

# How to design BREEAM Outstanding buildings?

## Future Cities by Sweco



**Kartik Amrania**

Head of Building Sustainability Department  
UK

5th April 2018

# Index

- Outstanding Rating and Statistics
- Highest number of Outstanding Rating Buildings Delivered by Sweco
- The Bloomberg London Building
- Targeting BREEAM Outstanding Rating



# bream

London Marketing Premium & Growing demand → **OUTSTANDING** ≥85%



Industry Norm & London Planning Requirement → **EXCELLENT** ≥70%



**VERY GOOD** ≥55%



**GOOD** ≥45%



**PASS** ≥30%




Only **1.5%** of all buildings assessed are “Outstanding Rating”  
&  
**0.3 %** Buildings are over 90 % “Outstanding Rating”

# Why Target “BREEAM Outstanding Rating”?



- Growing Sustainability awareness amongst large Cooperate tenants  
(Buildings inline to Corporate own environmental policy)
- BREEAM Outstanding as proof of badge for holistic sustainable building design
- Provides for high sustainability ethos end user tenants
- BREEAM Outstanding building also reflects high quality building environment



Code for a Sustainable Built Environment  
www.breem.org

**Interim Certificate – Design Stage**  
This is to certify that:

**Bloomberg**  
3 Queen Victoria Street  
City of London  
EC4N 4TQ

has been assessed to:


**BREEAM UK New Construction 2014: Offices  
(Fully Fitted)**

by a licensed assessor for:  
**Bloomberg L.P.**  
and has achieved a score of **98.5%**

**Outstanding**

Certificate Number: **BREEAM-0067-3780** Issue: **01**

27 June 2017  
Date of Issue

  
Signed on behalf of BRE Global Ltd

Gavin Dunn  
Director, BREEAM

Bloomberg L.P.  
Developer

Foster + Partners  
Architect

Sweco UK Ltd  
Building Services

AKT II  
Structural Engineer

ARUP  
Facade Engineers

Sweco UK Ltd  
Assessor Company

Kartik Amrania  
Licensed Assessor


KA36  
Assessor Number

Sir Robert McAlpine  
Principal Contractor


Stanhope PLC  
Project Management

Alexander Drysdale  
BREEAM Accredited Professional

AECOM  
Cost Consultants



This certificate is issued by BRE Global Ltd to the Licensed Assessor named above based on their assessment of data provided by the Client and verified at the time of Assessment.  
This certificate remains the property of BRE Global Ltd and is issued subject to terms and conditions set out at [www.breem.org/termsandconditions](http://www.breem.org/termsandconditions)  
To check the authenticity of this certificate visit [www.breem.org/verify](http://www.breem.org/verify), scan the QR tag or contact us:  
E: [breem@breem.org](mailto:breem@breem.org) T: 01223 321 98 11  
BREEAM is a registered trademark of BRE (the Building Research Establishment Ltd, Community Trade Mark 05/78051)



**bre**

BF1226 Rev 1.2 Page 1 of 2 © BRE Global Ltd, 2014



# SWECO HAVE DELIVERED HIGHEST NUMBER OF OUTSTANDING RATING BUILDINGS



## KINGS CROSS



**One Pancras Square**  
BREEAM Outstanding  
Score achieved of 89.3%



**Two Pancras Square**  
BREEAM Outstanding  
Score achieved of 85.9%



**Three Pancras Square**  
BREEAM Outstanding  
Score achieved of 89.09%



**Four Pancras Square**  
BREEAM Outstanding  
Score achieved of 88.1%



**Five Pancras Square**  
BREEAM Outstanding  
Score achieved of 97.6%



Adapted from Eric Parry Architects

## SWECO ARE THREE TIMES BREEAM COMPANY OF THE YEAR AND MULTIPLE BUILDING LEVEL AWARDS

# FIVE PANCRAS SQUARE

97.6% Outstanding Rating  
Highest Rated Bespoke Building in the UK





# ONE PANCRAS SQUARE

89.3 % Outstanding Rating  
First BREEAM 2011 Outstanding Building





# FOUR PANCRAS SQUARE

88 % Outstanding Rating  
First BREEAM 2014 Outstanding Building





# Bloomberg London

## 98.5 % BREEAM Outstanding Rating



© Nigel Young & Foster +Partners



# Bloomberg London

## “The Concept”

- Located between the Bank of England and St Paul’s Cathedral, the new building provides 1.1 million square feet of Grade A office space
- Site is of great archaeological importance with “the Roman Temple of Mithras “
- Design brief of sympathetic to its surrounding context, an exemplar of sustainable design and unique of its place and time
- The building is an embodiment of the culture and values of Bloomberg

