



Project
**Barnsley College Sustainable Construction and
Renewable Energy Centre**

Subject
Design and Access Statement
February 2010



Project Part-Financed
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Design and Access Statement

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INTRODUCTION

This report for Barnsley Metropolitan Borough Council is in support of the application submitted by Barnsley College for the proposed Sustainable Construction and Renewable Energy Centre.

The College has recognised that the major constraint upon its future progress and development is its existing building stock which, although it reflects the high standard of care which characterises all of the College's activities, no longer has the necessary flexibility in use or the ability to truly project the College's image and sustain its activities into the future.

The development of the College's Sustainable and Renewable Energy Centre (low carbon facility) will create a state of the art learning environment which will enable the College to maintain and build upon its record of achievement – and its reputation – in the twenty first century.

In May 2009 Barnsley College assembled a professional consultant team to progress outline designs in support of a funding application for the proposed Sustainable Technologies / Renewable Energies Centre of Excellence. The proposed building will incorporate a demonstration workshop and teaching facilities specifically focused upon developing a more highly skilled workforce in the construction sector and wider supply chain including professional bodies. This proposal is in part a response to the Governments proposed policy for zero carbon by 2016, and is related to the on going implementation of the College's wider property strategy which has already seen development of the following projects:

- Sports facility
- Motor Vehicle Workshop
- Block B Refurbishment
- Main Campus Redevelopment

The College brief to the design team and the strategic aims of the project are summarised as follows:

The Centre will be a 'flagship' in the education sector. It will develop working relationships with and provide support to all parts of the supply chain in the area of sustainable construction, technologies and renewable energy.

The building will incorporate where appropriate to its design, form and function, sustainable technologies and materials such that they both function as an integral element of the building and inform the building users.

The building shall be designed to achieve a **BREEAM rating of Excellent**.

The application is separate to – but complementary to – the previous applications which the College has made (and in respect of which permission has been obtained) for the new facilities at Honeywell (Sports facility) and Old Mill Lane (Motor Vehicle Workshop) and Church Street (Main Campus Building) which are, themselves, integral to the College's Estate Strategy.

The Statement explains the factors which have generated the design of the project, within the context of the College's masterplan and the processes by which this has been achieved.

The application proposal is the result of close consultation between the College and its design team and has been the subject of pre-application consultation with the local planning authority.

The application proposal is considered to be an appropriate and advantageous response to the College's brief, the context of the site and the wider needs of the Borough of Barnsley.

Phil Pollington / Claire Hawkins

Jefferson Sheard Architects (UK) Limited
February 2010

1.00 CONTEXT AND BACKGROUND

1.01 HISTORY OF BARNSELY

The first historical reference to Barnsley is in the Domesday Book of 1086, where it was referred to as "Berneslai". The name has its roots in the Saxon word Berne, a barn or storehouse and Ley, meaning a field.

Through the centuries ownership of Barnsley's land passed through many hands, from the monks whose influence led Henry III to grant Barnsley a charter to hold an annual fair and weekly market's, to the Crown following the dissolution of the monasteries in 1539.

The Civil wars of the 17th century left Barnsley undisturbed, so it steadily developed into a prosperous market town. As the town was on the route between Leeds, Wakefield, Sheffield and London, a large number of coaches passed daily through the town, generating good business for hostelries and related trades.

Barnsley was one of the principal British centres of linen weaving in the 18th and 19th centuries and insured its growth as an important manufacturing town.

There is a long tradition of making quality glass products in Barnsley. Glass bottles for ginger beer and pickle-jars were first made in Gawber in the mid 18th century but the industry accelerated 100 years later when the manufacture of glass-stoppered bottles was introduced. The Redfearn brothers established their glass and bottle works at Old Mill in 1862 on a site bounded by the Barnsley Canal and Harborough Hill Road – to the East of the application site.

In terms of its industrial history, Barnsley became best known as the heart of the South Yorkshire coalfield. There had been mining in Silkstone parish at least 200 years before the Norman Conquest and there is documentary evidence of leases for coal being awarded in 1370 at Cortworth, near Wentworth. The monks at Pontefract Priory acquired a coal pit at Barnsley in 1491 for £8, said to have a life of about 16 years.

By the late 17th century coal was in demand as a domestic fuel, for use in smithies and furnaces, in brewing and other trades. There was a considerable amount of coal beneath Barnsley, enough to supply the town's needs and export elsewhere. This created the need for an integrated transport network. In 1910 there were two canals and four railway lines serving Barnsley: the Aire & Calder and Dearne & Dove canals; the Midlands, Great Central, Lancashire and Yorkshire, and Hull & Barnsley railways.

By the turn of the 20th century coal had become the most important industry in Barnsley and by far the largest employer. The profitable Barnsley seam had been virtually worked out by the end of the 1940s but coal was still to be found in 24 seams throughout the Yorkshire coalfield. By the mid 1970s the Barnsley coalfield was in decline but as a result of massive investment the 1983 Barnsley Town guide could optimistically (and ironically) confirm that "a new coalfield-from-old is being created, taking Barnsley's 16 pits and 15,000 mineworkers well into the next century on a secure and profitable footing". However, this was not to be. The demise of the coal-mining industry followed hard on the heels of the 1984-85 Miners' Strike, and by 1992 only two pits remained open in the Barnsley coalfield: Grimethorpe and Houghton Main. These were also nominated for closure by the end of that year.

