

SIM - Plant Room Waterproofing & Landscaping



Design, Access + Heritage Statement
April 2025

Version history

Project name: Plant Room
Project number: 9488
Client: Science & Industry Museum, Manchester

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1	April 25	Drafting	Freya Needham Heritage Consultant	Heritage Input
2	22nd April 25	ISSUE	Alex Scrimshaw Associate	PLANNING

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1.0

Introduction

1.0 Introduction

1.1 Executive Summary

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| <p>1.1.1 The statement has been prepared by Buttress Architects Ltd on behalf of the Science & Industry Museum. It explains the proposals for waterproofing and associated landscaping to the plant room, located below the former ramp landing in the Lower Yard area of the Science & Industry Museum, Manchester and just south of the historic Pineapple Line. It has been prepared in line with the guidance document 'Design and Access Statements: How to Write, Read and Use Them,' published by CABE.</p> <p>1.1.2 Buttress Architects have been appointed by the Science Museum Group to develop a Planning & Listed Building Consent package for the waterproofing and associated drainage of the Plant Room, alongside the redesign of the landscaping above it. The Listed Building Consent application has been submitted due to the proposed interface with the Grade II Pineapple Line (List Entry No. 1200805 - Colonnaded railway viaduct at former Liverpool Road Goods Depot).</p> | <p>1.1.3 The report has been prepared by Rhiannon Williams, Architect BA(Hons) MArch under the direction of Alex Scrimshaw, Associate Technologist BSc (Hons), MCIAT, CIAT-Accredited Conservationist with Buttress Architects Ltd. Heritage impacts have been considered by Freya Needham MA, Heritage Consultant at Buttress.</p> <p>1.1.4 Existing survey information has been used to produce the drawings. The content of the report is based upon inspection carried out by Buttress Architects undertaken by Alex Scrimshaw Associate Technologist BSc (Hons), MCIAT, CIAT-Accredited Conservationist and Peter Levers BSc, completed on the 24th January 2024.</p> <p>1.1.5 The report is based on visual inspections made from ground level, floor levels and other accessible safe vantage points.</p> | <p>1.1.6 Unless otherwise stated the inspection(s) were purely visual and no enclosed spaces or inaccessible parts have been opened up for inspection. Therefore, the arrangement and interfacing illustrated across details and GAs are purely indicative / approximate only, pending the commencement of actual physical proposed works.</p> <p>1.1.7 Buttress gratefully acknowledges the assistance provided by the Science and Industry Museum site staff.</p> <p>1.1.8 The drawings provided are for Planning and Listed Building Consent purposes only.</p> |
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2.0

Background & Context

2.0 Background & Context

2.1 Location

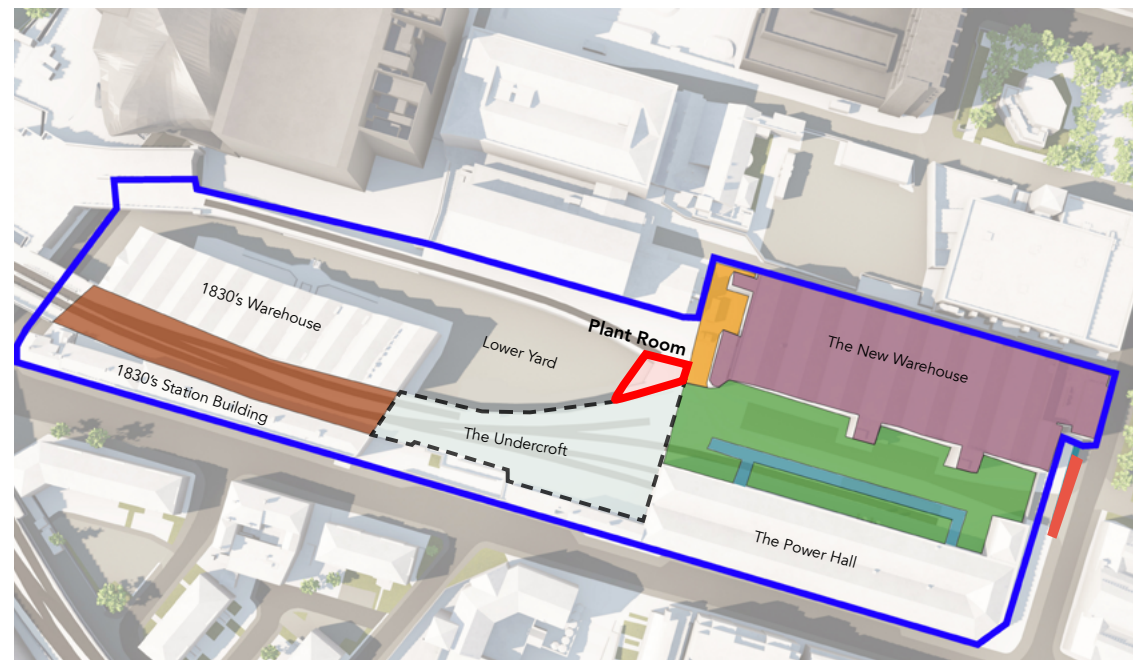
2.1.1 The Science and Industry Museum is located to the northwest of central Manchester, to the east of the River Irwell and within the Castlefield Conservation Area and Castlefield Urban Heritage Park. The Science and Industry Museum includes a number of Grade I and II listed buildings and structures.

2.1.2 This report focuses on the plant room and associated landscaping only, highlighted on the plan opposite.

2.1.3 The area referred to as the 'Plant Room' is located within the former vehicular ramp landing area, which interfaces with the Upper Yard, Pineapple Line and boundary wall to the south. The original vehicular ramp, which once abutted the masonry retaining wall, has been removed due to its severely deteriorated condition. The only remaining feature is the former ramp landing, which now serves as a 'roof' over the plant room area. Access to the plant room is provided from the Lower Yard. Within the building, the plant rooms themselves are housed in separate, internally waterproofed enclosures.

2.1.4 It is understood that the ramp and associated landing area were originally constructed circa 1992–1993. As previously noted, the vehicular ramp was removed in February 2024 due to its extremely poor condition and the significant health and safety risk it poses. While the area housing the plant room was retained, it remains in very poor condition and continues to suffer from ongoing water ingress through the former vehicular capping. The structure is steadily deteriorating, with visible corrosion and degradation. Substantial repairs and replacements to the steelwork are required, to be delivered in coordination with the already approved Upper Yard landscaping scheme.

Plan of Manchester Museum of Science and Industry complex.



SIM Capital Projects

-  SIM Ownership Boundary
-  New Warehouse roof & fabric repairs
-  Upper Yard conservation repairs
-  Gantry restoration
-  Special Exhibitions Gallery (SEG)
-  1830's Viaduct Waterproofing
-  Site entrance bollards & barriers

2.2 Historic Images - 1984

Views towards the New Warehouse before the ramp and plant room's construction





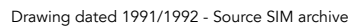
Date unknown - Source SIM archive



July 1997

2.3.1	New vehicle ramp Museum of Science and Industry Liverpool Road Station, Castlefield CENTRAL
2.3.2	130171/FO/2021 <i>External works to the Boiler Room including removal of an external staircase and making good in addition to the installation of a new balustrade and new doors.</i> Determined 02.07.2021
2.3.3	140087/LO/2024 <i>Public Realm Landscaping Proposals</i> Determined 31.07.2024

2.3.5 140089/LO/2024 | 1830s Viaduct Listed Building
Consent | Determined 31.07.24



2.4 Existing Site Photographs - Plant Room & Wider Context



Photo from Lower Yard towards New Warehouse.



View from above plant room looking towards lower yard.



Photo looking down towards lower yard & plant room.



External photos of entrance to the plant room (vehicular ramp now demolished).



2.5 Existing Photos - Plant Room



External photos of plant room, steel columns and beams have rusted due to water ingress issues.



Internal photos of plant room, showing water ingress and rusted steel beams.

3.0

Proposal

3.0 Proposal

3.1 Summary of proposals

- | | | | |
|-------|--|-------|--|
| 3.1.1 | Following on from the recent demolition of the vehicle ramp (this was agreed by exchange of correspondence with the local authority, via Deloitte LLP), the client is seeking Planning and Listed Building Consent for waterproofing works to the area referred to as the 'Plant Room', design by Buttress Architects, with associated landscaping designed by Planit Landscape Architects. The proposed works are summarised below. | 3.1.4 | Due to the unique interfacing arrangement with the Pineapple Line to the north, it will not be possible to fully waterproof this junction and it is therefore accepted that some water ingress may likely persist within this location, which will have to be managed and monitored internally. |
| 3.1.2 | The interior of the Plant Room area is prone to ongoing water ingress issues, which puts the museum's plant room systems at considerable risk. | 3.1.5 | This proposal will allow for the repair and remediation of the structure, the asset will be suitably waterproofed, the waterproofing system and former remnants of vehicular ramp will be concealed and hidden by hard landscaping to match that already consented within the Upper Yard, this location will be utilised as an observation point, offering views of the Lower Yard, 1830 Warehouse beyond with the introduction of permanent balustrading. |
| 3.1.3 | There is already a consented landscape scheme taking place across the Upper Yard which directly interfaces with this location. This brings with it an opportunity to extend the hard landscaping atop of the plant room, alongside introducing a waterproofing layer, to offer some protection to the interior from water ingress. In addition, the structure will be remediated, to allow for replacement and repair works to take place across corroded framing members. | 3.1.6 | The unsightly remnants left post ramp removal at the western interface will be repaired and decorated. |

3.2 Plant Room Waterproofing

3.2.1 The works to the Plant Room entails the following:

1. Structural frame / substrate to undergo repair / replacement internally and externally.
2. Existing ramp substrate will be removed, to provide sufficient depth for new hard landscaping.
3. Below ground drainage channels will be introduced for surface water.
4. Concrete capping will be suitably repaired and prepared for waterproofing system.
5. Waterproofing system will be installed, with lead cover flashings at interface with masonry.
6. Additional framing members will be introduced at west edge to allow for additional backfill material.
7. Cobbles / stone setts will be installed.
8. Metal balustrading will be installed.
9. All external elements and components will be redecorated / decorated.
10. Interior fabric repairs will take place across exposed masonry retaining walls.

