Alexandra Road Estate
Heating Infrastructure

Design and Access Statement | March 2020

Levitt Bernstein People.Design

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1.0 Introduction

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1.0 Introduction

This report has been produced by Levitt Bernstein with input from Butler and Young Associates, to put forward proposals for the replacement of heating infrastructure to Blocks A,B and C on Alexandra Road Estate, 109 Rowley Way Community Centre, 1-8 Langtry Walk, 61-83 Loudoun Road and Alexandra Place Plant Room. This report also covers the replacement of the cold water mains connection to Blocks A, B and C of Alexandra Road Estate.

The quality and importance of the Alexandra Road Estate has been widely recognised both in England and abroad. It is a powerful icon of the optimism and idealism that underpinned post-war public sector architecture.

The Alexandra Road Estate is a residential estate of 520 dwellings in Camden, NW9. The majority of the estate was listed Grade II* in 1993, the remainder now falling within the Alexandra Road Conservation Area, designated in 1996. The Estate is considered among the most ambitious social housing schemes of this time, one of a series of low rise, high density schemes.

1.1 Site Location

The Alexandra Road Estate is bounded by, Loudoun Road on the east, on the south by Boundary Road, Abbey Road on the west, and by the West Coast Main Line to the north. Block A follows the geometry of the tracks and is organised in the form of a ziggurat, stepping down in height towards the central pedestrian street, Rowley Way. Block B, a lower, 4-storey block runs along the other side of Rowley Way. Block C runs east-west along the southern edge of the site, sitting parallel to another public walkway.

Block B, the lower 4-storey building along Rowley Way, contains maisonettes with shared access, terraces, and gardens over-looking the park at the rear. Maisonettes also occupy the top two levels of Block A opposite, with entrance from a walkway on the 7th floor that runs the entire length of the structure. Dwellings in the lower floor in this block are entered from open stairs serving two dwellings per floor. The flat roofs of the stepped elevation provide private outdoor areas for every home.

There are a number of different dwelling types, all sharing a similar approach and a number of key features. The high density of the estate led to tight interior layouts, mitigated by open plan elements. Sliding doors and glazed partitions allow flexible arrangements, with the potential for views and light to pass through each dwelling.

The proximate relationship of public and private is eased by porches, decks and planting. Finishes are restrained, white paint contrasting with stained timber and brown tiling. Internally, simple joinery shelves and cupboards are formed from plywood, while the stairs are a more developed piece of joinery work. In the kitchens, concrete worktops form a striking, almost sculptural element. These are tiled, as are the walls, forming a very deliberate composition.

The construction of the Estate is of white board marked concrete with areas of self-coloured render. The predominant materials are light in colour with contrasting joinery, inside and out. Concrete forms the large, complex section, and the areas of self-coloured render is a reference to the Regency terrace. At Alexandra Road the quality and detailing of the materials is high. The care devoted to the internal fittings was perhaps unique amongst local authority departments at this time.

The quality and importance of the estate has been widely recognised both in England and abroad. It is a powerful icon of the optimism and idealism that underpinned post-war public sector architecture. It continues to be regularly visited by architectural students and practitioners.

1.2 Site History

Designed in 1968 and built between 1972 and 1978 by the London Borough of Camden Architects Department, Alexandra Road Estate is one of the most ambitious examples of the innovative new social housing emerging from the Department at this time, and of new housing in Britain. Its architect was Neave Brown.

Camden was formed in 1965 from the London Boroughs of Hampstead, Holborn and St Pancras and was one of the largest, wealthiest and most ambitious of the new London Boroughs. The architect's department under the leadership of Sidney Cook was, like all local authorities, under great pressure to build large amounts of housing. Camden developed low rise, high density schemes to meet this demand rather than the system built high rise schemes adopted by many other local authorities. The Estate was seen as an opportunity to improve a whole area by the inclusion of a public park and the provision of social buildings such as the community centre, shops and special needs school.

The street is the dominant element in the design and seen as a modern translation of the traditional London Street, where the sum of the whole exceeds the individual parts in creating a meaningful urban space. All dwellings are entered directly from the streets, which are freed of traffic by the parking garage provided at low level.

The estate can be seen as one of the most successful examples of the segregation of traffic and the pedestrian, and it remains a successful social space.

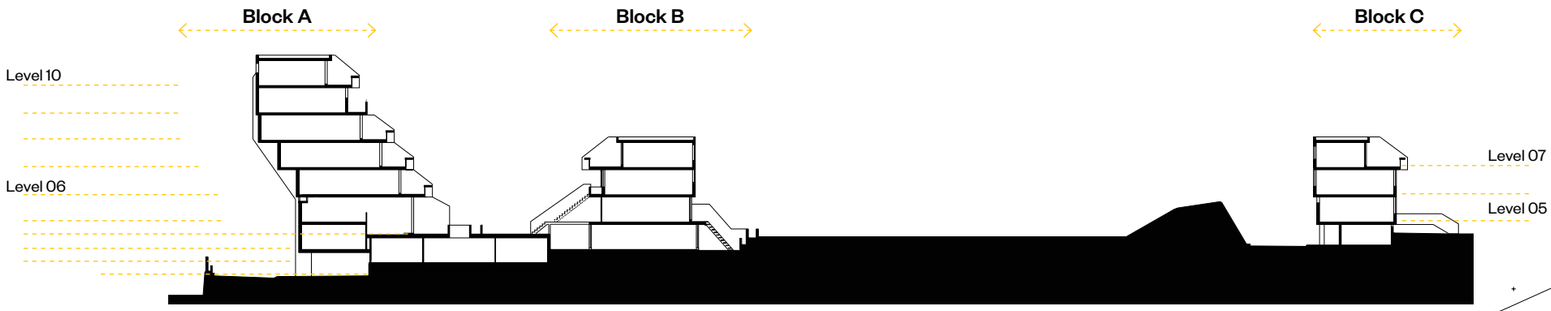
The linear stepped section was influenced by work developed by Leslie Martin - an idea also developed by Denys Lasdun at the University of East Anglia (1962-68) and by Patrick Hodgkinson at the Brunswick Centre in Bloomsbury (1967-72). At Alexandra Road the stepped section enabled all dwellings to have a sunny outdoor space and was further utilised to shield the estate from the noise of the railway line to the north. Alexandra Road Estate also represents a development of Neave Brown's earlier work for housing societies, undertaken while he was in private practice, at Winscombe Street and Fleet Road. Though on a much smaller scale, these too were essays in high-density developments of stacked dwellings and the considered sequencing of spaces moving from public and semi-public to private and semi-private.

1.3 Key Features

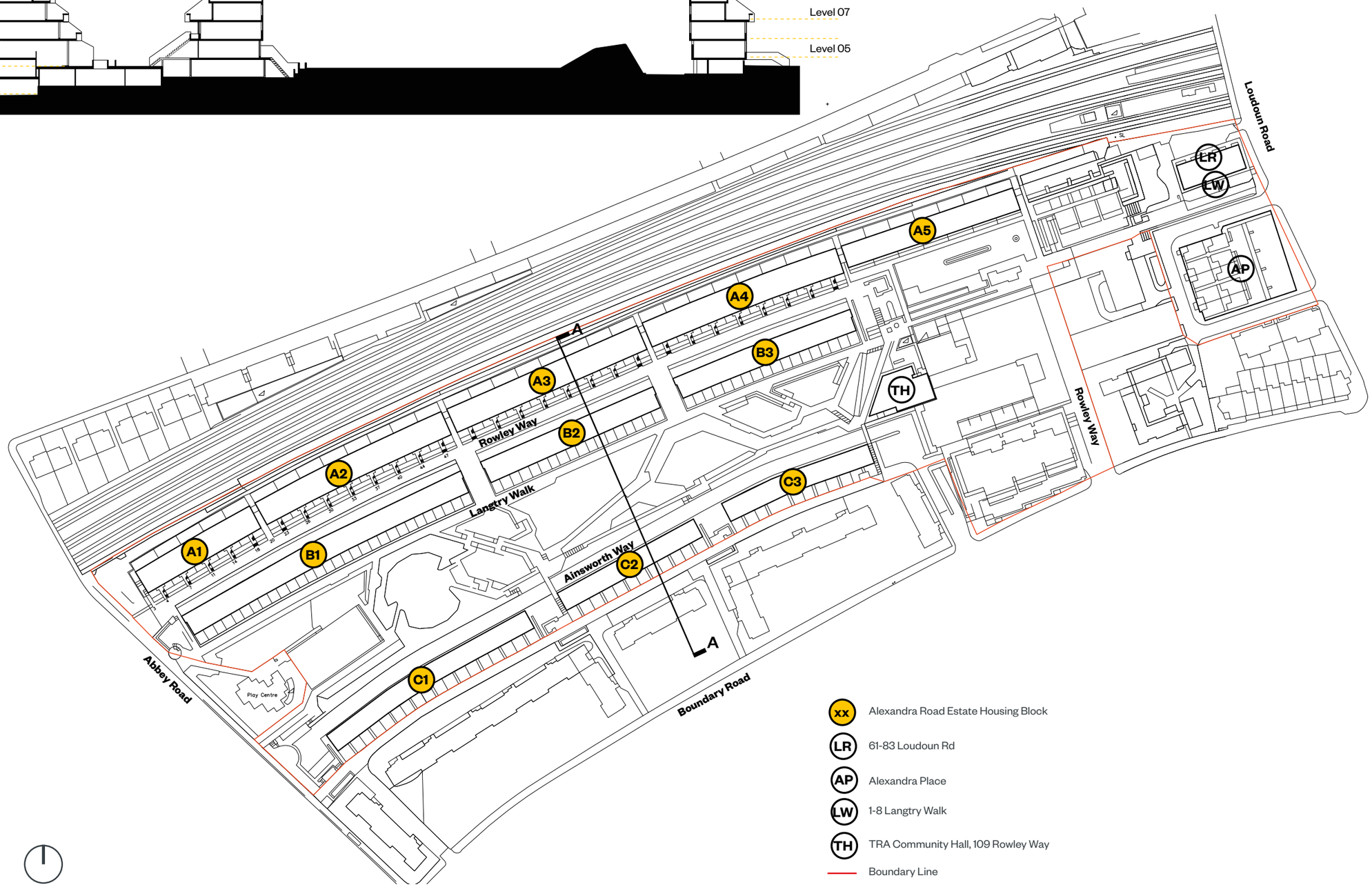
The high density of the estate led to tight interior layouts, mitigated by open plan elements. Sliding doors and glazed partitions allow flexible arrangements, with the potential for views and light to pass through each dwelling.

Internal finishes are restrained, white paint contrasting with stained timber and brown tiling. Simple joinery, shelves and cupboards are formed from plywood, while the stairs are a more developed piece of joinerywork. In the kitchens, concrete worktops form a striking, almost sculptural element. These are tiled, as are the walls, forming a very deliberate composition.

The clean, open plan lines were aided by concealed heating in party walls. Background heating was provided by coils buried within the walls, each heating two flats (one to either side), with top-up heating through ventilating plinths.



Site Cross Section A



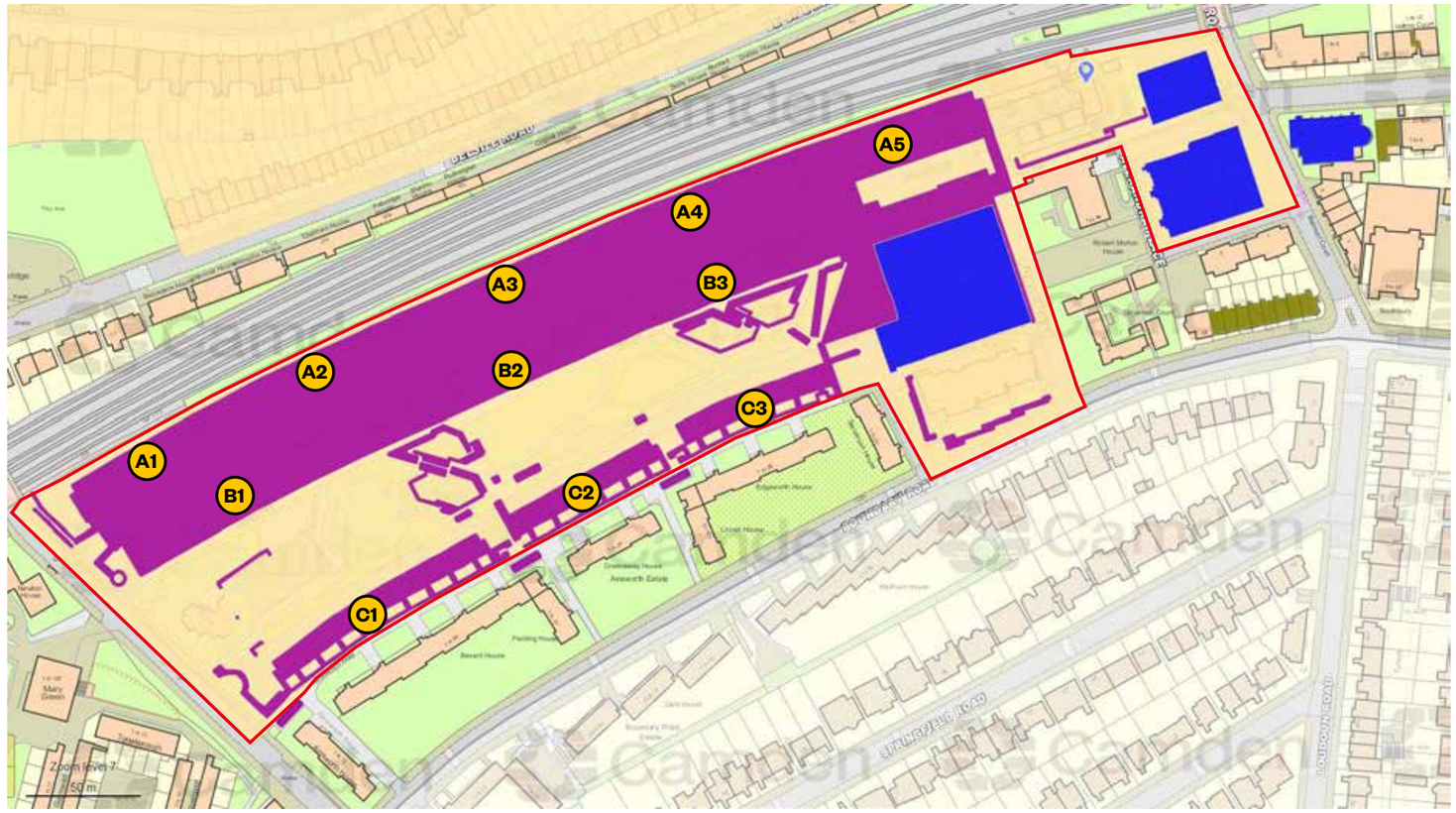
Site Plan

- xx Alexandra Road Estate Housing Block
- LR 61-83 Loudoun Rd
- AP Alexandra Place
- LW 1-8 Langtry Walk
- TH TRA Community Hall, 109 Rowley Way
- Boundary Line

1.4 Site Listing

As the conservation area covers land which was redeveloped by one landowner, the council, over a relatively short time span in the 1970s, the character of the area is homogenous.

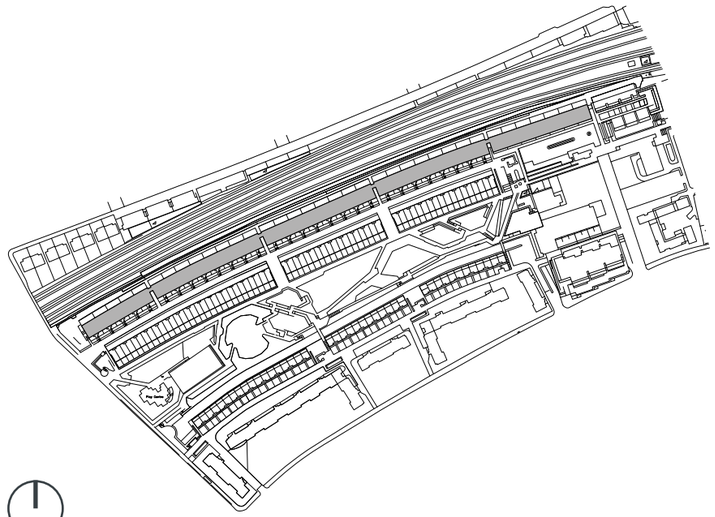
The estate has a strong geometric quality, orthogonal arrangements being varied by the use of bold chamfers, in both plan and section. Use is made in all the blocks of stepped and overhanging sections. Throughout the estate, play is made of changes of levels with associated ramps, stairs and lightwells. Much of the estate is constructed of fair-faced, white concrete with chamfered arrises. Careful attention was given to the detail and execution of the board-marking and day-work joints. The north face of A block, the south face of B block and both faces of C block are of self-coloured render.



1.5 Block A

Block A is the tallest (7-storeys plus basement parking) and backs on to the railway to the north of the Estate, presenting a mostly solid elevation with relatively small double-glazed aluminium windows. The south facing aspect is more open and steps down to Rowley Way, which is paved with red brick and lined with trees. The curved sweep of Block A is punctuated by the recessed glazed lift enclosures, which restricts access for maintenance and repair.

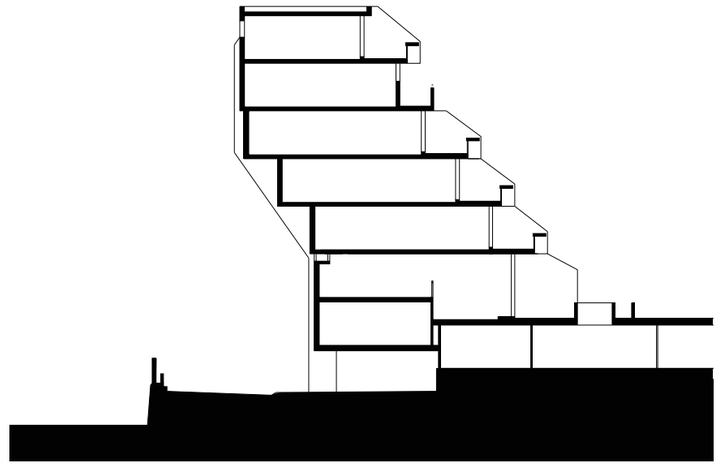
Block A north facade from Abbey road



Site plan

Block A looking west along service road to north

Block A south elevation

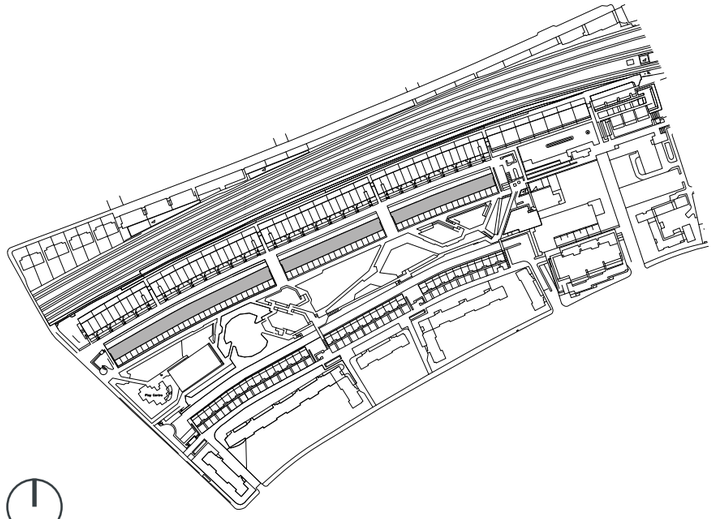


Block A cross section looking east

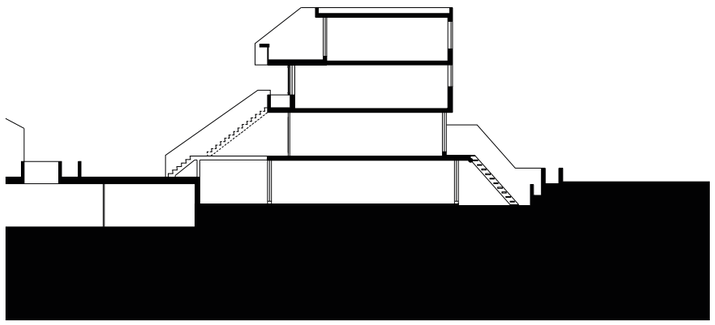
1.6 Block B

Block B to the south side of Rowley Way is lower (4-storeys) but also stepped in a manner similar to Block A. Each flat or maisonette is provided with its own terrace/garden area with integral in-situ concrete planters. Both Blocks A and B sit on a concrete deck. A parking garage is placed beneath Block A and Rowley Way as a response to requirement of the original brief to provide sufficient parking spaces for residents of the new estate and the existing Ainsworth Estate. The south elevation of Block B is of plain render and is not stepped. A broad band of landscaped lawns, enclosed play areas and integral seating, stretches two-thirds of the length of the site from Abbey Road in the west to the Tenants' Hall in the east and separates Blocks B and C.

