Design and Access Statement

Highgate Newtown Community Centre

August 2023

HNCC-FAR-XX-XX-DS-W-0010

Document by:
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Contents

Section One - Block B Plant

Introduction

This section has been prepared by Hunters Architects and Farrans Construction following concerns raised by Pentad Housing Society and discrepancies between the approved planning drawings relating to the roof planton Block B which extend beyond the building's parapet line, which has not been identified on approved drawing PL-E-103-Unwrapped Elevation-As Proposed-Building B but has been identified on PL-GA-B-604-Roof Plan-Building B and D-As Proposed.
Copies of approved drawings included within **appendix one.**

Why did the discrepancies arise?
The discrepancies have arisen due to the re-design of the mechanical system which changed from a CHP system to a centralised heat pump system providing heating and domestic hot water to the entire development in the form of an air source heat pump (ASHP).
This requirement was driven by the London Borough of Camden to reduce the carbon footprint of the development via the use of low carbon technology and to be in line with the New London Plan.
As part of the re-design a renewable and low carbon technology feasibility study was carried out by McBains to investigate the contribution that on-site generation from renewable energy technologies could make to reduce the carbon dioxide emissions in the development. As part of this study McBains assessed the following technologies in terms of their technical feasibility and potential CO2 emissions savings:

Technology	Feasibility	Comments
Ground Source Heat Pumps 		Ground source heat pumps extract heat from the ground and convert it to low grade heat for space heating and hot water. A ground source heat pump requires a large ground array, which would not fit on this site. Also, the cost of installing bore holes or slinky installations can still be prohibitively expensive. Heat Pumps typically meet a proportion of the heating and cooling loads and can be incorporated into the piles of a building structure. However, optimum performance is yielded when both heating and cooling are provided as this ensures that over the long term, the temperature of the ground remains relatively constant over a typical year. Mechanical cooling is not proposed for any of the dwellings and for a few spaces in building B, so a long-term temperature regime, and therefore optimal performance of a heat pump system could not be guaranteed. The technology is therefore discounted.
Air Source Heat Pumps 		Air source heat pumps extract heat from the air and convert it to low grade heat for space heating. These will produce low-grade heat which can then be boosted by the gas boilers to provide higher grade heat to the site-wide heat loop. This combination offers the best efficiency given the constraints of the site.
Photovoltaics 		The proposed development has a large area of flat or south facing roof and thus with the appropriate mounting systems can be very favourable for the installation of Photovoltaic panels. Photovoltaic cells would contribute to a proportion of the electrical load of the scheme and also benefit from the Feed in Tariff.
Solar Hot Water Systems 		The hot water load is substantial in any residential scheme. In this case this has been addressed at the second step of the energy hierarchy through the Combined Heat and Power plant; therefore, the solar thermal technology would not make a further contribution to the carbon dioxide emissions reduction and will not be considered further.

Technology	Feasibility	Comments
Wind (roof mounted) 		Roof mounted wind turbines are not recommended for this site due to noise, flicker and vibration implications on the residential/non-domestic areas. Numerous inner city wind turbine trials have shown that such turbines' energy yields are significantly lower than manufacturers' estimations. This will not be further considered.
Wind (standalone) 		Small-scale (10m mast), standalone turbines are not suitable for this development due to lack of space on the site and relatively low wind speeds that would be achieved in this very urban environment. This will not be further considered.
Biomass Heating 		A communal biomass boiler would be unsuitable for the development due to its central London location and the associated implications of fueldeliveries. Furthermore, given the restricted space between buildings and regular pedestrian movements related to the Community Centre, fuel deliveries from large vehicles would be deemed to pose a significant safety risk. This will not be further considered.

From this assessment an air source heat pump (ASHP) and PV array at roof level was the preferred technologies to serve the site. With the air source heat pump (ASHP) system supplying both heating and domestic hot water to all the buildings.

Therefore, based on the above, the design note explores potential options to mitigate the visual concerns created by an air source heat pump (ASHP) and looks at the feasibility of different options explored by the design team for discussions with Pentad Housing Society and Camden's Planning Department.

Building B Existing Street Views

Winscombe Street & Croftdown Road

1. View from Winscombe Street with the People's Gospel Mission Hall on the right

2. View from Croftdown Road

3. View from Croftdown Road

- Key streetscapes affected by air source heat pump.

View Key

Existing Visual Impact

Winscombe Street & Croftdown Road

1. View from Winscombe Street

2. View from Croftdown Road

3. View from Croftdown Road

Note: Air source heat pump highlighted in red.

- Air source heat pump extends beyond parapet line
- Building massing disrupted

View Key

Options

One - remove

View from Winscombe Street

Remove Air Source Heat Pump

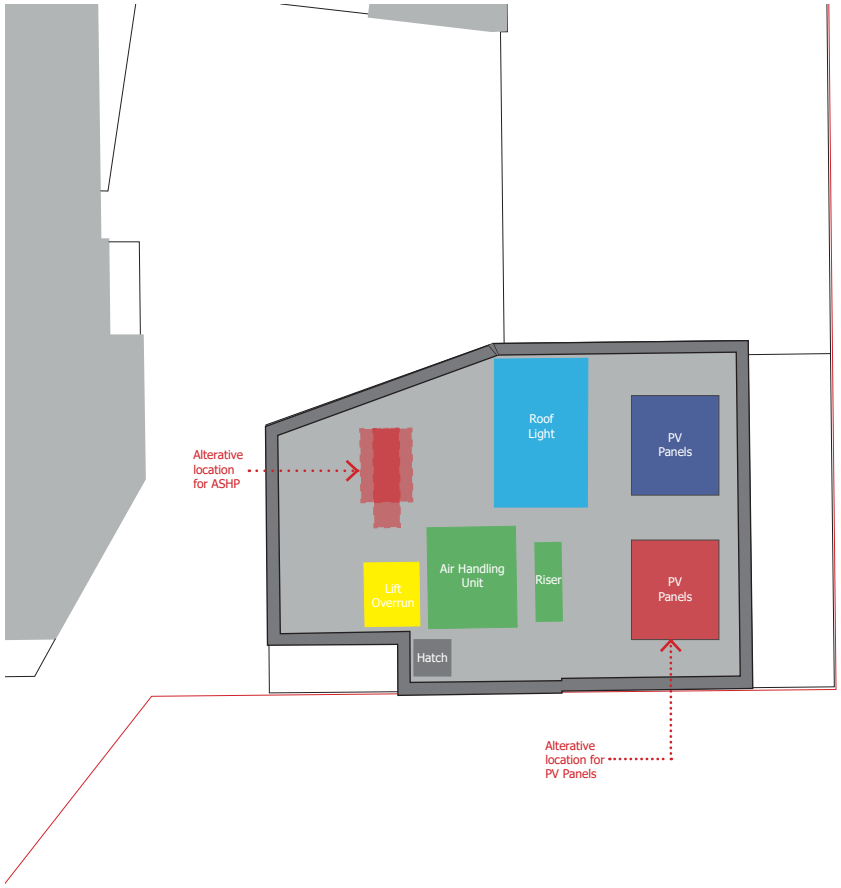
Solutions/issues encountered:

- Required to satisfy Planning Condition 48 - Energy and Sustainability Plan (Application Number 2021/0384/P) to allow London Borough of Camden meet their target use of low carbon technology and reducing the carbon footprint of the development in line with the New London Plan which is fully detailed in McBains Energy Strategy Report dated February 2020.

View from Croftdown Road

Options

Two - reorganise



Block B - Roof Diagram

Move air source heat pump to another part of Block B roof

Solutions/issues encountered:

- Limited locations available due to PV arrays and roof light
- Reduces maintenance space around unit
- ASHP still extends beyond the parapet line
- Greater impact on Croftdown Road & courtyard streetscape
- No visible impact on Winscombe Street

Impact on Courtyard

Air source heat pump highlighted in red.

