

Your ref  
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File ref

# ARUP

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Dear Kate,

## **UNSW HTH - Response to SSDA Queries**

Dear Kate,

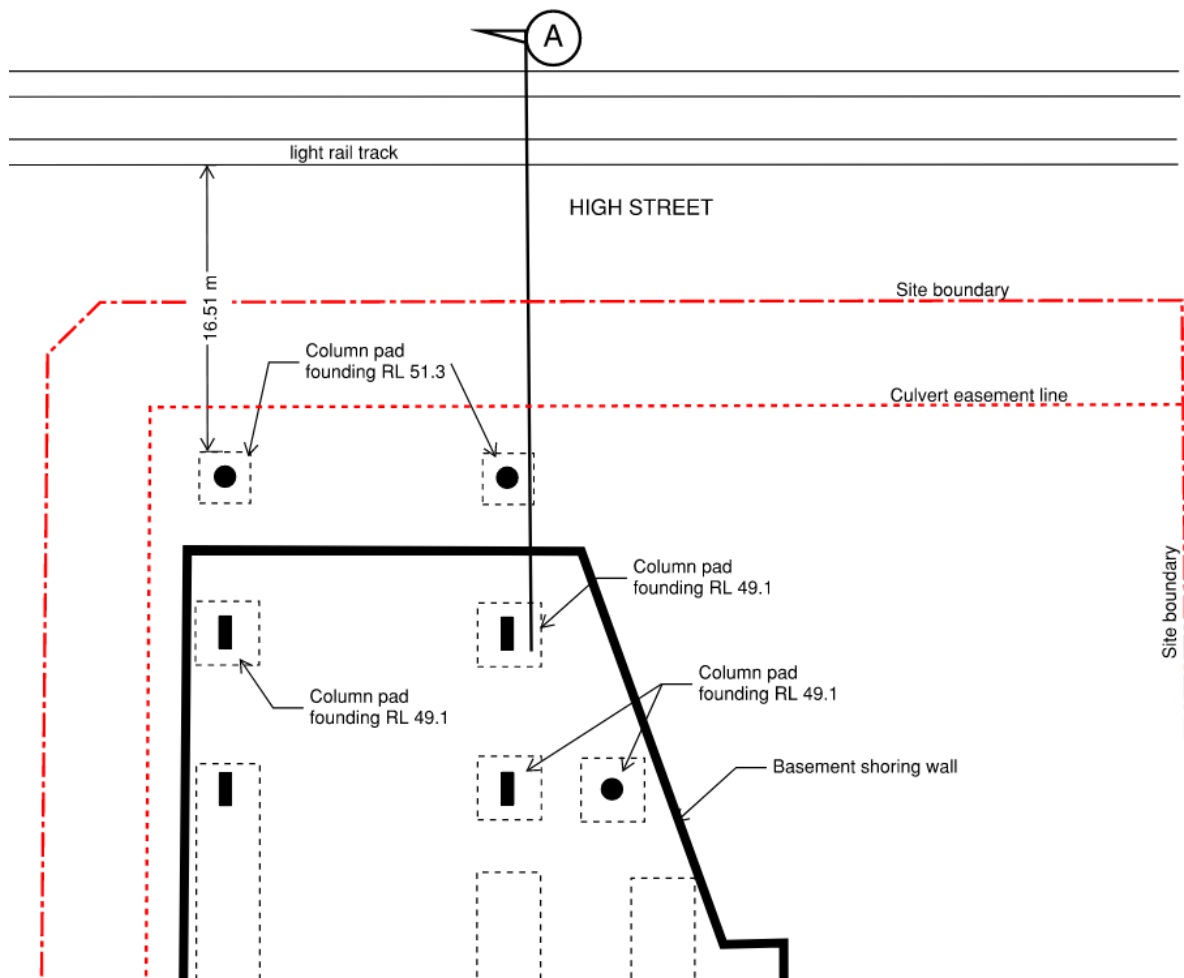
I can confirm that Arup have undertaken schematic level engineering design of the structure and building services for the proposed UNSW HTH building. This engineering input is included with the drawings, reports and other information submitted as part of the SSDA process. The project is aware of and has taken into consideration the existing light rail on High Street, which runs adjacent to the proposed building.

The appended sketches show the dimensioned setting out of the proposed building structure, sub-structure and temporary shoring anchors relative to the existing light rail. We can confirm that the proposed HTH basement shoring and foundations will impose negligible influence on the existing light rail.

