Notes

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Rev	Date	Amendment	Dra	Rev	App
A	13/06/2025	Costing	AM	AW	AW

S2
Suitable for Information

The Harlington, Fleet
SDE02035

Ground Floor Plan - Initial Costing
Option 2

Drawn	Status
AM	Construction
Reviewed	**Date**
AW	13/06/2025
Approved	**Scale**
AW	NTS

Project	Orig	Vol	Lev	Typ	Rol	No	Status	Rev
02035	SDE	00	GF	SK	S	1201	S2	A

4th Floor, 1 Throgmorton Avenue
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sd-engineers.com
020 8144 8900

Proposed Structural Works

Box frame steel structure to re-support upper floors of library following removal of existing columns at ground floor.

- Allow for pre-camber of new box frames
- 3no. columns at ground floor to support mezzanine floor over. New footings to each column.
- Allow for underpinning of existing foundations around perimeter of auditorium to support hung mezzanine balconies, to be verified through investigation
- Strengthening of slab to support additional load from stored retractable seating unit
- RC lintels in all new openings 800-1800mm wd. & steel beam lintels in openings exceeding 1800mm.

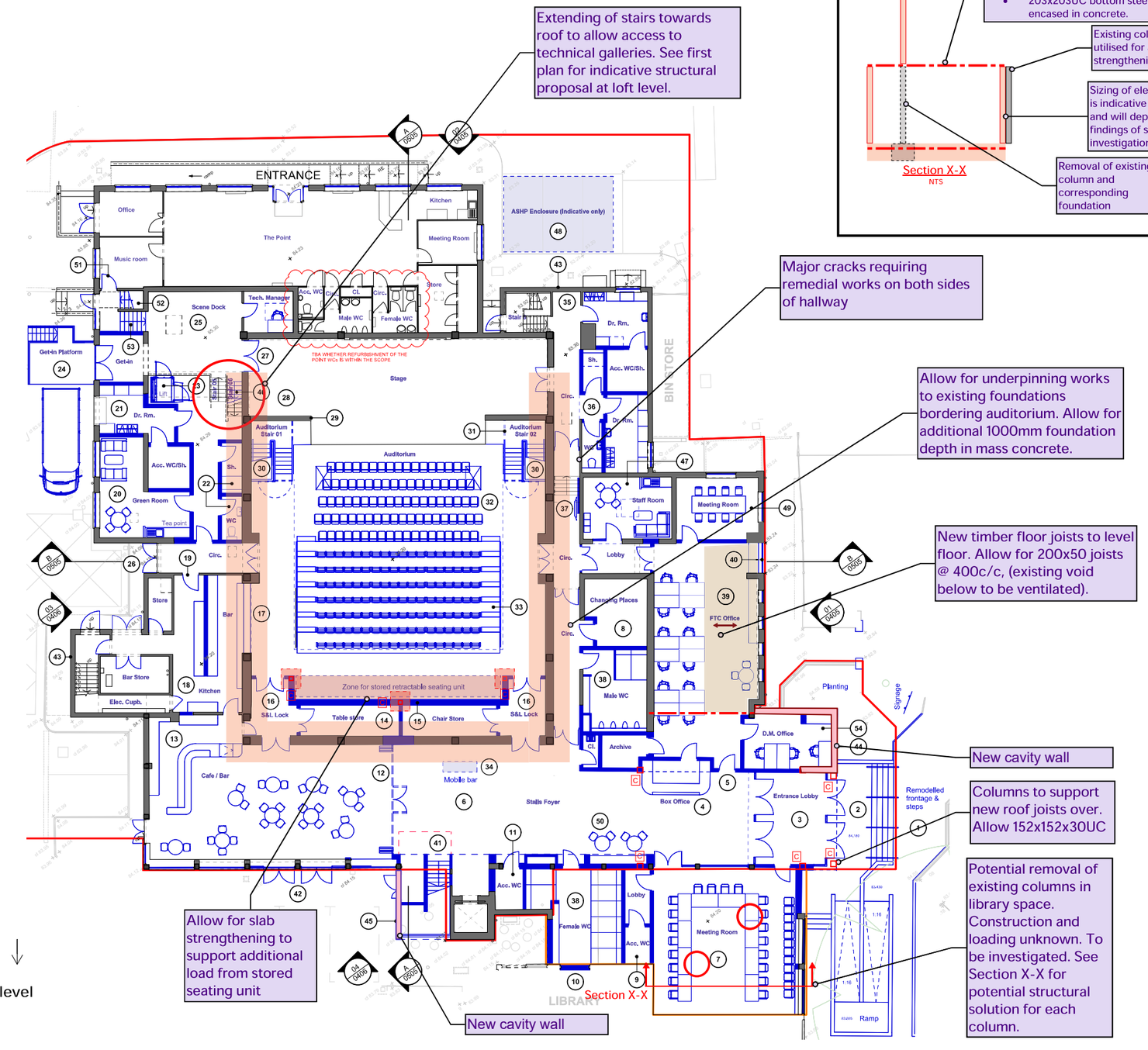
Assumptions

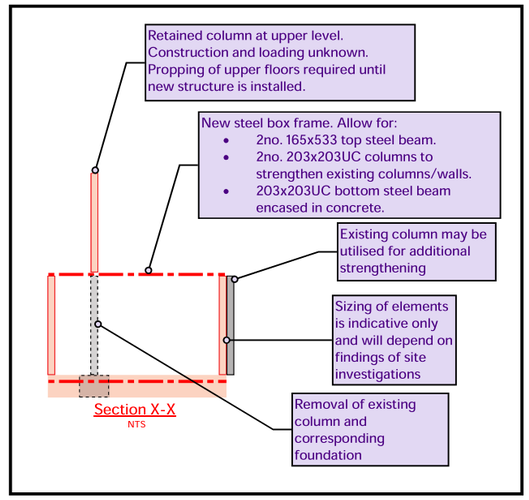
- Existing masonry wall surrounding main theatre space can sufficiently support additional loading from mezzanine and technical galleries
- Ground floor slab is insufficient to support new loads from column and thus, new footings are required. This can be verified through further geotechnical testing.
- Existing columns / walls are present within library space and can be reused to support new structure in this space

Remedial works