Refer to drawings:

- Drawing 9488 - PR (01) 003: Plant Room Demolition & Extent of Waterproofing Plans as Proposed
- Drawing 9488 - PR (03) 004: Plant Room Demolition Section Details
- Drawing 9488 - PR (04) 001: Plant Room Floor Plans as Proposed
- Drawing 9488 - PR (06) 001: Plant Room Sections & Elevations as Proposed
- Drawing 9488 - PR (06) 002: Plant Room Section Details as Proposed

3.3 Landscaping

3.3.1 For further comprehensive details regarding the proposed works, please refer to Appendix A and the following drawings:

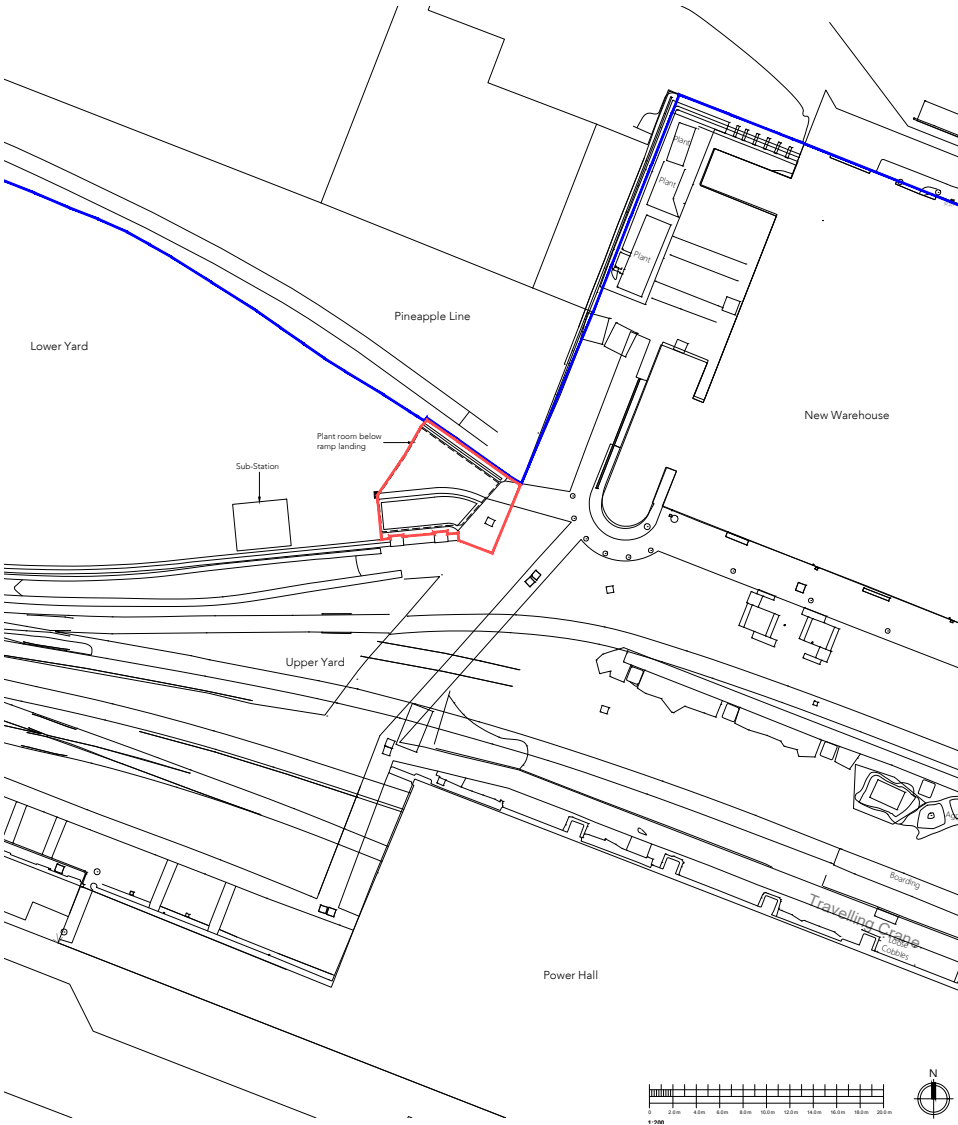
- 2913-PLA-XX-XX-DR-L-0026: Plant Room General Arrangement Landscape Proposals
- 2913-PLA-XX-XX-DR-L-301: Plant Room Site Sections
- 2913-PLA-XX-XX-DR-L-3012: Plant Room Elevations

3.4 Heritage Impact Statement

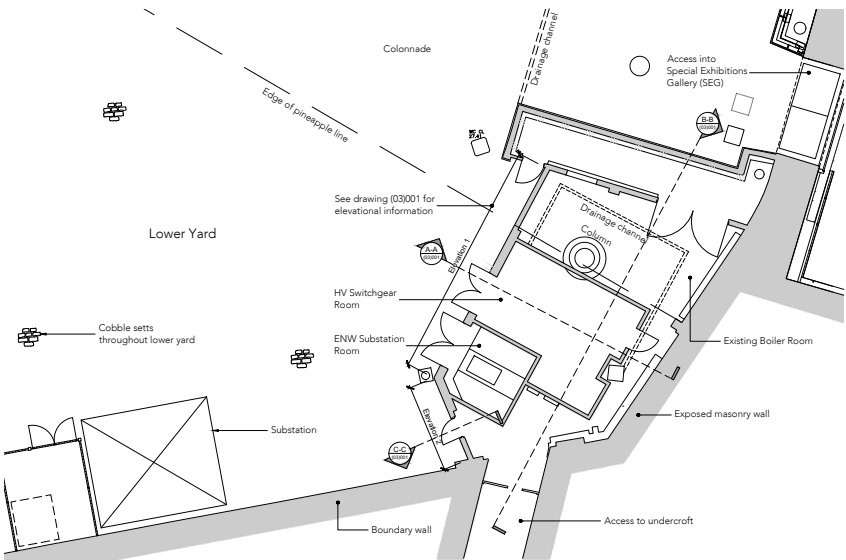
- | | |
|--|--|
| <p>3.4.1 Works requiring intervention with the Grade II listed Pineapple Line can be summarised as follows:</p> <ul style="list-style-type: none">• Careful removal of existing surface finishes abutting the balustrade.• Installation of waterproofing system as outlined above and within supporting drawings.• Laying of new surface finished to match those those previously consented for the wider landscaping works to both the Upper Yard and 1830 Viaduct.• Making good like-for-like where required. <p>3.4.2 Refer to Drawing 9488 - PR (06) 002: Plant Room Section Details as Proposed, Detail 5.</p> | <p>3.4.3 Overall, the proposed works will result in a negligible change to the Grade II listed asset which will have a Neutral/Slight impact of beneficial nature.</p> <p>3.4.4 The works will result in no harm to the significance of asset.</p> <p>3.4.5 Proposed surface finishes are high-quality and in-keeping with the industrial character and appearance of the site and will have result in no harm to the character, appearance or setting of the surrounding listed assets.</p> <p>3.4.6 The works will not result in any direct loss of historic fabric, or result in the loss or alteration of any historic design elements which are intrinsic to the asset's significance. The proposed upstand detailing for the waterproofing system will not be visible at surface level and will result in no visual change to the asset itself.</p> <p>3.4.7 The works will be beneficial to the longterm care and maintainance of the site and its fabric.</p> |
|--|--|

3.5 Existing Plans

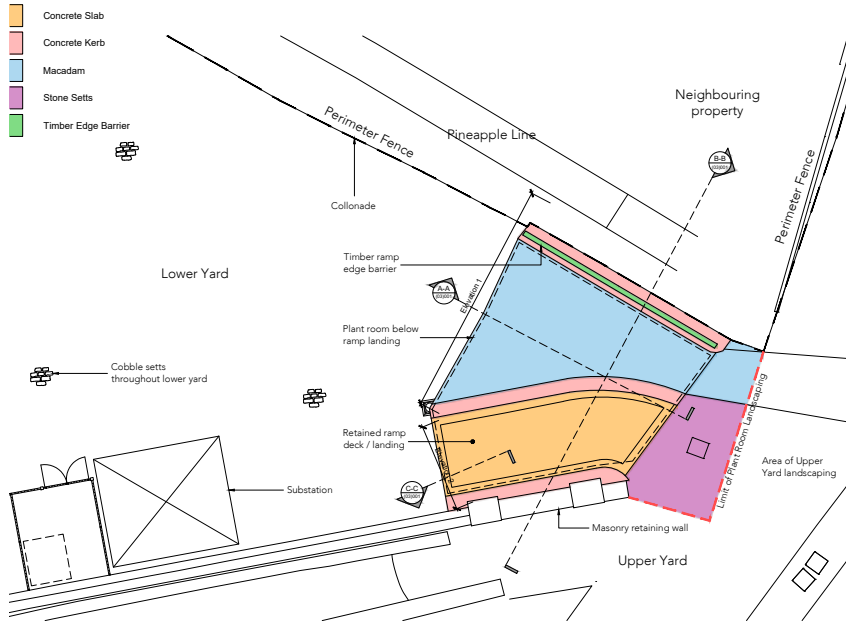
(Not to Scale)



Existing Site Plan, plant room indicated by red outline



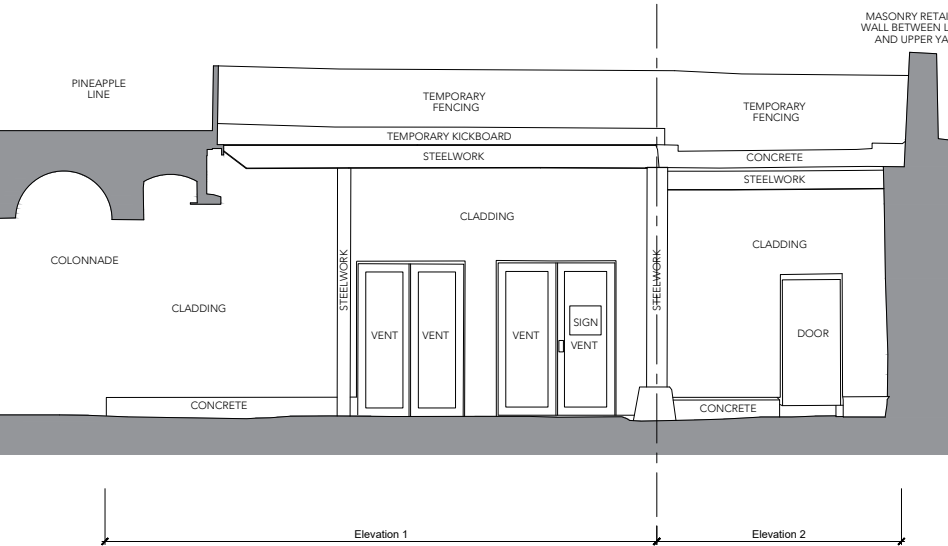
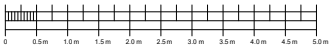
Plant Room Lower Yard Floor Plan as Existing



