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CADENT GAS LIMITED

COWLEY HOUSE, UXBRIDGE

DESIGN OPTIONS APPRAISAL

JANUARY 2023

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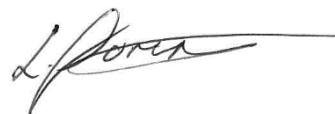
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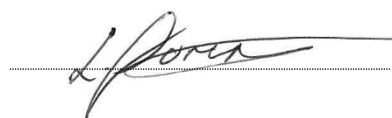


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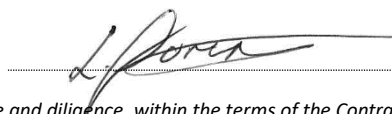
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Appendix 1	Copy of Conservation Officer comments to Design Option 5
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1 INTRODUCTION

1.1 Background

- 1.1.1 This document has been prepared by Wardell Armstrong LLP and Cadent Gas Limited to pending applications for planning permission and listed building consent (application refs. 15841/APP/2022/1168 & 15841/APP/2022/912) for the installation of external gas pipework to Cowley House. The document seeks to address comments received from the Conservation Officer offering further explanation as to the design approach for the proposed external gas pipe installations and evidence the extent of design options explored before committing to the proposed design which has been presented to Hillingdon Council.
- 1.1.2 The primary aim of the proposals is to upgrade the dated subterranean iron gas mains which currently supply gas to the flats within the Cowley House in accordance with the Health and Safety Executive (HSE) enforcement notice which requires Cadent Gas Limited to replace all iron gas mains within 30m of a building by 2030. As part of these upgrading works, in compliance with the Gas Industry Regulations, it is necessary to upgrade the point at which gas enters the building to ensure that the occupiers within the building have a safe supply of gas that reduces or eliminates the risk of the effects of a potential future gas leak on the health and safety of the occupiers.
- 1.1.3 Cadent Gas has a statutory obligation to maintain a safe and reliable supply of gas to consumers. By law, consumers have a right to request a gas supply which Cadent must accommodate as far as reasonably practicable. The flats within Cowley House already benefit from an existing gas supply therefore, this application seeks permission to upgrade the existing supply via the installation of external gas pipe apparatus in line with the adopted Gas Industry Standards.
- 1.1.4 In designing new gas works, proposed designs must be compliant with the currently adopted Gas Industry Regulations. In addition and in view of the Grade II listed designation of Cowley House (NHLE Ref: 1080189), the proposals seek to balance compliance with minimising any potential harm to its special interest.
- 1.1.5 The document sets out following:
- why the current internal gas supply needs to be replaced;
 - design options considered for a replacement; and
 - The design that has been presented to the council for consideration

2 NEED FOR THE PROPOSALS

- 2.1.1 The need for the proposed works derives from the proactive Gas Mains Replacement Programme (MRP) currently being undertaken by Cadent Gas Ltd. The upgrading works within this programme need to be undertaken to ensure compliance with a Health and Safety Executive (HSE) enforcement notice which requires Cadent Gas Limited to replace all iron gas mains within 30m of a building by 2030. Iron pipes are more vulnerable to corrosion around the joints which can make them more susceptible to leaking.
- 2.1.2 The proposed installations would consist of steel gas supply network pipes with a minimum asset life-expectancy of 50 years based on the assumption that their operating conditions are conducive to maintain an optimum stable environment where external aspects such as moisture do not have a detrimental effect of the carbon steel pipes.
- 2.1.3 As part of the MRP upgrading works, to comply with the adopted Gas Industry Standards (outlined in Section 3), new individual gas connections for each flat are required to ensure the safety of the residents living within the multi-occupancy building. The new connections must have access to natural means of ventilation to allow gas to escape and therefore minimise or eliminate the risk of a build-up of escaped gas which can have catastrophic consequences if ignited.
- 2.1.4 The existing gas supply is located within the fabric of the building within unventilated voids. Such a network is considered to be high risk. As such, with the well-being of the occupiers in mind, Cadent Gas seek to upgrade the gas connections to each flat in line with the currently adopted Gas Industry Regulations to remove / minimise the risks associated with the escape of gas within internal and unventilated areas.
- 2.1.5 The proposed works seek to upgrade the existing gas supply to the building as part of the MRP, therefore, the proposals will not result in any additional emissions, the units within the building benefitting from an existing gas supply.

3 TECHNICAL AND PHYSICAL CONSTRAINTS OF THE SITE

3.1 Technical Constraints

- 3.1.1 When designing new or replacement gas schemes Cadent Gas Ltd, as a national Gas Transporter, must ensure works comply with their adopted standards. The current adopted construction standards for such works is presented within IGEM/G/5 Edition 3 For Multi-Occupancy Buildings Engineering Requirements. This is an industry standard produced by the Institution of Gas Engineers and Managers which covers gas installations to and within multi-occupancy buildings and the individual dwellings and commercial units within such buildings. The implications of adopting this accepted industry wide standard on the current practices of Cadent Gas Ltd are that all future riser systems installed as new or as a replacement/upgrade on multi-occupancy buildings such as Cowley House shall be designed according to the requirements laid out in IGEM/G/5.
- 3.1.2 Importantly, the Institution of Gas Engineers and Managers (IGEM) would expect adoption of IGEM/G/5 by a Gas Transporter **in its entirety** to ensure best practice from lessons learned are applied to all new and replacement works.
- 3.1.3 In addition to IGEM/G/5 Cadent utilise multiple documentation to comply and maintain the standards needed to facilitate new and replacement gas works. Key documents used to inform both the design of the pipework (materials, route locations, pipework lengths) and meter box installations are listed below:
- Gas Safety (Installation and Use) Regulations
 - Pipeline Safety Regulations
 - Building Regulations (More specifically part B)
 - Dangerous Substances and explosive atmosphere regulations (DSEAR)
 - Regulatory Reform (Fire Safety) Order
- 3.1.4 In application of the above documents, Cadent in their approach to designing new and replacement gas schemes must assess the risk of different design options available with the most suitable design solutions advanced being those solutions which eliminate or remove potential hazards to residents. Different installation design options result in different hazards and different levels of risk and a systematic approach is required to minimise the risk.

- 3.1.5 The known hazard to be addressed by a design is a potential release of gas as a result of the failure of a pipe, fitting or joint which could lead to an uncontrolled gas release which, on ignition, results in a fire.
- 3.1.6 More serious, is the potential release of gas into a confined, unventilated space within a building space or compartment in a quantity capable of forming a flammable mixture which on ignition leads to an explosion resulting in damaging overpressures.
- 3.1.7 Design solutions explored by Cadent and sought by IGEM/G/5 therefore seek to:
- 1) Prevent failure of the pipework through using appropriate materials, methods and fixing for installations and apparatus; and
 - 2) Prevent the containment of a gas leak through ensuring new works are appropriately positioned to allow ventilation and access for maintenance and regular inspection.
- 3.1.8 Appendix A3.4.4 – Risk Assessment of IGEM/G/5 establishes a hierarchy of risk in multi-occupancy buildings as they concentrate larger numbers of residents who can be affected by the known hazard (gas leak), and, depending on the type of construction, an incident can cause significant damage beyond the source potentially affecting several buildings.
- 3.1.9 Catastrophic failure of the gas supply to or within a multi-occupancy building is defined as a more serious failure than would normally be expected during the life of the installation and is perceived to be a greater risk than for traditional housing, such as individual properties, as it has the potential to affect a greater number of people and properties. It is clearly the case that the gas supply in a multi-occupancy building is a greater societal risk, and it is eliminating or reducing societal risk which is a driver for gas safety.
- 3.1.10 General guidance within Appendix A3.4.4 provides the following hierarchy of the risk level at specific locations within multi-occupancy buildings. Locations considered to be at 'greater risk' of the known hazard (gas leak, ignition) and which design solutions should avoid based on best practice and lesson learned include the following: -
- Where a meter installation is accessible and a release can enter a confined inhabited space, e.g. internal meter, meter in common entrance area.
 - Installations with internal risers with the gas installation on the 'inside' of the property, e.g. internal kitchens. A release could be into a confined space with limited natural ventilation and venting only into another room.

- Properties where an explosion can affect several dwellings or affect the escape route(s). This will depend on the method of construction of the property.

3.1.11 Locations considered to be at 'lower risk' from the known hazard and which design solutions have full regard towards in terms of reducing and eliminating risk to occupiers based on best practice and lessons learned include the following: -

- Where a release from a gas network cannot enter a confined 'inhabited' space e.g. from an external meter box or a remote meter room i.e. the structure of the flats is not at risk from a gas escape.
- Low rise properties of similar construction to normal housing where the hazard and risk would be the same as for normal housing.
- Installations with external risers with the gas installation confined to rooms with an outside wall and window(s). The installation inside the property is limited and is in a location where the effects of an incident would be limited.

