

Ref: 23339.1

27 June 2025

Western Sydney University
Locked Bag 1797
Penrith NSW 2751

Via email S.Botterill@westernsydney.edu.au

Attention Steven Botterill

Dear Steven,

NABERS - Embodied Emissions Materials Form

Slattery has completed the NABERS Embodied Emissions Materials Form for WSU Indigenous Centre for Excellence. This assessment was completed based on the documentation listed below:

- WSU ICoE – Cost Plan Pre-Tender Estimate Rev.A Incl. VE

As the cost plan was at the development application stage, information on the exact quantities of materials was not available, requiring several assumptions to be made. The list of assumptions made can be found below:

- 35kg/m² for steel protected grating
- 160kg/m³ of reinforcement for concrete staircases
- 2.93m³ of concrete per 2.4 metre rise for staircases
- Steel sheet for acoustic screen to external walls
- Metal stud wall with plasterboard lining to undocumented walls
- 100mm thick concrete to footpaths
- SL82 mesh to concrete footpaths
- 50mm thick crushed rock under concrete footpaths
- 20kg per m² for framing to metal deck roofing
- 0.015m³ per m² for timber stud framing to internal walls
- 0.208m³ of timber to decking per m²
- 20kg/m² framing to operable wall

After inputting all available material information and taking into account the assumptions we have made regarding materials as the cost plan is very high level, Slattery has covered approximately 91% of the cost of the substructure, superstructure, envelope, finishes, fitments, services, and external works.

Yours faithfully,
Slattery Australia Pty Ltd



Tom Dean
Director
td.mk

Step 1: About the building

Fill out blue cells

| Building location and site data | Value | Unit | Note |
|-------------------------------------|---------------------------------------|------|--|
| Building address | Lot 100 and part Lot 101 in DP 816829 | | |
| Postcode | 2150 | | Required |
| Town/city | Parramatta | | Town/city/suburb/region automated from postcode (may not give exact town name) |
| Distance to nearest major city/town | | km | Enter for rural/regional locations only |
| Project stage | Development Application | | Required |
| New build or major renovation? | New build | | Required |
| Brownfield or greenfield site? | Brownfield | | Required |

| Floor area by NCC building classification | Gross (GFA) | Net (NLA/NSA/UFA) | Unit | Note |
|---|--------------|-------------------|-------------------------|--|
| 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 | Required for Class 1a: Detached residential houses, townhouses |
| Class 1b: Boarding houses and hostels | | | m ² | Required for Class 1b: Boarding house, guest house, hostel |
| Class 2: Multi-unit residential buildings | | | m ² | Required for Class 2: Multi-unit residential, including apartment buildings |
| Class 3: Other residential buildings | | | m ² | Required for Class 3: Other residential buildings |
| Class 4: Residential inside non-residential | | | m ² | Required for Class 4: Residential building inside a non-residential building, e.g., caretaker resk |
| Class 5: Office buildings | | | m ² | Required for Class 5: Office building |
| Class 6: Retail buildings | | | m ² | Required for Class 6: Retail building, e.g., shop, restaurant, café |
| Class 7a: Carparks | | | m ² | Required for Class 7a: Carparks |
| Class 7b: Warehouse-type buildings | | | m ² | Required for Class 7b: Warehouses, wholesalers and storage facilities |
| Class 8: Industrial buildings | | | m ² | Required for Class 8: Industrial buildings, e.g., factories and workshops |
| Class 9a: Healthcare buildings | | | m ² | Required for Class 9a: Healthcare, e.g., hospitals, clinics, day surgeries |
| Class 9b: Civic buildings | 6,777 | | m ² | Required for Class 9b: Civic buildings, e.g., theatres, civic centres, train stations |
| Class 9c: Aged care and personal care buildings | | | m ² | Required for Class 9c: Aged care and personal care |
| Class 10a: Non-habitable buildings | | | m ² | Required for Class 10a: Non-habitable buildings including sheds, carports and private garages |
| Class 10b: Miscellaneous structures | | | m ² | Required for Class 10b: Miscellaneous structures, including fences, masts, antennas, retaining |
| Class 10c: Bushfire shelters | | | m ² | Required for Class 10c: Bushfire shelters not attached to a Class 1a building |
| Total | 6,777 | | 0 m ² | Required: Sum of m ² inputs must be more than 0. |