- Cracking on both sides of hallway to the east of the site to be addressed
- Make good to retained masonry following demolition of existing masonry i.e. for new openings

This list is not exhaustive. Please refer to *Full Condition Survey,* January 2020 from Cooper & Withycombe for more information.





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Rev	Date	Amendment	Dra	Rev	App
A	13/06/2025	Costing	AM	AW	AW

S2
Suitable for Information

The Harlington, Fleet
SDE02035

Mezzanine Floor Plan - Initial Costing
Option 2

Drawn	Status
AM	Costing
Reviewed	**Date**
AW	13/06/2025
Approved	**Scale**
AW	NTS

Project	Orig	Vol	Lev	Typ	Rol	No	Status	Rev
02035	SDE-	00-	M1-	SK-	S-	1202	S2	A

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Proposed Structural Works

- New timber floor joists supported on new steel beam to form technical gallery
- New proscenium beam to support new beams directly above stage
- New padstone / steel spreader beam to support proscenium beam at both ends
- New timber floor joists to form mezzanine to rear of auditorium space supported on steel beams, steel columns & hanger rods
- New roof structure over office space including new courses of masonry to form increase in storey height
- New floor structure and steel framing in multi-purpose studio
- New roof support following cutting of existing trusses to allow for stair extension
- RC lintels in all new openings 800-1800mm wd. & steel beam lintels in openings exceeding 1800mm.

Assumptions

- Existing masonry wall surrounding main theatre space can sufficiently support additional loading from mezzanine and technical galleries
- Overhead lighting rig within stage area to be supported on steel grillage, not on timber roof joists.

