OXFORD RAIL STATION

WEST ENTRANCE BUILDING
DESIGN AND ACCESS STATEMENT





PROJECT INFORMATION

Project Title	Oxford Phase 2 Western Entrance Architectural Design	
Client	Network Rail	
Location	Oxford Station	
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DOCUMENT INFORMATION

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The project team consists of the following organisations:

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EXECUTIVE SUMMARY

This Design and Access Statement has been prepared by IDOM on behalf of Network Rail, to outline the key design issues and approaches, to assist Oxford City Council in their consideration of the prior approval.

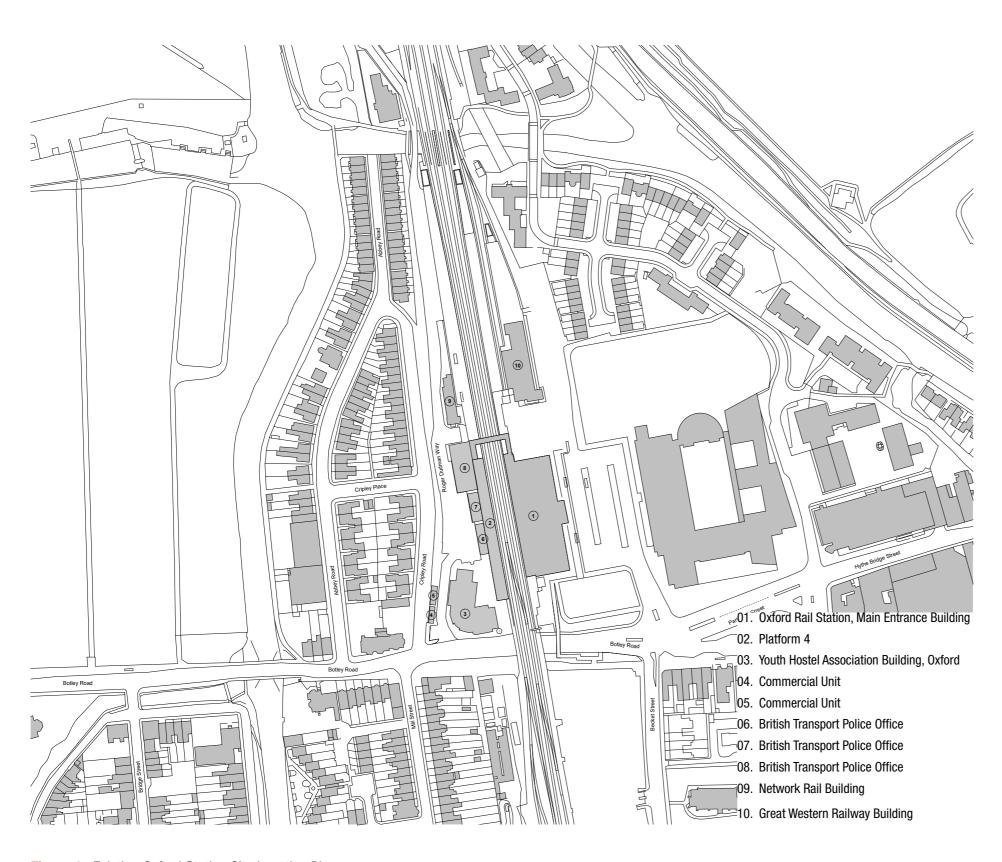
The purpose of this Design and Access Statement is to define the concept design of the new West Entrance Building for Oxford Rail Station as part of the Phase 2 expansion.

- New passenger entrance building with concourse, public toilets, retail, back-of-house accommodation, service areas and a consolidated waste compound.
- New public realm.
- New canopy and passenger accommodation on Platforms 4/5.
- New subway access to Platforms 4/5.
- New levels and finishes to Botley Road, the Bridges and underpass.

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OF PROJECT INTRODUCTION

PROJECT INTRODUCTION



PURPOSE OF DEVELOPMENT

The primary objective of the project is to increase capacity along the Oxford Corridor to meet the demands of the 2024 train service specification. Oxford station is nearing full capacity and will not otherwise be able to accommodate the further service increases.

Therefore, a new station building on the western side of the railway is proposed to act as a secondary entrance, along with a new Platform 5 and improved passenger facilities - including a full-length platform canopy, new waiting room, toilets, cafe, and staff accommodation.

Improvements will also be made to the Botley Road, including highway amendments to provide increased clearance under the bridge and 4-metre-wide segregated raised footpath and cycleway on either side of the road.

The proposal for Oxford Corridor Phase 2 will improve the everyday experience for commuters to, from and within Oxford, particularly as passenger numbers increase over time. This scheme is also the enabler and catalyst for the larger redevelopment of the main station site, which will follow on in time by delivering the essential rail and road infrastructure for future schemes at the station as part of the Oxford Station Masterplan.

SITE LOCATION

The site sits just beyond the city area natural divide of Botley Road bridge and the railway line. The new western entrance building is proposed to act as a secondary station entrance, providing access to the station from the west side of the city, primarily aimed at passengers arriving by foot and cyclists.

Figure 1. Existing Oxford Station Site Location Plan

PROJECT INTRODUCTION

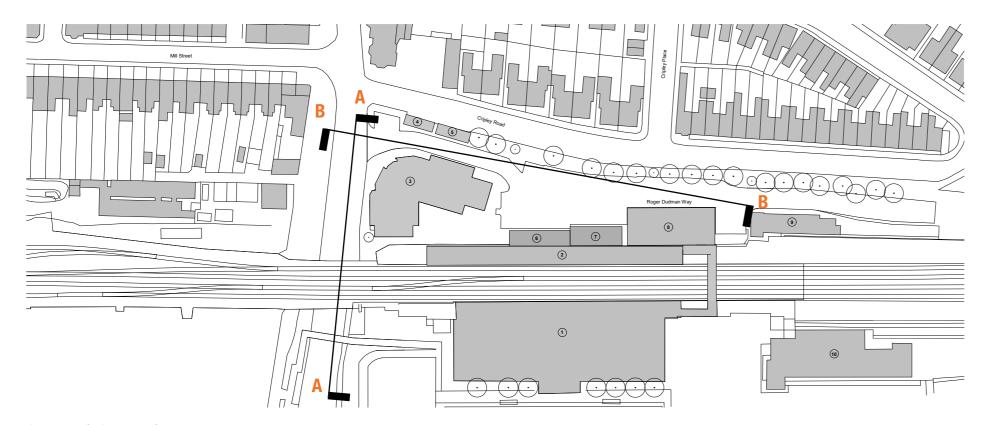


Figure 2. Oxford Rail Station West Entrance existing site

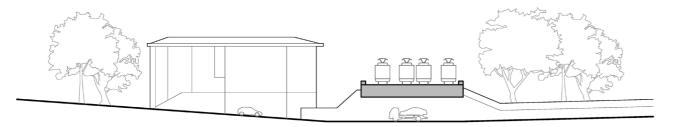


Figure 3. Botley Road bridge section AA

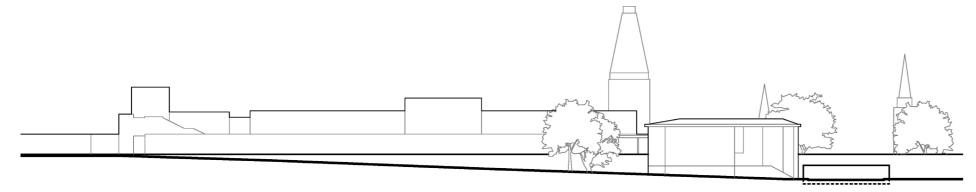


Figure 4. YHA building West facing elevation BB

SITE OVERVIEW

The site sits West of the existing Oxford Rail Station, across the existing rail lines. The site is delimited by Botley Road on the south and Cripley Road on the West.

The site is currently occupied by the existing YHA Hostel building, two small commercial constructions, platform No. 4, various Oxford Rail Station constructions and temporary buildings, canopies, a waste compound and a surface car park.

