DARe
Darussalam Enterprise

Industrial Park Facility Design Guidelines

September 2019

Issue 1.0

Manual Number: DPM002

DOCUMENT MANAGEMENT PLAN

Purpose

This is the manual management Plan which details updates, amendments and contact points for the DARe Industrial Park Facility Design Guidelines (DPM002).

Document Information

This document has the status of a standard as defined in the DARe's *Register of standards and guidelines manual*.

The content is based on the DARe's current best practices and those developed in the past from managing Industrial Parks in Brunei.

DOCUMENT NAME	DARE Industrial Park Guidelines
MANUAL NUMBER	DPM002
MANUAL OWNER	DARE Industrial Site Management
REVIEW TEAM MEMBERS	Daniel Leong Nyuk Ming, Stephen Officer, Noraisah Bujang, Bahrain Salleh

Amendment and Review Strategy

This document is subject to review and amendment from time-to-time. Document revisions will be issued to the registered copyholder with an Amendment Notice detailing the changes and section(s) affected.

All Correction Action/Improvement Requests (CAIRs) suggesting changes will be acknowledged by the Manual Owner.

	COMMENTS	FREQUENCY
Urgent amendments (minor changes)	Updates incorporated immediately as they occur	As required
Review (major changes)	Amendments fundamentally changing the content of structure of the manual will be incorporated as soon as practicable	Annually or as required
Notification	All users will be advised by email of the amendments and updates	

Other Information (at Manual Owner's discretion)

There will be occasion, depending on the subject matter, when amendments will need to be worked through by a Best Practice Group under the direction of the Tender Committee before the amendment is auctioned. This may cause some variation to the above noted time frames.

Feedback

If you have any comments with regard to this manual, please email DPM002@DARe.gov.bn with the subject line of "**Feedback for DPM002**". Your request will be forwarded to the Best Practice Group for review.

Distribution

The Manual management plan is included in the manual and sent to Information Management.

RECORD OF AMENDMENT

This document is a controlled document and is therefore subject to review and amendment from time-to-time. Amendments will be recorded on this Amendment Control Sheet. Amendment Notices, detailing the changes, will be issued, via email, to registered manual holders, and should be inserted behind this page.

If you wish to be notified by e-mail and when any amendment is made, please email DPM002@DARe.gov.bn with your contract details – name, organization and e-mail address. Please ensure that any subsequent changes to these contact details are notified.

All individuals seeking to rely on the DARE Industrial Site Guidelines, or to implement it, have a duty to ensure that they are familiar with the most recent amendments. Note: minor amendments are not always identified.

AMENDMENT NUMBER	DESCRIPTION OF CHANGE	EFFECTIVE DATE	UPDATED BY
-	-	-	-

1 Table of Contents

ABOUT THIS MANUAL

General

Status of this manual

This manual details DARe's guideline to Lessees for the design and construction of the Lesees' proposed facility.

Associated manuals and references

Department of Town and Country Planning, Ministry of Development, Brunei Darussalam, Garispanduan dan Piawai Perancangan bagi Kemajuan Industri.

Terminology

Arterial road	For the purposes of this document an arterial road is a road which passes alongside, adjacent to, the industrial area and is generally used by the public rather than specifically for industrial traffic, i.e. this is not an internal industrial road
Authority for Building Control and Construction Industry	The Authority for Building Control and Construction Industry (ABCI) of Brunei Darussalam was established to : - unite the functions and terms of reference of government agencies that control the development of land and buildings - ensure the safety of newly constructed or renovated buildings - coordinate and facilitate procedures for applications to develop land and buildings to facilitate 'ease of doing business', especially the completion of the building (OP) The standardization functions of ABCI are : - serve as the focal point for the development of national and international standards - consultation in the negotiation of technical barriers to trade (support to the Ministry of Foreign Affairs and Trade) - ensure that safe and best quality products and materials that meet standards and specification enter the market - promote local products - register companies, laboratories and consultants related to quality management systems - register employees under trade skills
Best practice	A technique, method, or process that is most effective at delivering a particular outcome, or multiple outcomes, based on repeatable procedures that can be proven over time.
Channelization	The creation of a channel or channels resulting in faster water flow, a reduction in hydraulic residence time, and less contact between water and solid surfaces in the water body.
Delineation	A clearly defined boundary between two conditions. For example, having a delineation between a public and private area, or between a roadway and a footpath.
Ecological connectivity	The maintenance of a connected system of open space throughout an ecosystem. Not only is a contiguous line of open space maintained, but also specific natural systems are kept intact. Ecological connectivity relies on maintaining ecotones, the linkages between different ecological regions.
Habitat	The environment within which a particular species or group of species lives. It includes the physical and biotic characteristics that are relevant to the species concerned.
Impervious surface	Constructed surfaces, such as rooftops, sidewalks, roads, and parking lots, covered by impenetrable materials such as asphalt, concrete, brick, and stone. These materials seal surfaces, repel water and prevent precipitation and melt-water from infiltrating soils. The term impermeable may also be used.
Legibility	This term refers to the ability of people who are unfamiliar with an area to be able to find their way. Legibility instils a sense of confidence in users of public space and can be achieved through the identification of designated pedestrian routes through the use of signage, lighting and suitable landscaping.
Lessee	Tenant
Lessor	Darussalam Enterprise and or agent of DARe
Master plan	A detailed plan for a defined area, e.g. a centre or a new urban development. It involves the integration of all elements (including social, cultural, economic

	and environmental considerations) into one overall design and can include the final expected physical form of the buildings and spaces within.
Native	Plant species that have evolved or are indigenous to a specific geographical area. The strict definition is a species that has not been introduced by humans either accidentally or intentionally. Because native species are a part of an ecosystem where everything is interdependent, these plants are adapted to local soil and weather conditions as well as pests and diseases.
Open space	The term 'open space' covers green space consisting of any vegetated land or structure, water or geological feature in an urban area and civic space consisting of squares, marketplaces and other paved or hard landscaped areas with a civic function.
Place-making	An inclusive approach to design that actively engages with local communities and stakeholders throughout all stages of the design process; planning, designing, building, managing and programming of places in an integrated way so that they are successful, attractive and enduring for people. It requires consideration of the relationships between all the parts of a place and the way they work together, rather than a focus on each part (e.g. just the building) in isolation from the whole area.
Restoration	The active intervention and management of modified or degraded habitats, ecosystems, landforms and landscapes in order to restore indigenous natural character, ecological and physical processes and their cultural and visual qualities. For historic heritage: to return a place as nearly as possible to a known earlier state.
Service area	An area that is external to the industrial building and used for the storage and collection of waste and recycling from individual units.

Abbreviations

ABCi	Authority for Building Control and Construction Industry of the Ministry of Development
DARE	Darussalam Enterprise (Lessor)
MOD	The Ministry of Development
PBD12	Brunei Darussalam Standard PBD12, Building Guidelines and Requirements published by the Ministry of Development
TCP	Town & Country Planning Department of the Ministry of Development

2 DISCLAIMER

a) This guideline has been developed to assist businesses understand the main regulations, requirements and best practice methods that apply to the design, development and operation of facilities within DARe's estates/sites. The guideline is intended to provide an easy-to-read summary of the key requirements that apply to the DARe sites, and can be used to identify regulations that may apply to you, your duties and areas where you can improve compliance.

b) Although the guideline has been written to help businesses understand the relevant legislative and regulatory requirements, it is not a legal document nor a substitute for the regulations. It should not be viewed as a definitive guide to the law; the guideline does not cover every requirement relevant to businesses involved in DARe's sites, and should not be used as your only source of information on development, health and safety, security, environmental or fire and emergency regulations.

c) Where there is variation between this guideline and any regulation then the applicable regulation overrides this guideline, unless the regulation is a lower standard than this guideline.

d) Importantly, the guideline is not intended to replace proper occupational training, which is a requirement under Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) laws.

e) Whilst every effort has been made to ensure the accuracy of the information presented in this guideline, the advice presented may not apply in every circumstance. Accordingly, DARe cannot be held responsible, and extends no warranties as to:

   a. the suitability of the information for any particular purpose; and

   b. actions taken by third parties as a result of information contained in this guide.

f) If you need help with any of the contents of this guideline or have additional questions, please contact Darussalam Enterprise.

3 ACKNOWLEDGEMENTS

a) In order to harness existing knowledge and ensure that these guidelines are in line with the expectations of key stakeholders, this guideline was developed in consultation with a range of government and industry stakeholders; background research conducted as part of this project included three workshops and a number of one-on-one consultations with industry representatives (business owners, existing tenants, architects, and engineers), Brunei environmental regulators (JASTRe and SHENA), Brunei building regulators (TCP and ABCi) and Brunei fire and emergency services (BOMBA) departments . The authors and Darussalam Enterprise (DARe) gratefully acknowledge the support and contributions to this guideline from all those who participated in the consultation for this project.

4 INTRODUCTION

a) DARe is committed to achieving greater sustainability throughout its industrial park developments. These guidelines are provided to assist the tenants and their chosen designers to achieve a more aesthetic, energy, water and resource efficient development.

b) DARe's Industrial Park Guidelines have been formulated to provide developers with a user-friendly set of planning criteria and to ensure further development of the Industrial Park has a consistent high standard of development and visual amenity.

c) The blend of well-designed buildings and quality landscaping will contribute the success of DARe's industrial parks. These guidelines will ensure that this is maintained through to the final stages of development, providing an advantage to all industries and businesses that choose to locate within DARe's industrial parks.

4.1 Vision

a) The vision is to create industrial parks which are both appealing, flexible and efficient, bringing about a great place for industry and business to thrive.

b) Most of the industrial site blocks and road structure follow a simple rectilinear pattern. This structure allows regular shaped lots to be created. Blocks are sized to allow for lots of varying sizes, sized to tenants needs, without the need to utilise rear lots, and with the option of through lots (with two road frontages) if desired.

c) It is intended that the industrial parks will offer relatively unconstrained opportunities for business development (expected to focus on industry, manufacturing and distribution, often on large sites).

d) Some of the larger industrial parks may have a "Core" within the development, particularly around a commercial area. This is expected to have a higher proportion of higher amenity users, such as showrooms and associated offices and "high tech" and research-based users and/or smaller combined warehouse and office spaces. Uses with higher staff levels will be encouraged to locate in the most central part of the development, to provide life and vibrancy within the public spaces of the commercial area.

e) Some of the industrial parks incorporate open park spaces. There are particular guidelines dealing with lots that interface with these open spaces.

4.2 Objectives of the Guidelines

a) The objectives of the Guidelines are:

- To attract high calibre long-term occupiers and tenants by providing a quality business environment offering the opportunities for work-life balance
- To attract to a broad spectrum of users by achieving a gradation of amenity levels from the Core out to the periphery, on the larger sites
- To ensure that design effort is focused on the interface between, and area between, the front of the building and the street boundary of the lot, leaving the balance of the lot with the potential for lower amenity outcomes if required for the particular user
- To ensure that the use and enjoyment of the open park spaces, which are a key public amenity within the Industrial park, are not compromised by poorly considered design on the interfacing lots
- To ensure that where lots abut properties zoned and used for residential purposes appropriate design devices are utilised to minimise adverse effects on those properties

- To achieve a landscaping regime on lots which respond to local conditions and reinforces the landscaping regime for the public spaces of the industrial park
- To ensure that lighting and signage complement rather than detract from building and site design
- To support the future creation of a memorable and iconic heart for the larger industrial parks by ensuring building development in and close to the commercial and Core areas are of the highest standard
- To achieve greater sustainability in the built form within the park, which provides high -performance building that reduces energy and water use

b) The Guidelines are set out under EIGHT main design elements:

- Street Interface
- Open Space and Walkway Interface
- Arterial Road Interface
- Residential Interface
- Building Design and Materials
- Signage
- Lighting
- Landscaping

c) Each Design Element starts with an introductory discussion of the issues being addressed and the outcomes the related guidelines are setting out to achieve or avoid.

5 PLANNING AND DESIGN PRINCIPLES

5.1 Overview

a) All development shall comply with the requirements set in this guideline in relation to the design of the buildings, location within the plots and use of the land. This is to ensure that development and land use is consistent with DARe's vision and objectives for the development of Industrial Parks and that land uses to comply with the authority requirements.

5.2 General Design Considerations

5.2.1 Putting the Right Use in the Right Place

a) The smallest-scale, 'finest grain' employment uses should locate close to town centres, and passenger transport routes. Fine grain refers to smaller sized businesses which seek to create an experience of individual buildings and tenancies opposed to homogeneous, large scale land uses.

b) The largest-scale, most noxious uses should locate on flat, gently sloping and and be buffered to minimise their physical effects on other uses (including those of heavy vehicles.

→ **Small and medium-sized businesses (less than 2,500m² sites) should be used as a buffer to large-scale ones.**

→ **Large-scale single uses on sites larger than 2,500m², or multi-tenancy uses on sites larger than 5,000m2, should generally not locate along edges of open spaces because their development 'backs' will provide low amenity interface.**

→ **Large-scale single uses on sites larger than 2,500m², or multi-tenancy uses on sites larger than 5,000m2, should not locate around the immediate periphery of town centre or villages.**

c) The exception to the above are very high-value business uses such as corporate offices where heavy investment in design is possible to mitigate building mass.

d) Coordinate development so that street character is maintained – local residential streets or vibrant business main roads should never become main routes for heavy vehicles.

e) Treat boundaries with a 'like with like' approach. This means that building 'fonts' should face other building fronts across the street, building 'backs' should face other buildings backs (rears0 and building sides should face the sides of neighbouring buildings.

6 SITE DESIGN

6.1 General

a) Sites should be designed around there balancing three key factors:

- → The utility of the site for activities;
- → The efficient use of infrastructure (the number of lots being served by the length of a service); and
- → The ease which resultant buildings can enhance street and local amenity.

b) Design sites to be as narrow as operationally possible at the front.

c) Avoid 'rear' sites unless it is appropriate to the local topography and movements networks, and helps hide a less 'clean' use from public spaces.

→ **Sites smaller than 5,000m² for a single activity should be in most cases have a front that is narrower than the side depth.**

→ **Sites smaller than 5,000m² for a multi-tenant activity should have a front that is narrower than the side depth.**

→ **Sites larger than 5,000m² for either single or multi-tenants should have a front wider than the side depth.**

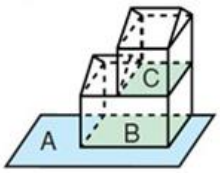
d) Look to use 'common' dimensions within subdivisions that avoid sites only being useable by one type of activity over the subdivision's lifetime.

e) On corner sites, ensure building platforms and vehicle access ensure outcomes will address the highest-order street edge and logically locate entrances here. Look to accommodate smaller activities and site sizes on corners.

6.2 Plot Ratio (Floor Area Ratio)

a) **Ratio**. Plot Ratio, sometimes referred to as Floor Area Ratio (FAR), is the percentage of the building total floor area (Gross Floor Area (GFA)) in relation to the lot area.

$$\text{Floor Area Ratio (\%)} = \left(\frac{\text{Gross Floor Area (B + C)}}{\text{Site Area (A)}}\right) \times 100$$



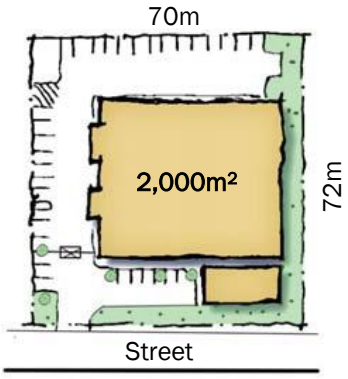
b) **Maximum FAR**. The maximum FAR for lots within industrial sites is **2.0 or 200%**. This means that the lot can accommodate up to a maximum floor area of twice the lot area. For example, if a plot has an area of 15,000m², the plot can accommodate a GFA of 30,000m² as long as all other requirements such as building line (setback), height, landscape, and carpark are met.

6.3 Medium **Sized** Industrial

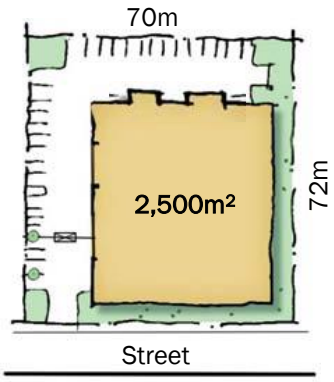
Typical site size: 2,000 – 5,000m²

Example: Light industry, warehousing, corporate offices

Variation 1



Variation 2



General site design checklist:

a) Office component/entrance located to the front of the site **addressing the street**

b) **Visitor parking** located (preference 1) on-street, (2) to the side, or (3) in the front. Frontage parking not located further forward of the office part of the building unless a site constraint precludes this.

c) **Tenant parking** to (1) the rear or (2) the side

d) **Servicing** to (1) the rear or (2) the side

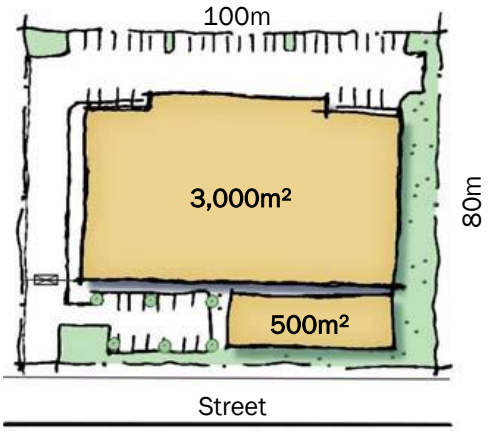
e) **Moderate landscaping**, trees located between parking bays and landscaping in the front yard

6.4 Large Sized Industrial

Typical site size: 5,000m² – 1ha

Example: General (medium) industry, clean production, warehousing, some light industry

Variation 1



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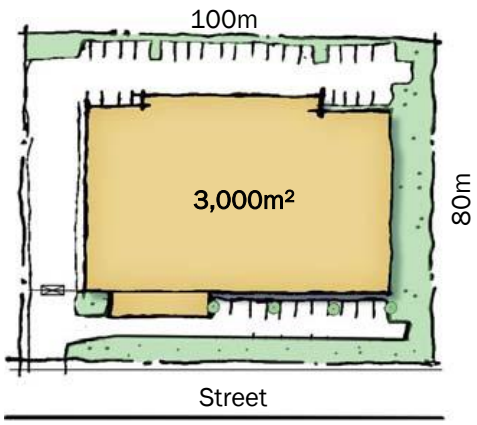


General site design checklist:

a) Office component/entrance located to the front of the site **addressing the street**

b) **Visitor parking** located (preference 1) on-street or (2) to the front of the main building. Not located further forward of the office part of the building unless a site constraint precludes this.

c) **Tenant parking** to (1) the rear or (2) the side

d) **Servicing** to (1) the rear or (2) the side

e) **Significant landscaping** fronting the street, trees located between parking bays (1 for every 3 parallel bays or 1 for every 4 right angled bays)

Note: Boat and car sales, vehicle services and trades, yard-based sales and service trades vary the above typical site layouts featuring smaller multi-tenanted buildings and/or larger outdoor display space.

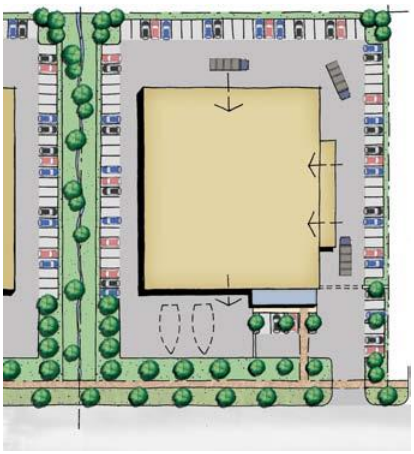
6.5 Examples of Various Site Layouts

6.5.1 Land Use Case Studies

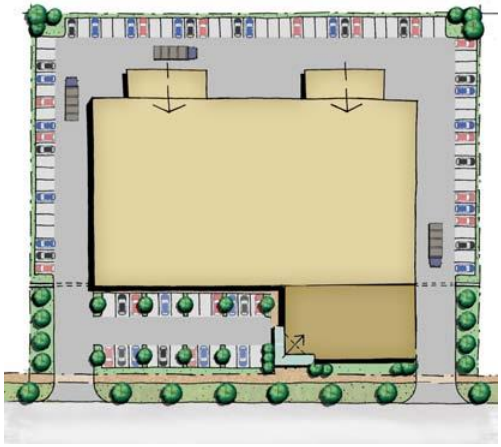
a) **Case Studies.** Nine land use case studies are presented on the following pages.

b) **Generic Designs.** A generic design has been prepared to provide a broad representation of the land use type under examination. These plans are to be read in conjunction with the written comments which highlight important aspects of the building and site design.

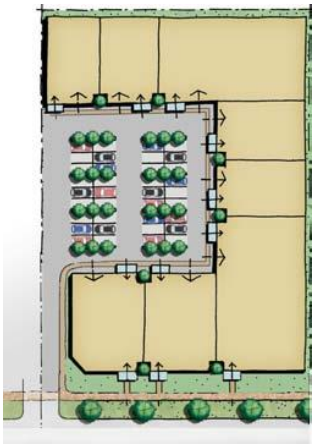
c) **Quick reference guide:**



General Industry



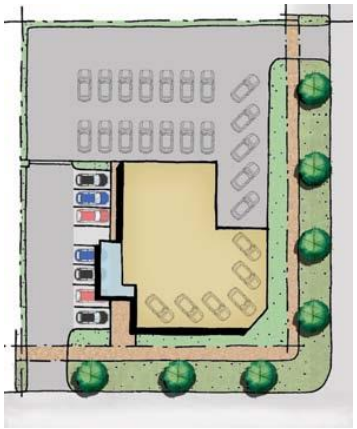
Light Industry



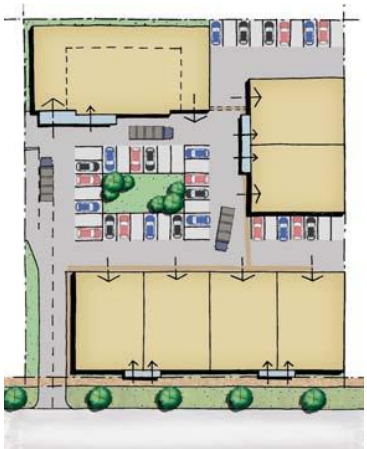
Service Trades/Small Offices

Clean Production

Warehousing



Car and Boat Sales



Vehicle Trades and Services

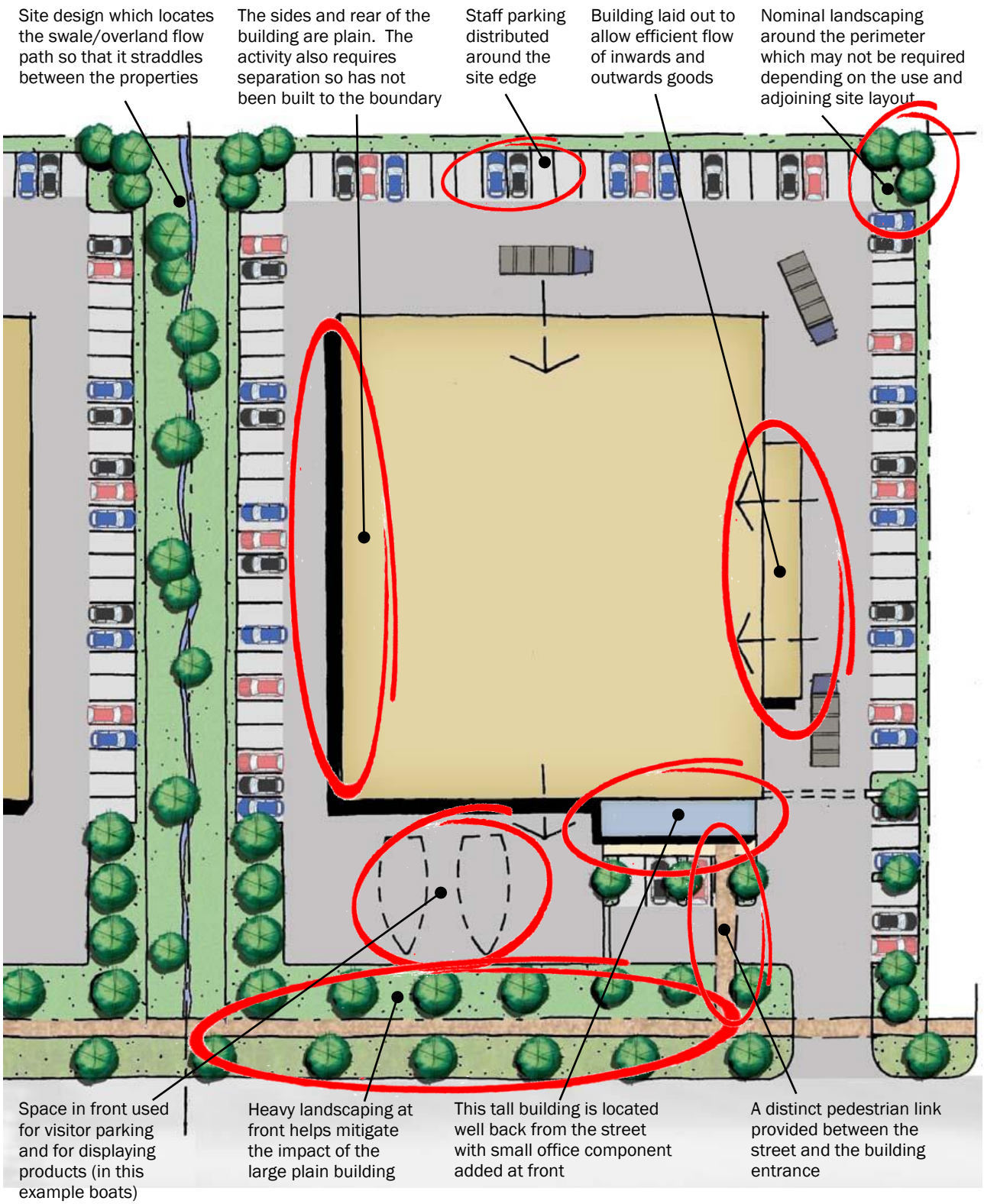
Yard-Based Retailing

Corporate Offices

6.5.2 General (Medium) Industry

7,300m² site, 2,300m² gross floor area.

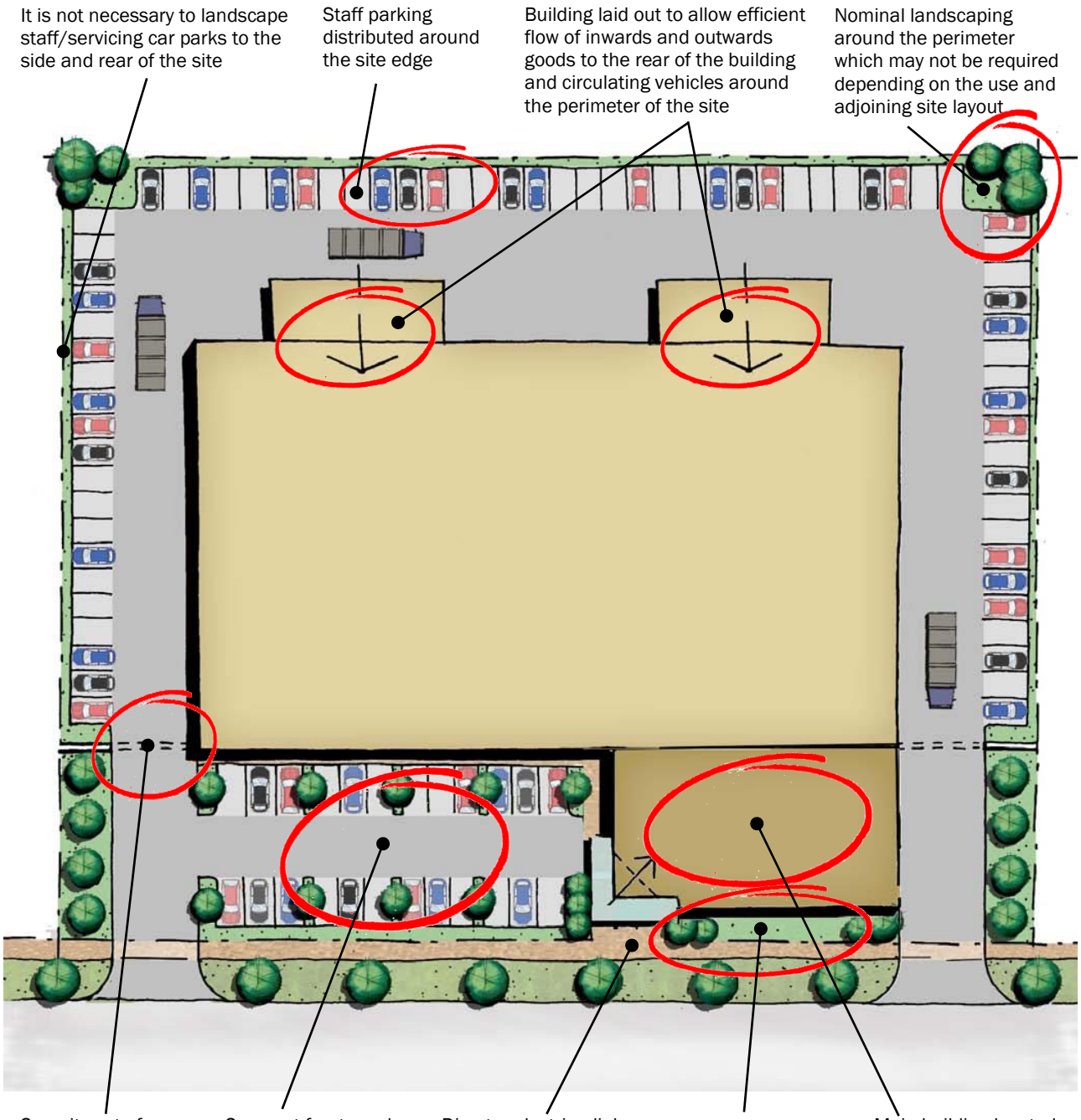
This refers to manufacturing and engineering activities that can be noisy, dirty, and involve the use of dangerous goods. Site sizes average around 5,000m² although many may require more than 1ha.



6.5.3 Light Industry

10,300m² site, 4,500m² gross floor area.

