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Urban Design Guidelines
WILLIAMS POINT BUSINESS PARK

Contents

Introduction

Vision

Williams Point Business Park will provide a mix of uses and form an important part of Williamstown's continued growth into the future. It will provide a range of lot types and sizes and thereby encourage a diverse mix of light and service industrial, warehousing and other business opportunities.

Purpose

These Design Guidelines apply to all lots within 85 Maddox Road, Williamstown North and will ensure that a high standard of development is maintained throughout the development of the precinct and the value of your asset is maintained.

The Guidelines will also help purchasers, developers and building designers appropriately design premises which assist in delivering the vision for Williams Point Business Park. The key purposes of the Guidelines are as follows:

- To create a high-quality Business Park Precinct which services the Williamstown community and provides a place of employment;
- To form a cohesive Business Park precinct which capitalises on its convenience location, and allows a for a range and scale of businesses that may benefit from this location; and the interface with the coastal park to the south and the amenity this provides.
- To implement and achieve sustainable building and management practices, including maximizing resource efficiency, minimising waste to landfill, minimizing energy use and water consumption.

Relationship to Other Planning Instruments

The Guidelines should be read in conjunction with the Hobsons Bay Planning Scheme and Hobsons Bay City Council's planning policies.

In the event of any inconsistencies between the Guidelines and the Hobsons Bay Planning Scheme and Hobsons Bay City Council's planning policies, the provisions of the Planning Scheme shall prevail with detailed development guidance provided by these Guidelines.

Development in accordance with these Guidelines is deemed to comply. It is recognised that alternative designs may be required to satisfy the specific needs of the site or proponent. Alternative designs may be considered where the proponent can demonstrate that the proposal will comply with the overall objectives and intent of the Design Guidelines and with the Town's other requirements.

A proponent wishing to pursue an alternative design must provide appropriate justification and describe the circumstances of the site which necessitate the design, informed by these Design Guidelines.

Prohibited Land Uses

A registered covenant on the title (Instrument Number AR538936U) (the Covenant) of the land prohibits the following Prohibited Uses (of any type) (Prohibited Uses):

a. crop raising
b. animal husbandry
c. home occupation
d. informal outdoor recreation
e. agriculture
f. caretaker's house
g. place of assemble (inc. carnival and circus)
h. cinema based entertainment facility
i. residential
j. childcare
k. nursery school
l. preschool or other educational facility
m. playground
n. athletic field, leisure or recreational areas
o. camping ground
p. place of worship
q. accommodation (including hotel, motel inn, bed and breakfast or rooming house)
r. nursing home
s. rehabilitation centre or hospital
t. community centre
u. brothel
v. commercial food processing or preparation or distribution facility
w. obtaining from beneath the surface of the Burdened Land any water for any reason whatsoever from any groundwater table or similar water basin accessed from Burdened Land (other than for monitoring purposes)
x. to re-open or use any existing bore-water or groundwater well located on the Burdened Land
y. underground development of any type other than for building foundations and below grade utilities for the purpose of conveying by pipeline or conduit water, drainage and sewerage, gas for fuel purposes, electricity or other fluid substances which may be transported by pipeline(s) or conduit(s) or to pass fibre optic cables and wiring designed to transmit data in an electronic form including telecommunication, computer and other signals and any and all ancillary and incidental communication systems, power systems valves, valve chambers, manholes, inspection pits, fittings, meters, connections and related equipment and appurtenances provided that such underground development is protected from vapour or liquid intrusion by the installation of an appropriate vapour ventilation system and a vapour and /or liquid barrier.

The Covenant provides that the Burdened Land must not be used for the Prohibited Use.

The Covenant creates a restrictive covenant over the Burdened Land which binds Williams Point Pty Ltd and its successors and transferees in title to the extent that the burden of the covenant runs with the land and binds the Burdened Land and every part thereof and that the benefit is annexed to and runs with the Benefited Land.

In the Covenant, unless expressed or implied otherwise:

a. Benefited Land means Certificates of Title Volume 7431 Folio 126, Volume 8059 Folio 872, Volume 9993 Folio 668, Volume 9993 Folio 669, Volume 10252 Folio 866, Volume 8059 Folio 874, Volume 8098 Folio 207 and Volume 8133 Folio 186.
b. Burdened Land means Lot 1 on Plan of Subdivision 57865 being the land described in Certificate of Title Volume 11974 Folio 813.

All lots within 85 Maddox Road, Williamstown North must not be used for a Prohibited Use in breach of the Covenant, and by its inclusion herein, breach of these Design Guidelines.

1.0 URBAN DESIGN GUIDELINES

Council's Industrial Development Design Guidelines June 2008 (IDDG) apply to all industrial and special use zoned land in Hobsons Bay and provides a suite of adopted application and design requirements for new industrial developments.

Designers of any proposed development will need to ensure that any application to develop on any specific lot is designed in accordance with IDDG.

Town Planning Applications will also be assessed against the decision guidelines in Clause 33.03 (Industrial 3 Zone) and Clause 65 of the Hobsons Bay Planning Scheme, and any other planning control as may be applicable at the time.

1.01 Building Setbacks & Heights

Building Heights

- A maximum building height 10m for properties along eastern boundary with Hygeia Avenue.
- All other building to have a height which responds appropriately to the form and function of the use and the surrounding built form context.

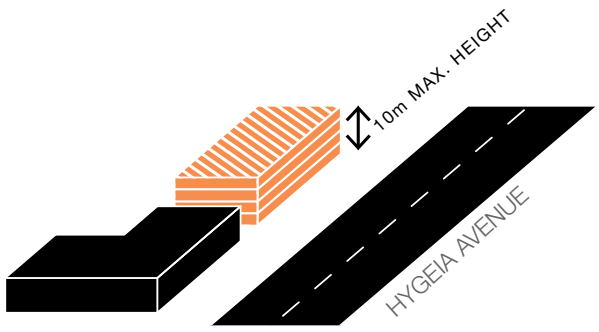

Figure 1.01A

Building Setback

- Building frontages must be set back at least 9m to the front boundary.
- Building front setbacks are to be consistent with the adjacent buildings, including buildings within the Business Park estate and surrounding buildings.
- High structures should be setback from the street frontage to minimise visual dominance of the building to the public realm.

