)

The deliberate breaking of the symmetry of the office zone recognises that the functionality will not be unduly compromised by the move while adding architectural definition to the spaces. The structuring of the zones in this way also goes hand in hand with the services distribution which utilises the larger ceiling voids over the 4.8m strip for longitudinal routes.

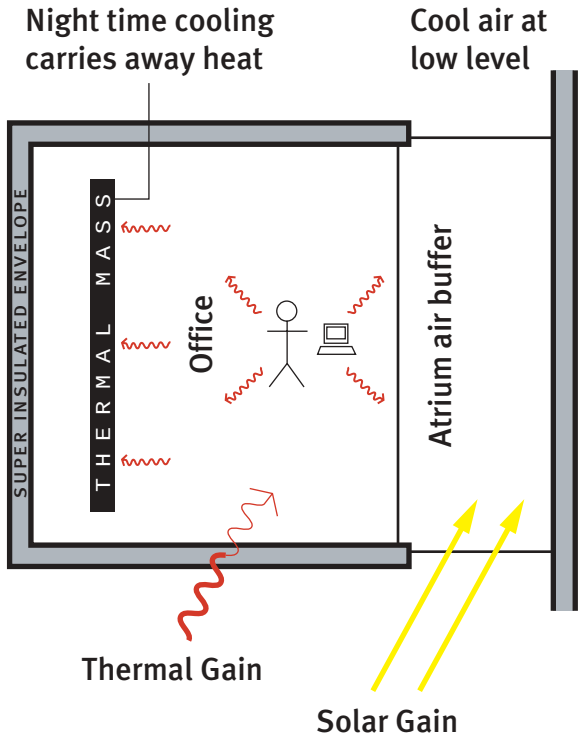
View east along Carmelite Street

The Basic Energy Concept

The organisation of the building into strips is also part of an energy concept for the building. Three sides of the blocks are wrapped in a warm jacket. These heavily insulated sides are punctured by small windows that light the adjacent space only. This arrangement limits solar gain on the one hand and reduces heat loss at night on the other. This form of construction can be achieved at a relatively lower cost than a fully glazed facade releasing funds within a limited budget to specify a fully glazed fourth side buffered from the external environment by a glazed atrium. The envelope equation is completed by reducing the cost of the now internal second atrium wall to a semi-internal build-up with light coloured surfaces to reflect light into the office space opposite.

The second aspect to the energy concept is to create a structure with a high thermal mass isolated from external factors of solar gain and wind chill cooling. The conditions for this to work properly are established by the highly insulated light weight envelope. The small windows control solar gain, preventing direct gain to the internal thermal mass.

The system as a whole then works as a temperature damping mechanism to minimise additional heating and cooling usually required to provide comfortable internal conditions.



Office Spaces - A Strategy Towards Reuse and Flexibility

Small Scale: The small windows are offset from a 900mm sub-grid to allow partitions to be introduced to divide the space into any multiple of 900mm (eg. 2.7m - cellular office, 3.6m or larger meeting room, or left completely open to take a pair of rows of workstations.) The hit and miss wall dividing this space from the open plan area can be left open or take glazed partitions and doors or fire rated enclosure for storage.

Large Scale : The interconnection between the blocks allows for letting to operate on a floor by floor and block by block basis providing many possible permutations of occupation from the smallest unit; one floor in block A, to the whole building. Each floor is provided with lavatories and washrooms adequate to be occupied in isolation from the rest of the building.

Cross Section through an Atrium

The Atria

The atria provide covered circulation between the blocks and a secure location out of the weather for the occupants' bicycles.

Photovoltaics on the roof of the atria provide power to extract hot air at high level in the summer, cool air is drawn in from the street and the courtyard sides of the atria. In winter the fans mix the air heated by solar gain and radiation from the back of the PVs at high level with cooler air sitting in the bottom of the atria.

This allows the atrium to act as a thermal jacket to the building in winter reducing the required performance of the inner elevations and allowing full glazing to the north east elevations of the three office blocks.

Construction

To provide the thermal mass required for temperature damping the building will be constructed with in-situ concrete walls and columns. The floors will be prefabricated concrete to speed construction and allow off site quality control of the exposed concrete. On to the concrete frame a deep metal frame or pre-fabricated compressed timber panel frame, bound together with an outer skin of ply, provide support for the insulation and an early watertight programme date. The external cladding can then proceed in isolation from the internal works removing the danger of poor quality work rushed to allow the internals to start.

The Building In Use

MKL will provide displays indicating how the building services work in order that the occupants understand the available controls and restrictions in relation to the energy model of the building.

Block C

Shows a very modern informal office layout such as an advertising agency or high tech company might have.

Freeform desks and a sculptural semi-open meeting space in the open plan area are supplemented by soft meeting spaces and a canteen in the 4.8m wide zone.

External Services pods facilitate isolated connection and maintenance of separate offices

The courtyard between the existing car park and proposed building is screened by a green wall adjacent to the car park and provides outdoor space away from road for office staff

Block A

Shows a conventional office layout with L-shaped workstations and cellular offices and meeting rooms.

The open plan zone and the cellular zone are separately mechanically ventilated through the void above the 4.8m zone.

This permits the 4.8m zone to be fully enclosed with doors, drywall and glazed partitions without disrupting the ventilation of the spaces. The 1.8m space windows in the south west elevation are all off the 900mm planning grid running along the space enabling division into any multiple of 900mm, say 2.7m for a cellular office or store, 3.6m or 4.5m for a conference room.

Block B

Shows a studio arrangement of the space with long parallel runs of desks for group team working in the open plan area and support spaces (library, storage and meeting rooms) which are enclosed or open depending on the occupants' requirement.

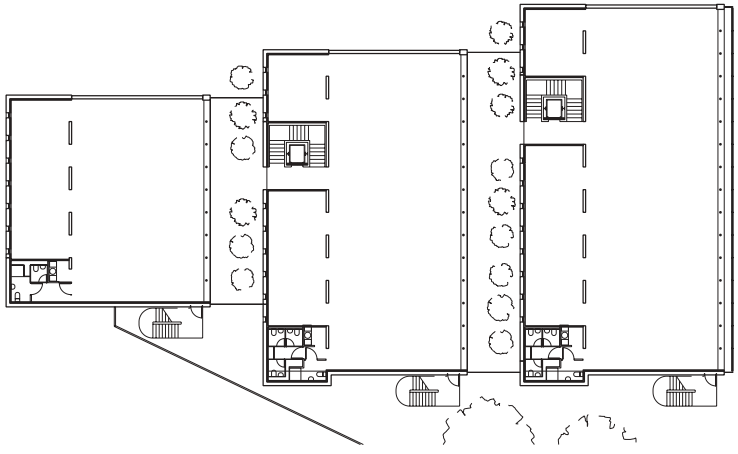
2.6 Accommodation Schedule and Plans

Accommodation Schedule

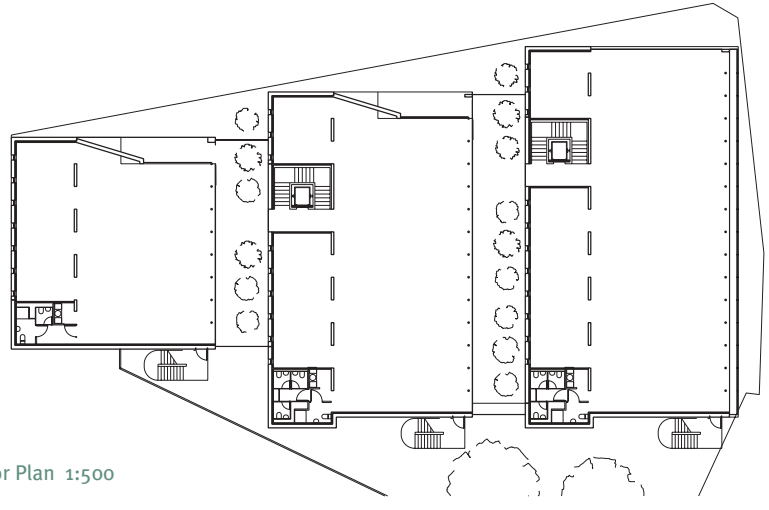
Gross external area in total	50,838 ft² (4,723 m²)
Gross internal area in total	47,340 ft² (4,398 m²)
Net lettable area in total	40,856 ft² (3,797 m²)

Net to GIA ratio = 86%

Ground	Typical floor	
GEA = 1,156m²	GEA	1,189m²
GIA = 1,074m²	GIA	1,108m²
N.L. = 974m²	N.L.	1,020 m²



Typical Upper Floor Plan 1:500

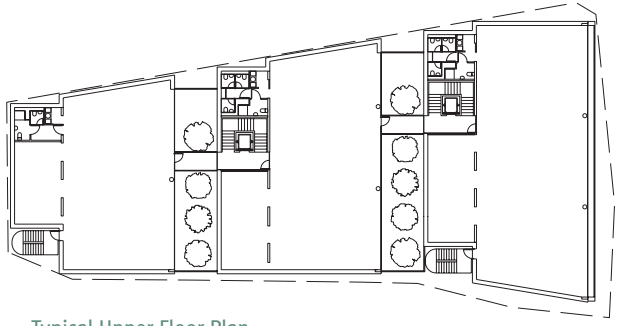


Ground Floor Plan 1:500

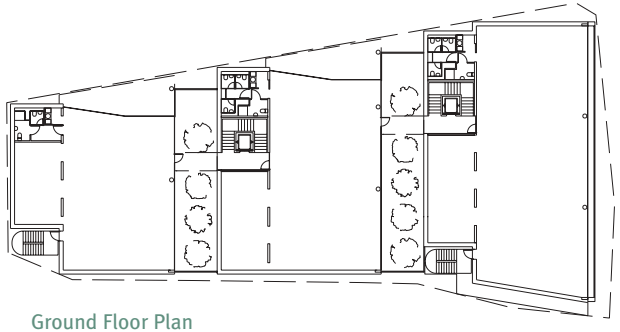
2.7 Development Options

Alternative Floor Plans

The main presentation illustrates a scheme that utilises part of the triangle of disused land to the rear of the site. This allows more generous set-backs on Carmelite Street so improving the public realm. A control scheme (illustrated below) was developed that remains entirely within the site boundary. This scheme is not dependent on the neighbouring site in any way.



Typical Upper Floor Plan



Ground Floor Plan

Extension of Scheme to River Foss

The scheme can be extended to the river following the strips established in the main design. Pedestrian routes are created through from Hungate and Garden Place leading to a riverside terrace lined with bars and restaurants. The terrace also gives direct access on to the pedestrian bridge over the River Foss.

The terrace sits over a parking floor for upwards of 60 spaces. The new blocks can accommodate offices or residential units or a mix.

3 Financial Offer by Knowstone CD

We have prepared our Financial Offer in response to the Development Brief, which states:

"The Foundation will be looking for a project that offers a minimum of 40,000ft² net . . . the appraisal should indicate a residual site value that the developer would be prepared to offer the Foundation, if it were minded to sell outright and also the projected yield, based on a site value of £1million, which the Foundation could consider, if it were minded to retain the completed development in its property portfolio. Proposals for joint venture arrangements will also be welcome."

The financial viability of the development requires an 'act of faith', in believing that:

- producing a new form and improved quality of accommodation will result in lettings at rents higher than those prevailing in the current market;
- value engineering, supply chain management and sub-contactor partnering will result in significant cost savings against the initial cost plan;
- fiscal incentives (eg. Enhanced Capital Allowances) and grants (eg. for photovoltaics) can be brought to bear to improve the out-turn;

for at present, the scheme faces a classic cost/value imbalance.

We have obtained the best possible professional advice on construction costs (Gardiner & Theobald) and on rental/investment values (Insignia Richard Ellis), both of whom have both London and Leeds offices. The result is that the development – based on initial costing and current rents – is not financially viable, if allowance is made for a standard level of risk/reward.

However, Knowstone comes from a successful background of pioneering new forms of accommodation and 'market making' – building occupational interest in parallel with the development process, by maximising publicity; using fast-track building techniques to generate momentum in terms of delivery and actively targeting 'would-be' occupiers with information on life-cycle costing and evidence that better working environments result in improved staff performance. Insignia Richard Ellis advise that there is upward pressure on rental levels because of tight city centre supply and are enthusiastic about the location and the development's prospects.

Knowstone has had a long working relationship with Gardiner & Theobald and is actively working with them on the commercial application of lessons learnt at BedZed (Peabody Trust's Beddington Zero Emissions Development). Gardiner & Theobald are both construction managers and cost consultants for this innovative project and thus have demonstrable evidence of delivering eco-friendly buildings.

It is however Knowstone's link with Gardiner & Theobald in the specialist field of capital allowances, in the use of their facilities management expertise – to appraise life-cycle cost-in-use – and in preparing successful bids for public sector funding that provides the element of 'USP' when it comes to detailed financial appraisal.

So the 'act of faith' is no leap into the unknown. It is an opportunity for a partnership with a most appropriate team.

Assumptions

Our Financial Offer is based upon the following key assumptions:

1. An estimated rental value of £160 per sm (£15.50 per sq ft) on the net lettable area - £11 per sm (£1.00 per sq ft) more than the current rental value).
2. On site car parking provision of 20 spaces @ £1,000 pa each and a commuted car parking payment of £147,000.
3. End valuation, once completed and let, at a yield of 7.5% net.
4. No abnormal site remediation costs.
5. No substantial developer's contribution towards archaeological survey works.
6. No extraordinary costs of mains services connections (including telecoms).
7. A building construction cost of £1080 per sm (£100 per sq ft), excluding professional fees and VAT.
8. A contingency of 5% and a cost price inflation allowance of 2.5% pa.
9. A build period of 12 months.

The effect of these key assumptions is to produce a positive residual sum, comprising developer's profit and site value. However one other key variable – the lettability of the proposed building, i.e. the time it takes to secure tenants and the level of financial incentive required to attract them – has such an adverse impact upon the residual sum, that it could make the outcome negative. To explain this, we set out below two scenarios – a best case and a worst case – in terms of let-up time for the building.

Best Case

We are advised by Insignia Richard Ellis that there are currently outstanding major occupiers' requirements and that securing a pre-letting could be possible. In which case, no letting void need be allowed for, although a 6 months' rent free inducement is considered advisable.

Worst Case

In the event of proceeding as a speculative development, Insignia Richard Ellis are more cautionary. A letting void period of between 6-12 months and a 3 months' rent free inducement is considered advisable.

In the Best Case scenario, we have included a reduced level of developer's profit, to allow for the absence of letting risk. Instead of a usual 20% on cost, at 13%, the residual site value is £100,000.

In applying the Best Case scenario to the retention of the completed scheme by the Foundation, with a notional site input value of £1m, we have assumed that the Foundation will fund the development and take the developer's risk. Thus we have omitted any developer's profit, taking instead a development management fee of 3%. The developer's profit, in so far as it exists, is reflected in the earnings yield (ie. income over total cost). The resultant earnings yield, on a total cost of £8.72m, being 7.68%. Obviously if the notional site input value was less, the earnings yield would markedly increase.

The Worst Case scenario reduces the developer's profit to only 5% with a site input value of £100,000, rendering the scheme unviable. If the Worst Case scenario is applied to the retained investment option, the earnings yield is 7.26 %, on a total cost of £9.23m.

The conclusion that we draw from these outcomes is that a joint venture would make most sense, from the Foundation's (and Knowstone's) viewpoint. For to dispose of the site to see it developed speculatively, provides little return to the Foundation (and may well prove to be unfundable by Knowstone), because of the low level of projected profit. However to work-up the scheme in partnership with Knowstone, to do all the things set out in the Introduction above, allows not only the Best Case scenario to apply, but for the Foundation to benefit from the current upward pressure on rents.

Summary

In order to be compliant with the Brief, we are submitting three alternatives:

1. Outright Purchase (conditional upon obtaining a prelet)
   Initial Consideration of £100,000
   Second Stage Payment ('Overage') based on 50% of the savings achieved from letting at better than a projected 9mth letting void/3mth rent free

2. Direct Development by the Foundation (as a retained investment)
   Best Case Earnings Yield 7.68%
   Worst Case Earnings Yield 7.26 %

3. Joint Venture (aimed at securing Pre-Lets)
   Best Case scenario as a retained investment applies with Knowstone taking a 3% development management fee plus a performance bonus, to be agreed.

Appendices

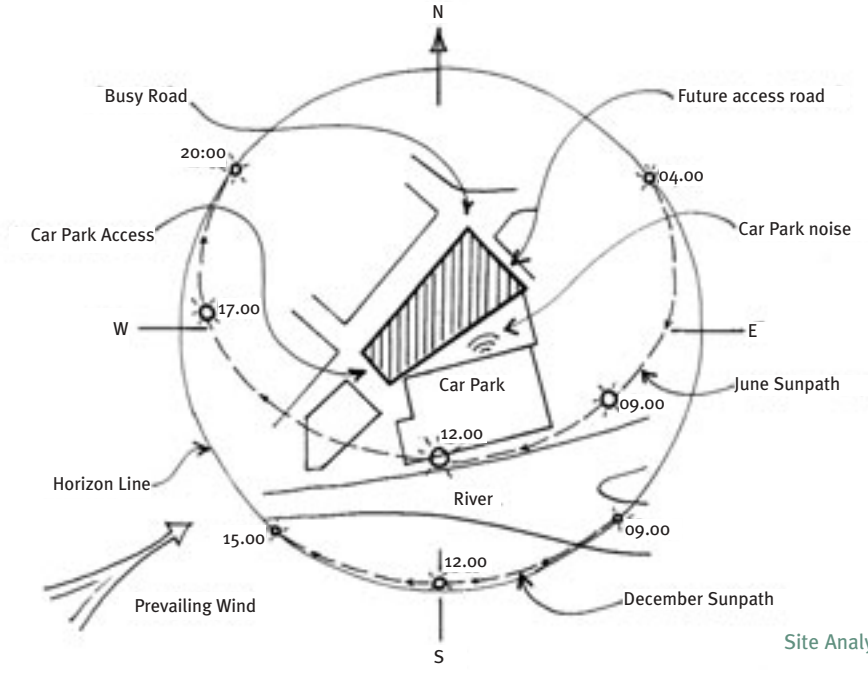
Appendix 1 - Services Engineer's Report

The brief calls for a high quality space at affordable costs, and for a building that provides long-term flexibility for a variety of changes of office use through its lifetime. There is also an emphasis on sustainable design and energy efficiency, reflecting the increasing awareness of the potential environmental impact of buildings. The building should also tie in with the wider development plan for the immediate area.

The building form, massing and servicing strategy have been developed to meet these aspirations.

A high quality internal environment must respond to the needs of its occupants, which change on daily, weekly and yearly cycles. Human comfort is a complex issue, and relies on more than just temperature. The radiant temperature of adjacent surfaces, air quality, humidity, lighting levels, colours and visual connection with the outside world all affect our perception of comfort in a building. A good design balances these effectively.

In office design, heat gain is a more significant services issue than heat loss for most of the year. The primary source of high heat gains is solar energy entering the building through the façade. An efficient façade design that prevents the heat entering the building is therefore the first key step towards an efficient and comfortable building. This also leads to a reduction in winter heat loss from the building.



Site Analysis

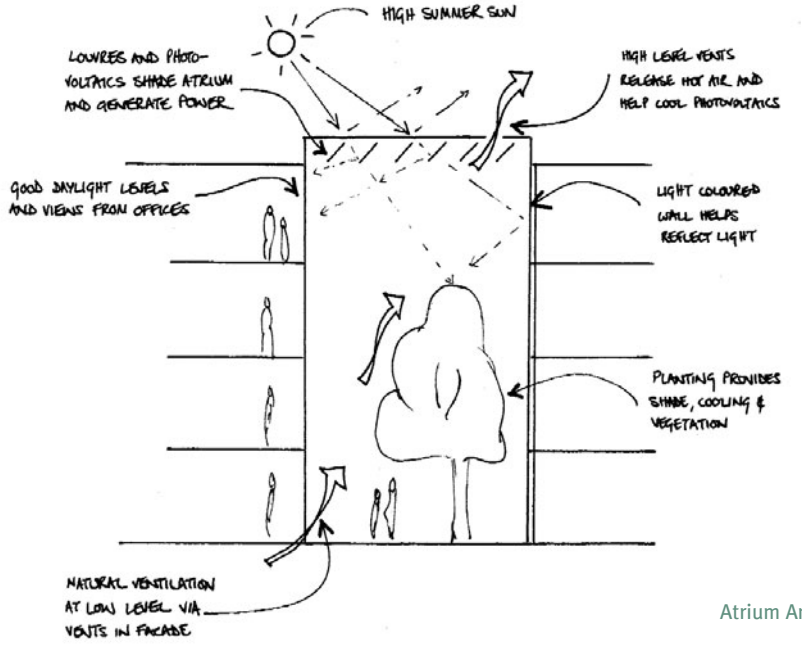
The façade treatment on the scheme has been tailored to suit the orientation and function of each elevation; smaller windows on south and west facades to control solar gain and high levels of insulation in unglazed areas. The reduction in solar gains that this provides allows for far greater flexibility in the servicing of the internal spaces and a reduced reliance on mechanical cooling.