Remedial works

- Make good to retained masonry following demolition of existing masonry i.e. for new openings

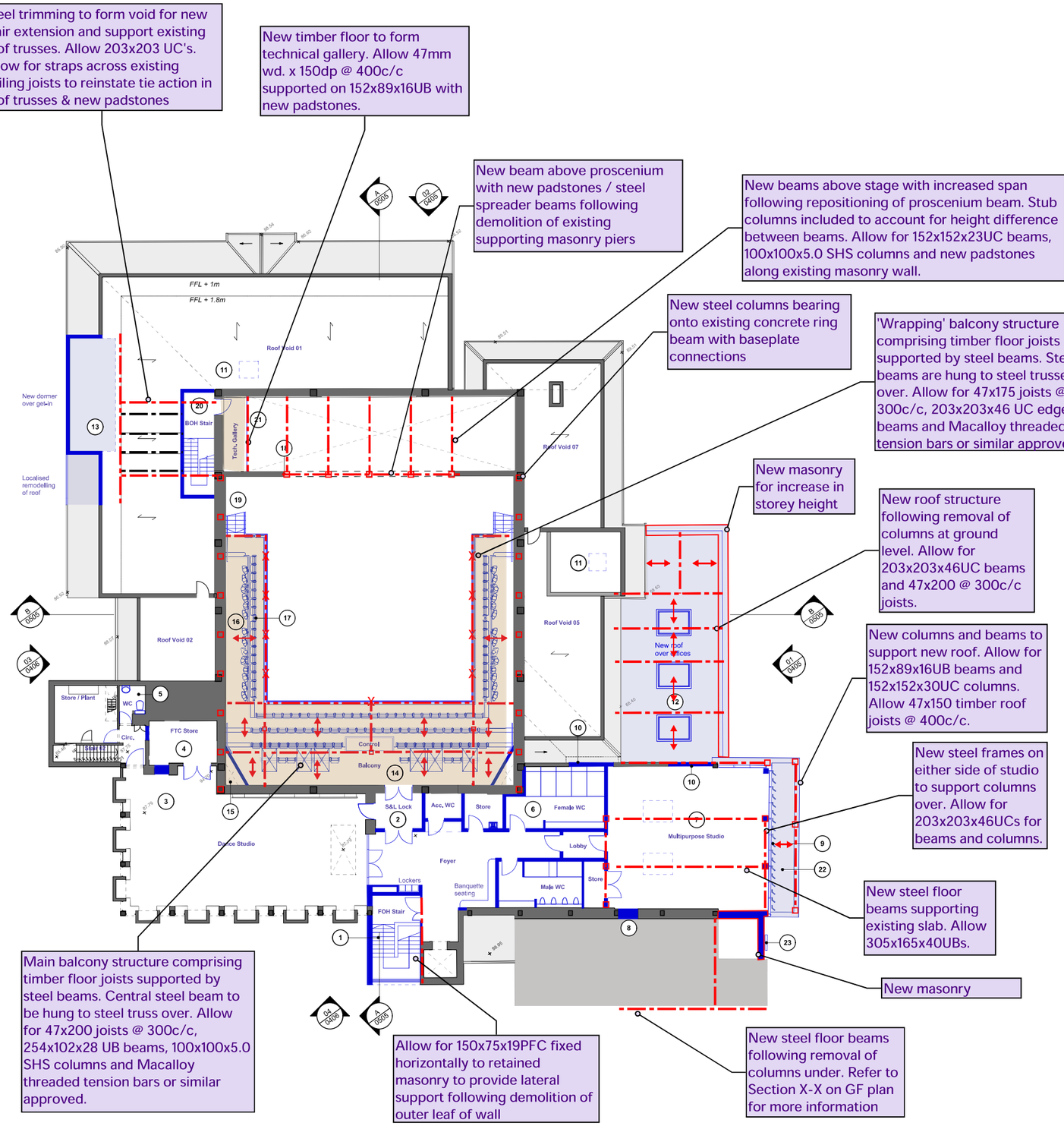
This list is not exhaustive. Please refer to *Full Condition Survey,* January 2020 from Cooper & Withycombe for more information.