The site has a significant gradient falling from the north to the south, and is sitting in proximity to residential buildings along Cripley Road.

The site is crossed by Roger Dudman Way, which currently serves as a service access road for the station and runs parallel to Cripley Road. Both roads run with a level difference of approx. 1.5m on average and are divided by an existing brick retaining wall and a line of mature trees.

The site also includes the existing Botley Road Rail Bridge and underpass which currently has limited headroom, aiming to remedy what is currently a dangerous route for cyclists and pedestrians.

- 01. Oxford Rail Station, Main Entrance Building
- 02. Platform 4
- 03. Youth Hostel Association Building, Oxford
- 04. Commercial Unit
- 05. Commercial Unit
- 06. British Transport Police Office
- 07. British Transport Police Office
- 08. British Transport Police Office

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PROJECT INTRODUCTION



Figure 5. View 1 - Existing site view from Botley Road

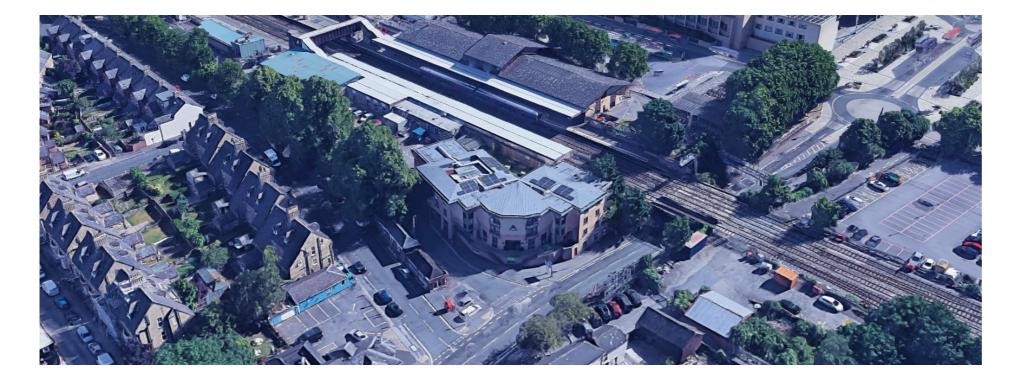


Figure 6. View 2 - Existing site aerial view

SITE CONTEXT

The images on the left depict the existing site and show the YHA building, the commercial constructions and the bridge over Botley Road. The image also shows the existing trees, to be largely retained as part of the development.

KEY TO VIEWS

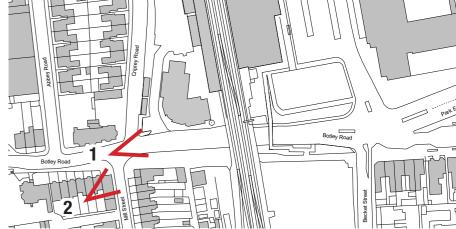




Figure 7. Existing Station Entrance Building



Figure 8. Existing Botley Road Bridge



Figure 9. Existing Bicycle Parking

DESIGN PRINCIPLES

Network Rail and other stakeholders defined the aspiration of a new "gateway" or "world-class" building, respectful with residents and that demonstrates "value for money" use of public funds.

The proposed solution is to account for the proximity to residents properties, addressing concerns over noise and vibration, light pollution, overshadowing and removal of trees that provide valuable screening to their properties.

The new station entrance building is to create a new high-quality urban public realm that embraces how people will want to move through the site. The creation of public space is a positive addition to the city and a significant opportunity, creating a place where people will choose to meet and spend time. The public space is to offer shelter from the busy Botley Road and is to consider continuous surfaces so it can be perceived as part of the station and used by passengers as such.

The design solution is to provide as much bicycle parking as practically possible.

CONSTRAINTS

The design solution is to incorporate new access onto Roger Dudman Way and retain as many existing mature trees as possible.

The proposed building is to be a single storey structure, requiring no public internal lifts or public stairs.

The new building is to tie in with the Platform 4/5 subway levels.

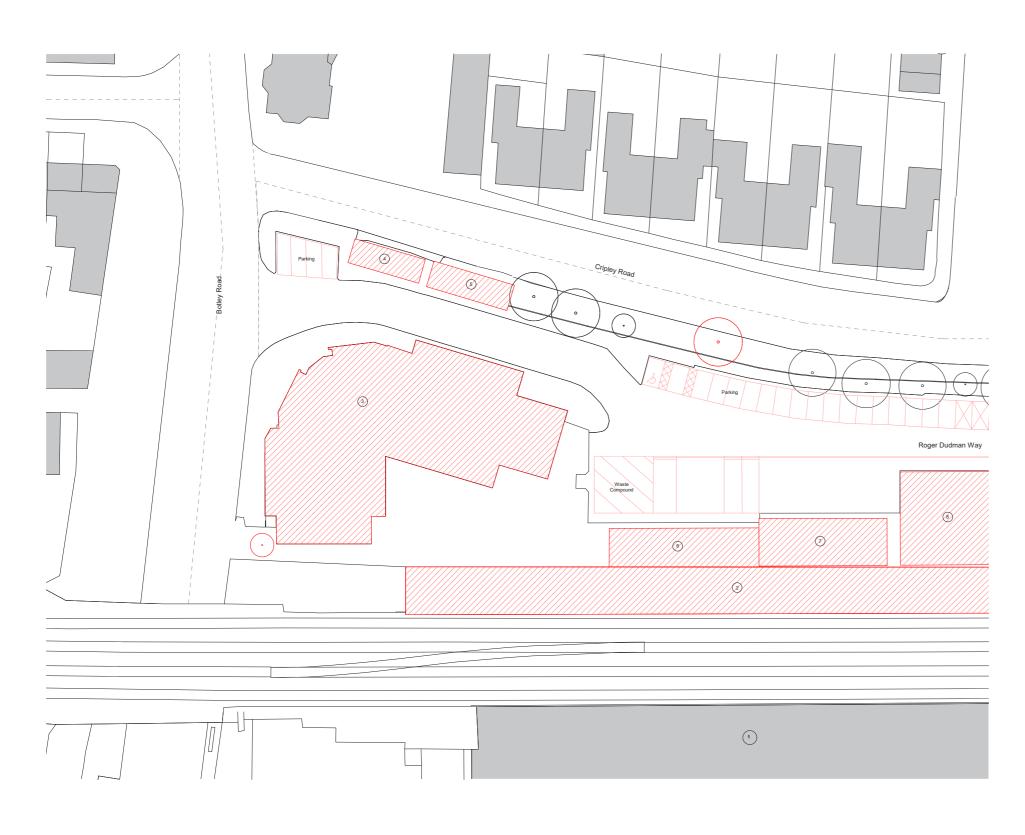


Figure 10. Demolition plan

DEMOLITION SCOPE PLAN

The plan on the left depicts the extent of demolition of the existing structures on the site to allow the construction of the new West Entrance building and public realm.

The main structure to be demolished is the Existing YHA building as well as the existing platform 4 building.

