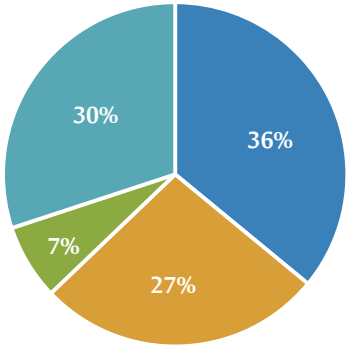
Life Cycle Thinking
For Decision Making


Design
Decision Making
Design
Decision Making

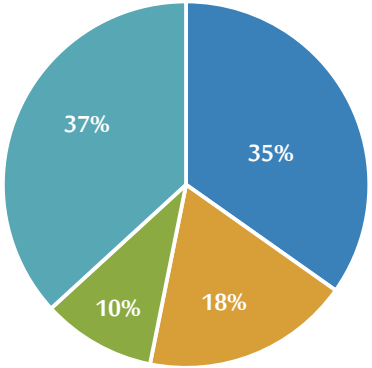
Material/ System Selection

Decision Making

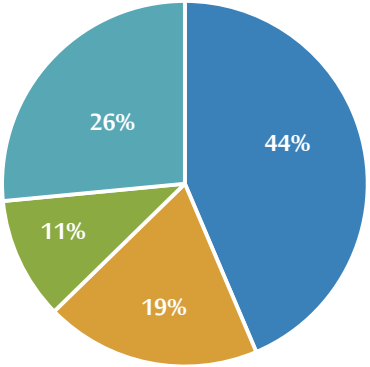
HOTEL



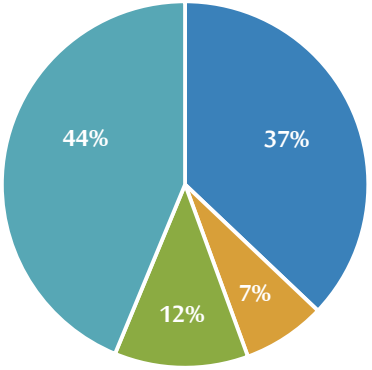
OFFICE



SCHOOL



RESIDENTIAL



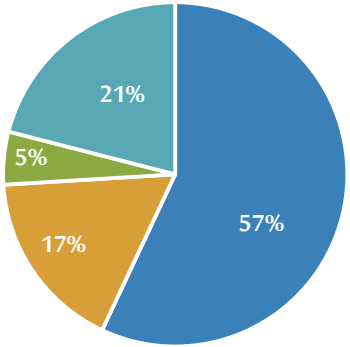
CONSTRUCTION COST

MAJOR REPLACEMENT COST

MAINTENANCE COST

OPERATION COST

HOTEL



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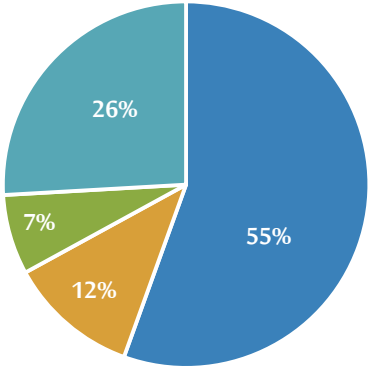

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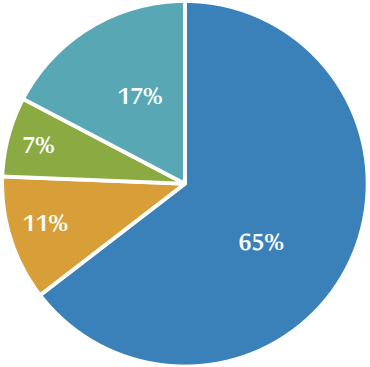

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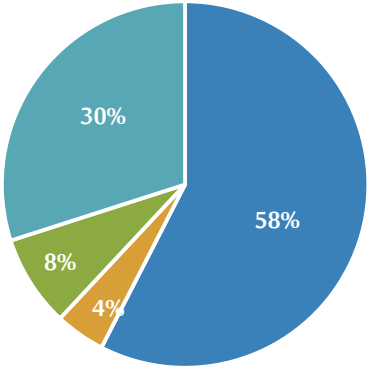


