

5 Description of new Gas Governor proposals



Introduction 5.1

The proposed Gas Governor is to be a replacement for the existing facility, known as the 'St. Pancras Gas Governor', which is owned and operated by National Grid Gas ('NGG') and located at Pancras Road.

The St. Pancras Gas Governor is one of the largest of a considerable number of pressure reduction installations provided by NGG to supply its customers with gas throughout England and Wales. Not only is it one of the largest in the UK but it is one of the largest in London, supplying much of north-west and west London.

London's gas is supplied via a network of high pressure pipelines which transport gas from the North Sea and other onshore storage installations. As the gas travels to its destination, it passes through a number of pressure reduction installations, progressively reducing its pressure and thereby increasing the volume of gas available to customers.

The final stage of this pressure reduction process occurs when gas is transported to specific areas of the city in gas mains that operate at 'medium' pressure (MP) up to 2 bar (2 atmospheres) and the pressure is finally reduced again, down to 'low' pressure (LP) at approximately 25 millibars, which is the pressure at which it enters people's homes. This final pressure reduction is carried out by a District Governor such as the St. Pancras Gas Governor.



Figure 6: Photographs of the existing St. Pancras Gas Governor plant and a section of the proposed plant for the new Gas Governor

Drawing RCS-KXCPR-P-3, submitted for information as part of the drawing package, illustrates the connection details for the proposed Gas Governor.

5.2 **Operational requirements**

The operational requirements set by NGG for the design of the new facility are set out below.

5.2.1 Buildings and Structures

Foundations

Any contamination within the proposed site should be remediated. The ground slab and walls should be supported on sheet piling to provide a structure that is independent from the Regent's Canal wall, CSNP and Goods Way.

The Welfare Building

As with the current St. Pancras Gas Governor, the proposed Gas Governor will be unmanned. However, staff will visit the site approximately 20 days per annum for training and maintenance of the equipment and therefore will need a Welfare Building for this purpose. The Welfare Building will also act as an incident room during a gas emergency. This building should include the following facilities:

- An entrance lobby;
- and a changing room bench (approx 1500mm x 500mm);
- A shower room, including shower, basin, hand drier and towel rail;
- A WC, including toilet, basin, hand drier, towel rail;
- A kitchen with eating area to accommodate 2 people, including kitchen units over a length of approx 2.2m (base and wall) and a sink. The existing kitchen also houses telemetry equipment (a switch panel) which will need to be located appropriately within the new building (see 'utilities' below).

Access and Parking

The parking facility should replicate the functional provision of the current facility, providing approximately 225m². This should allow access and turning for a 70T mobile crane.

Pedestrian emergency access and egress should be provided to ensure that personnel cannot become trapped within the enclosure.

Gas Governor Building

The Gas Governor housing is to be designed to accommodate the new Gas Governor with associated pipes, ventilation, maintenance and emergency requirements. The design and production of this governor will be procured on the basis of a data sheet provided by NGG. The design of the governor will also prescribe the acoustic requirements of the enclosure.

The housing needs to allow for replacement of the equipment inside. For example, the existing St. Pancras Gas Governor has a removable central panel; however this could be substituted for a beam and pulley system to slide equipment in and out.

A gas conditioning unit is required and this will require bunding to protect the surrounding area in the event of leakages. It will also require access from the road to allow for refuelling.

Security

The entire site should be surrounded by a wall at least 3m high (above adjacent paving level) with a gate of the same height at the entrance. Both the wall and gate should be designed to discourage climbing into the enclosure and the gate and lock should be to NGG standards. There should be restricted views into the enclosure and no distinguishing signs or lettering to identify the purpose of the facility.

The wall should be a minimum of 2m from the buildings within the structure. This is partially for security reasons, but also to allow access for maintenance around the wall and buildings.

• A locker room, accommodating a full height locker (approx 600mmx 350mm plan)

Utilities

The site will require:-

- Electricity: A standard connection for the Welfare Building will be required together with a 3-phase supply to the site.
- Water: The Welfare Building will require a domestic water supply.
- Sewer: The Welfare Building will require a sewer connection.
- Telephone lines: Two lines will be required; one for a telephone in the Welfare Building for when it is used as an Incident Control Centre; the second for NGG's PMAC Profiling equipment, which will be situated in a kiosk alongside the governor equipment.
- Electrically Operated Valves: The actuators for these valves will be on a control panel as part of the building distribution board in the Welfare Building, sited somewhere other than the kitchen area (their location in the existing building).

5.2.2 Landscaping

Planting

No planting is to be included inside the perimeter wall as it will not be maintained and could compromise security.

Planting around the perimeter of the Gas Governor should discourage climbing up or over the wall.

Maintenance

Any meters and access panels for irrigation should be located outside the enclosure, ideally on the perimeter wall.