The atria between buildings act as tempered outside spaces, allowing one façade of the internal office to be fully glazed without the energy penalties associated with applying this strategy to an external facade. Daylight levels and visual connectivity are increased and compensate for the smaller windows on other facades. Shading at high level in the atria can be combined with photovoltaic cells which provide power to run the ventilation fans in the offices which cool the building. The atria will be cooled using natural ventilation through openings at high and low level.

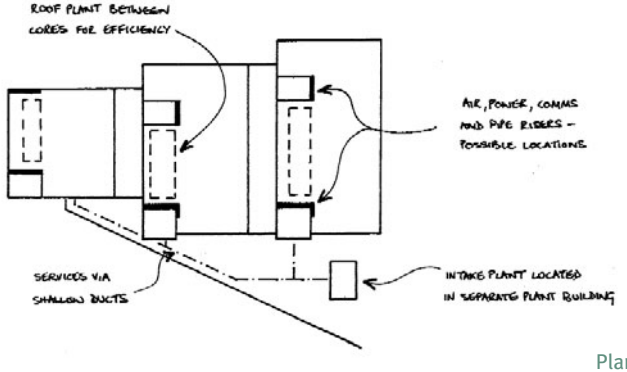
Using a concrete framed building adds thermal mass, and pre-casting of repeatable elements can make construction quick and simple. If this thermal mass is exposed to the occupied space it acts as a large reservoir of heat or 'coolth', helping to even out peaks and troughs in the daily cycle of heat gains in the space. The structure gradually heats up during the day, and provided that there is sufficient mass it does not reach the temperature of the space until the evening, when the space is cooling down. Throughout this time, it is therefore providing passive cooling of the occupants within the space. Night-time flushing of the space with cool air recharges the structure for use the next day.

Such a strategy is proposed for this building, with an exposed coffered ceiling providing both a useful thermal store and an interesting architectural element. Lighting / servicing elements hung below the coffers provide a neat and cost-effective solution to high level services and can provide both indirect and task lighting. Partitioning for cellular offices is still achievable along coffer lines.

Building occupants require fresh air, and this can be provided either naturally using opening windows or trickle ventilation, or mechanically with supply fans. Natural ventilation allows occupants control over their environment and does not use fan energy, but is not effective in deep spaces unless cross-ventilation can be achieved without draughts. Cellurisation of the office plate breaks this cross-ventilation and each office must have opening windows. Noise and dirt cannot



Atrium Analysis



Plant Analysis

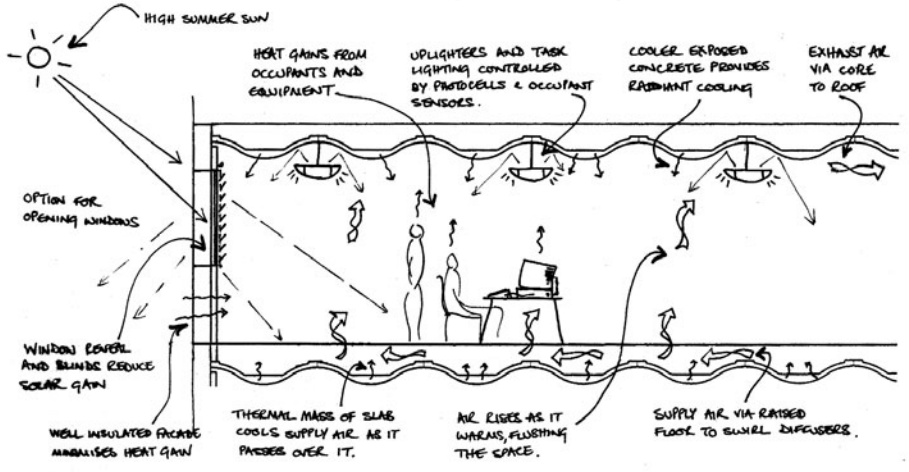
be easily prevented from entering the building, and the potential for heat recovery is lost. For this building, this may limit flexibility and available layouts. An alternative solution is to provide outside air via a plenum below the raised floor to floor grilles and extracted at high level. This allows energy to be recovered and ensures an even distribution of air regardless of future office layout or function. The costs of the glazing are also reduced.

Using an under-floor air supply with a concrete structure allows the thermal mass of the structure to temper the supply air as it passes through the void between floor and slab, further reducing energy. A low pressure system, with variable speed fans and a target of 1W/m² of energy in operation, makes this a very energy efficient solution. Zoning of air handling units to one per block allows for multi-tenant use and variable occupancy hours without excessive energy use.

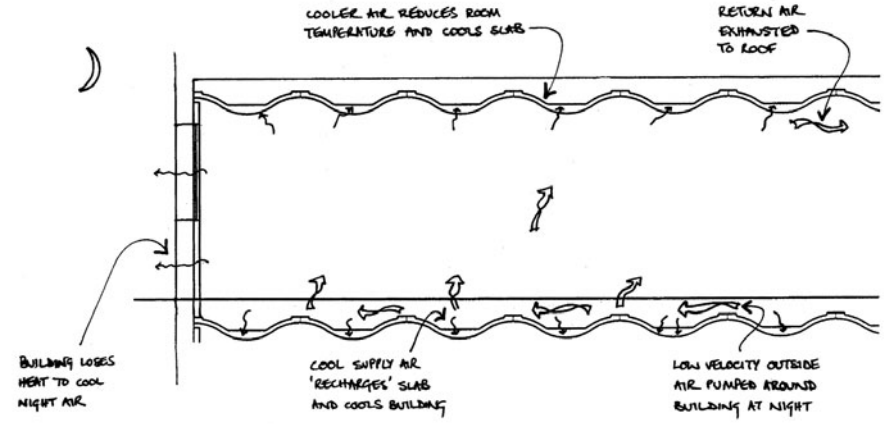
Opening windows can still be provided, especially if future plans may reduce traffic levels or change the local environment. This is an issue to be explored during the next design phase, where the balance between costs, energy use and market forces need to be assessed.

During much of the year, UK outside air temperatures are mild enough that outside air can be drawn directly into the building, warmed using waste heat from the extract air, and pumped into the offices to provide space cooling and fresh air without the need for mechanical cooling from chillers.

At peak external temperatures, the supply air can be reduced to a minimum during occupied hours, and the thermal mass of the building used to provide cooling. In this way it may be possible to avoid the use of mechanical cooling systems using chillers, and rely solely on the thermal mass of the building and heat recovery. This is the aim of this scheme. This would reduce still further the capital and running costs, without compromising the internal environment.



Summer Day



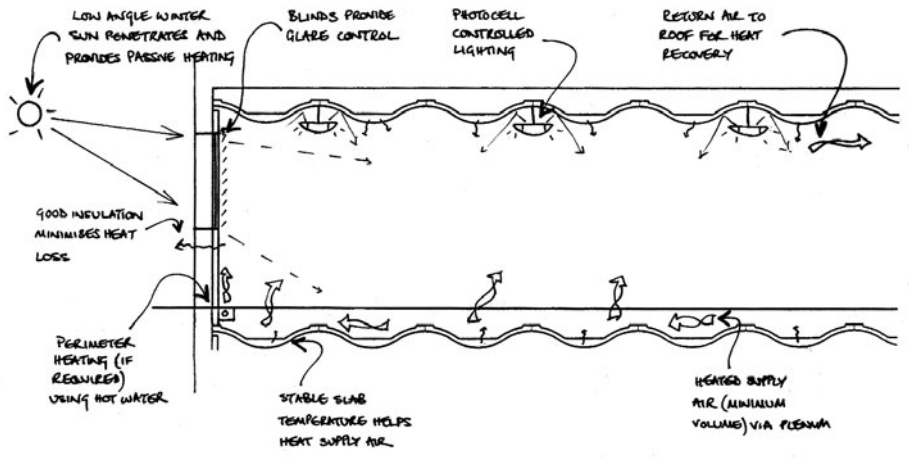
Summer Night

Where additional cooling is required for fit-out areas – for example meeting rooms or IT areas – a small chilled water system serving chilled beams or under-floor fan coil units can be installed easily to tenant requirements using dedicated roof-top plant.

Heating will be provided by an efficient condensing boiler running on natural gas, which will provide heating to supply air on cold days, and perimeter heating as required.

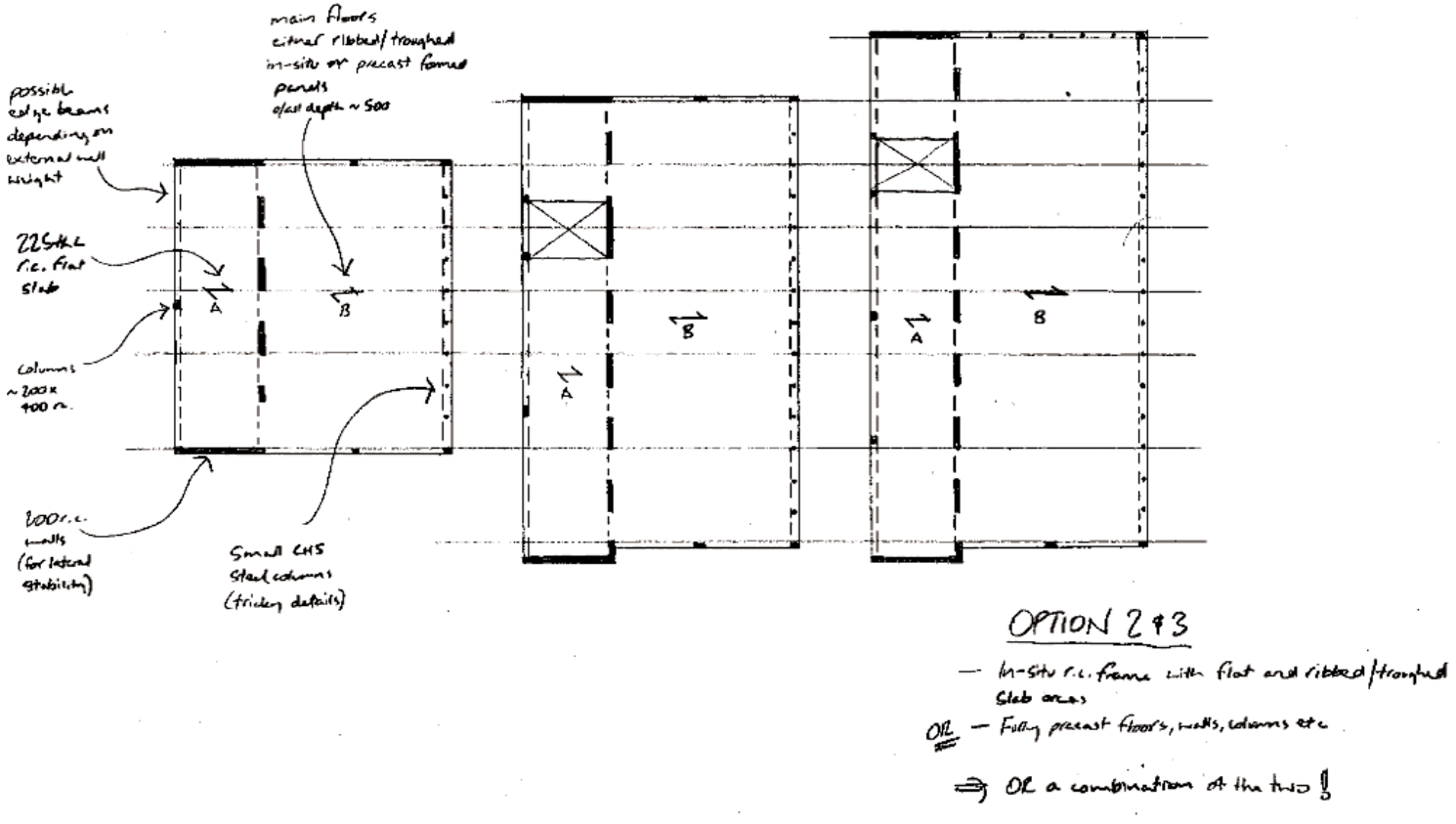
Modern offices require flexible power and IT systems, and the provision of a generous raised floor plenum provides just such a system. Efficient distribution of the risers allows offices to be simply and easily replanned or relocated without unnecessary disruption.

To avoid the need for excavation below the site, or for loss of accessible ground floor spaces, the intake and electrical rooms for the building will be located separately within the courtyard created at the back of the site. Shallow, accessible trenches will connect these with the main building blocks. Air plant will be located on the roof of each block between cores, with the boiler.



Winter Day

Appendix 2 - Structural Engineer's Drawings



Appendix 3a - Financial Appraisal Showing Direct Development, Retained as a Let Investment

PROJECT :	YORK Best Case		6 Month Rent Free		100% Occupancy	
	sq ft	Rent p.s.f	For Letting/Retention Total i/c	Yield %	TOTAL VALUE	
Net Lettable	41,947	15.50	650,179	7.5%	8,669,047	
	spaces	Rent per space				
Car Parking	20	1,000	20,000	7.5%	266,667	
Net Rental Income			670,179			
GROSS SALE PRICE					**8,935,713**	
less Purchasers Costs (agent&legal)	@	1.7625%			-157,492	
Less Stamp duty		4.00%			-357,429	
					0	
Less non recoverable void costs (S/C, Insurance, outgoings et		say				
NET DEVELOPMENT VALUE						**8,420,793**
COST OF DEVELOPMENT:			Acres	Per Acre	£	
Site Acquisition:						
	Site Cost (main)				1,000,000	
	Stamp Duty @		4.00%		40,000	
	Legals @ say				25,000	
	Agents, say		0.00%		0	
	Site Survey, say				10,000	
	Planning Applications				10,000	
	Building Regulations				10,000	
Total site costs						**1,095,000**
Construction :	50838	sq ft (GIA)	per sq ft			
Contributions to						
Site preparation/remediation			say		15,000	
Infrastructure			say		25,000	
Utilities			say		50,000	
Main Contract - Block 1		50,838	100		5,083,800	
Build Cost/tender inflation - assumed in a	2.50%	12 months			127,095	
Contingency			5.00%		265,045	
Commuted Car Parking		49 spaces @ £3,000/space			147,000	
Total Construction costs						**5,712,940**
Professional Fees						
Set up fees						
Architect inc CDM role			4.00%		228,518	
Quantity Surveyor			1.75%		99,976	
Structural Eng			1.50%		85,694	
M&E			1.50%		85,694	
Project Management			1.25%		71,412	
Total Professional Fees		**10.0%**				**571,294**
Basic Project Co-ordination Fee		3.00% of net development value required				**252,624**
Finance Costs	@	7.5% for		12 months		**365,389**
Other Costs						
Legal fees	lettings, say		2.00%		13,004	
	consultants appointments,say				15,000	
	Capital Sale		0.50%		42,104	
Promotion/Marketing					20,000	
Agents letting fees @			10.00%		65,018	
Rent Free Period	6 months				335,089	
Finance raising/valuation fees			at say,		10,000	
Total Other Costs						**731,298**
TOTAL DEVELOPMENT COST (inc Proj Co-ordination Fee)						**8,728,544**
DEVELOPMENT SURPLUS						**-307,751**
Developers Profit on Cost						**-3.53%**
Earnings Yield						**7.68%**

PROJECT :	YORK Worst Case		9 Month Letting Void/3 Month Rent Fr		100% Occupancy	
	sq ft	Rent p.s.f	For Letting/Retention Total i/c	Yield %	TOTAL VALUE	
Net Lettable	41,947	15.50	650,179	7.5%	8,669,047	
	spaces	Rent per space				
Car Parking	20	1,000	20,000	7.5%	266,667	
Net Rental Income			670,179			
GROSS SALE PRICE					8,935,713	
less Purchasers Costs (agent&legal)	@	1.7625%			-157,492	
Less Stamp duty		4.00%			-357,429	
					0	
Less non recoverable void costs (S/C, Insurance, outgoings et		say				
NET DEVELOPMENT VALUE						8,420,793
COST OF DEVELOPMENT:			Acres	Per Acre	£	
Site Acquisition:						
	Site Cost (main)				1,000,000	
	Stamp Duty @		4.00%		40,000	
	Legals @ say				25,000	
	Agents, say		0.00%		0	
	Site Survey, say				10,000	
	Planning Applications				10,000	
	Building Regulations				10,000	
Total site costs						1,095,000
Construction :	50,838	sq ft (GIA)	per sq ft			
Contributions to						
Site preparation/remediation			say		15,000	
Infrastructure			say		25,000	
Utilities			say		50,000	
Main Contract		50,838	100		5,083,800	
Build Cost/tender inflation - assumed in a	2.50%	12 months			127,095	
Contingency			5.00%		265,045	
Commuted Car Parking		49 spaces @ £3,000/space			147,000	
Total Construction costs						5,712,940
Professional Fees						
Set up fees						
Architect inc CDM role			4.00%		228,518	
Quantity Surveyor			1.75%		99,976	
Structural Eng			1.50%		85,694	
M&E			1.50%		85,694	
Project Management			1.25%		71,412	
Total Professional Fees		**10.0%**				571,294
Basic Project Co-ordination Fee		3.00% of net development value required				252,624
Finance Costs	@	7.5% for		21 months		865,389
Other Costs						
Legal fees	lettings, say		2.00%		13,004	
	consultants appointments,say				15,000	
	Capital Sale		0.50%		42,104	
Promotion/Marketing					20,000	
Agents letting fees @			10.00%		65,018	
Rent Free Period	6 months				167,545	
Finance raising/valuation fees			at say,		10,000	
Total Other Costs						731,298
TOTAL DEVELOPMENT COST (inc Proj Co-ordination Fee)						9,228,544
DEVELOPMENT SHORTFALL/SURPLUS						-807,751
DEVELOPERS PROFIT			**0.00%**			
Earnings Yield						**7.26%**

Appendix 3b - Financial Appraisal Showing Disposal for Speculative Development

PROJECT :	YORK Worst Case		9 Month Letting Void/3 Month Rent Fr		100% Occupancy	
	sq ft	Rent p.s.f	For Letting/Retention Total i/c	Yield %	TOTAL VALUE	
Block 1	41,947	15.50	650,179	7.5%	8,669,047	
	spaces	Rent per space				
Car Parking	20	1,000	20,000	7.5%	266,667	
Net Rental Income			670,179			
GROSS SALE PRICE					8,669,047	
less Purchasers Costs (agent&legal)	@	1.7625%			-152,792	
Less Stamp duty		4.00%			-346,762	
					0	
Less non recoverable void costs (S/C, Insurance, outgoings et		say				
NET DEVELOPMENT VALUE						8,169,493
COST OF DEVELOPMENT:			Acres	Per Acre	£	
Site Acquisition:						
	Site Cost (main)				100,000	
	Stamp Duty @		4.00%		4,000	
	Legals @ say				25,000	
	Agents, say		0.00%		0	
	Site Survey, say				10,000	
	Planning Applications				10,000	
	Building Regulations				10,000	
Total site costs						159,000
Construction :	50838	sq ft (GIA)	per sq ft			
Contributions to						
Site preparation/remediation			say		15,000	
Infrastructure			say		25,000	
Utilities			say		50,000	
Main Contract - Block 1		50,838	100		5,083,800	
Build Cost/tender inflation - assumed in a	2.50%	12 months			127,095	
Contingency			5.00%		265,045	
Commuted Car Parking		49 spaces @ £3,000/space			147,000	
Total Construction costs						5,712,940
Professional Fees						
Set up fees						
Architect inc CDM role			4.00%		228,518	
Quantity Surveyor			1.75%		99,976	
Structural Eng			1.50%		85,694	
M&E			1.50%		85,694	
Project Management			1.25%		71,412	
Total Professional Fees		**10.0%**				571,294
Basic Project Co-ordination Fee		0.00% of net development value required				0
Finance Costs	@	7.5% for		21 months		719,632
Other Costs						
Legal fees	lettings, say		2.00%		13,004	
	consultants appointments,say				15,000	
	Capital Sale		0.50%		40,847	
Promotion/Marketing					20,000	
Agents letting fees @			10.00%		65,018	
Rent Free Period	6 months				167,545	
Finance raising/valuation fees			at say,		10,000	
Total Other Costs						731,298
TOTAL DEVELOPMENT COST (inc Proj Co-ordination Fee)						7,735,163
DEVELOPMENT SHORTFALL						1,160
DEVELOPERS PROFIT			**5.60%**			433,169
Earnings Yield						8.67%

PROJECT :	YORK Worst Case		9 Month Letting Void/3 Month Rent Fr		100% Occupancy	
	sq ft	Rent p.s.f	For Letting/Retention Total i/c	Yield %	TOTAL VALUE	
Block 1	41,947	15.50	650,179	7.5%	8,669,047	
	spaces	Rent per space				
Car Parking	20	1,000	20,000	7.5%	266,667	
Net Rental Income			670,179			
GROSS SALE PRICE					8,669,047	
less Purchasers Costs (agent&legal)	@	1.7625%			-152,792	
Less Stamp duty		4.00%			-346,762	
					0	
Less non recoverable void costs (S/C, Insurance, outgoings et		say				
NET DEVELOPMENT VALUE						8,169,493
COST OF DEVELOPMENT:			Acres	Per Acre	£	
Site Acquisition:						
	Site Cost (main)				100,000	
	Stamp Duty @		4.00%		4,000	
	Legals @ say				25,000	
	Agents, say		0.00%		0	
	Site Survey, say				10,000	
	Planning Applications				10,000	
	Building Regulations				10,000	
Total site costs						159,000
Construction :	50838	sq ft (GIA)	per sq ft			
Contributions to						
Site preparation/remediation			say		15,000	
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Basic Project Co-ordination Fee		0.00% of net development value required				0
Finance Costs	@	7.5% for		21 months		719,632
Other Costs						
Legal fees	lettings, say		2.00%		13,004	
	consultants appointments,say				15,000	
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Promotion/Marketing					20,000	
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Finance raising/valuation fees			at say,		10,000	
Total Other Costs						731,298
TOTAL DEVELOPMENT COST (inc Proj Co-ordination Fee)						7,735,163
DEVELOPMENT SHORTFALL						1,160
DEVELOPERS PROFIT			**5.60%**			433,169
Earnings Yield						8.67%

Appendix 4 - MKL Sustainable Working Practice Statement

This statement is intended to outline the backbone of a unified site specific design approach to the wide, and sometimes contradictory, range of issues that are covered by this subject. Many of the items will require further study to achieve optimum benefit. For this reason this statement should be treated as a guideline indicating the design team's and developer's aspirations for the site. It is divided into the following sections:

- a general list of items that the design team aspire to;
- measures specific to the site and landscaping; and
- details of end user information intended to be distributed to ensure the benefits of the scheme are maximised.