CONSTRUCTION COST

MAJOR REPLACEMENT COST

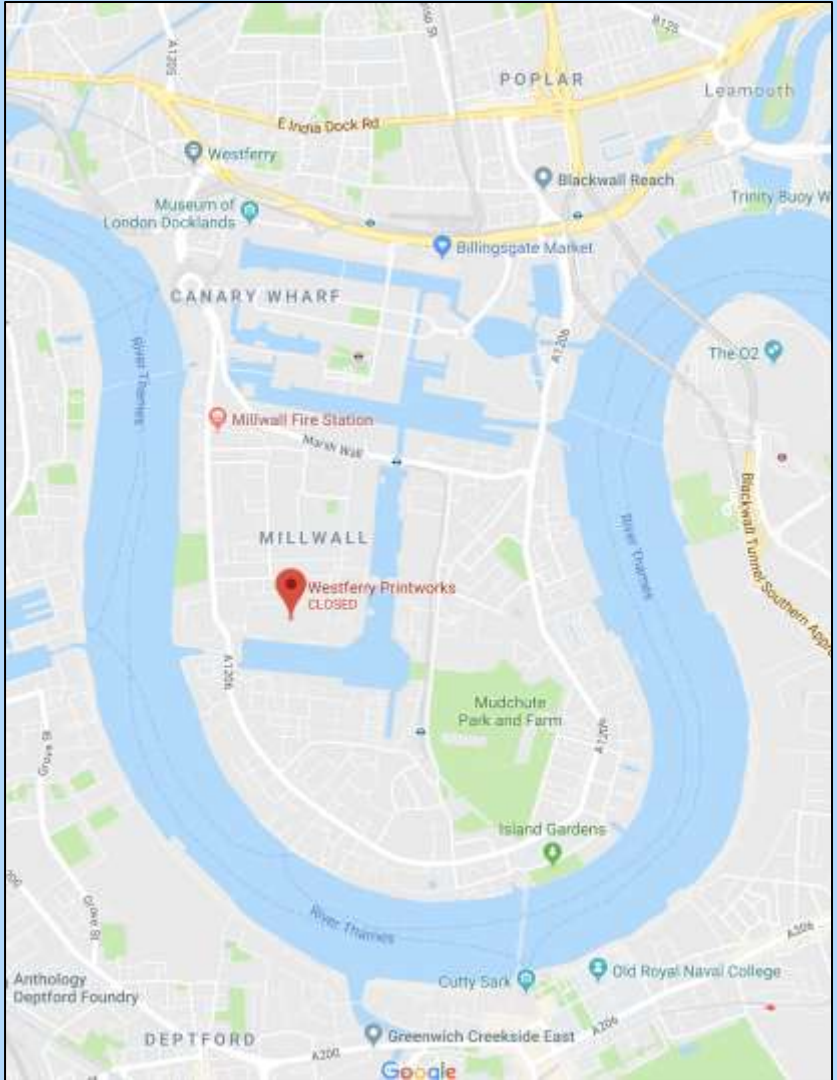
MAINTENANCE COST

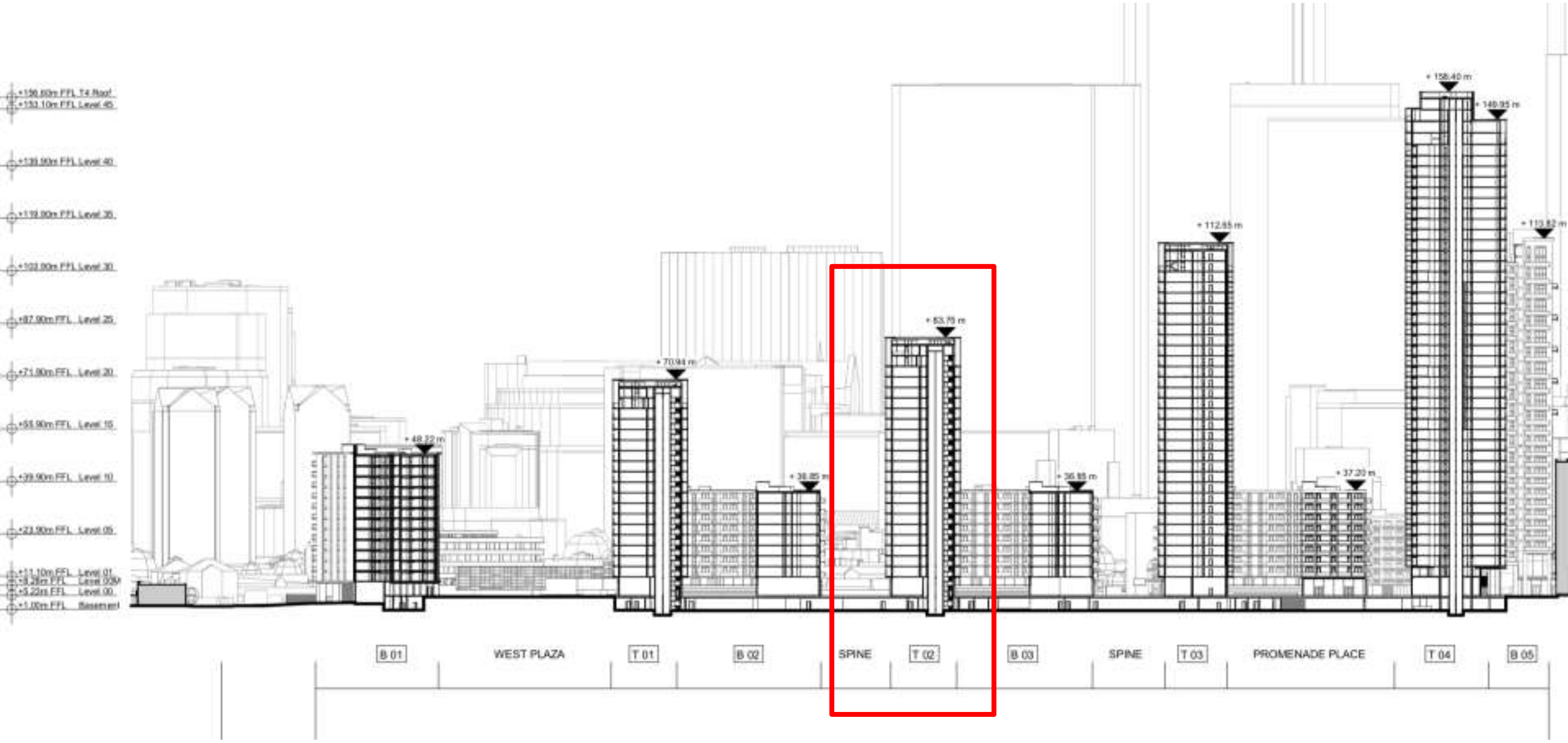
OPERATION COST

Hello!

You can find me at
harish.borah@adwdevelopments.com


SCOTLAND
Edinburgh
Glasgow
United Kingdom
NORTHERN IRELAND
Isle of Man
Leeds
Manchester
Liverpool
Dublin
Ireland
ENGLAND
WALES
Cambridge
Oxford
Bristol
Cardiff
Southampton
Plymouth
Westferry Printworks
(CLOSED)


POPLAR
Leamouth
E India Dock Rd
Westferry
Blackwall Reach
Trinity Buoy W
Museum of London Docklands
Billingsgate Market
CANARY WHARF
The O2
Millwall Fire Station
Marsh Wall
MILLWALL
Westferry Printworks
CLOSED
River Thames
Blackwall Tunnel Southern Appr
A1206
Mudchute Park and Farm
Island Gardens
Grove St
Anthology Deptford Foundry
Cutty Sark
Old Royal Naval College
DEPTFORD
Greenwich Creekside East
A200
Google



