Attachment A11

Structural Statement

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Project reference: CANVA – 8-24 Kippax St, Surry Hills - Project No:131006 – Planning Proposal

Dear Stephen,

Meinhardt (NSW) Pty Ltd have been engaged by Canva for the structural design documentation of the proposed redevelopment of the abovementioned project.

The existing building is a 10 storey reinforced concrete building with two levels of basement. The building is believed to be founded on extremely low rock. The existing footings are composed of piled and pad footings as indicated on the existing drawings. This is based on the desk top geotechnical study undertaken for the site but is to be confirmed.

The proposed structural alteration and strengthening works to the building include, but are not limited to:

- Demolition of the existing stair & lift cores and shear walls. The construction of a relocated lift and stair core within the building;
- Relocation of the existing substation;
- 2No new levels on the roof which include commercial office floor, rooftop terrace and plant space;
- Steel transfer truss at Level 01'
- Strengthening of the existing concrete columns via new reinforced concrete (RC) "jacketing";
- Additional steel K-bracing. Together with the new lift and stair core, these will provide overall lateral stability to the building;
- New RC and steel columns to support the slabs for the revised architectural layouts. These will be founded on new pad and piled foundations;
- Strengthening of the existing footings;
- A new "Town Hall" stair way linking the Kippax St and Sophia Lane streetscapes.

Meinhardt have assessed the existing building and the proposed structural development works as indicated on the architectural plans and we confirm that the building will be designed in accordance with the relevant standards such that the existing structure together with the new structural elements will be able to support the proposed new loads.

Our design relies upon the acceptance of the list of non-compliance issues and assumptions as discussed below.

Our assessment of the existing structure is based on the following information provided to us:

- Existing structural drawings by V.A. Lamaro dated 1969
- Existing architectural drawings by L.A. Kubany dated 1969
- "Report on Concrete Testing Investigation – 8-24 Kippax St, Surry Hills" by Mahaffey Associates dated 23 October 2023 (Ref: 20475)

The structural design of the new structural elements will comply with the Structural Provisions of Part B1 (Volume 1) of the Building Code of Australia, subject to the list of non-compliance issues and assumptions discussed below.

In addition, the capacity of the existing structure will be assessed such that the additional loads and/or alterations will not cause a decrease in its structural performance in comparison to the original design.

List Of Non-Compliances and Assumptions

It is noted that the existing structure was constructed in 1969. The building codes and standards of that time would typically have been used as a basis for the design of the existing structure by the original structural designer.

There will be requirements in the current day codes that the existing structure will not have been designed for nor will be able to comply with now.

In addition, there are assumptions that we have made in our design to date.

A list of these items is included in Appendix A at the rear of this letter. It should be noted that this list is not exhaustive and may be added to as the structural design develops.

