

CONSTRUCTION MANAGEMENT PLAN

1 BILLAMBEE AVE BILGOLA PLATEAU NSW

PROPOSED DEVELOPMENT

▶ **1 BILLAMBEE AVE
BILGOLA PLATEAU**

CLIENT

▶ **THE BOSS NSW P/L**

1.0 INTRODUCTION AND BACKGROUND

The following Construction Management Plan has been prepared to advise Council and adjoining property owners of the various activities proposed during the construction of the proposed project at 1 Billambee Ave Bilgola Plateau 91-93 McIntosh Rd Narraweena.

This report is based on Architectural Drawings DA0008 to DA0960 as prepared by Benson McCormack Architecture dated September 2020.

The objective of this plan is to address general site practice and safety issues, the site characteristics require specific consideration of the construction process and staging. It is the intention of this report to provide a detailed explanation into how the various issues are to be managed.

In particular the following issues are addressed;

- a) Safe Work Method
- b) Access and egress for construction vehicles
- c) Proposed construction phases and duration
- d) Order of site works and method statement
- e) Liaison with adjoining owners
- f) Loading and unloading of equipment and materials
- g) Storage areas
- h) Excavation methods
- i) Cleaning of vehicles
- j) Excavation support
- k) Protection of Council and adjoining properties
- l) Site crane
- m) Construction Zone

2.0 SITE CHARACTERISTICS

The site is located at 1 Billambee Ave, Bilgola Plateau NSW (Lot 5, DP 229309) with a site area of 930m².

The site fronts Billambee Ave to the west, Bilkurra Ave to the south & Billambee Lane to the east.

The site is presently unoccupied.

The site generally falls to the South East of the Property. There is currently no Site vegetation.

3.0 THE PROJECT

The proposed project consists of demolishing the existing building on the site with subsequent excavation and construction of a new multi-use Shop top building. This will consist of a double storey basement car park with lift, two retail / commercial spaces and eight residential units above.

It is anticipated that the structure will be constructed using conventional reinforced concrete with a masonry façade and concrete roof structure.

4.0 CONSTRUCTION MANAGEMENT PROGRAM

a) Safe Work Method

Fencing of Site

The site will be secured by a fence or other suitable barrier constructed in accordance with relevant regulations.

Ensure perimeter fencing or other site barrier systems do not allow climbing or unauthorized entry.

Before and during building work, all excavations must be fenced so they do not pose a danger to life or property to the satisfaction of the relevant building surveyor.

Barriers and other perimeter fencing must be suitably lined to limit public viewing to designated viewing areas. This will ensure pedestrian flow is not impeded and adequate site-public interaction is accommodated.

Safety and Security

Ensure adequate lighting, safety signage and traffic controls are provided in accordance with appropriate regulations. Traffic controls and a traffic management plan must comply with AS1742 Series Manual of Uniform Traffic Control Devices and/or Council requirements.

Any temporary or permanent changes to street lighting shall first be approved by Council. Changes shall be at applicant's cost. Once approved by Council applicant to arrange with relevant Authority. Temporary lighting shall provide an even lighting level and must match or better existing lighting levels.

Security measures must be in place at all times when the site is not in operation. This may include: perimeter barriers, locks, surveillance systems, security lighting and motion detectors.

Where a building site cannot be fully secured, consideration must be given to the use of a security service to prevent unauthorised access.

Security measures must be provided to prevent construction work or protective measures from facilitating unauthorised access to an adjoining building(s) and to safeguard site materials and equipment.

All dangerous chemicals need to be properly stored in secure areas located from emergency exits, safety measures or stormwater pits. Required quantities of chemicals need to be nominated and procedures put in place for the location of storage facilities, secure access and spillage procedures.

Refer to AS 1940-1993 Storage and Handling of Flammable and Combustible Liquids. Signage for dangerous goods must be in accordance with AS1216-1995 Class Labels. For Dangerous Goods Hazardous materials must be stored in a manner approved by Work Cover.

Signage

Signage specifying any security measures and key contact details shall be erected on the perimeter of the building site (i.e. attached to the building, fence or barrier). A 24-hour contact name and phone number must be provided.

