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ENGINEERING REPORT

495-511 LYGON ST, BRUNSWICK

VOLUME 2.3: SLAB RL'S STATEMENT
87a APPLICATION DRAWING SET

Architect:

KUD

Report Issue Date: 05.11.2025

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GENERAL SITE-SPECIFIC INFORMATION

The Cyprus Community of Melbourne and Victoria in partnership with LUCENT, is seeking to redevelop the two properties at **495–511 Lygon Street**, **Brunswick** including the historic Liberty Theatre Building. The proposed re-development of the site will achieve a mixed-use community centre, retail and residential complex. BOT Engineering (BOT) was engaged by the developer to provide structural and civil engineering for the proposed development.

BOT has undertaken several inspections of the site to review the general condition and configuration of the existing heritage structure. Significant coordination with design stakeholders has been ongoing for the last 12 months to ensure the most suitable and structural adequate solution can be implemented for this area of the development. The comments and general advice outlined in this report are outlined in accordance with relevant Australian standards and national Construction code (NCC) requirements.

Image 1: Proposed Development - Source: KUD Architectural drawings – 87a Application' drawing set - Proposed East Elevations - TP451 Rev E - 31.10.2025

PROPSOED RE-DEVELOPMENT DETAILS

Building Class	Class 2, 5, 6, 7a & Class 9b	Building Use	Commercial, Carpark & Residential
Construction Type	Commercial & Residential	Primary External Walls	Concrete/masonry/glazing
Floor Structure	Post tension suspended slabs	Foundation	Retention and foundations
Roof Structure	Concrete and Steel	Number of Levels	6 Level + Roof (2 level basement)
Age of Structure	Heritage Structure	Recent Works Completed	Design Development Commenced
Additional Comments	The heritage listed, Liberty Theatre facade is to be retained, temporary supported and re-stored to achieve project design compliance and ensure the heritage structure will be structural sound and fit for purpose during and on completion of the re-development scope.		

PROJECT TEAM AND CONTACT DETAILS

Consultant	Company	Reference
Landowner	Cyprus Community of Melbourne and Victoria	admin@cypruscommunity.com.au
Developer/Client	VMCC Joint Venture Pty Ltd	Tony Petreski - tpetreski@lucentgroup.com.au
Architect	KUD	Jaden Mialszygrosz - jaden@kud.com.au
Heritage Consultant	Bryce Raworth	Kyra King - kyra@bryceraworth.com.au
Structure & Civil Engineer	BOT Engineering	Denis Botvenev – denis@botgroup.com.au