All materials should be designed for the minimum amount of maintenance

5.3 **Proposals**

5.3.1 Site Clearance and earthworks

The existing vegetation within the proposed site is to be cleared to allow for construction, as approved under the Early Enabling Works submission (LBC ref. 2008/0278/P).

Two willow trees that overhang the site from the CSNP are required to be removed to provide access to the western boundary during construction of the perimeter wall and to prevent people climbing into the compound. As stated in Section 3.7, we have consulted The London Wildlife Trust, who has confirmed that it is not opposed to the trees being removed from it's land provided the wood is logged and returned to the CSNP.

As the CSNP is located within the Regent's Canal Conservation Area, a separate application for tree works within a conservation area has been submitted alongside the application for approval of details. The locations of the trees concerned are shown on submitted drawing 280_04_07_003.

Existing trees that are to be retained along the boundary are to be protected during construction, as indicated on submitted drawing TOWN279.3(08)3001 and in accordance with BS5837:2005 Trees in Relation to Construction.

Soil contamination levels were investigated in 2007 by Arup as part of the Earthworks and Remediation plan submitted and approved under the Southern Infrastructure Works submission (LBC ref. 2008/3731/P) and attached for information as Appendix A. Contamination was found to be low and within acceptable levels and no remediation is required or proposed.



Figure 7: Photo looking south across the Regent's Canal towards the proposed site, as existing

5.3.2 Site layout

The finished site levels were approved as part of the Southern Infrastructure Works submission and were designed to suit the gradients of Goods Way, the Regent's Canal water level and topography of CSNP. The slab level has been set at 21.20m AOD (i.e. approximately 300mm above the canal water level) and this determines the location of the vehicle access point off Goods Way. The Gas Governor Building is located to the west of the access where there is more space and the smaller Welfare Building is located to the east, in the narrowest part of the site. The space between the two buildings is designed to accommodate the swept path of the 70t mobile crane that is required for maintenance purposes.

Emergency escape to the public highway is provided by escape stairs and pass gates at the western and eastern ends of the perimeter walls as well as the main vehicle access gates on Goods Way.

5.3.3 Buildings and structures

Perimeter Wall

The foundations of the perimeter wall consist of sheet piling and a capping beam. The piling along the northern boundary has been set back from the canal to avoid disturbing the integrity of the canal edge and to ensure that the Gas Governor enclosure is not reliant upon the canal wall for structural support.

The perimeter wall has been kept as low as possible whilst being consistent with NGG's height requirement and the aim of screening the buildings from ground level views.

The wall varies in height from its lowest point of 3.3m on the south-east corner to the highest of 6.3m on the south-west corner and will be constructed of two skins of brickwork either side of a structural concrete core.

Consideration has been given to using reclaimed bricks from the site but the usable bricks reclaimed from north of the canal have all been allocated for re-use in the Eastern Goods Yard and the canal wall. We are exploring whether there are sufficient bricks in the area south of the canal which could be used for the gas governor wall and the canal wall. The preference would be to clad the exposed, external skin of the east, north and west elevations rather than the south elevation which will be covered with the green wall system. The south wall and the entire internal skin would instead use red London stock bricks.

In the event that there are not enough recycled bricks to complete both structures, priority would be given to the canal wall in order to match the reclaimed bricks being used on the north side of the canal, whilst the Gas Governor perimeter wall would utilise red London stock bricks.

Figure 10: Illustrative image of the proposed south elevation along Goods Way, looking east



South Elevation (i)

The southern elevation along Goods Way varies in height from approximately 3.3m at the eastern end to 6.3m adjacent to the CSNP. The wall is approximately 57m long and incorporates full height painted steel gates (10.5m long), similar to those at the existing St. Pancras Gas Governor shown in Figure 8. The double entrance gates will be mounted on wheels and constructed from painted steel slats positioned at various angles to add texture and interest as one moves along Goods Way. The proposed grey paint has been chosen for its robust, matt qualities so that the gate complements the planting along the same facade.



Figure 8: Photos of the gates at the existing St. Pancras Gas Governor which are similar to those proposed.

The main part of the wall incorporates a full height, 215m² 'green wall' which serves to soften the southern elevation as well as create an evolving streetscape which changes with the seasons. 'Architectural' planting will ensure that the wall enjoys year-round foliage of varying tones and textures which can withstand frequent contact with passing pedestrians. A band of more delicate, flowering species will be positioned out-of-reach at the top of the wall to add seasonal variation and colour. Illustrative views of the green wall are provided as Figures 9 and 10.

Details of the proprietary system will be submitted at a later date, however, it is currently intended to utilise a modular system comprising pre-grown planting units that are installed on standard metal cladding rails and fixings attached to the brick wall. This method has the advantage of enabling the system to be retrofitted to the wall, rather than forming an integral part of the wall structure, allowing modules to be easily changed if necessary. The modules include a growing medium and an irrigation system that waters and feeds the plants. It is carefully tuned to deliver precise, minimal amounts of water. Irrigation water will be supplied from an underground storage tank that recycles 'grey water' from the surface water drainage system and is topped up from the mains supply during dry weather. The green wall will be topped with painted steel coping which will match the treatment of the main entrance gates.