A sign is permitted with an advertisement area not exceeding two (2) square metres concerning construction work on the land. It must not be internally-illuminated and it must be removed when work is completed.

Public Domain

Any damage to the footpath, road, kerb and channel, stormwater drains and street furniture that results from excavation, demolition and building work is the responsibility of the builder or developer. Any impact which may impact on pedestrians, cyclists and motorists' safety shall be repaired immediately.

Developers and builders must ensure there are no tripping hazards from the perimeter fencing on nearby footpaths. Electrical, plumbing and other services extending over footpaths must be covered over, and pedestrian and disability access facilitated by a ramp. Ramps must have a non-slip surface, a handrail and a minimum gradient of 1:14 unless the existing topography of the street or road requires some variation to this ratio.

Determine whether the street or footpath or part thereof needs to be occupied by builders, above or below the public domain. The general public must be protected from construction activities including vehicle loading and off-loading within the public domain.

Precautions must be fully specified and include the following measures:

- ▶ The use of spotters and traffic controllers
- ▶ Restriction on the hours of operation of these activities (non peak hours)
- ▶ Restriction on the type of work being carried out (welding etc.)

- ▶ Machinery to be used
- ▶ Security mesh or barriers to separate the public from the work area

When using skip or rubbish bins, take the following steps to prevent disruption to public areas:

- ▶ Place bins away from public thoroughfares, pedestrian and bicycle access areas
- ▶ Specific times and methods for loading and unloading of bins or skips
- ▶ Protect pavements and streets and conduct dilapidation surveys before and after works have taken place.

When using cranes or mobile lifting equipment, take the following steps to prevent disruption to public areas:

- ▶ Ensure equipment does not restrict public thoroughfares and pedestrian access or, where restricted access is unavoidable, use gantries or other overhead protection
- ▶ Determine lifting zones for medium to long term use of the equipment
- ▶ Protect pavements and streets and conduct dilapidation surveys before and after works have taken place
- ▶ Implement procedures and lifting techniques to ensure safety on adjoining streets and footpaths
- ▶ Use traffic management controls and signage
- ▶ Use flagmen to manage pedestrian for protection during overhead lifting and unloading

Unless otherwise permitted, an obstruction must not protrude from premises causing it to interfere with pedestrian or traffic in a public place.

Unless otherwise permitted, all construction materials must be stored onsite and not in the street or public space.

When a crossover is required for vehicular access to the site, ensure:

- ▶ Protection of the existing crossover and footpath against damage
- ▶ The nature of protection of crossover and pavements
- ▶ Ensure a dilapidation survey of the footpath before and after works have taken place.

In the event that works may disrupt the adjoining reserve managed by the Council, consultation and approvals including park protection measures, ongoing maintenance requirements and reinstatement methods will be required to ensure there is no damage to flora, fauna and services. Grass verges and medians are also to be protected. No access is to be made across the reserve without prior consent.

Street Space Occupation

All necessary permits must be obtained from the Council to occupy and use the space on the footpath, roadway or any other public area.

Adequate barriers must be installed to prevent the public from accessing the construction area. Any occupation of activity that presents a hazard to the public must be provided with suitable barriers.

Pedestrian access areas must have a minimum width of 1.2m clear on the footpaths (1.5m preferable). Where possible, two (2) way passing bays 1.8m wide should be provide at not more than 20m intervals.

Excavation

Excavations adjacent to or in close proximity to a road or pathway must be designed to support the road or pathway.

The location and extent of excavations on a site must be specified and the means of containing sediment, especially in wet weather, must be detailed. The area of land to be cleared must also be minimized with stripping and excavating being avoided until building is about to start. Comply with Conditions of consent in regard to shoring, protection and notification of excavations.

Excavations adjacent to existing adjoining buildings must comply with the requirements of the Building Regulations to the satisfaction of the relevant building surveyor.

Prevent Unsightly Premises

Raw materials stored on the site must be adequately secured to prevent unnecessary and unsightly dispersal of the materials around the site and public areas (streets and footpaths).