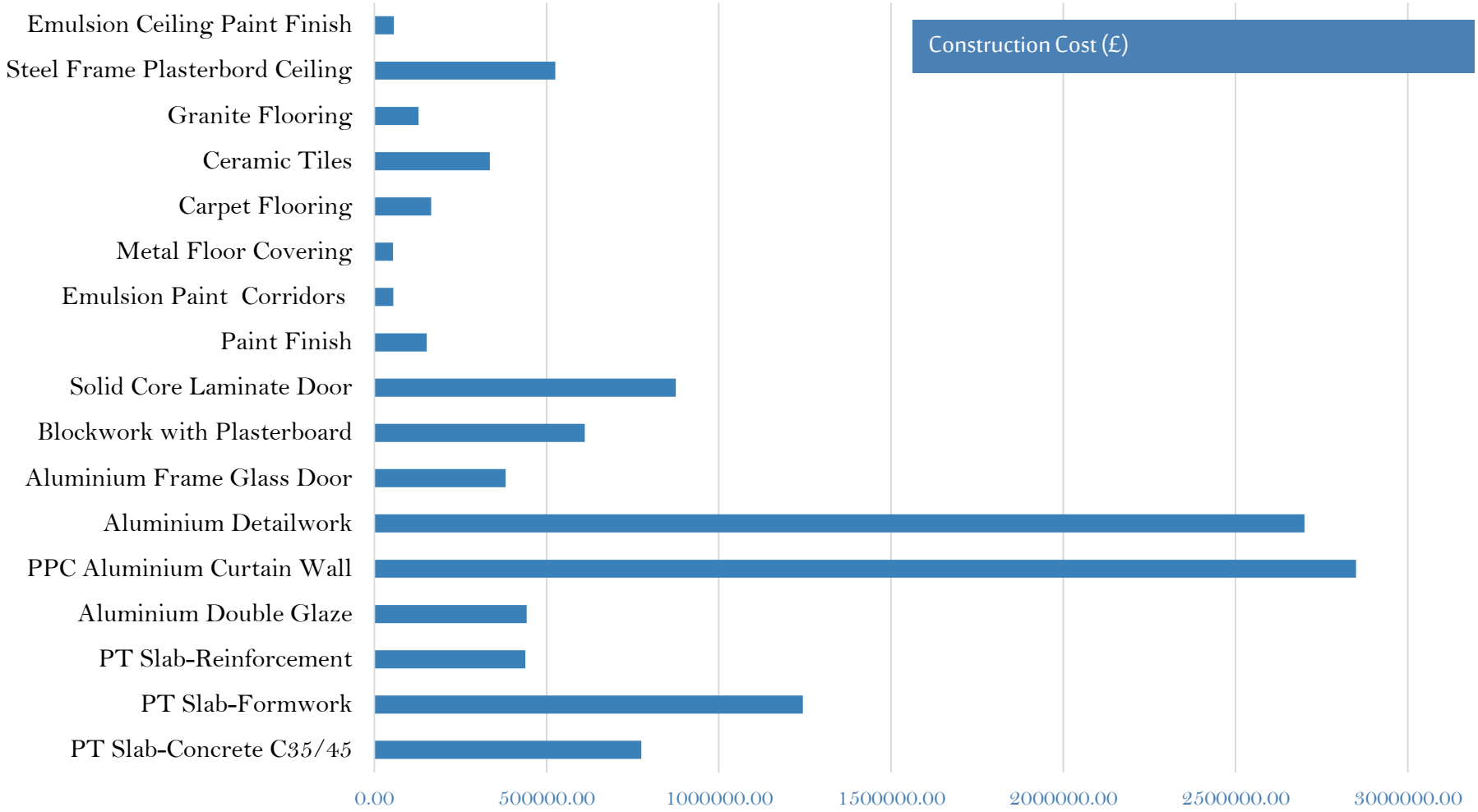
B 01
WEST PLAZA
T 01
B 02
SPINE
T 02
B 03
SPINE
T 03
PROMENADE PLACE
T 04
B 05

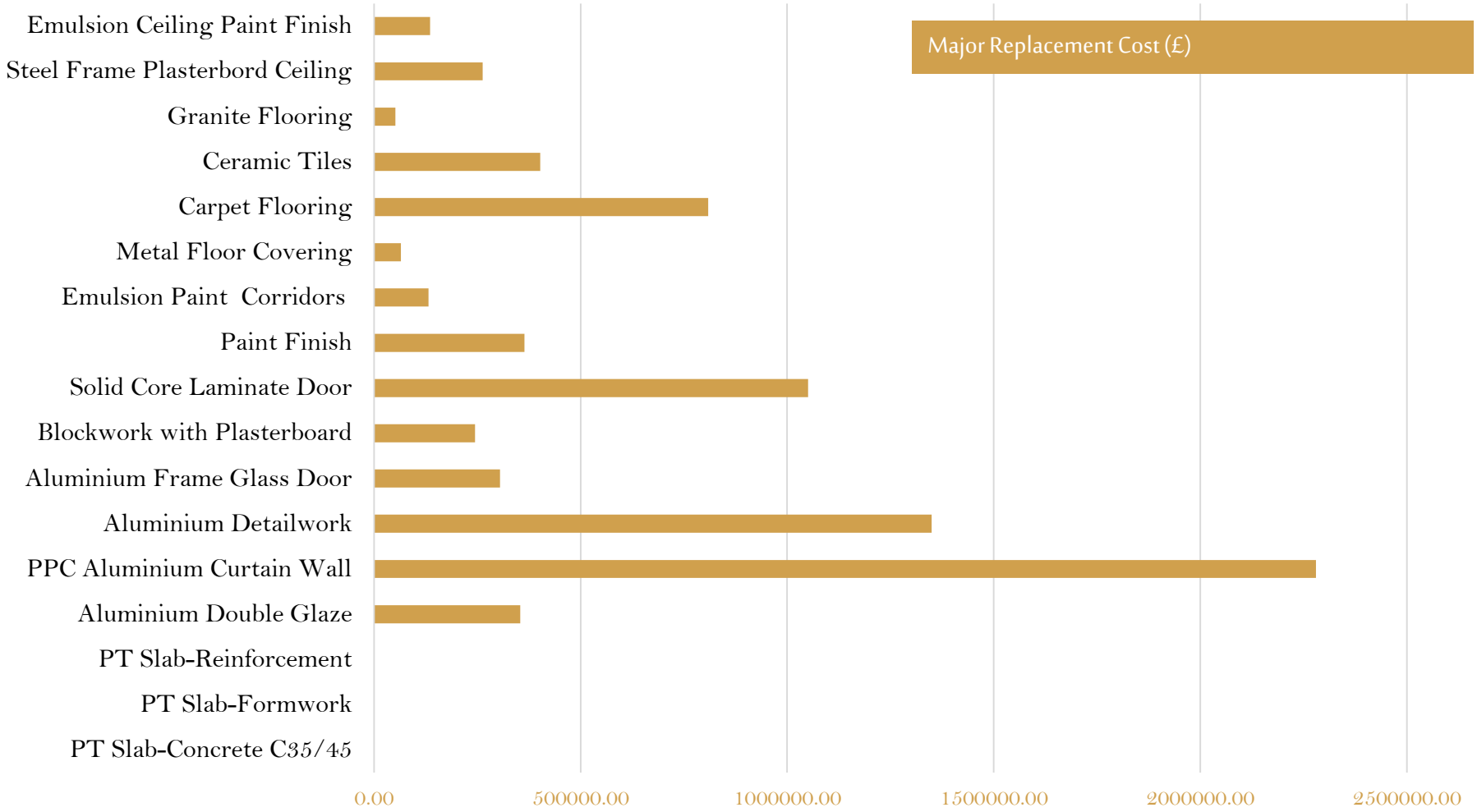
RESIDETIAL TOWER, LONDON

24 Floors

8100 Square Meters

Concrete Frame
Post Tension Slabs
Precast Concrete Stairs
PPC Aluminum Curtain Wall
Blockwork with Plasterboard
Wall Finishes
Floor Finishes
Ceiling Finishes
Services


