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## Grangegorman Sustainability Strategy

Grangegorman Development Agency

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# Grangegorman Sustainability Strategy



Grangegorman  
Development Agency  
Gníomhaireacht Forbartha  
Ghráinseach Ghormáin





# Contents

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	Page	
<b>1</b>	<b>Vision for Sustainability</b>	<b>5</b>
<b>2</b>	<b>Introduction</b>	<b>6</b>
2.1	Terminology – Themes, Aims, Targets, Indicators	6
2.2	Context of Document	7
<b>3</b>	<b>Statement of Strategy</b>	<b>8</b>
3.1	Themes	8
3.2	Aims	9
<b>4</b>	<b>Targets and Indicators</b>	<b>11</b>
4.1	Energy, Carbon and Climate Change	11
4.2	Water Conservation	13
4.3	Biodiversity	15
4.4	Waste	17
4.5	Transport	19
4.6	Construction	21
4.7	Health and Wellbeing	23
4.8	Governance and Sustainability	25
4.9	Community Relations	27
4.10	Sustainability Education	29
<b>5</b>	<b>Implementation</b>	<b>31</b>
5.1	Overview of Sustainability Targets, Indicators and Reporting	31
5.2	Sustainability Implementation	31
5.3	Review of Sustainability Strategy	31



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Location Plan

## 1 Vision for Sustainability

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The Grangegorman development will provide for a health and education campus for Dublin in an inner city location and in doing so, create a new vibrant urban quarter. The development of Grangegorman will provide modern educational accommodation for the Dublin Institute of Technology and new health care buildings and facilities for the Health Service Executive, together with facilities and opportunities for the local and wider community. The development is being delivered by the Grangegorman Development Agency (GDA)

The comprehensive nature of the planning and development for the site presents the opportunity to anticipate future challenges and to benefit from advantages of managing the development of the site in a comprehensive and sustainable way.

**On occupation, the Grangegorman development will be recognised by its users: students, staff, residents, local community, healthcare users, visitors, and wider stakeholders as a leading urban quarter in Ireland for its sustainability performance.**

The Grangegorman development in itself demonstrates inherently sustainable attributes. These are outlined in the Grangegorman Master Plan 2008 and Strategic Plan 2011 and Grangegorman Planning Scheme 2012 including and include:

- Reuse of a brownfield inner city site,
- Significant open space for recreational use, with inherent environmental benefits,
- Facilitation of the repair, reuse, intervention and adaptation of Protected Structures,
- Encouragement of a positive modal shift in transport patterns, through public transport linkages within city centre and improved pedestrian and cycling access and facilities,
- Minimisation of energy demand and carbon emissions generated in particular by vehicular traffic,
- Improved connectivity and integration of the site with the surrounding area,
- Community access to cultural, educational and recreational facilities,
- The inclusion of research, incubation, science and technology, and commercial uses within the site,
- Mixed uses on the site thus creating a vibrant urban area and also reducing travel journeys.

Given the strategic location, economic, cultural and social function of the site, the provision of important healthcare, education and other community facilities, the vision for Grangegorman Urban Quarter is to develop a new compact sustainable urban quarter which links with and adds value to its surrounding neighbourhood and the city in general.