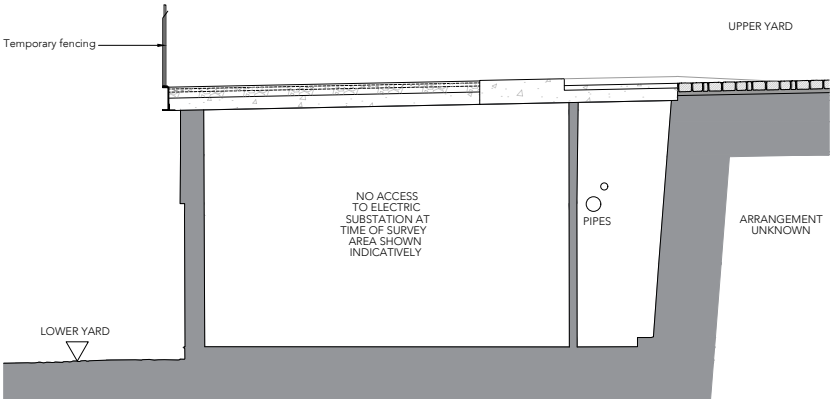
Plant Room Upper Yard External Finishes Plan as Existing

3.6 Existing Elevations & Sections

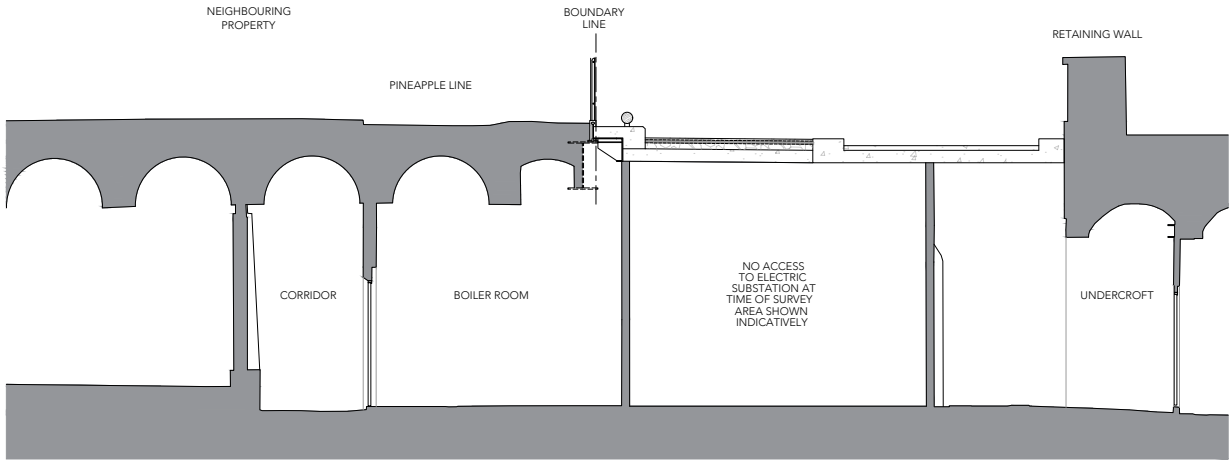
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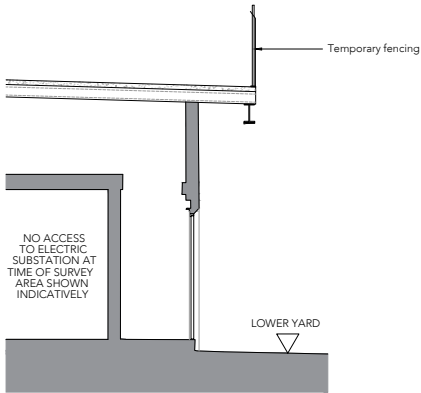
Plant Room Elevations as Existing



Section A-A as Existing



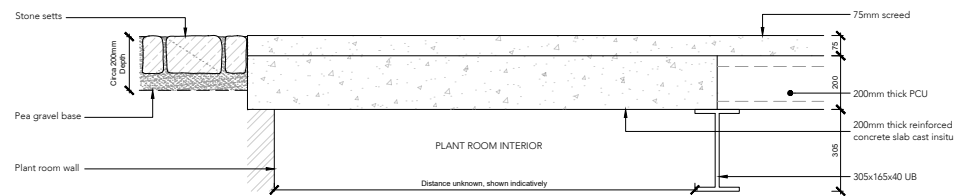
Section B-B as Existing



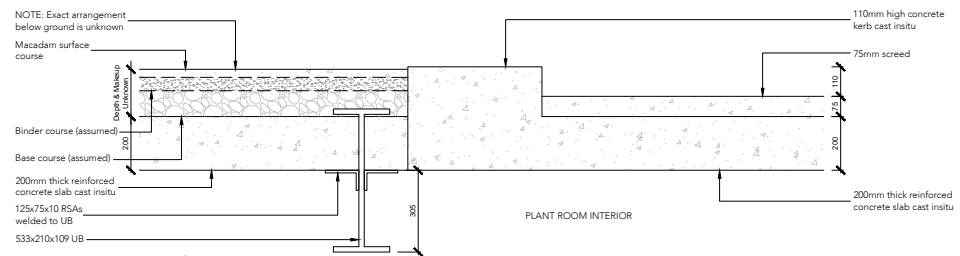
Section C-C as Existing

3.7 Existing Section Details

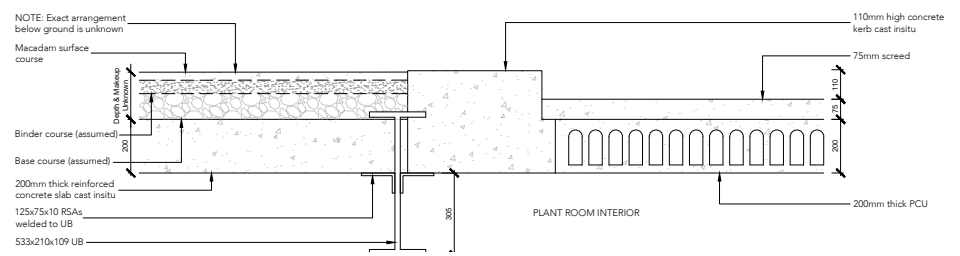
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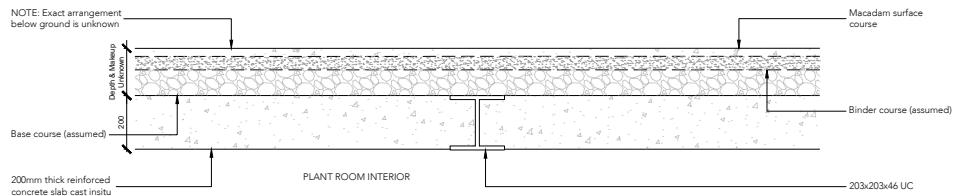
Detail 1 as Existing



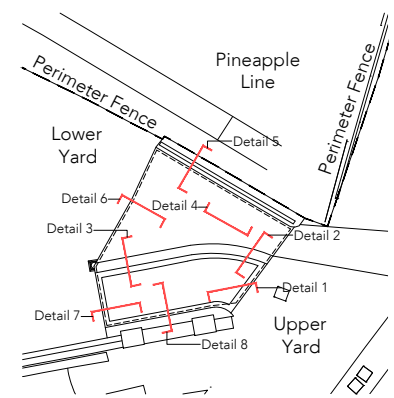
Detail 2 as Existing



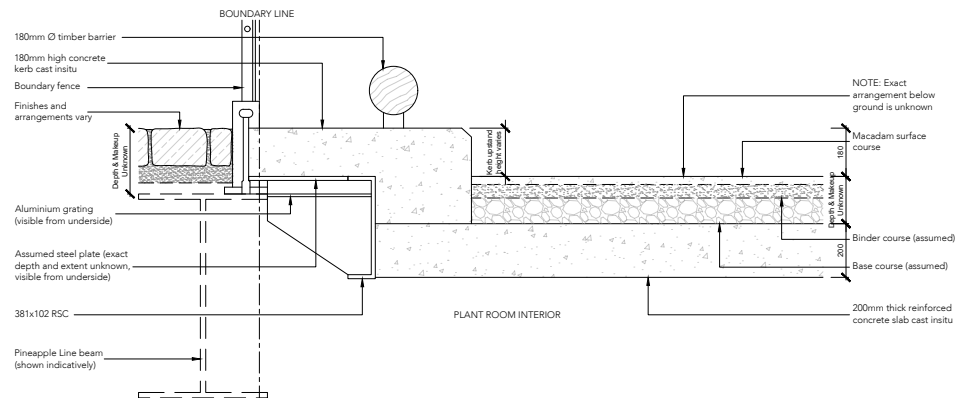
Detail 3 as Existing



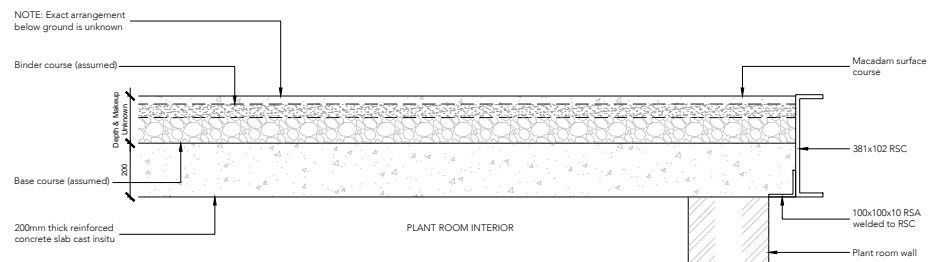
Detail 4 as Existing



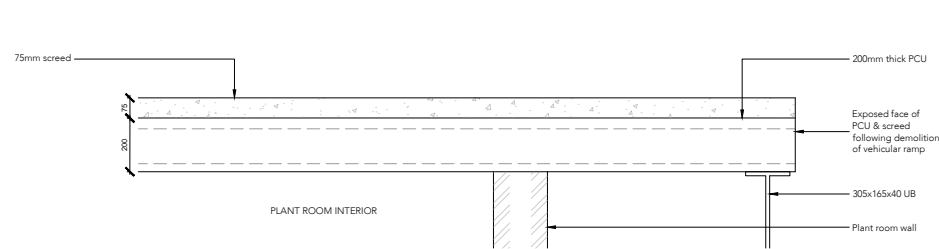
Existing Section Details continued. (Not to Scale)