As a shopping and commercial centre, Barnsley has always served a wide surrounding area and Barnsley's market has a long history of importance as the commercial and social heart of the town. The monks of Pontefract held their market and fairs from 1249 until the dissolution of the monasteries and it is likely that the inhabitants of Barnsley have been bartering and exchanging goods on May Day Green since the Middle Ages. Barnsley market has been in its time the largest open-air market in the north of England and has attracted people in their thousands every Wednesday, Friday and Saturday.

Today, the Barnsley Metropolitan Borough Council area covers 32,853 hectares (127 square miles) and has a population of just under 230,000. There remain strong contrasts between the rural and Pennine setting and urban industrial areas including the main town of Barnsley (population just under 90,000) and other smaller towns and former mining villages.

This history has generated the social and economic context in which Barnsley College operates and, of course, has been a major factor in forming not only the physical and environmental context of the application site but, also, the physical form of the existing College estate.

1.02 PHYSICAL AND ENVIRONMENTAL CONTEXT

The site is located to the south of the recently completed sports facility on land within Barnsley College's curtilage on the Honeywell site. The site borders upon railway lines to Leeds to the east and Huddersfield to the west. Network Rail will require statutory notices during the design and construction phases of the project and the negotiation process is currently underway. The site borders upon land under separate ownership to the south. The client is in the process of agreeing a wayleave agreement across this land via a footpath from Old Mill Lane. This footpath was approved under planning application reference 2006/ 0900 for the Sports Facility on Honeywell site.

The site is currently access via an unadopted highway built to adoptable standards. This highway terminates at the multi-use games area (tennis courts), it is proposed that this highway is extended to the proposed facility and further provision is made for the future expansion of both highway and footpaths across the land in separate ownership south to Old Mill Lane.

The site is currently overgrown with trees, bushes and grasses which are not maintained. An existing timber assault course related to the college's sports facility is located in the northeast corner of the site. It is proposed that this is relocated to make way for the development.

There are embankments to the east and west that slope down to the railway lines. The site generally slopes west to east with the eastern portion of the site being the lowest and the flattest. The site sections will clearly indicate the topography of the site.

The site is shown by the British Geological Survey 1:10000 map to be underlain by approximately ten metres of sandstone of the Kents Rock (or Kents Thin Rock) sandstone member of the Middle Coal Measures Formation of Upper Carboniferous age.

Preliminary designs have been based upon an easterly prevailing wind. Considerations have been made to utilise the sun-path and minimise the effects of detrimental noise from the adjacent railway lines.

It is proposed that the land to the west of the highway will be developed either as a series of B1 units (which received Reserved Matters Approval in July 2009), or as further education facilities for Barnsley College. The College are currently developing their estate masterplan and this will be subject to consultation with BURDAP in March.



SITE LOCATION





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ARTIST'S IMPRESSION



2.00 PLANNING POLICY

National Planning Guidance

Planning Policy Statement 1 'Delivering Sustainable Development' (PPS1) was published in February 2005 and sets out the Government's national policies regarding sustainable land use and development.

PPS 1 also seeks to inform planning policy and development at regional and local levels, as the advice within this document should be taken into consideration when regional and local plans are being devised and when a local planning authority is determining a planning application.

PPS 1 outlines that the planning system has a key role to play in the creation of sustainable communities, which could be delivered through a wider spatial approach, by proactively managing development and engaging in early stakeholder involvement.

The thrust of this guidance is to create mixed-use developments and communities in highly sustainable locations, and to engage stakeholders such as developers and communities early in this process.

Barnsley Local Development Framework (2005)

The college campus site falls within the urban area of Barnsley as designated within the Adopted Barnsley Local Development Framework (2005), thus meaning that the proposal is acceptable in principle.

The Local Plan also requires new development to be sustainable. The proposed development by virtue of its design and building function is considered to have the least amount of impact regarding pollution of the environment, as in this instance, the scheme proposes the implementation of energy efficient design and the promotion of the public transport system. It should also be noted that the proposal is located is not too distant from the urban centre allowing access all the neighbourhood services such as shops, supermarkets and the town centre.

It is considered that the proposed redevelopment of the College is in compliance with the relevant Planning Policies at National, Regional and Local level. The proposed scheme ensures that sustainable development will take place at locations and at scales which are in keeping with the surrounding environment.

The following policies within the Local Development Framework are believed to apply or have been specifically requested by Barnsley MBC for the proposed development:

Policy GD1: General development policy

Proposals for development must meet the following criteria.

- a There will be no significant negative effect on the living conditions of existing and future residents.
- b The proposed development must be compatible with neighbouring land and will not affect its future use.
- c There will be no negative effect on the character and appearance of the local area;
- d There will be no negative effect on the character and appearance of the landscape and countryside.
- e There will be no negative effect on the character and appearance of public spaces, including the street scene, public paths, conservation areas or listed buildings.
- f The proposals will not affect the development of a wider area of land which could otherwise be available for development.
- g The proposals will not result in the loss of or negative effect on the function, character and appearance of open space.
- h There will be no negative effect on road safety.
- i The development is in a place which will be accessible on foot, by bicycle or by public transport relative to its function.
- j Satisfactory arrangements can be made to make sure that all users can access the development safely and easily.