KEY

To be demolished

Tree removal

- 01. Oxford Rail Station, Main Entrance Building
- 02. Platform 4
- 03. Youth Hostel Association Building, Oxford
- 04. Commercial Unit
- 05. Commercial Unit
- 06. British Transport Police Office
- 07. British Transport Police Office
- 08. British Transport Police Office

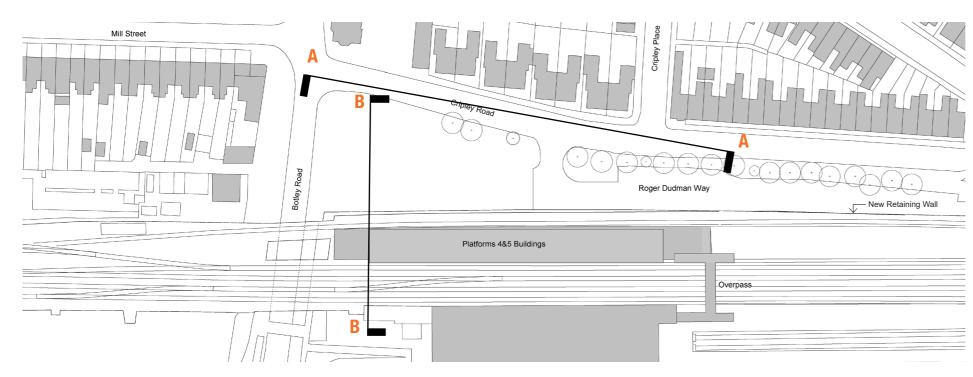


Figure 11. Future site plan

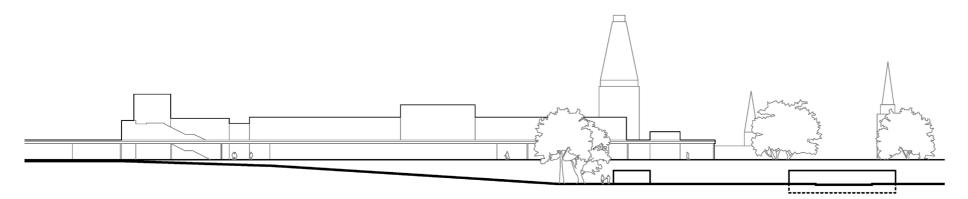


Figure 12. Future site front elevation AA

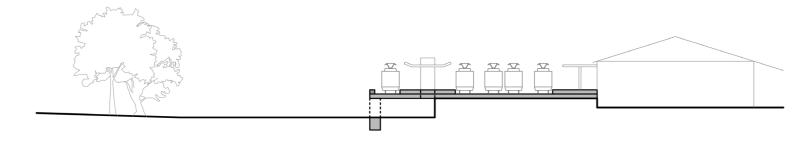


Figure 13. Cross section through subway BB

FUTURE SITE

The new platform 5 will run over the footprint of the existing YHA hostel, Its construction will imply the construction of a new retaining wall to level the terrain and lay the new tracks.

Once the site is cleared after demolition, the new retaining wall will have a dominant presence on the site. The proposal is to incorporate the design of this wall as an active part of the project.

The land directly in front of the retaining wall will become the site for the new west entrance building and public realm.



Figure 14. Public Realm v. Private Realm

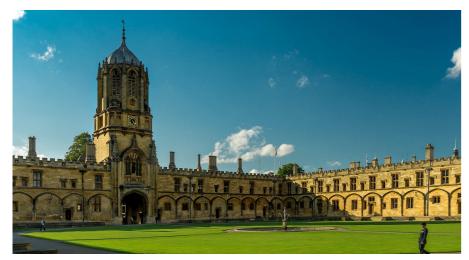


Figure 15. Private Realm - Christ Church, Oxford University



Figure 16. Oxford Skyline (Spires)



Figure 17. Oxford City site plan. Private and Public Realm.

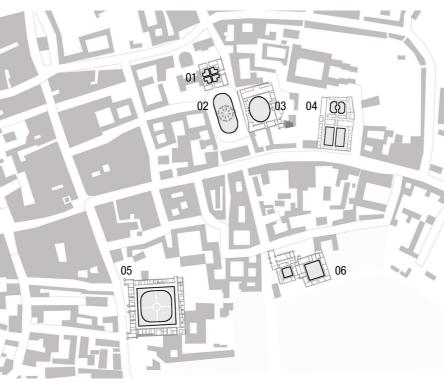


Figure 18. Private and Public Realm geometries: 01. Bodleian Library; 02. Radcliffe Camera; 03. All Souls College; 04. The Queen's College; 05. Christ Church; 06. Merton College

OXFORD'S VERNACULAR

Oxford is a city with many varied layers of history. IDOM has approached the design of the public realm, the building and the retaining wall seeking inspiration in the analysis of the vernacular architecture of Oxford.

A key characteristic of the city is the sequence of the public and private realm. Private quads are defined by the walls and accessed by crossing doors.

The diagrams on the left show the collection of public and private spaces which are defined by pure geometrical forms: quads, rectangles, circles and ellipses varying in size.

In addition, Oxford is a city whose skyline is created by a series of spires. These provide a backdrop of vertical elements, which work extremely powerfully when combined with sites consisting of buildings with long horizontal elements.



Figure 19. Jesus College Ship Street



Figure 21. Bodleian Library



Figure 20. All Souls College

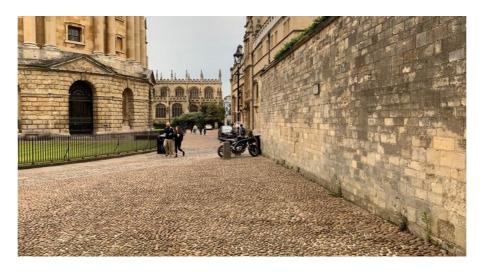


Figure 22. Radcliffe Square

WALLS AND DOORS

Oxford is a city of doors, walls and textures that tell stories. The existing site of the proposed development, sits outside the historical city wall and hence lacks the textures, and materiality that you see in the more central parts of the city.

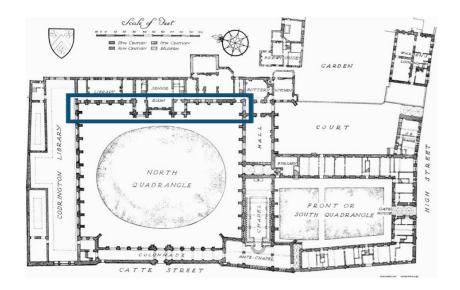


Figure 23. All souls college

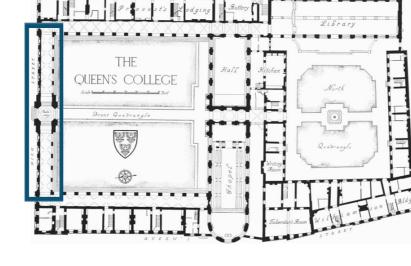


Figure 24. The queen's college

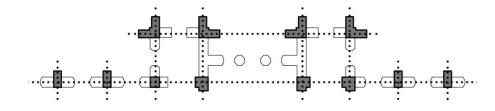


Figure 25. Buttress structure

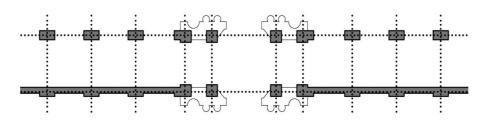


Figure 26. Gallery with columns

The project has analysed how walls are constructed in the city, how they relate to public spaces and how façades are configured. Rather than a purely historical approach, this analysis hints at how structural elements relate to the public realm.

For example, the idea of the buttress, the expression of thicker structural elements, the idea of a colonnade and the idea of a gateway help to define a transition between the public and the private realm.

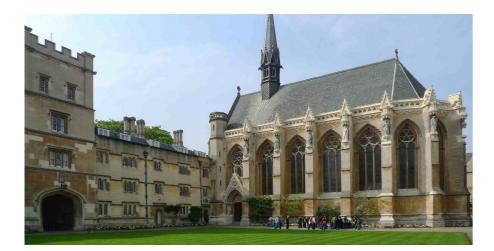


Figure 27. Exeter College, University of Oxford



Figure 29. Bodleian Library, Oxford

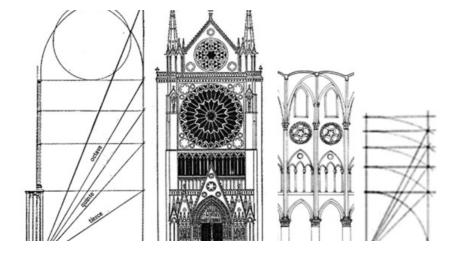


Figure 31. Geometry of Gothic Architecture

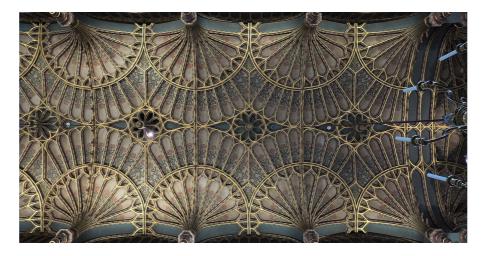


Figure 28. Chapel of Brasenose College, Oxford



Figure 30. The Divinity School, Oxford

RETAINING WALL

As introduced previously, the proposed site is characterised by a new, long retaining wall that will be the backdrop of the new building. The design challenge is to introduce a pattern, texture or detail to enrich the narrative of this retaining wall element.