SITE PROXIMITY

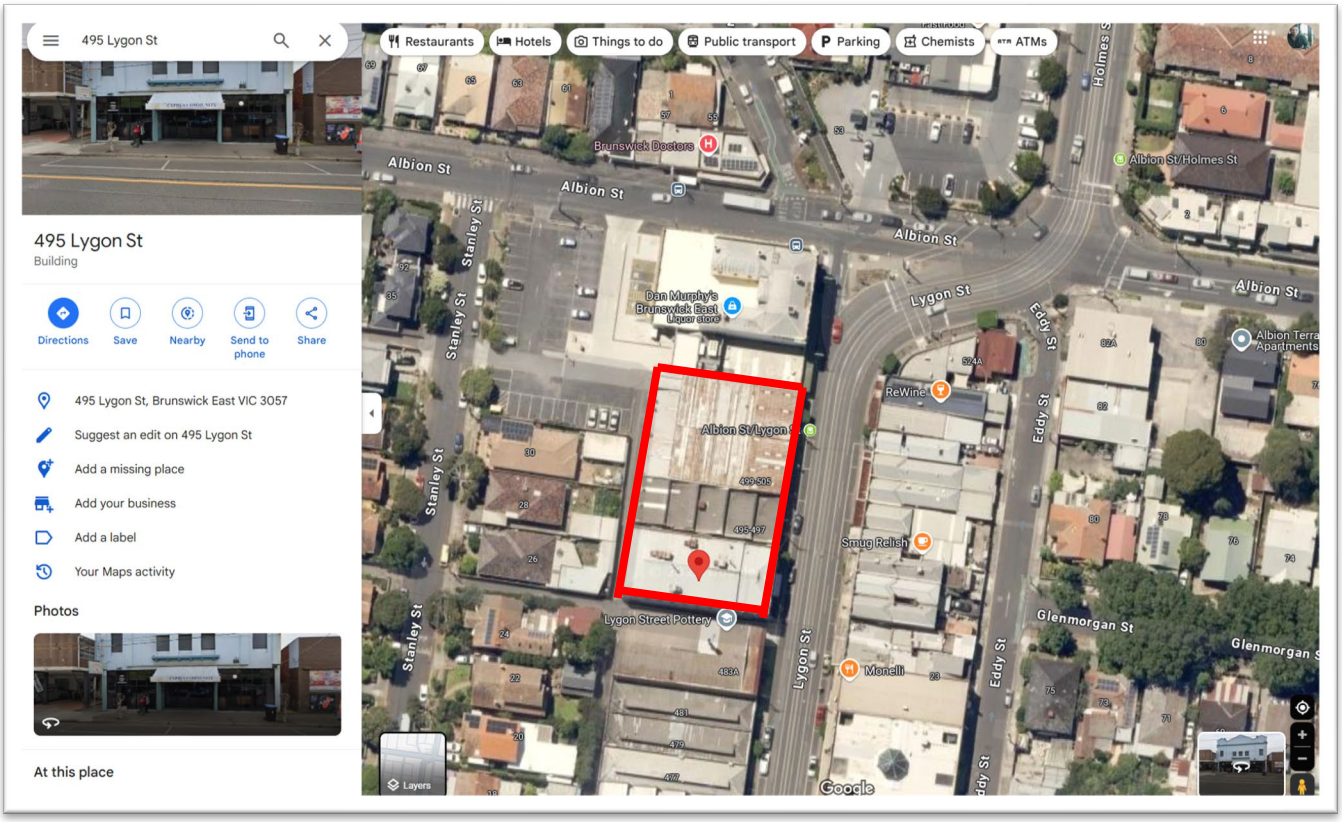

Image 2: Site Location – Source: https://www.google.com/maps/place/495+Lygon+St,+Brunswick+East+VIC+3057

