

NABERS Embodied Emissions Report

PROJECT NAME: 3-9 Park Avenue

ADDRESS: 3 Park Ave Gordon NSW 2072

CLIENT: Park Ave Residence DM Pty Ltd

CLASS: 2

DOCUMENT CONTROL

PREPARED BY: Tom Chen/William Derrier

CHECKED BY: JB

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1 - Introduction

The objective of the Embodied Emission Report is to disclose the embodied emissions of key materials that are required for non-residential developments from 1st/October 2023.

The use of Embodied Emissions Material Form is an interim instrument before the NABERS Embodied Emission Tool becomes the required format of reporting when the NABERS framework is released in mid-2024.

The quantities of key materials and associated embodied emissions at the development application and construction certificate stages, or when applying for a residential complying development certificate.

This report will provide the NSW government access to data to enable oversight of modelled operational emissions water use or embodied emissions performance for new non-residential buildings under State Environmental Planning Policy Sustainable Buildings 2022 (SB SEPP).

1.1 - NABERS Embodied Emissions Material Form

The NABERS Embodied Emissions Material Form has been developed by the National Australian Built Environment Rating System [NABERS] team to enable Applicants to input quantities of key construction materials used in a development. Until mid-2024, this form will be considered satisfactory for meeting the requirements of sections 35B clause (3) and 10A clause (4) of the EP&A Regulations.

The building components and key construction materials to be reported on will be itemised in the tool which will automatically convert the quantities into embodied emissions factors.

The total embodied emissions for the development, measured in kgCO₂-e/m², will be calculated by summing up the emissions from the provided materials. These emissions factors are derived from Environmental Product Declaration (EPDs). Emissions factors for materials that don't have EPDs will be conservative estimates, based on a review of available data. It will preference process life cycle assessment data from EPDs where this is available (e.g. timber concrete, steel). Hybrid data will be considered where there is a lack of suitable process data (e.g. facade assemblies and building services).

What materials are included? Embodied emissions reporting for non-residential development encompasses the whole building. At a minimum, 80% of materials must be quantified, including: - Substructure (foundations, ground-bearing slabs, basement retaining walls etc) - Superstructure (suspended floors, structural walls, columns, beams etc) - Envelope (cladding, curtain walls, roofing, windows, doors etc) - Permanent internal walls and doors. - External works (hard landscaping and vehicle trafficable surfaces). In addition, cost material amounts (excluding labour, plant, equipment, margins and taxes) must be entered for: - Fit-out, for items delivered as part of the primary building contract - Core services (mechanical, electrical, plumbing etc) required to run the core building services.

1.2– Report scope

The scope of this report is limited to the design documentation referenced in Section 2 of this report and the methodology employed as per Chapter 3 of the SB SEPP and amendments to Section 35B of the EP&A regulation and Section 10A of the EP&A (Development Certification and Fire safety) Regulation.

The proposed development is located at No. 3 Park Ave Gordon NSW 2072.

1.3 - Referenced Documents

The following documents and design plans have been referenced in compilation of this report:

1. Architectural Plans listed below provided by “Michael Gee” and received by Certified Energy at 01/04/2025 and 07/04/2025.
 - PTW-DA-A000000-COVER, Revision A, Dated 14/03/2025
 - PTW-DA-A000001-PERSPECTIVE 01, Revision A, Dated 14/03/2025
 - PTW-DA-A000002-PERSPECTIVE 02, Revision A, Dated 14/03/2025
 - PTW-DA-A000003-PERSPECTIVE 03, Revision A, Dated 14/03/2025
 - PTW-DA-A200020-LOCATION PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-A200030-SITE ANALYSIS, Revision A, Dated 14/03/2025
 - PTW-DA-A200040-DEMOLITION PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-A200060-SITE PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-B1B0010-BASEMENT 02 PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-B1B0011-BASEMENT 01 PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-B1L0001-LOWER GROUND FLOOR PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-B1L0002-UPPER GROUND FLOOR PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-B1L0003-LEVEL 01 PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-B1L0004-LEVEL 02 PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-B1L0005-TYPICAL PLAN (L03-L06), Revision A, Dated 14/03/2025
 - PTW-DA-B1L0006-LEVEL 07 PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-B1L0007-LEVEL 08 PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-B1ROFO8-ROOF PLAN, Revision A, Dated 14/03/2025
 - PTW-DA-C110010-NORTH & SOUTH ELEVATIONS, Revision A, Dated 14/03/2025
 - PTW-DA-C120010-EAST & WEST ELEVATIONS, Revision A, Dated 14/03/2025
 - PTW-DA-D110010-SECTION N-S, Revision A, Dated 14/03/2025
 - PTW-DA-D120010-SECTION E-W, Revision A, Dated 14/03/2025
 - PTW-DA-E120010-FINISHES AND MATERIALS, Revision A, Dated 14/03/2025
 - PTW-DA-Q100010-BUILDING HEIGHT LIMIT, Revision A, Dated 14/03/2025
 - 3D DWG Export File, Dated 04/04/2025
 - 3D IFC Export File, Dated 07/04/2025

