Crossrail Act 2008

Crossrail Ltd

London Borough of Camden

Fisher Street Head House

Schedule 7 Plans & Specifications
Design & Access Statement

Submission Reference: CAM/3/4

Document Number: C123-JUL-T-RDS-CR094_SH003_Z-00001

CONTENTS

1.0 EXECUTIVE SUMMARY

In accordance with the provisions of the Crossrail Planning and Heritage Memorandum (Annex 2 to the Crossrail Environmental Minimum Requirements), this Design and Access Statement accompanies, for information only, the main CAM/3/4 Plans and Specifications submission.

The CAM/3/4 submission seeks approval for the following permanent works at the Fisher Street Crossrail site as determined by the Schedule 1 works of the Crossrail Act 2008:

- Erection of head house building, rising to a maximum height of 7.05 m;
- Erection of visual screen to match the head house finishes, to a maximum height of 4.2m; and,
- Installation of artificial lighting equipment.

The head house forms part of the overall Fisher Street shaft complex. The head house itself is fundamental to the post-construction function of the shaft which is to provide emergency and maintenance access.

In developing the design, various considerations have been taken into account, including planning policies, the site's surrounding context, design principles, and consultation with the London Borough of Camden (LBC). These considerations have contributed to the evolution of the design.

The final design brings together various components which address the head house's use, layout, appearance and access requirements.

The design philosophy is one which has sought to minimise the impact of the head house on its surroundings. This will be achieved by ensuring a compact layout, all of which will be within the head house building. The cladding used on the head house façade will reflect recent buildings within the vicinity of Fisher Street. In particular regard has been given to ensuring the head house has minimal impact on the existing listed building at 8-10 Southampton Row and the local heritage setting, which is being achieved through an unobtrusive design approach. The head house's north and south façades front the pavements of Catton Street and Fisher Street and follow the existing building lines. In developing the design, an over-arching awareness of safety and security has also been applied.

Although constrained by site factors and the Limits of Deviation (LoD), the overall character and massing of the head house has been designed to respond to the local setting. This includes ensuring a complimentary architectural response to the vicinity of the shaft and head house site.

2.0 INTRODUCTION

2.1 Scope of this Statement and its Relationship with the Crossrail Planning Regime

This Design and Access Statement (DAS) supports submission CAM/3/4 to LBC under Schedule 7 of the Act for a head house at Fisher Street.

In accordance with the provisions of the Crossrail Planning and Heritage Memorandum (Annex 2 to the Crossrail Environmental Minimum Requirements), the Crossrail Planning Forum has been established. The Forum has agreed that Plans and Specifications for shafts will need to be supported by DASs. The Forum has also agreed the scope and content of DASs which is set out in Planning Forum Note (PFN) 5. This statement has been prepared in accordance with that Note.

Section 3 of this document sets out the various considerations which have influenced the design including planning policy, the site's surrounding context, the design principles, and consultation. Section 3 also describes the proposals in terms of use, layout, external appearance and landscaping.

Section 4 sets out the access arrangements in relation to the function of the shaft.

Section 5 concludes the Statement.

2.2 Crossrail Project Introduction: Fisher Street Shaft Complex

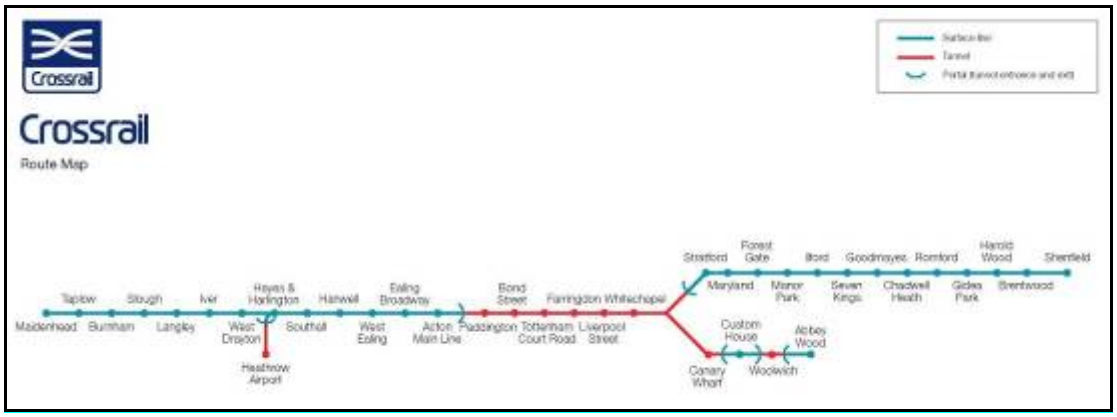


Figure 1: Crossrail Route

Fisher Street is located on the main underground section of the Crossrail (CRL) route to the west of Farringdon Station in the London Borough of Camden. Fisher Street Shaft is situated close to the intersection between the A40 (High Holborn) and the A4200 (Southampton Row). The site is contained by Fisher Street, Catton Street and 8-10 Southampton Row. Fronting both Catton Street and Fisher Street is an EDF sub-station forming the boundary to the site on the east.