The western end of the wall steps back from Goods Way to align with the CSNP boundary; this recess providing space at the back edge of the Goods Way footpath to gain access to the LP and MP exit gas valves located beneath the paving and to create a 'shadow gap' which conceals a full height emergency pass gate. The gate will be constructed from metal slats and painted grey to match the main entrance gate. Brick doors, set into the wall will conceal a small plant room which will house the controls for the irrigation system

Reflecting the curved north elevation, the south-west corner of the wall is also curved to provide a soft edge where the south elevation meets the CSNP boundary.



Figure 9: Illustrative image of green wall along the south elevation, looking west

(ii) West Elevation

The western elevation of the brick perimeter wall follows the oblique line of the land ownership boundary with the CSNP and replaces the existing timber fence and brick wall. At its northern end, nearest to the canal, the top of the wall is 3.9m above ground level. In the south, the wall is approximately 6.3m above the pavement level in Goods Way and 1.5m above the top of the existing boundary fence to CSNP.

(iii) North Elevation

The northern elevation is approximately 117m long. The wall slopes down from 4.8m at the north-east corner to 3.9m at the north-west, such that views into the compound from the proposed pedestrian and vehicular bridges across the canal are minimised (see the Urban Design Report at Section 7 of this Statement).

The sinuous form of the brick wall and the character of the adjacent planting are designed to create a transition between the CSNP to the west and the canal moorings to the east. The curvature of the wall has been specifically designed to work with the chosen, flatedged brick to create a non-facetted curve and avoid the use of bowed bricks.

The wall is separated from the canal edge by a strip of planting, which fills the space between the wall and the canal. This represents a departure from the approved scheme for the same area under the Southern Infrastructure Works submission which included a narrower planted bed and a paved maintenance path (see approved drawings attached at Appendix D). Following additional consultation with NGG, it is now considered that the maintenance path is unnecessary and that its removal would present a greater opportunity for enhanced planting along the canal edge.

A 2m high timber fence placed perpendicular to the western end of the wall defines the land ownership boundary between the CSNP and the Gas Governor site.



Figure 11: Illustrative image of the north and east elevations

(iv) East Elevation

The eastern brick curves round from the north elevation to meet the south elevation at right angles. The base of the wall follows the line of the steps to adjust to the changing site levels between Goods Way and the canal towpath. However, in order to limit views of the Gas Governor building from the aforementioned canal bridges, the top of the wall maintains a constant horizontal level to match the height of the wall at the south-east and north-east corners.

Mirroring the western elevation, there is a metal pass gate at the top of the steps adjacent to Goods Way, which provides emergency access onto the public footpath. The southern wall projects beyond the line of the east wall to conceal the gate, whilst ensuring that there is no space for people to loiter and hide.

The treatment of this gate will again match the main entrance gate on the southern elevation, in order to provide consistency across the scheme.

Gas Governor Building

The Gas Governor building provides an enclosure for the three gas regulating values which reduce the pressure of the gas from medium to low pressure gas for domestic use. The manifolds at either end of the housing are located below ground level.

The building will be constructed from moulded glass reinforced plastic ('GRP'), measuring approximately 12.3m by 19m in plan with a height of 4.6m. To meet the operational requirements of NGG, it is similar in design to the existing St. Pancras Gas Governor on Pancras Road, with a simple, painted finish and ridged seams which extend vertically up the walls and across the curved roof. The north and south facades are interrupted by 4 projecting ventilation boxes, 2 on either side of the central escape doors, as shown in Figure 12 of the current building.



Figure 12: Photos showing the ventilation shafts and escape exit on the current St. Pancras Gas Governor.

The building also includes inspection platforms for maintenance and the replacement of any equipment, together with the necessary ventilation and noise attenuation measures. Details of the colour and finish of the GRP structure will be provided at a later date.

In the unlikely event of an explosion, a raised panel in the roof is designed to lift slightly to release the pressure inside the enclosure before returning to its original position.





Figure 13: North/south and east/west elevations of the proposed Gas Governor Building



Welfare Building

The Welfare Building will be constructed from GRP to match the Gas Governor Building. Details of the colour and finish will be submitted at a later date.

The building is approximately $7.5m \times 5m$ long with a height of 3m and in line with the requirements of NGG, includes an entrance lobby, locker room, shower room, WC and kitchen. The latter includes telemetry equipment which automatically sends data about the operation of the unit back to NGG HQ.

The elevations of the proposed Welfare Building are shown in Figure 14 below.





Welfare Box South Elevation

Welfare Box East Elevation





Welfare Box West Elevation

Welfare Box North Elevation

Figure 14: Elevations of proposed Welfare Building

Ancillary Structures

A double skinned storage tank will be located at the western end of the Gas Governor site to store lubricant fluid used to seal the joints between the gas pipes. The double tanking is designed to mitigate any potential for leakage.

