



# Sustainable Building Standards

Review and Recommendations



# Strategic Requirement



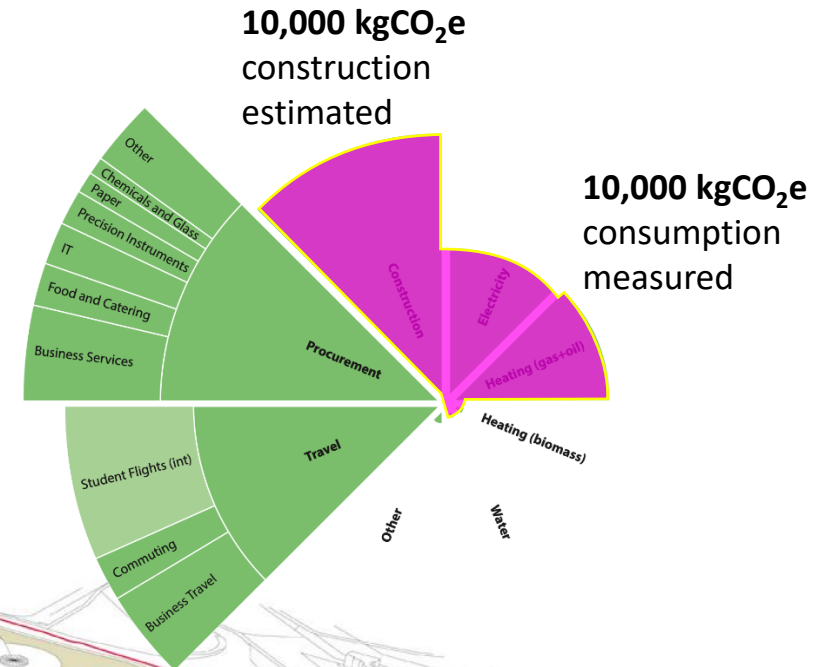
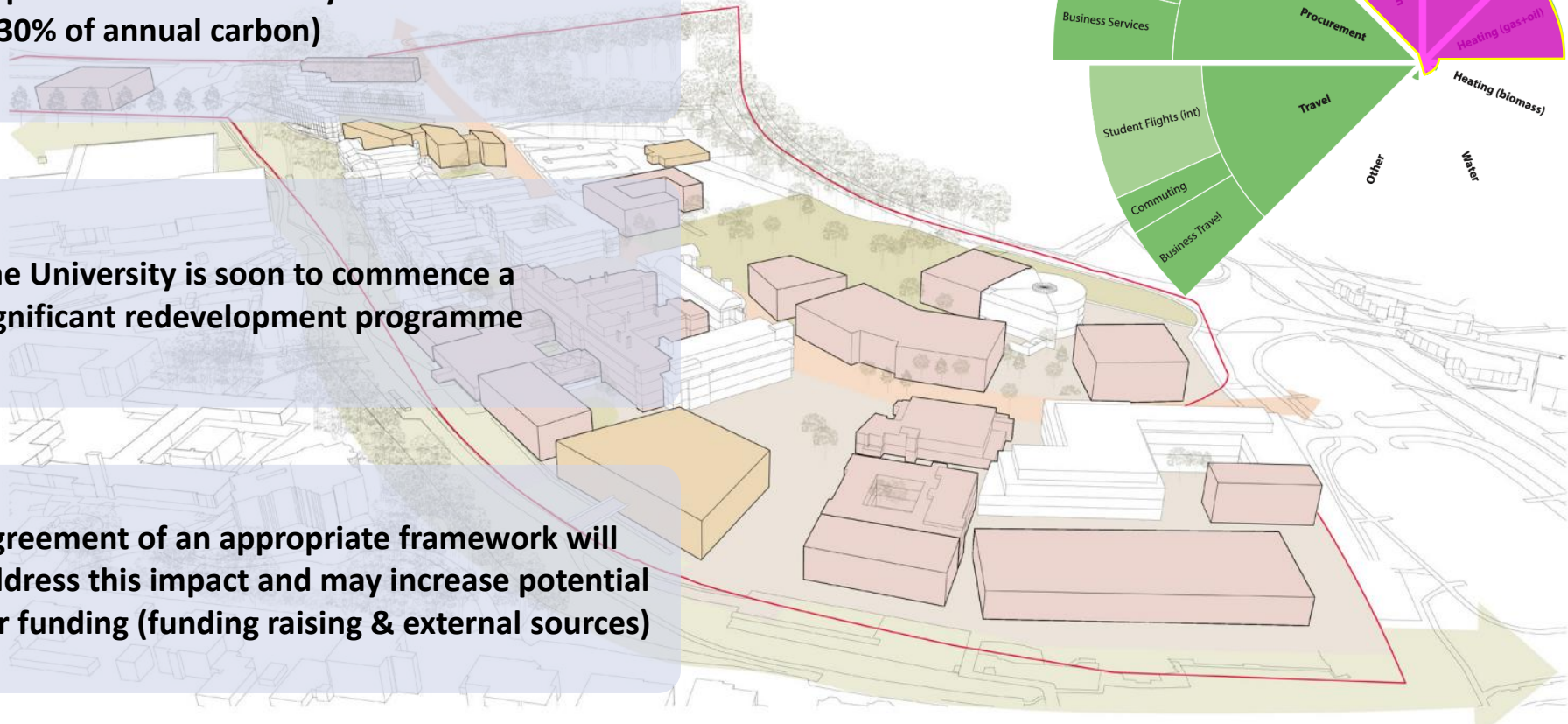
Impacts on the University are similar (~30% of annual carbon)