The following features will be incorporated to the appropriate parts of the scheme:

General Items

- column and slab construction using cores and envelope to brace against wind loads providing unobstructed floor plates allowing future reconfiguration;
- generous vertical services distribution with good access grouped with vertical circulation to easily enable replacement, refitting and expansion for future technologies;
- non-structural partitioning (non-load bearing block work or drywall construction) to reduce complications of refurbishment and reconfiguration;
- use of high quality, long design life cladding and roofing materials and clearly documented maintenance regime coupled with an access strategy to facilitate easy execution;
- a highly insulated, well sealed light-weight envelope and thermal mass distributed throughout the building to facilitate a stable internal temperature profile all year round;
- specification of low energy fluorescent lighting with electronic control gear with conveniently located switching or movement sensors where appropriate;
- specification of an integrated control and monitoring system for a modern heating and lighting system;
- appropriately spaced structure with clearly marked connection points on the roofs of the offices, hotel and apartment buildings for post construction installation of PVs;
- the office, hotel and apartment building will be equipped with rain water collection systems and adequate storage for anticipated rainfall to service toilet flushing and watering;
- specification of water saving services in accordance with BREEAM;
- cladding and roofing materials formed from a palette of materials choosen and detailed to facilitate easy cleaning and maintenance or removal and recycling where relevant;
- a robust but friendly internal environment will be achieved by mixing non-solvent based paints and coatings with self finished products to provide a low maintenance high longevity environment;

Site Considerations

- building massing on the site that optimises density and access whilst minimising overshadowing and provides an acoustic barrier where appropriate;
- specification of high quality external lighting to minimise light pollution;
- separation of planting and drainage runs to minimise danger of penetration by roots;
- retention of existing healthy mature trees through positioning of the buildings and the revised road alignment, supplemented with additional planting of indigenous plants and trees;

End User Documentation

- the provision of clear graphical indication in the form of sign boards and information handouts that explain the strategy and the function of both the manual and the automated controls and how they should be used to best optimise the building environment; and
- to supplement the information above, buildings fitted with energy saving and generating systems will be equipped with displays showing the actual energy output of the systems and indicating implications of the figures.

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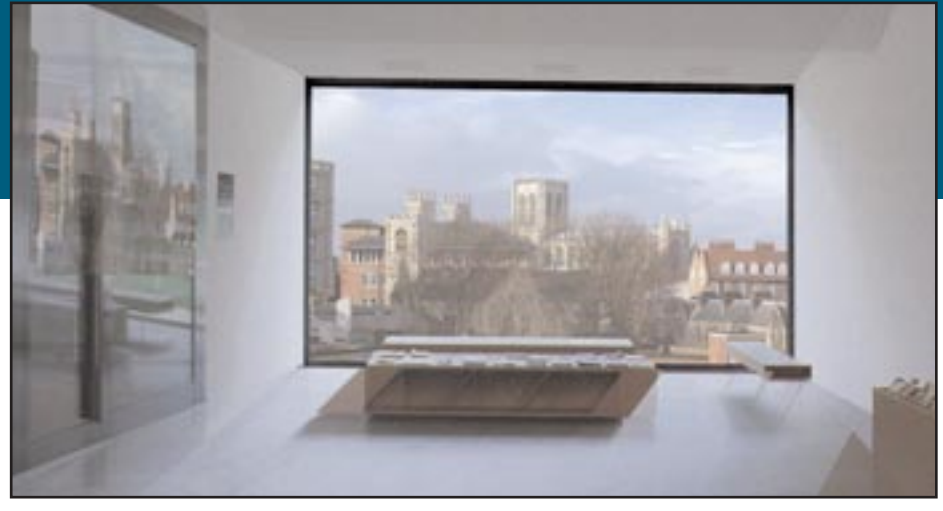
The submissions

Panter Hudspith Architects



The Intelligent Workspace

Carmelite Street Offices, York **Joseph Rowntree Foundation**

Panter Hudspith Architects

ARUP BioRegional Price & Myers

The Intelligent Workspace: A New Workspace Responding to Environmental Aspirations and Commercial Needs

Contents

View of Hungate Area from the York Minster

0.0 Introduction

0.1 Objective

As a cohesive team we believe we have a successful proposal for a flexible, environmentally responsible and desirable new office building for the Joseph Rowntree Foundation.

Our key objectives are:

- To provide clean, efficient and flexible workspace with fully integrated services designed to reflect current and future office needs
- To design a contemporary building envelope which modifies the internal environment of the building in a clear and low-tech way and which forms the external shell of a landmark commercial building regenerating the Hungate area.
- Developing a services strategy that balances the needs of the tenants, the need for environmentally sound buildings and the requirements of the investment market.
- Creating a design that embraces the benefits of off-site fabrication and contemporary construction technology to provide a sustainable development equipped to enrich the working environment of the future.
- To develop an environmental approach that has real benefits for people who use the building and that can inspire others to adopt a similar approach.

0.2 Team Participants

Panter Hudspith Architects
The aim of the practice is to explore the full potential of any design brief and construct good buildings using appropriate technology. Our work has included both the construction of new buildings in sensitive city centre locations and the refurbishment and extension of listed structures, with several projects in York.

Complex Development Projects Ltd
CDP are specialist urban developers with a track record of dealing with some of the most difficult sites in the UK dating back to the mid 1980s. The company aims to regenerate town centres and industrial areas, making them more vibrant, encouraging people to live, work and play in an attractive urban environment. CDP is committed to a programme of sustainable development projects.

Ove Arup & Partners
With roots as consulting engineers, Arup is a firm of designers in the broadest sense. Arup continues to develop and maintain a high standard of environmental awareness and we continuously improve our environmental performance in our activities and on our projects for others wherever we have control or influence. We are leading the development of new environmental design techniques to develop effective solutions, and we will apply all of our knowledge to developing a responsible solution to this exciting new building for York.

BioRegional
BioRegional is an environmental charity and trading group established in 1994. BioRegional initiated Beddington Zero Energy Development (BedZED) eco-village, securing Peabody Trust as development partners, defining sustainability strategy, sourcing local and reclaimed materials and organising "green lifestyle services" such as the ZEDCars car pool, office waste collection and on-site composting.

Price & Myers
Using the most recent developments in materials and construction technique, Price and Myers have worked with some of the country's leading architects on the design of a number of outstanding buildings.

View of Minster from Petergate

View down Shambles

1-3 Daveygate, Panter Hudspith Architects

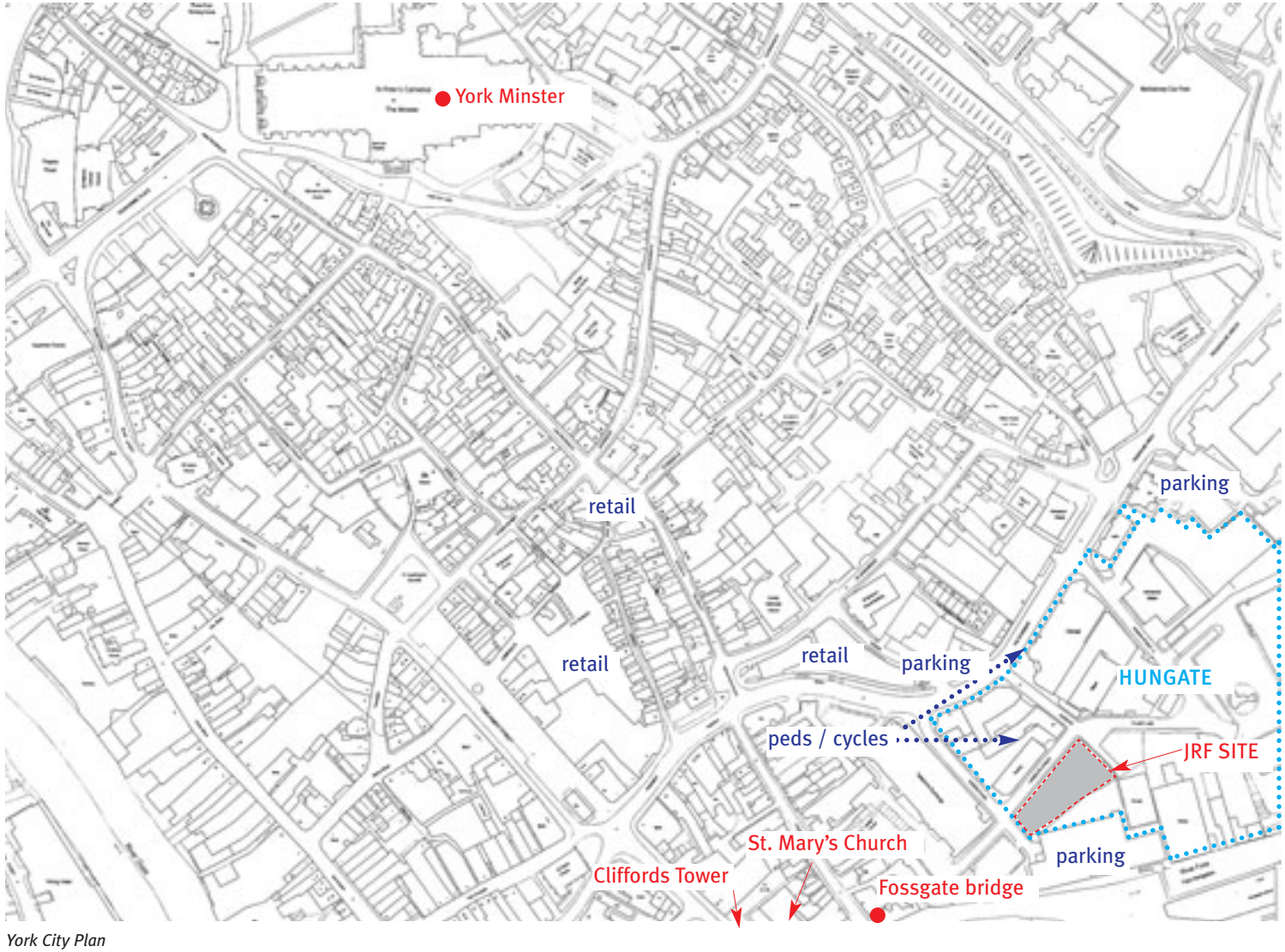
1.0 Context

1.1 City Fabric

Working with a historic context requires careful attention to precedents, or clues, from the surroundings. We have recognised key landmarks and distinctive traits to the local architecture of York. Significant features in the context include York Minster, Cliffords Tower, St. Mary's Church and the Foss Bridge. The Carmelite Street site has significant views to and from these landmarks.

Local design traits throughout history have included timber-framed houses and frequent use of the area above ground level for extensions to the floor. This has created a semi-arcaded covered space at street level under these projections. The most obvious example is the view down the Shambles.

We believe these traits to be unique and informative of the design direction for the project at Carmelite Street. This is similar to the approach Panter Hudspith Architects applied to their building at 1-3 Daveygate, York which received both RIBA and Civic Trust Awards.



York City Plan

View south from Garden Place, 1904.

1.2 Hungate Area

Located on the periphery of the city centre, the Hungate area is primarily a light grade industrial zone though it provides a critical link to the Stonebow and the retail centre to the north. Adjacent to the site is an existing four-storey car park to the south and a brownfield for redevelopment to the east.

It is critical to utilise the office project at Carmelite Street as a means to invigorate the Hungate area, which can be a viable extension of the commercial section to the north. Simultaneously, the design scheme should allow for flexibility within a future development to the east and to the south.

The proposal will provide an edge to Carmelite Street and will be primarily urban in nature. Another key factor is to provide high quality pedestrian areas along Carmelite Street.

1.3 York Planning

Preliminary discussions with York Council planning department have indicated that a four storey structure with approximately 40,000-50,000 ft^2 net lettable office space would be considered appropriate for the site. We believe that subject to detailed consideration there is a possibility to increase the area of the building above this figure, while maintaining its role as an urban generator for the re-development of the Hungate area.

Subsequent conversations with York Council on archaeology yielded information about limitation of piling. Pilecaps are not to exceed 7.0m AOD. Sufficient survey information would be needed to know the AOD levels on the JRF site, though preliminary estimates put it at approximately 10m AOD, therefore a semi-basement for carpooling, covered cycle parking, and supporting showers / locker rooms would be both possible and an asset. Piling and removable slabs have been preliminarily worked out with Price & Myers.

Option A with future re-development of existing carpark

1.4 Design Scheme

Several schemes were undertaken that evaluated the benefit of different massing.

Option A reflects the desired scheme that we have developed as a team. This scheme makes the most of the demised area as well as the unused triangular portion between the site and the Shambles car park. The resultant scheme uses a 15m wide floor plate completing the block edge on Carmelite Street. The land between the workspace and the car park was seen to be an asset both to the future office occupants and possible future developments within the area. This zone is protected by the new office and provides a landscaped area visible from the offices.

Option B reflects a similar strategy that works only with the allotted demise indicated from JRF. This scheme is less desirable, though it embodies the same design intent.

The design goal for both schemes is to provide a simple, elegant building that responds directly to its orientation relative to natural elements and significant urban landmarks. Working closely as a team, architectural, environmental, service, and lettability issues, we considered all opportunities in harmony. However, we believe Option A presents the must convincing opportunities for future development of the entire Hungate area and the most potential for innovative and flexible office environment.

Masterplanning

Option A also provides the greatest opportunity in attracting pedestrian and cycle traffic within the Hungate area because of the possibility of the courtyard space. If the carpark site were to be re-developed in the future then the courtyard could be extended towards the River Foss with new mixed-use buildings providing an edge.

Subsequently, there would considerable potential for a riverside walkway / cycleway linking the east of Hungate with the Carmelite Street Offices and its collegiate-like courtyard. Future developments to the East could provide a sequence of courtyard enclosures linked by pedestrian and cycle routes, bringing the green back into the city centre.

The massing of future riverside buildings should respond to both the pedestrian level as well as the new Carmelite Street Offices.

1.5 Solar and Environmental Conditions

Solar

Arup have carried out an analysis of the sun paths around the proposed building within its site. The interaction of the building with the external environment is a key aspect of the building's performance. A balance has been achieved between the key criteria, to provide an intelligent facade that works efficiently as either a barrier to or receptor of the external energy inputs.

Therefore, each of the facades should be designed to provide an environmental controller that responds to these conditions throughout the seasons. As a result, the following strategies have been integrated into the design:

- Fins (to the north) and louvers (to the south) are provided for glare protection and reduction of direct solar gain.
- Beneficial gain is allowed into the building during the winter.
- Excessive solar gain is controlled in the summer, using shading and the air window.
- The facade can be opened allowing natural ventilation to the perimeter zones of the building.
- The ventilation system uses outside air to control the internal environment.
- The building's mass and facade carefully balances lightweight responsiveness, with heavyweight thermal control.

External Conditions

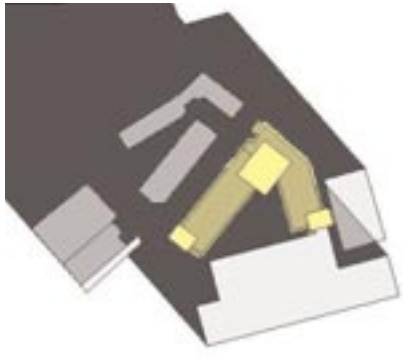
For most of the year, the temperatures of the British climate remain below the internal design temperatures for the internal environment. This means that the external air can be used to control the internal conditions within the space. The design of the building will incorporate natural ventilation for the perimeter offices, through opening windows where possible. The ventilation systems will make the most of the external conditions, by utilising external air directly when the conditions allow.

• Winter	-4°C, saturated
• Summer	28°C db and 19°C wb

Internal Conditions

• Internal Summer Temperature	25°C ± 2°C
• Min Internal Winter Temperature	21°C
• Humidity	future install possible
• Fresh Air Ventilation	12 l/s/person
• Occupant Density	14m²/person
• Lighting Load	12W/m²
• Lighting Level	350 lux
• Small Power/Equipment Load	25W/m²
• Noise Rating	NR 35

9:00 hrs



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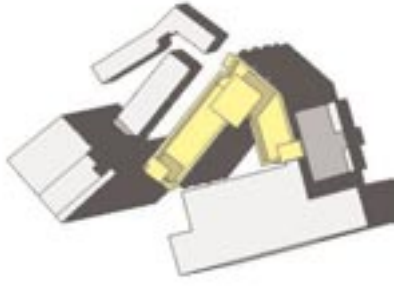
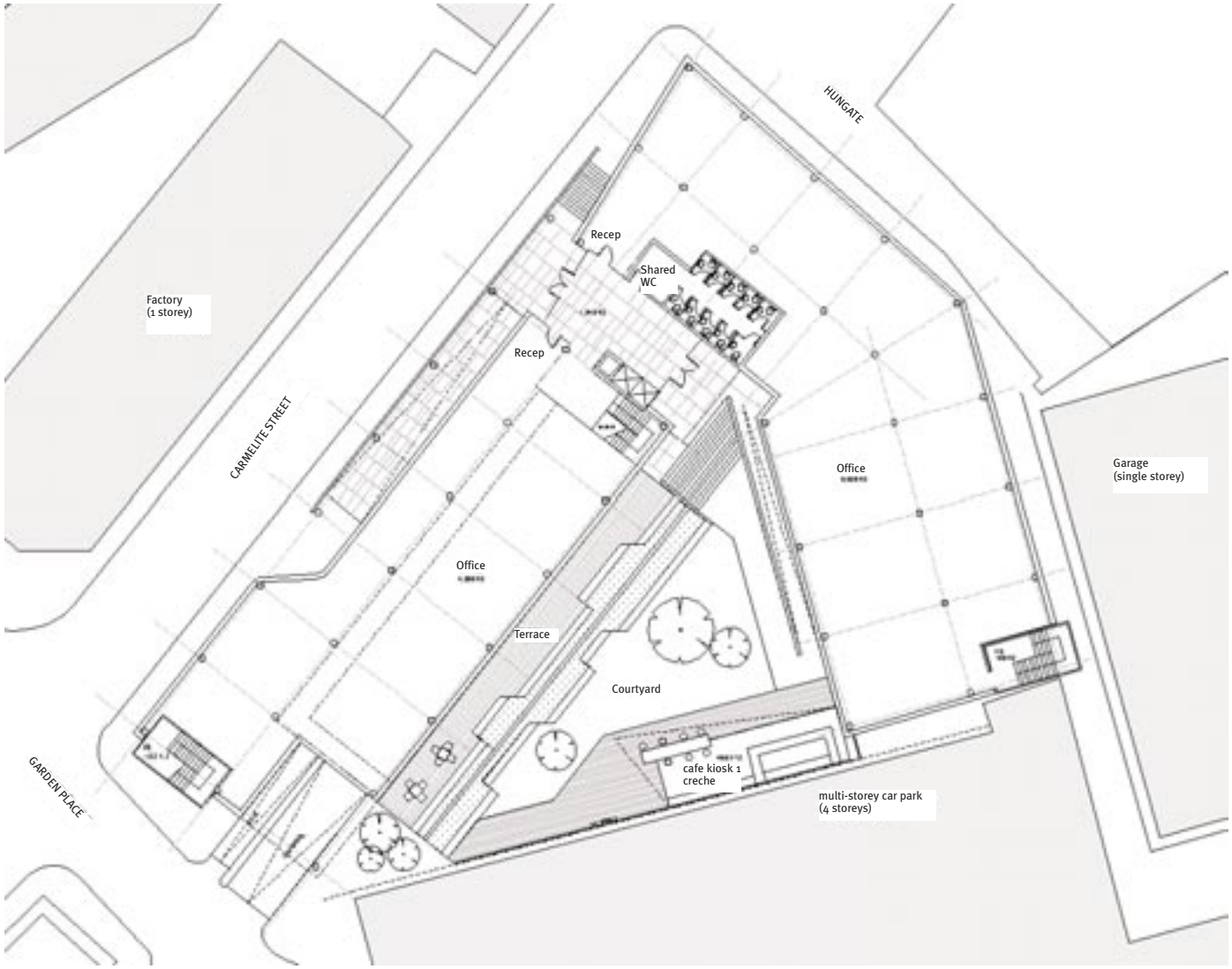