Figure 15 shows the existing storage tank on the St. Pancras Gas Governor site.



Figure 15: Images of the existing lubricant fluid storage tank

5.3.4 Landscaping

Paving

The compound provides parking facilities for NGG staff and a turning area for a 70t mobile crane which may be required to take out and/or install new pieces of equipment.

The paving within the Gas Governor enclosure consists of concrete blocks over a granular sub-base, which drains to a water storage tank used to irrigate the green wall.

The facility has two escape stairs at the eastern and western ends of the site providing access on to the public footpath along Goods Way. The stairs are constructed of concrete.

Planting and Landscaping

(i) Existing Trees

Approval has already been given for the removal of the trees within the proposed Gas Governor site in April 2008 (LBC ref. 2008/0278/P). However, the development also requires the removal of two mature willow trees that overhang the site from the adjoining CSNP, which is the subject of a simultaneous application for tree works within a conservation area. The location of these trees is shown on submitted drawing 280_04_07_003.

A site meeting was held on 30 October 2008 with representatives from LBC and the London Wildlife Trust (who manage the CSNP) and it was agreed that the trees could be removed provided that the wood is logged and delivered to the CSNP. The group of small trees close to the canal edge are to be retained (as shown on drawing TOWN279.3(08)3001), and protection measures taken during construction in accordance with BS5837-2005. Submitted drawing TOWN279.3(08)7002 shows a section taken through the working area along the western boundary and illustrates the physical measures being implemented to protect the existing trees.

The perimeter wall follows the existing boundary fence/wall with CSNP and so no permanent earthworks or utility works are proposed within the CSNP.



(ii) Proposed Planting

A proposed maintenance path alongside the northern perimeter wall (approved under the Southern Infrastructure Works submission with ref. 2008/3731/P) will now be replaced with planting to provide a deeper bed which fills the width of the space between the wall and the canal edge. A raised planted bed will also be provided between the eastern wall and the stairs leading to the canal and visitor moorings. The proposed planting will consist of low-maintenance native species selected from those found within the CSNP. The layout of the proposed planting is shown on drawing TOWN279.3(08)3000 and the species are listed below:

- Crataegus monogyna
- Salix caprea
- Cornus sanguinea
- Ligustrum vulgare
- Digitalis purpurea
- Galium odoratum
- Polygonatum multiflorum
- Polypodium vulgare
- Dryopteris filix mas
- Rubus pentalobus 'Green Carpet'

In addition, submitted drawings 280_04_07_200, 280_04_07_700 and 280_04_07_900 show the proposed green wall along the south elevation, as described in more detail in Section 5.3.3 of this document.

It is envisaged that the wall will feature predominantly hardy, green planting to provide year-round foliage, similar to the existing green wall at Westfield Shopping Centre in Shepherd's Bush, West London (see Figure 16). The top of the wall, which will be out-of-reach of passers-by, could provide opportunities for more delicate flowering species. This notwithstanding, installation and planting of green walls is a specialist and evolving field. We will therefore be seeking advice regarding the type of plants from the selected installer to ensure that the species are suited to their green wall system and the climatic conditions of the site. Consequently, details of both the proprietary system and a full planting schedule will be provided at a later date.



Figure 16: Precedent images of the green wall at Westfield Shopping Centre

The possibility of aquatic planting using pre-planted coir rolls was explored but is generally not supported by British Waterways due to continued maintenance requirements, litter collection issues and hindering navigation, all of which would present an additional burden on the organisation. Nonetheless, we understand that CSNP are currently undertaking a pilot project with British Waterways which may offer an acceptable alternative to the traditional coir rolls in the form of basket units. We will monitor the outcome of this project and take advice from British Waterways on what type aquatic planting, if any, along the canal edge would be appropriate.

(iii) Programming

The planting along the northern and eastern perimeter walls will be planted during the planting season (November – February) following completion of the engineering works. See section 11 of this Submission Statement for details of the proposed construction timetable.

The timing of the installation of the green wall will depend on the construction programme for B5 as this building would cast shadow over the wall for a large part of the day. If the green wall is installed before B5 is built, the planting would need to be suited to open sunny conditions. However, once B5 is built, it is likely that these plants would not survive the shady conditions and would need to be replaced with shade-tolerant varieties. To avoid the need for extensive replanting, it is proposed that the installation of the green wall is phased, with the irrigation system being installed during construction of the perimeter wall and the planted units being fitted later to coincide with the completion of Building B5. In the interim, the wall would provide an opportunity for temporary art to be installed along the brick façade. This would serve to animate the wall and the route along Goods Way, whilst also protecting the wall from vandalism during this period. As mentioned above, the delay in the installation also allows greater time to assess the performance of the different green wall systems.