## 2 Introduction

### 2.1 Terminology – Themes, Aims, Targets, Indicators

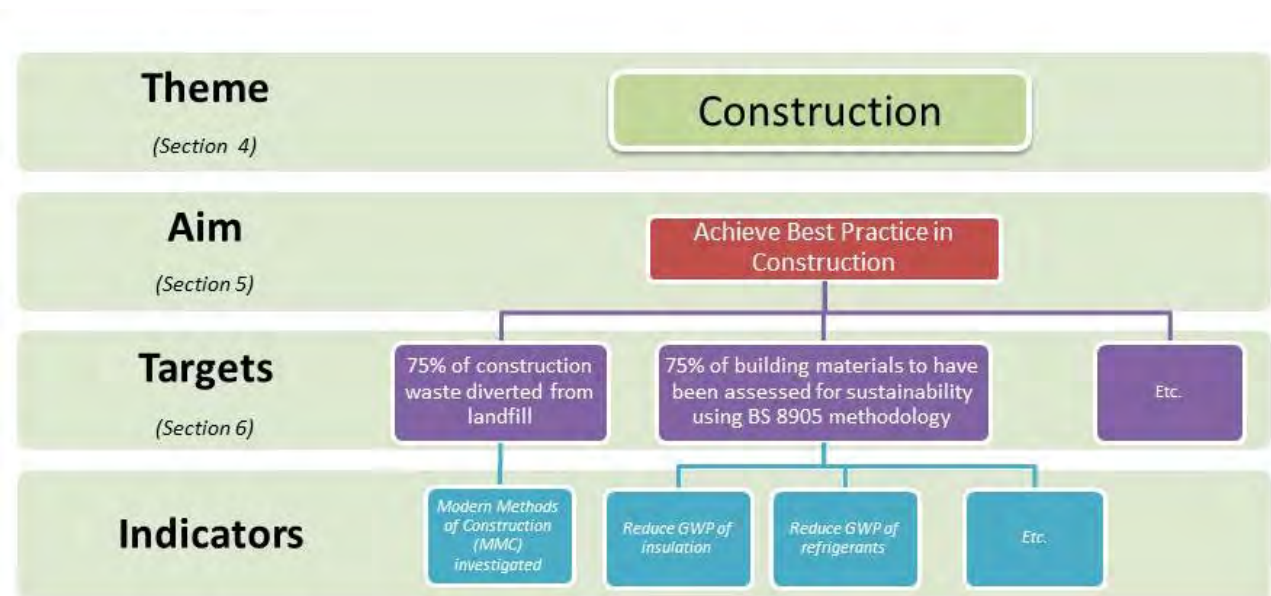
The terminology used in this document is derived from the definitions listed as part of the ISO 14001:2004 Environmental Management Standard.

**THEME** – A theme is a category, receptor or area that is necessary to focus on in order to achieve a sustainable development. The themes identified in Grangegorman Sustainability Strategy are Energy, Carbon and Climate Change, Water Conservation, Biodiversity, Waste, Transport, Construction, Health and Wellbeing, Governance, Community Relations and Education.

**AIM** – In this context, an aim is an overall goal that the Grangegorman Development Agency and its primary stakeholders has set itself to achieve. The aims developed for the Grangegorman development provide the framework of intent for the achievement of sustainability in the Urban Quarter.

**TARGET** – A target is a detailed performance requirement that derives from an aim. It is set and must be met in order to achieve the aim.

**INDICATOR**– The indicators included, for the most part, provide a means of satisfying or reaching a target, and thus achieving an aim of the development. Others act as guidance for the GDA and stakeholders. A suite of indicators are included for the purposes of illustration of how a target can be satisfied. The indicators are not exhaustive and can be added to.



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Example of Hierarchy of Terms

## 2.2 Context of Document

This document defines the overall strategy to ensure that the development and more importantly the continual management of the Urban Quarter are guided by best practice sustainable policy. The strategy develops sustainability aims and outlines the strategy for the individual specific projects to collectively meet these aims. The GDA wishes to encourage innovation in the design solutions and to promote this, the strategy has been kept at a high level. The sustainability aims and relevant targets will be required to be met by design teams, stakeholders, occupants and facility managers of the Grangegorman Urban Quarter.

The document outlines the sustainability strategy for Grangegorman, and its scope. The strategy takes the Sustainability Aims developed during 2012 and provides specific targets and indicators by which to progress towards the aims. Each of the 10 aims outlined is further developed into a total of 30 targets that define the means of achieving the sustainability aims. These targets are specific requirements to be achieved to attain desired levels of sustainability over time. Methods of achieving the targets are suggested by a suite of supporting indicators outlined in Section 4.