Policy T2: Travel plans.

All planning applications for single units that are above the following limits must be accompanied by a travel plan.

- a Offices with a gross floor area of 2500 square metres
- b Industrial uses with a gross floor area of 5000 square metres
- c Storage and distribution industrial uses with a gross floor area of 10,000 square metres
- d Retail uses with a gross floor area of 1000 square metres
- e Leisure uses with a gross floor area of 1000 square metres
- f Higher and further education facilities with a gross floor area of 2500 square metres.

The College has a green travel plan for its Estate and this has been submitted to Barnsley Metropolitan Borough Council as part of this application. The College review and update their Travel plan on a regular basis. The next review will take place in summer 2010.

Policy T5: Highway design.

All new developments must be designed and built to provide safe, secure and convenient access for vehicles, cyclists, pedestrians, people with special needs, and people with mobility problems. When an application involves work or alterations to the highway developers must provide fully detailed drawings of all highway design schemes.

Policy T6: Parking

Proposals for development must provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people, and must not provide more than the maximum number of car-parking spaces set out in the Supplementary Planning Document. If it is not possible or appropriate for the minimum amount of parking to be met on site, the developer must provide, or contribute towards, off-site parking, or improve or provide other forms of travel.

Policy LCA2: Landscaping in new development

Landscaping provided as part of new development must:

- a protect and improve the local landscape character;
- b include existing landscape features within the new landscaping; and
- c make sure that plant species and the way they are planted, hard surfaces, boundary treatments and other features appropriately reflect the character of the local landscape.

Policy D1: General design standards

All buildings and the spaces around and between them must have a high standard of design. We will assess all planning applications for built development against the following criteria:

1 Layout

- a The layout of buildings must clearly take account of the site and surrounding buildings and land.
- b Make sure there is good convenient pedestrian and public transport access into and out of the site.

2 Scale

- a The size and shape of buildings must relate to the local area.

3 Materials

- a All materials must be of a high quality appropriate to the setting of the site and use of the building proposed.

4 Detail

- a All architectural and detailed design features must be of a high quality and contribute positively to the overall design of the building proposed.

5 Space around and between buildings

All spaces around and between buildings must be designed to:

- a achieve high-quality co-ordinated landscaping, including planting, surface materials and other features;
- b make sure open space is part of the design; and
- c make sure a safe and pleasant environment is provided.

6 Managing waste

- a Measures must be taken to make sure that waste is managed in a way that avoids a poor appearance or any negative effect on living conditions or nearby uses.

Policy D3: Safe places

Development should be designed in a way that reduces the risk of crime and the fear of crime. New development must meet the following criteria.

- a Public spaces, including parking areas, pedestrian routes and play spaces, should be well lit, overlooked by other buildings and public areas, and avoid dark corners.



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b Public and private spaces should be clearly separated.

Policy W4: Sustainable urban drainage systems

For all developments greater than 1,000 square metres floor space or 0.4 hectares, and for major infrastructure projects, sustainable urban drainage systems must be used unless ground conditions make them impractical.

A copy of the proposals for the drainage strategy has been included within this submission.

The applicant considers that the application is compliant with all national and local planning guidance and policy.

3.00 THE DEVELOPMENT

3.01 CONCEPT

The project team of consultants has developed a strong master-plan (subject to a future planning application) and design in response to the ambition and vision of Barnsley College to create a Sustainable Construction and Renewable Energy Centre that will become a flagship in the education sector and a centre of vocational excellence (COVE).

The designs prepared address the aspirations of Barnsley College and build upon the experiences of designing colleges and sustainable buildings within a variety of sectors. The proposals contained within this report are based upon the educational needs of Barnsley College and the essential requirement for the design to provide a modern flexible learning environment within high quality buildings on the estate.

These proposals provide a strong basis for the development of the scheme design proposals which have received grant funding from the European Regional Development Fund through Yorkshire Forward.

The building design itself is to be sustainable with effective use of a natural light and ventilation. Externally the building is to be striking whilst appropriate to its use and maximise opportunities to demonstrate the use and operation of sustainable elements and technologies.

The building has been designed around the needs of both students and staff. Careful management of circulation throughout the building enables each area to operate independently whilst remaining highly visible and accessible to both groups. The main circulation core which includes WC's is situated at the centre of the plan, joining the separate workshops, one situated towards the south west, and the other to the north east. The adjacencies of the main entrance, student entrance and staff room to the central core will enable staff to manage student passage through the building effectively.

The two areas of workshop facilities will be identifiable as two entities joined together under a sweeping roof line. Multifunctional classrooms and training rooms are to be provided and are to be capable of subdivision by movable partitions providing flexible floor area arrangements. Breakout space is to be provided for both students and staff. The spaces are to be designed for effective learning in respect of technology/IT provisions.

