

L'importanza di soluzioni sostenibili commercialmente valide: l'esperienza di una azienda globale

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Convegno: **Costruiamo oggi per sostenere il domani**
Milano (Italia) March 12th, 2010



Imagine



Create



Lend Lease
Retail



Lend Lease
Communities



Lend Lease
Development



Actus
Lend Lease



Delfin
Lend Lease



Crosby
Lend Lease



Lend Lease
Investment Management



Bovis
Lend Lease



Catalyst
Lend Lease



Lend Lease
design



Lend Lease
Projects



Vita
Lend Lease

L'IMPATTO

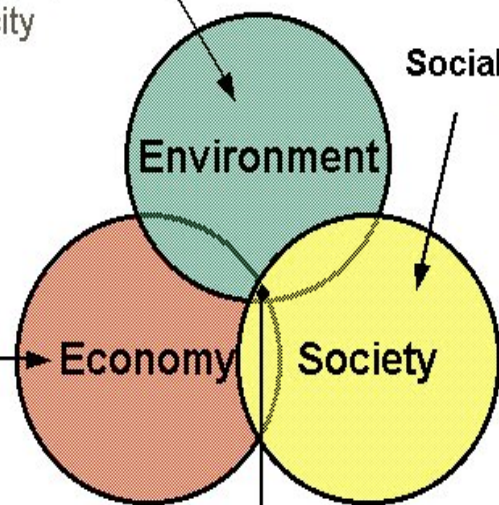


Buildings are responsible for **40%** of world's global greenhouse gas emissions.

Buildings are responsible for

Environmental Sustainability
Ecosystem integrity
Carrying capacity
Biodiversity

Buildings



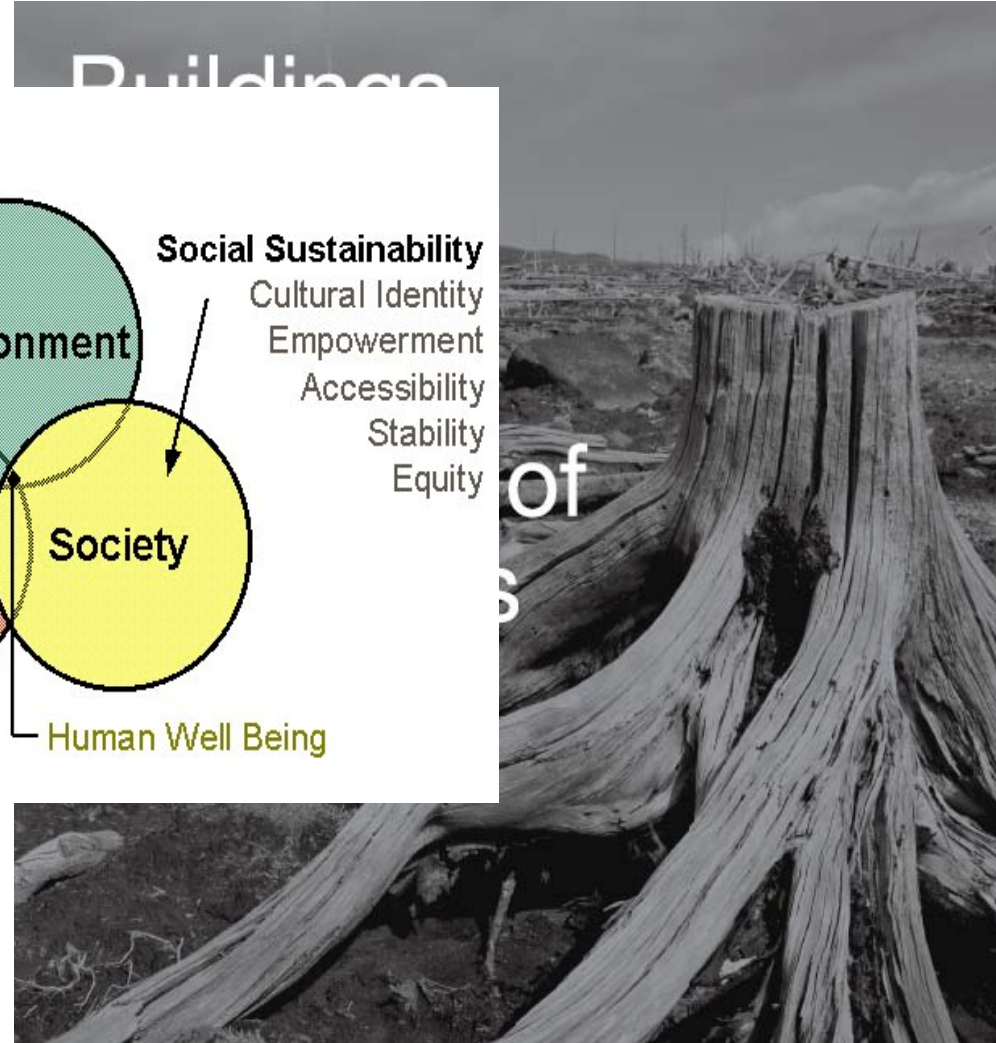
Social Sustainability
Cultural Identity
Empowerment
Accessibility
Stability
Equity

Economic Sustainability
Growth
Development
Productivity
Trickle-down

100x (and at times greater than 100) more pollutants than outdoor air.

Buildings use **12%** of the world's water.

of \$



Energy Performance of Buildings Directive (recast) Final Agreement 17 November 2009



- Identifica una nuova deadline per i nuovi edifici ad essere "nearly zero energy" (2018/pubblico e 2020/privato)
- Si applicherà anche alle ristrutturazioni di edifici esistenti e ai componenti edilizi
- Penali per chi non si adeguerà
- *Energia utilizzata dovrà essere principalmente da risorse rinnovabili*
- *Questo porterà ad un mercato "two tier" con eventuali differenziazione di prezzo*

Carbon trading

- La Direttiva 2003/87/CE *Carbon Emission Trading* a breve si applicherà anche alle produzioni considerate non "high intensity"
- Questo mercato sarà accessibile solo a coloro che avranno definito il proprio footprint