All structural solutions subject to investigations and full design at RIBA Stage 2

From information provided, imposed loadings of proposed development are not expected to exceed existing imposed loadings

New structure

Existing structure



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Rev	Date	Amendment	Dra	Rev	App
A	13/06/2025	Costing	AM	AW	AW

S2
Suitable for Information

The Harlington, Fleet
SDE02035

Roof Plan - Initial Costing
Option 2

Drawn	Status
AM	Information
Reviewed	**Date**
AW	13/06/2025
Approved	**Scale**
AW	NTS

Project	Orig	Vol	Lev	Typ	Rol	No	Status	Rev
02035	SDE	00	RF	SK	S	1203	S2	A

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Proposed Structural Works

- Removal of existing joists & replacement with new 75wd x 250dp. C24 timber joists @ 300c/c
- Removal of existing laminated timber roof beams with replacement with new steel trusses of 1.0m depth
- Removal of existing timber posts supporting timber roof beams and replacement with new steel posts.
- New short spanning steel beams above auditorium space to support new overhead lighting rig system
- New steel trimming out at eaves level to form void for upward extension of existing stairs
- New localised roof structures in wraparound buildings

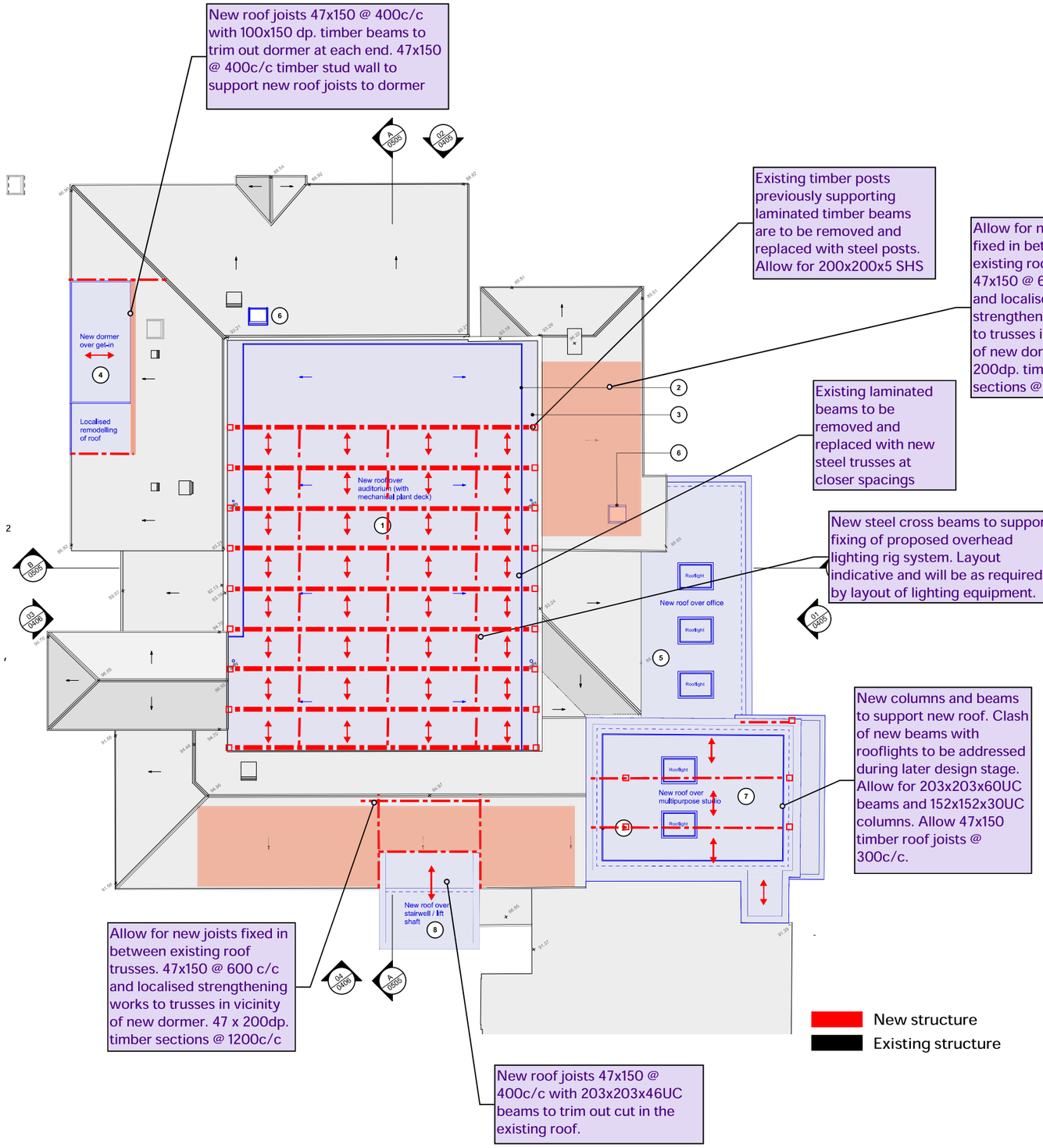
Assumptions

- New plant is contained within roof area directly above auditorium space i.e. no plant is proposed to be located in roof area above stage area
- Plant loading assumed to be 1.50kN/m (dead)
- Roof joists designed for 6mm deflection limit as per requirements for plant equipment
- Loadings for the proposed overhead lighting rig have been extracted from *Structural Loading - Initial Information* April 2025 from CharcoalBlue. Layout & positioning of fixings have been assumed.
- Overhead lighting rig within stage area to be supported on steel grillage, not on timber roof joists.
- Existing woodwall slabs are sufficient to support new insulation layer such that new structure/strengthening is not required.
- Where loads are deemed light, existing concrete columns are assumed to be able to support new structural elements
- Existing concrete ring beam around auditorium space is sufficient to take additional loads from new columns supporting new trusses

Remedial works