The workshop alongside the main entrance which will house live demonstration rigs will benefit from north light through roof lights and clerestory glazing. At low level there will be smaller windows adjacent to the main entrance to allow visitors to gain views into the facility. The workshop facilities will be open plan to allow for changing rigs and demonstrations to large groups. All workshop services will be distributed at high level through an open services zone and supported off the underside of the roof.

The demonstration / training workshop to the south west will take advantage of solar gains with large areas of glazing overlooking a demonstration garden and views out towards the valley. Horizontal brise soleil will control the solar gain to these elevations. The space will essentially be open plan to allow for changing displays or demonstrations.

The external envelope of the building will be designed to retain more heat within the building than current standard practice; therefore reducing the need for space heating ie the U values of the envelope will be significantly below the current Building Regulations. The demonstration workshop will be predominantly constructed in a straw bale construction system, externally clad in timber from a sustainable source. The live rig workshop envelope will be built in single skin 'Zeigel' blocks externally finished in an insulated lime render.

The existing highway is continued in a straight line past the existing tennis courts and will then divert past the new building. The facility's car-park is located to the north and shares access with the service yard located to the east. The main entrance faces north. The design of the building also takes into account how the building may be adapted and extended in the future to meet the ever changing demands of the curriculum and student growth.

As an educational tool itself, the buildings construction is revealed through clear panels in the walls, and the integrated renewable technologies are made visible. The plant room is given pride of place on the main elevation, expressed in black stack bonded architectural masonry. A glazed area is made in the plant room wall, allowing the services equipment to be visible. In the main reception are feed back computer displays showing the building operational figures. The intention is to compare the running costs and performance of this building with others on the Estate, and on a smaller scale, compare the running costs and performance of individual rooms within the building using different heating and ventilation systems.

Potentially this could include; internal temperatures, external temperatures, energy generation from each source, energy consumption, artificial lighting usage. All service pipes and cables leaving the plant room are expressed throughout the building and colour coded appropriately.

THE BUILDING FORM AND ORIENTATION

The massing studies reproduced below (from the Stage C Report) illustrate the way in which the concept is generated from its context:

Access

Pedestrians approach the site from the extended access road to the north and, subject to later development, from the footpath from Old Mill Lane to the south. Pedestrians enter and exit the building from the main visitors' entrance to the north and the students' entrance to the south. Pedestrians also exit the building at first floor level onto the terrace.

Cars approach the site from the extended access road to the north and park in the car park on the north side of the building.

Delivery vehicles approach the site from the extended access road to the north and access the service yard to east of the building. 13m articulated lorries complete a hammerhead turn at the termination of the extended access road that also provides an access point for biomass fuel delivery vehicles. Forklift trucks can enter the building through the sectional overhead door off the service yard.

Noise

The building will need to be designed to minimise acoustic disturbance from the two railway lines to the east and west.

Views

The building will afford views from the two railway lines to the east and west, and the pedestrian and vehicular approach from the extended access road to the north. The wind turbines will be visible from across the Dearne Valley.

There will be views from within the building out of the entrance curtain wall glazing to the north, the classrooms at first floor level facing south, and from the visitors centre facing east and west.

Daylight

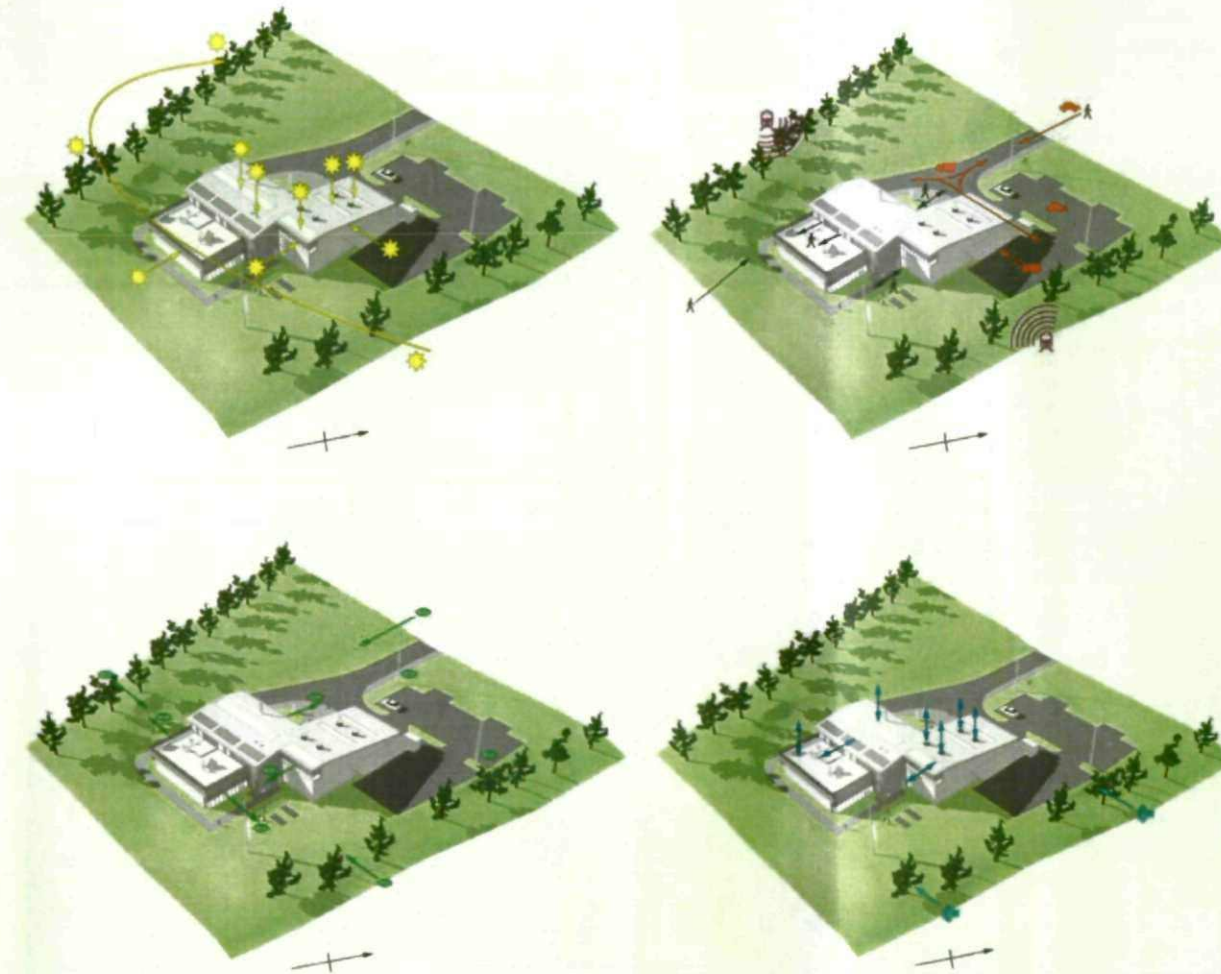
The building is orientated on a northwest to southeast axis that results in the first floor classrooms and the ground floor visitors centre receiving optimum levels of solar heat gain and daylight through their glazed walls. The ground floor workshop and first floor break-out space and corridors receive solar heat gain and daylight through roof lights. In addition the ground floor workshop receives light through a clerestory on its north, east and west external walls. The WC areas receive daylight through roof mounted sun-pipes to reduce electrical lighting during daytime hours. Further solar studies will be completed during the detailed design phase.