The key timeframe for achievement of the targets described in the tables are for buildings/facilities/infrastructure that are built or handed back to the GDA within 5 years (end of 2017), within 25 years (end of 2042), and 2050. These represent benchmark dates for the Grangegorman development. The associated targets are expected to be achieved by each development completed during these timeframes.

The timeframes represent:

- the initial phases of development, to be delivered within 5 years,
- a second phase of development and including the handing back of the first group of projects to be delivered by public private partnership, and
- 2050.

The GDA will monitor progress towards achieving the aims and targets. Design Teams and Contractors must demonstrate compliance against targets wherever they are referenced in the tables below.



## 3 Statement of Strategy

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### 3.1 Themes

A Sustainability Workshop held in 2011 with the principle stakeholders, Dublin Institute of Technology, the Health Service Executive, the masterplan design team and the GDA, identified a range of principle sustainability themes for the Urban Quarter of Grangegorman. The Grangegorman Sustainability Strategy has evolved through the process of these workshops and reviews, identifying 10 key themes.

The 10 themes are:

1. Energy, Carbon and Climate Change
2. Water Conservation
3. Biodiversity
4. Waste
5. Transport
6. Construction
7. Health and Wellbeing
8. Sustainable Governance
9. Community Relations
10. Sustainability Education

## 3.2 Aims

For each theme specific aims have been developed and encapsulate GDA's goals for a sustainable development. These aims are:

The Grangegorman Urban Quarter will:

- be zero carbon by 2050
- use 60% less mains water by 2050
- achieve good practice in Biodiversity
- achieve best practice in Waste
- achieve best practice in Transport
- achieve best practice in Construction
- achieve best practice in Health & Wellbeing
- best practice in Sustainable Governance
- best practice in Community Relations
- best practice in Sustainability Education

The tables in Section 4 outline in detail the agreed targets and suggested indicators to support the realisation of these aims.



## 4 Targets and Indicators

### 4.1 Energy, Carbon and Climate Change

This section sets out the targets and indicators for achieving zero carbon emissions associated with activities in the Urban Quarter by 2050

THEME	Energy, Carbon and Climate Change							
AIM	The Grangegorman Urban Quarter will be zero carbon by 2050.							
TARGET	Ref	Description	Target 2017	Target 2042	Target 2050	Unit	Data Source	Responsibility
	1	Built Environment Quality	A3	A2	A1	BER	BER Certificate	Design Team to demonstrate compliance
	2	Energy Consumption	10%	20%	30%	% reduction versus CIBSE TM46 benchmark	Annual Energy Audit	Design Team/ Stakeholder to demonstrate compliance
INDICATORS	Natural ventilation to be utilised wherever practical							
	Ensure Air Tightness in line with CIBSE guidelines							
	Minimise Mechanical Ventilation Energy consumption							
	Utilise exposed thermal mass to regulate temperature of the space							
	Design to minimise embodied energy and carbon footprint							
	Reduce the Global Warming Potential of insulation and refrigerants							
	Select energy efficient FF&E							
	Incorporation of low/zero emission sources of energy onsite							
	Include a portion of renewable energy supply in all buildings energy mix							
	Monitor energy consumption of systems and zones within buildings							
	Upgrade systems and equipment as appropriate to achieve further energy savings							
	Install high efficient lighting systems							
	Provide electric car charging facilities in preferred locations							
	Ensure building systems are commissioned as per CIBSE guidelines and seasonal commissioning is considered.							



## 4.2 Water Conservation

This section sets out the targets and indicators for achieving 60% less mains water consumption by 2050.

