

# EPM tES<sub>v3</sub> Environmental Sustainability Project Tracker

## Tracker Guidance

The EPM tES Environmental Sustainability Project Tracker is intended to be a basket of targets for project teams. These targets must each be addressed and explanations for any derogations or areas which are not applicable must be supplied to the Environmental Sustainability Team.

When completing this document the guidelines below should be followed:

- If the associated BREEAM credits are not being targeted an explanation should be given. Schemes which are not BREEAM certified should still aim to achieve compliance with the tracker.
- This document outlines the base targets for projects however, it is recommended that stretch targets are agreed with the Design Teams.
- There are certain areas where targets should be agreed with the relevant internal contact, the Environmental Sustainability Project Officer should be copied into all correspondence with these individuals. Contact details can be found in the table below:

Area	Contact	Email	Telephone
Environmental Sustainability Project Officer - Tracker Document	Helen Cutts	<a href="mailto:helen.cutts@manchester.ac.uk">helen.cutts@manchester.ac.uk</a>	0161 275 0354
Energy/Water	Tony Small	<a href="mailto:tony.small@manchester.ac.uk">tony.small@manchester.ac.uk</a>	0161 275 4943
Travel	Andrew Hough	<a href="mailto:andrew.j.hough@manchester.ac.uk">andrew.j.hough@manchester.ac.uk</a>	0161 275 0343

- All derogations must be explained within the tracker document. Once approved all rows must be hidden and not deleted
- BREEAM credits referenced within this document are from New Construction 2011.
- If additional project specific targets are required the following referencing system should be used: AD-ES/UO1, AD-ES/UO2 etc.
- DEFRA 2012 carbon conversion factors are used however please use current date conversion factors at time of completion.
- Planning Policy correct as of December 2013, this should be updated as necessary.

### Status:

1. On Track: Progress being monitored	2. Unlikely: Work ongoing, additional work/studies/strategies required	3. Derogation: With details provided
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# ENERGY

	TOPIC	DESCRIPTION	RELATED BREEAM CREDITS AND PLANNING POLICY	INDICATOR	BASE TARGET	STRETCH TARGET	STRETCH TARGET CONSTRAINT			ACTIONS & PROGRESS	PRIMARY RESPONSIBILITY	STATUS
							FINANCIAL	TECHNICAL	OWNERSHIP			
ES/VO 1	Life cycle costing	To ensure long life span of the facility, design decisions must take into account the 60-years life cycle cost (LCC) of the project.	MAN05 MAT01	<ul style="list-style-type: none"> <li>A LCC to be carried out using Net Present Value (£) to include construction, operation and maintenance.</li> <li>To demonstrate the use of LCC ensures that the design solution for building envelope and services installation bring in better value (i.e. lower running cost, lower maintenance cost, etc)</li> </ul>	1. LCC study is carried out and updated throughout the design process						1	
ES/VO 2	Reduction of Carbon Emissions - from legislative context	In line with the relevant legislative requirements, this topic is closely linked to the core building design for regulated energy uses. From the legislative or planning context, the target is set against Part L and BREEAM. (N.B. Where distinctive spaces are part of the design e.g. research labs & teaching spaces specific targets must be met. )	ENE01 ENE02 Policy EN4 and EN6 Adopted Core Strategy	<ul style="list-style-type: none"> <li>Carbon reduction over above Part L;</li> <li>BREEAM energy credits.</li> </ul>	1. Regulated carbon emission - a minimum 40% to be measured against 2010 building regulations 2. Achievement of 10 or more BREEAM Ene 01 credits						2	
ES/VO 3	High Levels of Energy Efficiency	To ensure the robust base building, minimum high efficiency for build quality and MEP efficiency.	ENE01 ENE02 ENE03 ENE08	<ul style="list-style-type: none"> <li>Air tightness testing.</li> <li>Building services specification detailing lighting efficiency</li> <li>Energy Efficient IT Strategy</li> </ul>	1. Air tightness testing: 3(m3/h)/m2 at 50 Pa 2. Lighting design shall not exceed illumination levels of 10% above the statutory minimum (as in BS EN 12464) 3. Produce a project-specific Energy Efficient IT Strategy						3	
ES/VO 4	Reduction of Carbon Emissions and energy benchmark	In line with the HEFCE target and the University's carbon management plan, a reduction of carbon emission must be achieved considering total energy uses and carbon emissions. Use of HEEPI figures.; project specific targets have been set as part of the University Carbon Management Plan, these are available on request.	ENE01	<ul style="list-style-type: none"> <li>Total CO2 emissions: (kgCO2/m2)/year (using DEFRA 2012 carbon factors: Elec 0.4907; Gas: 0.1848)</li> <li>Total energy consumption in kWh/m2/year</li> </ul>	1. Produce a project-specific Carbon Reduction Strategy including regulated and unregulated energy 2. Total CO2 kgCO2/m2/yr 3. Total energy consumption kWh/m2/year						1	
ES/VO 5	Display Energy Certificate	To ensure the actual building performance meets the best practice standard	ENE01 ENE02 ENE03 ENE04 ENE05 ENE06 ENE07 ENE08 ENE09	<ul style="list-style-type: none"> <li>DEC rating</li> </ul>	1. DEC B as a minimum, using the approved DEC prediction method to demonstrate the potential rating						2	
ES/VO 6	Renewable Energy	To reduce overall carbon emission.	ENE04 Policy EN6 Adopted Core Strategy	<ul style="list-style-type: none"> <li>% of energy demand provided by on-site low and zero carbon technologies to be calculated using the approved energy model</li> </ul>	A minimum of 20% of energy demand provided by on-site low and zero carbon technologies						2	

