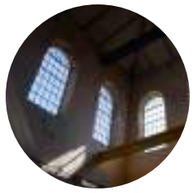
Living & working **Karslake East pump house**

The eastern pump houses of Karslake and Ruston & Ward are almost identical to each other. The proposal splits the lower level into two smaller 1-bed gallery units, with a large 3-bed penthouse unit above that allows for the roof truss structure to remain exposed and prominent in the space.



The Karslake eastern pump house has the addition of a large roof terrace opening out onto the new two level extension built onto the SW corner of the building.

The basement in Karslake is proposed as an additional shared amenity space for the development, with flexibility to hold community meetings, group events, and screened cinema showings.

Living & working **Ground level unit, Pump house East**

The ground level units in the Pump Houses follow a similar design to those at the single-story blocks, using a double height space for the living area with the loft style bedroom upstairs above the kitchen.

Light coloured timber brightens the space, and exposed existing bricks plus new dark grey metalwork for the staircase and railings recall the industrial heritage.

Karslake Unit 10
Ruston & Ward Unit 8

Karslake Unit 11
Ruston & Ward Unit 9

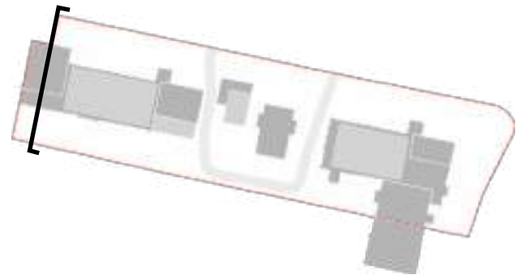
The large upper level penthouse flats in the Eastern Pump Houses make the most of the great existing windows along three facades. In the Karslake East Pump House a new opening leads to a roof terrace looking out south over the reservoirs to the Thames. A similar contemporary, loft aesthetic is revealed internally, expressing the heritage building.

Karslake Unit 19
Ruston & Ward Unit 13

Living & working **Karslake West Pump House East**

The Western pump house of Karslake is known as ‘The Beam’ and was built 30 years later than the rest of the building. Unlike the other pump houses, it has four floors already built within the volume.

The proposed design works carefully to follow the existing floor levels, using deep dark spaces for plant and storage and really making the most of the airy, high spaces and original cast-iron windows.

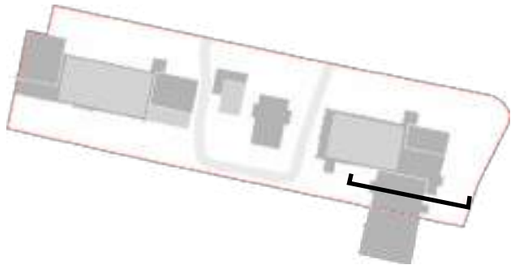


The top level of the western Karslake Pump House is the jewel of the Waterworks buildings, with many original architectural features still existing in good condition to be exposed in the new flat.

A steel gantry crane is left in place crossing over the lofty, open kitchen and living space. Original cast-iron windows run around all four facades, letting great amounts of natural light inside and providing views out across Hampton all the way to the Thames.

Living & working **Ruston & Ward workshop**

The separate workshop space in Ruston & Ward building provides 300 sqm of office area - accommodating potentially 25 to 40 people working in the space. A local co-working use is currently being reviewed for the space, providing desk space for small business owners in Hampton who live locally and would be most likely to walk to the site.



Roof trusses & glazed roof light retained

Heritage details retained and highlighted - ceramic tiles & steel crane

Prominent entry at junction utilised for the Workshop

Shared surface paving for pedestrians and vehicles

Entry to workshop from the west

Ground level workshop space

New mezzanine level inserted

Existing basement; can be utilised for kitchen and/ or storage

Ruston & Ward Workshop

Native, soft planting

Lower Sunbury Road

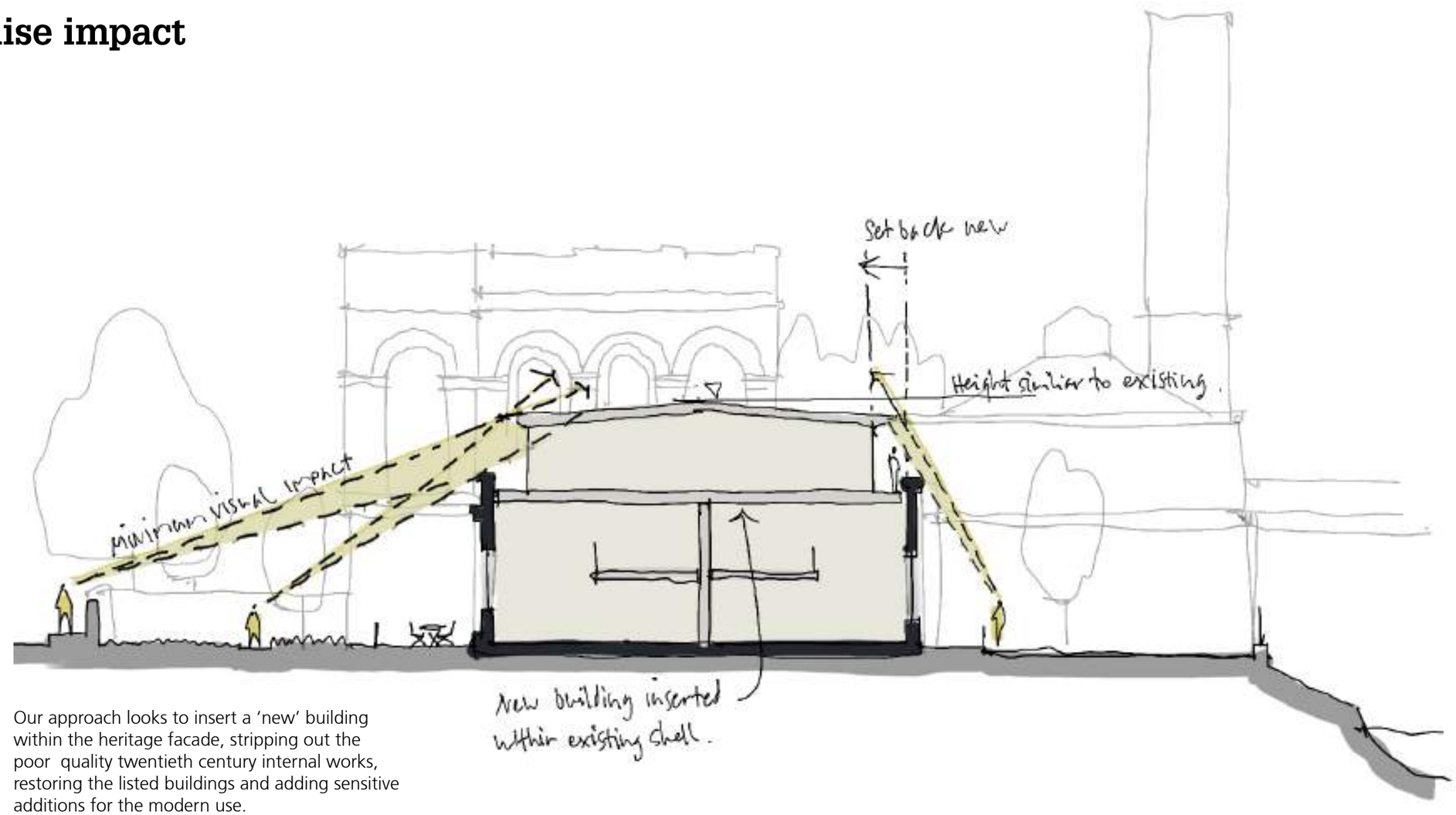
05
Design development

Design approach **Minimise impact**

Rooftop extensions have been designed to reduce their impact when views from the Upper Sunbury Road and beyond.

The extensions are within the existing roof ridge height and are set back from the listed historic building facade in the foreground.

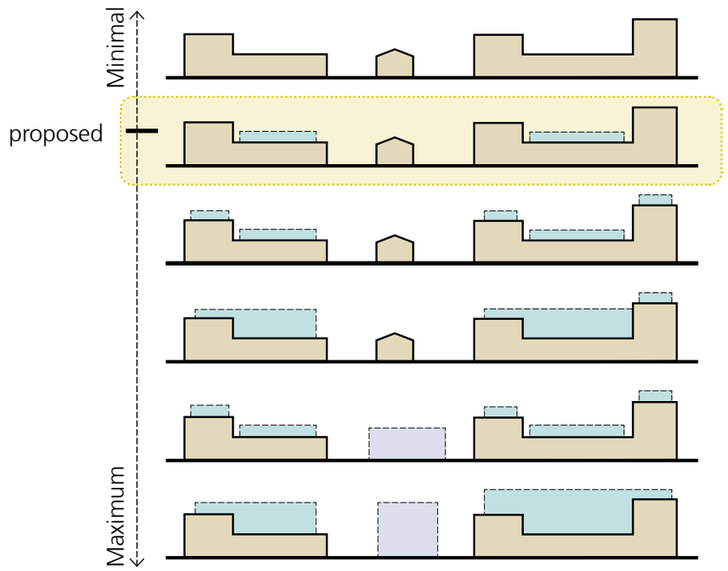
When viewed from street level the perceived extent of the new roof form is minimal and the impact is therefore minimised.



Our approach looks to insert a 'new' building within the heritage facade, stripping out the poor quality twentieth century internal works, restoring the listed buildings and adding sensitive additions for the modern use.



There is a wide range of well executed examples of adding a contemporary extension over a historic structure.



As the site is complex and available space to build additional area is limited, an exploration of new build / extension options was undertaken.

The proposed intervention is modest in proportion to other options previously proposed.

Existing building
+ New build in place of cottages
+ Roof extensions

Original - Initial proposals included roof extensions to all parts of Kerslake and Ruston & Ward

Iteration 1 - Roof extensions reduced to warehouses and cottages retained with two storey extension

Current proposal - Roof extensions refined and cottage extension reduced to single storey

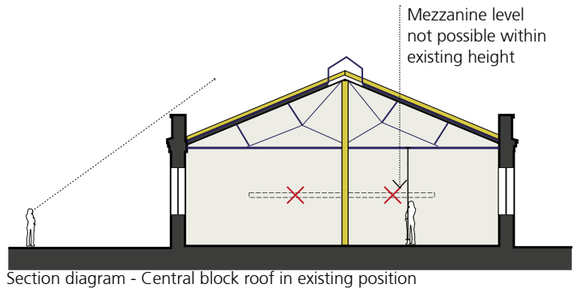
Design approach **Reduce impact**

Minimise visual impact from the street level.

Option 1A

Build within existing envelope

Existing internal height does not allow for addition of a mezzanine level - thus not a viable project.



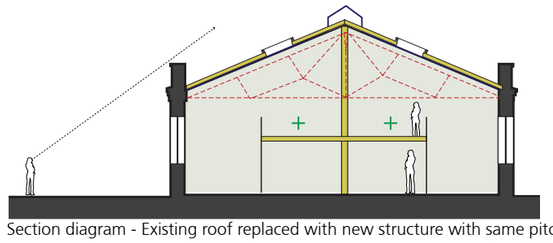
Section diagram - Central block roof in existing position

Perspective view from Upper Sunbury Rd - Existing

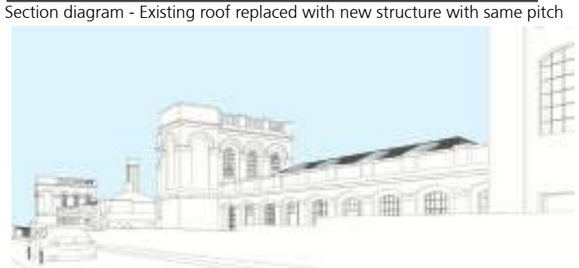
Option 1B

Replacement roof at the existing pitch

This option allows the insertion of a mezzanine floor inside the central section - still not a viable project.



Section diagram - Existing roof replaced with new structure with same pitch

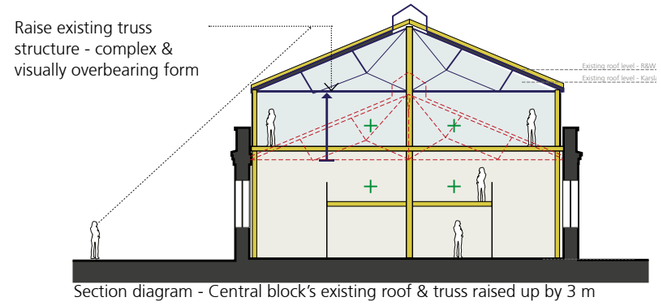


Perspective view from Upper Sunbury Rd - Option 1B

Option 2

Raise existing roof & truss

Additional floor area is provided, but overly complex structurally & visually overbearing external form outweigh benefits of retaining heritage trusses.



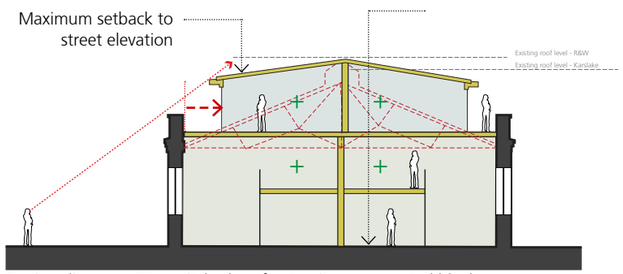
Section diagram - Central block's existing roof & truss raised up by 3 m

Perspective view from Upper Sunbury Rd - Option 2

Option 3

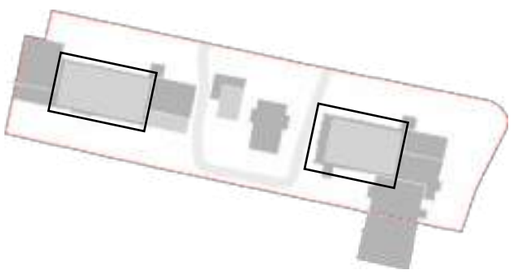
New extension - Pitched

The option pitched - roof with the eaves taken as far back from the street as possible



Section diagram - New pitched roof extension over central block

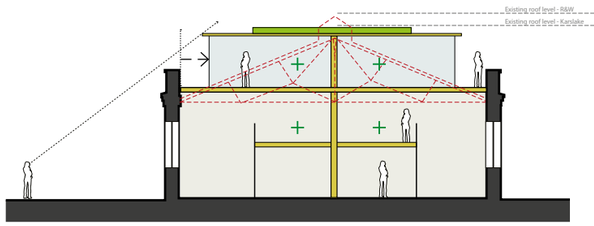
Perspective view from Upper Sunbury Rd - OPtion 3A



Option 4

New extension - Flat

The simple minimal box form reduces impact of shadows and is treated with a light reflective colour to soften the skyline. Not taken forward due to the height of parapet required.



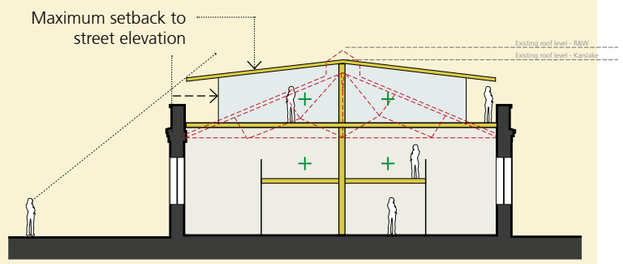
Section diagram - New flat roof extension over central block.

Perspective view from Upper Sunbury Rd - Option 3B

Option 5 (Proposed)

New extension - Pitched & extended

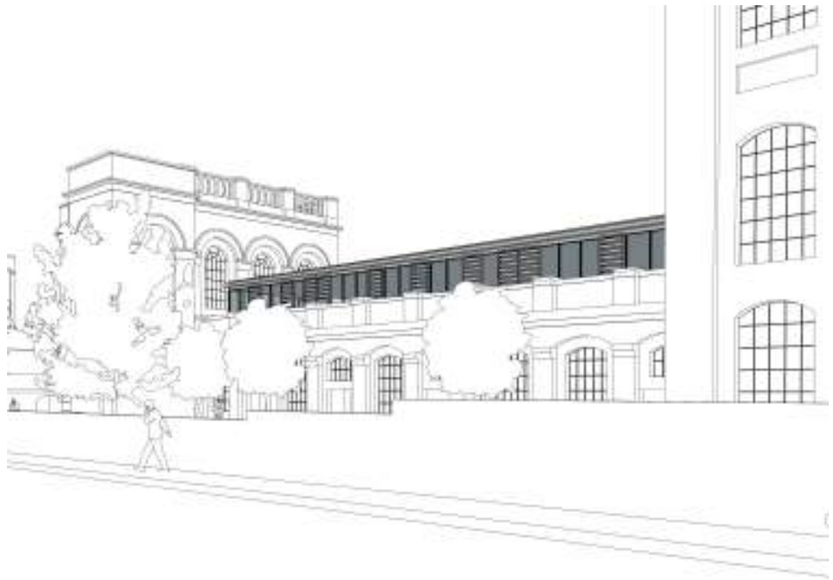
Keep the height within the existing roof level and extend roof edge to minimize the extension's impact on the facade appearance.