Ventilation

The building is passively ventilated through its external facade along the south elevation and into the classrooms and corridors. Wind catchers are located on the north-facing workshop roof to ventilate the space below. Similarly an air-source heat pump and evaporative cooling unit are located on the terrace to ventilate the visitors centre below.

Prevailing Wind

The prevailing wind is from across the Dearne Valley from the east. The wind turbines have been positioned on the eastern side of the building to reduce the risk of disturbing air flows. The turbines will need to be positioned to the satisfaction of Network Rail due to close proximity of the two railway lines.



3.04 EXTERNAL APPEARANCE AND SCALE

The external appearance and scale of the application design has the following features and characteristics:

- The Honeywell site location has been chosen by the client due to its relationship with existing College facilities, land availability/ownership and their wider development strategy. We have arranged the building on a northwest - southeast axis so that it maximises benefit from solar gains/shading. There are opportunities to market and advertise the site due to the close proximity of the two adjacent railway lines. The site slopes generally from west to east but the building is positioned such that cut and fill and retaining constructions will be minimised. It is necessary to extend the existing access road to service/access the building. By the introduction of a sweep in the road the new building is given a prominence as visitors travel along the access road and this provides a suitable architectural focus. Also by being located on the westward slope of a valley we have been able to incorporate wind turbines into the development effectively.
- Externally the site is planned to minimise the extent of hard landscape and engineering works with both car park and service areas entry via the extended access road. An attractive paved and landscaped area immediately to the front of the entrance doors will incorporate rainwater harvesting tank which is exposed as a feature and learning tool. Similarly the Biomass boiler pellet storage silo is made a feature again to educate students and training organisations that will use the building.

Paving to both pedestrian areas and car parking will where possible be permeable to reduce the extent of discharge into the sewerage system. The principles of SUDS (Sustainable Urban Drainage Systems) will be applied to the design.

Future expansion of the building has also been considered within the overall context of the design.

- The building has been positioned so that it will be visible on the approach through the Honeywell site. The plant room will have pride of place situated in the main elevation. Finished in black stack bonded blockwork, the plant room will contrast against the neutral render of the workshop, and the warmth of the timber to the demonstration workshop.

The main entrance is set back between the plant room and the live rig workshop and leads directly into a double height reception area. The curtain walling to the entrance elevation is seen as an ideal location for large feature signage and College branding.

The roof line will essentially be a simple form that will sweep down over the workshops. Using clerestory glazing between the roof and wall will give the roof the appearance of being a light weight floating element, especially during the evenings when the building is artificially lit.

- The south westerly facing demonstration / training workshop will be externally clad in horizontal timber boarding which will continue up and become the balcony at the roof terrace whilst the two storey elements of the demonstration workshop will be vertically clad. Large areas of curtain walling on the east and west will be kept free of columns which will be positioned clear of the external envelope. A display wall with high level glazing will face south where the building comes close to the boundary of the College's land. Above the demonstration workshop will be a green (sedum) roof terrace, accessed through one of the classrooms at first floor level.