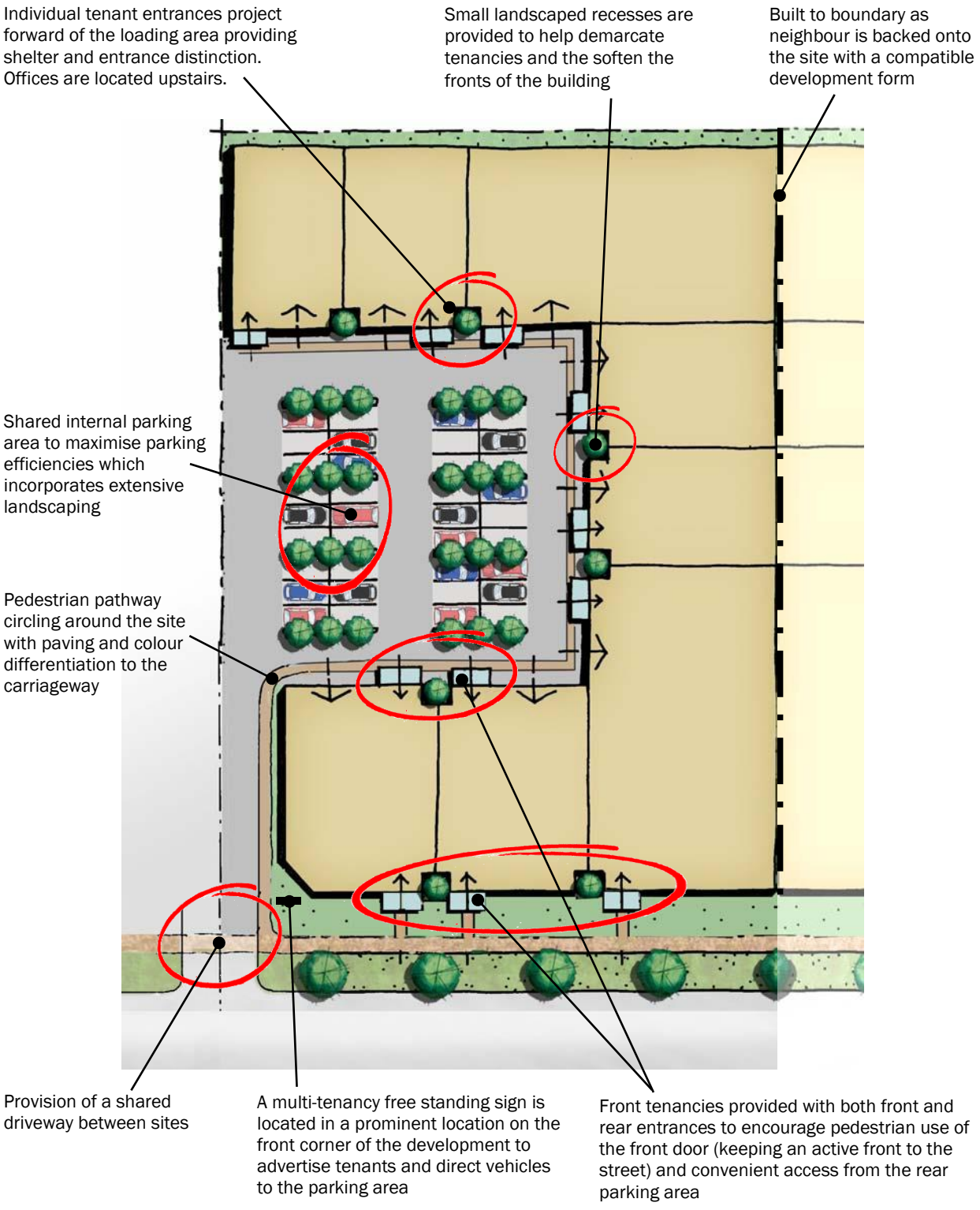
This refers to manufacturing and production operations that are smaller and generally less noisy, dirty, or noxious than general (medium) industries. Site sizes typically range between 1,000 – 5,000m² and averaging around 2,000m². Some premier local industries may require sites up to 1ha.



6.5.4 Service Trades and Small Offices

7,300m² site, 4,300m² gross floor area U-shaped multi-tenant

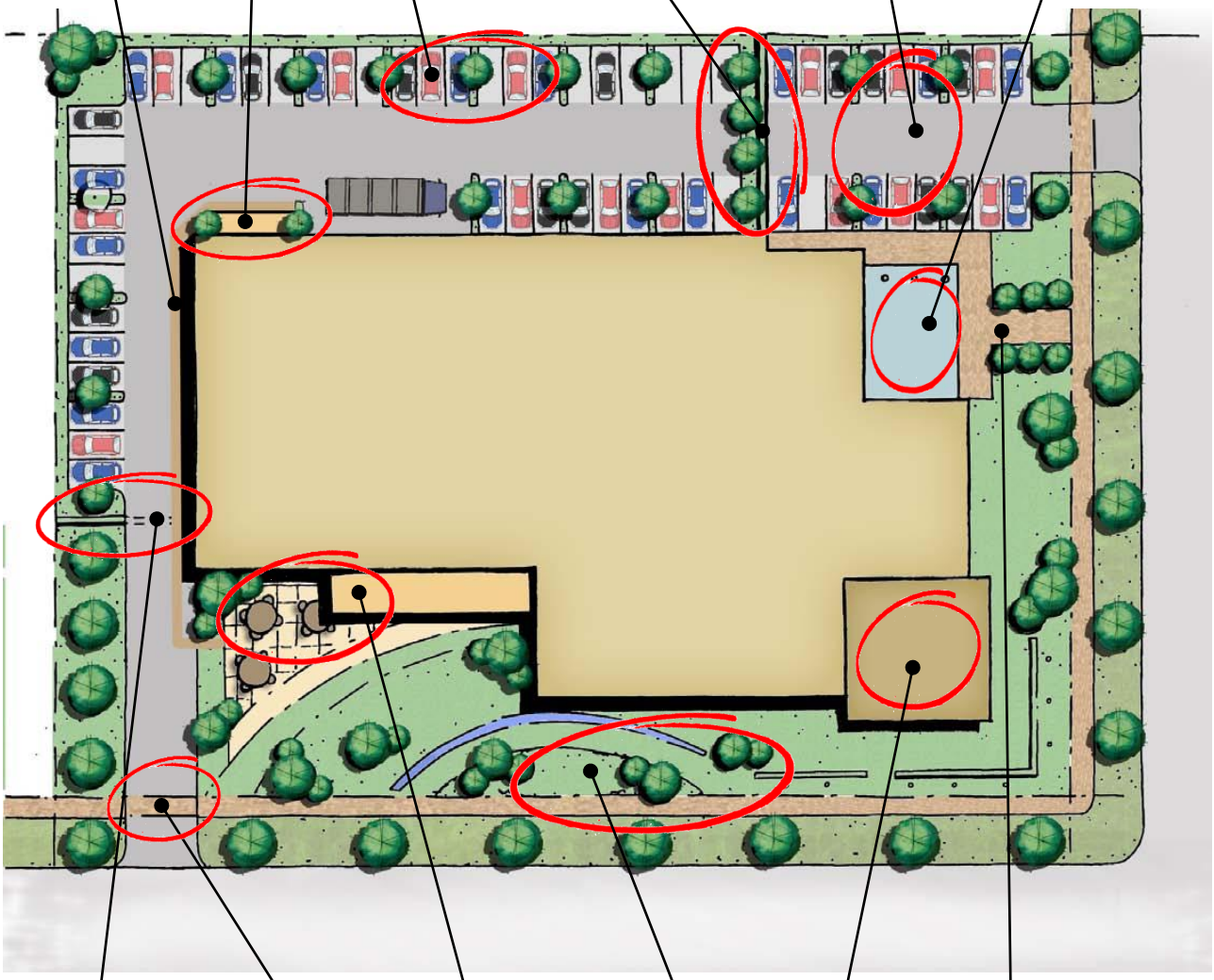
This refers to business premises that services industries around them and often the general public as well. Site sizes range between 1,000 – 5,000m² generally averaging around 2,000m². Some larger service trades may require additional site area.



6.5.5 Clean Production

9,300m² corner site, 3,300m² gross floor area.

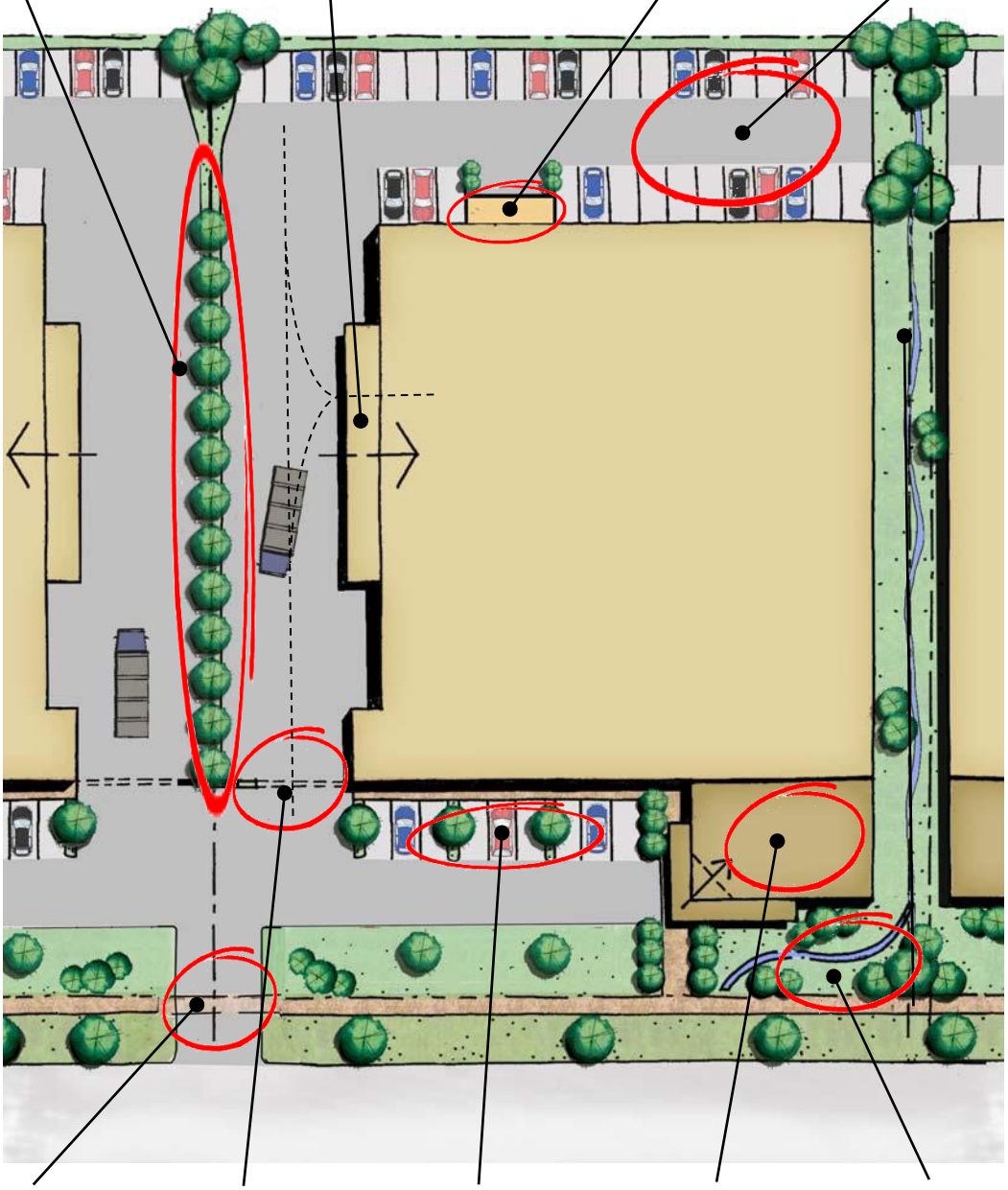
This refers to high quality, often high technology business that manufacture with high precision, hygiene and investment. Site sizes for small and multi-tenant developments range between 1,000 – 5,000m². Large single developments generally average 5,000m² but may be larger.



6.5.6 Warehousing

7,500m² corner site, 3,100m² gross floor area.

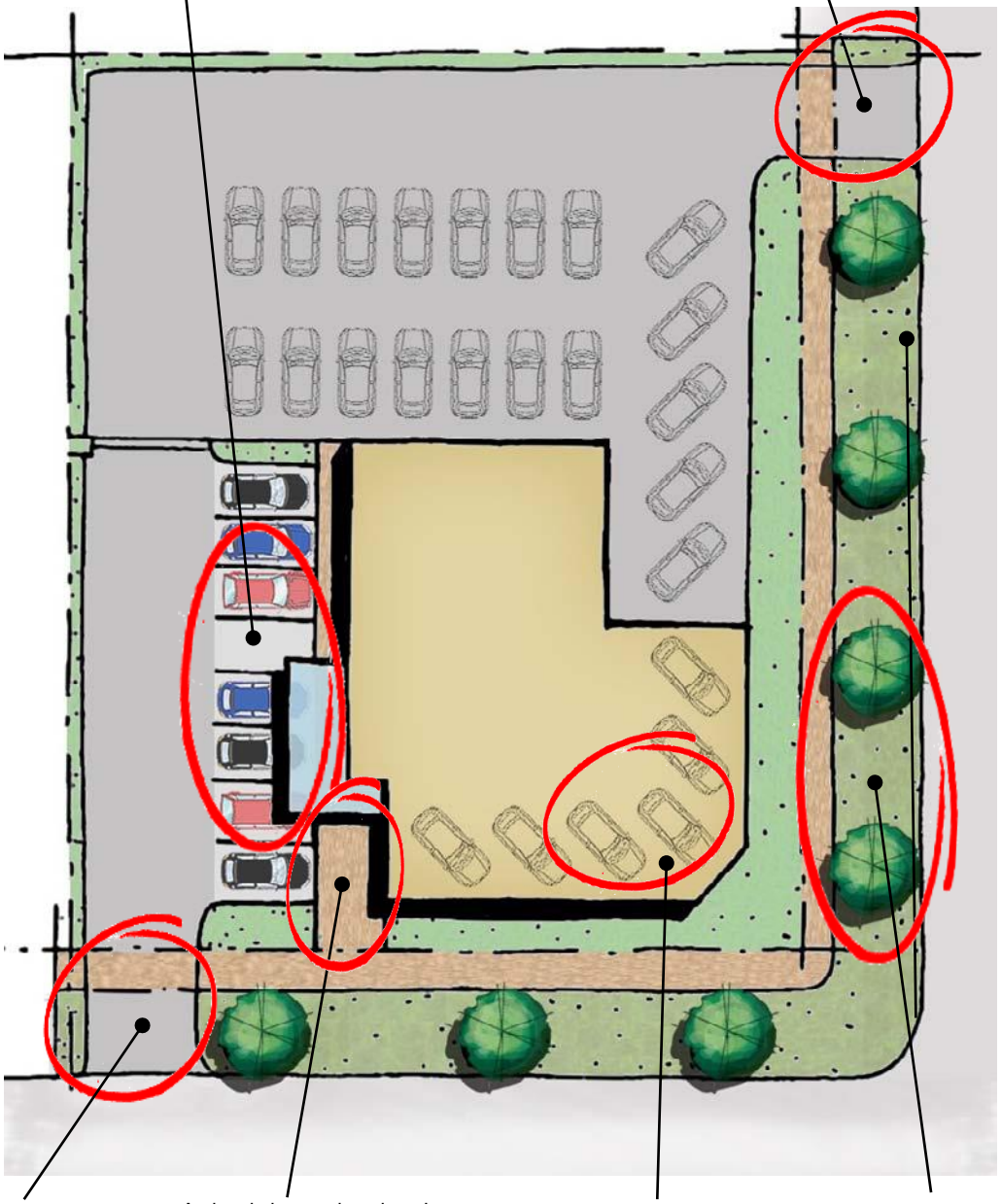
This refers to storage, intermediary assembly of products imported from elsewhere and also distribution of goods including direct wholesaling to customers. Site sizes are typically between 2,000 – 5,000m² although some users will require more than this.



6.5.7 Car and Boat Sales

2,800m² corner site, 500m² gross floor area.

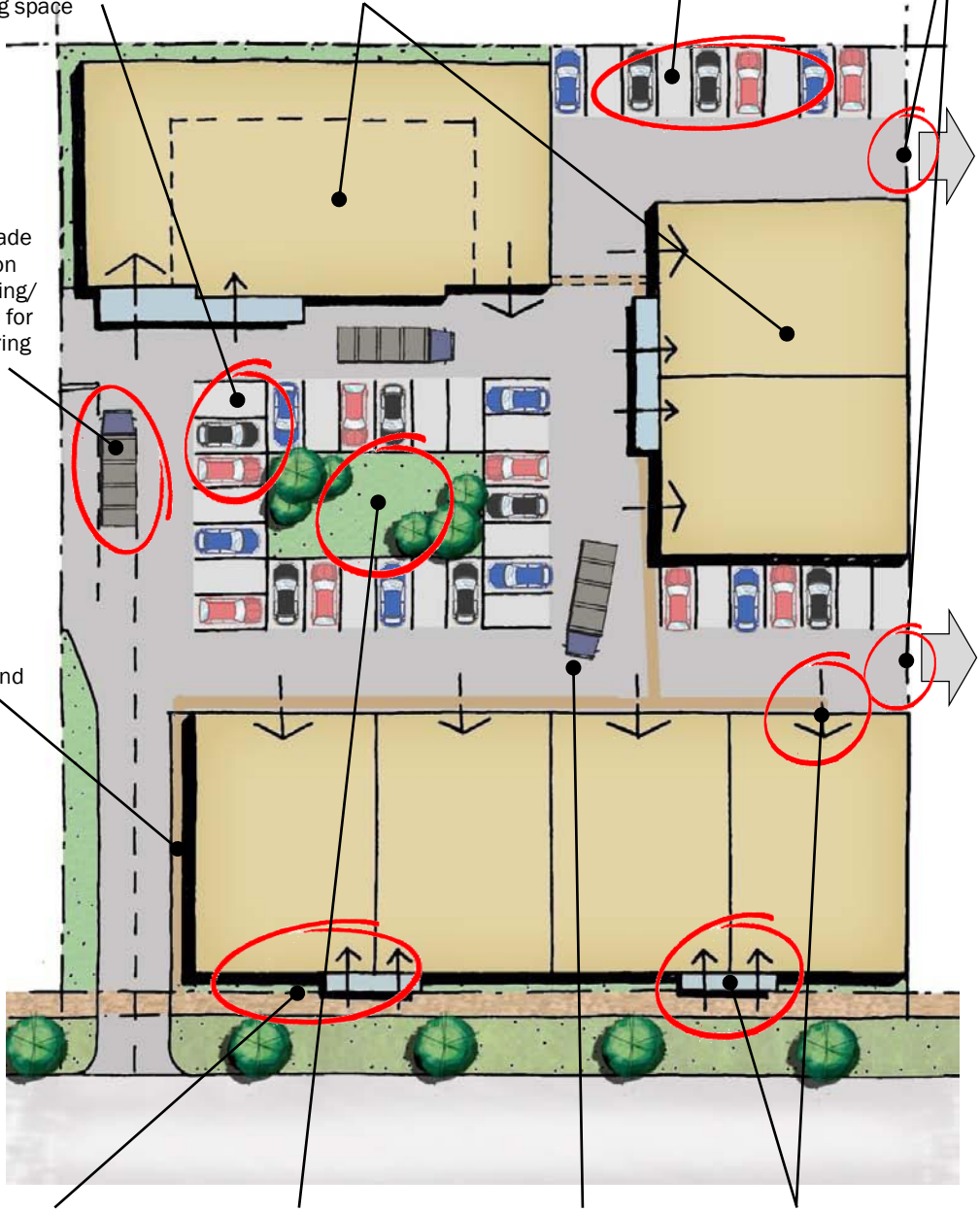
This refers to sales yards comprising (usually) of large quality showrooms. Major emphasis is given to displaying the range of 'product' available to passers-by. Site sizes are typically between 2,000 – 5,000m².



6.5.8 Vehicle Trades and Services

5,600m² multi-tenant site, 2,700m² gross floor area.

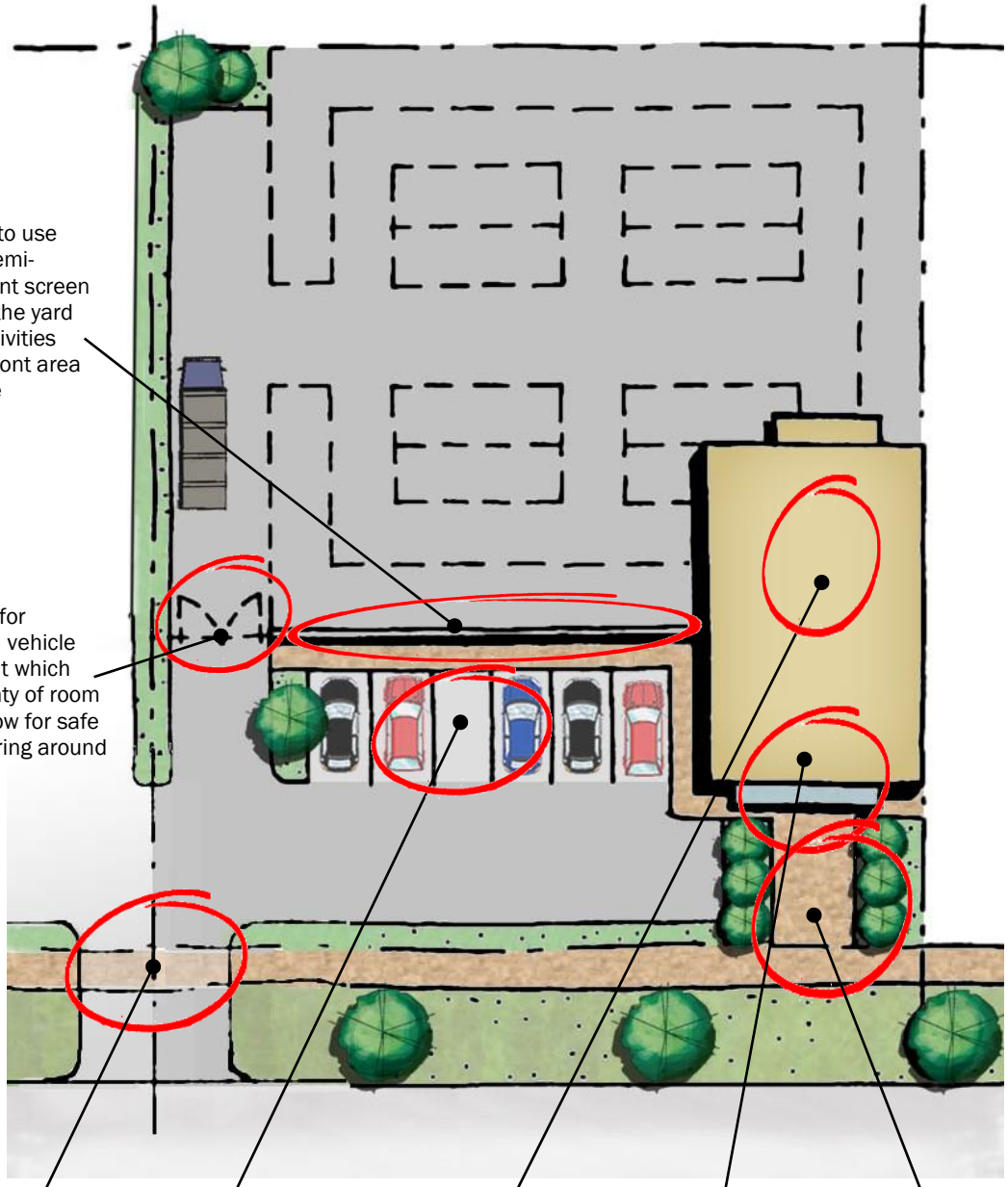
This refers to vehicular oriented services that are generally small scale but which can generate visual and noise nuisances. They will often seek to orient passing motorists at the expense of pedestrian and street amenity. Site sizes are typically between 1,000 – 2,000m². Some multi-tenant developments may be larger.



6.5.9 Yard Based Retailing

1,700m² site, 200m² gross floor area.

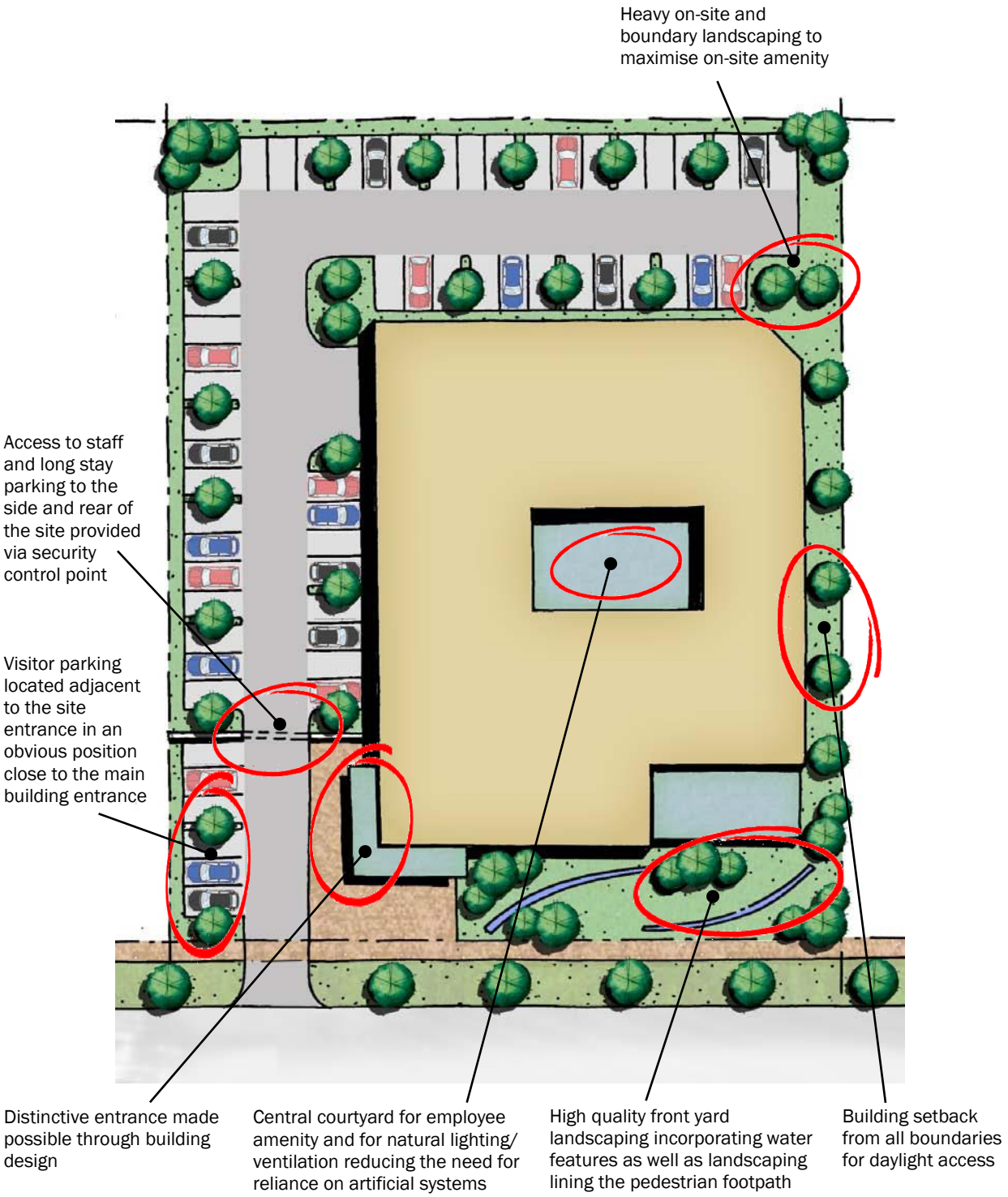
This refers to sales yards with small to medium sized showrooms or storage buildings on site. Site sizes are typically between 2,000 – 5,000m².



6.5.10 Corporate Offices

16,100m² site, 2,300m² gross floor area.

This refers to premier settings for major businesses. They require quality, high amenity settings for reasons of corporate branding, staff amenity and customer convenience. Site sizes are typically between 2,000 – 5,000m².



7 MINIMUM DEVELOPMENT CONTROLS

7.1 Primary Buffer from Industrial Lot to Residential Boundary

	Light Industrial IL	Medium Industrial IM	Heavy Industrial IH	Special Industrial IS
Primary buffer				
Distance from industrial lot boundary to residential boundary (or other sensitive receptor)	8m	250m	500m	1,000m

7.2 Secondary Buffer (Building Line) to Office or Factory/ Warehouse

	Light Industrial IL	Medium Industrial IM	Heavy Industrial IH	Special Industrial IS
Secondary buffer (Building Line)				
Principal front road to **office**	7.5m	7.5m	7.5m	7.5m
Principal front road to **factory/warehouse** (where lot depth is up to 70m) (where lot depth is over 70m)	12.5m 20.0m	12.5m 20.0m	12.5m 20.0m	12.5m 20.0m
Secondary side road to **office or factory/warehouse**	7.5m	7.5m	7.5m	7.5m
Secondary rear road to **factory/warehouse**	12.5m	12.5m	12.5m	12.5m
Adjacent industrial lot boundary to **office or factory/warehouse** (with firewall) (without firewall)	0.0m (c) 3.0m	0.0m (c) 3.0m	0.0m (c) 3.0m	0.0m (c) 3.0m
Arterial road to **office or factory/warehouse**	12.5m	12.5m	12.5m	12.5m
Residential zone to **office or factory/warehouse**	12.5m	N/A	N/A	N/A
Permanent/intermittent stream zone to **office or factory/warehouse**	12.5m	12.5m	12.5m	12.5m
Lake/coast zone to **office or factory/warehouse**	12.5m	12.5m	12.5m	12.5m

a) **Buffer Distance**. The buffer distance is measured from the nearest lot boundary to the building roof line.

b) **Buffer Uses**. The buffer areas (excluding the landscaping strip) shall only be used for the parking of vehicles (not those under repair), trade display, landscaping and access. Buffers shall not be used for the parking of vehicles that are being wrecked or repaired, the storage of materials, shipping containers, products, by-products or wastes or the storage of fuel, except in underground tanks. Only under special circumstances shall new or presentable used vehicles and machinery for sale be located within the buffer from a road boundary.

c) **Adjacent Industrial Lots**. The building line for side and rear industrial boundaries adjoining industrial lots, within DARe industrial sites, is zero. To comply with the building regulations and fire code a solid fire rated wall will need to be constructed. Please refer to Clause 7.3 below.

d) **Loading Areas**. Loading/unloading shall be located without a direct view from the adjacent road.

e) **Buffer to Residential Zone**. The secondary buffer to a residential zone shall be limited to soft landscaping, storm water management and treatment, parking and manoeuvring for staff cars and vans only. Lighting shall be limited to bollard lighting and directional, low surface lighting to avoid glare to the residential zone. A heavy landscaped bund strip shall be included along the boundary facing all residential/sensitive zones.

f) **Buffer to Arterial Road**. The secondary buffer to an arterial road shall be void of outdoor storage other than vehicles and machinery for sale, under special circumstances. A heavy landscaped strip shall be included along the boundary facing the arterial road.

g) **Buffer to Non-arterial Road** The secondary buffer to a non-arterial road shall be limited to soft landscaping, parking and manoeuvring for staff cars and vans only. Lighting shall be limited to bollard lighting and directional, low surface lighting to avoid glare to the road users. A landscaped strip shall be included along the boundary facing the road.

h) **Office Location**. Offices and showrooms shall be located at the front of buildings and facing the street (variations may apply to sites with boundaries to the main arterial through road or open space).

i) **Guard Houses**. Preferably guard houses should be set back off the road boundary, behind the office front wall and in line with the factory/warehouse.

j) **Awning Setback**. The setback distance is measured from the lot boundary to the awning roof edge (eave) line.

k) **Awning Roof Only.** The awning shall be open sided and void of walls or obstructions (e.g. louvres, canvas) greater than 2.0m high.

l) **Rainwater.** Rain-water, storm-water, drain-water or any other liquid discharge from a lot, plot or site shall not be discharged over, into or through an adjoining site. Any such liquid shall be contained and discharged appropriately.

