LIFT PASSAGEWAY CONSTRUCTION METHODOLOGY PLAN

7 ROCK BATH ROAD, PALM BEACH 2108

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1. INTRODUCTION

This Construction Methodology Plan has been prepared to address the impact of reducing the width of the lift passageway by 300mm to satisfy the minimum pathway width requirement for wheelchair access (1200mm) as stipulated in AS1428.1. The Construction Methodology Plan will outline construction procedures that are feasible with the current design intent of the passageway design at 1500mm wide to suit existing ground conditions and position of existing / proposed structures.

1.2 CONSTRUCTION METHODOLOGY SCOPE

The excavation & construction procedures identified below reflect the most construct feasible methods viable to achieve the current design documentation of the lifts'1500mm wide passageway through the following aspects which include but not limited to; safety, access, reduction in vibration, removal of additional / potential shoring works, prevention of water ingress, simplification of structural engineering and load transfers, and the like.

1.2.1 Bulk & Detail Excavation

The proposed operating machine required to satisfy the bulk & detail excavation works is a 3.5t excavator. A minimum width requirement of 1800mm wide is required for the machines access, as a result, the machines ability to swivel and turn whilst rock cutting, detailing the drainage voids & footings is required. Reducing the lifts passageway by 300mm will negate the use of a 3.5t machine, and a 2.0t machine or smaller is required. Utilization of a 2.0t machine will prolong the excavation works by 6 weeks increasing the risk of vibration adverse effects and will impose a detrimental financial impact on the client and construction program. In addition, significantly prolonging the bulk excavation program will leave the vertical rock cut unsupported for a longer duration of time, increasing the risk for adverse effects to take place if shale, voids & pockets are evident in the rock surface without a structural retaining wall in place or shoring works. The Geotech Report 3615Yrpt advised in the short-term leaving the rock cut unsupported will suffice, especially in the instance of using a larger machine will enable the retaining wall to be installed & poured at a closer date, ensuring a safe work practice site. All bulk excavation works are open and no tunneling is required due to the walkway design above, whereby the stair soffit forms part of the lift's passageway ceiling below.

1.2.2 Lift Wall Construction

The lifts passageway is designed to run in the same path as the previously DA approved walkway above, as a result, the walkway above will conventionally form the concrete ceiling of the lifts passageway. Maintaining the 1500mm span between the walkway above and the lifts passageway, will optimize formwork constructability practices and

engineering documentation, allowing the passageway walls to run vertically and continuously from footing to stair soffit, with a unified load transfer vertically without the implementation of offset loads and steps in supporting the stair structure above (in the instance if the footprint off the lift's passageway was to be reduce by 300m). In addition, constructing the lift walls with Dincel, a highly suitable subterranean permanent formwork system, allows the panels to be manufactured and formed at heights greater than 7m. The outcome of customizing the panel heights in accordance with the bulk / detail excavation depths, allows the panels to be formed and poured without any physical cold joints through the formworks surface, as a result, prevents the ingress of water into the passageway and down into the drainage cavity void as detailed. The proposed future detail of the house ground floor slab will bridge the drainage cavity void and will be structurally tied to the subterranean load bearing lift walls, down into rock. Reducing the passageway by 300mm will introduce a sophisticated design to allow the transfer to be accommodated through larger beams, L & Z bars to ensure structural adequacy is achieved, pending to engineers' approval & detail.

1.2.3 Drainage Void

The proposed lift passageway wall will be running parallel with the drainage cavity void. As per the Geotech Report 3615Yrpt a drainage cavity wall is required thus, implementing the Dincel construction walling system as above will prevent water ingress into the passageway. Through a reduction of 300mm to the passageway, will create a step in the wall which will negate the ability to conventionally form single Dincel panels and will introduce a step junction between the stair soffit structure & lift passageway wall. The introduction of this step will create an additional soffit & a cold joint between the two new structural junctions, which will allow water to cohesively build along the cold joint and ingress through, which will begin to undermine the reinforcement & concrete inside the wall over a long period of time. Furthermore, maximizing the drainage cavity void will safely allow water proofers to complete their membrane tanking works with a confined workspace permit, along with form-workers bracing the lifts passageway wall effectively either side of the Dincel panel in accordance with the BCA / AS guidelines and safe work practice.

1.3 SUMMARY

Ultimately, the Architectural design intent provided by Patten Design Pty Ltd with maintaining the 1500mm wide lift passageway to mimic the walkway above, allows the most construct feasible methods available which satisfy all measures of construction which include but not limited to; safety, construction code of practice, quality, time, structural design efficiency, minimising impact to neighbours & prevention of water ingress issues.