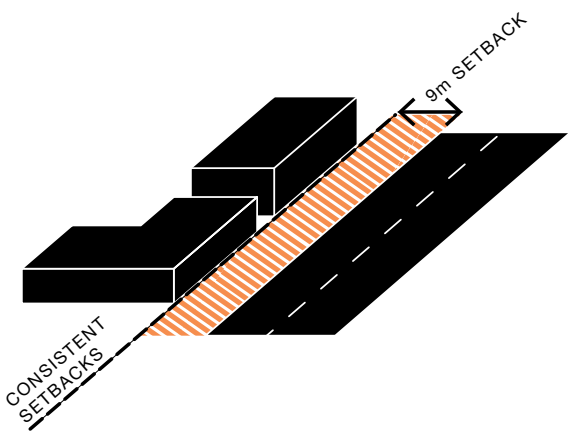

Figure 1.01B

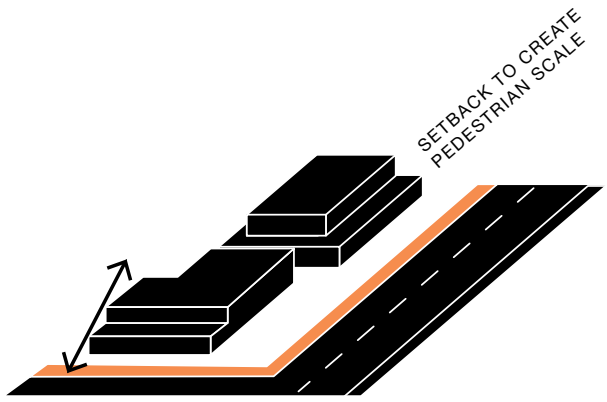

Figure 1.01C

Landscape Setback

- Landscape setback at least 9m to a boundary with Kororoit Creek Road.
- Landscape setback at least 4.5m to a boundary with Maddox Road and all other roads frontages. All crossovers from Maddox Road must have sight distance triangles in accordance with AS 2890 – 1. These sight distances within which all landscaping and/or fences are to be limited to a maximum height of 900mm. *Refer to Figure 1.05C.*
- Landscape setback of 1.8m from the side road on corner lots.

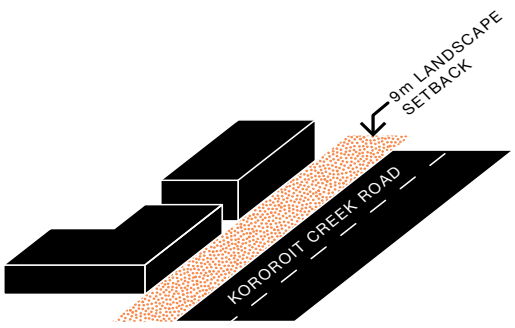

Figure 1.01D

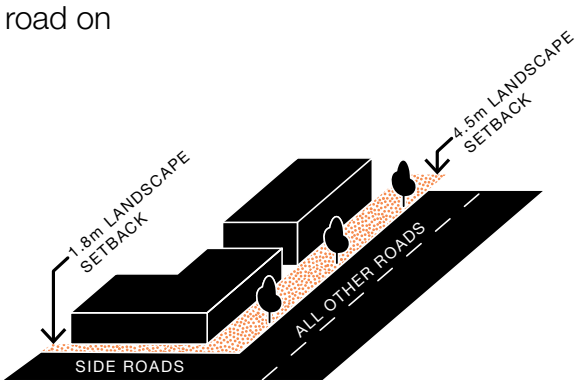

Figure 1.01E

1.02 Building Siting & Scale

Building Siting

- Offices are encouraged to be sited to the front of buildings to reduce building mass and increase visual interest.
- Locate and shape the building to accommodate local topography and features of the site.
- Locate and shape the building to protect view corridors from streets and public space.

Building Scale

- Building scale and form should enhance the existing character or support the preferred future character of the area.
- Shape the building form and detail to reinforce important street corners. *Refer to Fig 1.02A.*
- Use the building height and setbacks to frame the street as a public space. *Refer to Fig 1.02B.*

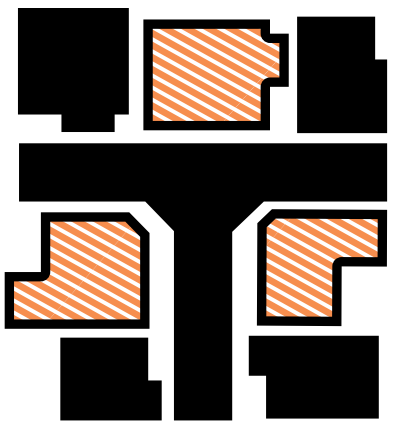

Figure 1.02A

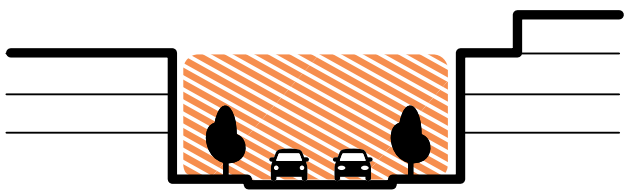

Figure 1.02B

Access to Daylight

- Ensure buildings provide equitable access to daylight and sunlight.
- Locate and arrange the building to allow daylight and winter sun access to key public spaces and key pedestrian street spaces.
- Allow sufficient distance between buildings to allow access to daylight for neighbouring windows.

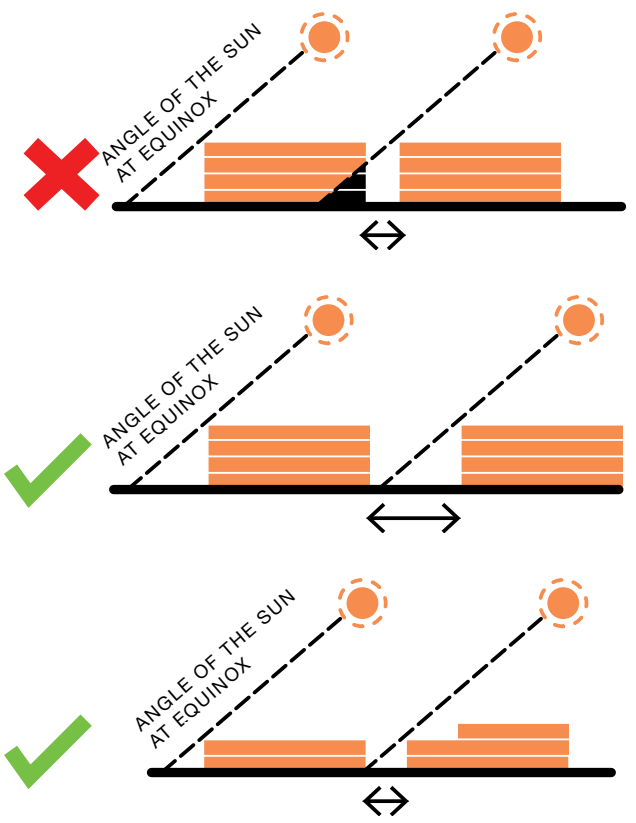

Figure 1.02C

The higher the surrounding buildings the further they may need to be separated to have access to daylight.