Impact on Croftdown Road

Options

Two - reorganise

Block B - Roof Diagram

Move air source heat pump to another part of Block B roof

Solutions/issues encountered:

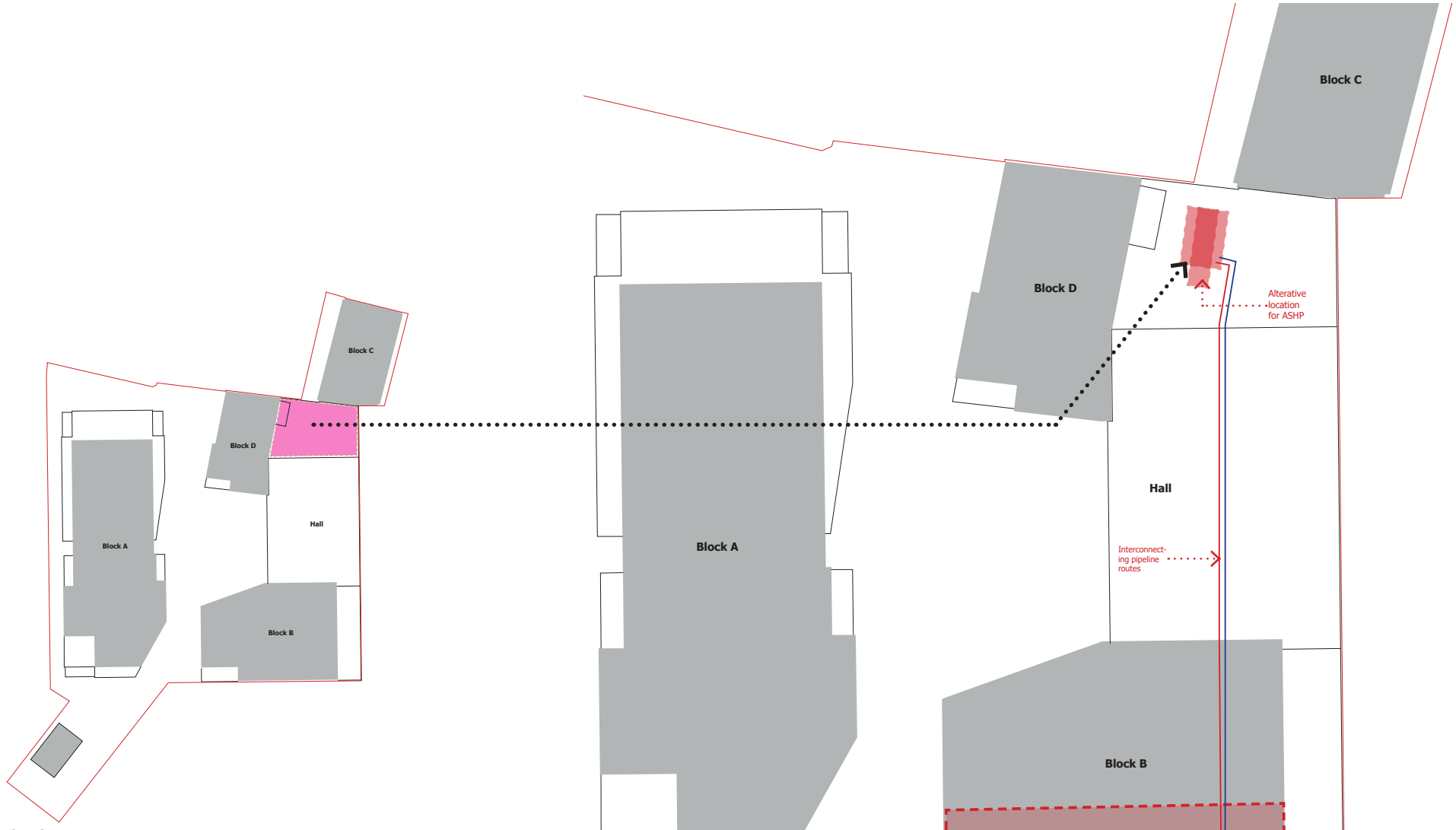
- Limited locations available due to PV arrays and roof light
- Reduces maintenance space around unit
- ASHP still extends beyond the parapet line
- Greater impact on Croftdown Road
- Reduced impact on Winscombe Street

Impact on Winscombe Street

Impact on Croftdown Road

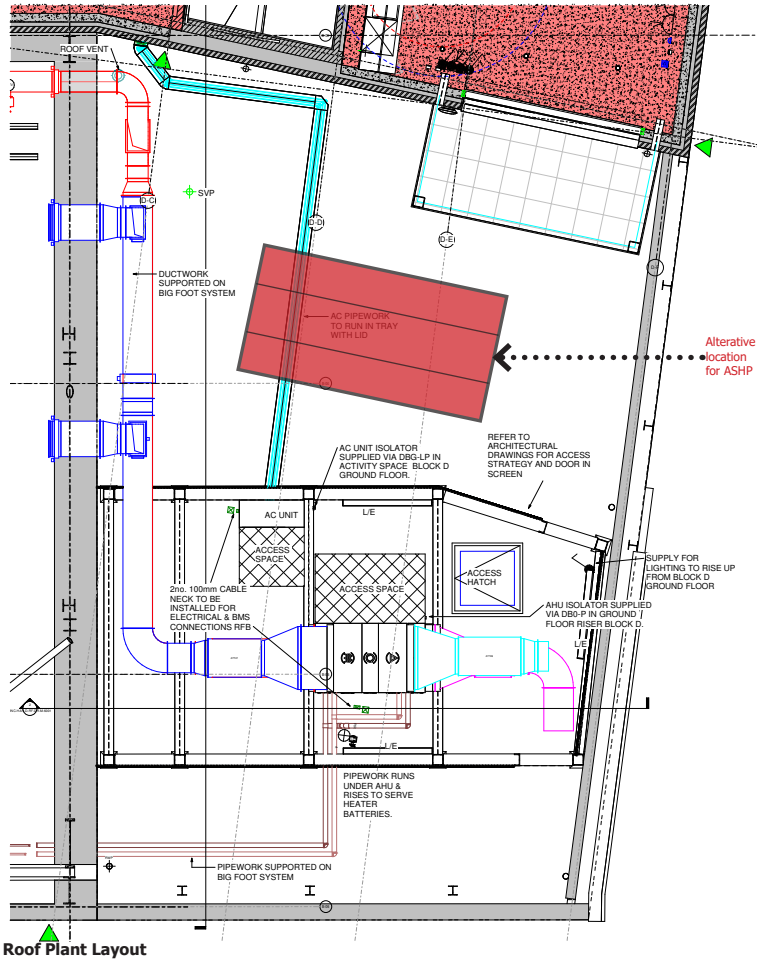
Options

Three - move

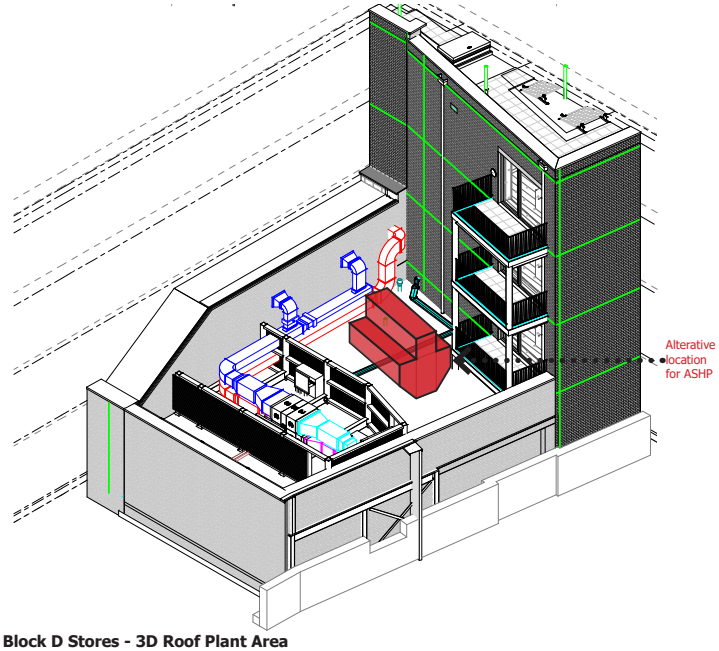


Options

Three - move



Block D Stores - Roof Plant Layout



Block D Stores - 3D Roof Plant Area

Move air source heat pump to another part of the site

Solutions/issues encountered:

- Air source heat pump extract heat from the air and convert it to low grade heat for space heating, therefore needs to be located externally.
- Alterative locations were reviewed on Blocks A and D roofs, but it was found these locations would have negative impact on the streetscape of Bertram Street. Therefore, the enclosed roof space to Block D stores which is full enclosed on all four sides would be suitable visually as there is no direct views in from the surrounding streets.
- Due to the space being very fully enclosed it is likely to have greater impact acoustically, whereby noise will reverberate around the surrounding elevations. This in turn would require additional attenuation measures to address.
- Whilst out of view of the surrounding streets, the plant would be overlooked by residents in Block D balconies specially at first floor level. Given the potential extent of additional attenuation required acoustically, the mass and height of the unit would be dominating to these residents.
- As the space is fully enclosed air flow around the unit would be compromised, which is fundamental to the unit's operation as it extracts heat energy from the air flow.
- Means of access for routine service and maintenance would be reduced.
- Interconnecting pipeline routes would be difficult to integrate as the sports hall needs to maintain minimum clear height internally for sports, all pipelines would need to run externally along the top of the hall roof and would be visible at the bottom of Winscombe Street and compromise the look and finish of the new community hall.
- The Block D stores are built over an existing Thames water sewer that crosses a small area at the Northeast corner of the site. Currently the new roof over the single storey bicycle shed and stores has been designed to be light weight construction to minimize loading. The roof consists of a lighweight roof buildup and finishes on a metal deck spanning between steel framed roof beams. The raised steel platform provided for the Air Handeling Unit (AHU) adjacent to the new community hall has been designed to avoid loading directly over the Thames Water Loading Exclusion Zone. Adding the air source heat pump and a raised steel platform to this area would result in an overall net increase in load over the Thames Water Loading Exclusion Zone which wouldn't be considered favorable by Thames Water.