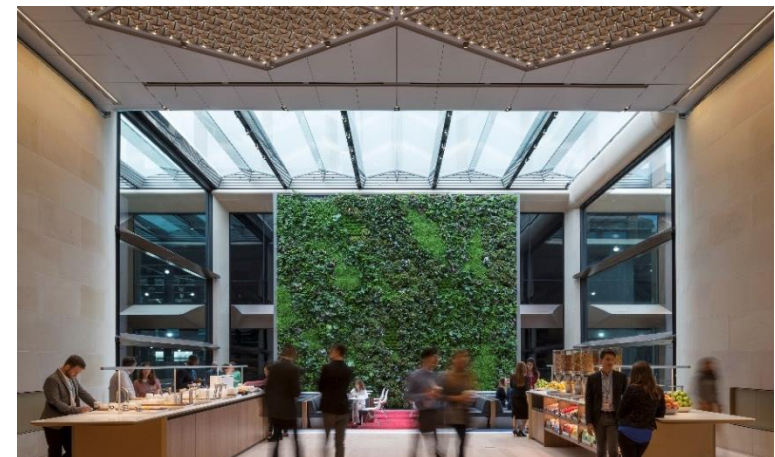




# Sweco's Approach

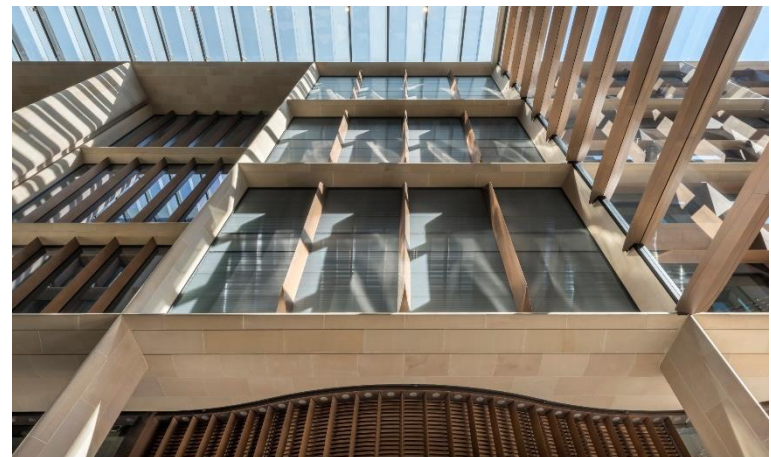
## To Address the Three Pillars of Sustainability

- **People:** by creating productive environments
- **Planet:** by reducing consumption of non-renewable resources and minimising waste
- **Profit:** by reducing energy bills, ensuring high retention and productivity of employees