1.03 Building Interface

Interface with Street Frontage

- Built form fronting Kororoit Creek Road which interfaces with residential development to the east, Jawbone Reserve to the south and industrial activity to the west, should have a high-quality built form outcome that acts as a gateway.
- Large blank façades facing a public street are not permitted. Where a building has a solid external wall facing a street or public place, it should be broken up with different architectural articulation, material and paint finishes.
- Incorporate lighting of walls facing streets and public spaces to contribute to lighting of streets.
- Define the boundary or transition between public space and private space without the need for high fences or barriers.
- The front facade of buildings should be well articulated and be comprised of at least 2-3 different materials as permitted by structural engineering requirements.
- Materials used should have anti-graffiti finish applied where appropriate.

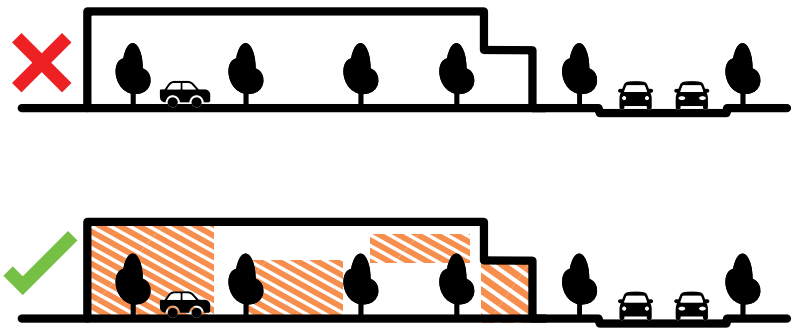

Figure 1.03A

Detail on external walls may include, for example, signage, artwork and other mixed materials.

Interface with Residential Properties

- Ensure the design of buildings respects the scale and mass of abutting residential development.
- Provide a transition in scale from larger buildings to adjacent areas of smaller scale built form.
- Ensure that residential amenity is not adversely affected by issues such as overshadowing and overlooking.
- Unnecessary bulk and mass in close proximity to residential boundaries is discouraged.
- The use of high quality architectural solutions and landscaping buffers should be incorporated into building designs to interface with adjacent residential areas.

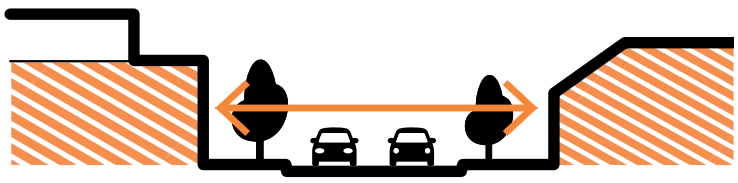

Figure 1.03B

A larger building can transition to a lower scale neighbour by placing smaller scale buildings at the interface, or by stepping down the building towards the interface edge.

1.04 Building Construction - (Refer to Geotechnical Report by AS James attached in Annex of this document)

- A Section 53X Environmental Audit is being undertaken over the entirety of this industrial estate to allow for industrial and commercial uses. The Statement of Environmental Audit (SoEA) will have conditions that must be abided by all future land owners and occupants within this industrial estate. A capping layer of nominally 800mm to 1,000mm of clean engineered fill has been provided over all the development lots. The capping layer is intended to provide a barrier over underlying contaminated fill materials, for installation of shallow footings and utilities within the development lots. A marker layer of orange geofabric has also been installed to designate the transition between the engineered capping layer and underlying contaminated fill. One of the conditions of the SoEA that must be complied with is the maintenance of the capping layer. There will also be conditions regarding any works that might breach the capping and marker layer.
- The Remediation Action Plan for this site has been prepared on the basis of all future buildings having raft slab foundations and lightweight construction. Any variation to this construction approach must be verified as acceptable by a Structural Engineer as informed by the Geo-technical report required to be undertaken for each individual site. If a different footing system is required for a development site, for example screw piling that breaches the geofabric marker (to allow a heavy weight construction outcome), this will require a Construction Environmental Management Plan to be prepared and verified by an Environmental Auditor and supervision of on-site works by an occupational hygienist. Refer to the conditions set out in the SoEA for further details of these requirements.

Raft Slab Construction

- The footing arrangements allowed for within the Industrial Estate are either strip footings, infill slabs and or raft slabs. However, if the operational requirements for the end user requires an alternative footing arrangement to be utilised as informed by a structural engineer, such arrangements must be fully detailed in the planning permit application for the development and be to the satisfaction of the Responsible Authority.
- Developments with heavy construction outcomes may be permitted, however the conditions of the Statement of Environmental Audit (SoEA) must be fully complied with at all times. If the geofabric marker layer (orange material) needs to be breached to allow for suitable foundations to be established (i.e. screw piles) this will require the proponent to develop a Construction Environmental Management Plan for management of the soil, and reinstatement of the marker layer and capping layer. The proponent would also need to engage an Environmental Auditor to review and endorse the plan, to inspect the works and provide confirmation to Council and EPA that the works were completed in accordance with the relevant SoEA condition.
  An endorsed CEMP by the Environmental Auditor will need to be submitted.
- All underground services are to be installed within the clean capping material. Any deviation needs to be overseen by an Environmental Auditor in accordance with the conditions of the SoEA (ie. via a construction environmental management plan as per the process outlined in the dot point above).
- The Structural Engineers Report to be submitted with development applications for a planning permit are required to include, but not be limited to, the following information:
  - Building materials (frame, walls, roofing)
  - Footing arrangements including any requirement to breach the geofabric marker layer.
  - Construction requirements including internal weight bearing systems (i.e. mezzanines, racking systems)
  - Moisture control (maintenance of footing systems)
  - Tree planting locations (species nominated)

Building Materials

- The building materials allowed for with the remediation strategy for this Industrial Estate are those of light weight construction which can include precast dado panels up to a height of 2.0m with a light weight steel frame. Metal or similar cladding is encouraged to suit a raft slab foundation to avoid breaching the geofabric marker layer and the need for additional oversight by an Environmental Auditor.
- If site conditions permit, heavier construction materials i.e. full height precast panels may be achievable subject to the geotechnical assessment and advice from a structural engineer. Any applicable footing system that will result in a breach of the geofabric marker layer will need to be overseen by an Environmental Auditor in accordance with the conditions of the SoEA.