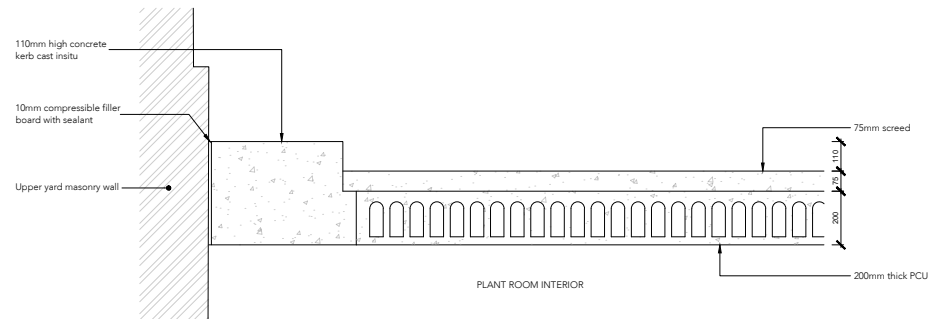
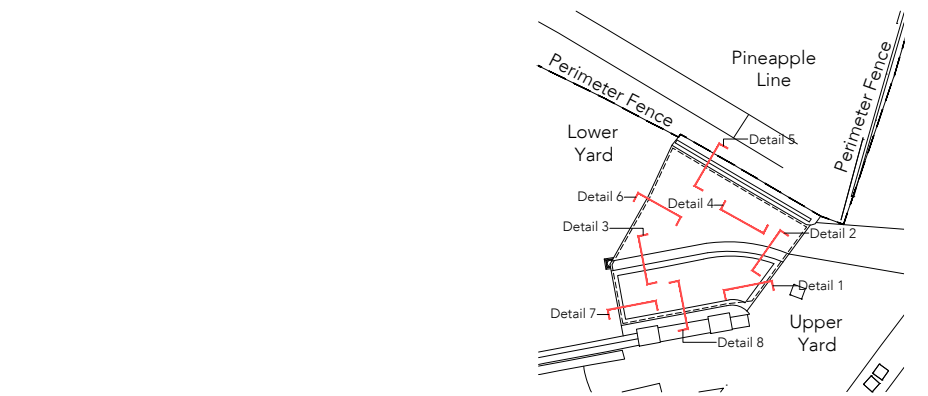
Detail 5 as Existing



Detail 6 as Existing



Detail 7 as Existing



Detail 8 as Existing



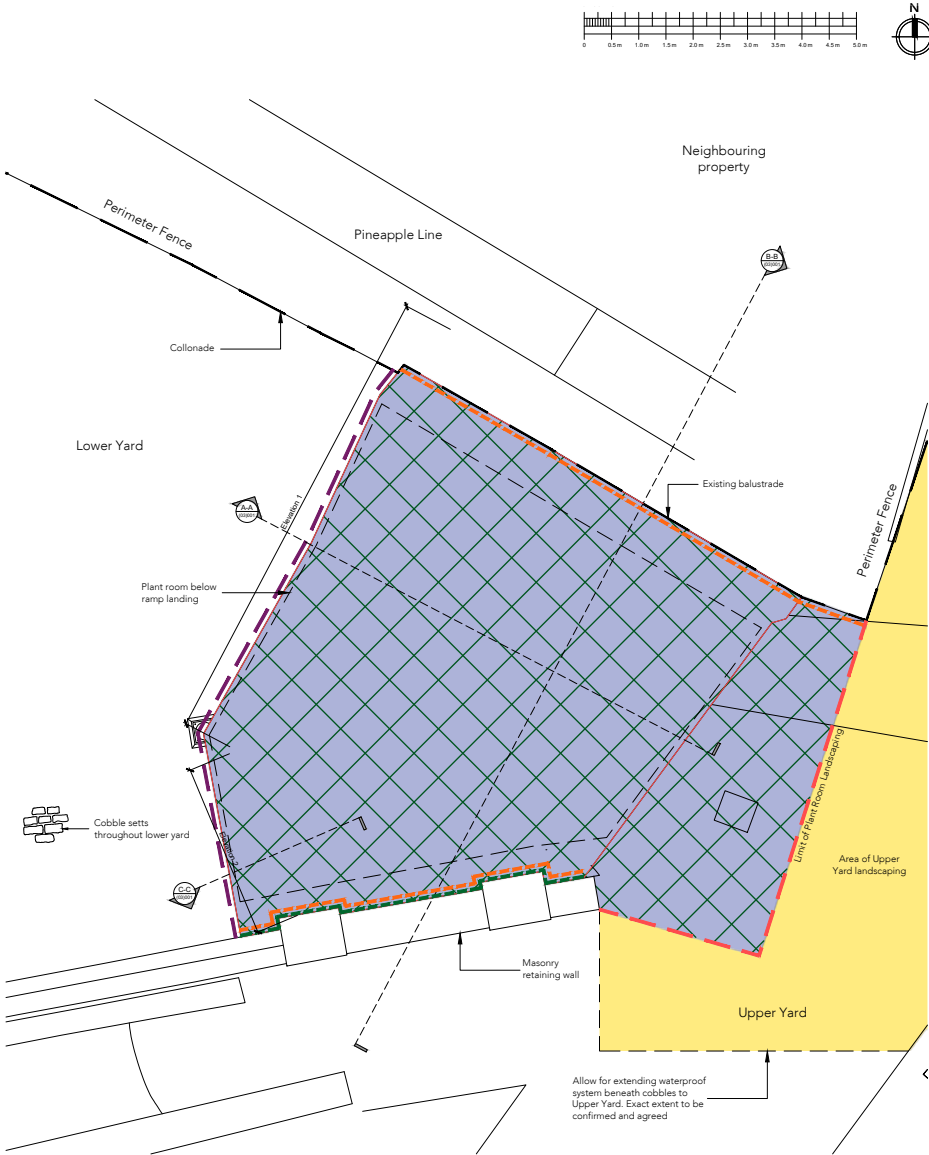
3.8 Proposed Plans - Demolition & Extent of Waterproofing

(Not to Scale)



Plant Room Demolition Plan

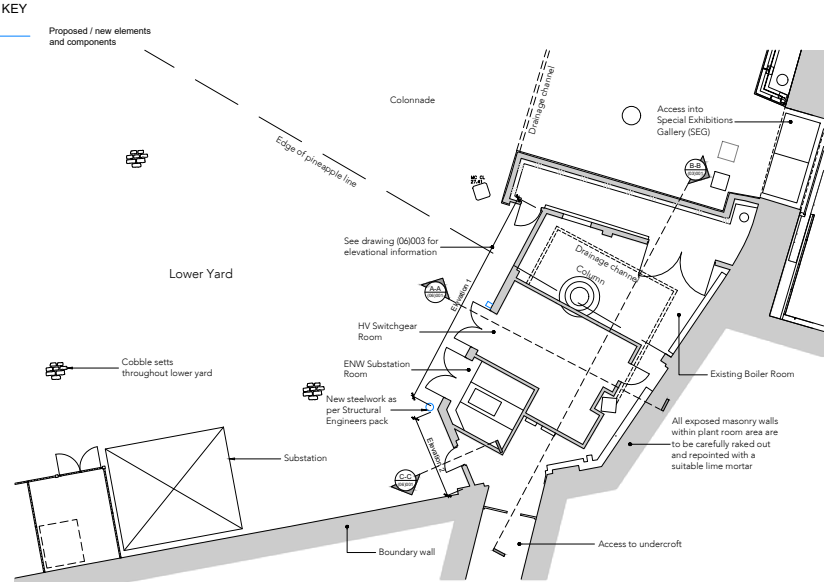
- KEY**
- Demolition - refer to drawing PR (03) 004 for key details
 - Hard landscaping replaced within separate Planning & Listed Building Consent application



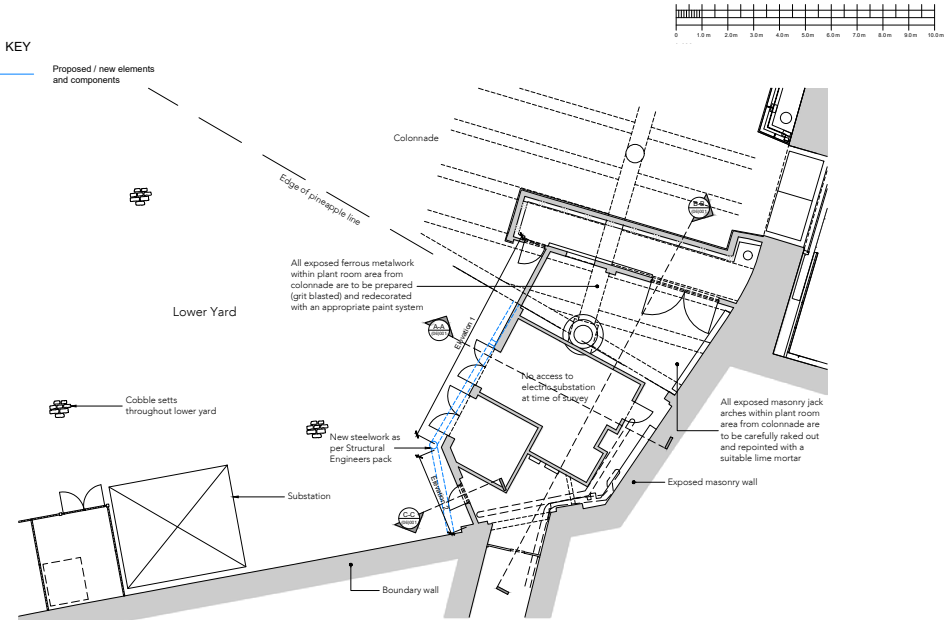
Plant Room Extent of Waterproofing Plan as Proposed

- KEY**
- Waterproofing system
 - Geocomposite drainage membrane
 - Waterproofing system to extend to Upper Yard

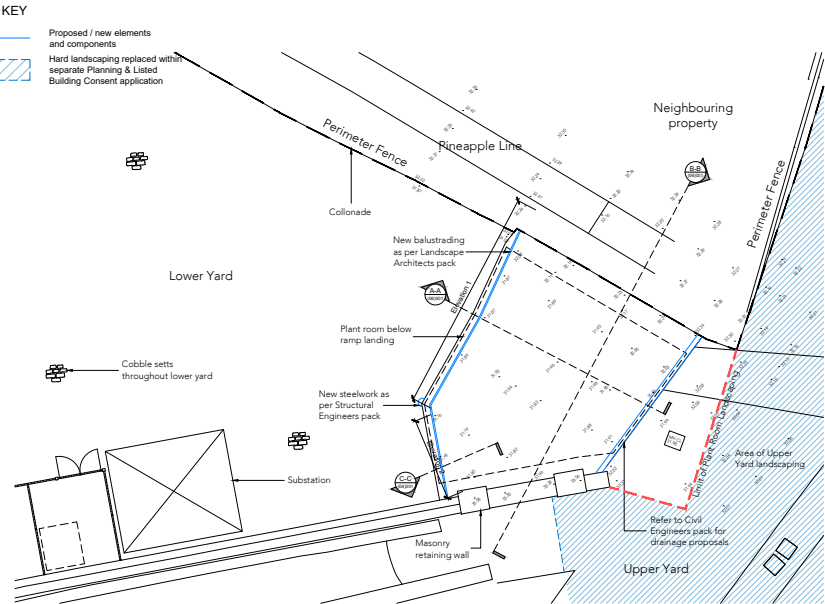
3.9 Proposed Plans (Not to Scale)