Block B south elevation looking west along Langtry Walk



Site plan



Block B cross section looking east

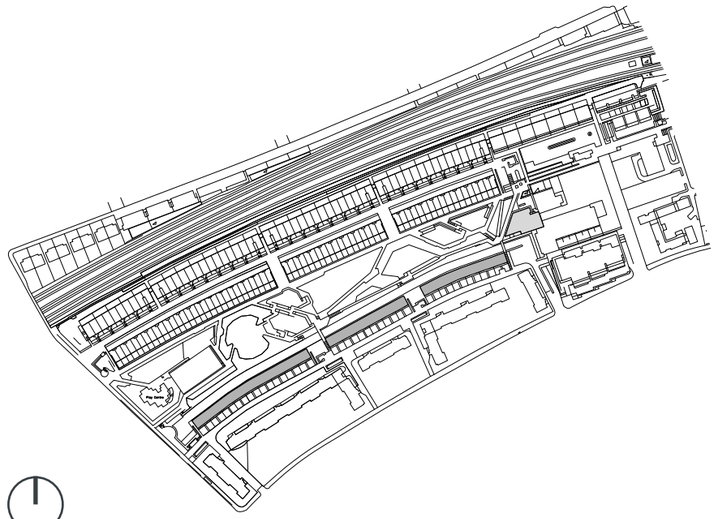
Block B North elevation, Rowley way, seen from Block A

View South-East to block B from roof of block A

1.7 Block C

Block C is a lower, modified form of Block B, and consists of three storey town houses. Below this, parking is provided in basements reached by one of the estate roads entered from Boundary Road. The gardens of Block C face south but are rather overshadowed by the neighbouring blocks of the earlier Ainsworth Estate.

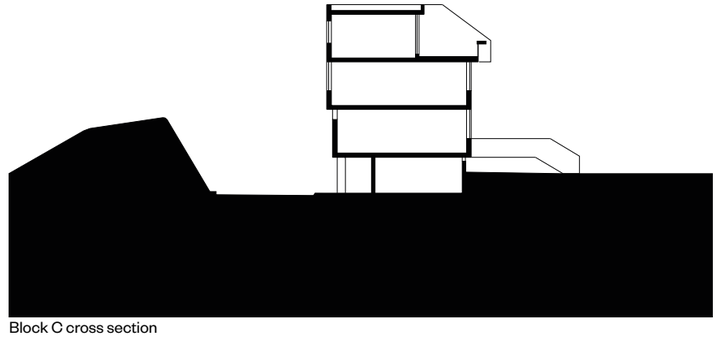
Block C, Ainsworth Way



Site plan

Link bridge between TRA Hall and block C

Block C from Boundary road (South elevation)



Block C cross section

1.8 Langtry Walk, Loudoun Road & Alexandra Place

At the eastern end of the conservation area, on Loudoun road, the council commissioned two mixed-use blocks of housing, shops and workshops, which were completed in 1981. Though in form and arrangement they are part of the Alexandra road family, these blocks are constructed of brindled metric stock bricks, incorporating pre-cast concrete units around window and vents.

The northernmost block consists of a parade of shops at ground floor level facing Langtry Walk. This is referred to as 1-8 Langtry walk with linked residential and commercial accomodation to the rear/north referred to as 61-83 Loudoun road. To the south of Langtry walk is Alexandra Place, which originally comprised workshop units at ground floor level. Behind and above are maisonettes and split level flats stacked in a typical stepped cross section.

Both blocks occupy prominent positions on the boundary of the conservation area; there are long views of them from both directions on Loudoun road. The two blocks are Grade II listed.

Key to site plan

1 - 1-8 Langtry Walk
- 61-83 Loudoun Rd

2 - Alexandra Place

1. 1-8 Langtry Walk block looking from west towards Loudoun Road

Site Plan

2. Alexandra Place from West along Langtry Walk

Eastern entrance from Loudoun road into Langtry walk. Conservation area boundary

1.9 Accommodation schedule

The Alexandra Road Estate blocks are designated as follows;

Blocks A, B and C
The 520 dwellings in Blocks A, B and C comprise of a mix of flats and maisonettes:

Block A1
8 x 3 bed
10 x 2 bed
32 x 1 bed

Block A2, A3 & A4 (each)
12 x 3 bed
16 x 2 bed
52 x 1 bed

Block A5
14 x 2 bed
42 x 1 bed

Block B1
30 x 3 bed
30 x 2 bed

Block B2 & B3
18 x 3 bed
18 x 2bed

Block C1
18 x 4 bed

Block C2
12 x 4 bed

Block C3
12 x 4 bed

In addition this application covers:
- 109 Rowley Way Community Centre,
- 1-8 Langtry Walk,
- 61-83 Loudoun Road
- Alexandra Place plant room.

2.0 Project Brief

2.1 Project Brief

Estate distribution pipework
The Alexandra Road Estate distribution pipework for heating and hot water in dwellings is at the end of its working life. For many years the pipework has suffered from extreme corrosion, furring-up and leaks.

The system is now 40-50 years old. The pipework has been continuously patched up over the course of more than 10 years. The upkeep and maintenance is burdensome, costly and unpredictable failures result in sporadic loss of heating and/or hot water for residents. It is clear that the patching up of the distribution pipework is no longer enough to ensure confidence in the system going forward.

A technical investigation was carried out at the end of 2019. Visual inspections by the team and service records have made it clear that the heat distribution pipework is beyond repair and in need of urgent replacement to prevent catastrophic failure. Failure of this pipework could range from the loss of heating and/or hot water to individual dwellings or the whole of the Alexandra Road Estate.

It is urgent that the London Borough of Camden Council replace the existing distribution infrastructure to the estate.

For an interim period (estimated at two years) much of the new installation will coexist in parallel with the existing system prior to final changeover so that essential services can be continuously maintained over the entire project programme.

Works will be phased with progressive decommissioning of the existing system as the new systems become commissioned and come on-line. As existing systems reduce in capacity associated plant performance (existing primary and secondary pump sets) will be de-regulated and reduced in pump performance capacity until such time the plant becomes redundant.

The London Borough of Camden proposed heating refurbishment scheme is anticipated to bring the following additional benefits over and above the future-proofing of the current system:

- Reduced maintenance burden both within central plant room and dwellings
- Reduction in carbon emissions through more energy efficient heat generation, distribution and temperature control
- Individual dwelling temperature control and metering of heating and hot water systems .

External works are expected to include the following:

- Partial removal and total replacement of the entire secondary Low Temperature Hot Water (LTHW) heating distribution pipework to the estate dwellings. This will run from the boiler house to all homes.
- Installation of above ground exposed and insulated two pipe hot water flow and return pipework
- Reprovision of cold water distribution to blocks A, B, C
- Existing central plant will be retained

Internal works
The replacement of the distribution pipework connect into each home via a new heat interface unit (HIU). The HIU will be positioned in the same location as the existing domestic hot water cylinders. The hot water cylinders will be made redundant as part of this process meaning the interior flat layout need is retained as existing.

The new distribution pipework and HIU will not connect to the embedded heating wall coils in the home. The recent technical study found that it is not feasible, economic or practical to connect to the heating coils. Therefore, we have concluded that it is necessary to abandon the embedded heating coils and seek an alternative heating system for each dwelling.

The selection of the heating emitters is not part of this planning application. The design team will carry out further detailed analysis and design work and seek full consultation with residents on any proposals. A separate planning application and listed building consent will be sought for these works.

Therefore, the internal works portion of this planning application only seeks permission for the connection to and installation of the HIUs within homes. This Includes associated internal pipework from the estate distribution to HIUs.

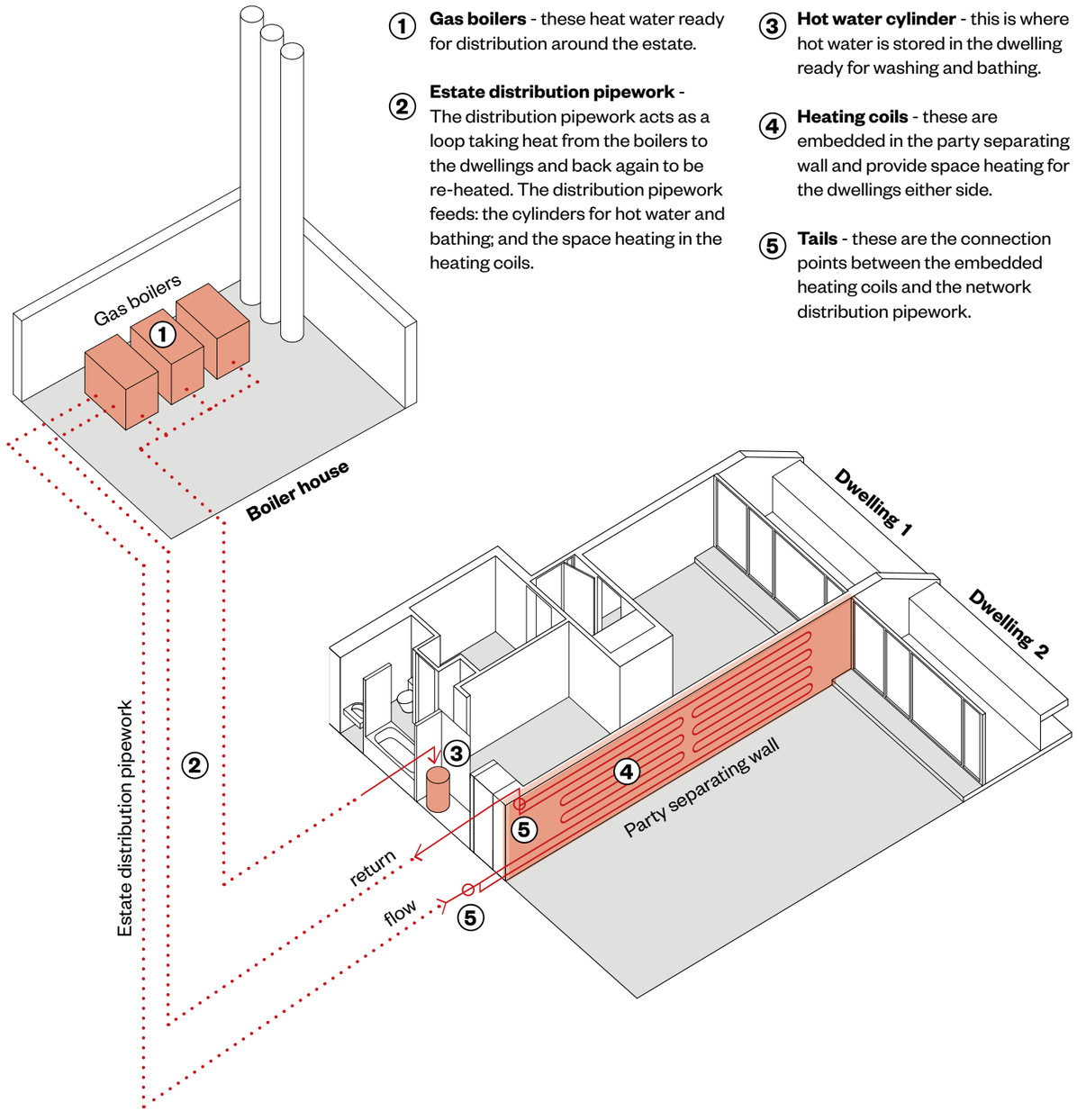
3.0 The Existing Heating System

3.1 How the communal heating system works

Heating and hot water is supplied to the Alexandra Road Estate via a communal heat network. Three gas boilers in the boiler house heat water which is pumped around the estate in communal heat network pipes. This provides heating and hot water to each dwelling.

Hot water for washing and bathing enters homes and apartments and supplies a hot water cylinder within the apartment. This cylinder is often located in a cupboard or under stairs. It stores hot water all year round ready for use.

Heating to homes and apartments is provided by steel pipe heating coils embedded into the party separating concrete wall between dwellings. This provides a shared source of heat between neighbouring dwellings. The heat network is connected to the heating coils via tail connections. The heating coils are supplied with heat between October and May to keep dwellings warm.



1. **Gas boilers** - these heat water ready for distribution around the estate.

2. **Estate distribution pipework** - The distribution pipework acts as a loop taking heat from the boilers to the dwellings and back again to be re-heated. The distribution pipework feeds: the cylinders for hot water and bathing; and the space heating in the heating coils.

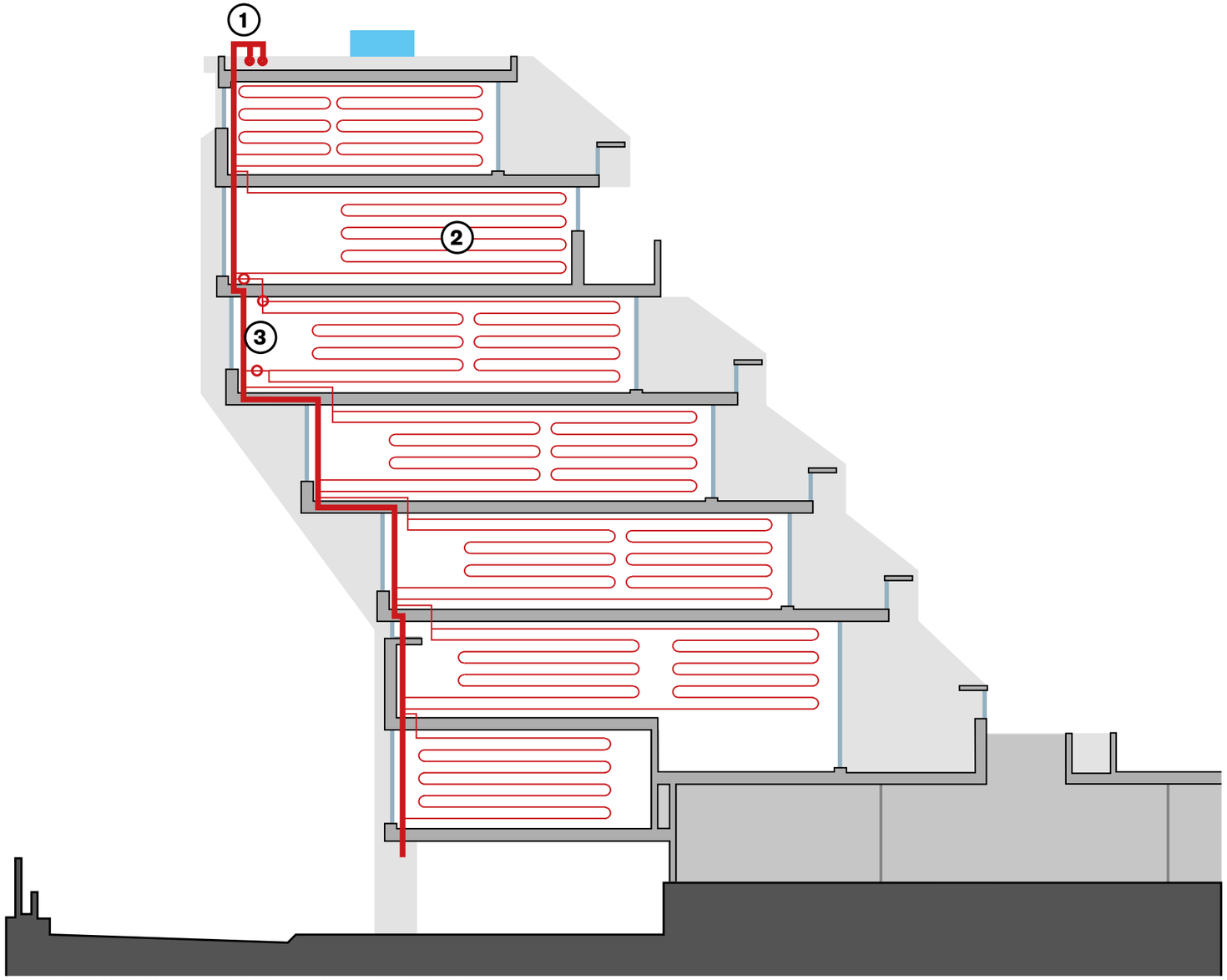
3. **Hot water cylinder** - this is where hot water is stored in the dwelling ready for washing and bathing.

4. **Heating coils** - these are embedded in the party separating wall and provide space heating for the dwellings either side.

5. **Tails** - these are the connection points between the embedded heating coils and the network distribution pipework.

3.2 Block A Existing Heating System

The existing heating estate distribution pipework is routed from the main plant room over to Block A where it runs at roof level. The distribution pipes from the roof drop in internal risers on the north side of block A in every other party wall, where they connect to the heating coils via the tails and valves.



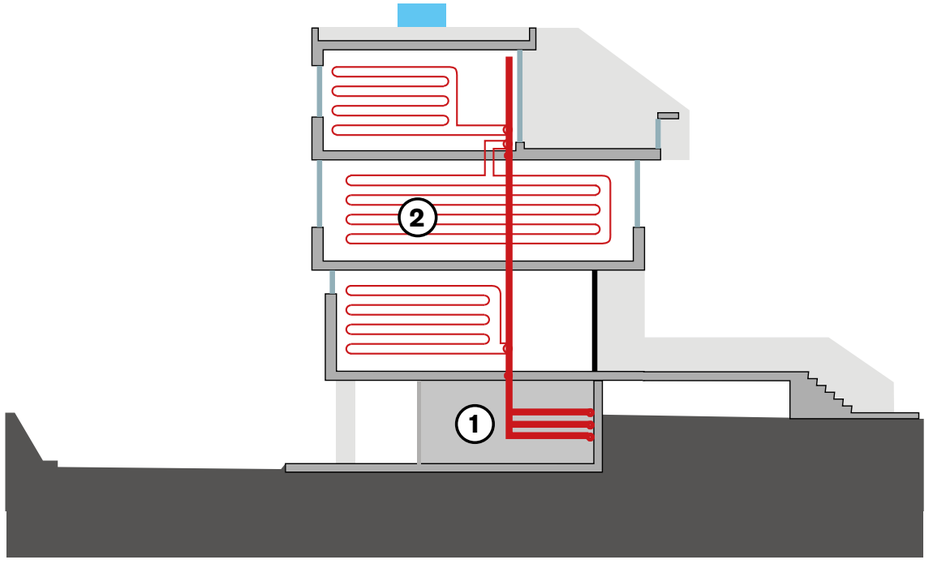
Section through Block A showing network distribution pipework, heating and tails

1. Estate distribution pipework
2. Heating coils
3. Tails and valves

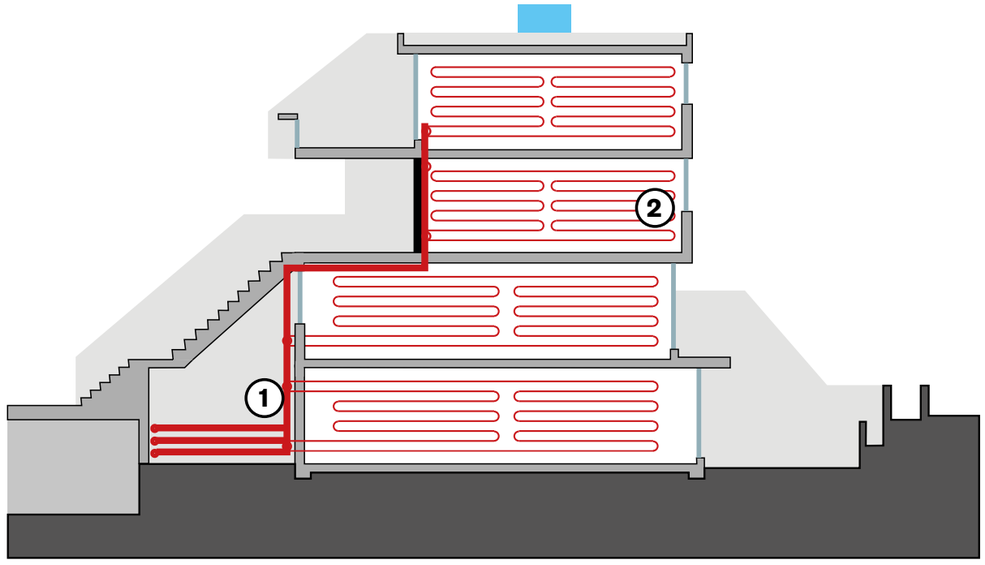
3.3 Block B & C Existing Heating System

The distribution pipework for block B is routed at parking level below ground. It enters into the ground floor maisonette and routes through the kitchen up into the upper floor maisonette at every other party wall.