# WATER and DRAINAGE

	TOPIC	DESCRIPTION	RELATED BREEAM CREDITS AND PLANNING POLICY	INDICATOR	BASE TARGET	STRETCH TARGET	STRETCH TARGET CONSTRAINT			MEASUREMENT PROCESS	PRIMARY RESPONSIBILITY	STATUS
							FINANCIAL	TECHNICAL	OWNERSHIP			
ES/VO 7	Water Usage	To reduce total demand of potable water considering environment benefit of rainwater/greywater recycling (N.B. Where distinctive spaces are part of the design e.g. research labs & teaching spaces specific targets must be met. )	WAT01 WAT02 WAT03 WAT04	<ul style="list-style-type: none"> <li>Total m3 per year</li> <li>% reduction against a notional baseline performance</li> <li>% reduction against UoM metered data in relevant existing building stock</li> </ul>	<ol style="list-style-type: none"> <li>Reduce predicted water consumption by a minimum of 40% (against a notional baseline performance)</li> <li>Reduce predicted water consumption by a minimum of 40% (against UoM baseline data)</li> </ol>						2	
ES/VO 8	Sustainable Drainage System (SUDs)	To reduce stormwater run-off and minimise negative environmental impact.	POL03	<ul style="list-style-type: none"> <li>Drainage calculations for pre and post development;</li> <li>Minimise impervious area</li> </ul>	<ol style="list-style-type: none"> <li>Specify SUDs to ensure that the new design has no greater run-off from the site than pre development following EA guidance;</li> <li>Investigate potential of using permeable surface and incorporate in LCC analysis.</li> </ol>						3	

# WASTE and MATERIALS

	TOPIC	DESCRIPTION	RELATED BREEAM CREDITS AND PLANNING POLICY	INDICATOR	BASE TARGET	STRETCH TARGET	STRETCH TARGET CONSTRAINT			MEASUREMENT PROCESS	PRIMARY RESPONSIBILITY	STATUS
							FINANCIAL	TECHNICAL	OWNERSHIP			
ES/UE 9	Recycling Facilities for operation	To provide waste recycling infrastructure/facility for better management	WST03	<ul style="list-style-type: none"> <li>Site plan showing designated recycling area in development;</li> <li>No individual waste bins for offices to be provided.</li> </ul>	<ol style="list-style-type: none"> <li>Provide internal and external recycling facilities for the following 3 waste streams: plastic bottles, cans and paper;</li> <li>Allow for future segregation of food waste for composting;</li> <li>Adopt an acceptable signage and alternative method to encourage the use of more centralised recycling points.</li> </ol>						1	
ES/UE 10	Construction Waste Management	To reduce construction impact	WST01	<ul style="list-style-type: none"> <li>Site Waste Management Plan</li> <li>Demolition Recovery Index</li> <li>Quantities of waste (wt./vol.) for landfill/reuse/recycling, as demonstrated by waste logs and waste transfer certificates /receipts</li> </ul>	<ol style="list-style-type: none"> <li>Produce a Site Waste Management Plan;</li> <li>Achieve a Demolition Recovery Index (DRI) of a minimum 80% with an aim to exceed 90%;</li> <li>Achieve a construction waste recovery/recycling rate of 75% by weight as a minimum with an aim to exceed 80%.</li> </ol>						1	
ES/UE 11	Recycled Materials	To encourage the use of recycled and secondary aggregates, thereby reducing the demand for virgin material and optimising material efficiency in construction	WST02	<ul style="list-style-type: none"> <li>Calculations and supporting documentation to demonstrate a recycled content of at least 10% (based on materials cost)</li> </ul>	At least 15% of the total value of construction materials derived from recycled and reused content in the products and materials used.						1	
ES/UE 12	Sustainable Sourced Timber	To ensure the specification of responsibly sourced timber for building element	MAT03	<ul style="list-style-type: none"> <li>Chain of custody certificates for FSC certified</li> </ul>	All timber to be FSC certified						2	

