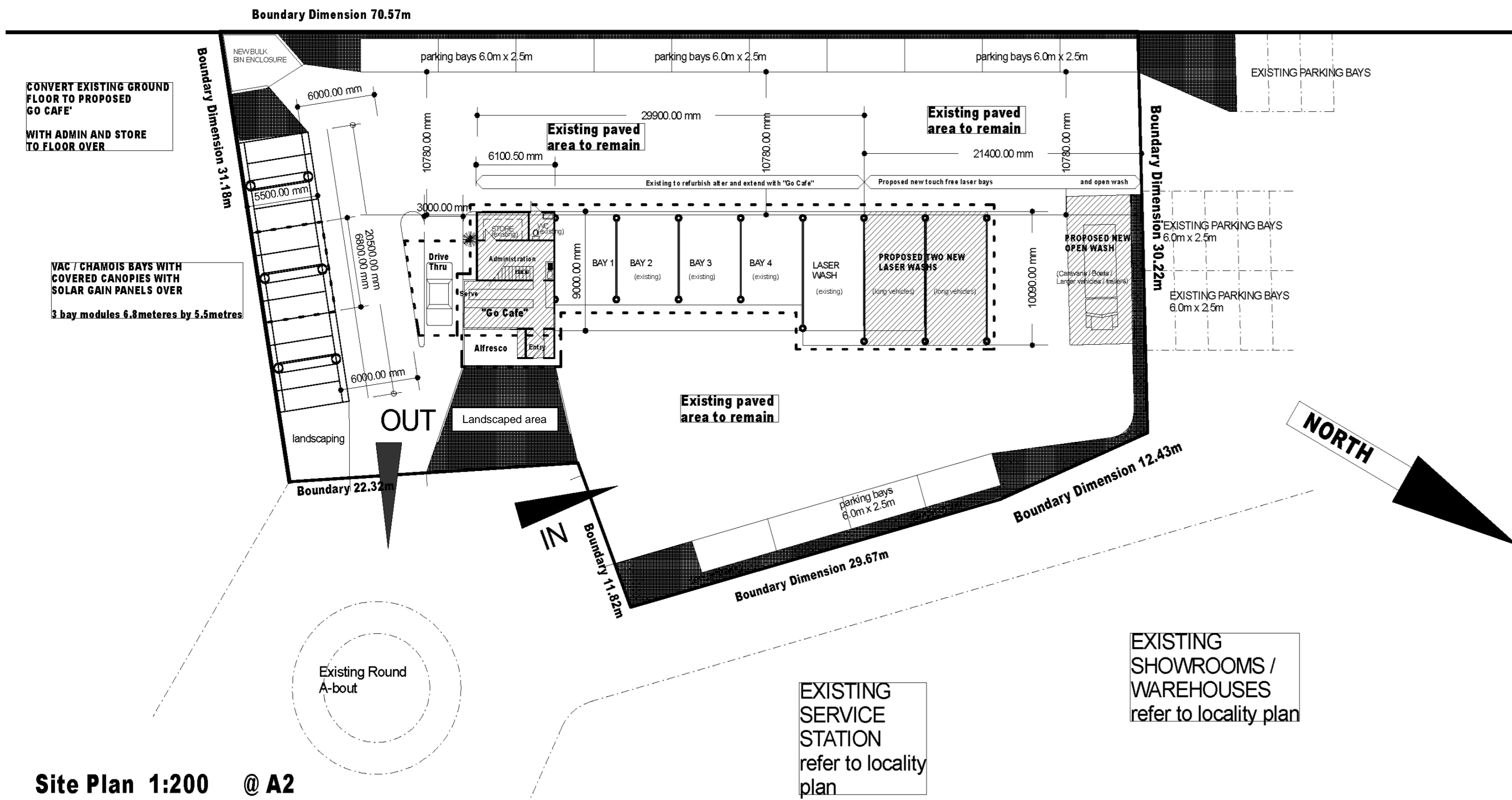






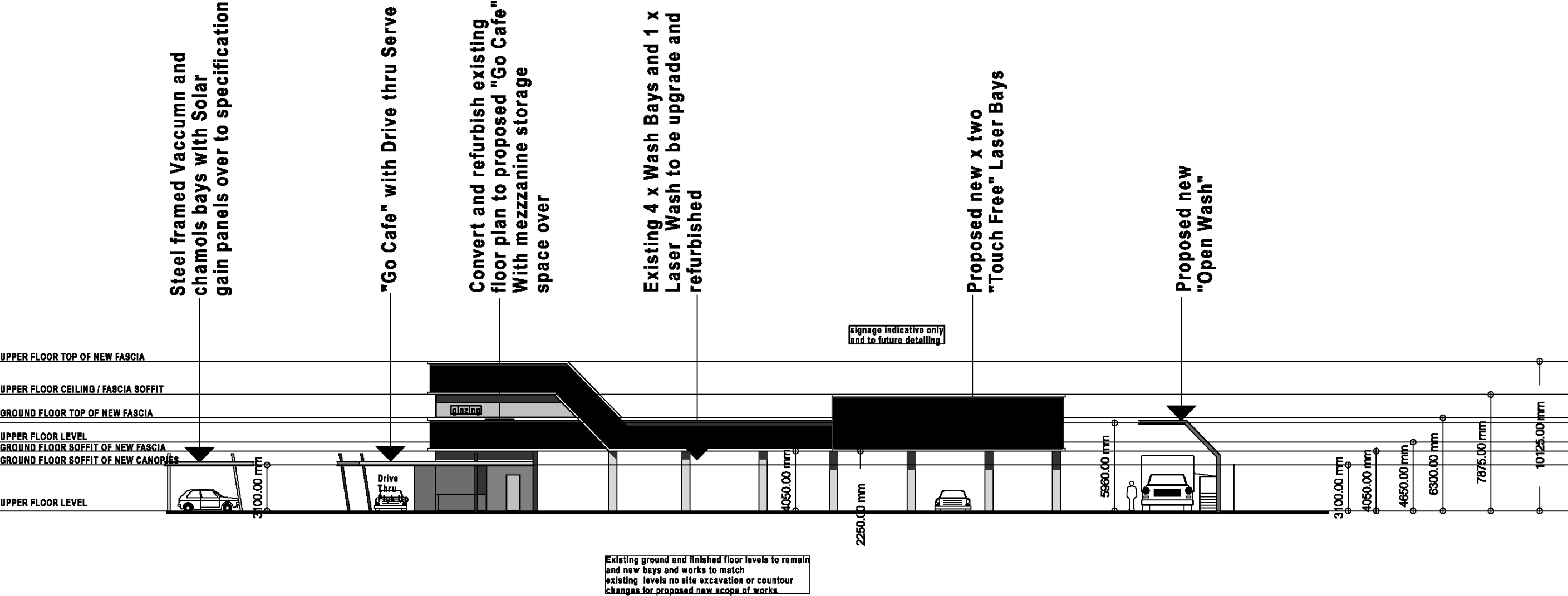


## **FREEWAY AND RAILWAY RESERVE**



**Site Plan 1:200 @ A2**



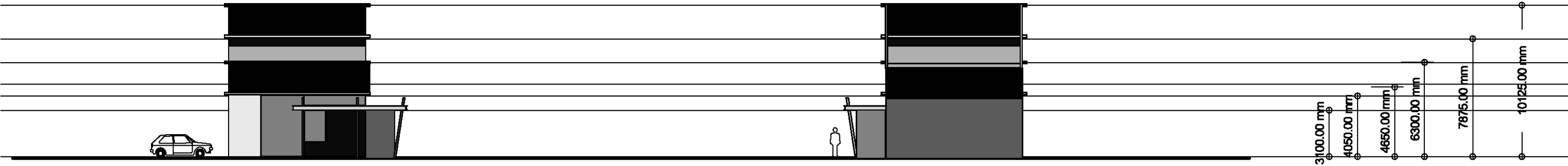


Eastern Elevation 1:200 @ A2

(To The Gateway & Joondalup Drive)