7.3 Zero Building Line for Side and Rear Industrial Boundaries

For Adjoining Industrial Lots within DARe Industrial Parks

Lapangan Terbang Lama Berakas, BB3510
Negara Brunei Darussalam

اءوتوريتي ڤرانچغ
AUTORITI PERANCANG
JABATAN PERANCANG BANDAR DAN DESA
KEMENTERIAN PEMBANGUNAN
NEGARA BRUNEI DARUSSALAM

JPB/DCCA(MR)AD.1

14 MUHARRAM 1440
14 SEPTEMBER 2019

Yang Mulia
Darussalam Enterprise (DARe)
Design & Technology Building
Simpang 32-37, Berakas BB3717
Brunei Darussalam

CADANGAN *ZERO BUILDING LINE* DI DALAM TAPAK-TAPAK INDUSTRI YANG DI BAWAH KALAWAN PIHAK DARUSSALAM ENTERPRISE (DARe)

Dengan penuh hormat merujuk mesyuarat bertarikh 11 Jun 2019 mengenai perkara di atas.

Untuk makluman pihak Tuan, cadangan *review* garispanduan dan piawaian perancangan bagi kemajuan industri ini telah ditaklimatkan kepada Yang Berhormat Menteri Pembangunan pada 26 Ogos 2019. Sukacita dimaklumkan bahawa Yang Berhormat Menteri Pembangunan tidak ada halangan dengan cadangan *review* garispanduan dan piawaian perancangan bagi kemajuan industri yang mana salah satu perkara yang luluskan tersebut adalah cadangan *zero building line* di dalam tapak-tapak industri di bawah kawalan pihak *Darussalam Enterprise* (DARe).

Walaubagaimanapun adalah dimaklumkan cadangan *zero building line* tersebut tertakluk kepada syarat-syarat seperti berikut:

1) Cadangan *zero building line* hanya dibolehkan pada kawasan industri yang telah ditetapkan oleh Pihak Yang Berkuasa seperti tapak-tapak industri di bawah kawalan *Darussalam Enterprise* (DARe).

2) Cadangan *zero building line* hanya dibolehkan bagi bahagian tanah industri yang bersebelahan dengan tanah industri lain sahaja. Bagi bahagian tanah industri yang berhadapan dengan tanah bukan industri seperti perumahan atau perniagaan atau berhadapan jalan laluan atau sungai, garis bangunan adalah dikenakan seperti lazimnya mengikut sukatan yang telah ditetapkan di dalam garispanduan perancangan Jabatan. Cadangan *zero building line* hanya dibolehkan bagi tanah bersyaratkan industri penuh sahaja dan tidak termasuk perumahan dan perniagaan.

BSB Tel. : 2382591 / 2382692 / 2383595 Faks : 2383313 Kuala Belait KA1131 Tel. : 3331855 Faks : 3332782 Tutong TA1141 Tel. : 4222272 Faks 4260145 Temburong : 551296 Faks : 5221288

3) Cadangan *zero building line* adalah tertakluk parameter perancangan yang lain dapat dipatuhi seperti nisbah plot (*plot ratio*), liputan plot (*plot coverage*), keperluan jumlah petak letak kereta dan lain-lain.

4) Kemajuan yang menggunakan cadangan *zero building line* hendaklah disediakan dinding pemisah api (*fire wall*) mengikut spesifikasi yang ditetapkan oleh pihak Kawalan Bangunan dan Industri Pembinaan (ABCi) dan Jabatan Bomba dan Penyelamat pada bahagian bangunan yang dibina ke sempadan tanah. Cadangan *zero building line* juga adalah tertakluk kepada kelulusan pihak ABCi dari segi keselamatan bangunan dan keperluan *fire safety*.

Di samping itu, ingin turut diingatkan bagi mana-mana bangunan industri yang sedia ada di dalam tapak-tapak industri di bawah kawalan pihak Darussalam Enterprise (DARe) yang telah membuat tambahan atau ubahsuai tanpa kebenaran, hendaklah dihadapkan semula ke pihak Jabatan Perancang Bandar Dan Desa bagi penelitian lanjut.

Sekian untuk makluman dan tindakan pihak Tuan seterusnya.

"Modul Insan Perkhidmatan Awam Yang Berpaksikan Islam"
"BERSEDIA BERKHIDMAT"

(HAJI LIHAN BIN HAJI IBRAHIM)
bp. Pesuruhjaya Perancang Bandar dan Desa,
Negara Brunei Darussalam.

TDA/ms

7.4 Awning/Canopy Setback

	Light Industrial IL	Medium Industrial IM	Heavy Industrial IH	Special Industrial IS
Awning Setback				
Industrial road to awning	7.5m	7.5m	7.5m	7.5m
Adjacent industrial lot to awning	0.0m	0.0m	0.0m	0.0m
Arterial road to awning	12.5m	12.5m	12.5m	12.5m
Residential zone to awning	12.5m	-	-	-
Permanent/intermittent stream to awning	12.5m	12.5m	12.5m	12.5m
Lake/coast boundary to awning	12.5m	12.5m	12.5m	12.5m

7.5 Arterial Road Interface/Secondary Buffer

a) **Additional Buffer**. This section provides information for tenants of lots adjoining an arterial through road. These lots shall generally have a 6.0 metre wide landscape strip and 12.5 metre building setback off the arterial road. The legal road boundary will remain unfenced, but the rear of the 6.0 metre landscape strip (within the Lot) can be fenced with a maximum 2.0 metre high permeable welded mesh fence.

b) **Limited Use Area**. A Limited Use Area shall be established to enhance the visual and noise amenity. The area shall be 6.5 metres in width (measured from the rear of the planted buffer). Activities will be limited to:

- soft landscaping, stormwater management and treatment, and car parking and manoeuvring for staff cars and vans only
- no external loading bays, rubbish storage areas and/or access and manoeuvring areas for non-staff vehicles (including forklifts, rubbish trucks and delivery trucks) shall be located between a building and the Limited Use Area;
- only pedestrian access shall be provided to any wall of a building facing the Limited Use Area, and;
- any security lights shall be directed into the site and away from the arterial road and neighbours

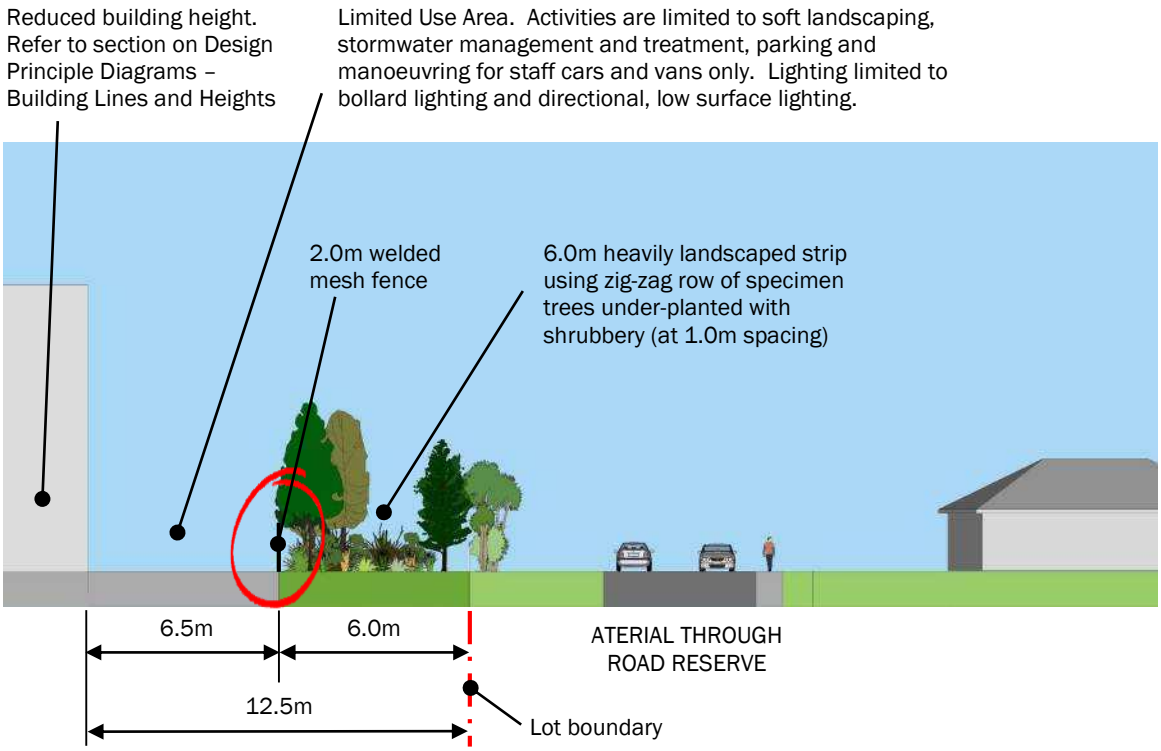
c) **Landscape Strip**. The majority of the arterial road landscaping strip will be typified by three rows of large grade specimen trees at 10.0 metre spacing approximately, a hedge row along the fence boundary and approximately 4.0 metres of the 6.0 metre width under-planted with low maintenance groundcovers.

d) **Responsibility**. Individual lot owners will take responsibility for the planting and long term management and maintenance of the landscape strip, in accordance with good horticultural practices. This would include:

- mowing the grassed strip adjoining the legal road boundary
- weed removal
- pest control
- rubbish removal
- watering during extended dry periods

- tree stake repairs and/or removal once trees are firmly established
- reinstatement of mulch levels
- reinstatement of garden edging (if any)
- formative or damage pruning
- fertilising for growth
- treatment for insect or fungal diseases
- tree death replacements

e) **Arterial Road Buffer Example**



7.6 Residential Interface/Secondary Buffer

a) **Additional Buffer**. There are a number of industrial sites which may be located adjacent to residential zones. The lots around the perimeter of the industrial site which are abutting onto residential lots will require additional buffer for sound and visual treatment. These lots shall generally have a 6.0 metre wide landscape bund and 12.5 metre building setback off the boundary abutting the residential zone. The lot boundary shall be fenced with a maximum 2.0m high permeable welded mesh fence.

b) **Limited Use Area**. A Limited Use Area shall be established to enhance the visual and noise amenity. The area shall be 6.5 metres in width (measured from the rear of the planted buffer). Activities will be limited to:

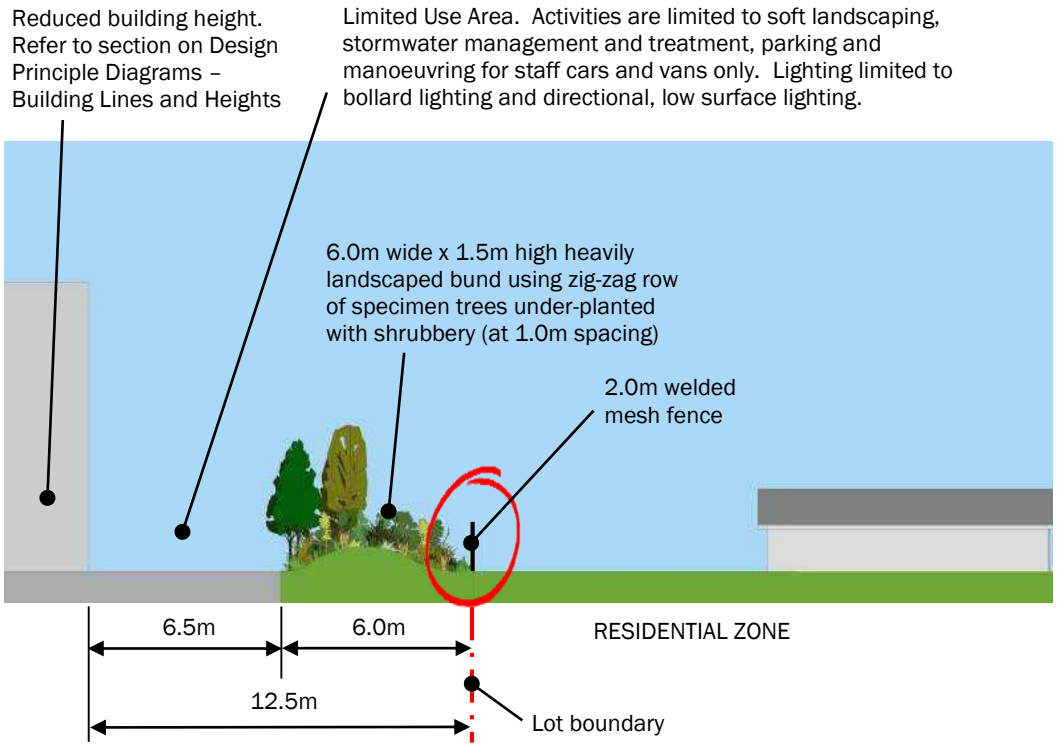
- soft landscaping, stormwater management and treatment, and car parking and manoeuvring for staff cars and vans only
- no external loading bays, rubbish storage areas and/or access and manoeuvring areas for non-staff vehicles (including forklifts, rubbish trucks and delivery trucks) shall be located between a building and the Limited Use Area;
- only pedestrian access shall be provided to any wall of a building facing the Limited Use Area, and;
- any security lights shall be directed into the site and away from residential neighbours

c) **Landscape Bund**. The majority of the residential zone landscaping bund will be typified by three rows of large grade specimen trees at 10.0 metre spacing approximately, a hedge row along the fence boundary and approximately 4.0 metres of the 6.0 metre width under-planted with low maintenance groundcovers.

f) **Responsibility**. Individual lot owners will take responsibility for the planting and long term management and maintenance of the landscape bund, in accordance with good horticultural practices. This would include:

- mowing the grassed strip adjoining the legal road boundary
- weed removal
- pest control
- rubbish removal
- watering during extended dry periods
- tree stake repairs and/or removal once trees are firmly established
- reinstatement of mulch levels
- reinstatement of garden edging (if any)
- formative or damage pruning
- fertilising for growth
- treatment for insect or fungal diseases
- tree death replacements

g) **Residential Zone Buffer Example**



7.7 Exterior Lighting, Particularly within Buffers

a) **Height and Direction**. Lighting within the front yard and buffer zones shall be limited to bollard lighting and directional, low surface lighting to avoid glare to the road users.

b) **Light Spillage**. Maximum lux spill from artificial sources of light shall not exceed 10-lux spill (horizontal and vertical) at or within any adjoining site within a residential zone.

7.8 Building Heights

	Light Industrial IL	Medium Industrial IM	Heavy Industrial IH	Special Industrial IS
Building Height				
Max. building height	14.0m	18.0m	22.0m	N/A
Max. building height adjacent to a residential zone, arterial road, waterway, or coast	Not to exceed a 25˚ recession line from a height of 2m at the boundary			

7.9 Landscaping Area

	Light Industrial IL	Medium Industrial IM	Heavy Industrial IH	Special Industrial IS
Landscaping				
Landscaped area (% of industrial lot)	10%	10%	10%	10%
Landscaped strip along boundary facing onto a road	3.0m	3.0m	3.0m	3.0m
Landscaped strip at based of walls facing onto a road	1.0m	1.0m	1.0m	1.0m
Heavy landscaped 1.5m high bund strip adjacent to a residential zone	6.0m	N/A	N/A	N/A
Heavy landscaped strip adjacent to an arterial road	6.0m	6.0m	6.0m	6.0m

a) The landscaping area must be planted with a mixture of trees, shrubs or ground cover plants (with minimal grass) and shall be located forward of the street facing building line and along publicly visible internal boundaries.

b) All walls facing an industrial road shall include a 1m deep landscaped strip, with trees and shrubs, along the base of the wall.

c) Landscaped strips are required along road frontages (excluding vehicle crossings), residential boundaries and arterial roads.

d) The carpark shall incorporate a 1.5m wide x 5m long landscaped strip with the tree, parallel and in between every 4 parking spaces.

7.10 Design Principle Diagrams – Building Lines and Heights

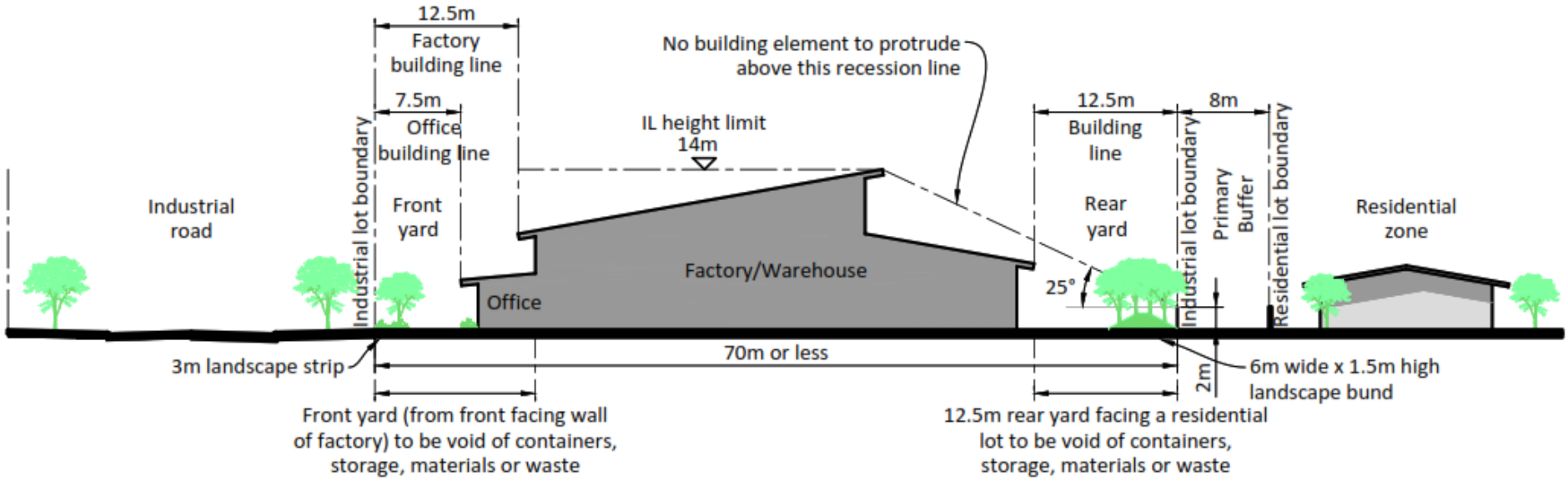


Figure 1 - Light Industrial (IL)/Residential Lot Elevation – for plots up to 70m in depth

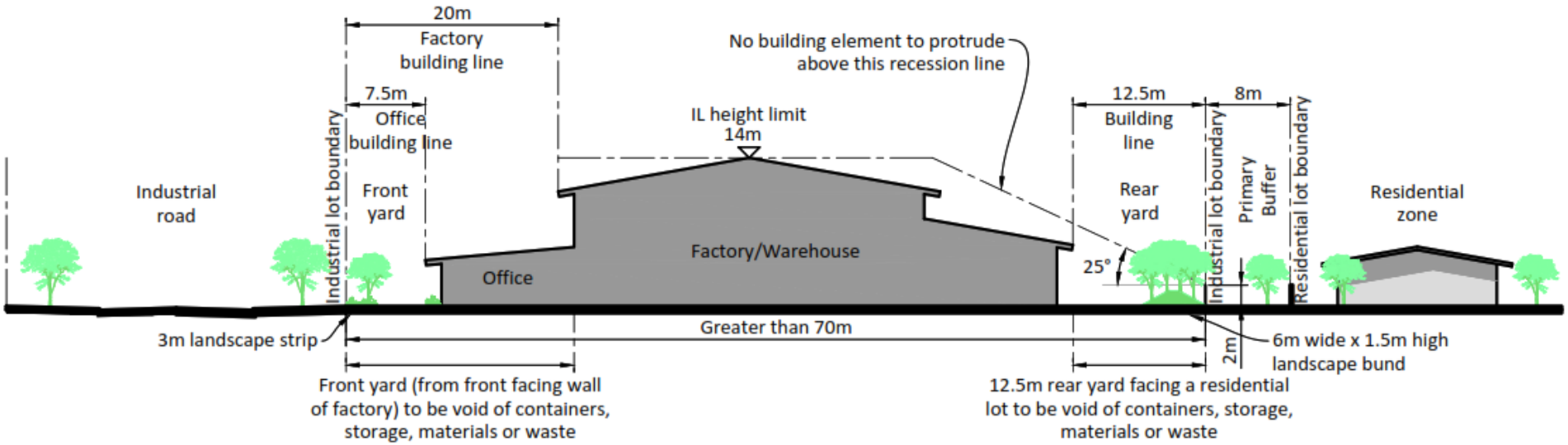


Figure 2 - Light Industrial (IL)/Residential Lot Elevation – for plots deeper than 70m

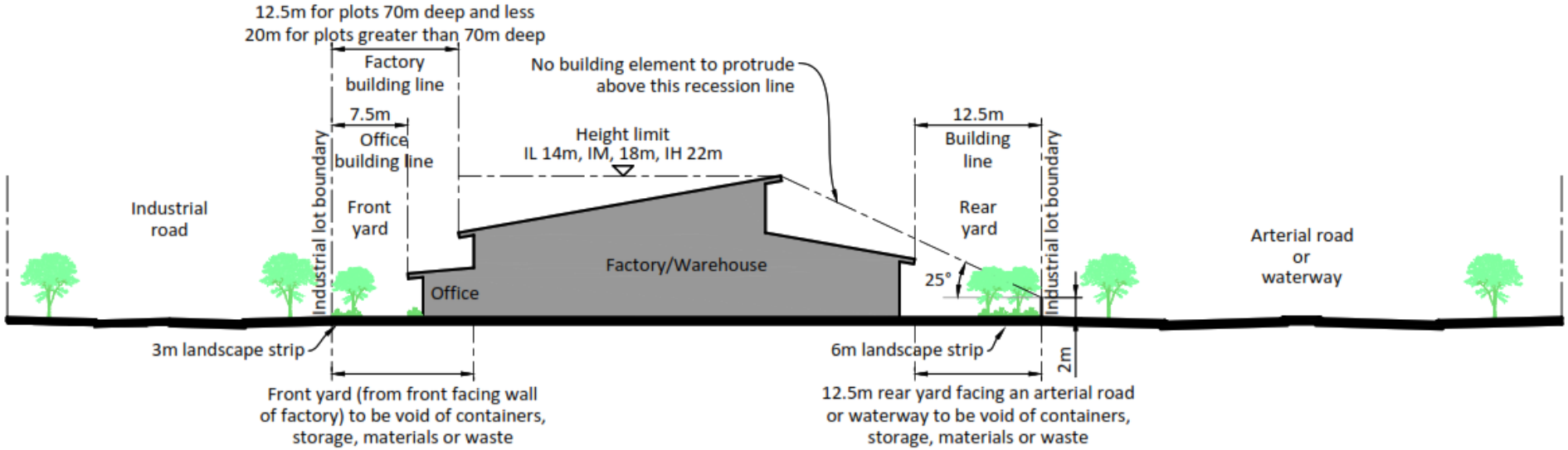


Figure 3 - Industrial Lot/Arterial Road Elevation – for all plots

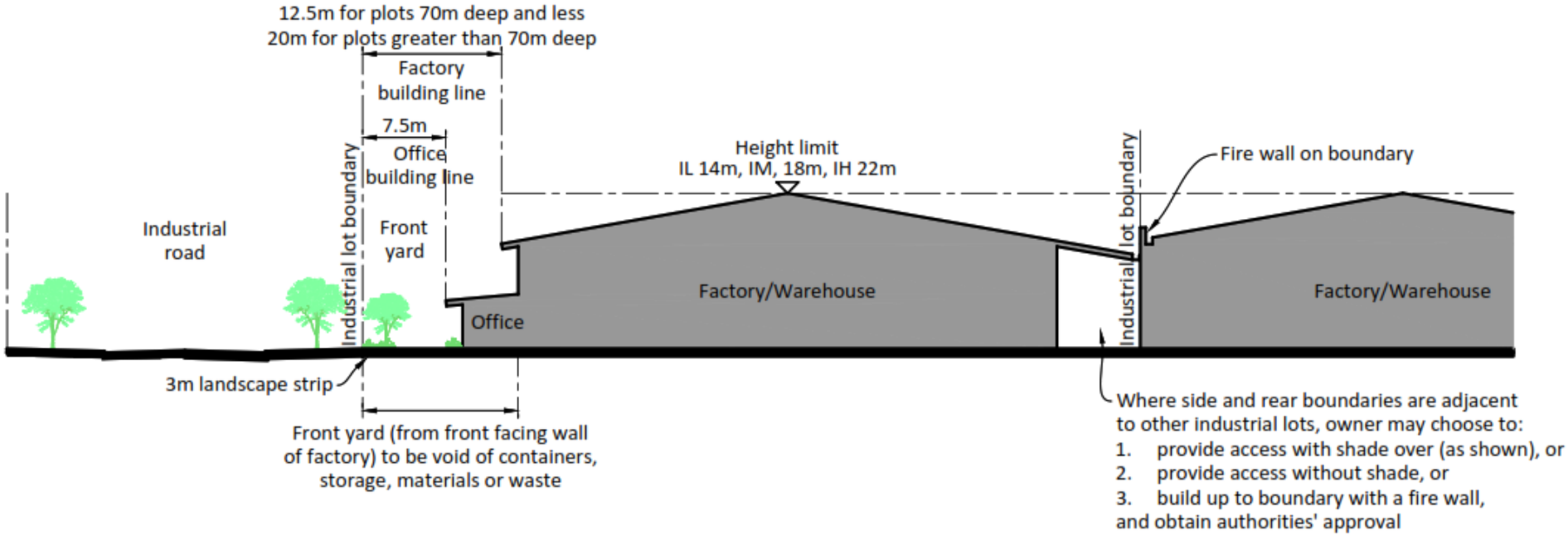
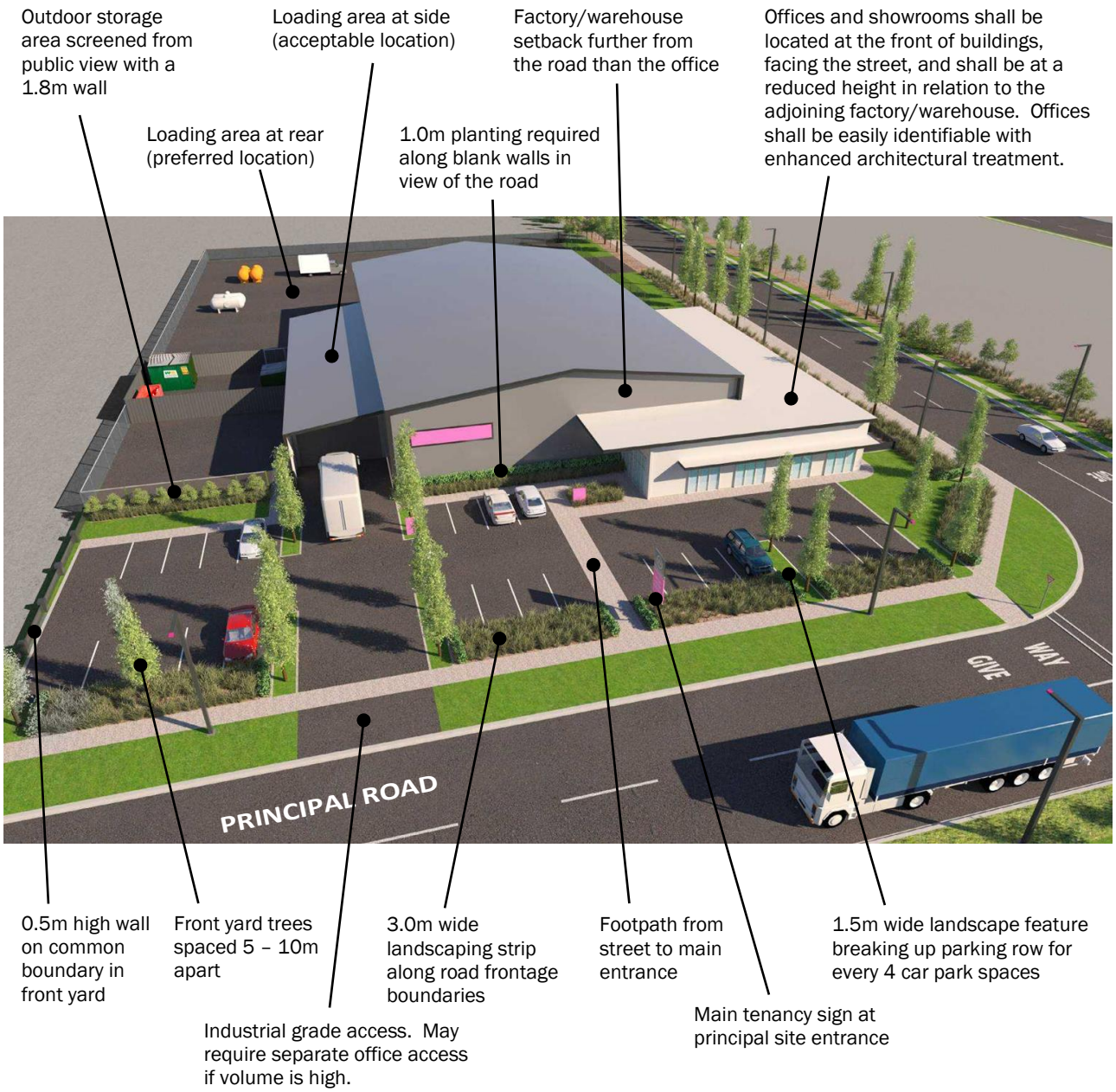


Figure 4 - Industrial Lot/Industrial Lot Elevation – for all plots

8 STREET INTERFACE

8.1 Street Interface Example



8.2 Building Design and Appearance

a) **Designs**. Building designs should follow contemporary industrial and commercial styles, typically using low pitched or flat roofs and wide spans. Building design should be neither residential nor "heritage" in character.

b) **Proportion and Scale**. The height of the office shall be no less than half the height of the adjoining factory/warehouse in order to achieve an appropriate proportion and scale. The visual mass of larger buildings should be minimised by employing the following methods:
- utilising subdued, recessive colours
- providing variation in materials and finish for facades viewed from the road
- creating variation of roof profiles with consideration given to the overall roofscape viewed from the road
- all rooftop servicing and plant should be designed as an integral part of the roofscape with particular consideration given to the view from the road.

c) **Architectural Variations**. The office area should be expressed as distinct from the surrounding building when viewed from the road, by way of scale and architectural variation. The architectural variation should include:
- changes in material and textures
- use of different colours
- awnings over windows
- extent and nature of glazing
- projections of all or part of the office area in plan form to break the building into individual elements

d) **Materials and Colour**. Buildings should employ a simple mix of materials and colour. The facades of buildings facing the street shall be constructed of brick, stone, glass or painted or rendered concrete. If utilised, concrete and fibre cement panelling should include some texture, relief or pattern. Materials shall be of low reflectivity to minimize glare to adjacent sites. Unacceptable use of materials includes:
- Plywood
- Horizontal weather board (timber or cement board) cladding (except as detail only)
- Tile roofs
- Sheet metal extending the full height of the building
- Fluorescent or iridescent colours should not be included in the colour scheme
- Avoid exposing unpainted/unfinished building facades at the front where possible, or those sides clearly visible from the street (excluding views across undeveloped neighbouring sites).

e) **Road interface**. It is important to ensure that design effort is focused on the interface between the front of the building and the street boundaries of the lot, leaving the user with more flexibility as to the use of the balance of the lot.

f) **Visitor Experience**. The aim of this group of guidelines is to focus the designer on the experience of the unfamiliar visitor and passing member of the public, who should feel safe and comfortable in entering the site by car or on foot and making their way to an entrance which is weather-protected and architecturally obvious.

g) **Office/Showroom Component**. If there is an office, showroom, shop, staff recreational space or other such component on-site, locate it facing and close to the street with as much glazing as possible provided (variations may apply to sites with boundaries to a main arterial through road or open space). It is worth noting that this guideline places restrictions on the use of the front of the site for the storage of materials or waste, and the guidelines below expand on these.

h) **Fencing.** Security is always an important issue in industrial/commercial areas and companies moving into the area are likely to want secure fencing to their properties. However, the guidelines control the nature of this fencing when forward of the line of the building, to maintain an attractive and open streetscape in combination with a Front Yard Garden.

