

Haverstock Hill

Planning Condition 08 SuDS - Feasibility Study

Project No: 864

Revision - / 14th February 2020



Burwell Architects

Application ref: 2018/2179/P
Contact: David Fowler
Tel: 020 7974 2123
Date: 28 January 2019

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Development Management
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London Borough of Camden
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London
WC1H 9JE

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Dear Sir/Madam

DECISION

Town and Country Planning Act 1990 (as amended)

Full Planning Permission Granted

Address:
18-22 Haverstock Hill
London
NW3 2BL

Proposal:
Demolition of existing buildings and ancillary structures (11 flats, A1 unit, A5 unit) and construction of a new building comprising ground plus basement and five upper floors for use as 29 no. dwellings (Class C3) and flexible Class A1/A2/A3/A4 together with cycle parking, landscaping, refuse and associated works.
Drawing Nos:

The Council has considered your application and decided to grant permission subject to the following condition(s):

Condition(s) and Reason(s):

- 1 Three years from the date of this permission

This development must be begun not later than three years from the date of this permission.

Reason: In order to comply with the provisions of Section 92 of the Town and Country Planning Act 1990 (as amended).

- 2 Approved drawings

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Introduction

Burwell Architects have been asked to provide a document in order to discharge Planning Condition 08.

Application Reference 2018/2179/P

Conditional Approval dated: 28th January 2019

Condition 8 SUDS

Prior to commencement of the relevant part of the development details of a sustainable urban drainage system shall be submitted to and approved by the local planning authority in writing.

SUDS will be implemented prior to the opening of the relevant parts of the development.

Reason: To reduce the rate of surface water run-off from the buildings and limit the impact on the storm-water drainage system in accordance with Policies CC1, CC2, CC3 of the London Borough of Camden Local Plan 2017.

The below ground drainage consultants, Engineeria, have already been liaising with Camden's planning department on this matter.

This document seeks to demonstrate the viability of blue roofs in response to Camden's Sustainability Officer's request in his email 22 January 2020.

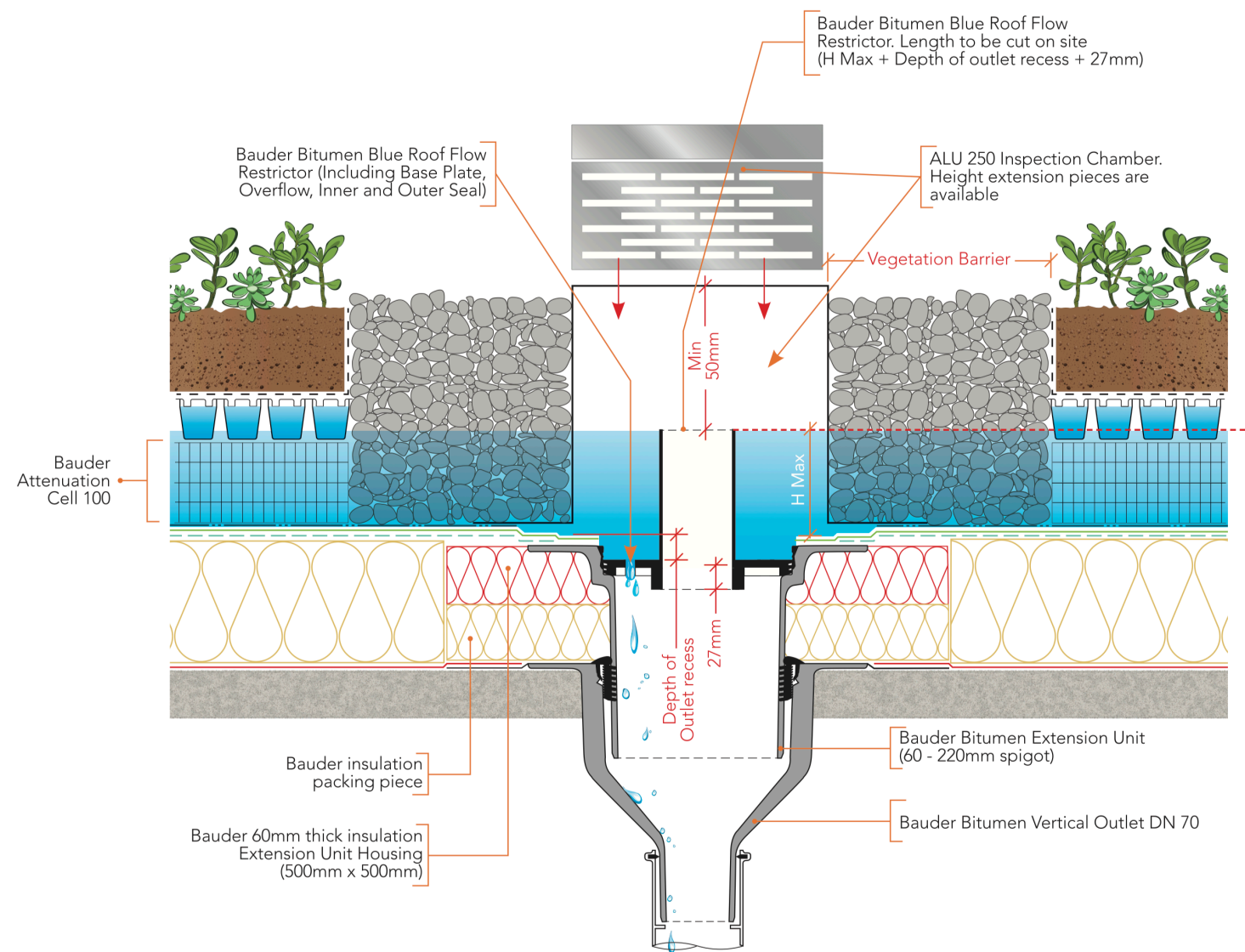
The current proposals are for an attenuation tank at ground floor level with a 20.8m³ capacity. All the surface water from the roofs and courtyards is diverted via this tank. This is referred to on page 74 of Piercy & Company's consented Design and Access Statement along with using Green Roofs to retain storm water.