Aspects of the scheme are fixed, including:

- The LoD; and,
- The alignment of the tunnels.

The shaft is required for:

- Intervention – access for emergency services to the running tunnels and access to the shaft equipment rooms for maintenance personnel; and,
- Provision of operational plant and equipment.

These fixed aspects and function have been important factors in shaping the shaft and head house design.

The CAM/3/4 submission seeks approval of the Plans and Specifications for the following works:

- Erection of head house building, rising to a maximum height of 7.05m;
- Erection of visual screen to match the head house finishes, to a maximum height of 4.2m; and,
- Installation of artificial lighting equipment.

3.0 DESIGN ISSUES

3.1 Design Considerations

3.1.1 Planning Policy Context

Schedule 7 of the Act defines the planning regime and sets out the grounds on which LBC can impose conditions on an approval, or refuse a Plans and Specifications submission. Notwithstanding this planning regime, in making a well informed decision on the CAM/3/4 submission it is expected that LBC will be guided by its own adopted design policies.

LBC's planning policy framework is based on the following documents in the Local Development Framework (LDF):

Local Development Framework: Core Strategy 2010

The Core Strategy was adopted by LBC in November 2010 and sets the borough wide objectives and policies at the strategic level.

Strategic Objective CS13 promotes a borough of sustainable land use and buildings by ensuring that land is used efficiently and buildings are designed to be carbon efficient and able to cope with the effects and impacts of climate change. Objective CS14 aims for a high quality environment through design that reflects local character and preserves and enhances the historic environment.

Local Development Framework: Development Policies 2010

The Development Policies Development Plan Document was adopted in November 2010. Development Policies DP24 (Securing High Quality Design) and DP25 (Conserving Camden's Heritage) focus on ensuring that Camden is developed in the future in a positive manner, which encourages strong design and reflects the existing heritage environment of the immediate and wider area. The policies aim to achieve quality buildings through the use of materials, texture tone and colour. Design is also encouraged to be suitable to its intended use.

3.1.2 The Site's Surrounding Context

The Fisher Street Shaft site is situated in an area between Bloomsbury and Holborn. Bloomsbury is a renowned area of regular Georgian Squares. It remains predominantly residential, although with large institutions including the British Museum, the University of London and Great Ormond Street Hospital. The distinctive buildings and mature open spaces of Lincoln's Inn and Gray's Inn distinguish Holborn. The Fisher Street site lies partially within the Kingsway Conservation Area.

To the west of the site lies 8-10 Southampton Row (including Kingsgate House), which is a Grade II listed building. To the north is the Grade II* listed Central Saint Martins College of Art and Design. Opposite 8-10 Southampton Row is the Kingsway Tram Subway (listed Grade II). Other listed buildings within the locality demonstrate the area's heritage, including town houses in Bedford Row (listed Grade II and II*) and Holborn Town Hall.

The Fisher Street Shaft site lies in the centre of a busy gyratory system encompassing Theobald's Road, Southampton Row, High Holborn and Procter Street. Fisher Street and Catton Street act as service routes for the buildings fronting Proctor Street and Southampton

Row. Both streets are routed one-way for traffic movement, Fisher Street eastbound and Catton Street westbound.

The Site Location Plan (C123-JUL-A-DDL-CR086_SH003_1-12101) shows the location of the site in relation to the surrounding area.

Photo 1: View looking south east across the existing site from Fisher Street (the tall brown brick building and red Georgian style building are to be demolished).

Photo 3: 8-10 Southampton Row Grade II Listed Building to west of site (Catton Street).

Photo 2: Area to the east of the site (Catton Street).

Photo 4: Fisher Street.

Photo 5: 8-10 Southampton Row Grade II Listed Structures (Fisher Street).