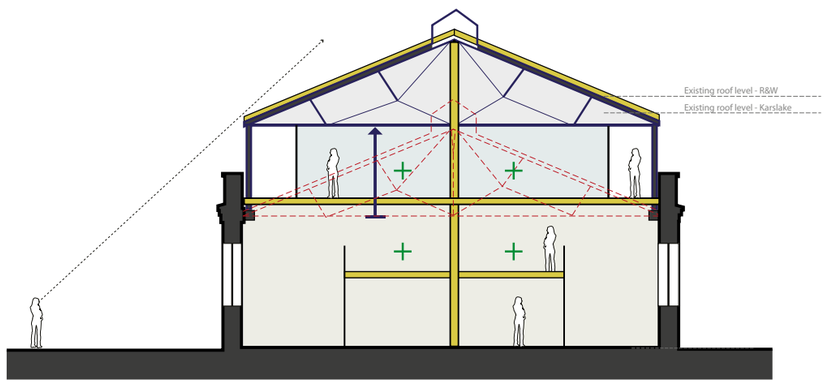
Section diagram - New mansard extension over central block.

Perspective view from Upper Sunbury Rd - Option 3C

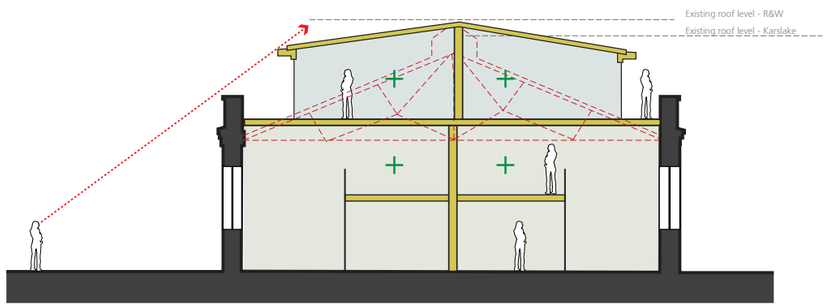
Design approach **Roof extension: previous options**



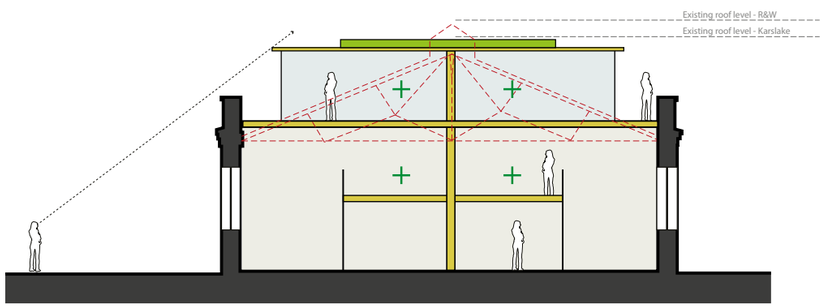
Option 2:
The roof extends considerably higher than the parapet and has a significant impact when viewed from the street



Option 3:
Improved from option 2

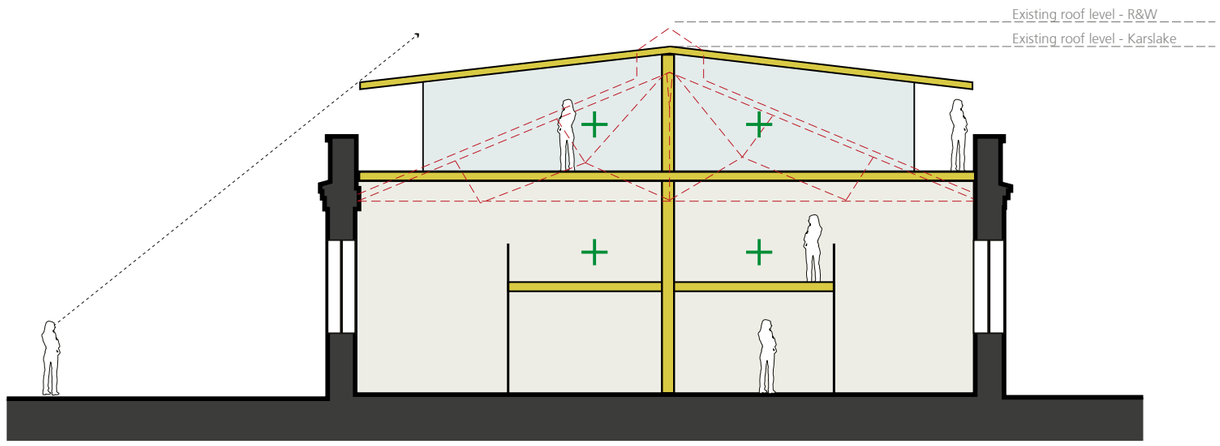


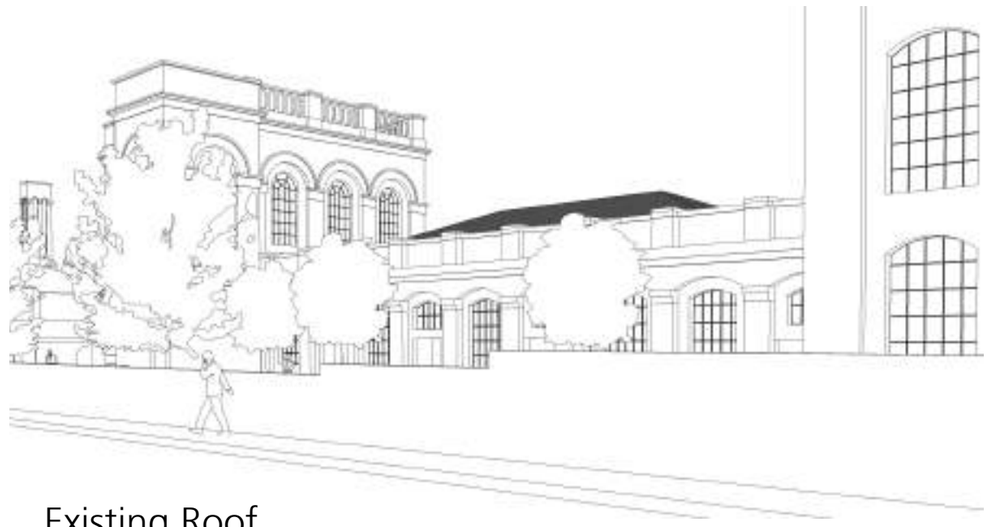
Option 4:
Similar to option 3 above and providing additional biodiversity through green roof



Design approach **Roof extension: option 5 (Proposed)**

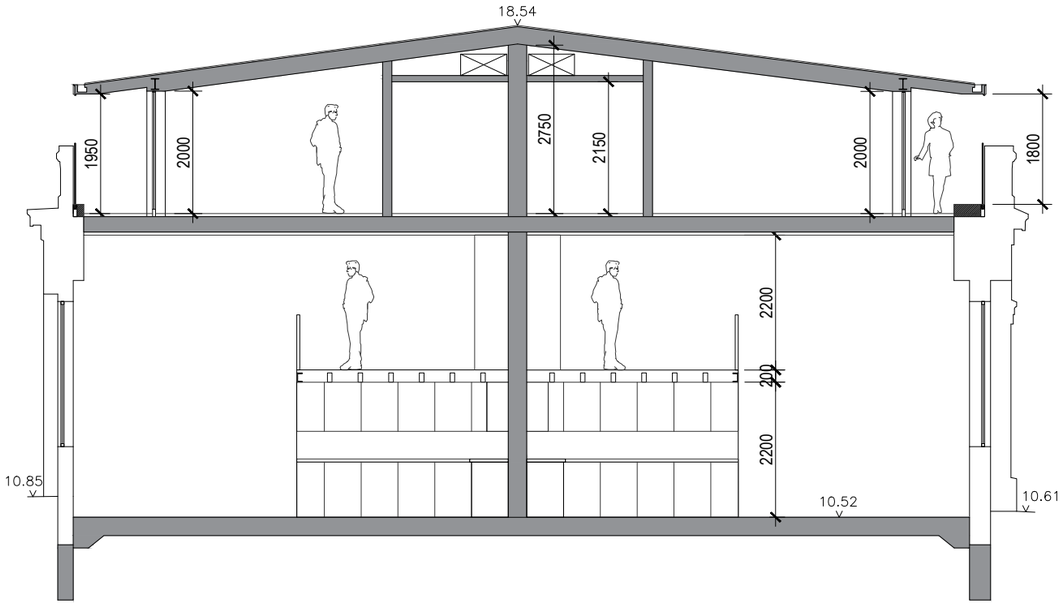
The deep shadow created by the overhanging eaves helps to set the roof extension behind the parapet





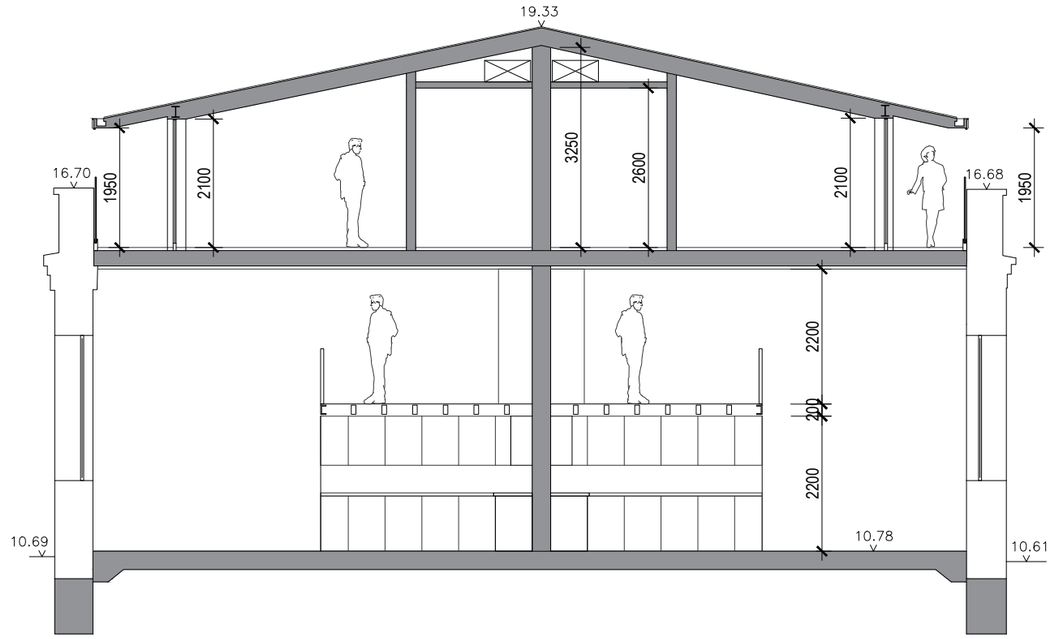
Existing Roof

Design approach **Roof extension: option 5 (Proposed)**



KARSLAKE SECTION

Demolish



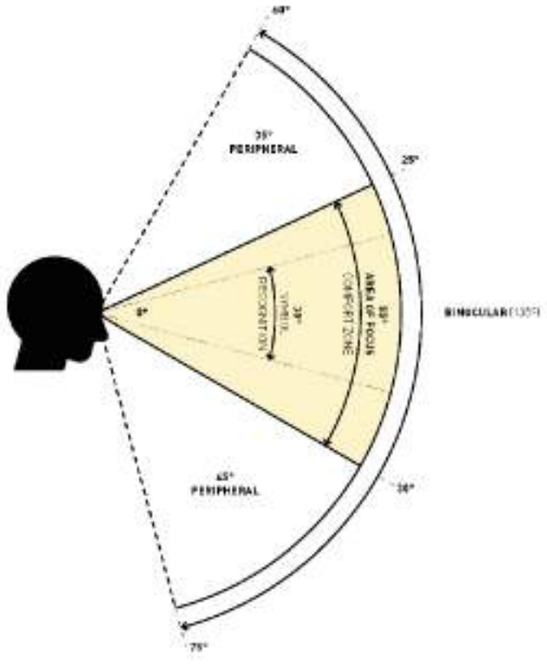
R&W SECTION

Design approach **Visual impact assessment**

The principal views of the building roofs are from Upper Sunbury Road as percieved by pedestrians as they pass by on both sides of the road.

Pedestrians approaching down the hill from the station experience the main view of the roofs from a limited view points but are more limited in number.

Car users will have limited views because they are concentrating on the road, moving at speed and in one direction on each side.

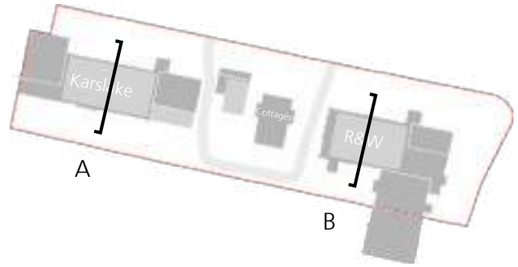


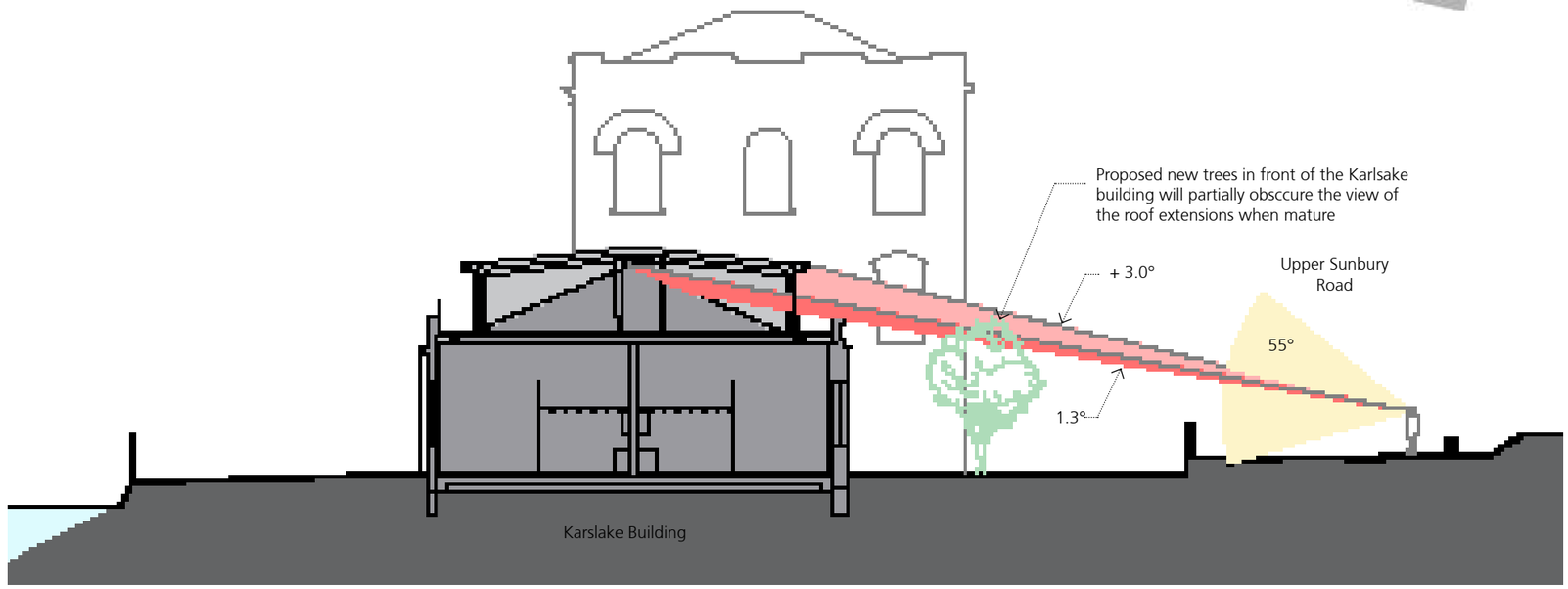
Key

55 degree human vertical field of view

View of existing roof

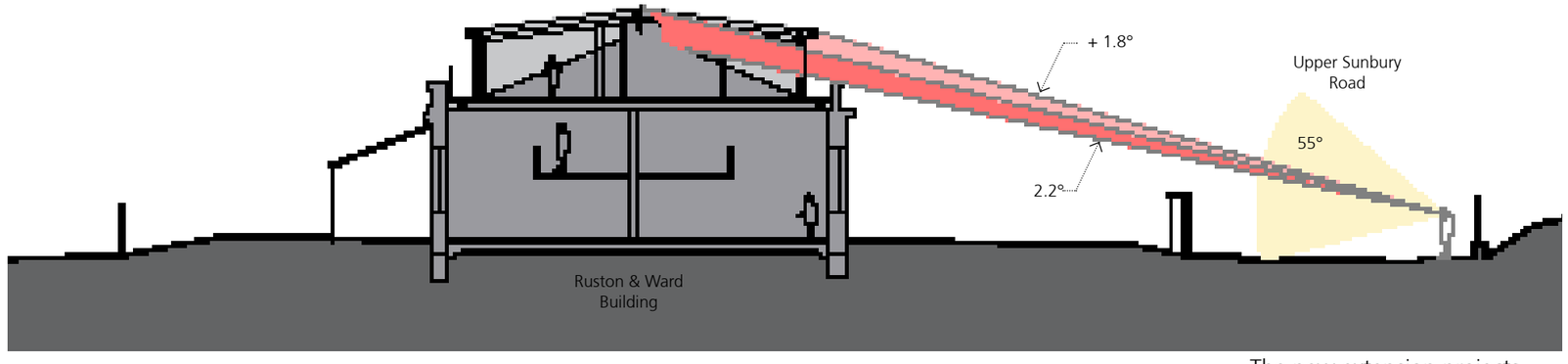
Increased view of proposed roof extension