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Blue Roofs

We have adopted Bauder's blue roof by way of an example in order to demonstrate the likely impacts of using this type of system. It will add an additional 250mm min. to the roof build ups at every level where it is to be used.



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Structure

Executive summary from Engineeria's SuDS feasibility study.

E0648 — 18-22 Haverstock Hill — SuDS feasibility study

1. Executive Summary

The following SuDS feasibility study report has been prepared by Engineeria for the development at 18-22 Haverstock Hill Project in response to the document received from the Lead Local Flood Authority – London Borough of Camden (Planning reference: 2019/5440/P) requesting for a feasibility study into the possibility of incorporating a blue roof system into the development.

The following reports have been issued previously to Camden Council:

- SuDS report (No: E0648-EEE-00-XX-RP-C-0010 Rev P1) on 21.08.2019 addressing Condition 8 for the planning permission for the proposed development (reference: 2018/2179/P).
- SuDS Technical addendum report (No: E0648-EEE-00-XX-RP-C-0010 Rev P2) in response to the request for further information from the Lead Local Flood Authority – London Borough of Camden. Planning reference: 2019/5440/P. The addendum report provides calculation and the attenuation volume size justifying the reduced surface water flow discharge rate of 2.4 l/s (2 - 2.5 l/s as requested).

The conclusions of the feasibility study are that the incorporation of a blue roof system is not feasible due to the following primary reason:

- Increase in loading on the structure:
 - It is not feasible to include the total volume of attenuation at roof level due to the increase in loading on the raft slab (construction of which has already commenced following a detailed iterative raft slab analysis) and also superstructure.
 - In order to justify a raft solution (a more sustainable foundation solution than piling), building loads have been kept as low as possible. This is evident in the use of a steel and timber structural frame at 5th and roof floor level in lieu of concrete.

The SuDS solution provided (green roofs and below ground attenuation tank) represents the most suitable strategy based on due consideration of the SuDS hierarchy, given the site and building constraints.

Additional considerations and further commentary on Policies CC2 and CC3 from the Camden Local Plan are addressed in Sections 2 and 3.

engineeria

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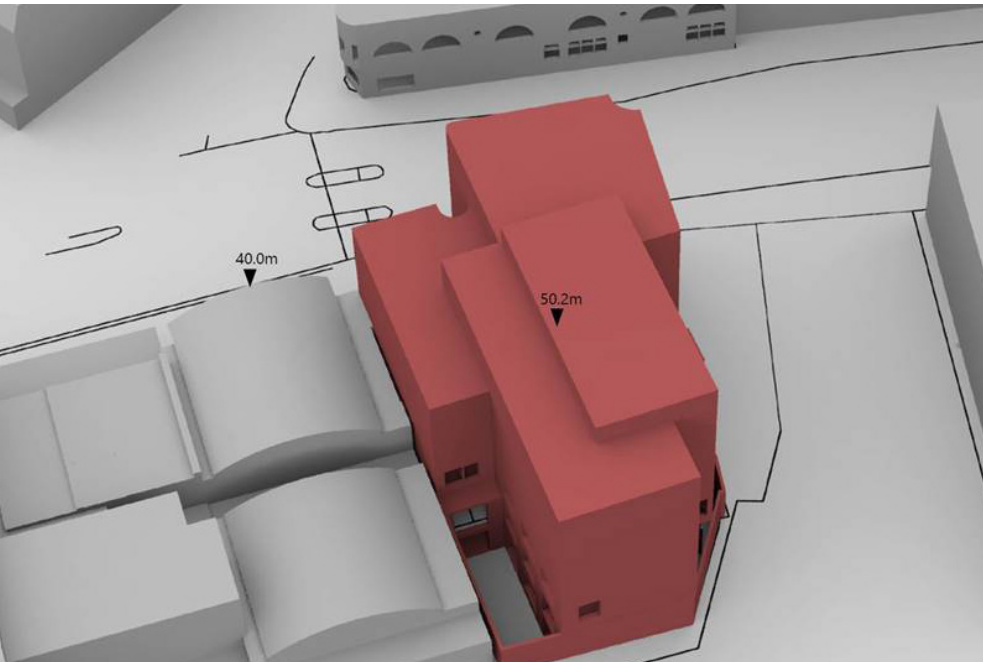
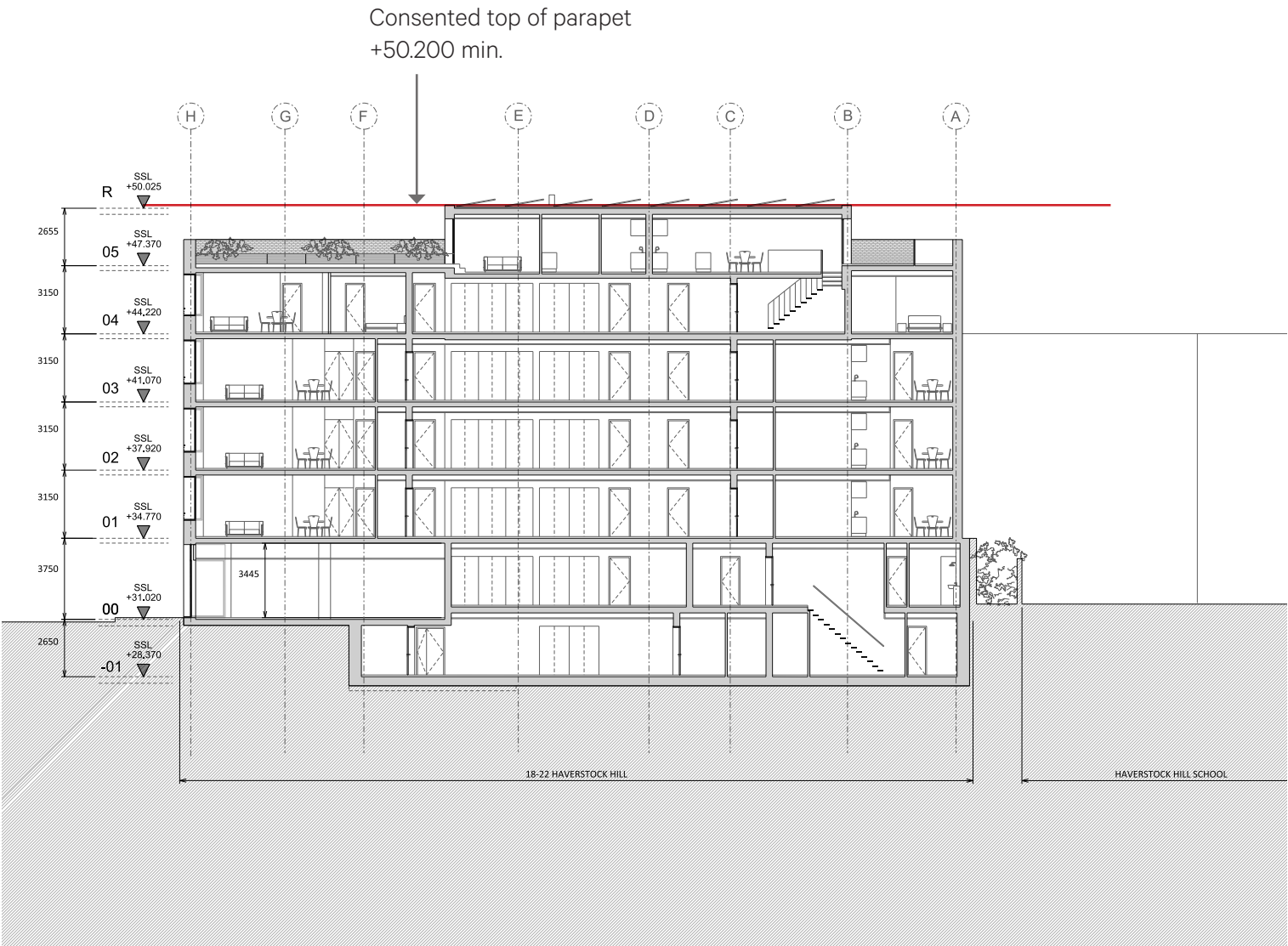
Blue Roof - Impact on consented height