In order to access the workshop classrooms at first floor level, students will walk along a glazed south facing gallery corridor where photovoltaic cells will be integrated into the roof lights above with brise soleil externally fixed to the vertical glazing where appropriate. The classrooms will benefit from borrowed light through this circulation space and high level clerestory glazing. Due to the close proximity of the train line and the visibility of the building to train passengers, the east facing elevation is to be utilised as a key location for signage and branding by the College.

The floor to floor heights of both workshop spaces has been set at 4.5m in height due to meet specific requirements of working at height in order to teach the curriculum along with the need for a flexible grid of services hung from the roof in these spaces in order to operate the new technologies that are to be taught.

In summary the design of the external appearance of the building has been considered in relation to the following;

- The requirement that it should provide a positive expression as a 'Beacon for Learning'.
- The desire to present positive views of it from all aspects including distant views from the approaches.
- The desire for an expression of local distinctiveness in relation to Remaking Barnsley.

- The desire to control scale and mass such that it is appropriate to its context and setting.

3.05 AMOUNT OF DEVELOPMENT

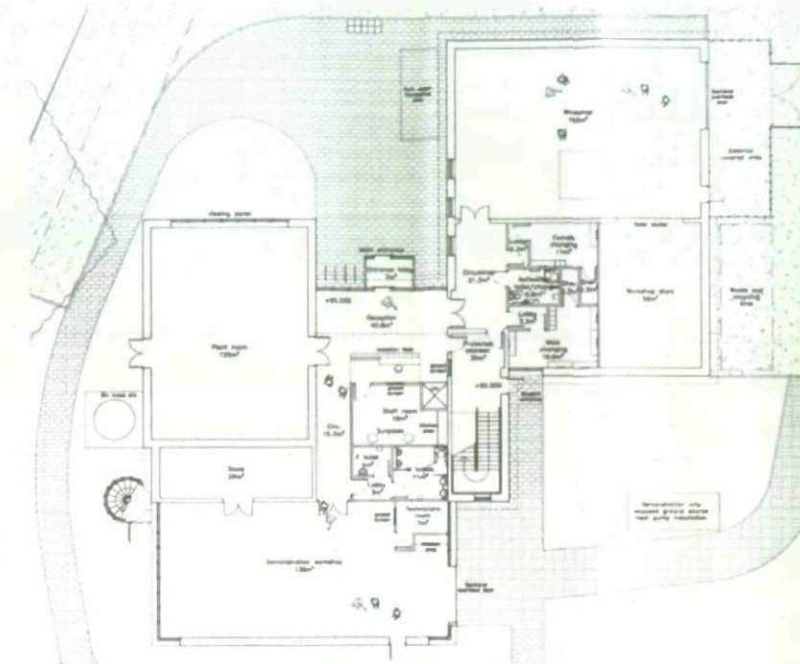
The floor space required is based not based upon the derivation of Guided Learning hours into area against curriculum like typical FE vocational and sixth form colleges. This is a flagship development which the College are developing as part of their full business case and the brief and area requirements has been developed following detailed curriculum meetings with Heads of Departments involved in utilising the building.

The accommodation is planned with an internal area of 1,068m² which is split over two floors and into two separate workshop spaces (up to approximately 54% of the overall area), classrooms, ancillary and support rooms (offices etc) and balance space incorporating circulation, changing facilities and wc facilities (combined 46% of the space).

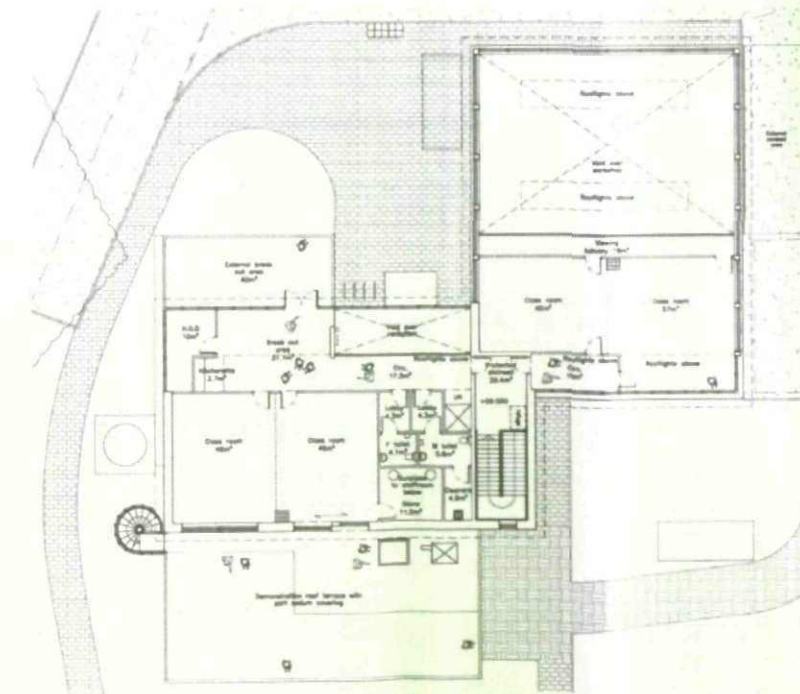
The building is planned around a central reception with the Training Workshop to one side and the front and the demonstration workshop to the other side and the rear. A separate student access is conveniently situated to one side of the reception with a link via the changing area to the training workshop. This is also located nearest the pedestrian route from the Old Mill Lane Campus which includes the existing Construction Centre. The visitor entrance relates to the car park and the reception area giving access to the demonstration workshop and circulation core. "Pride of Place" is given to the plant room accommodation with the provision of glazed panels allowing a clear view of the technologies being utilized and how they operate.