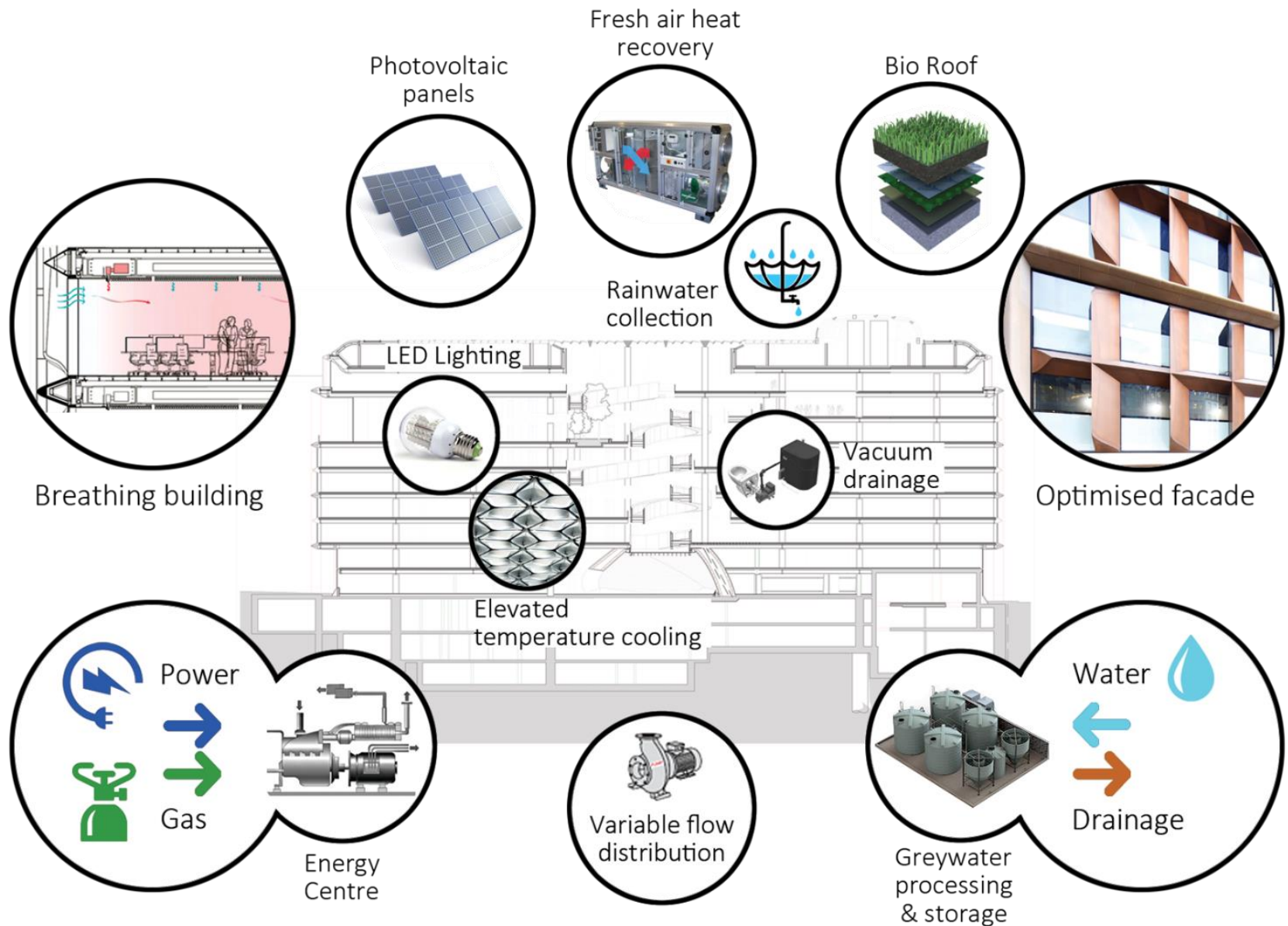
# Sweco used BREEAM as Design Tool

- **73%** saving in water consumption and **35%** saving in energy consumption
- Four Building Design First Innovations Approved by BRE:
  - ✓ Breathing Building
  - ✓ Integrated Ceiling
  - ✓ Vacuumed Drainage
  - ✓ Cooling Tower Water Recycling