Emulsion Ceiling Paint Finish
Steel Frame Plasterbord Ceiling
Granite Flooring
Ceramic Tiles
Carpet Flooring
Metal Floor Covering
Emulsion Paint Corridors
Paint Finish
Solid Core Laminate Door
Blockwork with Plasterboard
Aluminium Frame Glass Door
Aluminium Detailwork
PPC Aluminium Curtain Wall
Aluminium Double Glaze
PT Slab-Reinforcement
PT Slab-Formwork
PT Slab-Concrete C35/45
Construction Cost (£)
0.00
500000.00
1000000.00
1500000.00
2000000.00
2500000.00
3000000.00


Major Replacement Cost (£)
Emulsion Ceiling Paint Finish
Steel Frame Plasterbord Ceiling
Granite Flooring
Ceramic Tiles
Carpet Flooring
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0.00
500000.00
1000000.00
1500000.00
2000000.00
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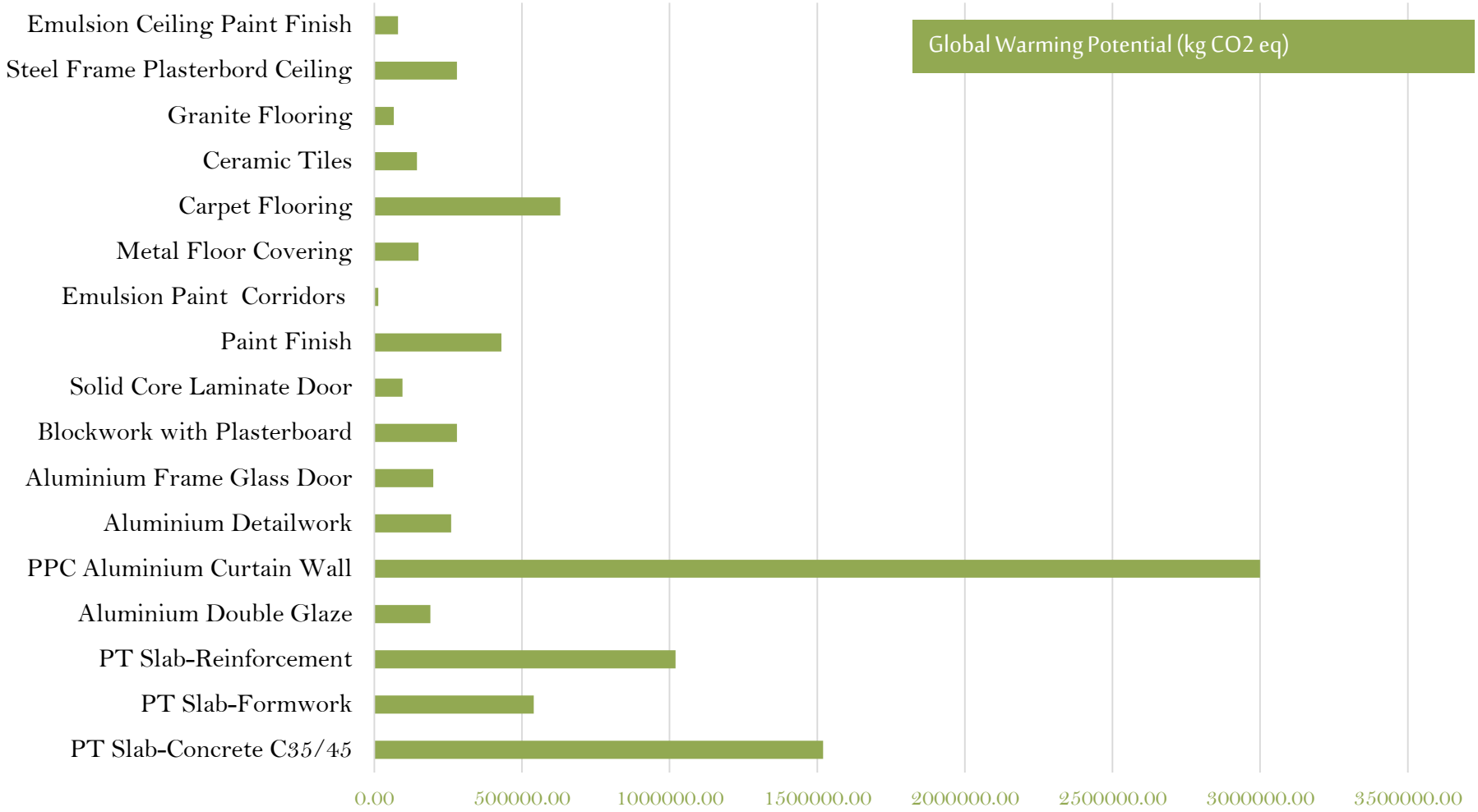
Global Warming Potential (kg CO2 eq)
Emulsion Ceiling Paint Finish
Steel Frame Plasterbord Ceiling
Granite Flooring
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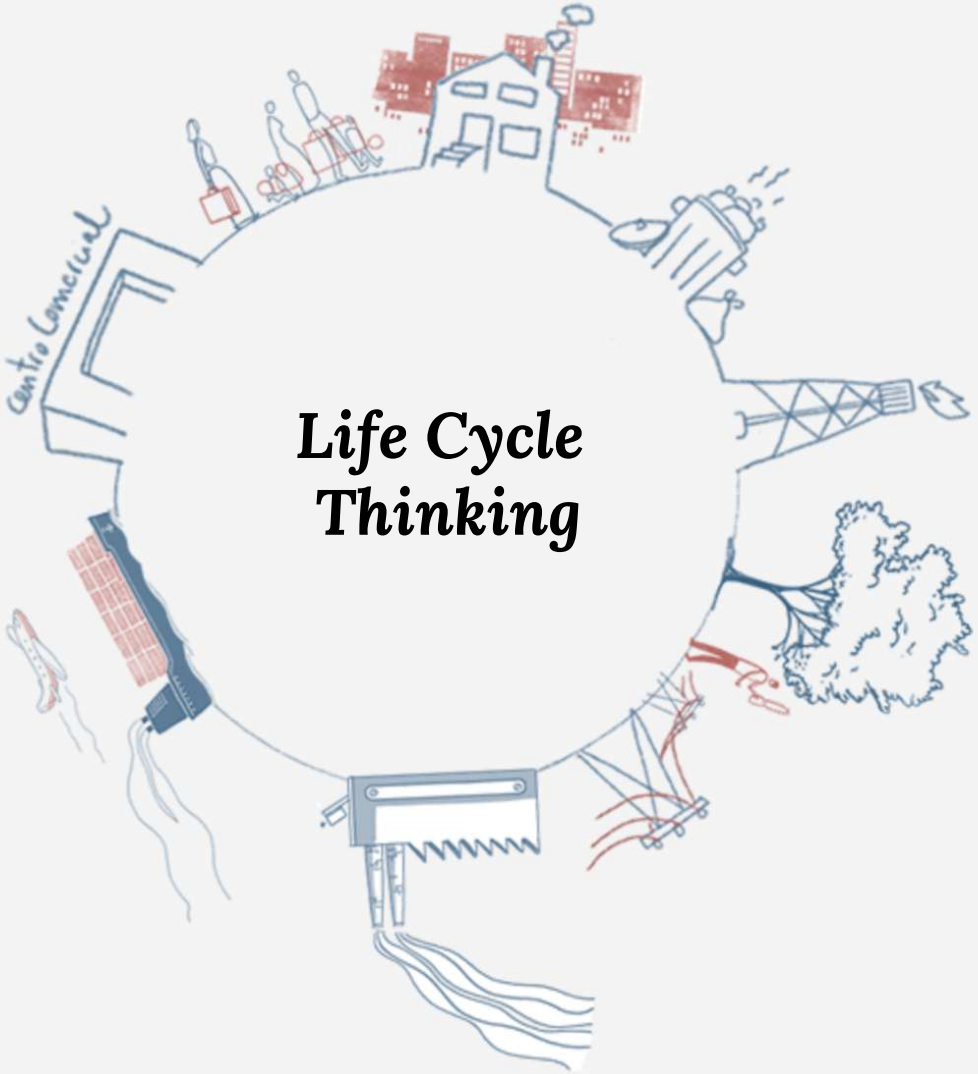
0.00
500000.00
1000000.00
1500000.00
2000000.00
2500000.00
3000000.00
3500000.00