Excavation

- All conditions within the SoEA must be adhered to at all times, particularly during construction phase.
- Development applications that do not adopt a shallow strip/pad/raft footing as part of the construction methodology will need to provide an individual geotechnical report of the site conditions confirming the depth of the geofabric marker layer below the finished surface level and level of compaction with any planning permit application for development. If a screw pile foundation is needed, the geotech report must confirm the depth to suitable founding material below surface level.
- Excavation should be limited to the fill capping layer zone located above the geofabric marker layer whenever possible. However, the capping layer may be breached for heavier construction requirements including with screw pile foundations when undertaken under the supervision of an Occupational Hygienist and oversight of an Environmental Auditor with an approved Construction Environmental Management Plan in accordance with the conditions of the SoEA.
- Any geotech investigations that breach the capping and marker layer must also be carried out under oversight of an Environmental Auditor with an environmental management plan.

1.05 Landscaping

The objectives of the landscape design are to:

- To encourage open, well landscaped industrial precincts;
- To encourage landscaping that enhances the appearance and amenity of the site and public areas;
- To encourage the use of recycled water and passive irrigation solutions to irrigate landscaped areas.

The landscape design should address the following:

- Plant and tree species to be selected based on site conditions and location. i.e. Coastal conditions, native Victorian species, etc.
- Landscaping strips must be a minimum width of 500mm.
- Tree planting should be incorporated within larger areas of hard stand where achievable.
- Trees should be selected to complement the proposed building forms and positioned to soften the height of building and structures.
- Minimum canopy tree height should be a minimum of 6-8m high.
- When selecting and locating trees, future root impact on building substructure needs to be taken into consideration as root barriers may be installed should they be required. Structural engineer's review is required.
- Large areas of car parking with 2 or more rows of car spaces should have a minimum of 15% landscaped area.
- All crossovers from Maddox Road must have sight distance triangles in accordance with AS 2890 – 1. These sight distances within which all landscaping and/ or fences are to be limited to a maximum height of 900mm. *Refer to Figure 1.05C.*
- All new crossovers must be designed and constructed in accordance with Design Standard 1 – Accessways specified in Clause 52.06-9 of the Hobsons Bay Planning Scheme and compliant with all relevant Australian Standards.

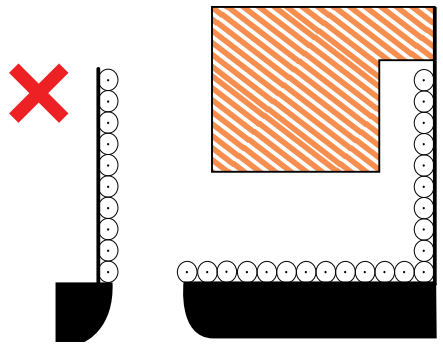

Figure 1.05A

Narrow landscaping strips are ineffective and should be avoided.

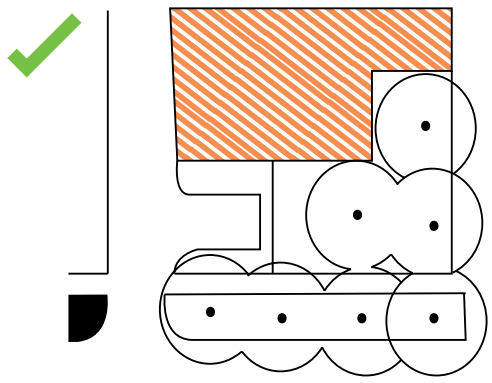

Figure 1.05B

Aggregated areas provide space for larger trees to complement street trees.

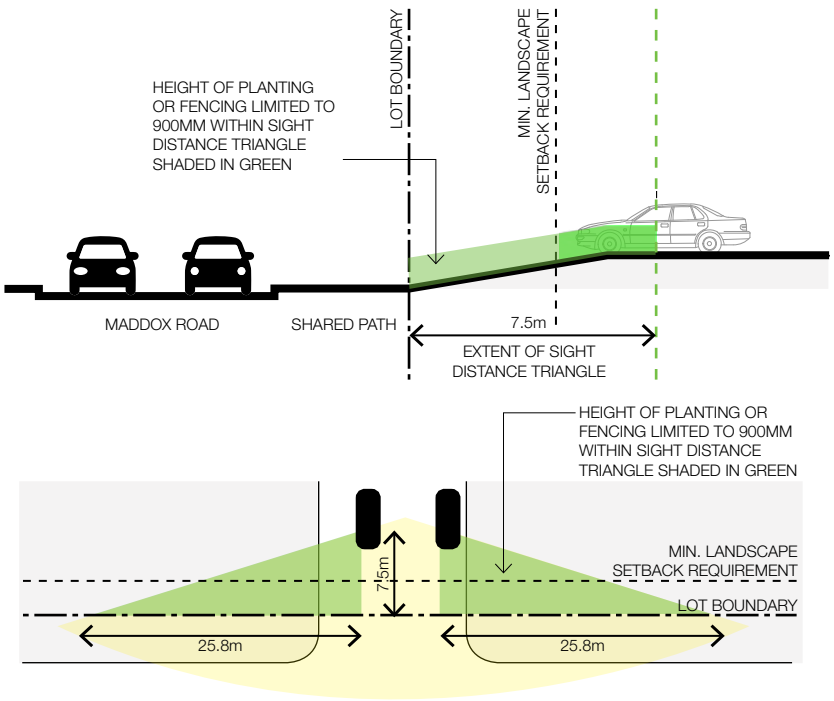

Figure 1.05C

Planting and fences within the sight distance triangles (green & hatched areas) are limited to a maximum height of 900mm to maintain sightlines.

1.06 Passive Surveillance

Buildings

- Arrange windows of buildings to overlook adjacent streets and public spaces.
- Provide building entries and transparent windows to the street frontage.

