



**CONSTRUCTION INDUSTRY LANDSCAPE
WITH
ARCHETYPE Myanmar**

Contents

- About Archetype Group
- Initiatives proposed for the construction industry in Myanmar
 - Eurocham Construction advocacy group
 - CTBUH = Council on Tall building and Urban Habitat
 - Environment and sustainability with “The Edge” certification
- Archetype Projects =

PAST /	PRESENT	/ FUTUR
Built /	Under construction	/ Starting
- About Permitting and Codes



Founded in
2002

4 Service
Lines

3
Sectors

Acquired
Tebodin APAC
in
2016

20
Offices

15
Countries

1100
Employees

Top 100
Architects

A large, solid green arrow pointing upwards, positioned above the "Top 100 Architects" circle.

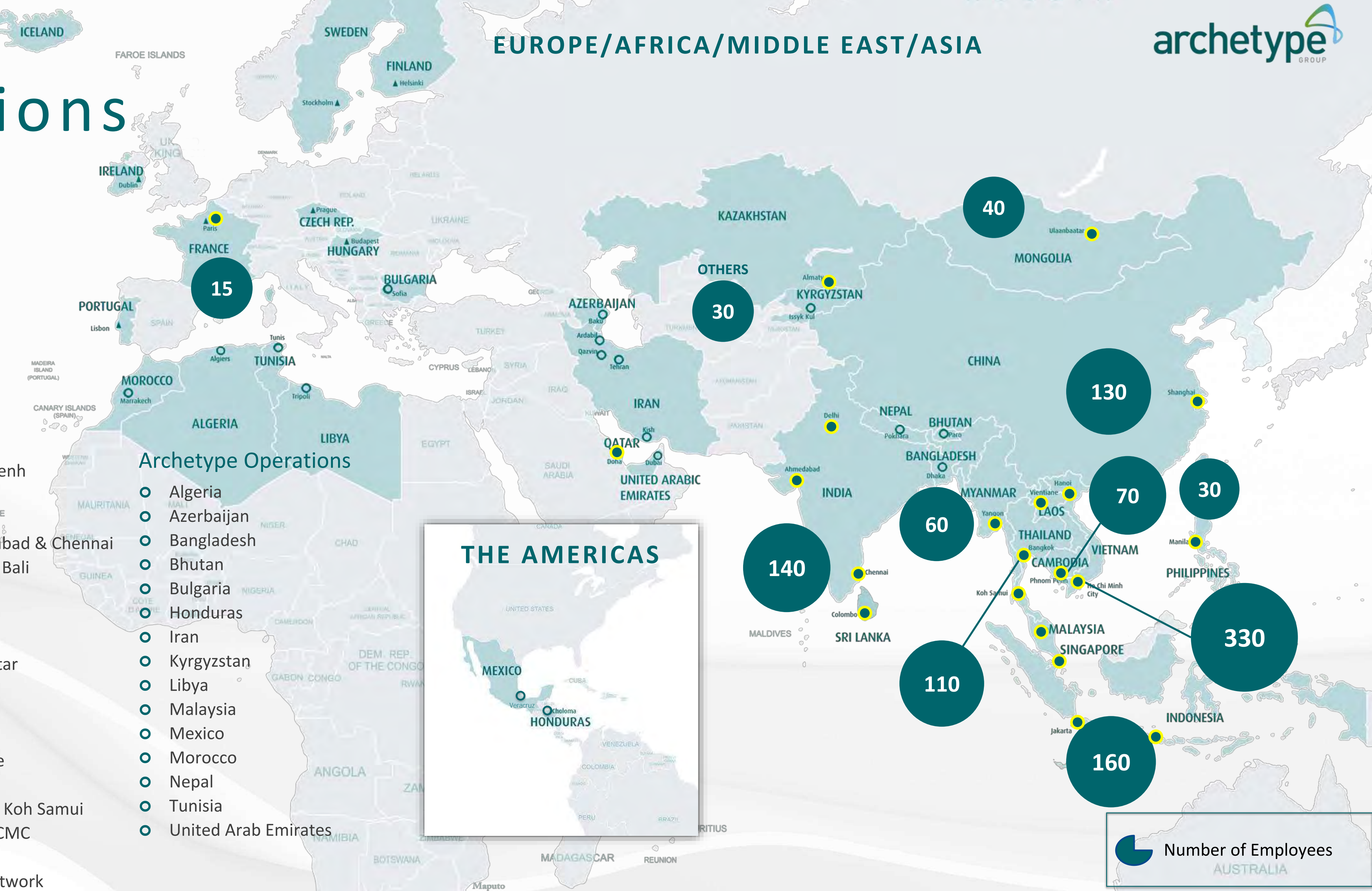
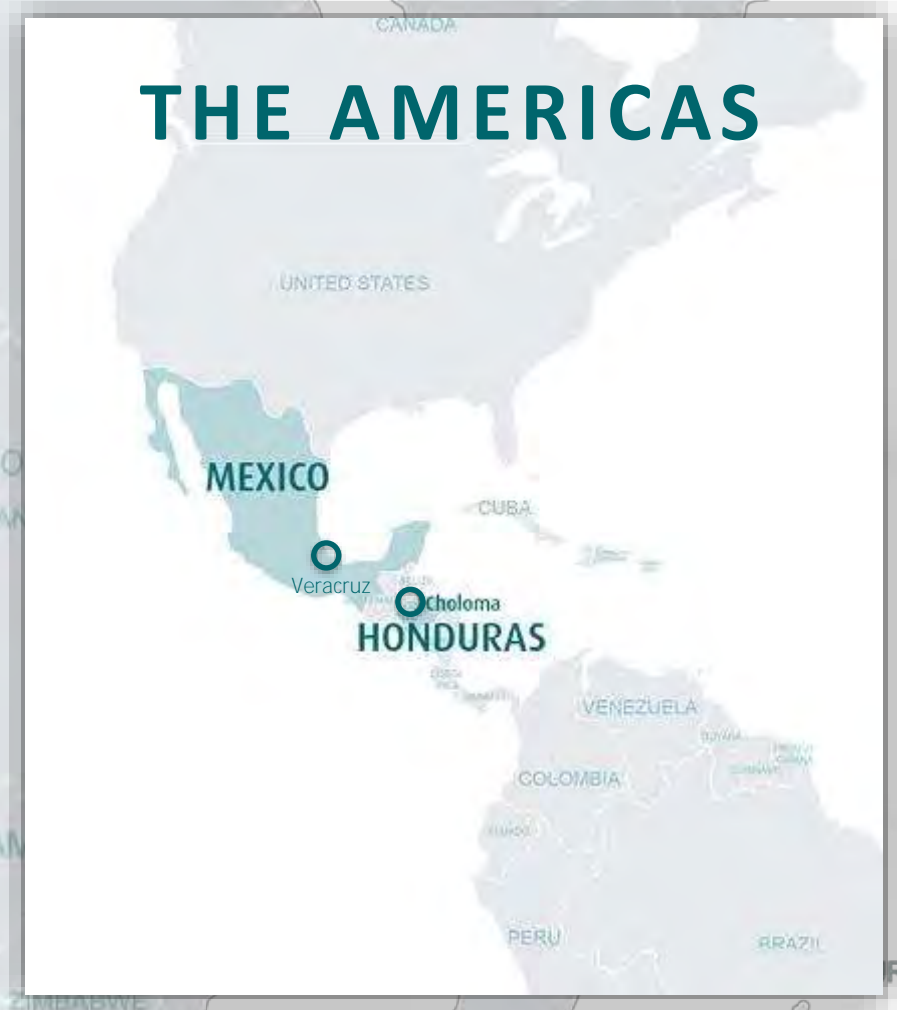
Locations