3.1.3 Design Principles

The overall site is constrained on all four sides resulting in a small site available for the shaft structure and associated worksite. The adjoining sites and boundaries are:

- Fisher Street to the North;
- Catton Street to the South;
- EDF building to the East; and,
- 8 – 10 Southampton Row to the West.

The buildings on Southampton Row are predominately six to eight storeys high and stone faced, of contrasting architectural character. The building heights along Fisher Street and Catton Street are four and five storeys.

The shaft will be constructed on a site created by the demolition of 2-6 Catton Street and 1-2 Fisher Street (Photo 1), as well as demolition of the rear, non-listed, extension to 8-10 Southampton Row.

The broad design philosophy has been one which has sought to minimise the functional and visual impact of the head house on its surroundings. This philosophy has incorporated a number of specific design principles, which have been addressed in order to balance functional requirements with architectural considerations. The design principles are as follow:

- Integration with the local context, use and heritage setting;
- Minimising scale, mass and space through design based on functionality;
- Ensuring security and safety;
- Minimising noise;
- Provision of operational plant and equipment;
- Ensuring the structure is durable and maintainable; and,
- Provision of maintenance and emergency access.

The design has also taken account of potential future development to take place over the head house – the Over-Site Development (OSD). The proposed structure is capable of accommodating an OSD. There will be a separate Town and Country Planning Act application for any OSD in due course.

3.1.4 Consultation

CRL presented the design proposal to LBC at a meeting held on 28th September 2010. The presentation illustrated the broad design philosophy and highlighted the shaft's purpose which is to provide emergency access to the running tunnels. LBC raised some queries with the proposal in respect of requests to provide:

- Screening to either side of the head house;
- A green (sedum) roof to the head house; and,
- Louver venting on the head house façades.

The design responses are explained in greater detail in Section 3.2 below.

3.2 Design Proposals

The overall head house design incorporates the majority of the considerations set out in Section 3.1, whilst taking account of the statutory limitations enforced by the LoD. The individual components of the design are broken down into greater detail in the following sub-sections.

3.2.1 Use

As stated above, the shaft is required for:

- Intervention – access for emergency services to the running tunnels and access to the shaft equipment rooms for maintenance personnel; and,
- Provision of operational plant and equipment.

3.2.2 Layout

The positioning of the head house and the space around it is substantially determined by the underground shaft in relation to the eastbound and westbound tunnel alignment.

In its final form, the shaft will be four levels deep (see Drawing Number C123-JUL-A-DDB-CR086_SH003_Z-12601) and will essentially accommodate the function of an intervention and maintenance access.

The Ground Floor Plan (see Drawing Number C123-JUL-A-DDA-CR086_SH003_1-12201) shows the proposed layout of the shaft, internally and externally.

Internal Layout
The 15.0m internal diameter shaft will rise approximately 23.0m from track level into a single storey head house building, standing at a maximum of 7.05 m above ground level. The total floorspace of the head house will be 258 sqm. The majority of plant rooms will be located underground within the shaft structure so only equipment that needs to be at ground level will be located within the head house. This minimises the land occupied by the building and makes for a compact and secure layout with the minimum of entrance points.

To the north of the internal head house area will be two transformer rooms with direct access, through steel louver doors, to and from Fisher Street. A service access for other plant will also be provided from Fisher Street.

The intervention lift and stair core will be located at the west side within the head house, defined by the tunnel alignment at the base of the shaft. An intervention access will be

provided on the south façade from Catton Street. Plant rooms, which require natural ventilation and exhaust vents will be located on this façade connecting to the louver venting. By incorporating ventilation inlets and outlets into the head house external wall, this will allow floorspace within the head house to be reduced, as less circulation space is required around the machinery.

Other necessary equipment rooms that are required on the ground floor are located within the east side of the head house.

Drawing Number C123-JUL-A-DDA-CR086_SH003_1-12201 provides detailing of the locations and layout as described above.

External Layout

The head house reaching a maximum height of 7.05m will be located between 8-10 Southampton Road and the EDF building. Visual screening with a secure door will be installed along Fisher Street and Catton Street, at the open spaces between the head house and 8-10 Southampton Road, and between the head house and the EDF building. The visual screening will stand at a maximum height of 4.2m in order to reduce the overall massing of the complex thus reducing the impact on its surroundings.

The head house will be a rectangular box like shape, with its scale and features designed to reduce its impact on its local surroundings, including minimising any detraction from the adjacent listed building.