In Block C, the distribution pipework runs at parking level and up into the dwellings in an internal riser for every other part wall. Block C has additional complextities where the heating coils are on both party walls, as opposed to every other party wall (as in Block A and B). Internal distribution pipework is set into the concrete floors and walls to allow the heating to cross the dwelling.



Section through Block C showing network distribution pipework and heating coils



Section through Block B showing network distribution pipewor and heating coils

1 Estate distribution pipework

2 Heating coils

3.4 Current System Condition

The communal heat network is in need of repair
Various minor alterations have been made to the way the heating and hot water work since the completion of the scheme in 1978. These alterations have been made in response to faults in the system and include:

- Decommissioning of the concealed warm air heater due to dirty air being taken from garages at ground levels and blown into homes. Heater fans are now obsolete.
- Increase in the capacity and temperature of hot water reaching the cylinders and heating coils to ensure all residents receive adequate heat. This makes sure the heat from the boiler house reaches the furthest dwellings on site.
- Minor and major repairs and patching up of the distribution network pipework, heating coils and tails due to corrosion of pipework and valve failures.
- Some dwellings furthest away from the boiler house were provided with individual gas boilers to ensure they receive enough heat.
- Where heat no longer reaches the heating coils in dwellings due to a failure on the network pipework or with the tails to the heating coils, radiators have been provided as an alternative heating source.
- Where hot water to dwellings has failed an electrical immersion cylinder has been provided to ensure residents still have access to hot water.

In addition to the minor alterations, the gas boilers in the boiler house were replaced in 2014 to reduce breakdowns and improve their efficiency. This has proved a successful intervention, however, the communal heating pipework that supplies heat across the Alexandra Estate is now in need of urgent replacement due to extreme corrosion and risk of catastrophic failure.

Estate distribution pipework

Visual inspections by the team and service records have made it clear that the estate heat network distribution pipework is beyond repair and in need of urgent replacement to prevent catastrophic failure. Failure of this pipework could range from the loss of heating and/or hot water to individual dwellings or the whole of the Alexandra Road Estate.


Corroded pipe found on site


Existing tail pipe


Corroded pipe found on site


Corroded valve found on site

3.5 Review of system

Technical review
The replacement of the estate distribution pipework provides a once in 40 year opportunity to evaluate the whole heating system from boiler to home; allowing an appraisal of condition, reliability, comfort, energy efficiency and cost to both Borough and residents.

In August 2019 Camden Council brought together a team to carry out a qualitative and quantitative review of the current heating infrastructure and evaluate which areas could be retained and re-used and which areas would require replacement and/or repair. This included a review of the heritage, visual, mechanical, technical and practical implications.

As part of this exercise Levitt Bernstein, Max Fordham, Butler and Young Associates, GEM and Camden Council appraised the heating system as a whole and carried out more in depth testing on areas of concern.

Outcome of the review
The outcome of the team's investigations are as follows:

1. Estate heat distribution pipework
Visual inspections by the team and service records have made it clear that the heat distribution pipework is beyond repair and in need of urgent replacement to prevent catastrophic failure. Failure of this pipework could range from the loss of heating and/or hot water to individual dwellings or the whole of the Alexandra Road Estate.

2. Heating coils
Pressure testing was carried out on a sample set of heating coils in Block B to determine whether the embedded coils were in good working condition and could be re-used. The sample embedded coils in Block B were found to be in serviceable condition. No tests were carried out in Blocks A or C.

3. Tail connections to the heating coils
The testing of the heating coils provided the opportunity to review the composition, location, condition/corrosion of the connection tails. It was found that the tails to the coils are not easily accessed or connected to.

The testing revealed that, in Block B, to access the tails to the heating coils, it would be necessary to temporarily remove of the front door of the dwelling and break open of some of the concrete fabric. The condition of the tails varied and therefore were difficult to physically connect to for testing purposes. The testing also necessitated the temporary disconnection of heating to the dwelling below.

While the testing of Block B was found to be challenging, it is noted that Block B is one of the easier blocks to access the tails. The testing of heating coils in Block A and Block C were aborted due to the significant disruption required to residents and the building fabric. To test a single coil in Block A three adjacent dwellings would require parts of their walls and/or floor to broken open simultaneously to access the necessary tails and valves. To test heating coils in Block C there would be significant disruption to walls on multiple stories of each home. From a heritage perspective it is undesirable to damage the building fabric in this way.

For this reason it was determined that it was not practical nor reasonable to attempt to test the coils in Blocks A and C.

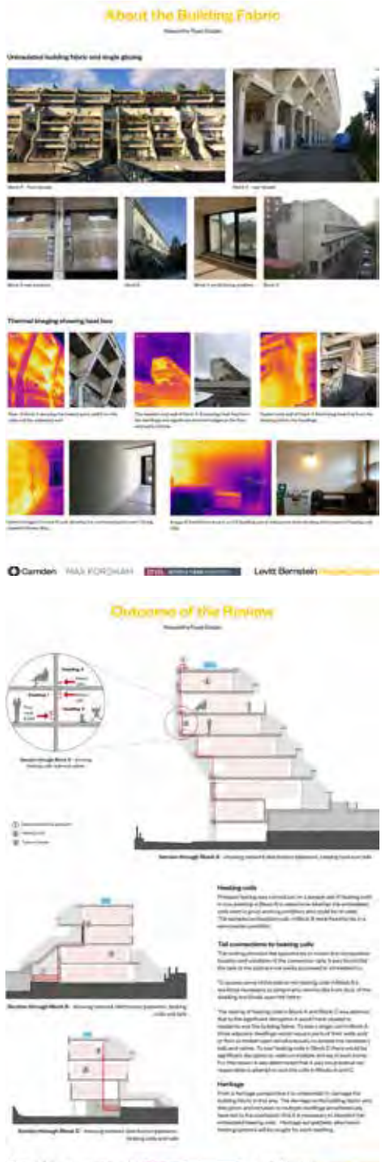
4. It is not possible to replace the distribution pipework and connect to the existing heating coils
The testing of the heating coils and the subsequent tail location exercise have demonstrated that the site-wide distribution pipework requires renewal and it will be intrusive and disruptive for residents to connect to the heating coils. Therefore, we have concluded that it is necessary to abandon the embedded heating coils and seek an alternative heating system for each dwelling.

Camden Council and the design team can now use the findings of this study to move forward with a planning application and listed building consent to provide new estate distribution pipework.

Following this we will begin to design and consult with residents on heating emitter options to determine the best route to heating homes.

The Design and Access Statement should be read in conjucntion with the acommpanying Alexandra Road Estate Heating Infrastructure, Technical Report.

4.0 Consultation



4.0 Consultation

The proposals have been developed in conjunction with planning and heritage officers, and existing residents of the estate; whose views have been sought and incorporated into the emerging scheme.

Residents consultation 20th November 2019
The Tenants and Residents Association (TRA) were presented the findings of the technical review (consultation boards opposite) . This included a description of how the system works together with the issues associated with connecting the new distribution pipework to the heating coils.

The residents were pleased with the thoroughness and way the investigations were conducted, and supported the findings.

Planning & Heritage Consultation 18th December 2019
The proposals were presented to planning officers in December 2019; who were generally supportive of the application.

4.0 Consultation

Residents Consultation 15th January 2020
A further update was presented to the TRA in January 2020; (consultation boards opposite). This included all proposed new infrastructure routes.

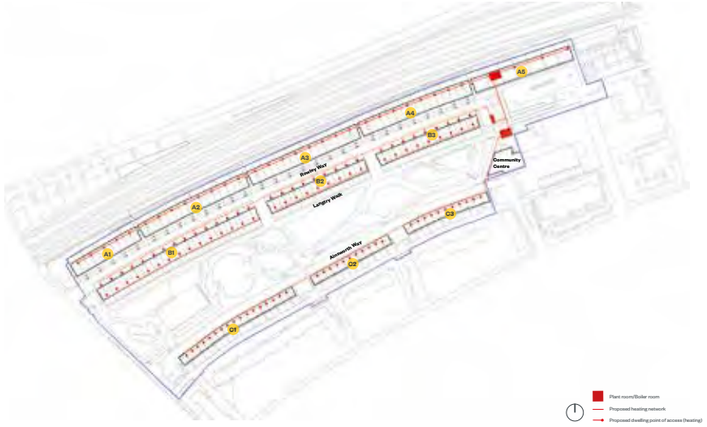
The residents were supportive of the proposals, including the removal of existing soffit-mounted box-outs and the closer fixing of exposed pipework to the existing soffits.

Residents expressed the view that the east facade of Block B3 facing the sunken garden area is particularly sensitive. The proposal has therefore been updated accordingly on the basis that new infrastructure services both this block and Block B1 via the intermediate open spaces, leaving the most visible end walls clear of additional services.

Consulation boards (15/01/2020) displayed opposite

Alexandra & Ainsworth Estate

Proposed Heating Infrastructure - Site Plan



Alexandra & Ainsworth Estate

Proposed Heating Infrastructure - Block A External

View 1 Proposed heating pipes - Block A rear view

Site Plan

View 1 Existing block A rear view

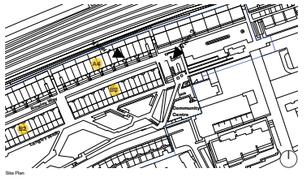
Proposed 3D Aerial view of Block A

Alexandra & Ainsworth Estate

Proposed Heating Infrastructure - Block B External

View 1 Proposed heating pipes - view of Block B3 roof block A terrace

View 2: Proposed heating pipes - view of Block B3 gable elevation



Site Plan

View 1 Existing Block B roof condition viewed from block A

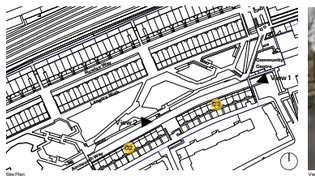
View 2: Existing block B3 gable elevation

Alexandra & Ainsworth Estate

Proposed Heating Infrastructure - Block C External

View 1 Proposed heating pipes fixed to underside of link bridge between the Community Centre & block C3

Proposed Block C3 Gable elevation from Ainsworth Way



Site Plan

View 1: Existing link bridge between the Community Centre & block C3

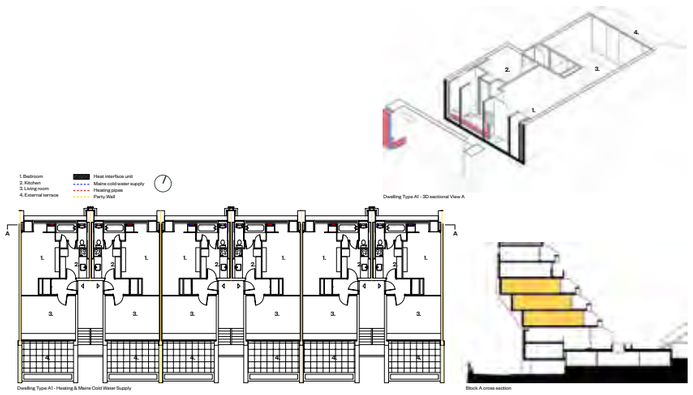
Block C3 Gable elevation from Ainsworth Way

4.0 Consultation

Consulation boards (15/01/2020) displayed opposite

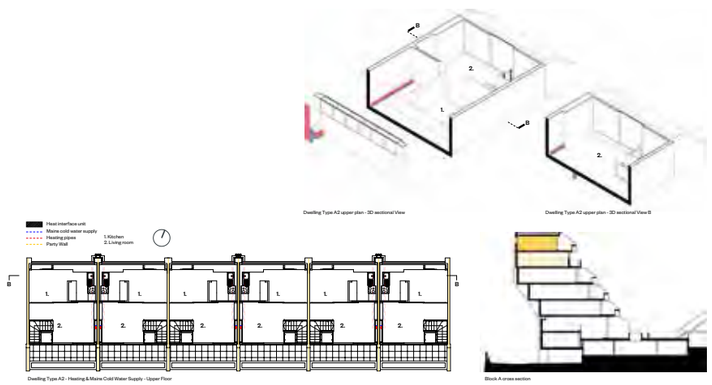
Alexandra & Ainsworth Estate

Proposed Heating Infrastructure - Dwelling Type A1



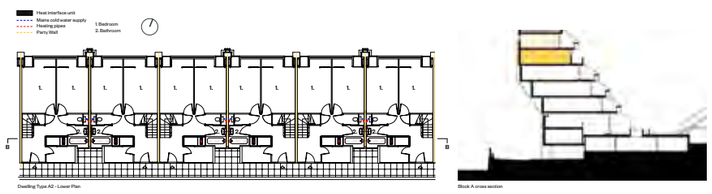
Alexandra & Ainsworth Estate

Proposed Heating Infrastructure - Dwelling Type A2 (Upper)



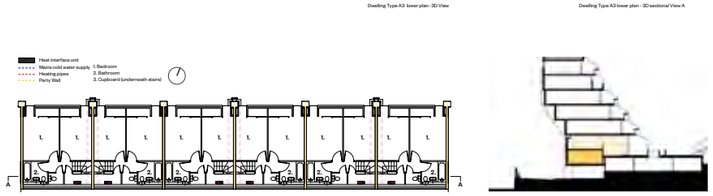
Alexandra & Ainsworth Estate

Proposed Heating Infrastructure - Dwelling Type A2 (Lower)



Alexandra & Ainsworth Estate

Proposed Heating Infrastructure - Dwelling Type A3 (Lower)



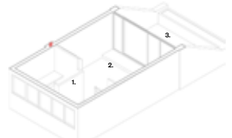
4.1 Consultation

Consulation boards (15/01/2020) displayed opposite

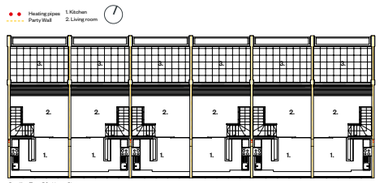
Alexandra & Ainsworth Estate

Proposed Heating Infrastructure - Dwelling Type B2 (Upper)

Block B 3D view of roof - typical bay



Dwelling Type B2 upper plan- 3D View



Dwelling Type B2 - Upper Plan

Block B cross section

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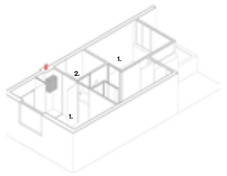
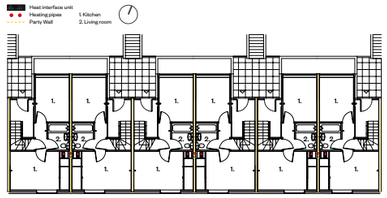
Proposed Heating Infrastructure - Dwelling Type B2 (Lower)



Dwelling Type B2 lower plan- 3D View



Dwelling Type B2 - Lower Plan

Block B cross section

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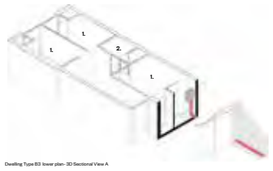
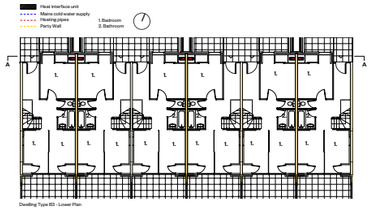
Proposed Heating Infrastructure - Dwelling Type B3 (Lower)



Dwelling Type B3 lower plan- 3D Sectional View A



Dwelling Type B3 - Lower Plan

Block B cross section

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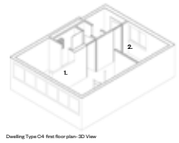
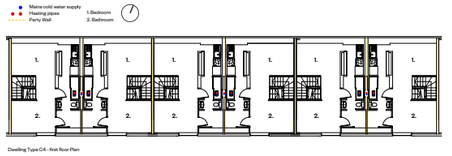
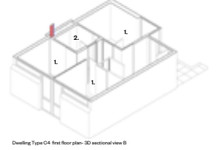
Proposed Heating Infrastructure - Dwelling Type C4



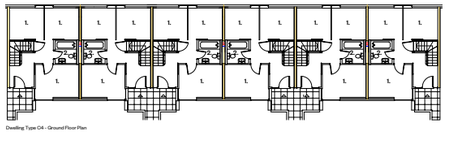
Dwelling Type C4 first floor plan- 3D View



Dwelling Type C4 - first floor Plan



Dwelling Type C4 first floor plan- 3D sectional view B



Dwelling Type C4 - Ground Floor Plan

Block C cross section

Levitt Bernstein People.Design

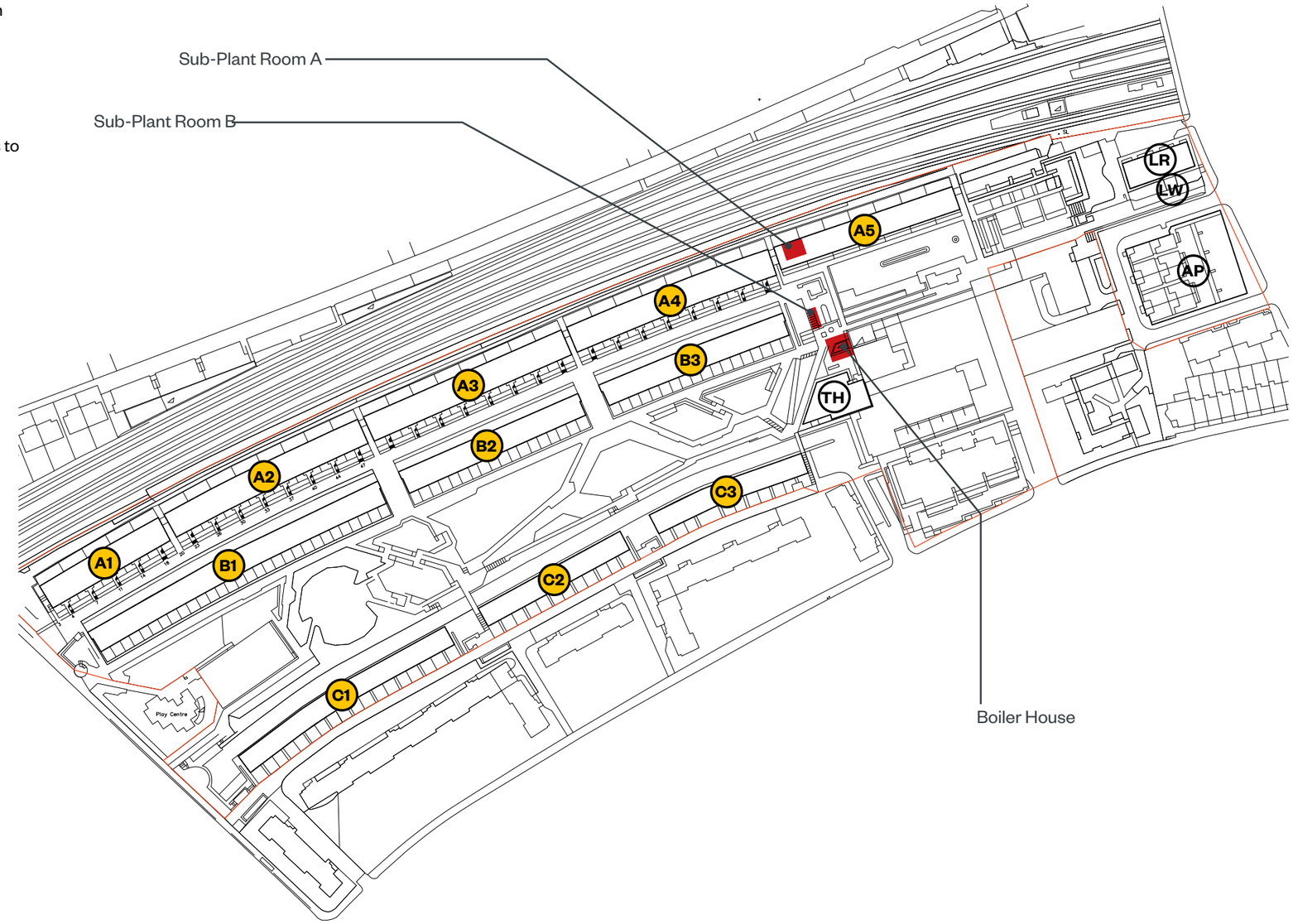
5.0 Proposed Plant Room Design

5.1 Plant Room Locations

The existing boiler house is located underneath the raised concrete plinth between block A5 and the Tenants Hall/Community Centre.