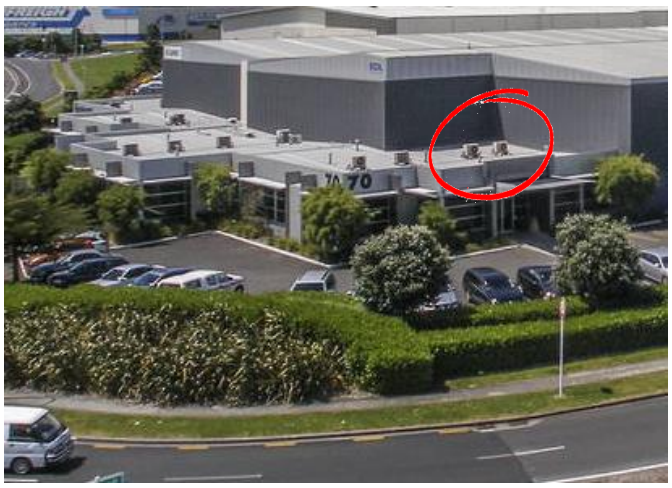
i) **Commercial Areas.** Certain specific guidelines may be applicable for the lots adjacent to commercial areas because users with a more significant component of office or commercial activity and higher staff and visitor numbers are anticipated.

j) **Elevations.** On building elevations visible from roads and open spaces:
- Blank walls lacking relief should not be proposed;
- Plumbing and drainage work and external plant, air-conditioners, vents etc. should not be proposed;
- Rooftop mechanical and electrical plant, including air-conditioners, should not be visible.

Office component should be a minimum 50% height of warehouse component.

Warehouse should not dominate the street frontage.

The total height of factory/warehouse component shall be no more than double the height of the office/administration component unless suitable architectural elements are included in the factory component.



Air conditioners and other plant shall be placed in such a way that they are hidden from view from the street and parking areas.

8.3 Building Interface and Entrances

a) **Entrances**. Ensure all public entrances are highly visible and accessible from the street. They should be the most prominent, obvious element of the building façade. Make individual tenancies highly visible in the front façade design. Ensure entrances are projected forwards, consider varying the colours, materials, and finishes of each unit, clearly visible and easily accessible from the road and visually distinct from other entrances. Avoid reliance on access via vehicle crossings especially for open-to-public uses.

b) **Customer/Visitor Parking**. Provide no more than one isle of customer parking between the closest part of the front entrance/building and the street frontage. Staff parking is preferably located at the side or rear.

c) **Traffic Flow**. If the site shares a driveway with an adjacent property, or is located on a corner site with two street frontages, encourage one way traffic flow around the site by separating the ingress (entry) and egress (exit) movements. This will help reduce accidents and minimise conflicts with traffic flows.

d) **Waste Storage**. Provide for the storage and collection of wastes at the side or rear of sites, never at the front.

e) **Loading and Serving**. Provide for the servicing, loading, and unloading at the side or rear, never at the front.

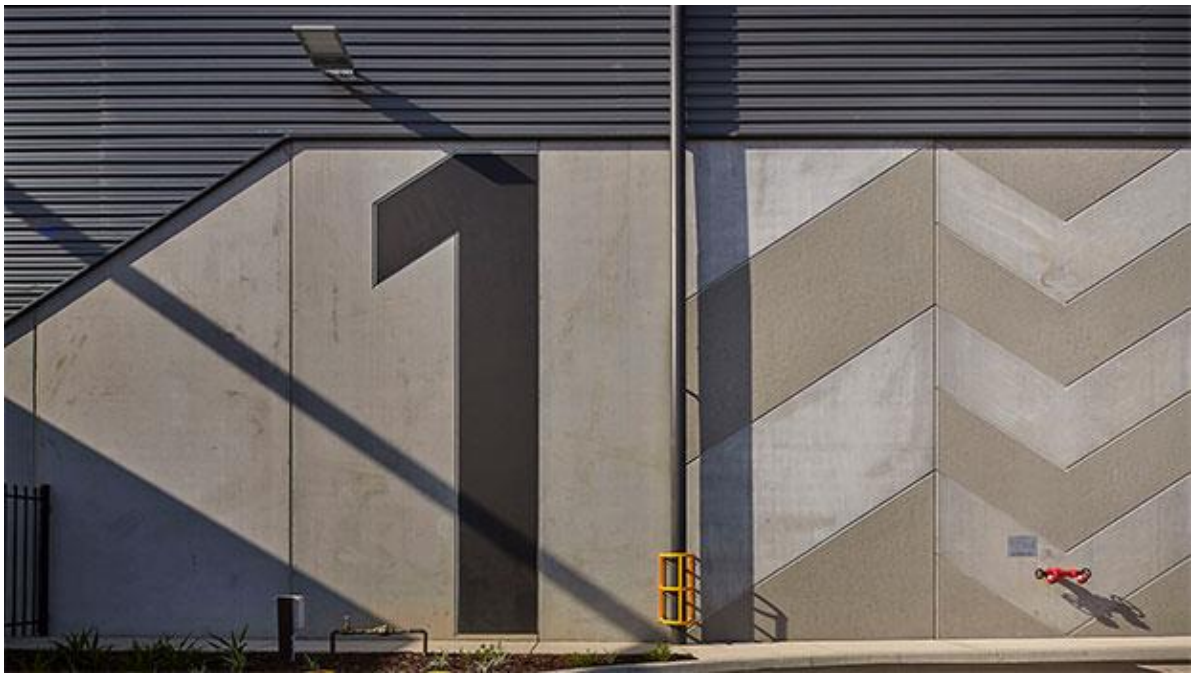
The main entrance is distinct and unmistakeable with a canopy, as well as colour/material change to the rest of the building. Basic signage is logically provided here.

A direct, clearly delineated connection for pedestrians between the street and main entrance helps provide for visitors and those arriving by passenger transport.

This large industry locates the office/administration component of its operation closest to the street at a lower height to the main plant area.
A painted corrugated iron panel and concrete texturing has been used on the factory frontage. This relatively low cost design feature goes a long way to improving an otherwise very dominant blank concrete wall.

f) **Examples of building façades and treatment**


Calibre Building 3



Artist's Impression, Calibre Building 5


Chifley
Business Park South


Goodman


FRANKLYN
BLINDS • AWNINGS • SECURITY

8.4 Factory/Warehouse Walls facing the Street

a) **Variations**. Provide variation in colour, texture and materials to break up the perceived mass and monotony of large wall areas facing the street.

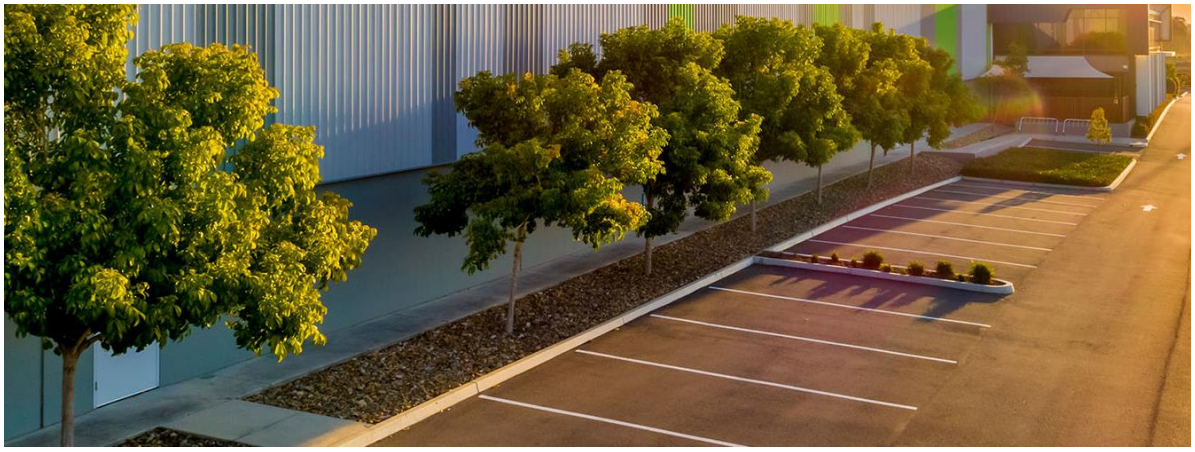
b) **Landscaping**. Walls visible from the street, particularly those facing the street, shall also incorporate a 1.0 metre wide landscaped strip at the base of the wall

c) **Examples of wall treatment**:

1.0m landscape strip with shrubs at base of wall

Trees at 5.0m centres

Large wall area broken up by introducing different materials, colour and texture, in contrast to the office component




Panels & Veneers

8.5 Open Space and Walkway Interface

a) **Open Space Function**. There are a number of industrial parks which include a network of open park-like spaces which will accommodate recreation and stormwater management functions. These open spaces will complement the more urban plaza spaces in any of the adjacent commercial zones. They are sometimes supplemented by walkways.

b) **Adjacent Industrial Lots**. In some locations industrial lots back onto or have a side boundary common with an open space. It is important that development on these lots does not "turn its back" on these spaces. Instead, the guidelines encourage development which presents a managed and tidy interface with the open space, and provides opportunities for surveillance (overlooking) of it, making it feel safer to use. It should be noted that on-site outdoor spaces overlooking outdoor spaces or walkways are encouraged, so alternative positions will be considered if the requirement to overlook the open space results in this being an undesirable location for an outdoor area from a natural lighting perspective.

c) **Landscaping**. Further guidance on landscaping requirements in regards to open space interface is included later in this document. This requires a specific garden bed design along boundaries with open space, so it is important that any boundary fencing is permeable so this planted area can be seen from (in addition to maintaining opportunities for overlooking the open space).

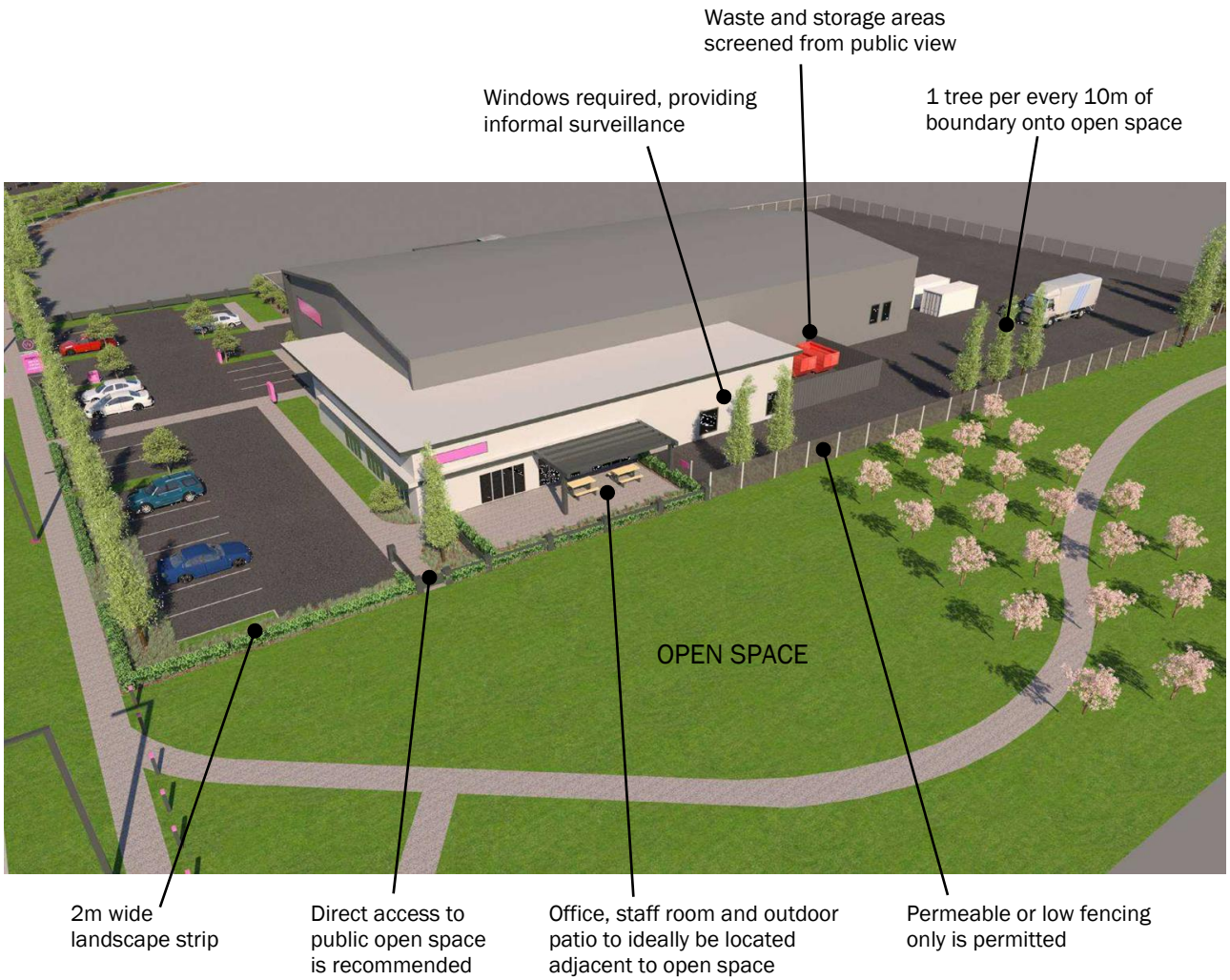
d) **Office Location**. Where a lot abuts a street at the front boundary and an open space on the side boundary, any office area should be located close to or at the front corner closest to the open space boundary. If lot orientation results in this being an undesirable location for offices from a natural lighting perspective, alternative means of providing glazing and activity at this building corner should be proposed. If outdoor space for staff or visitors (e.g. a lunch area) is provided it should ideally be located so that users can overlook the open space and access it easily.

e) **Blank Walls**. On any building elevation generally facing the open space, blank walls should be avoided and sufficient glazing (in windows and/or doors) should be provided to achieve a perception that the open space is being overlooked from within this part of the building.

f) **Outdoor Storage.** Outdoor storage of materials and waste (including associated bins) other than finished goods available for sale or hire from the site should be screened from direct view from the adjoining open space.

g) **Fencing and Screening**. Fencing on any boundary between a lot and an open space area should be entirely permeable and black in colour.

h) **Open Space and Walkway Interface Example**



8.6 Corner and Through Lot Interface

a) **Principal Road**. For the purpose of interpretation of the Street Interface guidelines, when applied to corner lots (with two adjoining road boundaries), or through lots (with two opposite road boundaries or three adjoining road boundaries) the tenant should nominate a principal road and the term "road" in these guidelines should be taken to refer to the principal road. Other non-primary roads will be considered as secondary roads in this case.

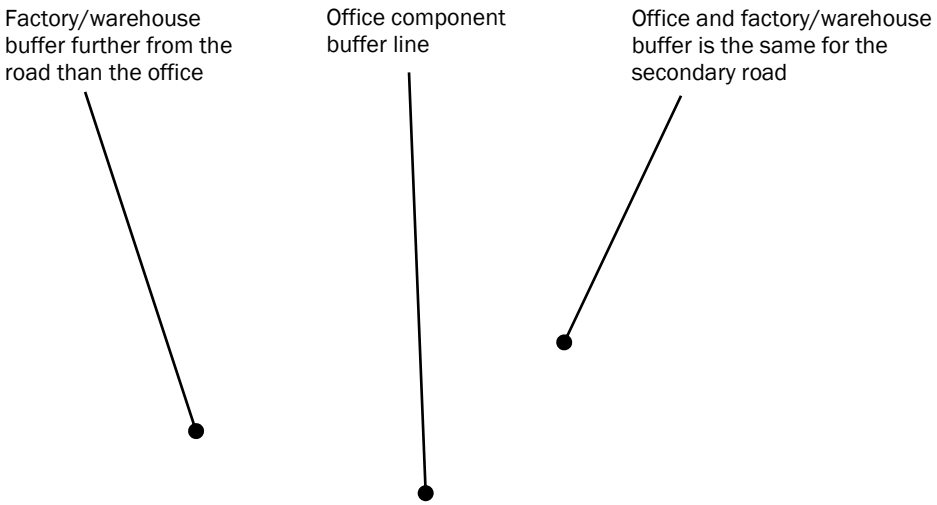
b) **Office Building Secondary Buffer**. Refer to section on Minimum Development Controls. The office buffer shall be the same for the principal and secondary roads.

c) **Factory/warehouse Building Secondary Buffer**. Refer to section on Minimum Development Controls. The buffer for the primary road shall follow the Minimum Development Controls. The buffer for the secondary roads may follow the office building buffer.

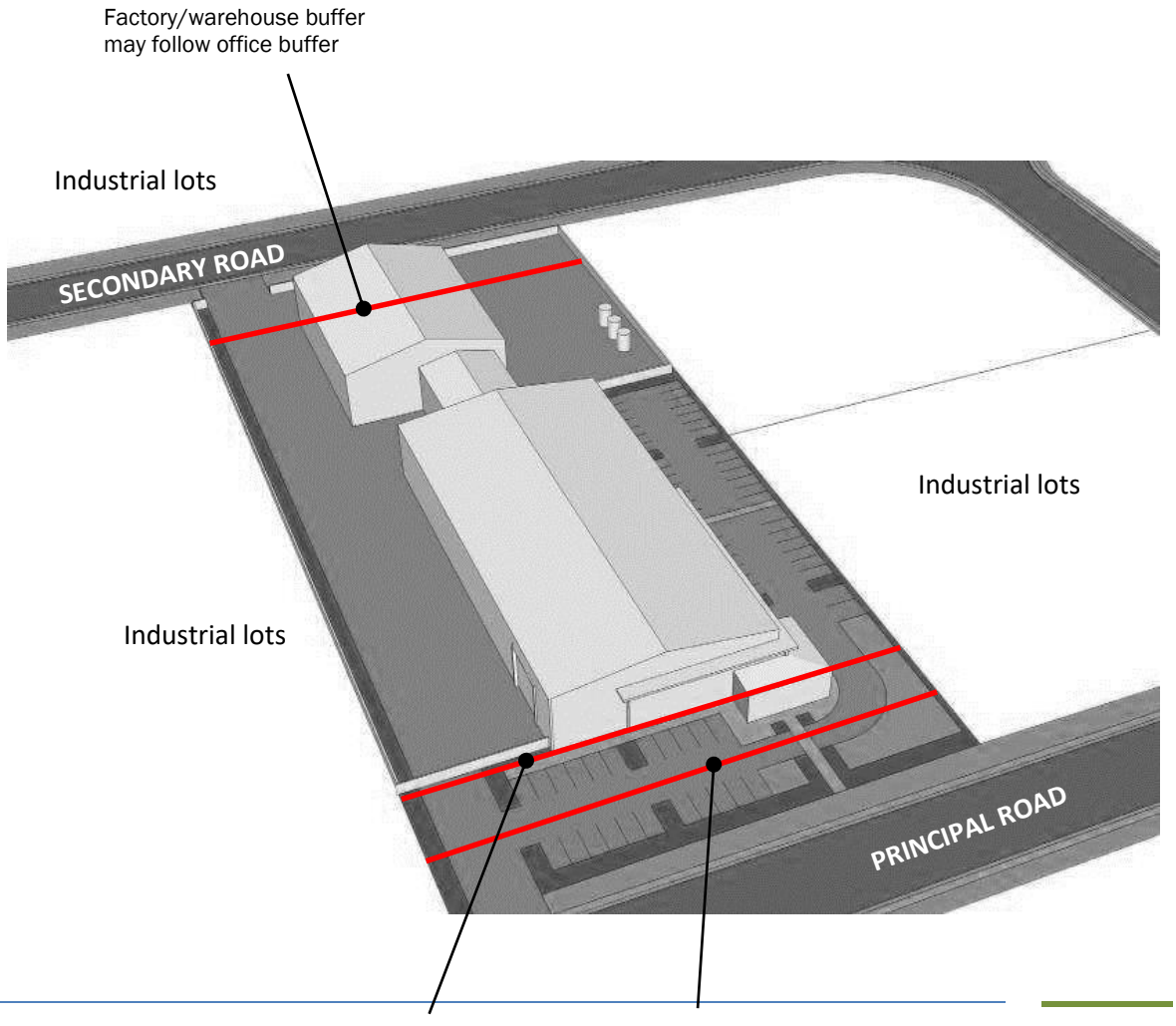
d) **Adjacent to a Commercial Zone**. If a corner lot has one road frontage where the lots on the opposite side of that road are in a commercial zone, and one where the lots on the opposite side of that road are in the industrial zone, the former should be identified as the principal road. If a through lot has one road frontage where the lots on the opposite side of that road are in a commercial zone then this road should be identified as the principal road.

e) **Arterial Roads.** For through lots (or corner lots) adjoining an arterial road the word "road" in all the above guidelines will be taken to mean the internal subdivision "road". For the purpose of interpretation of the guideline for fencing on all road boundaries, on corner or through lots (other than on an arterial road) it should be recognised that visually permeable high fencing on the boundary or boundaries which have not been identified as the principal road boundary will be acceptable if required for site security.

f) **Corner Lot Example**



g) **Through Lot Example**



Factory/warehouse buffer further from the road than the office

Office component buffer line

8.7 Building Awnings

a) **Car Park Canopies.** Refer also to the section on Car Park Canopies.

b) **Awning Specs.** The construction of awnings, shades or canopies for the purpose of shelter from sunshine and rain may be considered, provided the following conditions are met.

a) **Approvals.** Detailed dimensioned drawings shall be submitted to DARe and the relevant authorities for approval.

b) **Building Line.** The awning shall comply with the building line requirements, i.e. the distance from the front boundary to the awning eave shall be greater than 7.5 metres. In other words, the awning shall not be located in the Front Yard unless the eave is 7.5m clear of the road boundary.

c) **Open Sided.** All sides shall be open and not enclosed by walls and or other coverings.

d) **Materials and Colour.** Quality materials should be used and preferably similar to the main building. Supporting frames should be made of strong materials or materials pre-approved by the relevant authorities. The colour of the awning should be befitting with the colour scheme of the main building.

e) **Avoid Columns.** The awning should be built onto the main building without using separate columns as supporting structures, unless the supports are placed at the boundary. The location and height of the awning must be pre-approved by DARe and the relevant authorities.

f) **Safety.** The erection of awnings should not in any way compromise or interfere with the safety of the general public, traffic flow within the site, walkways, carparks, building line or setbacks and the surrounding aesthetics of the building.

g) **Examples of awnings, shades or canopies**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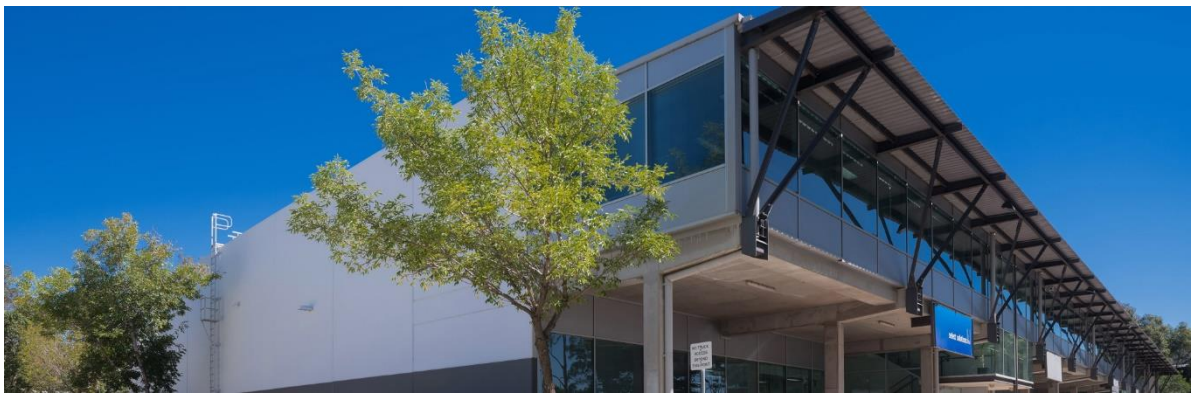


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9 VEHICLE PARKING AND PEDESTRIAN ACCESS

9.1 Overview

a) **Carparks**. Each industrial lot shall have designated areas sufficient for staff, visitor, and disabled carparks, and loading bays. The calculations are based upon the Gross Floor Area (GFA).

b) **Obvious Visitor Parking**. Visitor parking should be close to the building entrance, and should be easily identified from the vehicular entrance to the lot.

a) **One Isle for Visitors**. Provide no more than one isle of customer parking between the closest part of the front entrance/building and the street frontage.

b) **Staff Parking**. Locate staff and overflow visitor parking preferably at the side or rear of the site. Alternatively, this should take place between the road and the front of the building but behind the Front Yard Garden.

c) **Landscaping**. Communal parking areas (particularly those at the front of development) should be well landscaped – one tree per four spaces on average. The car parking should be arranged in rows that do not exceed 4 spaces in a line without a landscape feature or path with a minimum width of 1.5 metre separating these bays.

d) **Pedestrian Walkways**. Provide a clear 1.8 metre pedestrian pathway from parking areas to the entrance location.

e) **Shower and Changing Facilities**. Provide shower and changing facilities at workplaces, as well as convenient, secure cycle storage for staff and visitors.

f) **Minimise Crossings**. Minimise vehicles crossings with the street. Look to share between multiple tenancies if appropriate.

g) **Manoeuvring Space**. Ensure plenty of room for safe manoeuvring and entry/exit of vehicles in a forward direction.

9.2 Space Requirements For Saloon Cars

Facility Type	No. of Carparks
Office Component	1 space per 25m^2 of office GFA
General Industrial	1 space per 46m^2 of building GFA
Factory	1 space per 100m^2 of building GFA
Warehouse	1 space per 200m^2 of building GFA
Visitors	Additional 10% of total spaces
Disabled	1 space close to office
Dimensions	**No. of Carparks**
Angle Parking	5.0 x 2.7 m
Parallel Parking	6.0 x 2.5 m

9.3 Space Requirements For Lorries and Vans

Facility Type	No. of Carparks
Detached or semi-detached Industrial	1 space per 370m^2 of building GFA
Terraced Industrial	1 space per 5 terrace units
Dimensions	**No. of Carparks**
Van	7.0 x 3.0 m
Lorry	9.0 x 3.0 m
Trailer	18.2 x 4.3 m

a) Depending on the industrial activity additional spaces may be required, including designated spaces for trailers.

9.4 Car Park Canopies

a) **Awnings**. Refer also to the section on Awnings.

b) **Canopy Specs**. The construction of canopies for the purpose of shelter from sunshine and rain may be considered, provided the following conditions are met.

c) **Approvals**. Detailed dimensioned drawings shall be submitted to DARe and the relevant authorities for approval.

d) **Building Line**. The canopy shall comply with the building line requirements, i.e. the distance from the front boundary to the canopy eave shall be greater than 7.5 metres. In other words the canopy shall not be located in the Front Yard unless the eave is 7.5m clear of the road boundary.

e) **Open Sided**. All sides shall be open and not enclosed by walls and or other coverings.

f) **Materials and Colour**. Quality materials should be used and preferably similar to the main building. Supporting frames should be made of strong materials or materials pre-approved by the relevant authorities. The colour of the canopy should be befitting with the colour scheme of the main building.

g) **Avoid Columns**. The canopy should be built onto the main building without using separate columns as supporting structures, unless the supports are placed at the boundary or in a way that does not interfere with cars. The location and height of the canopy must be pre-approved by DARe and the relevant authorities.

h) **Safety**. The erection of canopies should not in any way compromise or interfere with the safety of the general public, traffic flow within the site, walkways, carparks, building line or setbacks and the surrounding aesthetics of the building.

9.5 On-Street Parking

a) **Staff Parking Not Permitted**. On street parking for employees is generally not permitted as sufficient spaces should be provided on the property.

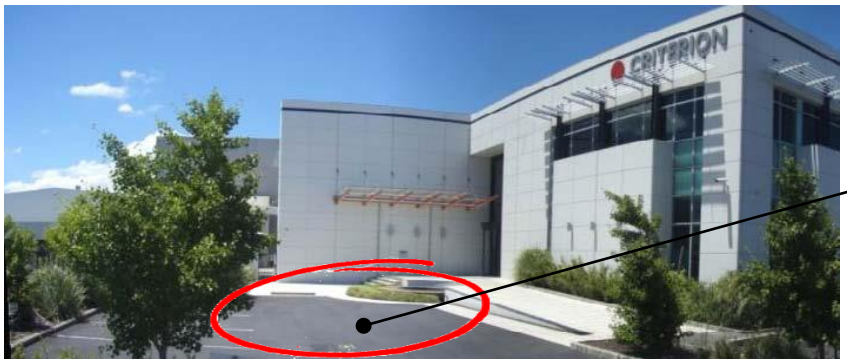
b) **Visitor Parking Not Desirable**. On street parking for visitors is not desirable but can be permitted, except in the following places:
- Where the road is not wide enough (absence of a paved shoulder or parking lane) and/or the car encroaches into the road carriageway causing an obstruction
- Where the vehicle obstructs the line of sight at street junctions, pedestrian crossings, bus stops and taxi stops

c) **Trucks Not Permitted**. The parking of a lorry, truck, semi-trailer, flat bed truck, trailer, wide vehicle, crane, equipment, machinery or other heavy vehicle on the road, whether temporary or long term, is strictly prohibited.

9.6 Bus Parking

a) **On Site Bus Stops**. In the event that buses or vans are used to transport personnel to the lot, the bus shall enter the lot and park in a designated bus-stop within the lot in order for the personnel to alight safely to enter the facility, preferably without crossing an internal access road.

b) **Bus Stop on Roads**. Buses may be parked temporarily on the side of the road, with the hazard lights activated, as long as it does not interfere or cause an obstruction to the traffic. The bus should be parked on the side of the road adjacent to the lot where the passengers can alight safely without the need to cross the road.



An example of visitor parking located to the side of the site which provides convenient access to the front entrance

This parking area incorporates tree pits and uses planting to good effect to help screen the large concrete wall of the adjoin building

h) **Examples of visitor/staff parking:**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9.7 Pedestrian Path

a) **Obvious Path**. A clear pedestrian path of a minimum width of 1.8 metres should be provided from the footpath at the road frontage to the building's principal entrance.

b) **Safety**. Safe and clearly defined crossing points (e.g change in surface material) should be provided where the path crosses areas in use by vehicles.

c) **Landscaping**. Where the pedestrian access is positioned alongside vehicular access to the site it should be separated by a garden bed.