Archetype Offices

- Cambodia—Phnom Penh
- China—Shanghai
- France—Paris
- India—Delhi, Ahmedabad & Chennai
- Indonesia—Jakarta & Bali
- Kazakhstan—Almaty
- Laos—Vientiane
- Malaysia
- Mongolia—Ulaanbaatar
- Myanmar—Yangon
- Philippines—Manila
- Qatar—Doha
- Singapore—Singapore
- Sri Lanka—Colombo
- Thailand—Bangkok & Koh Samui
- Vietnam—Hanoi & HCMC

Archetype Operations

- Algeria
- Azerbaijan
- Bangladesh
- Bhutan
- Bulgaria
- Honduras
- Iran
- Kyrgyzstan
- Libya
- Malaysia
- Mexico
- Morocco
- Nepal
- Tunisia
- United Arab Emirates



Number of Employees

▲ Equator European Network

Archetype Group Scope of Services

Architecture & Planning

Architecture

- Site Evaluation
- Pre-feasibility & Feasibility Studies
- Strategic Programming
- Conceptual Design
- Architectural & Detailed Design
- Architectural Peer Review
- Interior Design
- Landscape Design
- Renovations

Master Planning

- Special Analysis & Interpretation
- Feasibility Studies
- Regional Master Planning
- Urban & Local Planning
- Integrated Resort Planning
- Detailed Planning Design
- Liaison with Approving Bodies
- Assistance with Submissions

Building & Infrastructure Engineering

Mechanical & Electrical

- Sustainability & Green Building Engineering
- Infrastructure & Utility Engineering Design
- High & Low Voltage Reticulation
- Air Conditioning, Ventilation & Extraction
- Hydraulics & Plumbing
- Water and WWT
- Fire Prevention & Control
- Security & Telecom Systems

Civil & Structural

- Geotechnical Evaluation
- Site Drainage & Disposal
- Earth Retaining Structures
- Piling & Foundation Design
- Heavy & Light Steel Design
- Seismic Retrofits

Project & Cost Management

Project Management

- Design Mngt
- Value Engineering
- Program Mngt
- Material Procurement Mngt
- Contract Administration
- Construction Mngt
- Health & Safety
- Scheduling and Coordination
- Quality Control
- Commissioning & Hand-over Mngt

Cost Management

- Quantity Survey
- Bills of Quantity
- Cost Estimation
- Tender Management
- Contract Management
- Procurement Strategy
- Final Accounts
- Construction Budget Audit

Industrial & Process Engineering

General Industrial

- Site evaluation, due diligence and feasibility study
- Full in-house engineering
- Master plan and logistic optional design
- Value conceptual engineering
- Basic and Detailed Design
- GMP and food safety standards compliant design
- Energy modeling

Process Engineering

- Design of hot water, steam supply, compressed air and vacuum systems
- Process & control philosophy, PFDs (Process Flow Diagram) and P&IDs (Piping and Instrumentation Diagram)
- Specifications and datasheets for different equipment
- Piping design and stress calculations
- HAZOP studies
- HYSYS simulation

