

# Sirius - Tree Removal on Gloucester Walk

**DATE** 21/09/2021  
**TO** Richard Crookes Constructions Pty Ltd  
**ATTN** Ben Wilderink  
**PROJECT** Sirius Building

Dear Ben,

This letter is prepared to provide comment on the existing Sirius eastern basement retaining walls design and condition and to also comment on the stability of Trees T50 and T51 on Gloucester walk due to the required basement wall structural upgrade and proposed basement construction works.

Locations of Tree T50 and T51 are indicated on the structural footing plan with cross sections as shown in Appendix A. The Trees are approximately 0.5m to 1.0m behind the existing retaining walls. As a result, the trees are within the zone of influence of the retained material behind the wall.

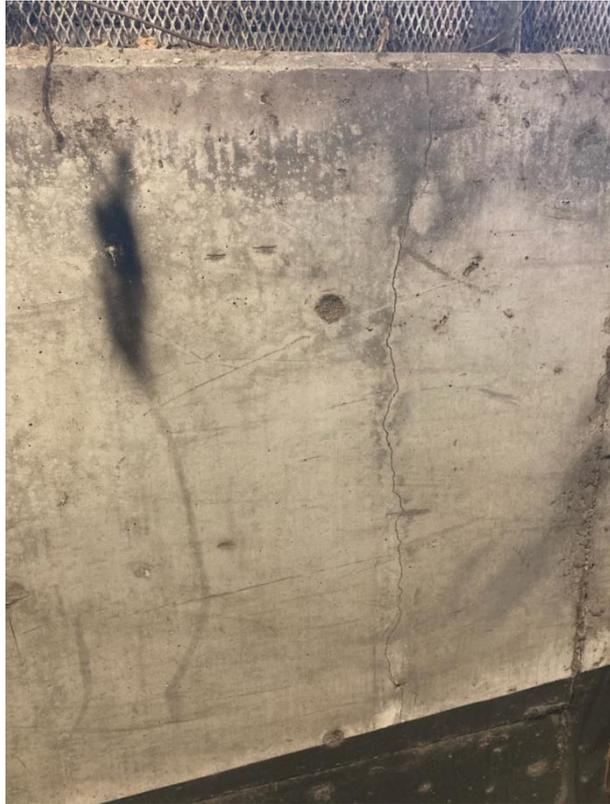
We note the existing retaining walls are of age and have been compromised by Tree 50 and 51. At Tree 50, the tree roots have penetrated the walls inducing forces onto the wall as well as compromising the integrity and waterproofing of the wall. At tree 51, the wall displays a vertical crack at the centre line of the tree trunk indicating the tree has imparted significant lateral pressure on the wall and caused the wall to fail in horizontal bending. This crack in the wall is at least 1 to 1.5mm in width indicating structural failure of the wall. We note the wall at this location also presents a 30mm lean into the basement. The lean is indicative of flexural failure at the base of the wall, or instability of the wall as a result of the added induced lateral pressure of the tree root system.



Tree 50: Plane Tree root penetration at wall floor internal junction



Tree 51: structural crack to retaining wall



Tree 51: structural crack to retaining wall (top to bottom)



Tree 51: structural crack to retaining wall (top to bottom) at centreline of tree trunk

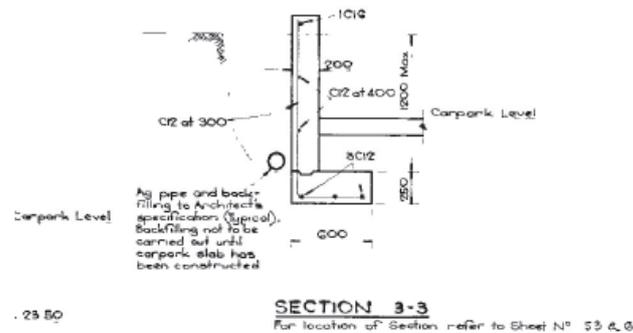
## Existing Wall and Tree Stability and Certification

The existing basement walls do not comply for stability to AS4678-2002 Earth Retaining Structures and therefore cannot be re-certified to current Australian Standards irrespective of the damage to the walls caused by Tree 50 and 51.