To truly understand how we gained these insights and how they aid green decision making –

we must first re-align with a holistic concept.

Life Cycle Thinking



Integrated approach
to evaluate the
environment & economic
performance of a product,
process or service during its
entire life cycle

Let's look at LCT Toolbox

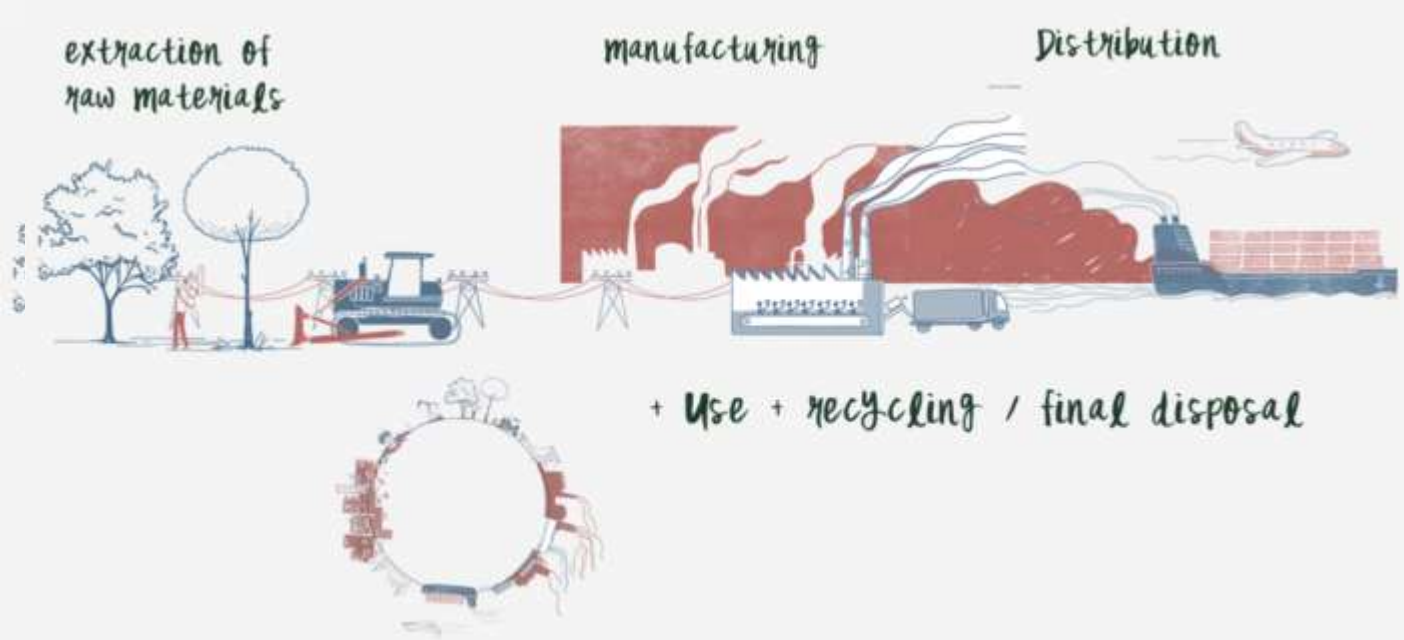
Life Cycle Costing (LCC)

A systematic consideration of all relevant costs and revenues associated with the ownership of a product/asset throughout its life cycle.

Life Cycle Assessment (LCA)

A systematic compilation and evaluation of the potential environmental impacts of a product/asset system throughout its life cycle.

Most relevant as means of ensuring that the improvements in one stage are not creating a greater cumulative impact by shifting the burden to another stage



The added information came from
Life Cycle Costing and Life Cycle Assessment.

Both Methods Have Respective ISO standards.
They are not new at all.

And are used extensively to
- influence design
- make better investment and
- green choices.

And it is this

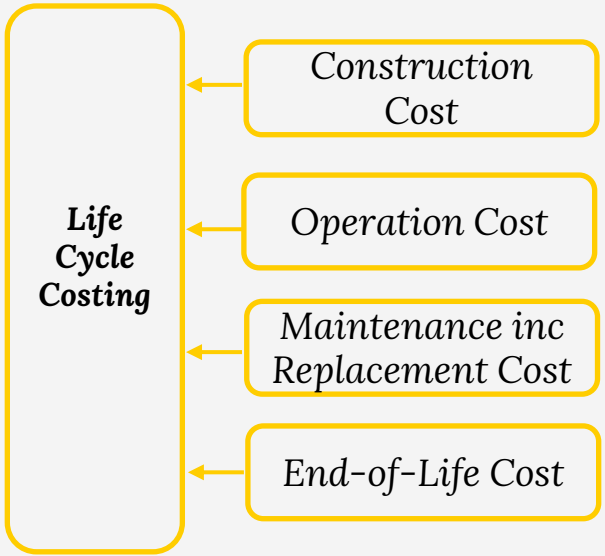
Injection of Life Cycle Thinking

in the building design and construction process – that we need to inculcate to shape a more sustainable building future.