3.1.12 In full consideration and application of this guidance including best practice from lessons learned, Cadent have pursued a scheme to upgrade the gas supply network at Cowley House providing a new in ground connections from the parent mains which then connects to external gas risers which provide individual connections to each individual flat.

3.2 Physical Considerations

3.2.1 In applying the above standards in the design process Cadent must also consider the physical constraints of a Site.

3.2.2 At Cowley House the following constraints have informed the proposed works:

- The Grade II listed building status of the building and the location of key architectural features;
- The internal layout of each flat and arrangement of appliances within the flats vary;
- The lack of natural ventilation internally;
- All elevations of the building are visible, minimising the opportunity to 'hide' pipework completely from surrounding views;

3.2.3 To renew the gas supply to the units within Cowley House, it is therefore necessary for the pipework to be installed in a location where in the event of a fault in the network, any escaped gas from gas riser pipework can filter directly into the

atmosphere via the provision of natural ventilation. The current arrangement of gas pipe installation do not comply with the requirements laid out in IGEM/G/5.

4 DESIGN OPTIONS APPRAISAL

- 4.1.1 As outlined in Section 3, when designing gas restoration/upgrading works for multi-occupancy buildings Cadent Gas must adhere to IGEM/G/5 Edition 3 due to higher potential risk to life.
- 4.1.2 Being the statutory undertaker for gas within North London, many of the multi occupancy properties that Cadent Gas work on are either listed and/or within a conservation area. While the safety of the residents is the main priority of Cadent Gas, where possible, they seek guidance regarding the most sympathetic way to install the necessary external gas apparatus to multi-occupancy buildings with the intention of preserving the special interest of the designated heritage asset – whether that be a listed building or a conservation area. The heritage asset in this instance is Cowley House which is included on the statutory list of buildings of special architectural or historic interest at Grade II.
- 4.1.3 The following sub-sections outline the several design options explored by Cadent in arriving at the proposed solution.

4.2 Design Option 1 – Internal Installations

- 4.2.1 Historically, gas riser pipework has been embedded into the fabric of the buildings so the pipework and other associated apparatus are not visible externally nor often internally. It should however be noted that, due to lessons learned by the gas industry, this can no longer be the case for multi-occupancy buildings (buildings containing flats, apartments, maisonettes etc) and gas riser pipework must be installed in areas with access to natural ventilation in accordance with the Gas Industry Regulations.
- 4.2.2 Only very limited amounts of gas riser pipework should be installed internally within flats. The reason being that the residents of the flats do not have control over the gas flow within gas riser pipework and in the event of a gas leak, they would not be able to terminate the gas supply allowing gas to filter into the property and potentially to unventilated areas where a gas build-up of escaped gas could occur. For context, gas riser pipework is connected directly to the gas mains beneath the public highway and also supplies gas to the other properties on the street. Gas riser pipework is owned and maintained by the Gas Transporter.
- 4.2.3 Renewing the gas pipework as existing is therefore not possible, the solution being non-compliant.

4.3 Design Option 2 – Installation of gas riser pipework within the communal hallway

- 4.3.1 In the first instance, to limit the extent of external gas riser pipework, Cadent Gas explored the possibility of installing gas riser pipework through the internal communal hallways of Cowley House (Design Option2). If there is appropriate ventilation at each level of the communal area and fire safety materials are used for the boxing in of gas riser pipes then it can possible to install gas riser pipework in accessible communal areas of multi-occupancy buildings.
- 4.3.2 At Cowley House Design Option 2 would entail a new subterranean gas connection from the gas mains which would emerge above ground externally adjacent to the main communal entrance of the property. The pipe would need to enter the communal area by extending vertically to ground floor ceiling level before wrapping around the decorative entrance surround and punching through either the fanlight above the communal entrance or through the adjacent stonework to continue internally at high level in communal hallway. It is essential that the pipe is located at high level to avoid any accidental damage which would result in a fault in the network.



Plate 1: Indicative route of external gas riser pipework for Design Option 2

- 4.3.3 To ensure that the pipework is compliant with fire safety standards, the gas riser pipework must be encased in fire resistant boxing which in the event of a fire will

protect the gas riser for approximately 2 hours to reduce the risk of damage to the pipe and a subsequent catastrophic event.

- 4.3.4 To provide an individual gas connection to each flat, a 1.5" gas riser pipe encased in fire resistant boxing would travel at high level around the internal communal hallways of the building. Individual connections would drop down from the gas riser on the outer wall of each flat before entering through the internal and connecting to a meter box.
- 4.3.5 The communal hallway within Cowley House is divided in several sections which means that the gas riser pipe, which must be encased in boxing, would need to run through internal sections of walls above internal doorways to reach all 16 flats. Examples of the configuration are shown below on Plates 2-5.

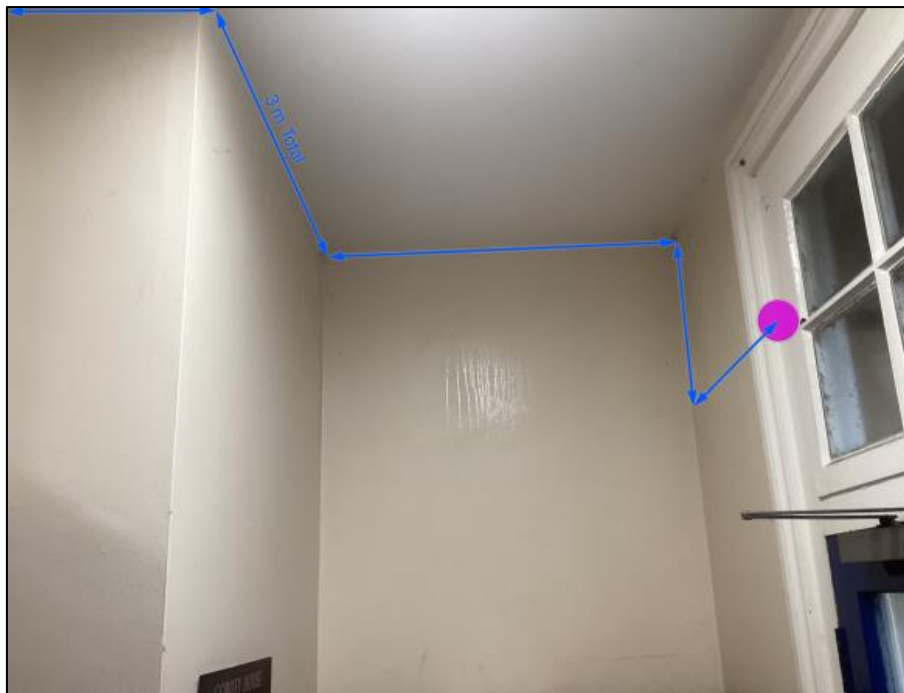


Plate 2: Indicative pipe route of internal gas riser pipework for Design Option 2.

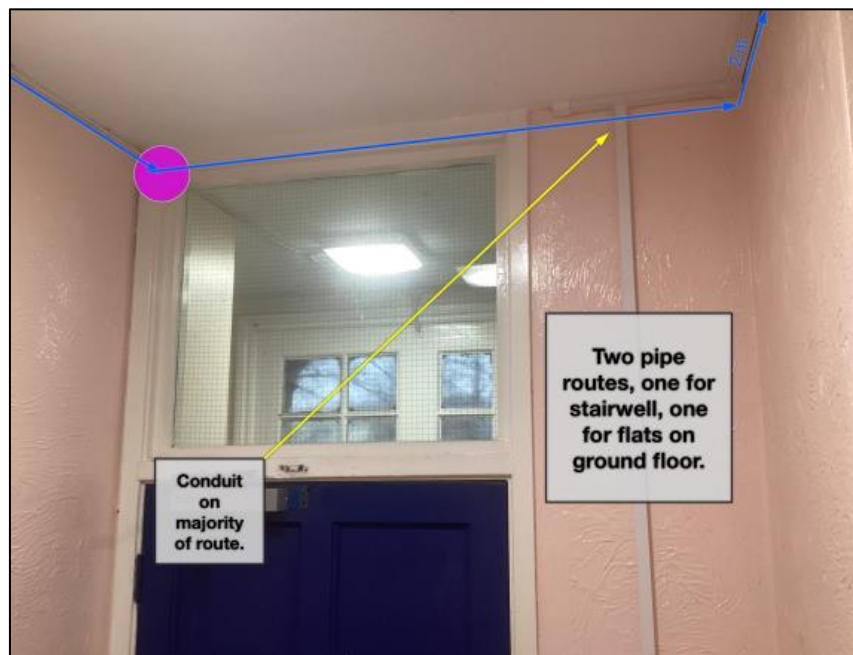


Plate 3: Indicative pipe route of internal gas riser pipework for Design Option 2.



Plate 4: Indicative pipe route of internal gas riser pipework for Design Option 2.

