

8.0 Existing Buildings

8.1 Listed Building Workhouse

The listed building is situated on the South-west side of the site and comprises a mixture of single storey and duplex flats arranged over Ground – Level 04. The building will be served by a single escape stair that extends down to the basement. The topmost occupied floor is approximately 14m above the lowest adjacent ground level.

8.1.1 Means of Escape

Evacuation strategy

Flats within the Listed Building will adopt ‘stay put’ strategy. In the event of a fire in a flat, only the occupants within the flat of fire origin will be alerted and evacuated initially. All other occupants would remain in place, unless the fire and rescue service deems it necessary to escalate the evacuation, at which point the fire and rescue service would operate the evacuation alert system.

This is supported by the provision of fire resisting compartment walls and floors.

Interaction with other buildings on the site

The Listed Building will not be evacuated during a fire in the New Building, North House, South-House or anywhere in the basement.

Escape routes

All flats within the Listed Building are served by a single escape stair, discharging directly to the outside on ground floor.

Travel distances

The travel distance from each flat entrance door to the door into the smoke vented stair lobby shall be limited to no more than 7.5m.

8.1.2 Flat Layouts

Flats with protected entrance halls

The majority of the flats within the Listed Building will be single storey flats with protected entrance halls. In these flats the travel distance within the protected entrance hall will be limited to a maximum of 9m in accordance with BS 9991.

8.1.3 Smoke Venting

The stair’s lobby will be vented by a 1.5m² AOV on each floor conforming to BS EN 12101-2: 2017. This has been incorporated into the new glazing next to the new lift.

Replacement air will be provided by a 1m² AOV conforming to BS EN 12101-2, located at the window on the top storey of the stair. This has been approved with the previous 2019 application, see drawing below showing approved North Elevation.

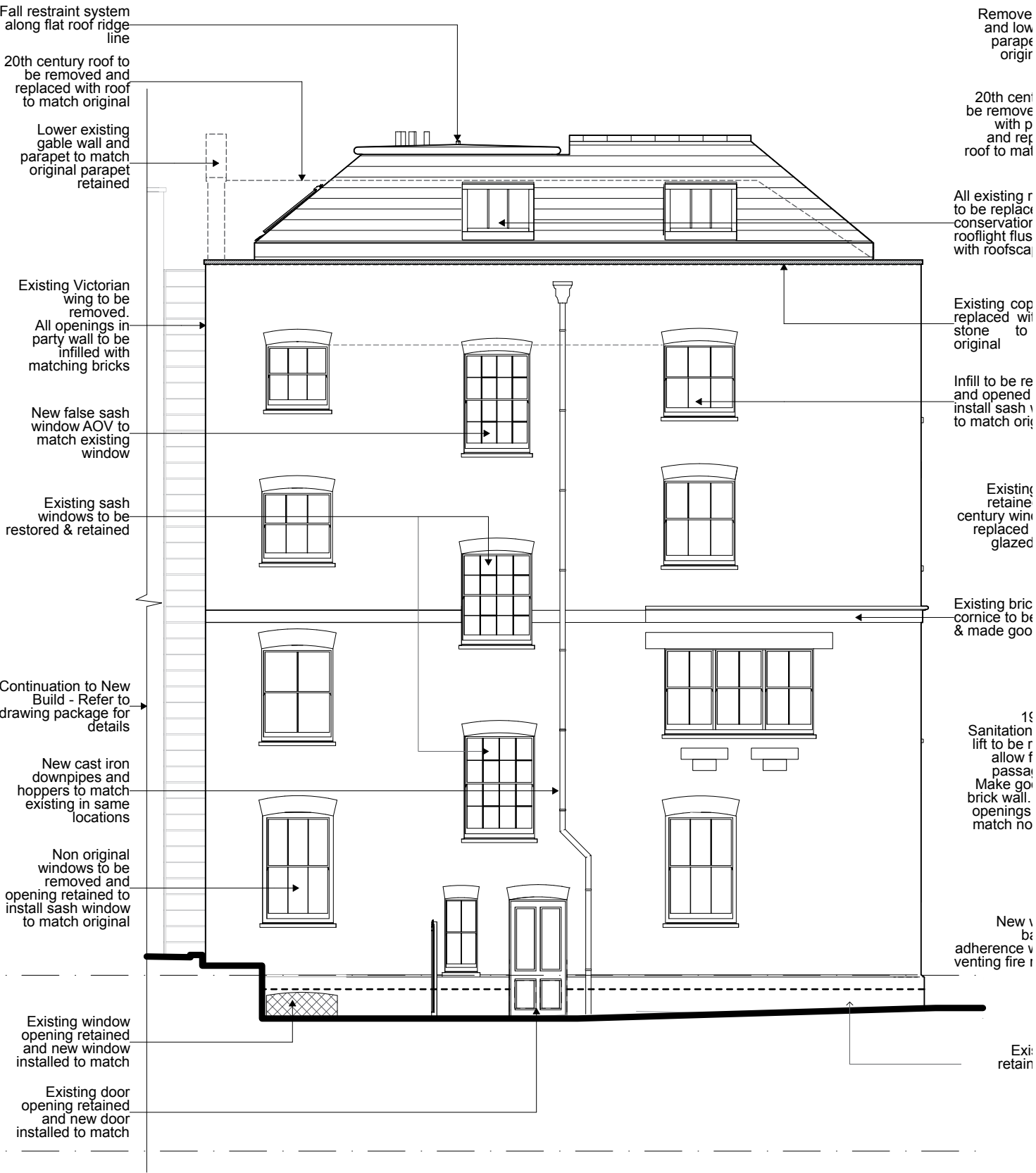
Workhouse AOV – North Facade 2nd Floor Staircase Window