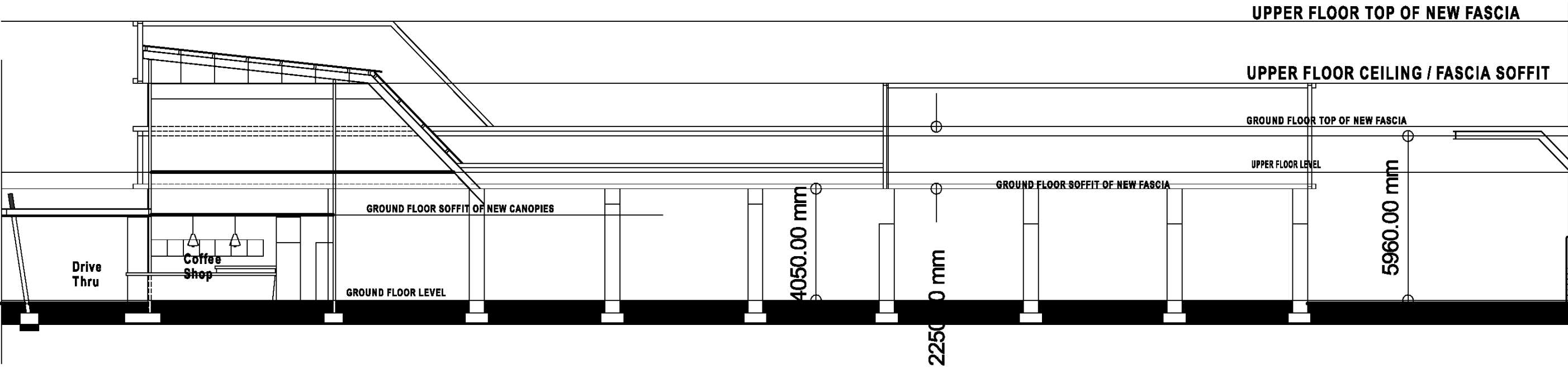


**Western Elevation 1:200      @ A2**  
**(Overlooking to freeway reserve)**



**Southern Elevation**

**Northern Elevation**

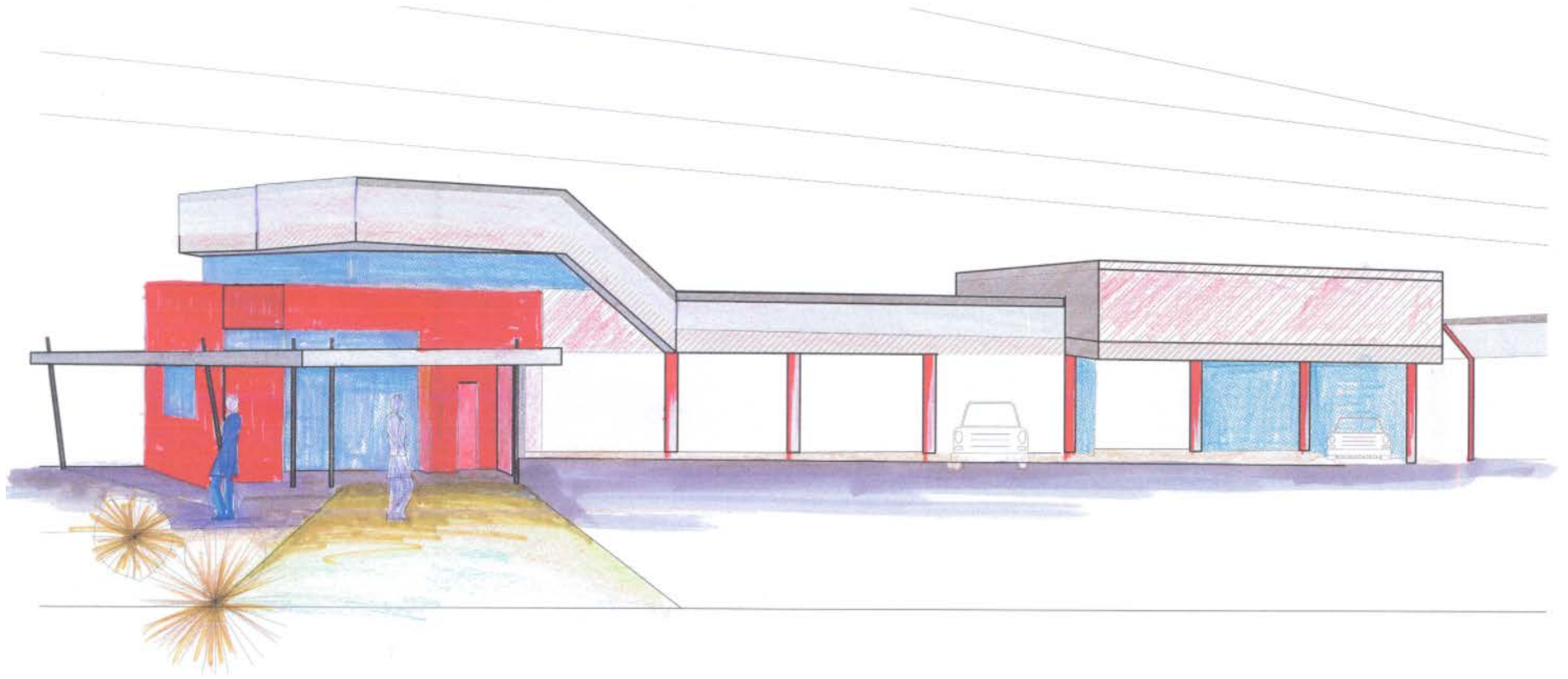


Existing ground and finished floor levels to remain  
and new bays and works to match  
existing levels no site excavation or countour  
changes for proposed new scope of works



**Perspective View**









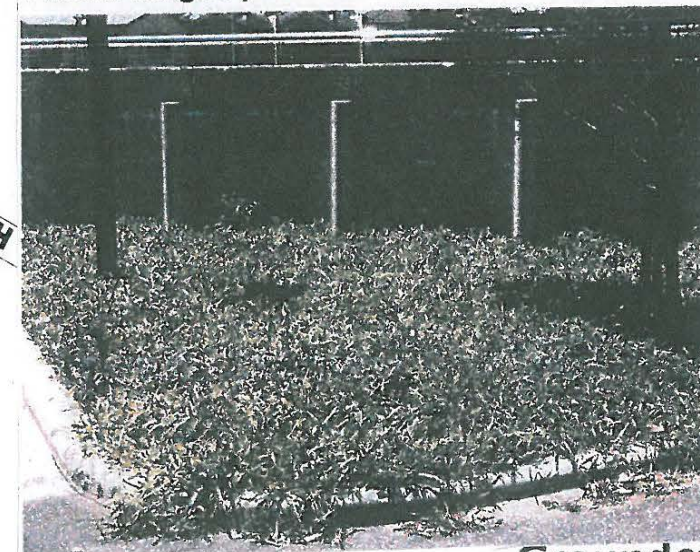
Height x Width  
1.5m high x 0.5m wide

Flower Colour  
Orange / Red

Flowering Period  
Autumn



Height x Width  
1m high x 0.5m wide  
Flower Colour  
Mauve  
Flowering Period  
Winter