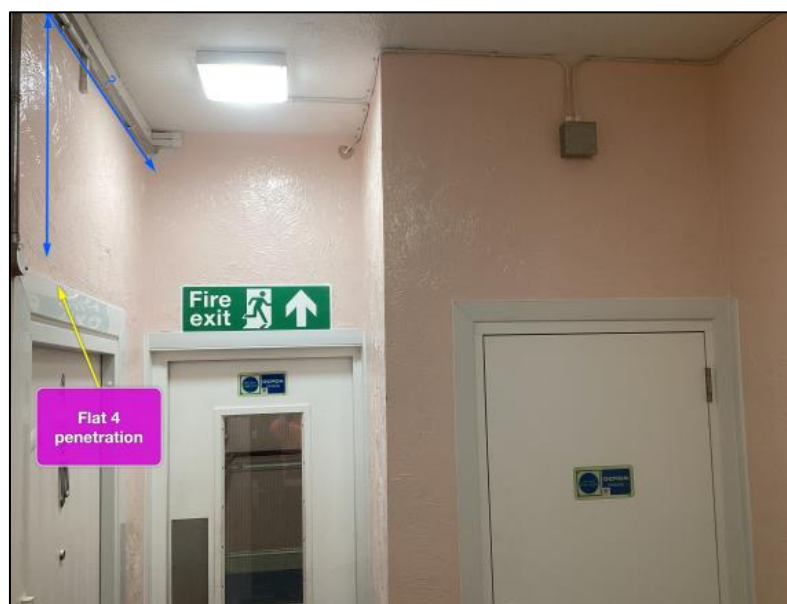


Plate 5: Indicative pipe route of internal gas riser pipework for Design Option 2.

- 4.3.6 Design Option 2 is not considered to be compliant with the requirements of IGEM/G/5 as it is not possible to naturally ventilate the entirety of the internal communal hallway. The internal communal hallways have been sub-divided several times and do not benefit from external walls or windows. As such, vents cannot be installed in this area to provide the adequate level of ventilation required to provide a safe gas connection to the residents within the building. Without appropriate ventilation, in the event of a gas leak, gas could potentially build up in these areas which could result in a catastrophic event risking the lives of those in the building as well as the structural integrity of the Grade II listed building.
- 4.3.7 In addition, the requirement for boxing of the pipework would result in incongruous features throughout the communal space.
- 4.3.8 Based on the above, Design Option 2 was not progressed.
- 4.4 **Design Option 3 – External Gas Meter Boxes and Outlet Pipes**
- 4.4.1 Design Option 3 entails the replacement all the existing internal gas meters with new externally gas sited gas meters housed in boxes and the external installation of copper gas outlet pipes (that is the pipework owned by the residents which supplies the gas from the mains to the individual properties) to upgrade the gas supply to the residents of Cowley House.
- 4.4.2 To achieve Design Option 3, a new subterranean gas connection would extend from the renewed gas mains. The gas riser pipework would emerge above ground level to

the north of the main communal entrance on the east elevation and wrap around the entirety of the building at basement, where possible.

- 4.4.3 The gas riser pipework would connect to 16 no. externally located gas meters which would be housed in plastic boxes which would be located as closely as possible to their required entry point. Gas meter boxes must be accessible to residents and emergency services therefore it is only acceptable to install them in either the basement lightwell, providing it has access, or at ground floor level.
- 4.4.4 A $\frac{3}{4}$ " copper gas outlet pipe will derive from the base of each gas meter box to provide an individual gas supply to each of the affected flats. Where possible, the outlet pipes will be grouped together and will travel in parallel with one another. Examples of the proposed external arrangement are illustrated on plates 6-14 below; the blue arrows are indicative of the gas riser which would apply carry the gas from the mains to each meter box. The orange arrows are indicative of the copper outlet pipes which would extend from every gas meter box and which transfer the gas from the mains into each individual property.



Plate 6: Indicative pipe route of external gas riser and copper outlet pipework to the south elevation for Design Option 3;



Plate 7: Indicative pipe route of external gas riser pipework for Design Option 3.



Plate 8: Indicative pipe route of external gas riser pipework for Design Option 3.



Plate 9: Indicative pipe route of external gas riser pipework for Design Option 3.

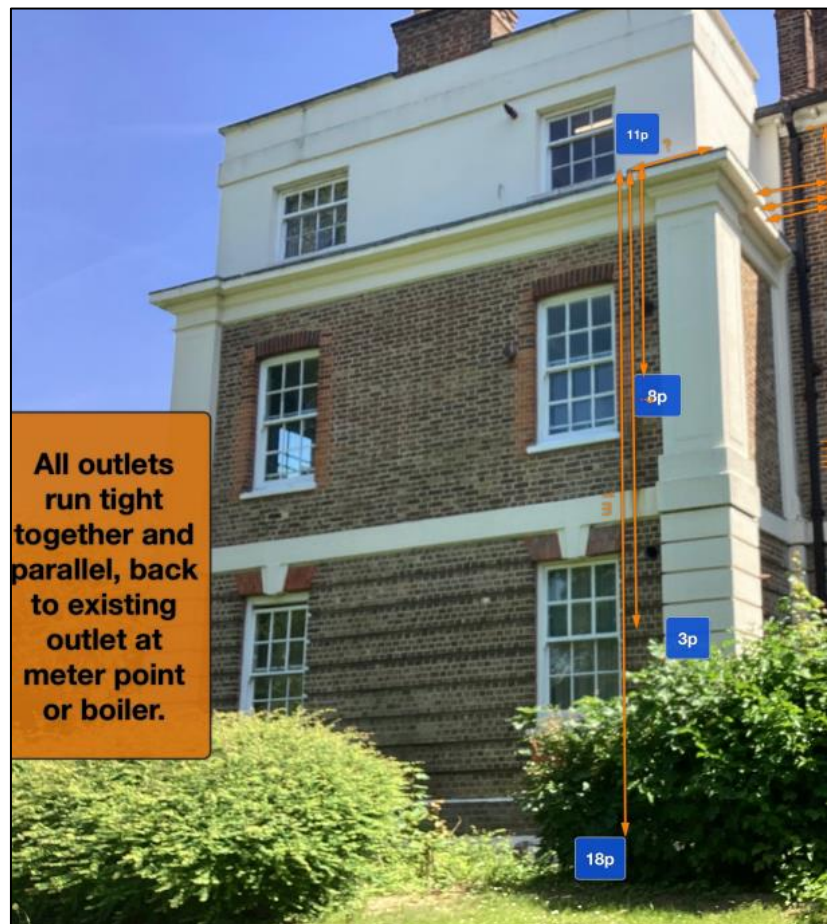


Plate 10: Indicative pipe route of external gas riser pipework for Design Option 3.



Plate 11: Indicative pipe route of external gas riser pipework for Design Option 3.



Plate 12: Indicative pipe route of external gas riser pipework for Design Option 3.

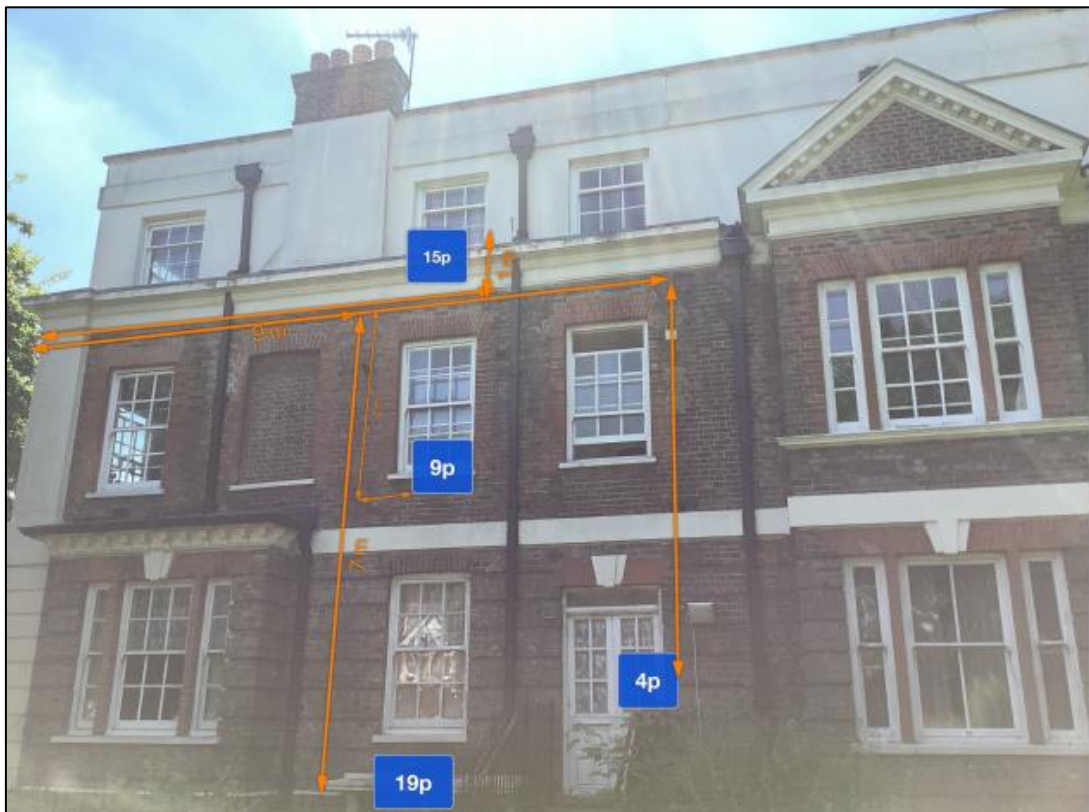


Plate 13: Indicative pipe route of external gas riser pipework for Design Option 3.