Sub-Plant Room A is to be located on the ground floor of block A5 and is accessed from the north rear service road.

Sub-Plant Room B is to be located underneath the existing external stairs to the north of the boiler house, within an under-used void space.



- xx Alexandra Road Estate Housing Block
- LR 61-83 Loudoun Rd
- AP Alexandra Place
- LW 1-8 Langtry Walk
- TH TRA Community Hall, 109 Rowley Way
- Boundary Line

5.2 Boiler House- Existing

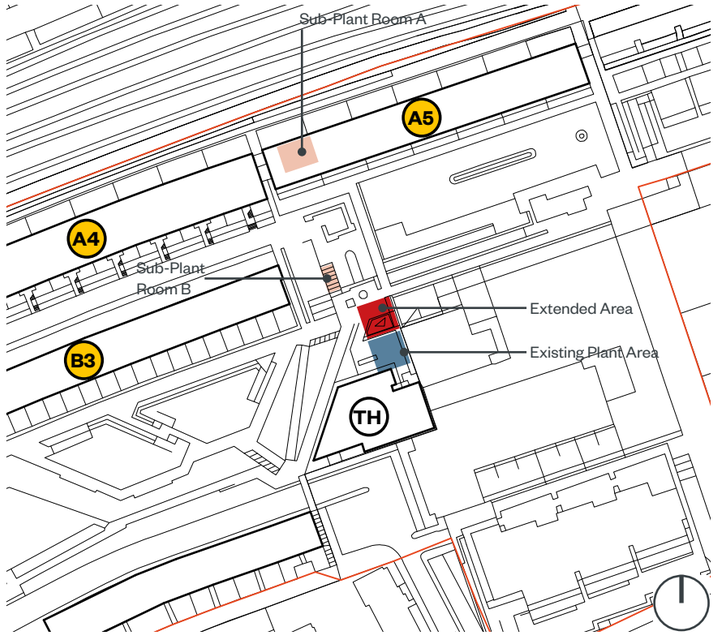
North of boiler room - Existing temporary timber hoarding on site

North west corner of boiler room - Existing temporary timber hoarding on site

Existing ductwork fixed to soffit of walkway, connecting boiler room to block A5

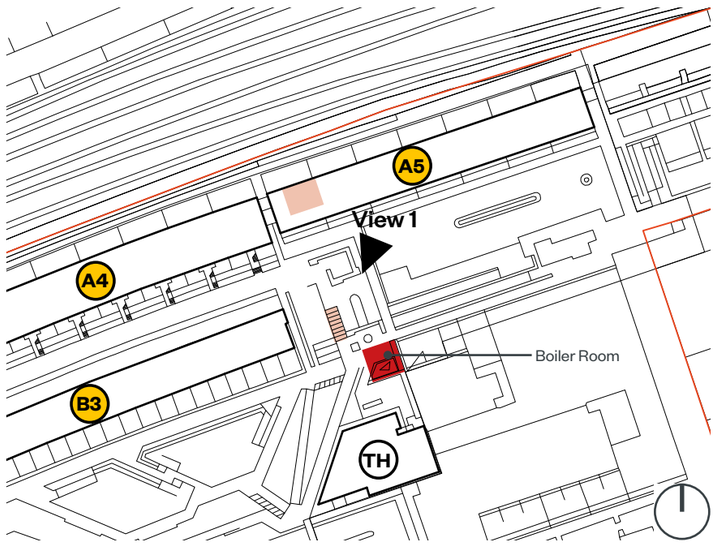
Recent changes have required the installation of two plate heat exchangers, mounted to the north of the original plant area and concealed by temporary hoarding. Conservation advisors would both like to see this temporary hoarding line reduced in visual dominance, and the hoarding itself replaced by a good quality permanent solution.

It is proposed that any unnecessary or redundant hoarding will be removed. It was confirmed that the temporary timber ramp inside the original plant area is not necessary (the existing steps remain beneath) and so the hoarding line around this is to be straightened out in line with the existing wall.



5.3 Boiler House- Proposed

View 1 - Visualisation of existing boiler house



View 1 - Visualisation of proposed boiler house enclosure

5.4 Sub-Plant Room A - Existing

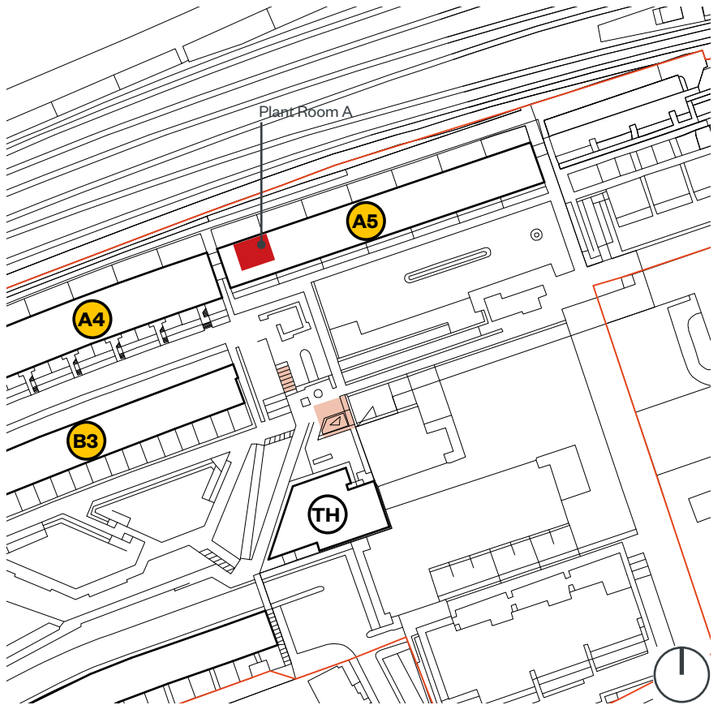
The area of new enclosure for sub plant room A is currently used for informal parking. Earlier proposals located the enclosure adjacent to the roller shutter, but through consultation it was established that this area is used for access on a regular basis.

Existing location for proposed sub-plant room A

Split-level car parking

Existing Condition - Ground level North North Elevation

Existing roller shutter



5.5 Sub-Plant Room A - Proposed

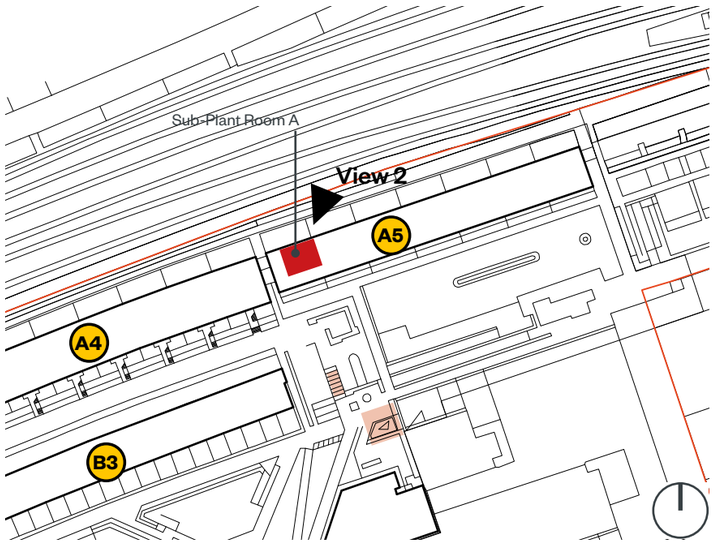
The proposed louvred enclosure goes up to the soffit of the slab above, creating a simple, rational screen to house the required equipment in this area.

The outer face of the enclosure is set back from that of the existing concrete bulkhead above denoting a secondary element to the original structure

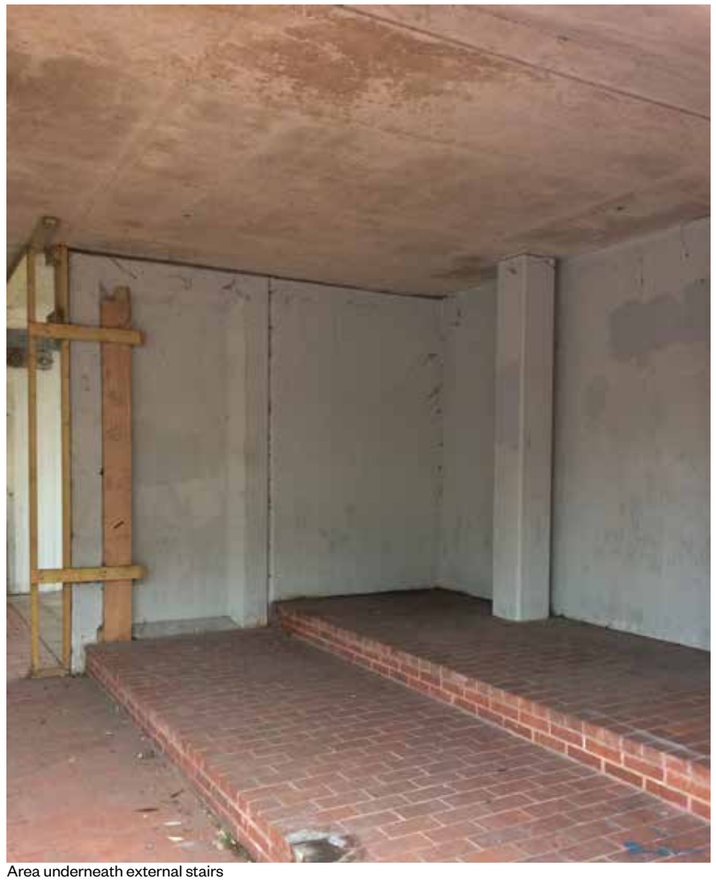
Existing external pipework routes will be rationalised, with new connections to the top panel of the enclosure local to the adjacent column. Following switchover of all dwellings, the final installation pipework will run as close as possible to the high level concrete soffit above to minimise visual impact.

On the north side of block A5, temporary isolators will be used so that the four existing horizontal pipes can be removed and the new pipework installed in their place. This is to visually minimise the new pipework as far as possible. It was preferred that the horizontal pipework run slightly below soffit level, so that it can be straight (rather than stepping below beams).

Proposed Plant enclosure to ground level North elevation



5.6 Sub-Plant Room B - Existing



Area underneath external stairs

Area underneath external stairs seen from public walkway

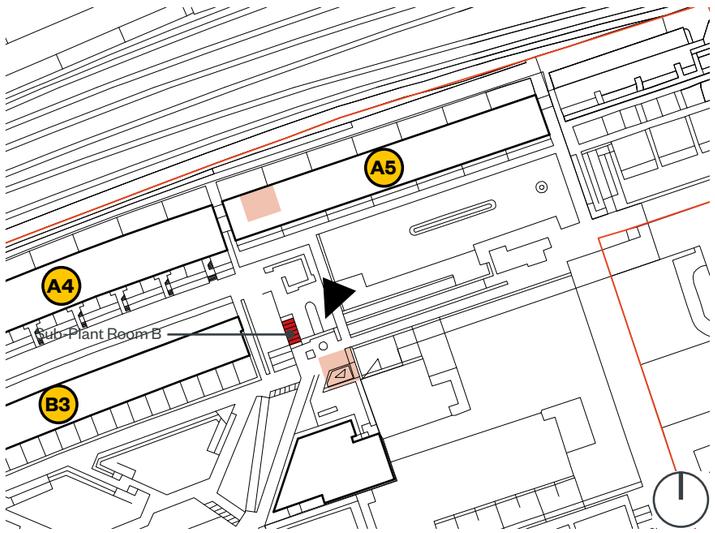
A new plant room is proposed below existing external access stairs, adjacent to the north side of the boiler room and close to the east end of Block B. Through consultation with Camden Conservation Officers, it was agreed that this area in its existing condition posed security issues, and so closing it off might be considered beneficial. Conservation advisors have accepted this visible change in principal, but requested that physical changes be minimal and reversible.

In order to provide sufficient height within the new enclosure of Sub Plant-Room B, it will be necessary to remove the existing steps, also creating a new level base for the required plant. Bricks removed here will be retained for salvage where possible.

Through consultation with Camden Conservation officers, it was agreed that the cladding should be set back from the face of the stair balustrade, so that it is clearly a secondary material.

5.7 Sub-Plant Room B - Proposed

Existing view of void below stair



Visualisation of proposed sub-plant room

6.0 Proposed Heating Distribution: Principal Routes

6.1 Heating Pipe Distribution

Replacement heating and domestic water services pipework will exit the estate boiler room area and branch in four directions;

- North toward Sub-Plant Room A following the existing route via the underside of the raised walkway before rising up between blocks A4 and A5, horizontally distributing at roof level to blocks A1-A5 dropping on alternate structural spines before horizontally entering each dwelling via the north external wall.

- West toward Sub-Plant Room B via boiler room before dropping to service road level and horizontally distributing on soffit level of B1-B3 garages. Service distribution pipework will enter lower dwellings via existing plant service voids following similar pipe routes to existing. Upper dwellings associated with Blocks B1-B3 will be served via heating pipework rising on flank walls to the intermediate open areas and distributing horizontally at roof level before dropping to dwellings below via existing roof service riser under cold water tank location.

- South toward blocks C1-C3 via Boiler Room, TRA Hall and soffit of the pedestrian bridge before dropping to service road level and horizontally distributing on soffit of C1-C3 garages. Service distribution pipework will enter dwellings via existing vertical plant service risers located at garage level following similar pipe routes to existing. Due to the physical “gaps” between blocks C1, C2 and C3 interconnecting heating pipework will exit the end flank wall of each block before dropping into the external ground and rising back up at the next block and entering within the existing refuse area.

- East following the existing route within the landlords store and school before emerging at the crossing over the east service access of Rowley Way, continuing below Langtry Walk and turning below ground to feed the Loudoun Road block to the North and Alexandra Place to the south. A localised run of pipework will rise to the first floor of the Loudoun Road block via the West wall, adjacent to the North of the existing external staircase

New services pipework from the existing plant room will follow the same routes as existing pipework. All existing services are to remain “live” and available until such time that new services render them redundant and changeover is complete.

All new horizontal and vertical visible service pipework will be installed exposed with suitable insulation finish to protect from freezing and sit sympathetically alongside existing adjacent building fabric.

Schematic heating pipe distribution plan

Plant room/Boiler room

Proposed heating network (Externally visible)

Proposed heating network (Externally hidden/burried)

Proposed dwelling point of access (heating)

TH Tennants Hall

YC Youth Club

AP Alexandra Place

LR Loudoun Road

6.2 Cold Water Pipe Distribution

The proposed replacement of Mains Cold Water Service (MCWS) is subject to further site investigations and consultation with Thames Water.

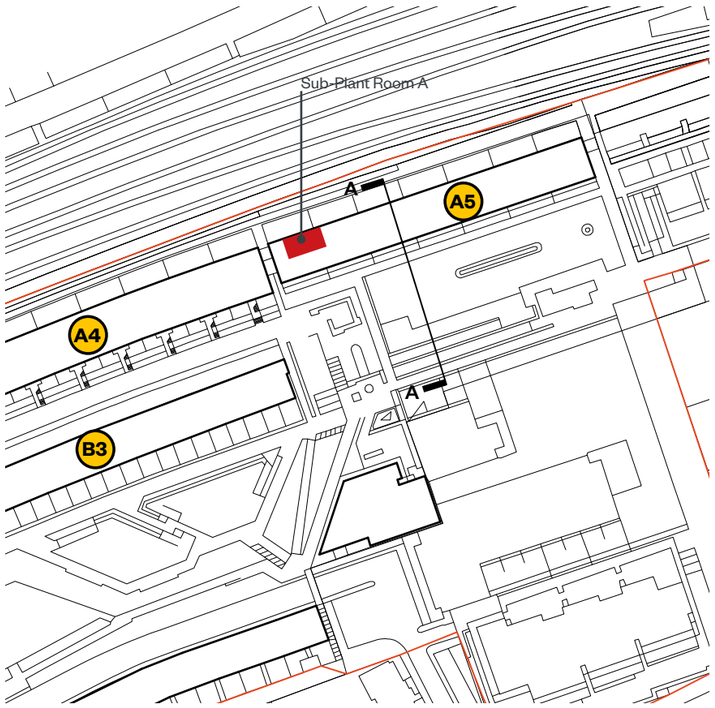
Block A's cold water system follows the same route as the proposed hot water system (see section 6.1) at high level, having come from below ground.

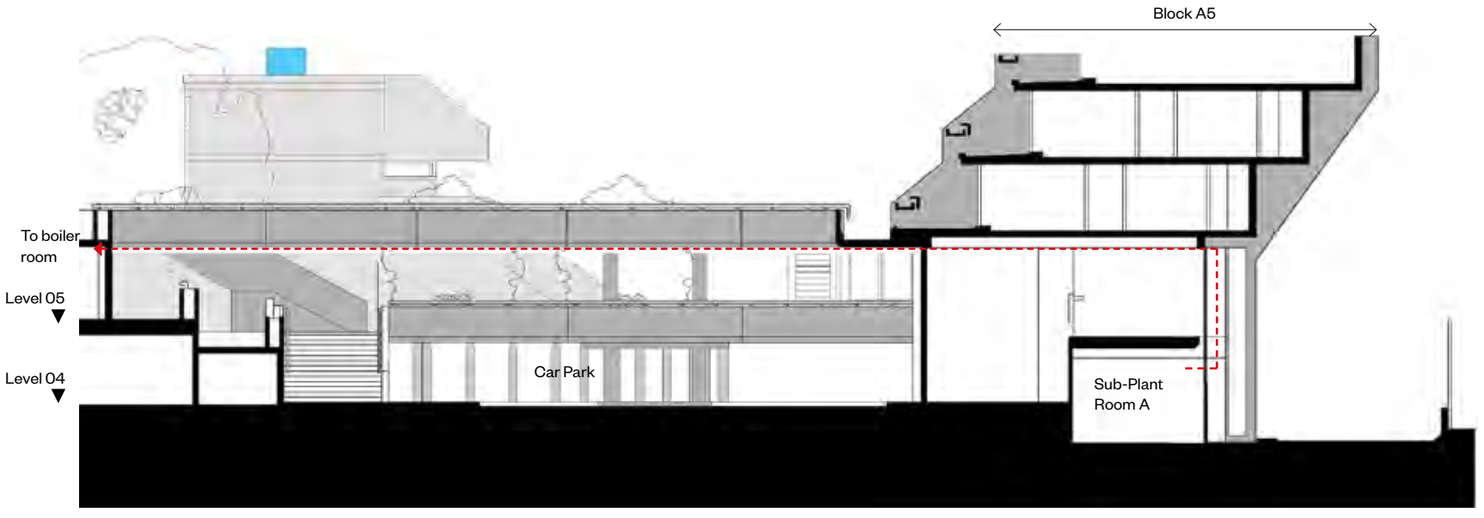
Blocks B1-B3 will have lower maisonette dwellings served from lower garage level and upper maisonettes served from roof level with the third pipe rising out of the ground on flank walls to the intermediate open areas and rising with 2 heating pipes to roof level before dropping to respective dwellings via the tank enclosed vertical internal service risers.

Blocks C1-C3 (town houses) will be served from lower garage level.