| Project information | Value | Unit | Note |
|---|------------|---------------|----------|
| Total cost of project | 87,030,501 | AUD excl. GST | Required |
| Building design life | 50 | years | Required |
| Estimated envelope life | | years | Optional |
| Estimated replacement cycle for mechanical services | | years | Optional |
| Estimated replacement cycle for vertical transportation | | years | Optional |

| Dimensions of the building and the site | Value | Unit | Note |
|---|--------|----------------|---------------------------------------|
| Site area | 12,872 | m ² | Required |
| Shared services or infrastructure | No | | Required |
| Building footprint area | 4,175 | m ² | Required |
| Typical floor area (if different to building footprint area) | 3,593 | m ² | Only needed if different to row above |
| Typical floor perimeter | 405 | m | Required |
| Area of external carpark (not included in GFA) | 7,857 | m ² | Required. Enter 0 if not applicable. |
| Area of external hardstand (not included in GFA) | 1,511 | m ² | Required. Enter 0 if not applicable. |
| Area of other hard landscaping (not included in GFA) | 999 | m ² | Required. Enter 0 if not applicable. |
| Number of floors/storeys above ground, including ground floor | 4 | no. | Required |
| Number of floors/storeys below ground | 0 | no. | Required. Enter 0 if not applicable. |
| Number of floors/storeys of car parking | 0 | no. | Required. Enter 0 if not applicable. |
| Total height above ground | 18 | m | Required |

| Structural material choices | Value | Unit | Note |
|---|-------------------------|------|--|
| Foundation type | Slab-on-ground | | Required |
| Frame type (dominant) | Mass timber | | Required |
| Suspended floor type (typical) | Cross-laminated timber | | Only needed for multi-storey buildings |
| Describe low carbon materials specified in your building (e.g. green concrete, low carbon bricks) | Structural timber | | Required |
| Describe recycled content specified in your building (e.g. recycled steel) | Not currently specified | | Required |