The circulation core gives access to the first floor where 4 classrooms / multi-function spaces are located each with viewing windows over either the Training Workshop or the Demonstration Workshop. Two of these rooms also have direct access to a planted "green roof" and potential for display of technologies such as solar thermal collectors. Also at this level is a further breakout space for use by Visitors and students which looks over what will be an impressive double height glazed reception.

Orientation of the building is such that the Training Workshop benefits from good quality natural "North" lighting via windows and roof lights, whilst the Demonstration Workshop makes maximum use of solar thermal gains via extensive glazing and a solid themed mass/core. A central core houses the WCs, Stairs and lift and separates the demonstration and training workshop elements.



Ground floor plan



First floor plan

3.06 PROCESS AND CONSIDERATION OF OTHER OPTIONS

Option Study / Design Opportunities

The initial aspiration was for the building to accommodate a visitor centre which could hold exhibitions and displays but funding for this use was unfortunately not forthcoming as Yorkshire Forward had already provided funds for a similar facility in Rotherham. The overall area of the building size has not been reduced, as the area initially earmarked for the visitor's centre has been taken up by additional workshop space. This additional workshop space was discussed at RIBA Stage C of the design as a possible requirement for future expansion and with the College now being in receipt of new figures for student intake, the operational need is now a necessity.

The proposed development is to be utilised as part of a decant strategy during the future development of the existing Construction Centre – which is part of the College's overall Masterplan. This has meant that the proposal is to provide flexible workshop spaces which can also be used by the College's standard Construction.

Community Engagement

A commitment to engage in consultation at an early stage in the design process is central to the project's progression. To this end, a consultation strategy was formulated for the College development, based on national guidance, and emerging best practice in this field. The strategy aimed to ensure that the consultation was inclusive to all potentially interested parties which include the local Council (including the Barnsley Urban Renaissance Design Advisory Panel), as the decision making body and the local community, who may be affected by the proposals. The College is actively continuing with this community engagement and will organise a consultation evening during the weeks following lodging the application to explain and show the interested third parties how the project has been developed. The College also intend that the local third parties are communicated with throughout the duration of the project and it is also the intention to run some 'surgeries' with the community in order to keep them fully informed in respect of the further development of the project. The project is to be presented to BURDAP along with an overall 'masterplan' of Barnsley College sites on the 23rd March 2010.

Planning Consultation

Jefferson Sheard has met with Keiron Dunn of Barnsley Metropolitan Borough Council Planning Department on 1st July 2009 to informally discuss the Stage C design proposals. During the meeting the Local Planning Authority were very supportive of the scheme and welcomed the fact that the building would be utilised to train student and people already employed in the construction industry on the new sustainable technologies.

We have subsequently met with Keiron Dunn of Barnsley Metropolitan Borough Council Planning Department on 20th January 2010 to discuss the further development of the project going forward from RIBA Stage C to RIBA Stage D, with the ultimate goal of lodging this planning application. Again the meeting was very positive and we have addressed the question of how pedestrians will access the building in that we have shown the footpath from Old Mill Lane (part of a previous planning permission relating to the sports facility reference 2006 /0900) and also explained that the majority of students access the site via the footpath from Belle Vue site into Honeywell. This access is maintained at present and in the future as part of the overall Masterplan.

All issues of mass and scale through to detailed design, detailing and materials; site planning, along with highways and landscaping have been considered. The scheme submitted responds to these issues whilst still firmly addressing the College's brief requirements for a 'flagship' centre in the Education sector. The College will develop working relationships with and provide support to all parts of the supply chain in the areas of sustainable construction, technologies and renewable energy.

4.00 SUSTAINABILITY AND THE ENVIRONMENT

The project requires that an innovative approach is taken to solve the design issues using environmentally conscious solutions and embracing the sustainability aspirations of the College, whilst working within the limitations of the budget. The success of the buildings environmental performance will be measured against key performance indicators:-

- The use of sustainability design solutions
- Minimum environmental impact
- Minimum energy consumption and water consumption
- Enhanced quality of life for staff and students via a quality working environment.

A BREEAM assessment of the new building will be carried out with the aim of achieving an 'Excellent' rating.

The energy efficiency of this building will be mainly due to the following:-

- High Performance construction materials and innovative methods (straw bale walling providing high levels of insulation and single skin block/insulation/lime render walling providing a substantial thermal mass to maximise benefits from solar gains and heat recovery).
- Maximum use of natural ventilation (incl passive wind catchers)
- Wind turbines converting kinetic energy in wind to mechanical energy
- Use of ground and air heat pump technology to provide low energy cooling
- Air to air heat recovery systems and free cooling
- Heating Plant comprising biomass fuel boiler units
- Solar Thermal domestic hot water
- Photovoltaic Energy generation
- Natural day lighting using conventional glazing and high performance sun pipes
- Solar shading to control glare and heat gains
- Use of green roofs and rainwater recovery to serve toilets and reduce drainage requirements
- Stormwater management to reduce loading on the mains water system.