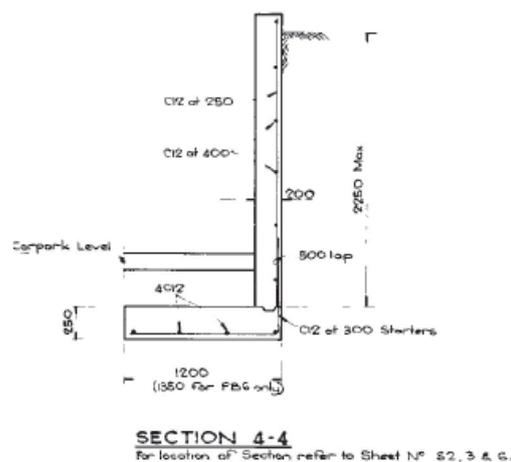
The existing retaining walls adjacent to trees 50 and 51 have narrower footings than required as specified in AS4678-2002 Earth Retaining Structures.

The 2 sections below indicate the construction of the existing walls and footings at tree 50 and 51.

Section 4-4 indicates a wall height of 2250mm having a footing of 1200mm wide. In accordance with AS4678-2002 the footing is to have a width of 1700mm minimum. The wall is therefore deemed to be unstable in accordance with the code requirements.

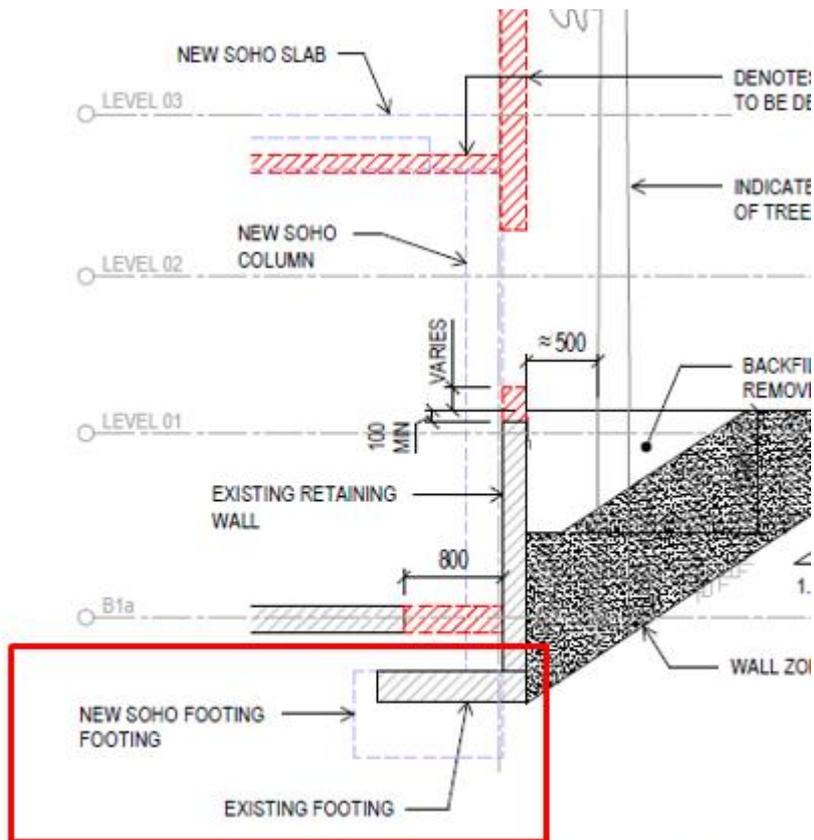


**Typical Wall section South of Grid 108.5 at Tree 50**

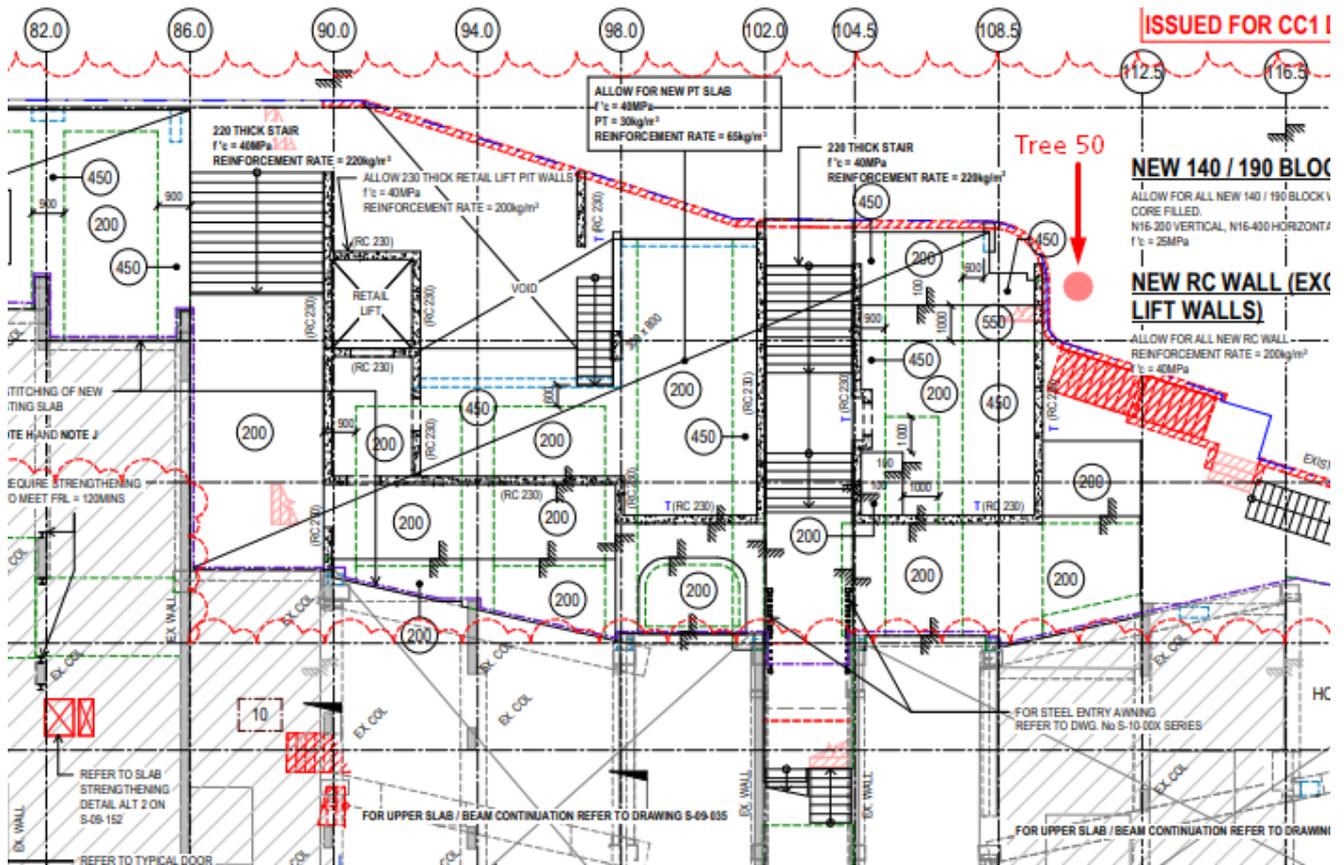