Height x Width  
0.3m high x 5m wide  
Flower Colour  
Yellow  
Flowering Period  
Late Winter—Spring



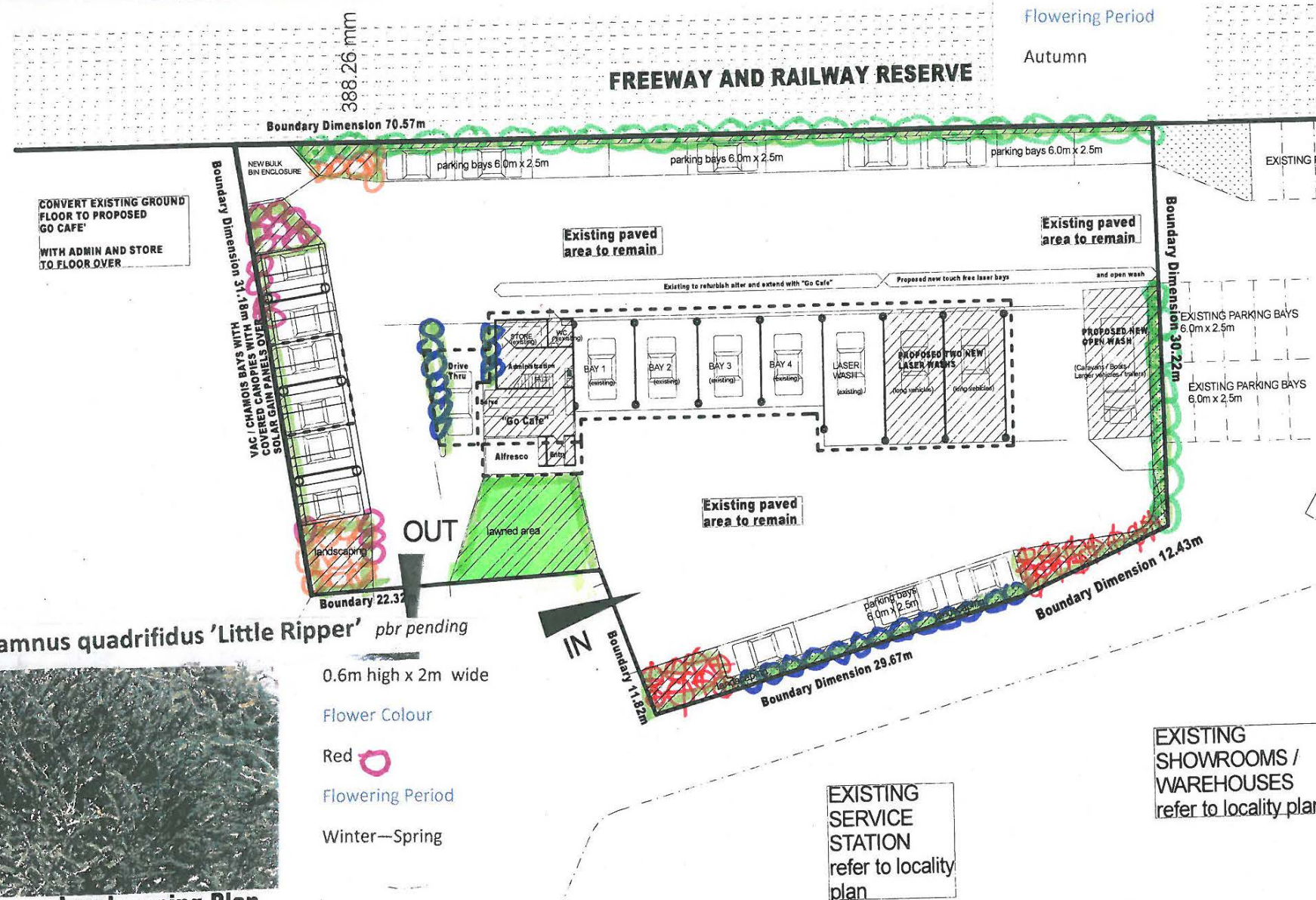
0.6m high x 2m wide

Flower Colour

Red 

Flowering Period

Winter—Spring



**S RAVI CONSULTANTS**  
Project Management Building Design  
Documentation Interiors  
Residential Commercial Industrial  
PO Box 106 Floreat WA 6014 Mobile: 0400 702 008  
Email: sravi@inet.net.au



Height x Width  
0.3m high x 2m wid  
Flower Colour  
Yellow

**PROPOSED EXTENSIONS, REFURBISHMENT AND "GO CAFE" ADDITION  
TO "CARWASH 24/7" @ LOT 200 THE GATEWAY EDGEWATER  
FOR WELL HOLDINGS PTY LTD**

THIS DRAWING IS THE PROPERTY OF C. I. L. COMPANY  
AND NOT TO BE LOANED OR FOR REPRODUCTION OF ANY





## Environmentally Sustainable Design – Checklist

Under the City's planning policy, *Environmentally Sustainable Design in the City of Joondalup*, the City encourages the integration of environmentally sustainable design principles into the construction of all new residential, commercial and mixed-use buildings and redevelopments (excluding single and grouped dwellings, internal fit outs and minor extensions) in the City of Joondalup.

Environmentally sustainable design is an approach that considers each building project from a 'whole-of-life' perspective, from the initial planning to eventual decommissioning. There are five fundamental principles of environmentally sustainable design, including: siting and structure design efficiency; energy efficiency; water efficiency; materials efficiency; and indoor air quality enhancement.

For detailed information on each of the items below, please refer to the *Your Home Technical Manual* at: [www.yourhome.gov.au](http://www.yourhome.gov.au), and *Energy Smart Homes* at: [www.clean.energy.wa.gov.au](http://www.clean.energy.wa.gov.au).

This checklist must be submitted with the planning application for all new residential, commercial and mixed-use buildings and redevelopments (excluding single and grouped dwellings, internal fit outs and minor extensions) in the City of Joondalup.

The City will seek to prioritise the assessment of your planning application and the associated building application if you can demonstrate that the development has been designed and assessed against a national recognised rating tool.

Please tick the boxes below that are applicable to your development.

### Siting and structure design efficiency

Environmentally sustainable design seeks to affect siting and structure design efficiency through site selection, and passive solar design.

Does your development retain:

- ☒ existing vegetation; and/or
- ☐ natural landforms and topography

Does your development include:

- ☐ northerly orientation of daytime living/working areas with large windows, and minimal windows to the east and west
- ☒ passive shading of glass
- ☒ sufficient thermal mass in building materials for storing heat
- ☐ insulation and draught sealing
- ☐ floor plan zoning based on water and heating needs and the supply of hot water; and/or
- ☐ advanced glazing solutions

**Energy efficiency**

Environmentally sustainable design aims to reduce energy use through energy efficiency measures that can include the use of renewable energy and low energy technologies.

Do you intend to incorporate into your development:

- ☒ renewable energy technologies (e.g. photo-voltaic cells, wind generator system, etc); and/or
- ☒ low energy technologies (e.g. energy efficient lighting, energy efficient heating and cooling, etc); and/or
- ☒ natural and/or fan forced ventilation

**Water efficiency**

Environmentally sustainable design aims to reduce water use through effective water conservation measures and water recycling. This can include stormwater management, water reuse, rainwater tanks, and water efficient technologies.

Does your development include:

- ☐ water reuse system(s) (e.g. greywater reuse system); and/or
- ☒ rainwater tank(s)

Do you intend to incorporate into your development:

- ☒ water efficient technologies (e.g. dual-flush toilets, water efficient showerheads, etc)

**Materials efficiency**

Environmentally sustainable design aims to use materials efficiently in the construction of a building. Consideration is given to the lifecycle of materials and the processes adopted to extract, process and transport them to the site. Wherever possible, materials should be locally sourced and reused on-site.