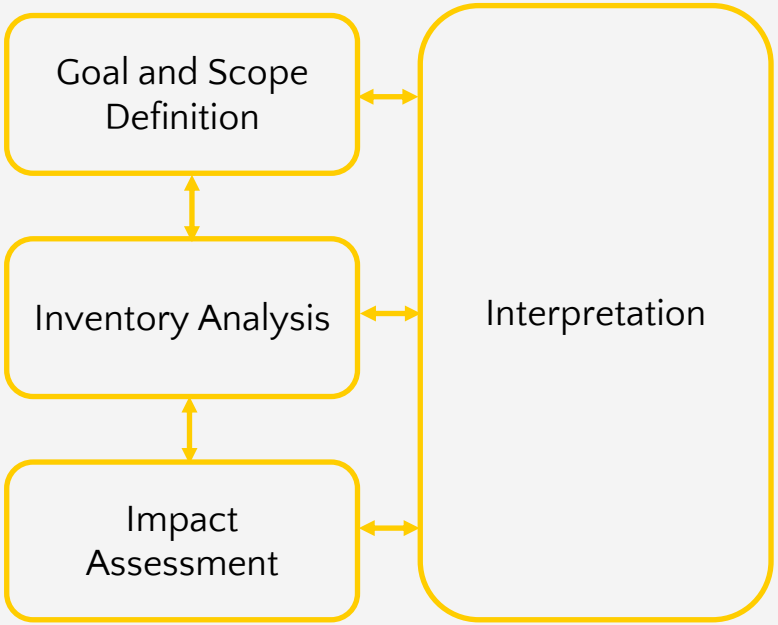
“

This is Life Cycle Framework

LCC – ISO 15686

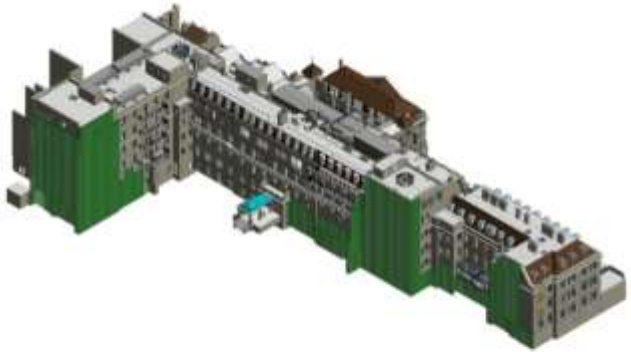


LCA – ISO 14044

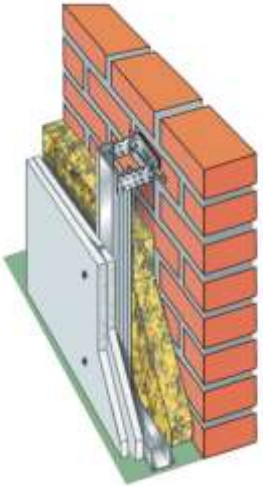


LCC can be performed at two levels

Whole Building Level

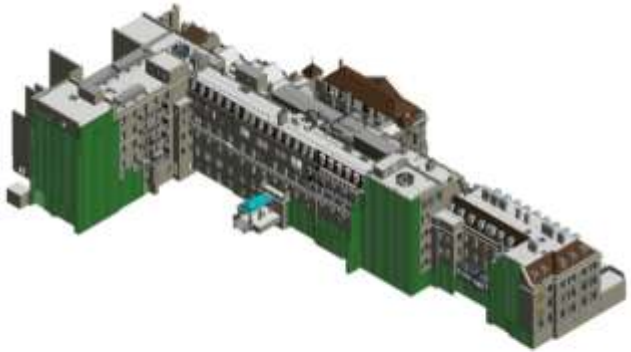


Building System Level



LCA can be performed at three levels

Whole Building Level



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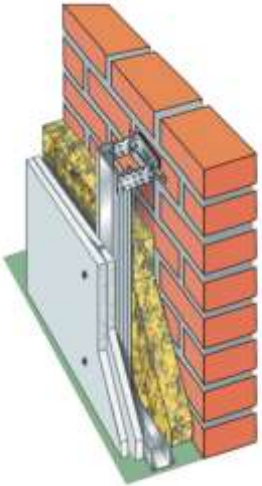


Building Product Level

Benefits in Construction LCC

Why

encourages *discussion and recording of decisions about the durability of materials and components at the outset of the project*

offers *a business case for capital intensive clean technology & green design. Provides an understanding of paybacks.*

providing *data on actual performance and operation compared with predicted performance for use in future planning and benchmarking*

facilitates *value decision making in industry, government and non government organisations*

Typically adopted by clients who have a long term interest in the property concerned.

1. ***public*** *sector who own a large portfolio of property as part of delivering Best Value.*
2. ***private*** *clients who intend to own a property over a long-time period.*
3. **PFI** *project consortia to develop their designs & bids; and to monitor & control costs thereafter*
4. ***funders*** *& insurers for due diligence enquiries into how robustly bids have been constructed & how successfully design & construction risks have been tackled*

Benefits in Construction LCA

Why

identifying *opportunities to improve the environmental performance of products at various points in their life cycle.*

prevents *burden shifting. helps focus action to address the most impactful areas*

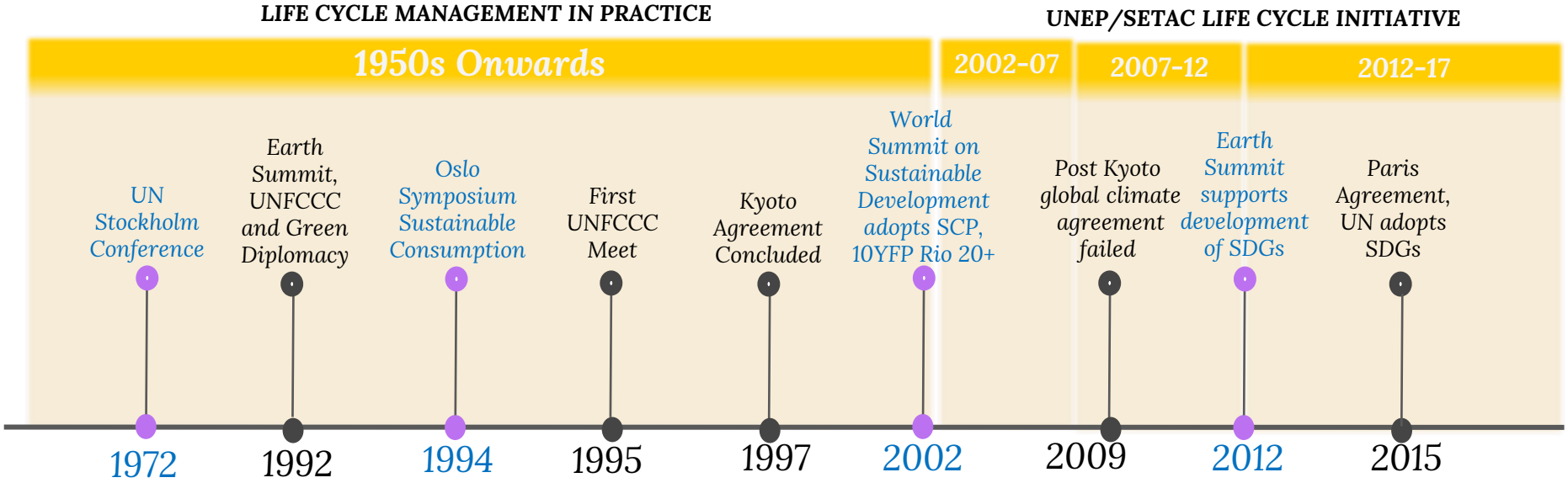
selection *of relevant indicators of environmental performance, including measurement techniques*