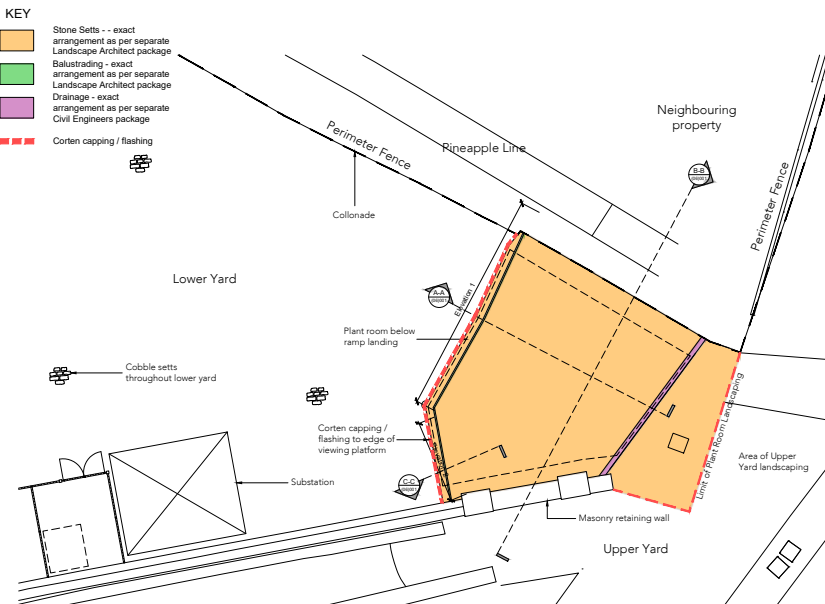
Plant Room Lower Yard Floor Plan as Proposed



Plant Room Lower Yard Floor Plan Showing Structural Elements as Proposed

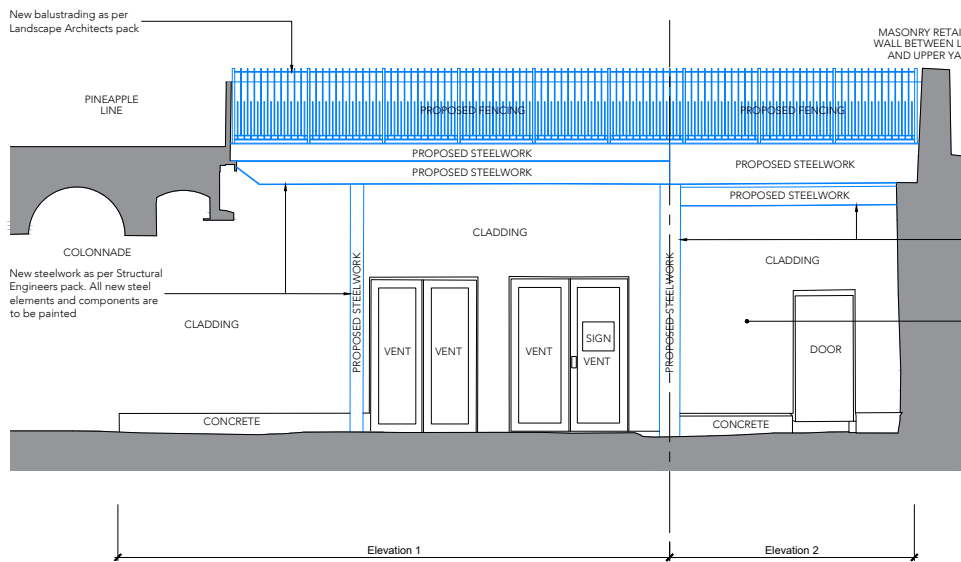


Plant Room Lower Yard Floor Plan as Proposed

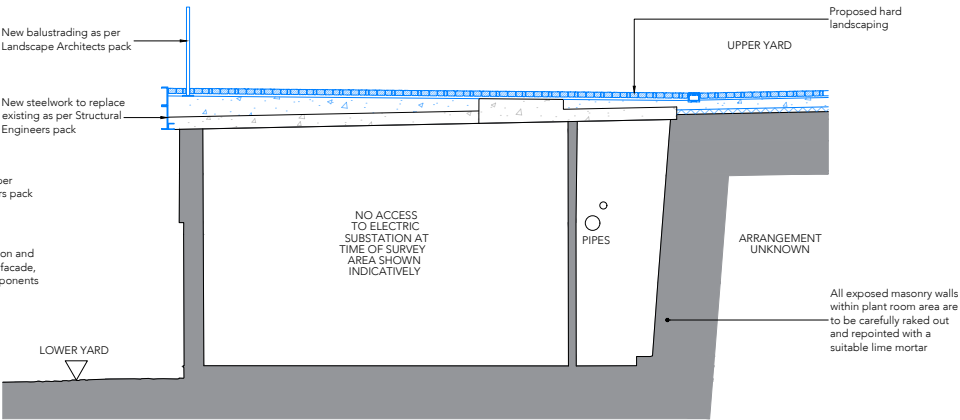


Plant Room Upper Yard External Finishes Plan as Proposed

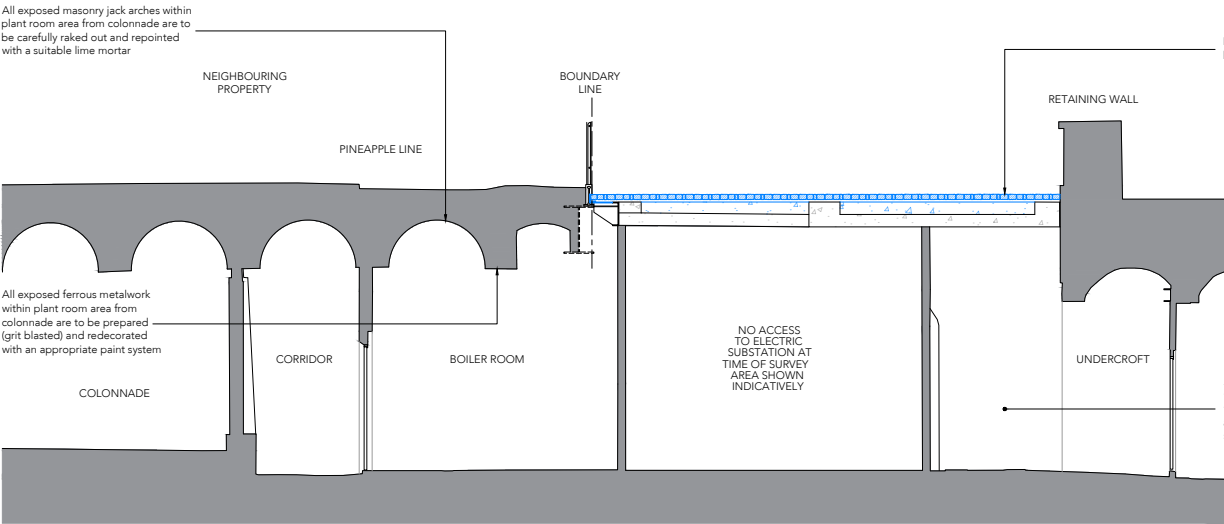
3.10 Elevations & Sections (Not to Scale)



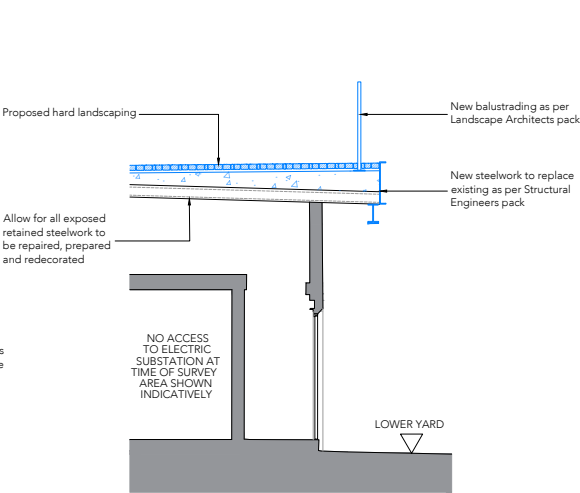
Plant Room Elevations - Proposed



Section A-A - Proposed

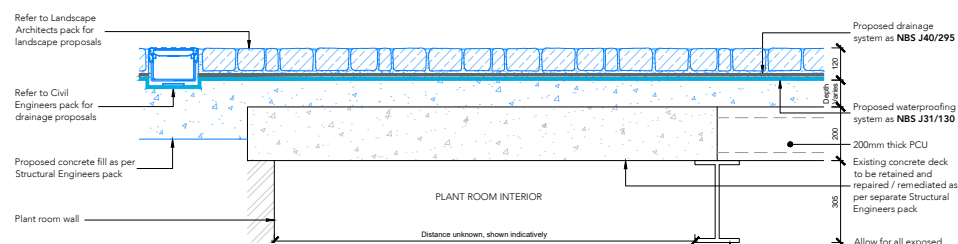


Section B-B - Proposed

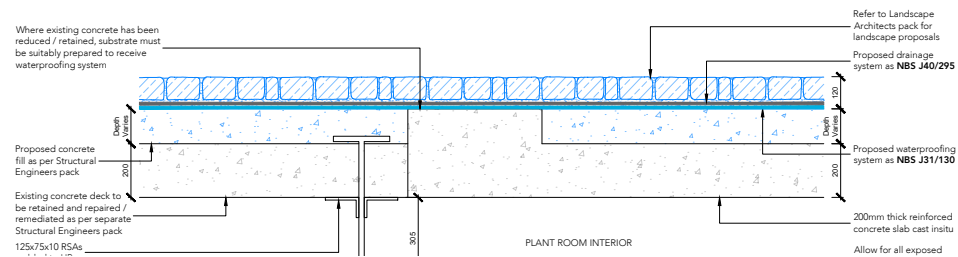


Section C-C - Proposed

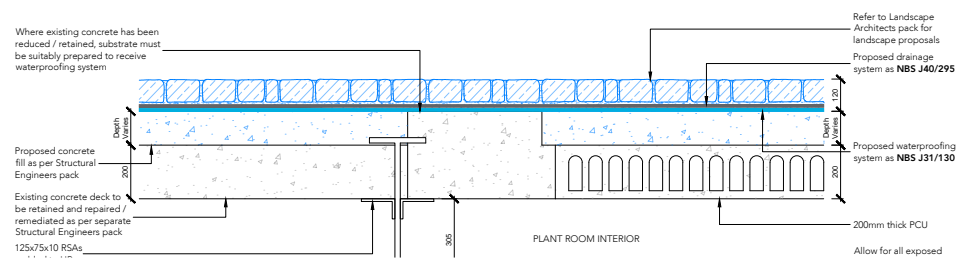
3.11 Proposed Section Details (Not to Scale)