Archetype Markets & Sectors

Buildings & Real Estate

- Hospitality
- Mixed-use High rise buildings
- Residential
- Commercial & Retail
- Healthcare
- Public Facilities



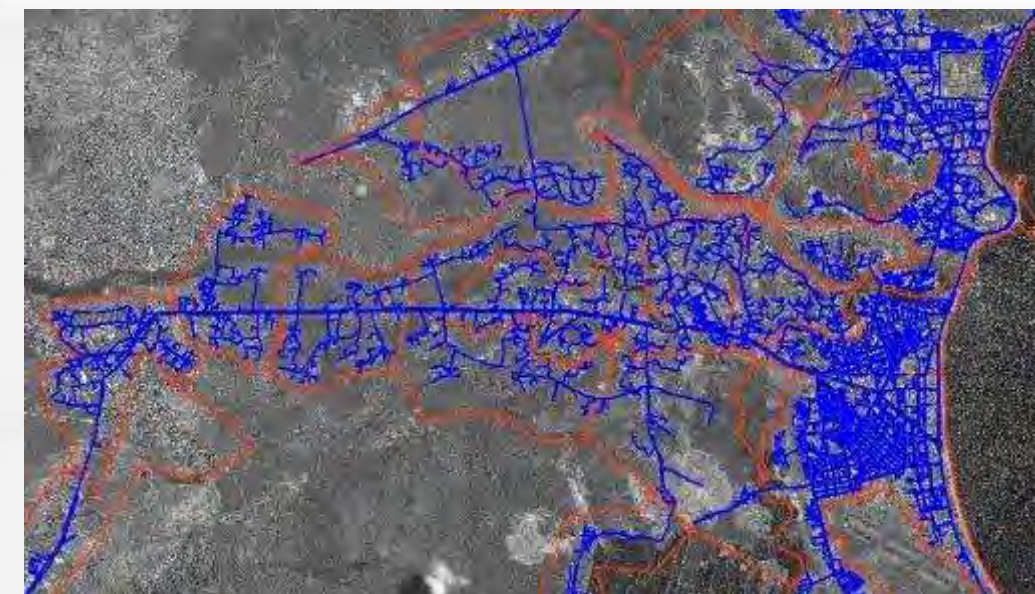
Industry & Manufacturing

- Pharmaceutical & Life Sciences
- Agriculture, Food & Beverage
- Chemicals
- Manufacturing & Assembling
- High-tech
- Automotive & Heavy Equipment



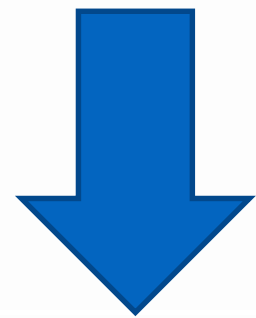
Energy & Infrastructure

- Power & Cement
- Oil & Gas
- Geographic Information Systems (GIS)
- Water & Environment
- Transportation
- Urban & Leisure Development



EUROCHAM Myanmar Advocacy Group:

Advocacy Working Division Group Members: **Construction Group**



Sectors:

Design & Standards

Environment

Safety

EUROCHAM Construction Advocacy Group:

Royal Haskoning

Archetype Group

Lafarge Holcim

Bouygues

Sika Myanmar

Bureau Veritas

Schneider Electric

Legrand

Jardine Schindler

EuroCham- White Book **Construction Issues:**

- 1. Developing laws and standards**
- 2. Balancing Growth and Environment**
- 3. Safeguarding Urban planning**
- 4. Preservation of heritage:**
- 5. Enforcing construction safety**

Archetype Myanmar= country representative for CTBUH



About CTBUH

- The Council on Tall Buildings and Urban Habitat is a not-for-profit organization, founded in 1969 and based at Chicago's Illinois Institute of Technology, CTBUH has an Asia Headquarters at Tongji University, Shanghai, and a Research Office at Iuav University in Venice, Italy.
- CTBUH facilitates the exchange of the latest knowledge available on tall buildings around the world through publications, research, events, working groups, web resources, and its extensive network of international representatives.
- The Council on Tall Buildings and Urban Habitat became the world's leading resource on tall buildings for architects, engineers, and builders of future cities.
- The CTBUH is recognized as the arbiter for defining such designations as “The World’s Tallest Building.”
- The CTBUH organizational member network included 1,333,155 individuals working in 9,050 offices around the world



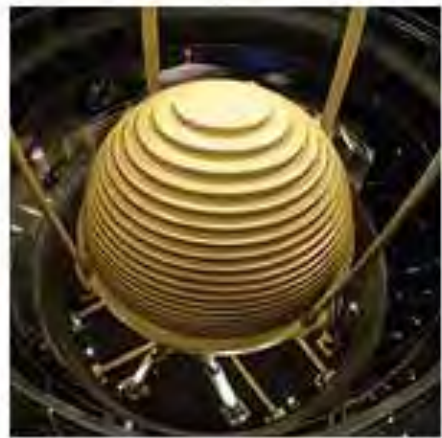
The Benefits of the CTBUH Network

- Valuable networking opportunities
- Access to the latest state-of-the-art concepts, developments and technical information
- Receive complimentary and/or discounted registration at CTBUH events – congresses, conferences etc, for educational and business networking purposes
- Involvement in working groups and other committees