To inform the design a study of the textures of the Oxford buildings (external and internal) was carried out.

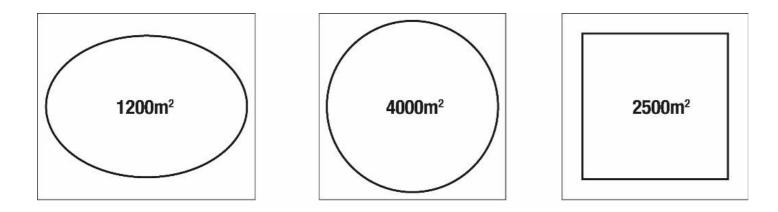


Figure 33. Oxford quads geometric analysis

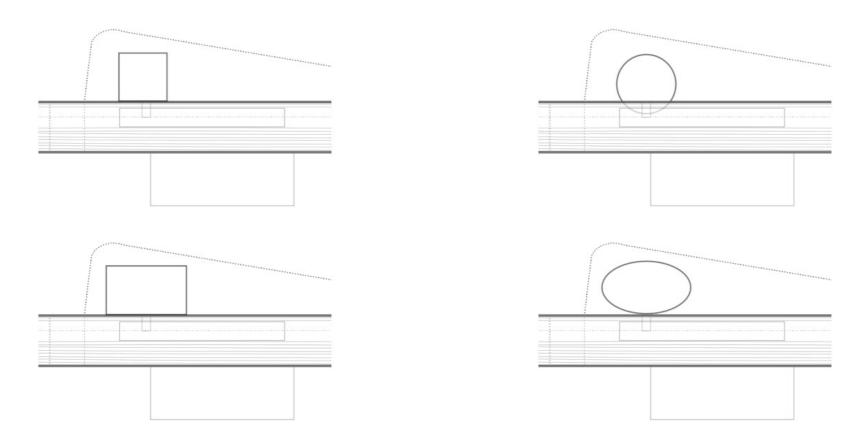


Figure 32. Oxford quads geometric analysis

OVERVIEW

The site for the new West Entrance building is to provide a significant new public realm, as well as a functional station entrance.

Following the analysis of Oxford's, the public realm is to influence the building rather than the being the space created outside of a building. As a result the definition of the public realm is the key protagonist in the design alongside the new retaining wall structure.

OPTIONEERING

PUBLIC REALM

The first step in the design of the options is the approach to the public realm. The analysis of the different public spaces in Oxford showed how the pure geometrical shapes and their different proportions shape the buildings in the city.

Several alternatives for the public realm were tested, including rectangular, circular and ellipsoidal public space. These shapes, varying in scale, were tested in the site, to evaluate how they could influence the design of the building and how people would use the space.

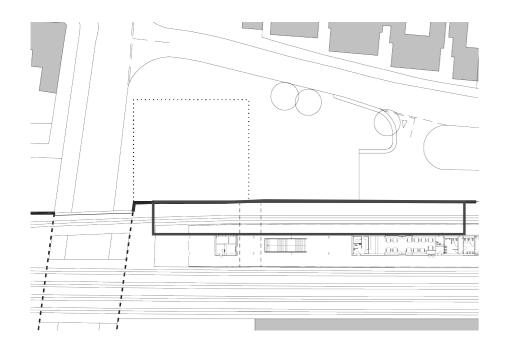


Figure 34. Massing strategy A: Building in the retaining wall

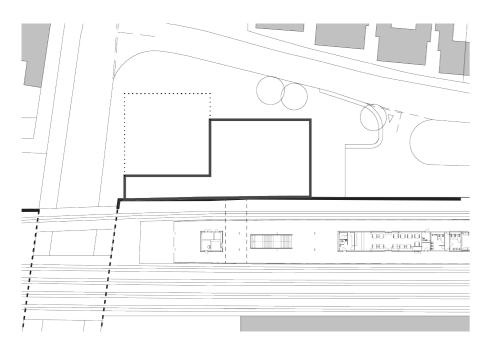


Figure 35. Massing strategy B: Building along the retaining wall

MASSING

In parallel with the definition of the public realm footprint, proportions and position, three massing strategies for the building were defined:

- A: Building in the retaining wall.
 The building would be conceived within the retaining wall, maximising the space for the public realm. This option was discarded due to the technical limitations of building under the rail tracks, with limited headroom available.
- B: Building along the retaining wall.
 This option consists of a linear building that runs in parallel to the retaining wall, sitting between the public realm and the wall.
- C: Compact building.
 This option presents a building that intersects the public realm. This option was discarded as it limits permeable access from Botley Road to Roger Dudman way, creating a clear Front and back split. It also encroaches towards the existing trees along Cripley Way.

Figure 36. Massing strategy C: Compact building

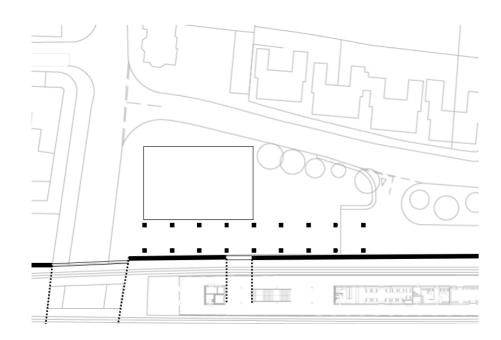


Figure 37. Option B1 plan view

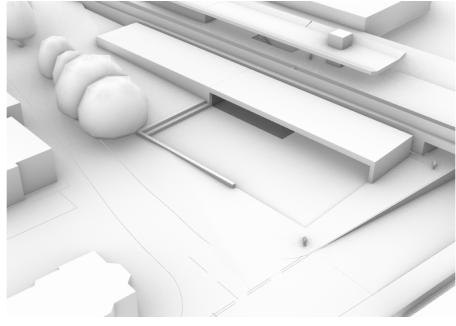


Figure 38. Option B1 perspective view

As part of the B: Building along the retaining wa

As part of the B: Building along the retaining wall, concept, 2 main geometrical forms for the public realm space were evaluated.

BUILDING AND PUBLIC REALM

OPTION B1

This option is conceived as a building-frame over a rectangular, quad-like, public realm. This simple and long rectangle sits simply and elegantly in front of the retaining wall.

OPTION B2

This option is conceived as a building wrapping around an elliptical public space. The curved form, provides an inviting and welcoming gesture to people arriving from the West, however creates pockets of spaces between the retaining wall and the rear elevation.

