

GREEN BUILDINGS INNOVATION CLUSTER (GBIC) - PROTOTYPING

The enhanced GBIC has introduced two new initiatives, namely **Product Prototyping and Design Prototyping**, dedicated to bridging the gap between Research & Innovation (R&I) and application to actual building projects for wider adoption.

GBIC - PRODUCT PROTOTYPING

Overview

The proposed scheme focuses on the development of commercial prototypes that provide the industry with a better understanding of the technology application and to carry out test-bedding to verify the performance of the technology to support Super Low Energy (SLE) building adoption.

It will fund proposals which are more downstream and closer to market adoption as compared to applied research projects funded under grant calls. Such projects, if successfully implemented, would encourage wider adoption of innovative technologies through larger demonstration projects.

Detailed report (including the test results) must be submitted to BCA. In addition, concise report must be submitted and shared with industry via the SLEB Smart Hub.

Eligibility for Product Prototyping

The proposal must meet the following criteria:

- a) The company (inclusive of SMEs, start-ups, large local enterprises) and institute of higher learning (IHLs) / Research Institutes (RIs) must be registered and based in Singapore.
- b) The technology must have a demand driver such as building owner or the industry partner who is committed to adopt the technology after the prototyping project.
- c) The prototyping must be carried out in Singapore, and the test-bedding shall be carried out in an operational environment setting (e.g. actual building or BCA SkyLab, etc)

- d) The proposal must not have obtained similar funding from BCA or other public agencies.

Evaluation Criteria

The proposal will be evaluated based on the following criteria:

- a) Novelty of technology / solution;
- b) Impact on sustainable built environment (e.g. energy savings and occupant thermal comfort);
- c) Degree of replicability and scalability, with potential to be commercialised; and
- d) Competency and track record of the applicant and the project team

Funding Support

The amount of funding is up to 70% of the qualifying costs or up to S\$500,000, whichever is lower, with project duration of up to two years.

Qualifying cost (with GST) will include:

- a) Manpower-related costs;
- b) Equipment, materials & consumables and software/apps;
- c) Professional services;
- d) Test-bedding cost inclusive of rental charges; and
- e) Miscellaneous costs (i.e. cost for installing & dismantling of prototype before & after validation)

How to Apply

Before you apply, check that you have met all the criteria stated above. Download the [form](#) and prepare all the supporting documents and send the e-copy via email.

Please direct your enquires to the following email addresses: wong_ngian_chung@bca.gov.sg.

GBIC - DESIGN PROTOTYPING

Overview

The Design Prototype aims to encourage developers/building owners, consultants and key stakeholders such as facility management, potential users, to strive for SLE buildings by placing more emphasis at early design stage.

The outcomes of the Design Prototype should meet the following:

- a) Technology analysis that recommends technologies and design solutions with potential energy savings of at least 20% better than the current best-in-class GM Platinum building;
- b) Attain GM Super Low Energy (SLE) certification.

Once the outcomes of the Design Prototype are evaluated and accepted by the Evaluation Panel, the building owners may proceed to submit the GBIC Demonstration application where more details on the implementation details including the design strategies and technologies to be deployed to achieve GBIC-Demonstration criteria.

Detailed design report (including the simulation models) must be submitted to BCA. In addition, concise report must be submitted and shared with industry via the SLEB Smart Hub.

Eligibility for Design Prototyping

The proposal must meet the following criteria:

- a) Development project¹ must be sited in Singapore.
- b) The development project should be in its preliminary concept design stage at the time of application.
- c) Development project must be committed to proceed to large scale demonstration once the project is supported by GBIC–Demonstration funding.

¹ The development is either a new or an existing (intending to undergo major retrofitting) private or public building.

- d) Development project must be committed to obtain certification for Green Mark Super Low Energy and achieve at least 20% better than the current best-in-class GM Platinum building.
- e) The development must not have obtained similar funding from BCA or other public agencies.

Evaluation Criteria

The project proposal will be evaluated based on the following guidelines:

- a) Integrated design approach² taken for the proposal to achieve SLE
- b) Competency and track record of the design team assembled
- c) Degree of replicability
- d) Degree of novelty

Funding Support

The amount of funding is up to 70% of the qualifying costs or up to S\$500,000, whichever is lower.

It supports engagement of Environmentally Sustainable Design³ (ESD) consultants to conduct collaborative design workshops and assist in simulation studies early in the project to achieve a breakthrough and optimal design for SLE buildings.