DECEMBER

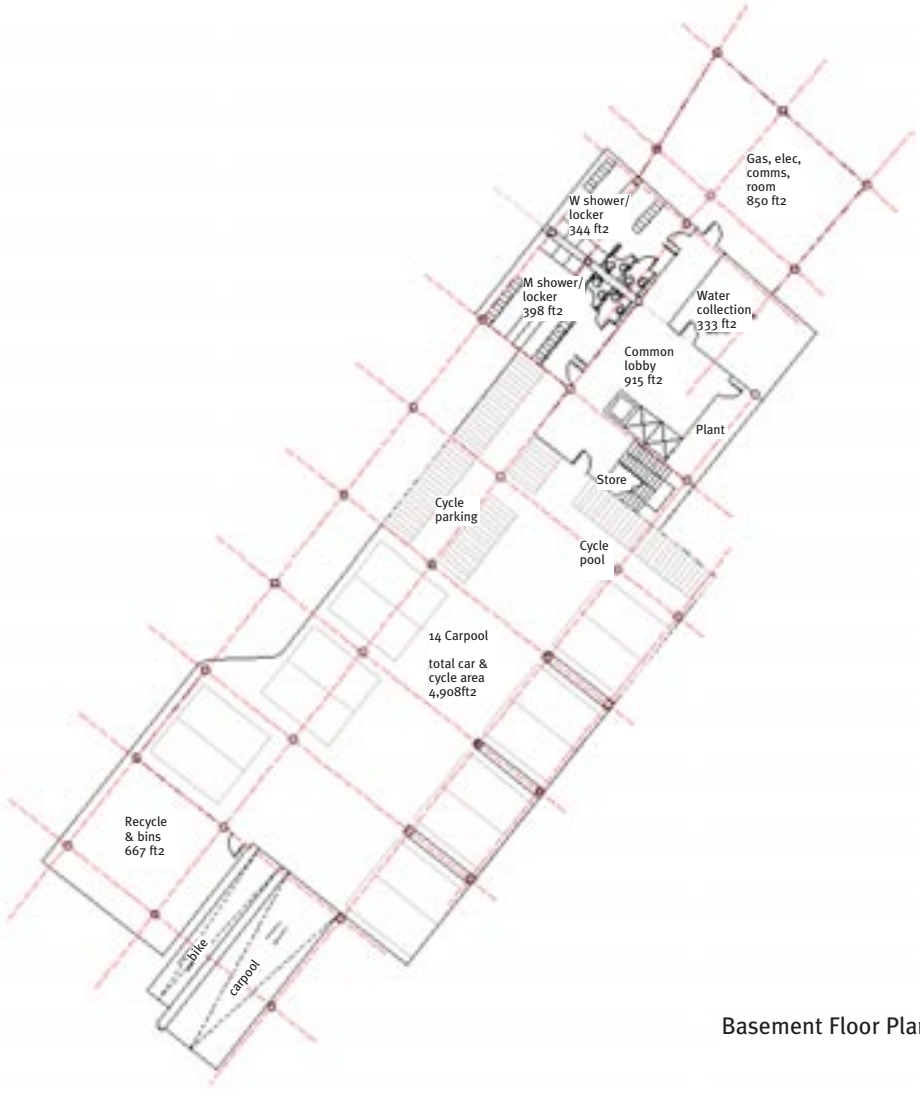
MARCH

JUNE

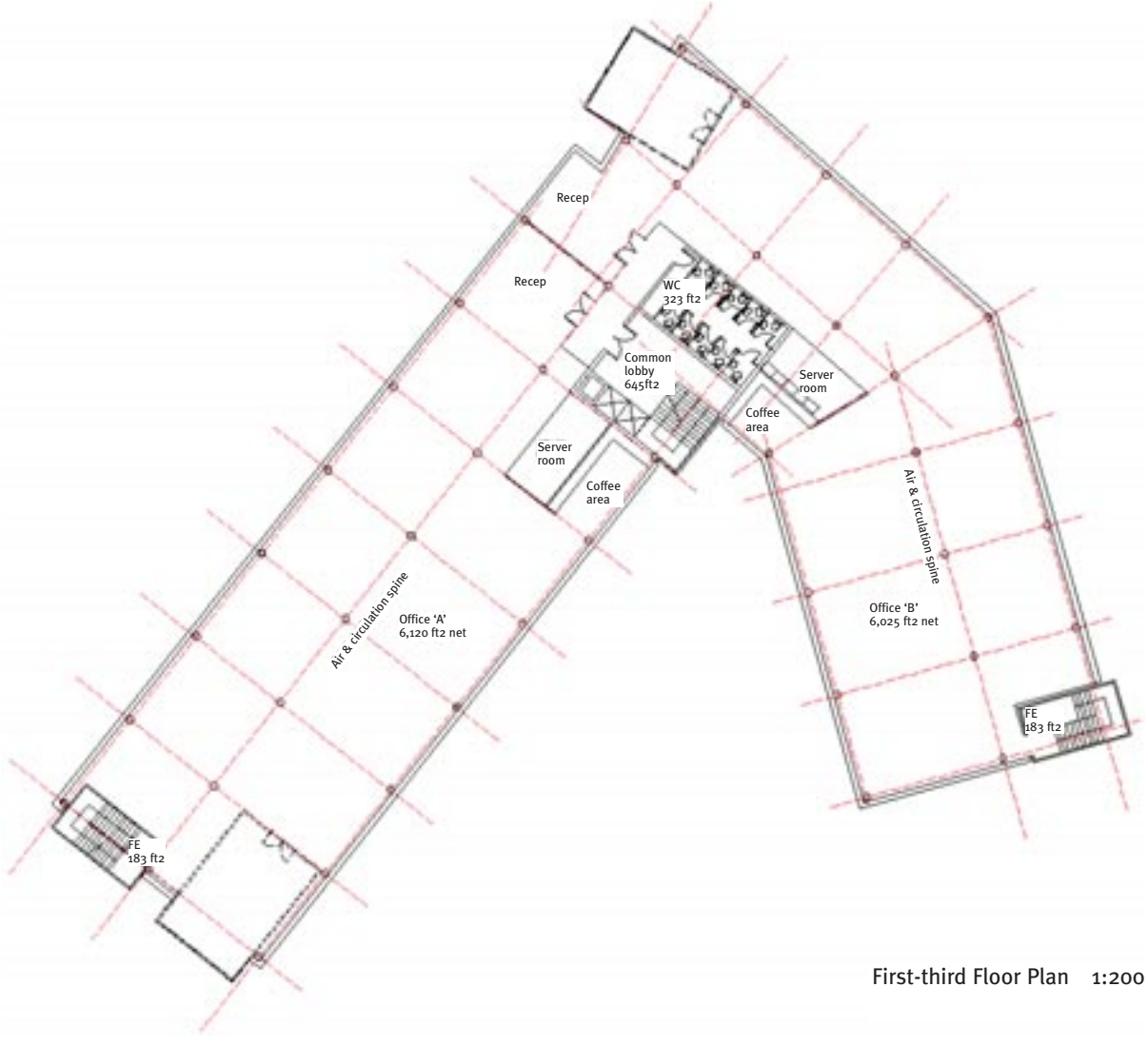
1.6 Plans/Elevations/Sections (1:200)