PROGRAMMA DI TRASFORMAZIONE

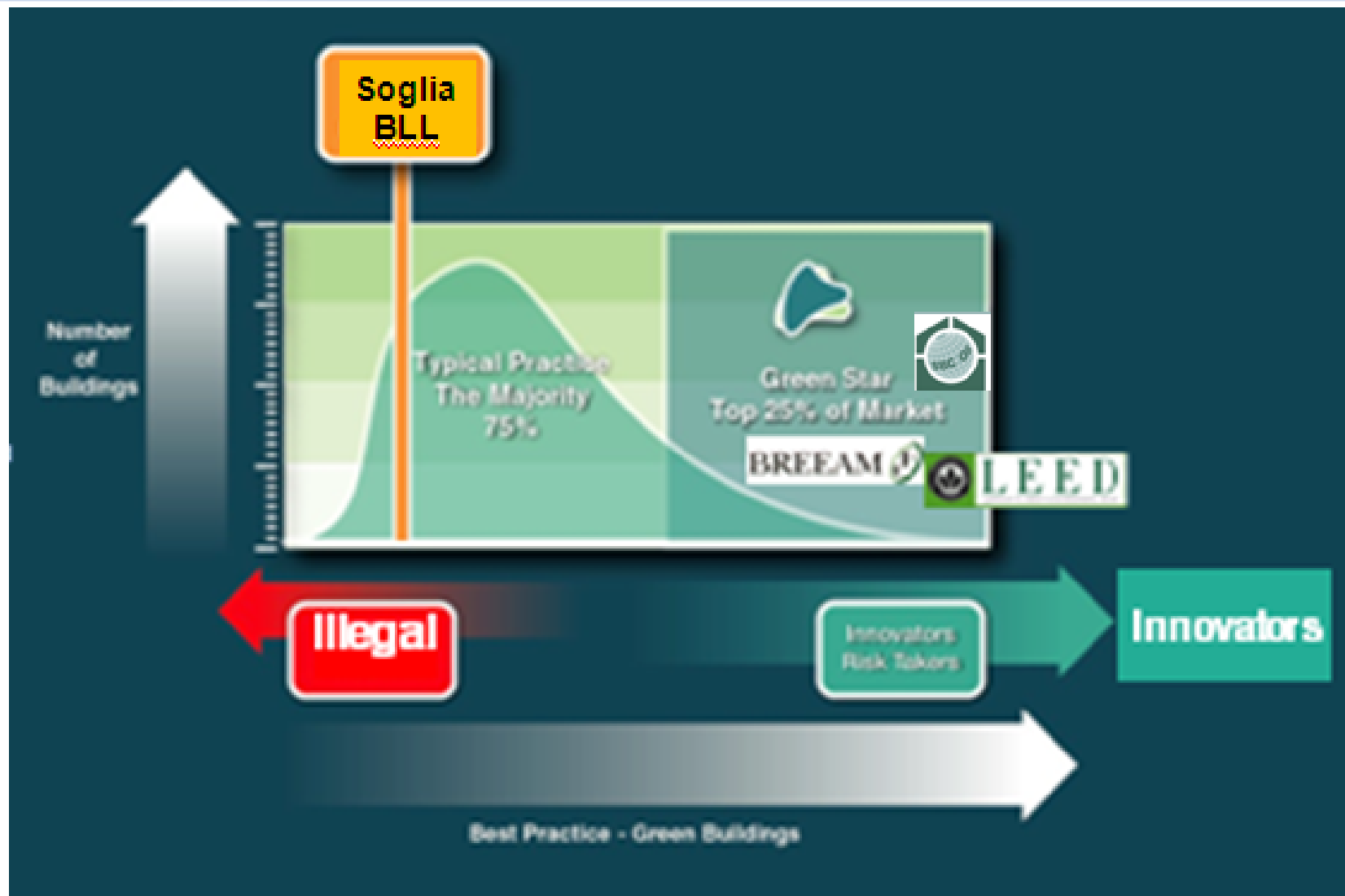


While Bovis Lend Lease remains on target towards being a sustainable leader, Environmental (carbon) Legislation now requires us to quicken our pace.

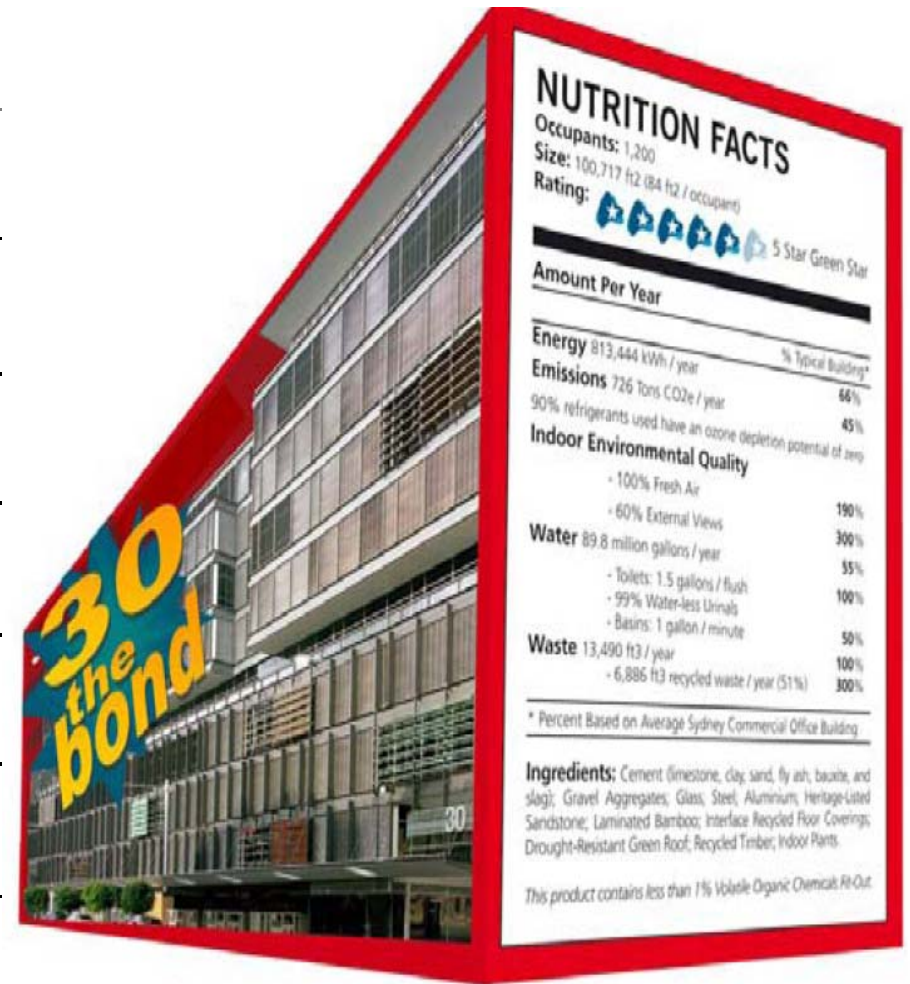
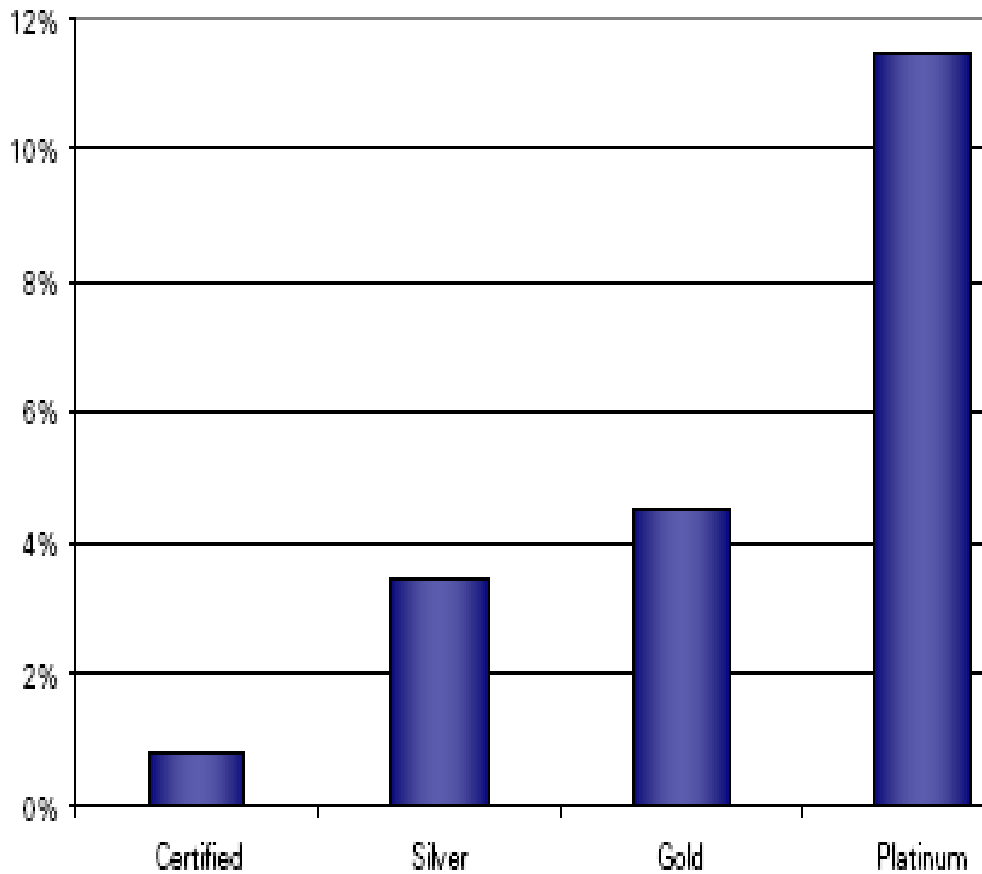
ASSETS