REPORT NOTES AND CONDITIONS

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SUBJECT AREA

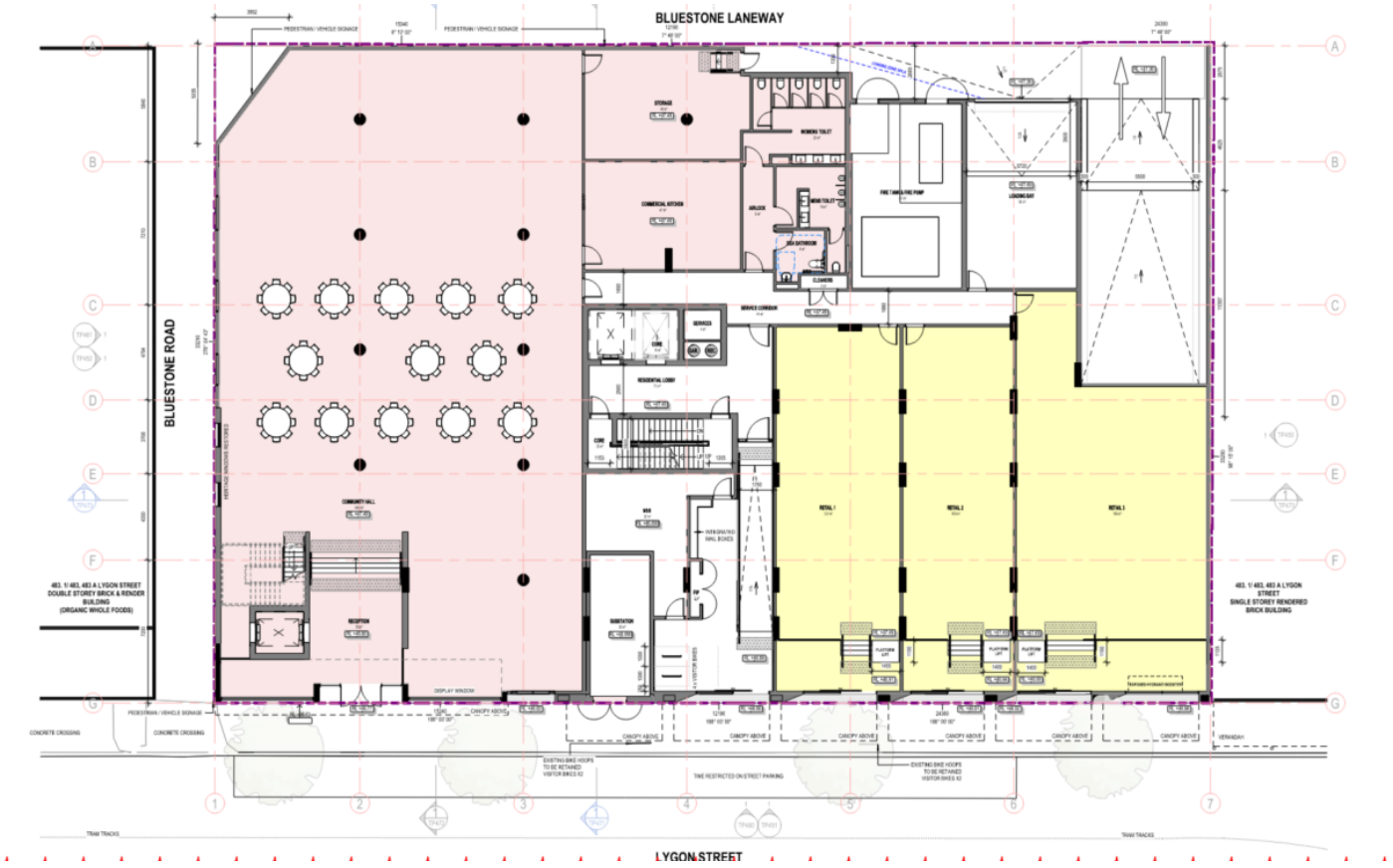

Image 3: KUD - Proposed Ground Floor Plan - 87a Application' drawing set - TP303 REV E - 31.10.2025