Step 2: Quantity of materials

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

Fill out blue cells

| Material category | Sub-category 1 | Sub-category 2 | Sub-category 3 | Value | Unit of measure |
|--|---------------------------|----------------|----------------|---------|-----------------|
| Structure | | | | | |
| <p>The structural parts of the building that are below ground (substructure) and above ground (superstructure). This includes fill below the substructure, foundations, basement levels, suspended floors, wall structure, roof structure, stairs, lift shafts and balconies. It excludes external areas such as hardstands, car parks, patios, etc.</p> | | | | | |
| Coverage of structural material spend | - | - | - | 85 | % |
| Concrete in-situ | ≤10 MPa | - | - | | m³ |
| Concrete in-situ | >10 MPa to ≤20 MPa | - | - | | m³ |
| Concrete in-situ | >20 MPa to ≤32 MPa | - | - | | m³ |
| Concrete in-situ | >32 MPa to ≤40 MPa | - | - | 2,423.8 | m³ |
| Concrete in-situ | >40 MPa to ≤50 MPa | - | - | | m³ |
| Concrete in-situ | >50 MPa to ≤60 MPa | - | - | | m³ |
| Concrete in-situ | >60 MPa to ≤80 MPa | - | - | | m³ |
| Concrete in-situ | >80 MPa to ≤100 MPa | - | - | | m³ |
| Concrete in-situ | >100 MPa | - | - | | m³ |
| Concrete pre-cast panel | - | - | - | | m³ |
| Concrete block | Hollow core | - | - | | m³ |
| Concrete block/brick | Solid | - | - | 134.9 | m³ |
| Concrete block/brick | Solid AAC | - | - | | m³ |
| Mortar | - | - | - | | kg |
| Reinforcing steel | Bar & mesh | - | - | 345,933 | kg |
| Reinforcing steel | Fibre & strand | - | - | | kg |
| Structural steel | Hot rolled structural | - | - | 298 | t |
| Structural steel | Cold formed structural | - | - | 5 | t |
| Structural steel | Other welded structural | - | - | | t |
| Structural steel | Plate | - | - | | t |
| Structural steel | Sheet | - | - | | t |
| Stainless steel | - | - | - | | t |
| Reinforced concrete piles | Concrete | - | - | | m³ |
| Reinforced concrete piles | Steel reinforcing | - | - | | kg |
| Steel piles | - | - | - | | t |
| Timber poles/piles | - | - | - | | m³ |
| Timber (solid) | Sawn softwood | - | - | | m³ |
| Timber (solid) | Sawn hardwood | - | - | | m³ |
| Timber (engineered) | CLT | - | - | 588.2 | m³ |
| Timber (engineered) | Glulam | - | - | 696.7 | m³ |
| Timber (engineered) | LVL | - | - | | m³ |
| Timber (engineered) | OSB | - | - | | m³ |
| Brick | Heat cured | - | - | | m³ |
| Structural Insulated Panel (SIP) | Steel outer | - | - | | m² |
| Structural Insulated Panel (SIP) | Aluminium outer | - | - | | m² |
| Structural Insulated Panel (SIP) | Engineered timber outer | - | - | | m² |
| Fill | - | - | - | | t |
| Sand & gravel | - | - | - | 42 | t |
| Waterproofing membrane | Bituminous | - | - | | m² |
| Waterproofing membrane | Polyethylene | - | - | 254 | m² |
| Other structural (Describe and add unit >>) | Bondek permanent formwork | - | - | 4,811.0 | m² |
| Other structural (Describe and add unit >>) | | - | - | | |
| Other structural (Describe and add unit >>) | | - | - | | |

Envelope

The skin of the building that separates the internal building from the external environment.

This includes the roof cladding, wall cladding, windows, doors and internal/external shading. It also includes insulation and the internal wall lining of envelope walls.