Section A
Karslake Building, looking east

The new extension projects an additional **3.0°** into the normal **55°** field of vision



Section B
Ruston & Ward Building, looking east

The new extension projects an additional **1.8°** into the normal **55°** field of vision

Design approach **Visual impact assessment**

We have analysed sightlines for the principal views on the previous page to determine the linear distance in which a passing pedestrian will perceive the roof extensions.

The main views of the roofs are from the northern side of upper Sunbury Road.

We have considered the extent of the impact of the new roofs on pedestrians as they pass by.

We consider that vehicle drivers will be concentrating on the road and are lower therefore will not appreciate the roof extensions.

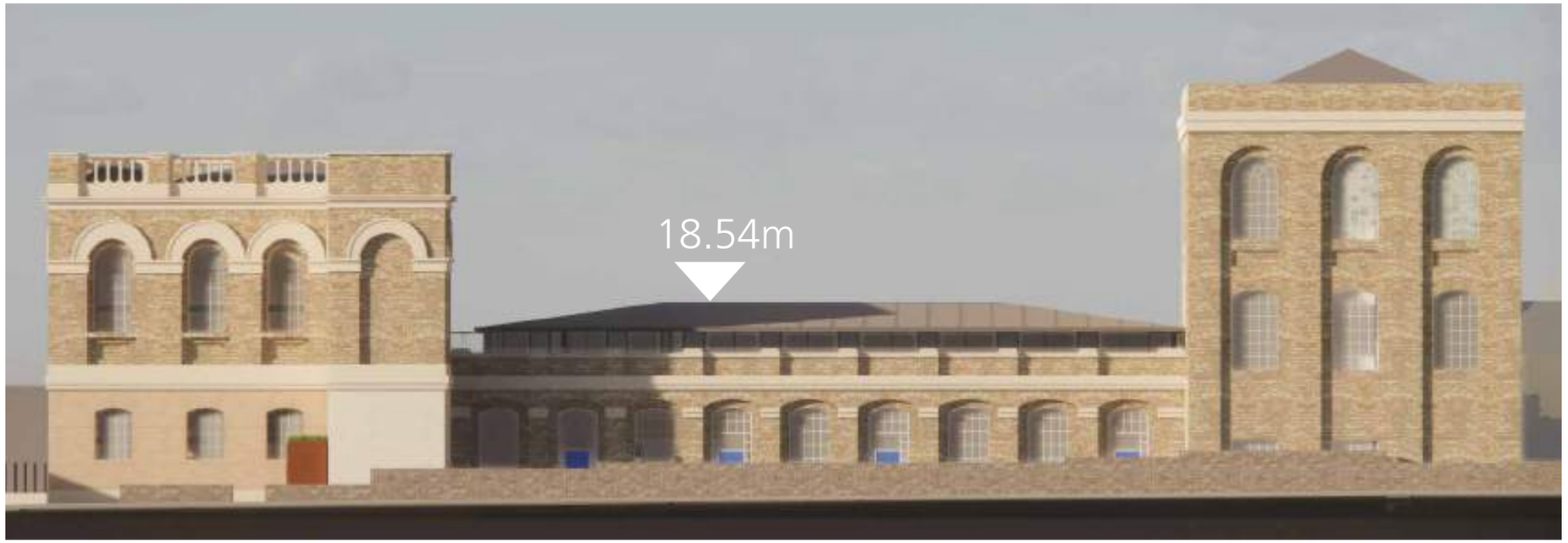
Site plan showing views of proposed roof extensions

Key

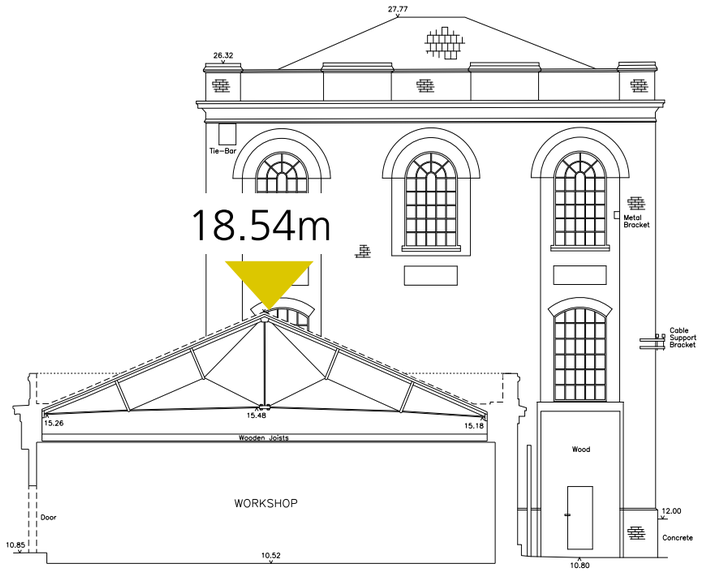
- Karslake Views
- Ruston & Ward Views
- Area of full view of roof extension
- Area of partial view of roof extension

In summary the small increase in new roof profile projecting above the parapet of a few degrees of vertical field of vision combined with the extent that this is experienced by passers by is limited.

The new extensions are within the existing roof ridge height and the material selection of timber and grey metal create a lighter colour palette that blends with the buff bricks and light stone of the existing building.



Updated roof extension

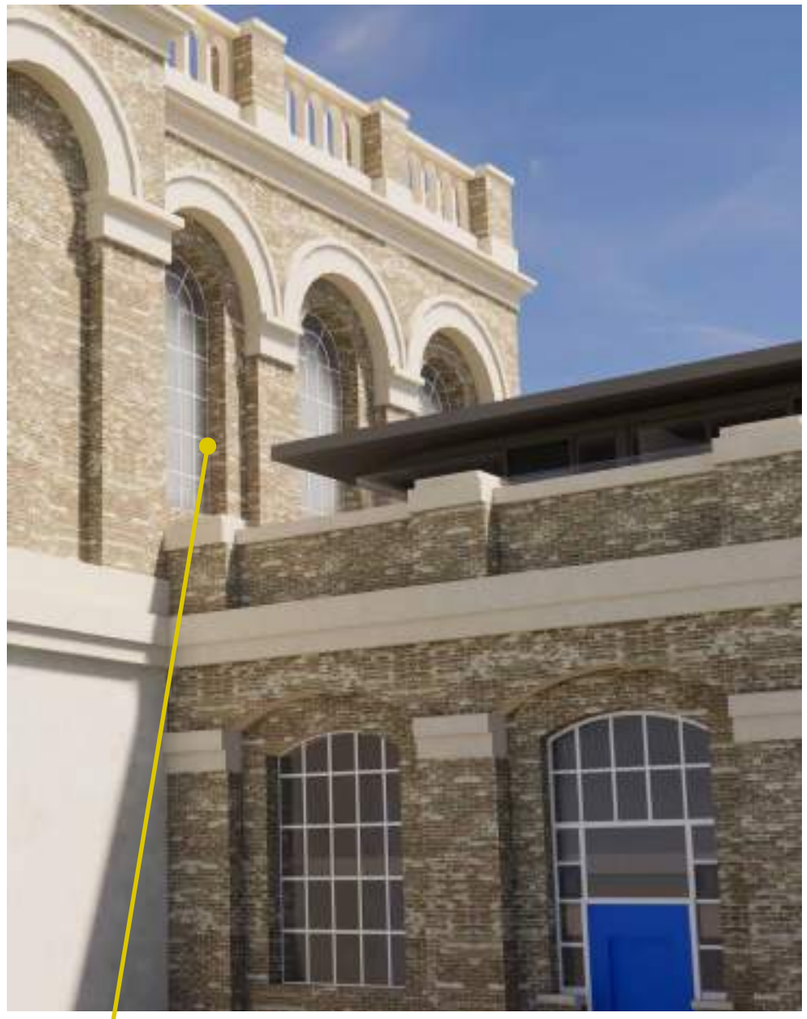


Existing ridge height

Refused scheme

Design approach **Roof extension street view**

Looking east from Upper Sunbury Rd



The rooftop has been cut back to create some relief and reveal more of the arched windows to expose to a similar level to the existing roof.

Roof extension

Existing roof

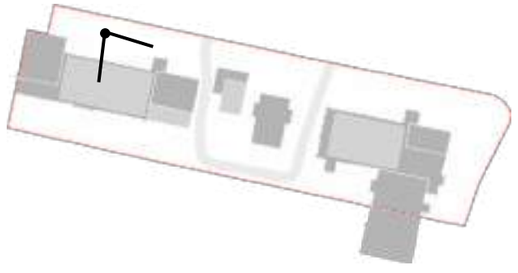
Enhance setting

Our approach is to build new elements in a contemporary idiom whilst restoring the existing built heritage to its former glory.

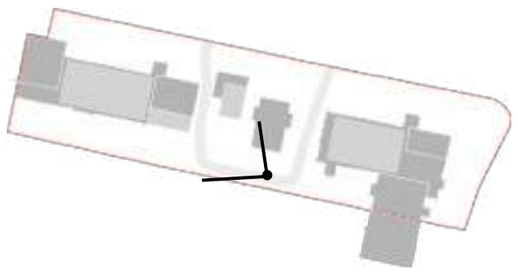
The design solution restores the heritage building to its original condition, limiting the loss of the original fabric. New necessary elements and additions follow a contemporary design aesthetic.

Roof extension materials have been amended to blend with the colours of the existing heritage brick and stone fabric.

What's old is old, and anything new, looks new and this contrast creates a more engaging project that depicts the history of the building through the eras.



Design approach **Rear extension to Karslake previous options**



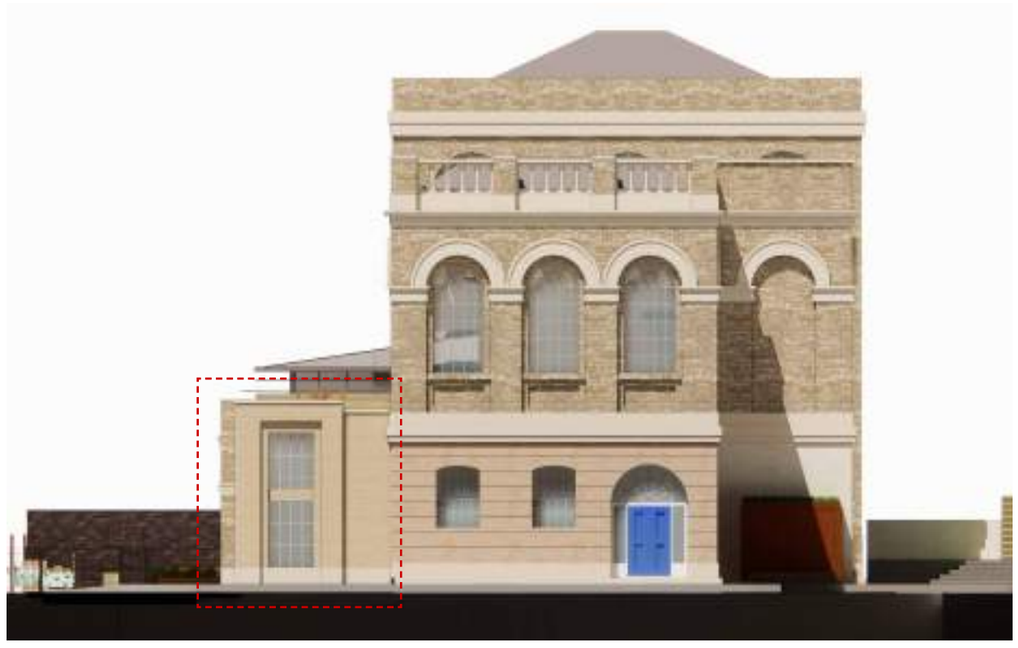
A number of different cladding materials have been considered but matching brick was selected as the preference of the conservation officer.

Recessed aisles matched the existing building.

Design approach **Rear extension to Karslake**

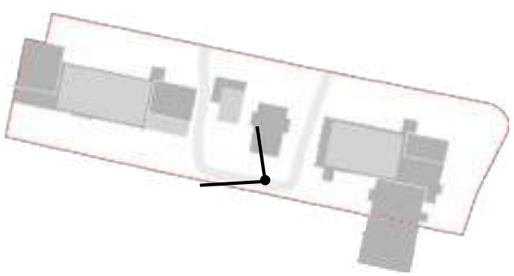
The design of the rear extension has been refined in form to match the rythm of the arched niches of the existing buildings.

Cornice and coping heights have also been used as datum lines for cill and head heights.



Design approach **Rear extension to Karslake PROPOSED**

Feedback from the DRP indicated a preference for simple clean fenestration and matching brick detailing which has been developed as a neutral extension that following the rhythm, materials and colours of the existing building.



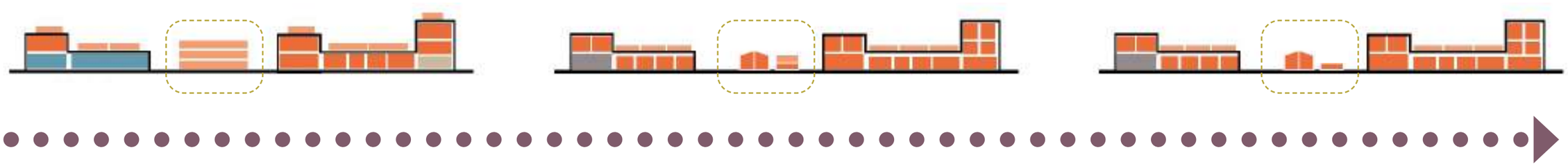
Design approach **Storehouse & cottages iterative versions**

We have reduced the scale of impact to the cottages in response to comments from the LPA during the design and application process. We have moved from a demolition and new build response to a single storey extension.