Imagine
Create

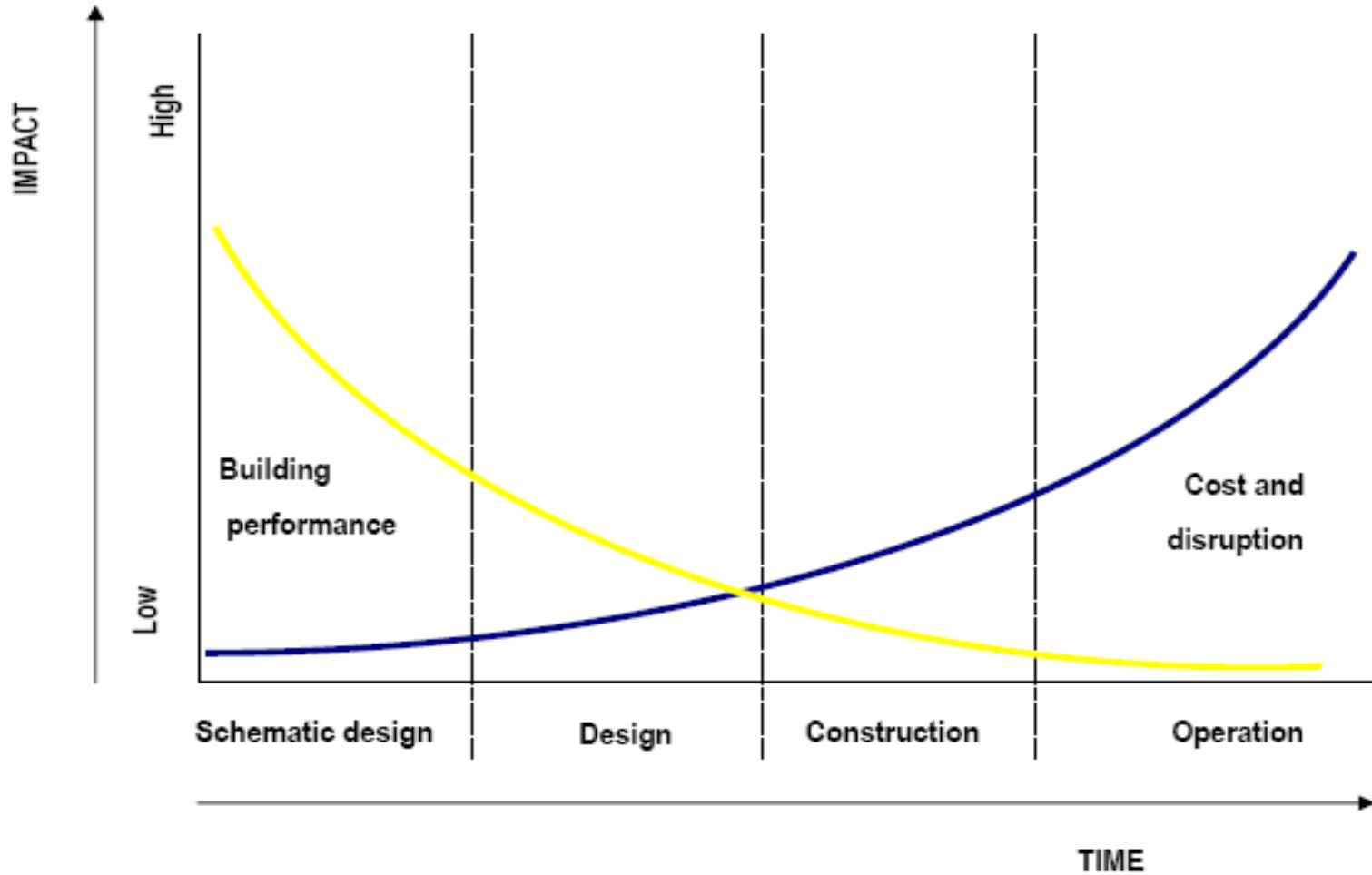




COST PREMIUM FOR LEED BUILDINGS

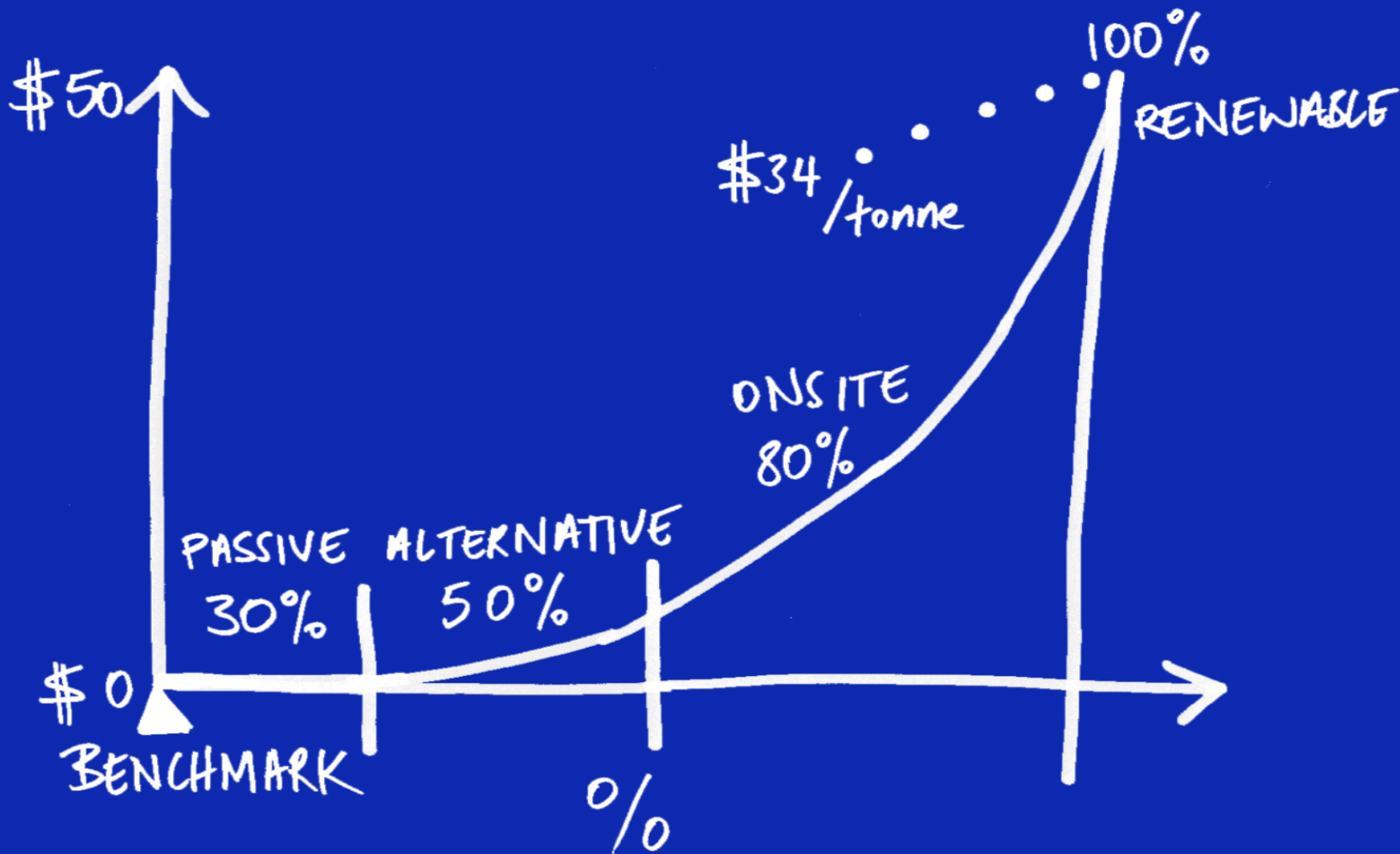


PERFORMANCE – COST CURVE



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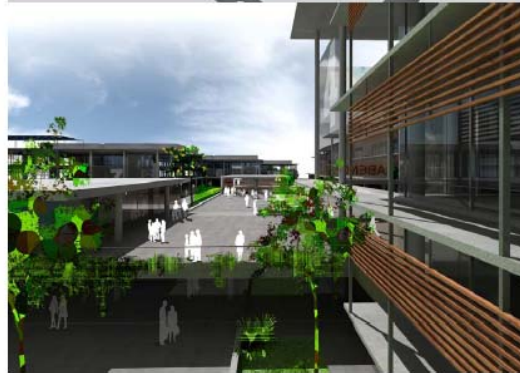
What does it take



First Platinum office building in EU a BLL project



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Abengoa
Headquarters
Palmas Altas Technological Center
Seville, Spain



Keys to a Sustainable Project

An optimal architectural design and the use of innovative programs are essential to deliver the most of sustainable design.

100% Sustainable as CO₂ emissions are also

740

The Building Shape
The compact building allows the interior distribution according to its use and creates an environment with a stable temperature that allows the energy use.

Other companies buildings three buildings with a total area of 18,300m²

Exterior Refrigeration

Macroclimate conditions through pipes connected by water elements.

Deck covered with vegetation to avoid heat transmission, together by stored water.