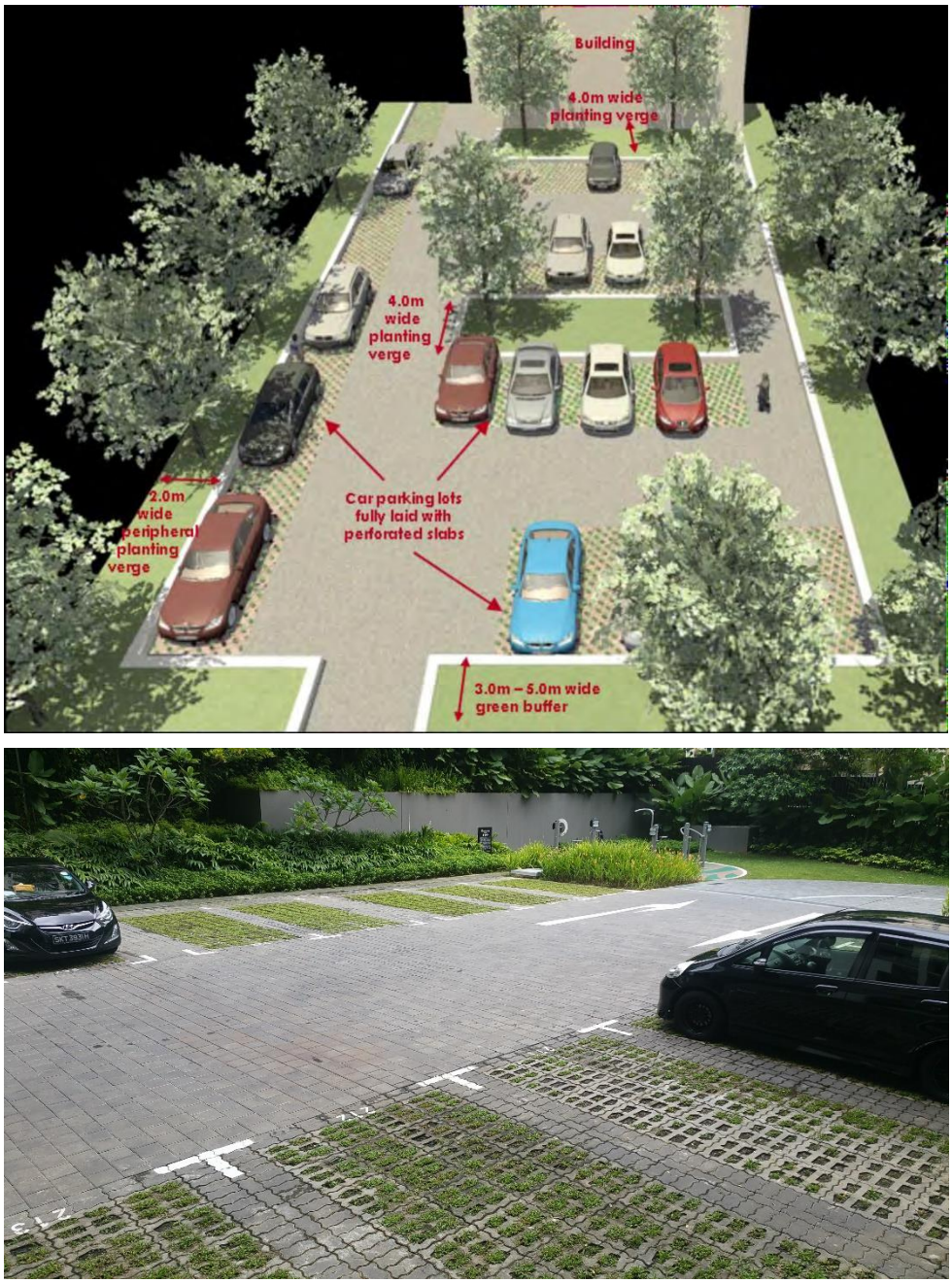
Footpath from street
to main entrance

9.8 Carpark Paving and Drainage

a) **Paving**. All parking areas are to be constructed in bitumen, concrete or approved brick/block paving.

b) **Semi-Permeable Pavers**. Use semi-permeable paving for car parking spaces to assist in the control of storm water run-off.

c) **Detention Structures**. The use of drainage detention basins, bio-filters and/or oil interceptor trap to collect and filter the run-off is recommended to minimise storm water runoff from the site and filter any contaminants.

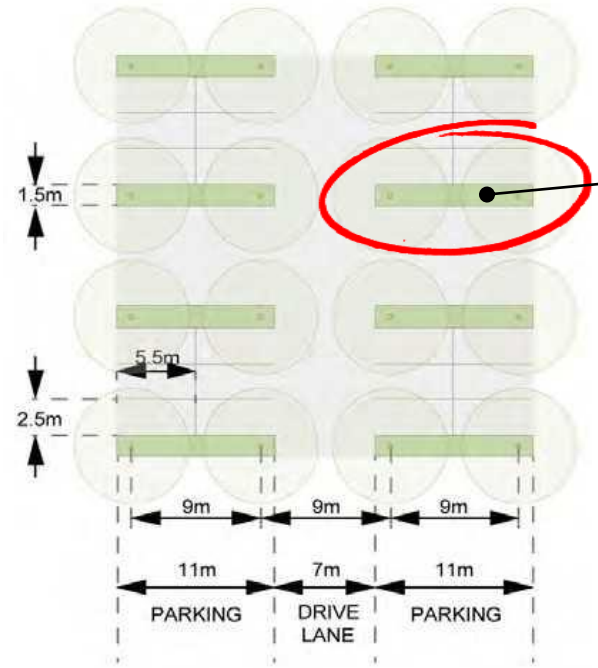


Permeable pavers used in carparks

9.9 Carpark Landscaping

a) **Landscape areas**. Parking areas should be designed to incorporate trees to break up the scale of hard surface areas.

b) **Landscape Strip Between Carparks**. A 1.5m wide landscape feature shall be implemented to break up the parking row for every 4 car park spaces.

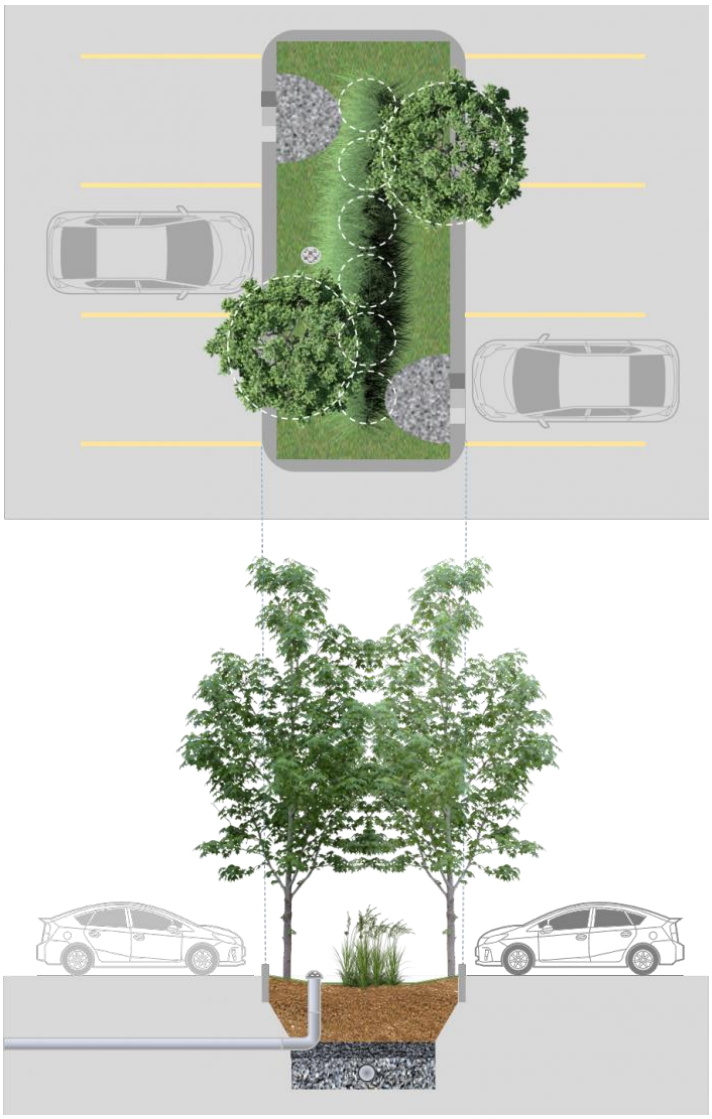


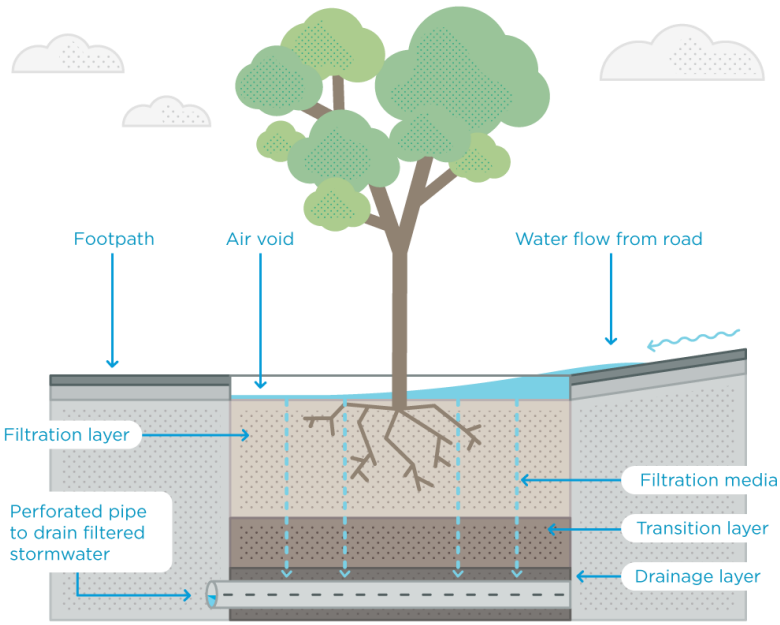
1.5m wide landscape strip with 2 trees in between every 4 spaces

1.5m wide landscape strip with 2 trees in between every 4 spaces

c) **Examples of carpark landscaping:**

i) **Examples of storm water bio-filter systems:**





9.10 Vehicle Storage

a) **Motor Vehicle Trades**. In the case of purpose-built workspaces for motor vehicle trades (other than panel beating/spray painting), adequate provision shall be made for customer vehicles and the storage of vehicles being worked upon. These spaces shall be screened off and not viewable from the road, and neighbouring properties. In such cases, the spaces required shall be in addition to the minimum parking requirements.

b) **No Vehicle Storage within Road Reserve**. Under no circumstances shall customer vehicles be parked, within the road/street reserve.

c) **Trucks and Trailers**. If allowed, according to the zone, trucks and trailers may be parked within the lot at the side or rear, and never in the front, but shall be completely screened by topographic features, landscaping, and fencing.

d) **No Parking of Trucks or Trailers within Road Reserve**. Under no circumstances shall trucks and/or trailers be parked within the road/street reserve.

9.11 Driveway/Accessway and Path Crossings

a) **Approvals**. Subject to specific approval from the Landlord, tenants may establish driveways (vehicle crossings and access ways) to their properties for both private and industrial use.

b) **Accessway.** industrial driveways (access crossings) shall be those which service businesses or cater for heavy trucks/vehicles on a regular basis safely

c) **Forward Direction**. All vehicle movements shall be able to enter and exit the lot in a forward gear. Also in general reverse manoeuvres should be avoided as much as possible apart from at loading bays.

d) **Driveway Width**. Excessively wide driveways can create more unpredictable manoeuvres at driveways and increase the potential for conflicts on the road frontage. Maximum driveway width, at the road kerb, for two way operation is 9.0 metres and 6.0 meters for one way operations.

e) **Vehicle Storage**. Vehicles entering into the property must stand clear of the road, footpath, and not protrude beyond the property boundary when stopped. Guard houses and gates shall be setback within the property to allow for the appropriate storage. Storage lengths would generally be 5, 15, and 22 metres for cars, single unit trucks, and articulated vehicles respectively.

f) **No. of Driveways**. A maximum of two driveways shall be permitted for all sites, one for entry and one for exiting.

g) **Perpendicular to Road**. The driveway shall ideally be perpendicular to the road, otherwise no greater than 15 degrees off the perpendicular.

h) **On Corner Sites**. On corner allotments, driveways shall generally be located no closer than 30.0 metres from the edge of the driveway to the adjacent side boundary at the road junction. This would be based on a road speed limit of 40km/h and may also be dependent other factors such as visibility (sight lines), road traffic volume and others.

i) **Designs**. Accessways shall be designed to the appropriate standard relative to the type of vehicles using the crossing without sustaining damage affecting the footpath or roadway:

- available off roadway standing area of relatively flat grade shall be provided to allow safe entry and exit, enabling drivers to stop and clearly see with adequate visibility approaching traffic;
- where kerb and channel exists then this will be reconstructed to comply with the requirements of the Landlord's engineering standards and policies and/or the relevant authorities;
- shall be finished with a permanent surface of either, concrete, or asphalt concrete and ideally matching the surrounding footpath material;
- concrete should be finished with an exposed aggregate concrete surface to match the concrete footpaths;
- no white concrete or loose/compacted gravel should be used within vehicle areas forward of the street facing building line;
- driveways should be constructed properly ensuring they do not create maintenance issues;
- no silt, stormwater, gravel or debris of any kind shall be able to run off or migrate from the premises on to the roadway or into drains creating a nuisance and safety hazard for road users;
- access-ways are sited in a safe location to provide maximum Safe Sight Distances;
- any safety issues shall be mitigated by for example additional seal widening, signage or vegetation control etc.;
- prevent damage to the road infrastructure, during construction and operations;

- the maintenance of all existing and proposed driveways (vehicle crossings and access ways) are the responsibility of the benefiting property tenant(s);
- adequate provision shall be made to ensure there is no impedance to the water channel or drainage paths, pipes under the driveway (access way);

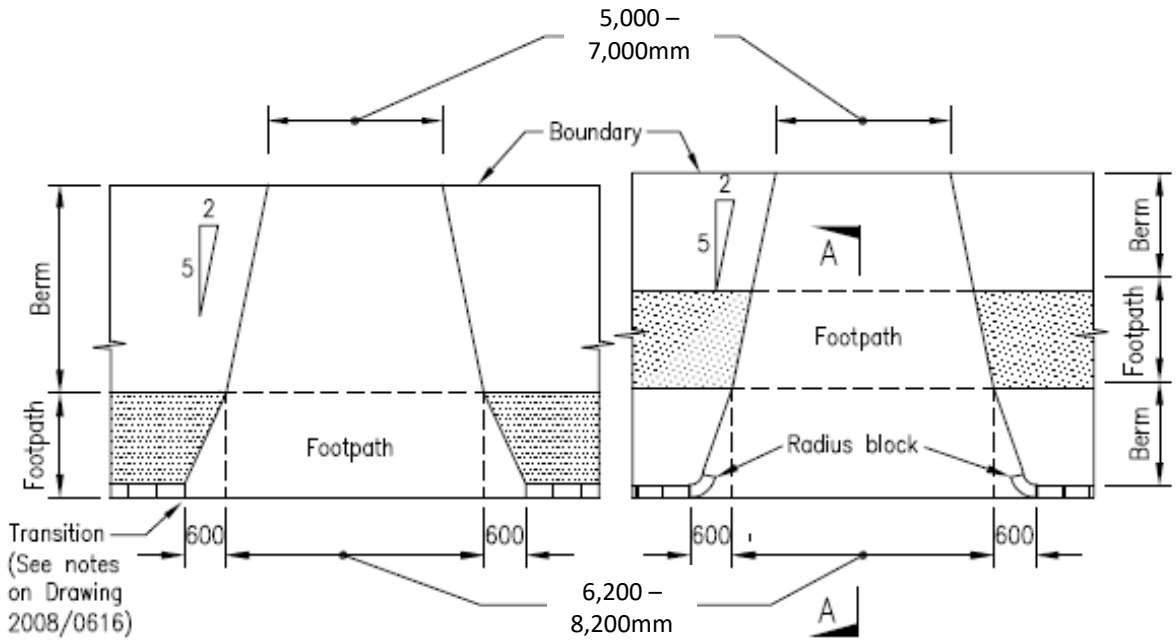
j) **Pedestrian Safety**. For all driveways crossing a footpath there should be a line of clear sight between pedestrians on the footpath and vehicles using the driveway so that collisions are avoided. The area occupied by the driveway should also be well defined so that pedestrians can anticipate vehicle paths across the footpath.

k) **Pedestrian Path within Plot**. A clear pedestrian path of a minimum width of 1.8 metres should be provided from the footpath at the road frontage to the building's principal entrance. So that it enhances site legibility and adds to the site amenity, this path should be constructed in one or a combination of the following materials:

- exposed aggregate concrete
- stone cobble
- interlocking concrete pavers
- coloured concrete

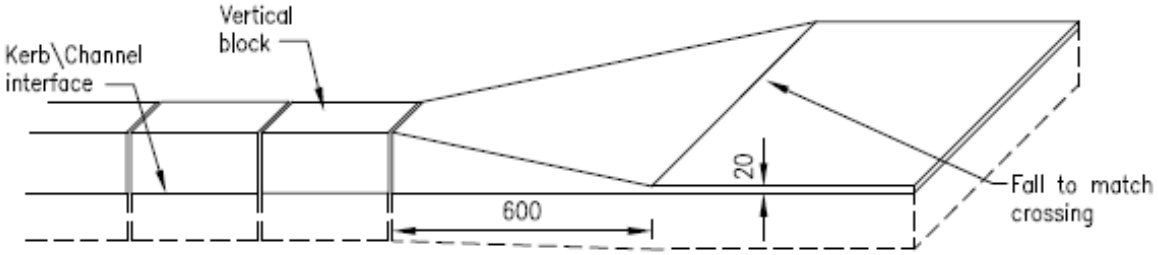
l) **Crossing Points within Plot**. All crossing points (where the path crosses areas in use by vehicles), should be clearly defined with a contrasting surface material including one or a combination of the above materials. There should be no painted crossings as these can be slippery.

m) **Configuration**. The following vehicle crossings shall be adopted as far as possible.

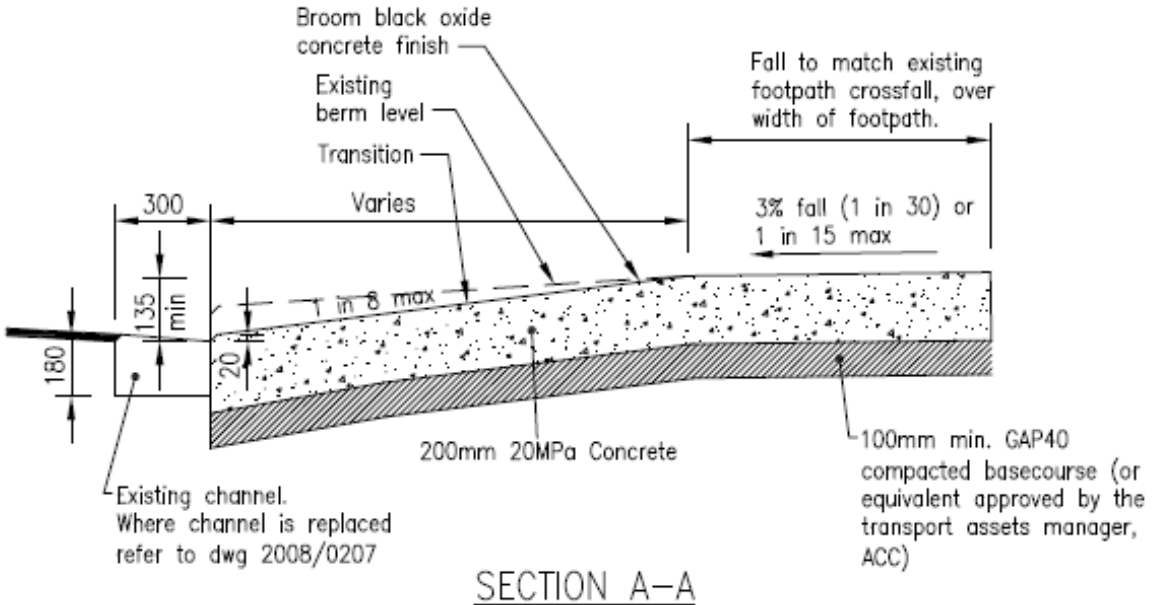


VEHICLE CROSSING FOOTPATH NEXT TO KERB

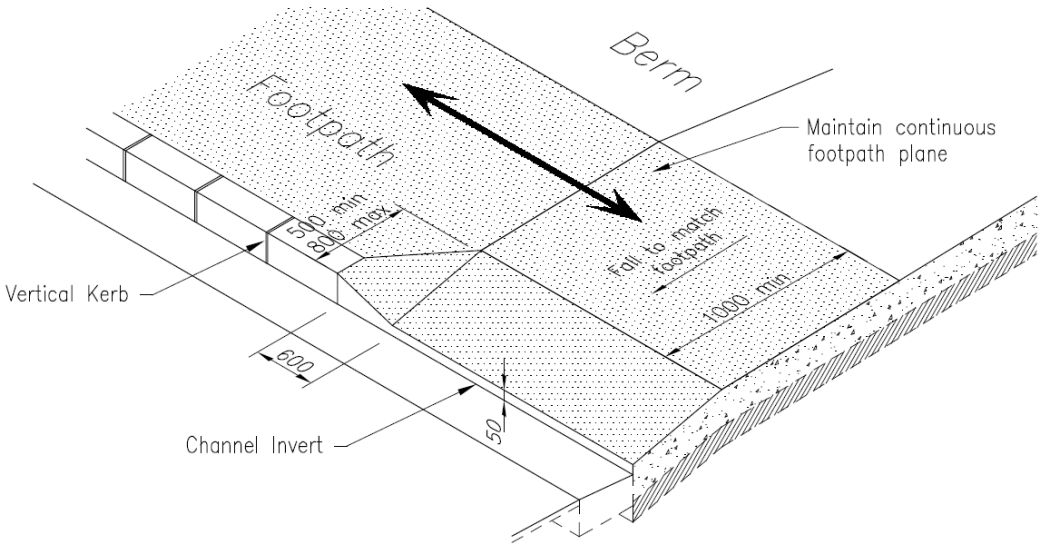
VEHICLE CROSSING–FOOTPATH SEPARATED FROM KERB



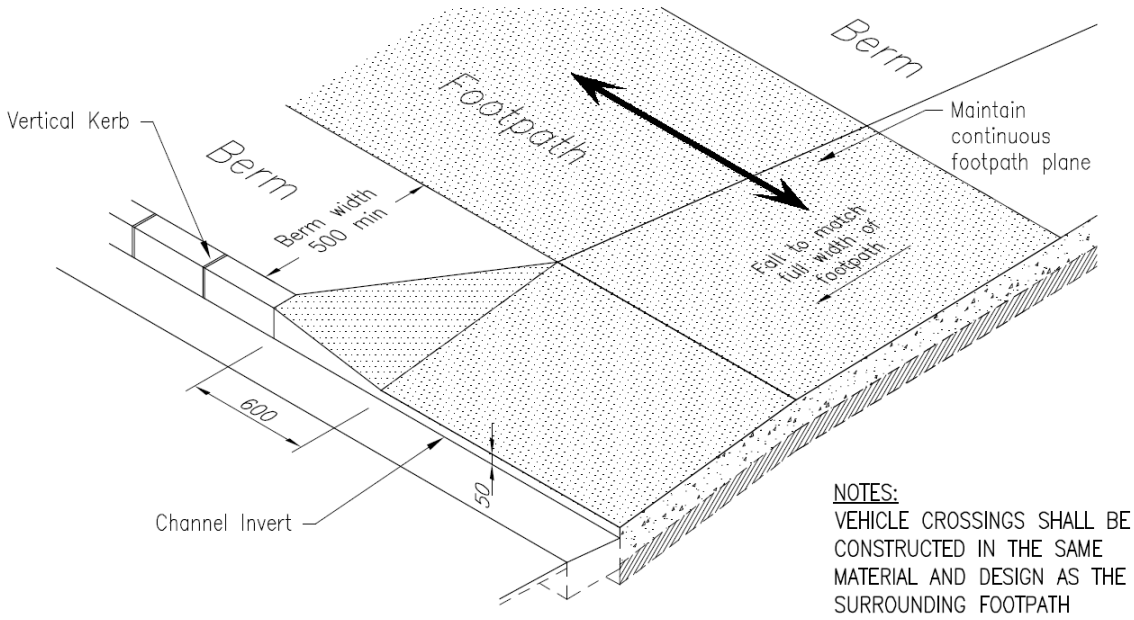
DETAIL OF KERB TRANSITION AT CROSSING



SECTION A–A



KERB TRANSITION AT CROSSING
FOOTPATH NEXT TO KERB



NOTES:
VEHICLE CROSSINGS SHALL BE CONSTRUCTED IN THE SAME MATERIAL AND DESIGN AS THE SURROUNDING FOOTPATH

KERB TRANSITION AT CROSSING
FOOTPATH SEPARATED FROM KERB

n) **Examples of Accessways**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CONCEPTS CENTRE

9.12 Loading Areas

a) **Location.** Loading bays shall be located to the rear (preferable) or side of the allotments and shall be located as far from main road frontage as possible away from public view. It is crucial to ensure the location of the bay does not obstruct the traffic, parking or walkway.

b) **Examples of Loading Bays**

10 SAFETY, SECURITY AND SURVEILLANCE

10.1 Overview

a) **Objective**. The objective is to ensure that public and private areas are either visible and safe or screened and illuminated in such a way as to ensure a high quality safe and comfortable outdoor environment prevails.

b) **Separate Areas**. Separate 'public use' areas of the site from non-public areas. Separate public building entrances from any private service area, storage area or other entrance.

c) **Controls**. Consider controlling entry and access via security gates and fencing where hazardous goods or dangerous equipment is envisaged.

d) **Security Gate Location**. Ensure any security gates are set back sufficiently to allow the largest vehicle manoeuvrable on-site to queue without obstruction the street or footpath.

e) **Security Gate Design**. Gates shall match the adjacent fence type and shall be permeable, i.e. see through.

f) **Passive Surveillance**. Locate the entrance and as many windows, balconies, showroom and office areas to front public spaces e.g. Streets and open spaces as possible.

g) **Lighting**. Provide adequate lighting at entrances and along pathways including routes to parking areas (visitor and staff). Consider integrating pathway lighting into feature lighting that can include gates or landscape features (trees, furniture etc.). Position trees away from street lighting to avoid blocking light sources.

h) **To be Avoided**. The following design features shall be avoided to improve safety:
- Outcomes that require walls (retaining or otherwise) greater than 1.5m in net height between the front boundary and front face of building
- Entrapment areas, blind corners and narrow pathways which may block visibility between the building and the street
- Dead ends and hidden recesses
- Landscaping and other elements shall not create a visual barrier between 0.5 and 2.0m above finished floor levels or ground level as applicable
- Rear loading shall be secure at night and preferably enclosed to reduce light and noise spill during night loading
- Loading bay access lanes and other areas that may be dead ends at night shall be secured
- Rear parking and pick-up/delivery areas shall be under passive surveillance from active indoor areas.

10.2 Industrial Health and Safety

a) **Standards**. For general standards in Brunei for Health and Safety please refer to the following authorities:

- **Ministry of Energy, Manpower and Industry**

  http://www.memi.gov.bn/SitePages/MEMI%20HSSE.aspx

- **Safety Health and Environment National Authority**

  http://shena.gov.bn

b) **Guidance**. Additional guidance for various industries can also be found at:

- **Health and Safety Executive**

  http://www.hse.gov.uk/guidance/industries.htm

10.3 Lighting

a) **Illumination.** The site shall be appropriately illuminated to provide an attractive environment at night without creating undue light spill or glare to pedestrians, road users, and neighboring properties.

b) **No Flashing or Moving lights.** Lighting should not include lights which flash or move.

c) **Avoid Dark Spots.** External lighting shall be provided to avoid dark spots:
- Around doorways, windows and pedestrian pathways
- In areas where goods and equipment are stored, and
- In all car parking areas and entrances

d) **Avoid Lighting Spillage.** Lighting must be appropriately directed or baffles installed to prevent illumination of adjacent properties and residential areas.

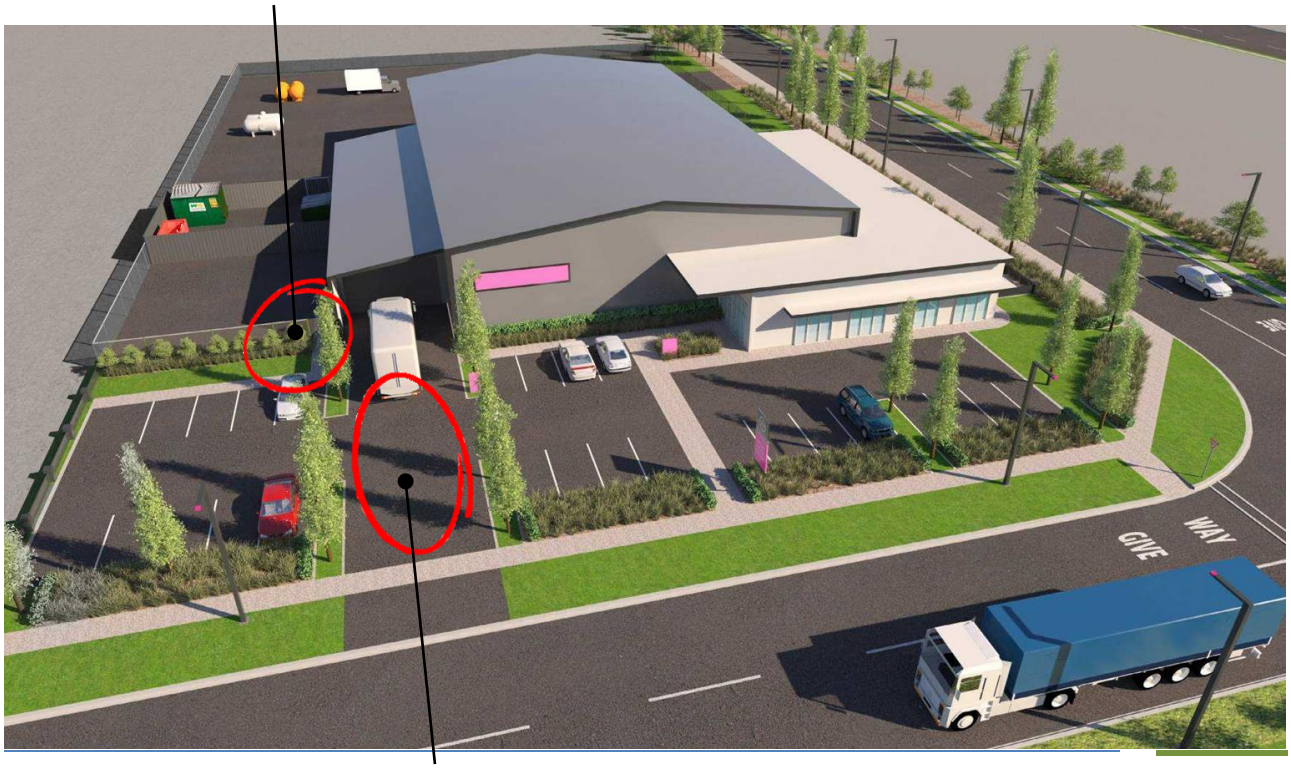
e) **Lighting Within Buffer Areas.** Lighting within the buffer areas adjacent to a residential boundary or arterial through road shall be limited to bollard lighting and directional, low surface lighting.