Plate 14: Indicative pipe route of external gas riser pipework for Design Option 3.

4.4.5 Design Option 3 presents a scheme which adheres to the adopted Gas Industry Standards. However, this solution requires a significant amount of copper outlet pipework to be installed externally. Due to the extent of the individual gas outlets required and the siting of the gas meter boxes at ground floor level, the scheme was not progressed as it was considered to have a cluttering effect which was considered to harm the special interest of the building and its appearance; several of the gas outlet pipe would be required to cross key features of the building's architecture. As such, Design Option 3 was not progressed to the planning stage and a gas riser solution was explored.

4.5 Design Option 4 – Gas Riser Option 1

4.5.1 Design Option 4 entailed the installation of external gas riser pipework at Cowley House. This solution enables the retention of the existing internal gas meter boxes.

4.5.2 A new subterranean gas riser would emerge above ground level to the north of main communal entrance on the east facing elevation before wrapping around the north east corner of the building and continuing at ground floor level on the north facing elevation.



Plate 15: Indicative route of Design Option 4 (east facing elevation)

4.5.3 Upon reaching the north facing elevation the gas riser pipework would continue across the extent of the elevation providing individual gas supplies to flats 4, 9, 15 and 19. The gas riser pipework would then wrap around the north western corner of the building at ground floor level to continue on the west facing elevation.



Plate 16: Indicative route of Design Option 4 (north facing elevation)

4.5.4 Upon reaching the west facing elevation, the horizontal gas riser pipework would travel across the elevation for approximately 12m between basement and ground floor levels. Two gas risers will extend from the 12m section of horizontal pipe. The first gas riser is located to the northern section of the elevation and serves flats 3, 8 and 14. The horizontal section of gas riser will also support an individual gas connection to flat 18 at basement level. The second gas riser would be sited to the southern section of west facing elevation and will provide individual gas connections to flat 2, 6, 7, 12, 13 and 17.



Plate 17: Indicative route of Design Option 4 (north section of west facing elevation)



Plate 18: Indicative route of Design Option 4 (south section of west facing elevation)

- 4.5.5 An additional subterranean gas connection would emerge on the southern section of the east facing elevation. The gas riser would extend to second floor level supporting 2 indanol connections to flats 10 and 16 as well as a longer section of horizontal gas riser at first floor level. The horizontal gas riser would extend aligned above the white storey banding southwards before wrapping around the south eastern corner of the building and continuing on the south facing elevation. On the south elevation, the gas riser would connect to a 6m section of vertical gas riser which would support individual connections to flats 1, 5 and 11.



Plate 19: Indicative route of Design Option 4 (east facing elevation)



4.5.6 Initially, Design Option 4 was to be taken forward for planning and listed building consent, however, after further review of the scheme, several amendments to the design were proposed to further reduce the extent of external riser pipework required and to amend its positioning on the building to offer a more sensitive solution. The appearance of the installations outlined as Design Option 4 were judged to clutter the elevations and did not make full use of existing horizontal and vertical features of the building to consolidate installations against and offer a discreet installation. Therefore, Design Option 4 was not progressed to the planning stage.

4.6 Design Option 5 – Gas Riser Option 2

4.6.1 Design Option 5 comprises the scheme initially submitted to the Hillingdon Council for consideration on 17th March 2022 (application refs. 15841/APP/2022/1168 & 15841/APP/2022/912). Design Option 5 is an evolution of Design Option 4 and sought to improve on the positioning of the pipework and to reduce its extent through introducing an additional in-ground (below ground) supply.

4.6.2 To upgrade the gas supply to the affected units, 2 no. new subterranean gas connections would be established from the existing gas mains located beneath the grounds of Cowley House.

4.6.3 A new subterranean gas connection would emerge above ground level at the north eastern corner of the building on the east facing elevation. The pipe would extend vertically before turning perpendicular and continuing horizontally on the north facing elevation between the basement and ground floor levels.

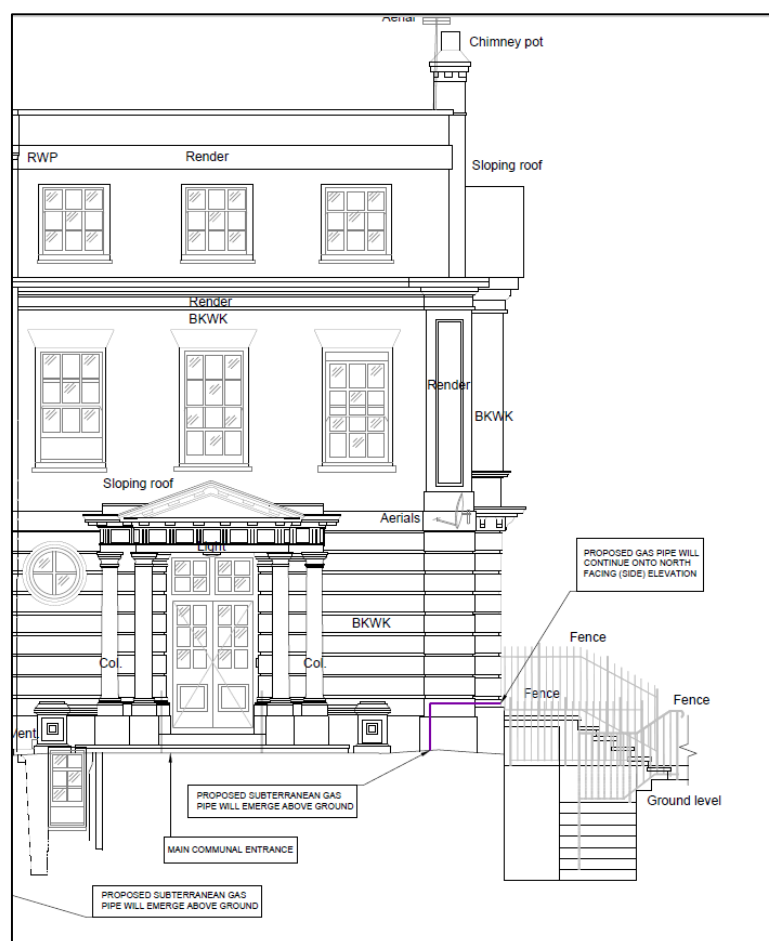


Plate 21: Route of Design Option 5 (north east corner)

- 4.6.4 As with Design Option 4, upon reaching the north facing elevation the gas riser would support 4 no. individual gas connections to flats 4, 9, 15 and 19. However, rather than having the gas riser pipework cut through the centre of the elevation, Design Option 5 makes use of existing vertical and horizontal features on the building by assimilating the 8m section of vertical gas riser with the off-white render on the corner, aligning the 14m section of horizontal gas riser pipework with the white storey banding below the cornice at first floor level and by aligning the additional 8m section of vertical gas riser with the an existing down pipe and positioning the riser close to the junction of the projecting pedimented bay.
- 4.6.5 The gas riser pipe would wrap around the north western corner of the building to continue on the west facing elevation.

