

Neal Hunter
Squirrel Wood Properties

14th October 2025

Dear Neal

Re: Retaining Wall Requirements – Cardonnel Court Care Home Development, Skewen

1. Introduction

We write in connection with the proposed development of a new care home at Cardonnel Court, Skewen. The site requires the formation of a reduced-level building platform and associated retaining measures due to the higher ground located immediately beyond the northern boundary. This letter report outlines the need for a new retaining wall to support the excavated face, considers both temporary and permanent stability conditions, and addresses the protection of Tree T6, a Category B Common Oak identified in the Arboricultural Report prepared by Arboricultural Technician Services (ArbTS).

Reference Documents

The following documents have been reviewed and inform the content of this report:

- Arboricultural Report & Tree Survey – *ArbTS_1574.2_Cardonnel Court* (Arboricultural Technician Services Ltd)
- Tree Constraints Plan / Tree Protection Plan – *ArbTS Plan Ref: 1574.2 (T6 RPA and protection zones)*
- Proposed Site Plan (Lower Ground Floor) – *Drawing Ref: SP803 – P02, C.W. Architects Ltd*
- Topographical Survey & Existing Levels Data
- Quorum Site Inspection Notes – *Observations regarding existing brick boundary wall and tree position*

2. Existing Ground Levels and Development Platform

The existing gravel access road to the rear of the site is situated at approximately 22.50m AOD, whereas the proposed finished floor level (FFL) of the care home is set at 21.00m AOD. The topographical survey suggests there is some form of berm raised above the gravel path level, which gives rise to the visual appearance of a high unsupported slope. In practice, this should be easy to remove, which will be beneficial for the final retaining support. The road supported is of rough gravel construction and does not appear to be currently adopted by the local highways authority.

For the construction of the proposed development, assuming a 1m deep reduced level dig from current levels, the underside of concrete foundations is anticipated at circa 20.00m AOD, giving rise to an exposed retained height of approximately 2.5–2.8 metres during the temporary construction phase.

Once backfilling and external landscaping are completed, the retained height in the permanent condition will reduce to approximately 1.5 metres.

The retaining wall has been positioned in the new Architectural design approximately 2.5m away from the face of the existing building and at a minimum distance of 3.75m from the centre of T6.

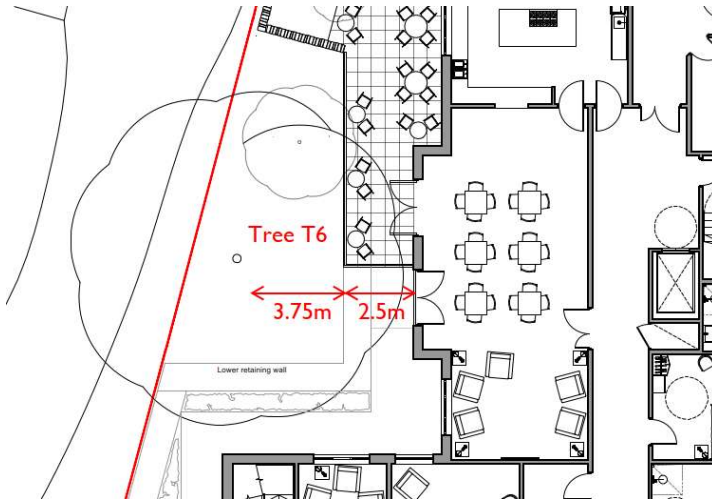


Diagram: Position of tree relative to proposed structure.

3. Existing Boundary Wall

An existing brickwork retaining wall lies along the northern boundary. At the time of inspection, its condition could not be confirmed due to extensive vegetation cover. Historic retaining walls of this nature are rarely suitable for structural reliance due to unknown original construction and backfill characteristics. Accordingly, a new engineered retaining wall will be required within the development boundary, independent of the existing structure.