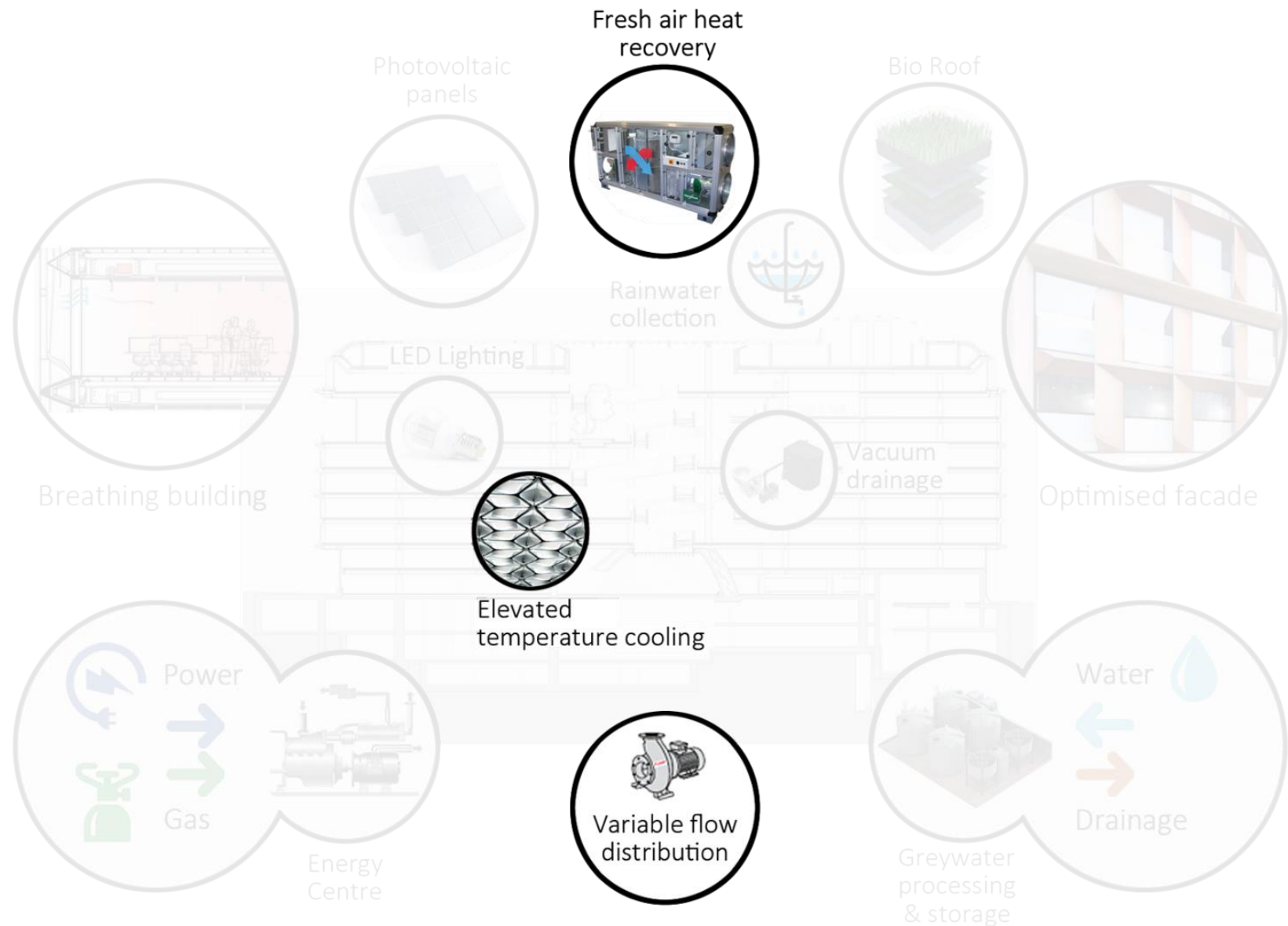




# Bloomberg Culmination of Innovation

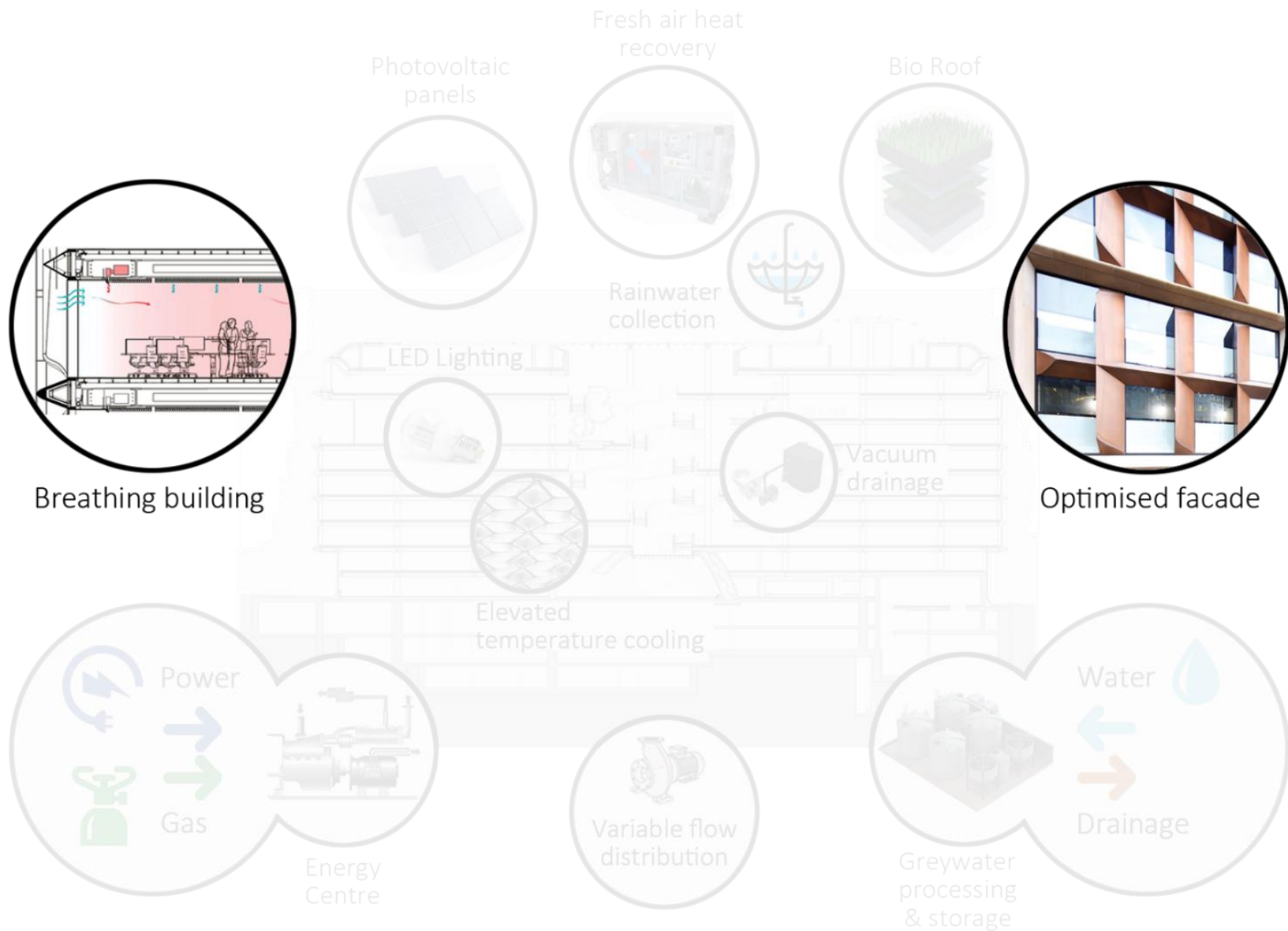


