Sustainability Performance and Metrics

Fiona Cousins | 12 November 2015 | Washington, DC
Introduction
Early sustainability metrics - SPeAR®

• Holistic sustainability decision-making framework to support project development and communicate outcomes

• Covers all aspects; environmental, social and economic
SPeAR

Segment (i.e. ‘Economic’)

Core Indicator (i.e. ‘Climate Change’)

ARUP
Sub-indicators

- Value for money
- Distortions to local economy
- Vitality and regeneration
- Carbon pricing

Economic Effect
Tracking progress over time

Sustainability Profile - Before

Sustainability Profile - After
ASPIRE

- Applicable to all types and scales of infrastructure projects or programs

- Useful throughout the whole project life cycle

- Consistent framework enables objective comparison across countries or context
ASPIRE - Sabre Kindergarten School, Ghana

- The project was assessed using ASPIRE during concept design, detailed design and again during construction.
- Identified design improvements for implementation.
The City Resilience Framework - April 2014

**Knowledge**
“informed, inclusive, integrated and iterative decision making”

**Place**
“the man-made and natural systems that provide critical services, protect and connect urban citizens.”

**People**
“the imperative of ensuring the health and wellbeing of everyone living and working in the city”

**Organisation**
“the social and financial systems that enable urban populations to live peacefully, and act collectively”

**4 Dimensions**

**12 Core Indicators**
Optimized and informed planning – Integrated Resource Management (IRM)
Integrated Resource Management (IRM)
Climate+

Control Panel

Baseline Inputs
- Land/Bdgs
- Energy
- Water
- Waste
- Transport
- Carbon
- Construction

Calculations
- Land/Bdgs
- Energy
- Water
- Waste
- Transport
- Carbon
- Construction

Output

ARUP
SoWa EcoDistrict

CLIMATE
LEED

- At a more analytical, but smaller scale.
- Set a baseline for quality in the market and a way of aspiring to something higher.
- Emphasis on energy and environment.
- What might LEED miss?

LEED FACTS

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodesign Building A</td>
<td>Gold</td>
</tr>
<tr>
<td>Sustainable Sites</td>
<td>12/14</td>
</tr>
<tr>
<td>Water Efficiency</td>
<td>4/5</td>
</tr>
<tr>
<td>Energy &amp; Atmosphere</td>
<td>6/17</td>
</tr>
<tr>
<td>Materials &amp; Resources</td>
<td>3/13</td>
</tr>
<tr>
<td>Indoor Environmental</td>
<td>10/15</td>
</tr>
<tr>
<td>Quality</td>
<td></td>
</tr>
<tr>
<td>Innovation &amp; Design</td>
<td>5/5</td>
</tr>
</tbody>
</table>

Image source: Arizona State University
GREEN BUILDINGS FOR EVERYONE WITHIN THIS GENERATION 🍃
150+ COUNTRIES & TERRITORIES
We Are Going to Take You Here

Positive Environmental Impact

Zero Impact

Negative Environmental Impact

Time

Present Day

PLATINUM

GOLD

SILVER

CERTIFIED

GREEN BUILDING PRACTICES BECOMING FOUNDATIONAL IN BUILDING CODES

TRADITIONAL BUILDING CODES

ARUP
The future of measuring sustainability

- Dynamic metrics that are data-driven
- Human-centered
- Socioeconomic equity
EU Energy Performance of Buildings Directive

- The Europeans had a different approach and used the EPBD to set asset metrics and performance metrics.
- They tend to look rather similar in their graphic display, but are clearly different, and the performance metrics started to give feedback.

![Energy Efficiency Rating](image1)

![Environmental Impact Rating](image2)
## Energy Retrofits for Caribbean Hospitals - RMI

<table>
<thead>
<tr>
<th>Bundle #1</th>
<th>Bundle #2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highest Potential Energy Savings</strong></td>
<td><strong>Shortest Payback</strong></td>
</tr>
<tr>
<td>Total annual energy savings (average)</td>
<td>47.7%</td>
</tr>
<tr>
<td>Total annual cost savings</td>
<td>$30,513 (USD)</td>
</tr>
<tr>
<td>Capital cost</td>
<td>$28,626 (USD)</td>
</tr>
<tr>
<td>Payback (average years)</td>
<td>0.94</td>
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<tr>
<td>Total annual energy savings (average)</td>
<td>43.1%</td>
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<tr>
<td>Total annual cost savings</td>
<td>$27,607 (USD)</td>
</tr>
<tr>
<td>Capital cost</td>
<td>$7,883 (USD)</td>
</tr>
<tr>
<td>Payback (average years)</td>
<td>0.29</td>
</tr>
</tbody>
</table>

### Your facility's annual energy costs
$100,000

### Your facility with Energy Saving Bundle #1
$64,962 new annual energy cost

### Your facility with Energy Saving Bundle #2
$94,724 new annual energy cost

[View Bundle #1](#)

[View Bundle #2](#)
Energy Retrofits for Caribbean Hospitals - RMI
IHG – Green Engage Sustainability Metrics
Mission & Vision

Actionable transparency for institutional investors

Systematic assessment for companies and funds

Objective scoring for ESG management and performance

Benchmarking among global, regional, and sectoral peers

“GRESB’s mission is to enhance and protect shareholder value by evaluating and improving sustainability best practices in the global real estate sector.”
Process

Connecting market participants

Real Estate Portfolios

Data
- Response Check
- Data Validation
- Analysis & Scoring

Real Estate Industry
Company and Fund Manager Members

Results
- Scorecard
- Benchmark Report
- Portfolio Analysis

Education
- Training
- Insights
- Events

Capital Market
Investor Members
Quadrant Model

Global history
Thank you

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