The design team has looked at several design options for the Workhouse Automatic Opening Vent solution to provide life-saving fire escape from the workhouse. These are as follows:

Option 1 - Sash Window with Actuator

Retain the existing sash window and make good. Incorporate an actuator within the window frame to provide an AOV releasing the window when triggered with the fire alarm.

Elizabeth Martin Camden Conservation Officer attended a site visit in early 2019 and confirmed the sash windows to the staircase can be replaced like for like. Retaining or replacing the sash window, no AOV exists that conforms and meet the BS standards EN12101-2. This option was not developed any further.



E-LB-03

1:100

Approved 2019 Workhouse North elevation

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Option 2 – Mock Sash Window with Actuator

The scheme was revised for the 2019 S73 application and incorporated a dummy sash window with an actuator. This has been approved.

The objective was to create an AOV window, which would appear like a sash window from the outside matching the 2 lower staircase sash windows, when the fire alarm sounded the top panel sash would lower and allow the smoke to ventilate and extract smoke from the staircase.

During the detailed design process and discussing with the window manufacturer, the manufacturer confirmed to the design team that they could not obtain an actuator that met the requirements nor complied with the BS standards EN12101-2 for life safety standards for fire escape.

They also confirmed that no product currently exists on the market to meet this fire requirements. Previously in the past, Building Control had allowed normal ventilation activator to be used on Listed Buildings to meet the AOV requirements. Unfortunately, post Grenfell, Building Control, Fire Consultants will not allow this method of smoke ventilation, and secondly manufacturers cannot provide warranties/test certificates for insurance companies to insure the building.

