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Prepared for:
Mt Atkinson Holdings Pty Ltd

2 March 2021

Traffic Impact Assessment

Background report for the Urban
Design Framework for:

Hopkins Road Business Precinct,
Mt Atkinson

Ratio: Traffic

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Our reference 16918T REP001F03
UDF Hopkins Road Business Precinct,
Mt Atkinson

Version	Date	Reason for Issue	Prepared By	Reviewed By
D02	19/07/2020	Draft	B. Thomson N. Chewta	H. Marshall
F01	5/8/2020	Final	B. Thomson N. Chewta	H. Marshall
F02	3/9/2020	Final-revised plan	B. Thomson N. Chewta	H. Marshall
F03	2/3/2021	Additional comments from Council	B. Thomson N. Chewta	H. Marshall

Directory Path	Y:\16501-17000\16918T - 1-65 Hopkins Road, Mt Atkinson\Work\Reports\16918T REP001F03 UDF Hopkins Road Business Precinct, Mt Atkinson.docx
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1 Introduction:

Ratio Consultants have been engaged by Mt Atkinson Holdings, to prepare a Traffic and Movement Assessment to accompany the Urban Design Framework (UDF) study for the area designated as Hopkins Road Business Precinct west of Hopkins Road, in Mt Atkinson.

The subject site is in the City of Melton, located within the Mt Atkinson and Tarneit Plains Precinct Structure Plan (PSP). In the preparation of this assessment, the following documents have been referenced:

- Mt Atkinson and Tarneit Plains Precinct Structure Plan dated June 2017 and Amended January 2020.
- Mt Atkinson and Tarneit Plains Infrastructure Contributions Plan (ICP), dated January 2020.
- Melton Planning Scheme.
- Concept Plans for the study area prepared by NH Architects, dated May 2020.
- Stockland Mt Atkinson estate road design details and abutting land uses as relevant.

In the course of preparing this assessment, the relevant documentation has been reviewed, the proposed and approved road network in the vicinity of the site and relevant traffic data assessed.

The following report is a background study of the traffic, parking and access implications associated with the proposed Hopkins Road Business Precinct Urban Design Framework (UDF).

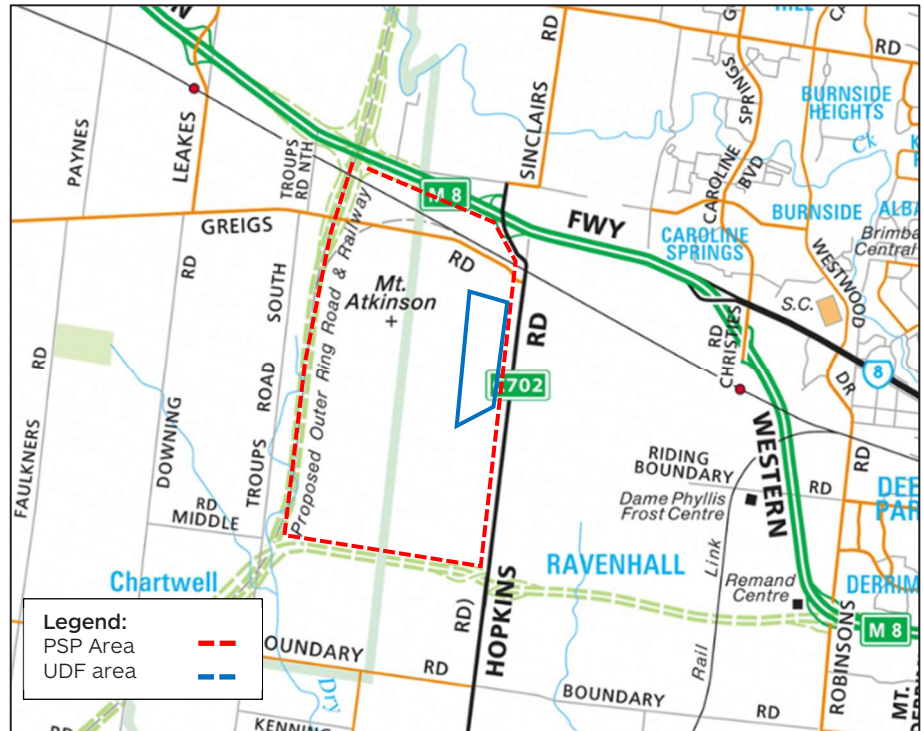
2 Existing Conditions:

2.1 Site Location

The Hopkins Road Business Precinct UDF area is located on the western side of Hopkins Road south of Grand Boulevard as shown in Figure 2-1. The site is located within the Mt Atkinson and Tarneit Plains Precinct Structure Plan (PSP) area and is within the City of Melton.

The overall PSP area is generally bound by the Western Freeway to the north, Hopkins Road to the east, Middle Road (Proposed East West Bypass Link) to the south and the future Outer Metropolitan Ring Road (OMR) to the west.

Figure 2-1: Locality Plan



Source: www.melways.com.au

The surrounding area is currently being developed for residential use, with a number of roads and dwellings under construction.

The preceding plan also shows the location of the future Outer Metropolitan Ring Road (OMR) that will form an outer suburban link from the Princes Freeway to the Hume Freeway. As part of the OMR project, a new freeway standard link will be provided between the OMR and the Western Freeway roughly following the Middle Road alignment east west.

The Hopkins Road Business Precinct is bordered by Grand Boulevard to the north, Hopkins Road to the east, a transmission power line easement to the south and McKinley Drive to the west, as shown in Figure 2-2.

Figure 2-2: Aerial View of Existing Conditions



Source: *nearmap 15/5/2020*

Future and existing land uses abutting the study area are a mix of commercial, residential and resource extraction including future mixed use development to the north, the existing Boral Deer Park Quarry and Ravenhall Landfill site to the east, future industrial use to the south and residential development to the west.

The Boral Quarry site also contains asphalt and concrete plants, as well as landfill and the quarry. Access to the Boral site is primarily via Christies Road, with an additional access from Hopkins Road just south of Riding Boundary Road. There is no access to the Boral site along Hopkins Road opposite the UDF area.