The University is soon to commence a significant redevelopment programme



Agreement of an appropriate framework will address this impact and may increase potential for funding (funding raising & external sources)



**Baseline BREEAM**  
Excellent [where possible]

**University Key Performance Indicators (KPI)**

Estate energy (Scope 1 & 2 tonnes carbon) compared to the 1.5 °C reduction profile

Scope 3 tonnes carbon compared to the 1.5 °C reduction profile

% of capital projects in delivery which meet relevant carbon targets

Tonnes of general waste produced

Annual biodiversity index

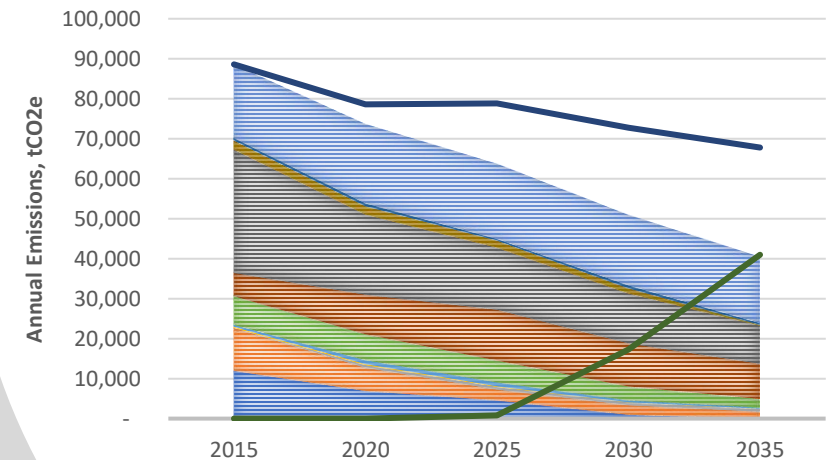
# Baseline Position and Drivers

## TARGETS

**Embodied carbon:**  
60% reduction

**Operational carbon:**  
50% reduction

**Carbon Footprint and Trajectory 2015-2035**



# Standards Reviewed



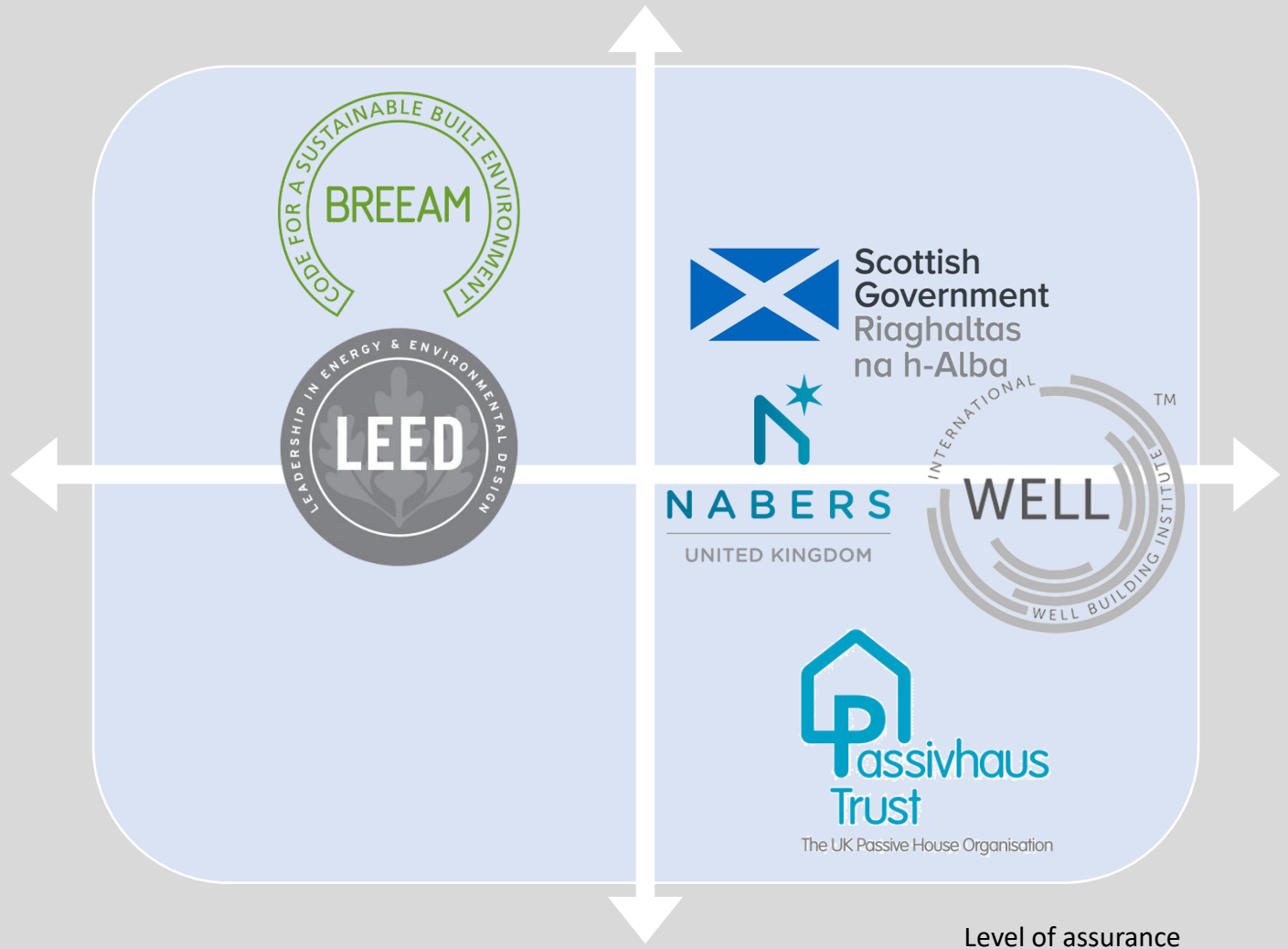