Options

Four - reduce

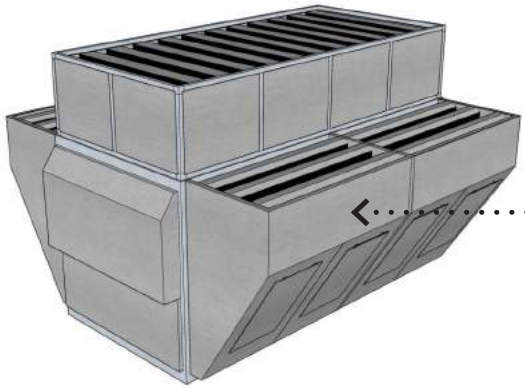


Illustration of Acoustic Shroud

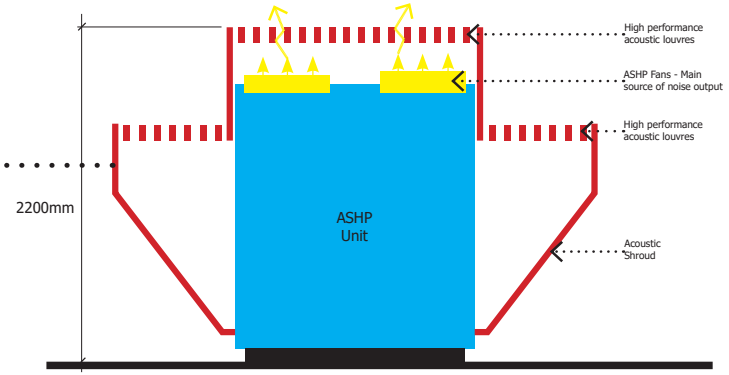


Diagram of ASHP Unit and Acoustic Shroud

Reduce the height of the acoustic screen/attenuation

Solutions/issues encountered:

- Acoustic attenuation required to satisfy Planning Condition 26 which requires plant noise levels to be below background noise levels at sensitive receptors (eg residences)
- Acoustic shroud design efficient as possible and still allows sufficient air flow and maintenance around unit
- Acoustic shroud isolates noise at source
- Reduce ASHP size, unit sized to in-line with Camden's CO2 emission targets.
- Alterative acoustic enclosure option also reviewed as per adjacent diagram, but due to the noise output from the fans being directed upwards from the unit attenuation would be required to the top and sides and would be a much larger volume allowing for maintenance zones etc. and would be approx. 500mm higher than the current acoustic shroud.

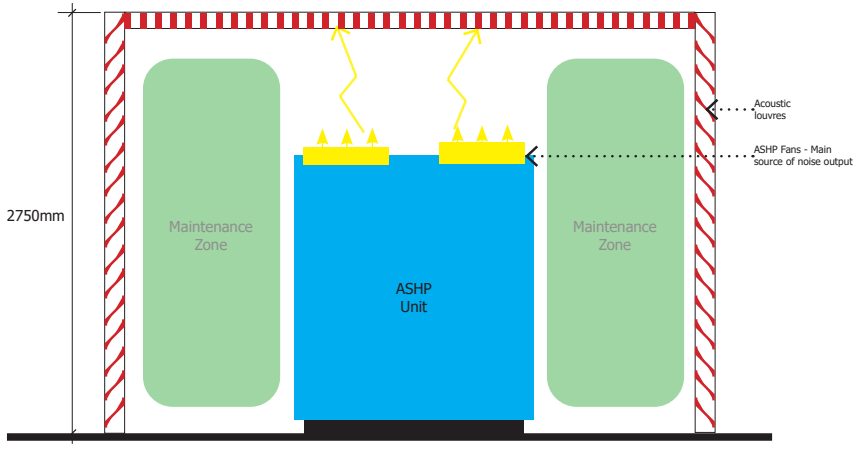
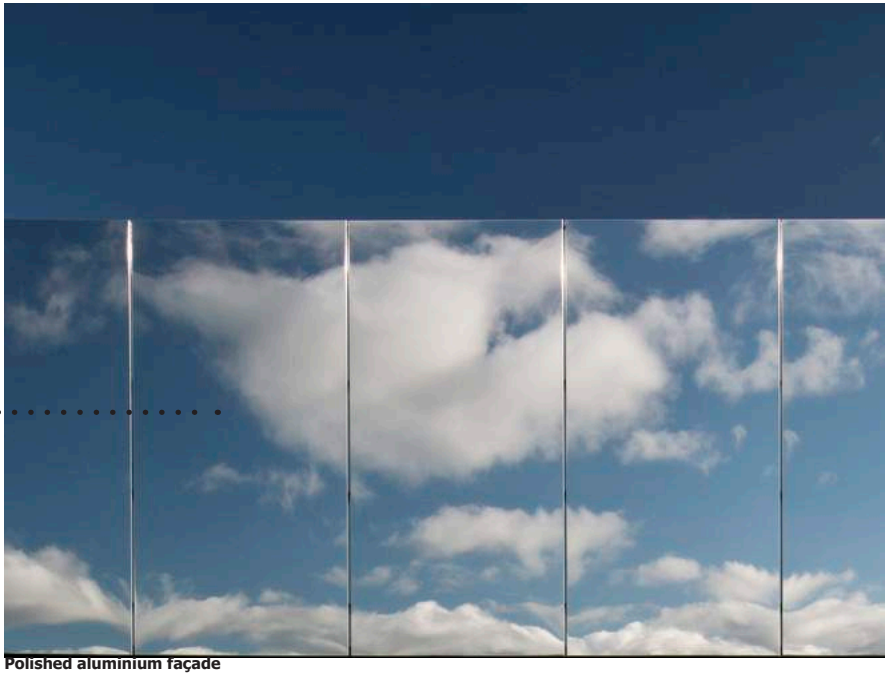


Diagram of ASHP Unit and Alterative Acoustic Enclosure

Options

Five - reflect

Visual from Winscombe Street



Polished aluminium façade

Example of Alucobond Reflect Panel

Precedent of Alucobond Reflect Panel

Key Design Intent Points:

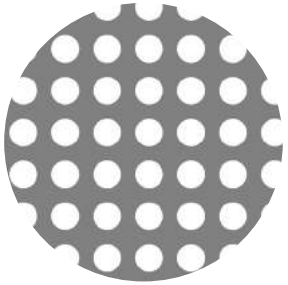
- Volume fades into natural background
- Establishes a dialogue between viewer and surroundings by juxtaposing transient reflections of the sky with the natural skies above
- Annual maintenance
- Foreign material not in keeping with material palette of area

Options

Six- wayfinder

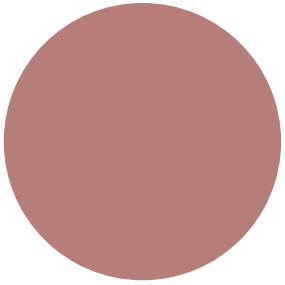
Visual from Winscombe Street

Concrete Feature Entrance to Block B



Example of perforated cladding panel pattern

Feature Concrete Sample



Example of colour of red perforated cladding panel

Key Design Intent Points:

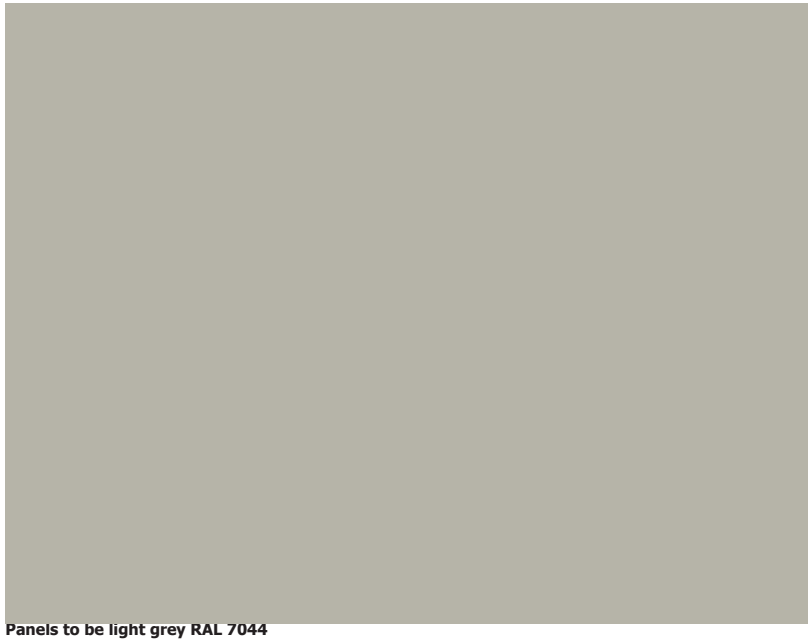
- Takes context from Highgate Newtown Community entrance in both form and colour
- Signals community centre
- Establishes a narrative between viewer and building
- Offers varying levels of translucency

Options

Seven - reorganise & enclosure (Proposed)

Option 7 - Visual from Winscombe Street

Precedent image of Plant Screen



Panels to be light grey RAL 7044

Key Design Intent Points:

- Move ASHP unit centrally on Building B roof so less visible at street level
- Simple vertically laid panels
- Pale grey coloured metal cladding - RAL 7044

Conclusion

Ion Acoustics Ltd have assessed the proposed location of the ASHP unit to ensure compliance with Planning condition 26 which requires plant noise levels to be 10dB below the background noise levels at sensitive receptors (eg residences) and have found that the relocation and the introduction of the additional screen will still meet the noise limits derived from the planning condition.

To conclude although all options have different advantages and disadvantages option three moving the unit to Block D store roof would have been visually the most appropriate option and satisfy the concerns raised by Pentad Housing Society, but as demonstrated in this report review of option three the underlying Thames Water Loading Exclusion Zone made this option structurally unfeasible.
And following a meeting with Winscombe St and Bramshill residences on Wednesday 13th September where the team put forward the alternative options within this report to the current situation its was concluded that the air source heat pump (ASHP) needs to remain on the Building B roof but can be moved more centrally on the roof so less visible from street level. The residences also noted the ASHP should be cladded by a durable, pale coloured metal cladding.

Therefore, the design teams and residences preference is Option 7 relocate and provide visual screening to the ASHP.

Current View from Winscombe Street

Option 4 - Visual from Winscombe Street

Option 7 - Visual from Winscombe Street

Section Two - Block A External Shading Proposal

Introduction

This design note has been prepared by Farrans Construction in relation to the Highgate Newtown Community Centre project.

It has been prepared to support the external shading proposal (Iteration 7.1) put forward in Semple & McKillop's Thermal Modelling Report to the three bedrooms within Building A apartment A2-GF-06 on the ground floor. See diagram 1.1 below highlighting bedrooms below.

The design note looks at the feasibility of four different control options reviewed by the design team and each options advantages and disadvantages and concludes with the option that provides the best user experience.

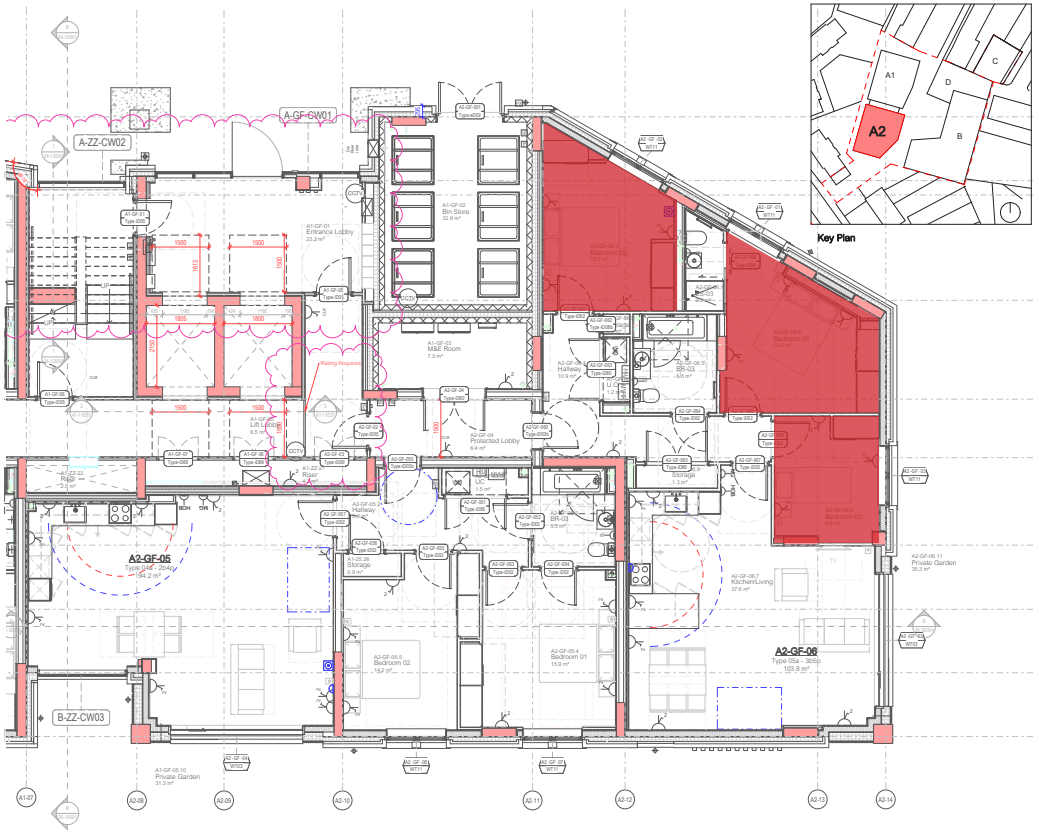


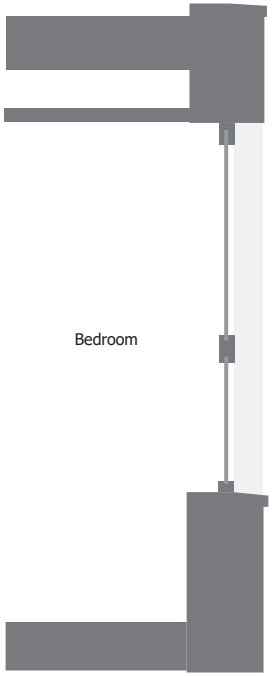
Diagram 1.1 - Block A Ground Floor Layout

Options

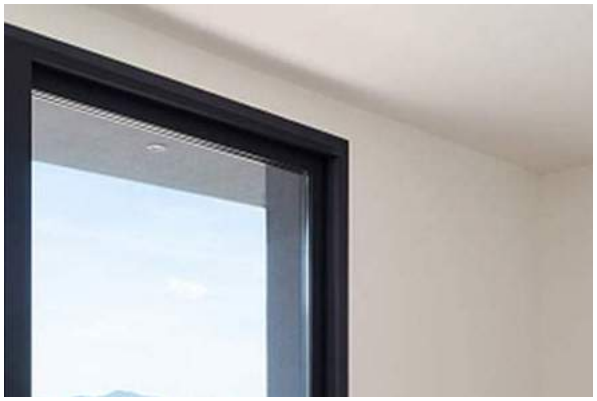
One - improve g-values

Proposal
Improve G-values of glass to three bedroom windows, from Low-E Clear Glass to Low-E Grey Glass.

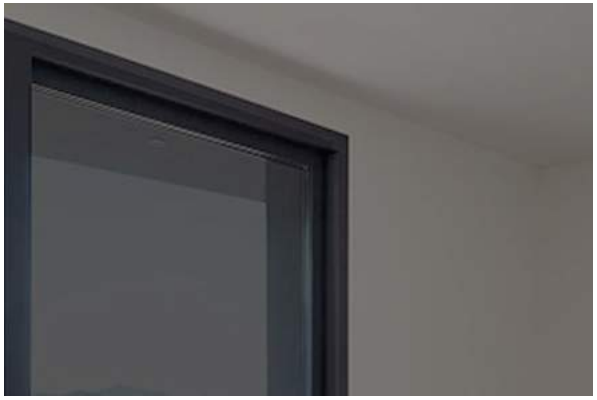
Current Proposal



Low-E Grey Glass Proposal



Low-E Clear Glass Precedent



Low-E Grey Glass Precedent

Advantages
- Simple installation
- Economic

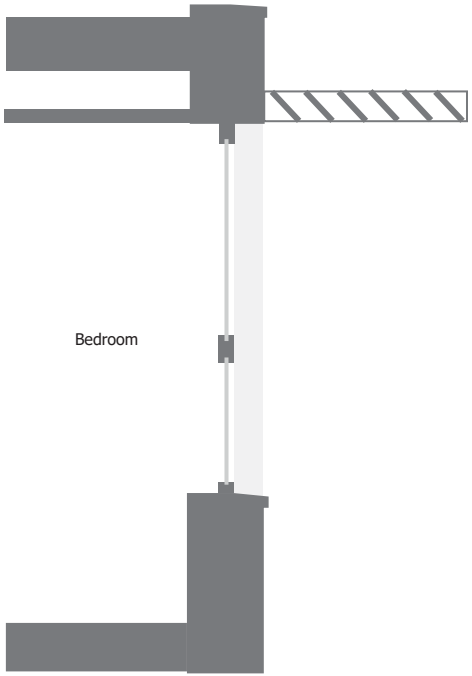
Disadvantages
- Solar heat transmission not reduced to applicable level
- Light transmission reduce by 30% to bedrooms all year
- No user control
- Visual appearance of windows would feel darker to other windows on same elevation
- View out reduced
- Increased artificial lighting and energy use

Options

Two - brise soleil

Proposal
Install horizontal fixed brise soleil fixed directly onto the face of the brickwork.