Does your development make use of:

- ☒ recycled materials (e.g. recycled timber, recycled metal, etc)
- ☐ rapidly renewable materials (e.g. bamboo, cork, linoleum, etc); and/or
- ☒ recyclable materials (e.g. timber, glass, cork, etc)
- ☐ natural/living materials such as roof gardens and "green" or planted walls

**Indoor air quality enhancement**

Environmentally sustainable design aims to enhance the quality of air in buildings, by reducing volatile organic compounds (VOCs) and other air impurities such as microbial contaminants.

Do you intend to incorporate into your development:

- ☒ low-VOC products (e.g. paints, adhesives, carpet, etc)

**'Green' Rating**

Has your proposed development been designed and assessed against a nationally recognised "green" rating tool?

- ☒ Yes **NEW SECTION WITH EXISTING TO BE INFORMED CONSISTENT WITH USAGE.**
- ☐ No

If yes, please indicate which tool was used and what rating your building will achieve:

**RATING WILL BE DESIGNED INTO AND DEVELOPED WITH BUILDING PERMIT APPLICATION.**

If yes, please attach appropriate documentation to demonstrate this assessment.

If you have not incorporated or do not intend to incorporate any of the principles of environmentally sustainable design into your development, can you tell us why:

REFER TO CHECKLIST AND REPORT

Is there anything else you wish to tell us about how you will be incorporating the principles of environmentally sustainable design into your development:

REFER TO ACCOMPANYING REPORT WITH  
DOCUMENTS SUBMITTED.

When you have checked off your checklist, sign below to verify you have included all the information necessary to determine your application.

Thank you for completing this checklist to ensure your application is processed as quickly as possible.

Applicant's Full Name: SEBASTIAN RAVI Contact Number: 0400701008

Applicant's Signature: Sebastian Ravi Date Submitted: 14-7-14

Accepting Officer's Signature: \_\_\_\_\_



**S RAVI****sravi@inet.net.au****PO Box 108, Floreat WA 6014****Mobile: 0400 702 008****Consultant****ABN: 76 859 594 776**

## **SCOPE OF WORKS FOR PORPOSED UPGARDE, ALTERATIONS AND EXPANSION @ CARWASH 24/7 AND GO CAFE**

**FOR: WELL HOLDINGS PTY LTD**

**PROPERTY: No 8 THE GATEWAY  
EDGEWATER WA 6027**

**LAND PARCEL: Lot 200 Swan Loc 6221  
D9497 Vol 2152 Fol 32**

### **THE STORY; TOWARDS AN ENERGY EFFICIENT AND SUSTAINABLE FUTURE**

"Car wash 24/7" has been in operation since December 2003 (11years ). The site was commissioned as a Carlovers Carwash site in 1998 at the very early stages of the Joondalup precinct.

Car wash 24/7's mission is to provide customers with a fast, user-friendly, quality carwashes convenient, safe and affordable carwash experience using the most technologically advanced systems, highest quality products, and state-of-the art facilities. Also reducing the environmental impact of the operating machinery being used and to install with the upgrade and expansion program.

Car wash 24/7 is currently operating with modern facilities which are to be modified and added to with new laser and manual technologies to improve and expedite the current congestion at peak load usage.

Car wash 24/7 team has the knowledge of what it takes to produce a clean car in the most efficient manner so that customers will feel great about their vehicles. This premise is a fundamental requirement to the car care industry.

**SOLAR PHOTOVOLTAIC MODULES / PANELS & RECYCLING:**

**Roof mounted:** These solar photovoltaic modules shall be electrically connected and roof top mounted. The installation of such roof top installation can supply power directly to an electricity user. Such installation can be competitive. These are to be electrically engineered at construction phase.

**Covered vacuum canopies:** These too shall incorporate solar photovoltaic panels to increase area gain and maximise generated output. All panels are to be electrically engineered at construction phase.

**Recycling:** Upto 90% of glass and 95% of the semiconductor materials contained within panel construction remain recyclable

**SIGNAGE:**

**On Building Structure:** Mounted signage to existing and additional building façade shall be in accordance with council sign policy

**Pylon:** Additional pole mounted Pylon sign is proposed for entry to site as per separate future application.

**LANDSCAPING:** The existing 63 sq. metres of landscaped area shall be increased by an additional 85 sq. metres resulting in a total of 148 sq. metres of maintained landscaping as indicated on development application plans.

**Sebastiano Ravi** PRINCIPAL  
BDWA FOUNDATION MEMBER  
REGISTERED BUILDING PRACTITIONER & CONTRACTOR 8351  
WARA 1097

**BUILDING DESIGN      DOCUMENTATION      CONSULTANCY      PROJECT MANAGEMENT**

**TRAFFIC MANAGEMENT:**

Exiting hardstands shall remain with additional landscaping installed within areas as indicated on site plan. Over the 11 years increase of trade and carwash demand has caused some traffic build up coming into site. The existing egress points as indicated shall remain as indicated. The increase manual bay and in particular the additional 2 laser bays shall maximise through time and minimise site congestions at peak operating times; this along with the additional 14 vehicle parking bays proposed will further improved the overall traffic management for the operation.

**WASH BAYS:**

<b>Manual: (four existing plus one additional open)</b>	<b>Five</b>
<b>Automatic "Laser / Touch Free" (one existing two additional)</b>	<b>Three</b>
<b>Bays: (five existing plus three additional)</b>	<b>Eight bays in total</b>

**WATERFILTRATION & RECYCLING:**

**Primary solids:** During the vehicle washing process there are varying amounts of solids inclusive of dirt, sand, silt, clay and gravel that are produced. These solids are collected with accompanying wash down water and are able to be recycled reducing waste. The solids are removed via an active separation filter and then recycled as engineered to health standards.

**Secondary solids:** These are "suspended solids" that do not readily drop out of wash down water as primary solids. The minimising of such secondary solids significantly reduces machinery wear and tear and prolongs maintenance recall periods.

**Recycling:** Decreases wastage and expenditure costs and improves productivity

Go Café shall be a predominantly a "meal and coffee to go venue". Bench seating and cloth shaded alfresco eating shall be available as indicated on development application documents.

Car wash 24/7 is proposing expansion with new environmental, sustainable and renewable energy methodology. The scope for the future and next phase in development is outlined and presented in the accompanying submission before the City of Joondalup.

## **PLANNING DEVELOPMENT ASPECTS AND PROPOSED CONSIDERATIONS**

### **SITE DETAILS:**

Site area	2,362 sq. metres
Existing site cover	225 sq. metres
Proposed additional site cover including (31 sq. metres for Go Café)	149 sq. metres
Total site cover proposed	374 sq. metres
Balance of open car parking and landscaped site area remaining	1,988 sq. metres