THEME	Water Conservation							
AIM	The Grangegorman Urban Quarter will use zero net mains water by 2050.							
TARGET	Ref	Description	Target 2017	Target 2042	Target 2050	Unit	Data Source	Responsibility
	3	Mains Water Consumption	1.5	1.1	0.6	M3/p/yr	Meter	GDA/ Stakeholders/ Design Team to demonstrate compliance
	4	Reuse of Greywater / Rainwater	25	40	55	% of WC/ urinal flushing demand met using recycled non potable water	Meter	GDA/ Stakeholders/ Design Team to demonstrate compliance
	5	Reuse of Rainwater for pitches	0	40	55	% of irrigation demand being met by col- lected rain- water	Meter	GDA/ Stakeholders/ Design Team to demonstrate compliance
INDICATORS	Incorporate best practice SUDS (Sustainable Urban Drainage Systems) strategies							
	Install greywater systems to BS 8525-1:2010 or equal and approved							
	Extent of greywater infrastructure in each building to be optimised							
	Install rainwater systems to BS 8515-1:2009 or equal and approved							
	Monitor water usage against predicted usage							
	Install leak detection systems where appropriate							
	Include water efficient solutions at a high level for process requirements where necessary							
	Install sub-meters on water consuming equipment, departments/areas and occupier areas.							



## 4.3 Biodiversity

This section sets out the targets and indicators for achieving good practice in Biodiversity.

THEME	Biodiversity						
AIM	The Grangegorman Urban Quarter will achieve good practice in Biodiversity.						
TARGET	Ref	Description	Target 2017	Target 2042	Target 2050	Data Source	Responsibility
	6	Biodiversity Coordination	GDA develops site specific biodiversity mgmt plan based upon achieving targets of most current DCC Biodiversity Action Plan	Publically accessible Open Spaces, Gardens and Facilities across the entire site.	Achieve National Centre of Excellence Status for Biodiversity	Biodiversity Management Plan	GDA to monitor progress on site-wide scale
	7	Biodiversity Enhancement	Completion of part of The Fields	Completion of public realm incl. Green Fingers, The Fields		Biodiversity Management Plan	GDA to monitor progress on site-wide scale
	8	Building Level Biodiversity	Compliance with the GDA Biodiversity Management Plan			Design Team Documents	Design Team to demonstrate compliance
INDICATORS	Preference given to suitable species when selecting for landscaping as detailed in the Grangegorman Strategic Plan 2011 and Planning Application for the Public Realm 2012						
	Retain existing trees on site consistent with the Planning Scheme						
	Conduct regular bat surveys						
	Adopt landscaping maintenance regime designed to encourage biodiversity						





## 4.4 Waste

This section sets out the targets and indicators for achieving best practice in operational waste.

THEME	Waste							
AIM	The Grangegorman Urban Quarter will achieve best practice in Waste.							
TARGET	Ref	Description	Target 2017	Target 2042	Target 2050	Unit	Data Source	Responsibility
	9	Recycling	70	85	95	% of all waste recycled by mass	Waste Service Provider	Stakeholder: GDA to monitor progress on site-wide scale
	10	Organic Waste	80	90	95	% of organic waste composted / reused	Waste Service Provider	Stakeholder: GDA to monitor progress on site-wide scale
	11	Building Level Waste Management	Compliance with the current GDA Waste Management Plan			Compliance or otherwise	Design Team Documents	Design Team to demonstrate compliance
INDICATORS	Stakeholder to adopt a Waste Management Plan consistent with the GDA waste management strategy							
	GDA to consider processing a portion of generated waste onsite							
	Appropriate recycling bins and recycling facilities external to buildings to be provided							
	Consider reuse of materials on site where appropriate							



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## 4.5 Transport

This section sets out the targets and indicators for achieving best practice in transport.

THEME	Transport							
AIM	The Grangegorman Urban Quarter will achieve best practice in Transport.							
TARGET	Ref	Description	Target 2017	Target 2042	Target 2050	Unit	Data Source	Responsibility
	12	Transport Modal Splits	Achieve MMP splits identified in Planning Scheme	Reduce car usage by 15% over 2017 levels	Reduce car usage by 30% over 2017 levels	Mobility Mgmt Plan Modal Splits	MMP Annual review	GDA and stakeholders to monitor progress on a site wide scale
	13	Permeability	70	100	—	% of new access points as per planning scheme	Annual Scheme Review	GDA to monitor progress on a site wide scale
INDICATORS	Encourage living onsite or within walking distance of the Urban Quarter							
	Provide sufficient and adequate cycle parking and shower facilities							
	Include proactive schemes to promote cycling, informed by section 6.8 of Mobility Management Plan							
	Install lighting along pedestrian precincts.							
	Ensure accessibility to local amenities and public transport services within walking and cycling distance or onsite where practical (shop, ATM, etc)							
	Prioritise the number of Carpool parking spaces onsite							
	Present current travel information, including maps and travel times, available in electronic and remote format (e.g. via Smartphone application, website, text notification etc)							