# Responsive to Occupants

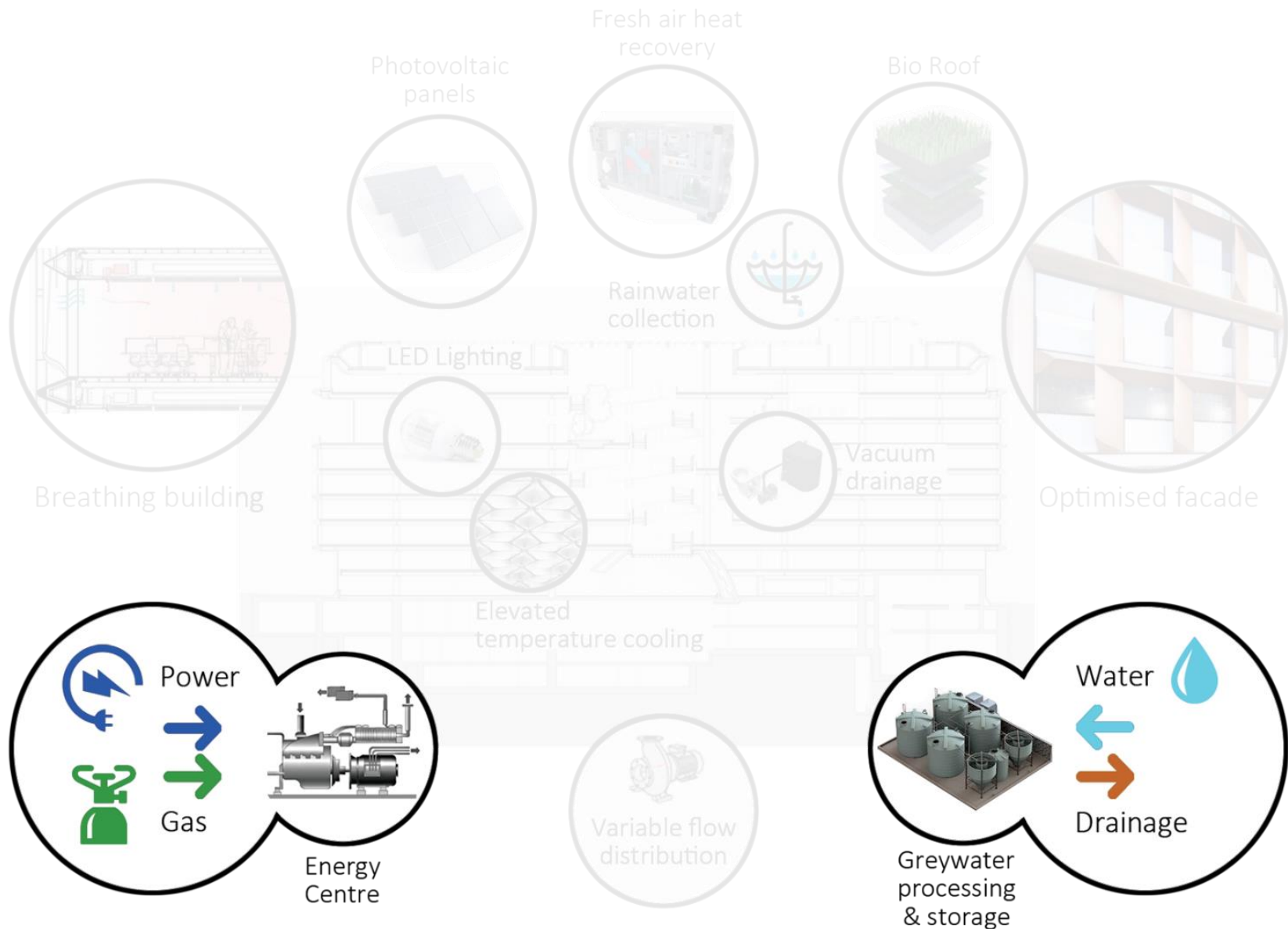




# Respond to Location