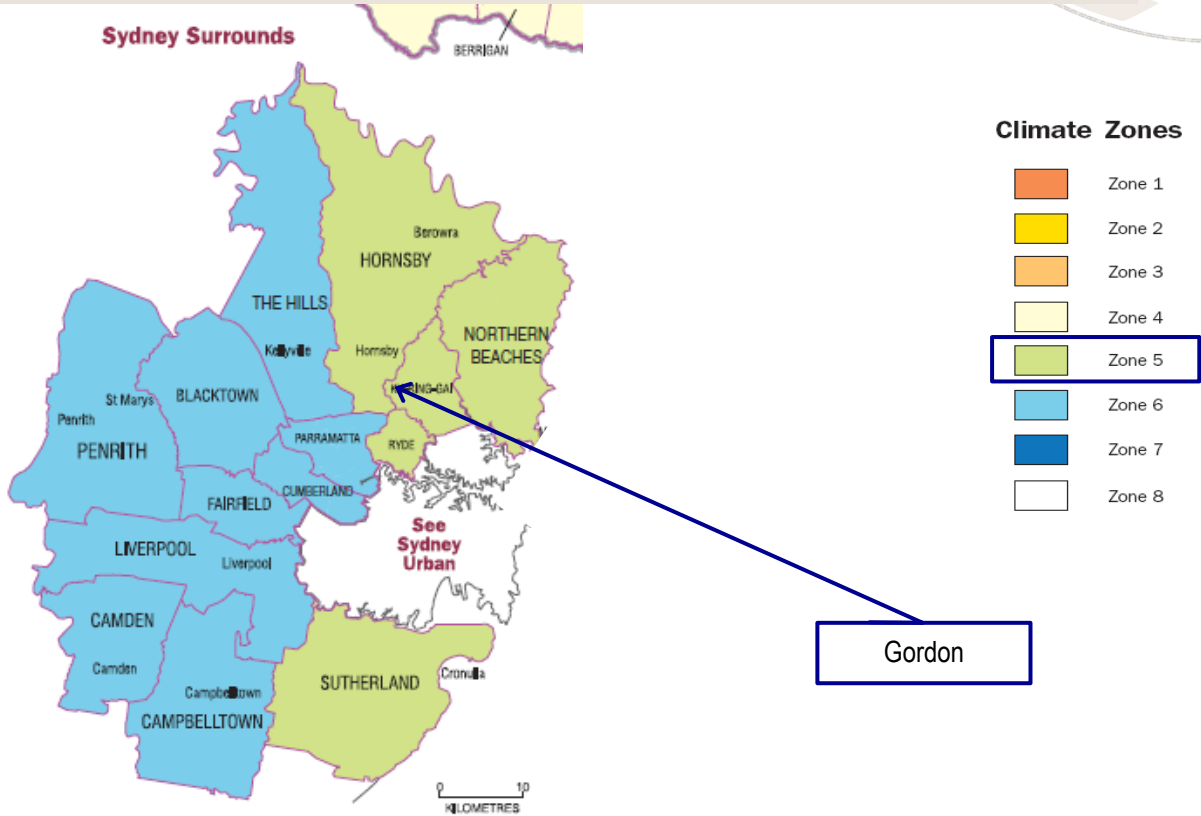
2. Email correspondence and response to information request received from the development manager “Michael Gee” in relation to the Proposed Development.



2 - Project Details

2.1 – Project Classification and Climate Zone

BUILDING CLASS 2



CLIMATE	COLOUR	SUBURB
ZONE 5	GREEN	GORDON

Climate Characteristics of Zone 5

Warm Temperate

- Moderate diurnal (day-night) temperature range near coast to high diurnal range inland
- Four distinct seasons: summer and winter can exceed human comfort range, spring and autumn are ideal for human comfort
- Mild winters with low humidity
- Hot to very hot summers with low to moderate humidity
- Widely variable solar access and cooling breeze directions and patterns

Key Design Objectives

Minimising heating and cooling energy use should be a primary design objective

2.2 – Proposed Development and building elements nomenclature

The following construction elements are being proposed in the building design according to architectural plans and design documents referenced in this report:

Structure:

1. Concrete in-situ:
 - a. >20 MPa to ≤32 MPa
 - b. >32 MPa to ≤40 MPa
 - c. >40 MPa to ≤50 MPa
 - d. >50 MPa to ≤60 MPa
2. Reinforcing steel: Bar & mesh

Envelope:

1. Windows and doors: Aluminium frame, Single glazed
2. Roller doors: Steel profile

Permanent internal walls and doors:

1. Internal walls:
 - a. Steel (light framing)
 - b. Plasterboard
2. Internal doors:
 - a. Steel
 - b. Lift Glazed Doors
3. Other:
 - a. Internal louvres

Services:

1. Mechanical services
2. Vertical transportation
3. Electrical services
4. Plumbing/hydraulic services
5. Fire service
6. Other: Special equipment

External works:

1. Concrete in-situ:
 - a. >10 MPa to ≤20 MPa
 - b. >20 MPa to ≤32 MPa
 - c. >32 MPa to ≤40 MPa
2. Reinforced steel: Bar & mesh
3. Fill

4. Other:
 - a. Rails and frame
 - b. Vertical fences
 - c. Glazed Balustrades
 - d. Concrete block
 - e. Brick Panels
 - f. Landscape



Building scope Note:



Legend: Scope of this report



Figure 1 – Basement 2

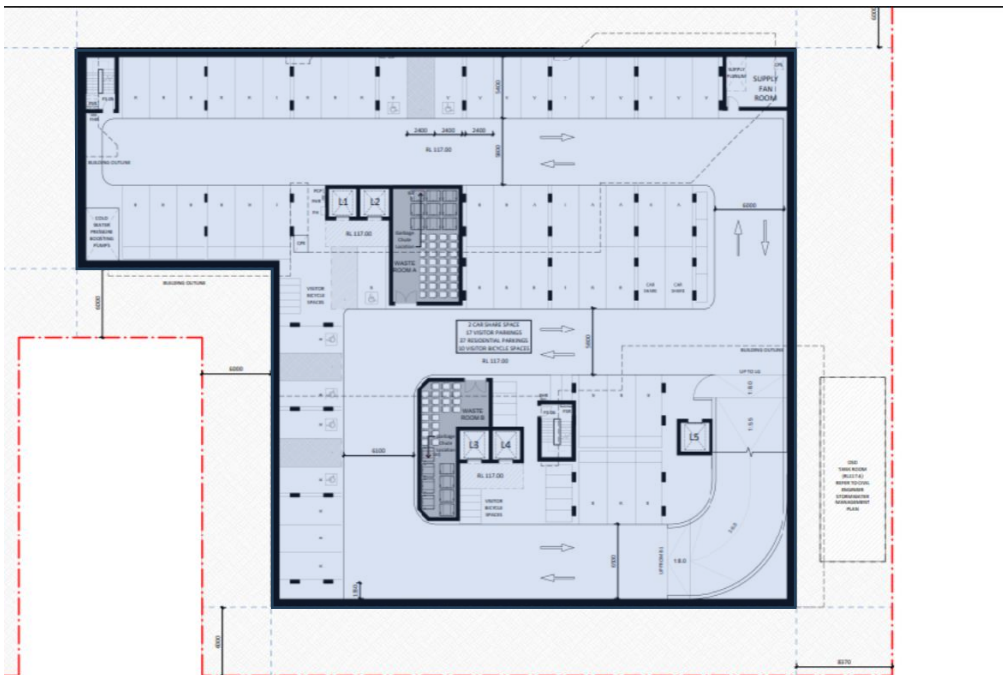


Figure 2 – Basement 1

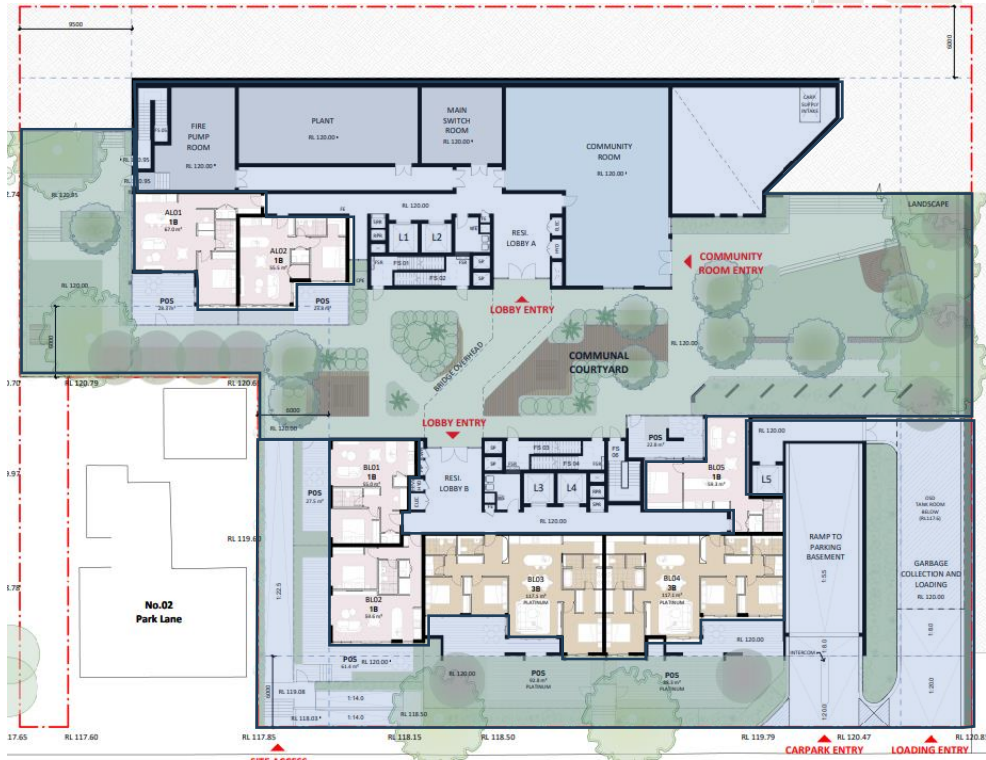


Figure 3 – Lower Ground Floor



Figure 4 – Upper Ground Floor



Figure 5 – Level 1

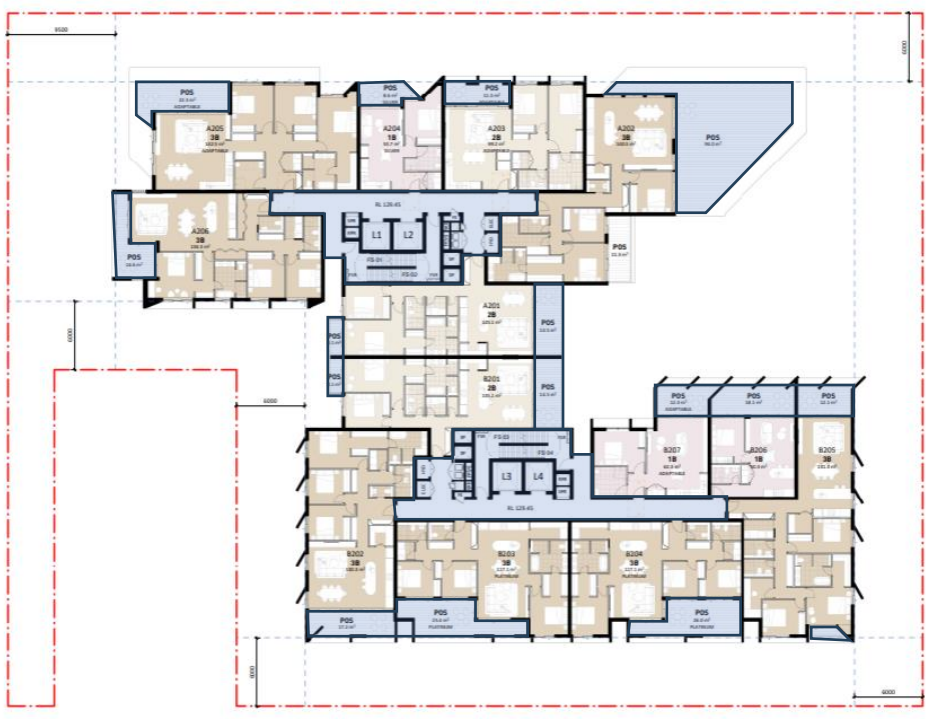


Figure 6 – Level 2



Figure 7 – Level Typical Levels (03-06)