## 4.6 Construction

This section sets out the targets and indicators for achieving best practice in Construction

THEME	Construction							
AIM	The Grangegorman Urban Quarter will achieve best practice in Construction.							
TARGET	Ref	Description	Target 2017	Target 2042	Target 2050	Unit	Data Source	Responsibility
	14	Building Materials	75	85	95	% of materials to have been assessed using BS 8905 methodology	BS 8905	Design Team to demonstrate compliance
	15	Recycling	75	85	95	% of construction waste (non demolition/ earthworks) diverted from landfill	GDA/ CWMP	Contractor to demonstrate compliance
	16	Sustainable Practices	80	90	100	% of contractors with EMS policies and procedures in place	Certs	Contractor to demonstrate compliance
	17	Waste	3.5	2.5	1.5	m <sup>3</sup> construction waste per 100m <sup>2</sup> gross internal floor area	GDA/ CWMP	Contractor to demonstrate compliance
INDICATORS	All construction activities adhere to BS 5228 Code of practice for noise and vibration control on construction and open sites							
	Code of Construction practice developed to manage potential impacts during the construction phase							
	Consideration given to facilitating deconstruction through design measures including the selection of materials, methods of construction employed, etc							
	Modern Methods of Construction (MMC) investigated, utilising prefabricated elements, manufactured offsite.							
	Appointment of community/local resident Liaison Officer by Contractor							
	Preparation of Construction Waste Management Plan (CWMP)							



## 4.7 Health and Wellbeing

This section sets out the targets and indicators for achieving best practice in Health and Wellbeing by 2050.

THEME	Health and Wellbeing							
AIM	The Grangegorman Urban Quarter will achieve best practice in Health and Wellbeing.							
TARGET	Ref	Description	Target 2017	Target 2042	Target 2050	Unit	Data Source	Responsibility
	18	Space and Comfort Use	10	14	18	Marks achieved in BREEAM 2011 HEA 01-06, or equivalent	Design Drawings	Design Team
	19	Programme for Sports and Recreational Facilities	40	100	-	% of sports facilities developed	Planning Scheme	Stakeholder
	20	Diversity of uses developed on the site	40	100	-	% of Grangegorman health and education campus delivered	Planning Scheme	GDA
INDICATORS	Promote and assist in development of community healthcare on site							
	Provide a view out for most building users where practical							
	Incorporate measures to promote the use of stairs							
	Incorporate measures to promote universal access to facilities							
	Incorporate measures to promote informal recreation and activities							
	Allow for purge period on completion of buildings prior to occupation							
	Provide natural ventilation wherever practical.							
	Provide regular public access to drinking water							
	Consider both the internal and external acoustic properties of the design and the impact on users							
	Encourage shared use of space and facilities							
	Ensure passive surveillance is integral to all aspects of design							





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## 4.8 Governance and Sustainability

This section sets out the targets and indicators for exceeding best practice in Sustainable Governance by 2050

<b>THEME</b>	<b>Sustainable Governance</b>						
<b>AIM</b>	The Grangegorman Urban Quarter will exceed best practice in Sustainable Governance.						
<b>TARGET</b>	<b>Ref</b>	<b>Description</b>	<b>Target 2017</b>	<b>Target 2042</b>	<b>Target 2050</b>	<b>Data Source</b>	<b>Responsibility</b>
	21	Overall Governance	1			Annual board level review of Sustainability Strategy	GDA
<b>INDICATORS</b>	Annual monitoring of Sustainability Strategy and making monitoring report publicly available						
	Annual monitoring Strategic Plan 2011 and Planning Scheme 2012						



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## 4.9 Community Relations

This section sets out the targets and indicators for exceeding best practice in Community Relations by 2050.