Schematic cold water pipe distribution plan

6.3 Principle Routes: Block A





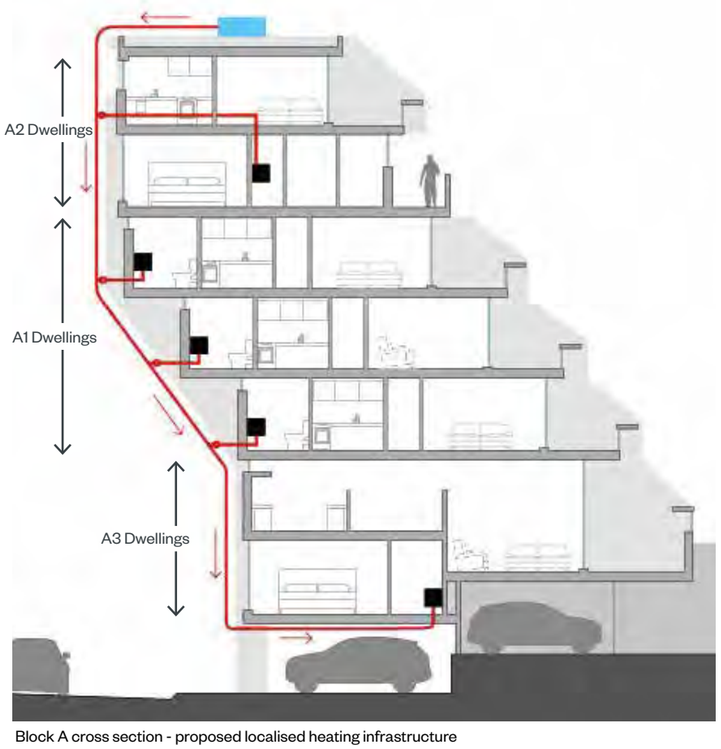
Section A

View from level 02 of car park entrance showing existing high level route to Block A. Casing to be replaced by smaller/higher pipework

6.3 Principle Routes: Block A

Heating distribution to A blocks

Existing condition of boxed section fixed to walkway soffit



Block A cross section - proposed localised heating infrastructure

Proposed site flow and return heating pipework follows the route of the existing boxing from the Boiler House to Block A5. The existing casing is in mixed condition, visually dominant and restricts available headroom. Therefore it has been agreed in consultation with planning officers that new pipework will be weather proofed and fixed closer to the existing soffit without additional enclosure. These are clad in weatherproof wrapping as visually similar to the existing concrete as possible. During the changeover additional pipework will run adjacent to the existing route for a temporary period.

On the rear of block A, the pipes turn and run briefly at high level before turning up internally within the lift enclosure area and rising to roof level.

For all pipework on the north of block A5, conservation advisors preferred that the pipes be run individually (rather than grouped in boxing) and clad in weatherproof wrapping that is visually as similar to the concrete as possible. Pipes should as much as possible have similar diameters, concealed fixings, minimise number of controls etc, and be set out consistently and symmetrically.

The hot water heating travels along pipes located on the roof of block A and over the north edge down into the dwellings below, via the vertical pipework on the concrete fins of the northern elevation.

The brief states that the existing heating system must be fully functional whilst the proposed works are undertaken. Therefore, the proposal aims to be designed around the existing system by passing over, as well as through, the pipes located on the roof.

Heating pipework will distribute along roof level then drop in smaller pipes to pairs of individual dwellings, on the rear face of every other fin. Mains water will rise from the ground on the same fins. Horizontal pipework will then connect these routes to each flat, stepping out round the gas pipes already installed. The gas installation should not be altered unless this is unavoidable.

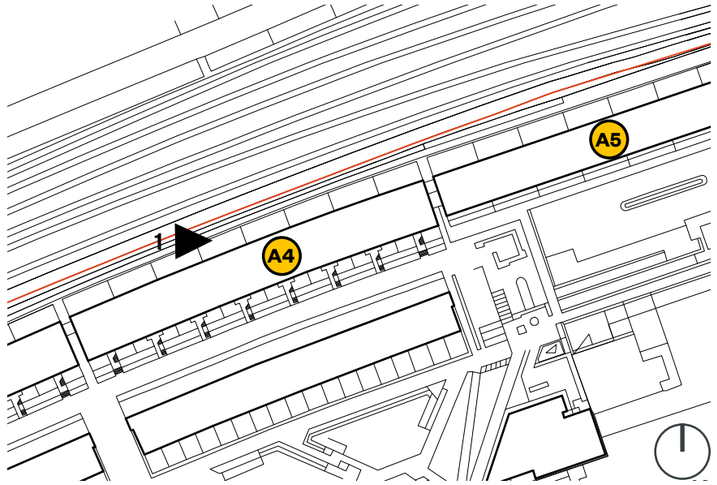
The penetrations through to the existing flats will be considered carefully, both in structural terms and also in coordination with the internal layouts.
It was accepted that the new vertical pipework will run on the rear of the fins, not the sides, as in some cases this would obstruct windows.
Protection will be provided to the pipework close to ground level. It has been agreed with Conservation advisors that the installation will be ‘mocked up’ on a single fin, for review. Existing lighting to the North service road has been installed at irregular spacings, and may be reconfigured so that it is more evenly spaced, to avoid clashes with pipework. Typically, the lights will be on the fins which do not have pipes, or mounted on the low level boxing.

6.3 Principle Routes: Block A

The proposed heating infrastucture will serve block A via the existing concrete structural fins located on the northern facade. This will consist of 3 x 160mm insulated pipes (outside diameter), which will provide heating and mains cold water supply. Access into each dwelling will be through carefully positioned localised core-drilled holes, which the pipes will pass through to be routed into the internal heat interface unit (HIU) within the residence.

The rationale generally emphasises the vertical concrete fin by fixing the pipes to the outer face of every alternate fin with a strut channel and threaded fixing. The pipes then access the dwellings on the upper levels by running horizontally behind the vertical pipework, either side of the party wall.

1. Proposed Block A ground condition - North Elevation



1. Existing Block A ground condation - North Elevation

6.3 Principle Routes: Block A

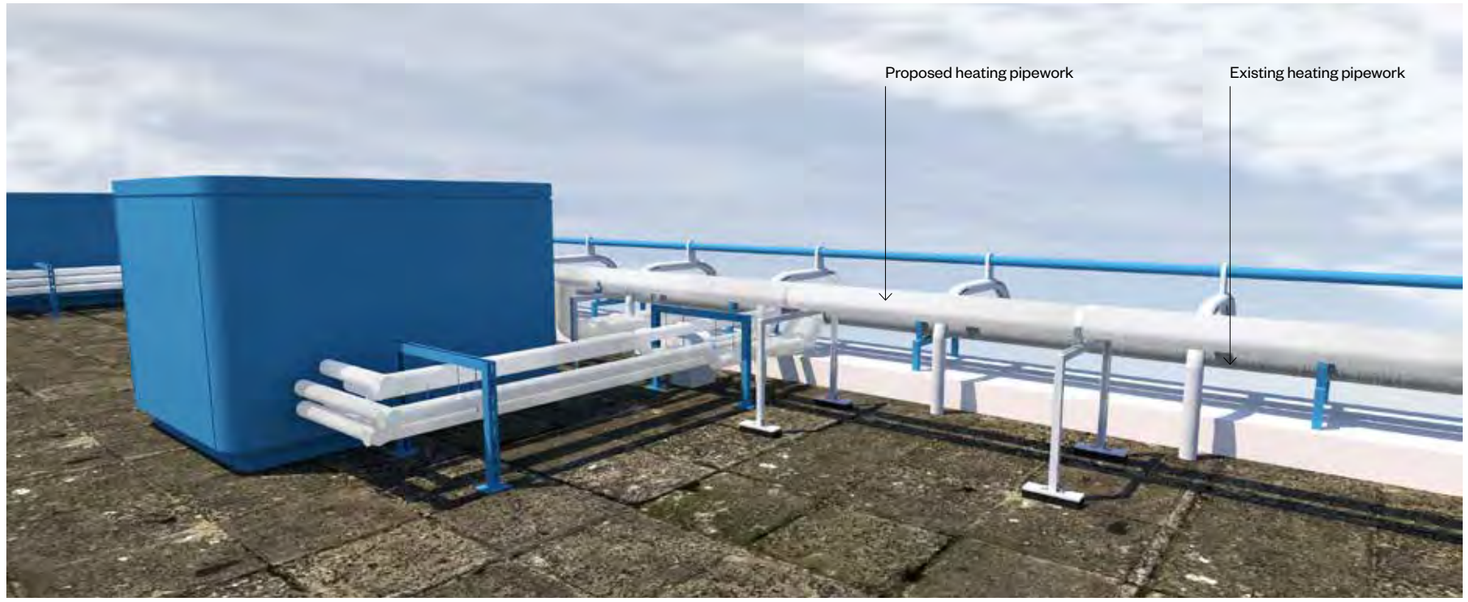


Image 1: Proposed heating pipework on Block A roof

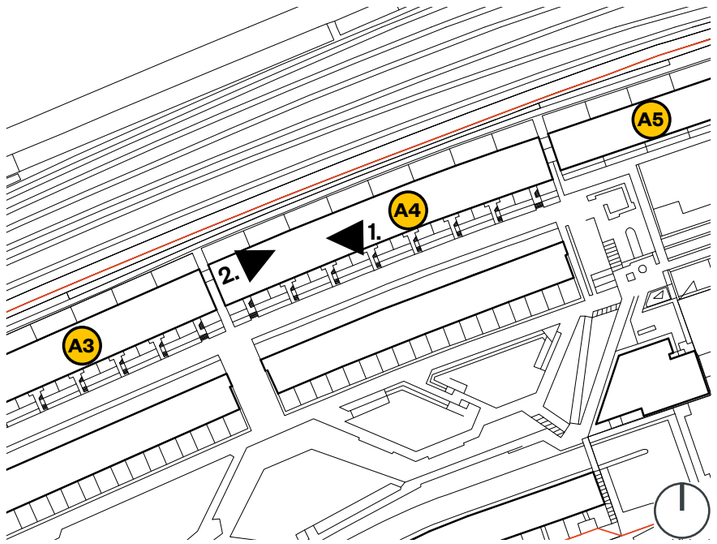
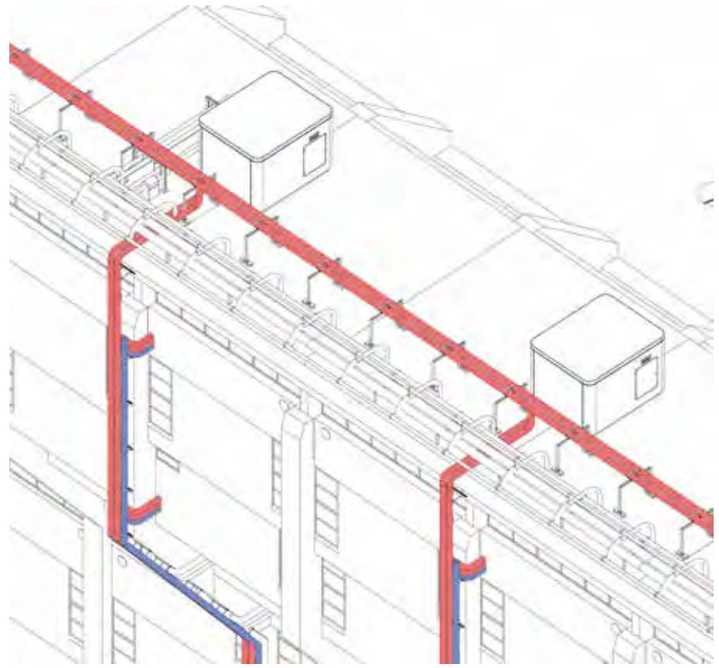


Image 2: Existing heating network on roof of Block A



Aerial view of block A roof - typical north elevation

Proposed heating pipes

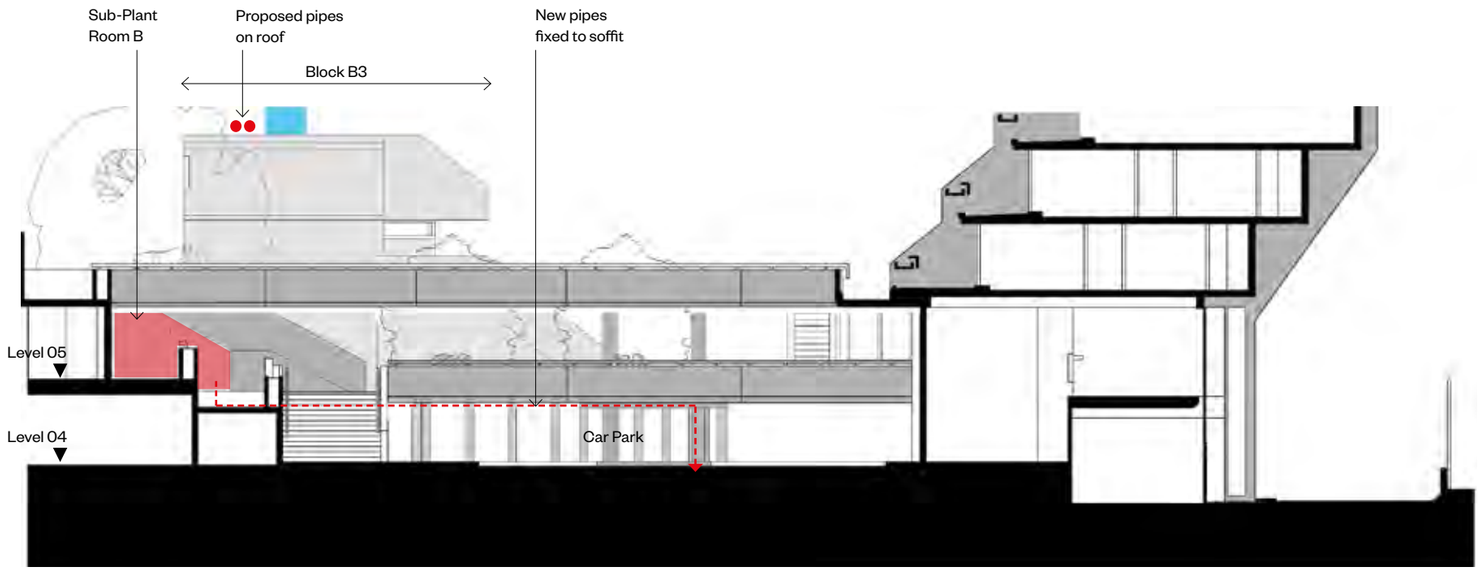
Proposed Mains Cold Water Pipe

6.4 Principal Routes: Block B

New heating flow and return pipes drop through the slab of the proposed Sub-Plant Room B to car park level below and follow a similar route to existing pipework located within the high level galvanised pipe casing. The existing casing is in a mixed condition, visually dominant and restricts available headroom. Therefore it has been agreed in consultation with planning officers that new pipeworkwill be weather proofed and fixed closer to the existing soffit without additional enclosure.

These are clad in weatherproof wrapping as visually similar to the existing concrete as possible.

During the changeover additional pipework will run adjacent to the existing route for a temporary period.

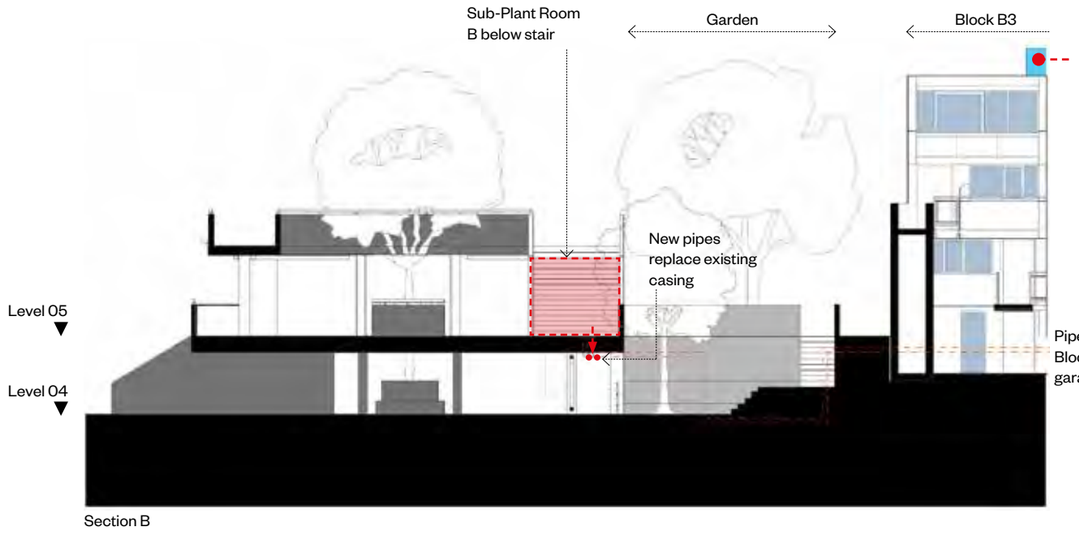


Section A

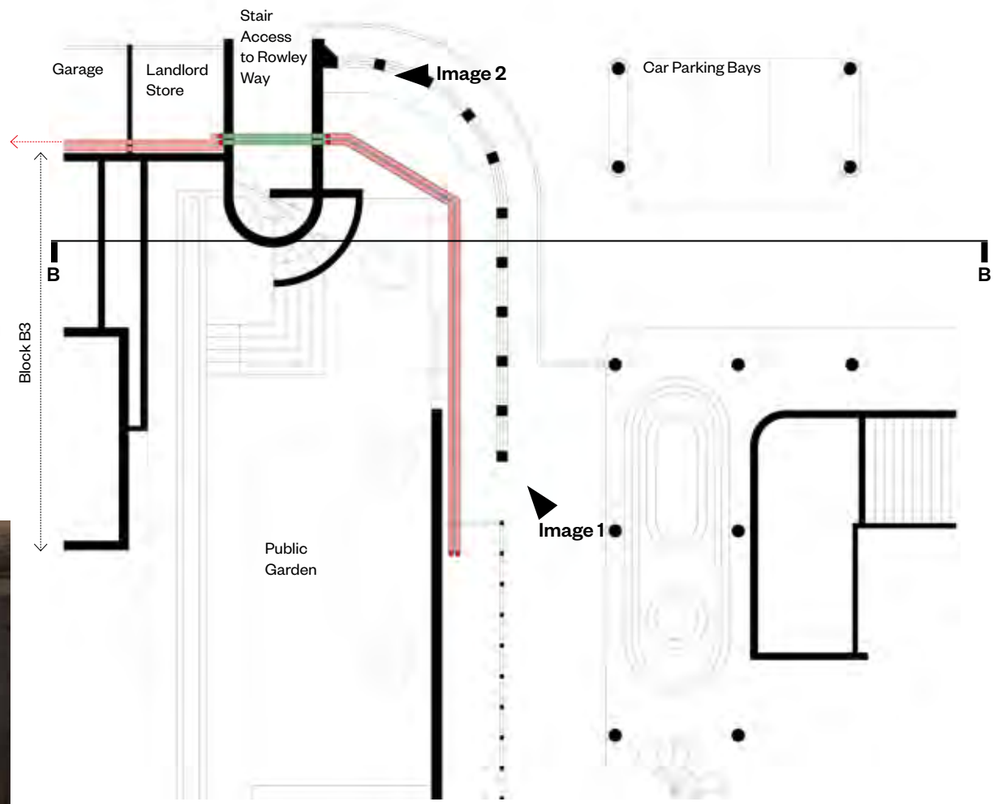
View of enclosure area below the stair. Proposed Sub-Plant Room highlighted by red dotted line

View from level 02 of car park entrance with proposed Sub-Plant Room B highlighted

6.4 Principle Routes: Block B



Section B



Level 04 plan

Pipes burried underground

Pipes fixed to soffit/wall

Image 1: Existing pipes fixed to soffit within substantial casing. Allows circa 1800mm clearance to underside

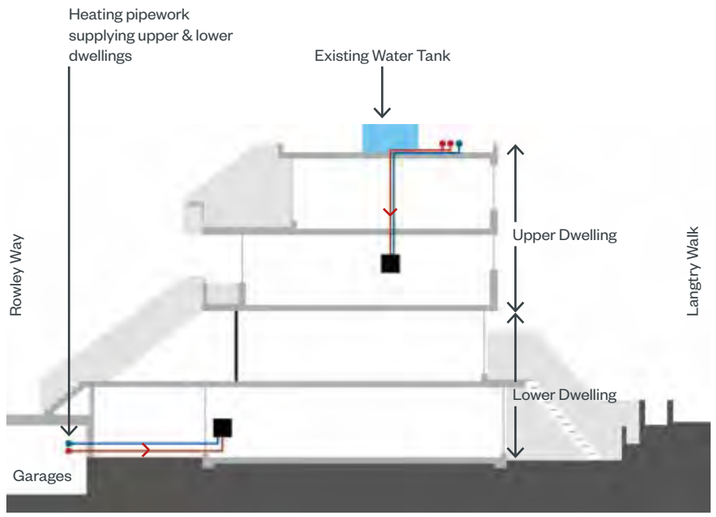
Image 2: Existing pipework returns below ground immediately east of wall to access stair

6.4 Principle Routes: Block B

Heating is provided to Block B via two heating pipes from Sub-Plant Room B. There is one route for the upper dwelling (type B2) and the other for the lower (type B3). Both types are fed by pipes fixed to the soffit of the garages directly below Rowley Way. The heating for the upper dwelling runs the length of each B block and runs up the flank wall of the block facing an intermediate garden space, where it then runs the length of the roof. A mains cold water pipe is also fixed to this wall, which is connected to the existing mains supply. The pipes are fixed to the flank elevation of blocks B by a strut channel and threaded fixing to the wall. When at roof level, the pipes feed into the existing risers between properties via the existing water tanks.