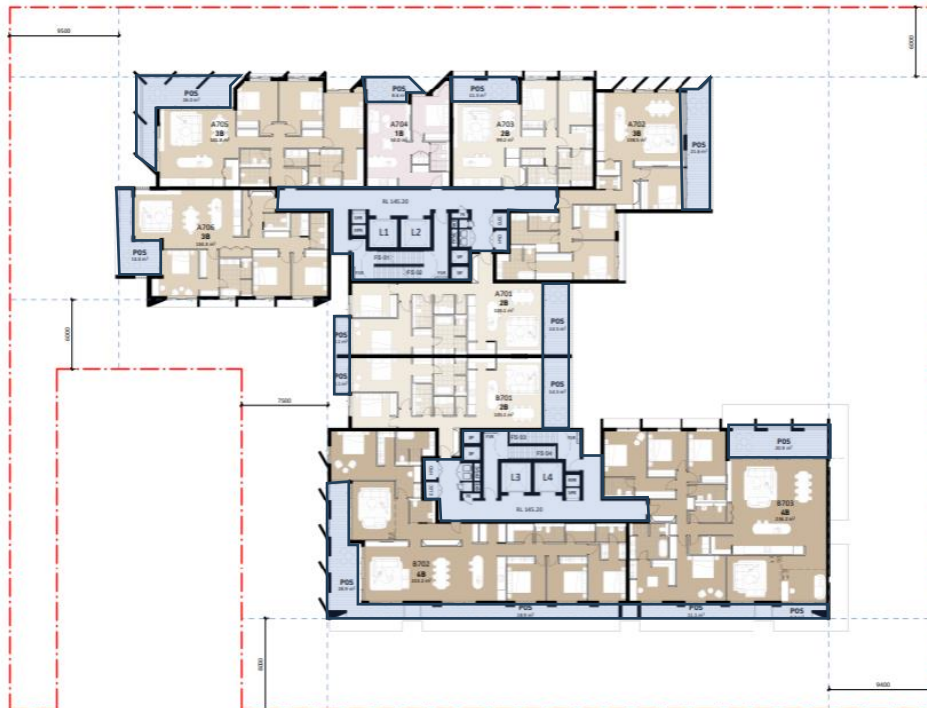


Figure 8 – Level 7

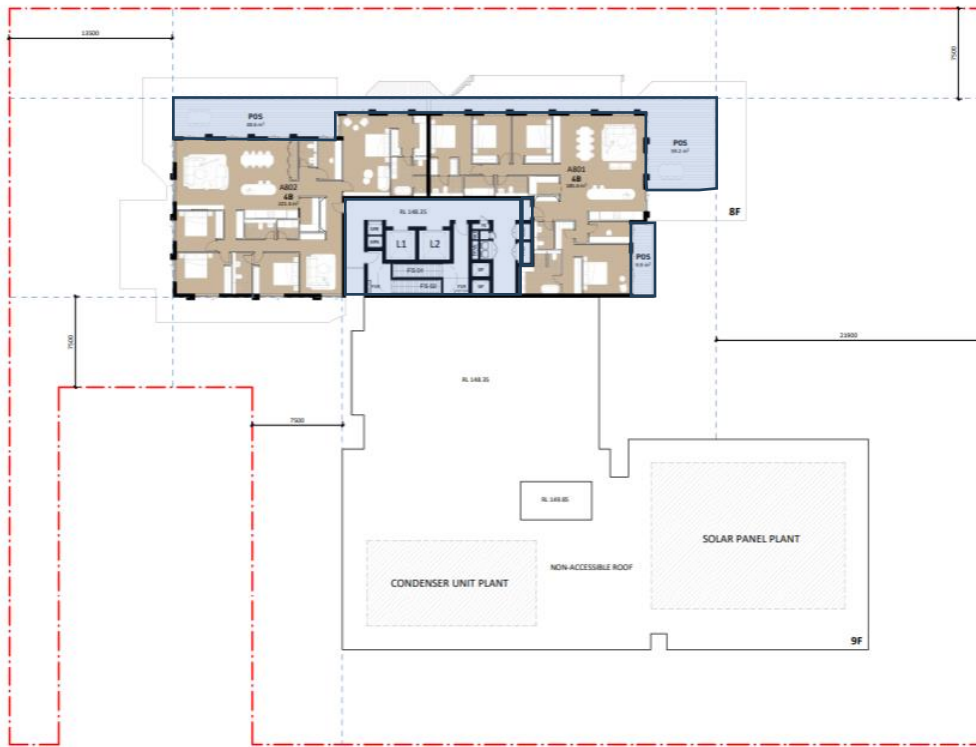


Figure 9 – Level 8

3 - Embodied Emissions Material Form

3.1 – Work Sheet 1 – Building Information



Step 1: About the building

Fill out blue cells

Building location and site data	Value	Unit	Comment
Building address	3 Park Avenue Gordon		
Postcode	2072		Postcode of building
Town/city	GORDON		Town/city/suburb/region of the building site.
Distance to nearest major city/town	22	km	Declare the shortest route by road to your site from the centre of your nearest major city (>100,000 people). The route must be traversable by a semitrailer truck.
Project stage	Development Application		Stage of development
New build or major renovation?	New build		
Brownfield or greenfield site?	Brownfield		