Figure 17: Illustrative image of the southern elevation in its interim brick state, providing an opportunity for the installation of temporary artwork

Detailed planting plans and programmes for the green wall will therefore be submitted for approval closer to the planting date.

5.3.5 Maintenance

The proposed Gas Governor buildings, hard standing, gates and the perimeter walls will be owned and maintained by NGG. As stated above, the entrance and pass gates will be painted with a grey, matt paint, which is hard-wearing and low-maintenance.

The green wall and the planting alongside the canal will be owned by KCCLP and maintained by KXC Estate Management.

PART III Responses to

- conditions
- 7
- **Condition 17: Environmental** 8 sustainability
- Condition 19: Access statement 9

- storage and collection
- 13 Condition 25: Enabling works
- 14 Condition 27: Floor plans
- 15 Condition 31: Parameter plans and
 - development specification

planning conditions

6 Introduction to the outline planning

Condition 16: Urban Design Report

10 Condition 20: Illustrative build-out plan 11 Condition 21: Construction timetable 12 Condition 22 and 28: Service and refuse

6 Planning conditions

As stated in Section 1 of this document, this Enabling Works submission represents an 'enhanced' submission under Condition 25 of the Outline Planning Permission, comprising a full Submission Statement which addresses a number of other conditions to provide additional information and context, including those which are stated to specifically relate to 'Reserved Matters' applications.

These conditions are listed in Table 2 along with a brief commentary on how the condition has been addressed. The full text of each condition and a more extensive discussion of the measures undertaken and/or information provided to satisfy the relevant conditions, are documented in the sections which follow.

No.	Title/ Subject	Commentary	
16	Urban Design Report	The Urban Design Report is included at Section 7 of this document.	
17	Environmental Sustainability Plan	The Environmental Sustainability Plan is discussed at Section 8.	
19	Access and Inclusivity Statement	Access and Inclusivity is discussed at Section 9.	
20	Illustrative Build-out Plan	An illustrative Build-out Plan is provided Section 10.	
21	Construction Timetable	The construction timetable is discussed in Section 11.	
22	Service Strategy	The servicing strategy is discussed in Section 12.	
25	Enabling Works	Layout, designs and specifications relating to the proposed Gas Governor site and ancillary landscaping are provided on the submitted drawings and explained in Sections 3 and 5 of this document.	
27	Floor Plans	The floor plans are provided in the submitted drawing package and in Section 4 of this document. Floor space figures are discussed in Section 14.	
28	Refuse Storage and Collection	See Section 12.	
31	Parameter Plans and Development Specification	Discussed at Section 15.	

Table 2: Relevant Planning Conditions

7 Condition 16: Urban design report

"Relevant applications for approval of Reserved Matters submitted pursuant to this permission relating to the design of new buildings and to the landscaping of the public realm shall be accompanied by an urban design report which explains the underlying approach of the design and explain how it addresses each of the relevant Design Guidelines."

7.1 Applicant's response

This is not a "relevant application for approval of Reserved Matters". Nonetheless, an Urban Design Report ('UDR') is included within this submission, overleaf. The UDR responds to the relevant Design Guidelines in relation to the proposed structures and landscaping.

Introduction 1

The existing St. Pancras Gas Governor lies within Development Zone B of the KXC scheme, off Pancras Road. In order to facilitate development of this part of the KXC site, the Gas Governor needs to be demolished and relocated to Development Zone V. as permitted by the Outline Planning Permission and subsequent approvals, namely 2008/0278/P, 2008/3731/P and 2004/2320/C. This Enabling Works submission provides the outstanding details of the new compound, including the perimeter wall, Gas Governor housing, staff accommodation and landscaping, as set out in Section 3 below.

Section 4 of this UDR addresses the Design Guidelines attached to the KXC Outline Planning Permission.

2 **Design Objectives**

The objective of the design is to meet the requirements of the KXC Outline Planning Permission and Revised Parameter Plans, whilst also addressing NGG's operational and maintenance needs in a way that creates a simple, contemporary facility which responds to its neighbours and canal-side context. In particular, NGG require the facility to include the following features:

- A Welfare Building to provide training and staff accommodation, to include changing, locker, WC and shower facilities and a kitchen for 2 people;
- Parking for staff and for maintenance vehicles, with space to allow access and turning of a 70T mobile crane;
- Central double access gates from Goods Way and pedestrian emergency gates to the east and west:
- Gas governor housing constructed in accordance with NGG's data sheet on the ٠ same;
- A perimeter security wall, not less than 3m high around the entire site;

3 Summary of Design Proposals

A full description of the design proposals is provided in Section 5 of the Submission Statement and in the submitted drawings.