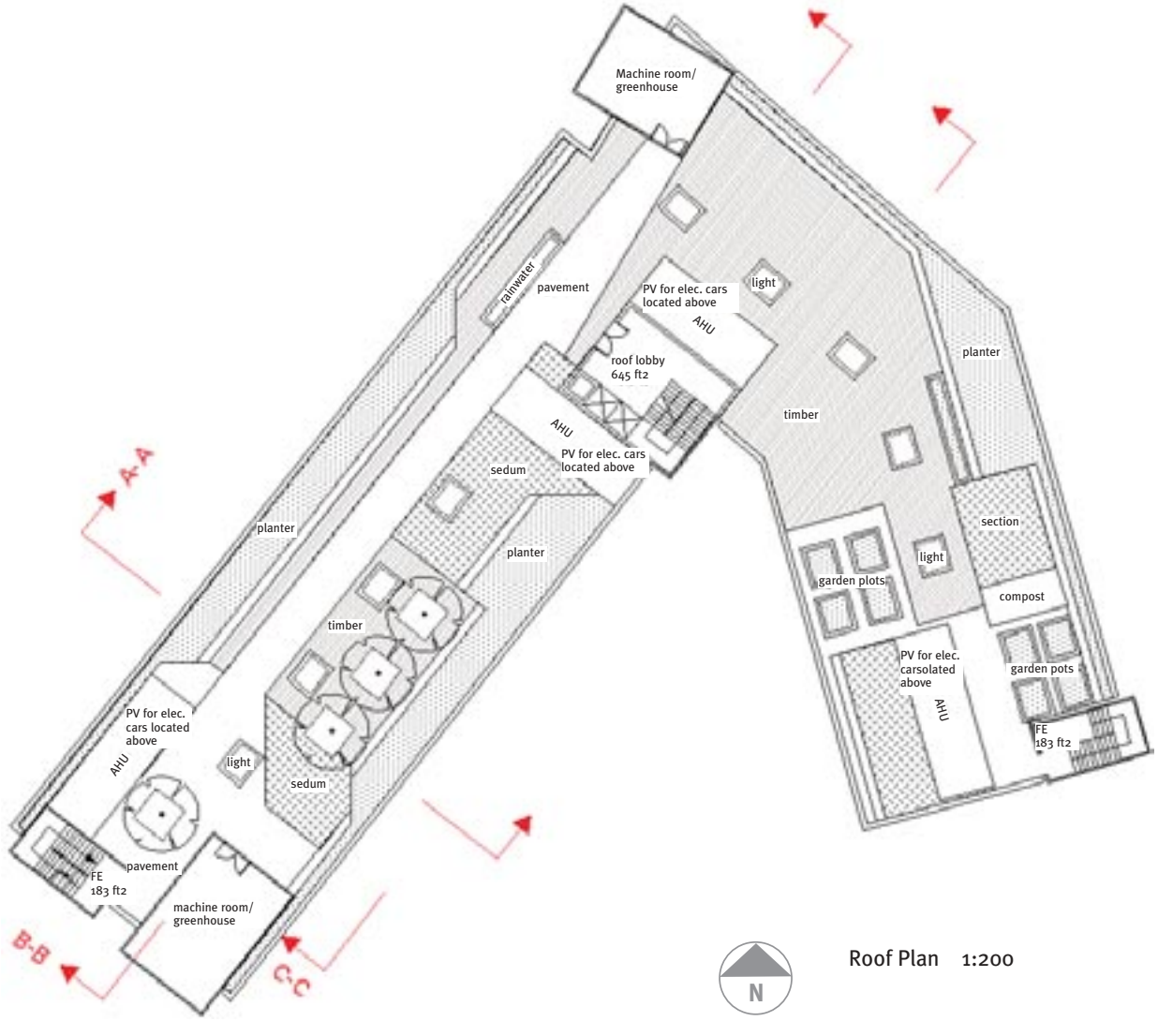
Ground Floor Plan 1:200



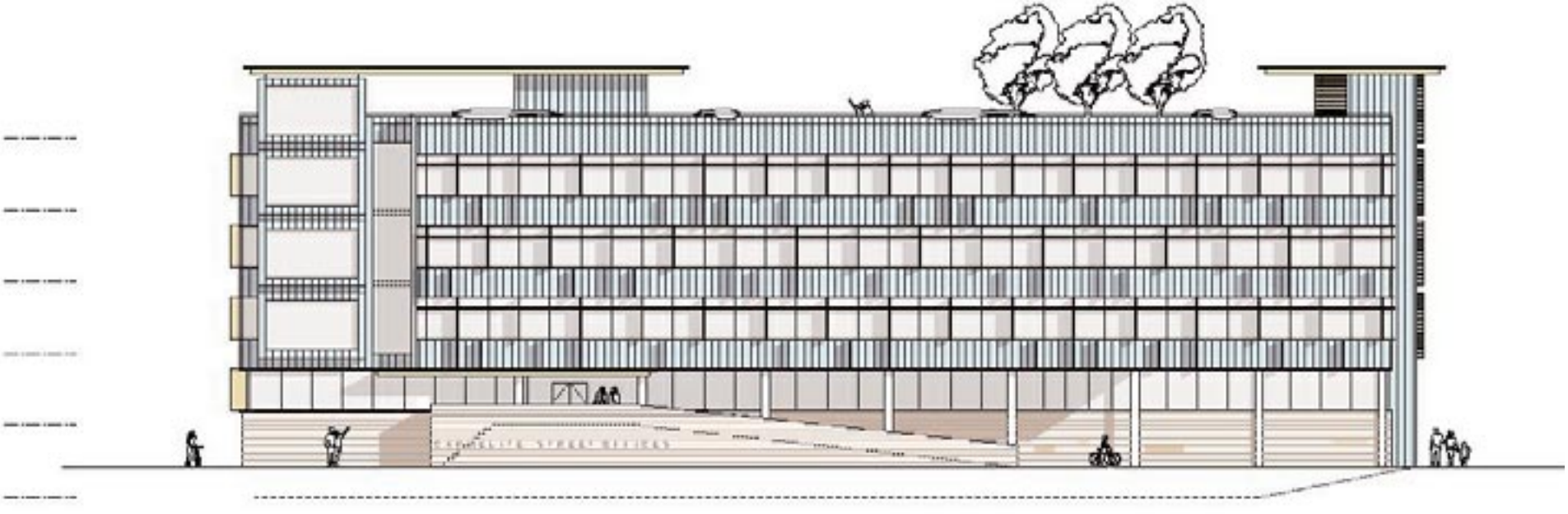
Basement Floor Plan 1:200

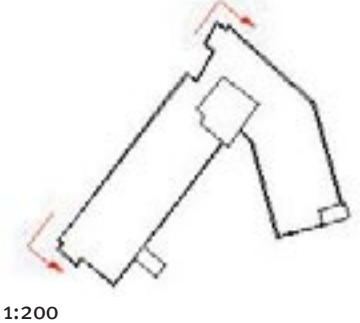


First-third Floor Plan 1:200

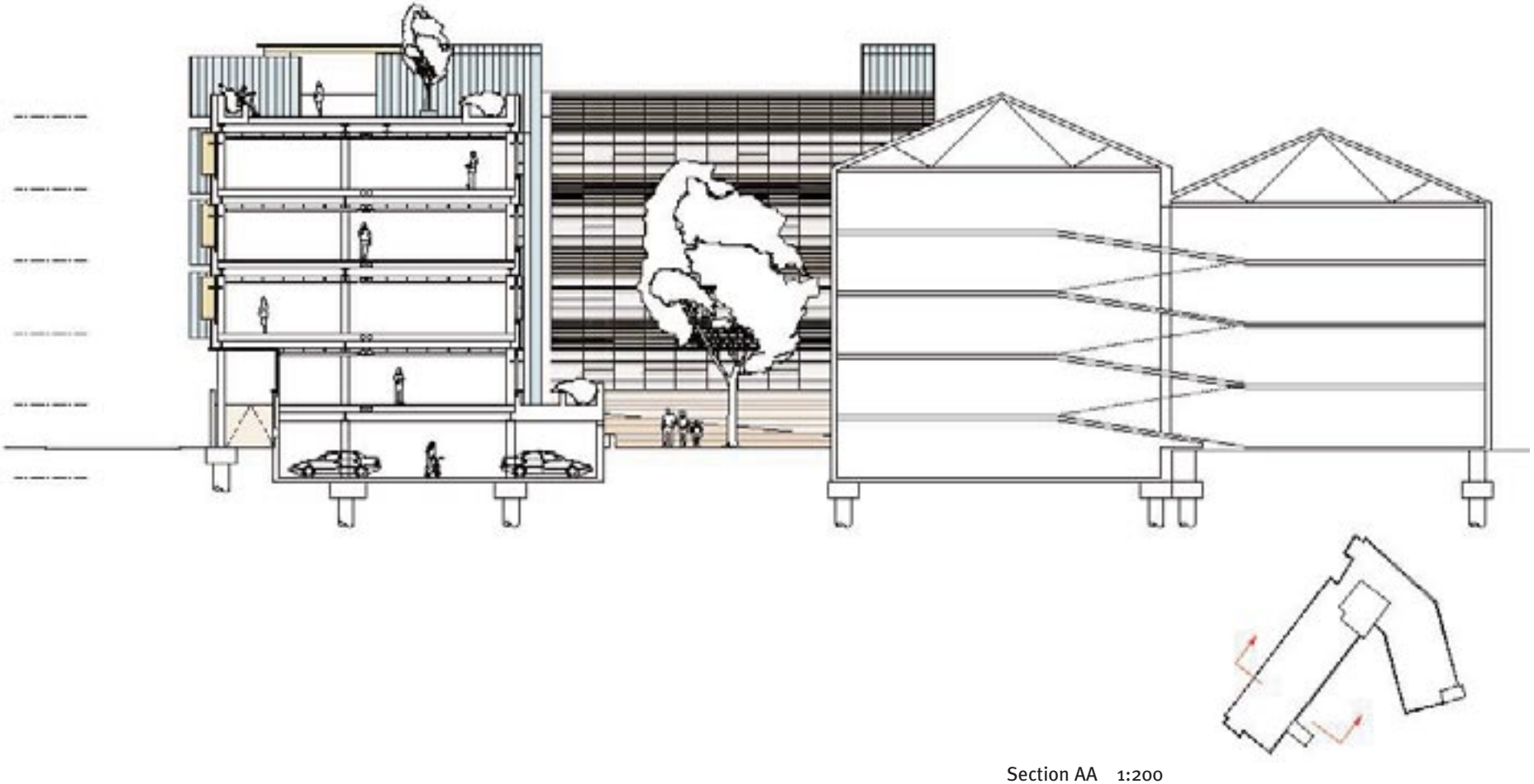


Roof Plan 1:200

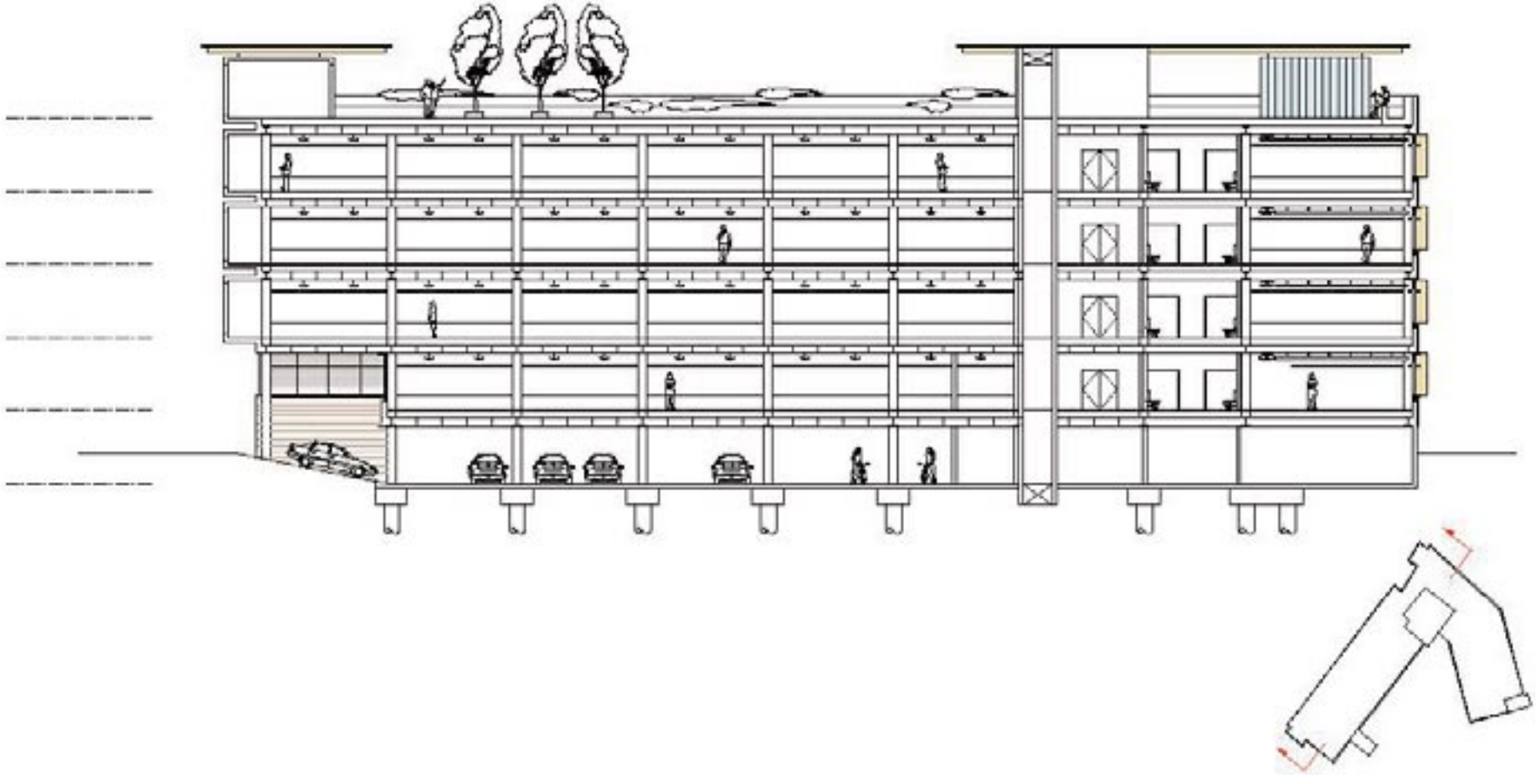




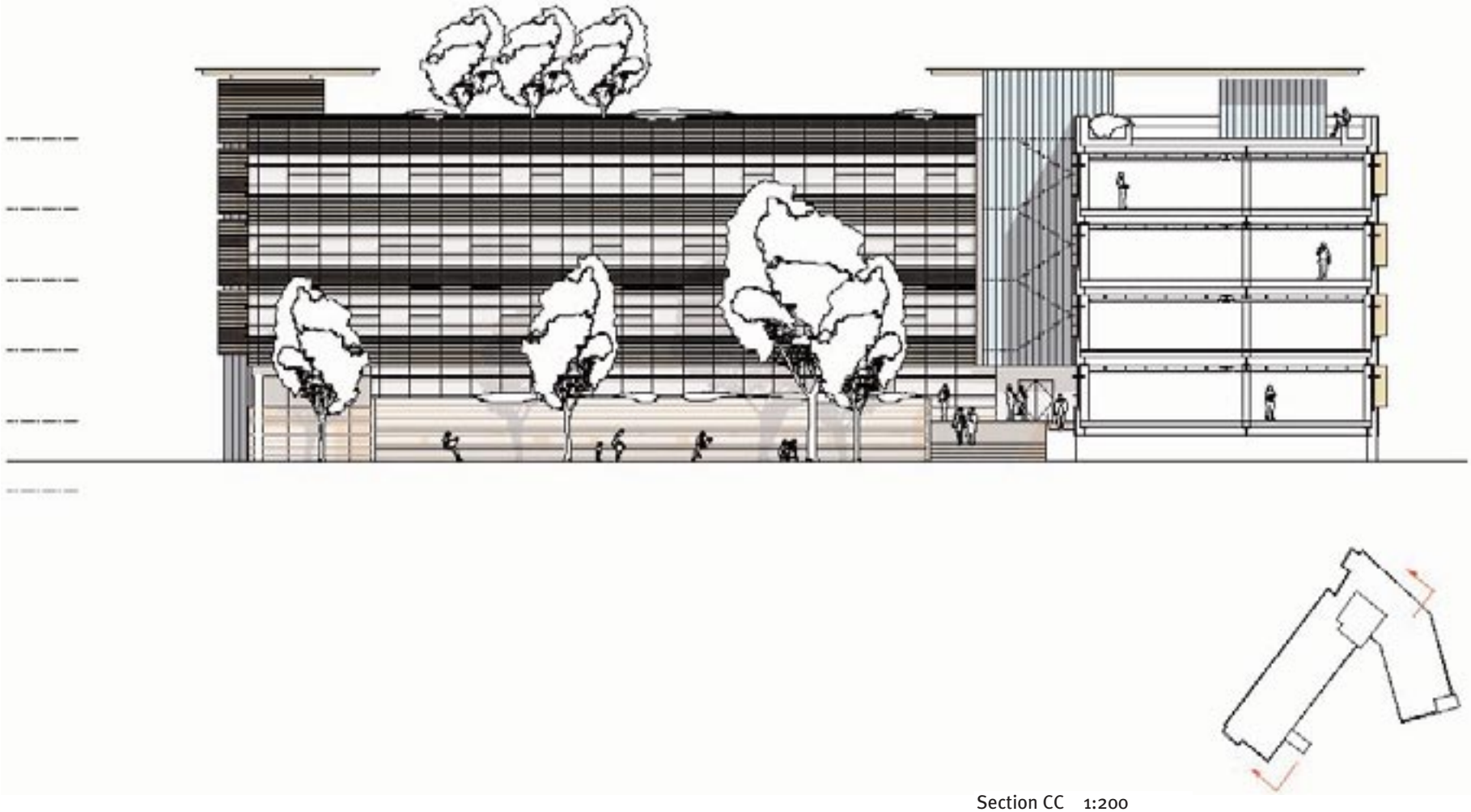
Carmelite Street Elevation 1:200



Section AA 1:200



Section BB 1:200



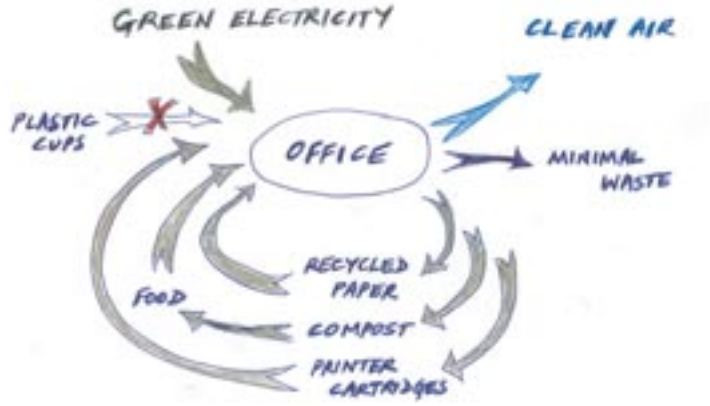
Section CC 1:200

Rendered impression looking down Garden Place

Rendered impression looking down Carmelite Street

Exterior Perspectives

Conventional Office - linear metabolism



Intelligent Office - circular metabolism

2.0 Intelligent Design

2.1 Introduction

What does sustainable mean?
If everyone on the planet consumed as many resources as the average person in the UK, we would need three planets to support us (World Wide Fund for Nature, Living Planet Report, 2000). The challenge therefore is to find ways of living and working, where we can reduce our consumption of resources by two-thirds, but at the same time are attractive, accessible, flexible and affordable. Only in this way can we create a future where we are living within our fair share of the Earth's resources, allowing other less developed countries to increase their consumption and alleviate their poverty.

Therefore, we propose that intelligent design is comprised of both intelligent design and intelligent use.

2.2 Intelligent Use

The green living office
We can view an office as a living structure, with a metabolism, requiring energy and nutrients to support it (The Metabolism of Cities, Herbert Girardet and Cities for A Small Planet, Richard Rogers). Currently most offices have a linear metabolism with a one-way flow of resources in and wastes out.

The main environmental impacts of offices come from their consumption of energy and office waste such as paper, photocopier and printer cartridges, tea bags, cans and plastic cups. Our total energy strategy is aimed at reducing energy use. The average office worker generates 64 kg of white paper waste each year, yet only 7% of this very high quality paper is recycled. Through a central office management service the following will be organised.

• free weekly white office paper collection through local recycling company Cutts Brothers (saving approx. £ 2,500 on trade waste collection)
• central supply of recycled photocopier paper, reducing environmental impact to 20% over using virgin paper
• all new office workers provided with a complimentary mug, making the office a "vending-machine–free" area
• small compost containers at tea points which will collected by the cleaner and composted in a wormery on the roof terrace
• can crusher and cans container at every tea point, with cans donated to a local community recycling group working with people with learning disabilities
• collection of used cartridges for recycling on to "ActionAid", generating an anticipated £8000 per year for education programmes in developing countries and again saving trade waste charges
• 10 dedicated “allotment planters" for any office workers wanting to grow their own fruit and vegetables on the roof terrace along with a wormery composter
• central supply of Fairtrade tea and coffee
• cleaning with environment-friendly cleaning fluids

The Community Office

It is important to weave the office into the local economic and community fabric. This has been done by forming links with local groups and service providers such as Friends of St. Nicholas Fields Urban Nature Park and further links can be made through York’s Local Agenda Officer which has been contacted and is supportive. Initial research has identified the following opportunities:

• Friends of St. Nicholas Fields Urban Nature Park are interested in taking on the contract to supply native plants and manage the gardens
• the local British Trust for Nature Conservation Volunteers and Friends of St. Nicholas Fields Urban Nature Park work with children to make bird boxes which can be used on site
• Yorwoods, the regional woodland initiative supported by the Forest Commission and the Yorkshire Dales & North York Moors National Parks have offered assistance in sourcing local larch or oak weatherboarding
• positive promotion of FairTrade products will show how the office can contribute to becoming part of the global community

The Healthy Office

• We can’t be healthy as individuals unless we have a healthy environment
• Avoiding sick building syndrome through use of low VOC (volatile organic compounds) paints
• natural light and ventilation
• Office management will be geared around positive promotion of healthy and green lifestyles
• interior planting such as spider plants to absorb formaldehyde
• stairwell made very attractive to encourage walking up stairs rather than using the lift.
• links with local organic farms to offer a local, seasonal vegetable box which is delivered to the office

Paper recycling collection

Green Office Manual: essential to educational office use

Total Water Strategy

- reducing water use – low/dual flush, spray taps
- rainwater collection for WC and garden irrigation

Materials Selections

The key drivers in selecting materials has been to:

- minimise "embodied energy", selecting materials which don't require much energy to produce them (high quality softwood frames rather than aluminium)
- use a high percentage of recycled and reclaimed materials (reclaimed aggregate for concrete, reclaimed steel for structure, recycled glass cladding and reclaimed fibre carpet)
- specify local materials wherever possible to reduce transport and support the local economy (local larch or oak timber cladding which is used untreated and free of potentially damaging preservatives, supporting the local rural economy)

Biodiversity Action Plan

In this scheme for Carmelite Street, we have developed a biodiversity action plan (BAP). As part of the BAP, we are proposing an innovative approach to wildlife, a concept which we will develop further in partnership with Royal Society for the Protection of Birds.

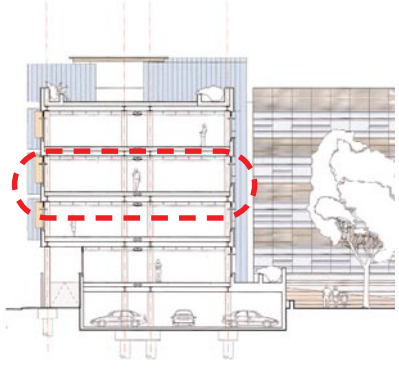
RSPB studies have shown that less wildlife lives around new buildings than old ones. How can we reverse this trend? Instead of conventional cladding for the whole development, we propose that parts of the stair towers facing the courtyard are used to create vertical homes for wildlife. Towers of native creeping plants (ivy, honeysuckle and wild clematis) will hold birdboxes at the first floor, bat boxes at the second floor and swift/house martin ledges at the third floor. The creepers will be contained by boxing in to reduce any maintenance issues. Proximity to the River Foss means that bats can forage for insects such as midges. The wildlife feature will benefit the local biodiversity as well as the natural aesthetic of the enclosed courtyard space. Contact has been made with local wildlife group, Friends of St. Nicholas Fields Urban Nature Park who are interested in supporting the project.

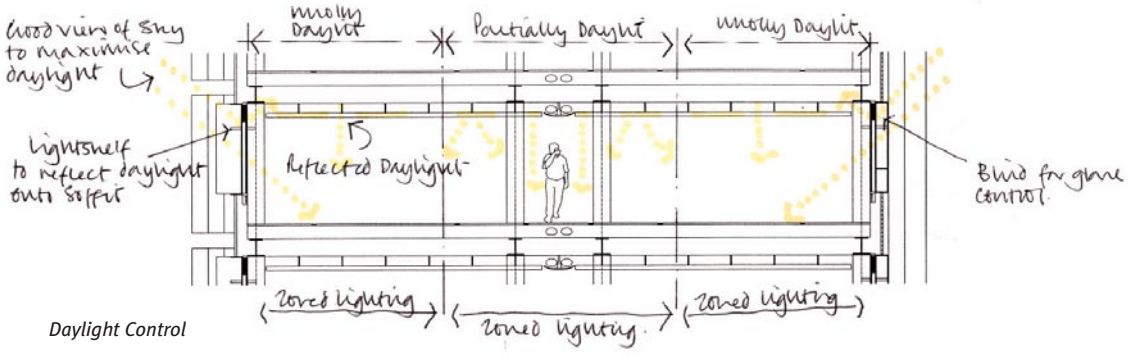
The wildlife highrises will be complemented by a small wildlife pond in the courtyard (providing drinking and bathing water for birds) and by butterfly-attracting plants on the roof terrace.

The office will also support management of local forests which increases their value to wildlife as well as supporting local rural employment. Office workers will have the opportunity to visit the forests from where the timber cladding has been sourced, making the direct link with the countryside.

Birdboxes: creating a local biodiversity

BioRegional foodbox





Daylight Control

"Intelligent buildings are distinguished not by the presence of a high degree of linked information, communication and building automation systems, but rather by the fact that they can serve users' needs directly from the environment and avoid the use of technical installations." - Klaus Daniels

2.3 Intelligent Services Design

Introduction: A Low-Tech Passive Strategy

Many of the exemplar environmental office buildings in the UK are owner occupied or headquarters buildings, and not speculative commercial buildings. Our new building at Carmelite Street will change that. We feel we have developed a design solution which balances the needs of the tenants, the need for environmentally responsible buildings, and the requirements of the investment market. It combines value with efficiency. The building is a complement of different aspects, from the passive design of the facades and structural frame, to the active technology of energy production and mechanical systems.

The key to the building is the integration of the fabric and systems, to work together with the external environment.

The design does not cut the occupants off from the external environment, but rather embraces the advantages of building such a building in the UK climate, close to a city centre.

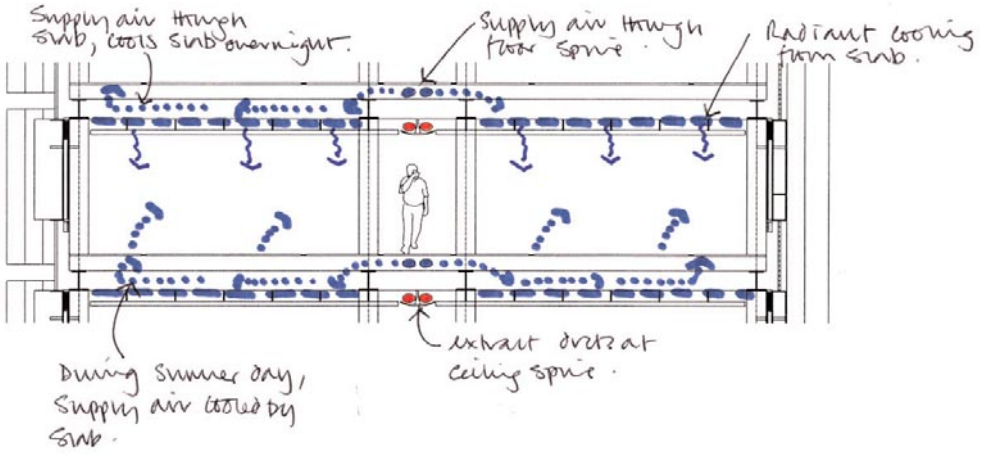
The systems are simple and flexible. We have also concentrated on developing a design which has low initial capital cost, and low maintenance costs, through the use of modular installations. This has also allowed us to develop a design which is space efficient maximising the efficiency of the building.

The building will be generating a proportion of its own electricity, through the use of Photovoltaics and Wind Turbine, a combination which will ensure all-round generation of electricity. Urban wind turbines are a relatively new idea, but we feel the building and its location would be suited to a small scale system.

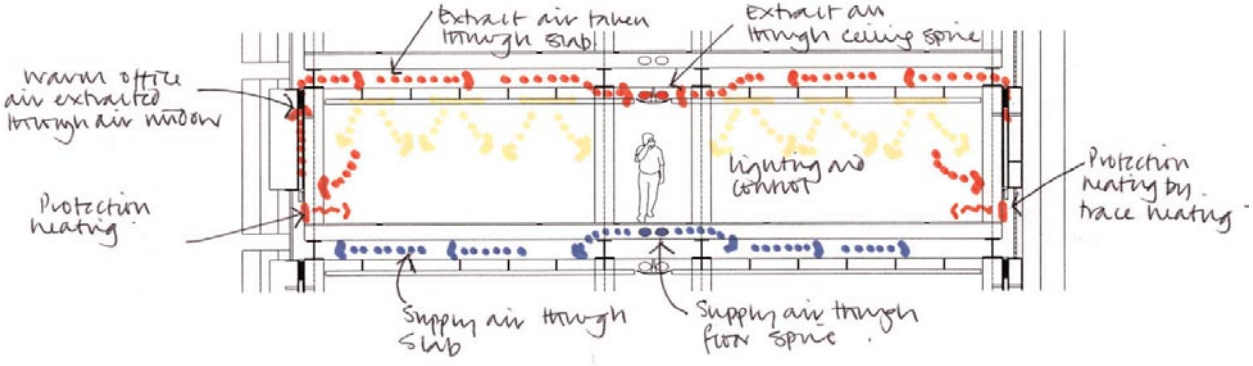
Objectives

In developing the design for the engineering systems for the new office building, it is important to establish a series of key objectives:

- provide a comfortable, high quality environment, suitable for the users and appropriate to the needs of the landlord and tenants.
- provide appropriate mechanical and electrical systems to complement the office space design;
- provide comfortable conditions for the occupants in terms of temperature, light, and noise;
- be economical in installation and minimising energy consumption during the life of the building, in line with the sustainable approach to the development; consider the use of free energies, heat recovery, and the use of the facade to reducing heat gain and heat losses;
- provide a suitable distribution system around the building to allow flexibility in the use of the spaces, allow subdivision on both a floor by floor basis and within each floor. The systems should allow existing tenants to grow within the building and occupy more space as their business expands;
- minimise maintenance costs by using quality materials and equipment, simple reliable systems, and providing good maintenance access;
- reduce environmental impact by using systems that are quiet, non polluting, avoiding the use of CFCs, be energy efficient and reduce the production of carbon dioxide.



Typical floor slab - cooling



Winter operation - heating and ventilation

Daylighting
The energy requirement of artificial lighting is a major part of the overall energy consumption of the building. We have designed the facade and lighting system to work together in providing an efficient way of providing the correct amount of lighting. The sensible use of glazing and the incorporation of light shelves to help penetration of daylight are small details, but important.

The tenant has flexibility over the lighting design and the control of the lighting. This can be expanded to suit their own requirements. The lighting control can include proximity detection, daylight detection and local or remote control.

Maintaining comfortable conditions
We have designed building systems which can provide a comfortable internal environment and minimise the amount of energy needed to provide these conditions. These systems include:-

- Natural ventilation through opening windows with user control.
- Efficient facade to keep heat losses and heat gains under control.
- Passive thermal designs, using the concrete structure as a thermal flywheel.
- Integration of structure and ventilation systems.
- A balance between radiant cooling and air temperature.
- The ability for the tenants to add cooling if required.

Water conservation systems
Water is becoming an increasingly scarce resource, despite the recent high rainfalls and associated problems. We have developed a design which serves to conserve water, and control the run-off of rainwater into the surrounding waterways. This is important in York, where problems with the rivers have become a national issue.

Our building will store rainwater for use in WCs and also for irrigation of the roof top gardens and the courtyard. The storage system will also allow the use of stored water for pre-cooling the fresh air in peak summer conditions. The water storage will control the run-off, and reduce the need for mains water in the building. We propose to use a modular storage system which can be adapted to suit the changing environment which may occur during the lifetime of the building.

We will also use low water content and use appliances, and ensure that education and monitoring of the tenants is undertaken as part of the management strategy.

Statutory Services
Water Supply: The water supply will be brought into the building at lower ground level. The supply will include a water flow meter, and will feed all appliances connected in the building directly.

Gas Supply: A natural gas supply will be brought into the building to serve the heating installation. The meter room will be naturally ventilated and located at the lower ground level. Pipework will be distributed to each of the appliances as required.