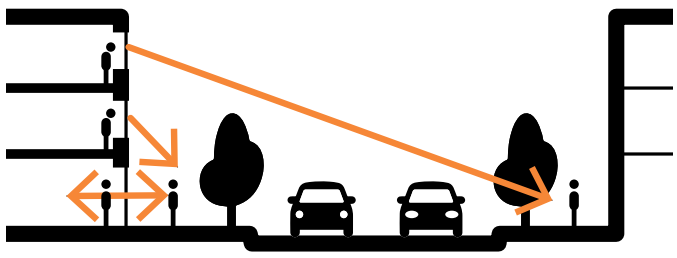

Figure 1.06A

Fencing

- Fences should be designed so that they are unobtrusive and compliment the amenity of the area.
- Along the streetscapes semi-transparent and articulated fences are encouraged. The use of solid and unarticulated fences along the street front is discouraged and should be avoided.
- Where high fences along boundaries are required, it is preferable that black, plastic coated chain link fencing is used.
- All fences should be consistent with Council's IDDG. i.e. black powder coated or chain-link fencing.
- Use low-height or semi-transparent fences along street frontages is encouraged to provide informal surveillance of the street.
- Front fences at street level that are low, open or partially transparent are encourage to create an impression of openness on the street. Where a fence is needed to minimise noise intrusion, consider using a solid, transparent material.
- Fencing along Maddox Road must not obstruct the sight line triangles in accordance with AS 2890-1 within which all fences are limited to a maximum height of 900mm. *Refer to Figure 1.05C.*

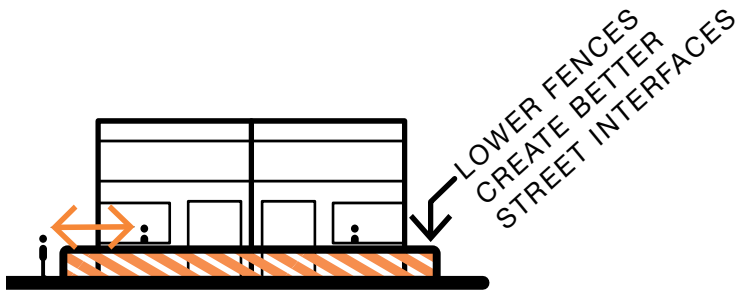

Figure 1.06B

1.07 Lighting

- Lighting should be designed so that the building is appropriately lit and to provide security to the buildings.
- The design of the lighting should ensure that the amenity of the local area is not impacted, by appropriately baffling lights that affect neighbouring lots or residential properties.
- External lighting should be located around entrances.
- Sensor lights should be used where security is not essential.
- Locate trees clear of lighting to allow direct illumination of pedestrian paths and vehicle lanes.

1.08 Movement & Access

Pedestrians & Vehicles

- Building entries should face the main public street, and be clearly visible from the street.
- Individual entry points of multiple tenant buildings should be identifiable.
- Emphasise pedestrian entries with prominent design features, signage or landscape treatments.
- Arrange vehicle entries to minimise the number of vehicle crossovers on pedestrian paths.
- Separate the pedestrian entries from the vehicle entries to buildings.
- The portion of the driveway system used as a fire route should be readily identifiable through signage in appropriate locations, and provide appropriate geometry and ease of access to buildings for emergency vehicles in accordance with relevant requirements.
- Signage and pavement marking must be installed at each access point to Maddox Road to delineate the shared path, and the on-road bicycle lane.
- Traffic calming measures, line marking and directional arrows to be implemented where appropriate to improve safety and efficiency.
- Any additional crossovers to Maddox Road, other than what has been previously endorsed by Council, will not be supported by Council

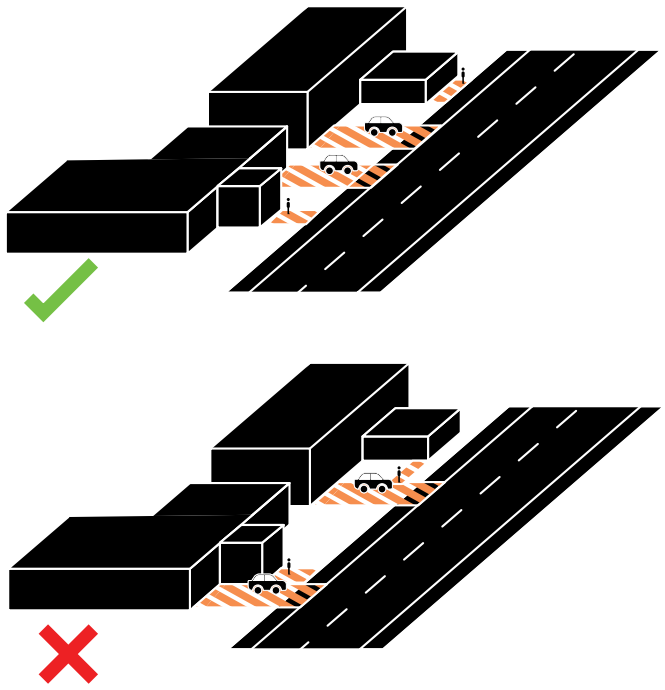

Figure 1.08A

Arrange vehicle entries to minimise the number of vehicle crossovers on pedestrian paths.

Separate the pedestrian entries from the vehicle entries to buildings.

Universal Access

- Disabled access to and within buildings must be provided in accordance with the relevant Building Regulations.
- Disabled access ramps should be integrated into the design of the building and landscape and should not intrude into the landscaped road setback areas.
- Disabled parking bays to be provided and located as close as possible to building entrances.

Active Transport

In addition to end of trip facilities, provide the following to encourage cycling where possible:

- Dedicated, secure covered bicycle parking areas.
- Provide visitor bicycle parking near to pedestrian entries to buildings.

Heavy Vehicles & Trucks

- All lots which have direct access to Maddox Road and the new service road to Kororoit Creek Road must be designed and constructed to enable all vehicles, including heavy rigid and articulated vehicles, to enter and exit the lot in a forward direction.
- All lots must ensure sufficient space to allow for heavy vehicles and trucks to enter and exit in a forward direction. Provide a passing area near the site entrances if applicable - or separate entry/exit points, etc.
- Truck access to service and loading areas should be designed with sufficient space so that truck movements will not disrupt other vehicular and pedestrian access.

1.09 Carparking

Carpark Amenity

- Locate larger car parking lots, with more than 2 rows of cars, to the rear or side of the buildings they serve.
- Create informal surveillance from surrounding buildings and spaces to carparking lots.
- Where a car parking lot must be located between the building frontage and the street, maintain a visual connection between the building and the street.
- In large car parking lots, position dedicated direct paths to take pedestrians from car parking spaces to main building entries.
- Provide pedestrian paths separate from driveway and vehicular areas.
- Provide clear sight-lines at entries and exits to car parking lots.
- Construct a permanent kerb for wheel stops.
- Wheel stops should be installed so that vehicles do not overhang pathways or landscaping areas.