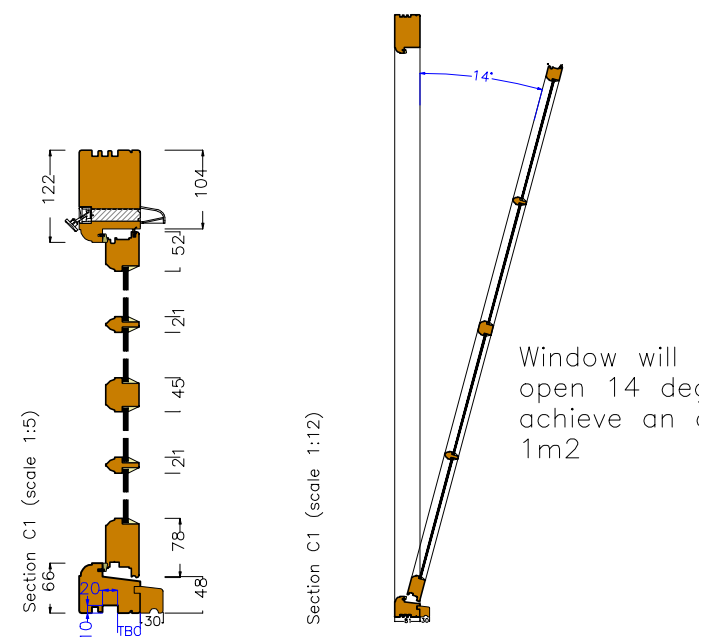
This option was not developed any further.

Option 3 – Mock Sash Window with Magnet Lock Actuator

The design team developed a further option with the window manufacturer. This was to provide a window that looked like a sash window externally, but was a casement window, hung from the bottom.

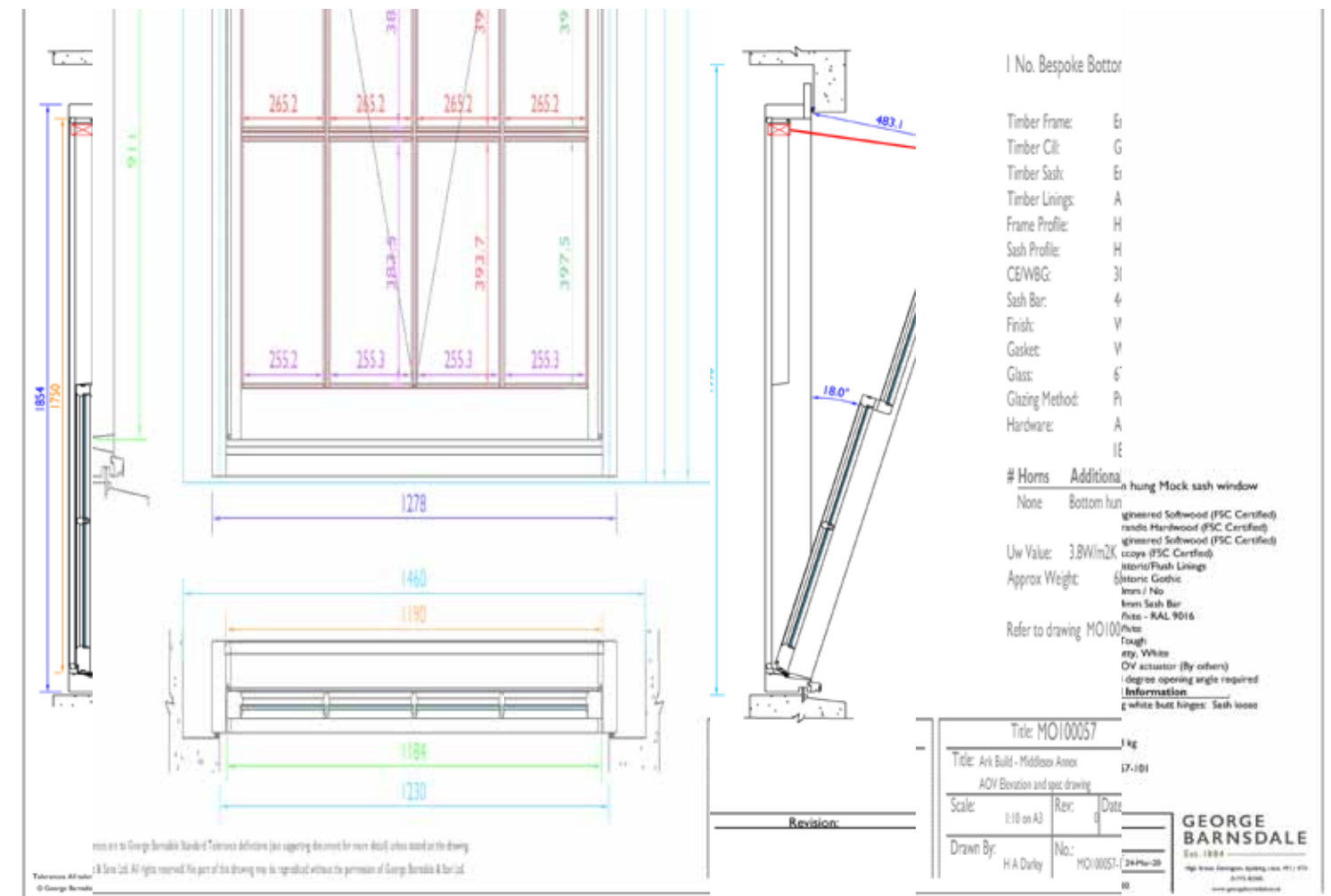
This would not open normally for natural ventilation; therefore the appearance from the outside would appear like a sash window.