Floor area by NCC building classification	Gross (GFA)	Net (NLA/NSA/UFA)	Unit	
Please enter all floor areas relevant to your building. Leave areas blank if not applicable. Please enter Gross Floor Area (GFA) for all building classifications. Please also enter the corresponding net area (Net Lettable Area, Net Sellable Area or Usable Floor Area) where it is commonly used for that building classification.				
Class 1a: Detached residential buildings			m ²	Gross Floor Area (GFA), as defined by the AIQS Australian Cost Management Manual
Class 1b: Boarding houses and hostels			m ²	Net area (Net Lettable Area, Net Sellable Area, Usable Floor Area), as defined by the PCA's Method of Measurement
Class 2: Multi-unit residential buildings	1	11,250	m ²	
Class 3: Other residential buildings			m ²	
Class 4: Residential inside non-residential			m ²	
Class 5: Office buildings			m ²	
Class 6: Retail buildings			m ²	
Class 7a: Carparks			m ²	
Class 7b: Warehouse-type buildings			m ²	
Class 8: Industrial buildings			m ²	
Class 9a: Healthcare buildings			m ²	
Class 9b: Civic buildings			m ²	
Class 9c: Aged care and personal care buildings			m ²	
Class 10a: Non-habitable buildings			m ²	
Class 10b: Miscellaneous structures			m ²	
Class 10c: Bushfire shelters			m ²	
Total	1	11,250	m²	

Project information	Value	Unit	
Total cost of project	113,748,607	AUD excl. GST	Include labour, materials, transport, plant, equipment and professional fees. Exclude GST, land, finance, escalation and other costs.
Building design life	50	years	If uncertain, enter 50 years
Estimated envelope life	25	years	
Estimated replacement cycle for mechanical services	25	years	
Estimated replacement cycle for vertical transportation	25	years	

Dimensions of the building and the site	Value	Unit	
Site area	4,430	m ²	Total area of site to external boundary.
Shared services or infrastructure	No		Indicate if there are shared services that the building utilises, or shared foundations, basement or podium
Building footprint area	1,732	m ²	Total floor area of the ground floor measured to the outside edge of the floorplate.
Typical floor area (if different to building footprint area)	1,660	m ²	
Typical floor perimeter	284	m	
Area of external carpark (not included in GFA)	0	m ²	
Area of external hardstand (not included in GFA)	885	m ²	
Area of other hard landscaping (not included in GFA)	0	m ²	Include all other impervious areas. For example, patios, paths and driveways (not already included in carparks and hardstands above).
Number of floors/storeys above ground, including ground floor	10	no.	
Number of floors/storeys below ground	2	no.	
Number of floors/storeys of car parking	2	no.	
Total height above ground	33	m	Measured from the average finished grade to the highest point of the building, excluding protrusions (lighting rods, masts, chimneys, etc.)

Structural material choices	Value	Unit	
Foundation type	Slab-on-ground		
Frame type (dominant)	Hybrid: Steel, reinforced concrete		
Suspended floor type (typical)	Reinforced concrete		
Describe low carbon materials specified in your building (e.g. green concrete, low carbon bricks)			
Describe recycled content specified in your building (e.g. recycled steel)			

3.2 – Work sheet 2 – Quantity of Materials



Step 2: Quantity of materials

Complete all blue cells that are applicable to the building. Leave items that aren't applicable blank. **Fit out blue cells**