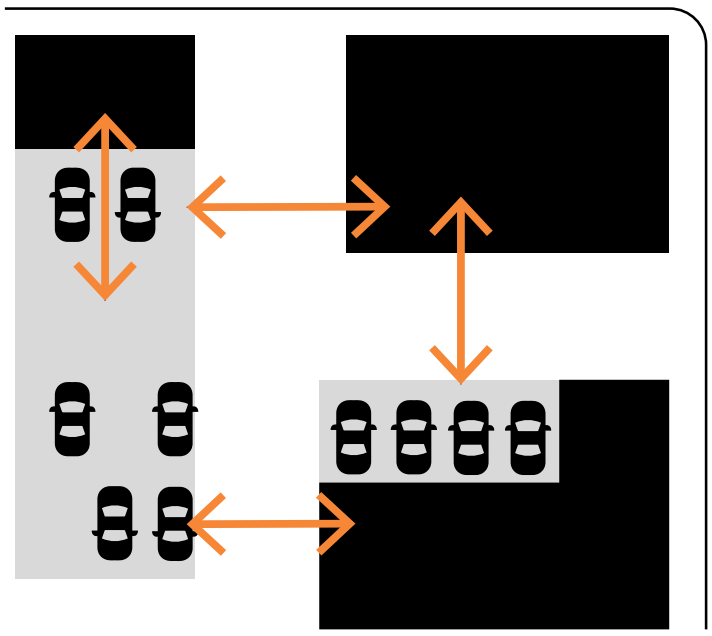

Figure 1.09A

Locate larger car parking lots to the rear or side of the buildings they serve, and create informal surveillance from surrounding buildings and spaces to carparking lots.

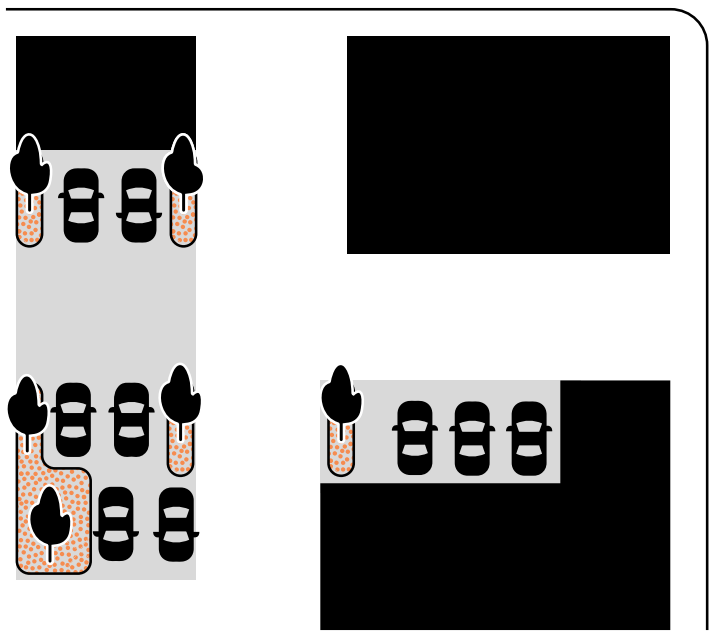

Figure 1.09B

Positioning the car parks behind substantial landscape areas.

1.10 Loading & Storage

Visual Amenity

- The front setback area must be kept free for visitor and staff parking and landscaping.
- Outdoor storage is not permitted in the front setback. i.e. Rubbish, vehicles, machinery, etc.
- Sites are to be kept tidy and well presented to ensure the amenity and appearance of the estate is not devalued by pallets, creates, boxes and other waste items stored in the front setback area.
- Loading bays, and other service areas should be located on the rear or side, and screened from the street by building mass, landscaping, fencing or screen wall compatible with the building architecture.
- Any solid screen walls are to be setback from road frontages as per other buildings.
- Storage of vehicles and machinery for repairs and wreckers must be located to the rear or side and screened from public view. No vehicles should be stored on the surrounding streets.

Figure 1.10A

1.11 Waste Management

- The requirements for waste, rubbish or refuse facilities including collection and stage areas must be considered as part of the early design stages of the development process.
- Provide for efficient storage, separation and removal of waste and recycled materials from buildings.
- Waste management facilities including collection and storage areas must be integrated into the design of the buildings and site layout.
- The design should ensure that no waste bin or receptacle or any form of rubbish or refuse is visible from any adjoining road.
- Waste rubbish or refuse must be managed to ensure that no odour is emitted, and minimise vermin activity.
- Prepare a waste management plan that provides for:
    1. The method of storage of waste, rubbish and refuse as well as recyclables;
    2. The method of collection;
    3. The designation of appropriate on-site areas for waste, rubbish and refuse storage, including allocation for recycling and green waste;
    4. The designation of adequate areas to access the waste, rubbish and refuse storage facilities to allow for safe loading and removal off the site;
    5. Measures to minimise the impact upon local amenity caused by the operation, management and maintenance of the waste, rubbish and refuse facilities.

1.12 Signage, Ancillary Services & Equipment

Signage

- Scale advertising signs to be consistent with the surrounding urban context, and comply with the Planning Scheme's local planning policy.
- Large signs should not impede sight-lines and views. Refer to detailed guidance in the Victoria Planning Provisions Clause 52.05 Advertising signs.
- Position signs clear of pedestrian and bicycle spaces and paths.
- Position signs clear of vegetation.
- Place pedestrian and cyclist signs at user eye level.
- Locate letterboxes and property street numbers to be visible from the street, and be lit up at night.

Fire Services and Substations

- The requirements and location of fire services and substations must be considered as part of the early design stages of the development process.
- While the location of fire services equipment and substations must comply with the standards set by the relevant emergency services authority, every endeavour should be made to minimise the visual intrusion into the streetscape.
- Fire services equipment and substations should be located to the sides as much as possible, not in front of the buildings entrances and to minimise impact on the front landscape area.

Rooftop and Plant Equipment

- Building plant and other service facilities including plant equipment, vents or lift overruns, solar energy facilities, storm-water collectors and telecommunication facilities should be avoided in rooftop locations where possible. However, where necessary, these elements should be designed to the lowest possible height within the building envelope to limit visibility from the street.
- Plant and equipment located at ground level should be integrated into the building design or located out of view from the public realm.
- Rooftop elements should be integrated into the design of the building so that they are screened from view from the surrounding streets and other buildings by intervening rooftops and parapets.
- Roof spaces can be used as outdoor recreation areas.
- The design of outdoor recreation areas on roof top areas must protect the amenity of residential properties.