Electrical Supply: The incoming electricity supply will be 400V, 3Ø at 50Hz frequency, taken from an appropriate supply adjacent to the site. It has been established that the external network has excellent data connections. The local BT exchange is available for ADSL links from the new building. The design will ensure that tenants can have a choice of providers. Telecommunications services will be brought into the building and terminated in the main equipment room via a number of 100mm ducts from Carmelite Road.

Building Services Zoning
The building will be capable of being divided into a number of zones per floor. The mechanical services will be distributed to each of the zones via risers located at the core and the escape stair locations. The layout of the primary distribution system will allow easy subdivision. The system will have the capability of operating at low outputs as required by the letting and tenancies in the building at any one time.

Office Ventilation System
The mechanical ventilation system will be designed to operate in conjunction with openable windows at the perimeter. The ventilation system will supply air to the office accommodation, with a greater amount being supplied to the internal areas. The ventilation plant will

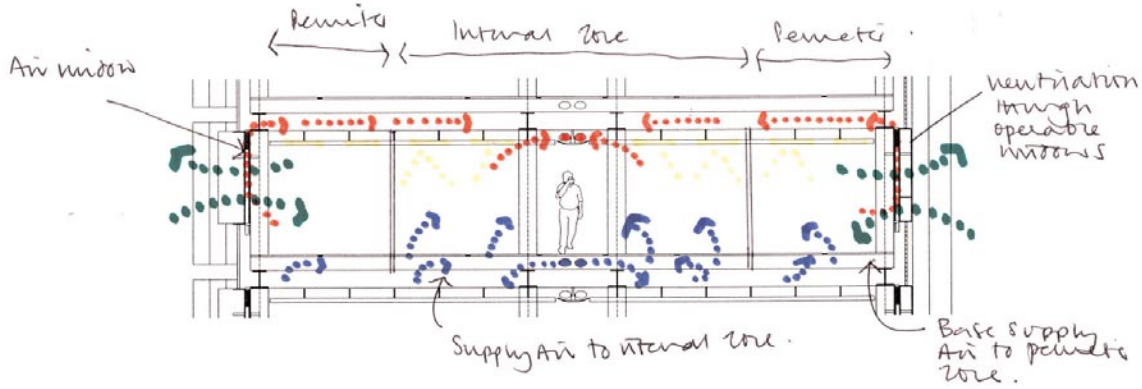
consist of a number of air handling units located at roof level. The supply unit will provide mixing of extract and supply air, heating, heat recovery and filtration to the supply air with space provision for a humidifier and future cooling.

Ventilation air will be supplied into the space via the underfloor supply plenum, through the Termodeck concrete slabs. Air will be introduced at low velocity through grilles located in the suspended floor tiles. The warm air is extracted at high level at two positions, one through the air window located at the perimeter, and the other located centrally at the spine, extracting air from the internal zone.

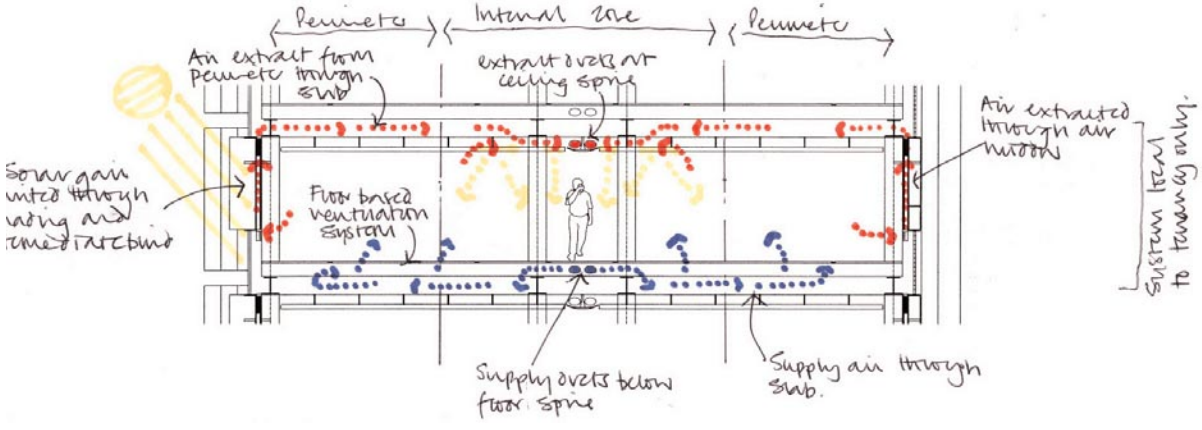
The fresh air units will supply air at a minimum temperature of 16°C to the floor plenum. The units will be interlocked with the extract units fan, so that they only operate when they are both proven to be operational. The system will be designed to provide a minimum fresh air ventilation rate of 1.2 l/s/m² over the office area. The supply temperature will be scheduled to between 16°C and 20°C, according to outside conditions.

Office Heating System

The system will provide heating to the perimeter areas of the office, to maintain the internal design conditions. This will offset all fabric and infiltration loss from the space and will be capable of providing economic preheating of the building before occupation. The facade has been designed to use the internal gains and base



ventilation system *Office Ventilation - control of perimeter zone* conditions in to maintain



comfortable *Typical floor mechanical ventilation system - building sealed*

the space. Air is preheated by the ventilation plant, and then drawn through the air window at the facade. During periods of unoccupied tenancies, the temperature will be set back to provide a minimum internal temperature of 15°C.

Future Cooling Installations
The building has been designed to allow the future installation of cooling, should the tenant require it. This will be allowed for as follows:-
• Space allowed at roof level for the installation of plant and equipment.
• Space allowed for in risers for distribution of pipework.
• The lighting rafts are designed for the future installation of a chilled beam coil. This will allow cooling to be provided using a conventional system if required.
• The ceiling spines and lighting rafts will be designed to allow the future fitting of chilled water pipework, which can then be connected to appropriate cooling terminals.

Incoming Electricity
The primary means of power supply to the site will be via the Regional Electricity Company main. A system of low voltage distribution panels and cabling will be provided to distribute low voltage power around the complex and service building, to serve local distribution boards and plant.

Low voltage power will be distributed to the building from a low voltage switchpanel in the LV switchroom at basement level. The panel will consist of a number of cubicles. Outgoing ways from the panel will be protected by moulded case circuit breakers (MCCBs) rated for their applications.

Lighting Control
Lighting controls will be installed to provide a flexible approach to lighting levels and energy control. All ballasts installed in tenant areas will be dimmable ballasts, such that the system can be extended if required.

A control system will be used to control all of the lighting in the building, not simply the tenant areas. The system will also be able to control the external lighting, and any architectural lighting, via an integral timeclock and/or ambient illuminance control.

Structured Cabling System
The raised floor system will allow for full flexibility for fit out. The tenant can install all required wiring systems for his use in the office space.

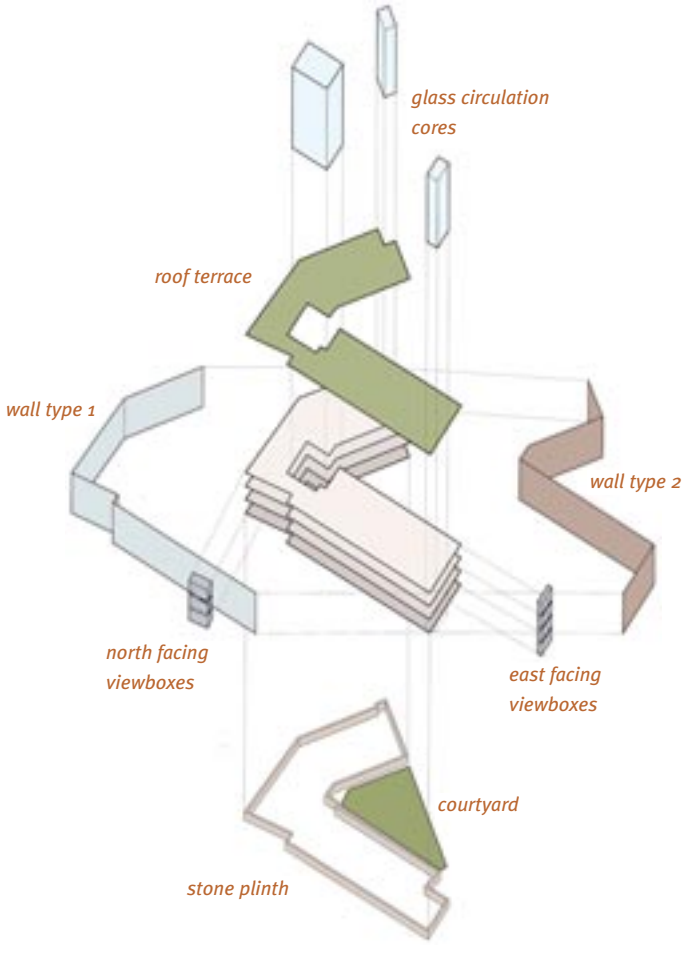
Containment will be provided from the communications room to the risers and within the risers, and this will allow the flexibility for major high speed links to the international network.

Service Charges
We have designed the building to have low service charges when compared to conventional inner city developments. This has been achieved through the careful design and integration of the building and fabric. An important aspect of the operation of the building will be an agreement between the management team and tenants.

Maintenance
The building systems are low maintenance. We have reduced the amount of maintainable plant and equipment, when compared to a conventional institution design. The number of moving parts are minimised, and the plant is located in easily accessible positions. Plant requiring replacement is kept to a minimum, and plant will be selected for efficiency and reliability.

Energy
The building has a low energy consumption which is inherent in its design. We have designed the systems to have monitoring installed for localised billing if required, and this can be applied to individual tenancies. Monitoring will also allow the tenants to control their own energy charges. Education is important for the users, and the user operating instruction will be a high priority in training users to manage their systems efficiently.

Water Charges
The use of rainwater collection and low water usage appliances will ensure that water charges are kept to a minimum. The education of users will also ensure that they are informed of their consumption, and taught how to manage usage.



2.4 Exterior Walls

The skin of the workspace is designed to provide maximum comfort for its occupants. Two wall types have been designed that reflect the potential of the sun path and local climate. Since the best urban solution for the massing does not have a direct north-south orientation, the facade design had to respond to variable conditions. The only moving parts needed are those that can be operated directly by building occupants for ventilation purposes.

North

Northeast and northwest facade factors to consider for design:

- because of floorplate depth, need for deep reflected natural light
- need for comfort ventilation during summer
- early morning light year round
- late day light year round
- very low direct solar orientation

Wall Type 1

This facade is composed of a series of vertical timber glare protectors from the early and late sun, and has a vertically expressed Linit U-glass panel at the spandrel that maximises northern ambient natural light. The linit panel is capped with a timber sill. The vision glass acts as an “air window” that contains the sun’s heat and channels the air into the Termodeck. Within the air window is an operable blind that can be used to further protect from brightness and heat gain. The prefab wall assembly and its associated vertical fins can be made in a variety of compositions to avoid a relentless facade, appearing more as a texture of timber shadows on glass.

South

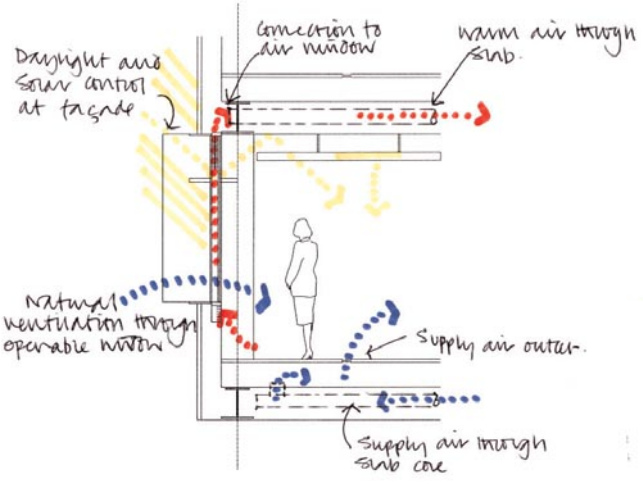
Southeast and southwest facade factors to consider for design:

- because of floorplate depth, need for deep reflected natural light
- need for comfort ventilation during summer
- prolonged solar exposure through middle of the day, year round

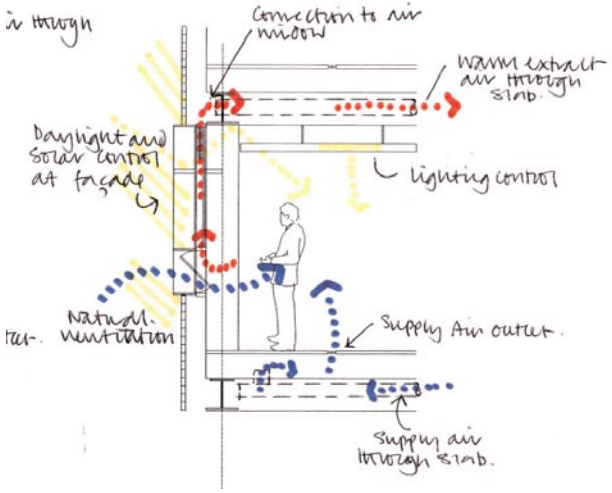
Wall Type 2

This facade is composed of a series of horizontal timber louvers that protect from the strong solar gain of the midday sun. At the spandrel it has prefabricated timber panels of locally sourced timber. The vision glass acts as an "air window" that contains the sun's heat and channels the air into the Termodeck. Within the air window is an operable blind that can be used to further protect from brightness and heat gain. The horizontal louvers are placed in a patchwork across the facade with critical shading datum lines providing horizontal continuity

Wall Types details on the following two pages.

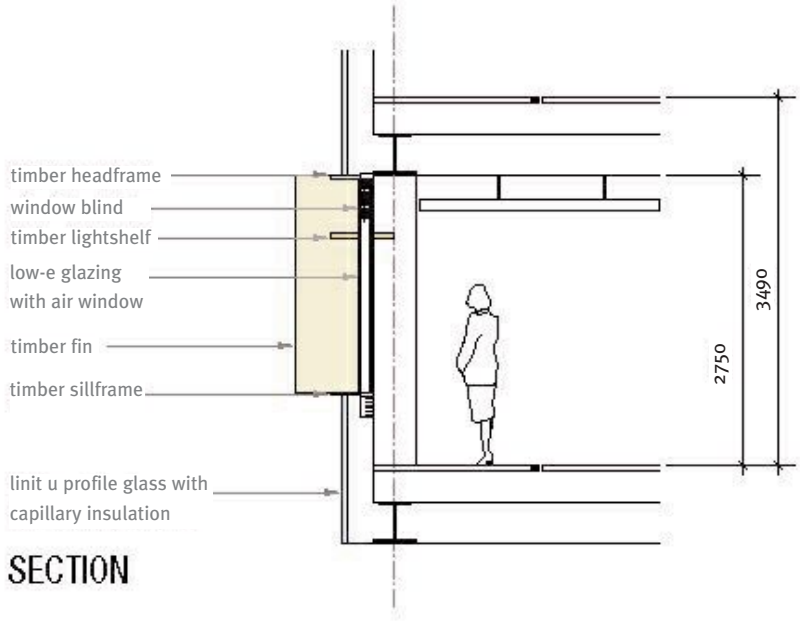


Wall type 1: glare protection / vertically expressed / street-facing skin



Wall type 2: solar shade / horizontally expressed / courtyard-facing skin

ELEVATION



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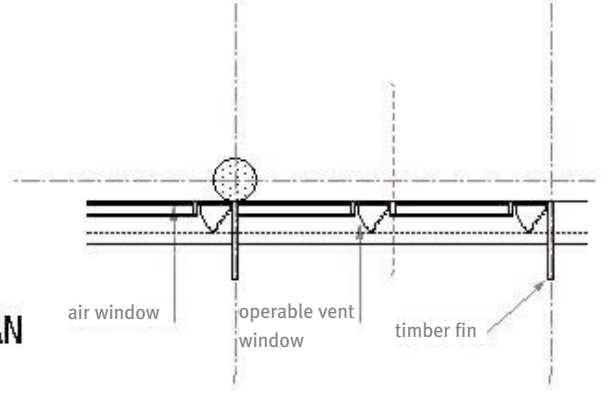
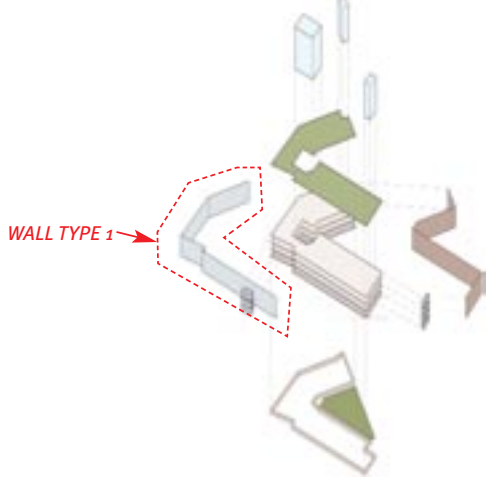
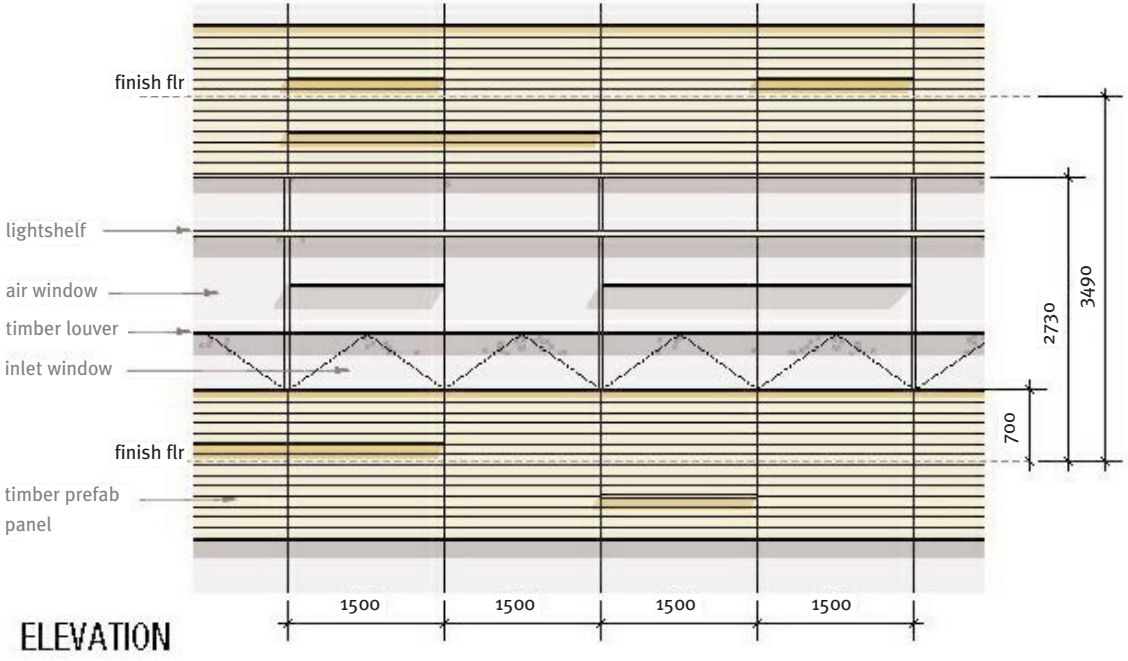


PLAN





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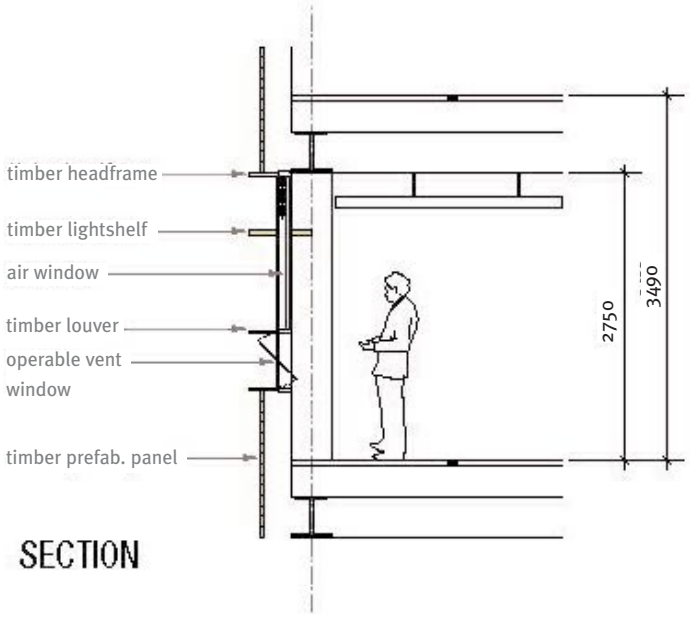

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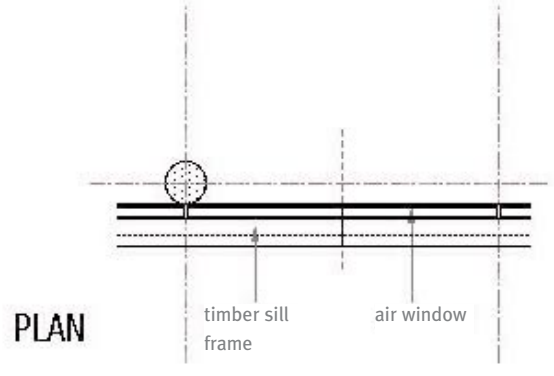

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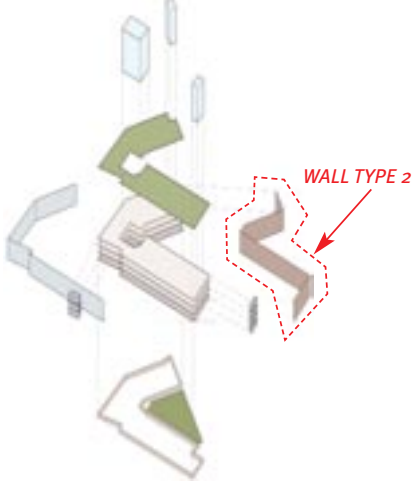


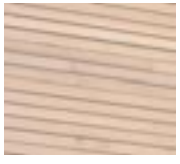


"Many commercial buildings now have a substantial cooling requirement throughout the year as a result of increasing use of computers, printers and photocopiers." - Jacqueline Glass

2.5 Materials

Introduction

Several issues should be considered when selecting materials sensibly. Two critical categories of evaluation are (1) environmental impact of material sourcing and (2) transport (embodied energy). Others include:

- emissions of CO_2 during production or as embodied energy
- distance of travel of materials (and method of travel)
- destination of material after buildings life (re-use or recycling is best)
- life span of the material
- impact of materials production
- nature of the resources involved (renewable is best)

Structure

Steel

The building structure is made up of a reclaimed steel structure sourced from local building demolition.