Once the fire alarm was triggered, the magnets holding the window at the top would release, tilting the window forward on a chain at an angle of 14 degrees to provide the correct square metres of smoke ventilation.



The drawing above by the manufacturer was rejected, due to the fact it looked like a casement window and did not resemble the sash windows below. Subsequently, we asked the manufacturer to provide a window that was truly a dummy sash window, except the window opened like a bottom hung basement window. This would then provide adequate smoke ventilation.

A new design was developed that met the visual requirements for the listed building.



We agreed with the manufacturer that this was a bespoke solution and asked for the manufacturer to provide the necessary certificates that this would meet BS standards EN12101-2. The manufacturer then informed the design team that due to the bespoke nature of the window, the actuator, that this approach had not been tested together and would not meet the fire requirements.

We have looked into fire testing and been advised that we would have to undertake a bespoke fire test and to allow for a budget of £30,000 - £50,000 to undertake the fire, maintenance testing etc. Secondly, if we could afford to undertake the testing, the manufacturer and tester have confirmed that after 3 - 6 months of testing they cannot guarantee this setup approach will pass.

After discussing with the manufacturer, asking them to undertake the test as they would benefit in possible future sales for similar properties, they declined and were not willing to commit to the resources.

We have exhausted all approaches to obtain an AOV that looks like a sash window. Secondly, no actuator exists on the market that fully complies with BS standards EN12101-2 for fire & life Safety protection. We cannot specify and ask the contractor to install equipment that does not meet these criteria. Likewise Building Control and our Fire Engineer will not approve the building is safe from fire and is fire & smoke compliant.

This means the building is technically not insurable and more importantly the future purchaser of the residential property cannot obtain mortgages for the apartments, thus making the entire scheme unviable.

The only approach we have left is to install a fully compliant AOV that complies with all relevant fire/smoke & life safety standards with the correct test certificate and documentation.

The above option was not developed any further.

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Option 4 – AOV Glazed Louvre Window

The drawing opposite BPD-LDW-WH-ZZ-DR-A-253012 AOV WINDOW DETAIL.

This shows a glass louvered AOV SHEVTEC system that is fully compliant and meets the requirements for EN12101-2.