10.4 Guard House

a) **Guard House Location.** It is preferable that any guard house, if required, be located no further in front, towards the street, than the front wall of the factory/warehouse area, i.e. set back behind the front street facing wall of the office component. This is to allow sufficient queuing space for service vehicles to park temporarily off the road and not

b) **Guard House Design.** The design shall be complimentary with the main building design and colour scheme, and shall blend in with the whole development.

Guard house (if required) to be located no further in front than screen wall or front wall of factory/warehouse



Allow sufficient service vehicle queuing length to ensure vehicles do not block the road or footpath

c) **Guard House Examples**







11 SITE FENCING, SCREENING OF LOADING BAYS AND OUTDOOR STORAGE AREAS

11.1 Front, Side and Rear Fencing

a) **Fencing.** Perimeter fencing is required for safety purposes and to avoid the industrial activities to be carried out outside their boundary.

b) **Recommendation**:
- All fencing shall be visually unobtrusive and complementary to the streetscape
- Fencing shall be integrated into the overall design of the development and associated security structures
- Gates and security structures should be designed to complement fencing and be considered as components of the overall design for all development
- Front fencing, particularly along the roadside boundary, shall be visually transparent. Prefer aluminum pressed spear fence or equivalent, powder coated in black colour.
- In the exceptional case where a screen wall is required above the 1.8m standard height, any fence above this height shall be of an open style

c) **Avoid**:
- razor or barbed wire fences which will lower amenity if visible from public spaces. Use electrified security fencing if required. Electric fencing must display an appropriate warning and otherwise comply with all relevant legislation and standards.
- walls along front boundary
- timber, cement sheet and corrugated steel fences

11.2 Outdoor Storage/Equipment Screening

a) **Front Yard.** The Front Yard (between the building and road reserve) shall not be used as a temporary or permanent storage area for equipment, machinery, material, and solid/liquid waste.

b) **Located to the Rear.** All outdoor storage shall be to the rear of the Front Yard (behind the factory/warehouse building line) and screened from the office carpark and public view. This could be achieved by screening the side and rear areas by the office component or a combination of 1.8m height fence/wall with landscaping.

c) **Screening from Public View.** Any outdoor equipment, whether on a roof or on the ground, shall be appropriately screened from public view. The method of screening should be architecturally integrated with the primary structure in terms of material, colour, shape and size.

11.3 Storage and Waste Management

a) **Standards**. For general standards in Brunei for Health and Safety please refer to the following authorities:

- Ministry of Energy, Manpower and Industry
  http://www.memi.gov.bn/SitePages/MEMI%20HSSE.aspx
- Safety Health and Environment National Authority http://shena.gov.bn

b) **Guidance**. Additional guidance for various industries can also be found at:

- HSE for industries http://www.hse.gov.uk/guidance/industries.htm
- Materials storage and waste management
  http://www.hse.gov.uk/construction/safetytopics/storage.htm
- Waste management and recycling http://www.hse.gov.uk/waste/index.htm
- Materials Recovery Facilities (MRFs) http://www.hse.gov.uk/waste/mrf.htm
- Scrap and metal recycling http://www.hse.gov.uk/waste/metals.htm
- End of life vehicle industry http://www.hse.gov.uk/waste/dismantling.htm
- Waste Electrical and Electronic Equipment recycling (WEEE)
  http://www.hse.gov.uk/waste/waste-electrical.htm
- Drum / cylinder handling http://www.hse.gov.uk/comah/sragtech/techmeascylinder.htm
- Secondary containment http://www.hse.gov.uk/comah/sragtech/techmeascontain.htm
- Safe use and storage of cellular plastics http://www.hse.gov.uk/pUbns/priced/hsg92.pdf

11.4 Loading Bay/Service Area Screening

a) **Located to the Rear**. Loading and service bays shall be located at the rear of a site (preferably) or at the side and screened from public view.

b) **Screening from Public View**. Screening could be achieved by staggering the loading areas behind the office component.

11.5 Site Fencing and Screening Example

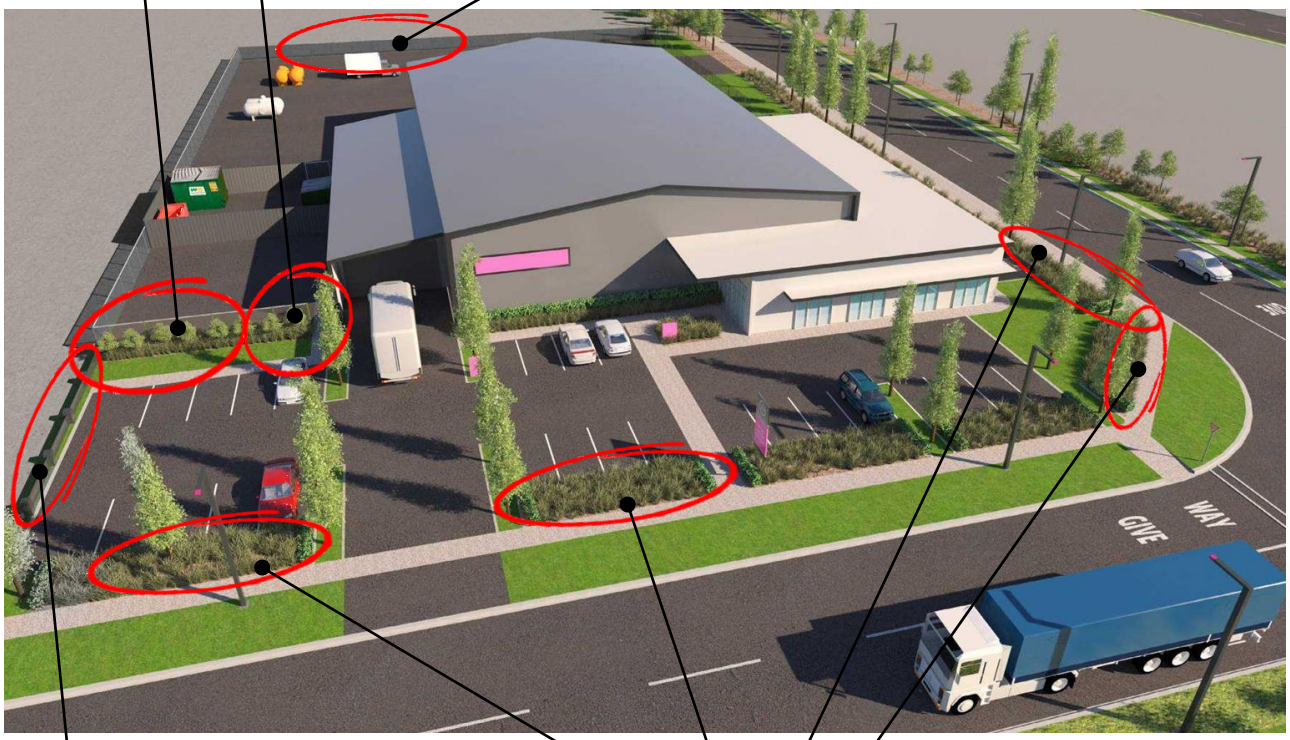
Screen for side and rear yard.

A. **1.8m high heavy duty aluminum 'pressed spear fence', with 1.0m wide heavily landscape strip (preferred)**,
   or
B. 1.8m high concrete/brick wall, with 1.0m wide landscape strip

Common side and rear yard (not along road boundaries).

A. **1.8m high heavy duty aluminum 'pressed spear fence' (preferred)**,
   or
B. 1.8 – 2.4m high welded wire mesh fence

Guard house location (if required)
No further in front than screen wall or front wall of factory/warehouse

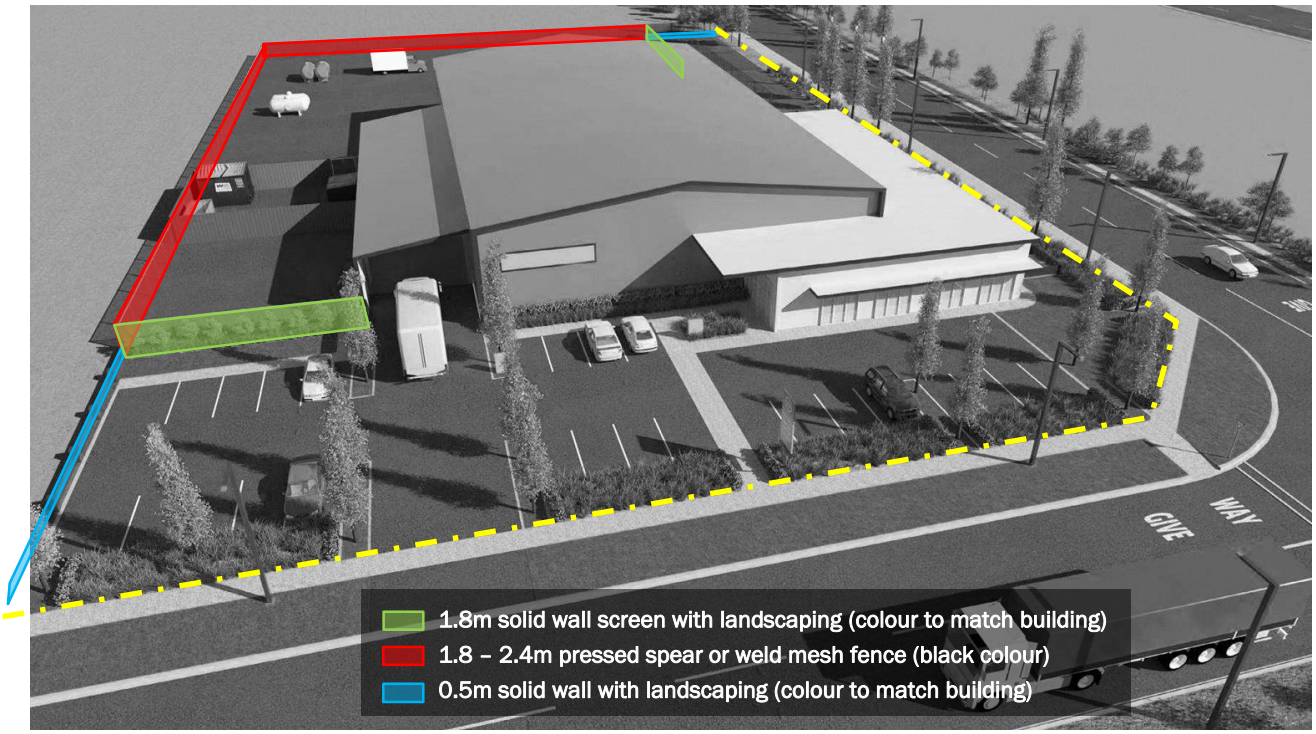


Common boundary in front yard.

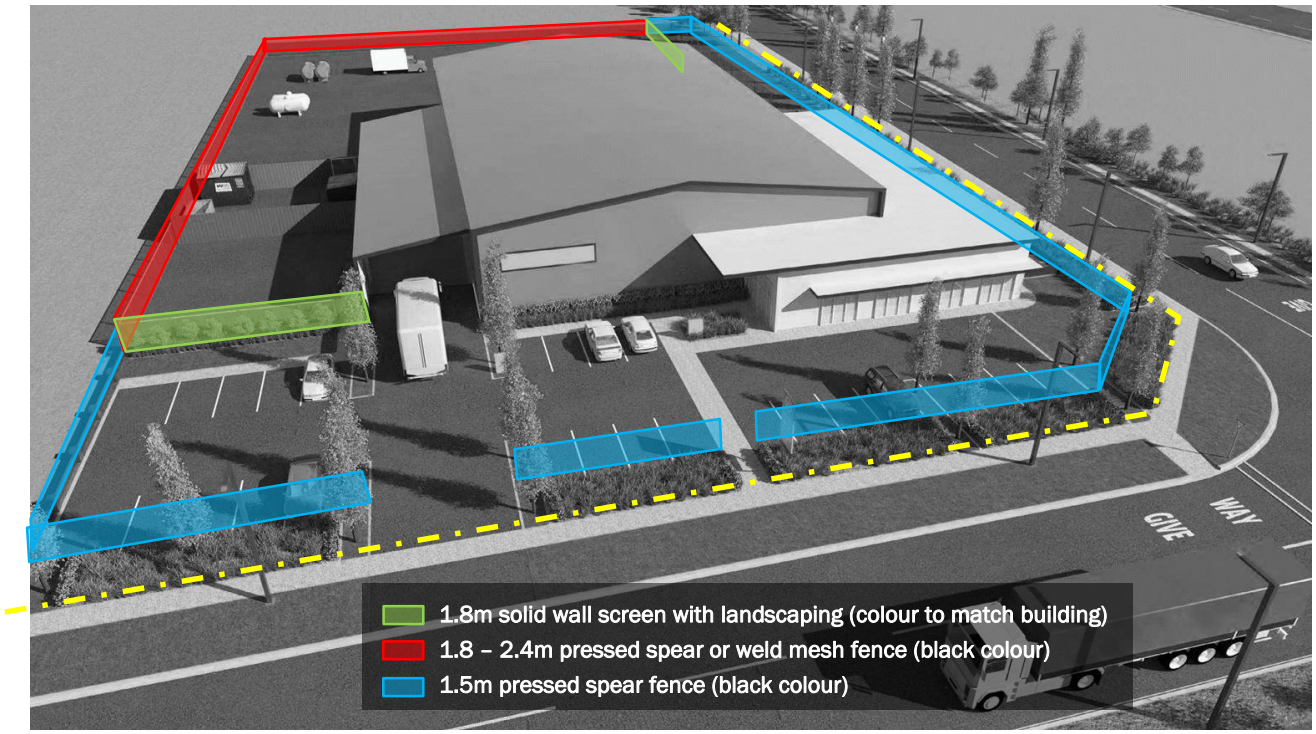
A. **0.5m high wall, with 1.0m wide landscape strip (preferred)**,
   or
B. 1.5m high heavy duty aluminum 'pressed spear fence' with 1.0m wide landscape strip

Road boundary in front yard.

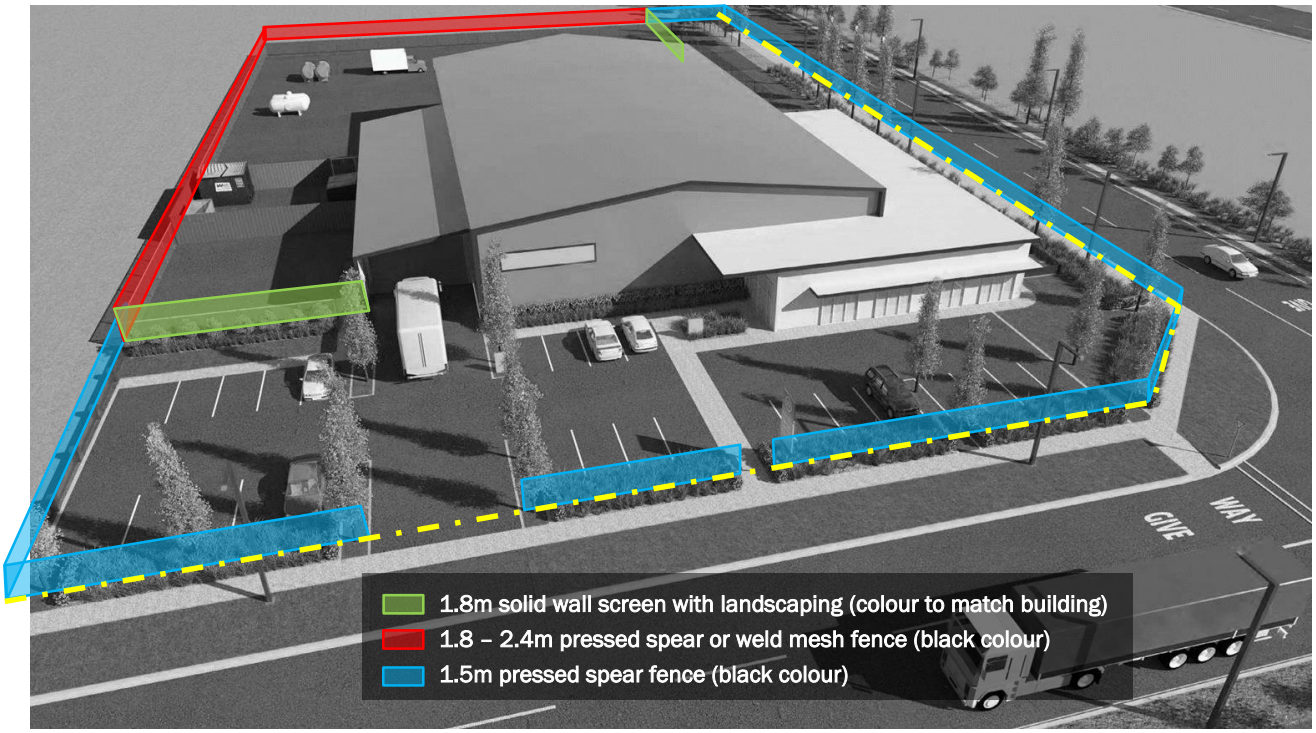
A. **No fence, 3.0m landscape strip only (preferred)**,
   or
C. 1.5m high heavy duty aluminum 'pressed spear fence' 3.0m off the boundary, i.e. behind the 3.0m wide landscape strip,
   or
D. 1.5m high heavy duty aluminum 'pressed spear fence' along the boundary, i.e. in front of 3.0m wide landscape strip



a) Lot Fencing – Recommendation
- Front yard open
- Rear yard enclosed by screen wall facing road and pressed spear or welded mesh fence to adjoining industrial plots



b) Lot Fencing Alternative 1 (next preferred)
- Front yard enclosed by pressed spear fence (3.0m offset from road boundary, behind landscape strip)
- Rear yard enclosed by screen wall facing road and pressed spear or welded mesh fence to adjoining industrial plots

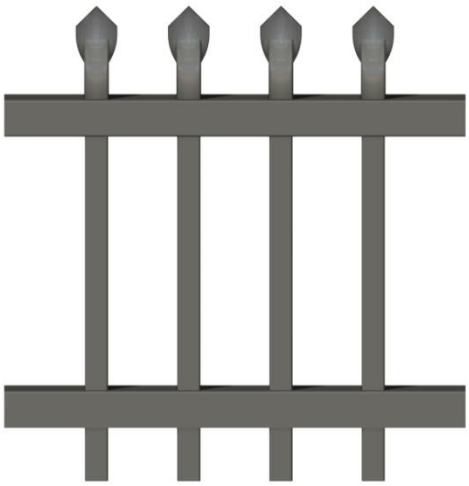


c) Lot Fencing Alternative 2 (least preferred)
   - Front yard enclosed by pressed spear fence (at road boundary, in front of landscape strip)
   - Rear yard enclosed by screen wall facing road and pressed spear or welded mesh fence to adjoining industrial plots

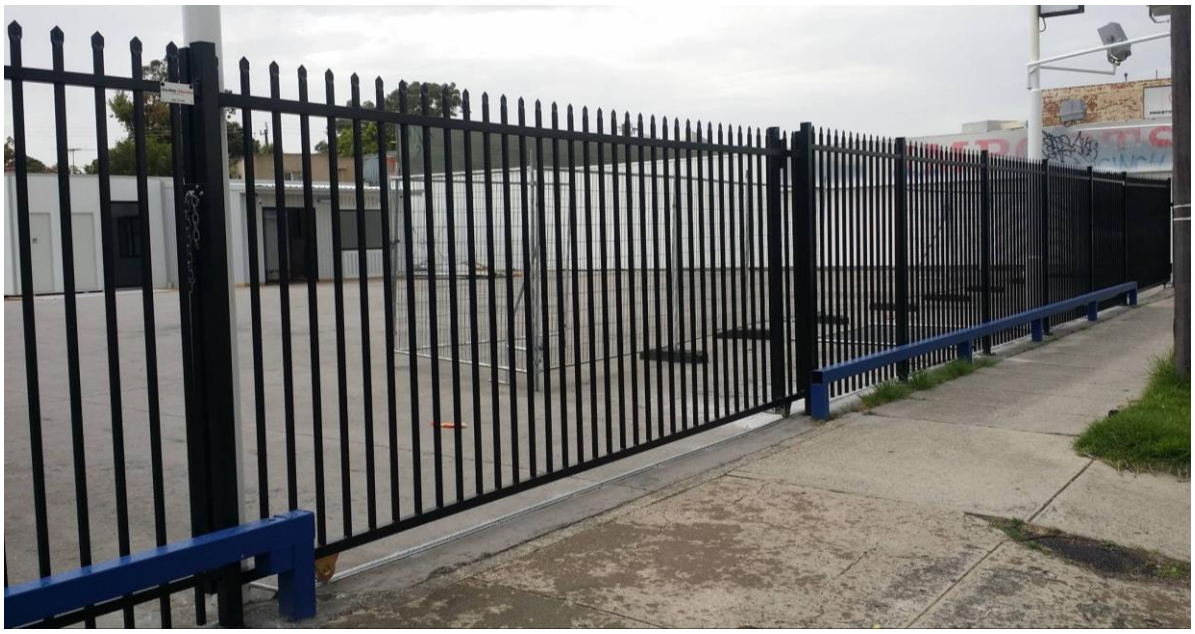
11.6 Fence and Gate Design Specs

a) Pressed Spear Fence Specifications:

- Material: Heavy duty aluminum ‘pressed spear fence’
- Colour: satin black colour, powder coated
- Panel dimensions: 2,400mm wide x 1,500 – 1,800mm high
- Posts: 65mm x 65mm
- Top and bottom rails: 40mm x 40mm x 2mm
  punched through welded pickets
- Pickets: 25mm x 25mm x 1.6mm @ 125mm centres
  Pointed Crimped Top 6 Point Welds
- Gate: Similar to above, however rails and posts shall be increased in size based on the weight of gate



b) **Fence Examples**




Powers
COLDWEL
BANKER
COMMERC
PROPERTY GROU


Arndell Park
Distribution
Centre
60 Holbeche Road
Goodman

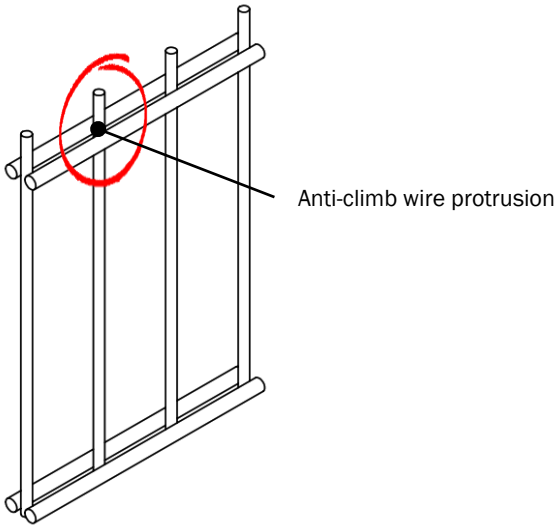

PHILIPS
ENTRY
20
Goodman


10
D
Gerard Lighting
Receiving and despatch
Car park

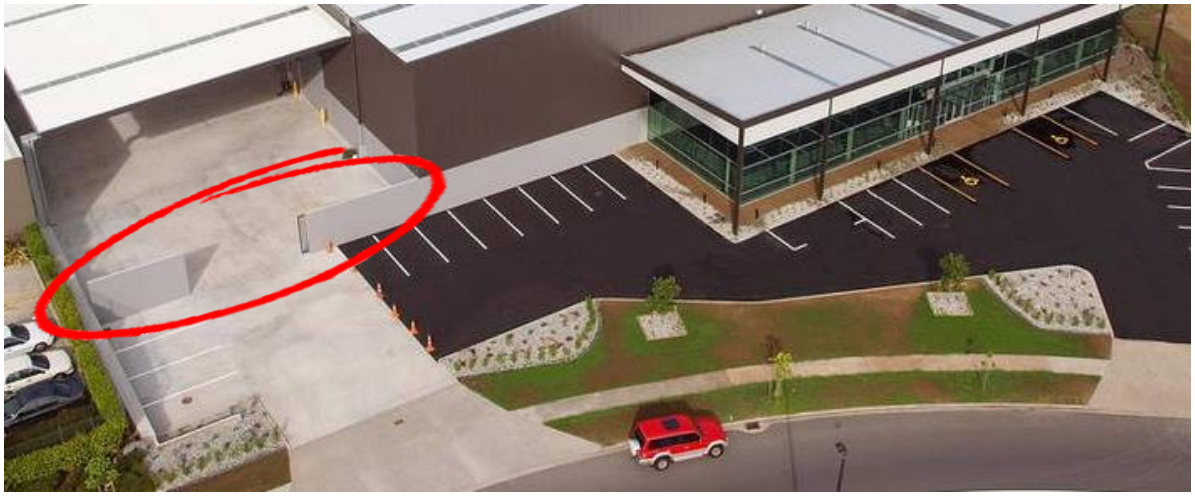

Ford
Carparking
Visitor
Entry/Exit

c) Welded Wire Mesh Fence Specifications:

- Material: Fully welded galvanized steel
- Colour: satin black colour, powder coated
- Panel dimensions: 2,400mm wide x 1,800 – 2400mm high
- Posts: 60 x 40 x 2mm
- Vertical wire: 6mm dia. @ 50mm spacing
- Horizontal wire: 2 x 8mm @ 200mm spacing
- Gate: Similar to above, however rails and posts shall be increased in size based on the weight of gate



11.7 Outdoor Storage Screening Examples – Using Walls

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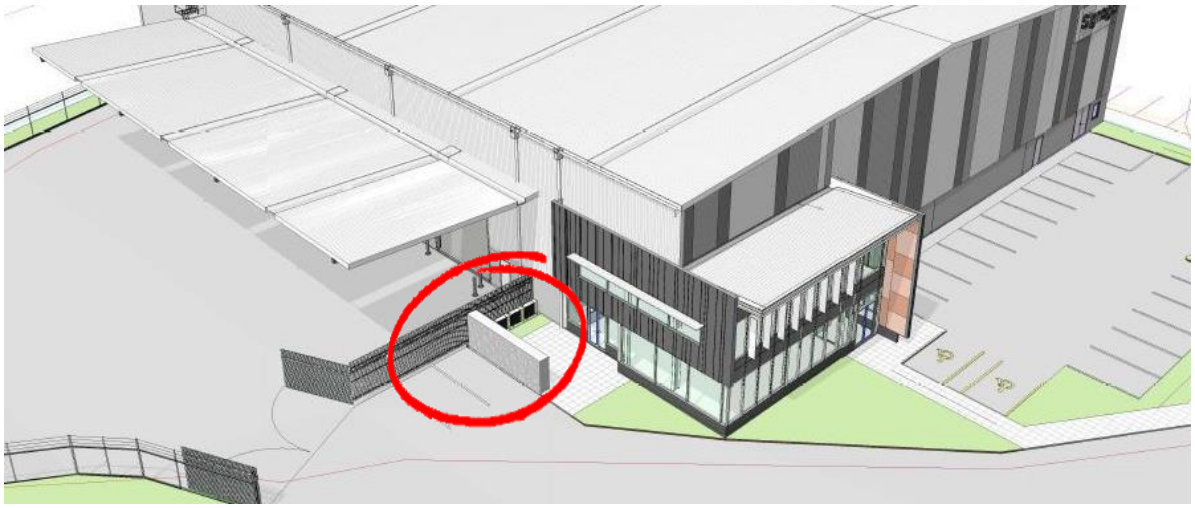
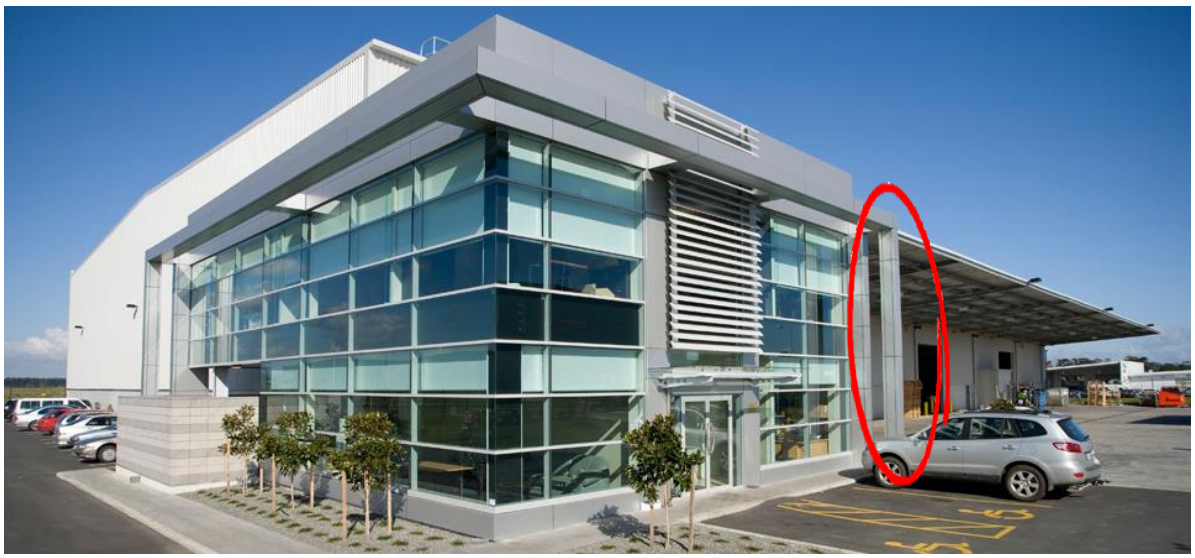
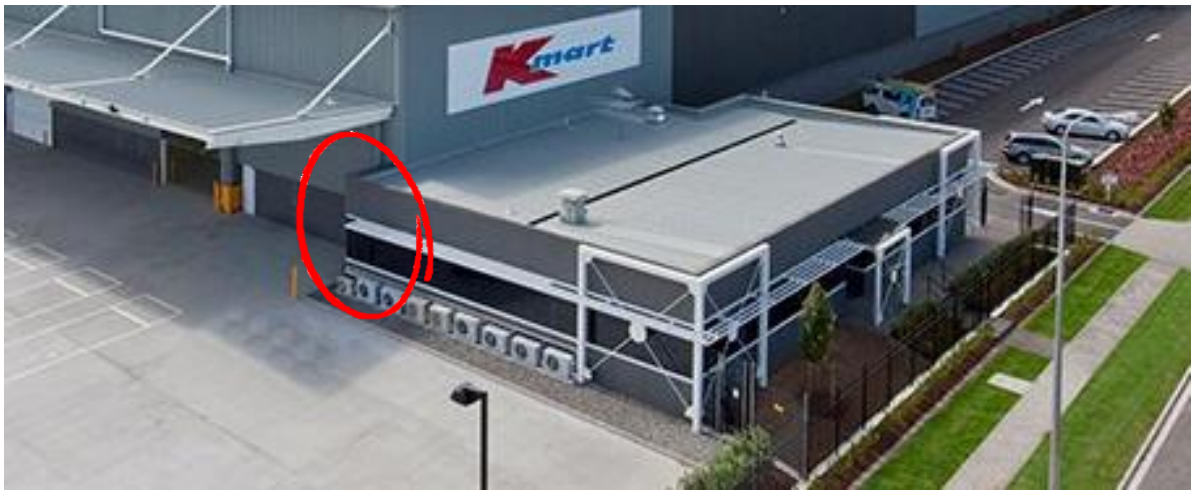


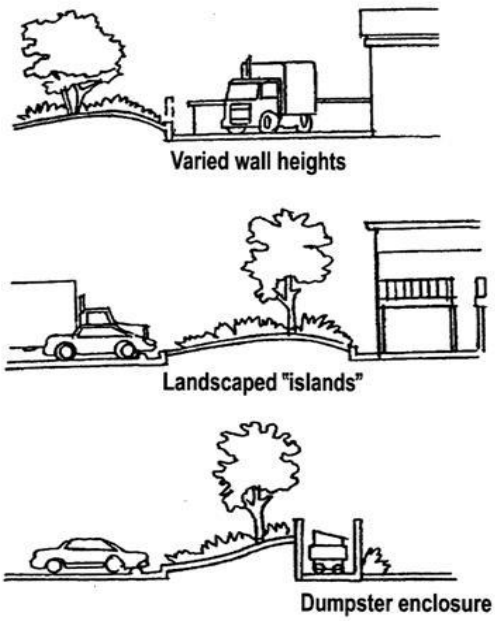

décortech

11.8 Outdoor Storage Screening Examples – Using Office Building as a Screen




Kmart


MACHINERYHOUSE



Elevation Changes to Screen Loading and Other Operations

11.9 Outdoor Display of Goods

a) **Zoning**. If zoning permits, the display of goods manufactured on-site or sold/marketed /hired from the lot, must be done in conjunction with the business being conducted on the premises and shall comply with the following regulations:

- The items displayed outside shall be of the same type that are lawfully displayed and sold inside the building on the premises.
- The aggregate display area shall not exceed 50 percent of the linear frontage of the storefront.
- Items shall not project more than 6.0 metres from the storefront.
- No item, or any portion thereof, shall be displayed on public property.
- Items shall be displayed only during the hours that the business conducted inside the building on the premises is open for business.
- No item shall be displayed in a manner that causes a safety hazard; obstructs the entrance to any building; interferes with, or impedes the flow of pedestrian or vehicle traffic; is unsightly or creates any other condition that is detrimental to the appearance of the premises or any surrounding property; or in any other manner is detrimental to the public health, safety, or welfare or causes a public nuisance.