85

Photovoltaic solar Energy
The photovoltaic installations that cover and protect the patio between the buildings provide with 10% of the new headquarters energy.

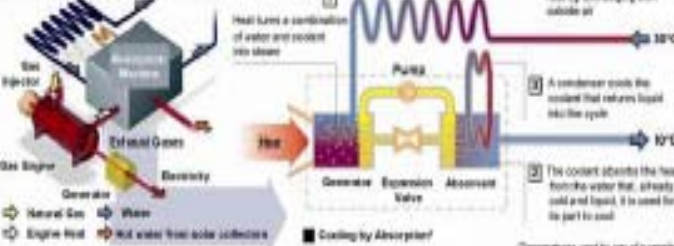
Other companies buildings three buildings with a total area of 18,300m²

Parking in Open Basements
More than 1,300 Unconventional and opened parking spaces.

452

Tigeneration + Cylindrical/Parabolic Collectors (Solar Collectors)
The electric energy use at Abengoa offices will be produced by a natural gas engine. The engine remaining heat and its exhaust gases, together with the heat created by the solar collectors will be introduced into a absorption machine that generates hot/cold water for the buildings so-conditioning.

The Plant



23

Internal Biomass: Solid Fuel
During its use, wood chips are recycled with a chipping machine located inside every 40-60cm², which is a system of distributed biomass storage. The gas is used to heat the building during the night. It is also used as a renewable energy of the facility.