Concrete: FES and Recycled Aggregate

Concrete provides sufficient thermal mass or fabric energy storage (FES). Concrete surfaces in the ceiling are exposed to allow heat exchange with the volume and surrounding surfaces, absorbing heat gains from occupants and equipment. This is an effective passive solution. The precast panel is composed of recycled aggregate. Contact has been made with a company called Lafarge, which has an impressive track record of quarry restoration, and energy saving, minimal environmental impact, community projects. Lafarge has recently opened a new canal wharf near Wakefield that has been praised by the Transport Minister. Thus, transport emissions would be minimal. In this case the precast panels use recycled aggregate and industrial waste products as part of the mix to reduce quarrying and haulage.

Termodeck

Termodeck is used as a hollow precast concrete ceiling plank through which tempered air may be pumped. Exceptionally energy efficient, it combines the benefits of a heavy thermal mass with the flexibility and control of a mechanical ventilation system. The energy consumption is less than 50% of an equivalent air-conditioning system.

As Termodeck requires a sealed and insulated building, it also helps to cut out noise. The system works by pumping air at low velocity through the concrete at 19C in the summer and 22C in the winter. It then circulates in the room below before returning via corridors to a heat exchanger and exhaust (see diagram). The system does not recirculate air – eliminating one of the major causes of "sick building syndrome". Termodeck demands an exposed structure, therefore the installation and maintenance of finishes is reduced. In addition to the reduced energy consumption, another advantage is that the estimated combined annual capital and running cost of the system is about 60% of an equivalent conventional air-conditioned system. And the need for plant is much reduced: the size and capacity of air handling plant, ductwork and airflow rates are all reduced by about 70%.

"The design of a building as a whole cannot easily be separated from the choice of materials and components which will go into it. Their selection influences design and performance profoundly."
- A Green Vitruvius

Exterior Cladding

Recycled Glass

In order to provide the maximum daylighting possible without hindering passive cooling and heating strategies, it was believed that a floor-to-ceiling glass office facade could be simulated with glass in the spandrel condition as long as it was insulated transparently. Daylight manufactures a product called Linit U-profile glass which is produced by combining pure silica sand with carefully graded cullet (recycled glass). Simply on the basis of raw materials used in manufacture, sand, sodium chloride, and lime, glass is an extremely environmentally friendly construction material. Glass cullets which are derived during manufacture are recycled within the plant, while additional cullets are sourced from glass recycling concerns. An Okapane capillary honeycomb insulation is used to enhance light transmission. This also provides significant solar control.

Timber

Wood is light, durable, easy to work, and beautiful. It is also a renewable energy resource, if sourced from properly managed forests. Panter Hudspith has recently contacted local suppliers of wood with a good environmental track record. Thus, sourced nearby, transportation energy could be reduced. TImber is also a low maintenance cladding material.

Stone

The base of the Carmelite Street workspace provides an earthen-based environment that contains the internal courtyard and protects the building at street level. The building appears to rest on a stone plinth. The plinth could be composed of recycled local stone with random finish to provide a rich texture adjacent to the pavement. Louver zones could be integrated into the stone pattern to ventilate the carpool parking and cycle parking zone.

2.6 Construction

Prefabrication
It is our intention that the construction process for the Carmelite Street Offices will make use of dry off-site fabricated components wherever possible. This will be possible for the structural frame, precast floor panels, cladding assemblies and cores. Off-site fabrication shortens the amount of construction time on site and has benefits in energy use and safety.

As part of our research we have made contact with local suppliers of preassembled components such as Yorkon. Continuing this research could form an integral part of the design process for the building.

The successful use of reclaimed materials also requires careful planning to address issues and to ensure the availability of sufficient materials.

Essential to all concerns regarding prefabrication is consideration of fabricating locations, as the shortest distance to site for lorries is the most environmental.

Labour
We would encourage the use of local labour and businesses wherever possible in the construction of the building. This issue could also be addressed at an early stage in the design process to make sure the building capitalises on locally available materials and construction methods. See the Procurement section on the following page for more on this.

2.7 Procurement

Local Sources of Materials
Where possible the design has been developed with local materials in mind. Ultimately the contractor partner will be asked to ensure local suppliers, within a defined radius of the site, are used in the first instance, and only when resources have been adequately explored should the search area for materials be expanded.

Local Labour Initiatives
CDP uses local labour initiatives in the majority of its construction contracts. These initiatives stipulate that the

contractor should use local sub-contractors wherever possible and that the local sub-contractors and the main contractor should actively encourage the employment of local people. CDP also stipulates a minimum number of training places to be provided for trades such as bricklaying.

The success of local labour initiative schemes often relies on the Local Authority keeping updated registers of local subcontractors and available construction staff together with effective "policing" by the employer. These schemes can nevertheless be very successful in providing not only jobs but a better sense of ownership by the local community because of local involvement in the construction.

CDP has already had preliminary discussions with the Council's economic development department who would be very keen to assist in relation to local labour initiatives.

Contractor Partner
CDP believes in the non-confrontational partnership approach epitomised by Egan & Latham. CDP would look to select a contractor partner as early as possible in the design development process to benefit from the contractor's input and the input of his specialised sub-contractors.

There may be some conflict with trying to utilise local sources of materials and labour if the contractor already has established supply chain partners for items such as steel etc. These problems should, however, be capable of resolution.

Time and effort will be required in selecting the correct type of contractor partner. It is imperative that the contractor totally supports the environmental ideology behind the proposed building and is willing to work with the design team on items such as waste reduction strategies to ensure that the construction is as environmentally friendly as possible.

2.8 Conclusion

BREEAM Assessment
We have reviewed the key criteria under the BREEAM Assessment, and we believe our initial appraisal has indicated that the building design will receive an EXCELLENT score against these criteria. The building scores well in each of the key criteria, and should be regarded as an exemplar model for speculative commercial buildings.

A major proportion of the credits will arise from the management of the building and its maintenance regime,

BREEAM Assessment Criteria

Criteria	Available Score	Target Score
Management	150	120
Health and Well being	150	126
Energy	208	120
Transport	120	72
Water	48	48
Materials	104	64
Land Use	32	24
Ecology	80	72
Pollution	154	112
BREEAM Totals	1046	756

and these requirements will need to form part of the agreements with the tenant. We expect a management agreement to be put in place between the landlord and the tenants to enforce this. This will cover such items as:

- Facilities for and monitoring of recycling.
- Input into the energy monitoring and auditing process.
- Acceptance of the full maintenance regime which will be put in place to operate the building and its systems.

As an initial informal assessment, the above table summarises the key target areas, and sets an appropriate target score against each area.

Reducing the Eco-footprint

All our consumption of energy and materials can be converted to an area of biologically active land required to produce it sustainably. This forms the basis of the emerging discipline of eco-footprinting.

A conventional office requires around 600-1000 m^2 of the planet's surface to provide it with energy and paper.

We have calculated that our proposed offices require only 274 m^2 if using conventionally generated electricity – meeting our target to reduce our eco-footprint by two-thirds, so that we can live off one planet. We can further reduce the office footprint to only 106 m^2 by buying only green electricity generated by wind power, as offered by companies such as Ecotricity.

BREEAM Analysis Schedule

Carmelite Street, York

	Issue	Comment	Possible Score	Building Target Performance
1.00	**Management**			
1.01	Where evidence can be provided showing a client commitment to a firm commissioning period prior and immediately post occupation of all services within the building.	A separate period for commissioning to ensure that the systems are fully commissioned and put to work will be shown as part of the construction programme.	30	30
1.02	Where there is an established and openly available company policy on the environment. This should include the following as a minimum requirement:- - Define the scope of the policy covering all issues within BREEAM - Action Plan - Responsibilities and nominated people - Strategic and short-term targets - A commitment to be reviewed annually - A commitment to report internally, and preferably externally, the results of review and performance	Tenant/landlord agreements	30	30
1.03	Where there is a verifiable environmental purchasing policy at a corporate level and is demonstrably in use at a local level.	Tenant/landlord agreements	30	30
1.04	Where a verifiable environmental management system (formal or informal) is in operation.	Tenant/landlord agreements	30	30
1.05	Where building operating manuals are available on site.	To be incorporated into contract / management requirements	30	30
Totals for Section			**150**	**150**

Management	Max Credits
Section deals with commitment to long term environmental policy. The occupier will be expected to meet the commitments outlined	150

2.00	**Health and Well-being**			
2.01	Where cooling towers locations are designed to allow ease of access to filters / drip trays etc. for cleaning / replacement or no cooling towers	No cooling towers	6	6

Health and Well-being	
Section refers to air intakes/cooling towers openable windows, views and air quality and control. The new building meets most of the criteria, although being relatively deep, does not meet some of the window access criteria.	150

2.02	Where domestic hot water systems have been designed or actions taken to minimise risk of Legionellas.	Local hot water generation using gas fired boilers	6	6
2.03	Where at least 30% of windows to office areas are openable. This should have an even distribution around the office area.	See architects drawings. Target 20% opening windows.	6	4
2.04	Where there is no / steam humidification.	Space only, with heat wheel recovery	6	6
2.05	Where air intakes / outlets are over 10 m apart to minimise recirculation and avoid sources of major external pollution.	Intake/extract within 10 m but designed to avoid external pollution, located at roof level.	6	4
2.06	Where either: - at least 30% fresh air is provided in a/c mech vent systems. - or trickle vents are provided in naturally ventilated buildings.	30% minimum is supplied	6	6
2.07	Where at least 80% of net lettable office area is adequately daylit.	Office too deep for 80% adequate daylight, but office at least 60% daylit.	6	4
2.08	Where controllable internal or external blinds are fitted to prevent glare.	Internal blinds as part of fit out	6	6
2.09	Where high frequency ballasts are installed in all general office luminaires.	HF ballasts to be included	6	6
2.10	Where lighting meets BCO Specification for Offices recommendations in terms of lighting levels.	Lighting levels to 350 lux	6	6
2.11	Where control of lighting in office areas relates to circulation space, daylighting and is broken down to provide separate control for groups of no more than four work areas.	Daylight control to perimeter and group control	6	6
2.12	Where all workstations have view out with max. 7 m to windows.	Deep plan offices ⇢ 7.0 m	6	0
2.13	Where local control is available for temperature in office areas.	Vents can be controlled	6	6
2.14	Where cooling towers / systems are designed in accordance with HSG70 & TM13 or no cooling towers.	No cooling towers	6	6
2.15	Where assessments have been made of thermal comfort levels at design stages and used to evaluate appropriate servicing options.	Design development in conjunction with client/brief	6	6
2.16	Where design achieving ambient noise levels below: - 40 dB LAeqT in small offices. - 45 dB LAeqT in large offices.	Design for < 40 dB, with windows closed	6	6

2.17	Where there is an established and operational policy to operate maintenance schedules covering all systems including regular checking of controls, filters and cleaning in compliance with HVCA Standard Maintenance Specification for Mechanical Services in Buildings. - Heating / cooling systems. - Ventilation / humidification systems - Lighting systems - Domestic hot water systems (dhws)	Tenant/landlord agreements. Maintenance agreements and operating requirements given in specification documents 6 6 6 6	 6 6 6 6	
2.18	Where safety survey of dhws has been carried out and appropriate steps taken to minimise risks within last three years or building is less than three years old. where building < 3 years old design to TM13.	Design to TM13.	6	6
2.19	Where smoke ban is in effect.	Client Building Management Team	6	3
2.20	Where maintenance schedules include high performance cleaning of carpets and soft furnishings with steam or liquid nitrogen cleaning at least once a year.	Client Building Management Team	6	3
2.21	Where procedures operate for the collection and recording of occupant feedback and comparisons are made to historical data.	Client Building Management Team	6	3
2.22	Where important targets relating to occupant satisfaction are in place.	Client Building Management Team	6	3
Totals for Section			**150**	**126**

3.00	**Energy**			
3.01	Total net CO_2 emissions will be predicted. credits given based on scale below: The Total net emissions as follows: - CO_2 emissions 160 - 140 kg/m^3/yr - CO_2 emissions 139 - 120 kg/m^3/yr - CO_2 emissions 119 - 100 kg/m^3/yr - CO_2 emissions 99 - 90 kg/m^3/yr - CO_2 emissions 89 - 80 kg/m^3/yr - CO_2 emissions 79 - 70 kg/m^3/yr		 8 16 24 32 40 48	 32

Energy
The energy study shows an overaalll CO_2 production level of below 90 kg/m^3.

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	- CO_2 emissions 69 - 60 kg/m^3/yr - CO_2 emissions 59 - 50 kg/m^3/yr - CO_2 emissions 49 - 40 kg/m^3/yr - CO_2 emissions 39 - 30 kg/m^3/yr - CO_2 emissions 29 - 20 kg/m^3/yr - CO_2 emissions 19 - 10 kg/m^3/yr - CO_2 emissions 9 - 5 kg/m^3/yr - CO_2 emissions 4 - 0 kg/m^3/yr - CO_2 emissions ⇦ 0 kg/m^3/yr		56 64 72 80 88 96 104 112 120	
3.02	Where sub-metering is available for substantive energy uses within the building covering lighting and each of the following where present: - Computer Room - Catering Facilities - Humidification Plant - Cooling Plant - Fans	Sub metering flexibility to be allowed for in base design.	8	8
3.03	Where check-metering of tenancy areas (in multi-occupant buildings only) or where single tenancy.	Sub metering flexibility to be allowed for in base design.	8	8
3.04	Where energy policy is endorsed by Board and available to staff in accordance with GPG 186.	Tenant/landlord agreements	8	8
3.05	Where an energy audit of building is carried out at least every three years.	Tenant/landlord agreements	8	8
3.06	Where there is quarterly dissemination of information on energy use and savings.	Tenant/landlord agreements	8	8
3.07	Where energy/CO_2 monitoring is carried out using historical data.	Tenant/landlord agreements	8	8
3.08	Where energy/CO_2 targeting is carried out using historical data.	Tenant/landlord agreements	8	8
3.09	Where evidence is available showing movement to energy/CO_2 targets over time.	Tenant/landlord agreements	8	8
3.10	Where actual energy consumption figures are less than established good practice benchmark levels.	To be confirmed during	8	8
3.11	Where there are established and operational maintenance schedules covering calibration and operation of all heating and cooling system controls. Full maintenance records should be available.	Tenant/landlord agreements	8	8

3.12	Where there are established and operational maintenance schedules that cover regular cleaning of lighting installations (at least every two years) and phased replacement of luminaires in line with best practice. Full maintenance records should be available.	Tenant/landlord agreements	8	8
Totals for Section		**208**	**120**	

4.00	**Transport**				Transport
4.01	Total net CO2 emissions arising from transport to and from the building will be predicted based on location. Credits given based on scale below: Total emissions net as follows: - RURAL location with TYPICAL public transport connections - SMALL TOWN location with TYPICAL public transport connections - TOWN / SMALL CITY location with TYPICAL public transport locations - URBAN CONURBATION location with TYPICAL public transport connections - NATIONAL TRANSPORT NODE location with TYPICAL public transport connections - Where public transport connections are GOOD and car parking in the area is restricted by at least 20% from the LA standard	 16 24 32 48 64 16	 48		120
4.02	Where provision of cycling facilities: Sheds, Showers and changing facilities.	See Architects layouts	8	8	
4.03	Where policies and actions taken to encourage the use of public transport for commuting to and from the site (passes/ loans etc) and to discourage the use of the private car.	SWENDA / DETR	8		
4.04	Where policies and actions have been taken to encourage the use of public transport and to discourage the use of the private car for business travel.	SWENDA / DETR	8		
4.05	Where good access to public transport networks 500 m and with a 15 min service frequency to local urban center	Yes	8	8	
4.06	Where good access to public transport networks within 500 m and with a 30 min service frequency to major transport node.	Yes	8	8	
Totals for Section			**120**	**72**	

5.00	**Water Consumption**				Water Consumption
5.01	- Where predicted water consumption is 20 - 10 m^3 per person per year - Where predicted water consumption is 9 - 5 m^3 per person per year - Where predicted water consumption is <5 m^3 per person per year	6 12 18	18		
5.02	Where a water meter is installed to all supplies to building.	Water meter on main supply to development	6	6	
5.03	Where a leak detection system is installed covering all mains supplies.	Water metering and pressure monitoring to check for leaks	6	6	
5.04	Where a proximity detection shut off is provided to water supply in toilet areas.	Use of infrared controls	6	6	
5.05	Where there are established and operational maintenance procedures covering all water systems, taps, sanitary fittings and major water consuming plant. Full maintenance records should be available.	Requirements included in specifications. Agreement between landlord and tenant.	6	6	
5.06	Where water consumption monitoring is carried out at least once every quarter using historical data	Water meter/monitoring on BMS	6	6	
Totals for Section			**48**	**48**	

6.00	**Materials**				Materials
6.01	Where there is no asbestos in structure, services, lifts, etc. or where asbestos survey has been carried out and all asbestos either removed or contained and identified with H&S plan.	No asbestos. New building	8	8	
6.02	Where presence of dedicated storage space for materials either within building or on site skips with good access for collections (2 m^3 per 1000 m^3 up to 10 m^3 max)	See basement layout for information.	8	8	
6.03	Major building elements will be evaluated against the specifications set out in the Green Guide to Specifications as follows: - Where at least 80% by area of upper floor slab specifications achieve an 'A' overall rating - Where at least 80% by area of external wall specifications	Architects Spec.	8 8		

104

	achieve an 'A' overall rating - Where at least 80% by area of roof specifications achieve an 'A' overall rating - Where at least 80% by area of windows specifications achieve an 'A' overall rating		8 8		
6.04	Where timber for key elements including structural timber, cladding, carcassing, internal joinery is specified to come from sustainably managed sources.		8		
6.05	Where specifications of timber panel products use only timber that complies with above requirements. This relates specifically to plywood and other composite timber doors.		8		
6.06	Where there is reuse of > 50% of existing facades.	8			
6.07	Where there is a reuse of > 80% major structure by building volume.		8		
6.08	Where there is use of crushed aggregate or masonry for use in structure, slabs, roads etc		8		
6.09	Where there is corporate policy endorsed at Board level and operational procedures for the collection and recycling of office consumables. Should cover paper, printer cartridges, toner cartridges, plastics.	Tenant/landlord agreements	8	8	
6.1	Where there is information on presence of hazardous materials available for staff and contractors.	Tenant/landlord agreements	8	8	
Totals for Section			**104**	**32**	
7.00	**Land Use**				Land Use
7.01	Where the site has been previously built on or used for industrial purposes within the last 50 years.	By bioregional/Pha	16	16	32
7.02	Where land is 'contaminated' and where adequate steps have been taken to contain or clean the site prior to construction. Evidence of survey and consultants report demonstrate targets to be achieved.	By bioregional/Pha	16	8	
Totals for Section			**32**	**24**	

8.00	**Ecology**				Ecology	
8.01	Where land has been defined as of low ecological value	By bioregional/Pha	16	8		80
8.02	- Where change in ecological value of site is minor and negative - Where change in ecological value of site is neutral - Where change of ecological value of site is minor and positive - Where change in ecological value of site is significant and positive	By bioregional/Pha	16 32 48 64	48		
8.03	Where seeking and acting on advice from Wildlife Trusts (AWTC) or a member of IEA on enhancement.	By bioregional/Pha	8	8		
8.04	Where contract specification ensures that all trees over 100 mm trunk dia, hedges, ponds, streams etc are maintained and adequately protected from damage during construction works.	By bioregional/Pha	8	8		
Totals for Section			**80**	**72**		
9.00	**Pollution**	Pollution				
9.01	Where refrigerant type has ODP of zero or no refrigerants	Only DDP=0 will be specified	14	14		154
9.02	Where presence of refrigerant leak detection system covering high risk parts of plant (coil can be omitted from this) or no refrigerants.	No refrigerant in base build	14	14		
9.03	Where provision of automatic refrigerant pump down to coil or storage tanks with isolation valves or no refrigerants.	No refrigerant in base build	14	14		
9.04	Where absence of Halon based fire fighting systems.	No Halon to be incorporated	14	14		
9.05	Where burners in boiler plant (except standby) have maximum NOx emission levels as follows: Where emissions are 200 - 100 mg/kWhr delivered heating energy Where emissions are 99 - 70 mg/kWhr delivered heating energy Where emissions are 69 - 40 mg/kWhr delivered heating energy Where emissions are ⟵40 mg/kWhr delivered heating energy		 14 28 42 56	14		
9.06	Where site facilities reduce potential for run off to natural watercourses and/or municipal watercourses by 50% and where on site treatment such as oil interceptors/filtration is present.	Sustainable drainage and retention. Rainwater collection for use in WCs	14	14		
9.07	Where specification of insulants avoids the use of ozone depleting substances in either manufacture or composition	To be excluded by specification	14	14		

9.08	Where there is an established and operational policy to operate maintenance schedules covering BOILER/BURNER systems inc	Maintenance regime and agreement between landlord and tenant.	14	14
Totals for Section			**154**	**112**

Sum points achieved in each column assessed	
496	**Total Building Score**

		1046	**756**

398	**Total number of points achieved "Design and Procurement"**
758	Maximum possible score

200	Pass
300	Good
380	Very Good
490	Excellent

364	Total number of points achieved "Management and Operation"
770	Maximum possible score

160	Pass
280	Good
400	Very Good
520	Excellent

3.0 The New Office

3.1 Flexibility

The Carmelite Street workspace will provide the capability of multi-faceted occupation. With an easily divided floorplate into 2 segments of approximately 6,000 ft², an office depth of 15 meters, a centralised core, and an almost column-free workspace, the possibilities of work-based occupation are numerous. As stated earlier, services have been designed to accommodate the maximum flexibility of a tenant's needs and desires.