# Infrastructure Friendly

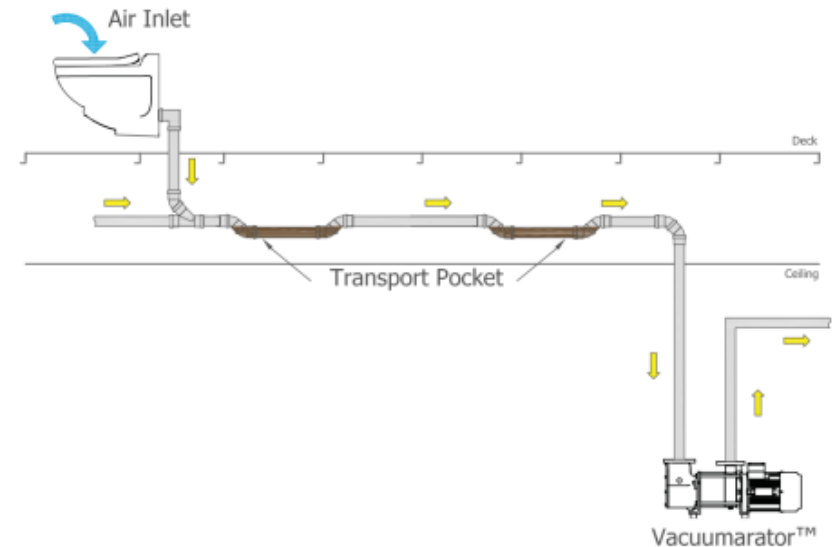
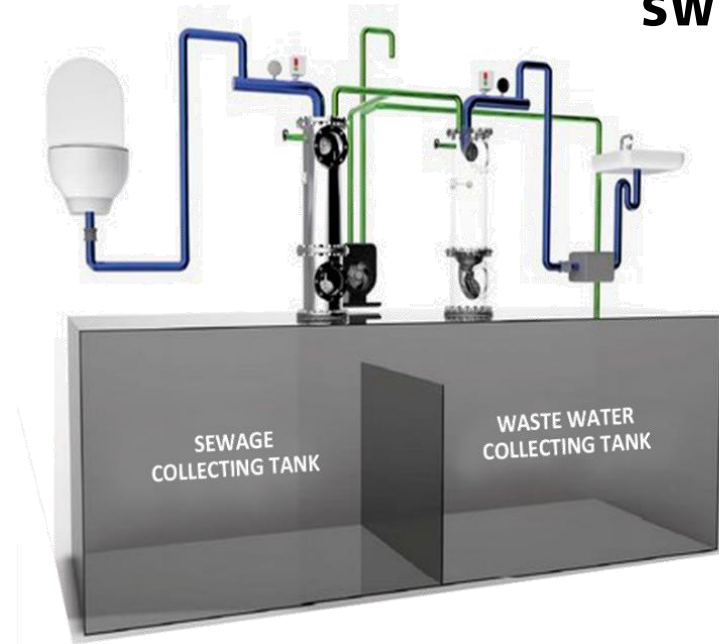