Heating for the lower dwelling is provided from pipes which are fixed to the soffit of the garages below. Two heating pipes are then fed through the void created from the stair into each of the B2 types above, as well as a mains cold water pipe. Walls are then core drilled to allow for the pipes to pass through into the dwelling.

The pipes will be insulated and protected by a metal sleeve, which will blend with the existing palette of materials.



Section through Block B looking east

Block B3 West gable elevation - proposed

Block B West gable elevation - existing

Block B, Dwelling type B3 external ground floor terrace (Rowley way)

6.4 Principal Routes: Block B

Two heating pipes and a mains cold water pipe will run along the lengths of all three block B blocks at roof level. These pipes will be visible from the upper floor dwellings on Block A and have therefore been placed to the south of the existing water tanks on Block B in order to reduce the visual impact from Block A. The pipes are fixed and supported by a lightweight system that is self-supporting and requires no direct fixing to the roof itself, avoiding impact on waterproofing layers. Rather, the support system is braced internally, restraint provided by the self-weight of the bracing system.

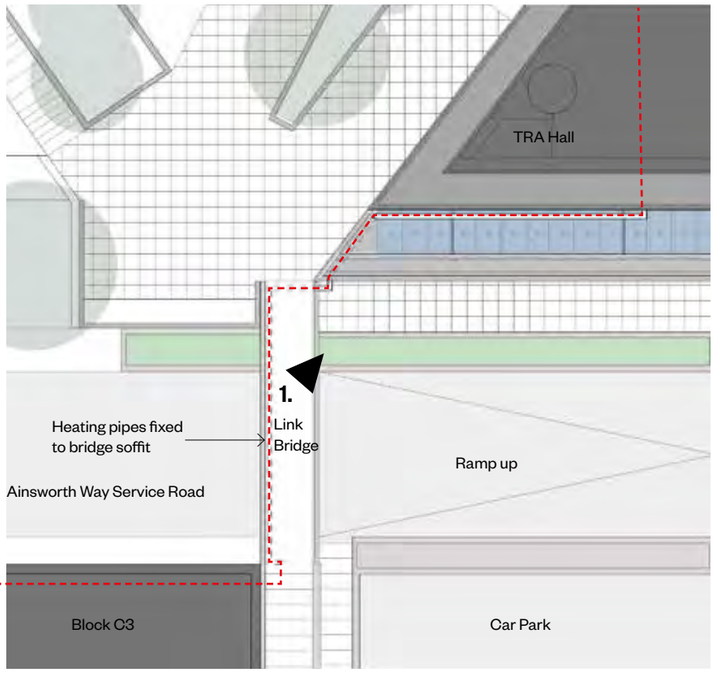
View of block B roof from Block A - Proposed

Typical bracing currently used elsewhere on Block B roof

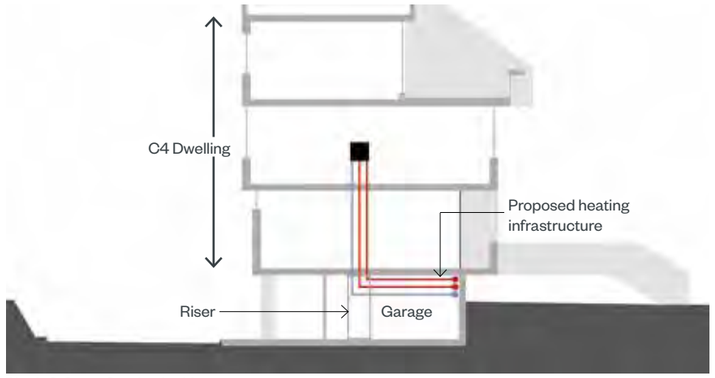
View of block B roof from Block A - Existing

6.5 Principal Routes: Block C

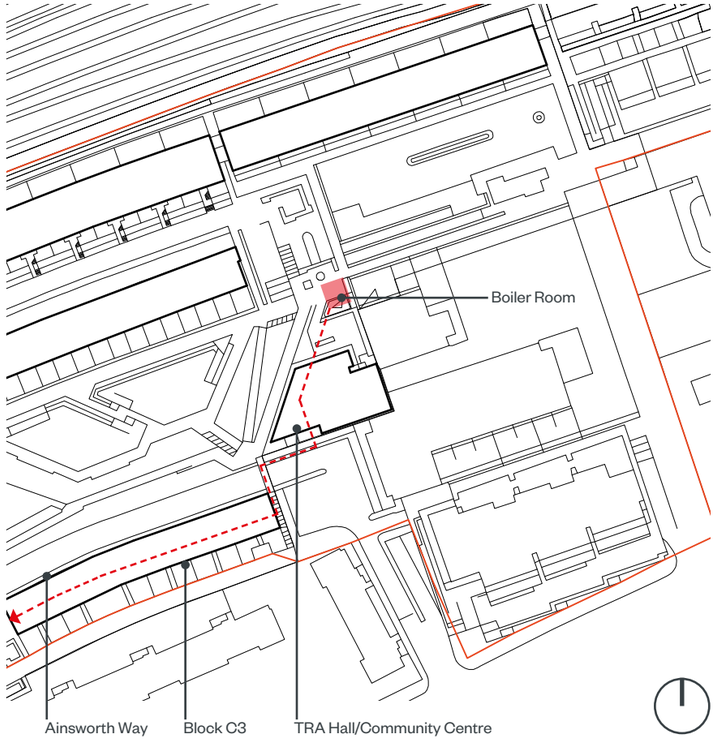
The proposed heating upgrade to block/TRA Hall connects the block and pedestrian bridge to the south the boiler room via the existing community centre, adjacent to block C. Two heating pipes are fixed to the underside of the bridge, which connects the upper level of the community centre with block C. The fixing is in the form of a strut channel and threaded rod.



Aerial view of Community Centre/TRA Hall and Block C3



Block C Cross Section looking east



1. View of TRA Hall/Community Centre looking north from link bridge

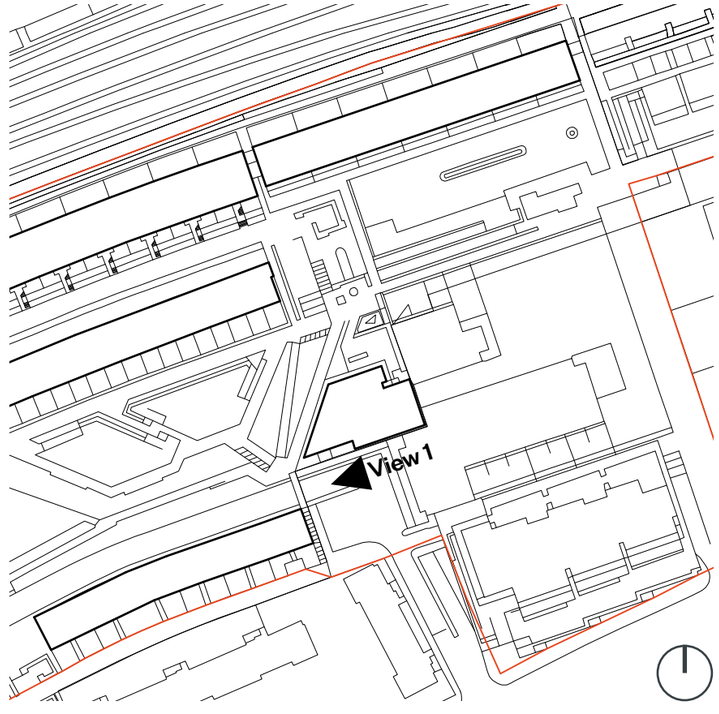
6.5 Principal Routes: Block C

View 1: Bridge link between the community centre & block C seen from east. Proposed pipes fixed to underside of existing bridg.e

View 1: Bridge link between the community centre & block C.

To align the proposed pipework between the community centre and block C3 as sympathetically as possible, they are fixed tight to the bridges soffit. Again, an insulated sleeve with metal finish is used to protect the system as well as to blend with the existing material palette.

The pipework then runs vertically down the structural wall to the north east corner of Block C3 and into the void below the external stairs.



6.5 Principal Routes: Block C

Having passed through the void underneath the stairs the pipes then exit the void via an amended overpanel/door within the existing doorway; and run parallel to the existing garages along the soffit of the sheltered walkway. The pipes are then diverted back into the easternmost garage and run the length of each block internally.

Block C pipes fixed to soffit of easternmost garage area below block C3 - Proposed

Block C existing condition

6.5 Principal Routes: Block C

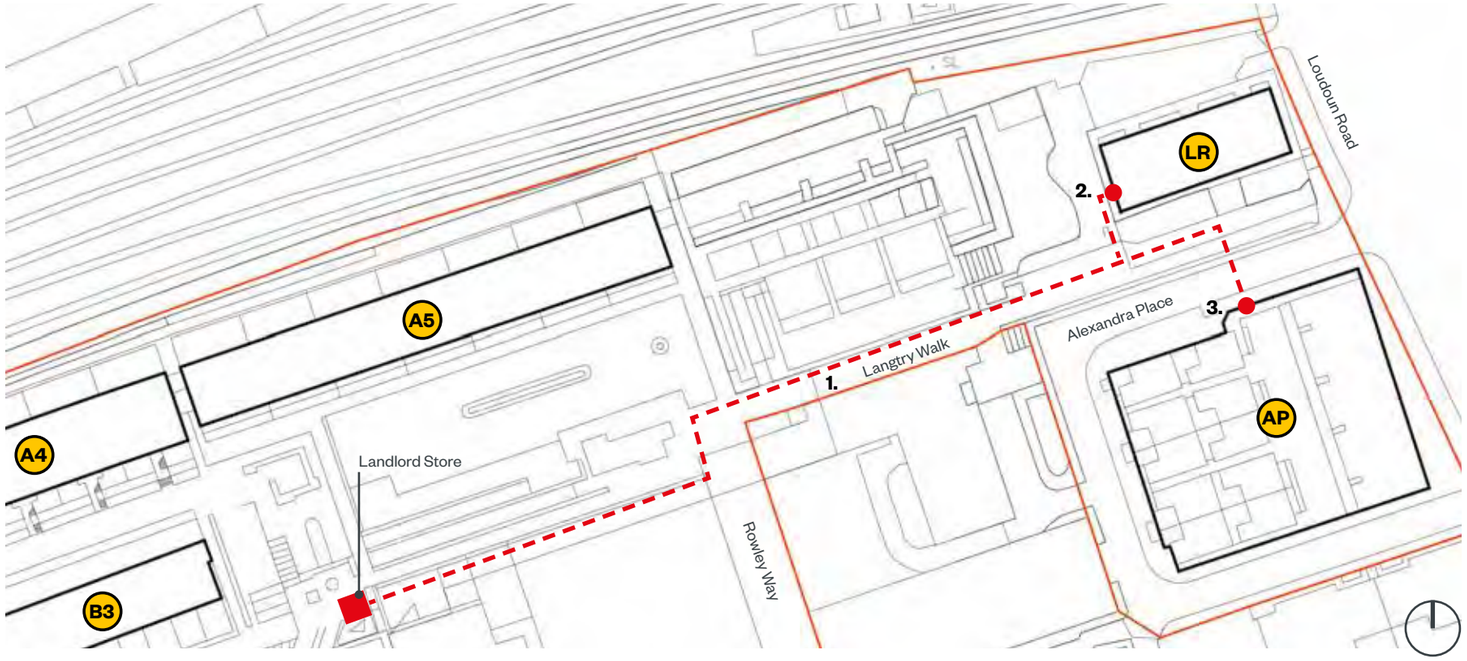
Having passed along the soffit of each of the blocks, the heating pipes then exit the block via the gable elevation, travelling underground to the next block, where they rise up the external wall adjacent to the bin store. The pipes are then directed to the rear of the bin store and fixed to the soffit of the ground floor garages, again running the length of the block.

Intermediate open space between blocks C2 and C3. Block C pipes fixed to soffit - Proposed


Intermediate open space between blocks C2 and C3. Existing

6.6 Principal Routes: Loudoun Road/Alexandra Place

The principal route for the properties located on Loudoun Road and Alexandra Place (see plan opposite) follows the existing route within the landlords store and school before emerging at the crossing over the east service access of Rowley Way, continuing below Langtry Walk and turning below ground to feed the Loudoun Road block to the North and Alexandra Place to the south. A localised run of pipework will rise to the first floor of the Loudoun Road block via the West wall, adjacent to the North of the existing external staircase.



Heating pipe distribution route

Site boundary

Connection to block

AP Alexandra Place housing block

LR Loudoun Road housing block

1. Langtry Walk. Proposed pipes burried below paving

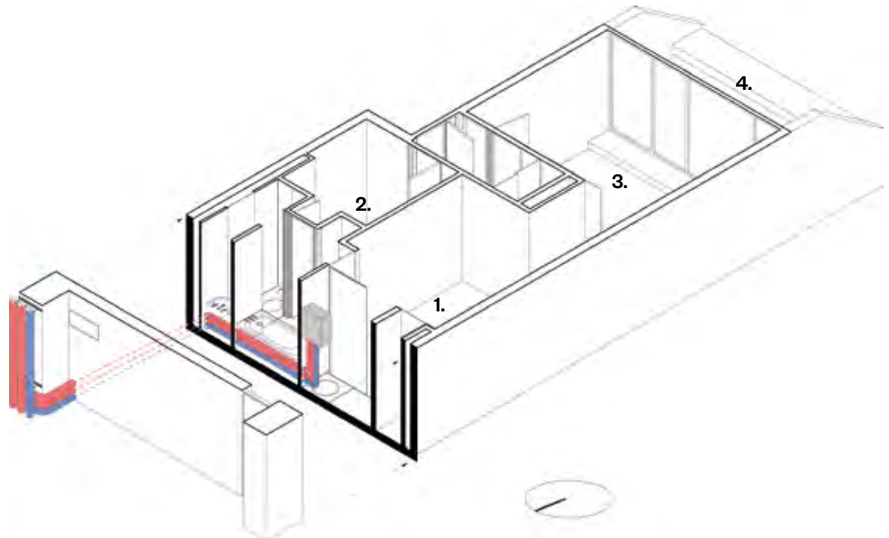
2. Loudoun Road Block West elevation. Proposed heating pipes externally fixed to wall at ground floor level behind existing external staircase

3. Proposed heating pipes to come up through floor of existing plant room located underneath external ramp at Alexandra Place

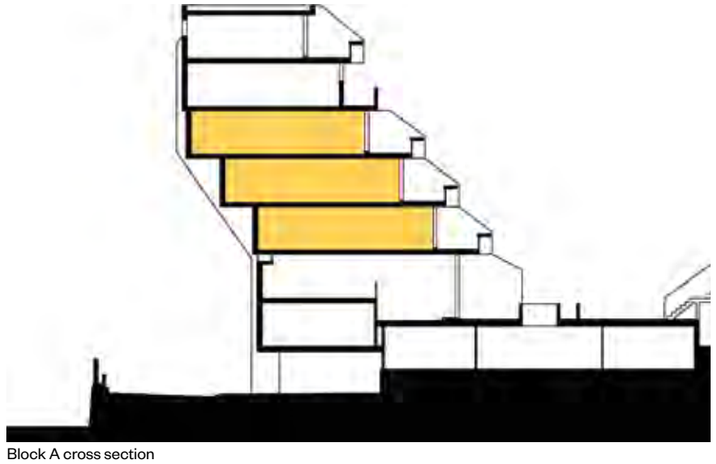
7.0 Proposed Heating Distribution Into the Dwellings

7.1 Block A - Dwelling Type A1

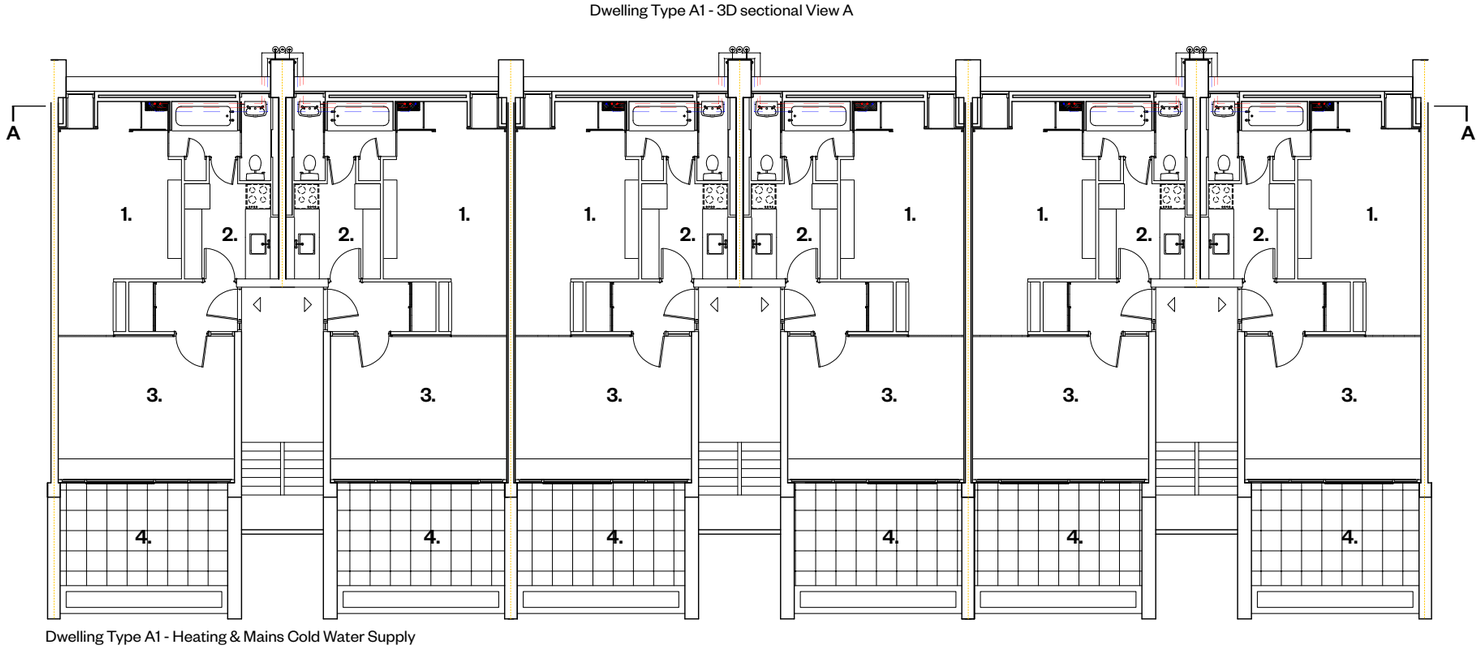
The heating infrastructure accesses the A1 dwelling type on block A via core drilled holes in the northern facade. The proposed pipes come into the dwelling underneath the sink in the toilet area, then passing underneath the bath, which has the least visible intrusion internally. The HIU is kept in the cupboard where the existing gas cylinder is currently stored.