Material category	Sub-category 1	Sub-category 2	Sub-category 3	Value	Unit of measure	Comments	MOS ACOW Code	CRS3 Level 3 Codes Construction
Structure								
The structural parts of the building that are below ground (foundations) and above ground (super-structure). This includes all below the substructure, foundations, basement levels, suspended floors, wall structure, roof structure, walls, lift shafts and balconies. It includes external areas such as balconies, terraces, pergolas, etc.								
Coverage of structural material exposed				80%		Required: Coverage of gggg for structural elements entered below. Minimum requirement = 80%. Exclude head contractor performance and margins.		
Concrete in situ	>10 MPa				m ³	Passes error monitoring steel as part of 'Reinforcing steel' below	01_58 or 02-11	02 or 03
Concrete in situ	>10 MPa to <20 MPa				m ³	Passes error monitoring steel as part of 'Reinforcing steel' below	01_58 or 02-11	02 or 03
Concrete in situ	>20 MPa to <32 MPa			3,675.7	m ³	Passes error monitoring steel as part of 'Reinforcing steel' below	01_58 or 02-11	02 or 03
Concrete in situ	>32 MPa to <40 MPa			1,772.0	m ³	Passes error monitoring steel as part of 'Reinforcing steel' below	01_58 or 02-11	02 or 03
Concrete in situ	>40 MPa to <50 MPa			86.1	m ³	Passes error monitoring steel as part of 'Reinforcing steel' below	01_58 or 02-11	02 or 03
Concrete in situ	>50 MPa to <60 MPa			286.7	m ³	Passes error monitoring steel as part of 'Reinforcing steel' below	01_58 or 02-11	02 or 03
Concrete in situ	>60 MPa to <70 MPa				m ³	Passes error monitoring steel as part of 'Reinforcing steel' below	01_58 or 02-11	02 or 03
Concrete in situ	>70 MPa				m ³	Passes error monitoring steel as part of 'Reinforcing steel' below	01_58 or 02-11	02 or 03
Concrete precast panel					m ²	Passes error monitoring steel in sheet form below. For known at DA stage, please make your best estimate. For known at CC stage, please ask your supplier.	01_58 or 02-11	02 or 03
Concrete block	Solid com				m ³	Enter as GRC/CLC blocks, calculated as (area of wall in m ²) * thickness in mm / 1000.	01_58	02 or 03
Concrete block/brick	Solid				m ³	Passes error monitoring steel in sheet form below. For known at DA stage, please make your best estimate. For known at CC stage, please ask your supplier.	01_58	02 or 03
Concrete block/brick	Solid AAC				m ³	Enter as GRC/CLC blocks, calculated as (area of wall in m ²) * thickness in mm / 1000.	01_58	02 or 03
Mortar					m ³	Enter as GRC/CLC blocks, calculated as (area of wall in m ²) * thickness in mm / 1000.	01_58	02 or 03
Reinforcing steel	Bar & mesh			607,660	kg	Include all reinforcing steel bar/ mesh in the building's structure in this row. Usually this is calculated as kg/m ³ per concrete element and then summed. Example: 10 m ³ of 40 MPa concrete @ 100 kg/m ³ + 5 m ³ of 50 MPa concrete @ 150 kg/m ³ = 1750 kg reinforcing steel.	01_58 or 02-11	02 or 03
Reinforcing steel	Fibre & strand				kg	Include all steel fibre reinforcing and strand in the building's structure in this row. Examples include carbon fibres, mineral fibres and aramid fibres.	01_58	02 or 03
Structural steel	Hot rolled structural				m	Examples include C purlins, Z purlins and all light gauge steel framing.	01_58	02 or 03
Structural steel	Cold formed structural				m	Examples include C purlins, Z purlins and all light gauge steel framing.	01_58	02 or 03
Structural steel	Other rolled structural				m	Examples include C purlins, Z purlins and all light gauge steel framing.	01_58	02 or 03
Structural steel	Plate				m	Include any allowance for concrete haas	01_58	02 or 03
Structural steel	Sheet				m	Priority for engineered inter-structure connections	01_58	02 or 03
Structural steel	Specialty steel				m	02-11	02 or 03	
Reinforced concrete pile	Concrete				m	Passes error monitoring steel in this below. For known at DA stage, please make your best estimate. For known at CC stage, please ask your supplier.	01_58	02 or 03
Reinforced concrete pile	Steel reinforcing				kg	For known at DA stage, please make your best estimate. For known at CC stage, please ask your supplier.	01_58	02 or 03
Steel plate					m	Where concrete and reinforcing steel are also used, enter these in the row above.	01_58	02 or 03
Telex plate/brick					m	Where concrete and reinforcing steel are also used, enter these in the row above.	01_58	02 or 03
Telex (pave)	Sawn softwood				m ³		02-11	02 or 03
Telex (pave)	Sawn hardwood				m ³		02-11	02 or 03
Telex (pave)	CLT				m ²		02-11	02 or 03
Telex (pave)	GRCM				m ²		02-11	02 or 03
Telex (pave)	LVL				m ²		02-11	02 or 03
Telex (pave)	OSB				m ²	Enter as GRC/CLC blocks, calculated as (area of wall in m ²) * thickness in mm / 1000.	02-11	02 or 03
Block	Steel cast				m ²	Enter as GRC/CLC blocks, calculated as (area of wall in m ²) * thickness in mm / 1000.	02-11	02 or 03
Structural Insulated Panel (SIP)	Steel cast				m ²	Enter as GRC/CLC blocks, calculated as (area of wall in m ²) * thickness in mm / 1000.	01_58	02 or 03
Structural Insulated Panel (SIP)	Aluminium cast				m ²		01_58	02 or 03
Structural Insulated Panel (SIP)	Engineered timber wall				m ²		01_58	02 or 03
Fill					m ³	Include purchased material only. Exclude site-work material	01_58	01
Soil & gravel					m ³	Include purchased material only. Exclude site-work material and subgrade in concrete.	01_58	01 or 02 or 03
Waterproofing membrane	Bituminous				m ²		01_58	01 or 02 or 03
Waterproofing membrane	Polyethylene				m ²		01_58	01 or 02 or 03
Other structural (Describe and add unit >>)						Passes error a description for any structural material that does not fit a predefined classification.		
Other structural (Describe and add unit >>)						Passes error a description for any structural material that does not fit a predefined classification.		
Other structural (Describe and add unit >>)						Passes error a description for any structural material that does not fit a predefined classification.		

Envelope

The area of the building that separates the internal building from the external environment. This includes the roof cladding, wall cladding, windows, doors and interstitial shading. It also includes insulation and the internal wall lining of envelope walls.