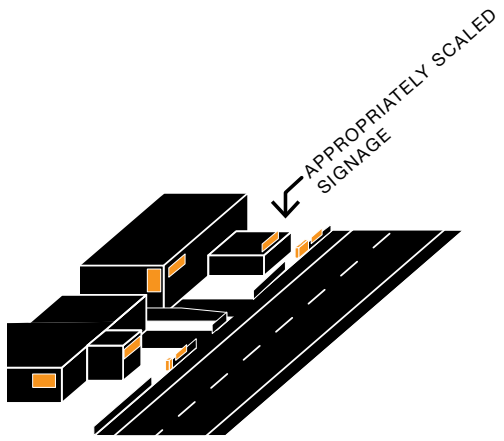

Figure 1.12A

Scale advertising signs to be consistent with the surrounding urban context.

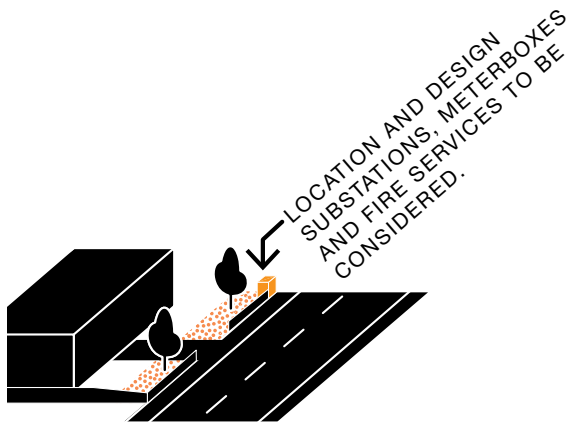

Figure 1.12B

Fire service equipment, substations and meter installations are to be located so they are accessible as per authority requirements, however measures to be undertaken where possible to ensure they are not visually dominant.

2.01 Sustainability - (Refer to ESD Report)

ESD

Buildings are encouraged to implement, where feasible, environmental best practices such as passive and active solar technology, and environmental waste water processing systems.

New buildings should:

- Minimise the demand for water by providing water efficient fixtures and fittings including water-less urinals and low flush volume toilets.
- Use collected rainwater and storm water on-site for reuse to replace rest mains water consumption wherever possible including use in toilets and for landscape irrigation.
- Treat grey water (basins and sinks) on-site for reuse in toilets flushes and for landscape irrigation.
- Water management facilities, including but not limited to rainwater tanks, should not be located within the landscaped setback areas or where they are visually intrusive when viewed from the public realm.
- Solar and alternate energy sources to be incorporated to help meet the energy demands anticipated for each site.
- Building design utilising best practice passive solar design principles particularly for both heating and lighting.
- Taking advantage of both active and passive design strategies.
- Rainwater collection should be integrated into the lot design. i.e. appropriately sized rainwater tanks need to be used for toilet flushing with an average of 150l/day per lot being re-used and for landscape irrigation purposes.

Landscape Irrigation

In accordance with this provision when planning the site layout and landscaping, lot owners are required to:

- Install a low flow trickle irrigation system, connected to a rainwater tank as the main supply, and the mains water supply as back up if required.
- Install a programmable water controller / timer system.
- Direct storm-water runoff from building and hard-stand areas to passively irrigated trees and landscaped beds.

WSUD Guidelines

Suggested Strategies to meet Best Practice for Stormwater Quality onsite

1. Increasing rainwater storage – 2X 5000L tanks for each development and used for toilet flushing and landscaping (front internal streets) on individual lots

2. Above ground rain garden - connected to rainwater from part roof (as it is unlikely that all the roof will be connected to the proposed 5000L RW tank) –The drainage pipe from the raingarden should be able to fit easily and run down the slope within the soil capping layer to the LPD. Rain gardens can also add to the amenity of the development and contribute to greening/cooling of the site

3. In-ground swale/raingarden - in each lot with driveways/hardstand areas/parking paving draining towards them. This can provide further treatment of the water (beyond the primary treatment proposed above via grated inlets and GTP).The trench for the swales could be lined with a physical barrier to avoid contaminated land leachate entering the swale. The existing soil capping depth should be able to accommodate the trench and any perforated and sloped piping at the bottom of the swale trench.

4. Enviss Sentinel pit – a mechanical system with a 3 stage water purification process that can meet the water quality objectives. Being mechanical in nature these pits would be more reliable and require less maintenance than rain gardens. They are located underground and are 890mm deep so the soil capping would need to be at least about 1m and perhaps a bit more to accommodate slope of the drainage pipe.

5. Water efficient fittings - (taps, toilets, showers) to be installed in each warehouse development

Passive Design

Buildings should be designed to be resource and energy efficient using best practice Ecologically Sustainable Design and Green Building Design principles.

Ensure that natural light and ventilation is provided to all buildings, particularly for office areas.

Natural Light:

Provide a balance of natural light, whilst minimising thermal heat gain. Seeks ways to introduce natural light to the centre of the building including:

- Clerestory windows (preferably oriented to capture diffused southern light)
- Translucent roofing materials to be applied to large roof spans (i.e. warehouses) interspersed with opaque materials

Ventilation:

Seek ways to encourage cross-ventilation including:

- Provide side wall openings, in addition to front and rear openings.
- Locating clerestory windows so as to provide an outlet for rising warm air.
- Wind powered ventilation turbines to enhance the removal of rising warm air.
- Roof vents (actively or passively controlled to further increase the upward flow of warm air in the building).

Material

Material ESD credentials can be obtained from manufacturers through environmental performance data sheets, eco-labels and material safety data sheets.

- Materials used should be durable and complement the surrounding character.
- Materials chosen should be sustainably sourced.
- Materials chosen should satisfy the ESD objectives of the chosen material. i.e. All paints and adhesives used should be VOC-free or low-VOC, concrete with high recycled content.

Adaptive Re-use

- Where practical, lay out the building structure and internal spaces to allow future adaptation to other uses.

3.0 Annex

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TJH:sk 13 February 2020

WILLIAMS POINT DEVCO PTY LTD
C/- TIME & PLACE COMMERCIAL PTY LTD
Level 26, 35 Collins Street
MELBOURNE VIC 3000
Attention: Ms. Sophie de Montalembert Ref: 118689/K

RE: Site Developments & Geotechnical Conditions,
85 Maddox Road, WILLIAMSTOWN NORTH

This letter seeks to clarify briefly the conditions that exist on this site, the site preparation works that are currently being undertaken or will be undertaken at the site, and the likely development proposals and footing arrangements that will be possible.