Trucks leaving the site must be adequately cleaned to ensure soil, mud and other site debris is prevented from spilling onto adjoining roads and footpaths. Roads and footpaths should be cleaned on a regular basis with consideration to water efficiency.

Graffiti and other posters or stickers on fencing must be removed on at least a weekly basis or immediately if it is offensive in nature.

General Management

A person must not commence building works unless in accordance with a permit and the appropriate notice specified in the consent is given to Council of their intention to do so.

Trees must be protected where they are near the proposed demolition, excavation and construction works. Refer to the conditions of the consent.

Pedestrian signs must not be damaged, defaced, removed or altered in an anyway. New pedestrian signs must not be installed without Council approval.

Any precautions for public protection within the street/public domain must comply with the Building Regulations, local law and Work Cover requirements.

Operating Hours, Noise and Vibration Control

Minimise the impact of noise and vibration on the immediate neighbourhood. Provide a framework to plan and cater for construction activities outside normal hours. Minimise the likelihood of damage to adjacent buildings and structures.

Approved work hours to be confirmed, work shall not take place outside the approved hours without prior Council approval.

Air and Dust Management

Dust suppression techniques and equipment are to be provided if required depending upon the following:

- ▶ Weather and wind conditions
- ▶ Exposure/proximity to the public and surrounding buildings
- ▶ Proximity to air intake vents on adjacent buildings. Intake from these vents must be prevented through the installation of adequate filters or other approved measures.

Minimise dumping of loose materials on a site. If dumping of loose material is unavoidable, detail method for preventing dust and other airborne matter impacting on the surrounding area. Ensure these measures are adequate when the site is unattended.

Minimise airborne dust arising from trucks and other vehicles entering and leaving the site by providing details on the method and frequency of watering down driveways and trucks with consideration to water efficiency.

Perimeter fencing must be installed to minimise the impact of dust on the public and adjacent areas.

Materials are only to be cut in designated areas set away from boundaries and public areas, with adequate dust (and noise) suppression. Where cutting needs to occur in situ, localized dust suppression measures must be used.

Stormwater and Sediment Control

Prevent contamination of, or damage to, stormwater drains and waterways. Ensure sediment from the building site is retained on-site during construction work.

Site measures are to ensure that:

- ▶ Site water retention will not cause structural damage to excavations or retaining walls
- ▶ Drainage of the site to the legal point of discharge throughout construction
- ▶ Prevention of stormwater entering adjoining properties or into the sewerage system
- ▶ Capture and filtering of stormwater in sediment control points before entering the legal point of discharge

Site entry will be from Bilkurra Ave and stabilised with crushed rock, bitumen or similar material. A rumble grid or similar is to be installed to collect mud from the wheels of trucks leaving the site. Rumble grids must be cleaned daily with consideration to water

saving measures including recycling. Water run-off from cleaning the grid must be filtered prior to entering the legal point of discharge.

Provide grated drains at stormwater exit points from the site to prevent uncontrolled run-off.

Natural rainwater run-off must be controlled to prevent sediment draining into the stormwater system. Upslope water must be diverted to prevent it from traveling through the site. Downpipes must be connected as soon as a roof is installed on the site. Identify natural falls of the site and provide sediment filters such as straw bales filters, gravel surface barriers, sand bags, pit baskets or geo-textile mesh screens at run-off points. Straw bales/geo-textile mesh screens must be replaced on a regular basis so they remain effective.

Sediment traps or filters must be placed around any drain affected by construction works to prevent sediment entering the stormwater system. Sediment controls are often moved during construction works and should be checked daily to ensure they are put back in place properly.

The proposed storage locations for loose materials such as soil, sand and gravel are to be as specified. Sediment barriers may be required for fine materials.

Designated truck/vehicle/equipment wash down areas are to be as specified. Wash down areas must be located near site entrance and be designed to capture and treat water prior to discharge into the stormwater system.

Pump out any water collected at the bottom of excavation sites. If the water contains only sediments, it can be filtered and pumped into stormwater. Polluted water must not enter the stormwater system and may be pumped to the sewer system with the appropriate approvals from the water authority. In some circumstances, a liquid waste company may be required to collect the contaminated water for disposal at a licensed treatment facility.