Original - New build 3 storey block

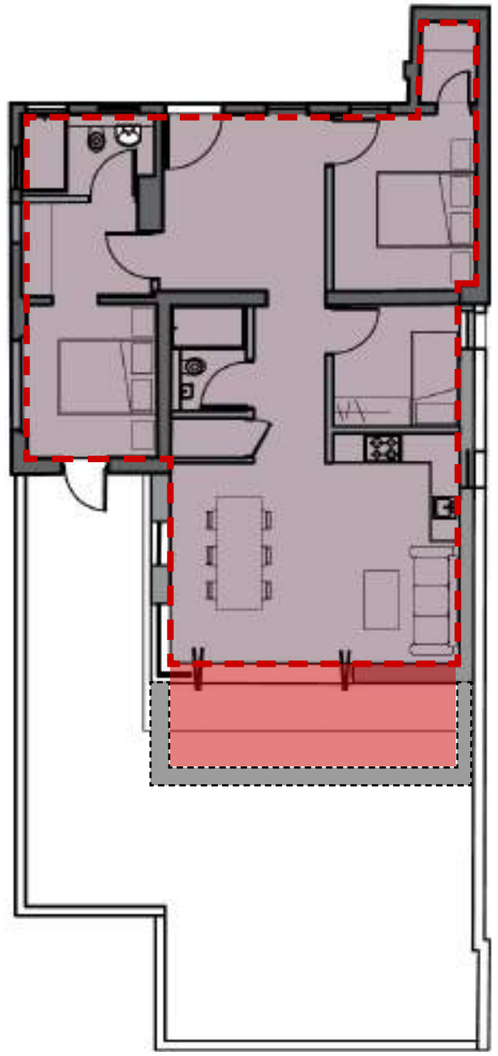
Iteration 1 - 2 storey block

Current proposal - Single storey extension and green roof



The impact has been considerably reduced over design iterations

Design approach **Storehouse extension**



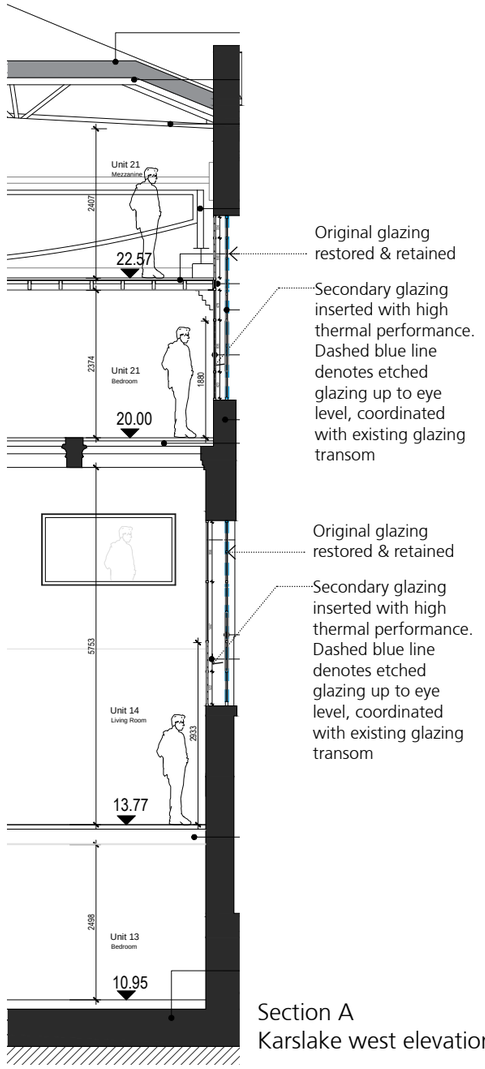
Storehouse extension area reduced 18% to 90.53 sq m (GIA).

Overlooking

Several windows to the Karslake pumphouse west overlook the property at 5 Water Works cottages.

We have analysed sight lines and identified all windows where this applies.

To remedy this, window panes within eye level inside Karslake will be glazed with etched, opaque glass to prevent a view out up to eye level.



Original glazing restored & retained

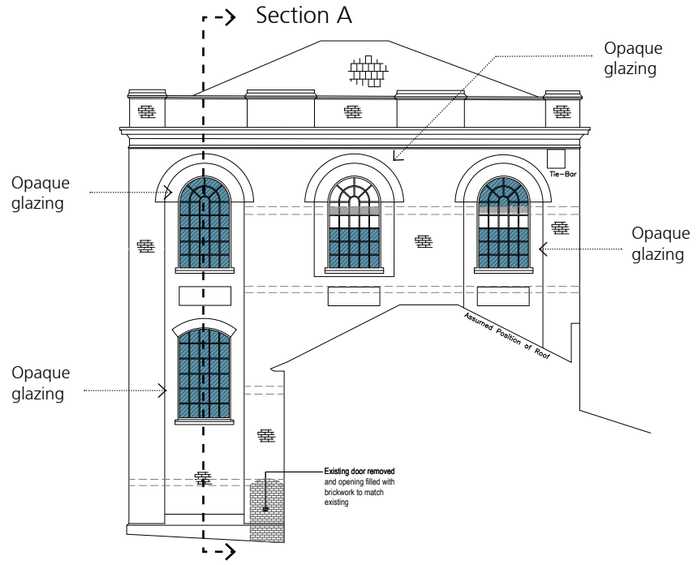
Secondary glazing inserted with high thermal performance. Dashed blue line denotes etched glazing up to eye level, coordinated with existing glazing transom

Original glazing restored & retained

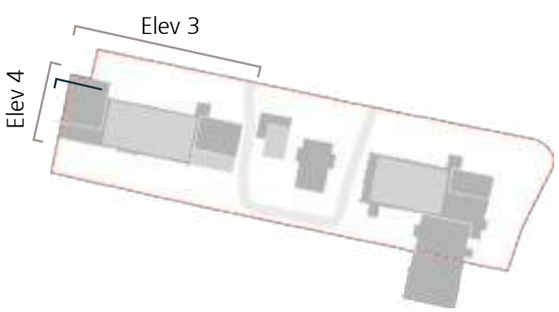
Secondary glazing inserted with high thermal performance. Dashed blue line denotes etched glazing up to eye level, coordinated with existing glazing transom

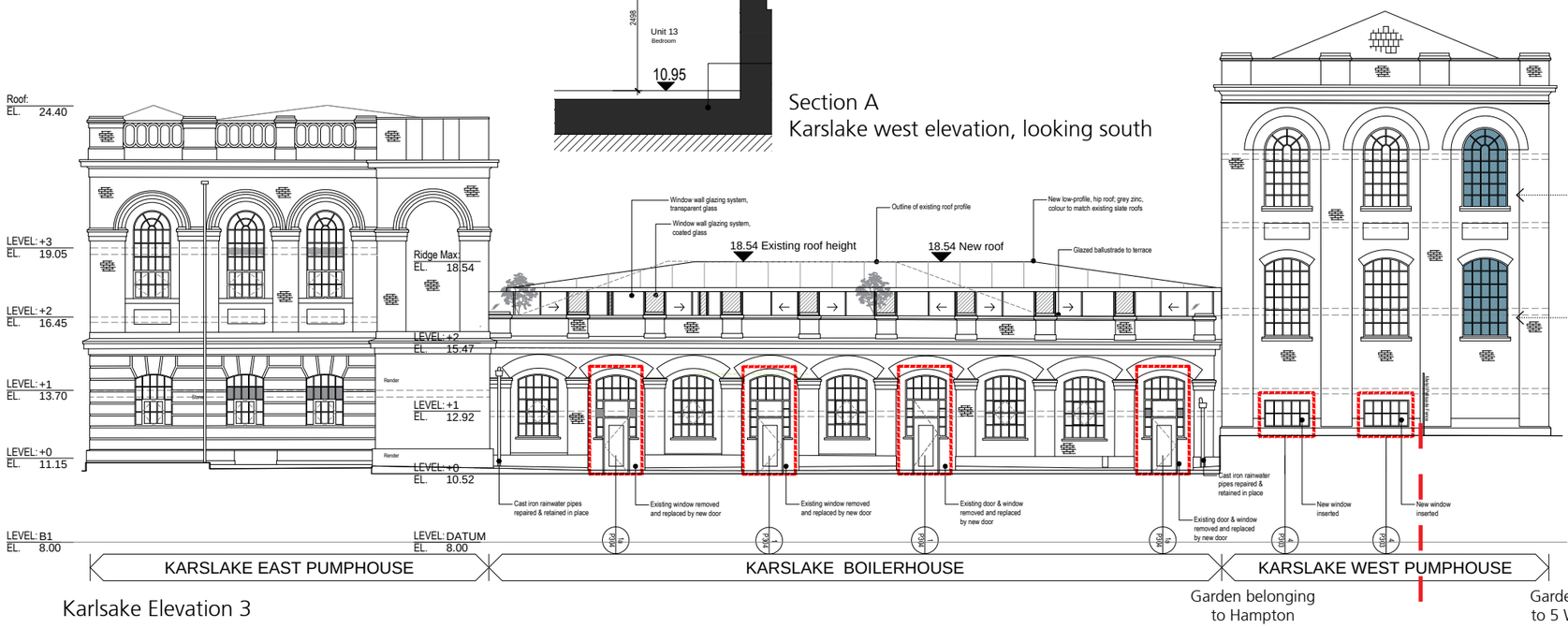
Section A
Karslake west elevation, looking south

Key
Areas of etched glass to secondary glazing to prevent overlooking



Karlsake Elevation 4





Karlsake Elevation 3

Garden belonging to Hampton Waterworks

Boundary Line

Garden belonging to 5 Water Works Cottages

06
Heritage interventions

Heritage changes - Victorian & contemporary

The contemporary interventions to the heritage fabric look to provide a contrast between the existing stone and brick of the historic facade and the modern palette of large glass panes, zinc roofing and cor-ten steel cladding.

Detail - Proposed elevation

Material palette

Existing materials

White window frames & mullions

Blue timber doors

Stone and Render

Gaunt Brick

Contemporary materials

Zinc roofing

Contemporary Glazing

Core-ten steel planters

Paving

Heritage changes **Roof extensions material exploration**

Material options for roof extensions

Minimal, light contemporary architecture will act as a foil to the intricate existing, heavy Victorian industrial architecture. Several material options and forms were explored in developing the roof extension design.

Due to the simplicity and deferential nature of Option 1 - continuous glazing panels & zinc roof - against the listed building, it was determined to be the preferred roof extension design which has been taken forward in this application.

Roof extension

Material option 1
Glazing panels & zinc roof

- The full glazing design is deferential to the listed building, contemporary yet keeping the heritage facade front and centre.
- Light weight, continuous glazed window wall system set back from existing stone heritage facade.
- Dark grey zinc roof, to match colour of existing roof, with deep overhang to protect from overheating.

Material option 2
Corten - to match side extensions

- Corten steel panels are used in the roof extensions as well as the side extensions - connecting the new elements together.
- Corten panels have a contemporary industrial aesthetic that works well in combination with heritage buildings.
- Although seen as a good option, it was determined that the strong contrast & heavy materiality was not in line with the minimal design approach.

Material option 3
Dark grey zinc with punched openings

- The dark grey zinc wraps over the roof and vertically down the roof extension facade.
- Creates a very strong contrast between the new roof extension and historic facade.
- Determined to be overbearing in contrast and not in keeping with design approach.

Heritage changes **Roof extension material exploration**

Options were developed in three dimensions to understand how the materials, forms, and panel rhythm would look in context.

1 - Zinc panels + glazing, follow heritage bay spacing

Alignment of panel widths to bay spacing in the heritage building is not visually apparent with roof extension set back from existing parapet.
The darker vertical panels create a heavy contrast which is not in keeping with the design aims of minimal visual impact to the heritage buildings.

2 - Corten panels + glazing, follow heritage bay spacing

The alignment of panel widths to the bay spacing in the heritage building below is visible when the new roof extension is pulled to meet the edge of the existing parapet.
But the proposed extension becomes dominant and overbearing.

Heritage changes **Roof extension options**

The perspective views illustrate that, due to the setback of the roof extension from the existing parapet, any connection in alignment with the heritage bay rhythm is visually lost. The treatment of the glazing panels as all equal widths is most in keeping with the design approach of minimal visual impact with a clean and simple glazed line touching lightly above the heavy stone façade.

3 Glazing panels, all equal width

The options to vertically align the roof extension panels with the existing facade, the setback from the parapet means that this connection is not visible in context.
Therefore the uniform panel widths across the roof extension is most in line with a simple, minimal visual impact.

4 Glazing panels, follow heritage bay spacing

Alignment of panel widths to bay spacing in the heritage building is not visually apparent with roof extension set back from existing parapet. The result is this option looks less orderly and elegant than that of A4 with all panels of equal width.

* The darker panels are opaque glass to cover the internal perpendicular dividing walls behind. Creating a subtle difference in the glazing tones of the roof extension.

Heritage changes **Rear extension material exploration**

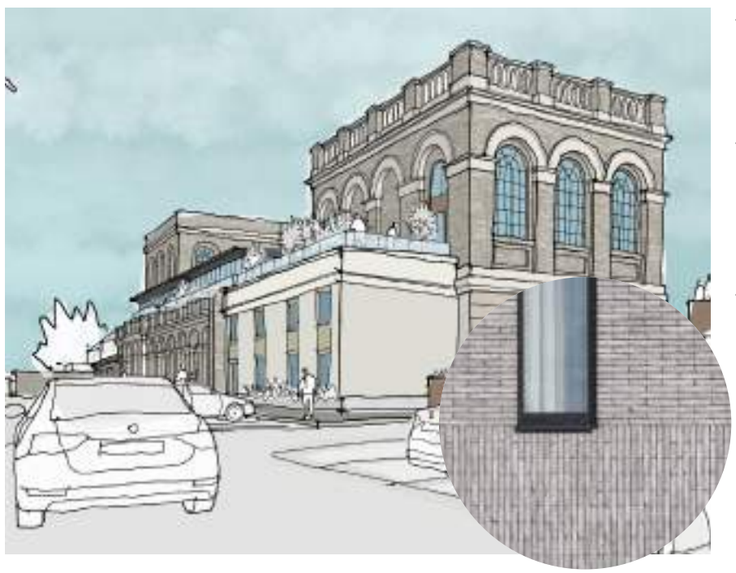
Numerous options were assessed as part of the design process

Side extension

Material option 1
Corten steel panels

- Corten steel panel cladding system wraps the two visible sides of the new side extension, running the panel system vertically and maintaining horizontal lines through from the existing building.
- Corten steel is a contemporary industrial material which attractively complements brick heritage buildings.
- The corten material is utilised throughout the site in railings, new door panels, and the bin storage.

Material option 2
Brick



- Contemporary, light coloured engineering brick is utilised.
- Matches closely in colour and material type with the existing facade.
- Determined to be too similar in tone and materiality to the heritage facade

Material option 3
Dark zinc

- Dark grey zinc cladding with vertical lines. Material and colour matches that of the roof on the roof extensions.
- Deemed to be too stark of a contrast with the existing heritage light coloured stone and brick facade.

Heritage changes **Roofs**

Most roofs across the site are to be structurally retained, thermally upgraded and reroofed to match existing. New roof extensions are proposed for the central single storey blocks only, as that location allows for the greatest addition of floor area to the development, thus creating a viable development.