| | | | | |
|-------------------------------------|----------------------------|-----------------------|----------------------|----------------------|
| Coverage of envelope material spend | - | - | - | 95 % |
| Roof cladding | Profiled steel | - | - | 1,271 m ² |
| Roof cladding | Profiled aluminium | - | - | 0 m ² |
| Roof cladding | Profiled zinc | - | - | m ² |
| Roof cladding | Membrane | - | - | 1,271 m ² |
| Roof cladding | Tiles (traditional clay) | - | - | m ² |
| Roof cladding | Tiles (concrete) | - | - | m ² |
| Roof cladding | Other (Please describe >>) | Fibre cement to eaves | - | 637 m ² |
| Roof cladding | Bricks (heat cured) | - | - | 0 m ² |
| Wall cladding | Bricks (air dried) | - | - | m ² |
| Wall cladding | Bricks (under fired) | - | - | m ² |
| Wall cladding | Bricks (concrete) | - | - | m ² |
| Wall cladding | Mortar and render | - | - | kg |
| Wall cladding | Profiled steel | - | - | 108 m ² |
| Wall cladding | Profiled aluminium | - | - | m ² |
| Wall cladding | Profiled zinc | - | - | m ² |
| Wall cladding | GRC cladding | - | - | 0 m ² |
| Wall cladding | Timber weatherboards | - | - | 2,909 m ² |
| Wall cladding | Fibre cement board | - | - | 0 m ² |
| Wall cladding | Terracotta | - | - | 2,685 m ² |
| Wall cladding | Brick tiles / veneers | - | - | m ² |
| Wall cladding | Plasterboard | - | - | 0 m ² |
| Wall cladding | Plywood | - | - | m ² |
| Wall cladding | Other (Please describe >>) | | - | |
| Windows & doors | Aluminium frame | Single glazed | - | m ² |
| Windows & doors | Aluminium frame | Double glazed | - | 78 m ² |
| Windows & doors | Aluminium frame | Triple glazed | - | m ² |
| Windows & doors | Timber frame | Single glazed | - | m ² |
| Windows & doors | Timber frame | Double glazed | - | m ² |
| Windows & doors | Timber frame | Triple glazed | - | m ² |
| Windows & doors | uPVC frame | Single glazed | - | m ² |
| Windows & doors | uPVC frame | Double glazed | - | m ² |
| Windows & doors | uPVC frame | Triple glazed | - | m ² |
| Windows & doors | Frameless | Single glazed | - | m ² |
| Windows & doors | Frameless | Double glazed | - | 0 m ² |
| Windows & doors | Frameless | Triple glazed | - | m ² |
| Windows & doors | Metal frame | Metal panel lift door | - | 16 m ² |
| Curtain wall | Single skin façade | Glazed panel | Single glazed | m ² |
| Curtain wall | Single skin façade | Glazed panel | Double glazed | 1,844 m ² |
| Curtain wall | Single skin façade | Glazed panel | Triple glazed | m ² |
| Curtain wall | Single skin façade | Opaque panel | Aluminium cladding | m ² |
| Curtain wall | Single skin façade | Opaque panel | GRC cladding | m ² |
| Curtain wall | Single skin façade | Opaque panel | Insulated shadow box | m ² |
| Curtain wall | Single skin façade | Opaque panel | Brick cladding | m ² |
| Curtain wall | Single skin façade | Opaque panel | Stone cladding | m ² |
| Curtain wall | Double skin façade | Glazed panel | Single glazed | m ² |
| Curtain wall | Double skin façade | Glazed panel | Double glazed | m ² |
| Curtain wall | Double skin façade | Glazed panel | Triple glazed | m ² |
| Curtain wall | Double skin façade | Opaque panel | Aluminium cladding | m ² |
| Curtain wall | Double skin façade | Opaque panel | GRC cladding | m ² |
| Curtain wall | Double skin façade | Opaque panel | Insulated shadow box | m ² |
| Curtain wall | Double skin façade | Opaque panel | Brick cladding | m ² |