**Typical Wall section North of Grid 108.5 at Tree 51**





**TREE - T51**  
SCALE 1 : 50



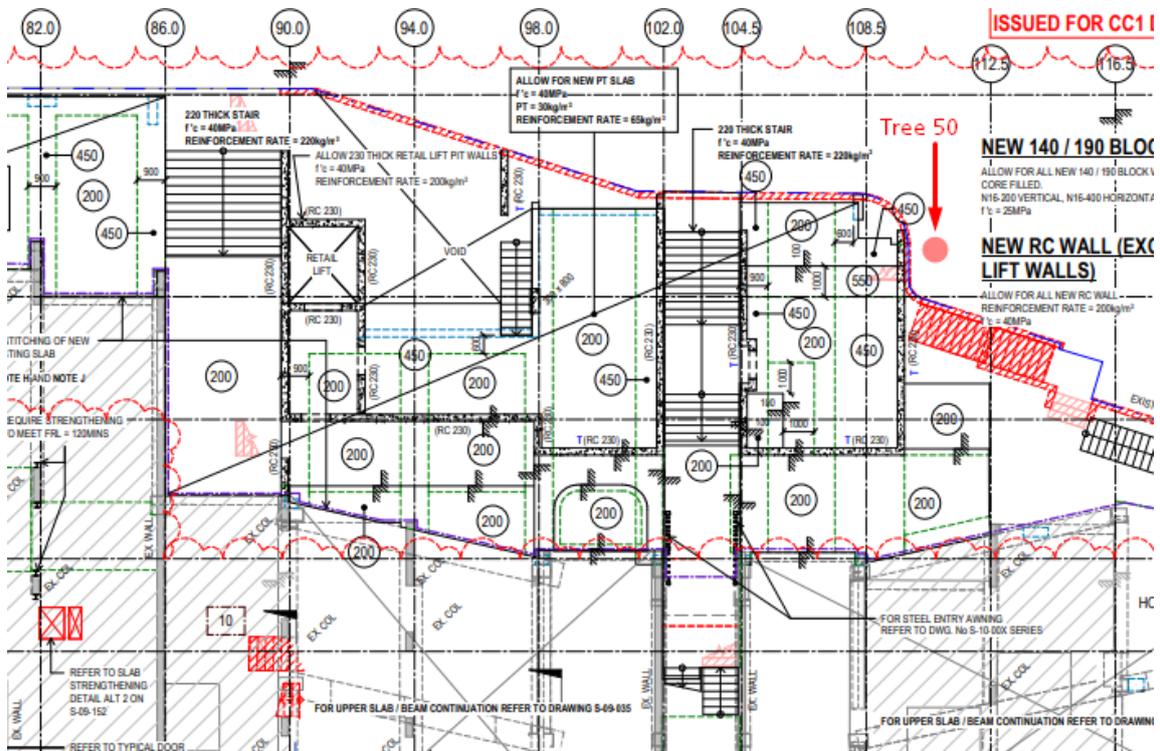
**Tree 50 Updated Podium design showing vertical support structure under clashing with the existing Section 3 Retaining Wall.**

To upgrade the building to meet current standards and good building practice (waterproofing, stability etc), which is required in order to structurally certify the completed project, the retaining walls will require removal and re-construction which will impact on the stability of tree 50 and 51.

We also note the DA approved works includes new buildings (SOHO Lots) along Gloucester Walk in the vicinity of Tree 50 and 51. These new structures require support columns with pad footings. The construction of the new columns and pad footings require local demolition of the existing retaining wall footings rendering the walls unstable during the works. In order for SCP to certify the structure as stable during construction, removal of the retained earth behind the existing retaining wall is required until the SOHO pad footings and columns are constructed.

We note temporary propping bearing onto the basement slab cannot be provided to the wall during the works as the basement slab is not bearing on the retaining wall footing (see Section 4-4 above).

With the required removal of the backfill at the tree locations and wall re-construction, the trees would be unstable. Refer to the Arborist report.