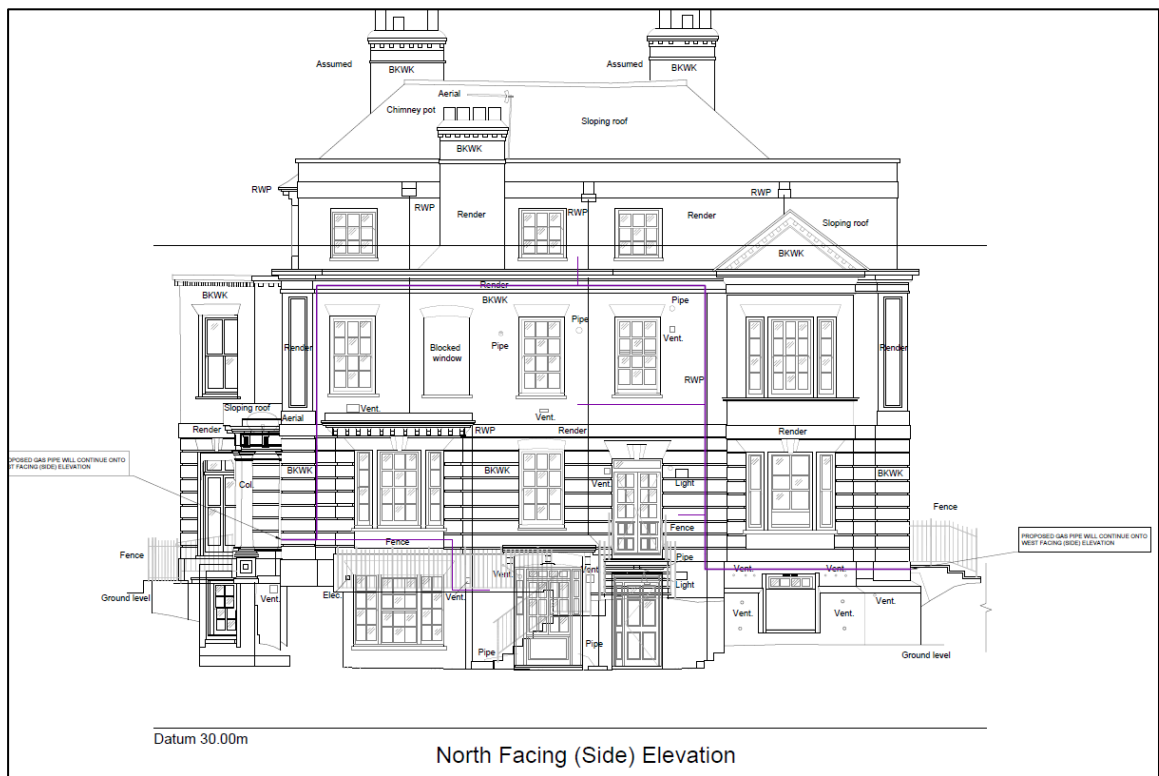


Plate 22: Route of Design Option 5 (north facing elevation)

- 4.6.6 Once on the west facing elevation, the gas riser pipe would continue horizontally at ground floor level. The horizontal gas riser at ground floor level would serve one individual connection which would descend to basement level on the northern section of the elevation to serve flat 18. In addition, the horizontal gas riser would support 3 no. gas riser in total.
- 4.6.7 The first gas riser would be installed on the south facing return of west facing elevation and would extend from ground level to second floor level, wrapping around the cornice, so that in the future, if necessary, the riser can be removed with the cornice left intact and unaffected. The gas riser would support individual gas connections to flats 3, 8 and 14. The individual connections would extend from the gas riser and wrap around the outer corner of the return before penetrating through the fabric of the building on the northern section of the west facing elevation.

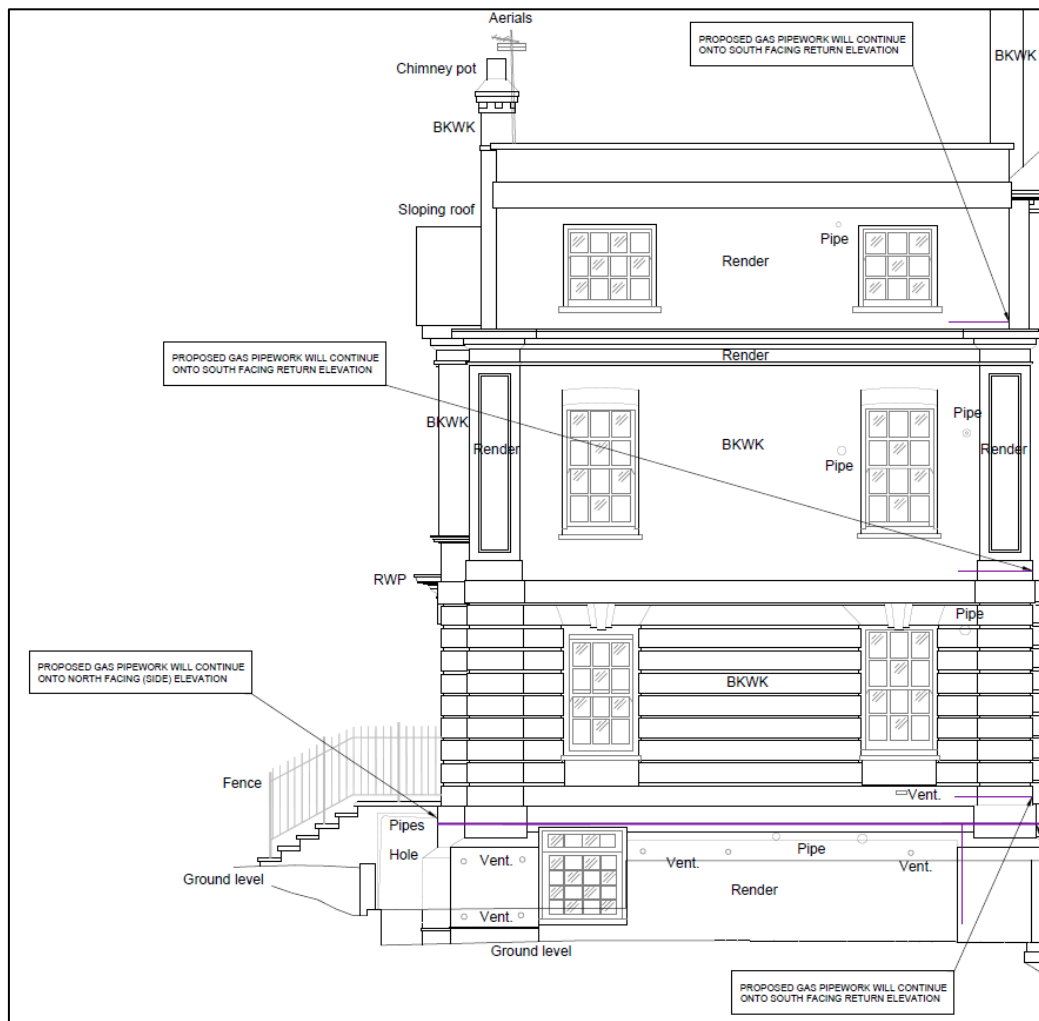


Plate 23: Indicative route of Design Option 5 (north section and south facing return of the west facing elevation)

- 4.6.8 The second vertical gas riser would extend from ground floor level for 9m aligned next to an existing downpipe between the junction of the south facing return elevation of the southern section of the west facing elevation. At first floor level, the 9m gas riser will support 1 no. individual connection for flat 7. The riser will also connect to a 9m section of horizontal gas riser pipework aligned to the underside of the eaves. This section of pipework would support two individual connections to flats 12 and 13.
- 4.6.9 The third gas riser would extend on the southern section of the west facing elevation from ground floor level to 4.5m supporting 3 no. connections to flats 2, 6 and 17.



Plate 24: Route of Design Option 5 (south section of the west facing elevation)

- 4.6.10 An additional subterranean gas connection would emerge above ground on the east facing elevation of Cowley House to the south of the main communal entrance. The pipe would extend up the elevation for approximately 11m from basement level to eaves level aligned directly adjacent to the off-white painted angled pilaster. At low level within the basement lightwell area, a lateral gas pipe will extend southward below cill level to provide a gas connection to Flat 16.
- 4.6.11 Upon reaching eaves level, the gas pipe will travel horizontally for approximately 12.5m aligned to the underside of the eaves before wrapping around the south eastern corner of the building and onto the south facing elevation. 6.3.21 1 no. vertical pipe would descend from the 12.5m horizontal pipe on the east facing elevation, entering into Flat 10.



Plate 25: Route of Design Option 5 (east facing elevation)

4.6.12 Upon reaching the south facing elevation of the building, the horizontal pipe at eaves level would continue for approximately 1m before descending vertically down the elevation for 9m aligned to the edge of the off-white painted angled pilaster. The 9m vertical pipe would support 3 no. lateral gas pipes which would serve flats 1, 5 and 11.

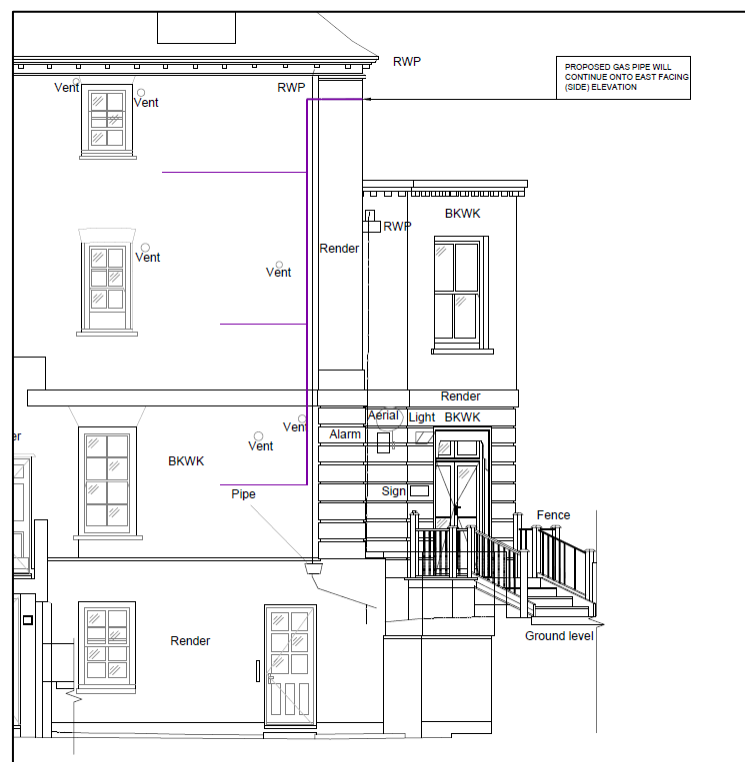


Plate 26: Route of Design Option 5 (south facing elevation)

4.6.13 Design Option 5 is fully compliant with the requirements of IGEM/G/5 and would provide a safe and compliant gas supply to the gas using residents of Cowley House. As mentioned previously, this scheme was initially presented to Hillingdon Council for planning permission and listed building consent.