Parapets

The existing consented planning permission by Piercy & Company indicates a fifth floor roof SSL of +50.025. We would expect to add at least six brick courses to this figure to allow for insulation, the roofing system and a 150mm upstand to the parapet when applying a blue roof to the fifth floor roof.

Storage or rainwater at this level would mean that any attenuation would only be off the fifth floor roof area whereas a tank located in the basement allows for surface water to be captured from flat roofs at various levels.

The proposals currently include for a set of PV's at fifth floor roof level which are currently positioned to be discreet when viewed from the street. It may be possible to mount the PV's above a blue roof but it raises them still further so that they would become increasingly visible from below interfering with the clean parapet line and increasing the mass of the building.



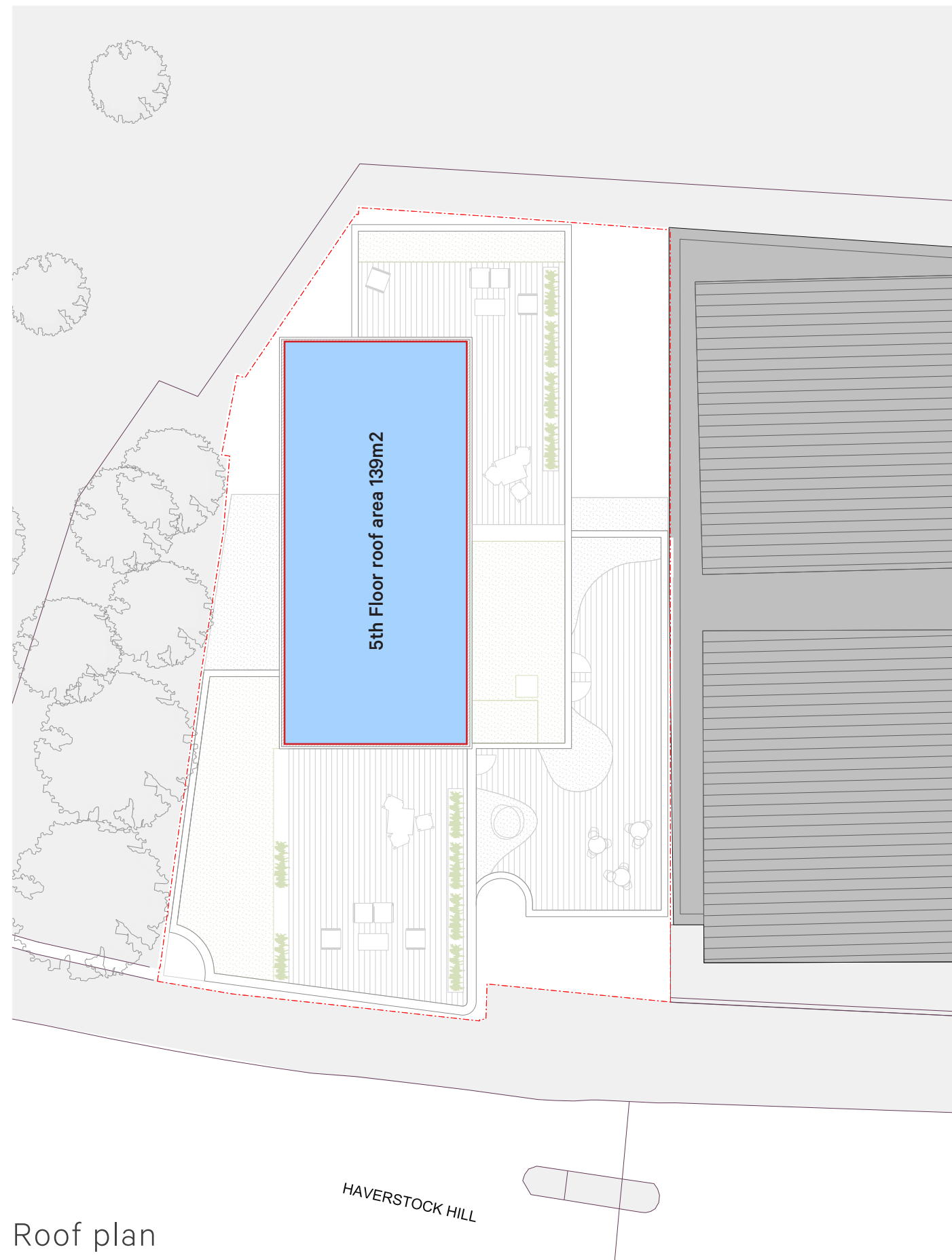
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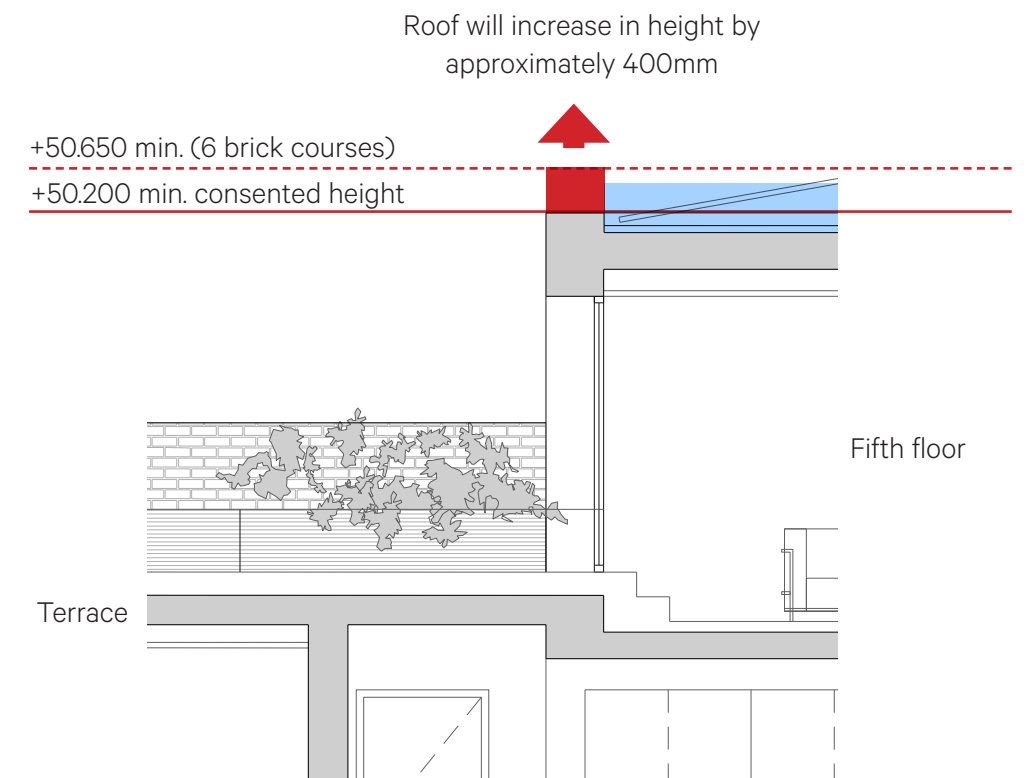
Blue Roof - Impact on consented height

Parapets

Introducing a Blue Roof at fifth floor roof level only will increase the height of the building by approximately 450mm or 6no brick courses. This includes the additional make up of the Blue Roof itself and a 150mm parapet to contain the top level of planting.