Other companies facilities Tigeneration Deck Box

Compressor and Hydrogen Storage

Fuel Battery

Direct current to alternating current converter

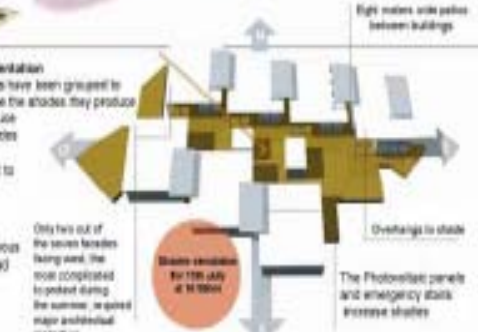
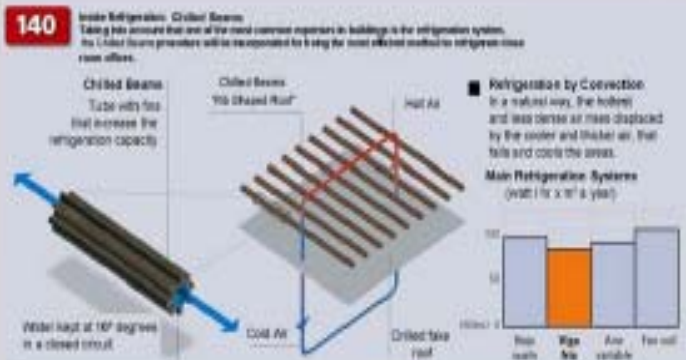
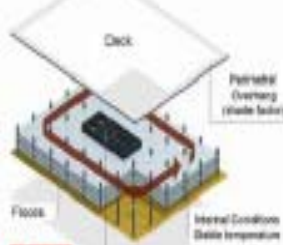
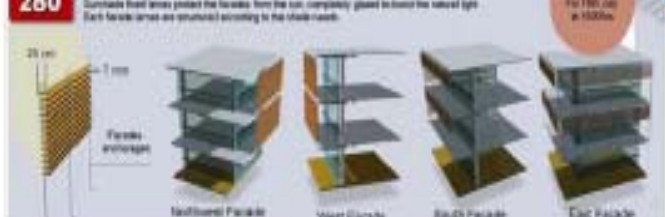
Electricity for direct consumption

Electricity for direct consumption

Fuel Battery

It produces electricity from the chemical reaction of mixing hydrogen with oxygen from the air. It produces water.

280



Example of what can be done on site



Table 1: Impact of main initiatives once implemented



Initiatives	Target reduction	% Carbon Reduction
Lights-Out Policy	10% of site electricity	4
Transformers Out Policy	3% of site electricity	1
Behaviour change in offices	10% office energy	0.2
Low carbon fuel on sites	30% savings on carbon	11
Efficient lights on sites	5% of site electricity	2
Behaviour change on sites	5% of site electricity	2
Total		20.2



Misurare e comprendere il nostro carbon footprint



ONLY ENTER VALUES, DO NOT CHANGE TEMPLATE
 (See E&E -> "Process Specialist" to paste Values Data)

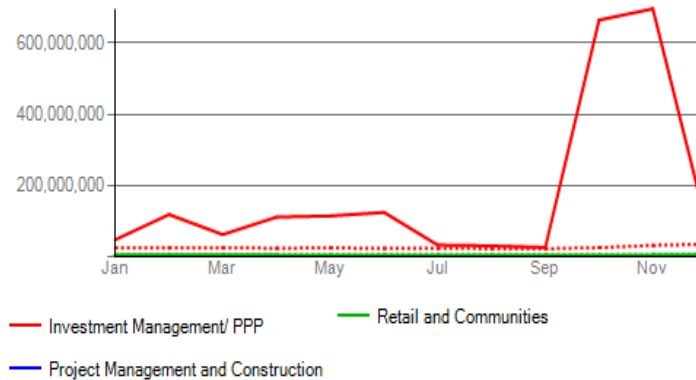
Asset/Category Name	Units	Total	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08
Net Electricity Use		11,819,471,715														
Net Heating Use		1,173,100,000														
Net Water Use		1,920,000,000														

Environment : Environment | Metric Analysis

Business Unit: Business Units Metric: Total Energy Con... Scenario: Actual/Estimate Period: 2009 Feb Timeframe: Previous 3 Months View: Periodic

All Assets Offices Projects

Total Energy Consumption - Split by Business Unit



Top 10 Total Energy Consumption

	Kilowatt hours	Normalised Measure
Sheffield University	11,819,471,715	875
FORT CAMPBELL Bldgs: 4199,850, Community Center,851,844, 1534,7372	464,346,817	2,920
Calderdale Hospital (Inc PFI Hospital, Villas, VLL Office)	315,470,973	58
Manchester Hospital	299,976,339	
Hexham Hospital (Including Main Hospital, Residential Block and Phase 3 extension)	260,139,069	146
Queens Hospital - Romford	224,306,893	18
Bluewater	211,710,028	36
Farrer Place 25% owned APPF, DEXUS Managed	194,473,184	17
Bluewater - PFI Office	189,198,219	7
Parkway Parade LLR Managed	154,192,444	11

