Memorandum - Traffic

| Date | 19 November, 2020 | | |
|----------|--------------------------------------|--|--|
| File No. | Development Applications: 321/2020/1 | | |
| То | Mr W Perdigao | | |
| CC | Mr L Robert | | |
| From | Ms E Fang | | |
| Address | 19-27 CROSS STREET DOUBLE BAY 2028 | | |



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I refer to the memo from the Planning Department dated 9 September 2020 requesting comments in relation to the above.

Traffic Engineering has reviewed:

- 1. Statement of Environmental Effects, Rev D, referenced Job No. 18005, prepared by GSA Planning, dated 28 August 2020;
- 2. Traffic and Parking Statement, Rev D, referenced 18001, prepared by TTPP, dated August 2020;
- 3. Revised Architectural Plan of Basement 2, referenced Job No. 1725, prepared by Luigi Rosselli Architects, dated 14 September 2020;
- 4. Architectural Drawings, referenced Job No. 1725, prepared by Luigi Rosselli Architects, dated 18 October 2020, including:

| DRAWING LIST | | DA_16 | elevations - north |
|--------------|---------------------|-------|----------------------------|
| | | DA_17 | elevations - west |
| DA_00 | cover sheet | DA_18 | GFA diagrams |
| DA_01 | site analysis | DA_19 | adaptable apartment layout |
| DA_02 | plan - site + roof | DA_20 | ventilation diagram |
| DA_03 | plan - basement 2 | DA_21 | ADG diagrams |
| DA_04 | plan - basement 1 | DA_22 | exterior finishes |
| DA_05 | plan - ground floor | DA_23 | photomontage |
| DA_06 | plan - level 1 | DA_24 | shadow diagrams 9am |
| DA_07 | plan - level 2 | DA_25 | shadow diagrams 12pm |
| DA_08 | plan - level 3 | DA_26 | shadow diagrams 3pm |
| DA_09 | plan - level 4 | DA_27 | solar analysis 9am |
| DA_10 | plan - level 5 | DA_28 | solar analysis 10am |
| DA_11 | plan - roof terrace | DA_29 | solar analysis 11am |
| DA_12 | plan - roof | DA_30 | solar analysis 12pm |
| DA_13 | section AA | DA_31 | solar analysis 1pm |
| DA_14 | elevations - south | DA_32 | solar analysis 2pm |
| DA_15 | elevations - east | DA_33 | solar analysis 3pm |

Proposal

Demolition of existing structure and construction of a shop top housing development

COMMENTS

Parking Provision

The parking provision for the proposed development has been assessed in accordance with Council's *DCP 2015 Chapter E1 Parking and Access:*

| Residential Component | Quantity | DCP Maximum Requirement per Dwelling | DCP Maximum Permitted Parking |
|------------------------------|------------|--|----------------------------------|
| 1 bedroom | 2 | 0.5 x 0.6 multiplier for one bedroom apartments in Double Bay Business Zoned Area | 0.6 (1) |
| 2 bedrooms | 1 | 1 | 1 |
| 3 bedrooms | 15 | 1.5 | 22.5 (23) |
| Visitor | 18 | 0.2 | 3.6 (4) |
| Total Permitted | | | 29 |
| Non-residential Component | Quantity | DCP Minimum Requirement per 100m ² GFA (with 0.6 multiplier for Double Bay Centre B2 Zone) | DCP Minimum Required Parking |
| Retail | $440.5m^2$ | 3.3 | 8.7 (9) |
| Food and Drink | 236 | 7 | 9.9 (10) |
| Total Required | | | 19 |

Table 1: Car Parking Provision – Mixed Use

In response, the proposal includes 39 car parking spaces for residents, four (4) spaces for residential visitors and eight (8) spaces for non-residential components, which will result in:

- 1) An oversupply of 14 car parking spaces for residential components than DCP's maximum permitted parking;
- 2) A shortfall of 11 car parking spaces for non-residential components than DCP's minimum requirement.

| BICYCLE | | | | | | |
|--------------------------------|---------------------|--|---------------------------------|--|--|--|
| | Quantity | DCP Minimum Requirement | DCP Minimum Required Parking | | | |
| Residential Residents | 18 | 1 per dwelling | 18 | | | |
| Residential Visitors | 18 | 1 per 10 dwellings | 1.8 (2) | | | |
| Shop & Restaurant Employees | 676.5m ² | 1 per 250m ² | 2.7 (3) | | | |
| Shop & Restaurant Customers | 676m ² | $2 + 1 \text{ per } 100\text{m}^2 \text{ over}$ $100\text{m}^2 \text{ GFA}$ | 7.8 (8) | | | |
| Total required | | | 31 | | | |
| MOTORBIKE | | | | | | |
| | Quantity | DCP Minimum | DCP | | | |
| | | Requirement | Minimum Required Parking | | | |
| Car Spaces | 51 | 1 per 10 car spaces | 5.1 (5) | | | |
| Total required | | | 5 | | | |