Waste material, including liquid wastes such as paint, concrete slurries and chemicals, must not be discharged into a stormwater drain. Specify facilities to enable paint brushes rollers and spray equipment to be cleaned without any discharge of by product into the stormwater system.

Wherever possible, natural vegetation must be retained to absorb water flows and to minimise dust. Re-vegetation should occur as soon as possible after the completion of works.

Activities on construction sites need to consider permanent water saving measures. All hoses must be in good condition and fitted with a trigger nozzle. A high pressure water cleaning unit is to be used for all wash down activities.

Agricultural drains if required for the development shall always be located within the property boundaries and drain into the property.

Waste and Material Reuse Management

Maximise the re-use and/or recycling of construction materials. Waste material is to be stockpiled or placed in the specified bins stored on site until removed.

Removal of hazardous or dangerous materials from the site must be in accordance with State and Federal legislation including Work Cover requirements.

Waste collection shall only occur during permitted hours.

For outside bins, self-closing lids must be installed to ensure waste does not become airborne.

Litter and debris 'trapped' against site fencing must be regularly cleaned.

Burning off on site is prohibited.

Traffic Management

Minimise disruption to traffic (vehicles, pedestrians and cyclists) caused by construction activities to ensure the safety of all road users.

Obtain required permits from Council including but not limited to:

- ▶ Permit for a vehicle crossing
- ▶ Permit to occupy space on road or footpath
- ▶ Permit for a road opening
- ▶ Permit for a construction zone
- ▶ Permit to use a mobile crane, travel tower or lift on or above a road

Provide persons when required to coordinate traffic flow around the site and the surrounding roads and footpaths. Traffic controllers must have completed appropriate accreditation.

Parking and traffic controls around building sites must be complied with.

Access to existing waste bins or skips by waste collection contractors is to be maintained. Adequate provisions will need to be made for contractor vehicles in a manner that minimises disruption to the precinct. Where access for waste collection vehicles cannot be maintained, assistance may need to be provided by relocating bins and skips to accessible area as designated by Council or moving bins at time of collection.

b) Access and egress for construction vehicles

Vehicular access to the site will be provided from Bilkurra Ave. It is recommended that vehicles be limited to a maximum total weight of 35 tonnes in order to preserve Council assets.

Access to the site

Certified traffic controllers are to be provided and would be required to manage the use of the driveway by construction traffic and residents. The controller would be required to halt traffic along either Bilkurra Ave or Billambee Lane as required to allow for vehicle manoeuvres outside the site and to ensure other vehicles do not enter the driveway at the same time. If access does not permit vehicles to turn around on site, the traffic controller would ensure that all vehicles reverse into the site. This would allow vehicles to leave the site in a forward direction.

Local Traffic routes

Construction vehicles are to access and vacate the subject site utilizing Barrenjoey Rd as the main approach route and departure route.

Inbound Route

Barrenjoey Road, left turn to Plateau Rd, right turn to Bilkurra Ave & thence a left turn movement to the site or a forward movement to the works zone.

Outbound Route

Forward right turn movement from the site to Bilkurra Ave, left turn to Plateau Rd, and thence a right turn to Barrenjoey Rd.

Further to our inspection of the site and surrounding streets we note that there is sufficient standing room from construction traffic and waiting of ready mix concrete trucks without being disruptive to local traffic movements.

c) Proposed construction phases and duration

The following list provides the principal stages of construction, and the anticipated duration of each stage:

▶ Installation of safety measures and work practices	1week/s
▶ Installation of site facilities, sediment control and dust management devices	1week/s
▶ Demolition of existing structures	3week/s
▶ Site excavation	8week/s
▶ Erection of structure	35week/s
▶ Installation of drainage and site landscape, including finishes	6week/s
▶ Completion of road/footpath works	2week/s

TOTAL CONSTRUCTION PERIOD

56WEEKS

d) Order of site works and method statement

The following list provides the principal construction activities:

- ▶ Installation of safety measures and work practices
- ▶ Installation of sediment control devices
- ▶ Dust management
- ▶ Demolition of existing structures
- ▶ Site excavation
- ▶ Installation of site facilities
- ▶ Delivery of materials and equipment
- ▶ Erection of structure
- ▶ Installation of finishes

Installation of safety measures and work practices

The following measures are proposed.