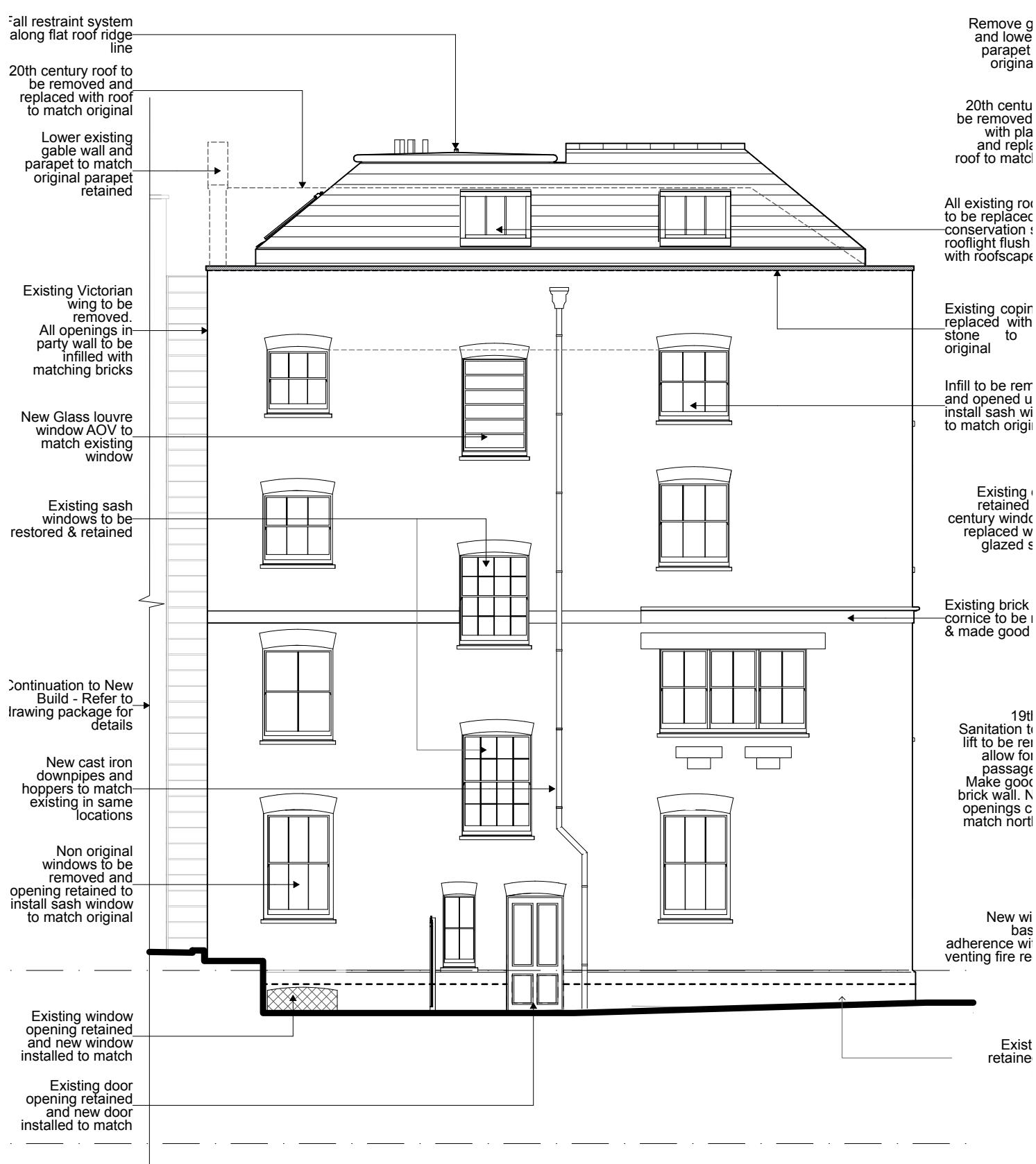
<https://www.secontrols.com/en-gb/products/louvres/shevtec-glazed-louvre-aov/>

A revised elevation called E_LB_03-04 Listed Building Proposed Elevation 03 & 04 Rev G has been submitted showing the alternative proposal using a glass louvered window. This shows the full North elevation.