2.2 Road Network

Western Freeway

The Western Freeway is generally aligned east west between the West Gate Freeway in Derrimut and its continuation to the west serving regional Victoria.

The Western Freeway provides convenient access to Melbourne and the Western Ring Road.

Access to the Western Freeway is provided via the Hopkins Road interchange allowing fully directional access to the freeway to and from Hopkins Road.

Hopkins Road

Hopkins Road is a Road Zone 1 (RZ1) managed by VicRoads, generally aligned north south between Neale Road, just north of the Western Freeway and Boundary Road to the south. Hopkins Road continues south as Derrimut Road to the Princes Highway in Werribee.

Hopkins Road / Derrimut Road currently functions as the main north south connection between Werribee and the Western Freeway.

Hopkins Road reserve is currently 20 metres wide containing a single carriageway with one traffic lane in each direction. Hopkins Road adjacent to the UDF area has a high voltage power line down the eastern side and is bordered by a high pressure gas easement on the western side, also 20 metres in width. Hopkins Road is ultimately proposed to be a 6 lane arterial, with all future widening to occur to the east. Widening and duplication of Hopkins Road are the responsibility of the Roads Authority.

Hopkins Road has a posted speed limit of 70kph in the vicinity of Greigs Road and Grand Boulevard, increasing to 80kph south of Grand Boulevard.

A typical view of Hopkins Road in the vicinity of the site is shown in Figure 2-3.

Figure 2-3: Hopkins Road, looking south, south of Greigs Road.



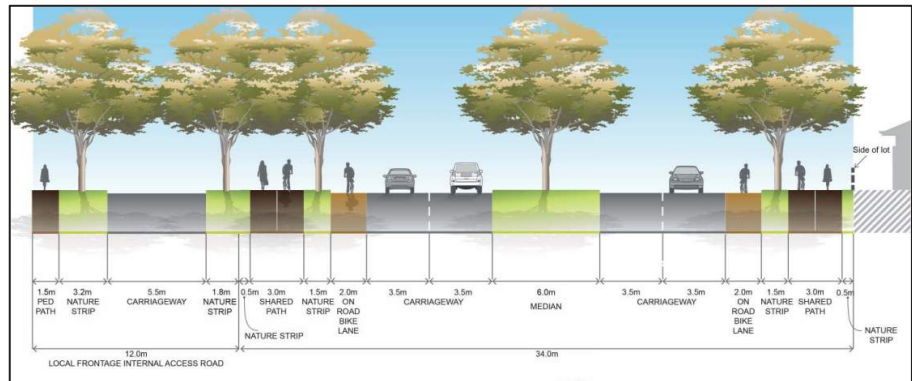
Grand Boulevard

Grand Boulevard is a Secondary Arterial Road aligned east-west between Hopkins Road and the existing Greigs Road alignment. Grand Boulevard effectively becomes the extension of Greigs Road in the future. The existing Greigs Road / Hopkins Road intersection will ultimately be removed.

Grand Boulevard adjacent to the subject site, is being constructed in its ultimate 4 lane cross section with on road bike lanes in each direction plus shared paths on both sides. The cross section will reduce to its interim form with a single carriageway, providing one lane in each direction west of the Major Activity Centre.

The ultimate cross-section for Grand Boulevard is shown in Figure 2-4.

Figure 2-4: Cross section of Grand Boulevard

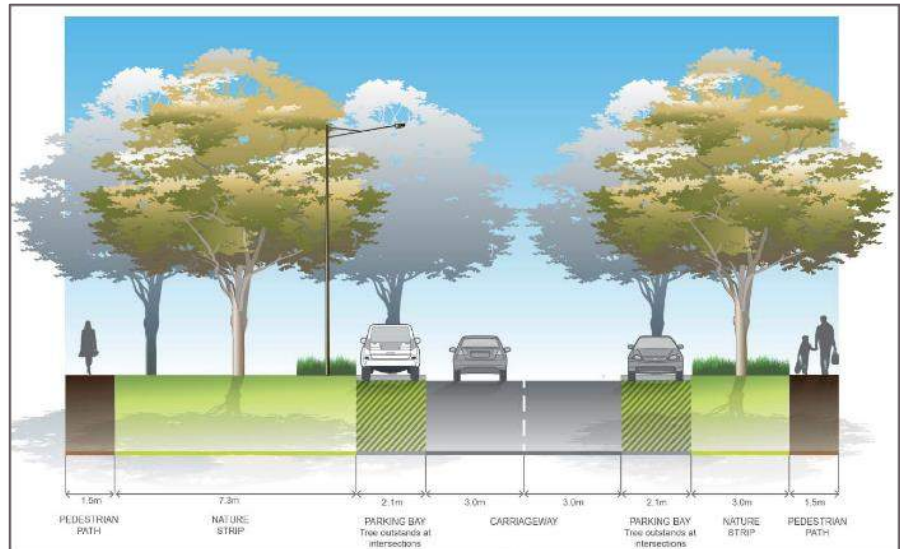


McKinley Drive

McKinley Drive is a designated as a Green Link Key Local Access Street aligned in a north-south direction between Grand Boulevard and Kirkpatrick Boulevard to the south.

The Green Link cross section is shown in Figure 2-5, which includes one traffic lane in each direction, indented parking along both sides of the street and footpaths on both sides. The wide landscape buffer of 7.0 metres width will be located along the eastern side of McKinley Drive directly abutting the future lane uses within the Hopkins Road Business Precinct.