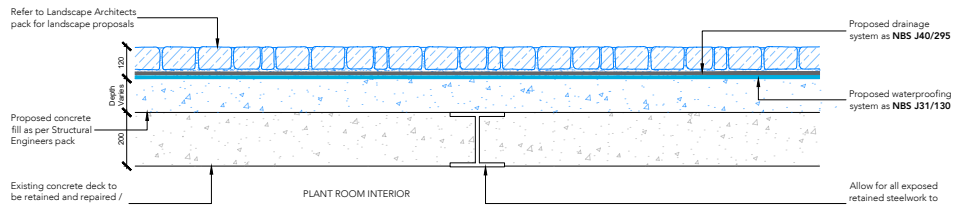
Detail 1 - Proposed



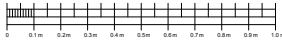
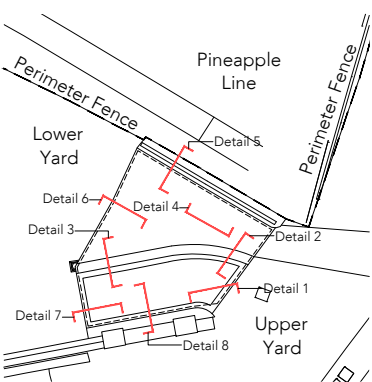
Detail 2 - Proposed



Detail 3 - Proposed

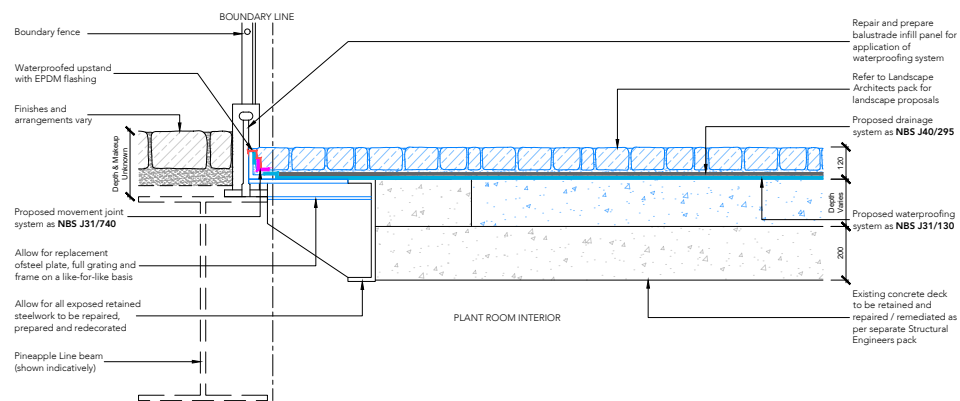


Detail 4 - Proposed

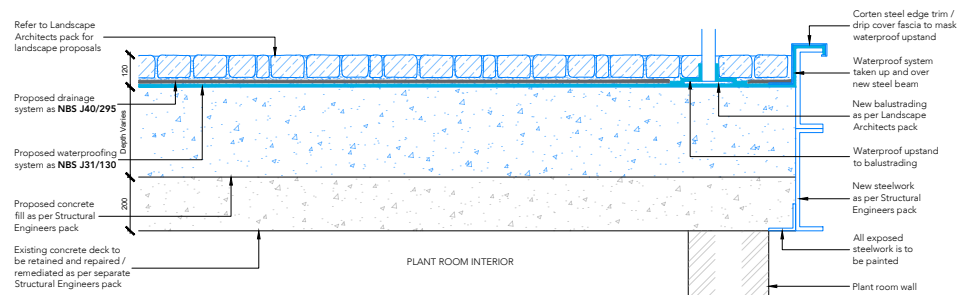


Proposed Section Details continued.

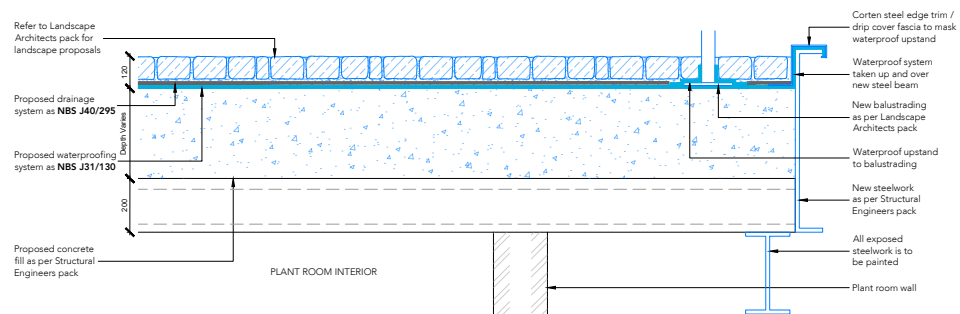
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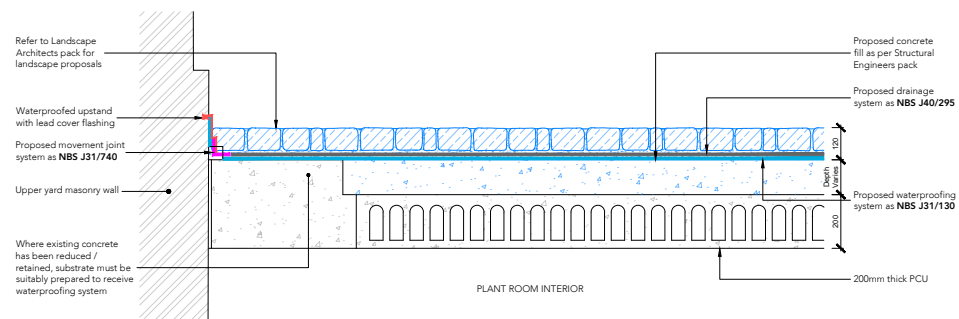
Detail 5 - Proposed



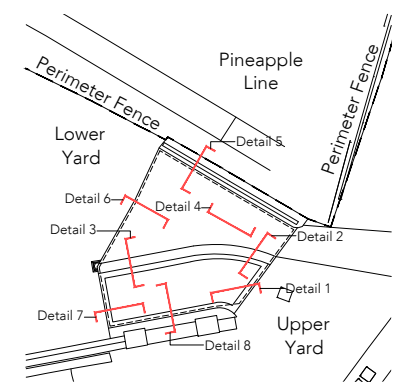
Detail 6 - Proposed



Detail 7 - Proposed



Detail 8 - Proposed



4.0

Summary

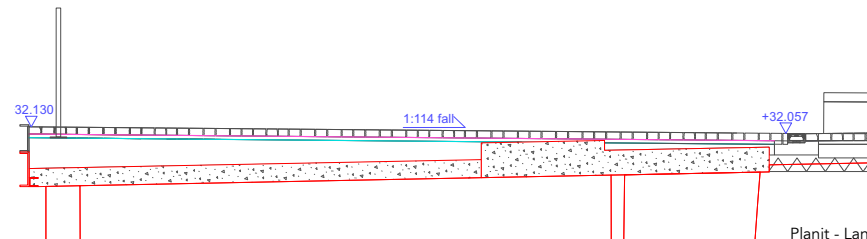
4.0 Summary

4.1 Summary of proposals

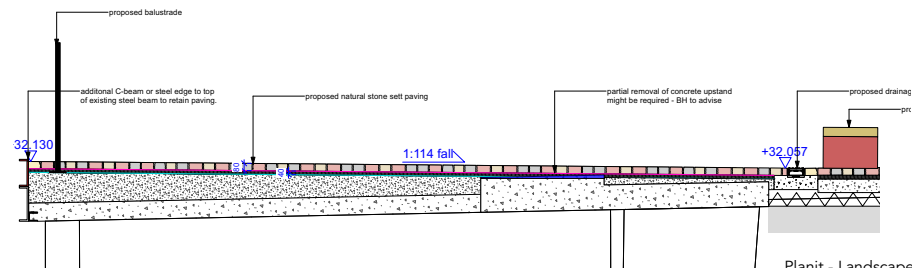
- 4.1.1 Overall the proposals will alleviate the current water ingress issues within the Plant Room, by improving the waterproofing details and also enhance the public realm of the space above this, providing a gathering /observation point offering vistas to the west of the site.
- 4.1.2 As highlighted in the Heritage Impact Assessment, the proposals result in a negligible change to the Grade II listed Pineapple Line and result in no harm to the significance of the heritage.
- 4.1.3 Additionally, this initiative will yield a positive public benefit by enhancing safety on the museum site and improving the public realm.