Material category	Sub-category 1	Sub-category 2	Sub-category 3	Value	Unit of measure	Comments	MOS ACOW Code	CRS3 Level 3 Codes Construction
Envelope								
The area of the building that separates the internal building from the external environment. This includes the roof cladding, wall cladding, windows, doors and interstitial shading. It also includes insulation and the internal wall lining of envelope walls.								
Coverage of envelope material exposed				80%		Required: Coverage of gggg for envelope items you have entered below. Minimum requirement = 80%. Exclude head contractor performance and margins.		
Roof cladding	Profiled steel				m ²	Enter as m ² of roof area. Exclude allowance for overlap in the roofing sheets. This row includes all measured and prepared (including sheet piling) steel in the roof area. Examples include: galvanized steel, zinc-coated steel, stainless steel, weather resistant steel, weather resistant steel.	01_58	03 or 04
Roof cladding	Profiled aluminium				m ²	Enter as m ² of roof area. Exclude allowance for overlap in the roofing sheets. This row also includes prepared aluminium sheets.	01_58	03 or 04
Roof cladding	Profiled zinc				m ²	Enter as m ² of roof area. Exclude allowance for overlap in the roofing sheets. This row also includes prepared zinc sheets.	01_58	03 or 04
Roof cladding	Membrane				m ²	Enter as m ² of roof area. Exclude allowance for overlap in the membrane sheets.	01_58	03 or 04
Roof cladding	Tile (structural clay)				m ²	Enter as m ² of roof area. Exclude allowance for overlap between tiles.	01_58	03 or 04
Roof cladding	Tile (concrete)				m ²	Enter as m ² of roof area. Exclude allowance for overlap between tiles.	01_58	03 or 04
Roof cladding	Other (Phase describe >>)				m ²	Passes error a description for any roofing that does not fit a predefined classification.	01_58	03 or 04
Wall cladding	Bricks (face course)				m ²	Enter as m ² of wall area. Annoted bricks are used using ambient temperature.	01_58	03 or 04
Wall cladding	Bricks (inner leaf)				m ²	Enter as m ² of wall area. Annoted bricks are used using ambient temperature.	01_58	03 or 04
Wall cladding	Bricks (concrete)				m ²	Enter as m ² of wall area.	01_58	03 or 04
Wall cladding	Mortar and render				m ²	Enter as m ² of wall area.	01_58	03 or 04
Wall cladding	Profiled steel				m ²	Enter as m ² of wall area. Exclude allowance for overlap in the cladding sheets, offsets, etc. This row includes all measured and prepared (including sheet piling) steel in the wall area. Examples include: galvanized steel, zinc-coated steel, stainless steel, weather resistant steel, weather resistant steel.	01_58	03 or 04
Wall cladding	Profiled aluminium				m ²	Enter as m ² of wall area. Exclude allowance for overlap in the cladding sheets, offsets, etc. This row also includes prepared aluminium sheets.	01_58	03 or 04
Wall cladding	Profiled zinc				m ²	Enter as m ² of wall area. Exclude allowance for overlap in the cladding sheets, offsets, etc. This row also includes prepared zinc sheets.	01_58	03 or 04
Wall cladding	GRC cladding				m ²	Enter as m ² of wall area. GRC = Glass Reinforced Concrete.	01_58	03 or 04
Wall cladding	Telex weatherboards				m ²	Enter as m ² of wall area. Exclude allowance for overlap between weatherboards, offsets, etc.	01_58	03 or 04
Wall cladding	Fibre cement board				m ²	Enter as m ² of wall area. Exclude allowance for offsets, etc.	01_58	03 or 04
Wall cladding	Tempered				m ²	Enter as m ² of wall area. Exclude allowance for offsets, etc.	01_58	03 or 04
Wall cladding	Brick (lay / render)				m ²	Enter as m ² of wall area. Exclude allowance for offsets, etc.	01_58	03 or 04
Wall cladding	Paintwork				m ²	Enter as m ² of wall area. Exclude allowance for offsets, etc. Includes both external wall linings and internal wall linings for wettable walls.	01_58	03 or 04
Wall cladding	Other (Phase describe >>)				m ²	Enter as m ² of wall area. Exclude allowance for offsets, etc. Includes both external wall linings and internal wall linings for wettable walls.	01_58	03 or 04
Windows & doors	Aluminium frame	Single glazed			m ²	Passes error a description for any window or door that does not fit a predefined classification.	01_58 or 01_59	03 or 04
Windows & doors	Aluminium frame	Double glazed			m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Aluminium frame	Triples glazed			m ²	Includes all double glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Aluminium frame	Other (Phase describe >>)			m ²	Includes all triple glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Timber frame	Single glazed			m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Timber frame	Double glazed			m ²	Includes all double glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Timber frame	Triples glazed			m ²	Includes all triple glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Timber frame	Other (Phase describe >>)			m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	uPVC frame	Single glazed			m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	uPVC frame	Double glazed			m ²	Includes all double glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	uPVC frame	Triples glazed			m ²	Includes all triple glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	uPVC frame	Other (Phase describe >>)			m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Fibre-reinforced	Single glazed			m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Fibre-reinforced	Double glazed			m ²	Includes all double glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Fibre-reinforced	Triples glazed			m ²	Includes all triple glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Windows & doors	Fibre-reinforced	Other (Phase describe >>)			m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58 or 01_59	03 or 04
Other (Phase describe >>)					m ²	Passes error a description for any window or door that does not fit a predefined classification.	01_58 or 01_59	03 or 04
Curtain wall	Single skin facade	Aluminium frame	Single glazed		m ²	Passes error a description for any curtain wall that does not fit a predefined classification.	01_58	03 or 04
Curtain wall	Single skin facade	Aluminium frame	Double glazed		m ²	Includes all double glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Curtain wall	Single skin facade	Aluminium frame	Triples glazed		m ²	Includes all triple glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Curtain wall	Single skin facade	Aluminium frame	Other (Phase describe >>)		m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Curtain wall	Single skin facade	Aluminium frame	GRC cladding		m ²	GRC = Glass Reinforced Concrete.	01_58	03 or 04
Curtain wall	Single skin facade	Aluminium frame	Insulated double box		m ²		01_58	03 or 04
Curtain wall	Single skin facade	Aluminium frame	Brick cladding		m ²		01_58	03 or 04
Curtain wall	Single skin facade	Aluminium frame	Stone cladding		m ²		01_58	03 or 04
Curtain wall	Double skin facade	Aluminium frame	Single glazed		m ²	Passes error a description for any double skin facade area in this section. All double skin facade areas should be entered in the next section. Includes all double glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Curtain wall	Double skin facade	Aluminium frame	Double glazed		m ²	Includes all double glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Curtain wall	Double skin facade	Aluminium frame	Triples glazed		m ²	Includes all triple glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Curtain wall	Double skin facade	Aluminium frame	Other (Phase describe >>)		m ²	The type of glazing refers to the building's envelope wall, not including the outer skin.	01_58	03 or 04
Curtain wall	Double skin facade	Aluminium frame	GRC cladding		m ²	GRC = Glass Reinforced Concrete.	01_58	03 or 04
Curtain wall	Double skin facade	Aluminium frame	Insulated double box		m ²		01_58	03 or 04
Curtain wall	Double skin facade	Aluminium frame	Brick cladding		m ²		01_58	03 or 04
Curtain wall	Double skin facade	Aluminium frame	Stone cladding		m ²		01_58	03 or 04
Curtain wall	Double skin facade	Aluminium frame	Other (Phase describe >>)		m ²	Passes error a description for any curtain wall that does not fit a predefined classification.	01_58	03 or 04
Other (Phase describe >>)					m ²	Passes error a description for any curtain wall that does not fit a predefined classification.	01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Single glazed		m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Double glazed		m ²	Includes all double glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Triples glazed		m ²	Includes all triple glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Other (Phase describe >>)		m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	GRC cladding		m ²	GRC = Glass Reinforced Concrete.	01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Insulated double box		m ²		01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Brick cladding		m ²		01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Stone cladding		m ²		01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Other (Phase describe >>)		m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Double glazed		m ²	Includes all double glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Triples glazed		m ²	Includes all triple glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Slack framed wall system	Aluminium frame	Oblique section	Other (Phase describe >>)		m ²	Includes all single glazing, including standard, toughened, laminated and low-E.	01_58	03 or 04
Slack framed wall system								