Dynamic simulation software will be used throughout the design process to maximise the design efficiency and to interrogate the following issues:-

- Glazing and fabric analysis
- Passive engineering solutions including natural ventilation
- Dynamic solar shading analysis

- Building Regulations Part L2 compliance
- Thermal comfort analysis
- Daylight and glare analysis
- Energy consumption and CO₂ emissions.

The Centre will be an **exemplar facility**, demonstrating via the built form, the integrated services and mobile test beds, of what can be achieved. It will continue to develop and function into the future as a leading training facility and information centre. It will continue to serve and inform students and visitors in the Barnsley area and further a field; as well as promoting sustainable solutions for the construction industry.

5.00 ACCESS

5.01 VEHICULAR AND TRANSPORT LINKS

Cars approach the site from the extended access road to the north and park in the car park on the north side of the building. The existing highway is continued in a straight line past the existing tennis courts and then diverts past the building. The facility's car-park located to the north shares access with the service yard located to the east. The main entrance faces north.

Delivery vehicles approach the site from the extended access road to the north and access the service yard to east of the building. 13m articulated lorries can complete a hammerhead turn at the termination of the extended access road that also provides an access point for biomass fuel delivery vehicles. Forklift trucks can enter the building through the sectional overhead doors located off the service yard.

Pedestrians approach the site from the extended access road to the north and, subject to later development, from the footpath from Old Mill Lane to the south. Pedestrians enter and exit the building from the main visitors' entrance to the north and the students' entrance to the south. Pedestrians can also exit the building at first floor level onto the terrace.

Barnsley College has been actively working with Barnsley Metropolitan Borough Council Transportation and Highways department over the last couple of years in developing their Travel Plan for the whole College estate. The new design proposal is based on this Travel Plan whereby there will be 16 car parking spaces along with 2 no. motorcycle spaces within the area identified. The new development provides 18 car parking spaces and this provision (including 2no disabled spaces). The car parking is intended for disabled students and will be limited to visitors and staff only.

As part of the BREEAM criteria the College will provide up to 7 bicycle stands in one bank (under cover) in a secure location where they can easily be monitored from within the new building to avoid theft and unwanted damage.

A minimum of 2 disabled persons car parking spaces are to be provided by the design.

A separate service yard has been designed off the car park to accommodate limited numbers of heavy goods vehicles to deal with the Colleges' refuse and teaching equipment (large movable rigs i.e. PV cells) This service yard is situated close to the building for ease of distribution of goods to and from the new development. Deliveries to the Biomass silo will be infrequent at a likely occurrence of once every three months.

5.02 INCLUSIVE ACCESS

The design of the building, including hard and soft landscaped areas, has been generated to permit full accessibility to all people attending the College. The current application design is based on the requirements of the following documents;

- Building Regulation Approved Document M (2004 edition)
- BS8300:2001
- Disability Discrimination Act 1995

Within the external works element of the project we have provided disabled car parking as close as possible to the main entrances into the building.

Vertical movement between floors is via a platform lift or stair situated within the centrally placed core. The lift will cater for wheelchairs. The Ground floor will contain disabled toilet facilities including shower and changing facilities for use by students and the stairwells will contain disabled refuge areas.

Corridor widths are a minimum 2m wide to assist in horizontal movement throughout the building which also provides improved circulation for disabled students generally.

The entrance desk is placed in clear view of the main entrance and will be designed to be DDA / SENDA compliant. The reception desk will use induction loops to aid the hard of hearing and the blind.

Further consultation with the College is required during the next stages of the project. Barnsley College will form a user group for consultation purposes, from which we can hold workshops and meetings in order to further develop the design in the most inclusive way.

6.0 LANDSCAPE DESIGN STATEMENT

The general philosophy behind the landscape design is to create an easily accessible, usable space that is both functional yet diverse, using a natural palette of materials that attempts to capture the local vernacular whilst defining the space with its own individual character, open to both college users and public alike.

Landscape and hard landscape works will incorporate sustainable elements and materials such as recycled aggregates and reed beds where appropriate. The extent of hardscaped land used is to be effectively minimised where possible.

An extensive sedum roof is to be incorporated which can help slow storm-water run off to assist local SUDS (sustainable urban drainage system) planning and flood defences, remove CO₂ and harmful pollutants from the atmosphere, and regulate internal building temperatures. The remainder of the roof would be paved as a terrace incorporating PV's, Solar Thermal Collectors, Air Source Heat Pumps and Evaporative Cooling.

Externally the site is planned to minimise the extent of hard landscape and engineering works with both car park and service areas entry via the extended access road. An attractive paved and landscaped area immediately to the front of the entrance doors will incorporate an exposed rainwater harvesting tank. Paving to both pedestrian areas and car parking will where possible be permeable to reduce the extent of discharge into the sewerage system. The principles of SUDS (Sustainable Urban Drainage Systems) will be applied to the design.