The Benefits of the CTBUH Network

Current Working Groups



Building Damping Technologies



Building Information Modeling



Demolition



Façade Access



LCA of Structural Systems



Legal Aspects of Tall Buildings



Performance Based Seismic Design



Security



Sustainability



Tall Timber

Completed Working Groups



Fire & Safety



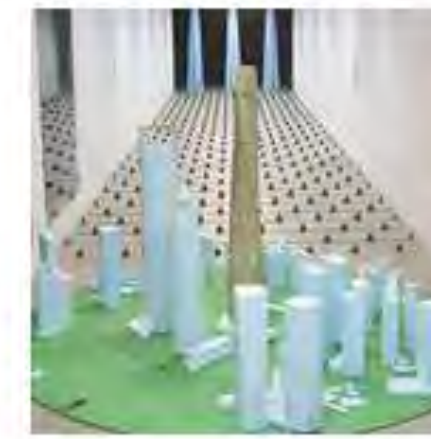
Outriggers



Research, Academic and Postgraduate

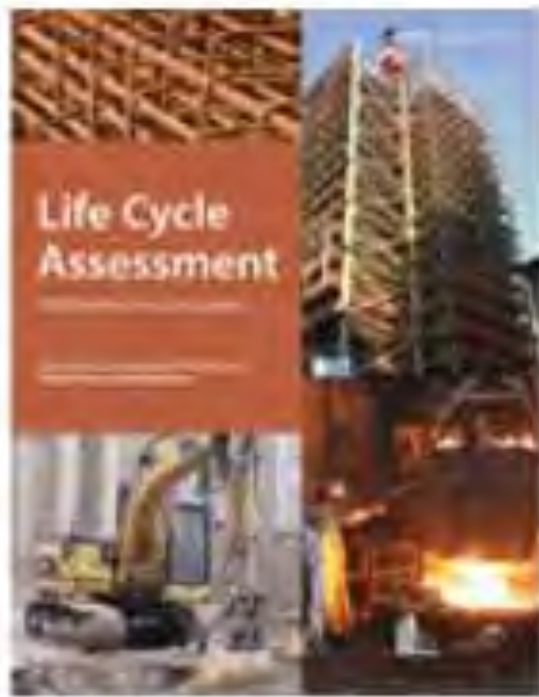


Seismic Design



Wind Tunnel Testing

The Benefits of the CTBUH Network



Life Cycle Assessment (2015)



Green Walls Guide (2014)



Wind Tunnel Testing Guide (2013)



Vertical Greenery (2015)



Natural Ventilation Guide (2012)



Recommendations for Seismic Design (2008)



Emergency Evacuation Guidebook (2004)



Building Safety Guidebooks (2002)

The Benefits of the CTBUH Network

- Research papers



A Study on Improving Living Environment of Urban - Cases of Multi-Family Housing

Seoul Conference; Jeong-Yoon Byun, Deok-Gi Jung, & Jung-Lo Park, Hanyang University; et al.

The government adopted a policy to build urban-type residence with an objective to



From Eyesore to Urban Asset: The Transformation of Abandoned Railroad Structures in American Cities

Robert Lau, Roosevelt University

The high-line is a new 1.5-mile long public park built on an abandoned elevated railroad stretching from the Meatpacking District to the Hudson Rail Y... [Download Paper](#)



Hearst Headquarters: Innovation and Heritage in Harmony

8th World Congress, Dubai; Ahmad Rahimian & Yoram Eilon,

WSP Cantor Seinuk

This paper describes the challenges met in preserving the façade and how the choice of a diagrid system - a highly efficient triangulated truss tube s... [Download Paper](#)



Balancing Life Safety with the Historic Preservation of Tall Buildings

Seoul Conference; Milosh Puchovsky, NFPA

Balancing life safety with historic preservation goals in historic buildings presents unique challenges. These challenges are further compounded when ... [Download Paper](#)

CTBUH.ORG Resource Centre

Call for Participation Façade Access Working Group Seeking Case Studies



The Façade Access Working Group is calling for case studies of buildings that demonstrate innovative solutions to particularly challenging aspects of façade access... [learn more](#)

CTBUH 2016 Conference

Shenzhen → Guangzhou → Hong Kong, Oct. 16-21

Global Awards 2016

Submissions Due: April 29, 2016

China Awards 2016

Register for the Dinner & Ceremony: May 13

Tall and Urban Database



The Skyscraper Center

What is a tall building? How is it measured?
[See the World's 100 Tallest Buildings](#)

Featured Tall Building



Tour Carpe Diem, Courbevoie

[Other Featured Tall Buildings](#)

Global News

- March 25, Chicago**
After structurally topping out, 150 North Riverside is now on the market
- March 25, Ha Long**
A proposed waterfront development will include a series of 35- to 40-story towers
- March 25, Toronto**
A 29-story residential tower has been proposed for a large Street site
- March 25, Buffalo**
A 23-story apartment tower would see the former Freezer Queen warehouse demolished
- March 24, Frankfurt**
A four-tower, mixed-use complex has been proposed for the Financial District

[Read More Global News](#)
[See the CTBUH Tall Building Newsletter](#)
[CTBUH in the Media](#)

Regional Resources



What's going on in your part of the world?
[Visit the Regional Pages](#)

Featured Regional Event



CTBUH Canada: New Tall Buildings
[View the Events Calendar](#)

Latest Research



Call for Research Seed Funding Proposals
[Research Paper Library](#)

Video Spotlight



Monthly Video: WOHA Architects
[Video Library](#)

Turner

Supporting Contributors

Major Sponsors of the Council

[Become a CTBUH Member](#)
[Search Members by Expertise](#)

Skyscraper Center

- The Council's free database on tall buildings, The Skyscraper Center, is updated daily with detailed information, images, data, and news.