| | | | | | |
|---|----------------------------|---------------------|----------------------|---------|-----|
| Curtain wall | Double skin façade | Opaque panel | Stone cladding | | m² |
| Curtain wall | Other (Please describe >>) | | - | | m² |
| Stick-framed wall system | Aluminium frame | Glazed section | Single glazed | | m² |
| Stick-framed wall system | Aluminium frame | Glazed section | Double glazed | | m² |
| Stick-framed wall system | Aluminium frame | Glazed section | Triple glazed | | m² |
| Stick-framed wall system | Aluminium frame | Opaque section | Aluminium cladding | | m² |
| Stick-framed wall system | Aluminium frame | Opaque section | GRC cladding | | m² |
| Stick-framed wall system | Aluminium frame | Opaque section | Insulated shadow box | | m² |
| Stick-framed wall system | Aluminium frame | Opaque section | Brick cladding | | m² |
| Stick-framed wall system | Aluminium frame | Opaque section | Stone cladding | | m² |
| Stick-framed wall system | Steel frame | Glazed section | Single glazed | | m² |
| Stick-framed wall system | Steel frame | Glazed section | Double glazed | | m² |
| Stick-framed wall system | Steel frame | Glazed section | Triple glazed | | m² |
| Stick-framed wall system | Steel frame | Opaque section | Aluminium cladding | | m² |
| Stick-framed wall system | Steel frame | Opaque section | GRC cladding | | m² |
| Stick-framed wall system | Steel frame | Opaque section | Insulated shadow box | | m² |
| Stick-framed wall system | Steel frame | Opaque section | Brick cladding | 4,000 | m² |
| Stick-framed wall system | Steel frame | Opaque section | Stone cladding | | m² |
| External wall | Steel (light framing) | | - | 98.5319 | t |
| Wall louvre system | Aluminium | - | - | | m² |
| External shading system | Aluminium frame | Aluminium cladding | - | 0 | m² |
| External shading system | Aluminium frame | GRC cladding | - | | m² |
| External shading system | Aluminium frame | Terracotta cladding | - | | m² |
| External shading system | Aluminium frame | Stone cladding | - | | m² |
| External shading system | Aluminium frame | Pre-cast concrete | - | | m² |
| External shading system | Aluminium frame | Timber | - | | m² |
| External shading system | Aluminium frame | Glass (opaque) | - | 766 | m² |
| External shading system | Aluminium frame | Steel | - | 53 | m² |
| External shading system | Other (Please describe >>) | | - | | m² |
| Roller doors | Steel profile | - | - | 0 | m² |
| Roller doors | Hardwood over steel | - | - | | m² |
| Roller doors | Softwood over steel | - | - | | m² |
| Revolving doors | Glass/aluminium/steel | - | - | | no. |
| Fire-rated doors | Engineered timber | - | - | | no. |
| Fire-rated doors | Steel | - | - | 0 | no. |
| Fire-rated doors | Aluminium/glass | - | - | | no. |
| Insulation | Glass wool / fibreglass | - | - | 2,909.0 | m² |
| Insulation | Stone wool | - | - | | m² |
| Insulation | Polyester | - | - | | m² |
| Insulation | Expanded polystyrene | - | - | 0.0 | m² |
| Insulation | Other (Please describe >>) | | - | | m² |
| Other (Please describe and add unit >>) | | - | - | 0.0 | m² |
| Other (Please describe and add unit >>) | External solid core doors | - | - | 33.3 | m² |
| Other (Please describe and add unit >>) | Webforge steel grating | - | - | 114.0 | m² |

Permanent internal walls and doors

Walls and doors within the building that are either structural or designed to be permanent.

| | | | | | |
|--|-----------------------------|---|---|---------|----------------|
| Coverage of material spend on permanent internal walls and doors | | | | 95 | % |
| Interior wall (permanent) | Steel (light framing) | - | - | 79,550 | t |
| Interior wall (permanent) | Timber framing | - | - | 7.4 | m ³ |
| Interior wall (permanent) | AAC panel (reinforced) | - | - | | m ² |
| Interior wall (permanent) | Concrete-filled steel panel | - | - | | m ² |
| Interior wall (permanent) | Plasterboard | - | - | 19,240 | m ² |
| Interior wall (permanent) | Plywood | - | - | 918.0 | m ² |
| Interior wall (permanent) | Fibre cement sheet | - | - | 18.0 | m ² |
| Interior wall (permanent) | Insulation | - | - | 8,258.0 | m ² |
| Interior wall (permanent) | Glass | - | - | 568.0 | m ² |
| Interior wall (permanent) | Other (Please describe >>) | | - | | m ³ |
| Internal door (permanent) | Aluminium/glass | - | - | 52 | no. |
| Internal door (permanent) | Timber/glass | - | - | | no. |
| Internal door (permanent) | Timber solid lightweight | - | - | 95 | no. |
| Internal door (permanent) | Fire resistant | - | - | 28 | no. |
| Internal door (permanent) | Steel | - | - | 0 | no. |
| Internal door (permanent) | Other (Please describe >>) | | - | | no. |
| Other (Please describe and add unit >>) | Metal writeable surface | - | - | 18.0 | m ² |
| Other (Please describe and add unit >>) | MDF | - | - | 132.0 | m ² |
| Other (Please describe and add unit >>) | | - | - | | |