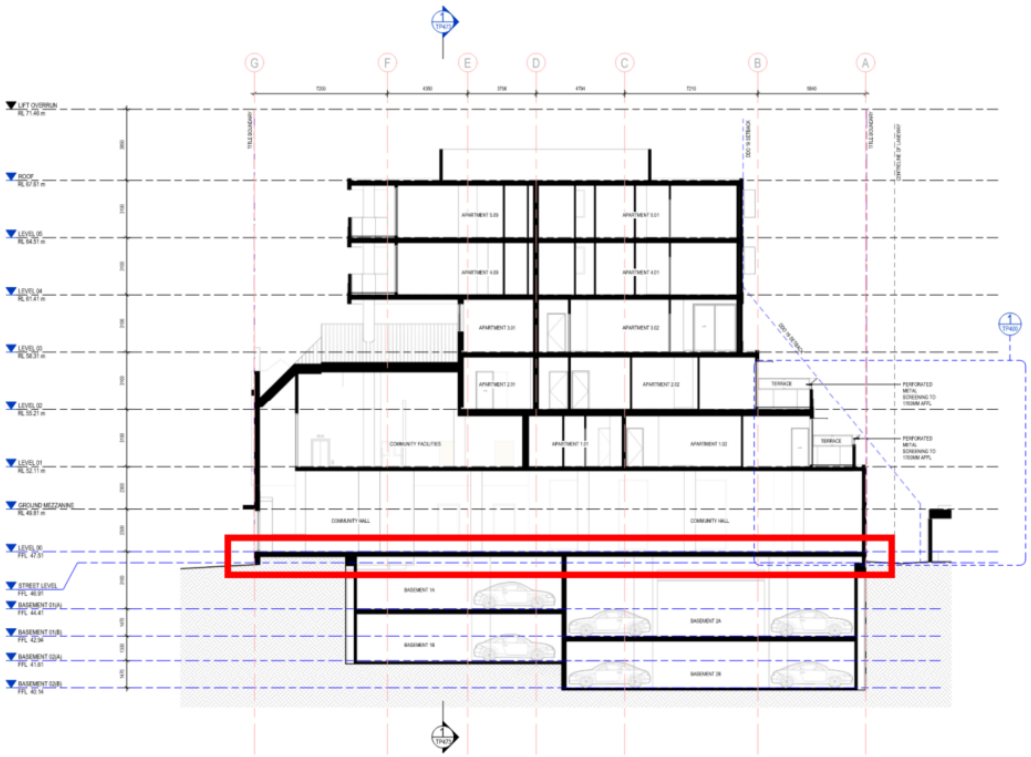

Image 4: KUD - Proposed Section BB 87a Application' drawing set--TP472 Rev E - 31.10.2025

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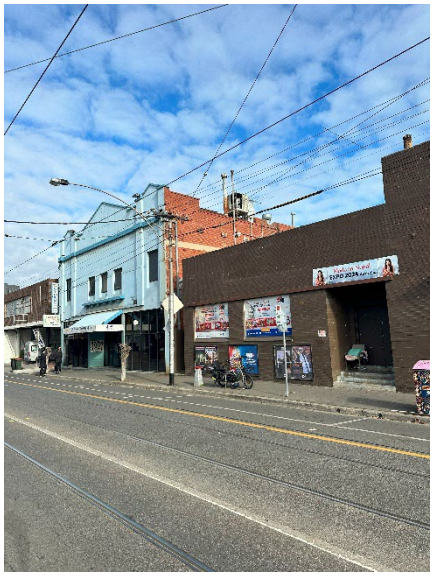
PHOTOS TAKEN DURING SITE INSPECTION – **18.06.2024** – HERITAGE FAÇADE (EXTERNAL)



GENERAL COMMENTS:

BOT reviewed the general configuration and orientation of existing heritage façade parallel to Lygon St along all boundaries of the subject site. The former Liberty Theatre Building has a heritage overlay and consideration to existing and proposed RLs is being coordinated during ongoing design development.

STRUCTURAL ADEQAUCY: **GENERAL CONDITION: OK**

The current build form and general configuration of the heritage structure has been a constant design focus for the design team. Several design considerations have been coordinated to ensure a suitable solution can be achieved within the existing community hall and across the development ground floor and above ground levels.

BOT ENGINEERING ADVICE:

Pursuant to ongoing design development coordination and an understanding of the floor level requirements along Lygon St, BOT is of the opinion the ground floor slab and the suspended slab levels above, within the community hall need to be raised to achieve an adequate structural solution.

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BOT ENGINEERING SITE INSPECTION STATEMENT

Attention:
Jaden Mialszygrosz
KUD Pty Ltd
T: +61 3 9429 4733
E: jaden@kud.com.au
A: U1, 76-78 Balmain St, Cremorne, VIC 3121

Dear Jaden Mialszygrosz,

Further to your request, BOT Engineering Pty Ltd (BOT) confirms significant design consideration into the community hall slab RLs has been undertaken by the design team. The current architectural drawings - **251031_23-007_Cameo House - 495-511 Lygon St_Architectural Drawings_Section 87a Application Rev E dated 31.10.2025** set accuratly reflect the design intent for the project. In principle, the following comments and engineering advise are in accordance with the relevant Australian standards and National Construction Code (NCC) requirements:

- AS1170 – Structural Design Actions
- AS3600 - Concrete Structures
- AS3700 – Masonry Structure
- AS4100 – Steel Structures
- AS4349 – Inspection of Buildings

BOT strongly believes the most suitable structural solution for the ground floor slab level within the community hall and adjacent proposed areas is at the currently proposed raised flood level height. BOT understands the RLs have raised to accommodate the requirements for flood modelling, however these RLs are further justified through a comprehensive engineering analysis, addressing functionality, structural feasibility, constructability, and cost implications.