# TRANSPORT

	TOPIC	DESCRIPTION	RELATED BREEAM CREDITS AND PLANNING POLICY	INDICATOR	BASE TARGET	STRETCH TARGET	STRETCH TARGET CONSTRAINT			MEASUREMENT PROCESS	PRIMARY RESPONSIBILITY	STATUS
							FINANCIAL	TECHNICAL	OWNERSHIP			
ES/UE 13	Transport	Sustainable transport design to reduce environmental impact and improve accessibility	TRA01 TRA02 TRA03 TRA04 TRA05	<ul style="list-style-type: none"> <li>MCC Planning guidance</li> <li>BREEAM guidance</li> </ul>	1. Produce Green Travel Plan; 2. Meet BREEAM credits							1
ES/UE 13a	Cycle Parking	Providing sufficient and user friendly cycle facility	TRA03	<ul style="list-style-type: none"> <li>Cycle provision</li> <li>Shower provision</li> <li>Drying room provision</li> </ul>	1. 1 space per 10 staff and students up to 500 occupants. Spaces can be reduced by 50% if current capacity available in close proximity. 2. Subject to change of current arrangements, 50% of provision to be in the form of a secure shelter to be provided for staff and PG use. 3. A minimum of 1 shower per 10 cycle spaces (with suitable changing/lockers equal to number of cycle spaces); 4. A specifically designed area for the drying of wet clothes to be provided in close proximity to changing facilities.							2
ES/UE 13b	Pedestrian and Cycle Access	Enhance pedestrian safety and encourage walking and cycling	HEA06		Priority given to pedestrian and cycle access with high quality demarcated routes and signage/markings.							3
ES/UE 13c	Reduce traffic demand	To reduce traffic demand	HEA06	<ul style="list-style-type: none"> <li>Provide options to owning a private vehicle</li> <li>Increase convenience and accessibility between facilities</li> </ul>	1. Organise carpools/vanpools with priority parking 2. Establish car share scheme 3. Design a layout to reduce the need for transporting equipment across facility/building/campus							1
ES/UE 13d	Electric Vehicle Charging Points	To reduce carbon emission and encourage the use of green vehicles	TRA05	Electric vehicle charging point	As a minimum, one dual electric charging point to be installed in a prominent parking area.							2

# BREEAM, POLLUTION and CONSTRUCTION

	TOPIC	DESCRIPTION	RELATED BREEAM CREDITS AND PLANNING POLICY	INDICATOR	BASE TARGET	STRETCH TARGET	STRETCH TARGET CONSTRAINT			MEASUREMENT PROCESS	PRIMARY RESPONSIBILITY	STATUS
							FINANCIAL	TECHNICAL	OWNERSHIP			
ES/VO 14	BREEAM	To achieve BREEAM accreditation as a recognised sustainability benchmark method	Policy DM1 Adopted Core Strategy	<ul style="list-style-type: none"> <li>BREEAM Certificate - interim at Design - final at Post Construction</li> </ul>	New Build: <ul style="list-style-type: none"> <li>Excellent (≥70%)</li> </ul> Refurbishments: <ul style="list-style-type: none"> <li>Very Good</li> </ul>							1
ES/VO 15	Pollution	Reduce impact on air quality and climate impact	POL01 POL02	<ul style="list-style-type: none"> <li>GWP/ODP refrigerants and insulants;</li> <li>NOx level</li> </ul>	1. Zero GWP/ODP refrigerants and insulants 2. NOx: mg/kWh delivered space heating and water energy							2
ES/VO 16	Water Pollution	Reduce impact on water quality	POL03	<ul style="list-style-type: none"> <li>Reduce water pollution to site drainage;</li> <li>Adequate measures to drainage system to prevent the escape of chemicals to natural watercourses</li> </ul>	1. Appropriate water pollution prevention systems (Pollution Prevention Guideline 3 and the SUDS manual); 2. Where the building has chemical/liquid gas storage areas, shut-off valves are fitted to the site drainage system to prevent the escape of chemicals to natural watercourses (in the event of a spillage).							3
ES/VO 17	Construction Site Impacts	To reduce negative environmental impact of construction activities	MAN02 MAN03 WST01 WST02	<ul style="list-style-type: none"> <li>Monitor, report and set targets for CO2, energy and water consumption during construction.</li> <li>CCS certificates</li> </ul>	1. Monitoring logs for energy and water displayed graphically on site; 2. Make policies to reduce this and pollution; 3. Considerate Constructors score of at least 32.							1