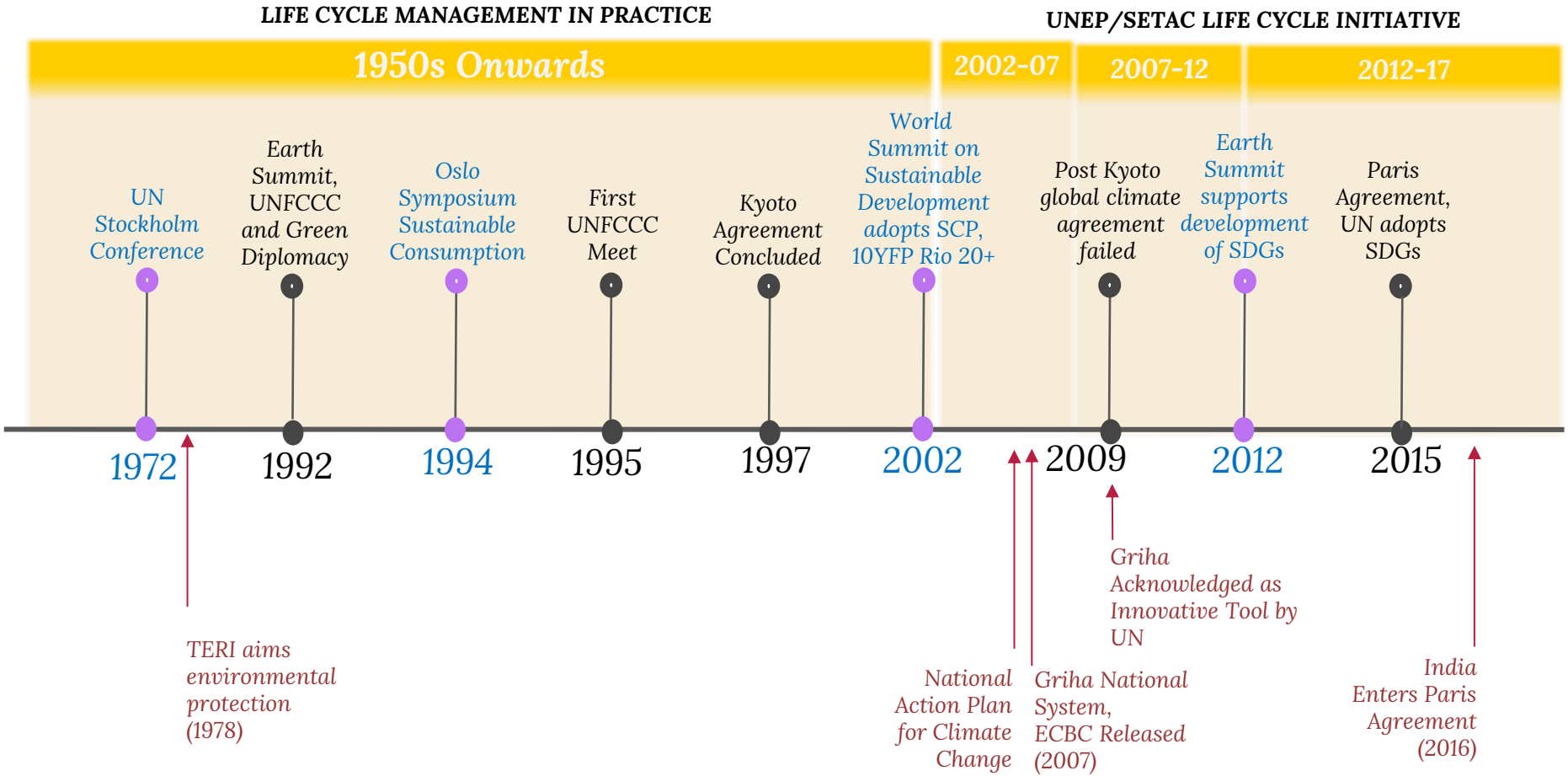
implementation *of eco-labling scheme, producing EPDs & making environmental claim*

facilitates *value decision making in industry, government and non government organisations*

Typically adopted by clients who take interest in optimising on sustainability requirements

1. ***public*** *sector and large property portfolio for minimum/target requirements & for delivering Best Value*
2. ***material*** *manufacturers to present sustainable optimisation of their products*
3. ***designers*** *and specifiers for ensuring a sustainable design approach*
4. ***academics*** *and students for researching impacts from construction and for material innovation*


LIFE CYCLE MANAGEMENT IN PRACTICE
UNEP/SETAC LIFE CYCLE INITIATIVE
1950s Onwards
2002-07
2007-12
2012-17
UN Stockholm Conference
1972
Earth Summit, UNFCCC and Green Diplomacy
1992
Oslo Symposium Sustainable Consumption
1994
First UNFCCC Meet
1995
Kyoto Agreement Concluded
1997
World Summit on Sustainable Development adopts SCP, 10YFP Rio 20+
2002
Post Kyoto global climate agreement failed
2009
Earth Summit supports development of SDGs
2012
Paris Agreement, UN adopts SDGs
2015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1972
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1994
1995
1997
2002
2009
2012
2015
TERI aims environmental protection (1978)
National Action Plan for Climate Change (2006)
Griha National System, ECBC Released (2007)
Griha Acknowledged as Innovative Tool by UN
India Enters Paris Agreement (2016)

Life Cycle
Thinking is critical for
achieving targets of
UN SDGs & Paris Agreement