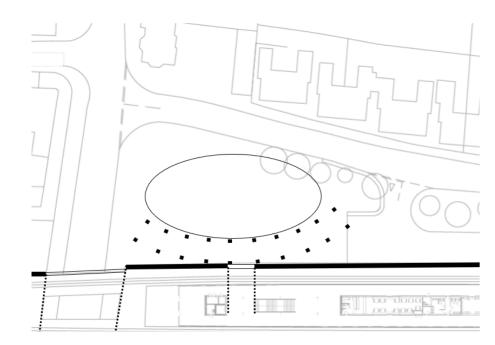


Figure 39. Option B2 plan view

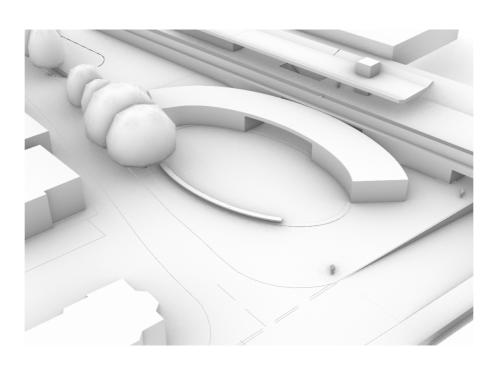


Figure 40. Option B2 perspective view

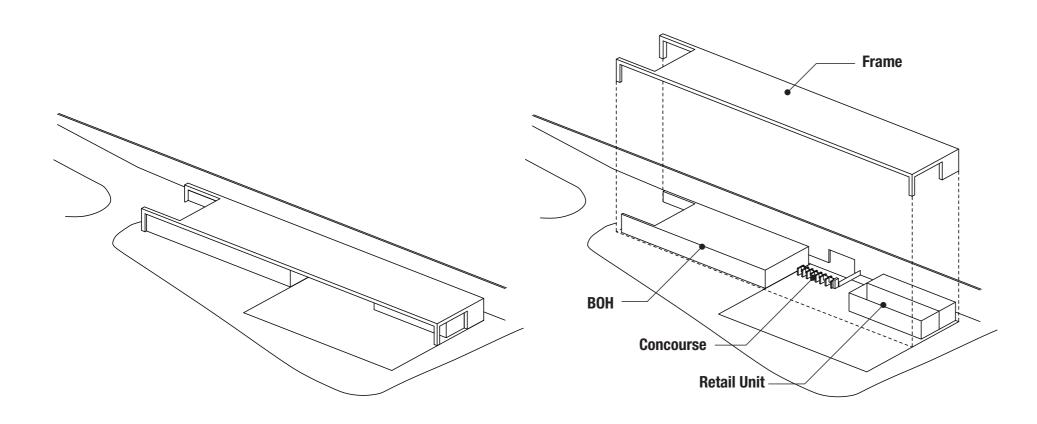


Figure 41. Proposed Massing

Figure 43. Diagram showing the internal elements

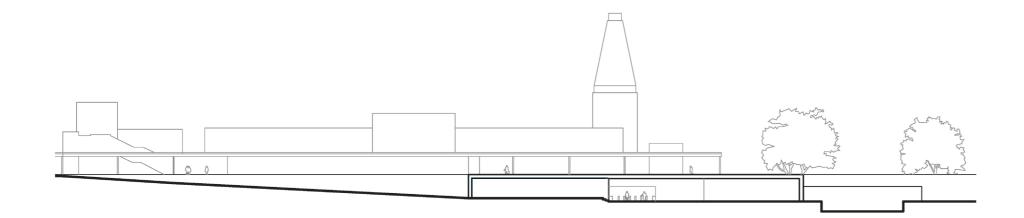
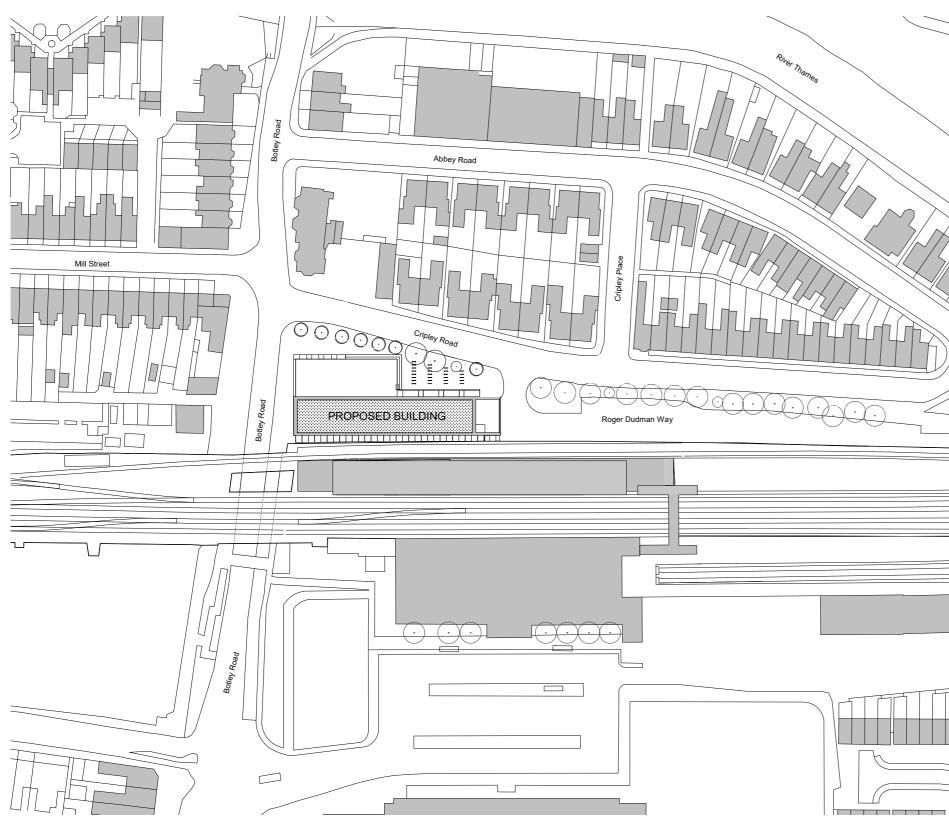


Figure 42. The gateway

PROPOSED SCALE, MASSING AND FORM

The Option B1 solution had been developed as a simple elegant, linear and frame-like building that straddles over a quad-inspired plaza. The frame communicates and invites the passengers towards the entrance, while also integrates the BOH and retail units seamlessly.

The proposed building has a footprint of approx. 66x12.3 meters. The building height is approx. 4.5m, which allows for a clear height of 3.5m in the main concourse area. All plant equipment has been concentrated into a compound in the North of the building to allow for a continuous green roof.



SITE PROPOSAL

The adjacent image shows the proposed site plan. The new West Entrance building sits in front of the retaining wall, separated by a BOH corridor with a continuous glazed roof.

The main public realm, the "quad" is defined by a perimeter bench that resolves the level difference across the site and segregates the main waiting and pedestrian movement areas from the bike parking spaces and the general pavings along Botley Road and Cripley Way.

A waste compound is located at the northern end of the building. It consists of an open space for Euro bins, parking space for waste collection and goods vehicles, two good lifts and plant equipment. The compound is considered part of the overall building, and is a gated, open-roof area.

KEY NUMBERS

Building Footprint	c. 985 m²
Gross internal floor area (Excl. External Area)	c. 793 m^2

AREA SCHEDULE (EXTERNAL)		
USE APPROX. AREA		
Waste Compound	74 sqm	
Goods Lifts	10 sqm	
TOTAL	84 sqm	