The Skyscraper Center
The Global Tall Building Database of the CTBUH

Search Buildings & Companies

Countries Cities Buildings Companies Interactive Data Search Submit Data

Council Tall Buildings Urban Habitat

Tall Buildings [Click a region for tall building information](#)

World map showing tall building locations. JS map by amCharts.

Quick Facts – Global

- Tallest Building: [Burj Khalifa, Dubai](#), 828 m
- # of 300m+ buildings: 94
- # of 200m+ buildings: 980
- # of 150m+ buildings: 3,327

Interactive Data – Global

- [Completed Tallest Buildings](#)
- [Tallest Buildings Under Construction](#)
- [Tallest Buildings Proposed](#)
- [Tallest Buildings Demolished](#)
- [All Tall Buildings](#)

Quick Links

- [Height Criteria](#) ▶▶▶
Rules and Definitions Used for Tall Buildings
- [100 Tallest Buildings](#) ▶▶▶

Featured Tall Building

Al Hilal Bank Tower, Abu Dhabi



GREEN BUILDINGS
FOR A SMARTER WORLD

www.edgebuildings.com

**EDGE MAKES IT FASTER, EASIER AND MORE
AFFORDABLE THAN EVER BEFORE TO BUILD AND
BRAND GREEN.**

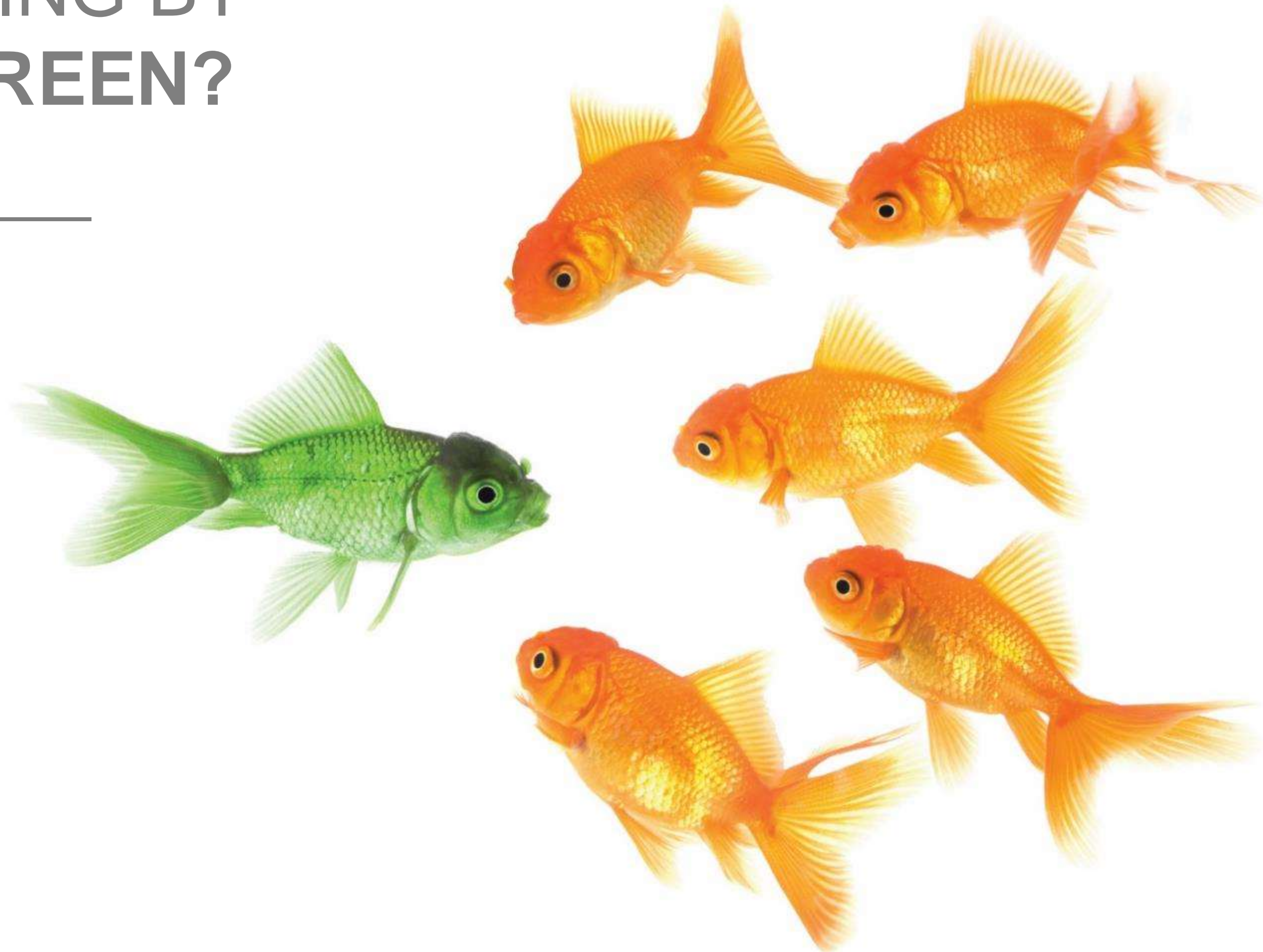


EDGE is an innovation of IFC, a member of
the World Bank Group.