Retain & re-roof existing Engine house roofs

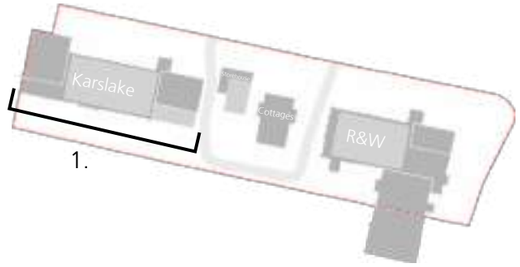
New roof extension over single-story blocks

New-build extension

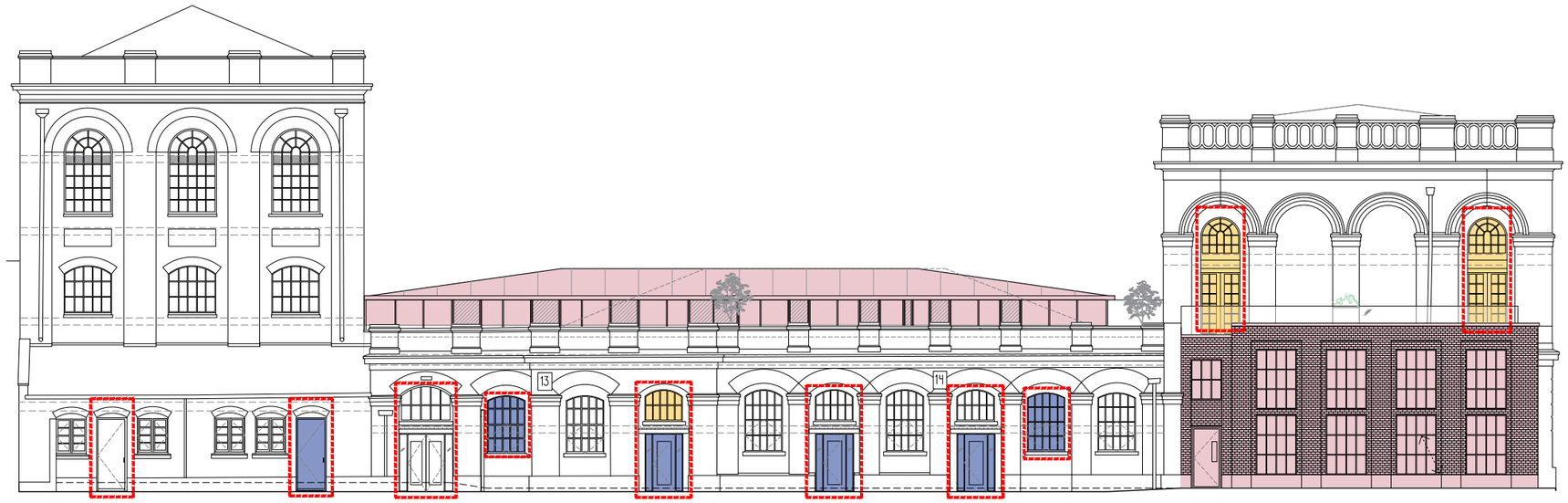
Karslake

Proposed changes

- New opening
- Change existing opening
- New extension (under development)

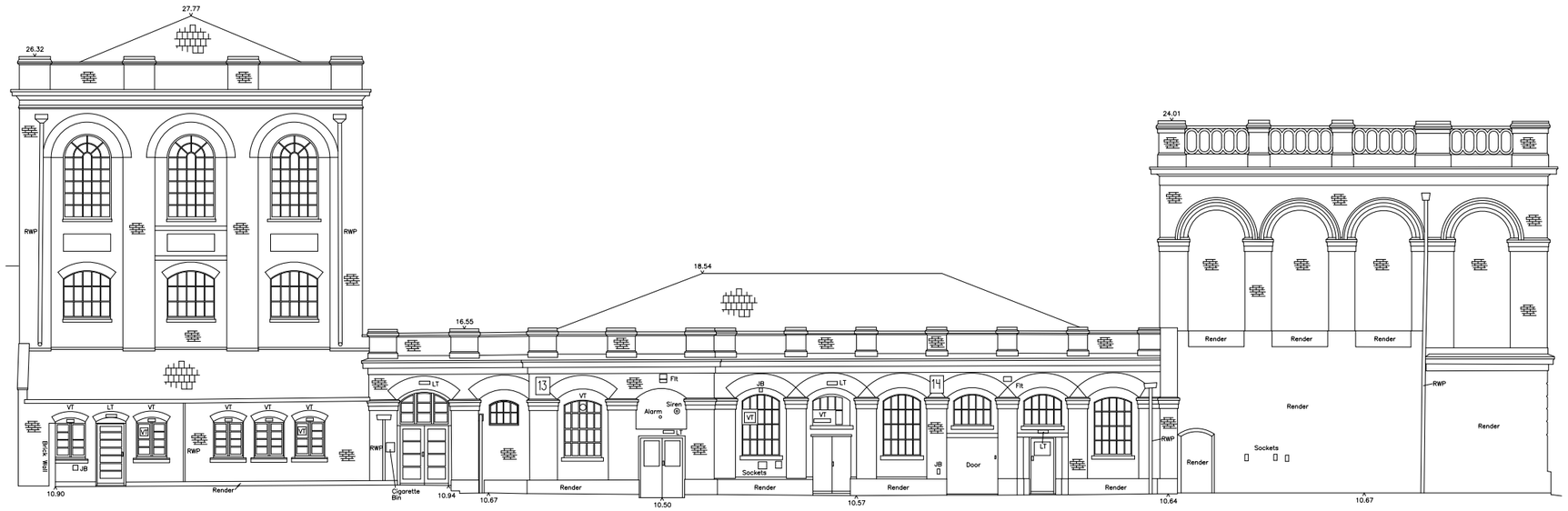


Proposed



Proposed
Karslake Elevation 1

Existing

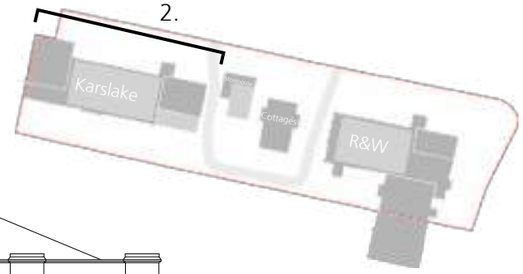


Existing
Karslake Elevation 1

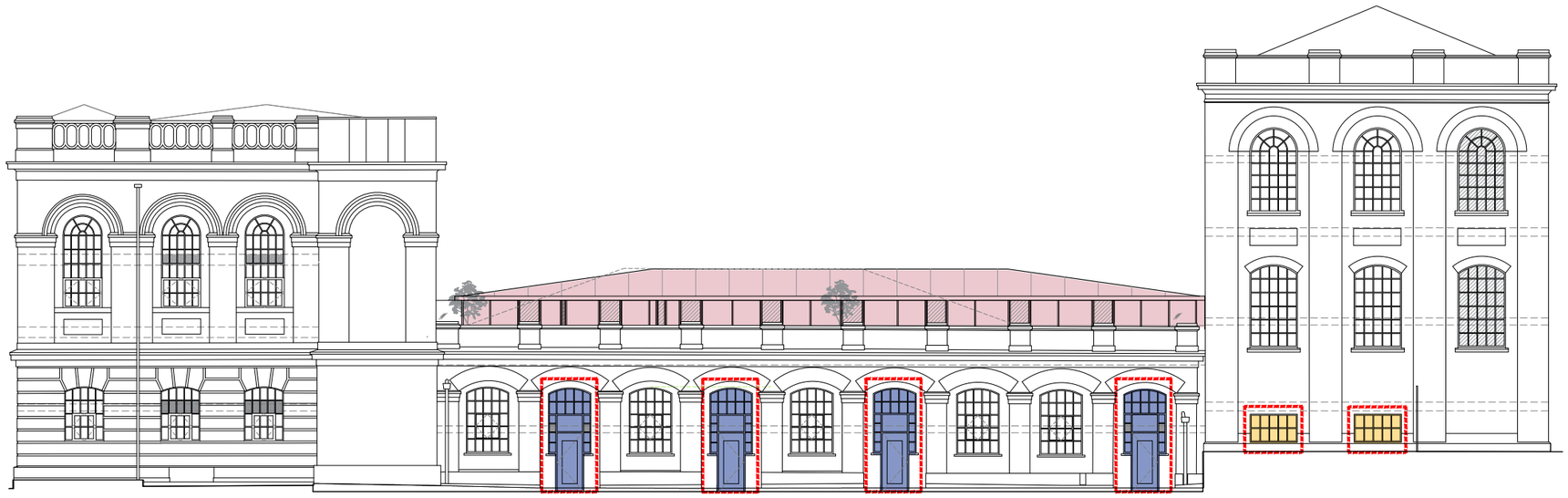
Karslake

Proposed changes

- New opening
- Change existing opening
- New extension (under development)

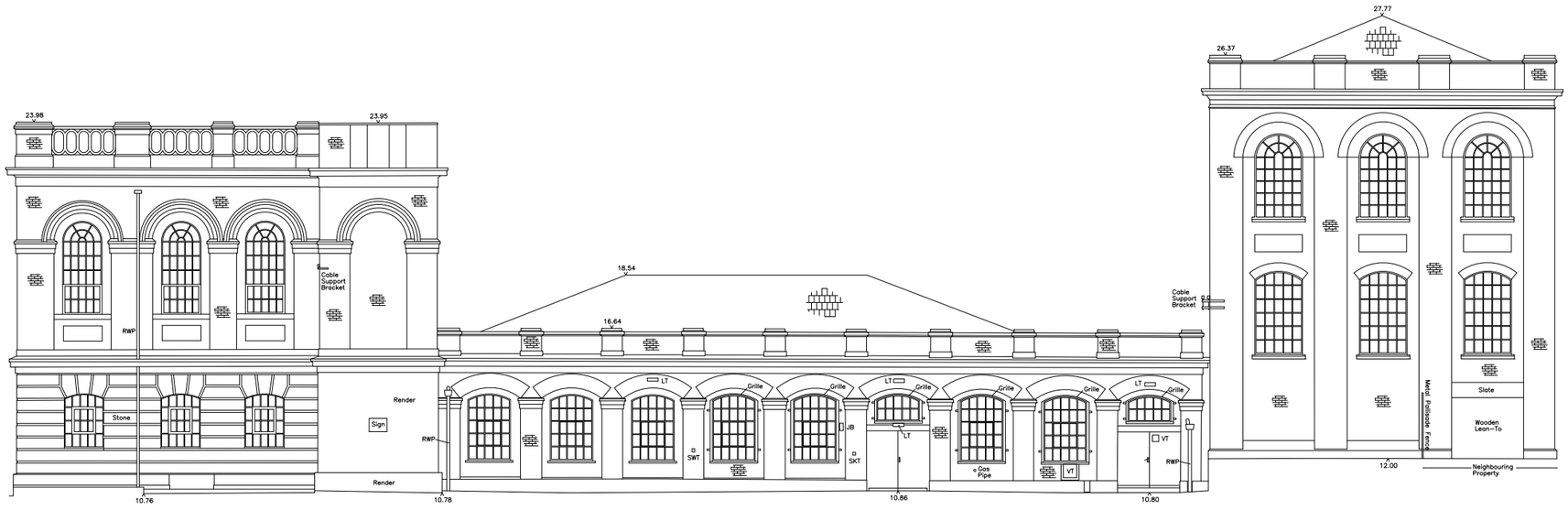


Proposed



Proposed
Karslake Elevation 2

Existing



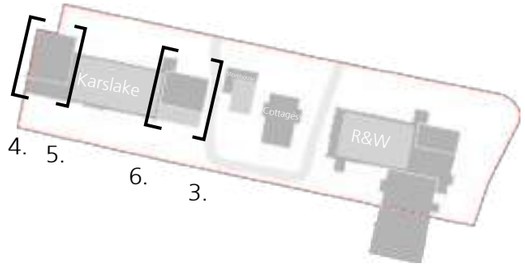
Existing
Karslake Elevation 2

Heritage changes **Proposed / Existing**

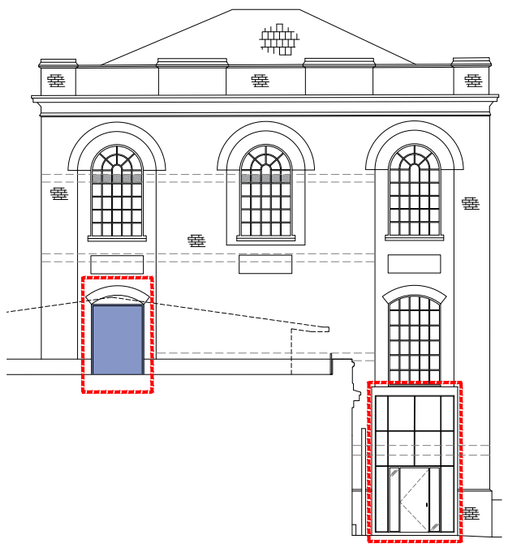
Karslake

Proposed changes

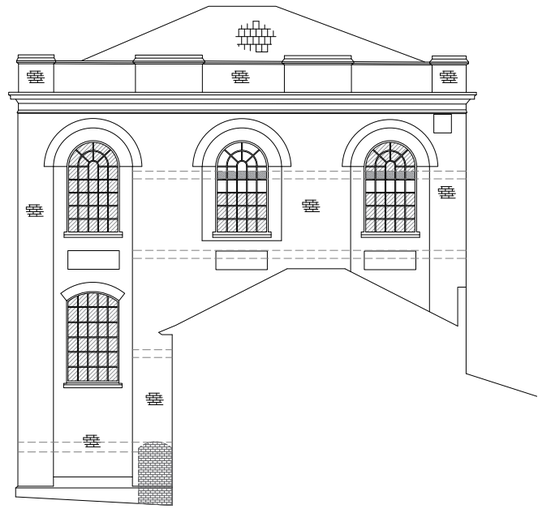
- New opening
- Change existing opening
- New extension (under development)