Figure 2-5: Cross Section of McKinley Drive facing South

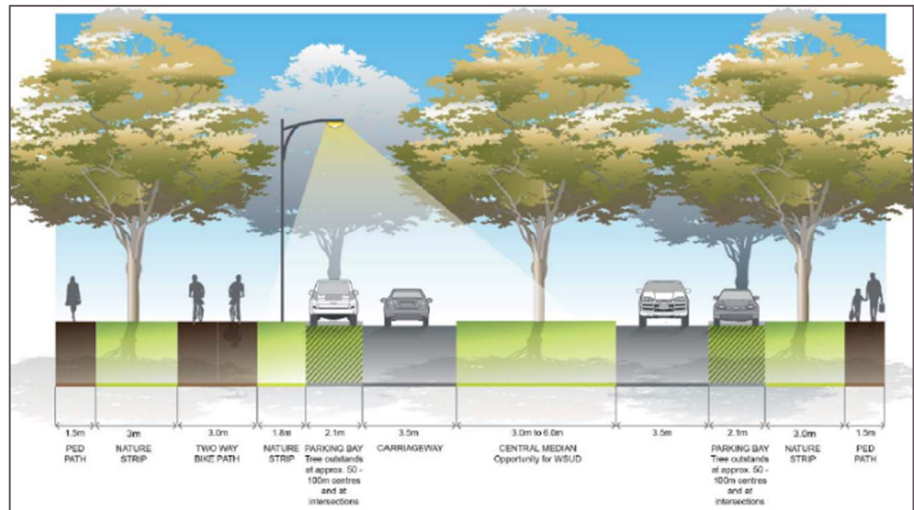


Kirkpatrick Boulevard

Kirkpatrick Boulevard is a Boulevard Connector aligned east-west between Hopkins Road and Mt Atkinson Road, continuing to the west as Highline Boulevard.

Kirkpatrick Boulevard is proposed to have a carriageway width of 3.5 metres and indented parking bays, either side of a central median. Pedestrian paths are provided on either side of the road and a two-way off road bicycle path will be included on the southern side of the boulevard, as shown in the cross-section of Figure 2-6.

Figure 2-6: Cross Section of Kirkpatrick Boulevard facing West



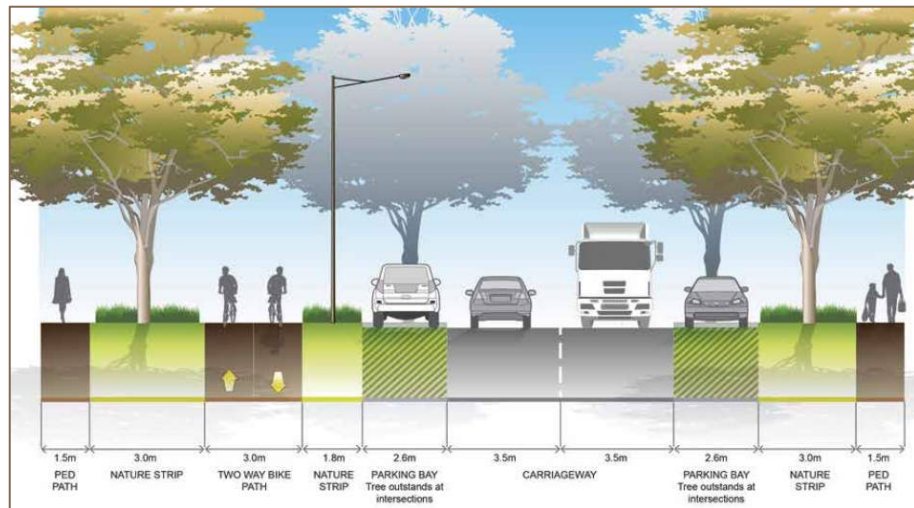
Kirkpatrick Boulevard is currently under construction and will be built by the neighbouring Mt Atkinson residential estate.

Strathbogie Boulevard

An industrial Connector Road known as Strathbogie Boulevard is proposed through the centre of the UDF area, aligned north south between Grand Boulevard and Kirkpatrick Boulevard to the south.

The cross section of Strathbogie Boulevard is shown in Figure 2-7 and comprises one traffic lane in each direction, wide indented parallel parking on both sides, footpaths on both sides of the road as well as an off road bicycle path.

Figure 2-7: Strathbogie Boulevard – Industrial Connector Cross Section



2.3 Public Transport

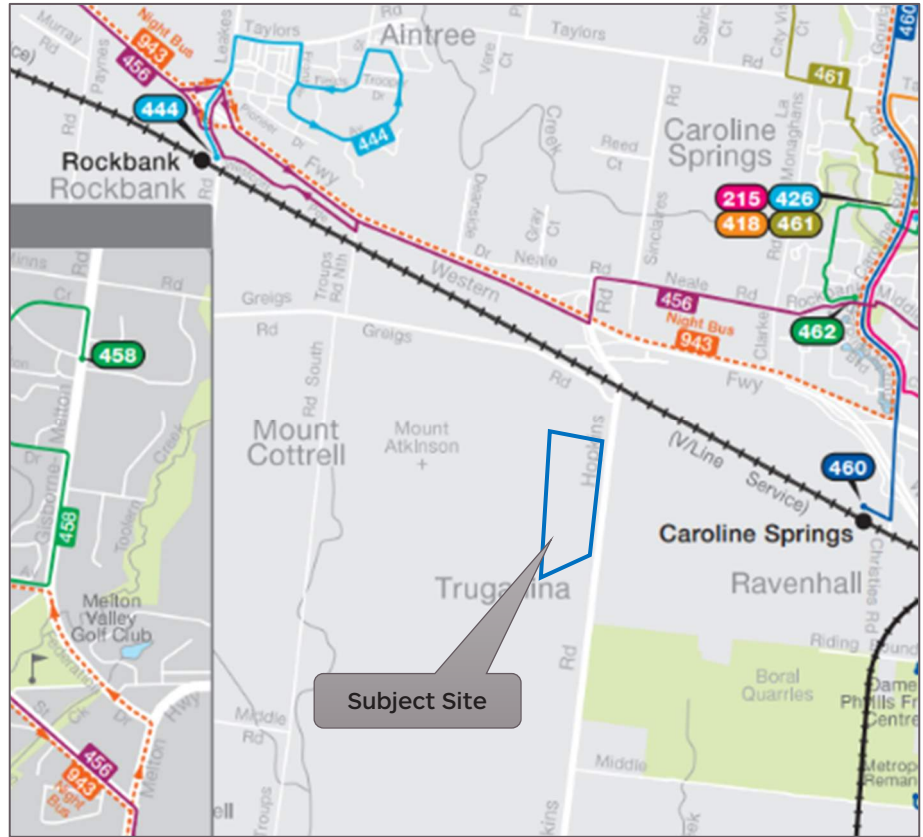
The subject site currently has limited access to public transport. The closest bus service (Route 456) operates along the Western Freeway and Neale Road, with the closest bus stop located approximately 2.0km north of the subject site.