4.6.14 To minimise any potential impact to the listed building, the following mitigation measures were embedded:

- Avoiding horizontal and vertical installation across centre of the principal east frontage and the canted bays window additions;
- Aligning proposed installations against existing infrastructure such as downpipes and within basement lightwell where possible to consolidate additions and minimise the appearance of the gas pipework so that it does not disrupt the simple design intentions;
- Aligning the proposed pipework in close proximity to existing vertical and horizontal features present on the building including the angled pilasters, eaves and junctions between projecting elements so as to consolidate the installations and minimise their appearance on the listed building generally so that the installations are integrated sympathetically and do not disrupt the simple design intentions;
- Applying an off-white painted finish to pipework installed against rendered areas of the exterior to match the coloured finish;
- Applying a brown colour painted finish to pipework crossing brickwork to the exterior of the building;
- Avoiding interference with or disturbance to existing decorative features;
- To be reversible and easily removed in the future should they no longer be required.

4.6.15 Taking into account the mitigation proposed, the Design Option 5 was assessed to result in less than substantial harm to the significance of Cowley House in the supporting Design and Heritage Statement. It was considered that the public benefit of the scheme, which in this case is the safe and compliant gas supply to residents of Cowley House, should be weighed against the less than substantial harm.

4.6.16 On 6th June 2022, an objection from the conservation officer was received. In summary, the objection raised concerns in respect of harm to architectural features of the building, in particular, the projecting cornice, as well the overall impact on the

overall appearance of the building. The conservation officer advised keeping pipework at low level where possible. The correspondence and associated conservation officer comments received on 06th June 2022 are included in Appendix 1.

4.6.17 While Design Option 5 is compliant with IGEM/ G/5 and offers a solution that can be safely installed revisions to the scheme have been made based on the feedback from the conservation officer.

4.7 Design Option 6 – Gas Riser Option 3 (Current Design)

4.7.1 Design Option 6 entails a revised gas riser scheme following an objection received from the council's conservation officer. The intention of the changes presented within Design Option 6 is to minimise the amount of above ground pipework and where possible keep the pipework at low level. The full extent of the scheme is outlined in the revised Design and Heritage Statement submitted alongside this Options Appraisal Document to support the application.

4.7.2 Design Option 6 entails the installation of 4 no. subterranean gas connections from the upgraded gas mains. Increasing the number of the inground (below ground) supplies has enabled a reduction in the extent of the external gas pipework.

4.7.3 The first subterranean connection will emerge above ground to the north of the main communal entrance on the east facing elevation. The pipe will rise vertically before wrapping around the north eastern corner to continue on the north facing elevation.

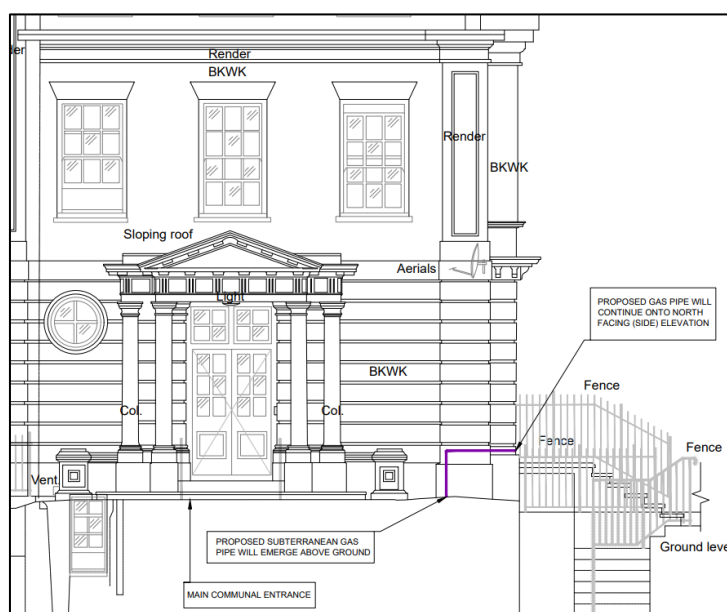


Plate 27: Route of Design Option 6 (north eastern corner of Cowley House)

- 4.7.4 Upon reaching the north facing elevation, the horizontal gas riser will travel at ground floor level before descending to basement level and providing a gas connection to flat 19.
- 4.7.5 The second subterranean gas pipe will emerge above ground level on the west half of the north facing elevation. On emerging, the vertical gas riser will extend for approximately 9m supporting 3 no. lateral connections to flats 4, 9 and 15. A horizontal section of riser pipework will also extend from the base of the 9m gas riser which will wrap around the north western corner of the building to continue on the west facing elevation.

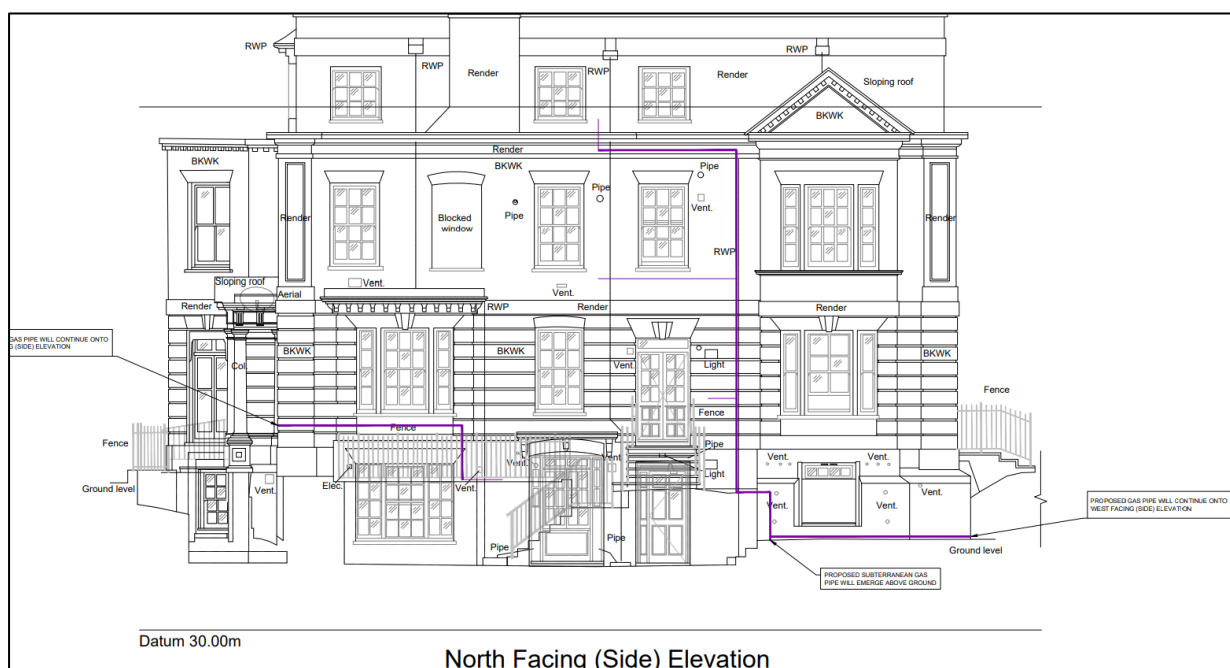


Plate 28: Route of Design Option 6 (north facing elevation of Cowley House)

- 4.7.6 Upon reaching the west facing elevation, the horizontal gas pipe will travel at basement level supporting 2 no. gas risers and a lateral connection to flat 18.
- 4.7.7 The first gas riser will be located close to the junction of the south facing return and the southern section of the west facing elevation. The gas riser will extend from basement level to eaves level supporting 4 no. lateral gas pipes. Three of the four pipes will extend northward wrapping around the outer corner of the south facing return and entering flat 3, 8 and 14 on the northern section of the west facing elevation. The lateral pipe serving flat 14 at second floor level will be aligned above the cornice. The fourth lateral pipe will serve flat 7. In addition, the gas riser will connect to a section of horizontal gas riser aligned below eaves level and an additional section of horizontal

riser at basement level. At eaves level the horizontal section of pipe will provide gas supplies to flats 12 and 13.