Yours sincerely,

Neal Foye

Associate Director

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Appendix 1

– List of Structural Non-Compliances and Assumptions List

LIST OF CODE NON-COMPLIANCES AND ASSUMPTIONS ADOPTED IN DESIGN

No:	Non-compliance / Assumption	Comments	Current Day Standards/ Code Reference	Method for Compliance/Assumption Adopted	
				Methodology	Notes
1	Pounding	Requirement to setback adjacent building between each other such that there is no contact between the buildings in the event of an earthquake. Given that 8-24 Kippax St and the neighbouring 26 Kippax St are existing building, it is unlikely that the two will have sufficient clearance between each other to satisfy this clause. This will need to be confirmed via investigation through local removal of the boundary wall of 8-24 Kippax St. Note that this item is made on the assumption that there is little or no gap between the existing buildings. This will have to be confirmed by investigation of the existing building. Namely local removal of the existing masonry along the party wall. Our preliminary structural analysis is that a gap between the existing buildings of 40mm of more would be required to comply with code requirement. If this gap did not existing, the alternative paths of dispensation or significant remedial works would then apply.	AS 1170.4 Clause 5.4.5	Dispensation of the clause by PCA and Council	Given that this is an existing condition which is very difficult to rectify and which is an inherent condition that will exist in nearly all existing buildings within the City of Sydney, a dispensation of the clause may be acceptable to the PCA and Council.
2	Adoption of existing structural drawings for use as a basis of design for the redevelopment	Existing drawings dated 1969 and 1970 have been obtained from City of Sydney Council archives. Meinhardt intend to use these drawings as a basis of the existing structure to be incorporated in the design of the redevelopment.	n/a	An investigation of the existing concrete structure will be undertaken on site by a concrete testing company. This investigation will include: taking sample concrete cores for testing, scanning of existing reinforcement and measurement of existing structural elements on site. A cross check of the results of the investigation report against the existing structural drawings will be undertaken in order to provide a level of confidence that the existing structural drawings are suitably reliable for this use.	It should be noted that the concrete testing will be undertaken at a number of locations and will be a reasonable sample representation. It is not intended to test every structural element or every assumed concrete pour which would have been poured at the time of construction. It is believed that taking such a sample investigation is a reasonable approach to provide a sufficient level of comfort to allow the use of the existing drawings
3	Geotechnical Investigation	Existing drawings dated 1969 and 1970 have been obtained from City of Sydney Council archives. These drawings indicate a mix of piled and pad footings for the existing building. It is intended to use these existing pad and piled foundations to support the proposed building loads including an increase in loads in some cases. Strengthening of the foundations will be undertaken where required. It is intended to use the foundations noted on the existing structural drawings as a basis of the design for the redevelopment.	n/a	It is intended to undertake sample investigation of the existing pad footings and piled foundations by a geotechnical investigation company. The investigation will take the form of local excavation adjacent to a sample number of existing pad foundations to confirm their size, depth and founding strata. Investigation of the existing piles will be undertaken by drilling boreholes to a sample number of piles and use magnetic gradiometry testing (or other similar methodology) to confirm the depth of those existing piles. Once the sample testing of existing pad and pile information is confirmed, this will be cross checked against the existing drawings in order to provide a level of confidence that the existing drawings are suitable to be used as a basis of the design. An assessment of the capacity of the existing piles and pad footings will then be undertaken by the geotechnical engineer and their performance under the proposed increased loads assessed.	The level of testing to be undertaken will be as required by the geotechnical to achieve a reasonable level of confidence in the existing structural drawings and investigation findings on site.
4	Ongoing Durability & Design life of the existing structure	Compliance to AS 3600 provides a design life of 50 years (+/- 20%) for new structures. Any existing structure is at the end of its design life and AS 3600 section 4 for durability and design life will not apply.	AS 3600 Section 4	The concrete investigation of the building will include sample testing of the concrete structure for chloride ingress, reinforcement corrosion, etc (more commonly given the umbrella reference of "concrete cancer". Where any such defects are found in the building, rectification works as advised by the concrete testing specialist will be undertaken.	It is intended that the concrete testing report, once complete, will be able to state that there will be no significant risk of reinforcement corrosion or concrete deterioration for a further 40-50 years once any advised rectification works (if required and as stated in the concrete testing report) are undertaken and provided reasonable maintenance of the existing building is provided during that period.
5	Restraint of longitudinal reinforcement in existing concrete columns	Horizontal column ties are required to restrain main vertical column reinforcement. These prevent the vertical main bars from breaking out of the column under high bar stresses. While the existing structural drawings indicate that ties have been provided in the existing concrete columns, the tie diameters and spacing may not comply with current day codes	AS 3600 Clause 10.7.4	For the restrain of main vertical column bars in existing columns is required, an assessment of the restraint bars forces and ties provided as noted on the structural drawings will be undertaken. These will be assessed from first principles of the stresses in the columns in order to provide a performance solution compliance rather than a deemed to comply approach as provided in AS 3600.	Where restraint stresses are found to exceed the tie capacities, strengthening works to the existing columns will be documented.
6	Restraint of longitudinal reinforcement in proposed concrete column strengthening "jacketing"	Horizontal column ties are required to restrain main vertical column reinforcement. These prevent the vertical main bars from breaking out of the column under high bar stresses. Internal ties will not be able to be provided in column "jacketing" due to the existing column being in place. Hence the deemed to comply requirement of the provision for retaining ties can not be achieved.	AS 3600 Clause 10.7.4	An assessment of the restrain forces required for the main bars will be undertaken. Hook bars dowelled into the existing columns with chemical anchors will be provided to restrain these bars in this condition. Hence a performance solution compliance will be provided rather than a deemed to comply approach as provided in AS 3600.	n/a
7	Ductility of the existing reinforcement	The ductility of the existing reinforcement may not be compliant with the adjacent code clauses	AS 3600 Clause 1.1.2 and clause 3.2.1	Testing will be undertaken to confirm the ductility of the existing reinforcement. This testing may find that the existing reinforcement is complaint to AS 3600 with respect to ductility. If the testing determines that the existing reinforcement does not comply in this respect, a dispensation of these clauses will be required.	n/a
8	Deflection	Measured deflections in the existing slabs may exceed the "guidelines for serviceability limit states" provided in the codes	AS 1170.0 Appendix C	A visual inspection of the existing building will be undertaken once all existing intnernal finishes are removed. An assessment of the slab deflections provided in the building topographocal survey will be reviewed also. A comparison will then be made with suggested deflection limits provided in codes e.g. AS 1170.0	If excessive deflections are discovered in the existing slabs, strengthening works can be provided.
9	Detailing of the reinforcement in the existing flat plate slabs	Flat plates require certain deemed to comply detailing of lengths and spacing of bars in the code. The existing slabs will not comply with this in many locations.	AS 3600 Clause 9.1.2 & Clause 9.1.3	A finite element (FE) computer analysis of the existing slabs will be undertaken to confirm if the reinforcement as noted on the existing structural drawings is sufficient as per the outputs of the analysis. Hence a performance solution is proposed in lieu of the deemed to comply approach of the code.	Where existing reinforcement is found to be insufficient, for minimum strength requirements, strengthening of the slab will be provided.
10	Structural integrity reinforcement	Bottom reinforcement is required in the code in order to increase the resistance of progressive collapse of the slabs at its connections to columns. It is noted that this requirement was not included in the concrete code until 2018. Structural integrity reinforcement was not required before this. The clause requires a minimum amount of bottom reinforcement be provided within a flat plate slab and for this reinforcement to be continuous over the supporting column. This is not how reinforcement in slabs was typically detailed in Australia prior to 2018 and this is not what is provided in the existing slabs at 8-24 Kippax St as shown on the existing drawings.	AS 3600 Clause 9.2	A dispensation of this clause is required as there is no alternative solution method of achieving this within the existing slabs in order to comply with the deemed to comply clause. The justification of any dispensation would rely on the fact that this is a relatively new clause that was not required prior to a new revision of AS 3600 in 2018. The clause is intended as a back up to punching shear failure of the slabs. Punching shear failure of the existing slabs will still be checked to AS 3600 Clause 9.3 and strengthening of the slabs provided where required	n/a

List of Codes:
AS 1170.0 - Structural Design Actions - Part 0 : General Principles
AS 1170.4 - Structural Design Actions - Part 4 : Earthquake Actions in Australia
AS 3600 - Concrete Structures