Current Proposal



Brise Soleil Proposal

Brise Soleil Precedent

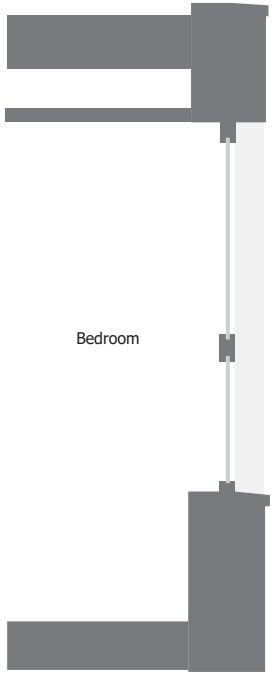
Advantages
- View out maintained
- Robust

Disadvantages
- Solar heat transmission not reduced to applicable level
- Natural light transmission reduced
- Limits maintenance access to windows above
- No user control
- Increased artificial lighting and energy use

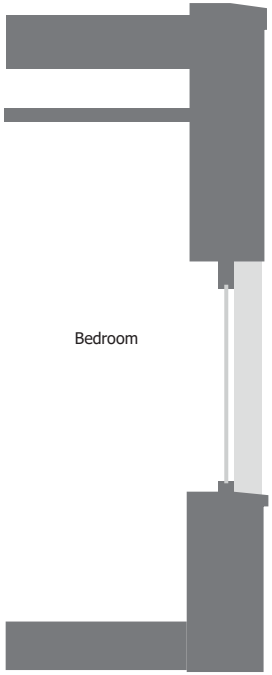
Options

Three - reduce windows

Proposal
Reduce window size to three bedrooms.



Current Proposal



Reduce Window Proposal

Advantages
- Solar heat transmission reduced to applicable level

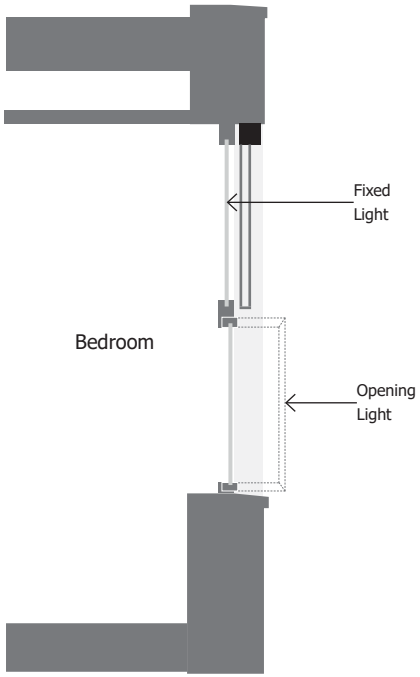
Disadvantages
- Natural light transmission reduced greatly
- View out reduced
- Architectural language of elevation changed
- No user control
- Increased artificial lighting and energy use

Window Reduction Precedent

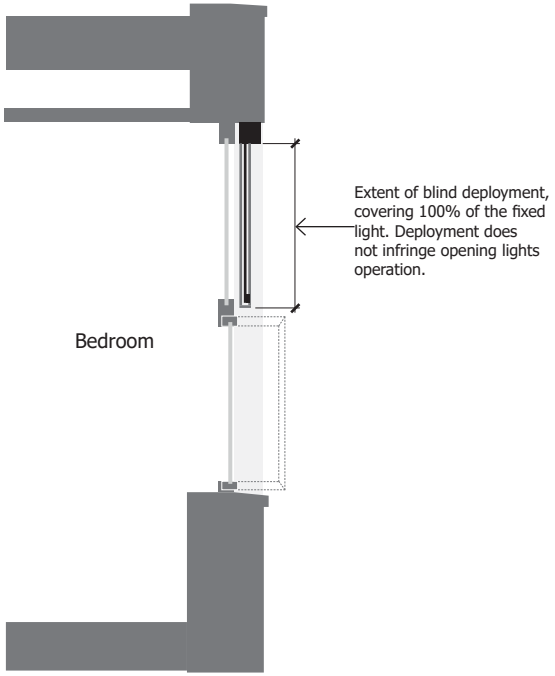
Options

Four - fabric vertical blind (Proposed)

Proposal
Install fabric vertical blind within winodw reveal depth.



Fabric Vertical Blind Proposal (Closed Position)



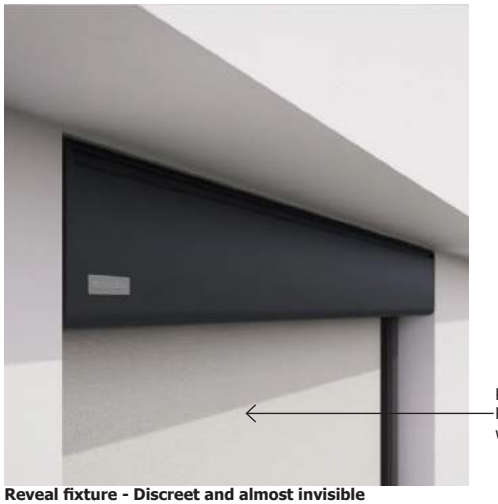
Fabric Vertical Blind Proposal (Open Position)

Advantages

- Reduction in solar heat transmission when required by user
- View out maintained
- Full control by bedroom user to suit individual
- preference
- No visual impact when not in use

Disadvantages

- Will require regular maintenance in line with similar building components.



Reveal fixture - Discreet and almost invisible

Fabric Vertical Blind Precedent - Closed Position

Conclusion

To conclude although Option One was found to be economic and the most straightforward installation, as demonstrated in the thermal modelling report (Ref: HNC-SMK-ZZ-ZZ-RP-ME-6301) improving the G-values did not mitigate overheating to a sufficient level to the three bedrooms and as such did meet TM59 compliance.
Also during our studies of Option One the architectural language of the façade would be impacted as the bedroom windows would be visually darker than the windows adjacent.

Option Two did have minimal physical impact on the architectural language of the façade, but again as demonstrated in the thermal modelling report (Ref: HNC-SMK-ZZ-ZZ-RP-ME-6301) the fixed brise soleil did not mitigate overheating to a sufficient level to the three bedrooms and as such did meet TM59 compliance.
Also, both options one and two did not provide the users any control to deal with changing weather conditions to suit their preferences and along with the reduced natural light transmission into the bedrooms these two options were discounted by the design team.

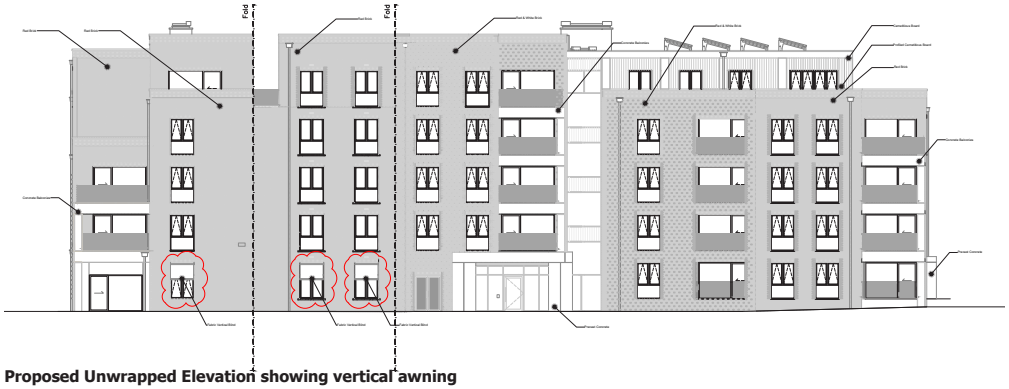
Option Three did provide adequate reduction of solar heat transmission shown through the thermal modelling analysis, but it was felt that the architectural language wasn't in harmony with the rest of the development.
Again, Option Three did not provide the users any control to deal with changing weather conditions to suit their preferences and along with the reduced natural light transmission and the limited view out to the bedrooms this option was discounted by the design team.