Roof plan



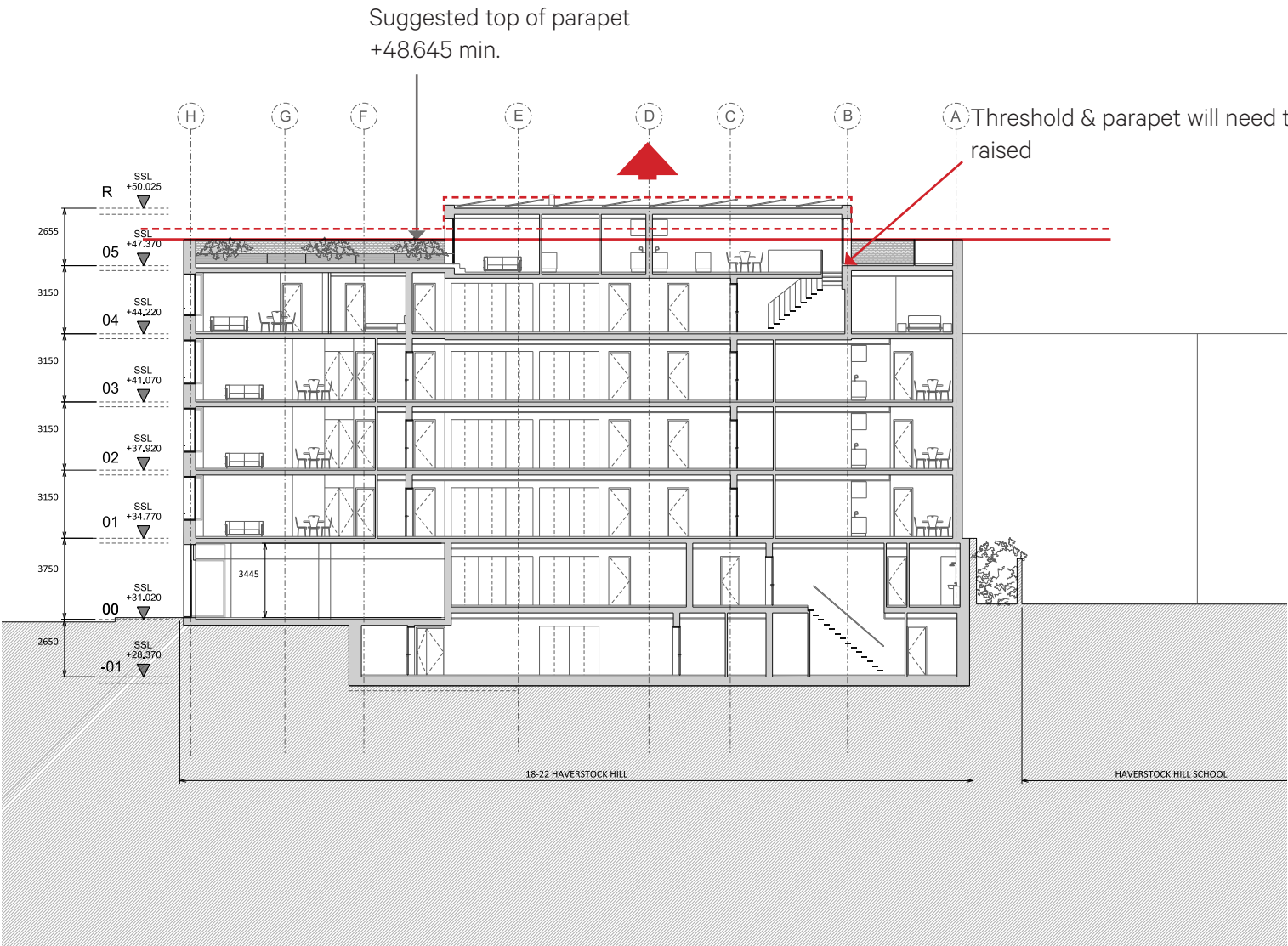
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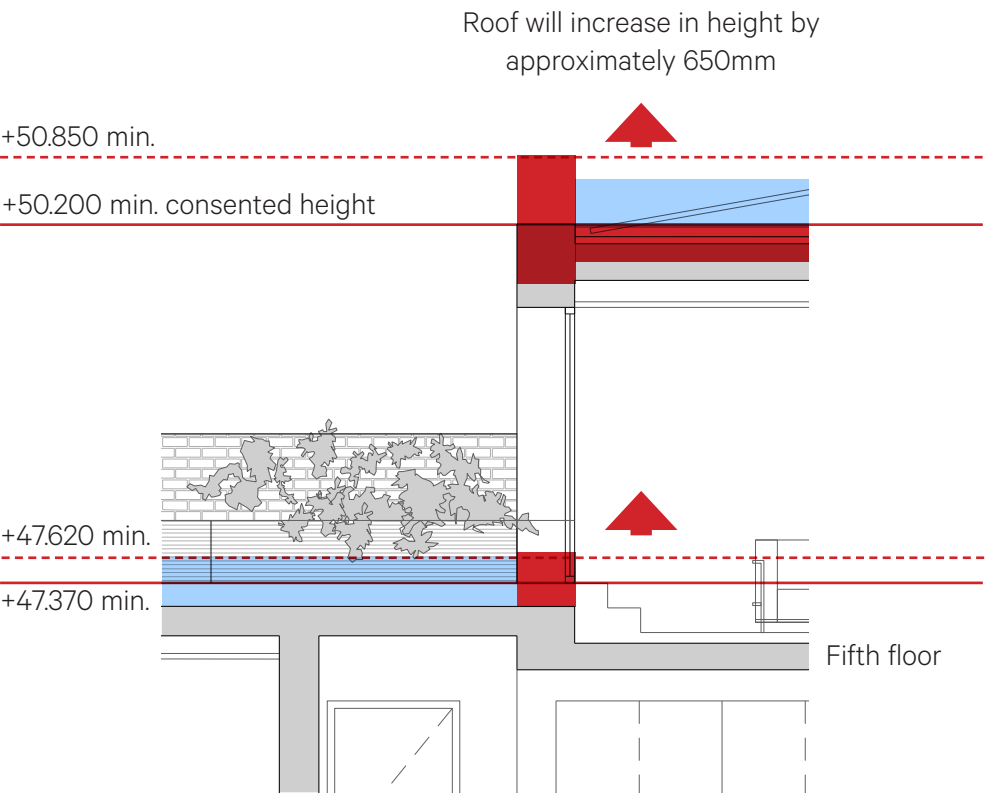
Blue Roof - Impact on consented height

Thresholds

The existing consented planning permission by Piercy & Company suggests a parapet level of +48.645 at fifth floor level. Whilst this may appear to offer the possibility of retaining rainwater at high level this will result in raising the thresholds out onto the roof terraces. This in turn will push the roof level up by an additional 250mm.