The rail corridor in the northern portion of the PSP area serves the regional service to Ballarat as well as the Metropolitan service to Melton. The closest train station is currently Caroline Springs Station, located approximately 3.5km to the east of the subject site.



Figure 2-8 indicates the closest public transport services to the subject site.

Figure 2-8: Melton Public Transport Victoria Map



Source: ptv.vic.gov.au/assets/maps

Public transport services will be significantly improved through the development of the PSP area, including a new train station and a comprehensive bus network as outlined in Section 3.3, of this report.

3 Mt Atkinson and Tarneit Plains PSP:

3.1 Future Urban Structure Plan

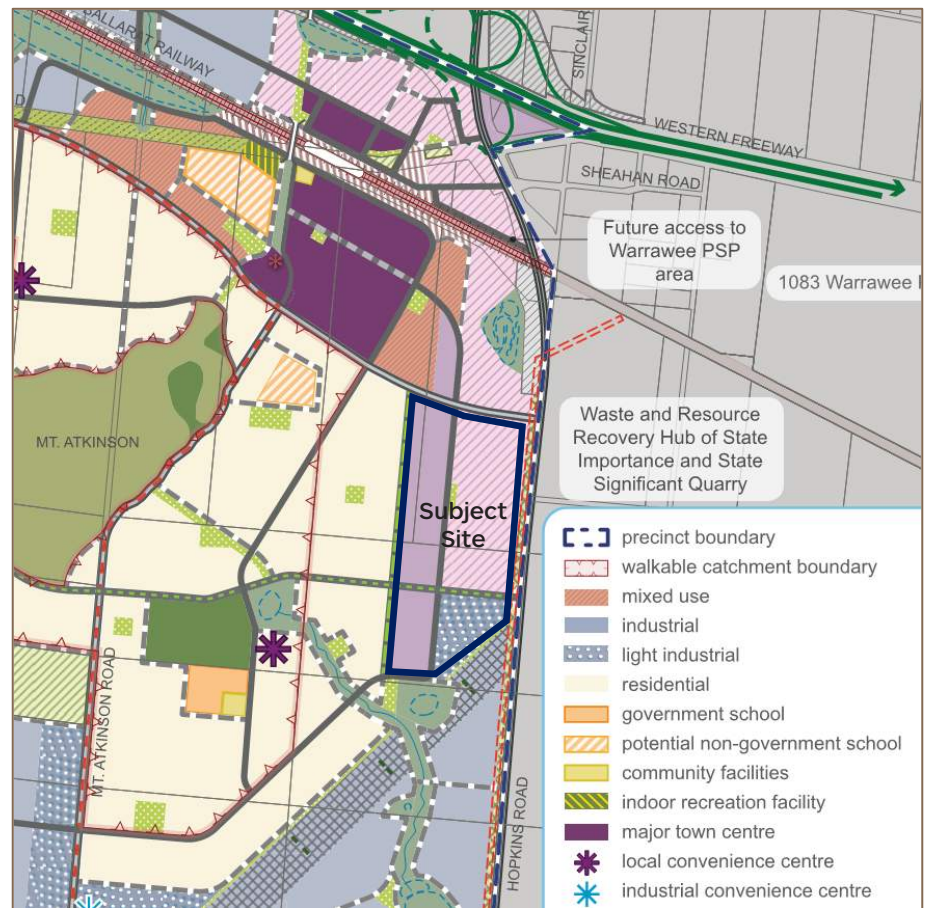
The Mt Atkinson and Tarneit Plains Precinct Structure Plan (PSP) has been prepared by the Victorian Planning Authority (VPA), in conjunction with Melton City Council and other stakeholders.

The PSP was incorporated as Amendment C162, into the Melton Planning Scheme and approved by the Minister for Planning in September 2017. The PSP was subsequently updated in January 2020.

Infrastructure requirements of the PSP area are identified on the Precinct Infrastructure Plan (PIP) and detailed in the Mt Atkinson and Tarneit Plains Infrastructure Contribution Plan (ICP) for this PSP. The ICP was also approved by the Minister for Planning in January 2020.

The PSP proposes a wide range of land uses, including residential, industrial, commercial, conservation, education and an activity centre. The UDF area in context with the abutting Future Urban Structure Plan is shown in Figure 3-1.