Plantit - Landscape Proposals - Proposed Elevation



Plantit - Landscape Proposals - Existing Section



Plantit - Landscape Proposals - Proposed Section

5.0

Appendices

5.0 Appendices

5.1 Appendix A - Landscape Architect's Design & Access Statement Extract

SCIENCE AND INDUSTRY MUSEUM - PLANT ROOM

Design and Access Statement Extract

PLANIT

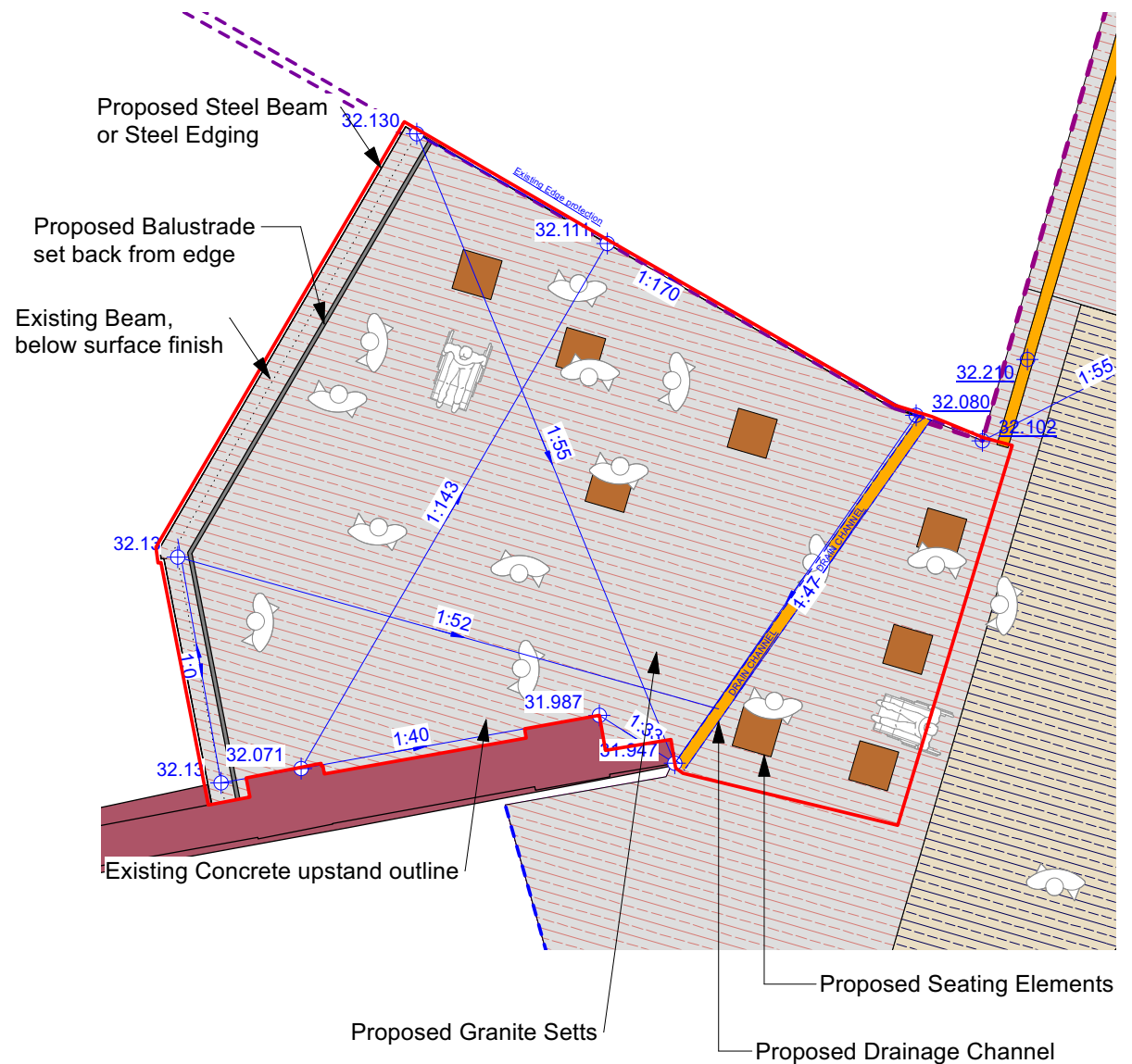
1

LANDSCAPE CHAPTER

Plant Room - General Arrangement Proposals

The plant room zone will provide a unique vantage point for visitors to experience and enjoy the long distance views across the Museum site. From this location panoramic views unique to the site allow visitors to view the historic buildings as one composition.

The proposed landscape design for the plant room extends the same materiality strategy as the adjacent Upper Yard works. Proposed sett paving will blend in seamlessly with the Upper Yard. In combination with proposed balustrades and seating cubes to create a natural gathering point at the West End of the Upper Yard.



Proposed Landscape General Arrangement Plan View

Plant Room - Hardworks Proposals

The proposed natural stone paving palette draws inspiration from the site's historic cobbles, reflecting their timeless character.

The selected paving colours have been carefully chosen to closely match the existing cobbles, ensuring a seamless blend between the new and the old, while maintaining the site's historical integrity and enhancing its overall aesthetic.



Proposed Setts Paving Mix

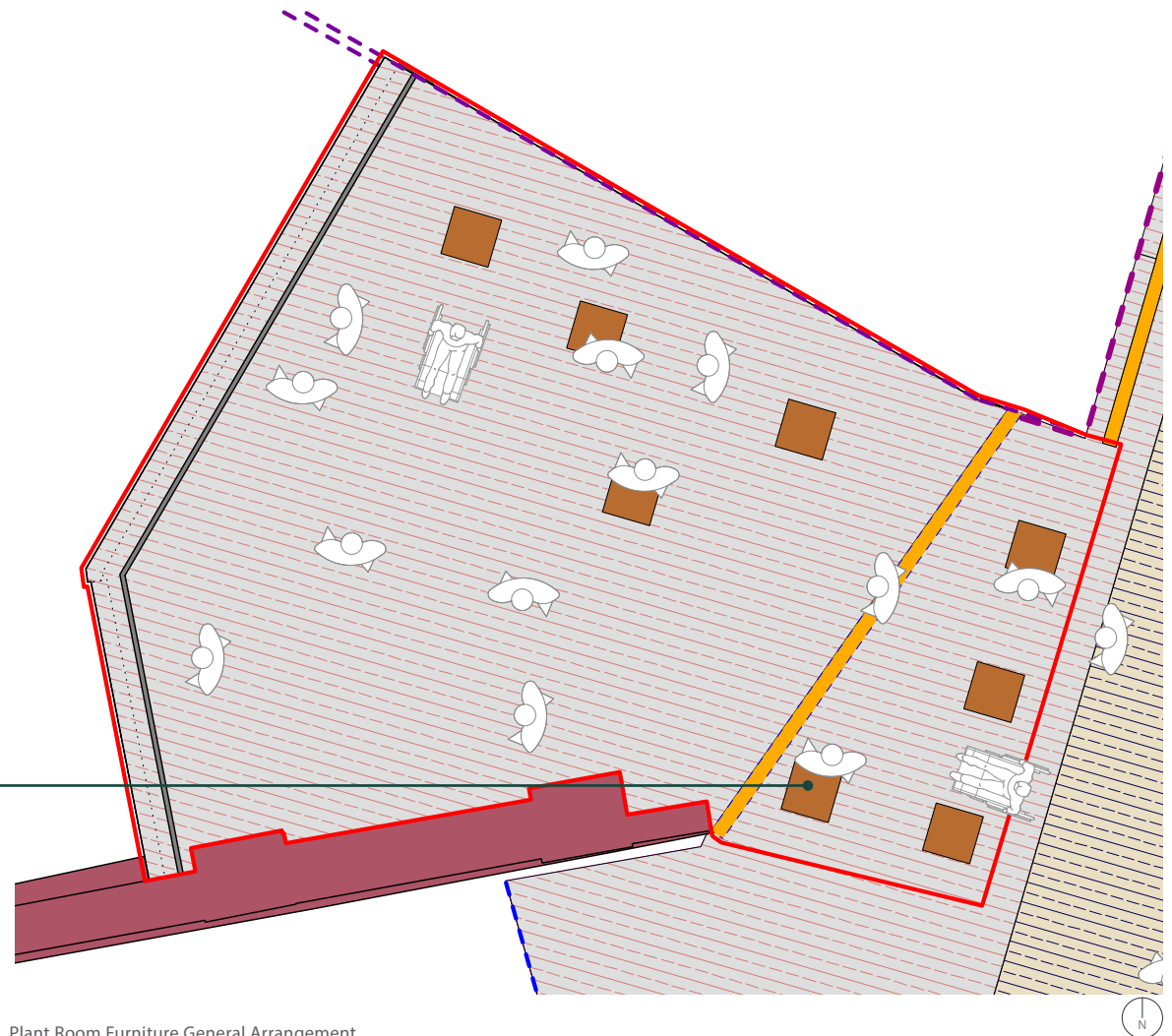
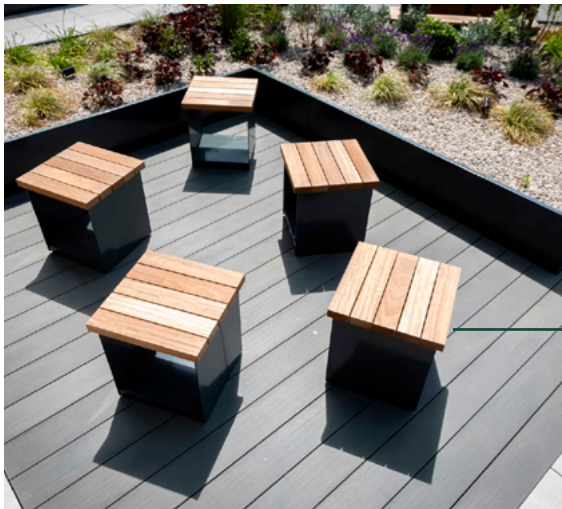


Existing Cobbles - provide the inspiration for the proposed paving colour mix

Plant Room - Proposed Furniture

The proposed furniture maintains the same material palette as the Upper Yard, incorporating corten steel and timber to harmonize with the site's heritage.

The furniture helps to define an additional dwelling opportunity for users and prevents vehicle movement onto the plant room area and an area for visitors to rest and enjoy the long views.

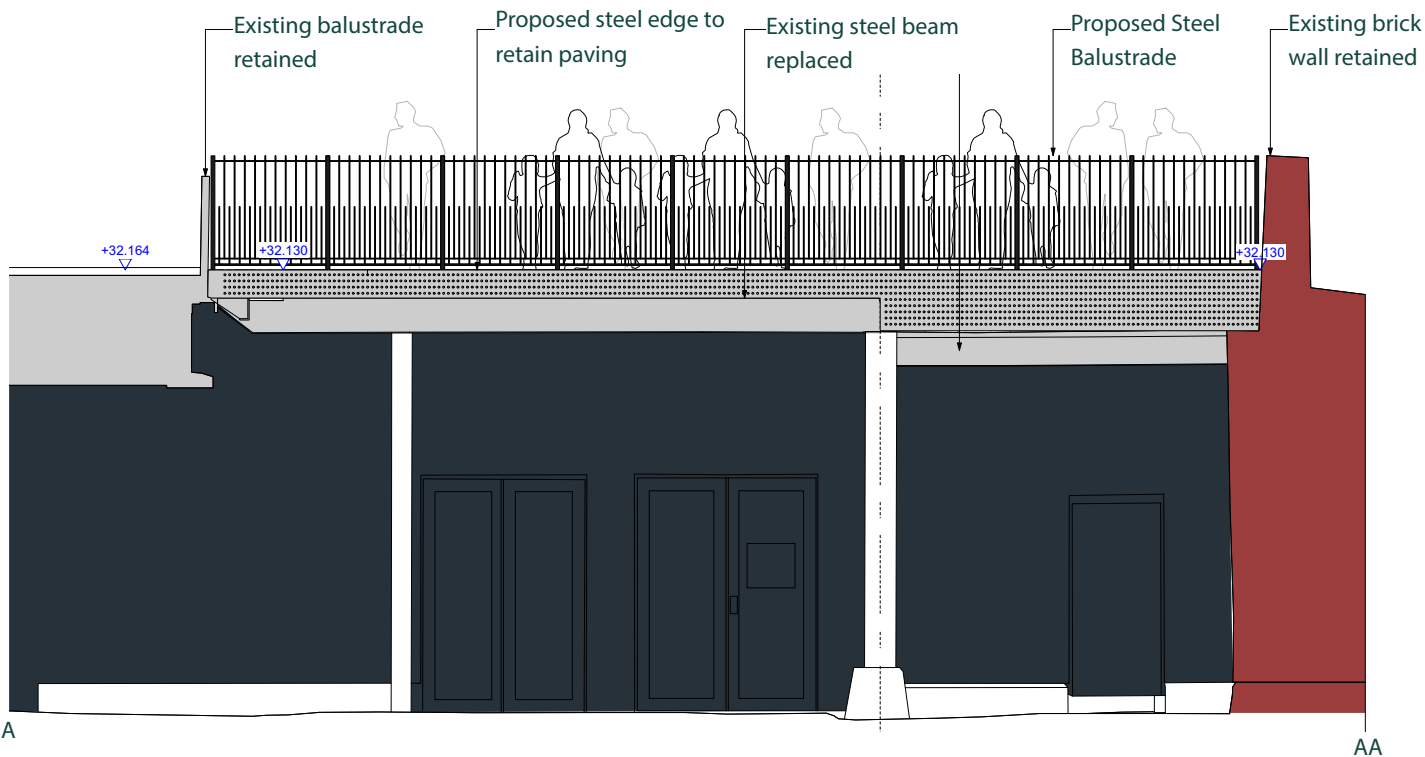


Plant Room Furniture General Arrangement

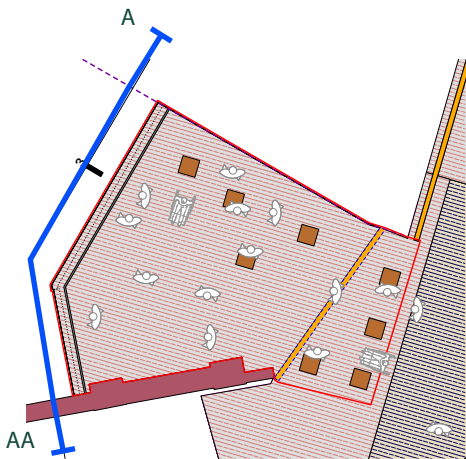
Plant Room - Elevation

This elevation offers a view from the Lower Yard, where the structural support beams are the prominent visual feature, complemented by the brick wall and existing dark cladding elements of the plant room building.