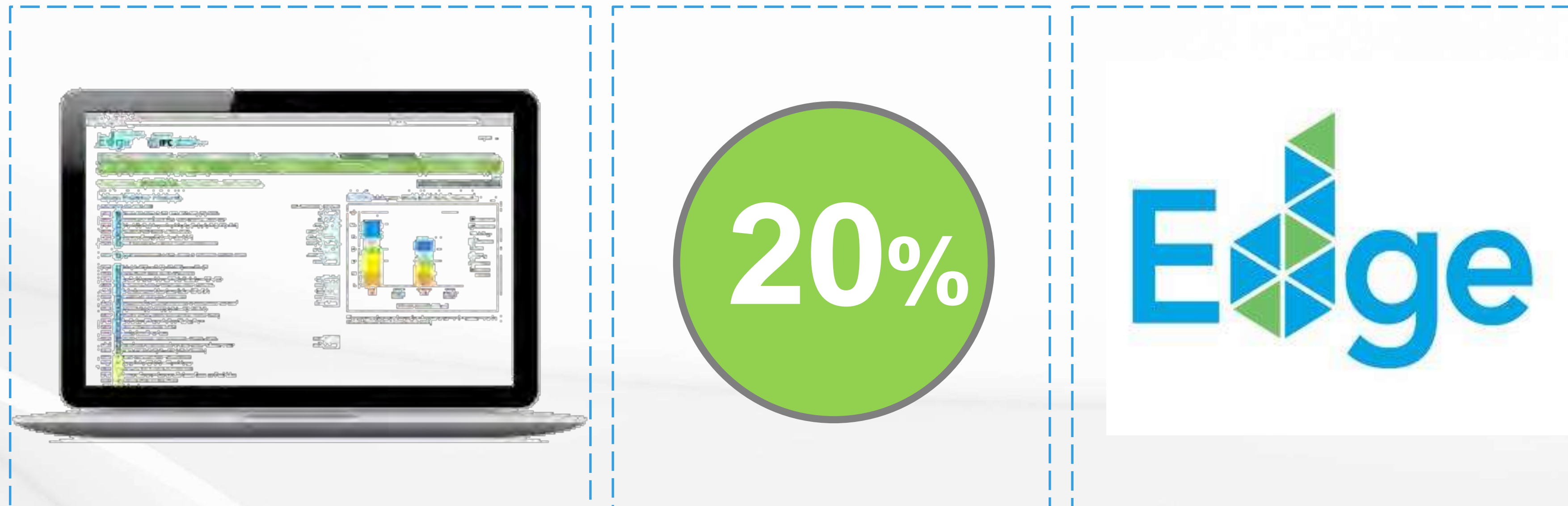
WHAT GREEN IDEAS WILL WORK FOR MY PROJECT? AND HOW MUCH WILL THEY COST?



HOW CAN I INCREASE THE MARKETABILITY AND SUSTAINABILITY OF MY BUILDING BY **GOING GREEN?**



THE SOLUTION IS EDGE: A SOFTWARE, A STANDARD, AND A GREEN BUILDING CERTIFICATION SYSTEM.



THE EDGE STANDARD FOCUSES ON **RESOURCE EFFICIENCY**, KEEPING CERTIFICATION ACHIEVABLE.



THE FREE SOFTWARE SHOWS HOW YOU CAN CUT BACK ON THE RESOURCE INTENSITY OF YOUR BUILDING DESIGN.



	Homes	Hotels	Retail	Offices	Hospitals	Education
RESULTS	Final Energy Use	932.19 kWh/Month/Unit	Operational CO ₂ Savings	0.00 tCO ₂ /Year	Base Case Utility Cost	1988.73 ZAR/Month/...
	Final Water Use	22.45 kL/Month/Unit	Embodied Energy Savings	0.00 MJ/Unit	Utility Costs Reduction	- ZAR/Month/...
					Incremental Cost	- ZAR/U...
					Payback in Years	NA Yrs.