- 4.7.8 The horizontal section of gas riser pipework at basement level will provide a gas supply to the second gas riser proposed to the elevation. The gas riser will extend from basement level for approximately 6 supporting lateral connections to flats 2, 6 and 17.

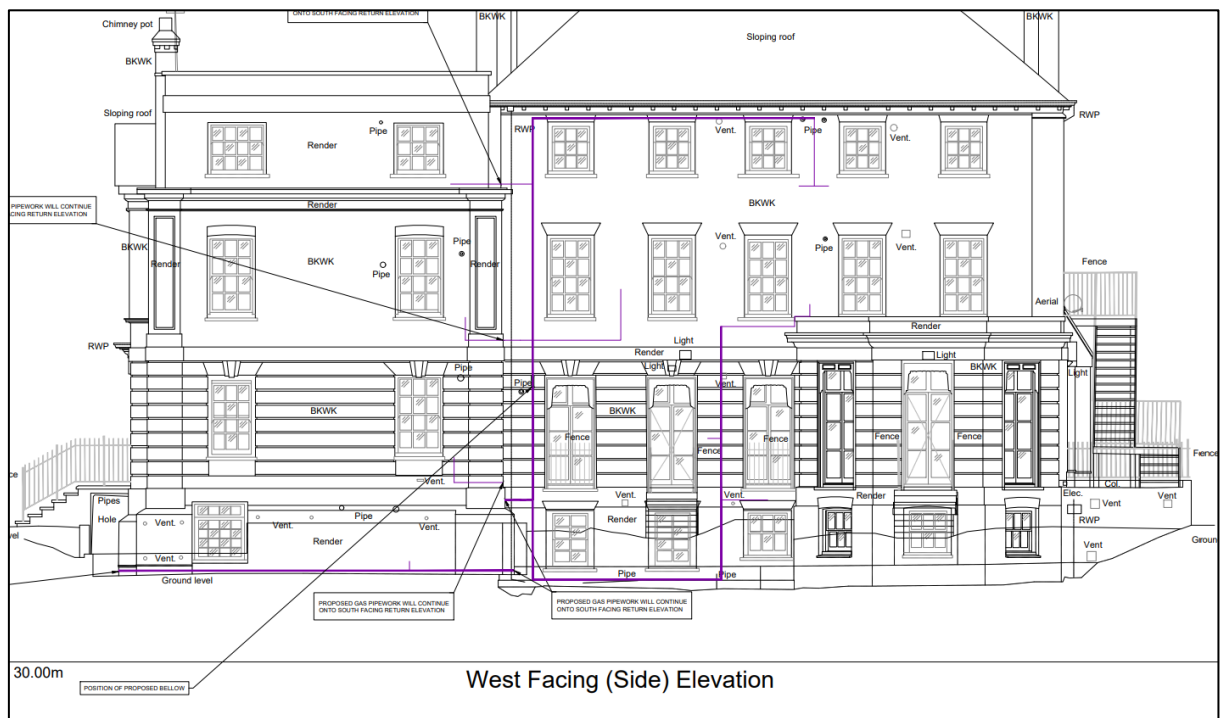


Plate 29: Route of Design Option 6 (west facing elevation of Cowley House)

- 4.7.9 The third subterranean gas connection will emerge above ground to the south of the main communal entrance on the east facing elevation. The gas riser will support a lateral connection to flat 16 within the basement lightwell and connecting to a horizontal section of gas riser which will be aligned below the eaves at second floor. The horizontal section of pipe will extend southwards for approximately 5m before descending to provide a connection to flat 10.



Plate 30: Indicative route of Design Option 6 (east facing elevation of Cowley House)

4.7.10 The fourth gas subterranean gas connection will emerge above ground at the south east corner on the east facing elevation. The pipe will wrap around the south eastern corner to continue on the south facing elevation of Cowley House. Upon reaching the south facing elevation, the horizontal gas riser will connect to a vertical gas riser which will extend to second floor level. The gas riser will support 3 no. lateral connection to flats 1, 5 and 11.

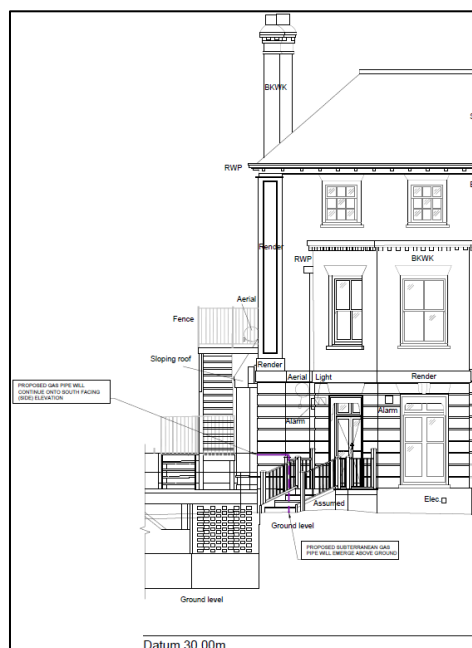


Plate 31: Route of Design Option 6 (south east corner of Cowley House)

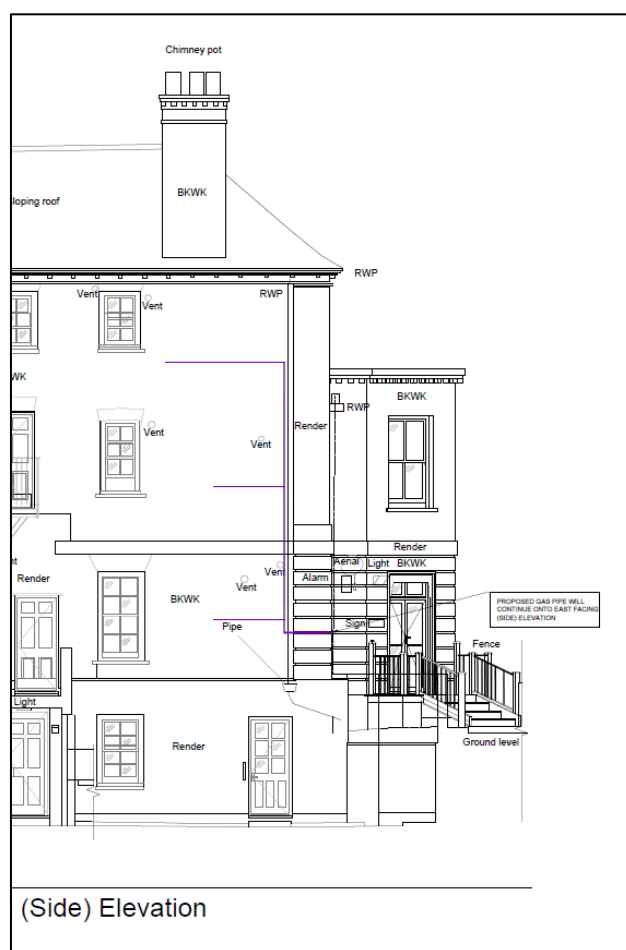


Plate 32: Route of Design Option 6 (south east corner of Cowley House)

- 4.7.11 Design Option 6 is shown on drawings CA12610-003B, 0-05B, 007B, 009B, 011B and 012B submitted to Hillingdon Council to supersede the original proposed plans.
- 4.7.12 Design Option 6 presents a scheme which is both compliant with the requirements of IGEM/G/5 and where possible has sought to minimise potential harm to the special interest of the building. Taking into account the concerns raised by the conservation officer in respect of Design Option 5, Design Option 6 presents a more sympathetic scheme which keeps as much pipework as possible to the lower levels of the building, taking advantage of the basement lightwells, whilst also adhering to the Gas Industry Standards. In addition, the scheme has been amended to avoid interference with the decorative cornice on the west facing elevation and efforts to avoid installations crossing other key architectural features elsewhere on the building have been made. In comparison to Design Option 5, Design Option 6 offers a significant reduction in above ground pipework and is therefore considered to be the most appropriate design solution for the building in view of all the constraints and industry requirements.