### **MAXIMUM NUMBER OF EMPLOYEES:**

Carwash	one
Go Café	one
Administration	one
Total	Three

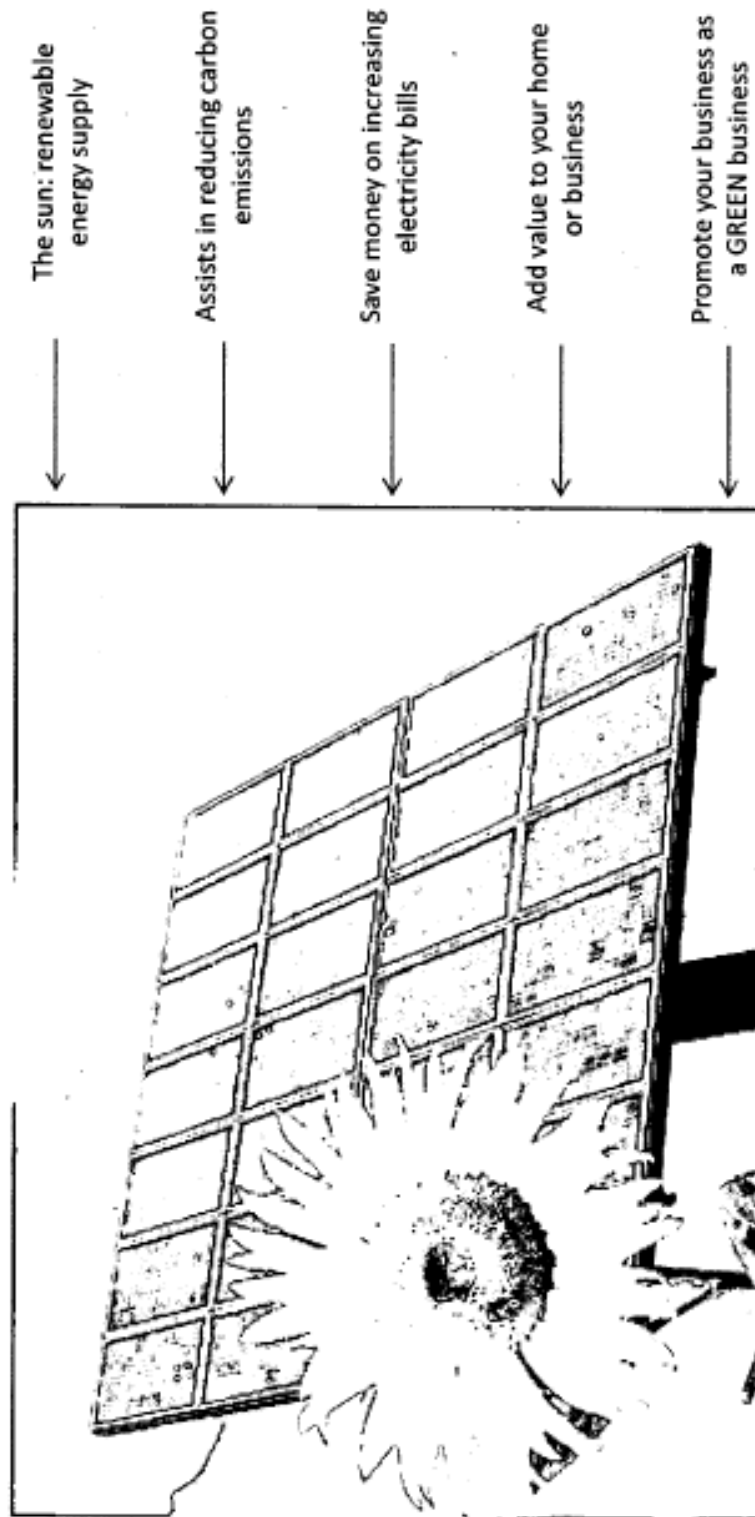
### **VEHICLE PARKING:**

**RECIPROCAL PARKING:** refer locality plan

**ALLOCATED STAFF CARBAYS:** Three (refer site plan)

**TOTAL ON SITE CARBAYS:** Fourteen

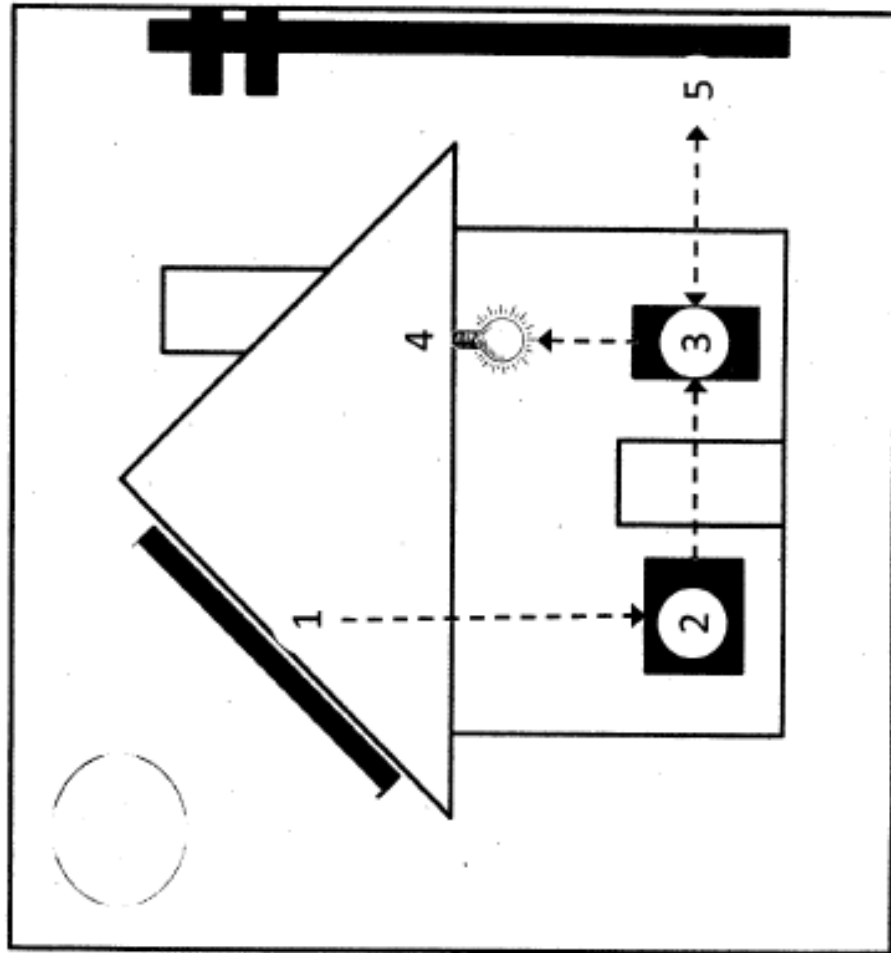
# Why solar?





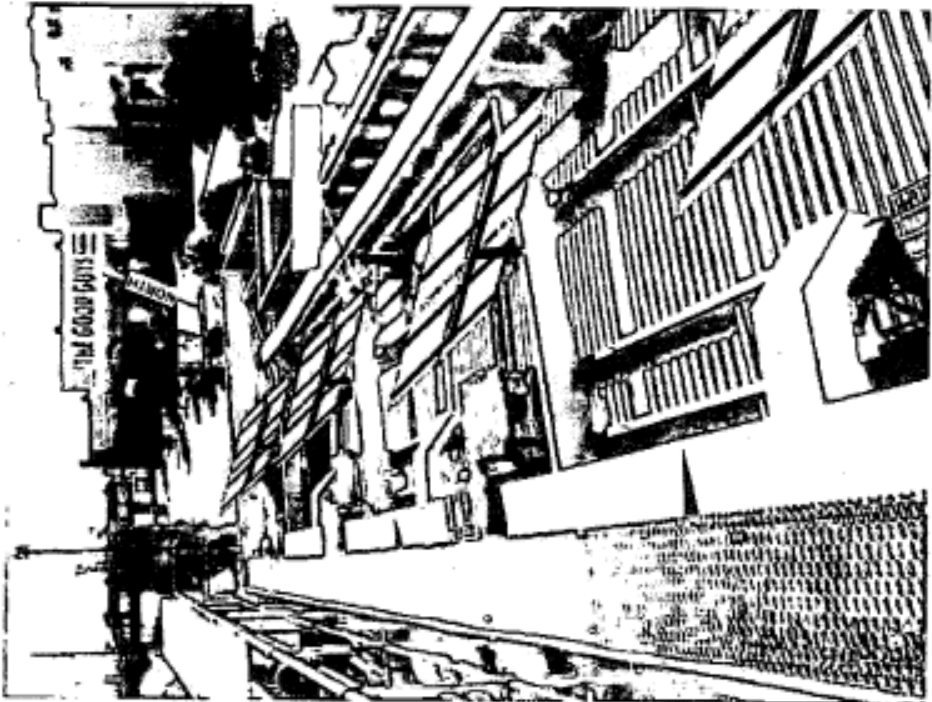
# How it works

1. Solar panels on your roof collect the sun's energy and convert it into DC electricity.
2. Inverter turns DC electricity into AC for use in your home or business premises.
3. A meter will show your usage, spinning backwards if you generate more electricity than you use.
4. Electricity is used in your home or business premises.
5. All excess electricity is fed back into the grid – kept as a credit for your future use.