**Tree 50 Updated Podium design showing vertical support structure under clashing with the existing Section 3 Retaining Wall.**

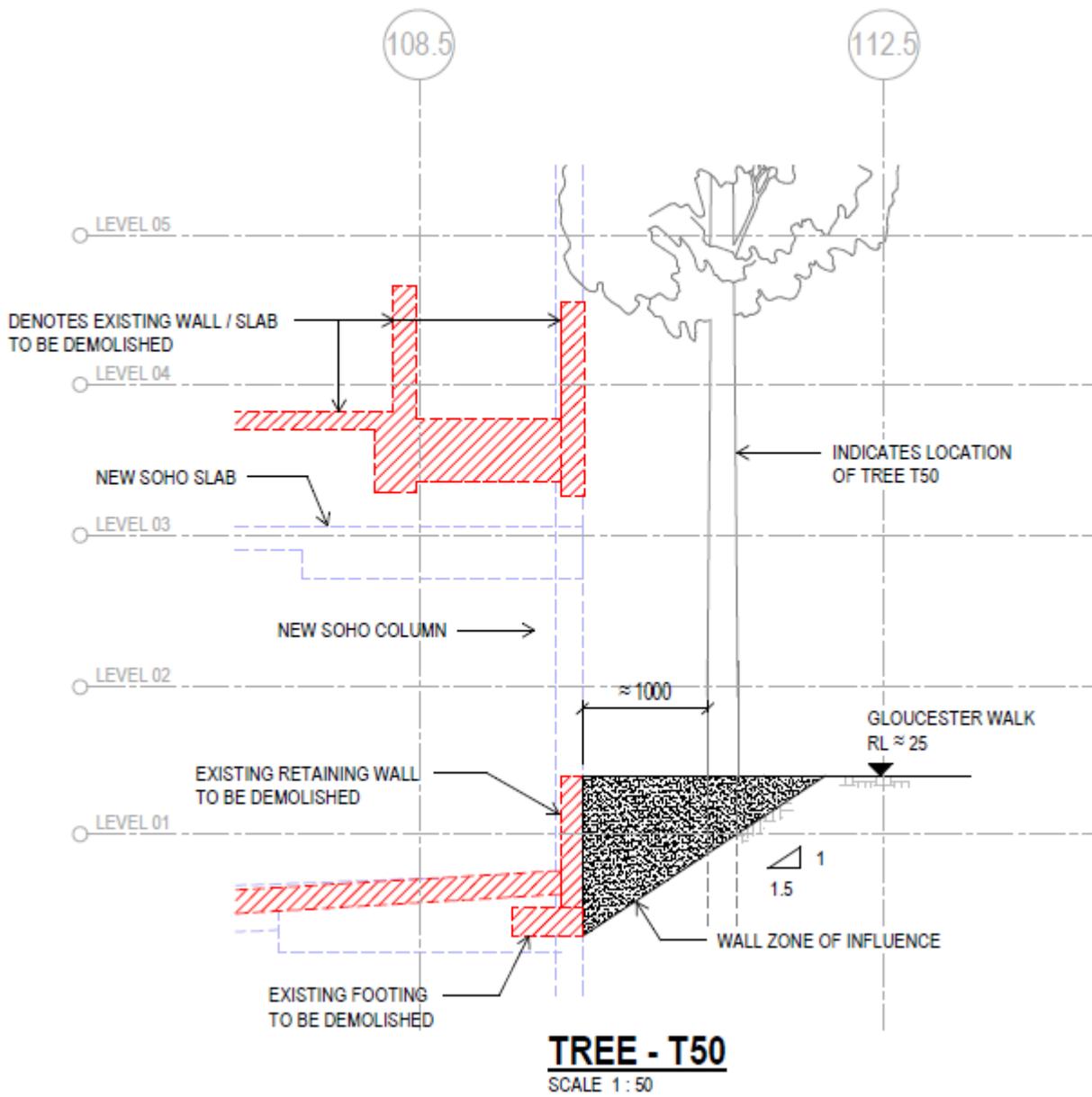
Refer to Appendix A for detailed sketches.