AVOIDING UNWORKABLE CEILING HEIGHTS WITHIN BASEMENT 1 AND SUBSEQUENTLY BASEMENT 2

Lowering the community hall's RL directly reduces the floor-to-ceiling height in the basement level (Basement 1) below it, as the structural slab and associated services (HVAC, plumbing, electrical) must fit within the constrained vertical space. A reduced ceiling height in Basement 1 would either render the space non-compliant with building codes or necessitate costly workarounds. Pursuant to the site locations and expected rock conditions below ground, the direct implication of pushing everything down results in extrapolated costs to the projects and extends construction duration significantly. Maintaining the currently proposed raised RLs avoids these constraints, ensuring Basement 1 remains functional for its intended use and minimises further excessive excavation adjacent to Lygon St.

MINIMIZING COMPLEXITY IN THE LEVEL 1 SLAB DESIGN

Lowering the community hall's RL introduces significant structural implications in the slab design and general configuration of the ground floor slab. The ground floor level is a transfer slab as it transitions between commercial/residential usage to car parking and services areas. The current raised RL configuration has achieved a solution with a typical fold along adjacent to Lygon St which accommodates the larger transfer loads from the structure above in an efficient and structurally suitable manner. Lowering the slab RL will add significant complexity to the structural design, as several staggered and offset steps and folds will be necessary. The increased complexity can further raise construction costs and further limit the general configuration and usage of the areas within the development (In particular, within the community hall). Maintaining the currently proposed RL at ground floor within the community hall ensures a simple, more efficient design, reducing both construction complexity and long-term structural risks.

AVOIDING COSTLY EXCAVATION FOR A LOWERED BASEMENT

If the community hall's RL is lowered and the basement is adjusted to a deeper level to maintain adequate ceiling heights, deeper excavation will be required. This increases project costs significantly due to higher volumes of earthwork, shoring, additional temporary anchors and further reinforcement to accommodate the greater retained height. The difficulty of achieving this scope will be extensive, especially in rock-prone areas like this site, where retention design is critical. Deeper excavations would also result in additional construction time as rock excavation is tedious and lengthy in nature. The increased construction time frame would adversely affect the general community and would increase the period of works where deep excavation risks are highest. By maintaining the proposed RL, the project avoids these expenses and aligns the basement design with the site's geotechnical and surrounding constraints.

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PRESERVING ACCESS TO BACK-OF-HOUSE AREAS FOR FUNCTIONALITY.

Lowering the community hall's RL would disrupt the seamless integration of access routes to back-of-house areas. The BOH areas are typically designed with level access to ensure efficient movement of staff, equipment, and supplies. A lowered RL introduces further steps, ramps, or lifts, which compromise accessibility and may even create safety risks due to elevation changes. Maintaining the RL at the currently proposed level ensures compliance with general logistic requirements and preserves the hall's operational functionality.

From an engineering perspective, maintaining the community hall's RL at the raised flood level height is the most practical and cost-effective solution. It preserves operational functionality by ensuring level access to back-of-house areas, complies with building code requirements for basement ceiling heights, simplifies the structural design of the Level 1 slab, and avoids costly and risky deep excavation, beyond what is currently required for the development. This current configuration and orientation of the ground level slab balances the technical feasibility, safety, and economic considerations, ensuring the project meets its functional and budgetary objectives while mitigating flood-related risks.

BOT Engineering have completed other engineering designs and reviews of similar scale and are comfortable with the details and scope nominated within the engineering report.

Please feel free to contact me on 0414 545 770 should you wish to discuss any of the above further in detail.

Thank you.

Yours faithfully

Denis Botvenev – Director
BOT Engineering Pty Ltd

B.E Honors (CIVIL), B.C (ACTUARY), D.B&C (Building)
BLA Registered Engineering No.: PE0002058
MIEAust, NER, M.FESA, RPEQ

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Company: Bot Engineering Pty Ltd

Email: info@botgroup.com.au

Web: www.botgroup.com.au