Qualifying costs, inclusive of GST (where applicable) cover the cost of engaging the Environmentally Sustainable Design (ESD) consultants to carry out collaborative design workshops and assist in simulation studies early in the project.

Qualifying cost (with GST) will include:

- a) Consultancy fees
- b) Facility venue and logistical costs for design charrettes and workshop organisation

² Integrated design approach is a collaborative process that focuses on the design, construction, operation and occupancy of high performance buildings over its complete life cycle.

³ Environmentally Sustainable Design (ESD) consultants have extensive experience in energy auditing, implementing energy efficient measures in buildings, and performing in-depth computer simulation for buildings and a thorough understanding of the design process

- c) Professional fees (e.g. Modelling, simulation analysis, life cycle assessment analysis, pre-construction field/site survey, feasibility study, etc.)
- d) Miscellaneous e.g. Transportation and accommodation for ESD consultants (if required to be flown in).

Funding support is up to 70% of the qualifying costs or up to S\$500,000, whichever is lower.

How to Apply

Before you apply, check that you have met all the criteria stated above. Download the [form](#) and prepare all the supporting documents and send the e-copy via email.

Please direct your enquires to the following email addresses: noel_chin@bca.gov.sg.

Green Buildings Innovation Cluster (GBIC) Product Prototyping Application Form

PART I – DETAILS OF PROPOSAL

1. PROPOSAL

Title
Innovation focus areas (pls refer to Super Low Energy Building Technology Roadmap) <input type="checkbox"/> Passive Strategies: _____ (pls specify) <input type="checkbox"/> Active Strategies: _____ <input type="checkbox"/> Smart Energy Management: _____ <input type="checkbox"/> Renewable Energy: _____

2. APPLICANT

Type of applicant <input type="checkbox"/> Developers/Building Owners <input type="checkbox"/> Consultants <input type="checkbox"/> IHL / Research Institutes <input type="checkbox"/> System Specialists <input type="checkbox"/> Technology Suppliers <input type="checkbox"/> Others, please specify: _____	Name : _____ Designation : _____ Organisation : _____ UEN : _____ Contact No. : _____ Email : _____
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3. COLLABORATORS⁴

Name	Designation	Organisation	Contact No.	Email

4. DESCRIPTION

Proposal narrative – Main text

Give a concise description of the proposal, including background, scope of work and objectives. In addition, elaborate and describe the following:

- i) Novelty of proposed design tools, methods and technologies
- ii) Potential impact to improve energy efficiency

⁴ One of the collaborators MUST be the potential adopter of the proposed technology.

- iii) Potential replicability, scalability and commercialization plan
- iv) Testbedding locations to validate the performance of prototype
- v) Transition to actual implementation in projects (please state the building owners' organization and potential buildings potential to adopt the technologies)
- vi) Competency and track record of the applicant and project team

Deliverables

State all deliverables of the project and provide the key performance indicators (KPIs) for the project.

Impact of Proposed Target(s)	KPIs
Energy savings <i>(please state current baseline in kWh/m² & % improvement over the baseline)</i>	
No. of deployments (including licenses, adoptions)	
Industry R&I spending <i>(please breakdown in- cash & in-kind)</i>	
Industry Research Scientists and Engineers positions created	

Milestones

Define the implementation schedule of major activities/deliverables.

Milestones & Deliverables	Year 1				Year 2			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Key Activity (1)								
Key Activity (2)								
Key Activity (3)								

5. FUNDING SUPPORT REQUESTED

Summarise the funding support requested in the table below. Provide a detailed breakdown on the funding support requested as an Appendix.

Item	Proposed Funding Support (\$\$)
Manpower-related	
Equipment, Materials and Software/Apps	
Professional Services	

Test-bedding cost inclusive of rental charges	
Miscellaneous costs <i>(i.e. cost for installing & dismantling of prototype before & after validation)</i>	
TOTAL (\$\$)	

**N.B. For all monetary transactions carried out, please indicate if the party involved is related to your company (e.g., from the same group or subsidiary / parent of your company). Any transaction between the Applicant and its related party/parties (as defined under the Financial Reporting Standard 24 (FSR 24) published by the Accounting Standards Council) are not eligible as claims under the Qualifying Cost Item.*

PART II - DECLARATIONS

The Company has obtained or is applying for Government incentive/loan⁵ Yes /No*

If yes, please provide details using the format below:

Grant Title	Funding Agency	Status	Grant received	Project Duration	Role Played

I hereby declare that the information provided are true and correct.