In response, the proposed provision includes 30 bicycle parking spaces and six (6) motorcycle parking spaces in the basement area, which will result in a shortfall of one (1) bicycle parking space. It is however acknowledged residential storage room can accommodate a bicycle, the marginal shortfall is thus considered acceptable.

Traffic Generation

Traffic generation from the proposed development has been calculated in accordance with RMS Guide to Traffic Generating Developments 2002, and RMS Guide to Traffic Generating Developments Updated traffic surveys TDT 2013/04a.

Existing Development

Office

- Weekday peak hour vehicle trips: $772m^2 \times 1.2-1.6$ per $100m^2$ GFA = 9.3-12.4 trips
- Daily vehicle trips: $772m^2 \times 11$ per $100m^2$ GFA = 84.9 trips

or Retail

- Weekday peak hour vehicle trips: $772m^2 \ge 0.75 \ge 4.6-10.7$ per $100m^2$ GLFA = 26.6-62.0 trips
- Daily vehicle trips: $772m^2 \ge 0.75 \ge 55.5$ per $100m^2$ GLFA= 321.3 trips

Total

- Weekday peak hour vehicle trips = 9.3-62.0 trips
- Daily vehicle trips = 84.9-321.3 trips

Proposed Development

Medium Density Residential – Smaller unit

• Weekday peak hour vehicle trips: 3 dwellings x 0.4-0.5 per dwelling = 1.2-1.5 trips

• Daily vehicle trips: 3 dwellings x 4-5 per unit = 12-15 trips

Medium Density Residential – Larger unit

- Weekday peak hour vehicle trips: 15 dwellings x 0.5-0.65 per dwelling = 7.5-9.75 trips
- Daily vehicle trips: 15 dwellings x 5.0-6.5 per unit = 75-97.5 trips

Retail

- Weekday peak hour vehicle trips: $440.5m^2 \ge 0.75 \ge 100m^2$ GLFA = 41.3 trips
- Daily vehicle trips: $440.5m^2 \times 0.75 \times 55.5$ per $100m^2$ GLFA= 183.4 trips

Restaurants

- Weekday peak hour vehicle trips: $236m^2 \times 5$ per $100m^2$ GFA = 11.8 trips
- Daily vehicle trips: $236m^2 \times 60$ per $100m^2$ GFA= 141.6 trips

Total

- Weekday peak hour vehicle trips = 61.8-64.4 trips
- Daily vehicle trips = 412-437.5 trips

Net Increase

- Weekday peak hour vehicle trips = 0-55.1 trips
- Daily vehicle trips = 90.7-352.6 trips

There is no clear breakdown of GFA on existing retail and commercial uses, it can be envisaged that the actual difference between current and post-development traffic should be between the predicted best and worst case scenario. Nevertheless, given the proposed access driveway is immediately adjacent to the entry driveway of Intercontinental Hotel, where a slew of vehicles continuously slow down and make turning movements into the Hotel, Traffic Section raises concerns on the increased number of traffic, the weaving of traffic flow and its potential impact on the road network in the vicinity. More detailed and quantifiable analysis, considering the influencing factors mentioned above, and the cumulative effects of three approved 6-storey developments in the vicinity, should be undertaken to demonstrate the post-development traffic impact on the surrounding road network.

Car Lift, Queuing & Waiting Bay

Two (2) separate car lifts are proposed for the development, which complies with E1.15.4 of Council's DCP for a car park with over 25 parking spaces.

It should however be noted that swept path analysis indicates very restricted manoeuvres entering and exiting parking spaces, and a series of encroachments into other parking spaces are identified. Revised architectural drawings and swept path analysis should thus be provided.

Furthermore, with the anticipated number of vehicle movements and compact layout or car park, and given there is no waiting bay provided on-site, Traffic Section raises concerns on the feasibility of several vehicles simultaneously accessing/egressing the car lift. It should be noted that, pursuant to E1.15.3 of Council's DCP, vehicles must not wait on the footpath or roadway to be serviced. A queuing analysis should be submitted for further assessment, including information but not limited to:

- 1) The service rate (in seconds) associated with the proposed car lift; and
- 2) Number of on-site waiting bays required to accommodate the 98th percentile queue at peak traffic levels.