Dwelling Type A1 - 3D sectional View A



Block A cross section



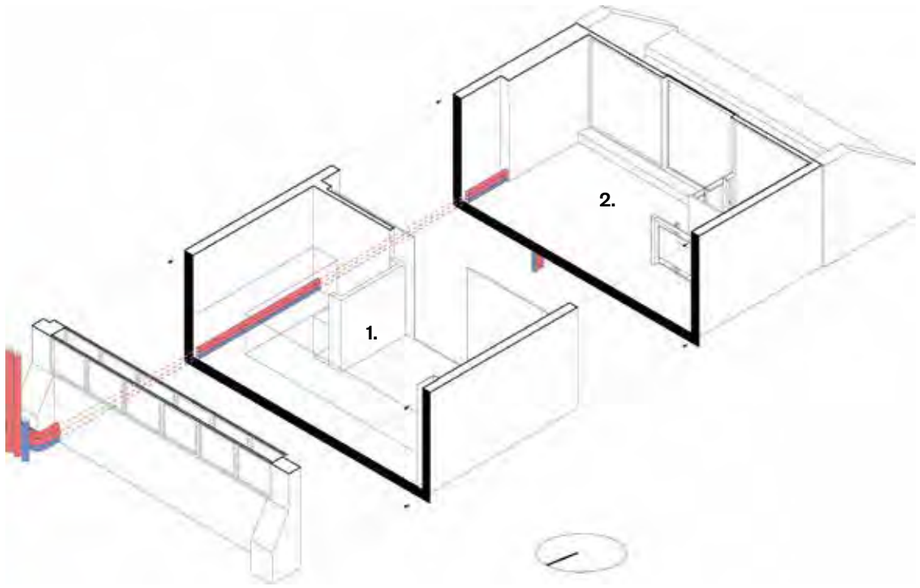
Dwelling Type A1 - Heating & Mains Cold Water Supply

1. Bedroom
2. Kitchen
3. Living room
4. External terrace

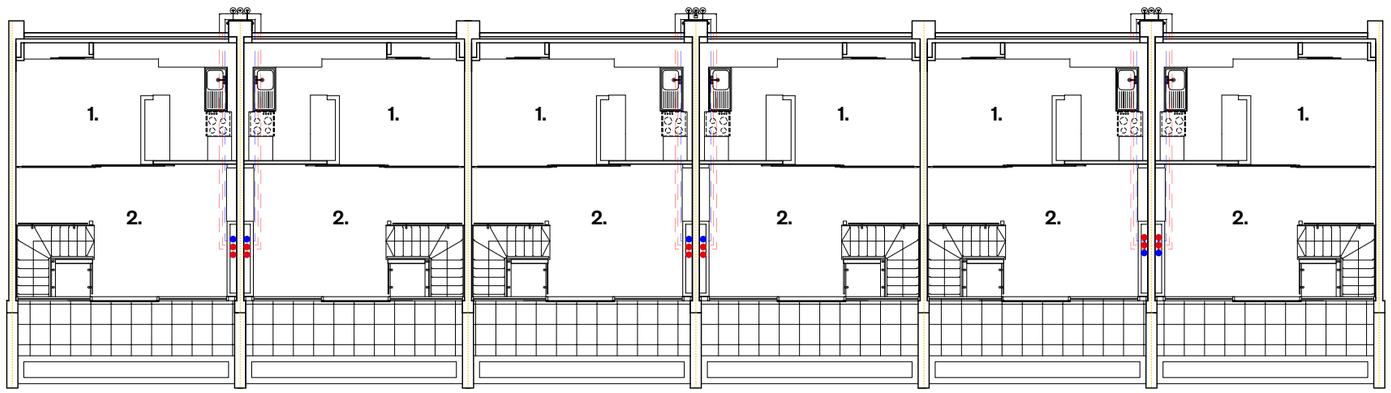
Heat interface unit
Mains cold water supply
Heating pipes
Party Wall

7.2 Block A - Dwelling Type A2

The heating infrastructure accesses the A2 dwelling type on block A via core drilled holes in the northern facade. The proposed pipes come into the dwelling on the upper floor and are hidden by the kitchen base units, then passing through the internal partition and into the existing riser.



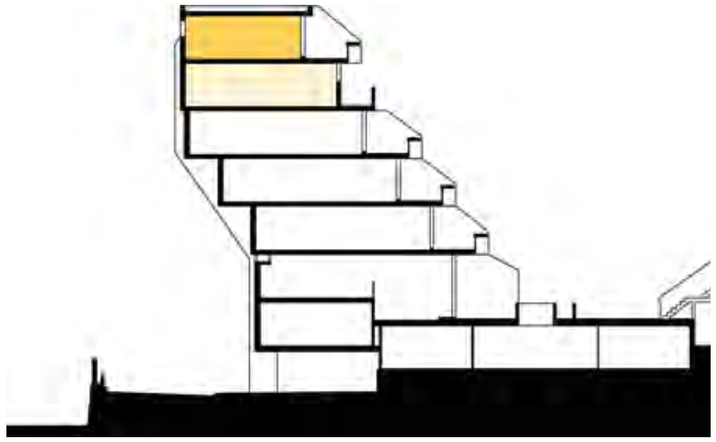
Dwelling Type A2 upper plan - 3D sectional View



Dwelling Type A2 - Heating & Mains Cold Water Supply - Upper Floor

Heat interface unit
Mains cold water supply
Heating pipes
Party Wall

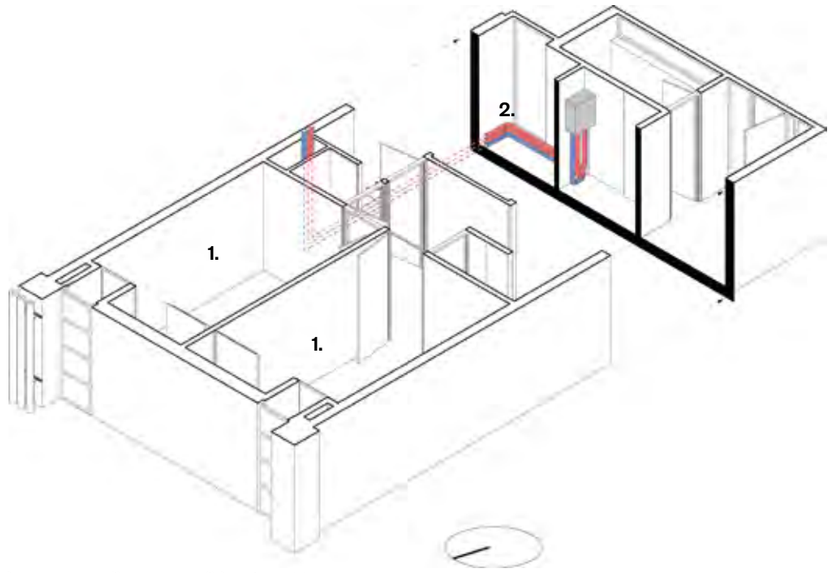
1. Kitchen
2. Living room



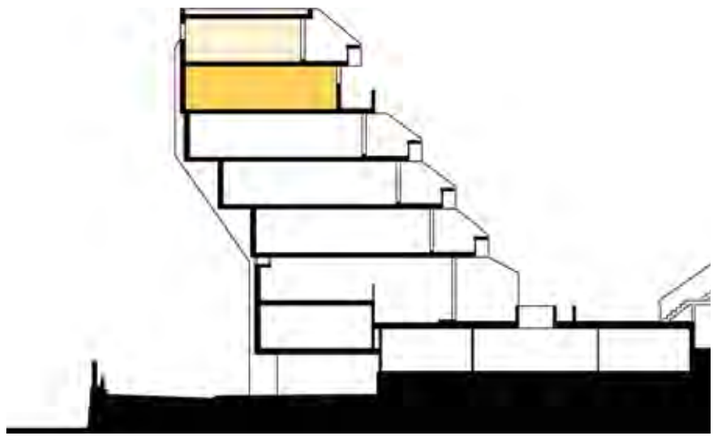
Block A cross section

7.3 Block A - Dwelling Type A2

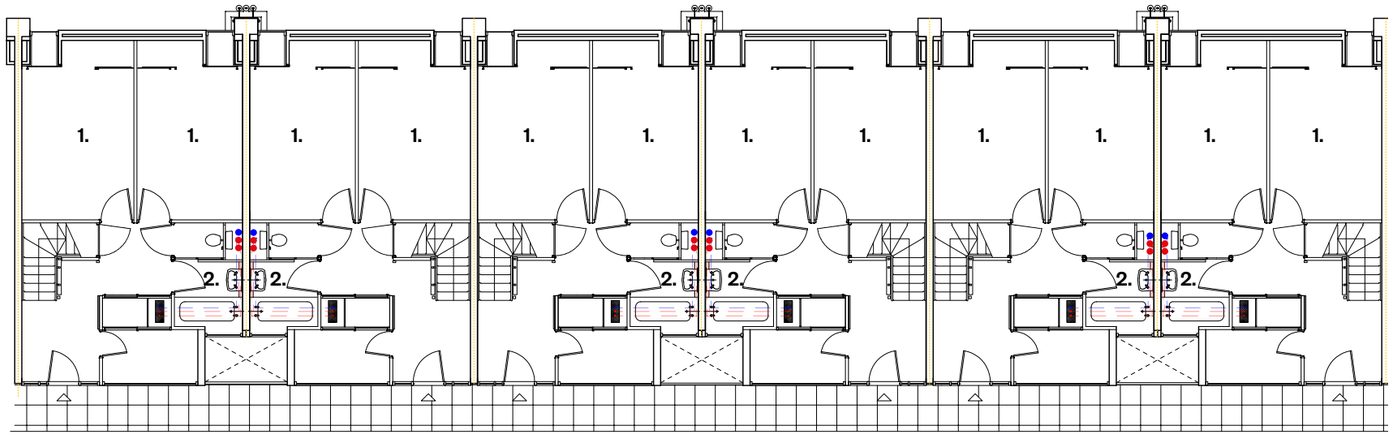
Having passed through the existing riser from the upper floor, the proposed pipes then pass through the bathroom, underneath the existing bath and into the HIU, located in the cupboard with the existing hot water cylinder.



Dwelling Type A2 lower plan - 3D sectional View



Block A cross section



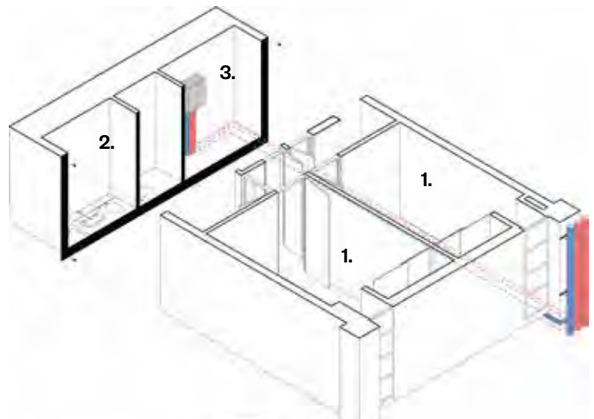
Dwelling Type A2 - Lower Plan

1. Bedroom
2. Bathroom

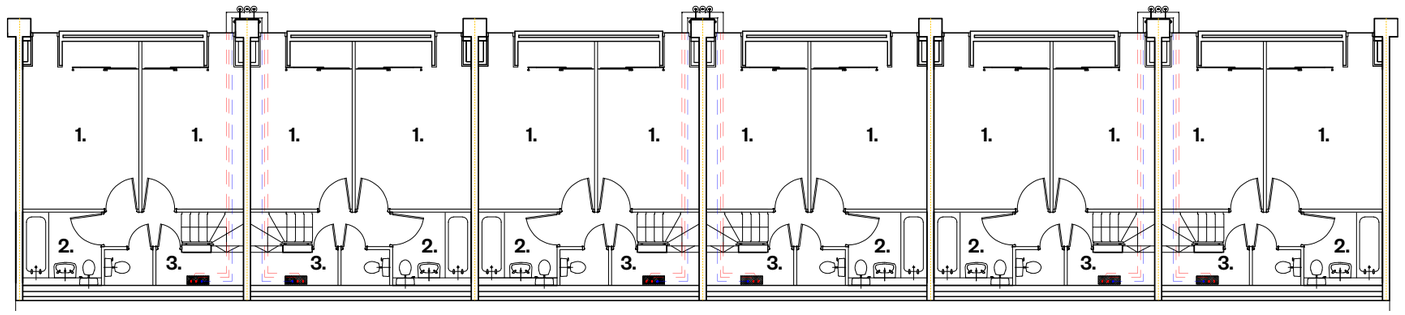
Heat interface unit
Mains cold water supply
Heating pipes
Party Wall

7.4 Block A - Dwelling Type A3

The heating pipes for dwelling type A3 are fixed to the car park soffit and run to the centre of the dwelling, where they come up through the floor and into the cupboard located beneath the internal stairs, where the HIU is located



Dwelling Type A3 lower plan - 3D sectional View



Dwelling Type A3 - Lower Plan

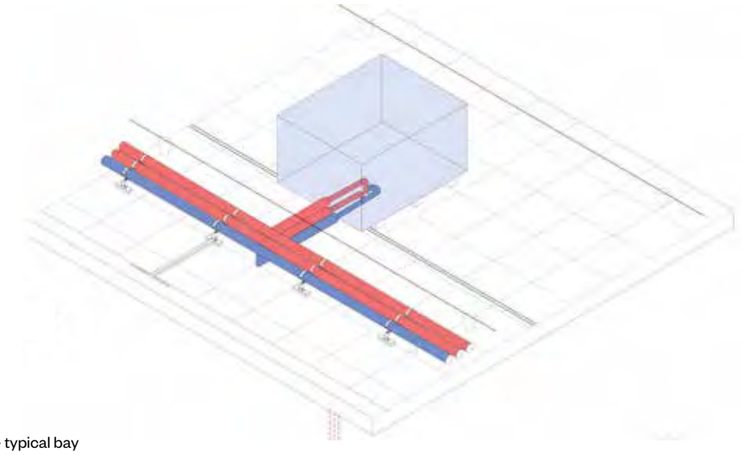
Block A cross section

Heat interface unit
Mains cold water supply
Heating pipes
Party Wall

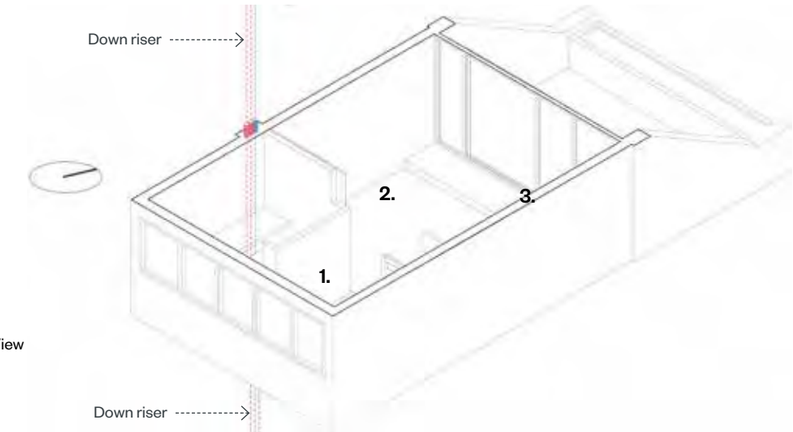
1. Bedroom
2. Bathroom
3. Cupboard (underneath stairs)

7.5 Block B - Dwelling Type B2

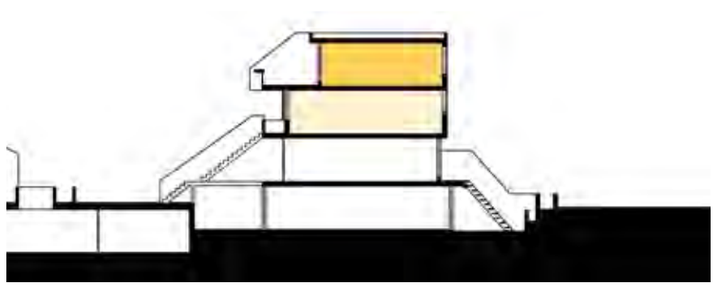
Dwelling type B2's proposed heating pipes and mains cold water come through the existing water tank on the roof of block B and down through the existing riser on the upper floor.



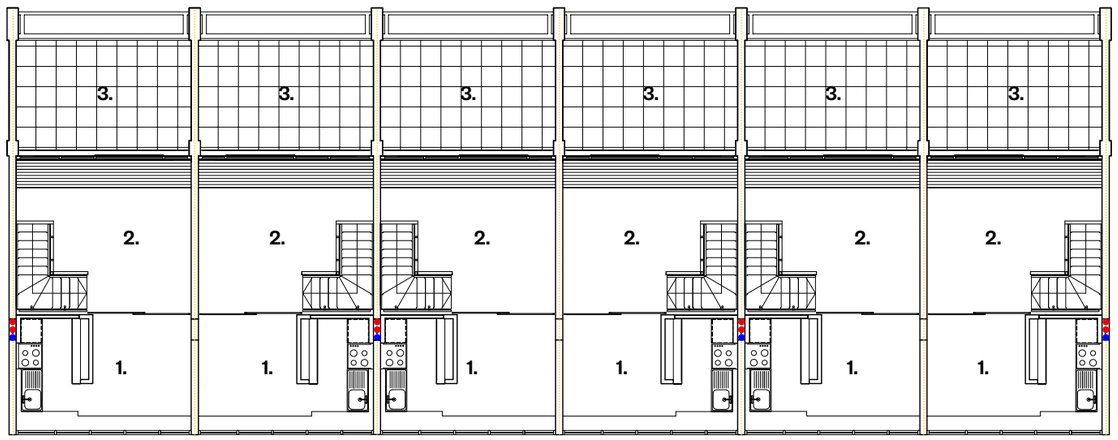
Block B 3D view of roof - typical bay



Dwelling Type B2 upper plan- 3D View



Block B cross section



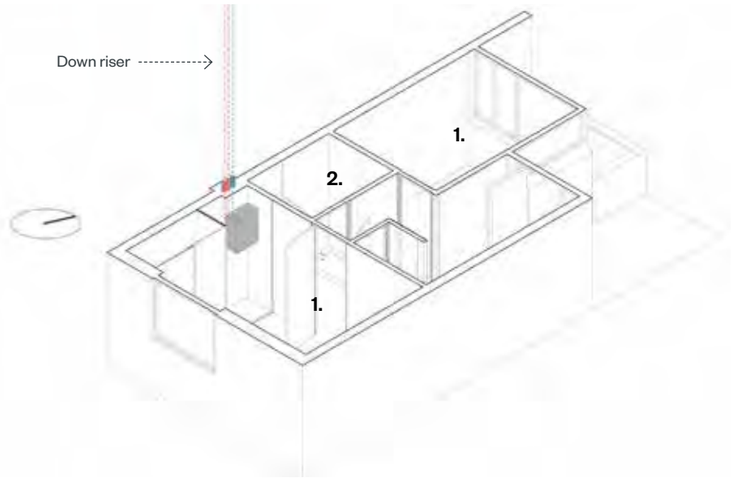
Dwelling Type B2 - Upper Plan

1. Kitchen
2. Living room

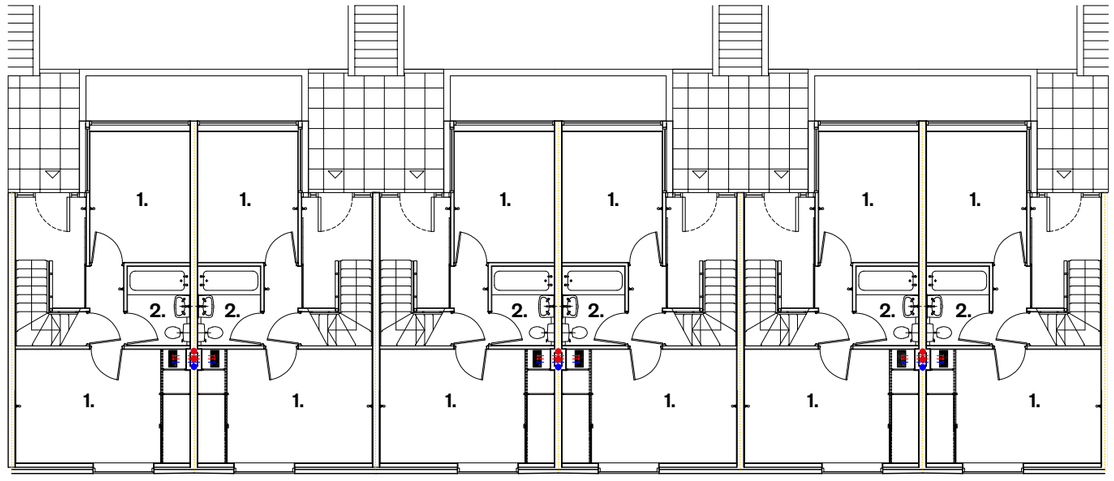
Heating pipes
Mains cold water
Party Wall

7.5 Block B - Dwelling Type B2

The proposed heating and cold water pipes are fed through the riser from roof level and directly access the Heat Interface Unit in the cupboard on the lower floor.