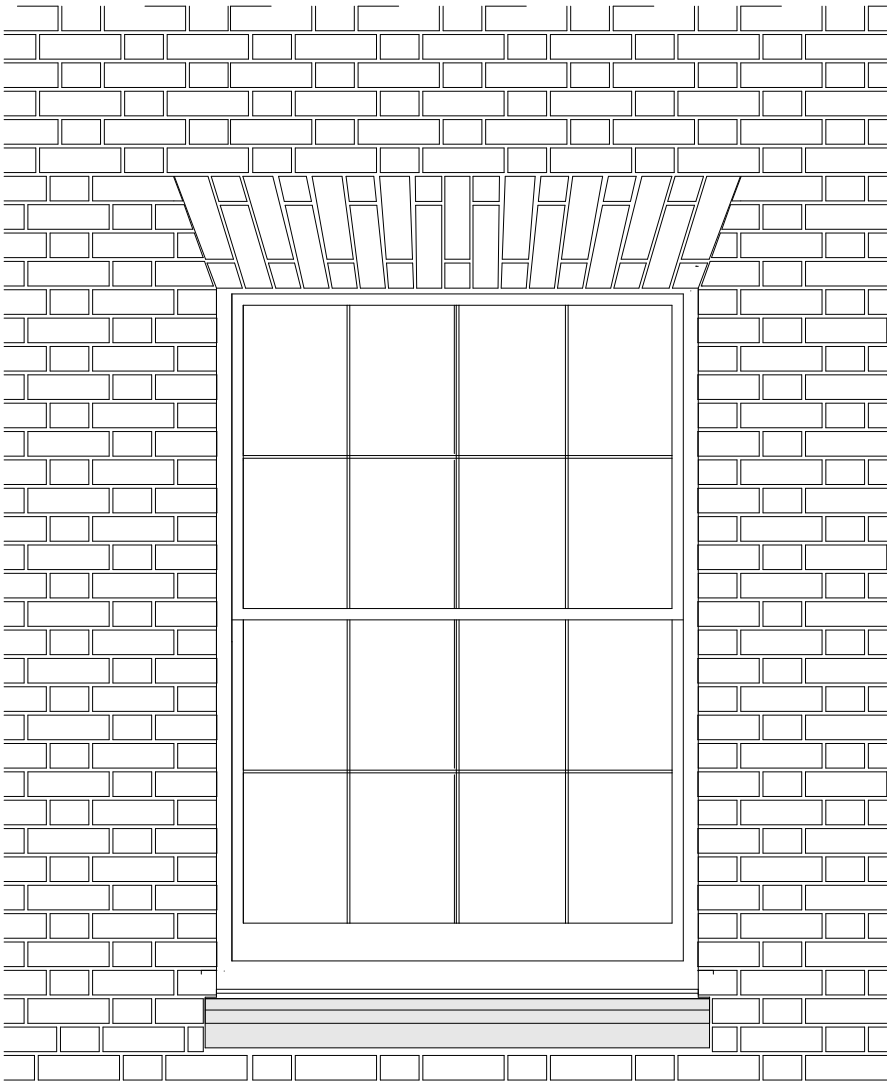
The glass louvers will also match the louvered glass panels to the new proposed lift tower east of the workhouse. The simplicity of the glass louvers we believe will be less invasive than installing a metal or UPVC window system to this location.

The metal / UPVC windows would be a bottom hung system with a release magnet and chain to open the window in the event of fire & smoke. As these are pre-tested unit we cannot amend or alter the design of the window. These will not match with the sash windows.