Loading Bay

Pursuant to E1.14.2 of Council's DCP, loading bays should operate independently of other parking areas, and should be located via a rear lane or side street. Traffic Section does not concur with the conclusion made in traffic report that this is a *small* residential based mixed use development, and the current proposal to provide a loading bay near the entrance area and parking aisle in Basement 1 is undesirable. Delivery vehicles will share the access/egress route with other residents and customers via the proposed car lift, which will lead to weaving of traffic during operation and exacerbate the queuing condition near the car lift. As such, the current arrangement of loading bay cannot be supported, alternative plan should be submitted for further assessment.

Access Driveway

Pursuant to Table 3.2 of AS/NZS 2890.1:2004, both entry and exit widths of driveways should be at least 3.0m for separate driveways of Category 1 access facility. The proposed 5.5m separate access driveway does not comply with such requirement and should be redesigned to allow two-way movements.

Pursuant to Clause 3.3 of AS/NZS 2890.1:2004, the design of access driveway should adopt a maximum gradient of 1 in 20 for the first 6m into the car park, the proposed entry ramp with a gradient of 1 in 10 does not comply with the standard and should be redesigned.

Sight Splay

Pursuant to Clause 3.2.4 and Figure 3.3 of AS/NZS 2890.1:2004, a 2m x2.5m driveway sightline splay should be provided along both sides of the driveway to ensure adequate visibility between vehicles leaving the site and pedestrians on the frontage road footpath. As such, the proposed driveway shall be redesigned to ensure that a 2m x 2.5m sight triangle, clear of obstructions to visibility, is provided wholly within the site accordingly.

Traffic Sign

It should be noted that the proposed new crossover would require relocation of existing street signs. Should this development be approved, the applicant is to liaise with Council's Traffic Section for the adjustment. This matter is required to be referred to Woollahra Traffic Committee to seek approval and the process can take up to 8 weeks. All works associated with the signage changes shall be carried out at the full cost to the applicant.

RECOMMENDATION

Council's Traffic Engineer has reviewed the application and recommends that the development not be supported at this stage until the following issues are addressed:

- 1. Parking Provision
 - a. An oversupply of 14 car parking spaces for residential components than DCP's maximum permitted parking;
 - b. A shortfall of 11 car parking spaces for non-residential components than DCP's minimum requirement;

- 2. Traffic Generation More detailed and quantifiable analysis be undertaken to demonstrate the post-development traffic impact on the surrounding road network considering all the influencing factors mentioned in the report above;
- 3. Car Lift, Queuing & Waiting Bay
 - a. Restricted manoeuvres while entering and exiting parking spaces and a series of encroachments into other parking spaces are identified;
 - b. With the anticipated number of vehicle movements and compact layout or car park, a queuing analysis should be submitted for further assessment, including information but not limited to:
 - The service rate (in seconds) associated with the proposed car lift; and
 - Number of on-site waiting bays required to accommodate the 98th percentile queue at peak traffic levels.
- 4. Loading Bay The current arrangement to provide a loading bay near the entrance area and parking aisle in Basement 1 is undesirable and cannot be supported, alternative plan should be submitted for further assessment to ensure loading bays could operate independently of other parking areas, as per E1.14.2 of Council's DCP;
- 5. Access Driveway
 - a. The proposed 5.5m separate access driveway does not comply with the requirement that both entry and exit widths of driveways should be at least 3.0m for separate driveways of Category 1 access facility, as per Table 3.2 of AS/NZS 2890.1:2004. Access driveway should be redesigned to allow two-way movements;
 - b. A maximum gradient of 1 in 20 should be adopted for the first 6m into the car park, as per Clause 3.3 of AS/NZS 2890.1:2004;
- 6. Sight Splays A 2m x2.5m driveway sightline splay, clear of obstructions to visibility, be provided wholly within the site along both sides of the driveway, as per AS/NZS 2890.1:2004. This should be clearly depicted on the revised architectural drawings;
- 7. Traffic Sign Should this development be approved, the applicant is to liaise with Council's Traffic Section for the relocation of existing street signs to accommodate the proposed new crossover. This matter is required to be referred to Woollahra Traffic Committee to seek approval and the process can take up to 8 weeks. All works associated with the signage changes shall be carried out at the full cost to the applicant.