Photo: Existing tree/retaining wall scenario

4. Arboricultural Constraints – Tree T6 (Common Oak)

Tree T6, a mature *Quercus robur* (Common Oak), is positioned on the raised bank above the boundary and is classified as Category B2 under BS5837:2012. The ArbTS report identifies the need for specific precautions, including:

- Excavation within the outer Root Protection Area (RPA) only under Arboricultural supervision
- Use of hand tools or a small excavator fitted with a toothless bucket
- Clean root pruning using sterilised tools where roots <25mm are encountered

These requirements necessitate a retaining wall methodology that avoids deep, continuous trenching

and limits ground disturbance adjacent to the tree.

5. Proposed Retaining Wall Options

A L-Shaped Reinforced Concrete Retaining Wall is proposed to the area local to Tree T6 and is detailed in the appended drawings. In summary:

- Approx. 250mm stem thickness with a 300mm base slab
- Constructed in short lengths ($\leq 1.2\text{m}$)
- Installation using the existing wall as a back shutter, reducing excavation depth towards T6
- Provides robust long-term structural performance

The above is considered currently as the most practical approach however various alternatives exist which can be completed with due respect to the protection of the tree. This report and corresponding drawings should be considered sufficient to demonstrate the principal of the construction methodology, with a detailed permanent and temporary works design to be provided prior to commencement of site works.



Photo: Typical sequential dig

A King Post Retaining Wall can be considered as an alternative option:

- Utilises vertical steel posts installed in 450mm diameter augered concreted boreholes, typically at 2.4m centres; infilled with precast concrete panels
- Minimal continuous excavation – compatible with Arboricultural supervision requirements
- Majority of works may be undertaken using a toothless bucket, with hand-dug trial pits at post locations if roots are suspected
- Suitable for phasing and avoids intrusion into the deeper RPA zones



Photo: Typical kingpost wall (Credit – Craven Concrete)

6. Temporary Construction Stability

During the reduced level dig, interim measures may be required to prevent slippage of retained soil. These may include temporary thrust blocks or provisional berms constructed on the internal side. The wall will also be constructed in “hit and miss” sequence normally in bays not exceeding 1.2m and connected together with dowels . These enable phased construction while maintaining stability of the bank and avoiding impact on Tree T6.

7. Permanent Structural Design Considerations

In the permanent scenario, retaining conditions reduce to approximately 1.5 metres. This should be relatively simple to achieve since the temporary works design will call for the design to retain 2.8m in height.

8. Protection of Tree T6

Provided that excavation is supervised by an Arboriculturalist and wall construction adheres to the prescribed methodology, it is considered that neither the L-shaped nor King Post wall solution will prejudice the health, stability, or longevity of Tree T6. Root pruning, where unavoidable, will be limited to small-diameter material under professional supervision.

9. Conclusion

A new engineered retaining wall is essential to facilitate the formation of the building platform for the care home. Both retaining wall solutions presented—L-shaped reinforced concrete and King Post system—are suitable, subject to final engineering confirmation and Arboricultural supervision. Further detailed structural design will proceed following confirmation of ground investigation data and construction sequencing.

We trust the above is satisfactory for current planning and coordination purposes. We remain available to develop the detailed design phase or to comment further on construction methodology where required.