Lets wind up with a holistic picture of our residential project,

as it stands today

“

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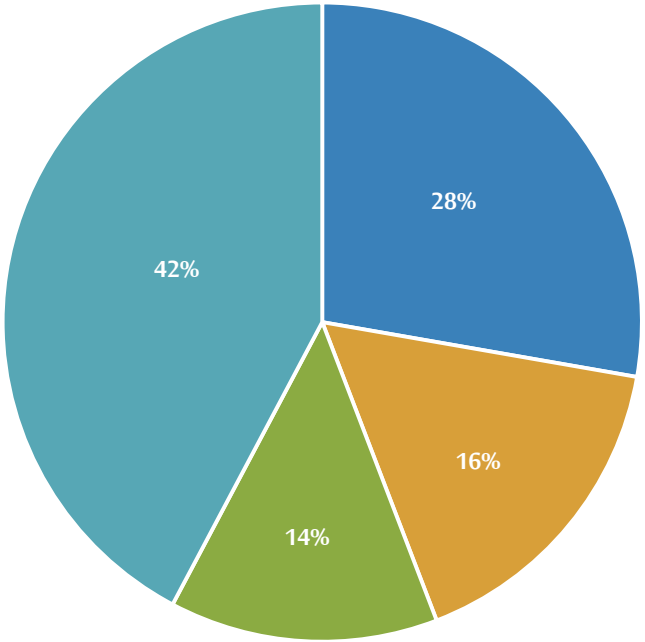
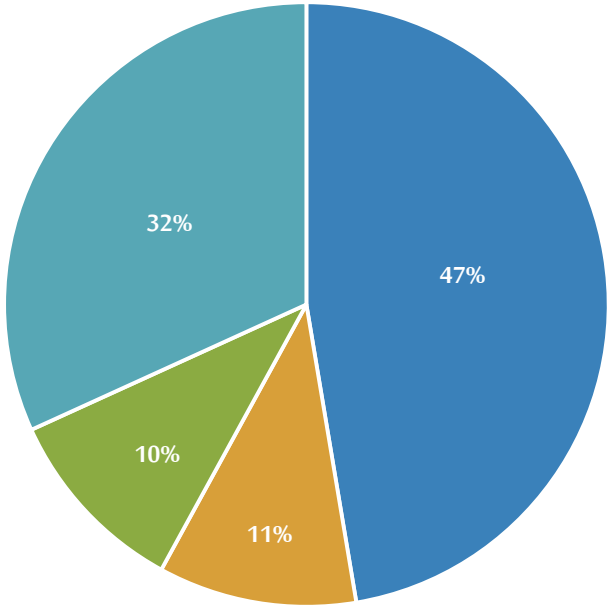
REAL SCENARIO ANALYSIS



REAL DISCOUNTED SCENARIO ANALYSIS



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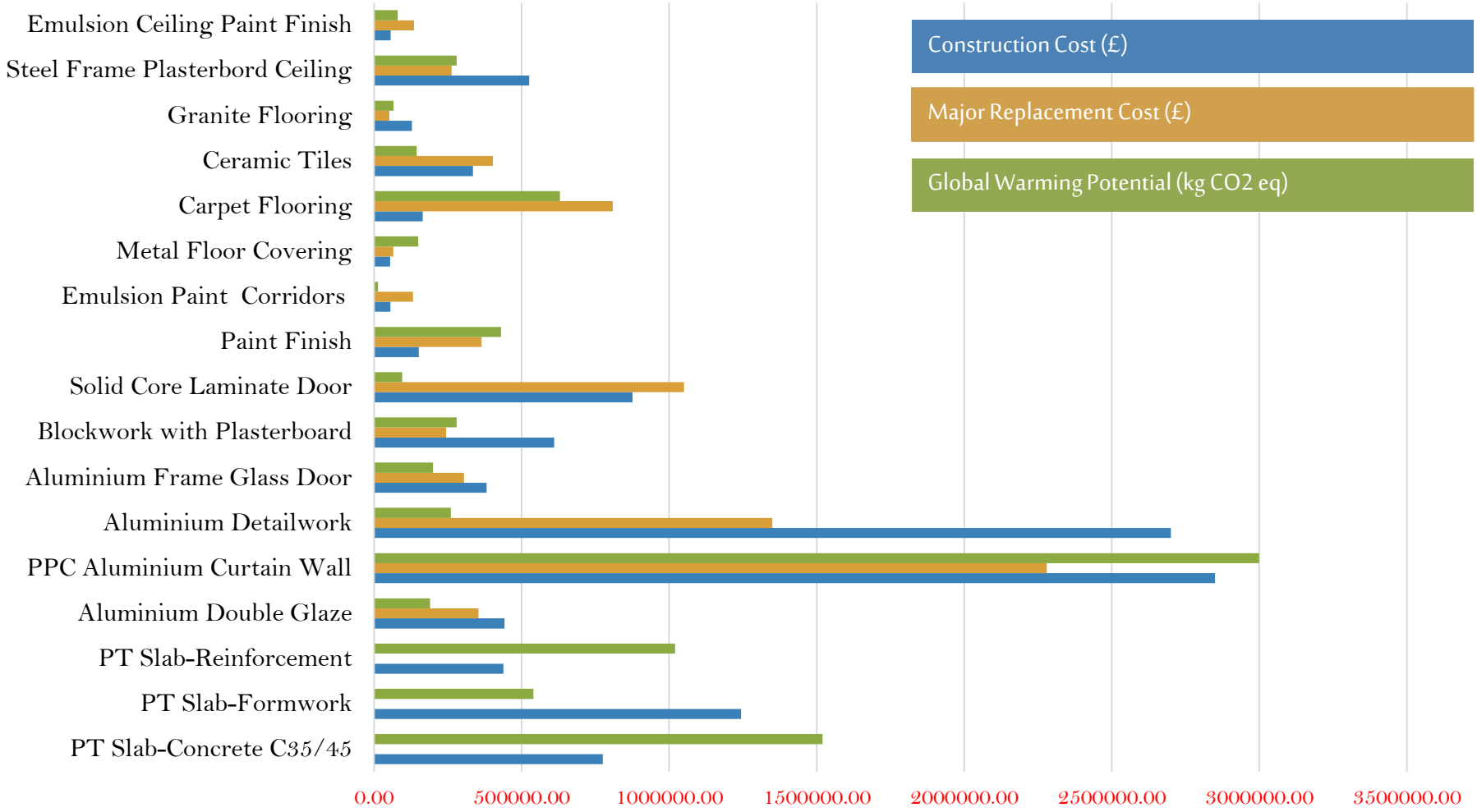
MAJOR REPLACEMENT COST

MAINTENANCE COST

OPERATION COST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Life Cycle Thinking For Decision Making

- Thank You