Save Version 2.1.4

Design Energy: 0.00% Water: 0.00% Materials: 0.00%

File

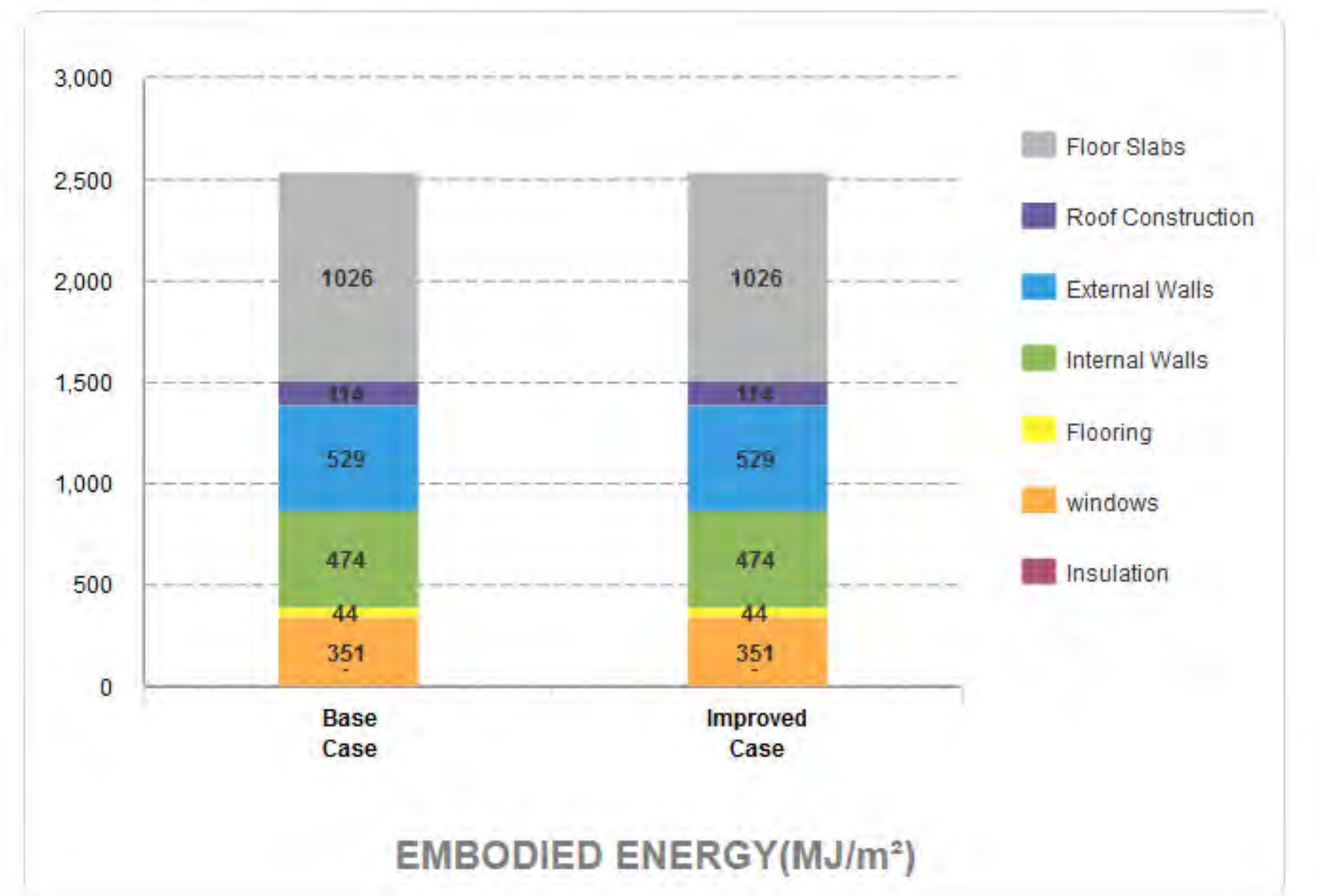
Materials Efficiency Measures

Choose building material options to achieve savings of at least 20%, indicating thickness.

Ref	Building material	Improved Case selection	Proportion %	Thickness	Steel Rebar
HMM01*	Floor Slabs Upload Document(s)	In-Situ Reinforced Concrete Slab		mm	kg/m ²
HMM02*	Roof Construction Upload Document(s)	Type 1 In-Situ Reinforced Concrete Slab	100 %	mm	kg/m ²
HMM03*	External Walls Upload Document(s)	Type 1 Common Brick Wall with Internal & External Plast	100 %	mm	
HMM04*	Internal Walls Upload Document(s)	Type 1 Common Brick Wall with Plaster on Both Sides	100 %	mm	
HMM05*	Flooring Upload Document(s)	Type 1 Ceramic Tile	100 %		
HMM06*	Window Frames Upload Document(s)	Type 1 Aluminium	100 %	Single Glazing	

*A selection must be made for each measure with a thickness entered for floor, roof, and walls.

0.00% EMBODIED ENERGY SAVINGS



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Homes

RESULTS
 Final Energy Use
 Final Water Use

Save Version 2.1.4

Design Energy: 0.00%

Materials Efficiency Measures

Choose building material options to achieve savings

Ref	Building material	Type	Percentage
HMM01*	Floor Slabs		
HMM02*	Roof Construction	Type 1	
HMM03*	External Walls	Type 1	
HMM04*	Internal Walls	Type 1	
HMM05*	Flooring	Type 1	
HMM06*	Window Frames	Type 1	