Total Energy Consumption - Split by Region

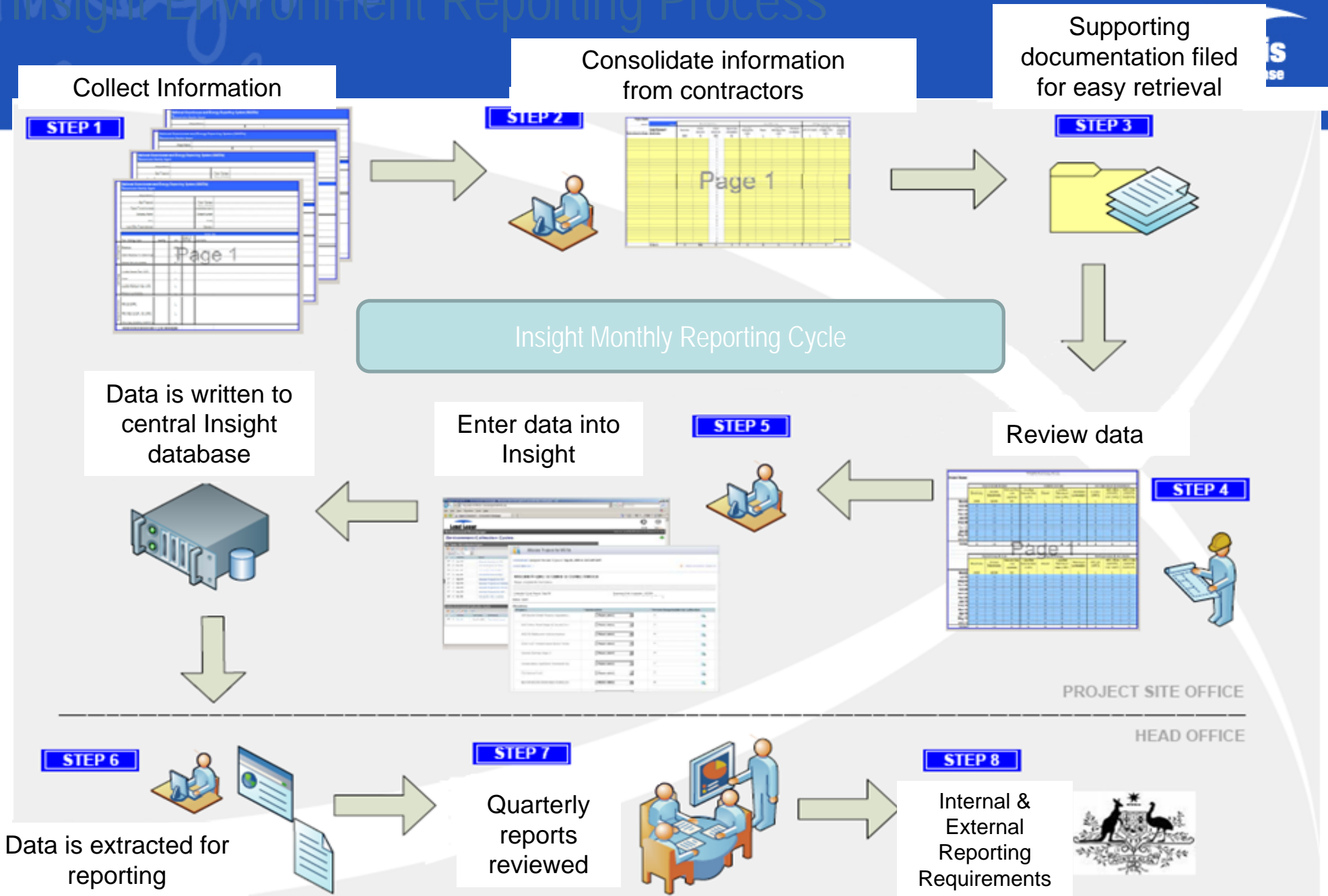


Bottom 10 Total Energy Consumption

	Kilowatt hours	Normalised Measure
Project office: Regents Place	250	0

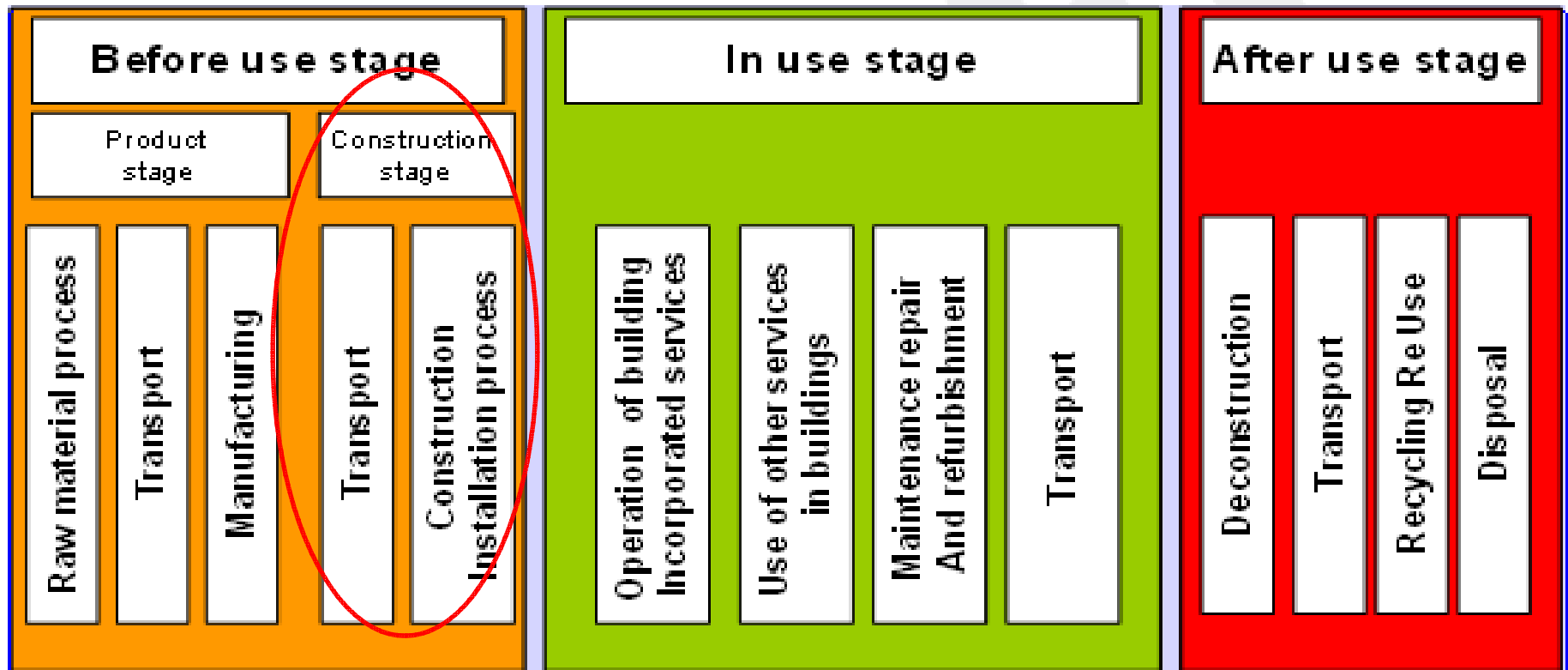
Attributes (e.g.)

