HKUST
SUSTAINABLE SMART CAMPUS AS A LIVING LAB

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Why Sustainable and Smart Together?

HKUST SUSTAINABLE SMART CAMPUS AS A LIVING LAB

SUSTAINABLE
The conditions by which humans can thrive over time within planetary boundaries

SMART
Use of cutting edge technologies, behavioral insights, and dynamic ICT tools to build a healthy and joyful community
Integrating academics and operations

To transform our campus into

a showcase of sustainability

well-aligned with

smart designs and tech-enabled solutions
Integrating academics and operations
To transform our campus into
a showcase of sustainability principles
and concepts
well-aligned with
smart designs and tech-enabled solutions

Overarching Vision
Transformation of campus into:

- A cutting-edge showcase for innovation and sustainable action
- A “living lab” for learning and hands-on experiences
- A point of pride for the campus community
- Better value to the HK community
Details

HKUST Commitment
$50 million over three years

Types of eligible projects
Projects implemented on campus that demonstrate technologies, concepts, or redesign of spaces in ways that create Sustainable and Smart learning opportunities.

Involvement
All students, faculty, staff, alumni, and partners are eligible to participate in twice yearly calls for proposals.

Culture of experimentation
Celebrate innovative efforts – even if they fail – recognizing that a “Living Lab” learns and grows from these experiences.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Unsatisfactory</th>
<th>Improvement Needed</th>
<th>Satisfactory</th>
<th>Exceptional</th>
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<tbody>
<tr>
<td><strong>Project Champion</strong></td>
<td>Lacking at least one full-time HKUST faculty or staff to take ownership and lead the project.</td>
<td>Single HKUST faculty or staff as the lead / point of contact.</td>
<td>Small dedicated team within one specialized unit, with one dedicated team leader and others committed to support.</td>
<td>An interdisciplinary team with a diverse member set, preferably with student and/or alumni involvement; with one dedicated team leader and others committed to support.</td>
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<td><strong>Stage of Development</strong></td>
<td>Requests for seed grant, basic research, entrepreneurship.</td>
<td>Project ideas with reasonable opportunity for campus, but lack definition or concrete steps for implementation.</td>
<td>Idea is further developed with a general budget, rough outline, and implementation timeline. A demonstrable prototype or pilot has been developed.</td>
<td>Idea has well-defined project scope of work, line-level budget, timeline, and locations for implementation. Incorporated feedback from campus operations staff (FMO, etc). A demonstrable prototype or pilot has been developed.</td>
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<td><strong>Visibility and Educational Potential</strong></td>
<td>Projects with zero potential for broad educational outcomes for the community; or no potential for follow-on research or knowledge transfer.</td>
<td>Projects that appeal only to people who specialize in the field; limited ability to showcase the technology or approach. Some data or information generated with potential for follow-on work.</td>
<td>Internal or external projects that appeal to more than one stakeholder group, with some visible learning opportunities identified. Identification of KPIs and data potential for future follow-on projects.</td>
<td>&quot;Home-grown&quot; projects that are designed to engage multiple stakeholder groups and have potential for high visibility within the campus. Identification of KPIs and data potential for future follow-on projects, with specifics carved-out for student hands-on projects like UROP/USEL or service learning experiences.</td>
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<td><strong>Sustainable and Smart</strong></td>
<td>Projects that cannot satisfy definitions.</td>
<td>Projects that have marginal smart or sustainable benefits, but not combined.</td>
<td>Projects that can demonstrate positive sustainable and smart elements.</td>
<td>Projects that satisfy the definitions in ways that provide a clear demonstration of how the approach is a model for the vision, and would be a clear source of inspiration and pride for the HKUST community</td>
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<td><strong>Value for Money</strong></td>
<td>Projects that cannot demonstrate a positive value for money proposition; are lacking life-cycle cost/benefit description, and no end-of life plan.</td>
<td>Value for money as defined through a life-cycle cost benefit analysis. Includes some end of life considerations; acknowledgement of staff expectations.</td>
<td>Positive value for money in life-cycle CBA, clearly defined end-of-life strategy; Identification of specific operations staff and plan for hand-over.</td>
<td>Positive value for money in life-cycle CBA, clearly defined end-of-life strategy with salvage / recycling plan; clear and accepted roles for admin staff for hand-over.</td>
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Current SSC Projects

- Blockchain Technology for Student Certification
- Electronic Price Label (Advertag)
- Introduction of facial recognition capability for improved Library services
- USThing as a Platform for Mobile Apps

- Pulse of HKUST
- Smart Lunch Kiosks and Mobile Pay System
- SmART Steps
- Water Treatment System for Chinese Garden
Concluding remark

- Serve as a living lab for home-grown technologies and innovations
- Inspire teaching and learning
- Cultivate partnerships with government and industries
- Through collective effort, make HKUST a global center of excellence for GREAT Smart Cities research and education, and Hong Kong an exemplary GREAT smart city.

More information at http://ssc.ust.hk
Additional Funding Support of up to 100K for BGF projects

Plan for implementing the project on campus
• How/where, what units on campus may be involved

Educational components to be added
• FYP/FYT
• USEL: experiential learning
• UROP: SSC track.
• Taught Postgraduate (TPg) students: MSc projects