THE UNIVERSITY OF SYDNEY

ENERGY MODELLING AND PASSIVE DESIGN [2.2] Submittal Form

Project Name

Measure

Energy Modelling and Passive Design Performance
Complete an energy model using BCA Section J energy modelling Guidelines. Provide a report in accordance to show predicted energy consumption for each space type within the building and a predicted total value for the Building's annual energy use.

3 points: Demonstrate that the proposed building will perform
a) at least 20% better than the reference building when the proposed building is modelled with the proposed services; and
b) at least 10% better the reference building when the proposed building is modelled with the same services as the reference building

Mandatory Requirement

Points Available 3 **Points Claimed** Select

Sign-off: Pre-contract Design Stage

☐ By ticking this box the project team confirms the Pre-contract design stage meets the requirements of the measure and details are provided in this form.

Project Team Representative	
Signature	
Name (print)	
Date	

Campus Infrastructure Services Sustainability Representative	
Signature	
Name (print)	
Date	

As-built Stage Sign-off - to be completed at Practical Completion of Project

☐ By ticking this box the project team confirms the Energy Modelling assessment completed in the design stage meets the requirements of this measure

Project Team Representative As-built Sign-off		Campus Infrastructure Services Sustainability Representative	
Signature		Signature	
Name (print)		Name (print)	
Date		Date	

1.0 Pre-contract Design Stage - Energy Modeling and Passive Design

1.1 Energy Modelling Assessment Results - Base Building

Confirm the following for the energy modelling assessment completed:

BCA Version Used	
Any Specific Assumptions Made and Reference within Modelling Report	

Complete the following table for Energy Modelling results breakdown:

Plant	**Model 1: Standard Practice Building [Benchmark] (MWh)**	**Model 2: Proposed Building Fabric with benchmark building Services**	**Model 3: Proposed Building Fabric and Services (MWh)**
Boiler Energy			
Chiller Energy			
Cooling Tower			
Communications			
Fans [AHU/FCU]			
Mechanical Pumps			
Hydraulic Pumps			
Ventilation Fans			
Lighting			
Lifts			
Domestic Hot Water			
Other Please List			
Totals			

Complete the following table for Building Fabric Design:

Building Fabric Systems		**Model 1 & 2:**			**Model 3:**		
	Thermal Performance Values	**U-value**	**SHGC**	**R-value**	**U-value**	**SHGC**	**R-value**
Glazing System							
Glazing System							
Glazing System							
Glazing System							
Glazing System							
Glazing System							
Wall Type							
Wall Type							
Wall Type							
Wall Type							
Wall Type							
Wall Type							
Wall Type							
Wall Type							
Wall Type							
Wall Type							
Roof Type							
Roof Type							
Roof Type							
Floor Type							
Floor Type							

Complete the following table for energy modelling results and confirm overall savings:

Model	**Total Building Gas Consumption (MWh)**	**Total Building Electricity Consumption (MWh)**	**Total Building Energy Consumption per annum (MWh)**	**% Improvement**
Model 1: Standard Practice Building (Reference Building)				
Model 2: Proposed Building Fabric with benchmark building Services				
Model 3: Proposed Building Fabric with Proposed Services				

1.3 Building Plug-In Loads

Please advise on the estimated energy consumption for the building associated with Plug-in Loads (kWh) from **Plug In Loads Analysis Submittal Calculation Form**:

1.4 Reference Documents

Provide the following documents as part of the Pre-Contract signoff:

- [ ] Energy Modelling Report which includes the following minimum details:
  - ◯ Summary of Energy Results
  - ◯ Software adopted and modelling methodology
  - ◯ Model and Geometry [descriptions and images]
  - ◯ List of Modelling Inputs [services, building fabric etc]
  - ◯ Energy Use Breakdown
  - ◯ List of Reference documents
  - ◯ List of any assumptions
  - ◯ Operational Profiles adopted
  - ◯ Building construction calculations including minimum thermal insulation specifications
  - ◯ Lighting Calculations
  - ◯ List of any protocols adopted and associated calculations
  - ◯ Plant and equipment energy power use and associated efficiencies

2.0 As-built Stage - Energy Modeling and Passive Design

If there have been any deviations in the AS-INSTALLED Plant or Building Fabric to details previously modelled please describe in brief below and provided updated Modelling Report:

2.1 Reference Documents

Provide the following documents as part of the As-built signoff:

- ☐ Energy Modelling Report which includes the following minimum details:
  - ○ Summary of Energy Results
  - ○ Software adopted and modelling methodology
  - ○ Model and Geometry [descriptions and images]
  - ○ List of Modelling Inputs [services, building fabric etc]
  - ○ Energy Use Breakdown
  - ○ List of Reference documents
  - ○ List of any assumptions
  - ○ Operational Profiles adopted
  - ○ Building construction calculations including minimum thermal insulation specifications
  - ○ Lighting Calculations
  - ○ List of any protocols adopted and associated calculations
  - ○ Plant and equipment energy power use and associated efficiencies
  - ○ Installed plant and equipment data sheets