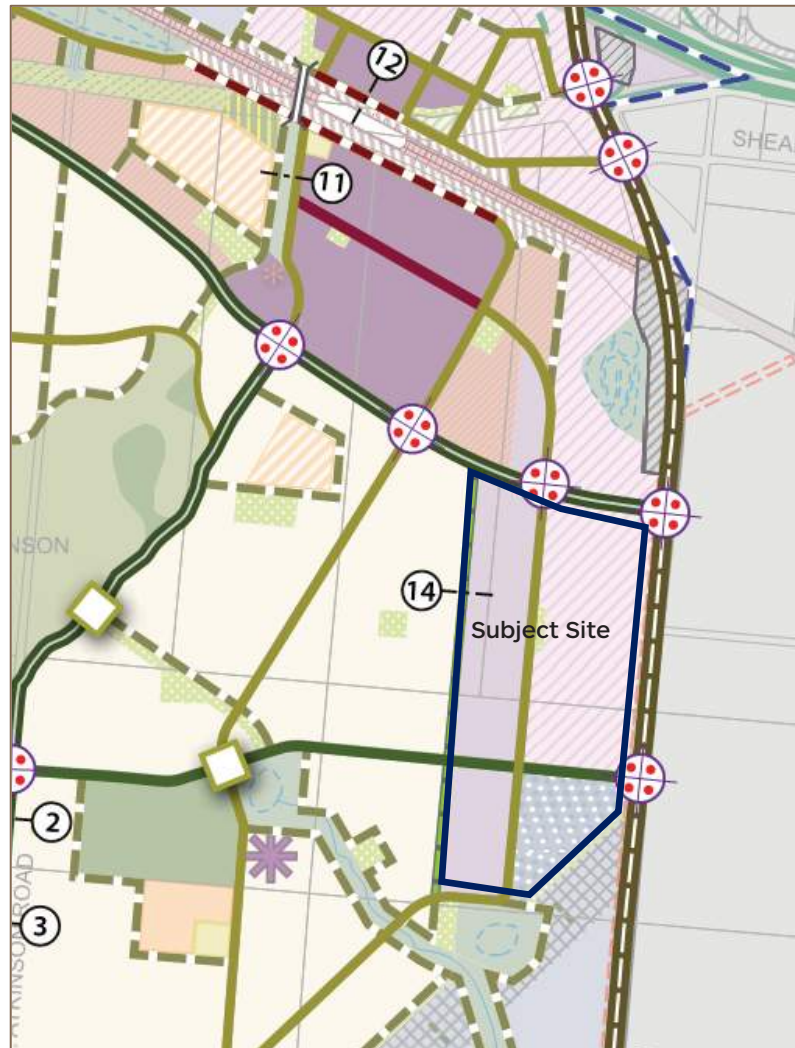
Figure 3-1: PSP Future Urban Structure Plan



3.2 Road Network

Plan 9 of the PSP outlines the proposed road network and is reproduced in part as Figure 3-2.

Figure 3-2: PSP Road Network Plan



As shown in the following figure, the roads relevant to the UDF area are classified as follows:

- Hopkins Road, which is aligned north-south along the sites eastern frontage and identified as a Primary Arterial;
- McKinley Drive which is aligned north-south located along the sites western frontage is identified as a Green Link Key Local Access Street;
- Strathbogie Drive, which is aligned north-south located through the centre of the site, is identified as an Industrial Connector Road;
- Grand Boulevard, which is aligned east-west to the north of the site is identified as a Secondary Arterial Road; and
- Kirkpatrick Boulevard, which is aligned east-west to the south of the site is identified as a Boulevard Connector Road.

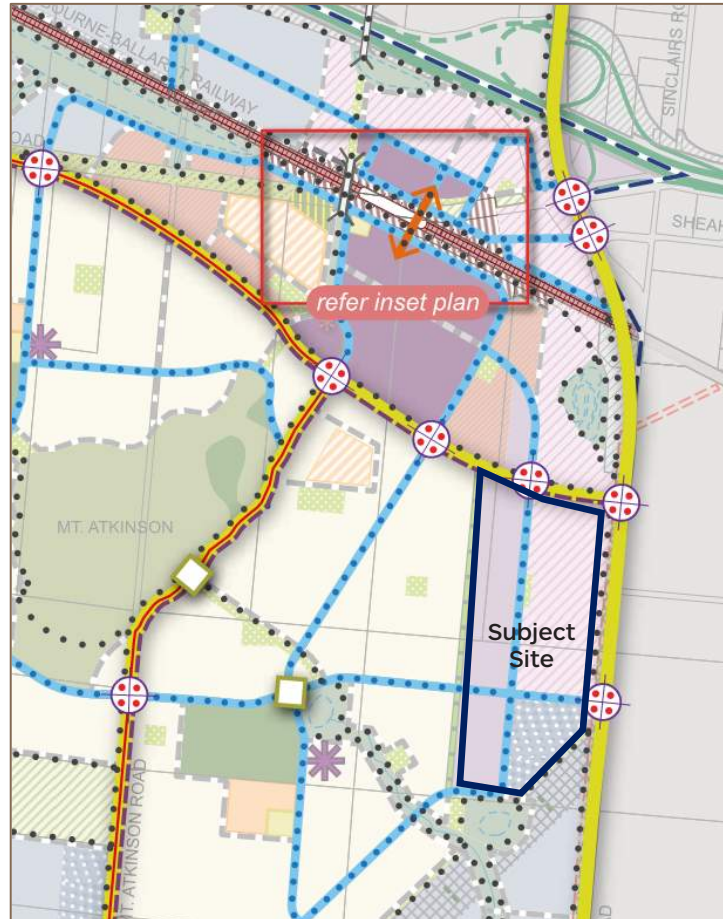
All major road connections to Grand Boulevard and Hopkins Road are proposed to be signalised.

To the north, McKinley Drive forms an unsignalised intersection with Grand Boulevard. To the south, McKinley Drive and Strathbogie Drive form roundabout intersections with Kirkpatrick Boulevard.

3.3 Public Transport and Path Network Plan

Plan 10 of the PSP outlines the proposed public transport and path network throughout the PSP, which is reproduced in part as Figure 3-3.

Figure 3-3: Public Transport and Path Network Plan



As shown in the preceding plan the north south Industrial Connector (Strathbogie Boulevard) is nominated as a bus capable road, as well as Grand Boulevard to the north and Kirkpatrick Boulevard to the south. Although Hopkins Road is also nominated as a future bus route, it is not anticipated that bus services will be able to be accommodated within the existing road reserve until the Department of Transport acquires the future road widening to the east.

A comprehensive on-street and off-road path network is proposed. The Secondary Arterial roads are proposed to have on road bicycle lanes, as well as an off road two-way shared path.

An off-road bicycle path is proposed along one side of the Industrial Connector Roads in addition to a footpath on both sides.

An off-road shared path will also be located north south adjacent to Hopkins Road within the gas easement.

3.4 Precinct Infrastructure Plan

Plan 13 of the PSP outlines the Precinct Infrastructure Projects (PIP) included in the PSP. The projects in the vicinity of the site are shown in Figure 3-4.