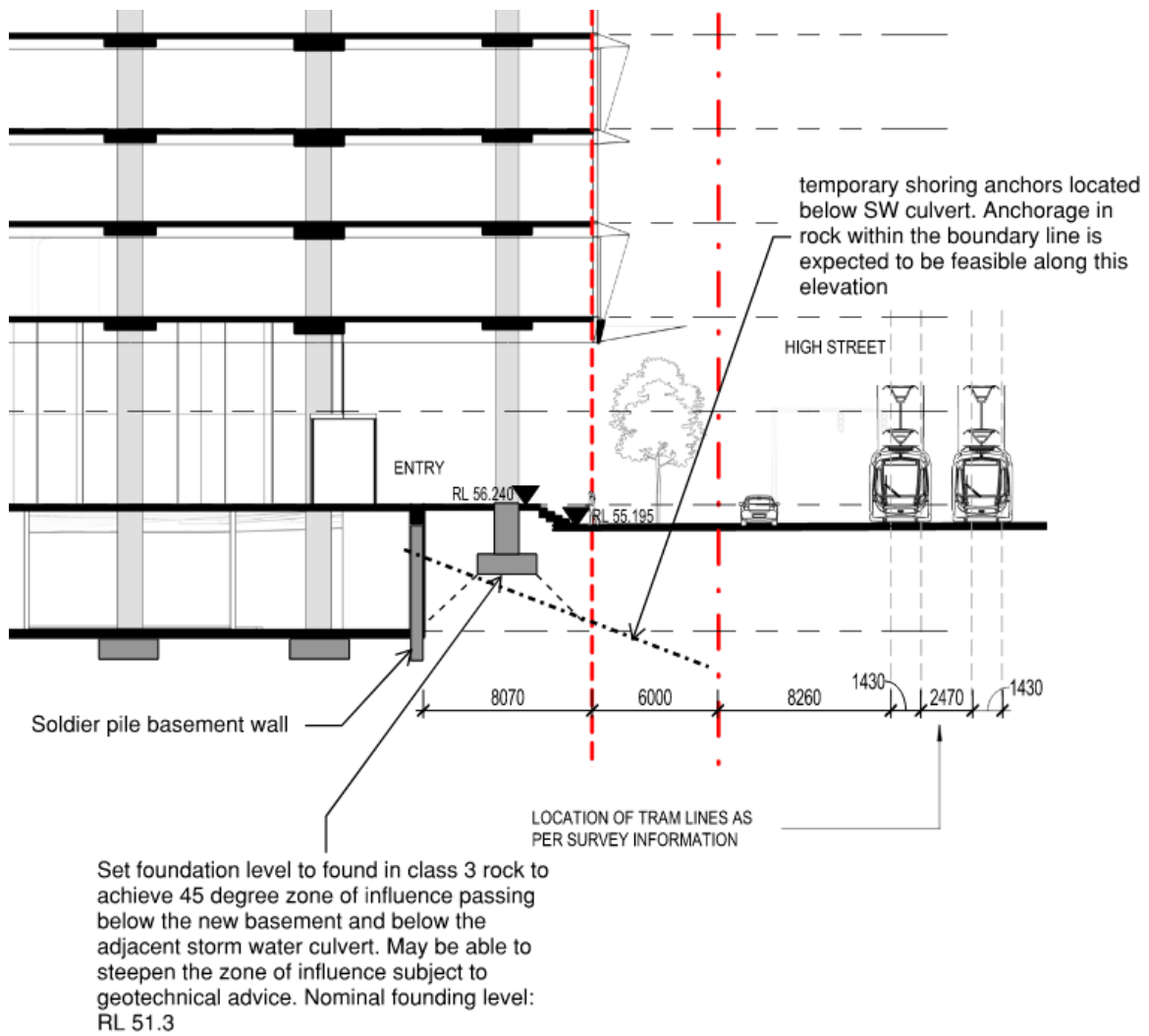
The project design team is aware that the existing light rail system inherently generates noise, vibration and electromagnetic interference (EMI) and have considered this in the design. At present there is no plan to accommodate equipment which is unusually sensitive to these influences. We are aware that if this need arises then specialist assessment will be required, and that any such assessment may determine that mitigation measures (EMI shielding, vibration isolation, etc) are needed within the building, or indeed that this building is not suitable to accommodate such equipment.

A drained basement is proposed. Ground water inflow to the basement is to be collected in a sump and pumped from the basement. The basement walls will be designed to resist the hydrostatic pressures and associated draw down forces that are expected during the design flood event. Being a drained basement, the lowest basement floor will be constructed over a drainage layer and may incorporate pressure relief ports if these are determined to be required to protect the floor from buoyancy forces. The building will have sufficient structural robustness to resist reasonable impact from floating cars and debris in the event of a flood. The building is unlikely to be undermined by scour. If it is determined during design that a drained basement is not feasible to accommodate the design flood event, then the basement will be amended to a tanked design.

If you have any further queries on this matter the design team are happy to discuss.



Foundation Plan – Illustrating proximity of structure to the light rail



Section A – Proximity of structure to the light rail

Yours sincerely

Richard Cass  
Associate

cc

Shane McLoughlin  
UNSW