The proposed balustrade design draws inspiration from the site's railway heritage, subtly evoking the pattern of a railway track.



Proposed Elevation



Elevation Location Plan



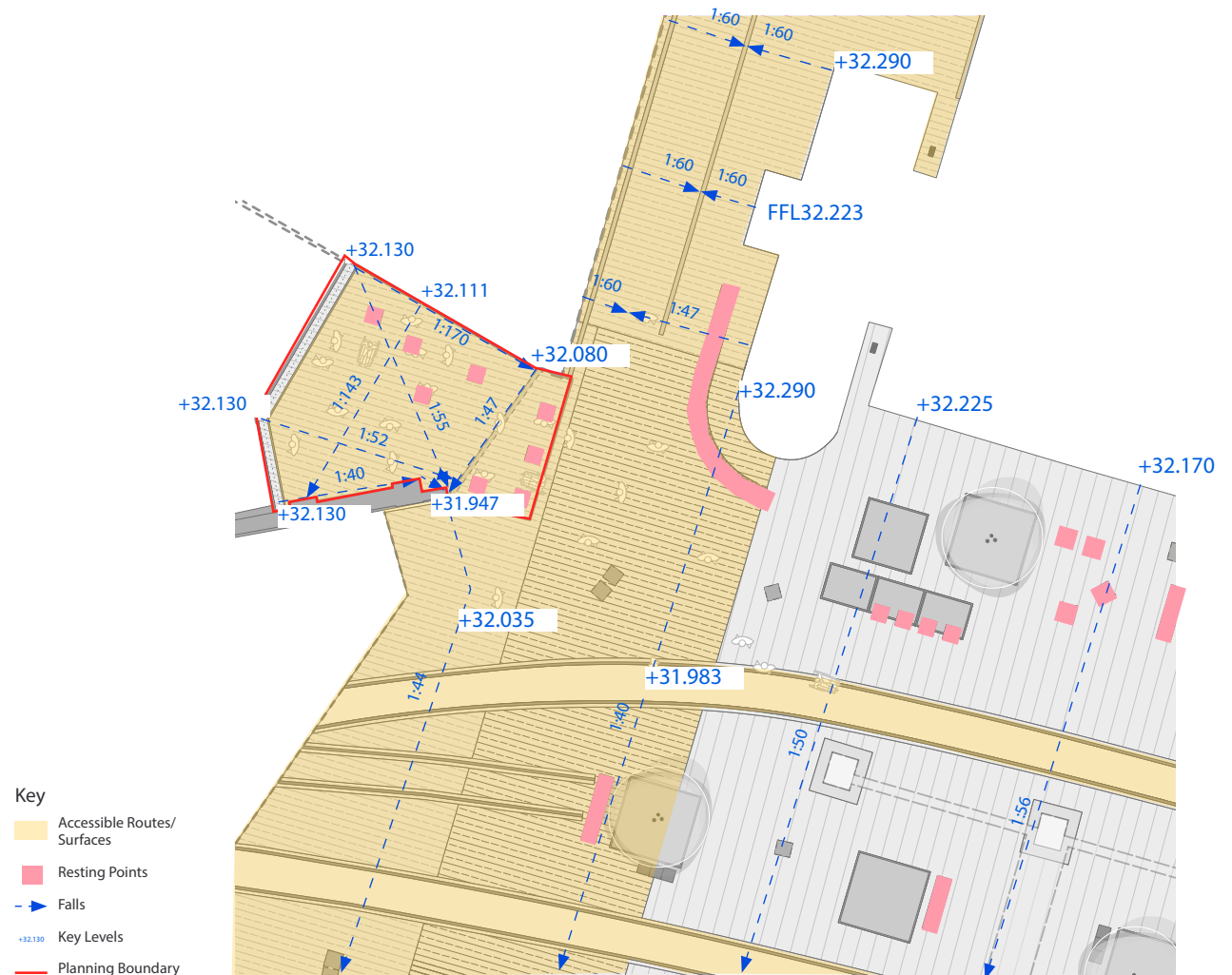
Locomotive carriages as inspiration for planters



Plant Room - Levels and Accessibility

The British standards state that we should be "designing to address and integrate the access requirements of all people, irrespective of their personal circumstances, as part of mainstream design" as this is "always preferable to designating separate or specific features. Designing in this way doesn't isolate or "socially separate" but accommodates a wide array of user requirements.

The proposal aims to provide a DDA compliant space with falls not exceeding 1:40 gradients. To achieve this the western paving edge of the site has been lifted to allow drainage to fall back towards the Upper Yard.



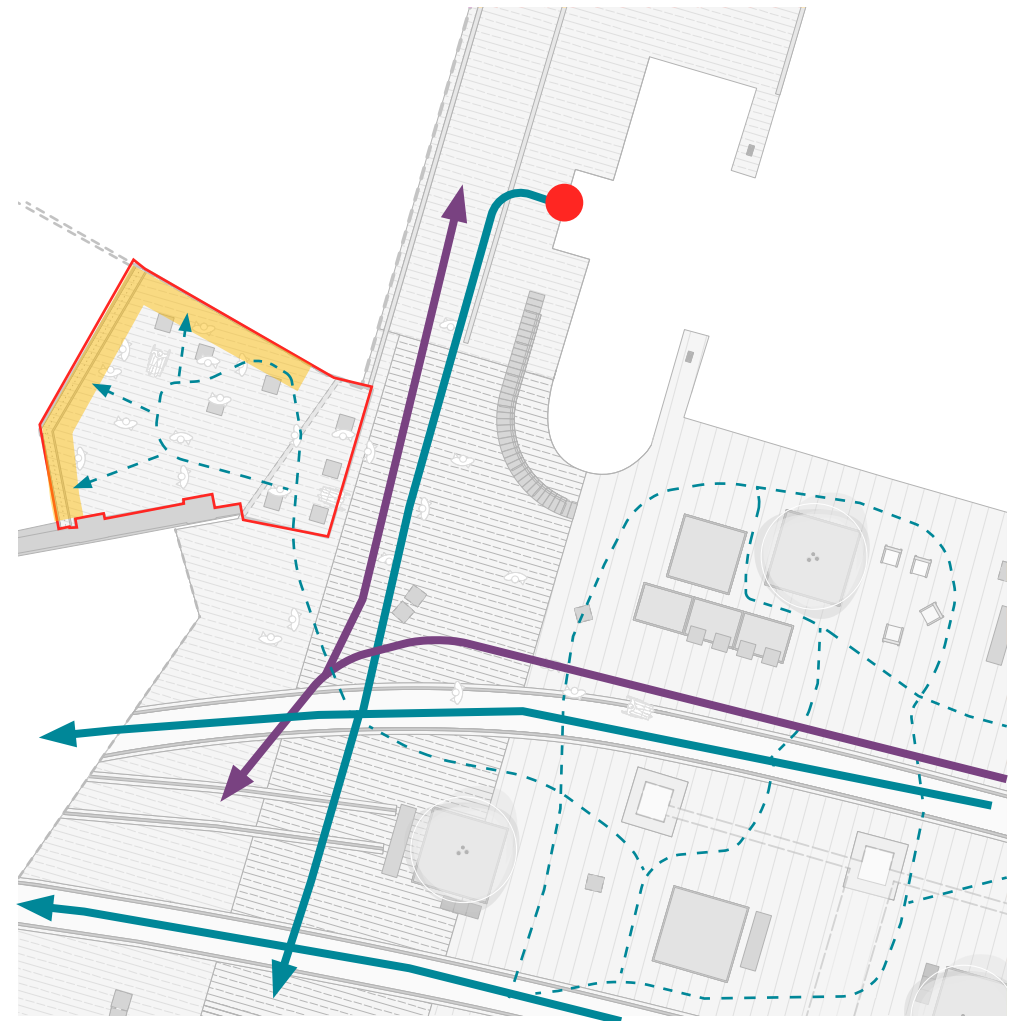
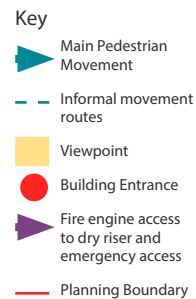
Plant Room and Wider Upper Yard Levels Diagram

Plant Room - Pedestrian and Vehicular Movement

Pedestrian movement across the site follows a series of informal, meandering paths that weave around site furniture and naturally culminate at a viewing point by the balustrade.

These routes are accessible to all users, encouraging exploration while connecting seamlessly to the main access paths and building entrances at the adjacent Upper Yard. Opportunities for rest are thoughtfully integrated, enhancing the experiential quality of the landscape.

Vehicular access to the plant room is not anticipated. Emergency and fire service vehicles can access the eastern portion of the Upper Yard, where turning space has been accounted for. The placement of furniture at the perimeter of the paved area of the site helps to restrict unauthorized vehicle access.



Plant Room and Wider Upper Yard Movement

Wider Upper Yard Masterplan

In the context of the wider public realm proposals, the Plant Room proposal seamlessly extends the Upper Yard, serving as the essential element that enhances the visitor experience by offering expansive, long-reaching views across the site.

The continuity of hardworks materials and the use of consistent furniture finishes for the seating and balustrades ensure a cohesive design throughout the site.



Wider Upper Yard Landscape General Arrangement

We design for all life to thrive in balance.

For today, tomorrow and the next 200 years.



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