- Remedial works to woodwool slabs to allow installation of new insulation over

This list is not exhaustive. Please refer to *Full Condition Survey,* January 2020 from Cooper & Withycombe for more information.



Next Steps

1 Refining the proposals

It is intended that the information provided in this report will allow for the refinement of the architectural proposals to produce a ‘best-fit’ scheme. Subsequently, an efficient structural solution can be developed further in which the architectural proposals can be considered holistically instead of piecemeal.

2 Intrusive structural investigations

As outlined in structural drawings presented in this report, several assumptions had to be made in the absence of information on the existing condition and construction of the existing structure. While the conditions survey prepared by Cooper & Withycombe provided some information in regard to the existing structure, more detail investigations are required to better understand the design parameters which will govern the structural design in the later stages of this project. Intrusive investigations anticipated based on the current proposals are as follows:

- Trial pits internally to confirm the foundations to the auditorium and ground slab build up
- Concrete testing and rebar survey for the perimeter concrete columns and ring beam
- Access to trussed rafter roofs and survey of structural arrangement to inform modifications
- Opening up of the library ‘under croft’ structure and current external wall structural arrangement to inform column removal and modification here

3 Wider project team consultations

The architectural criteria have been a key driving force in the preparation and evaluation of the various structural schemes. However, it is appreciated that other disciplines of the project design will also have implications on the structure and should be accounted for as early as possible. In particular, for a project of this scale and function, M&E and fire requirements are likely to play a key role in the development of the structural design. Consequently, interdisciplinary coordination is vital in the next stage.

Appendix A

The Harlington, Fleet

Auditorium Roof Strengthening Options

SD Engineers Project Reference

SDE2035

Issuing Date

22/05/2025

Revision Number

A

Document Reference

Introduction