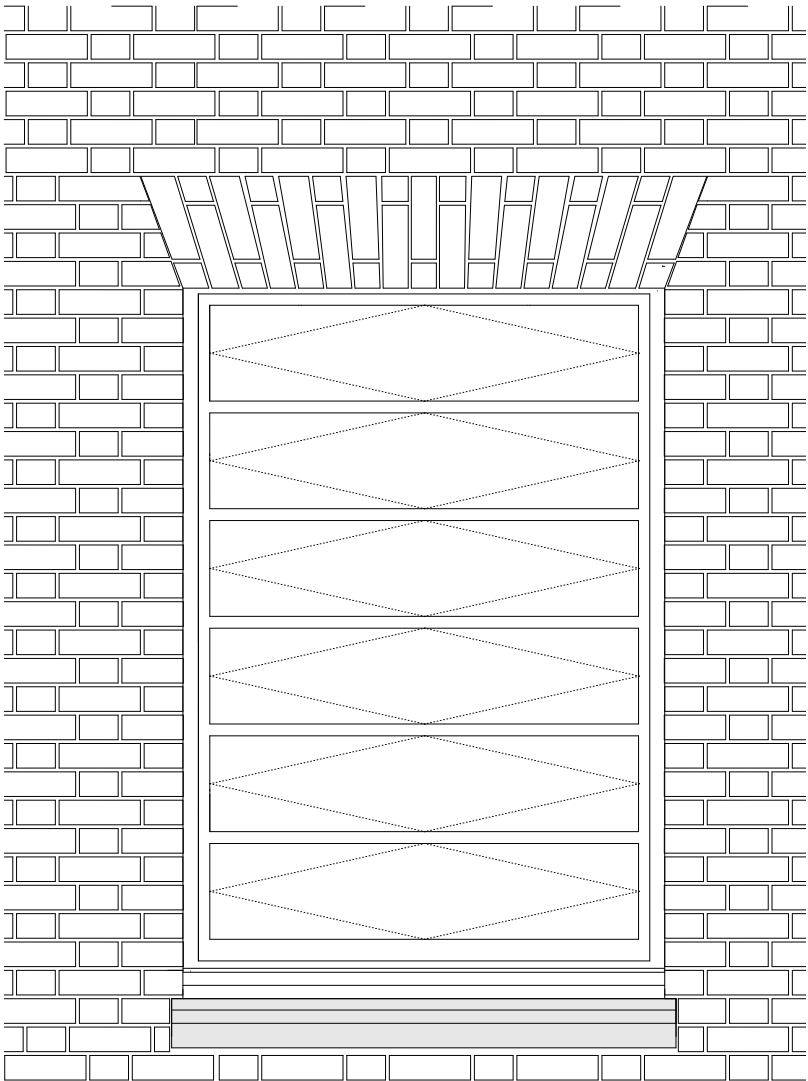
Further discussions with the conservation officer regarding the colour of the louvre frame either as black or white. The design team preferred choice is a white frame. Visuals have been shown for both approaches.



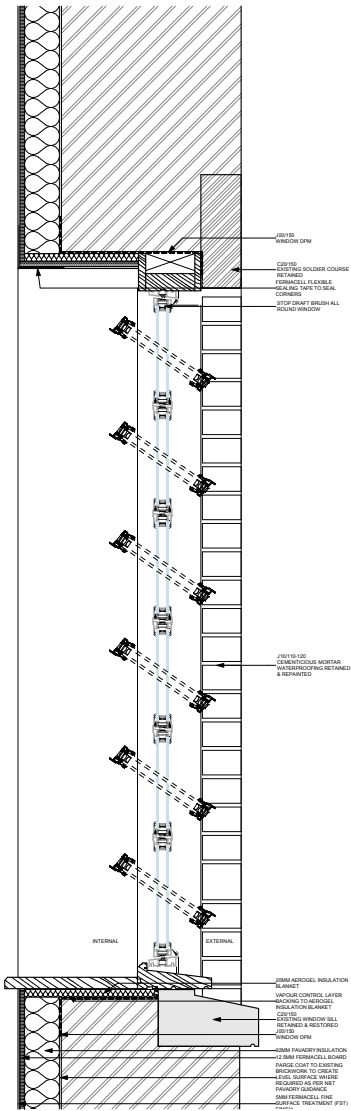
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Existing Window



Proposed AOV Glazed louvre Window



Section A-A