3.1 Perimeter Wall

A perimeter wall, constructed predominantly of reclaimed and/or red London stock brick, runs around the edge of the site, providing a secure but visually attractive barrier to the facility. At between 3.3m and 6.3m high, it meets the minimum height requirements set by NGG

The treatment and design of the perimeter wall seeks to relate to the contrasting land uses that adjoin the site; the north faces the Regent's Canal and the Fish and Coal building (both of Victorian origin); to the west is the CSNP (established in the 1980s); to the south is Goods Way and the future KXC development in Zone B; and to the east is the proposed redevelopment of the canal edge to provide a new canal wall, seating, planting and visitor moorings.



Figure 18: Images showing canal walls and the Fish and Coal Building which lie in close proximity to the site

Along the Goods Way (south) elevation, the perimeter of the Gas Governor has been conceived as a gently curved 'feature' wall, to which the other walls have been attached. This wall will range in height from approximately 6.3m at its western end to 3.3m at its eastern end. In contrast to the exposed brick proposed on the east, west and north elevations, a green wall will extend across the majority of the south elevation featuring hardy, native plants which will provide year-round foliage. It is proposed that this green wall will use a modular system which can be affixed to the brick structure underneath. At the western end, a small portion of brick wall is set back from Goods Way to align with the existing boundary fence of the CSNP and form a 'shadow gap' which conceals the west escape gate. The recess created by this arrangement provides access to this gate, the plant room set into the wall and the LP and MP valves which are located beneath the paving. The brick wall continues to curve round from the gate to the west elevation, such that it provides a seamless continuation between the south and west elevations.

Double gates, formed of slatted metal and painted in a grey hard-wearing matt finish, will punctuate the south elevation to provide access/egress to the site from Goods Way. The angle and size of the slats take an irregular form to create texture and depth as one moves past the gates.



Figure 19: Illustrative view of the southern perimeter wall

The brick-built west elevation curves round from the south to create a 'softer' corner at the junction between the proposed site and the CSNP. The wall is constructed at an oblique angle to follow the land ownership boundary, curving again at its northern edge to emulate the form of the north elevation.

The north elevation, also constructed entirely of brick and ranging in height from 4.8m to 3.9m, incorporates pronounced curves to respond to changes in direction at the corners of the site and reflect the sinuous nature of the canal.

The brick east wall maintains a constant level along the top, despite the change in site level between Goods Way and the canal. This feature is illustrated in Figure 20 below. A rounded northern corner reflects the treatment of the other facades to create an overall appearance of one continuous perimeter wall which starts and finishes at either end of the south elevation. As for the western elevation, an escape gate is located perpendicular to the south wall providing emergency access onto Goods Way.



Figure 20: Illustrative view of the curving northern elevation, the sloping east elevation and canalside planting

3.2 Gas Governor and Welfare Buildings

The Gas Governor housing and the Welfare Building are by necessity functional and supplied by a specialist manufacturer in order to accommodate NGG's operational requirements and meet health and safety regulations.

The proposed Gas Governor will be housed in a GRP structure, approximately 4.6m in height and 12.3m x 19m in plan, similar in scale and design to the existing St. Pancras Gas Governor building shown in Figure 21 below.

The smaller Welfare Building will also be constructed from GRP and will use the same finish and colour as the Gas Governor housing. This building will be 3m in height and approximately 7.5m x 5m in plan, providing space for a lobby, locker room, shower room, WC and kitchen.

The curved roof and height of the Gas Governor building and the height of the perimeter walls are such that the building will only be visible from a few raised vantage points, specifically, the upper storeys of Buildings B3, B5 and B6, and the proposed foot and road bridges across the canal. The views from the latter are illustrated in Figure 22, which indicates that the visual impact of the building will be minimal, being limited to the top of the roof only. At only 3m high, the Welfare Building will not be visible from Goods Way or the Regent's Canal bridges.



Figure 21: Photo of the existing St. Pancras Gas Governor building under construction.

3.3 Landscaping

The paving within the Gas Governor compound will be concrete block paving over a granular base.

In addition to the aforementioned green wall, soft landscaping will be provided between the northern perimeter wall and the canal and alongside the eastern perimeter wall, incorporating native species selected from those already found in the neighbouring CSNP. The planting along the canal edge will be terminated by a 2m high wooden fence which demarcates the land ownership boundary with the CSNP.

An above-ground storage tank for lubricant fluid will also be provided at the west end of the site. These will be double-skinned to trap fuel in the event of leakage.





Figure 22: Wireline drawings showing views from proposed vehicle and pedestrian bridges across the Regent's Canal (top and bottom respectively)

Response to the Design Guidelines 4

Responses to the Design Guidelines (attached as Annex 1 to the Outline Planning permission) are set out below. In some cases, the responses have been combined to address a number of guidelines in order to avoid repetition.

4.1 Response to General Design Guidelines 1, 4, 6 and 12 and Canal Area Design Guideline 8

General 1

How the detailed design of the facades, particularly at ground level, integrates with the design and function of adjacent public realm and contribute to the vitality and safety of the streets, providing a human scale, through for example, entrances, scale of elements, articulation, special features and choice of materials.