# BIODIVERSITY

	TOPIC	DESCRIPTION	RELATED BREEAM CREDITS AND PLANNING POLICY	INDICATOR	BASE TARGET	STRETCH TARGET	STRETCH TARGET CONSTRAINT			MEASUREMENT PROCESS	PRIMARY RESPONSIBILITY	STATUS
							FINANCIAL	TECHNICAL	OWNERSHIP			
ES/VO 18	Biodiversity	Enhance site ecology	LE01 LE02 LE03 LE04 LE05	Provision of landscaping that will enhance local biodiversity, local species, pollen-rich species	1. Change in ecological value of the site is equal to or greater than zero; 2. Development of site specific Biodiversity Action Plan.							1
ES/VO 19	Green roof	Use of green roof to reduce surface water run off and enhance biodiversity	LE03 LE04 LE05	Green roof area	1. Green roof area 2. New species introduced							2
ES/VO 20	Open space	To create a suitable microclimate for public realm		Public realm design to consider wind, light, and climatic conditions	1. At least a desktop wind microclimate study to inform design of open space; 2. Consider sun path, shading, overshadowing effect.							3

# CLIMATE CHANGE

	TOPIC	DESCRIPTION	RELATED BREEAM CREDITS AND PLANNING POLICY	INDICATOR	BASE TARGET	STRETCH TARGET	STRETCH TARGET CONSTRAINT			MEASUREMENT PROCESS	PRIMARY RESPONSIBILITY	STATUS
							FINANCIAL	TECHNICAL	OWNERSHIP			
ES/UO 21	Climate Change Impact and Resilience	To improve climate resilience and adaptation capacity	POL01 HEA03 Policy EN8 Adopted Core Strategy	Examine impact of extreme events of heat wave and flooding	Climate resilience report to include: 1. all critical services and plant; 2. predicted hours of future summertime overheating (at least 2050s climatic projections); 3. flood risk that address predicted impact of climate change (test sensitivity to a 1 in 300 years event)							1

# POST OCCUPANCY EVALUATION

	TOPIC	DESCRIPTION	RELATED BREEAM CREDITS AND PLANNING POLICY	INDICATOR	BASE TARGET	STRETCH TARGET	STRETCH TARGET CONSTRAINT			MEASUREMENT PROCESS	PRIMARY RESPONSIBILITY	STATUS
							FINANCIAL	TECHNICAL	OWNERSHIP			
ES/VO 22	Post Occupancy Evaluation	Carry out Post Occupancy Evaluation	MAN04	<ul style="list-style-type: none"> <li>Post construction monitoring records and where applicable corrective actions</li> <li>At least 12 months POE after handover</li> </ul>	<ol style="list-style-type: none"> <li>Undertake Post Construction Audit (PCR);</li> <li>Undertake POE for 12 months at least;</li> <li>If more than 20% of occupants are dissatisfied the thermal conditions, commit to undertaking corrective action.</li> </ol>						1	

# COMMUNICATION and RESEARCH

	TOPIC	DESCRIPTION	RELATED BREEAM CREDITS AND PLANNING POLICY	INDICATOR	BASE TARGET	STRETCH TARGET	STRETCH TARGET CONSTRAINT			MEASUREMENT PROCESS	PRIMARY RESPONSIBILITY	STATUS
							FINANCIAL	TECHNICAL	OWNERSHIP			
ES/Com01	Environmental Sustainability Information	Communication with building users throughout the design, construction and operation process	MAN04	<ul style="list-style-type: none"> <li>Plans of Environmental Sustainability information area</li> <li>Specification of display/demonstration areas</li> </ul>	1. A prominent area to be provided which allows for the provision of Environmental Sustainability information, through an interactive display 2. Create a project page on the University website.							2
ES/Com02	In-house expertise	Draw in-house research knowledge base		<ul style="list-style-type: none"> <li>Minutes from meetings with the University of Manchester staff to show communication</li> </ul>	Draw on in-house expertise where applicable and/or input from the research knowledge base							3
ES/Res01	Research	To contribute to the creation of a research and learning environment		<ul style="list-style-type: none"> <li>A minimum of one research topic presented</li> </ul>	Provide opportunity for at least one research/dissertation project, to be delivered by members of the University							2