Option Four did raise concern with regards maintenance, but it was felt with a robust maintenance plan put in place this could be managed over the life span of the building and due to their limited deployment, approximately 33 hours per year if required by the user the blinds would be in their closed position for the majority of their use therefore limiting the effects of weathering and provide suitable longevity.

Therefore, the design team have concluded that Option Four provides the necessary reduction in solar heat transmission and meets TM59 compliance and offers views out and minimal visual impact when not in use and offers the users greatest control to suit individual preferences to deal with varying weather conditions.

Approved Unwrapped Elevation

Building A



Proposed Unwrapped Elevation showing vertical awning

Building A

Section Three - Building D Privacy Screens

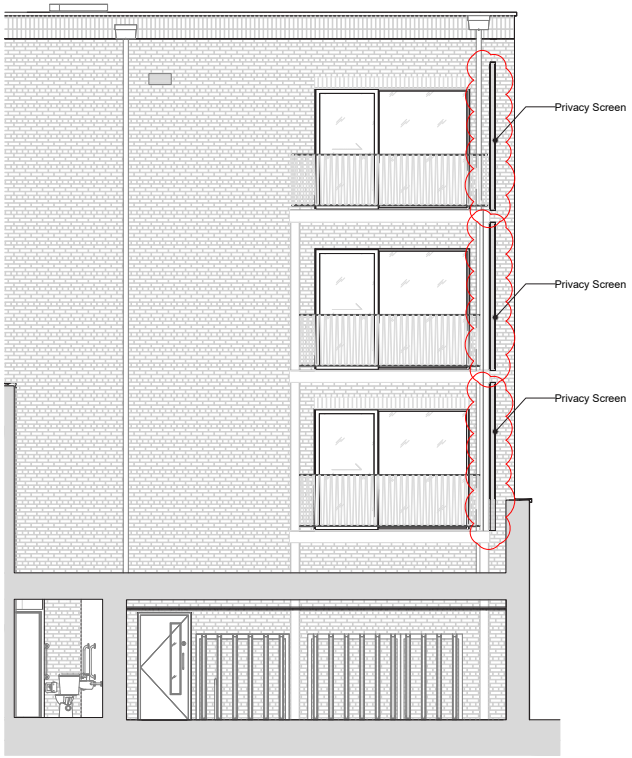
Building D Privacy Screens

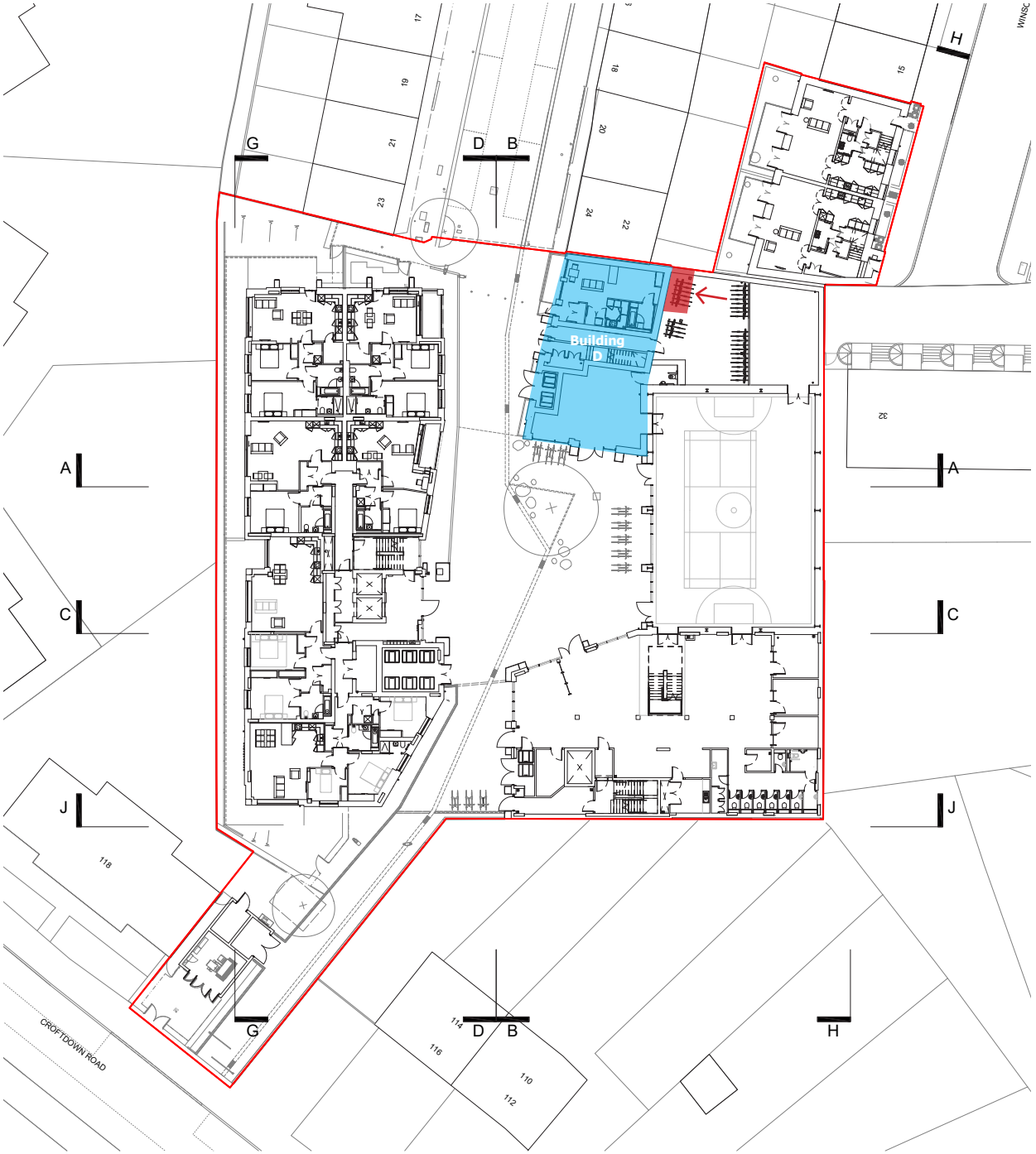
This section has been prepared by RCKa following consulation with residents on Bertram Street there has been concerns regarding the privacy to neighbouring gardens from future potential residents that will occupy building D.

The following pages explore potential options to mitigate these concerns, integreting privacy screens sensitively to the northern edge of the balconies.

Approved Design

The site plan and elevation below shows the location and design of the stacking balconies which are providing external amenity to the residential apartments loacted in building D.



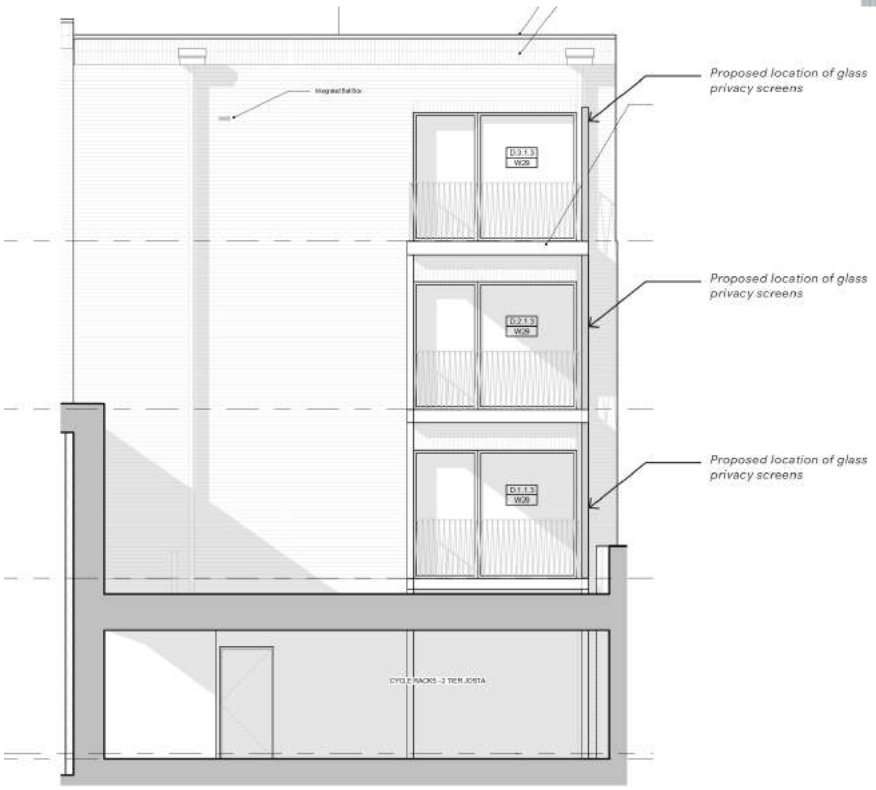


Options

One - glass screen

The existing balcony is galvanised steel. A polycarbonate/ diffused glass screen could be installed that obscures views while allowing light to filter. The screen would compliment the steel and provide a lightweight feel.