General 4

How the detailed design of the buildings responds to adjacent development and its townscape qualities, through, for example, setbacks, choice of materials and arrangement and/or scale of façade elements.

General 6

How the design of the buildings generally minimises louvres and louvres/vents, blank facades etc, especially at street level and over large areas of façade.

General 12

How the detailed design of the building maintains quality and attention to function and detail on all elevations.

Canal 8

How the detailed design of the Gas Governor and its enclosure relates successfully to Goods Way, using planting/greening and urban formality as appropriate and how it responds sensitively to the canalside location and environment by using, for example setback, articulation, materials, openings and opportunities for biodiversity.

The key frontages in terms of visibility from the public realm are the southern elevation along Goods Way and the northern elevation along the Regent's Canal.

The Goods Way elevation is the only part of the perimeter wall which can be accessed by the public; the remaining elevations being adjacent to private or secure areas. The wall has been set back from the public footpath to allow for the construction of an extensive 215m² 'green wall', reflecting the transition between informality of planting at CSNP and the emerging built environment/bridge to the east. The proposed planting will create a softer edge to the Gas Governor site, as well as provide a human scale to the wall.

Planting will be designed mindful of the heavy footfall anticipated along the road, with hardy species towards the base where people may brush past and more delicate flowering plants towards the top. Species will be chosen to ensure that the wall will provide year-round colour and to reflect the native planting in the neighbouring CSNP.

The metal gates which punctuate the green wall and the emergency pass gates on the east and west elevations will be painted in the same grey matt finish to ensure a coherent scheme which complements the planting. Metal coping along the top of the green wall will be finished in the same treatment to visually connect the gates with the rest of the wall

The junction of the south elevation with the CSNP is the tallest part of the wall (at 6.3m in height). The curved 'S' shaped wall plan at the western end of the Goods Street elevation is proposed to soften the outline and marry up with the CSNP boundaries set back from the road. In addition, the recess created by this arrangement serves a functional purpose by providing a shadow gap for a concealed emergency pass gate and allowing access to the plant room and the LP and MP exit gas valves set beneath the paving.

The plant room, set into the recessed wall on the south elevation, uses brick doors rather than metal louvres to ensure it blends in with the rest of the wall. The bricks will be sliced into thin tiles and mounted within a metal frame on a pivot to ensure the doors are light enough to open.

The east, west and north walls are entirely brick, articulated along the canal edge in a series of curves to create a contemporary design with variations in light and shade to soften the overall mass of the structure. This approach provides a simple yet effective response to its context, creating a level of detail which can be enjoyed in medium to long distance views from the bridge between Goods Way and the canal towpath. The design and angle of the curves are such that either reclaimed or standard red London stock bricks can be used which more closely reflect the materials of the surrounding buildings and adjacent canal walls. Indeed, the proposed brickwork means that the wall retains an industrial feel; typical of the buildings which historically lined this part of the canal up to the 1990s (see Figure 23).





Figure 23: Historic photos of canal side buildings on the proposed site, c.1990

The northern wall has been set back along the canal edge to provide a band of predominantly native planting. This would extend the character and biodiversity of the CSNP along the water's edge and discourage trespass into the Gas Governor compound.

There is also the potential for aquatic planting within the canal, subject to a suitable planting unit being agreed with British Waterways. At this time, British Waterways do not favour aquatic planting using the traditional coir rolls due to the additional ongoing maintenance requirements it would impose on them. However, a pilot scheme is currently underway with the CSNP which may offer an acceptable alternative using basket units instead.

Bat and bird boxes will be integrated into the walls in areas with minimal disturbance from people.

Both the Gas Governor and the welfare buildings will be seen from the upper floors of Building B5 and the Fish and Coal Building, as shown in Figure 25, and in oblique angles from Buildings B3 and B6. In addition, the top of the Gas Governor Building roof will be visible in partial views from the proposed bridges across the canal, illustrated in Figure 22. Attention has therefore been given to the design of the roofs to ensure that they are visually acceptable whilst requiring minimal maintenance. The roofs will therefore be arched with horizontal ridges to add strength and will be painted in the same hardwearing, weather resistant finish as the remainder of the building. In addition, the roof of the Gas Governor will feature a raised pressure release panel which would lift up in the event of an explosion.

The layout and choice of materials of the buildings, the perimeter wall and the access gates aim to produce a functional design with durable materials that will maintain a high quality appearance with minimal maintenance.

4.2 Response to General Design Guideline 5

General 5

How any service entrances, where they are unavoidable, have been designed to integrate successfully within the street scene, including providing crossings at pedestrian grade.

As stated previously, a double service gate is set into the green wall on the south elevation to provide vehicular access to the facility from Goods Way. The gates will follow a similar design as those currently on Pancras Road, specifically metal slats spaced to take the wind load but provide limited views into the site (for security reasons). They will be painted in grey paint to produce a hardwearing, matt finish which complements the planted face of the wall.