# Guidance Reviewed



# Breadth vs Assurance

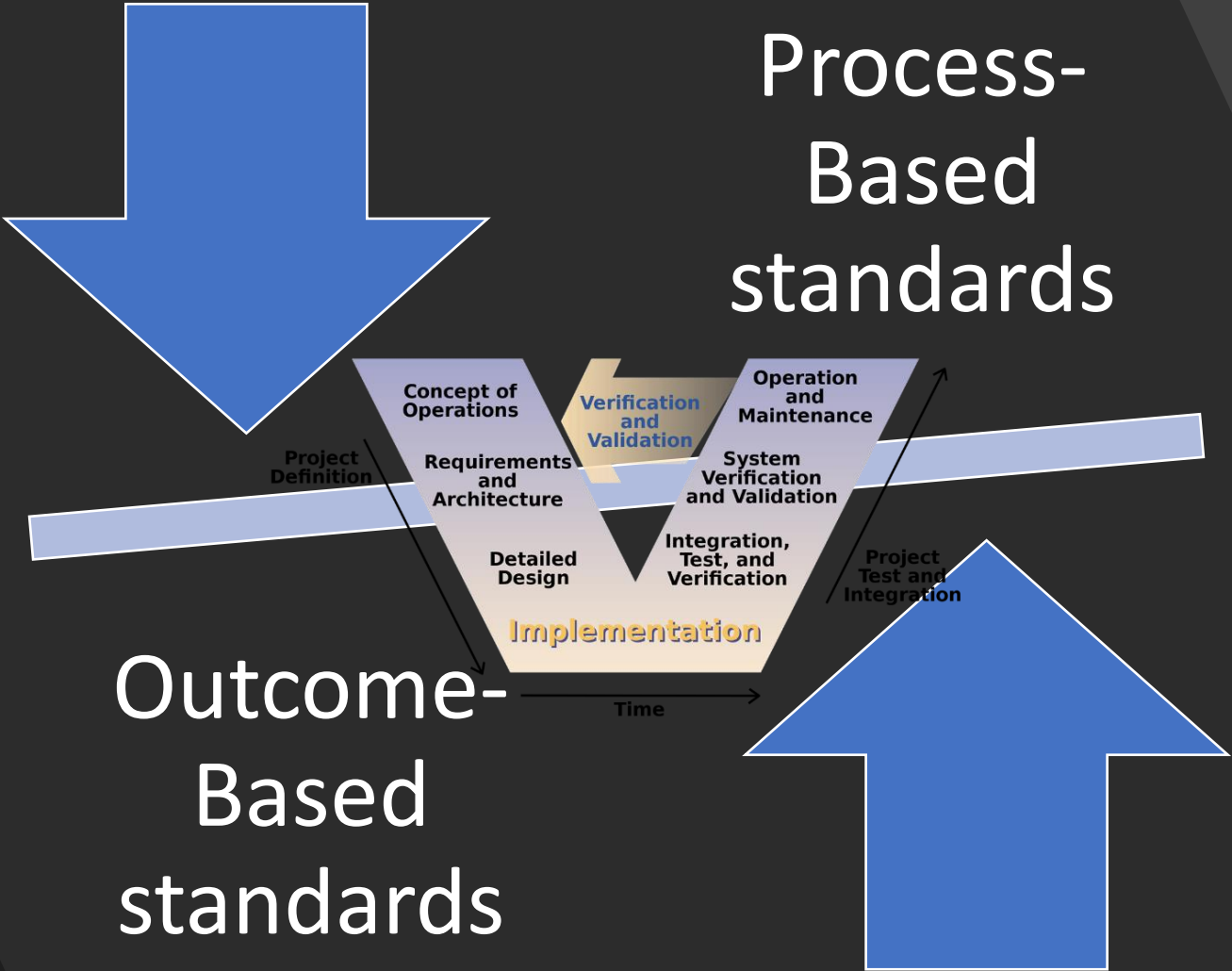
*\*against University strategy requirement*

Breadth of standard



Level of assurance

Process-  
Based  
standards



Outcome-  
Based  
standards



# Scope of Review

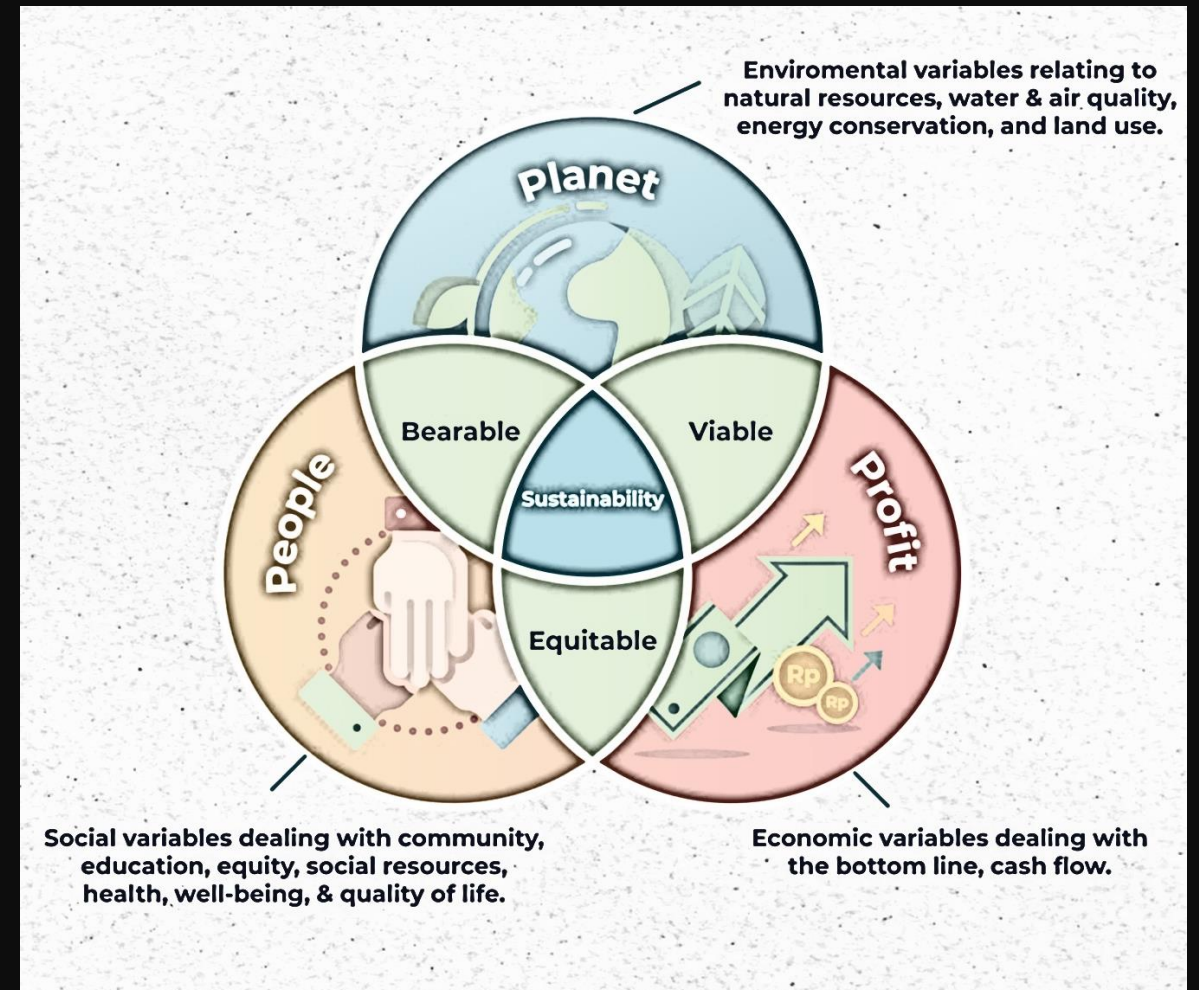
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The following criteria were considered for transferability to the University:

- Scope of standard
- Process and level of assurance
- Strengths and weaknesses
- Cost/Effort of implementation
- Reputational benefits
- Alignment of objectives with University strategy
- Local expertise/relevance to UK

**Best practice case study projects were also included to demonstrate outcomes for each standard**

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# Key Findings and Recommendation

**Proposed route forwards [NZPSB Standard] as it provides a flexible and pragmatic approach to the development of sustainable buildings within the University**

Gold

- Passivhaus + BREEAM + WELL (best complete combination of industry standards for UK project)

Silver

- NZPSBS [+ WELL aspects for key buildings] (most pragmatic view)

Bronze

- Develop in-house framework standard to be adopted by projects

University Key Performance Indicator (KPI)	BREEAM	LEED	WELL	PSNZCBS	NABERS	Passivhaus
Estate energy (Scope 1 & 2 tonnes carbon) compared to the 1.5 °C reduction profile	p	p		Y	Y	Y
Scope 3 tonnes carbon compared to the 1.5 °C reduction profile	p	p	P	Y		
% of capital projects in delivery which meet relevant carbon targets				Y	Y	P
Tonnes of general waste produced	p	p		p	Y	
Annual biodiversity index	p	p	Y	p		



# University KPI versus NZPSB Standard



University Key Performance Indicators (KPI)
Estate energy (Scope 1 & 2 tonnes carbon) compared to the 1.5 °C reduction profile
Scope 3 tonnes carbon compared to the 1.5 °C reduction profile
% of capital projects in delivery which meet relevant carbon targets
Tonnes of general waste produced
Annual biodiversity index

Theme	Objectives	Sub-Criteria
Place	OB.1 NZ Economy Outcomes	
Carbon	OB.2 Construction Embodied Carbon	
	OB.3 Operational Energy	OB 3.1 OE target OB 3.2 ZDE heating OB 3.3 NZ deadline
	OB.4 Whole Life Carbon	Project targets
	Environment	OB.5 Indoor Env. Quality <i>(selectively applied based on use and typology)</i> OB.6 Env. aspects

# Next Steps

## Impact on projects

### Brief

- **Essential to effective delivery is early engagement on sustainability**
- Sustainable places (link to masterplan objectives and wider benefits)
- **Register project:** project specific objectives and high-level targets (/m<sup>2</sup>)

### Design

- Objectives developed into project requirements and carbon targets (tCO<sub>2</sub>e)
- **Verification of design performance:** digital twin/BIM modelling (TM54)
- Development of M&V plan to inform tender specification

### Construction

- **Project roles** to ensure translation of design intent into building construction
- **Validation through performance testing:** requires tight programme control
- Transfer findings via soft landings approach into operation phase

### Operation

- Integration of reporting requirements into post occupancy assessments (e.g. energy)
- Continual improvements process as part of snagging and annual reporting
- **Certification not awarded until performance targets validated (~18m)**