It is proposed that the screens are only located on the northern end of the balconies.



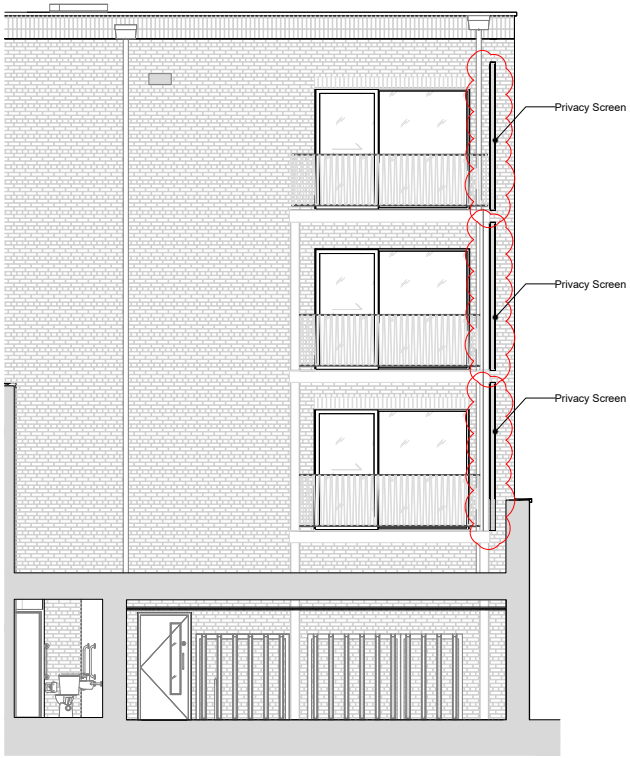
Options

Two - metal screen (Proposed)

The existing balcony is galvanised steel. A metal screen, similar in appearance could be installed that provides a defused appearance. Allowing light to flow through while obscuring residents view of the balconies and vice versa.

A pattern could be achieved that harmoniously balances with the existing guarding. Creating a holistic appearance to the balcony design.

It is proposed that the screens are only located on the northern end of the balconies.



Conclusion

To conclude although both options would provide suitable privacy it is felt option two metal screen provides the most appropriate option and satisfies the privacy concerns raised by residents on Bertram Street, while still allowing dialogue between the gardens and balconies.

Metal Screen Precedent

Metal Screen Precedent

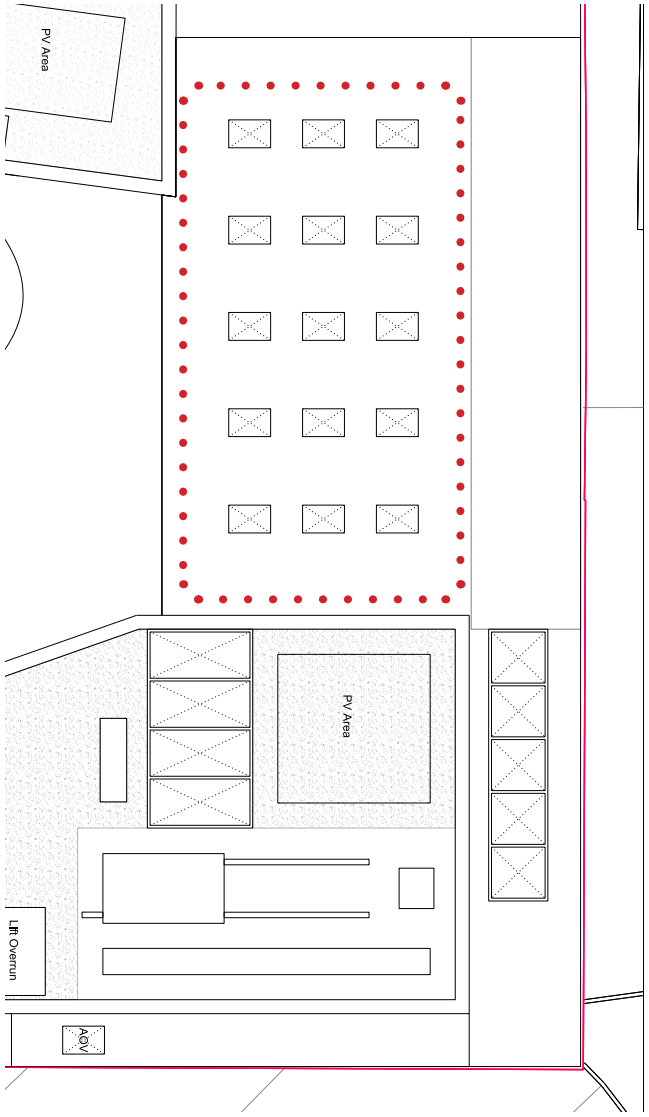
Section Four - Amendments

Introduction

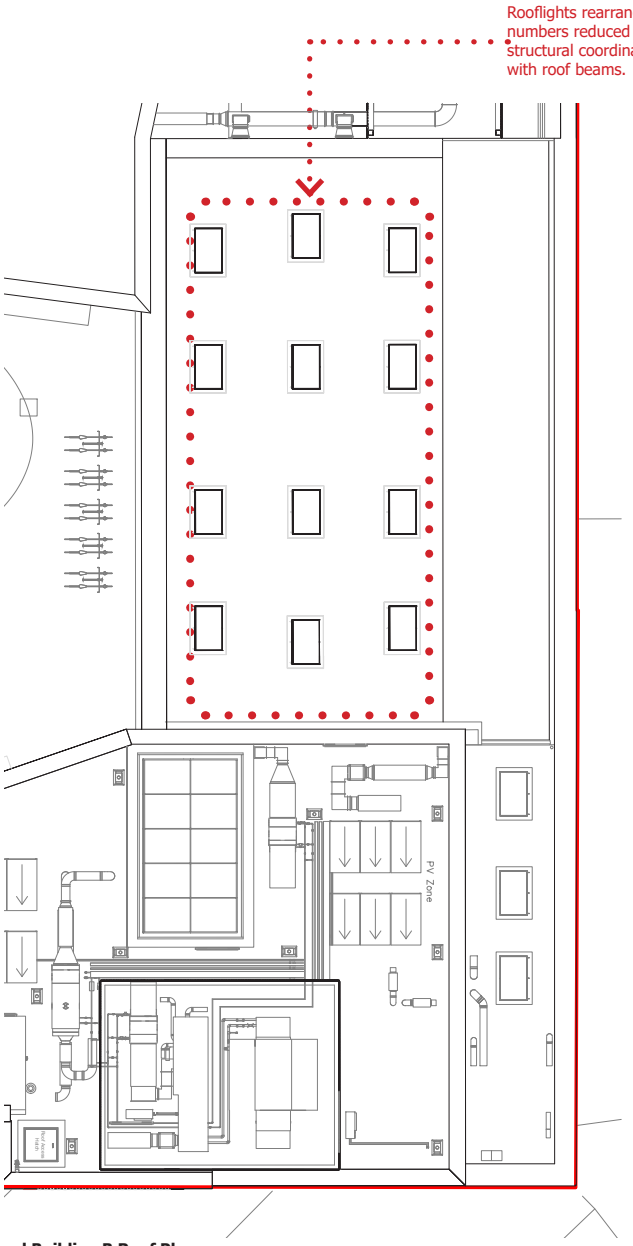
The following section has been prepared due to design development and coordination changes during the construction stage due to structural and mechanical constraints.