## YOUR BUSINESS

# Solar @ Car Lovers



Panels will be visible from the road side. This is a perfect opportunity to promote your business as a **GREEN BUSINESS** by including signage across the roof line and on the Car Lovers totem pole along Joondalup Drive.

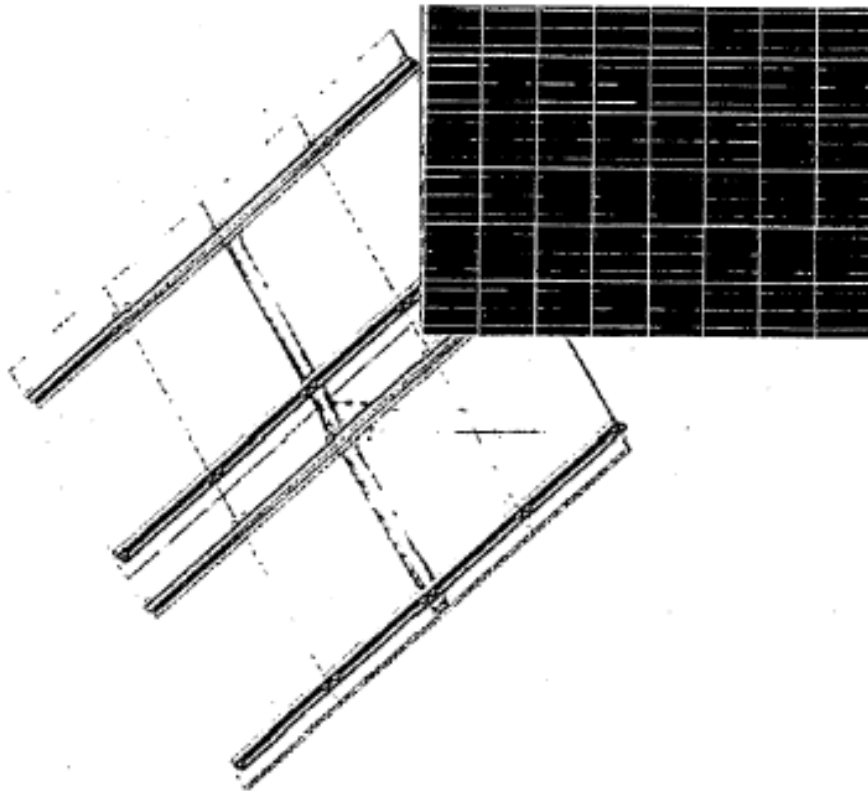
## 4.5kW System Usage

- A 4.5kW system produces an average of 18.8 kWh per day
  - We estimate that you'll be consuming 15 kWh throughout the day and feeding back 3.8 kWh to the grid
- **Savings that the system will produce (by producing your own electricity)**
  - 15 kWh @ \$0.20 = \$3.00 per day
  - Over 12 months = \$1,095
  - Over 120 months = \$10,950
- **Feed-in tariff (reduction in your bill)**
  - 3.8 kWh @ \$0.47 = \$1.78 per day
  - Over 12 months = \$651
  - Over 120 months = \$6,518

## Your panels by Kyocera



- Japanese made and proven technology
- Highest efficiency multi-crystalline solar modules
- Heavy anodised aluminium frame



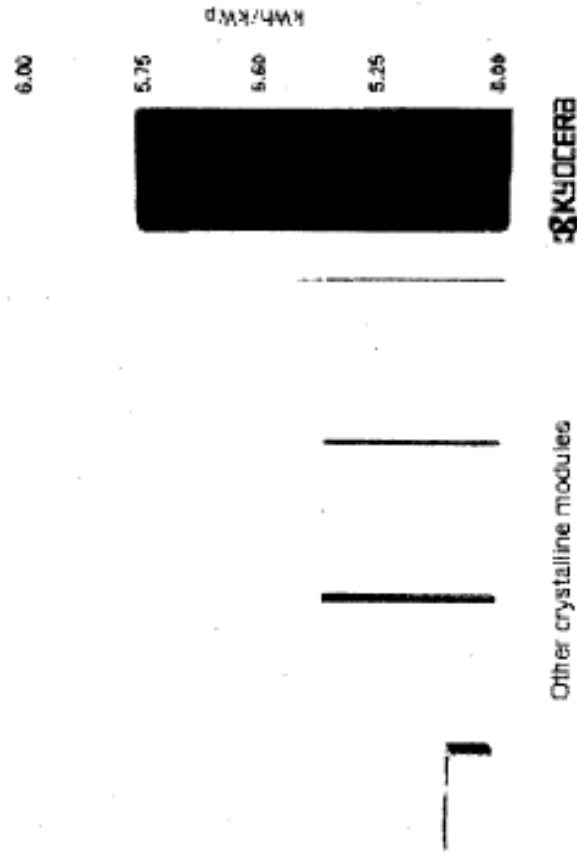


# About Kyocera

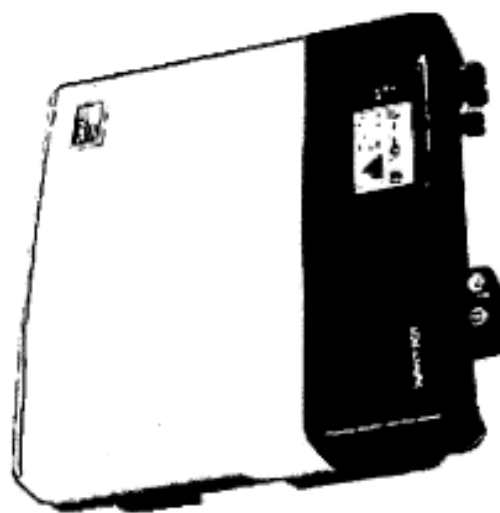


- Japanese company with over 35 years experience with solar. That means **long-term reliability** of PV modules is validated.
- **Shown on right:**  
The Desert Knowledge Australia Solar Centre publically showcases a broad range of solar installations. Each system is presented on a level playing field enabling accurate and unbiased comparisons of technology performance. Kyocera has recorded the highest average system output every month for any crystalline solar product. Proving the superior real world performance of a Kyocera system under Australian conditions.
- **More info?**  
Visit [www.kyocerasolar.com.au](http://www.kyocerasolar.com.au)

**Average kWh/kWp Oct '08 to Apr '09**



## Your inverter by SMA



- German engineered
- First class efficiency and reliable
- Output can be easily monitored with the user-friendly system

# About Wesglo Electric

- Jason Sachse, Director of Wesglo Pty Ltd, holds an "A Grade" Electrical Workers License as well as "First Class" certification as an Engineering Tradesperson (Mechanics). His experience as an Electrical Contractor and Electrician in supervisory, project management and "on-the-tools" roles has included:

- Solar panel systems installations (over 400 in the Perth metro area)
- Commercial installations, including the Vancouver International Terminal and Surrey Training Centre for the Vancouver 2010 Winter Olympics
- Agricultural automation and control, specialising in poultry farms
- Installation of communication towers for clients such as Optus
- Domestic installations that have varied from general fittings, switch board upgrades and house re-wires

- Member National Electrical Contractors Association of WA
- Clean Energy Council Accredited Installer





## E19 / 318 SOLAR PANEL

MAXIMUM EFFICIENCY AND PERFORMANCE

### BENEFITS

#### Highest Efficiency

SunPower™ Solar Panels are the most efficient photovoltaic panels on the market today.

