Science Central –
Urban Sciences Building
Academic Project Champions
Prof. Stephanie Glendinning
Prof. John Fitzgerald
Building type massing and quantum

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>16,800 sqm</td>
</tr>
<tr>
<td>Business</td>
<td>81,950 sqm</td>
</tr>
<tr>
<td>Residential (inc. student housing)</td>
<td>38,310 sqm</td>
</tr>
<tr>
<td>Hotel</td>
<td>5,900 sqm</td>
</tr>
<tr>
<td>Community Use</td>
<td>4,200 sqm</td>
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<tr>
<td>Retail</td>
<td>2,000 sqm</td>
</tr>
<tr>
<td>Leisure</td>
<td>4,550 sqm</td>
</tr>
<tr>
<td>Energy Centre</td>
<td>3,600 sqm</td>
</tr>
<tr>
<td>Multi-Storey Car Park</td>
<td>17,400 sqm</td>
</tr>
<tr>
<td>TOTAL</td>
<td>174,710 sqm</td>
</tr>
</tbody>
</table>

The Core
Academic Overview

- A unique interdisciplinary environment for research, learning and engagement.
- Cutting-edge facilities working with expert practitioners to discover and demonstrate solutions
- Addressing global sustainability challenges
- Digitally enabled urban sustainability
  - School of Computing Science
  - New Collaborative Laboratories
  - Institute for Sustainability
Interdisciplinary Environment: cutting-edge facilities
Digitally Enabled Urban Sustainability (DEUS)
New Collaborative Laboratories

- Urban Observatory
- Decision Theatre
- Digital Civics
- Cloud Computing

- The building and the site as laboratories
- Smart Grid
- Energy, Power & Transport
- Cyber Physical
DEUS: The Building as a Living Laboratory

- Green Infrastructure
- Water and waste
- Structures and Materials
- Electrical Systems
- Heating and Ventilation
- Usability and Engagement
- Cyber security and Resilience
- Art and Engagement
DEUS: the Site as a Lab
Grid Scale Energy Storage Test Bed

NPG 11kV

11kV/440V

440V AC Bus

11kV/440V

650V DC Bus

Spare AC connections

Spare DC connection

Redox Flow Battery

Supercapacitors

Lithium Capacitors

Sodium Nickel NaNiCl2 Battery

360 kVA

AC/DC

SC Buildings/Lab

Decision Theatre

Data
DEUS: The City as a Living Laboratory
Sustainability Framework

**Sustainability Themes**

- Consumption and waste
- Production and resources
- Integrated infrastructure systems
- Justice and governance
- Security and resilience
- People, communities and society

**Beyond BREEAM**
Collaborative Design Process

- Full user consultation programme
- Groups representing different space types:
  - Workshop and Labs
  - Workspace (Kit of Parts)
  - Teaching space
  - Support Space
  - Building as a Lab
Proposed Site Plan
Internal Organisation