- ▶ A main proof construction fence will need to be erected to secure the site from public access at both street frontages and along the public reserve. Access into the site shall be clearly marked as required.
- ▶ Certified traffic controllers would be required to manage traffic flow outside the development in Bilkurra Ave or Bilambee Lane as required. The controller would be required to halt traffic to allow vehicular manoeuvres onto the site and to ensure other vehicles do not enter the driveway at the same time. The traffic controller would be assisted by flagmen as required.
- ▶ It will also be required for the traffic controller to ensure that the build up of dust on the driveway surface does not compromise traction. Thus regular washing down would be required. In addition the appropriate sediment control measures on site, as discussed later, will prevent mud deposits and the like from building up on the pavement surface.

Installation of Sediment Control Devices

In this regard the following measures are required;

- ▶ Stormwater flows from properties located above the site shall be diverted to prevent scour of the site and deposition of stormwater into the excavation.
- ▶ A site discharge pit shall be construction prior to the commencement of excavations as part of the sediment and erosion control measures to allow for direct discharge of stormwater into the street system. If this is not feasible prior to the commencement of works on site then a temporary system may be installed.
- ▶ The accompanying drawings provide additional details in the form of sediment fences and the like that are required to prevent sediment runoff from the site itself. In addition, due to the excavation of the site, a temporary sediment basin at the

low point in the excavation is proposed to control surface flows and avoids hazardous ponding of water.

Dust Management

Conventional methods are proposed in this regard. Excavation faces and stockpiles would be kept in a continuously dampened state by regular watering. In addition stockpiles are to be protected by geotextile dust fences.

Demolition of existing structures

Demolition would commence after the implementation of the site safety measures. Movement and loading of demolition materials from transportation can occur wholly within the site.

Site Excavation

Excavation of the site would commence once debris from the demolition works has been removed.

It is anticipated that the geological condition of the site will consist of top soil over silty clay overlying weathered shale.

The excavation is located sufficiently clear of the site boundaries to allow battering of the shallow soil layer overlying rock.

Excavation of the soil and weaker rock material would be by normal bucket techniques. It should be considered that the staging should incorporate a series of temporary benches to allow for inspection and mapping of temporary faces before they reach the final wall alignment to enable the contractor pre-warning of any difficult site conditions. Initial excavation is to be carried out as a series of test pits located from the site boundary for inspection by engineer and geotechnical engineer to confirm the expected depth of competent rock.

At the conclusion of each layer of excavation inspection by a qualified and experienced geotechnical engineer will be required to determine any unexpected features. The next layer of excavation shall proceed only upon approval from the geotechnical engineer.

Notwithstanding the above, it is anticipated that problems associated with vibrations are unlikely and may be readily controlled using conventional measures. If vibrations due to even small or medium sized rock hammers proved to be excessive, lower energy methods such as line drill and split use of rock saws or the use of hand held pneumatic jack hammers would need to be considered.

Note that excavation is to be supervised by the engineer and geotechnical throughout the duration of works.

Installation of Site Facilities

Site amenities, materials and equipment would be located wholly within the site at ground level being transferred into the basement once constructed.

During the excavation stage there will be minimal requirement only for facilities and equipment.

For unloading and moving of construction material, it is expected that a combination of Tower crane, truck crane or mobile cranes would be used for the duration of construction.

Erection of structure

Once excavation is complete and sub-surface services have been installed construction of the structure can commence. Each suspended concrete floor will progress following a similar sequence of tasks as listed below:

- ▶ Construction of column forms & slab
- ▶ Laying and tying of slab & column reinforcement
- ▶ Pouring of columns & slab

Installation of finishes

Installation of finishes will occur once the buildings façade is in place enabling the level of noise and dust to be reduced.

e) Liaison with adjoining owners

The contractor will be required to inform owners of upcoming works.