Long section



Threshold / parapet detail

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Blue Roof - Impact on consented height

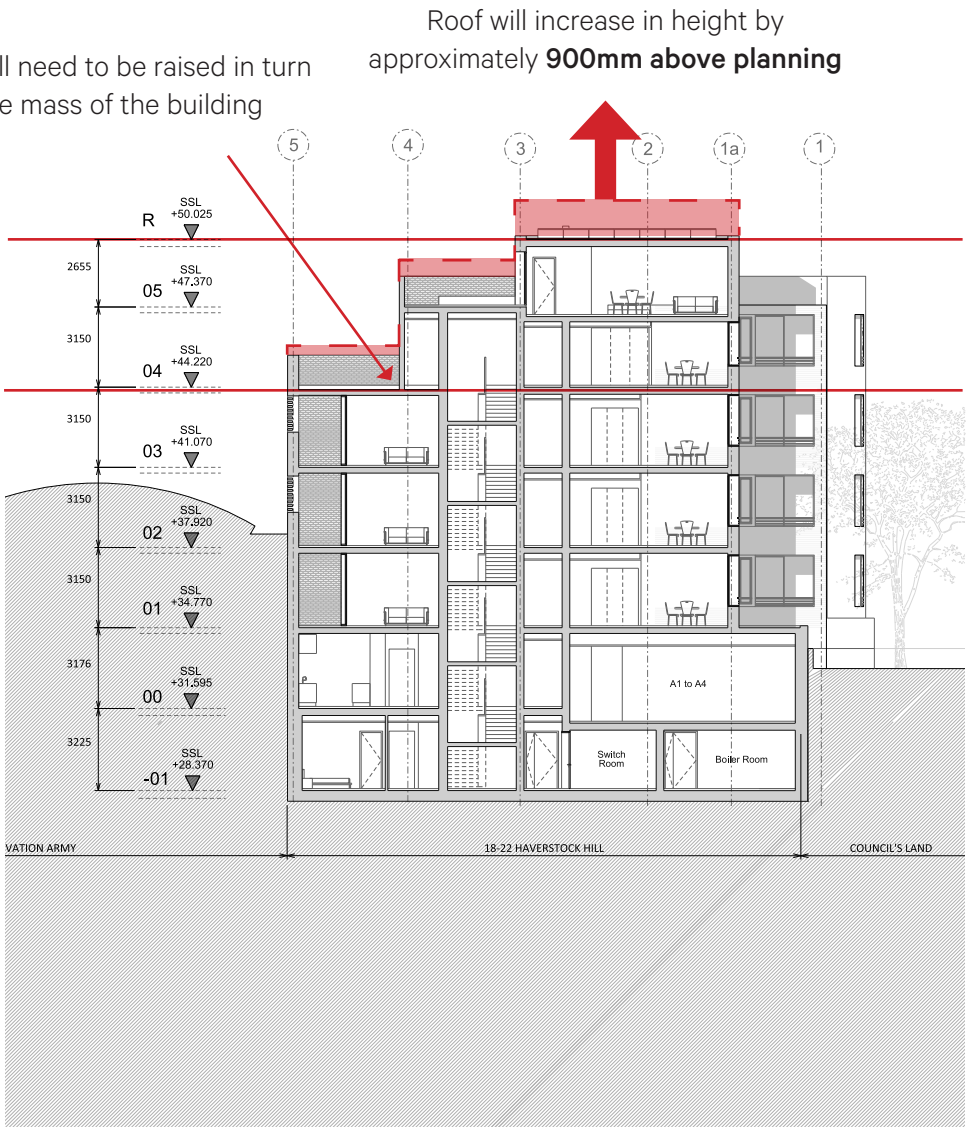
By introducing blue roofs at three levels it will push floor levels up incrementally. **The increase in height will be significant.**