Figure 3-4: Precinct Infrastructure Projects in the vicinity of the site



As shown in the preceding figure, the only infrastructure projects relevant to the UDF area are

- RD-04 and RD-05 Grand Boulevard
- IT-03 Hopkins Road / Grand Boulevard intersection
- IT-04 Hopkins Road / Kirkpatrick Boulevard
- IT-08 Grand Boulevard / Strathbogie Boulevard (Industrial Connector)

All projects outlined above have either been constructed by the adjacent Mt Atkinson residential estate or are approved and will be constructed in the near future.

An aerial view of the completed and under construction roads in the vicinity of the Hopkins Road Business Precinct was previously shown in the aerial photograph in Figure 2-2.

3.5 Relevant PSP Requirements and Guidelines

The PSP outlines a number of requirements and guidelines applicable to the various employment areas within the PSP. The following requirements and guidelines are considered applicable to this assessment and have been addressed in the following sections of this report.

Table 3-1: Traffic Related Requirements

Ref.	PSP Requirement
R34	Vehicular access to properties fronting primary arterial roads must be from service roads, internal loop roads and/or rear laneways. Service roads and internal loop roads must provide indented parking unless carriageway widths can cater for on road parking without indented bays.
R36	Each UDF must address the following: <ul style="list-style-type: none"> • A street network that identifies direct connectivity within, to and from the commercial area, including measures to slow down speed • Measures to prioritise pedestrians along and across the main street and provide a continuous path of travel for pedestrians and cyclists to key destination including the potential future Mt Atkinson train station. • Locations of public transport services, including bus stops. • Set out provisions for car parking including the location and design of parking areas, car parking rates and a demonstration of how off-street car parking has been minimised through efficiencies in the shared use of off-street facilities. • Provision of service areas for deliveries and waste disposal including spaces for larger vehicles, including measures to minimise negative impacts on the amenity of neighboring residential and/or town centre areas.

Table 3-2: Traffic Related Guidelines

Ref.	PSP Guideline
G27	Ancillary offices should: <ul style="list-style-type: none"> • Be located at the front of buildings; • Include a façade addressing the street frontage of the lot; and • Provide for improved pedestrian access and engagement with the public domain.
G31	Streets should be aligned to create views and direct connections to the local park, waterways and open space.
G32	Large areas of car parking, water tanks, service infrastructure and other structures (including plant and equipment) that are not part of the building should be located to the rear of buildings or the site, but behind the building line. Where this is not possible, they should be located behind constructed screening using durable and attractive materials.

4.1 Hopkins Road Business Precinct

The proposed structure of the Urban Design Framework area for the Hopkins Road Business Precinct has been prepared by NH Architecture and is reproduced as Figure 4-1.

Two sites within the UDF area have been granted planning permits. The proposed building on the corner of Grand Boulevard and McKinley Drive is known as the Vision Centre and has a permit for a sales and information office and café to support the display village currently operating within the Mt Atkinson residential estate. Ultimately the building will be used for office with a café.

The site immediately south of the Vision Centre, will be the Mt Atkinson Hotel, containing restaurants, bars, accommodation and function space.

Figure 4-1: Proposed Structure of the Urban Design Framework Area



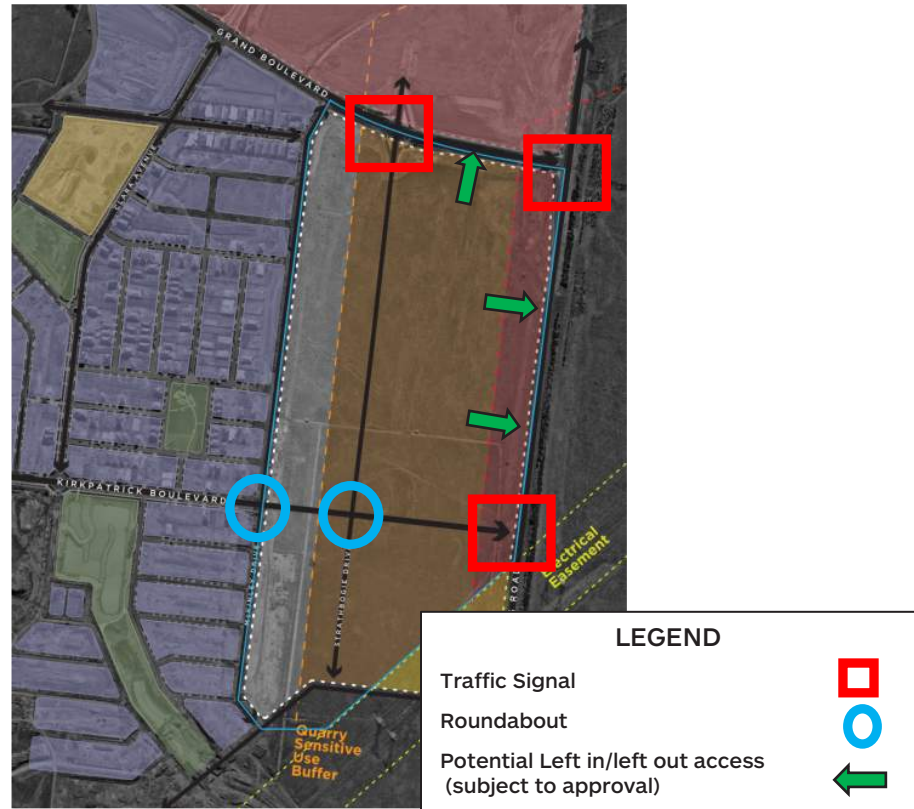
The Hopkins Road Business Precinct can include a variety of uses including but not limited to the following:

- Business / Large Format Retail
- Light Industrial Employment
- Office / Commercial sites
- Health / medical
- Emergency services
- Hotel with accommodation, restaurants and function space
- Food and beverage premises
- Community Uses
- Convenience facilities such as petrol station and/or convenience restaurants

4.2 Access

The proposed access points to the Hopkins Road Business Precinct are shown in Figure 4-2.