Flexibility within each Segment
The ceilings to the office areas are flat concrete soffits which make subdivision of the office areas simple and flexible with minimal impact on service runs. This enables office layout to develop and respond to the changing requirements of tenants in an economical way.

Providing businesses with a working environment that can respond to the changing demands of the business is a key factor in the overall success of the business.

The workspace must also respond to the needs of people when they are at work in order to reduce the stress caused by spending all day away from home life. Provision should be made for people to interact with colleagues, as they eat, rest, play and work. The extent to which these facilities are needed depends on the type of business, however it is likely that the variety of functions within all working environments is to increase in the future.

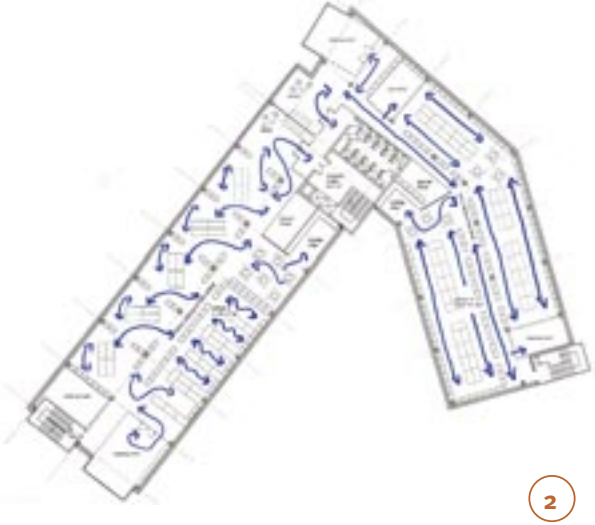
The following page indicates several possible means of tenant occupation within the Carmelite Street Offices.

1

office layout option 1

office A: IT office / data company
open plan, max. density

office B: product manufacture /
showroom and offices
open plan, minimum density



2

office layout option 2

office A: corporate design company
open plan, medium density

office B: market research company
open linear plan, medium density

3

office layout option 3

office A: information design offices
open plan, low density

office B: law firm
cellular plan, medium density
with open plan administration support

"Innovation in office design starts from the inside and works its way outwards, changing not only the building shell but its relationship to the city" - Francis Duffy

3.2 The Social Office

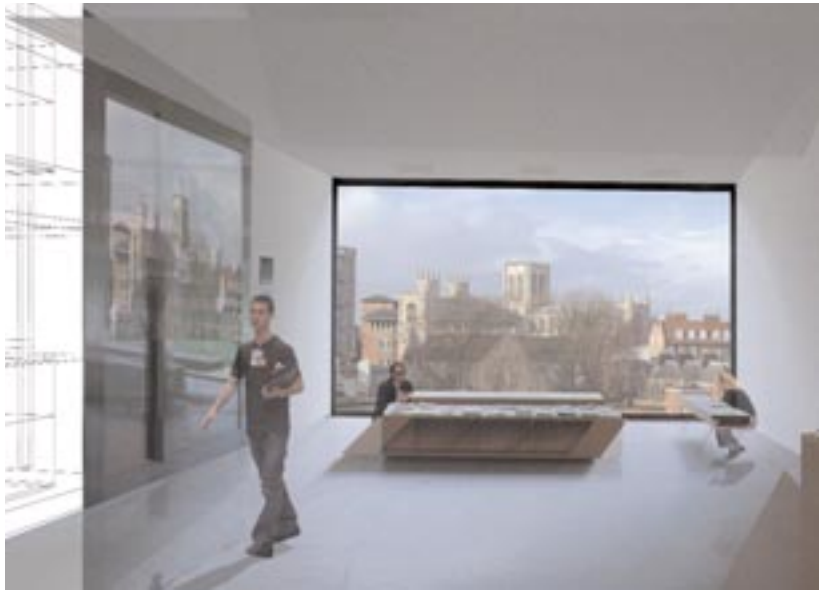
For the Carmelite Street Offices we propose a series of spaces inside and out by which occupants may engage with one another in a setting atypical to the workplace. These spaces provide relief from the cubicle-based workspace. Furthering the belief that domestic and commercial spaces continue to blur in predominantly urban environments.

Viewboxes
Each office floor has two distinct spaces dedicated to a view. These are placed in connection to significant landmark features in the environment. One creates a visual link with the Minster while the other provides a view towards St. Mary's Church and the Foss Bridge. The Viewboxes extend from the building shell and provide a large window. This space can be modified according to the kind of office environment each tenant wants.
One tenant might use it as a client meeting room, another as a break-out collective work space, and yet another as a working "living room" complete with soft furniture and high-tech media.

Greenspaces
Essential to a successful workplace in the 21st century is a connection to nature. Our proposal makes the natural spaces central to occupants' use by providing it in immediately adjacent spaces such as the roof and the ground. A courtyard is created by the inside faces of the office in conjunction with the existing car park structure. This landscaped environment receives some daylight, though its solar potential would be enhanced with subsequent re-planning of the car park. The intent was to provide a collegiate-like environment that presented an escape from traditional sterile corporate squares commonly associated with workplaces.

A roof terrace is provided as a landscaped space with stunning views of York from 16 meters in the air. The roof terrace is complete with several elements supporting the "circular metabolism" of the building, such as composting, photovoltaic cells, and rainwater collection.

The existing car park wall is partially "clad" in vegetation. Supporting wires allow ivy to grow, in a controlled way, along the courtyard facade of the car park. This transforms the internal courtyard into a three-sided nature-based environment made up of timber, stone, and a tapestry of creeper.



View towards Minster from north-facing office "viewbox" window

View out of typical office floor showing vertical glare fins on exterior and services beam on exposed slab

Courtyard View

3.3 Services and Interior

For the Carmelite Street Offices we propose a base office environment that provides an exposed slab ceiling from which an integrated service spine located above the corridor links lighting and air. This provides occupants with an innovative environment free of the traditional ceiling-hung panels.

The beams linked to the central spine are multi-service chilled beams. The beam casing is sized to incorporate other service functions. The cooling element (if desired) is set alongside downlighters and would be designed such that the heat from light fittings assists the air flows. As a prefabricated service unit, the beam can incorporate coordinated service runs including fire detection, sprinklers, computer cabling, mains electrics, etc.

Data and electricity is integrated into a raised floor cavity and accessible at select points from a floor access panel. High-speed internet (ADSL) as well as computer networking data plugs will make this a critical resource.

3.4 Amenities

Carpooling

The Carmelite Street Offices will provide, at semi-basement level, 10 car spaces dedicated to shared use for office occupants. This promotes use of public transport when possible, and reduces use of automobiles unnecessarily. For example, a meeting outside of the office involving several employees would be an ideal moment to have a shared car used for short-distance transport. Four car parking spots could be used for electric cars with electricity supplied from photovoltaic cells on the roof terrace.

Cycles

Promoting cycling to work is both a solution to a “healthy office” as well as a “healthy” planet. Over 100 cycle parking spots are provided including 14 cycles used as a “cyclepool.” The cyclepool could be utilised for individual employees making short-route office-related trips and re-introduce employees to the benefits of cycling.

Showers / Lockers

Adjacent to cycle parking are showers, lockers and changing facilities. This provides employees with a valuable resource in the working environment in its promotion of health and activity.

Future Basement Uses

The semi-basement could benefit from natural light and provide alternate commercial uses in the future if the carpool becomes unviable. Also, a more direct link with the courtyard space could be established if that would promote activity within the new semi-basement use.

4.0 Marketing and Finance

4.1 Marketing

Introduction

Before any detailed design work was commenced CDP wanted to appoint commercial letting agents to provide detailed knowledge of the York office market. CDP appointed FPD Savills who are based in Micklegate. Advice from FPD Savills is enclosed in Appendix 1 with a summary as follows.

- Carmelite Street is a good location and is set to improve.
- The accommodation is well designed offering optimum letting flexibility.
- Proposed M & E specification should be well received by office occupiers.
- First speculative development with dedicated showers and locker facilities.
- Acceptable parking provision.
- Competing office schemes generally out of town.
- Rental expectations in excess of £14psf.
- Investment yield in the range of 7.5% -8.25%.
- Demand for space in the range of 2,500-27,000ft^2.
- Tenant requirement for flexible lease terms.
- Allowance required for rent free/incentive packages.
- Acknowledgement of the quality working environment to be created.

One important factor that FPD Savills did not emphasise enough is that the marketing and success of the Carmelite Street site will be greatly influenced by the timing and content of the Land Securities/Evans of Leeds Hungate proposals. In particular the Local Authority's requirement for 150,000sqft of offices on the Hungate site and the levels of parking that the proposed buildings will include. CDP have a close working relationship with senior personnel within Evans of Leeds responsible for the project. This relationship is likely to prove advantageous if CDP were selected as development partner by the Foundation.

FPD Savills have emphasised the need to keep service charge costs to a minimum particularly in a multi let building. This particular point has been laboured by CDP to the design team from the outset and the proposed building, particularly with regard to M&E, reflects this requirement.

CDP have relied heavily on advice from FPD Savills in formulating proposals for the proposed building. Where appropriate this has been supplemented by details learnt from CDP's meeting with the Chief Executive of the Inward Investment Board and the Council's Economic Development Unit. Both these organisations were very encouraging particularly in relation to the building's environmental policy and car parking provision.

4.2 Financial

Institutional Investment Interest / Management

The Competition Brief requires both a residual site value for the Foundation's freehold and running yield for the Foundation based on a site value of £1m. In order to calculate the former and help in comparing the running yield to alternative investments one needs to look in detail at the investment market.

The building proposed for Carmelite Street incorporates some highly innovative ecological measures which to date have tended to be included in only bespoke owner occupier buildings and not speculative buildings. CDP are nevertheless confident that if the Foundation did not wish to retain the investment then the proposed building would be of interest to institutional investors. Through Arups the investment has already been discussed with Morley Fund Management who now recognise the importance of ecological issues. Morley, for example, subject their acquisitions to a BREEAM audit and all developments since 2000 have been certified with a "good" rating. Given their interest it is CDP's belief that the building could become a "trophy" building for some of the more forward thinking institutional investors.

It is important that the investor owning the building understands the building's ethos and is supportive of it. For example, whilst provision has been made for space for chillers for tenants to air-condition their units the investor must be prepared to expend time and energy and try to educate the prospective tenant to consider occupying their premises without the need for air conditioning. Active management is also required from the sympathetic investor to ensure the building functions as it was designed to do so, for instance if the showers are not maintained to a high standard of cleanliness then individuals may be discouraged from cycling and encouraged to use their own private motor vehicles.

Commentary on Appraisal Items

Set out below is a commentary on the various elements used in the appraisals enclosed at the end of this section.

Office area

The net office area is 46,010 ft². The basement includes showers, water collection areas, etc that would not normally be provided in a speculative building. Excluding all of the basement accommodation the gross area is 54,139 ft² which produces a building with a very good net/gross ratio of 85%.

Office Rent, Yield and Incentive Packages

FPD Savills advice anticipates rentals in excess of £14psf. The appraisals have been undertaken using a rental of £14.50psf.

FPD Savills felt the appropriate investment yield should be between 7.75% and 8.25%. The appraisals have been undertaken using a yield of 8%.

The rent free and incentive packages are based on advice from FPD Savills and CDP's experience of similar schemes.

Surveys

The Competition Brief recommends the need for on site investigative works and an allowance of £60,000 has been included.

Building Cost/Contingency

Enclosed in Appendix 2 is the cost report produced by Walfords Quantity Surveyors.

The Quantity Surveyor advised the range of cost values was £4,420,000 to £4,885,000. CDP utilised a construction figure of £4,500,000.

In addition to the Quantity Surveyors contingency, CDP have included a 5% contingency.

Professional Fees

An 11% professional fee allowance has been included as the Walfords costs specifically exclude any professional fees payable under the Building Contract.

Other Costs

Legal fees, agent fees and promotion costs are based on CDP's experience of similar projects.

An allowance of £100,000 has been included as a commuted parking sum. The development relies on a provision for 4 electric cars and space for parking 10 additional vehicles. The reaction of the Local Planning

Authority has been very encouraging to this idea but until the matter is discussed in detail the exact commuted sum cannot be calculated, hence the inclusion of an allowance of £100,000.

Construction Finance
Current interest rates are 4%. CDP would expect to pay 2% over base rate. An allowance of 7.5% reflects the likely increase in interest rates over the development period particularly as construction is not due to commence until January 2003.

Developers Profit
A 17.5% profit has been included based on undertaking the development without prelets in place.

Land Purchase Price
The land purchase price is the figure payable to the Foundation. The development is assumed to be undertaken under a Development Agreement and as such the land purchase price is assumed to be payable at the time when the investment sale is concluded.

Land Purchase Offer
Based on the appraisal enclosed at the end of this section the land purchase price CDP is able to offer the Foundation for the freehold site (including the BT triangle) is £408,090.

Running Yield Offer
The appraisal enclosed at the end of this section shows the investment produces a running yield of 7.93% for the Foundation based on a notional site value of £1m.

The appraisal shows the running yield to the Foundation and assumes that the Foundation retains the investment when CDP has concluded all the lettings. Under this scenario CDP are responsible for all construction and letting risk. Detailed profit erosion agreements would need to be set up. This arrangement avoids stamp duty and disposal costs.

Joint Venture Arrangements

CDP undertakes the vast majority of its development activities with joint venture partners on an open book basis. The exact nature of joint ventures can vary considerably, two alternative arrangements are discussed below.

• CDP would be willing to consider entering to a joint venture with the Foundation where the Foundation prefunded the development on an agreed investment yield. The appraisal for this type of arrangement would be very similar to the land purchase offer appraisal but there would be a saving of the Sale to Funds Costs (5.75%) of investment value which would increase the site value by approximately £450,000.

• CDP would be willing to take on board the construction risk of the building and deliver the building to the Foundation at Practical Completion for a reduced developers profit of 10%. Letting risk in this scenario would be the responsibility of the Foundation.

CDP would also welcome the opportunity of working up the Land Purchase Offer and the Running Yield Offer with the Foundation on an open book basis. This may have advantages for both parties since, for example, the Foundation and CDP may be able to persuade the Local Authority to accept an even denser development than is proposed. This type of persuasive discussion is often difficult to achieve whilst in a competitive situation.

COMPLEX DEVELOPMENT PROJECTS					
Carmelite St, York					
LAND PURCHASE OFFER APPRAISAL					
Completed Development Value					
	sqft	£/sqft	rental pa		
Offices	46,010	14.50	667,145		
	Sale of offices	@	8.00%	8,339,313	
less	Funds Costs	@	5.75%	479,510	
	Sale to Fund			7,859,802	
less	Incentive package equate to 6 months rent			333,573	
	(Building 100% let after 9 months)				
	Net Sale to Fund after incentive package			7,526,230	
	Interim Rent			444,763	
	Development Value				**7,970,993**
	Development Costs				
	Construction Costs				
Planning Fees					10,000
Surveys					60,000
		gross area sqft	£/sqft		
Building Cost		51,054	88	4,500,000	
Contingency		5.00%		225,000	4,725,000
	Total Construction Costs				4,795,000

	Professional Fees				
	Architect		5.00%	236,250	
	Engineer		2.00%	94,500	
	M&E Engineer		1.00%	47,250	
	Project Manager		1.50%	70,875	
	Quantity Surveyor		1.50%	70,875	
	Planning Supervisor			10,000	
	Total Professional Fees		11.00%		529,750
	Other Costs				
	Legal Fees	Acquisition	15,000		
		Lettings	30,000		
		Inv Sales	15,000		
		Construction	10,000	70,000	
	Agents Fees	Letting	15.00%	100,072	
		Investment Sale	1.00%	78,598	
		Promotion		50,000	
	Commuted parking payment			100,000	
	Total Other Costs				398,670
	Construction Finance	@	7.25%		624,768
	Total Construction and Finance Cost				6,348,188
	Developers Profit	@	17.50%		1,187,169
	Residual Sum				435,636
	Acquisition Costs		6.75%		27,546
	Land Purchase Price				408,090

COMPLEX DEVELOPMENT PROJECTS					
Carmelite St, York					
RUNNING YIELD APPRAISAL					
	Completed Development Value				
	sqft	£/sqft	rental pa		
Offices	46,010	14.50	667,145		
	Running yield	@	7.930%	8,412,926	
				8,412,926	
less	Incentive package equate to 6 months rent			333,573	
	Building 100% let after 9 months)				
	Net Sale to Fund after incentive package				8,079,353
	Interim Rent				444,763
	Development Value				**8,524,116**
	Development Costs				
	Site Acquisition				
Site Cost				1000000	
Fees	0.00%			0	
Total Site					1000000
	Construction Costs				
Planning Fees					10,000
Surveys					60,000
		gross area sqft	£/sqft		
Building Cost		51,054	88	4,500,000	
Contingency		5.00%		225,000	4,725,000
	Total Construction Costs				4,795,000

	Professional Fees				
	Architect		5.00%	236,250	
	Engineer		2.00%	94,500	
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	Quantity Surveyor		1.50%	70,875	
	Planning Supervisor			10,000	
	Total Professional Fees		11.00%		529,750
	Other Costs				
	Legal Fees	Acquisition	15,000		
		Lettings	30,000		
		Construction	10,000	55,000	
	Agents Fees	Letting	15.00%	100,072	
		Promotion		50,000	
	Commuted parking payment			100,000	
	Total Other Costs				305,072
	Finance	@	7.25%		624,768
	Total Site, Construction and Finance Cost				7,254,590
	Developers Profit	@	17.50%		1,269,549
	Residual Sum			-	23
	Land Purchase Price			-	23

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The submissions
Carmelite Street, York : Architect Developer Competition – Stage 2
Allford Hall Monaghan Morris Architects/Lake Estates
© Allford Hall Monaghan Morris Architects 2002

Submission document for Carmelite Street, York
Cartwright Pickard Architects/Landmark Development Projects Ltd
© Cartwright Pickard Architects 2002

Carmelite Street, York: a response to the competition
Feilden Clegg Bradley Architects/Munroe K Ltd
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Competition report for new office development, Carmelite Street, York
Markland Klaschka/Knowstone CD
© Markland Klaschka Limited 2002

The intelligent workspace: Carmelite Street offices, York
Panter Hudspith Architects/Complex Development Projects Ltd
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