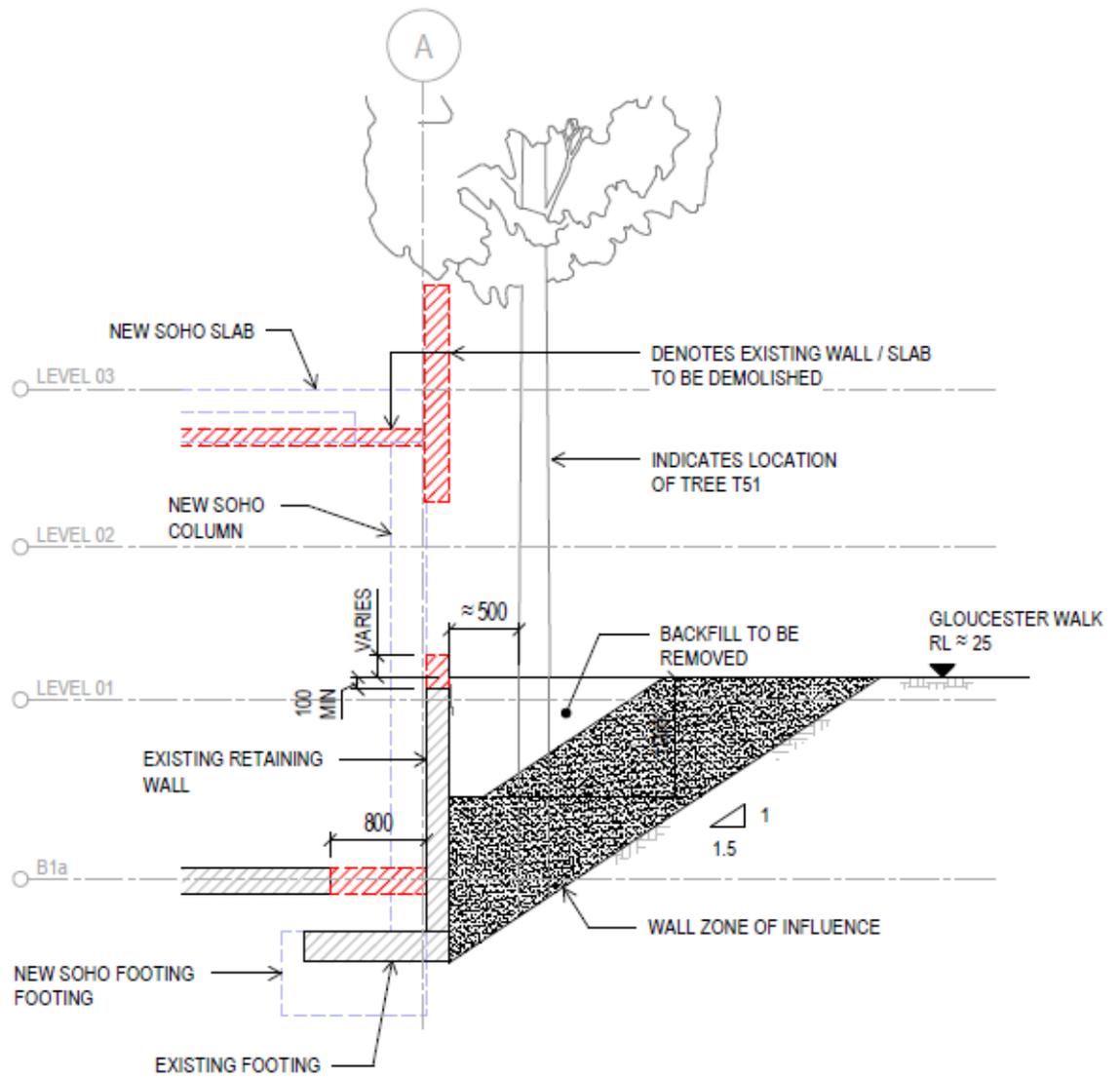
For the reasons of structural non-compliance of the existing retaining wall; localized demolition required to construct the new approved SoHo and podium structure along Gloucester Walk and the existing and on-going damage to the existing retaining walls caused by Tree 50 and 51 the existing retaining wall is required to be demolished and rebuilt to the current standards. To ensure safety and as a result of the required demolition of the existing retaining wall including the removal of soil behind trees 50 and 51; both trees will become unstable as noted in the Arborist report.

Yours faithfully  
SCP Consulting Pty Ltd

**Paul Siewert**  
Director

## **APPENDIX A**





**TREE - T51**  
SCALE 1 : 50