12 LANDSCAPING

12.1 Overview

a) **Objective.** Landscaping can help mitigate the visual impact of large buildings from the street and public spaces.

b) **Area**. Provide as much landscaping as possible (at least 10% of site coverage). Landscaping should be maximised along the front of a building, in between the building and street boundary (or other public space), and along the connection with the public footpath and street.

c) **Design Accent**. Landscaping can accent building design and help minimise the reflected thermal footprint of a site.

d) **Clear Sightlines**. For uses which require clear visibility between the building and the street to be maintained, use a combination of low shrubs (less than 0.7 metre in height) and single trunk trees with canopies beginning their spread above 2.0 metre in height. Avoid low shrubs which block sightlines.

e) **Location**. Position trees carefully and consider the fully grown canopy spread of the species to minimise the nuisance of branches to large trucks.

f) **Plant Species**. Use carefully selected and preferable locally sourced plant species in keeping with the natural landscape character.

g) **Minimise Grassed Areas**. Use low-maintenance landscaping and shrubs in preference to large areas of grass.

h) **Tree Pits**. The incorporation of tree pits in parking areas can fulfil a dual purpose of providing for amenity as well as fulfilling a storm water treatment function.

12.2 Landscaping of Car Parks

a) **Carpark Landscaping**. Refer also to the section on carparks.

b) **Carpark Dividers**. Area measuring a minimum of 1.5 metres to be allocated at every car park divider for the planting of trees and grass. One main tree to be planted at every third bay.

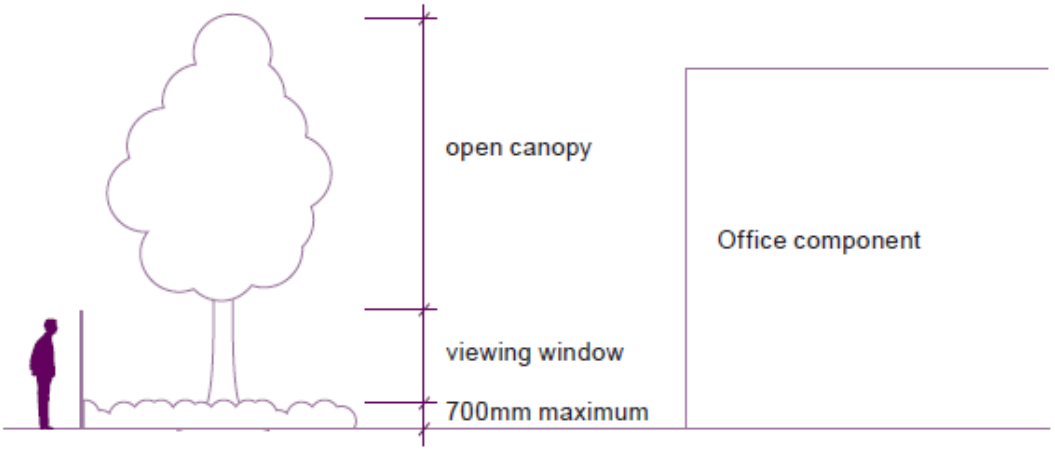
c) **Trees**. Minimum area of 1.5m x 2.5m to be allocated for the planting of 1 tree per 3 parking bays at the front of the building

d) **High Canopy**. High canopy trees shall be used for shade within the car parking areas with low/groundcover varieties to a maximum of 700mm to allow clear lines of sight within car parking areas and to internal site access pathways.

12.3 Landscaping for Security

a) **Clear Sight Lines**. For security purposes, it is recommended to provide an effective and well maintained landscape that:

- Creates clear sight lines
- Creates clear and safe routes for access and egress
- Assists in defining space, and
- Decreases the opportunities for particular types of crimes



Enable passive surveillance through appropriate landscaping.

i) **Examples of landscaping:**


Arndell Park
Distribution
Centre
60 Holbeche Road
Goodman


DHL
1
2
3
4
5
6
7


BUNNINGS
DISTRIBUTION
BUNNINGS
7


DSV


15


RECEPTION
LINFOX


12


Newington
Business
Park
4 Avenue
of The Americas
Goodman


Greencross Limited
The Pet Company
Goodman
BRICKWORKS


FUJI Xerox

13 SIGNAGE

13.1 Guidelines and Approval

a) **Objective**. This set of guidelines encourages sensitive and integrated design of building signage. The aim is to ensure that all signage is reasonably consistent and fair, finished to a high standard, and harmoniously integrated with the buildings and landscaping.

b) **Multi-Tenant Signage.** Provide directory signage for multi-tenant sites which are slender and located at the entrance and in parking areas.

c) **Illumination**. Sign illumination should be provided in a diffused up or down lighting that also highlights architectural detail in building rather than any internal illumination. Exterior signage may only be illuminated by wall mounted light fittings and/or ground mounted uplights. A separate power supply is to be provided by the customer by a licenced contractor. An isolation must be provided at a low level to assist in maintenance. All service penetrations are to be sealed for water and vermin.

d) **Directional Signage**. Signage which directs vehicles to parking and servicing areas should be clearly visible and unobstructed by building features or landscaping.

e) **Adjacent to Commercial Zone**. In areas adjacent to a commercial zone, it is important that signage is reasonably limited in extent, as it can detract from amenity if widely and randomly used.

f) **Standard Tenancy Signage**. To achieve coherence across an industrial park a standard tenancy sign may be required. This may be developed into a separate more detailed specification for this in due course.

g) **Approval for signage on or within DARe owned/managed buildings and facilities**. No signage may be installed without prior written consent from DARe. Please contact your Property Manager to arrange approval. Artwork must be supplied by the customer and include proposed location, exact measurements and specifications for installation and connection methodology, i.e. cabling, fixings to wall etc. Internal signs shall consist of the company name and logo, made from acrylic letters or at least plastic composite. A customer's entrance door or reception sign must be made from frosted or solid vinyl, or the equivalent. Advertising and temporary signs are not permitted. This includes flags, billboards, sandwich boards, window stickers and banner signage.

h) **Approval for signage on customer owned facilities and landed properties**. No external signage may be installed without prior written consent from DARe. Please contact your Site Manager to arrange approval. Artwork must be supplied by the customer and include proposed location, exact measurements and specifications for installation and connection methodology.

i) **Relevant Authority Approvals**. Installation of external signage (outside of the building) must also obtain written permission from the relevant authorities by informing them or through procedure involving their review and comments, depending on the type of signage to be installed.

j) **Free Standing Signage**. These should not obstruct the view of the building, ventilation area and light, including windows and doors of the existing building.

k) **Showrooms.** Use window displays and signage within areas of glazing in showrooms.

l) **Vehicle Sales Yards.** These may accommodate flags (freestanding or removable) with an individual area of less than 1.0m^2.

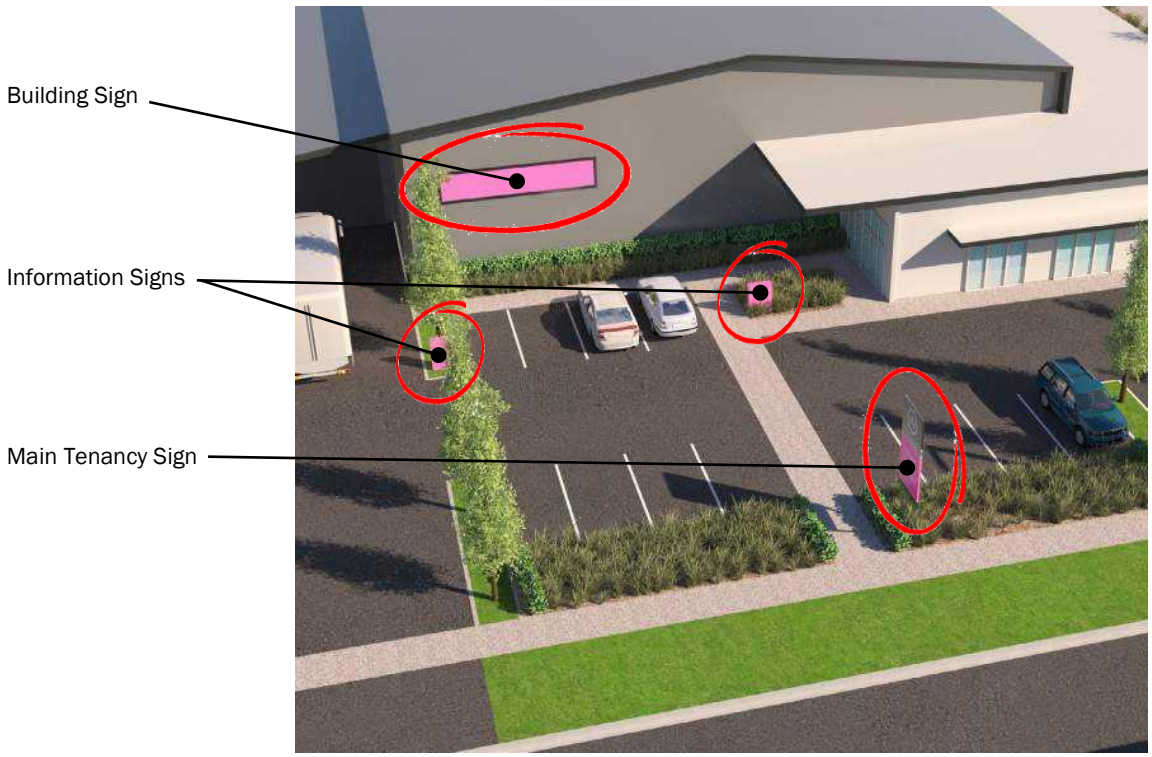
m) **Ancillary or Supplementary Signage**. Signage for suppliers, specials or other product information, e.g. in sales and trade yards, should each be no greater than 1.0m^2. These

should each be provided with a frame, firmly attached to the ground, a building or wall and not 'staked' like a real estate sign.

n) **To be avoided:**
- third party signage;
- advertising such as company website, phone numbers etc;
- flashing, neon, revolving, variable message or animated signs;
- highly reflective materials at the street front where applicable to reduce sunlight glare;
- fluorescent or iridescent paint colours;
- bunting, streamers, flags or wind vanes;
- sandwich boards or other mobile signs;
- A-frame signage; and
- post mounted signs.

o) **Tenant Name and Insignia Only.** All signs should be limited to the name and insignia of the firm occupying the lot and related to the activity and operation of the building on the lot (not unrelated general product advertising). Where multiple occupancy is proposed, the composite sign may have one panel per occupancy.

p) **Three Types of Signage Allowed.** Each industrial lot is allowed to have 3 types of signage:
- Building façade sign – affixed or painted directly to the building façade,
- Tenant entry point sign – located within the site boundaries, adjacent to the entry, and
- Directional or information sign



13.2 Building Façade Sign

a) **Size**. All signage should remain within the form of the façade and be smaller than 4m² per activity. The size shall also not exceed 5% of the area of the building façade.

b) **Projection**. Building signage should be integrated with the building and should not project above facades, rooflines and parapets. The sign shall also not project outwards from the building facade by greater than 0.5m.

c) **Painted Signage**. Signs may not be painted directly onto screen walls, building façades, roofs, doors or windows (other than safety signage). Vinyls, stickers or the like are not acceptable.

d) **Materials and Fixing**. Exterior signage should be made from a waterproof pre-finished panel such as Alucobond or the equivalent. The panel must be bolted through the building fascia or external wall, with fixings to space the panel at 100mm distance from the façade. All fixings should be approved by the customer's contractor and their structural engineer.

e) **Additional**. Building façade signage shall:

- be a single sign and located on the front side of the building only (Note: signage is allowed on the sides of the building fronting the road on corner allotments)
- be integrated with the overall architectural design of the building
- include a company badge and logo only
- be simple in form, color and structure
- not include advertising of company websites, phone numbers etc.

f) **Examples of Façade Signs**


Trio
SOURCE. STORE. DISTRIBUTE.


LINFOX


coles


GRAYS


KIA
KIA MOTORS


Electrolux


HOSV


DHL


nomad


TOSHIBA

13.3 Tenant Entry Point Sign

a) **Directory Sign**. Each lot should include, at or near the main vehicle or pedestrian entrance within their lot, a tenant's directory sign.

b) **Tenant Details**. Tenant signage shall identify each particular lot and/or building so that it can be read from the street and footpath during day and night, include the street number, constructed of durable materials, with approved UV stabilized colours and if illuminated, shall be lit.

c) **Size**. Tenant entry point signage shall comprise of a single free standing sign when

land with frontage of less than 50m:
- total height does not exceed 4m, and
- total area of the sign face does not exceed 4m^2

land with a frontage exceeding 50m:

- height may increase by 1m for every additional 10m of frontage, or part thereof, to a maximum height of 6m, and
- total area of the sign face may increase 1m^2 for every 10m of frontage, or part thereof, to a maximum of 6m^2

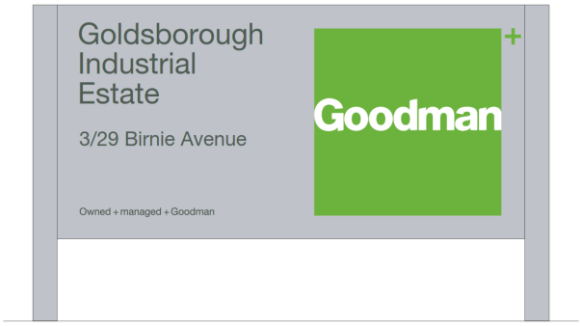
d) **Signage Examples**


Port+ Business Park
350 Bridge Street
Goodman

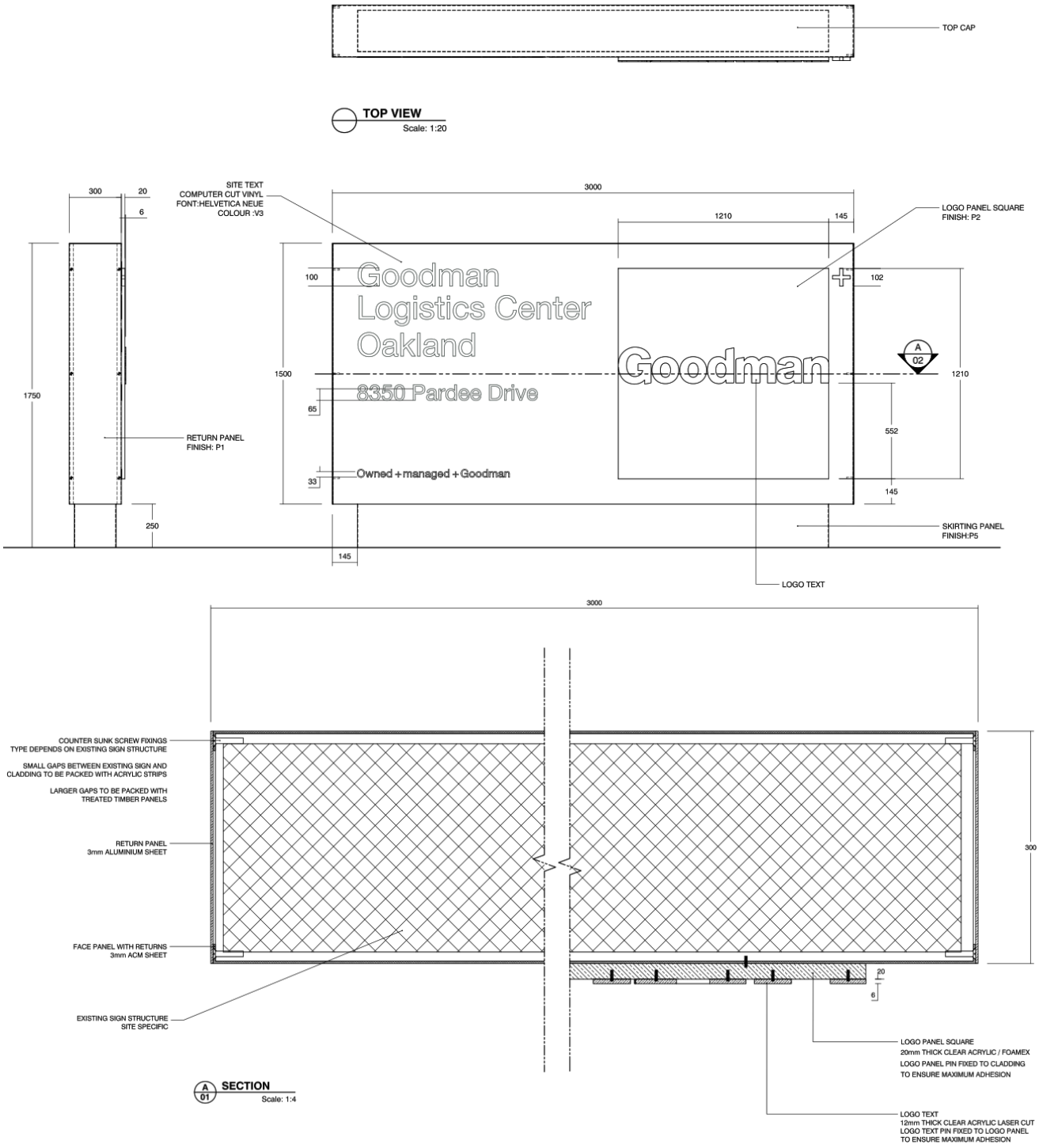

DHL
Highbrook Distribution Centre


Ford
Carparking
Visitor Entry/Exit
13 Underwood Street
Goodman

Freestanding entrance sign



Secondary entrance sign



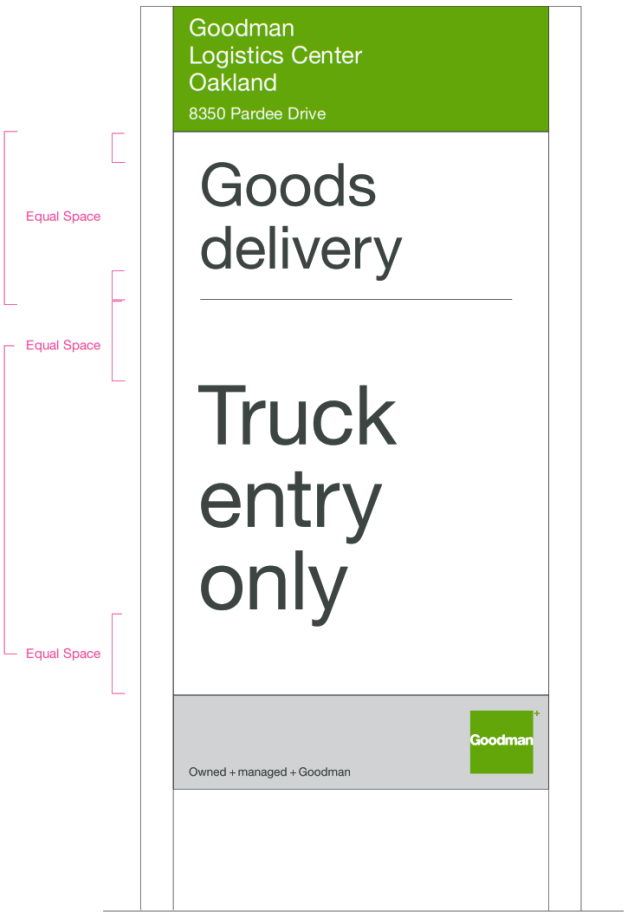
Source: Goodman Limited

13.4 Information or Directional Sign

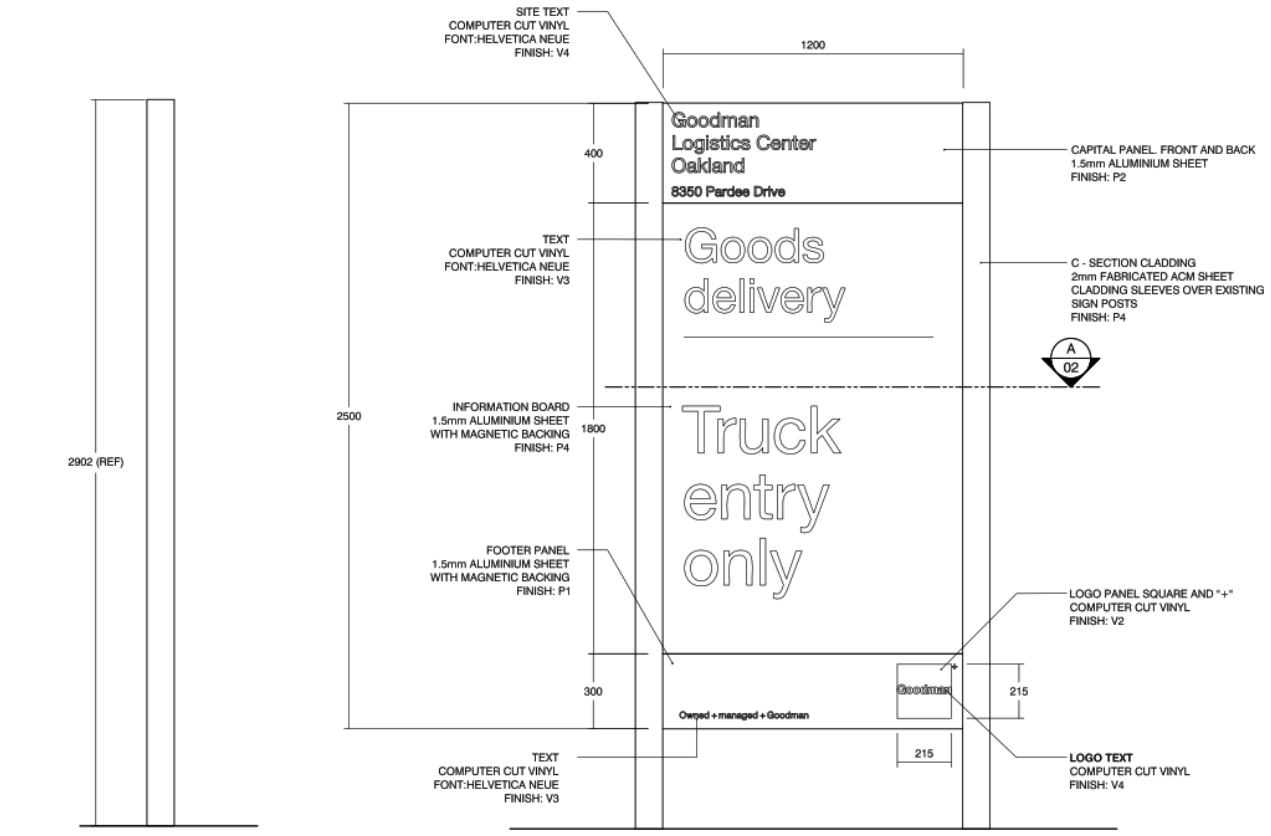
a) **Location.** The information or directional signage shall be located adjacent to lot entry points or other prominent areas within the lot to assist visitors and delivery vehicles..

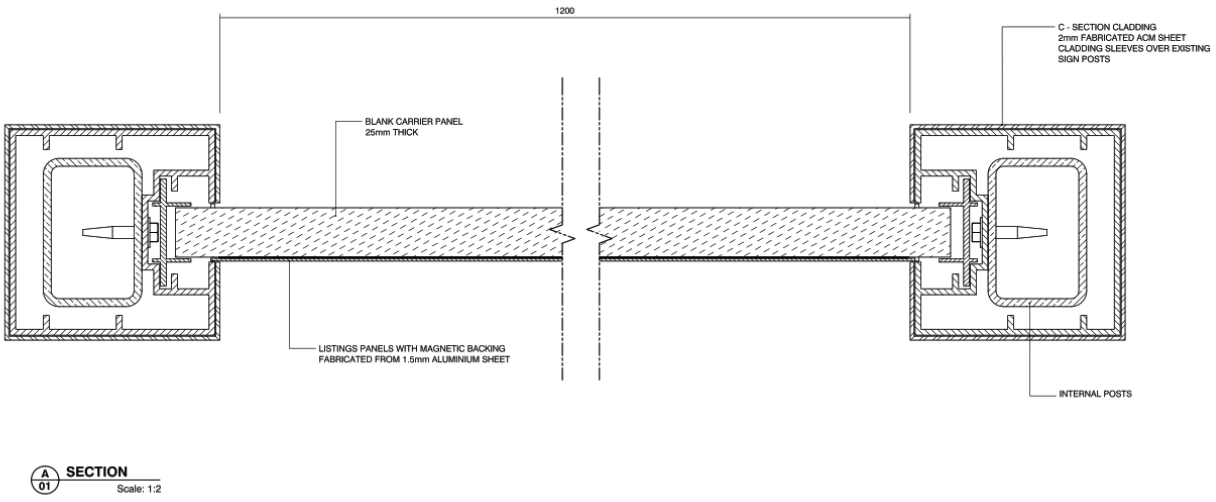
b) **Specs.** The sign shall comprise of a single free standing sign, similar to the tenant entry point sign, whereby:

- total height does not exceed 1.5m, and
- total area of the sign face does not exceed 1.5m^2



Source: Goodman Limited



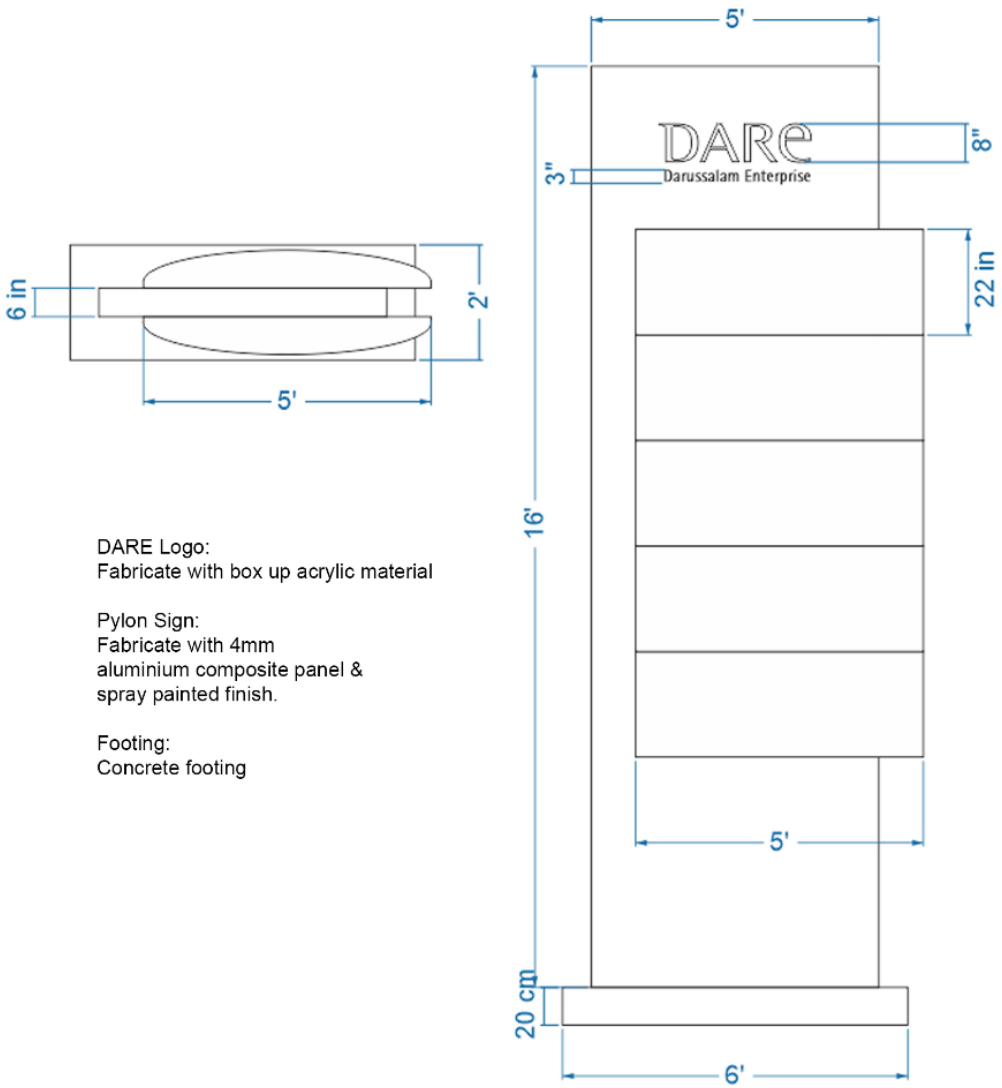


Source: Goodman Limited

13.5 Estate Totem Monolith Sign

a) **Estate Sign**. For large multi-tenant sites DARe would usually install an estate totem monolith directory sign. These signs would usually have tenant names and logos displayed.

b) **Signage Examples**



DARe Monolith Plinth Directory

14 ENERGY EFFICIENCY AND CONSERVATION

14.1 Energy Conservation Guidelines

a) **Objective**. Buildings should be designed to be as energy efficient and healthy as reasonably possible.

b) **Cluster Activities.** Look to cluster compatible uses together to make shared or common services viable (cold stores, freeze drying, cryo-vac, inert gas and vacuum packing, packing and refrigerated transport services, etc.).

c) **Use of Natural Lighting**. Maximise natural light, such as incorporating transparent corrugated sheets in factory/warehouse roofs and walls, and invest in automated ventilation and temperature control devices.

d) **Low Energy Lights**. Use low energy lighting (preferably LED), especially for any amenity or security night-time, and car parking areas. Incorporate with control sensors to minimise energy waste.

e) **Use of Natural Ventilation**. Maximise natural ventilation, such as incorporating low level louvres in factory/warehouse walls in conjunction with roof extract vents/fans. This should allow for cross ventilation between the walls and allow hot air to escape through the upper vents.

f) **Windows**. Ensure windows related to offices or staff/customer use areas open to green space where appropriate, and can be easily opened to help control internal heat and ventilation.