Figure 44. Proposal site plan

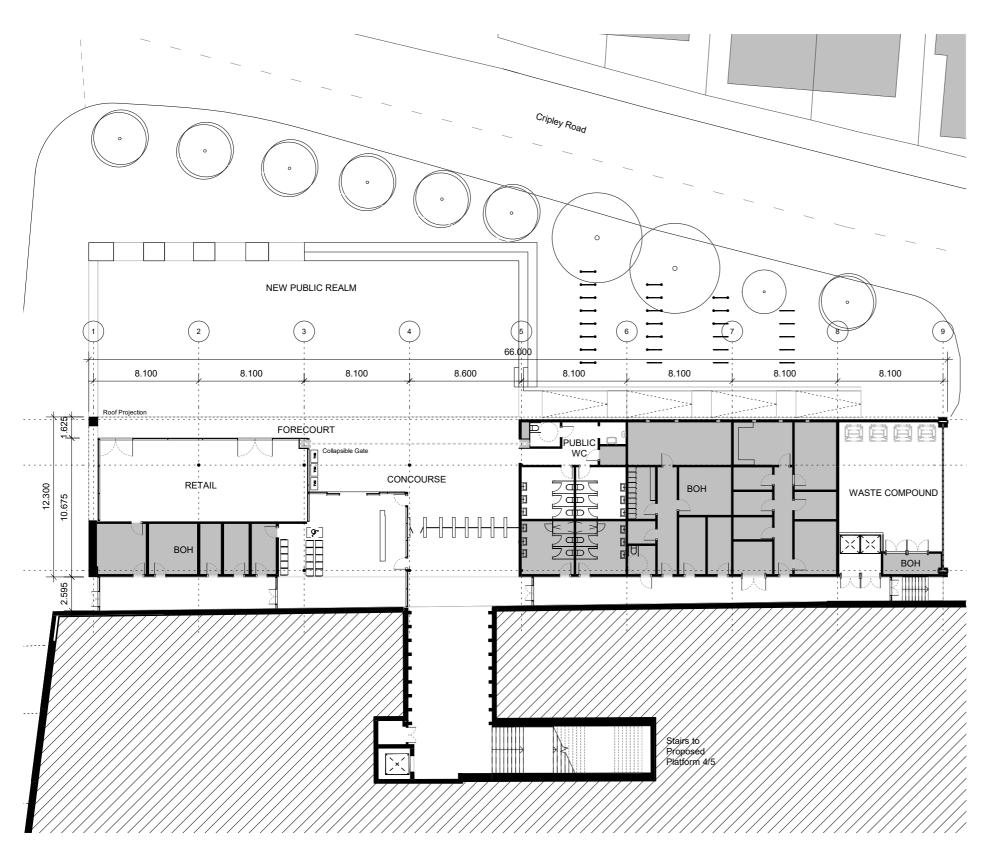


Figure 45. West entrance building plan

GENERAL ARRANGEMENT PLANNING

The building is conceived with a modular approach that aims to maximise its flexibility. A clear segregation exists in the building with front-of-house areas (FOH) for passengers in the middle and south parts of the building and back-of-house areas (BOH) to the north.

The FOH areas are relate directly with the public realm and have been organised to include:

- Main concourse

This space is centred in the building, aligned with the position of the subway that provides access to Platforms 4 and 5. The concourse incorporates the access gates, the ticket vending machines, a small help desk and includes covered seating areas. The main concourse is fully open, however will be secured at night with a security mesh barrier.

- Public WCs.

These have been located to be accessible from the concourse and secured at night time.

Retail unit.

It features an open frontage and has the possibility to expand a seating area into the public realm.

The BOH areas are kept out of sight of passengers, and include storage, plant and small offices. The separation between the wall and the building serves as a private corridor that links all the back-of-house areas.

AREA SCHEDULE (INTERNAL)		
USE	APPROX. AREA	
Concourse	273 sqm	
Retail	102 sqm	
Public Toilets	53 sqm	
BOH Areas	276 sqm	
Circulation	89 sqm	
TOTAL	793 sqm	

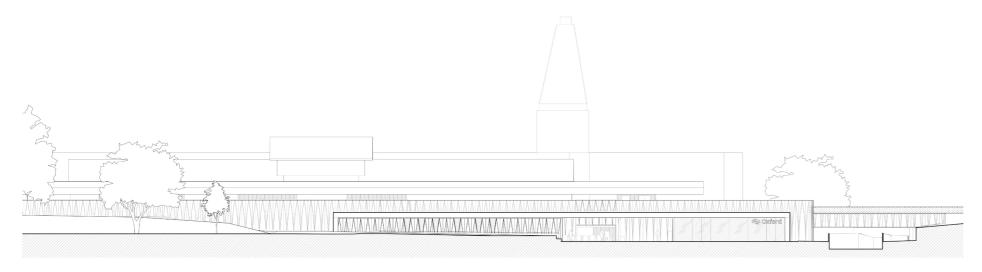


Figure 46. West entrance building elevation AA

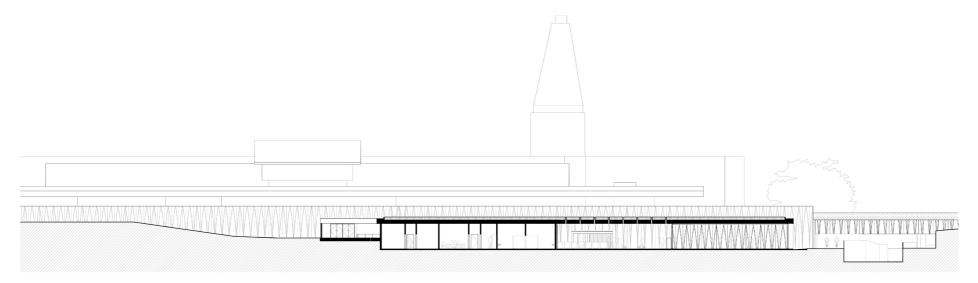


Figure 47. West entrance building longitudinal section BB

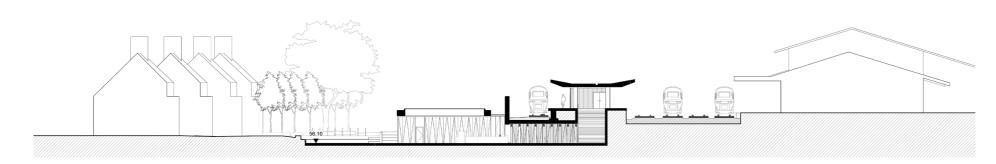


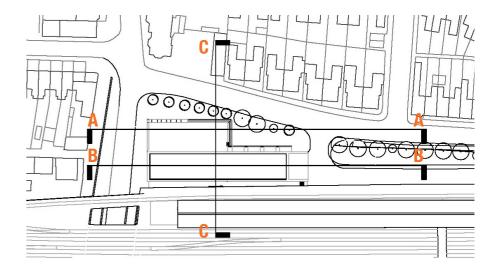
Figure 48. West entrance building section through proposed subway CC

The adjacent images show the elevation of the building, which is conceived as a frame that is positioned in front of the continuous, textured retaining wall.

Additionally the images show how the proposed public realm is levelled to be at the same height as the subway. This provides visual continuity for the passengers, and helps to understand the public realm as a continuation of the interior of the West Entrance building.

The section also shows how the retaining wall has been extended to be approx 2m above the rail tracks which allows it to function as an acoustic barrier.

The building has been designed to ensure it is visible on the approach from Botley Road. The building signage has been incorporated as a design element in the southern most part of the west facade, so that the Network Rail logo can be identified from the approach on Botley Road.