Figure 4-2: Hopkins Road Business Precinct Access



The traffic signals shown on the above plan have all been approved by the Department of Transport. The Hopkins Road / Grand Boulevard is fully constructed and in operation, the Grand Boulevard / Strathbogie Blvd intersection has been partially constructed and the Hopkins Road / Kirkpatrick Boulevard intersection will be constructed in association with the Mt Atkinson residential estate.

Indicative locations have been shown on the preceding plan for potential left in / left out access to Grand Boulevard and/or Hopkins Road. These access locations will be subject to review and approval by the relevant authorities during future planning permit applications.

4.3 Road Network

The road network is consistent with the PSP and has been largely constructed and/or approved during the ongoing development of the adjacent residential estate.

4.4 Road Cross Sections

No variations are proposed at this stage, to the relevant PSP cross sections.

4.5 Car Parking

Each building and pad site will be supported by an appropriate allocation of at-grade car parking, accessed primarily via the internal road network.

The specific parking provision for each use will be determined during the planning permit application stage, however due to the type of uses proposed and the anticipated reliance on private vehicle, it is anticipated that the majority of single land uses will have parking provision in accordance with the Planning Scheme statutory rates, with parking dispensation where appropriate to the satisfaction of the responsible authority.

4.6 Loading and Waste Collection

The internal road network is proposed to be designed using primarily industrial road cross sections, which will allow good accessibility for large loading and delivery vehicles.

Loading bay design and access will be determined during the detailed design of each use, however it is anticipated that these uses will be located to the rear of sites wherever possible. The Vision Centre and Mt Atkinson Hotel for example both have loading provision at the rear of each site, with access via McKinley Drive.

Typically, in large format retail development, waste collection and storage are incorporated in the loading bay area. This is considered appropriate and an efficient use of space as all large vehicle movements are consolidated in one area.

It is anticipated that most loading and waste vehicles will access the site via the north south industrial connector Strathbogie Boulevard, with some vehicles using McKinley Drive.

Larger uses that may require larger trucks to access their site, will be located close to roads as identified in the PSP and accompanying UGZ Schedule.

5 Hopkins Road Access:

5.1 Proposed Access

The proposed road network within the Hopkins Road Business Precinct includes potential direct access to Hopkins Road. Although not explicitly shown on the PSP road network, Requirement R34 includes consideration of service road access from primary arterial roads.

A meeting was held with Melton Council and the Department of Transport (DoT) on the 10th February 2021, to discuss access to Hopkins Road. DoT advised that they would be unlikely to support a service road arrangement unless the land use was primarily industrial in use.

It was acknowledged that the ultimate land uses were unknown at this stage. DoT also advised that would be willing to consider left in / left out access subject to a detailed review and traffic assessment.

The frontage to Hopkins Road between Kirkpatrick Boulevard and Grand Boulevard is approximately 700 metres, as shown in Figure 5-1.

Figure 5-1: Road Network and Frontage to Hopkins Road



6.1 Statutory Car Parking Requirements

The car parking requirements for various uses are set out under Clause 52.06 of the Melton Planning Scheme. The purpose of the Clause, among other things, is:

- To ensure that car parking is provided in accordance with the State Planning Policy Framework and Local Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

The statutory parking requirements are listed under Table 1 of Clause 52.06-5 for various uses. Whilst the broad nature of uses has been nominated by the PSP and accompanying UGZ Schedules, the exact uses of the future business precinct may vary. The parking rates anticipated to be relevant to the Business Precinct are outlined in Table 6-1.

Table 6-1: CI52.06 Statutory Car Parking Rates – Melton Planning Scheme

Use	Rate (Column A)	Measure
Convenience Restaurant	0.3	spaces per patron permitted
Convenience Shop	10	to each premises if the floor area exceeds 80m ²
Food & Drink Premises	4	to each 100m ² of leasable floor area
Medical Centre	5	to the first person providing health services plus
	3	to every other person providing health services
Office	3.5	to each 100m ² of leasable floor area
Place of Assembly	0.3	spaces per patron permitted
Restricted Retail Premises	3	to each 100m ² of leasable floor area
Shop	4	to each 100m ² of leasable floor area
Trade Supplies	10	per cent of the site area
Warehouse	2	to each premises, plus
	1.5	to each 100m ² of net floor area

It is anticipated that most land parcels within the UDF area will be stand-alone uses and as such will most likely adopt the Planning Scheme parking rates.

However, in the event that a site combines a number of complementary uses or uses with varying car park demand, a car park dispensation is likely to be relevant.

In this context, the Planning Scheme acknowledges the interaction and temporal parking demand profile exhibited by different developments.

Car parking demands are generally made up of short-term and long term-parking parking demands, with many visitors to the precinct generating short term parking demand and/or likely to visit multiple land uses as part of a single trip.

6.2 Variation to the Car Parking Requirements

Clause 52.06 of the Melton Planning Scheme states the following:

“An application to reduce (including reduce to zero) the number of car parking spaces required under Clause 52.06 or in a schedule to the Parking Overlay must be accompanied by a Car Parking Demand Assessment.

The Car Parking Demand Assessment must assess the car parking demand likely to be generated by the proposed...new use”.

Whilst the UDF intends to meet the statutory car parking rates under the Melton planning Scheme, this does not preclude future individual applications seeking a waiver/reduction of car parking and being tested under the requirements of Clause 52.06-7.

6.3 Car Parking Demand Assessment

A Car Park Demand Assessment will be undertaken in future planning applications for the individual land uses within the UDF.

The Car Park Demand Assessment, where applicable, should consider the following:

- Activity Centre Characteristics
- Multi-Purpose Trips
- Variation in Car Parking Demand over Time
- Short Stay and Long Stay Parking Demands
- Availability of Alternative Transport Modes

6.4 Car Park and Access Design

The design and layout of car parks will be principally in accordance with Clause 52.06-9 of the Melton Planning Scheme.

It is likely the creation of on-street parking will be used to, at least partially satisfy some visitor / customer parking requirements where appropriate.