Figure 24: Photo of existing vehicle access gates at St. Pancras Gas Governor

4.3 Response to General Design Guideline 5

General 9

How the detailed design of the roofscape (including any plant, wind turbines, photovoltaicsm green and brown roofs) responds to views from overlooking buildings and skyline views from lower levels

As stated in section 4.1 above, the proposed buildings will only be visible from the upper storeys of Buildings B3, B5 and B6 and the Fish and Coal Building (see Figures 25), and to a limited degree in the case of the Gas Governor Building, from the bridges across the canal (see Figure 22).

The roofs will be curved and painted in the same weather-resistant paint as the rest of the GRP structure, minimising crevices and joins to allow water to run-off easily and avoid the build up of dirt. Ridges will run across the width of the roofs and down the facades to provide additional strength and visual interest.

The roof of the Gas Governor Building has also been designed primarily with safety considerations in mind, incorporating the aforementioned raised pressure release panel.



Figure 25: Illustrative image showing view from the upper levels of the proposed Building B5

8 Condition 17: Environmental sustainability

"Relevant applications (or groups of related applications) for approval of Reserved Matters in respect of buildings shall be accompanied by an Environmental Sustainability Plan. The Environmental Sustainability Plan shall explain:

(a) how the proposed building design(s) realise(s) opportunities to include design and technology energy efficiency measures;

(b) the reduction in carbon emissions achieved through these building design and technology energy efficiency measures, compared with the emissions permitted under the national Building Regulations prevailing at the time the application(s) for approval of reserved matters are submitted;

(c) the specification for any green and/or brown roofs;

(d) how energy shall be supplied to the building(s), highlighting;

(i) how the building(s) relate(s) to the site-wide strategy for district heating incorporating tri-generation from distributed combined heat and power;

(ii) how the building(s) relate(s) to the strategy for using biofuel boilers to supplement the energy supplied through district heating systems;

(iii) the assessment of the cost-effectiveness and reliability of the supply chain for biofuels; and

(iv) any other measures to incorporate renewables.

(e) how the proposed building(s) have been designed to achieve a BREEAM and/or Ecohomes rating of "very good" (or an equivalent assessment method and rating) or better; and

(f) the incorporation of bird boxes, bat roosts and other wildlife features on buildings."

8.1 Applicant's response

8.1.1 Response to 17(a) and (b)

As explained in Section 5.2, NGG's operational requirements necessitate the use of a specialist manufacturer for the Gas Governor housing who will pre-fabricate the structure offsite to NGG's specification. The Welfare Building will follow a similar design so that the two are visually coherent. Consequently, the ability to incorporate energy efficiency measures are limited to retrospective additions such as lighting and water harvesting rather than adapting the design of the building fabric itself.

NGG staff will only visit the site approximately 20 days per annum. At all other times, the site will be unmanned. During each visit, energy consumption would be minimal, consisting of lighting, heating in winter, and the use of an electric kettle for refreshment.

The site will not be lit at night, although external lighting will be provided for emergencies. Any internal lights, for example in the Welfare Building, will use low-energy light bulbs in order to minimise energy use.

Rainwater will be harvested into an underground storage tank, and used to irrigate the green wall.

Given the nature and proposed use of the two buildings, as described above, it is considered inappropriate to undertake any calculations regarding the reduction in carbon emissions achieved through design and technology measures.

8.1.2 Response to 17(c)

Development Zone V, in which the proposed site lies, is not highlighted on Parameter Plan KXC021 as a priority zone for green and brown roofs. Nonetheless, an extensive green wall is proposed along the southern perimeter wall, as described in more detail in Section 5.3 of this document.

8.1.3 Response to 17(d)

Due to the size and nature of the proposed development, the buildings will not be connected to the district wide heating and power system in T1. Indeed, there is no requirement to provide pipework to connect Development Zone V to this system under condition 48 of the Outline Planning Permission. Any energy requirements will instead come from the National Grid whilst high-efficiency electric wall heaters will be installed to heat the Welfare Building during the winter. There will be no boiler or hot water supply and no chillers for air conditioning in either building and therefore, it is anticipated that energy demand for both buildings will be low.

8.1.4 Response to 17(e)

The proposed Gas Governor and Welfare Buildings do not fit into a recognisable category for BREEAM assessment. In any event, as an Enabling Works submission for utilities buildings, a BREEAM assessment is not considered appropriate or necessary.

8.1.5 Response to 17(f)

Bat and bird boxes will be incorporated into the brickwork to attract the bird species that have been recorded in and around this area of King's Cross. Bat boxes will be positioned on the northern perimeter wall facing inwards in order to minimise disturbance by human activity. Similarly, bird boxes will be located on the western wall facing CSNP away from publicly accessible areas.

The proposed green wall and the planted area between the north face of the perimeter wall and the Regent's Canal will also provide new habitats for wildlife, including insects and birds.