# Vacuum Drainage

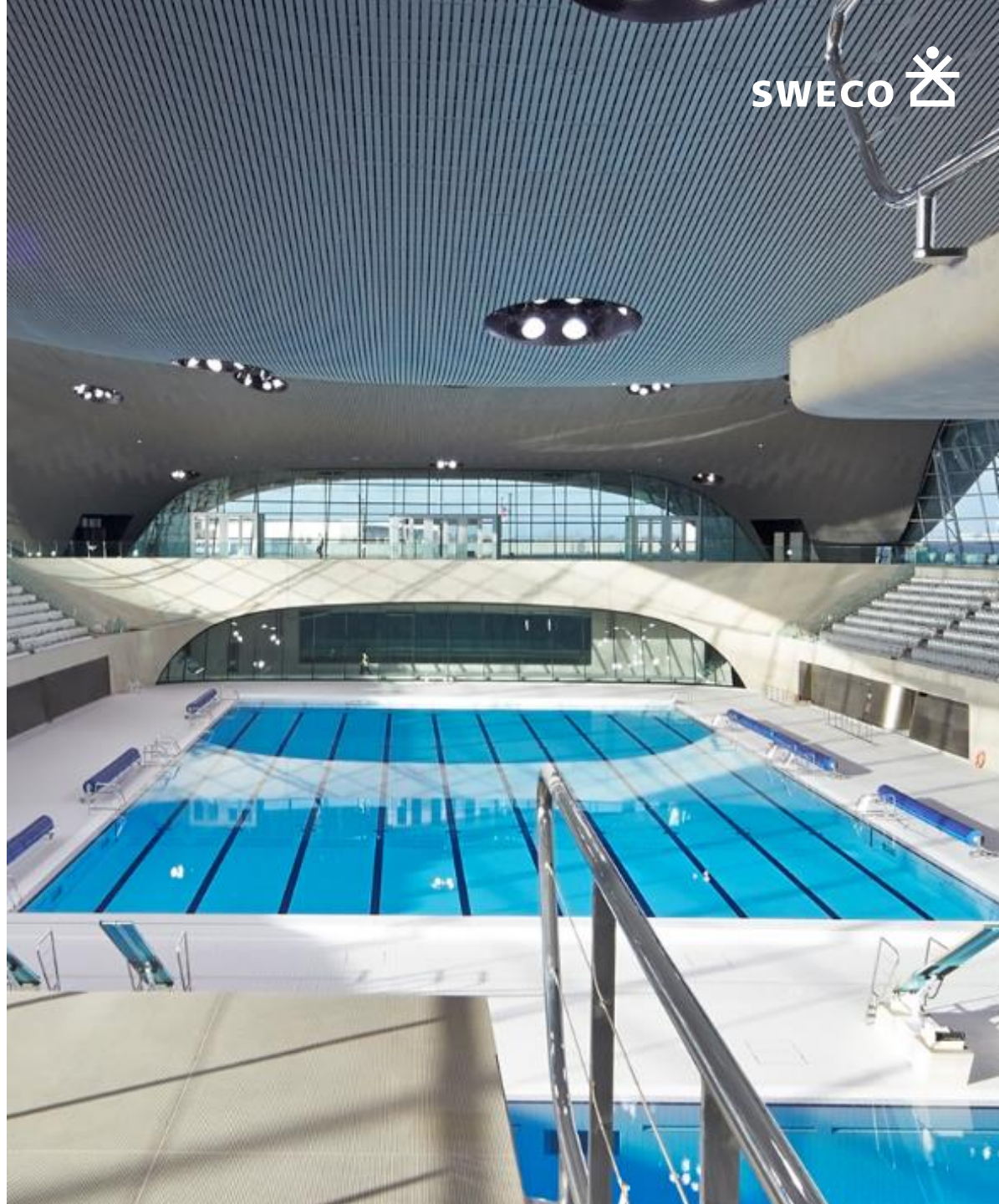
## Critical Building Sustainable Design

- Reduction in water use by **80 %**
- Use of **100 %** grey water
- Low Impact on drainage



25 million litres  
saved annually

Equivalent to 10  
London Olympic Pools



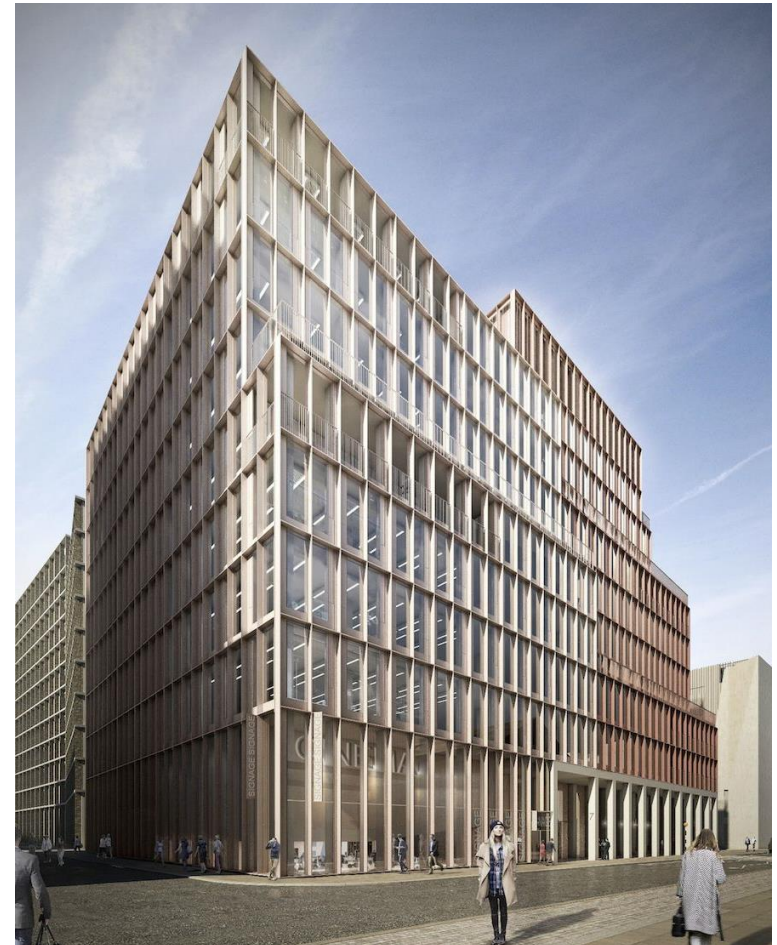


# Essence of BREEAM Outstanding Rating



- Forward thinking Developers and Clients
- Outstanding Rating Target from the “Outset”
- Collaborative Teams
- Low Carbon Energy Centre
- BREEAM AP part of design team