This was carried out at the request of Williams Point Pty Ltd to inform their potential purchasers and for the purposes of council requirements.

Our original geotechnical report reference 118689/A, dated 7 June 2018, was prepared prior to development and it is not proposed to repeat this, although the following represents a summary.

The site is underlain as determined by twenty eight (28) test pits by a variable depth of contaminated fill predominantly with asbestos that cannot be removed from the site and at that time it was proposed to build the site up approximately 0.8 metres to 1.0 metres with controlled clean fill.

The depth of fill varies on the site considerably, being anything between 0.1 metres and up to 2.7 metres. This fill is then underlain by residual basaltic deposits comprising generally a firm to stiff clay. So, the depth of fill at completion will be some 1.0-3.7 metres.

It can be expected, although was not determined at the time, that underlying the clay, at least over some of the site, will be weathered basalt rock at depth.

An earthworks technical specification was prepared by A.S. James for the development of this site comprising essentially impact rolling the whole of the site with a Landpac roller with a view to mitigating settlements in the underlying uncontrolled fills.

At the time of preparation of this letter, this is largely complete, and the site is now beginning to be filled with the clean capping fill that will be compacted to a minimum 98% Australian Standard compaction.

It is envisaged that once the site preparation works are carried out, that the site will be suitable for a particular type of industrial and commercial development, being warehouses utilising precast dado panels up to approximately 2.0 metres with the remaining being relatively light weight steel frame, largely metal or similar cladding. Herein we attach an architect's vision of the type of development proposed, and such a development will be able to be constructed on the improved fill, with footings located within the capping fill at a shallow level. Such a footing arrangement will be either strip footings and infill slabs or a raft, and recommendations are provided in our original report, and both will be suitable, however much will depend on the floor slab requirements and usage for the end purchaser and will be subject to a geotechnical investigation for each site.

It is also possible that a user will be able to construct a development that is of heavier construction, ie full height precast panels and mezzanines and the like, but in all probability, depending on how much fill is present on that particular site, that a screw pile foundation arrangement will be necessary.

The screw pile foundation arrangement is preferred, in that it will not bring the contaminated soil to the surface, but enable founding in either the firm to stiff clay or weathered basalt, depending upon loads.

The capping layer is being controlled by this office under Level 1 supervision to a minimum density of 98% Australian Standard compaction at a moisture content of between 85% and 115% of optimum moisture content. For normal warehouse slabs of this type, such a bridging layer will provide stiffness in the subgrade for the slab, however, obviously some minor settlements will occur, and these have been assessed in our original report, as possibly in the range 30-50mm under normal UDLs of 30 kPa. These are values that can be accommodated by most normal warehousing, although if racking systems are proposed, special requirements may be necessary, ie re-levelling mechanisms in the racking or piles.

We emphasise it is not the intention of this summary to replace an individual geotechnical investigation for each and every site, based on the proposed development and its use, and the susceptibility of the installations to minor movement.

Should any point remain in doubt please do not hesitate to contact us.

Yours faithfully,

T.J. HOLT MIEAust CPEng
NER APEC Engineer IntPE(Aus) EC-1022
A.S. JAMES PTY LTD
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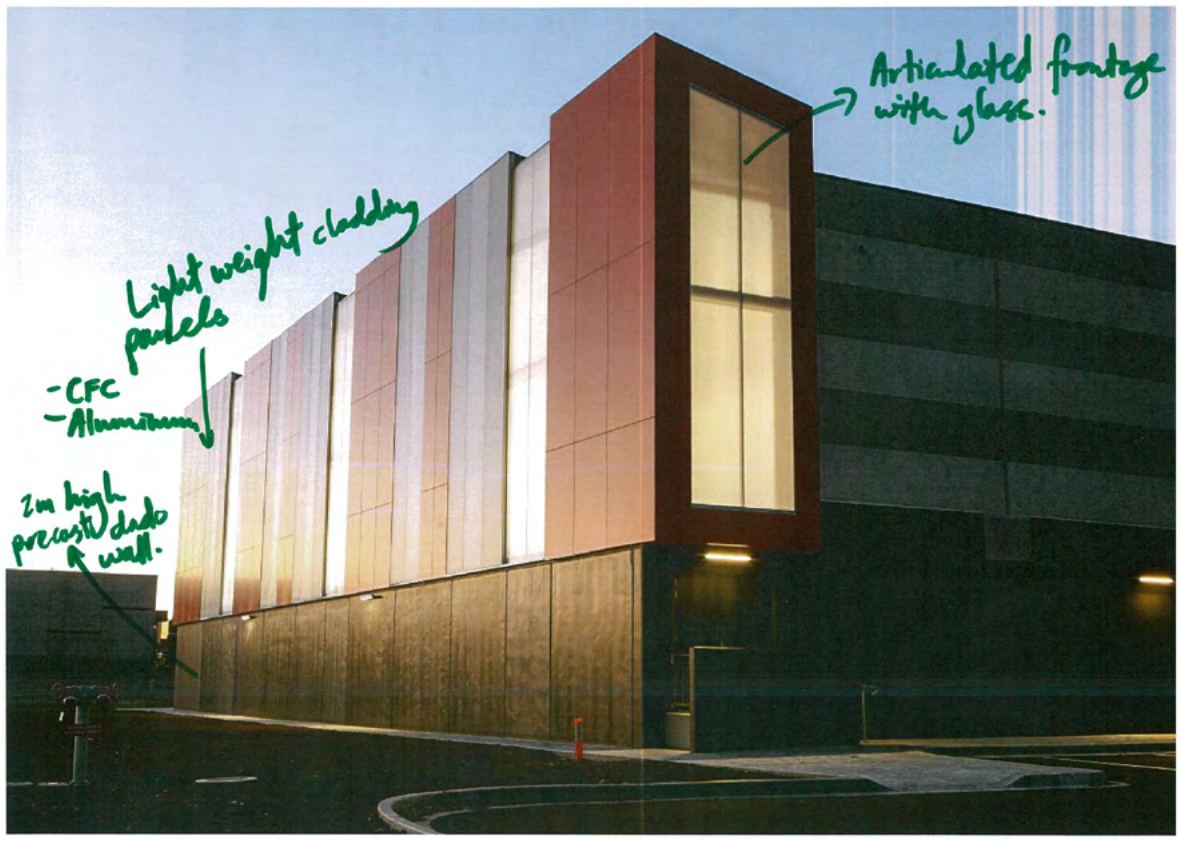

Examples of potential industrial developments and construction materials.