3.3 – Work sheet 3 – Certifier Details

Step 3: Certifier details

Fill out blue cells

The material quantities must be determined through an itemised list of building materials (such as a bill of quantities) and certified by a quantity surveyor, designer, engineer or NABERS Assessor.

Person that completed this form	Value	Note
Name	William Derrier	Required
Company	Certified Energy	Required
ABN		
Profession	ESD Consultant	Required
Qualification or registration	MSc Civil Engineering, Energy Efficiency	Required

Person that certified the details in this form	Value	Note
Name	Jamie Bonnefin	Required
Company	Certified Energy	Required
ABN		
Profession	ESD Consultant/NABERS assessor	Required
Qualification or registration	Registered NABERS assessor No. 90269	Required

Confirmation of certification	Value	Note
Are 80% of material costs captured for the building's structure, envelope and external works?	Yes	Required
If no - why not?		

Additional comments from data provider

Additional comments of certifier

Attach this Excel spreadsheet to your development application or construction certificate application.

4 - Report Recommendations

The following are recommended strategies at critical design stage that can lower the embodied emissions and demonstrate leadership.

Use salvaged or recycled materials whenever possible to eliminate the emissions associated with manufacturing new materials.

Optimise systems for material efficiency -Specify higher grade options, such as higher-grade strength steel, to reduce material quantity. Don't use material if it isn't needed.

Specify low carbon concrete – choose concrete that replaces the carbon-intensive Portland cement component with lower carbon cementitious alternatives such as fly ash and ground granulated blast furnace slag (GGBFS).

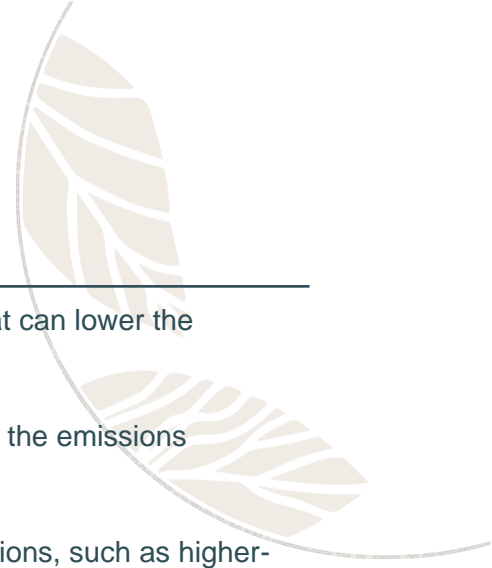
Specify materials that naturally sequester carbon – Consider timber for the superstructure. Materials such as timber naturally sequester carbon and store it for their useful life.

Specify materials manufactured with renewable energy - Materials manufactured with renewable energy, such as aluminium produced with renewable electricity, have a greatly reduced embodied carbon impact as compared to materials manufactured with fossil fuel energy.

Design for durability - Use the appropriate product to withstand the wear and tear of the space to ensure that the material will last the lifespan of the building.

Get to know the supply chain for your specific project - Understand where the materials for your project come from and the carbon implications of their manufacturing and transportation. Design to use the lowest carbon systems and materials. Seek Environmental Product Declarations (EPDs) where available.

Source locally where possible - Knowing what materials are available in your region is key to specifying local materials. Additionally, using local resources and materials reduces transportation emissions.



5 - Statement of Embodied Emissions reporting

This NABERS embodied Emissions report have captured minimum 80% of materials for the proposed development. The material quantities have been determined through an itemised list and that the attached Embodied Emission Material Form in Excel Format is suitable for DA and CC submissions to the principle certifying authority (PCA).

Completed by:



William Derrier

Msc Civil Engineering, Energy Efficiency

Checked by:



Jamie Ian Bonnefin

*BSc(Arch) MArch Cert IV (NatHERS Assessment)
NABERS Assessor License Number: 90269*



CERTIFIED ENERGY

Leading Local Sustainability