#### More Power

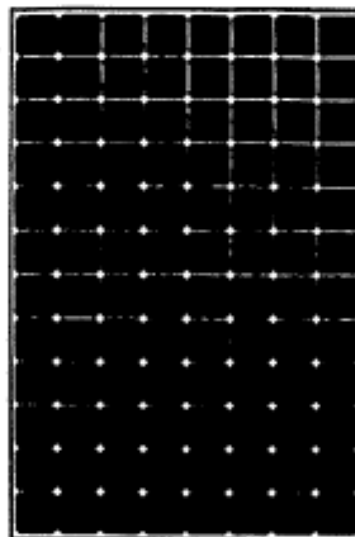
Our panels produce more power in the same amount of space—up to 50% more than conventional designs and 100% more than thin film solar panels.

#### Reduced Installation Cost

More power per panel means fewer panels per install. This saves both time and money.

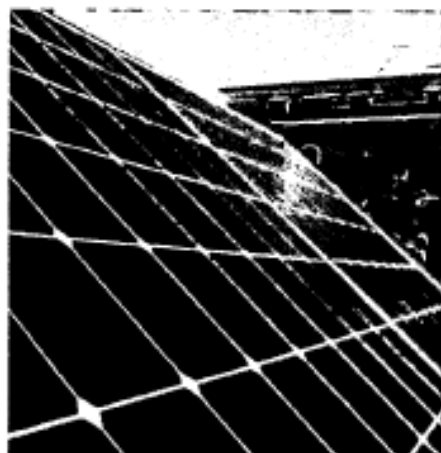
#### Reliable and Robust Design

Proven materials, tempered front glass, and a sturdy anodised frame allow panel to operate reliably in multiple mounting configurations.

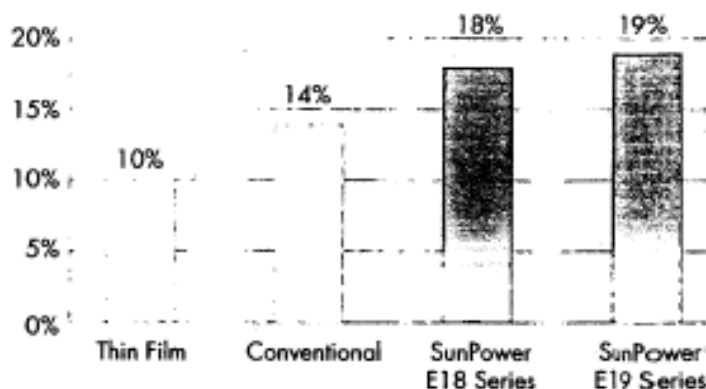


### The planet's most powerful solar panel.

The SunPower™ 318 Solar Panel provides today's highest efficiency and performance. Utilising 96 back-contact solar cells, the SunPower 318 delivers a total panel conversion efficiency of 19.5%. The 318 panel's reduced voltage-temperature coefficient, anti-reflective glass and exceptional low-light performance attributes provide outstanding energy delivery per peak power watt.



SunPower's High Efficiency Advantage



SPR-318E-WHT-D



PV CYCLE



## E19 / 318 SOLAR PANEL

MAXIMUM EFFICIENCY AND PERFORMANCE

## Electrical Data

Measured at Standard Test Conditions (STC): Irradiance 1000W/m<sup>2</sup>, AM 1.5, and cell temperature 25° C

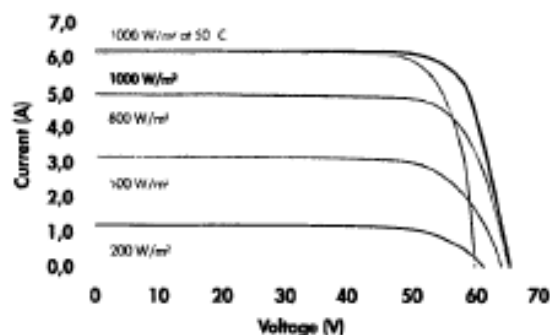
Nominal Power (+5/-3%)	P <sub>nom</sub>	318 W
Efficiency	η	19.5 %
Rated Voltage	V <sub>mpp</sub>	54.7 V
Rated Current	I <sub>mpp</sub>	5.82 A
Open Circuit Voltage	V <sub>oc</sub>	64.7 V
Short Circuit Current	I <sub>sc</sub>	6.20 A
Maximum System Voltage	IEC	1000 V
Temperature Coefficients	Power (P)	-0.38% / K
	Voltage (V <sub>oc</sub> )	-176.6mV / K
	Current (I <sub>sc</sub> )	3.5mA / K
NOCT		45° C +/-2° C
Series Fuse Rating		15 A
Limiting Reverse Current (3-strings)	I <sub>r</sub>	15.5 A

## Electrical Data

Measured at Nominal Operating Cell Temperature (NOCT): Irradiance 800W/m<sup>2</sup>, 20° C, wind 1 m/s

Nominal Power	P <sub>nom</sub>	236 W
Rated Voltage	V <sub>mpp</sub>	50.4 V
Rated Current	I <sub>mpp</sub>	4.69 A
Open Circuit Voltage	V <sub>oc</sub>	60.6 V
Short Circuit Current	I <sub>sc</sub>	5.02 A

## I-V Curve



Current/voltage characteristics with dependence on irradiance and module temperature.

## Tested Operating Conditions

Temperature	-40° C to +85° C
Max load	550 kg / m <sup>2</sup> (5600 Pa), front (e.g. snow) w / specified mounting configurations 245 kg / m <sup>2</sup> (2400 Pa) front and back - e.g. wind
Impact Resistance	Hail - 25 mm at 23 m/s

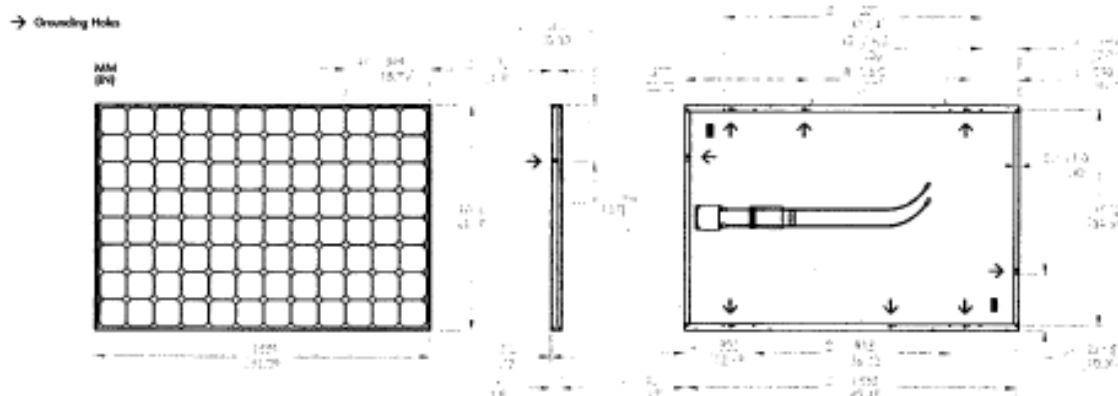
## Warranties and Certifications

Warranties	25 year limited power warranty 10 year limited product warranty
Certifications	IEC 61215 Ed. 2, IEC 61730 (SCH)

## Mechanical Data

Solar Cells	96 SunPower all-back contact monocrystalline	Output Cables	1000mm length cables / MultiContact (MC4) connectors
Front Glass	High transmission tempered glass with anti-reflective (AR) coating	Frame	Anodised aluminium alloy type 6063 (black)
Junction Box	IP-65 rated with 3 bypass diodes 32 x 155 x 128 (mm)	Weight	18.6 kg

## Dimensions



CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

Visit [sunpowercorp.com](http://sunpowercorp.com) for more information.