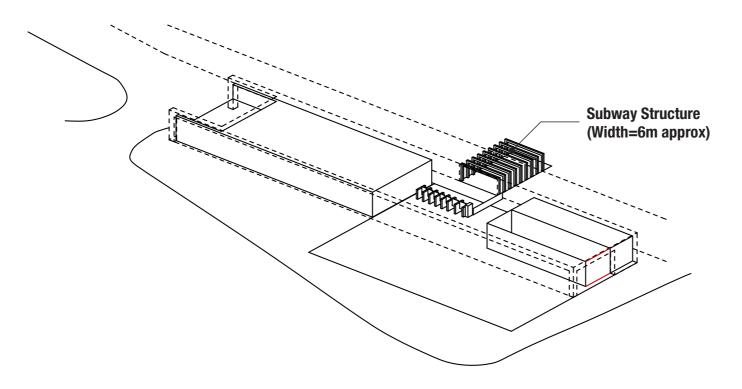


Figure 49. Subway diagram

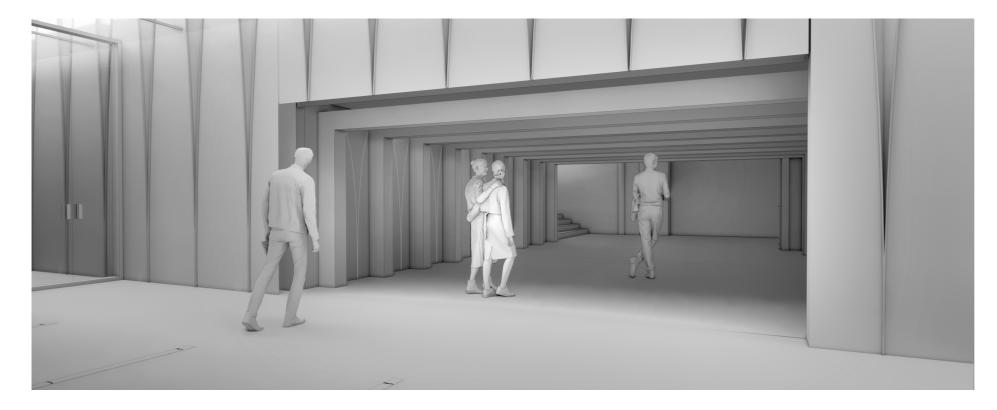


Figure 50. View of the proposed Subway

SUBWAY STUDIES

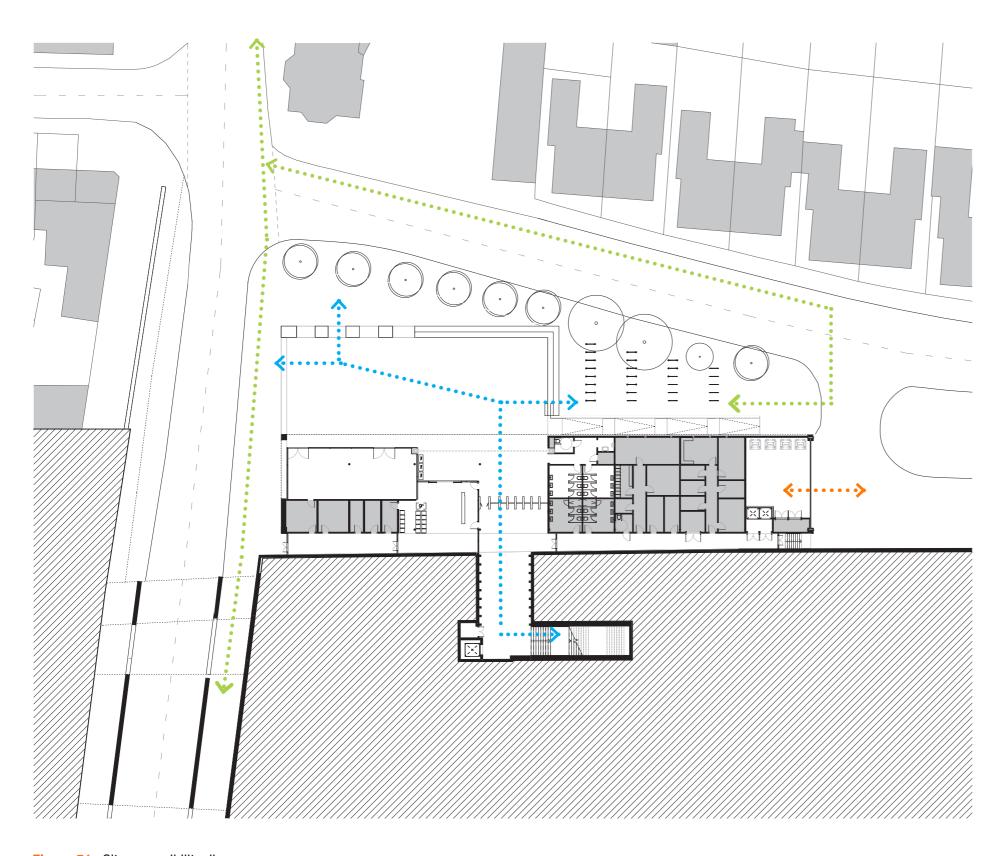
The new subway provides access from the West Entrance Building to the Platforms 4 and 5. Its positioning and design are coordinated with the Oxford Station Masterplan, which safeguard a potential extension further towards the east and under the rail tracks to connect to the main station.

The proposed levels within the subway (floor and ceiling) are heavily constrained by the levels of the tracks above and flood levels.

PROPOSED SOLUTION

The proposed solution provides an approx 6m clear width internally, with a 2.25m clear headroom. However the structural solution, with a series of Frames (downstand beams + columns) provides 0.25m additional headroom, while also creating a visual feature in the ceilings and the walls of the subway.

This also provides opportunity to incorporate lighting effects and artwork between the "frames" that makes the passenger journey more interesting.



The ediceont diegra

SITE ACCESS

The adjacent diagram shows the main pedestrian and cycle access routes into and around the site.

PEDESTRIAN

The public space has been designed to accommodate the natural movement of passengers in and out out of the Train station that walk towards the western neighbourhoods of Oxford, primarily using Botley Road.

CYCLING

A segregated cycle parking area has been provided close to the station entrance.

The area is to be accessed directly from Cripley Road or Roger Dudman Way, which segregates the cylce routes from the main Pedestrian flows. This parking area also allows for the parking of electric scooters.

VEHICULAR ACCESS. GOODS IN - WASTE OUT (GIWA)

Vehicular access for waste collection and deliveries will be via Cripley Road and Roger Dudman Way, keeping these movements segregated from the main pedestrian and cycle flows.

Pedestrian
Cycles

••••• GIWA

Figure 51. Site accessibility diagram

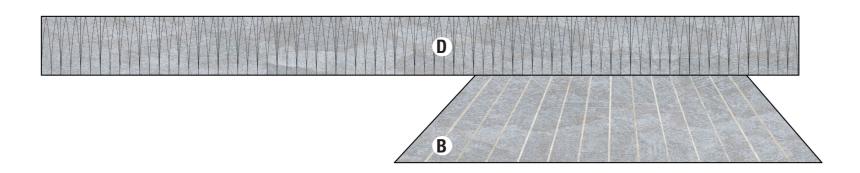


Figure 52. Materials on retaining wall, public realm pavement and patterned inserts

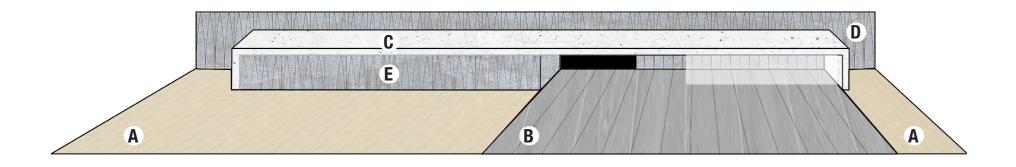


Figure 53. Materials on key elements





A. Public footpath pavement



B. Public realm pavement



C. White concrete on frame



D. Retaining wall concrete



E. Aluminium Panels

KEY MATERIALS

Several iterations for the material strategy of the Western Entrance building and public realm have been reviewed. The material palette aims to tie-in with the urban surroundings, define clearly the public realm and enhance the perception of the frame.

RETAINING WALL

The retaining wall will be a feature element of the Western Entrance Concourse. The wall will be constructed using precast concrete panels. The panels will be formed using distinct 3-dimensional pattern to provide articulation and interest.

WESTERN ENTRANCE BUILDING

The building is conceived as a simple and elegant white concrete frame, supported by slender black-powder coated steel columns. The retail unit will feature large glass panels. The back-of-house area will include dark grey metal panels with a pattern to replicate that used on the retaining wall.

PUBLIC REALM

To allow for a good tie-in and urban continuity, it is proposed to pave the surrounding footpaths with the same stone pavement as used in Frideswide square.

The main Quad area in front of the West Entrance will consist of grey slender stone pieces with regular white stone inserts. The transition between the public realm and the public footpath will be defined by a band of white concrete/stone elements.