Insight Environment Reporting Process

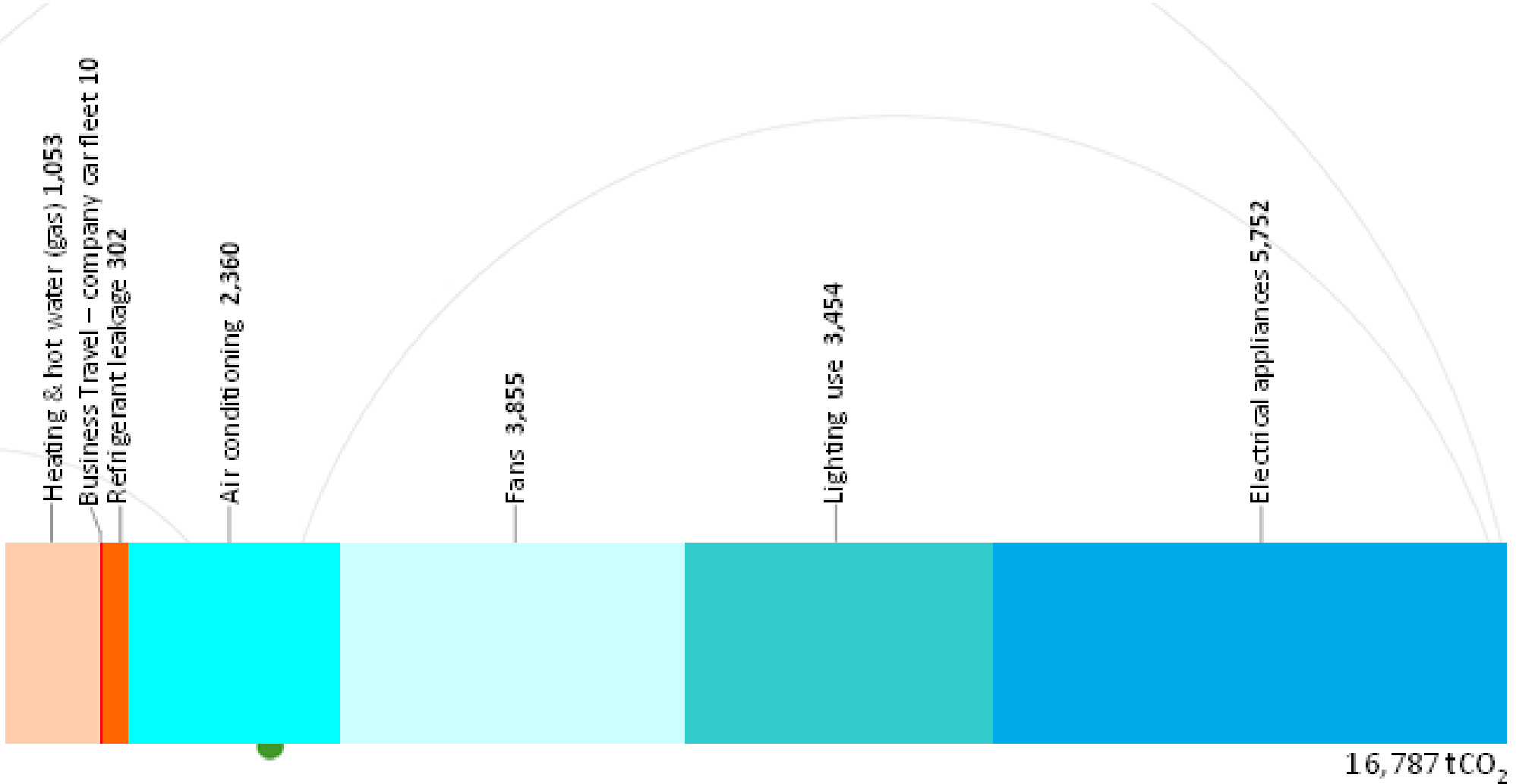


Accounting: SCOPES AND BOUNDARIES

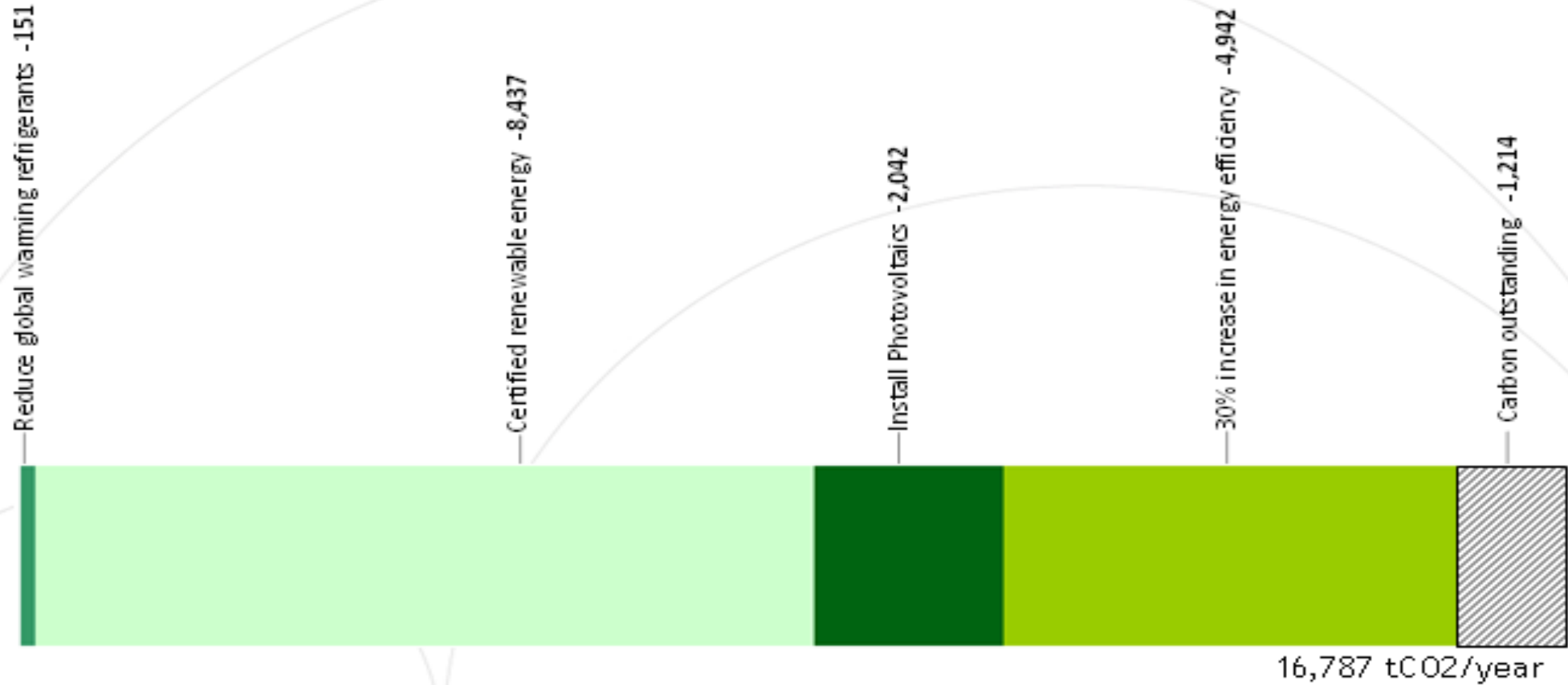
Scaleable approach – BLL services IN CEMEA & LAC happen in scope 1 in construction stage