**High-yield**

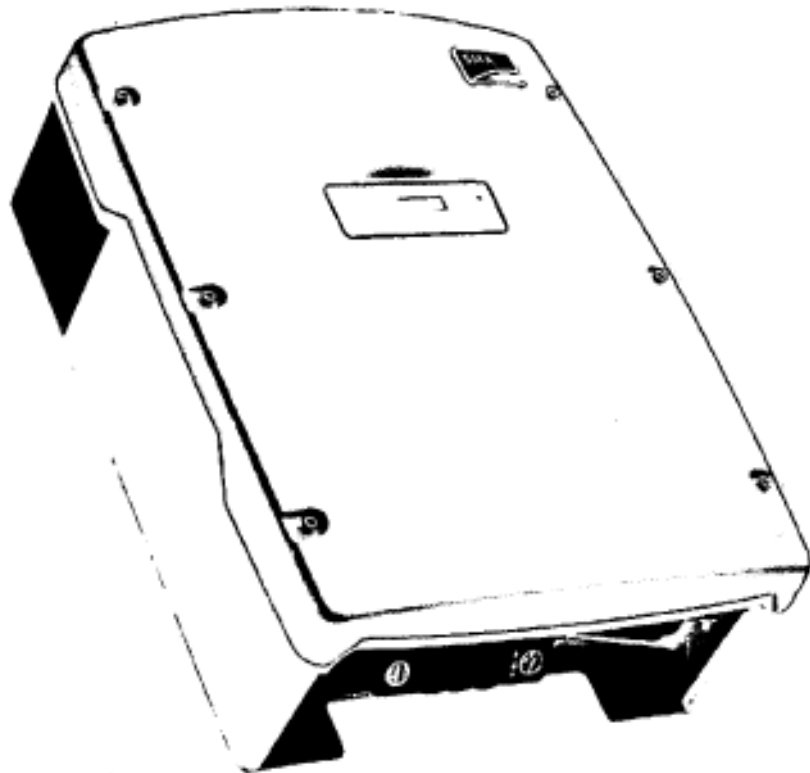
- > OptiCool active temperature management
- > The best tracking efficiency with OptiTrac MPP tracking

**Safe**

- > Galvanic isolation
- > Integrated ESS DC load-disconnecting unit
- > SMA Power Balancer for three-phase grid connection

**Flexible**

- > Suitable for generator grounding



## SUNNY MINI CENTRAL

**Ideal for three-phase systems**

The Sunny Mini Central 4600A, 5000A, and 6000A are convincing, above all, due to their first-rate efficiency: they reliably feed maximum energy yields into the public grid. Additionally, they offer the highest degree of flexibility in plant design due to their graduated power classes. They are suitable for use in smaller plants as well as in the implementation of solar parks with power outputs of several hundred kilowatts. Furthermore, the galvanic isolation provides flexible connection possibilities. In this way, the Sunny Mini Central can be used with crystalline cells as well as thin-film modules.

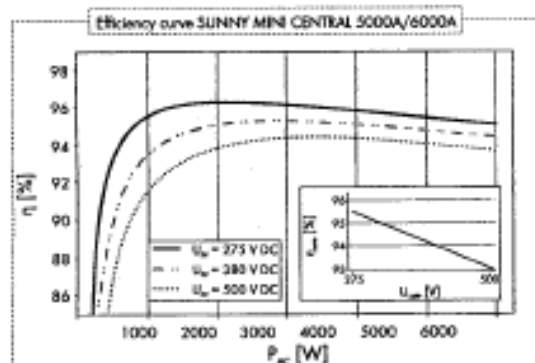
## Technical Data

## SUNNY MINI CENTRAL 4600A / 5000A / 6000A

	SMC 4600A	SMC 5000A	SMC 6000A
<b>Input (DC)</b>			
Max. DC power	5250 W	5750 W	6300 W
Max. DC voltage	600 V	600 V	600 V
PI-voltage range, MPPT	246 V - 480 V	246 V - 480 V	246 V - 480 V
Max. input current	26 A	26 A	26 A
Number of MPPT trackers	1	1	1
Max. number of strings (parallel)	4	4	4
<b>Output (AC)</b>			
Nominal AC output	4600 W	5000 W	6000 W
Max. AC power	5000 W	5500 W	6000 W
Max. output current	26 A	26 A	26 A
Nominal AC voltage / range	220 V - 240 V / 180 V - 260 V	220 V - 240 V / 180 V - 260 V	220 V - 240 V / 180 V - 260 V
AC grid frequency (self-adjusting) / range	50 Hz / 60 Hz / $\pm 4.5$ Hz	50 Hz / 60 Hz / $\pm 4.5$ Hz	50 Hz / 60 Hz / $\pm 4.5$ Hz
Phase shift (cos $\phi$ )	1	1	1
AC connection / Power balancing	single-phase / ●	single-phase / ●	single-phase / ●
<b>Efficiency</b>			
Max. efficiency	96.1 %	96.1 %	96.1 %
Euro-Eff	95.2 %	95.2 %	95.2 %
<b>Protection devices</b>			
DC reverse polarity protection	●	●	●
ESS DC load-disconnecting switch	●	●	●
AC short-circuit protection	●	●	●
Ground fault monitoring	●	●	●
Grid monitoring (SMA Grid Guard)	●	●	●
Galvanically isolated	●	●	●
<b>General Data</b>			
Dimensions (W / H / D) in mm	468 / 613 / 242	468 / 613 / 242	468 / 613 / 242
Weight	62 kg	62 kg	63 kg
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C
Noise emission (typical)	$\leq 42$ dB(A)	$\leq 42$ dB(A)	$\leq 42$ dB(A)
Consumption: operating (standby) / night	<7 W / 0.25 W	<7 W / 0.25 W	<7 W / 0.25 W
Topology	1F transformer	1F transformer	1F transformer
Cooling concept	OptiCool	OptiCool	OptiCool
Installation: indoors / outdoors (IP65 electronics)	● / ●	● / ●	● / ●
<b>Features</b>			
DC connection: MC3 / MC4 / Tyco	○ / ● / ○	○ / ● / ○	○ / ● / ○
AC connection: screw terminal	●	●	●
LCD	●	●	●
Interface: Bluetooth® / RS485	○ / ○	○ / ○	○ / ○
Warranty: 5 years / 10 years / 15 years / 20 years / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Certificates and approvals	www.SMA.de	www.SMA.de	www.SMA.de

● Standard ○ Optional

Data of nominal conditions - last update: March 2009



## Accessories

RS485 interface of type  
485PWR

Bluetooth Pigeon

SMA Power Balancer  
Plug PBL-SMC-10NRGrounding Kit "Positive"  
ESHWPNRGrounding Kit "Negative"  
ESHWPNR