The proposed bulky goods uses are expected to provide the majority of their parking within at-grade car parks located on site.

Access to car parking areas will be provided via the internal road network defined by the PSP, and potentially via access to/from Hopkins Road (subject to approval by the relevant authorities).

7.1 PSP Traffic Modelling

Broadscale traffic modelling was undertaken by Jacobs consultants initially in July 2016, with a further analysis completed for the PSP Panel Hearing dated September 2016.

The traffic modelling of the arterial road network included two scenarios, an interim scenario with a design year of 2026 and an ultimate buildout year of 2046.

The interim design year notably excludes the Outer Metropolitan Ring Road (OMR) and the proposed East-West Bypass Link, whilst the Ultimate 2046 design year includes all roads and infrastructure contemplated in the PSP.

The anticipated traffic volumes on Grand Boulevard (Greigs Road) and Hopkins Road are summarised in Table 7-1.

Table 7-1: Modelled Interim and Ultimate Daily Two-Way Traffic Volumes

Road Segment	Interim (2026)	Ultimate (2046)
Hopkins Road, north of Boundary Road	21,400 vpd	54,300 vpd
Hopkins Road, south of Greigs Road	20,500 vpd	47,900 vpd
Greigs Road, west of Hopkins Road	12,800 vpd	26,800 vpd
Greigs Road, east of OMR	12,800 vpd	25,400 vpd

As shown in the preceding table, traffic volumes on the surrounding arterial road network will more than double over the next 20 years', with significant growth expected along the Hopkins Road corridor.

7.2 Traffic Assessment

The PSP road network was modelled in conjunction with the preparation of the Mt Atkinson and Tarneit Plains PSP. The interim road network will focus traffic to Hopkins Road to the east, until the Outer Metropolitan Ring Road is constructed.

Ratio have designed the surrounding traffic signals serving the Hopkins Road Business Precinct, including the Hopkins Road and Industrial Connector intersections on Grand Boulevard as well as the intersection of Hopkins Road and Kirkpatrick Boulevard.

During the design and approval process traffic modelling was undertaken by Ratio, to the satisfaction of the Department of Transport.

The various land uses proposed within the Business Precinct will be used by the adjacent residential development, resulting in a significant number of internal trips. Some trips to the site will be diverted trips from the adjacent road network rather than new trips to the area.

The peak traffic activity is anticipated to be spread over the day and over the week due to the variety of land uses, which are anticipated to peak at different times of the day and/or week.

The addition of left in / left out access to Grand Boulevard and/or Hopkins Road will further dissipate the traffic activity by reducing the number of vehicle turning movements on the internal road network and at the traffic signals to Hopkins Road.

It is anticipated that additional traffic analysis will not be required for the future uses within the Business Precinct.

8.1 Overview

Based on the preceding discussion, the proposed Urban Design Framework for the area within the Hopkins Road Business Precinct is considered appropriate from a traffic, parking and access perspective. The key findings are summarised as follows:

Movement and Access

The Hopkins Road Business Precinct will have excellent access from the adjacent arterial road network, with the Western Freeway located to the north and the future Outer Metropolitan Ring Road (OMR) located in close proximity to the west.

Movement through the precinct will be direct and convenient with an Industrial Connector Road forming the main north west spine, supported by a north west Green Link road between the residential estate and business precinct.

The north south road network will be connected via local access streets generally designed to an Industrial Access Street standard, allowing one uninterrupted traffic lane in each direction and indented parallel parking along both sides of the street.

It is noted that requirement R34 of the PSP requires vehicular access to properties fronting primary arterials to be provided via a service road, loop road and /or rear laneway.

There is potential for additional left in / left out access locations to Grand Boulevard and/or Hopkins Road, which would be subject to approval by the relevant authorities.

Street Network

The proposed Hopkins Road Business Precinct is consistent with the road network identified Mt Atkinson and Tarneit Plains PSP and will provide convenient access to the surrounding arterial road network as well as surrounding land uses.

The Business Precinct will have convenient access to Hopkins Road via the signalised intersections at Grand Boulevard and the soon to be constructed signalised intersection at Kirkpatrick Boulevard.

A roundabout is proposed at the intersection of Kirkpatrick Boulevard and Strathbogie Boulevard.

Pedestrian and Cycling

Good pedestrian connectivity will be provided throughout the UDF area, with footpaths to be provided on both sides of the majority of streets. The footpath network will provide convenient access to the adjacent residential development and various recreational open space areas.

The area will include good connectivity to the wider cycling network with off road paths provided north south on the central Industrial Connector as well as within the gas easement along Hopkins Road. Both on-road and off-road paths will be provided on both sides of Grand Boulevard, with an off-road bike path along the southern side of Kirkpatrick Boulevard.

Each development within the Business Precinct will have additional requirements to provide on-site bicycle storage and end of trip facilities to further support the use of cycling.

Public Transport

The north south Industrial Connector, Strathbogie Boulevard, is nominated as a potential bus route in the PSP, which will provide good public transport coverage for the Business Precinct. In addition to Strathbogie Boulevard, bus services are anticipated on both Grand Boulevard and Kirkpatrick Boulevard.

Bus stop locations will be provided on the departure side of signalised intersections and at major cross intersections along Strathbogie Boulevard at approximately 300 metre spacings.

It is anticipated that bus services will provide convenient access to the proposed Mt Atkinson train station.

Car Parking

Car parking is anticipated to be provided at grade, with access via the internal road network. The provision of parking, design and access will be determined during the planning application stage for the individual uses once known.

Loading / Unloading and Waste Collection

The proposed road network is relatively generous in width and will allow convenient access to the various land uses proposed within the Hopkins Road Business Precinct.

It is anticipated that most large bulky goods stores will be provided with an appropriate loading bay on site, which will include waste collection facilities. Loading and waste collection will be determined for other uses within the Business Precinct once the specific land use and operation of the site is known.

It is noted that the two sites within the UDF area that currently have planning permits have access from McKinley Drive with loading facilities located at the rear of the building.