Access into the shaft will be provided from Fisher Street and Catton Street. These entrances will be at street level and whilst there are steps at the Catton Street entrance, the Fisher Street entrance will not require ramped access to and from the pavement. However, a ramp will be provided within the head house structure itself in order to access equipment rooms. The emergency exit will be through double doors, which will open on to Fisher Street. It has been agreed with LBC that due to the infrequency of the use of these doors the outward opening onto the Fisher Street pavement is considered to be acceptable.

The area immediately surrounding the shaft complex will be kept clear at all times in order for emergency and maintenance vehicles to access the shaft and park in this area.

3.2.3 Appearance

Scale, Mass and Form

The head house massing is determined by the site boundary and the vertical LoD, which are approximately 7.5m above ground level. The head house building will take on a rectilinear 'boxed' form of uniform height, which continues the linear streetscape between Fisher Street and Catton Street.

The head house will be approximately 10 - 15m wide, 17.5 - 21.5m deep and 7.05m high (see Drawing Numbers C123-JUL-A-DDA-CR086_SH003_1-12201 (General Arrangement Floor Plan) and C123-JUL-A-DDC-CR086_SH003_Z-12402 (South Elevation). The external walls at Fisher Street and Catton Street will follow the existing building lines thus continuing the street frontage. The west side wall will be approximately 5.5 – 7m from 8-10 Southampton Row and the east side façade will be approximately 5.5 – 10.5m from the EDF building.

The size of the head house has been led by maximising the engineering functions below ground, thereby minimising the amount of functional space required at ground level. The internal arrangement of the head house has also been adjusted to minimise the number of external doors and simplify security requirements. This design approach has been fundamental in minimising the scale and mass of the head house.

As far as it is practicable in design and construction terms, it is proposed to minimise energy wastage within the head house, for example using louver venting to reduce the energy used to cool plant and machinery. With regard to the architectural treatment of the surface structures, the design approach has also been influenced by the need for sustainability.

The form of the overall head house complex is split into three distinct components:

1. Cladding to the visual façades of the head house;
2. Louver vents; and,
3. Visual screening.

The first component is the cladding, which will be provided at the Fisher Street and Catton Street (visual) façades. The cladding that has been chosen for the external walls incorporates a finishing material designed for durability and ease of maintenance. The particular colour pattern (shown in Appendix A) has been chosen in order to provide continuation of the streetscape as this palette and material has also been used on a recent EDF office building opposite the site.

The second component of the design is the louver venting to the north and south façades of the head house. The louver vents' function is to provide ventilation to plant located in the front rooms as only specific equipment requires ventilation; the head house provides ventilation to the shaft only and not to the tunnels. The louvers reduce the need for the mechanical cooling of plant within the head house, thus ensuring the building is more sustainable by nature. The louver vents also provide continuation of the streetscape by reflecting those found on the EDF sub-station adjacent to the shaft site.

The visual screening incorporated in the design, at the request of LBC, is the third identifiable feature. The visual screening will be an extension of the aluminium cladding used on the north and south façades of the head house. Figure 2 provides an indication of how this will be achieved. The visual screening will stand at a maximum of 4.2m tall in order to prevent access to the general public and misuse of the areas either side of the head house.

Although constrained by site factors and the LoD, the overall character and massing of the head house has been designed to respond to the local setting. This includes ensuring the head house reflects adjoining buildings, for instance the EDF offices opposite and the EDF sub-station adjacent to the site, whilst minimising the impact on the adjoining listed building.

Figure 2: View from the west end of Catton Street

Materials and Finishes

The finishing palettes for the head house have been chosen principally in the interests of integration into the local area, in addition to their robustness and long term low maintenance characteristics.

The finishes for the head house will be a combination of a series of horizontal anodized aluminum cladding panels in different colours with clear anti-grafitti coating and louver panels. The colours of the cladding panels are to be charcoal grey, green and light green, which have been chosen to reflect the adjacent EDF building and the building beyond it. The intention is to create an effect which reflects the colours of the local surroundings.

The panels will be bolted by traditional mechanical fixing methods on to the face of the external concrete wall of the head house. These smooth surface cladding panels will be maintenance free and durable.

A sedum roof option was considered in line with LBC's request. However, due to the nature of the building, it was not considered to be economical or practical, as the roof area is insufficient to make this option viable and the roof itself is only likely to be temporary. In this respect, further development is due to occur on top of the head house at a later date (OSD).

Attention to detailing will minimise the upkeep and maintenance needs of the head house. Further details on materials and finishes are provided in Appendix A.