5 DISCUSSION

- 5.1.1 Several different design options have been explored to upgrade the existing gas network at Cowley House, which is a Grade II listed building. Design Options 3-6 outlined in this document can be installed in accordance with the adopted Gas Industry Standards, however, recognising the importance of conserving the significance of this statutory listed building, Cadent have sought proceed with what they consider to be the most sympathetic solution to the building.
- 5.1.2 Design Option 1 was discounted as the internal installation of gas riser pipework does not comply with the standards set out in IGEM/G/5, which Cadent Gas are required to adhere to. Design Option 2 was discounted as it is not possible to naturally ventilate the entry of the internal communal hallways which is sub-divided. Design Option 3 was not progressed as the mass of external gas outlet pipework that would be required to wrap around the building and siting of meter boxes at ground floor level would have a harmful impact to the building appearance. Design Option 4 was reviewed and improved resulting in Design Option 5 which was submitted to the council for consideration.
- 5.1.3 After receiving the first objection from the council in June 2022, Design Option 5 was further enhanced, and the amount of above ground level pipework was reduced as far as possible. Further objections from the council were received in response to these amendments on 30th November 2022. The comments from the council acknowledge that there are no alternative ways to reduce the extent of the pipework or its layout. For completeness, the comments received 30th November is included in Appendix 2.

It is clear that Design Option 6 provides the most acceptable solution for the upgrading of the gas supply at Cowley House. Design Option 6 presents the minimum extent of required external gas riser pipework and is fully compliant with the requirements of IGEM/G/5 which Cadent Gas must adhere to when designing new or replacement / upgrading gas works to multiple occupancy buildings. In addition, the pipework has been sited carefully on the building to ensure that it does not disrupt any key architectural features and where possible, the pipework follows existing horizontal and vertical lines of the building to minimise its appearance. A painted colour finish to match the pipework to the external façade will help integrate the pipework into the building and reduce its visibility.

6 CONCLUSION

- 6.1.1 This Design Options Appraisal seeks to demonstrate the design evolution behind the current proposals to Cowley House and how the current proposed design has been arrived at in terms of the adopted Gas Industry Regulations and in terms of conservation of heritage significance. The priority for Cadent in the design process is to provide a gas supply which is compliant, and which reduces or eliminates the risk of known hazards to the occupiers.
- 6.1.2 The Appraisal demonstrates that the installations to the north east facing (front) elevations have been carefully considered to be fully compliant with the Gas Industry Regulations and demonstrates the efforts made to reduce the visibility of the pipework by aligning it against existing building features such that the vertical and horizontal alignment of the proposed pipework is consolidate or concealed by existing vertical or horizontal features, and by applying a painted finish to match the existing façade which would help assimilate the installations against the fabric of the building.
- 6.1.3 As required by the NPPF, it is the impact of the proposed additions to Cowley House, the designated heritage asset, that has been considered. It is judged that the proposals due to their extent, location and proposed finish would result in limited less than substantial harm to the significance of the Grade II listed building. Importantly the proposed works do not detract from an appreciation of the architectural interest of the building as an example of 18th Century residential development of some status nor would the installation result in the loss of key architectural features which contribute towards the character and appearance of the listed building.
- 6.1.4 The design approach taken would ensure that the pipework is not an incongruous addition and that it would not be perceptible in long sightlines through the area with the consistent scale and proportions of the building conserved.
- 6.1.5 In accordance with para 202 of the NPPF, where a development proposal results in less than substantial harm, this should be weighed against the public benefits of the proposals including where possible its optimum viable use. In this case the less than substantial harm to Cowley House as a result of the current proposals (Design Option 6) should be weighed against the provision of a safe and compliant gas supply to the residents of Cowley House. We would invite you to place significant material weight on the measures set out within this application to satisfy Policy D12 of the London Plan and in doing so ensuring that the property benefits from the highest standards of fire safety. This matter has been emphasised recently by an appeal decision (reference APP/V5570/W/21/3280342) where the inspector found that there is public benefit

from the safe and proper installation of gas pipes to a multiple occupancy building and the works to renew the supply would therefore represent a significant public benefit in the context of the NPPF.

- 6.1.6 When it comes to gas installations, ensuring public safety is the main priority for Cadent Gas. Cadent Gas will, in accordance with their adopted Industry Standards, always seek to install the safest solution which presents the least risk to the residents living within the building, this is of even more importance in a multi-occupancy building, where a catastrophic event has the potential to impact several dwellings. In this instance, Design Options 3, 4, 5 and 6 offer the safest solutions.
- 6.1.7 In taking the options forward, with the intention of conserving the character and appearance of Cowley House, it is Design Option 6 which Cadent seek permission to install.
- 6.1.8 Importantly the works are reversible with the installations able to be removed in the future should they no longer be required.

APPENDICES

APPENDIX 1

Copy of Conservation Officer Comments to Design Option 5



Planning Specialist Observations			
Specialism(s)	Conservation and Design		
Case Officer	Nicola Taplin		
Site	Cowley House, 181 Cowley Road, Uxbridge		
Proposal	Upgrading of the existing gas supply via the installation of external gas pipe apparatus (Applications for Planning Permission and Listed Building Consent)		
Planning Ref	15841/APP/2022/912 15841/APP/2022/1168 (LBC)	Date	15/05/2022

Objection	Harm	Comments	Conditions	Approval of Details
x	Less than substantial			

1. Summary of comments: objection

2. Historic Environment Designation(s)

- Grade II Listed Building – Cowley House (NHLE: 1080189)
- Colne Valley Archaeological Priority Zone (APZ)

3. Site visit: 20/04/2022

4. Assessment - background/ significance

- 4.1. Cowley House originates from the 18th century however was altered and enlarged in the 19th century. The building includes semi-basement level with 3-storeys above.
- 4.2. Externally the elevations are constructed in a brown brick with red brick dressings. The elevations are decorated with double hung timber sash windows with flat headed arches, string course detailing, attractive cornices and roof eaves with dentil detail, bay windows and a stucco parapet. Pilasters frame the corners of the building.
- 4.3. Internally the property retains notable features of interest.
- 4.4. The building has a strong presence within the area, positioned on a spacious plot and enclosed by a historic (curtilage listed) brick boundary wall, all positively and strongly contributing to the building's significance as a designated heritage asset.



- 4.5. It is understood the property is currently subdivided into multiple residential units. It was evident on the site visit that the building has been altered to some degree, notably including the additions of numerous flues and vents without the relevant consent.

5. Assessment - impact

- 5.1. From the submitted information it is unclear how the proposed pipe work arrangement relates to the internal units and what the gas supply is for. Floor plans would need to be submitted depicting what the pipe work relates to and any internal runs.
- 5.2. The proposed placement of gas pipe across all external elevation of the Listed Building would harm the character and appearance of the building. It would disrupt notable architectural features such as the cornice and quoin detailing. It is also likely harm historic built fabric, particularly where the pipe work is fixed and goes into the building. Of notable concern is the relationship between the projecting cornice and proposed pipe work.
- 5.3. The proposed to litter the building's elevations with pipe would be unacceptable. The approach fails to respect the significance of the building particularly when compared to modern buildings which do not have pipework evident externally, a more sensitive approach is expected with a listed building.
- 5.4. If a compromise is to be considered the arrangement of the pipework need to be rethought. Pipe work runs would need to be kept at a low level rather than running along architectural features.

Harm

- 5.5. As proposed the works would result less than substantial harm the listed building. Paragraph 202 of the National Planning Policy Framework (NPPF, 2021) would be relevant in this case.
- 5.6. Duties under sections 16 and 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 would need to be considered by the decision maker in determination of this application.

6. Conclusion: Objection

APPENDIX 2

Copy of Conservation Officer Comments to Design Option 6



Planning Specialist Observations			
Specialism(s)	Conservation and Design		
Case Officer	Nicola Taplin		
Site	Cowley House, 181 Cowley Road		
Proposal	Upgrading of the existing gas supply via the installation of external gas pipe apparatus (Application for Listed Building Consent)		
Planning Ref	15841/APP/2022/1168	Date	29/11/2022

Objection	Harm	Comments	Conditions	Approval of Details
X	X	X		

A site visit was undertaken to Cowley House on the 21st October with Cadent to view the exterior of the listed building and to discuss the works in more detail as well as see samples of the pipework. It was also requested that other recent schemes for gas pipe replacement on the exterior of listed buildings be submitted so that the impact can be fully understood.

The below images show an example of the gas pipe and the fittings that are required to attach it to the elevations of the listed building that were taken during the site visit.









Having seen the building and the proposed pipework it is not considered that the amended drawings will overcome the listed building objections previously raised. The pipework would clearly be harmful to the character and special interest of the listed building and that there does not appear to be a way of reducing the extent of pipe coverage or its layout that would be sympathetic to the listed building.

The other precedent schemes that were sent via email are not comparable to what is being proposed at Cowley House. The schemes show short localised stretches of pipework that would be discreetly located on the building. The lack of comparable schemes suggests that the proposals to fix the pipework externally is not necessary and is likely for the convenience of installation where flats do not need to be entered?

Since there are no comparable schemes on other listed buildings then there must be a more sympathetic solution where the pipes are run within the building such as their current arrangement.

Replacement pipework on other listed buildings that contain flats must have occurred at other properties in the past and given that no examples have been presented that are comparable to the proposals at Cowley House,



suggests that there are other solutions that are sympathetic to the listed building which have not currently been explored.

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Date: 29th November 2022

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