Signature of Applicant's Representative

Name & Designation

Contact No.

Official Stamp / Date

Please send the completed signed application form with the supporting documents and send the e-copy via email to: [wong ngian chung@bca.gov.sg](mailto:wong_ngian_chung@bca.gov.sg).

² Please indicate incentives/loans administered by any other government agencies.

Green Buildings Innovation Cluster (GBIC) Design Prototyping Application Form

PART I – DETAILS OF PROPOSAL

Development Name:	
Description of project:	
Address and Planning area (as in URA's Master Plan):	
Gross Floor Area (GFA):	
Building type:	<input type="checkbox"/> New development <input type="checkbox"/> Existing building undergoing major A&A
Type of ownership:	<input type="checkbox"/> Public <input type="checkbox"/> Private
Development type:	<input type="checkbox"/> Commercial <input type="checkbox"/> Mixed use development_____ (<i>please specify</i>) <input type="checkbox"/> Hotel <input type="checkbox"/> Residential <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional <input type="checkbox"/> Healthcare <input type="checkbox"/> Others_____ (<i>please specify</i>)
Has Provisional Permission (PP)/ Written Permission (PP) been obtained for the development?	<input type="checkbox"/> Yes <input type="checkbox"/> No

PART II – PARTICULARS OF THE APPLICANT (DEVELOPER/ OWNER)

Name of Firm:	
UEN:	
Name & Designation of Contact Person:	
Email:	
Telephone:	

PART III – PARTICULARS OF THE CONSULTANTS

PARTICULARS OF THE ESD CONSULTANT

Name of Firm:	
UEN:	
Name & Designation of Contact Person:	
Email:	
Telephone:	

PARTICULARS OF THE QUALIFIED PERSON (If applicable)

Name of Firm:	
UEN:	
Name & Designation of Contact Person:	
Email:	
Telephone:	

PARTICULARS OF THE PROFESSIONAL M&E ENGINEER (If applicable)

Name of Firm:	
UEN:	
Name & Designation of Contact Person:	
Email:	
Telephone:	

(Please attach CV of each consultant, stating the relevant past experience in carrying out design workshops/ simulation of similar scale and scope, educational background and employment history, if these are related and support the application.)

PART IV – DESCRIPTION OF SUPER LOW ENERGY BUILDING PROPOSAL

Applicant shall indicate the proposed approach, proposed experts, targets and relevant track records in the proposal such that the development can achieve Green Mark Super Low Energy (SLE) buildings and obtain at least 20% energy savings better than the current Green Mark Platinum standards.

Milestones

Define the implementation schedule of major activities/deliverables.

Milestones & Deliverables	Year 1			
	Q1	Q2	Q3	Q4
Key Activity (1)				
Key Activity (2)				
Key Activity (3)				

PART VI – FUNDING SUPPORT REQUIRED

Summarise the funding support requested in the table below. Also, provide an estimated detailed breakdown on the funding support requested (e.g. design workshop, simulation studies, workshop venue, transport and accommodation required) as an Appendix.

Item	Proposed Funding Support (S\$)
Consultancy fees (e.g. to carry out design workshop and/ or simulation studies)	
Facility venue and logistical costs (e.g. workshop venue and other logistical costs)	
Professional fees (e.g. modelling and simulation analysis)	
Miscellaneous (e.g. Transportation, accommodation, cost of living allowance if consultants required to be flown in)	
TOTAL (S\$)	

**N.B. For all monetary transactions carried out, please indicate if the party involved is related to your company (e.g., from the same group or subsidiary / parent of your company). Any transaction between the Applicant and its related party/parties (as defined under the Financial Reporting Standard 24 (FSR 24) published by the Accounting Standards Council) are not eligible as claims under the Qualifying Cost Item.*

PART VII – DECLARATION

The Company has obtained or is applying for Government incentive/loan⁶ Yes /No*

If yes, please provide details using the format below:

Grant Title	Funding Agency	Status	Grant received	Project Duration	Role Played

I hereby declare that the information provided are true and correct.

Signature of Applicant’s Representative

Name & Designation

Contact No.

Official Stamp / Date

Please send the completed signed application form with the supporting documents and send the e-copy via email to: noel_chin@bca.gov.sg.

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