Amendment

Building B - Rooflights



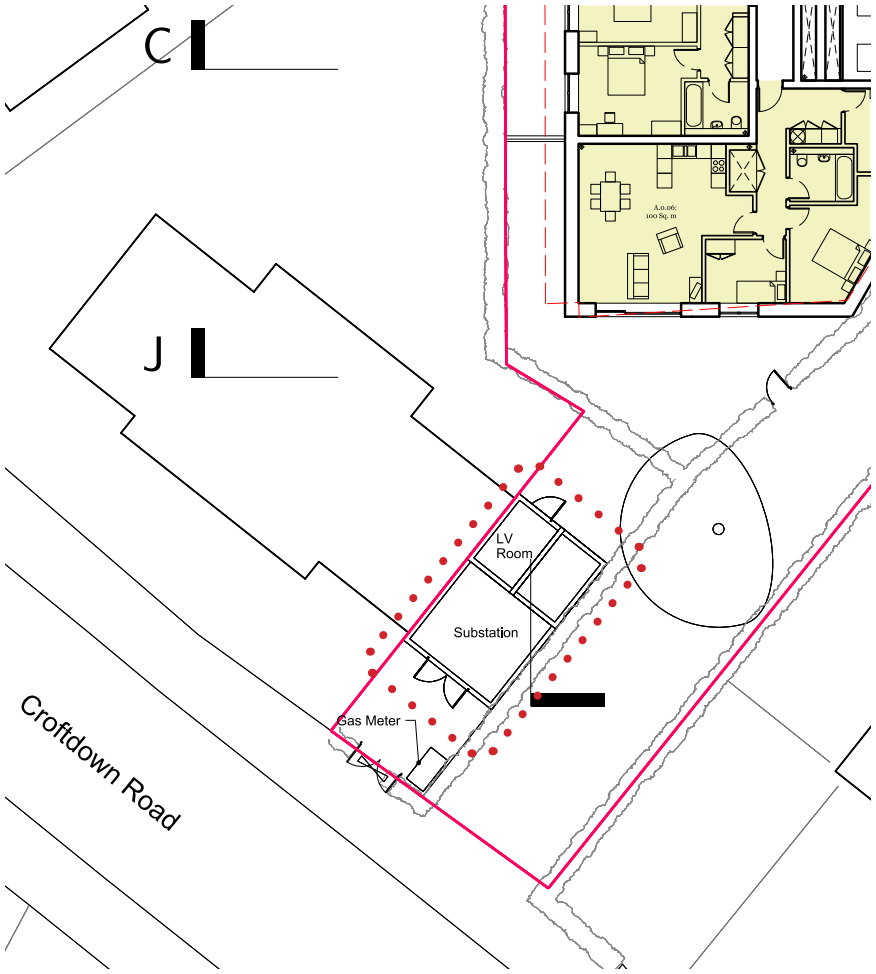
Approved Building B Roof Plan



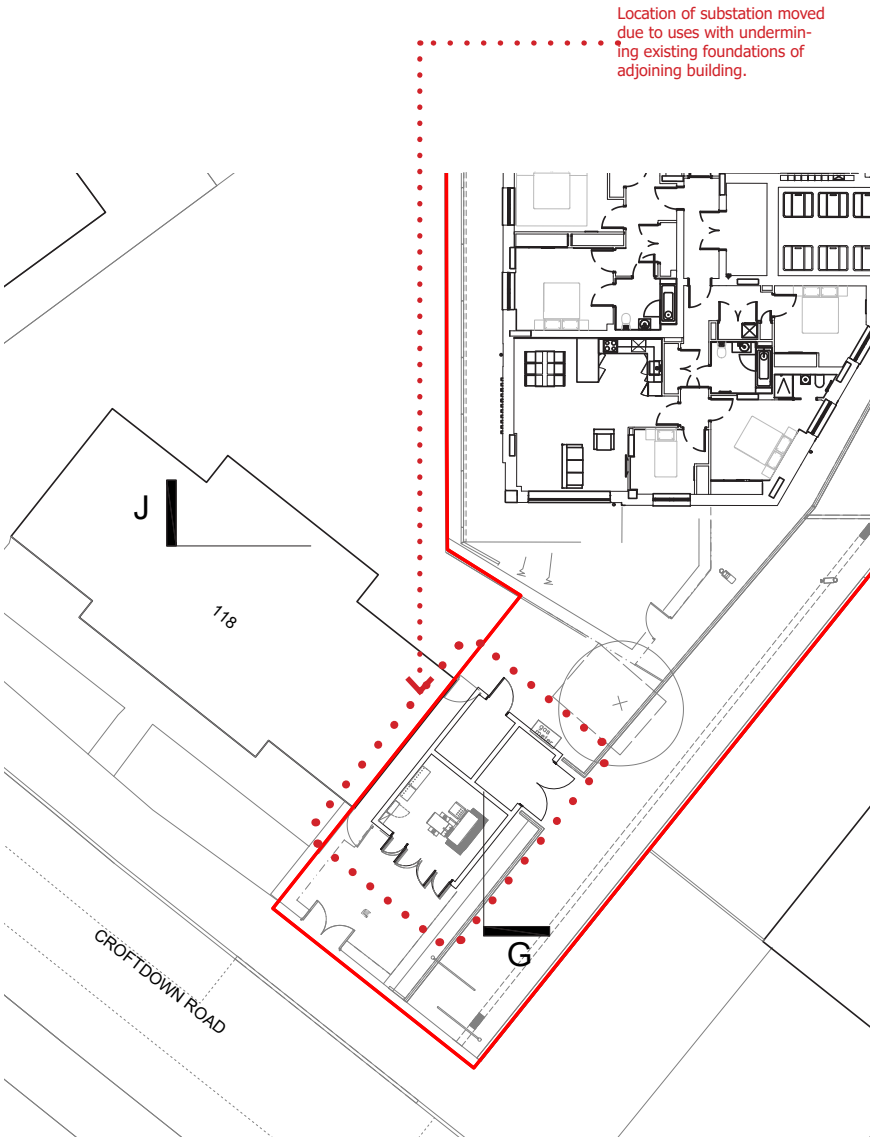
Proposed Building B Roof Plan

Amendment

Subsation Location



Approved Site Plan

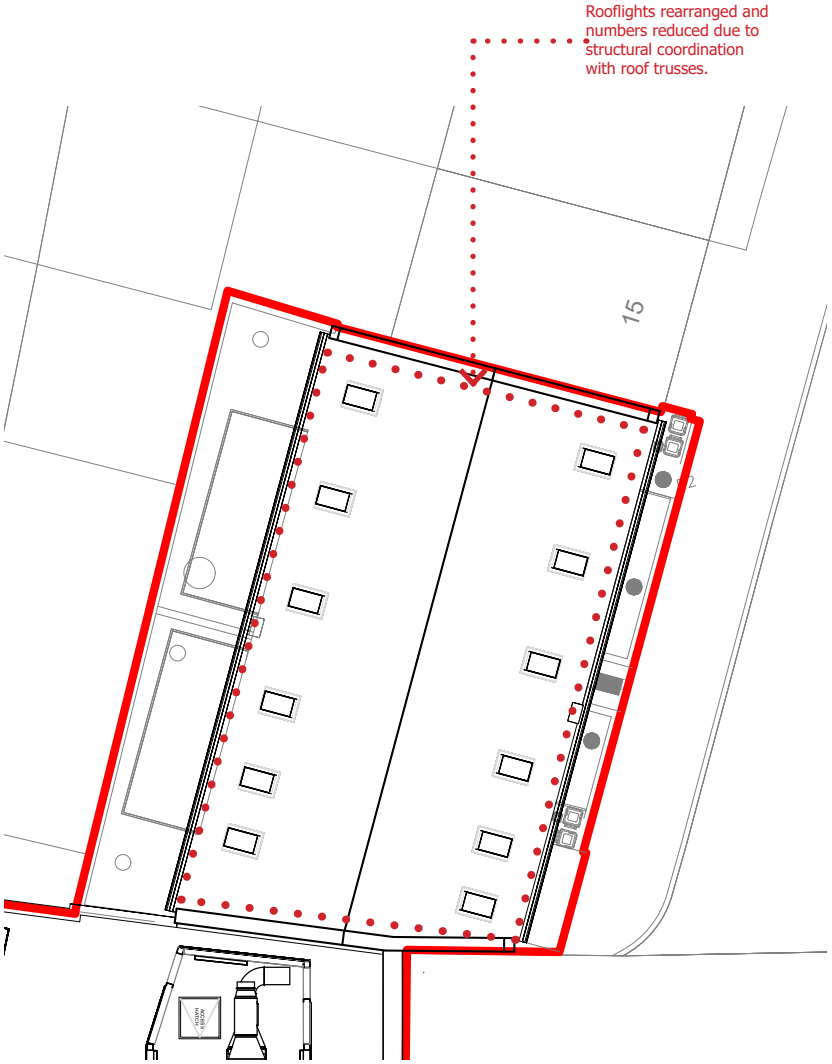


Proposed Site Plan

Amendment

Building C Rooflights

Approved Building C Roof Plan



Proposed Building C Roof Plan

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