Lighting

External lighting shall be provided to the Fisher Street head house external areas in accordance with Crossrail Standards and the Chartered Institution of Building Service Engineers (CIBSE) Code for Lighting for the maintained illuminance levels and with luminaires of a type approved for use by Crossrail (see Appendix A). For security purposes, vandal resistant external bulkhead lighting will be installed near the intervention and maintenance access, and louver doors).

3.2.4 Screening

Visual screening with a secure door will be installed along Fisher Street and Catton Street, at the open spaces between the head house and 8-10 Southampton Road, and between the head house and the EDF building.

The visual screening will be anodized aluminum cladding panels, the same material as the cladding to the head house structure. The extension of the cladding of the head house façade for the visual screening will provide an impression of a single integrated head house, thus continuing the streetscapes along both streets.

4.0 ACCESS ISSUES

4.1 Head House Access

Access via the head house to the shaft and running tunnels will be required to enable maintenance and emergency intervention.

The ground floor level of the head house will be set above flood risk level. This will necessitate a ramp within the head house at the maintenance entrance at Fisher Street, which will aid the movement of plant and equipment. An internal step at the emergency access entrance at Catton Street will also be provided.

No plant or equipment will be placed on the roof except for drainage channels connected to external rainwater pipes. There will be no permanent internal or external access to the roof. When maintenance to the roof is necessary, a temporary mobile access platform (e.g. 'cherry picker') at Fisher Street or Catton Street will be used. Handrails and barriers will be provided at the roof edges for safety purposes.

4.2 Vehicle Access

Access to the head house will be required for emergency services and Network Rail maintenance personnel. Fisher Street and Catton Street are routed one-way for traffic movement, Fisher Street eastbound and Catton Street westbound. The maintenance and service access will be from Fisher Street, which is the wider street. Emergency vehicle access will be from Catton Street. Maintenance vehicles will park on Fisher Street outside the head house.

4.3 Access for All

This development proposal has not been designed to meet the requirements of 'Building Regulations Approved Document Part M' or the 'Disability Discrimination Act'. This is on the basis that maintenance and intervention operations are highly physical activities, which would be expected to require full mobility.

5.0 CONCLUSIONS

The design philosophy of the Fisher Street head house is one which has sought to produce a scheme which will have a minimal impact on its surroundings.

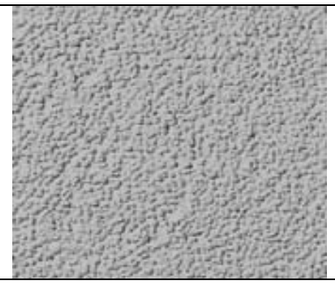
By taking account of planning policies, consultation with LBC and appraisal of the site's surroundings, a design has been formulated which satisfies the design principles, therefore ensuring the head house will:

- Integrate with the context of local land uses, buildings and their settings;
- Minimise scale, mass and space through design by functionality;
- Ensure security and safety;
- Minimise noise;
- Provide the necessary operational plant and equipment;
- Ensure the structure is durable and maintainable; and,
- Provide maintenance and emergency access.

GLOSSARY

Term	Explanation
Louver	A framed opening, as in a wall, door, or window, fitted with fixed or movable horizontal slats for admitting air and light and shedding rain.

APPENDIX A: SCHEDULE OF MATERIALS & FINISHES

		Finish/Material/Item	Location	Description
		Anodised aluminium cladding	North and south external walls facing Fisher Street and Catton Street	Horizontal anodized alumnium cladding panels finish with anti-graffiti coating on stainless steel frame fixed to external concrete wall. Colours to be charcoal grey, green and light green to reflect the adjacent EDF building and the building beyond it.
		Silicon Render system	East and west external walls (facing 8-10 Southampton Row and EDF building)	Rolled texture lightweight silicon render for use as render only or as part of an external wall insulation system
		Railing	Roof edge of the head house	50mm dia galvanised steel handrail with 50mm dia galvanized steel tube baluster at 1.2m intervals, bolted to top of parapet. Handrail at minimum 1.1m above finished roof level.

		Finish/Material/Item	Location	Description
		External doors	Intervention and maintenance access	Steel security door faced with powder coated finishes.
		Louvers	Air inlets/ outlets on the retaining wall facing Fisher Street and Catton Street	Powder coated steel louvered panels.
		Louvre doors	Transformer rooms	Powder coated steel louvered doors.

		Finish/Material/Item	Location	Description
		External Lighting	Adjacent to intervention/ maintenance access doors	Vandal resistant Thorn Concept lamp mounted on external wall next to doors.