Threshold will need to be raised in turn increasing the mass of the building

Roof will increase in height by approximately **900mm above planning**



Fourth floor plan



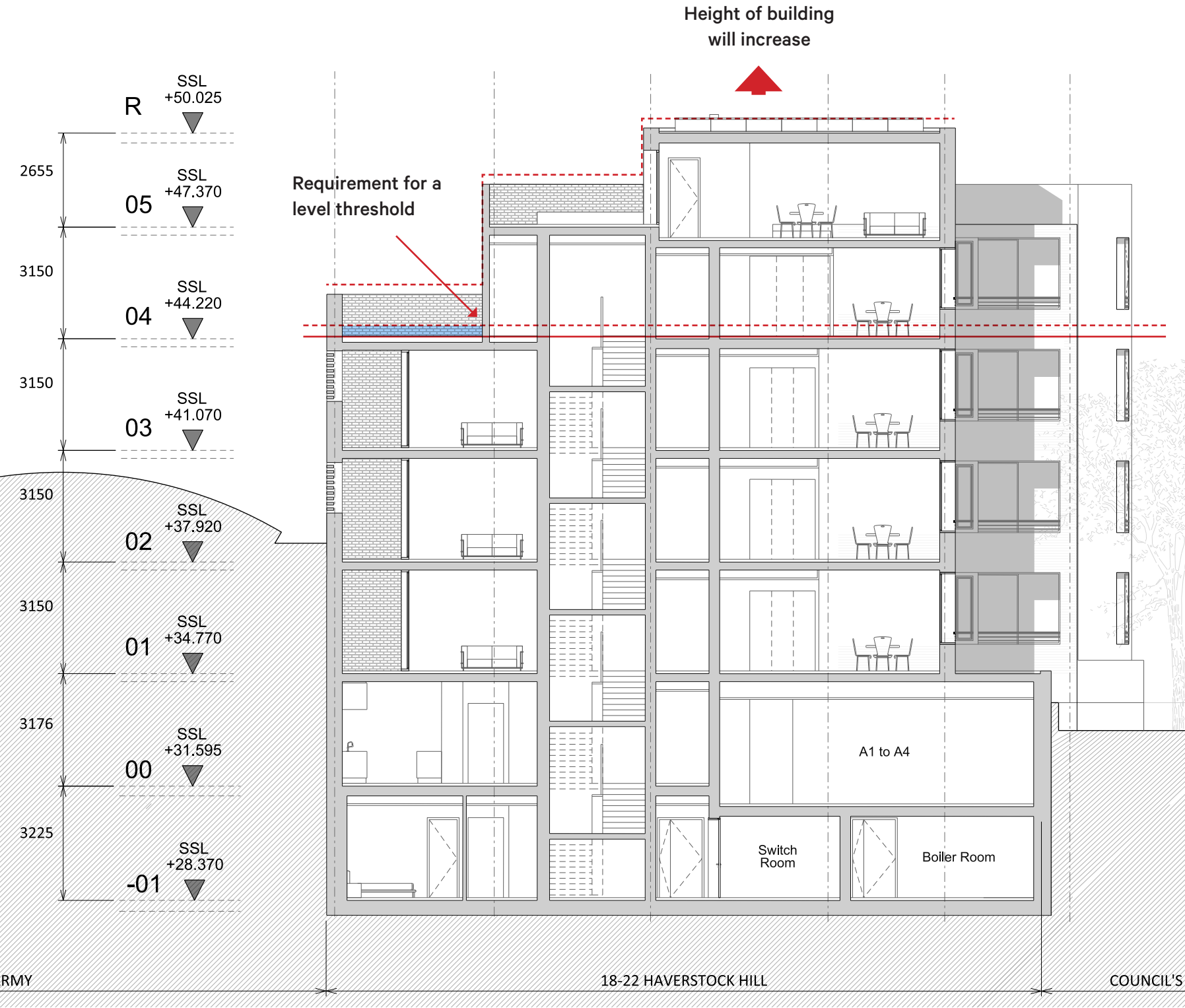
Short section

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Blue Roof - Accessibility to amenity space

Introducing a blue roof at fourth floor level would render the access to the amenity space non Part M compliant as a level threshold would no longer be achievable. This could be overcome by adjusting slab levels but would also result in the height of the building being increased.