Image: Building R7 Kings Cross



# BREEAM as Design Tool



- Review of Green Building Materials at Concept Stage
- Mix-Mode Ventilation and Daylighting at Concept Stage
- Consider Flood Risk, Ecology, Utility Infrastructure at Master Planning Stage
- Use of Life Cycling Analysis to Address Design





# Focus on Practicality than just scoring credits

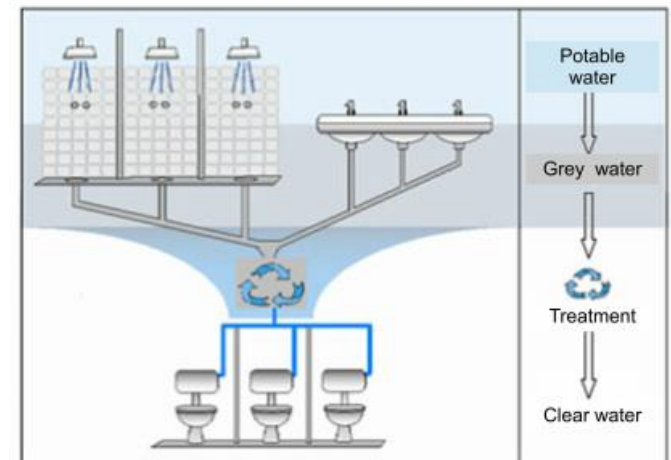


Image: Hard wearing surfaces on public walk ways at Bloomberg London

# Four Pancras Square: Practical Sustainable Design

- Showers on upper basement enabling collection below
- Recycled water quantity far more than rainwater harvesting potential + financial benefits
- Grey water harvesting & re-use locally

Cost Savings + Credit on BREEAM





# Four Pancras Square: Practical Sustainable Design

- Four Pancras Square held a Landscape Architectural Competition
- Image depicting the moor-land design leading to enhanced ecology credits

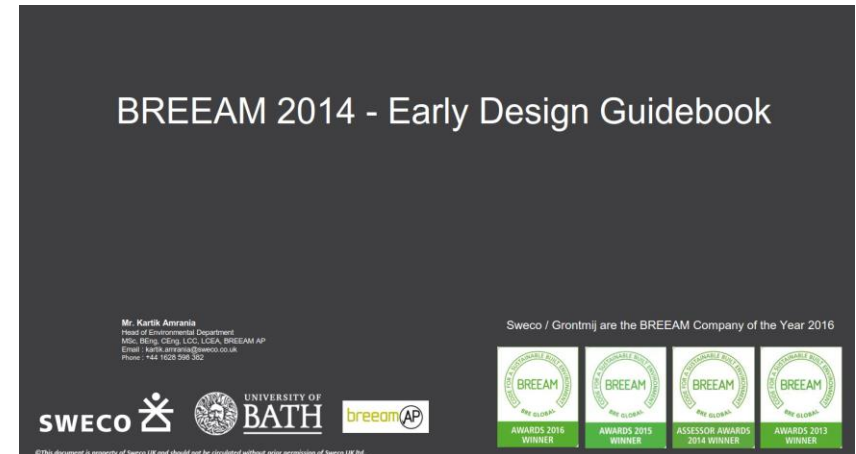


Generates more flexibility at roof

# Use of Sweco BREEAM Design Guide

- Visual Guide to Credit Compliance
- Collection of Actual Examples
- Collection of Actual Specifications

Sweco's experience in delivering  
highest number of Outstanding  
Buildings at play



## KEY BREEAM EARLY APPOINTMENTS

- ✓ Energy Assessor
- ✓ (FRA) Flood Risk Assessment
- ✓ Ecologist
- ✓ Acoustician
- ✓ Travel Consultant
- ✓ Contaminated Land Specialist
- ✓ Start Public Consultation
- ✓ Security Consultation or Architect Liaison Officer



## OUTSTANDING RATING

- Sweco believes an 'Outstanding' rating is possible for most European City based projects given the EU's stringent sustainability requirements
- Much of BREEAM is management driven/processes and evidence collection
- Most of the buildings we assess at pre-assessment achieve 80-82%
- It is then a process of working collaboratively with the team to seek how the additional percentage points can be achieved holistically.

Thank You



Sweco changing London's Skyline