Yours faithfully,

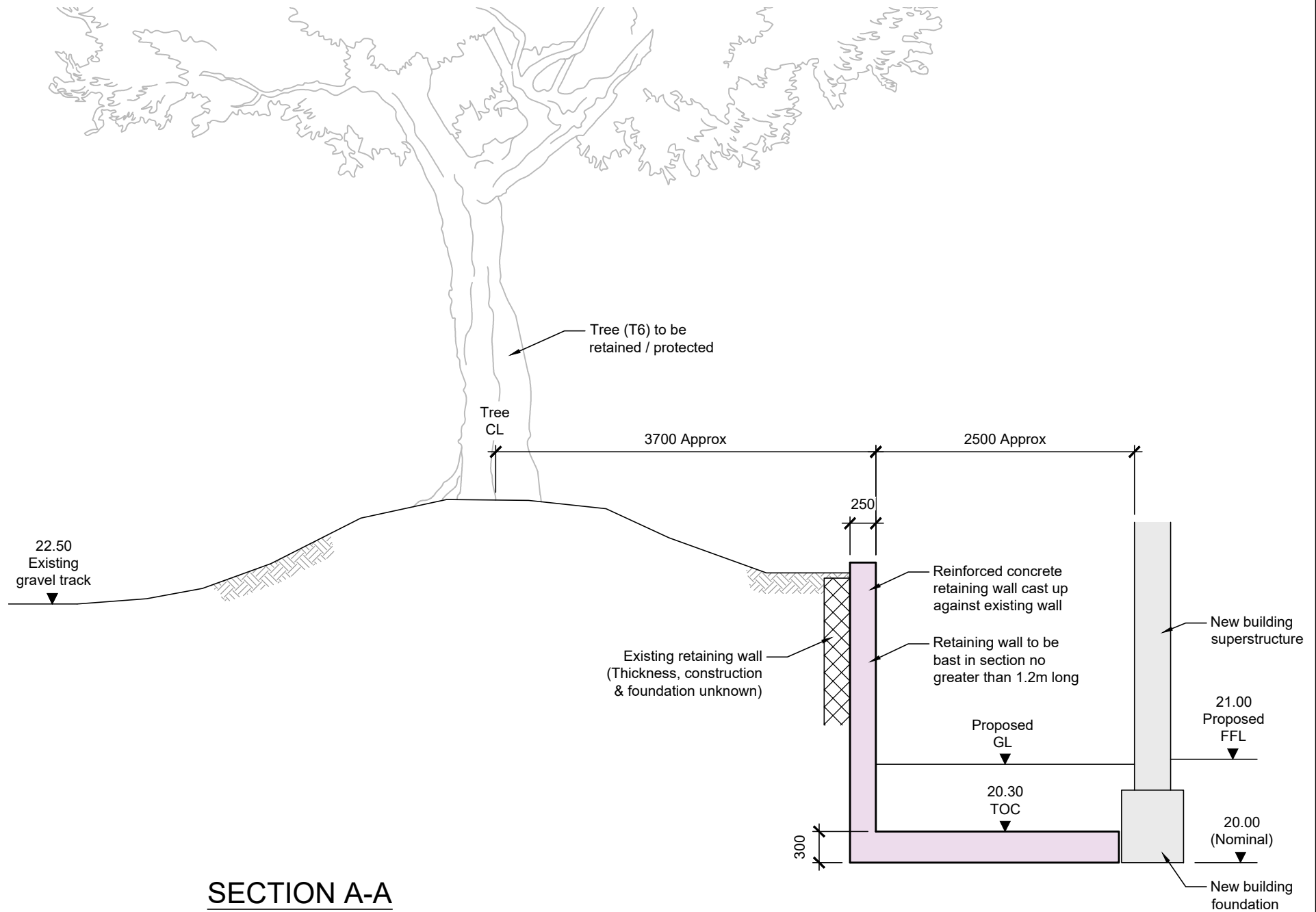
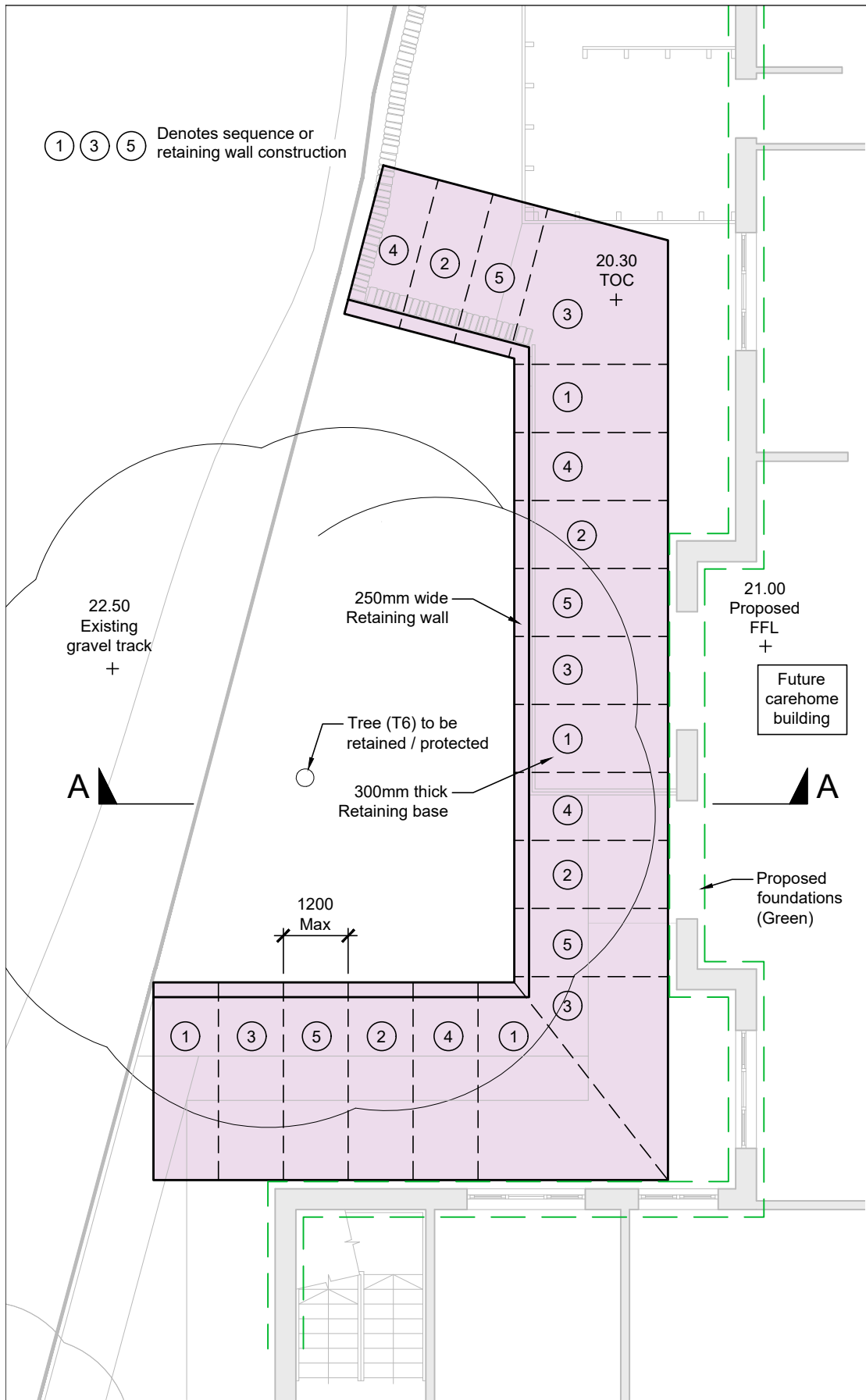
Joel Saunders MSc BEng CEng MICE

Managing Director

For and on behalf of

Quorum Consulting Engineers

① ③ ⑤ Denotes sequence or retaining wall construction



SECTION A-A

Scale 1:50



GENERAL

1. ALL DIMENSIONS ARE IN MILLIMETERS (UNO).
2. ALL LEVELS ARE IN METRES (UNO)
3. ORDINANCE LEVELS TO BE COORDINATED WITH TOPO SURVEY.
4. DO NOT SCALE FORM THESE DRAWINGS.
5. ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE ENGINEER.
6. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.