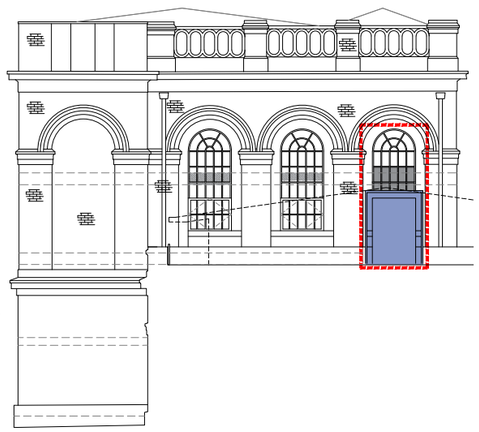
Proposed



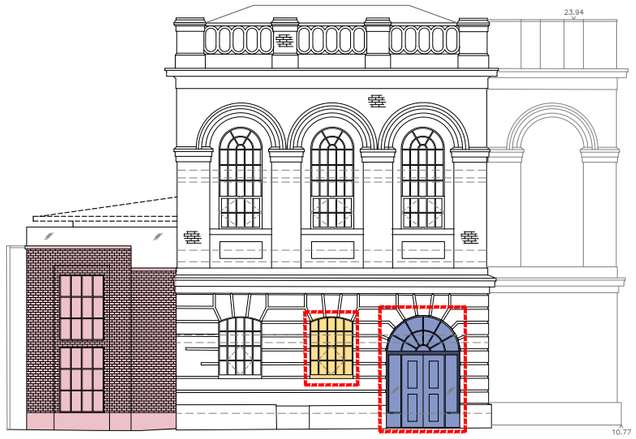
Proposed
Karslake Elevation 5



Proposed
Karslake Elevation 4

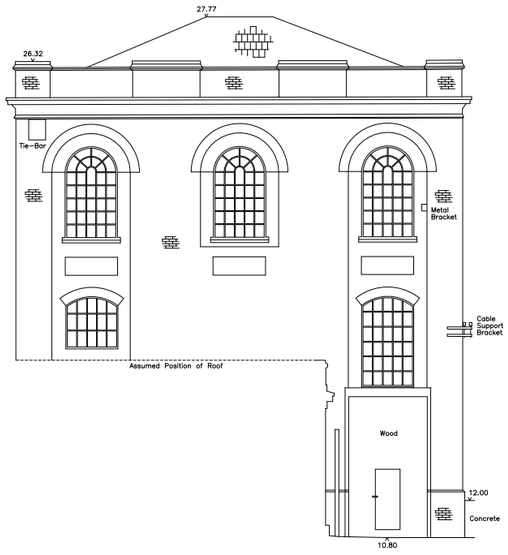


Proposed
Karslake Elevation 6

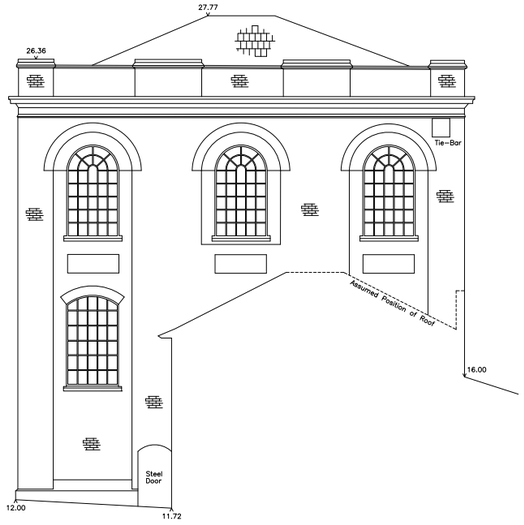


Proposed
Karslake Elevation 3

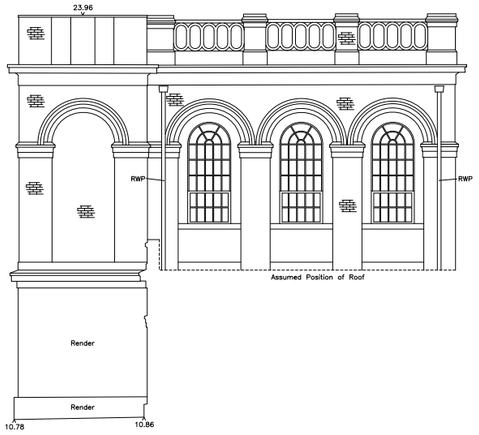
Existing



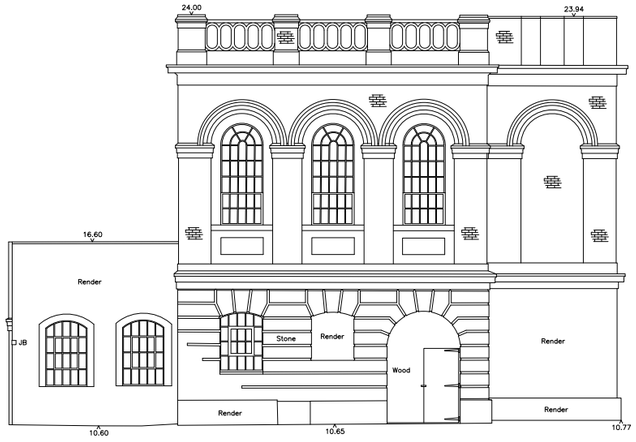
Existing
Karslake Elevation 5



Existing
Karslake Elevation 4



Existing
Karslake Elevation 6

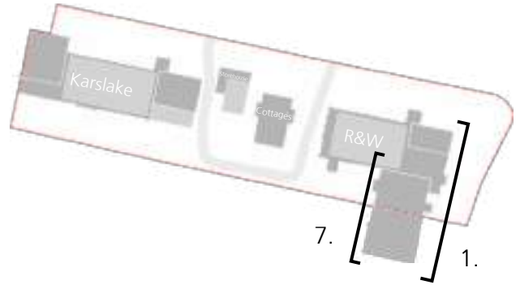


Existing
Karslake Elevation 3

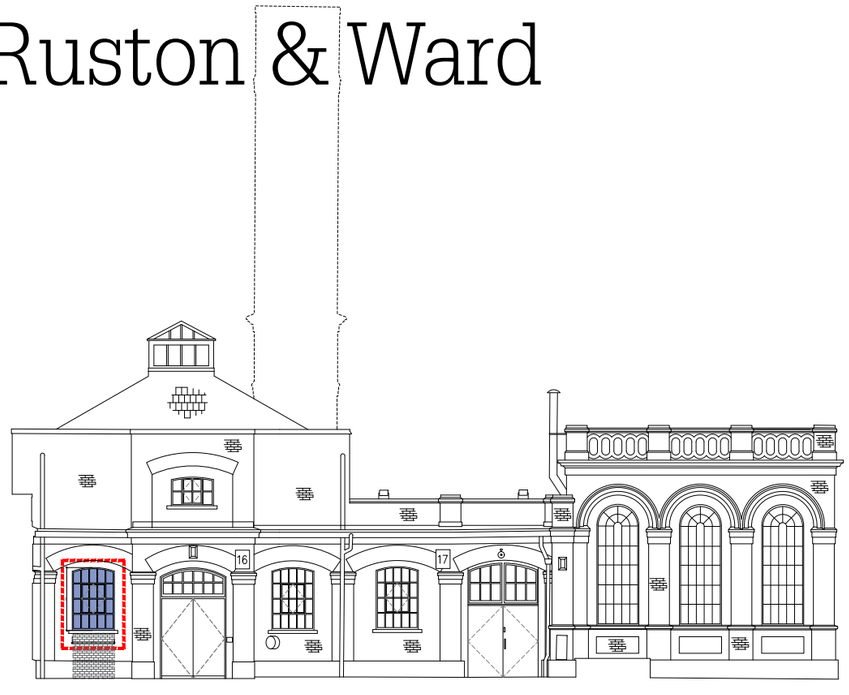
Ruston & Ward

Proposed changes

- New opening
- Change existing opening
- New extension (under development)



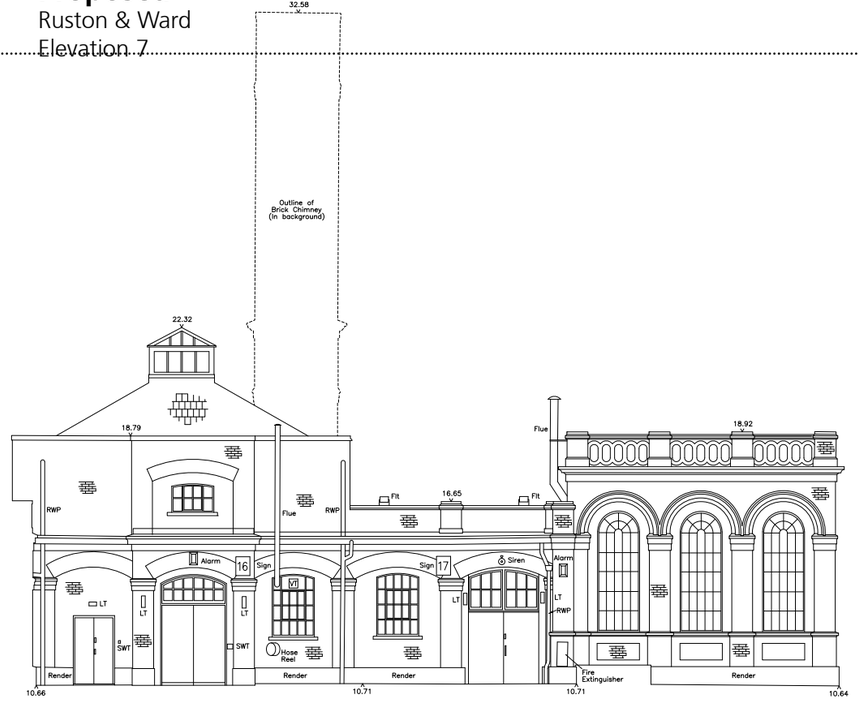
Proposed



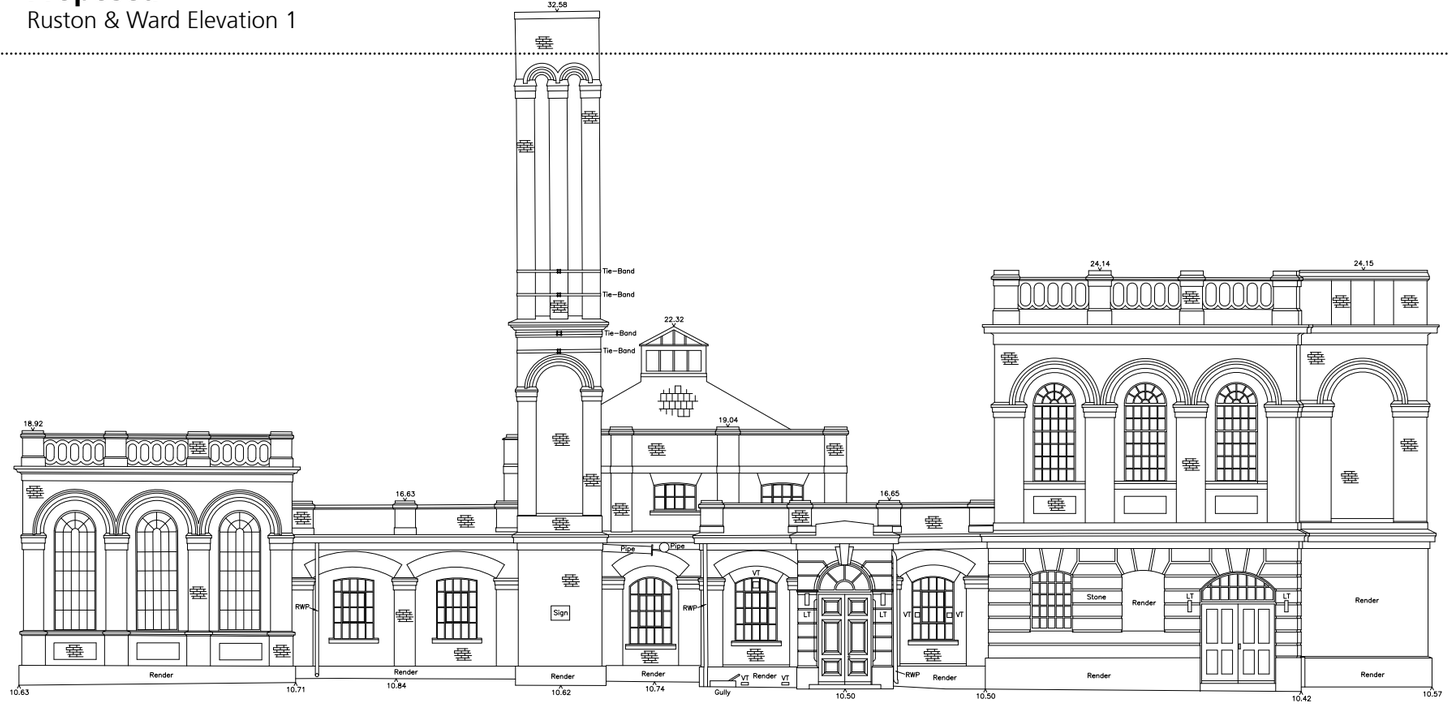
Proposed
Ruston & Ward
Elevation 7

Proposed
Ruston & Ward Elevation 1

Existing



Existing
Ruston & Ward Elevation 7

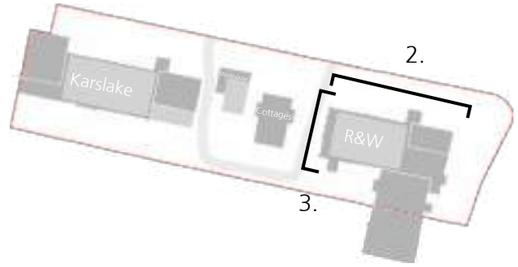


Existing
Ruston & Ward Elevation 1

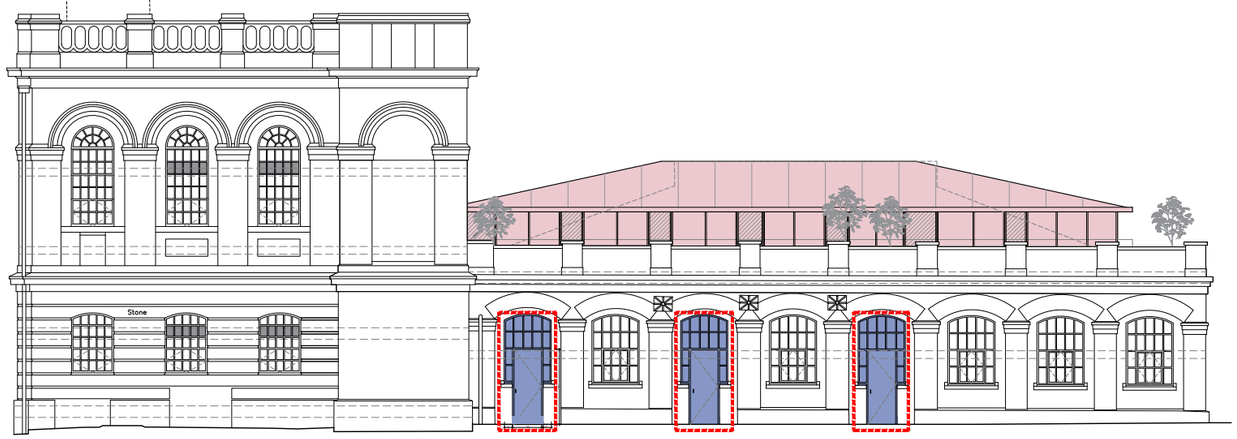
Ruston & Ward

Proposed changes

- New opening
- Change existing opening
- New extension (under development)



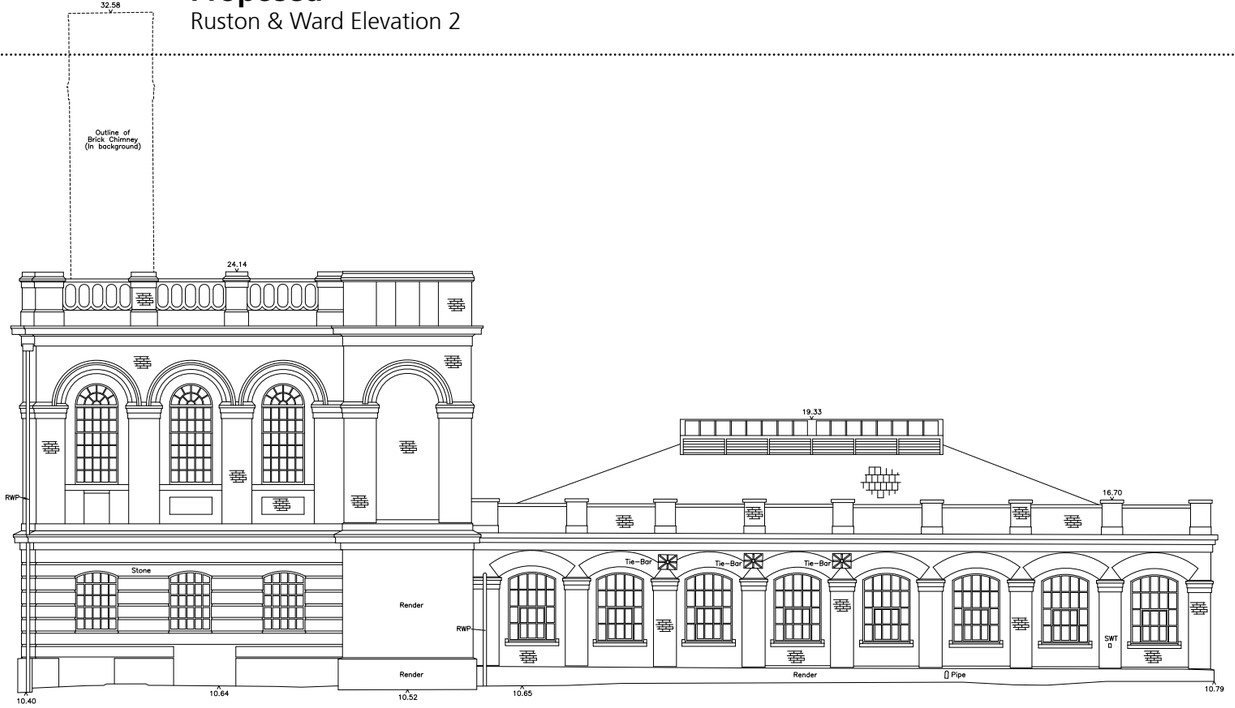
Proposed



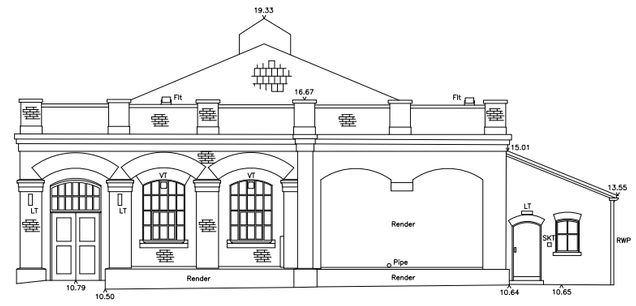
Proposed
Ruston & Ward Elevation 2

Proposed
Ruston & Ward Elevation 3

Existing



Existing
Ruston & Ward Elevation 2

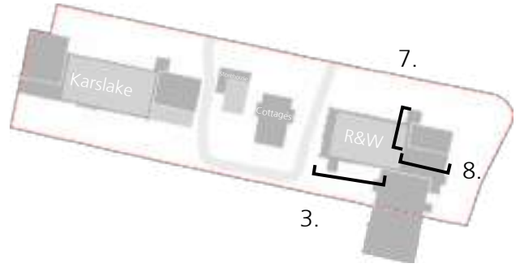


Existing
Ruston & Ward Elevation 3

Ruston & Ward

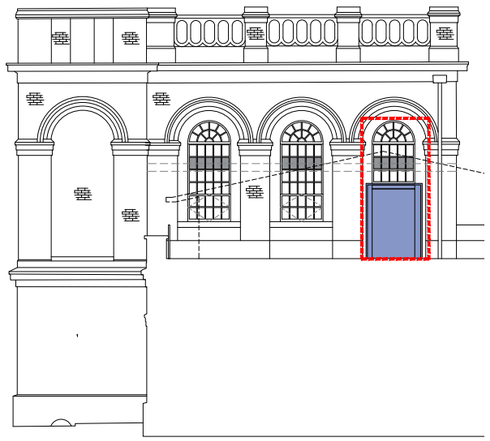
Proposed changes

- New opening
- Change existing opening
- New extension (under development)