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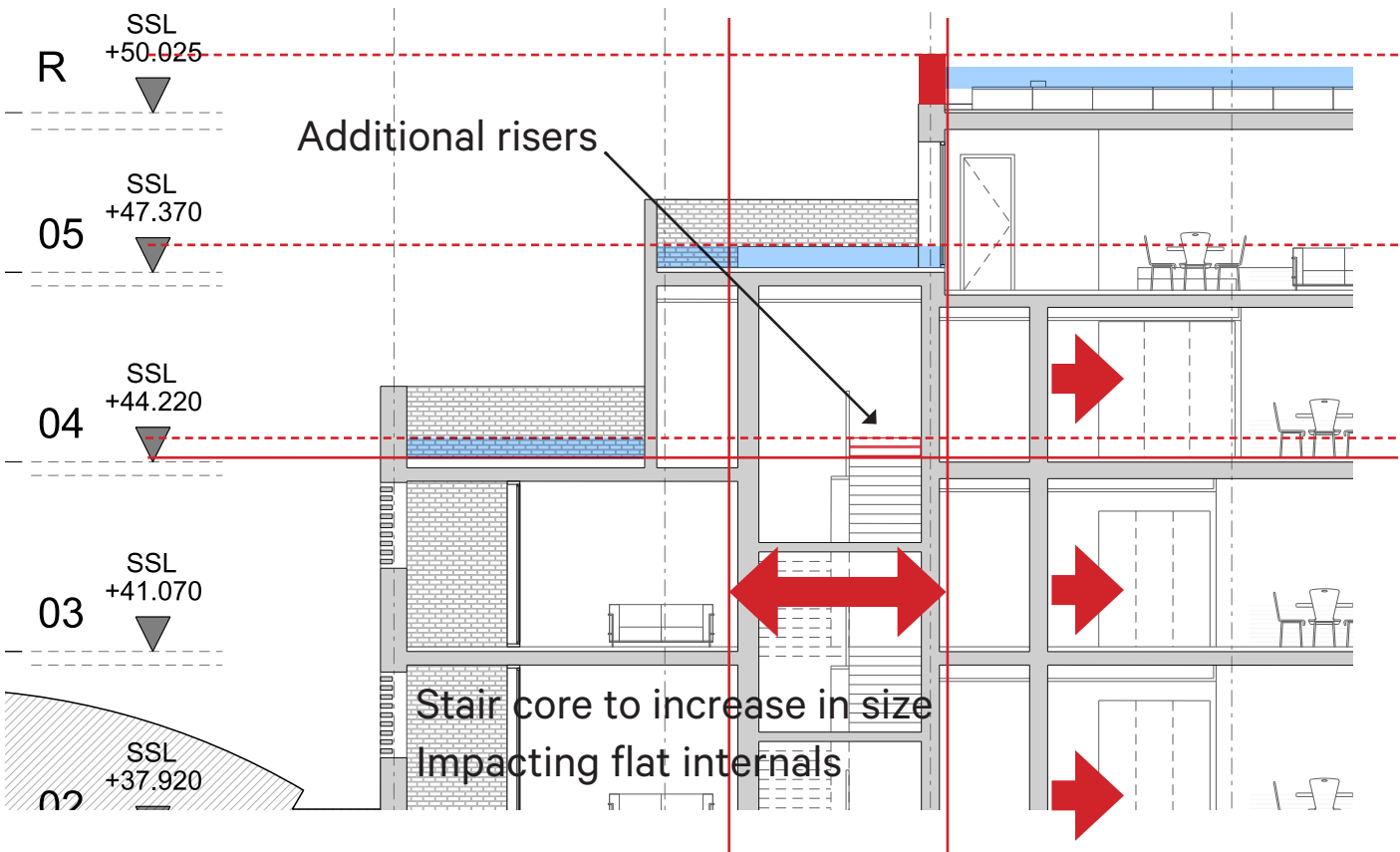
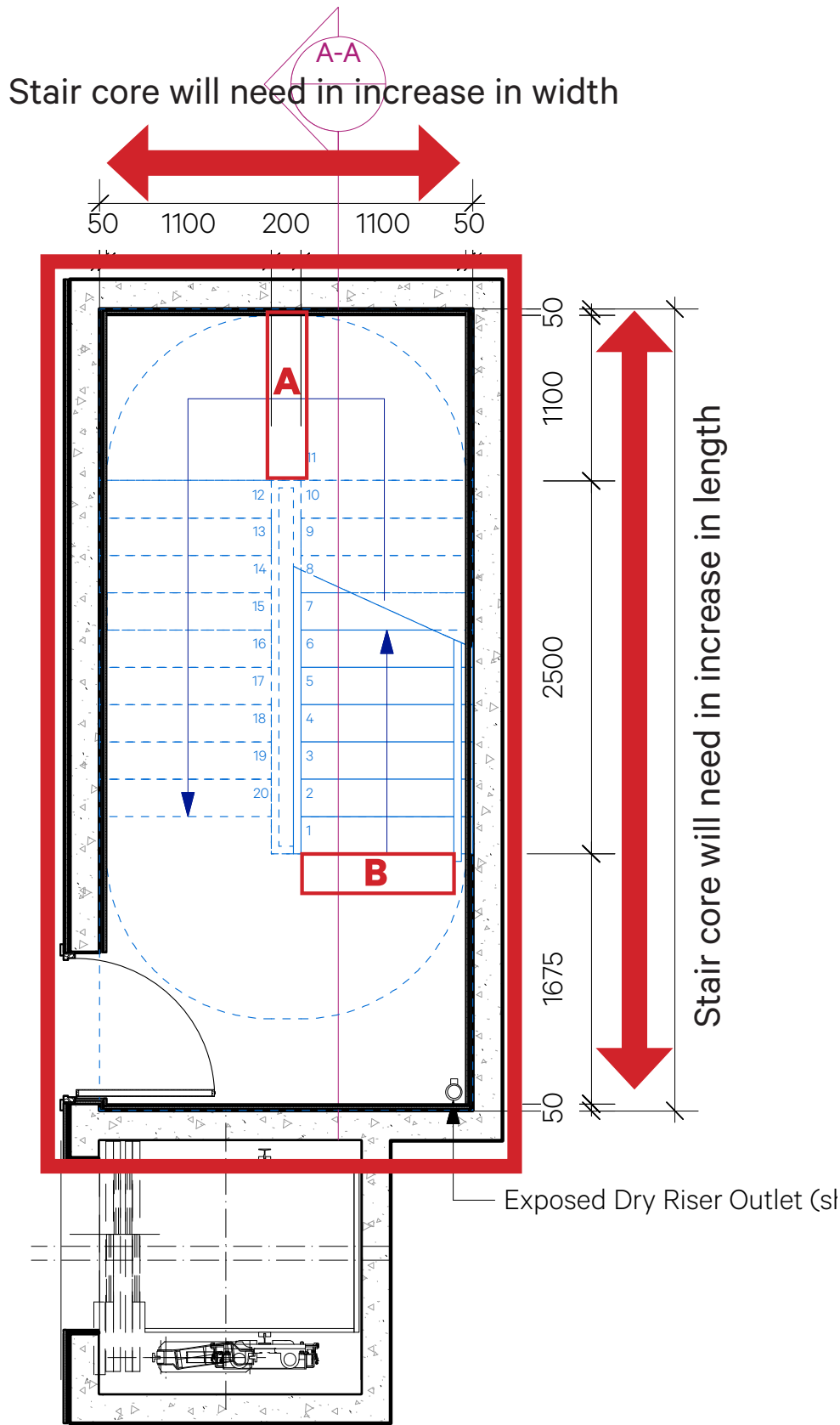
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Blue Roof - Impact on stairs / internal layouts

If the slabs are raised to allow for a blue roof there will be an impact on the stair core. From fourth floor up there be an additional two risers required.

In order to accommodate this the stair core will need to increase in size either in length or width. This will have an impact on the consented internal arrangements possibly rendering them non compliant. The consequences of an enlarged stair core will be felt from basement to fourth floor.

A similar effect will be felt when addressing the private stairs within the two penthouse units. Currently these show fifteen risers. Should two additional risers be required this would result in a seventeen riser stair making them non Part K compliant. A landing would need to be introduced potentially effecting the internal arrangements.



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Blue Roof

Further considerations:

- Difficult and expensive to maintain the flat roof membrane. Access for maintenance is typically every six months and if used at fifth floor level will require access via the residential units.
- Membrane failure would be catastrophic.
- Proposed locations are all above residential units.
- Vulnerable to mechanical damage
- Risk of damage reduced if water can be stored elsewhere.
- Access / maintenance issues through a private demise.