Services

Unit of measure

Building services included within the main building contract. If the building components that are the subject of the development application or the construction certificate are base building only, then only enter these items. If you cannot split services by type, please enter them all in the "Other services" category at the bottom. Enter all values as material costs in dollars.

| | | | | | |
|----------------------------------|---|---|---|-----------|---------------|
| Mechanical services | - | - | - | 1,673,320 | AUD excl. GST |
| Vertical transportation | - | - | - | 210,000 | AUD excl. GST |
| Electrical services | - | - | - | 1,681,475 | AUD excl. GST |
| Solar photovoltaic installations | - | - | - | | AUD excl. GST |
| Plumbing/hydraulic services | - | - | - | 424,020 | AUD excl. GST |
| Fire services | | | | 535,860 | AUD excl. GST |
| Other services (Please describe) | | | | | AUD excl. GST |

External works

The materials associated with hard landscaping and outbuildings on the site but outside the building envelope.

This includes hardstands, carparks, driveways, covered walkways, decks, patios, awnings, fences, gates, etc. Soft landscaping should be excluded.

| | | | | | |
|-------------------------------------|--------------------|---|---|-------|----------------|
| Coverage of spend on external works | | | | 90 | % |
| Asphalt | - | - | - | 1,646 | t |
| Concrete in-situ | ≤10 MPa | - | - | | m ³ |
| Concrete in-situ | >10 MPa to ≤20 MPa | - | - | | m ³ |
| Concrete in-situ | >20 MPa to ≤32 MPa | - | - | 228.5 | m ³ |
| Concrete in-situ | >32 MPa to ≤40 MPa | - | - | 9.9 | m ³ |
| Concrete in-situ | >40 MPa to ≤50 MPa | - | - | | m ³ |
| Concrete in-situ | >50 MPa | - | - | | m ³ |
| Pavers, bricks and blocks | Concrete | - | - | 175 | m ² |
| Pavers, bricks and blocks | Clay | - | - | 0 | m ² |
| Reinforcing steel | Bar & mesh | - | - | 9,088 | kg |
| Reinforcing steel | Fibre & strand | - | - | | kg |
| Structural steel | - | - | - | 7 | t |
| Structural aluminium | - | - | - | | t |
| External roof/wall cladding | Polycarbonate | - | - | | m ² |
| External roof/wall cladding | PVC | - | - | | m ² |
| External roof/wall cladding | Bitumen sheet | - | - | | m ² |
| External roof/wall cladding | Steel profile | - | - | 127 | m ² |
| Fill | - | - | - | | t |
| Sand & gravel | - | - | - | 1,870 | t |
| Timber (solid) | Sawn softwood | - | - | | m ³ |
| Timber (solid) | Sawn hardwood | - | - | 3.3 | m ³ |
| Timber (engineered) | CLT | - | - | | m ³ |

| | | | | | |
|--------------------------|--------|---|---|---|----|
| Timber (engineered) | Glulam | - | - |  | m³ |
| Timber (engineered) | LVL | - | - |  | m³ |
| Timber (engineered) | OSB | - | - |  | m³ |
| Fabric (awning/sunshade) | | | |  | m² |

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 | Michael Keith | Required |
| Company | Slattery | Required |
| ABN | 78085462 | ACN |
| Profession | Carbon Planner | Required |
| Qualification or registration | Carbon Planner | Required |

| Person that certified the details in this form | Value | Note |
|--|-----------------------------|----------|
| Name | Tom Dean | Required |
| Company | Slattery | Required |
| ABN | 78085462 | |
| Profession | Quantity Surveyor, Director | Required |
| Qualification or registration | Quantity Surveyor | 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? | However the cost plan is very high level therefore we have made assumptions regarding material. Based on this we assume we have covered 80% | |

Additional comments from data provider

Additional comments of certifier

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