THEME	Community Relations							
AIM	The Grangegorman Urban Quarter will exceed best practice in Community Relations.							
TARGET	Ref	Description	Target 2017	Target 2042	Target 2050	Unit	Data Source	Responsibility
	22	Publications	Publish newsletters to inform surrounding community			Number of newsletters published per annum	Newsletter	GDA
	23	Public Events	Hold publically attended events			Number of publically attended events	Record of Events	GDA/ Stakeholder
	24	External Community	Establish Campus Liaison Committee			-	-	GDA/ Stakeholder
	25	Employment	Employ Employment Co-ordinator			-	-	GDA
	26	Employment	Comply with Grangegorman Employment Charter			Number in the locality employed/ being trained on the Grangegorman	Annual Report	Contractor to demonstrate compliance
	27	Education	Achieve objectives of DIT Access and Civic Engagement Office			Numbers in the locality taking educational courses in DIT	Annual Report	DIT
INDICATORS	Engage stakeholders in consultation in accordance with Grangegorman consultation strategy							
	Site information made available for visitors							



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## 4.10 Sustainability Education

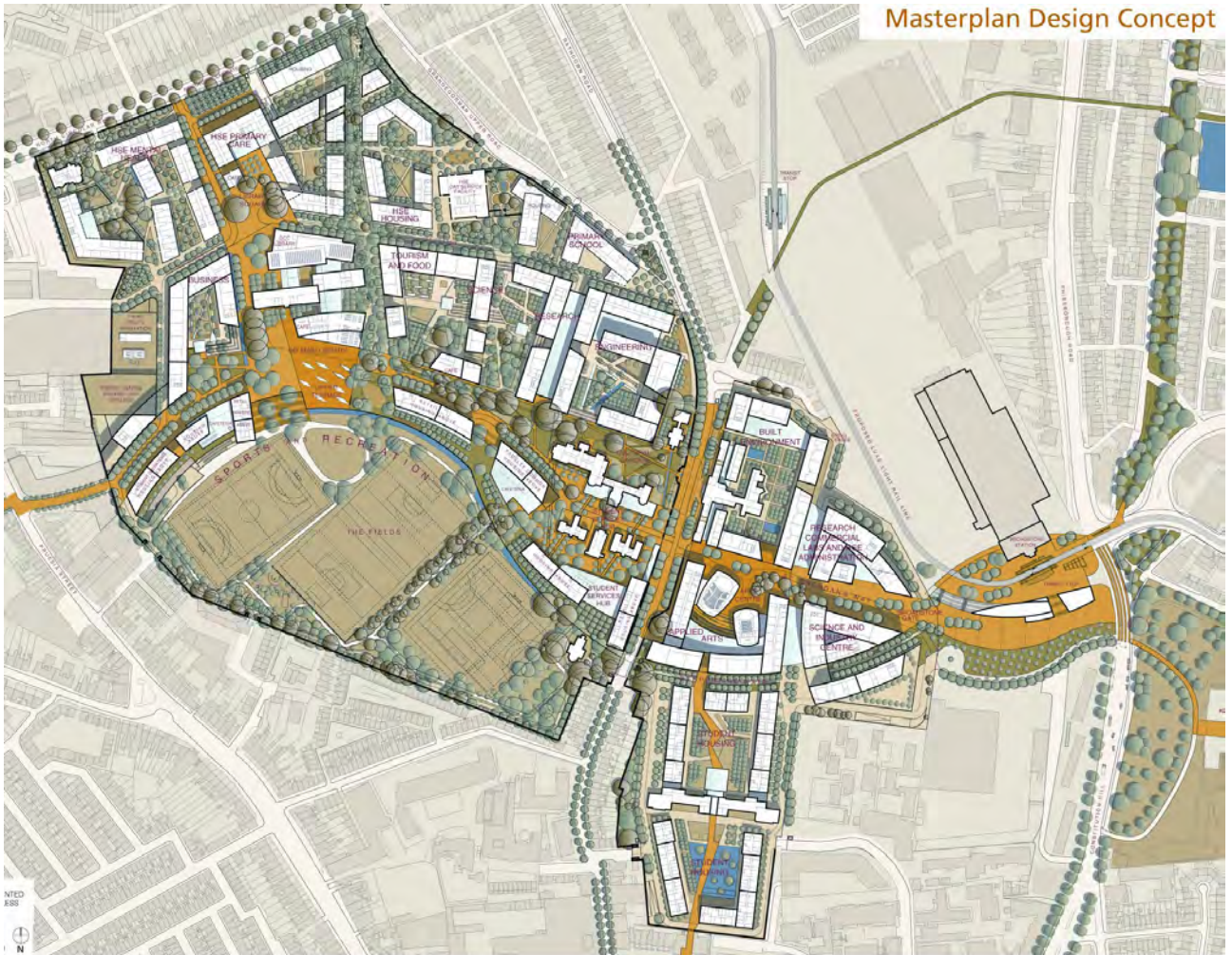
This section sets out the targets and indicators for exceeding best practice in Sustainability Education by 2050.