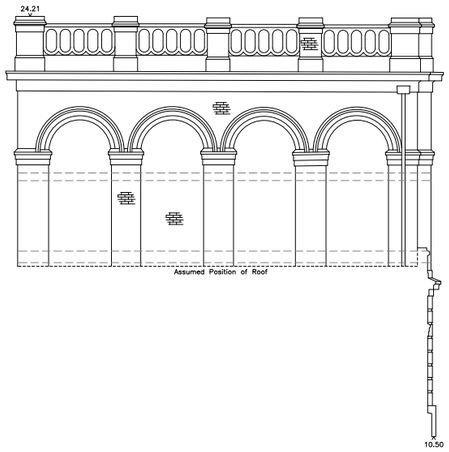


Proposed

Proposed
Ruston & Ward Elevation 3

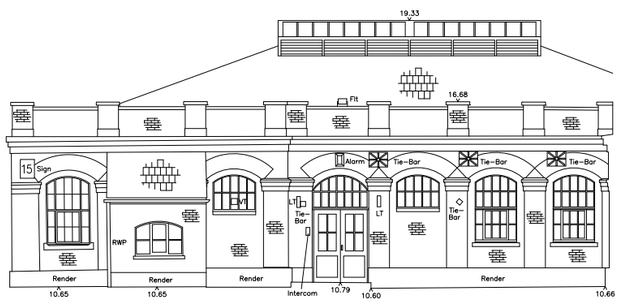


Proposed
Ruston & Ward Elevation 7

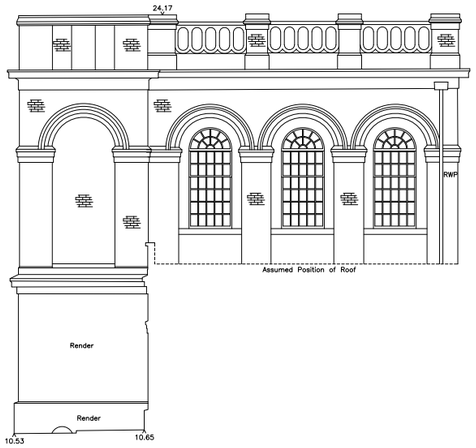


Proposed
Ruston & Ward Elevation 8

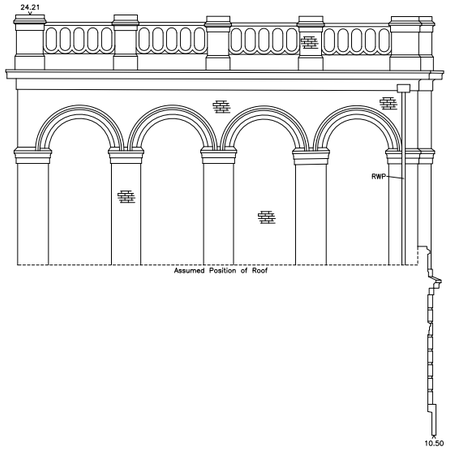
Existing



Existing
Ruston & Ward Elevation 3



Existing
Ruston & Ward Elevation 7



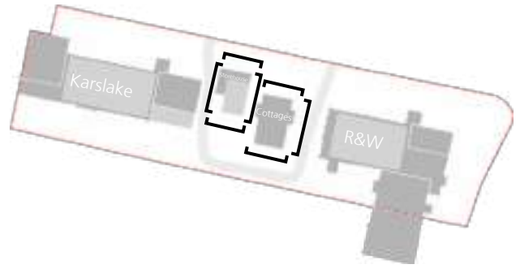
Existing
Ruston & Ward Elevation 8

Heritage changes **Proposed / Existing**

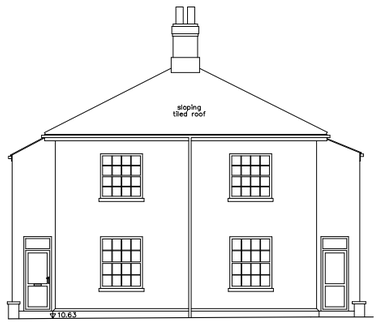
Cottages & Storehouse

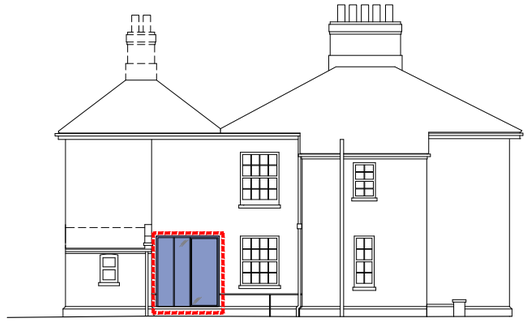
Proposed changes

- New opening
- Change existing opening
- New extension

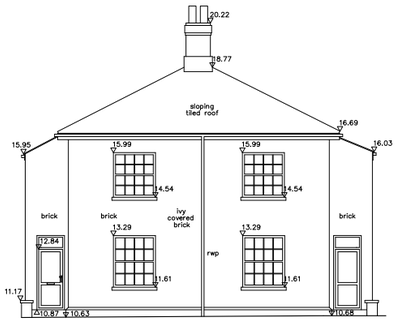


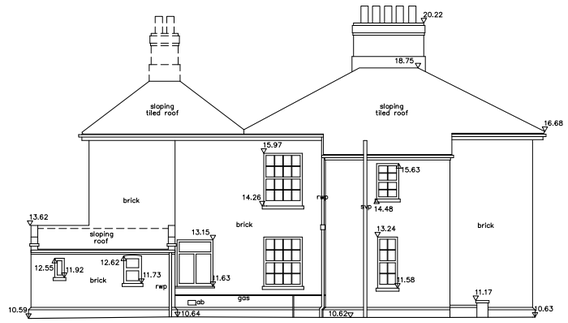
Proposed

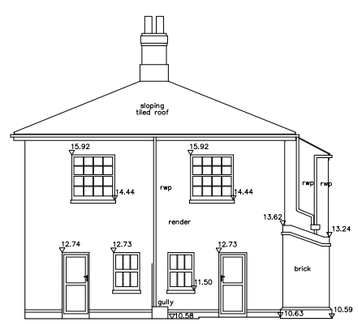




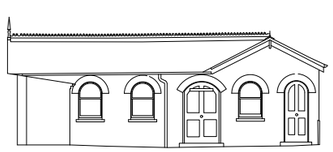
Existing

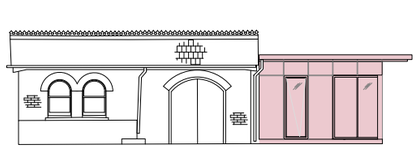


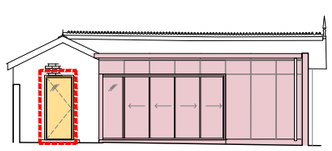


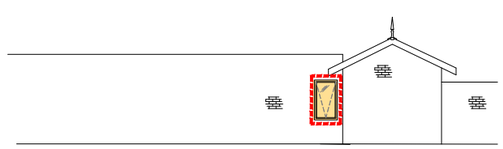


Proposed

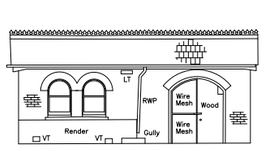


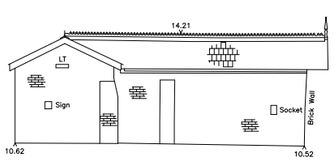


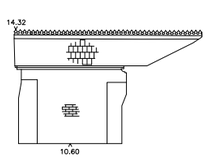




Existing

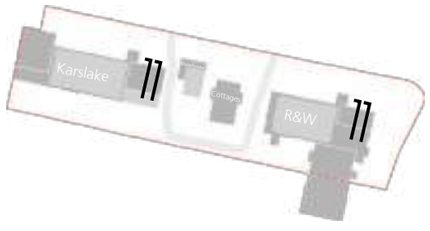


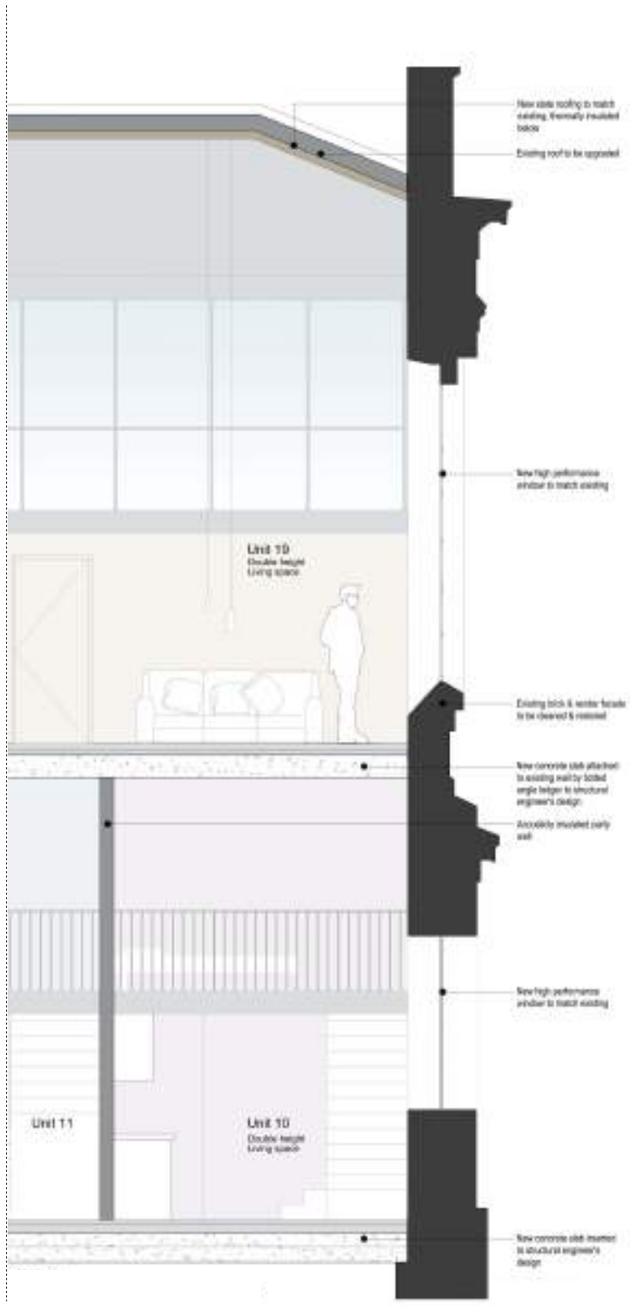




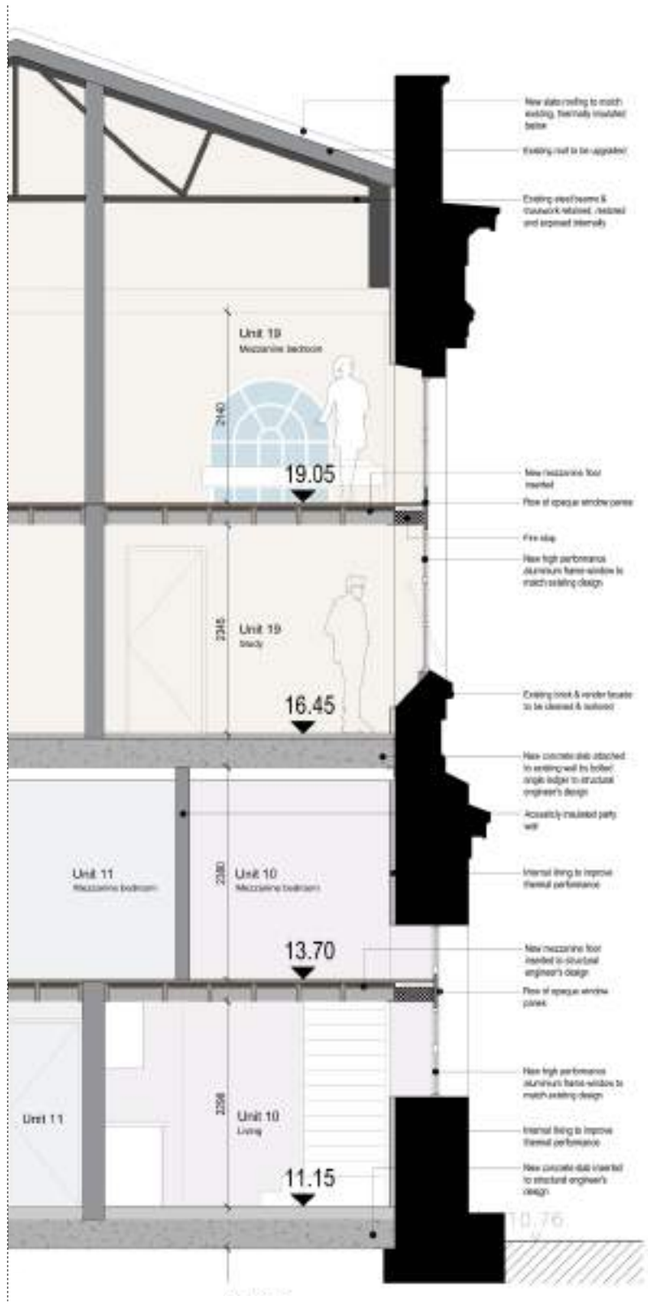
Heritage changes **Enlarged elevation/sect**

Enlarged section and elevation of the typical eastern engine house on both Karslake and Ruston & Ward buildings, illustrating the insertion of new floors within the existing large single volume.