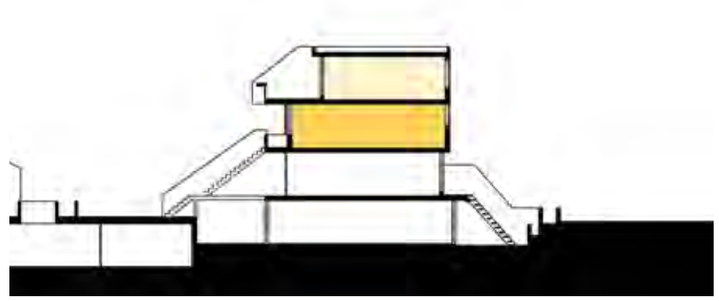
Dwelling Type B2 lower plan- 3D View



Dwelling Type B2 - Lower Plan

1. Kitchen
2. Living room

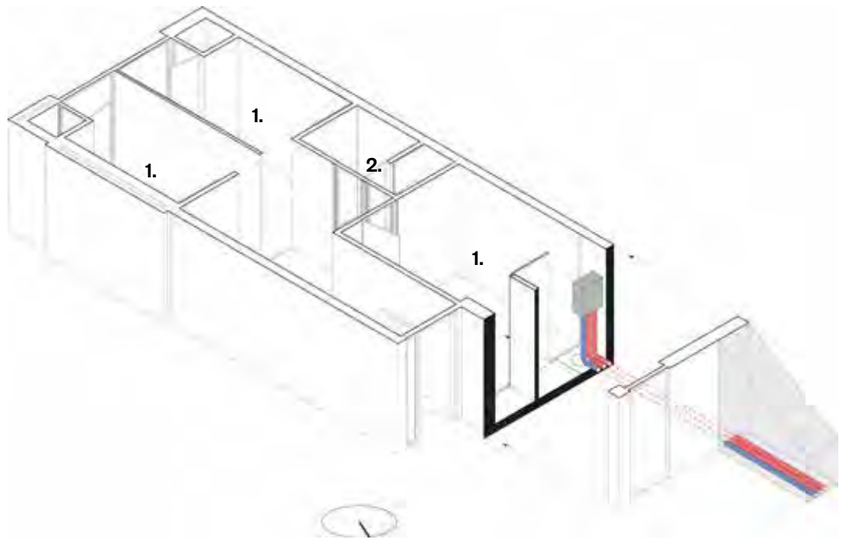
Heat interface unit
Mains cold water
Heating pipes
Party Wall



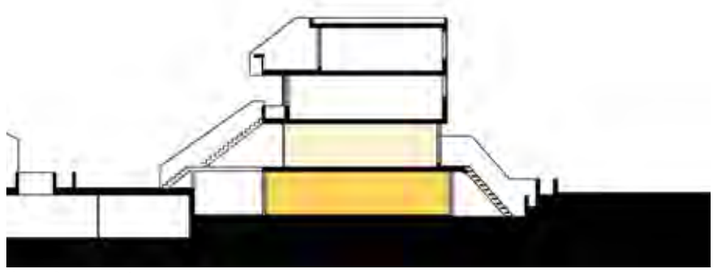
Block B cross section

7.6 Block B - Dwelling Type B3

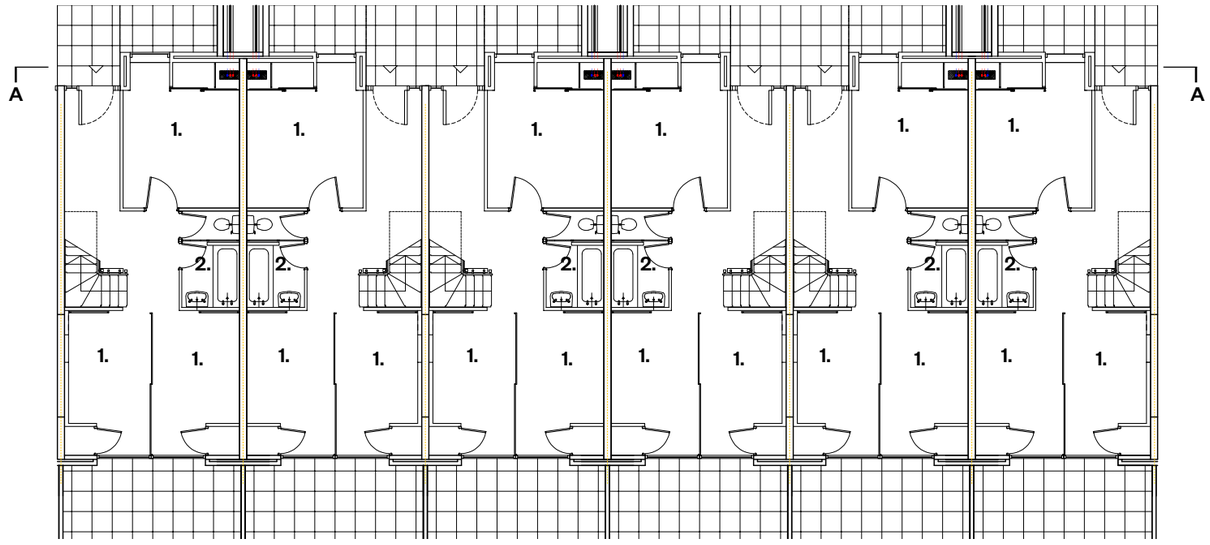
Dwelling type B3's proposed heating and cold water pipes pass through the void created by the stairs into dwelling type B2 above. The Heat Interface Unit is then directly located where the existing HWS cylinder is located, and served by the new incoming heating and MCWS.



Dwelling Type B3 lower plan- 3D Sectional View A



Block B cross section



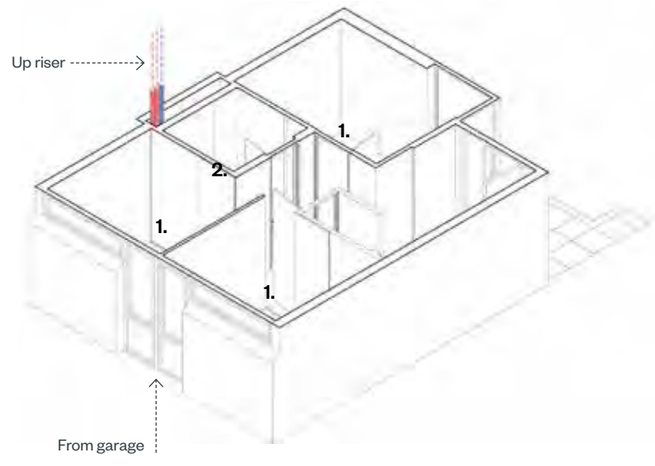
Dwelling Type B3 - Lower Plan

1. Bedroom
2. Bathroom

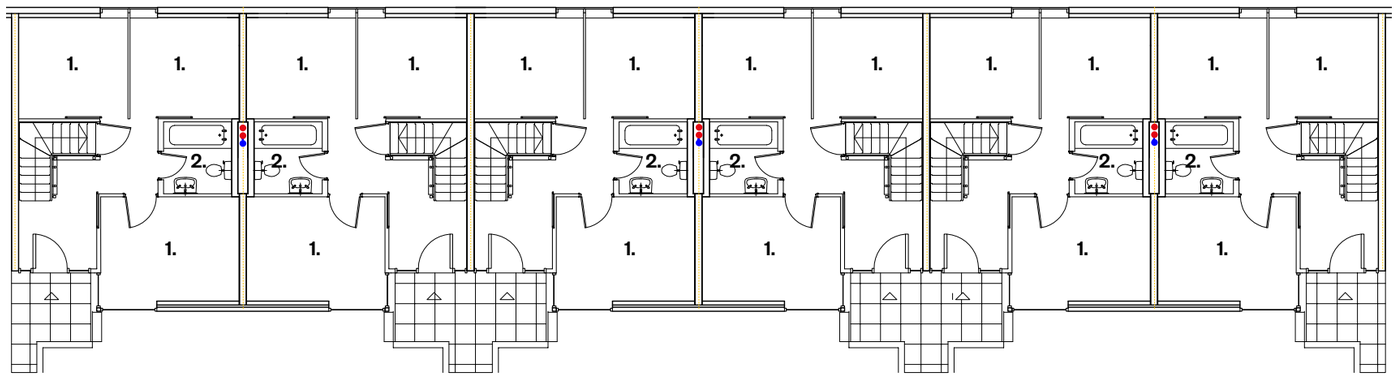
Heat interface unit
Mains cold water supply
Heating pipes
Party Wall

7.7 Block C
Dwelling Type C4

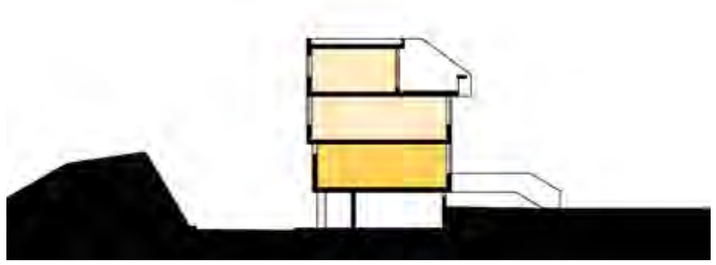
The proposed heating pipes and cold water supply rise up through the existing riser from the soffit of the garage below in Block C.



Dwelling Type C4 lower plan- 3D View



Dwelling Type C4 - Ground Floor Plan



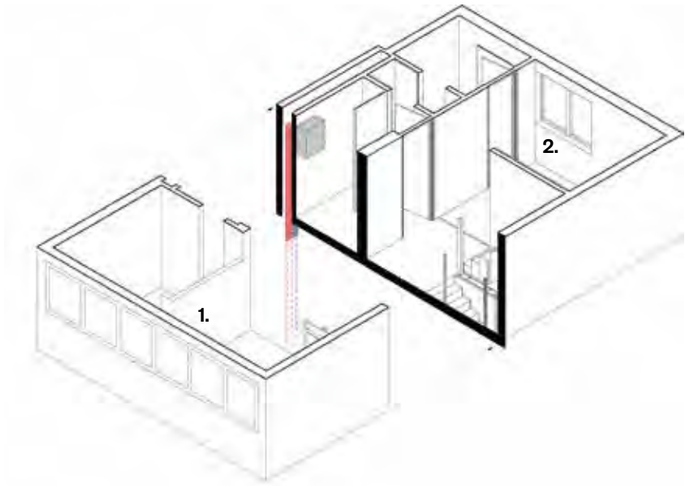
Block C cross section

1. Bedroom
2. Bathroom

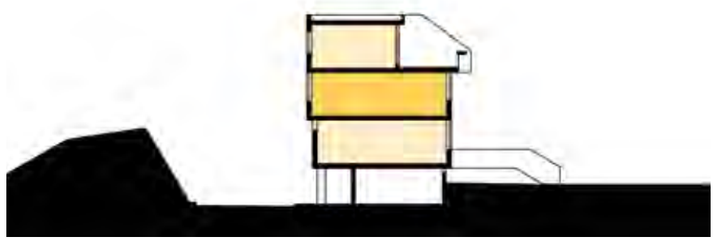
Mains cold water supply
Heating pipes
Party Wall

7.7 Block C
Dwelling Type C4

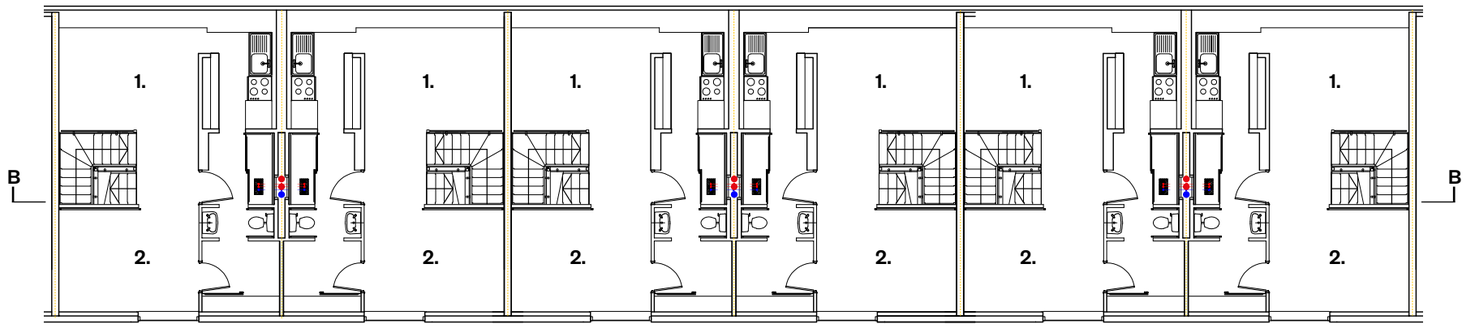
The proposed pipes rise up through the riser and connect into the HIU, located in the cupboard opposite the stairs.



Dwelling Type C4 first floor plan- 3D sectional view



Block C cross section



Dwelling Type C4 - first floor Plan

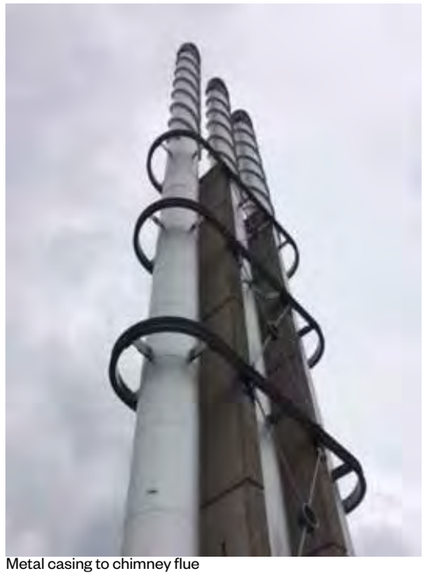
Heat interface unit
Mains cold water supply
Heating pipes
Party Wall

1. Kitchen/Dining
2. Living Room

8.0 Materiality

8.1 Existing Materials


Expanded metal - blue protective coating


Metal casing to chimney flue

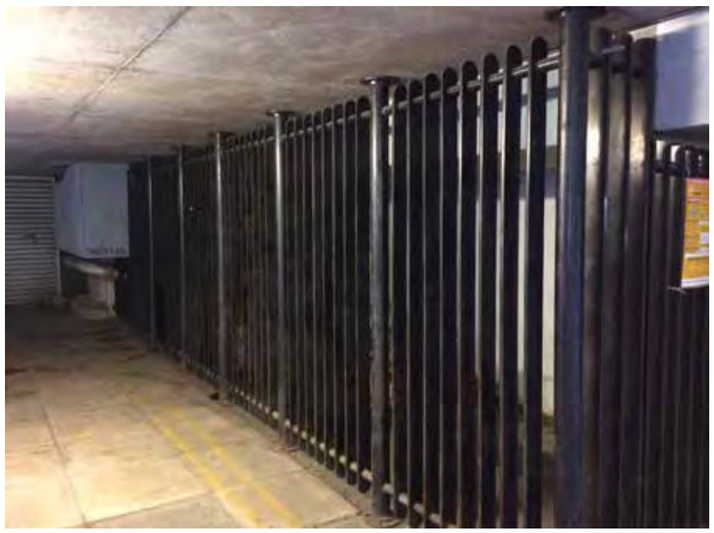

Shuttered concrete


Profiled glazing & black mechanical pipes


Protective screen - red protective coating


Mechanical pipes located on roof of block A


Roof mount located on Block A roof


Black metal fencing located in car park

8.2 Proposed Materials

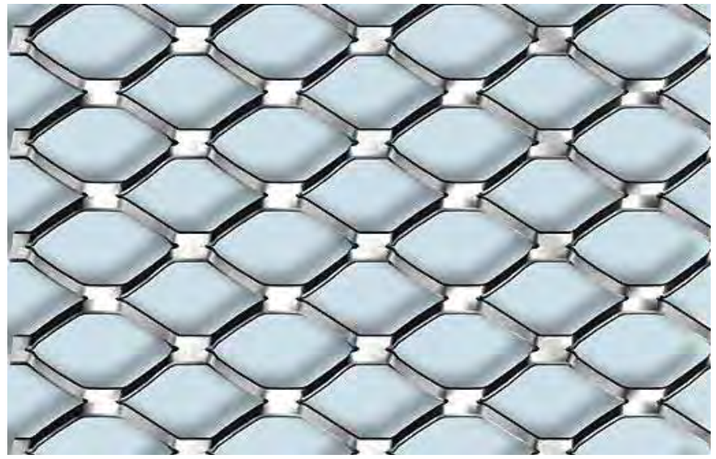
A palette of carefully considered materials has been discussed with the planners and it was agreed that the colour of the new cladding should be neutral: Either a grey/galvanised/metallic finish (to tone in with the concrete structure), or black (to match existing timber window frames and cladding panels). It was accepted that the panels may be louvred or perforated, to allow ventilation. Glass planks or blocks, to match the existing stair enclosures, were also discussed but rejected as they offer no ventilation to the enclosures

Thought has been given to the extent of removal of existing services pipework (including pipe casing containment, insulation etc) that is exposed and visible to the residents and visitors; what will be left behind when services are removed and what is final services appearance when replaced by new heating distribution.

Stucco aluminium finish

Pipe support frame

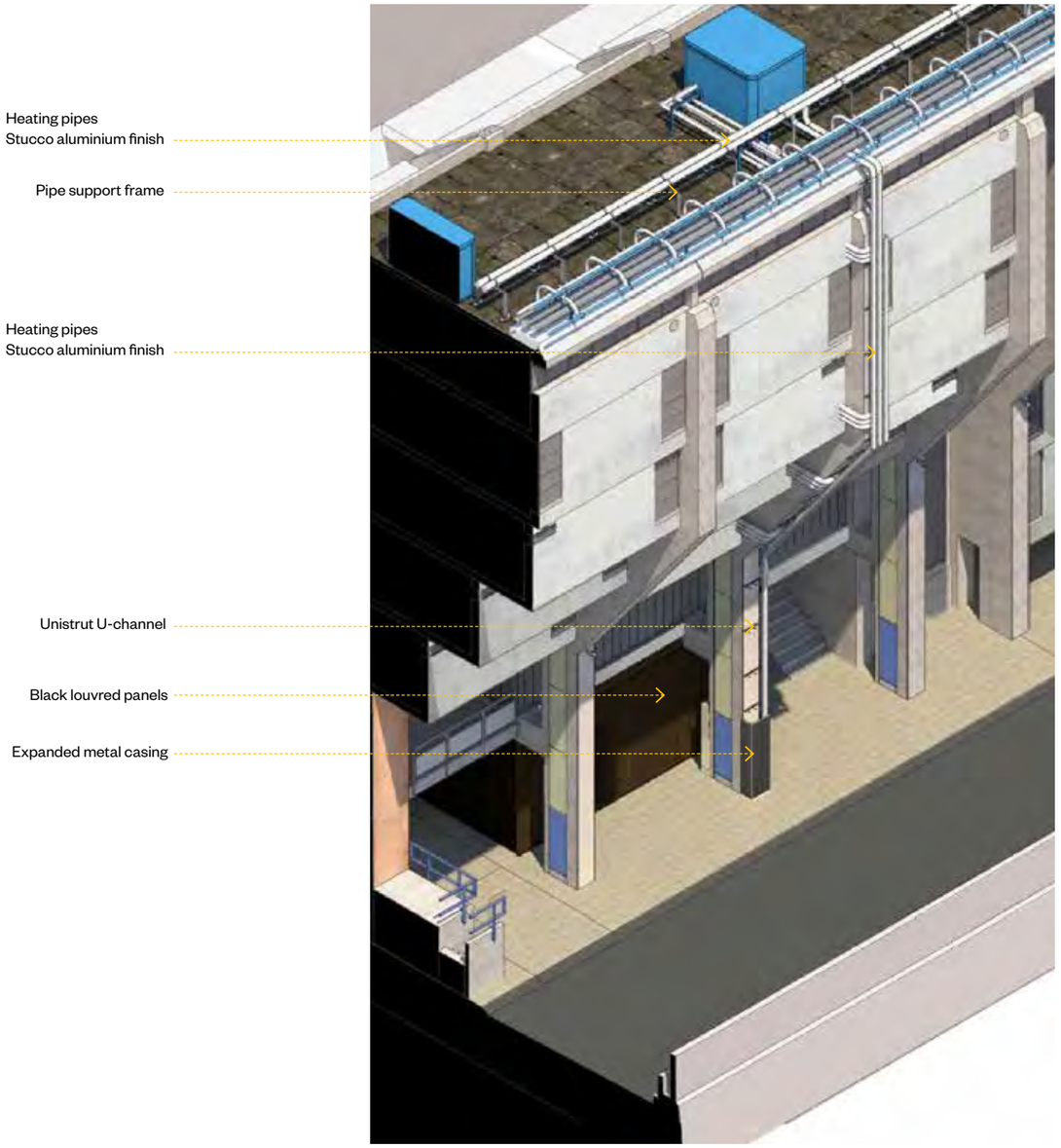
Unistrut channel fixing



Expanded metal

Black louvred panels

8.3 Proposed Materials - Typical



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