This may be done by providing written advice to adjoining owners on a monthly basis of upcoming construction activities, and the anticipated time for completion of each phase.

A lead time of at least seven (7) days prior to commencement of a new phase should be maintained.

f) Loading and unloading of equipment and materials

All deliveries will be made to the site by suitably sized trucks and vans. Trucks with materials would be unloaded either manually or by crane and then store materials on site or transferred directly to the work area. The work site should be programmed so that materials are delivered with only short lead-time. This will minimise the storage space required.

Construction of the building footings below the parking level will require delivery of formwork and steel reinforcement. This would be unloaded either manually or by crane and transferred directly to the work site.

Construction of the parking level slabs will require the delivery of formwork and reinforcing steel. This would be unloaded either manually or by crane and transferred directly to the work site, or onto areas of the deck already formed.

Materials required for the construction of the upper levels would be unloaded and transferred directly to the surface of the most recently cast concrete deck or to completed areas of the formwork.

Obviously any additional materials delivered could be stored outside of the excavation within the property boundary.

Concrete pours will utilize ready mixed concrete and mobile pumping trucks. It is proposed to set up the concrete pump on the eastern end of the site. Ready mixed concrete would be delivered in the standard method, discharged into the pump, thence to the work site. Allowing two (2) trucks to discharge into the hopper at the same time will reduce the duration of the concrete pours and hence the disturbance to the neighbours.

With regard to traffic control and temporary parking of concrete trucks and the like please refer to later sections of this report.

Excavation machinery will be unloaded into McIntosh Rd and will proceed by working on the site. The street entry will be enlarged to allow spoil trucks to stand within the site for loading.

g) Storage areas

Excavated materials will be stockpiled within the footprint of the proposed excavation.

Construction materials and waste containers will be located wholly within the site in the areas determined most appropriately at the time. During the excavation stage waste containers may be located with the excavated area.

The site contains adequate area outside the building excavation and footprint at ground level to allow for materials and waste storage.

h) Cleaning of vehicles

Prior to leaving the site all vehicles are required to traverse a truck shaker located at the McIntosh Rd entrance.

Vehicles are to be washed down with a high pressure hose and all loose mud and spoil removed prior to leaving the site. The proposed location for this activity is over the truck shaker.

Water from this activity is to be collected a sump draining the stabilised access. This water is to be recycled where possible.

Prior to discharge from the site the collected water is to be pumped via a sand filter to remove sediment.

i) Protection of Council and adjoining properties

Protection measures are proposed as follows.

Dilapidation reports are to be prepared for all adjoining sites and Council assets prior to work commencing.

A temporary all weather driveway crossing will be required.

Refer to detailed discussion proceeding in regarding to the following items;

- ▶ Fencing of Site
- ▶ Safety and Security
- ▶ Signage
- ▶ Public Domain
- ▶ Street Space Occupation
- ▶ Excavation
- ▶ Prevent Unsightly Premises
- ▶ General Management
- ▶ Operating Hours, Noise and Vibration Control
- ▶ Air and Dust Management
- ▶ Stormwater and Sediment Control
- ▶ Waste and Materials Reuse Management
- ▶ Traffic Management

j) Site Crane

The proposed methodology will utilize a fixed crane in the Middle of the site.

The fixed crane will be located in Middle of the site.

When using cranes or mobile lifting equipment, take the following steps to prevent disruption to public areas:

- ▶ Ensure equipment does not restrict public thoroughfares and pedestrian access or, where restricted access is unavoidable, use gantries or other overhead protection
- ▶ Determine lifting zones for medium to long term use of this equipment
- ▶ Protect pavements and streets and conduct dilapidation surveys before and after works have take place.
- ▶ Implement procedures and lifting techniques to ensure safety on adjoining streets and footpaths
- ▶ Use traffic management controls and signage

k) Construction Zone

The proposed location for the Construction Zone is to the South of the site along Bilkurra Ave.

The construction zone will operate during normal construction hours as previously noted.

5.0 CONCLUSION

Finally we confirm our opinion that the project proposed can be carried out in an acceptable and safe manner provided the recommendations of this report are followed.