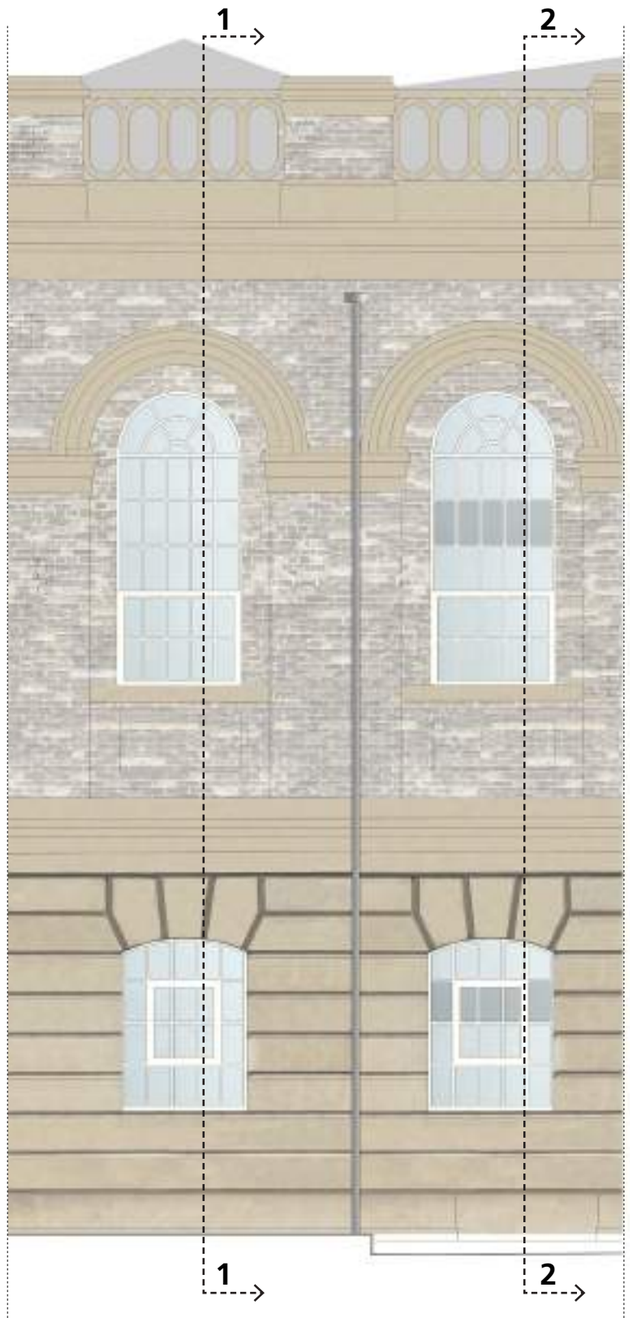




Enlarged section 1
Cut through double height living space



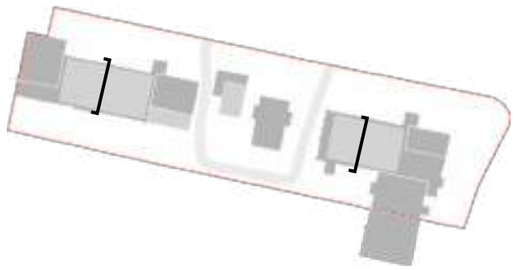
Enlarged section 2
Cut through mezzanine floors

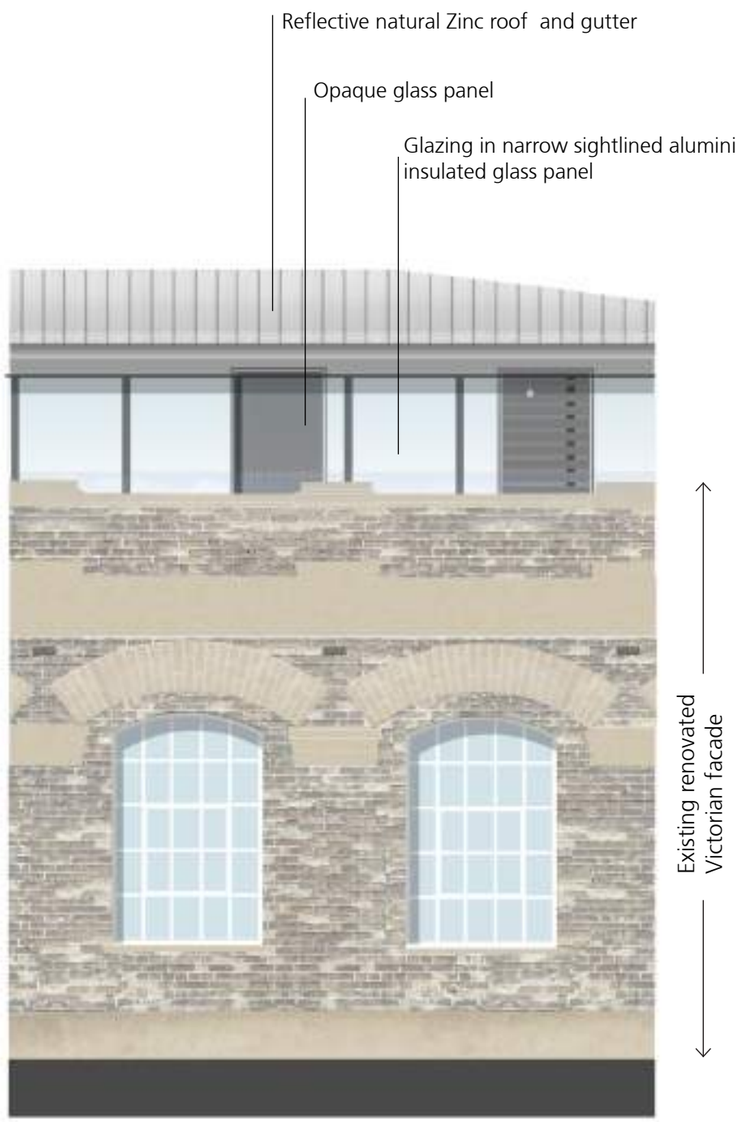


Enlarged elevation
Engine house with mezzanines

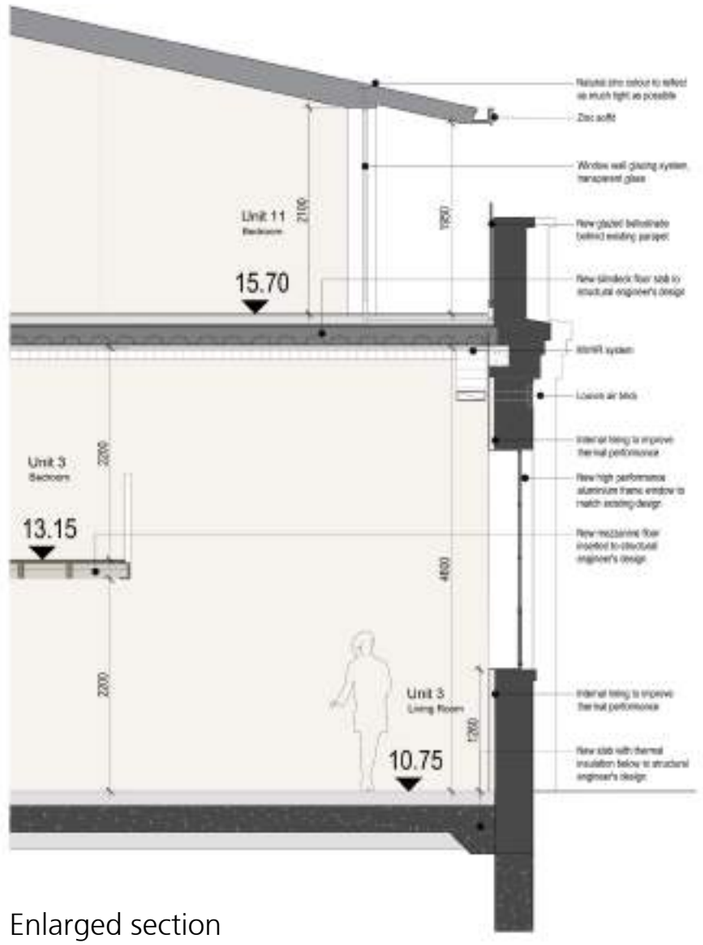
Heritage changes **Enlarged elevation/section**

Enlarged section and elevation of the typical single story block with roof extension illustrating the insertion of new roof extension over the existing volume.





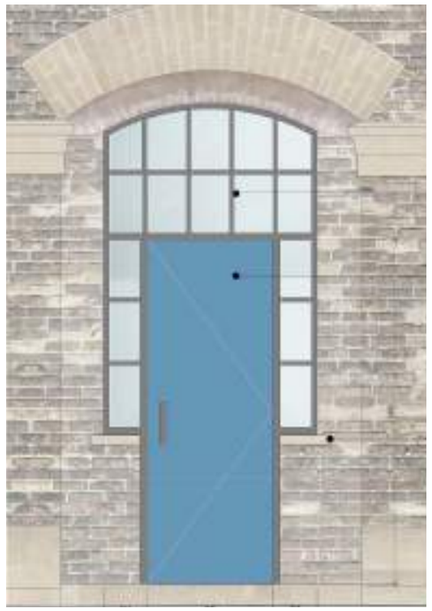
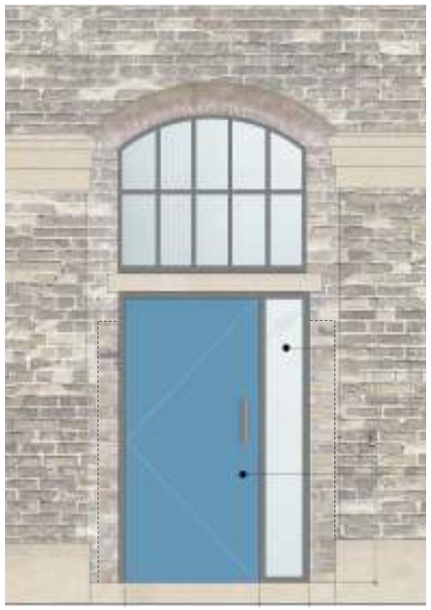
Enlarged elevation
Single story block with roof extension



Enlarged section
Single story block with roof extension

Heritage changes **Doors & window alterations**

Previous refused proposals

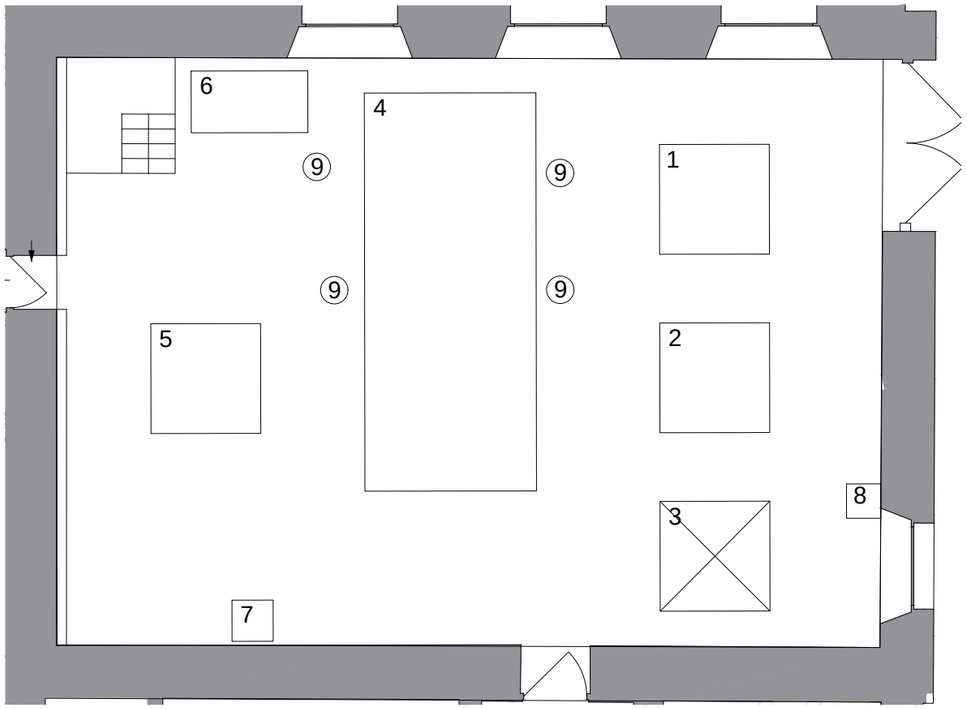

Traditional fenestration patterns have been adopted and proportion, materials and colour are aligned with the existing doors and windows



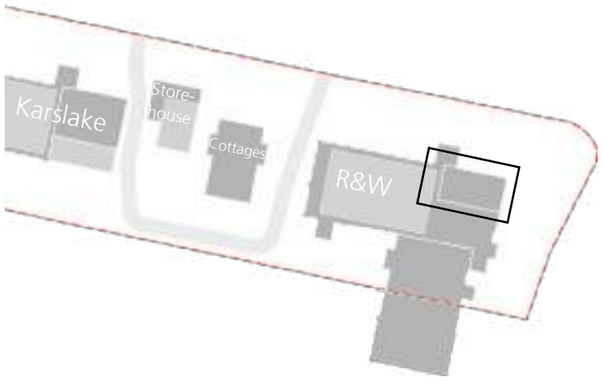


Updated design

Heritage changes **Existing pumphouse machinery**



Ruston & Ward Pumphouse existing electrical pumping equipment. Approximate locations shown.



Item 1

Replacment W H Allen DC motor
Date: Undated
Size: 1.6m x 1.6m
Report comment: Low to medium significance

Item 2

Harland DC motor
Date: 1932
Size: 1.6m x 1.6m
Report comment: Low to medium significance

Item 3

Harland DC Motor
Date: 1932
Size: 1.6m x 1.6m x 3 (Recessed)
Report comment: Low to medium significance

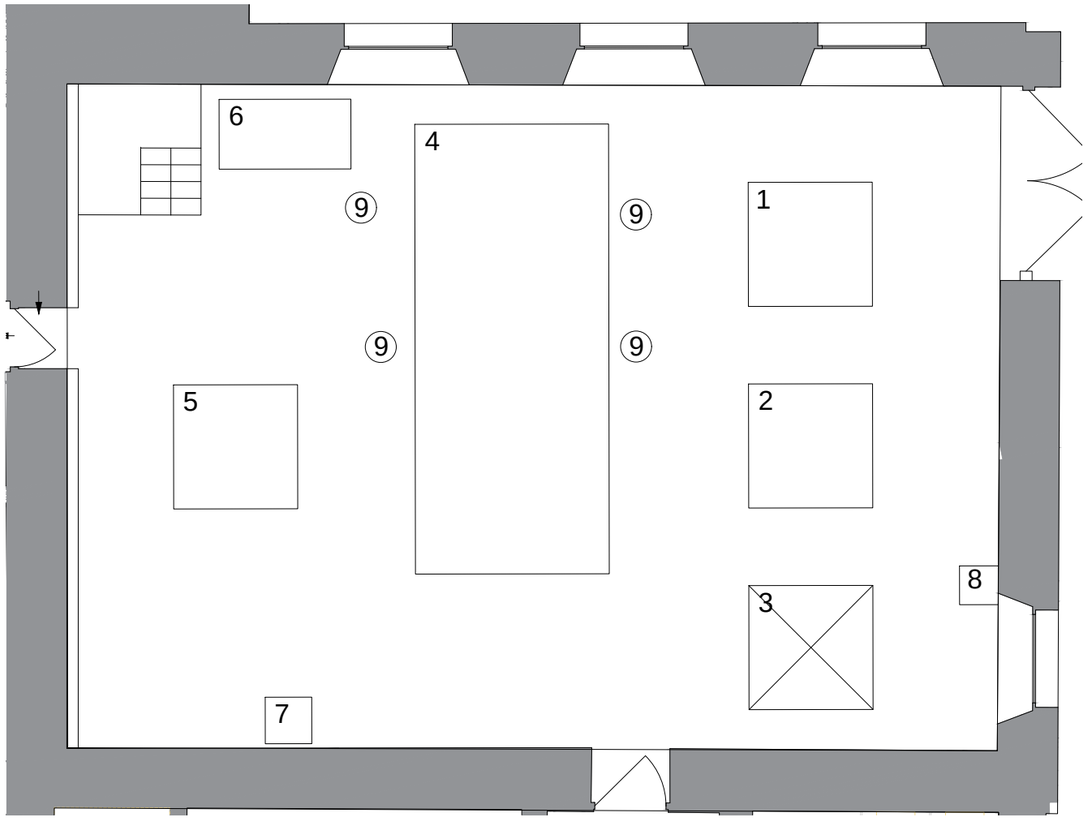
Item 4

Harland twin impellar electric centifugal pump set
Date: 1932
Size: 5.8m x 2.5m
Report comment: Low to medium significance

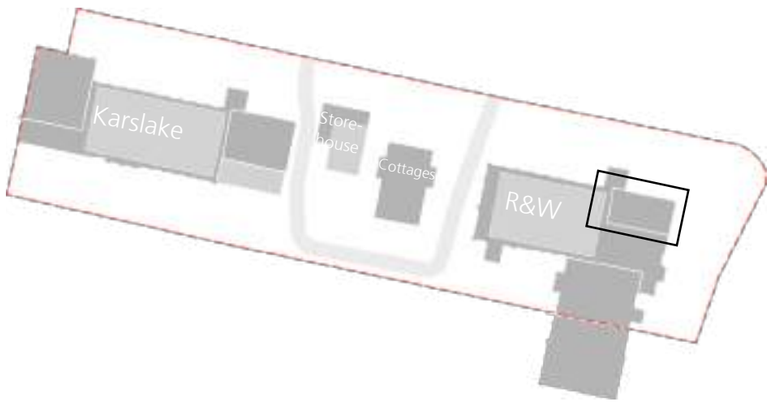
Item 5

Harland DC Motor
Date: 1932
Size: 1.6m x 1.6m
Report comment: Low to medium significance

Heritage changes **Existing pumphouse machinery**



Ruston & Ward Level 0 Pumphouse existing electrical pumping equipment. Approximate locations shown.



Item 6

Harland control cabinet for electric centrifugal pump
Date: 1932
Size: 0.9m x 1.7m Doubel leaf.
Report comment: Low to medium significance

Item 7

Harland control cabinet for electric centrifugal pump
Date: 1932
Size: 0.6m x 0.6m Single Leaf
Report comment: Low to medium significance

Item 8

Harland control cabinet for electric centrifugal pump
Date: 1932
Size: 0.5m x 0.5m Single Leaf
Report comment: Low to medium significance

Item 9

Valve Control standard for centrifugal pump
Date: 1932
Size: 0.4 d
Report comment: Low to medium significance