THEME	Education							
AIM	The Grangegorman Urban Quarter will exceed best practice in Sustainability Education.							
TARGET	Ref	Description	Target 2017	Target 2042	Target 2050	Unit	Data Source	Responsibility
	28	Student Education	30	60	80	Programmes with a module containing significant sustainable content	Student Timetables/ course handbook	DIT
	29	General Education	10	Sustainability related certificate program through its continuing education department		Continuing education/ Community courses in sustainability	Public Class Timetables/ course handbook	DIT
	30	Shared Educational Facilities	Provide dedicated spaces contracted for use by external bodies			-	Contract of Use	DIT
INDICATORS	Provide web and newsletter access to Grangegorman sustainability information							
	Continually monitor and improve the utilisation rate of teaching and other spaces.							
	Stakeholders to adopt measures to encourage sustainable behaviour							
	Further support and encourage faculty and departments to be involved in sustainability research.							
	Facilitate peer to peer teaching of sustainability issues including formal training and coordinated sustainability outreach.							
	Promote the sustainability of the Urban Quarter and collaborate with other campuses to spread lessons learned							
	Make sustainable technologies visible throughout the campus and enable their use as a learning tool							



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Masterplan Design Concept



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## 5 Implementation

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The GDA or an entity that is subsequently incorporated to manage the site and facilities will work together with all the main stakeholders involved on the site to ensure that the objectives of this sustainability strategy are implemented. The principle stakeholders will be the Dublin Institute of Technology, The Health Services Executive, the Public Private Partnership Companies, and the Local Community.

### 5.1 Overview of Sustainability Targets, Indicators and Reporting

The GDA will use the targets outlined in this document to report annual achievements in sustainability for the Grangegorman development.

Indicators appropriate to the development have been established. These indicators will be used to evaluate submissions from design teams, contractors, developers, Public Private Partnership Companies.

The extent to which targets have been addressed will be used by the GDA in the assessment and selection of design teams and contractors.

### 5.2 Sustainability Implementation

This strategy will be issued to Stakeholders who are required to incorporate all relevant objectives into their specific project briefs.

Each target will be achieved by a combination of initiatives developed by Design Teams and Contractors. Design Teams and Contractors should use the indicators listed as a *guide* to aspects of sustainable design that are important to GDA. The indicators are intended to be non-exhaustive and innovation is encouraged.

Compliance with this strategy should be presented in a manner that can be independently verified.

### 5.3 Review of Sustainability Strategy

The Sustainability Strategy will be reviewed regularly by GDA and updated as necessary.

Targets are to be reviewed at a minimum interval of 5 years to respond to developments in sustainable technology and the changing political and regulatory context.