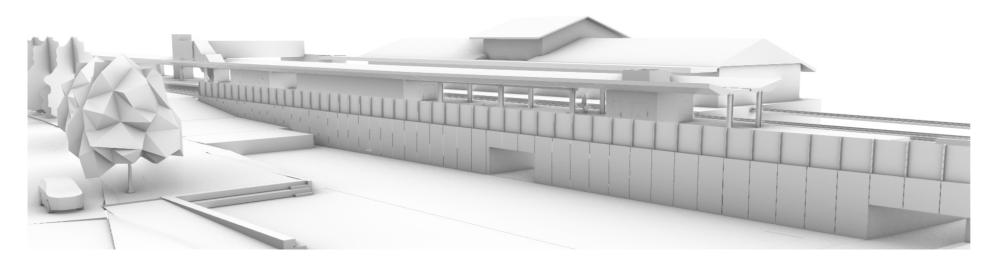


Figure 54. Retaining wall composed of two pieces, concrete lower part and acoustic panel



Figure 56. Retaining wall composed as a singular piece

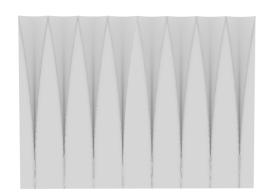


Figure 55. Proposed retaining wall with patterned panels



Figure 57. Proposed 2m-wide panel

RETAINING WALL

OPTIONEERING

The height requirement for the retaining wall to allow for the construction of the track is approx. 4.0m. In addition, it is required to incorporate an acoustic wall of approx. 2.0m to reduce the noise of passing trains.

Alternatives of a retaining wall composed of two pieces (wall and acoustic panel) or a single continuous piece were carried out. The evaluation of the options shows the weakness of the acoustic piece, over the design of a continuous panel, which provides a uniform backdrop in materiality as well as geometry.

As a result the new retaining wall will be constructed with c. 6.0m high precast concrete elements. These elements are to be repeatable, uniform and off-the-shelf and approximately 2-3m wide. The wall will be built with temporary sheet piles to retain the existing platform.

It is proposed to incorporate a contemporary pattern, that creates a rhythm in the wall and that is inspired in the Gothic constructions of Oxford. This pattern is to enrich the perception of the wall by providing dynamic shadows. It is designed to prevent bird perching or roosting.

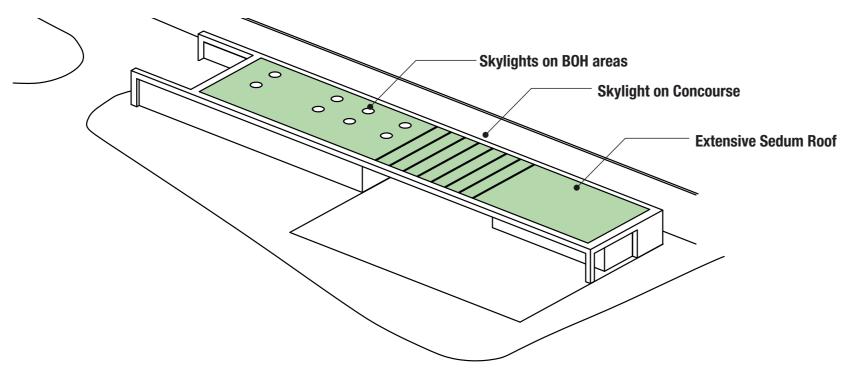


Figure 58. Aerial Axonometric View

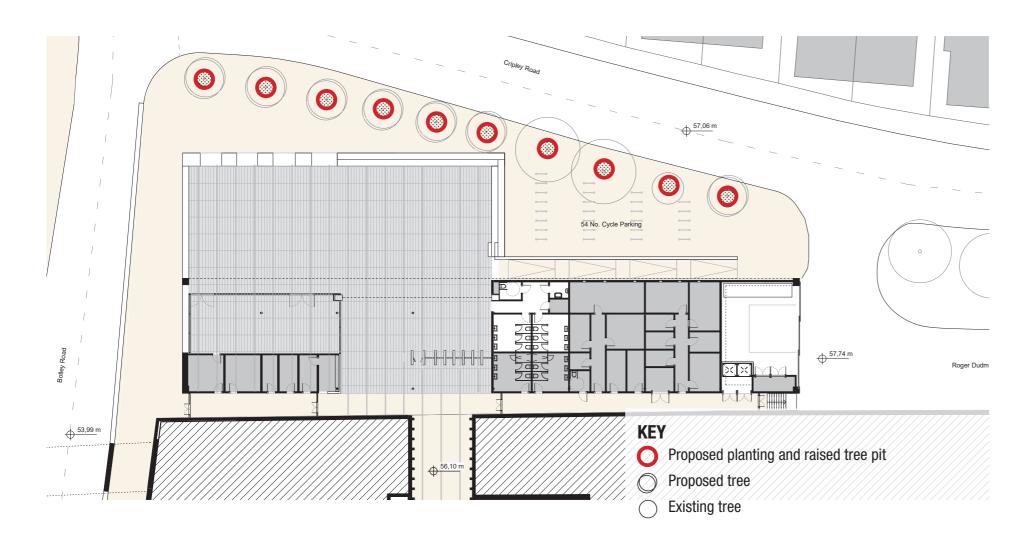


Figure 59. Example of Extensive Sedum Roof

SUSTAINABILITY APPROACH

The building has been conceived following a sustainable approach. The building will be developed to comply with BREEAM "good" certification.

Key features included in the design for sustainability include a green roof, and the use of natural light. The main concourse has also been designed to be an "open" space, reducing the needs for heating/ventilation to the building.



LANDSCAPING

The proposal for the public realm includes new tree planting, with species that follow the existing tree alignment such as: *Tilia cordata* "Böhlje", *Tilia cordata* "Greenspire". The new trees will be planted in new bespoke raised planters that can be used as benches and include grasses and perennials mixed border plants. Planters will also be created around some of the existing trees.

The selection of species for the planters include; *Pennisetum villosum, Verbena bonariensis* 'Lollipop', *Verbena rigida* 'Santos Purple', *Erigeron karvinskianus* or *Callamagrostis spp.* The mix is inspired in Oxford Botanic Garden, the oldest botanic garden in UK, known for exploring new planting configurations rather than relying solely on native species.

EXTERNAL LIGHTING

The new seating to the perimeter of the main "quad" area will include an integrated recessed continuous lighting strip under the bench. Additional lighting to the external areas will be with vertical lampposts.

Figure 60. Landscape and public realm



Figure 61. Proposed raised tree pit



Figure 62. Tilia cordata



Figure 63. Proposed Planting



Figure 64. Proposed Planting



Figure 65. Proposed Lighting

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Figure 66. View 1 - Botley Road rail bridge



Figure 68. View 3 - Botley Road rail bridge



Figure 67. View 2 - Botley Road view towards Oxford City Centre

BOTLEY ROAD UNDERPASS AND BRIDGES

The pattern proposed for the main retaining wall to the rail tracks will also be applied to the retaining wall structures of the Botley Road underpass and bridges. This will help to give cohesion across the entire area.

The cladding on the bridge will be adapted to keep the geometry of the bridge.

Handrailing to the raised Pedestrian and Cycle areas are also designed to reflect the patterns used in the retaining wall structures.

KEY TO VIEWS

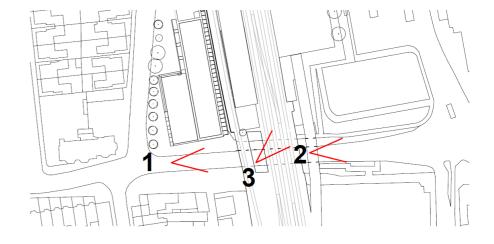




Figure 69. View 1 - Botley Road pedestrian bridge



Figure 70. View 2 - Botley Road pedestrian bridge

KEY TO VIEWS

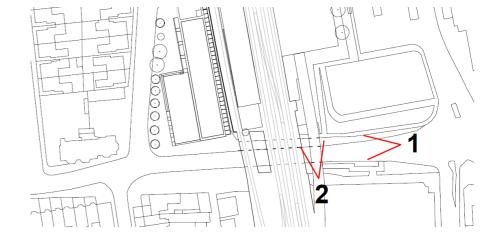




Figure 71. Aerial Day View



Figure 72. Aerial Night View



Figure 73. Pedestrian view of the station



Figure 74. Concourse View



Figure 75. Subway View