CARBON- DIRECT EMISSIONS SCOPES - BU1



CARBON DIRECT EMISSIONS – ABETEMENTS- BU1

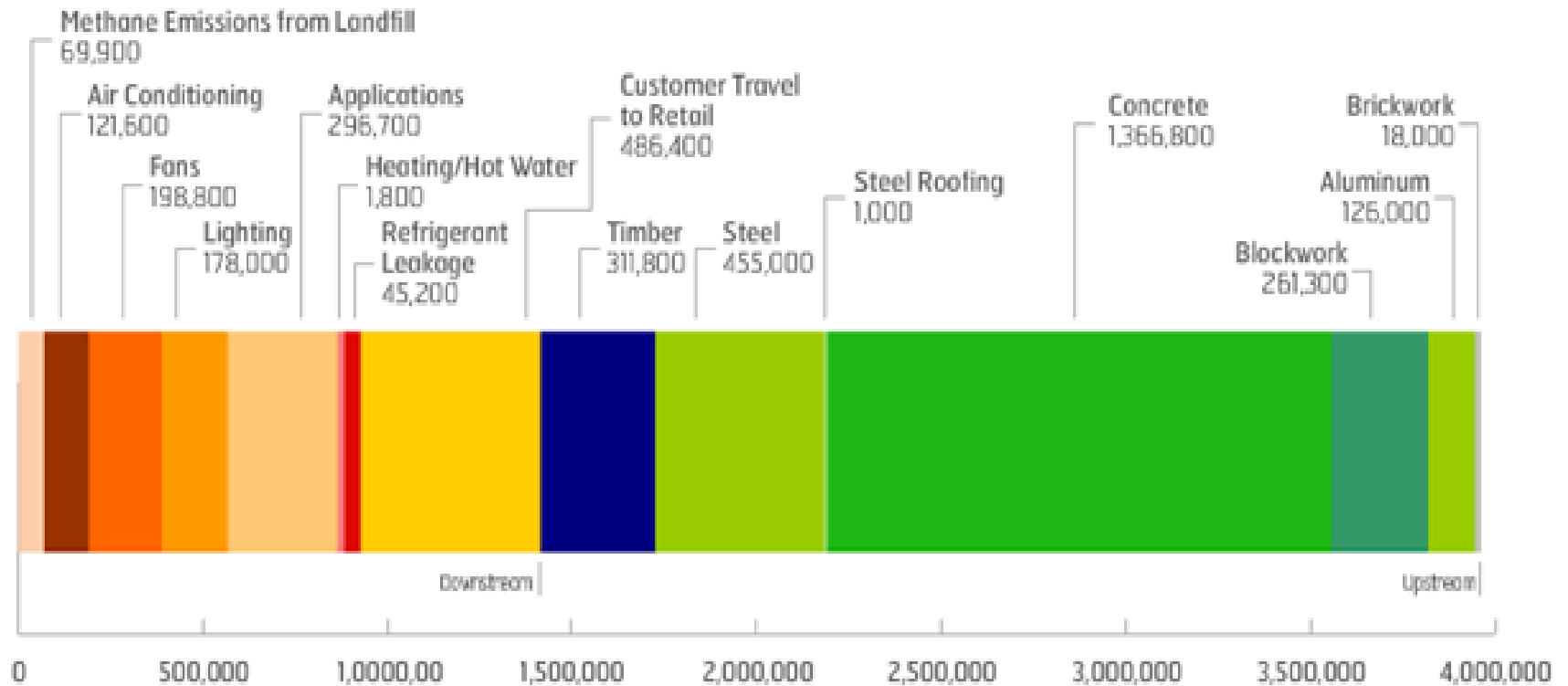


Imagine
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Legacy: 3,956,860 tCO₂/Year

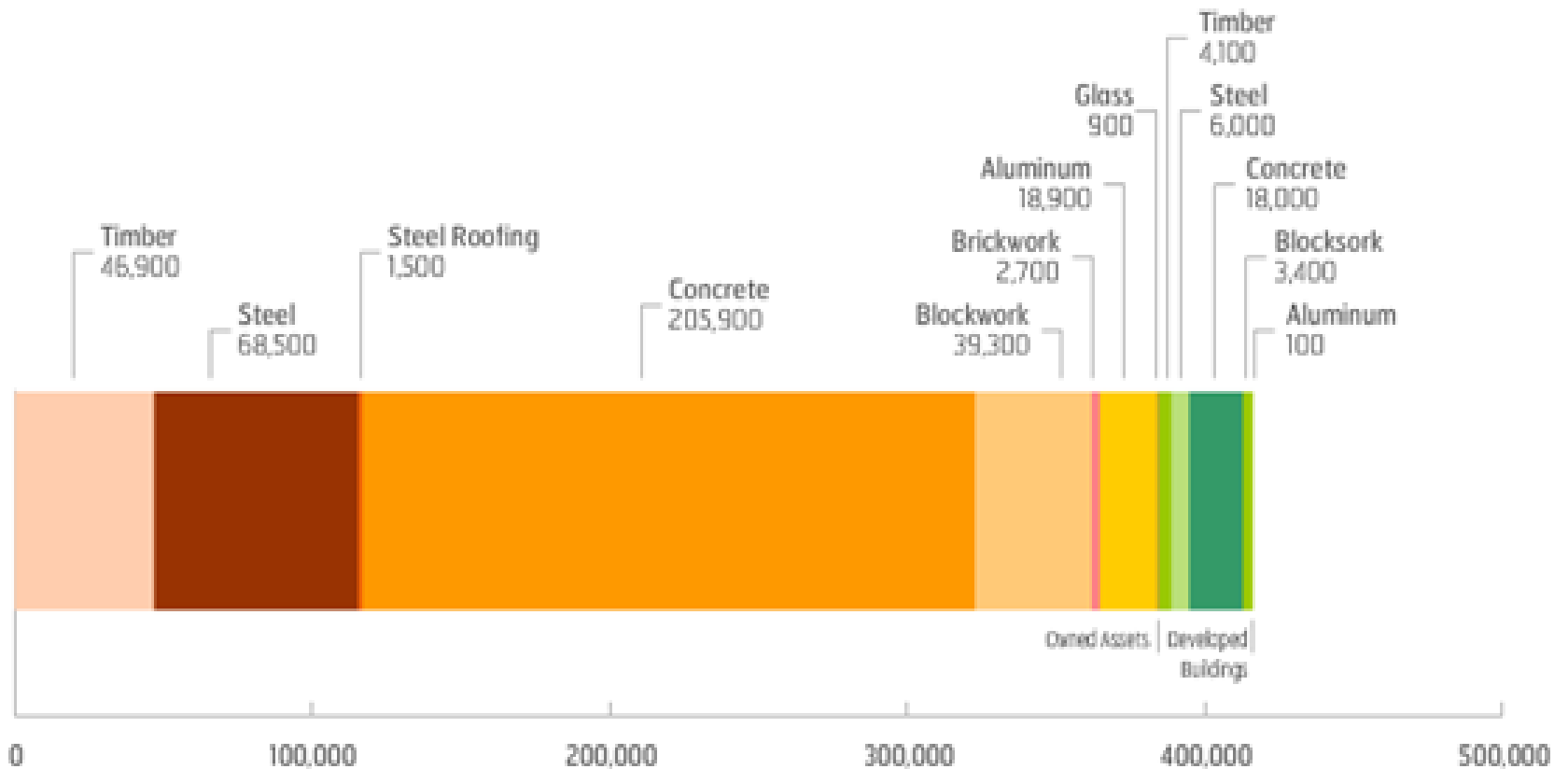
Operational and embodied emissions from construction projects



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Upstream: 418,000 tCO₂/Year

Embodied emissions from developed, owned buildings



Downstream: 3,356,680 tCO₂/Year Operational emissions from developed, owned and managed buildings