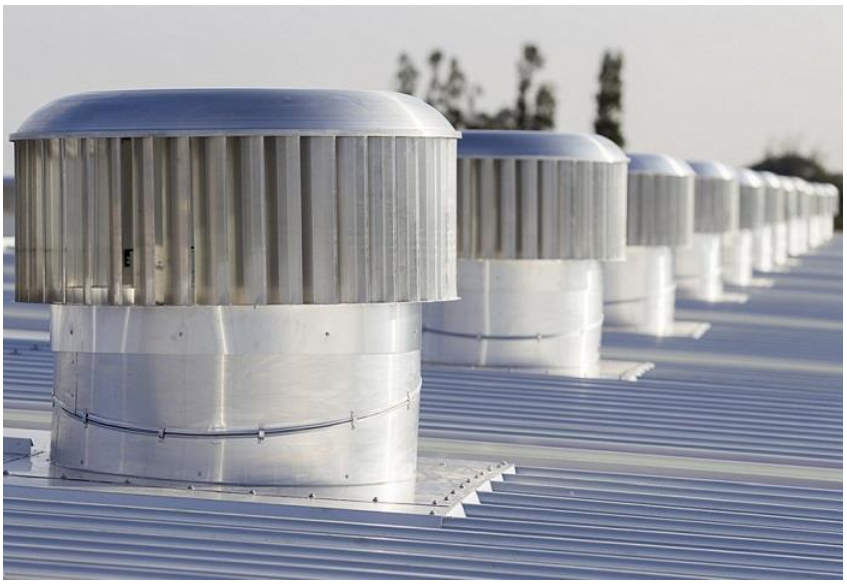
g) **Construction and Waste Management**. Use construction and waste management plans when building. For further detail on improving resource efficiency in building design, refer to the Rebri guidelines at http://www.rebri.org.nz

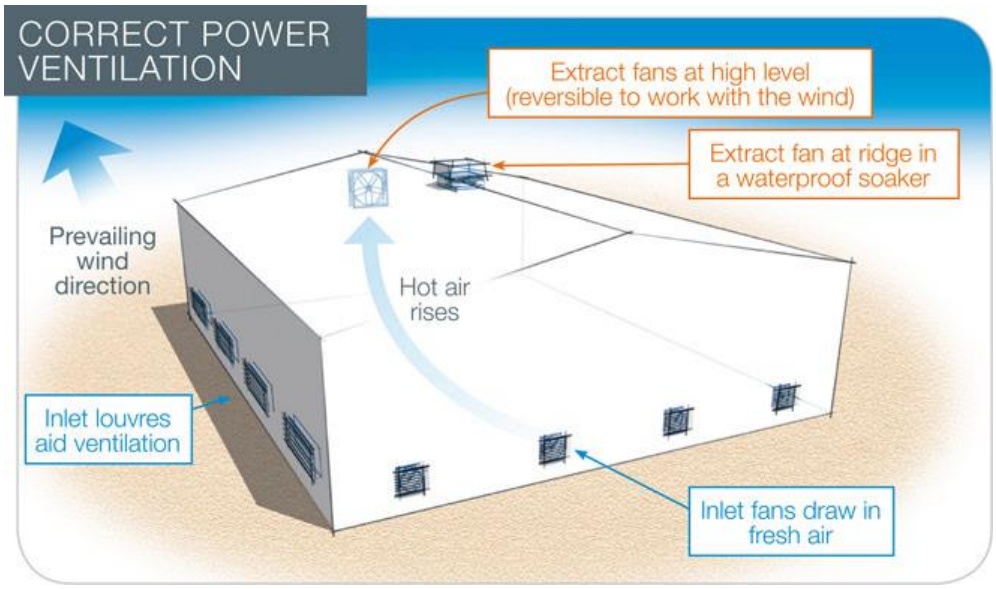
h) **Solar Panels**. Consider the use of photovoltaic cells on large roof areas to reduce the demand from the electricity grid.

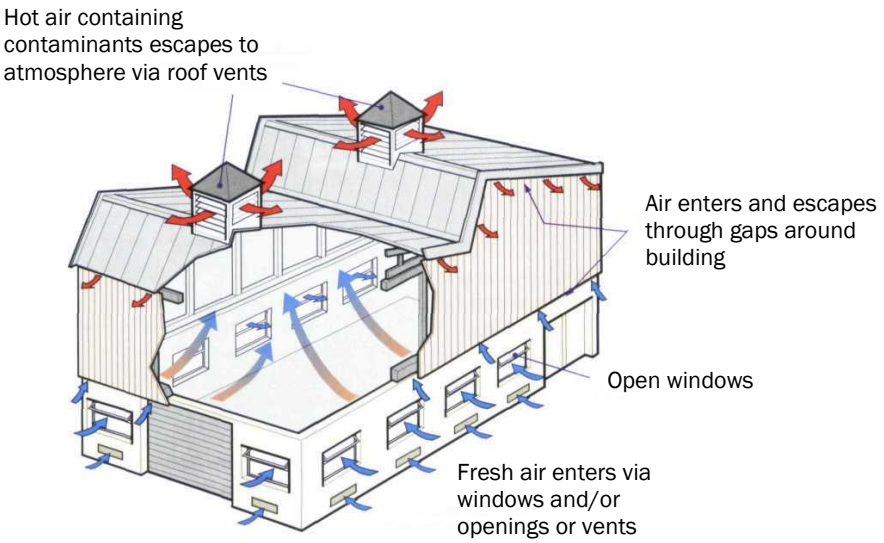
i) **Sustainability**. For further guidance view the info on Sustainable Built Environment by the Singapore Building and Construction Authority at https://www.bca.gov.sg/Sustain/sustain.html

j) **Examples of Natural Lighting**

k) **Examples of Natural Ventilation**







l) **Examples of Sunscreens**

m) **Examples of Solar Panel Installations**

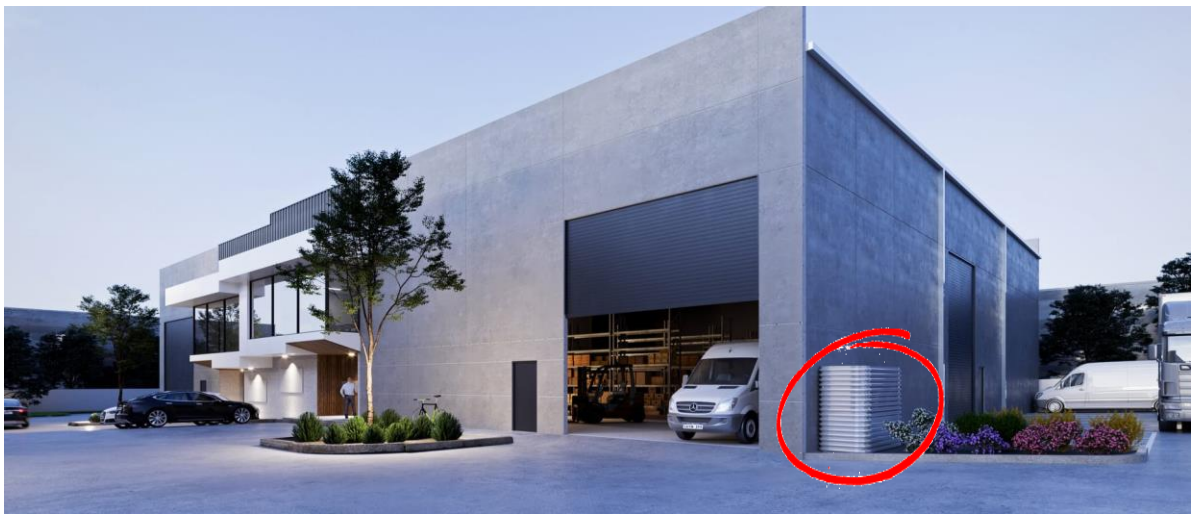
14.2 Water Conservation Guidelines

a) **Objective**. Buildings should be designed to conserve water as reasonably possible. This could be done be implementing a rainwater harvesting system.

b) **Rainwater Harvesting Systems**. This system could capture roof rainwater runoff which is stored and used for flushing of toilets, washing etc. A separate system could be used to capture and store compound stormwater runoff which could be used for landscaping irrigation or washing of vehicles etc.

c) **Rainwater.** Rain-water, storm-water, drain-water or any other liquid discharge from a lot, plot or site shall not be discharged over, into or through an adjoining site. Any such liquid shall be contained and discharged appropriately.

d) **Examples of rainwater harvesting systems**:



14.3 Low Impact Design

a) **Objective**. Minimise the rainwater/stormwater runoff caused by large impermeable surface areas in industrial developments, limiting the viability of on-site water quality initiatives.

b) **Rain Tanks**. The main focus in employment areas is on water quantity: peak flow attenuation by way of rain tanks will be the default minimum. Ensure rain tanks are located to allow easy maintenance in the future.

c) **Rainwater Harvesting**. Use captured rainwater to supply on-site landscaping and toilets. Refer to Water Conservation Guidelines above.

d) **Swales**. Swales and rain gardens can be more viable if shared between sites along boundaries, collecting water from parking and manoeuvring areas. Refer to Carpark Landscaping, and General (Medium) Industrial site layout above.

e) **Sharing**. Shared spaces will maximise the use of such areas and can offer excellent amenity.

f) **Semi-Permeable Pavers**. Use semi-permeable paving for car parking spaces.

g) **Minimise Grass Areas**. Use low-maintenance landscaping and shrubs in preference to large areas of grass.

h) **Source Locally**. Use locally-sourced durable materials to reduce impact for transportation.

i) **Paints**. Avoid zinc or lead based paints on roofs and other areas as this incrementally degrades waterways and coastal marine areas.

j) **Oil Interceptor Traps**. Ensure paint, oil, and other hazardous contaminants do not enter waterways. Capture these on-site and provide for their storage and safe eventual disposal.

k) **Green Roofs**. Consider implementing green roofs in higher-value premises such as offices. It provides excellent insulation, reduces the thermal footprint of buildings, and can offer excellent staff amenity.

Semi-permeable pavers help to manage stormwater issues and can add visual interest to an industrial site

Incorporating on-site landscaping with stormwater management. This example captures runoff from parking areas, channelling it to a rain garden via kerb cuts to filters before discharging to the piped system.

15 STORAGE AND COLLECTION OF WASTES, SERVICING AND LOADING

15.1 General

a) **Objective.** Storage and service areas must not affect the visual amenity of the building. Service and deliveries are best suited to the side or rear of the site well away from the frontage.

b) **Location.** Any outdoor storage or rubbish collection areas that directly face and are visible from an adjacent road, residential zone, school zone, commercial zone, open space zone, rural zone, adjoining a boundary with, or on the opposite side of the road from, an industrial zone, must be screened from those areas.

c) **Screening**. Carefully screen service and loading areas to maintain visual amenity and practical on-site security and safety. This could be achieved by means of a solid 1.8m high wall or 1.8m permeable fence with heavy landscaping.

d) **Separation for Safety/Privacy**. Consider how to preclude public access from waste and service areas which may be physically dangerous or compromise privacy.

e) **Security**. Provide a secure area for storage and collection of wastes including hazardous wastes and recycling. This area should be located internally, serviced by a vehicle entering the building (via a service bay), or to the side or rear.

f) **Separate Access**. For larger activities with a high delivery, servicing component look to provide the 'entry-in' separate to the 'exit-out' to ensure the efficient circulation and manoeuvring of heavy vehicles.

g) **Avoid Blockage**. Ensure that the storage of client vehicles for yard based services and retail never blocks on-site manoeuvring space or requires vehicles to use the street.

h) **Servicing and Emergency Vehicles**. Make adequate provision for servicing and emergency vehicle access.

i) **Loading Bays**. Provide dedicated loading bays for large trucks.

j) **Chemicals**. For the storage of chemicals and materials (including loading areas) containment facilities shall be provided to prevent entry of liquids or solids to external storm water drainage systems. Containment facilities shall:

- Have adequate capacity to contain spills of stored materials
- Have walls and floors of impervious construction to retain the stored materials
- Include waste retaining sump, holding tank or pumping sump that is capable of containing spills
- Provide adequate access for the removal of water or spilt materials, and
- Be protected and secured from public access and identified with appropriate signage

15.2 Waste Management

a) **Cleanliness**. The industrial building and its surrounding area should be kept clean from any waste resulted from the industrial activities. It is important to ensure the landfills are sufficient and satisfactory in terms of storage, collection and disposal.

a) **Refuse Area**. Designated and appropriately screened areas for waste recycling shall be provided. Minimum space required is 1m x 1.5m and 1.8m high and at least two garbage cans that have a minimum capacity of 240 litres shall be provided in the storage bin. The floor and the wall shall be tiled as required by the Ministry of Health. For ease of cleaning the area, a tap water shall be provided and a removable grating on the front to clean the drain. Waste management areas shall be:

- Located so as not to cause offence to the public with regard to smell, visual appearance and noise
- Protected and secured from public access
- Located away from storm water drains; and
- Not be located immediately adjacent to street boundary but rather behind the warehouse/factory building line

b) **Heavy Industry**. For heavy industry, a garbage collection centre may be required to accommodate the large quantity of the waste. Larger waste or chemicals shall be disposed at a suitable place.

c) **Disposal**. Disposal of solid waste, chemicals or liquids directly to the drains is strictly prohibited.

A false façade and gate provides for a very secure, safe, and screened servicing, loading/unloading, and storage/collection of wastes away from the street.

Servicing and storage of containers is located inconspicuously to the side of the building with an effort directed towards focusing attention to the building frontage.

15.3 Outdoor Storage

	Light Industrial IL	Medium Industrial IM	Heavy Industrial IH	Special Industrial IS
Outdoor Storage				
Area (% of plot area)	5%	10%	20%	30%
Within front yard (7.5m from the road)	×	×	×	×
Within side and rear yards (screened from public view)	✓	✓	✓	✓
Material storage height limit	1.8m	2.4m	3.0m	6.0m

a) **General**. Outdoor storage shall be minimised as much as possible. Materials must be stored in a planned and orderly manner that does not endanger employee safety.

b) **Materials and Equipment**. Outdoor storage materials includes raw materials, manufactured goods, parts, equipment, vehicles being repaired, and other non-biodegradable material.

c) **Screening**. Outdoor storage areas shall be screened from public view, i.e. roads, adjoining residential properties, adjoining arterial road, and adjoining waterways, by means of trees or a fence/wall.

d) **Location**. Outdoor storage shall be limited to the rear (preferably) and side yards of the property, behind the factory/warehouse building line, in properly designated areas and appropriately screened off from public view. Required parking and landscape treatment areas can never be used for outdoor storage. The placement of outdoor storage shall not impede the safe access, movement, and parking of vehicles within the lot.

e) **Setbacks**. Storage areas shall comply with the setbacks of the zoning area.

f) **Enclosed Storage.** Unless allowed by zoning, all storage shall occur within an enclosed building or buildings.

g) **No Storage within Road Reserve.** Under no circumstances shall materials/waste be stored, even temporarily, within the road reserve, whether during construction or operations of the facility or at any other time.

h) **Business Related.** All outdoor storage shall be incidental and directly related to the primary business being conducted on that property. Outdoor storage shall not be the primary use of any property and the leasing of space for outdoor storage is prohibited unless the outdoor storage is an accessory use to a business operated by a tenant who leases any building located on such property for the operation of the tenant's business or as permitted by the Landlord.

i) **Principal Structures.** No outdoor storage shall occur on a lot that does not contain a building unless said outdoor storage is used by an adjacent property lessee and is directly related to such adjacent property lessee's business.

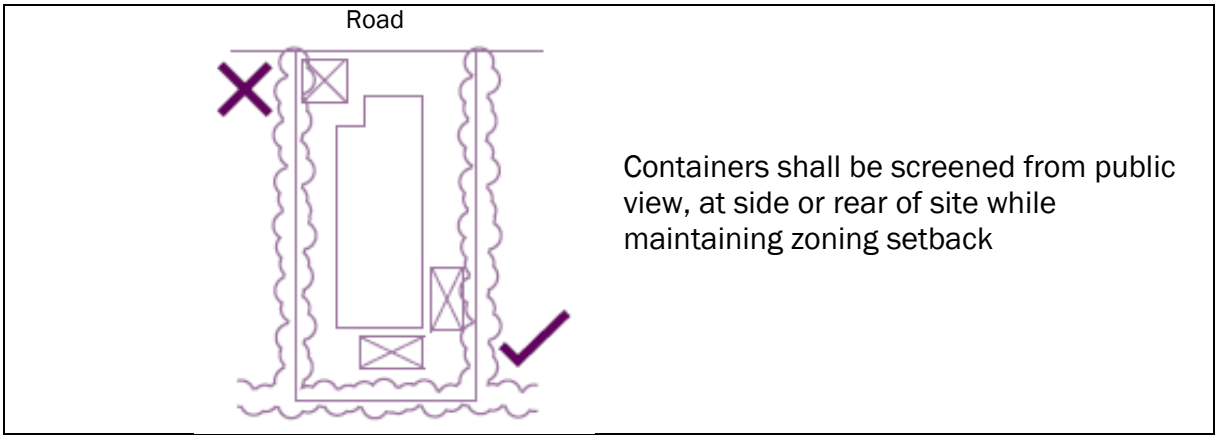
j) **Reduce Fire Risks.** Goods, combustible pallets, waste containers etc. stored outside in the yard increase the risk of fire. Arson is the most common fire source, but hot work, cigarette butts, self-igniting materials, sparks, friction, fireworks, engines, vehicles and lightning strikes have also started fires in yards. To reduce the risk of fire:

- Remove all excess storage and waste from the yard. This includes items such as idle pallets, discarded crates, dismantled machine parts, excess materials from installation or construction work, items left by contractors, and waste from production or other operations.
- The storage of combustibles should not be allowed closer than 10 metres from the buildings, or 15 metres if the walls contain combustible insulation. Plan carefully how to store items that cannot be stored inside. The preferred way is to store items inside purpose-built sheds and containers made of metal or other suitable materials. If the outside wall is a classified fire wall without any openings, items can be stored next to it.
- Do not store any combustibles under canopies, unless the sprinkler protection is designed for this specific fire load.
- A minimum distance of 10 metres should also be kept from public highways and possible ignition sources such as incinerators.
- Ensure that waste is regularly transported away to prevent the overfilling of waste containers.
- If smoking is allowed in the yard, choose and mark carefully the locations where smoking is permitted, and ensure that there are fire-proof ash receptacles provided.
- Prohibit the parking of cars and other motor vehicles alongside buildings or stored goods. Preferably the cars should be parked outside the fenced area, and heavy equipment should be parked in purpose-built garages or in clearly marked safe places in the yard.
- Keep an eye on the parking of vehicles during coffee and other breaks. They should never be left closer than 10 metres away from combustible structures or materials.
- Regular inspections or surveillance should be in force.

k) **Site Plans.** Site plans for outdoor storage shall be provided to the Landlord, when required, and shall depict the following:

- Exact location of proposed outdoor storage area;
- Dimensions and locations of aisles and circulation paths in the outdoor storage area for general and emergency access;
- Square metre area of proposed outdoor storage area;
- Location of the fence, including pedestrian and vehicular gates;
- Height and type of fence proposed, including an elevation of the fence;
- Description of the material proposed to be stored;
- Height of the material and/or proposed stacking height of the material proposed to be stored; and
- Description of the proposed surface on which material will be stored, and in the circulation and emergency access aisles.

Road



l) **Examples of Outdoor Storage**

15.4 Shipping Containers

	Light Industrial IL	Medium Industrial IM	Heavy Industrial IH	Special Industrial IS
Shipping Containers				
Not exceeding total Outdoor Storage Area (% of plot area)	5%	10%	20%	30%
Within front yard (7.5m from the road)	×	×	×	×
Shipping container located short term within side or rear for loading/unloading (screened from public view)	✓	✓	✓	✓
Shipping container located long term within side or rear used as storage (screened from public view)	×	✓	✓	✓
Shipping container storage stacking height (no. of containers)	1	2	4	6

a) **Containers.** These consist of containers, shipping containers or other portable storage containers.

b) **Screening.** Containers shall be screened from public view, i.e. roads, adjoining residential properties, adjoining arterial road, and adjoining waterways, by means of trees or a fence/wall.

c) **Location.** Containers shall be located at the rear (preferred) or side of a business but never in the front yard.

d) **Setbacks.** Containers shall comply with the setbacks of the zoning area.

e) **Short Term Loading/Unloading.** Containers may be located on site for loading and unloading purposes for up to 7 days. Any time beyond this would be considered long term storage, which is not allowed in Light Industrial zones. Containers must not encroach upon any existing car-parking spaces.

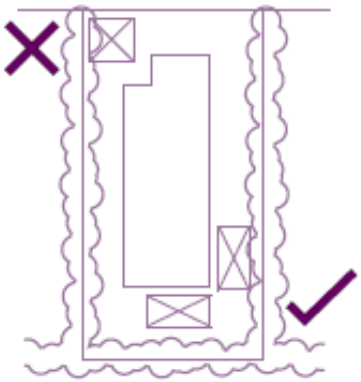
f) **Long Term Storage.** Containers may be used as long term storage (beyond 7 days) but must comply with the guidelines in this section.
- Containers must not be located over water, wastewater or stormwater mains, dedicated drainage, effluent treatment disposal areas/systems, gas lines or underground power lines
- Setbacks to overhead power lines must comply with the requirements of the relevant electricity authority
- Containers must be screened from the streetscape by suitable vegetation or other appropriate screening
- Containers must be painted a neutral colour to blend with the surrounding natural environment and built structures, maintained in a good condition and corrosion/deterioration kept to a minimum
- Containers must not contain sanitary facilities
- Containers must be placed on flat, solid ground
- Containers must not be used to store contaminated or hazardous materials
- Containers must not encroach upon any existing car-parking spaces

g) **IL Zoning Districts.** Long term storage of containers is not permitted.

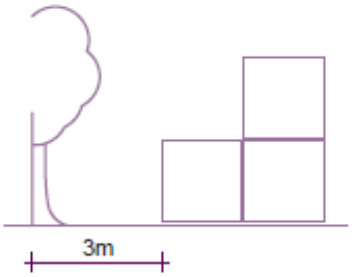
h) **IM, IH, and IS Zoning Districts.** In addition to not being visible from an adjacent road or adjacent non-industrial properties and public right-of-way, containers shall not be visible to a pedestrian at ground level looking at the shipping container area from a public facility such as a city park, trail, and open space, or from the first floor of any commercial building or other building not in the industrial zone to the maximum extent possible. Containers may be stacked to the allowable height if done in a manner that ensures safety. Any items stacked higher than the fence must be placed in such a manner that the items cannot fall and land on or outside of the fence.

i) **Site Plans.** Site plans for outdoor storage shall be provided to the Landlord, when required, and shall depict the following:
- Exact location of proposed outdoor storage area;
- Dimensions and locations of aisles and circulation paths in the outdoor storage area for general and emergency access;
- Square metre area of proposed outdoor storage area;
- Location of the fence, including pedestrian and vehicular gates;
- Height and type of fence proposed, including an elevation of the fence;
- Description of the material proposed to be stored;
- Height of the material and/or proposed stacking height of the material proposed to be stored; and
- Description of the proposed surface on which material will be stored, and in the circulation and emergency access aisles.

Road



Containers shall be screened from public view, at side or rear of site while maintaining zoning setback



Stored shipping container stacks shall:

- Not exceed the designated height
- Be appropriately secured, and
- Be stacked in a pyramid formation from the boundaries with the closest tier to the boundary not exceeding the height of one container

j) **Examples of Containers Storage**

15.5 Recycling Plants and Stockpiles

	Light Industrial IL	Medium Industrial IM	Heavy Industrial IH	Special Industrial IS
Stockpiles				
Area (% of plot area)	×	20%	30%	40%
Within front yard (7.5m from the road)	×	×	×	×
Within side and rear yards (screened from public view)	×	✓	✓	✓
Stockpile height limit	×	2m	5.0m	5.0m

a) **Guideline Reference Documents.**

i. **Environmental Guidelines, Resource Recovery and Waste Transfer Depots** – Environmental Protection Agency, Government of South Australia
https://www.epa.sa.gov.au/files/4771347_rrwt.pdf

ii. **Waste definitions guideline** – Environmental Protection Agency, Government of South Australia
https://www.epa.sa.gov.au/files/4771336_guide_waste_definitions.pdf

iii. **Undercover storage requirements for waste/recycling depots** – Environmental Protection Agency, Government of South Australia
https://www.epa.sa.gov.au/files/4771348_info_storage_waste.pdf

iv. **Guideline for stockpile management: Waste and waste derived products for recycling and reuse** – Environmental Protection Agency, Government of South Australia
https://www.epa.sa.gov.au/files/4771349_guidelines_stockpile.pdf

v. **Best Practice Guidelines for Tyre Storage and Fire and Emergency Preparedness** – Tyre Stewardship Australia
https://www.epa.sa.gov.au/files/4771349_guidelines_stockpile.pdf

b) **General.** Recycling facilities and stockpiles shall comply with the above reference documents and should be minimised as much as possible. Materials must be stored in a planned and orderly manner that does not endanger employee safety.

c) **Zoning.** Generally, recycling plants and tyre processing plants (and other combustible waste) shall be located at least 300m and 500m respectively from schools, residences, water bodies, major transportation routes and other sensitive receptors.

d) **Material.** Stockpile material includes non-hazardous and non-radioactive, raw materials, parts, waste, equipment, and vehicles being scrapped, tyres, recycling materials, and other non-biodegradable material.

e) **Waste.** Waste includes leftover, unwanted, surplus materials whether of value or not. To be suitable for reuse, waste needs to be processed into a recycled product that meets an appropriate standard.

f) **Stockpiling Waste.** To responsibly stockpile waste or waste derived products you need to:

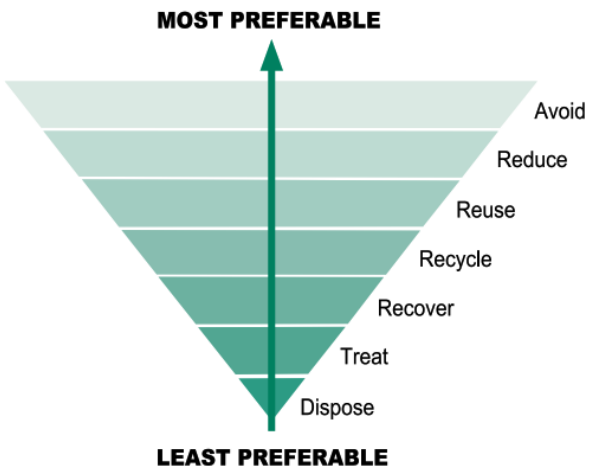
i. receive, store, treat, process or dispose of the waste (including waste for reuse) in an appropriate manner
ii. only store waste temporarily
iii. have an immediate market for the waste derived product
iv. implement appropriate environmental controls and waste segregation
v. dispose of residual wastes
vi. comply with legal obligations.

g) **Legal Obligations.** It is important to be aware of the legal obligations associated with stockpiling of waste, including:
i. having authorisation to receive, store, treat or dispose of waste
ii. conducting activities such that they do not cause or risk environmental harm
iii. meeting your environmental duty.

h) **Managing Risk.** Appropriate practices for stockpiling waste will help manage the environmental and human health risks such as:
i. contaminated runoff
ii. pollution of groundwater
iii. dust
iv. odour
v. vermin
vi. instability
vii. fire.

i) **Waste Stockpile Checklist.**
i. Do I know what is in my stockpile?
ii. Do I have relevant approvals in place?
iii. Does the waste need processing and sorting?
iv. Have I implemented appropriate environmental, human health and safety procedures and controls?
v. Do I have an immediate market available?
vi. Have I conducted sufficient sampling and assessment to determine risks?
vii. Is the waste or waste derived product fit for purpose?
viii. Have I put materials flow controls in place to avoid excessive accumulation?
ix. Have I contacted the JATRe and SHENA?

j) **Waste Hierarchy.** The hierarchy is a nationally and internationally accepted guide to prioritising waste management practices to achieve the optimal environmental outcome. Avoidance of waste is the highest point on the hierarchy and the most preferred option for waste management practices.



16 LABOUR QUARTERS

16.1 General

a) **Objective.** This guidance note addresses the standards that should be applied to the provision of permanent labour quarters/ workers' accommodation in industrial sites.

b) **No Construction Quarters.** In general construction worker's camps, if required, shall be located off site and not within an industrial site area.

c) **Zoning.** Permanent labour quarters may be allowed within light, medium and heavy industrial sites/parks as long as the following, and relevant authority, requirements are achieved.

d) **General Standards and Obligations.** Provide and maintain:
- sufficient and proper safe and hygienic accommodation;
- sufficient supply of safe and wholesome water;
- sufficient and proper sanitary arrangements;
- in accordance with Brunei's labour laws, building codes, workplace health and safety orders and any other relevant authority requirements.
- Where a tenant provides accommodation for workers, the accommodation shall be appropriate for its location and be clean, safe and, at a minimum, meet the basic needs of workers. In particular, the provision of accommodation shall meet national legislation and international good practice in relation, but not restricted, to the following: the practice for charging for accommodation; the provision of minimum amounts of space for each worker; provision of sanitary, laundry and cooking facilities and potable water; the location of accommodation in relation to the workplace; any health, fire safety or other hazards or disturbances and local facilities; the provision of first aid and medical facilities; and heating/cooling and ventilation. Workers' freedom of movement to and from the employer-provided accommodation shall not be unduly restricted.

e) **Building Regulations.** The labour quarters shall be designed and constructed as a permanent residential dwelling meeting all the residential standards, with a clear (roof eave to eave, or roof eave to boundary) 6m separation between adjacent buildings and boundaries. The labour quarters is also required to have an occupational permit granted by the relevant authority.

16.2 Labour Quarters Development Controls

	Light Industrial IL	Medium Industrial IM	Heavy Industrial IH	Special Industrial IS
Labour Quarters				
Temporary construction labour quarters	×	×	×	×
Permanent labour quarters	✓	✓	✓	×
Labour quarters GFA compared to main factory/warehouse GFA	15%	15%	15%	-
Clear distance from roof eave to boundary	6m	6m	6m	6m
Clear distance from roof eave to roof eave of other building	6m	6m	6m	6m

a) **Location.** Labour quarters shall be generally be located to the rear (preferable) or side of a lot out of public view. Where the lot abuts up to an arterial road or residential zone, or other public space the labour quarters shall be located at least 12.5m from the abutting boundary and out of view of the public and neighbouring properties.