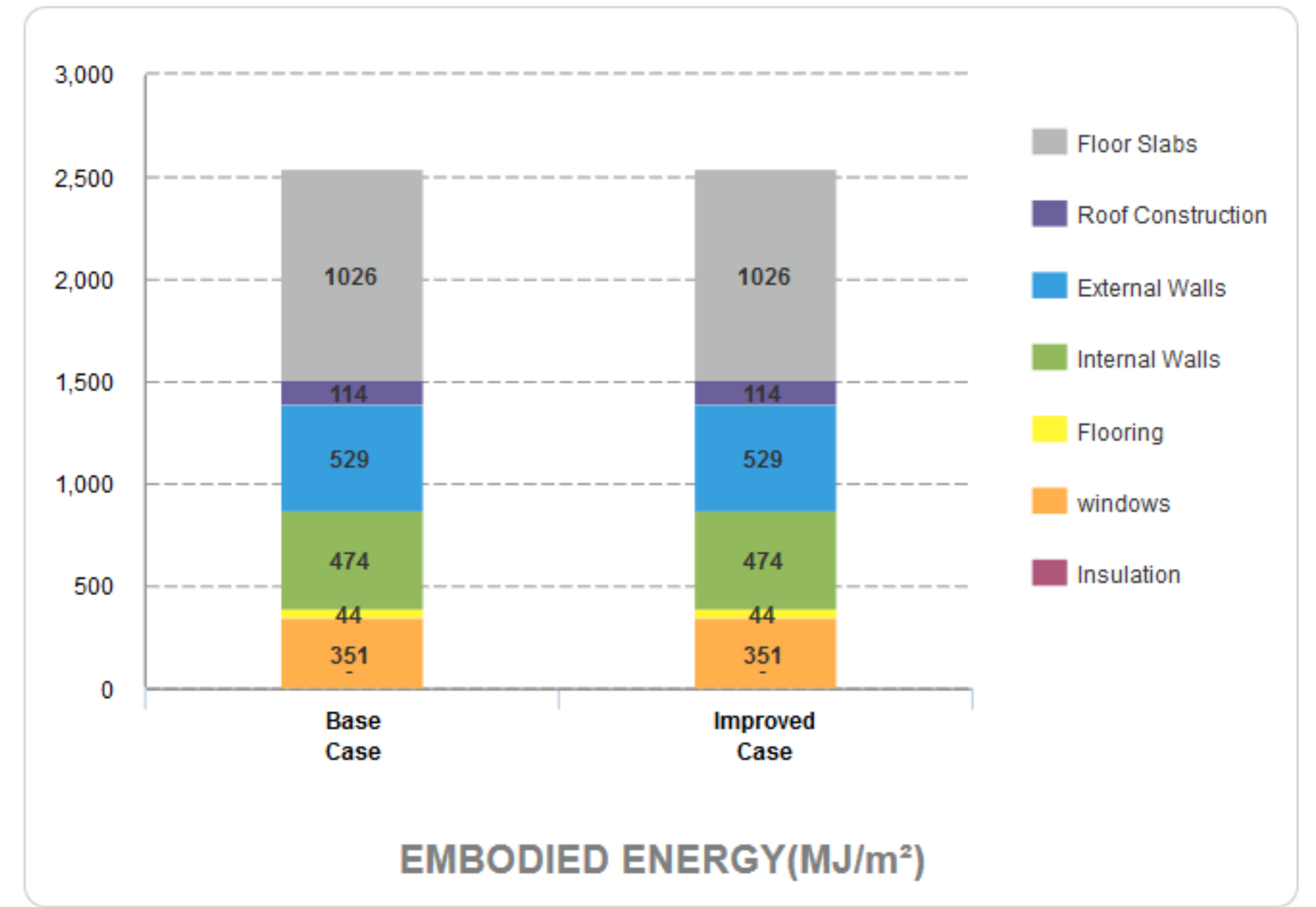
- 3-D Wire Panel with 'Shot-Crete' Both Sides
- Aluminium Profile Cladding
- Aluminum-Clad Sandwich Panel
- Autoclaved Aerated Concrete Blocks
- Brick Faced Precast Concrete Sandwich Panel
- Cellular Light Weight Concrete Blocks
- Cement Fibre Boards on Metal Studs
- Cement Fibre Boards on Timber Studs
- Clay Tiles Cladding (or 'Terracotta Rainscreen Cladding') on Metal Studs
- Common Brick Wall with Internal & External Plaster**
- Compressed Stabilized Earth Blocks
- Cored (with Holes) Bricks with Internal & External Plaster
- Curtain Walling (Opaque Element)
- Exposed Brick Wall with Internal Plaster
- Exposed Cored (with Holes) Bricks with Internal Plaster
- Facing Brick and Hollow Concrete Blocks
- Facing Brick and Solid Concrete Blocks
- Facing Brick and Timber Stud
- FaLG Block
- Ferrocement Wall Panel

Thickness	Steel Rebar
<input type="text"/> mm	<input type="text"/> kg/m ²
<input type="text"/> mm	<input type="text"/> kg/m ²
<input type="text"/> mm	
<input type="text"/> mm	

Offices Hospitals Education

0.00 tCO₂/Year Base Case Utility Cost 1988.73 ZAR/Month/... Incremental Cost - ZAR/U...
 0.00 MJ/Unit Utility Costs Reduction - ZAR/Month/... Payback in Years NA Yrs.

0.00% EMBODIED ENERGY SAVINGS



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RESULTS	Final Energy Use	922.96 kWh/Month/Unit	Operational CO ₂ Savings	0.10 tCO ₂ /Year	Base Case Utility Cost	1988.73 ZAR/Month/...
	Final Water Use	22.45 kL/Month/Unit	Embodied Energy Savings	18710.88 MJ/Unit	Utility Costs Reduction	14.32 ZAR/Month/...
					Incremental Cost	-10.77 ZAR/U...
					Payback in Years	- Yrs.

Save Version 2.1.4

Design Energy: 0.99% Water: 0.00% Materials: 8.19%

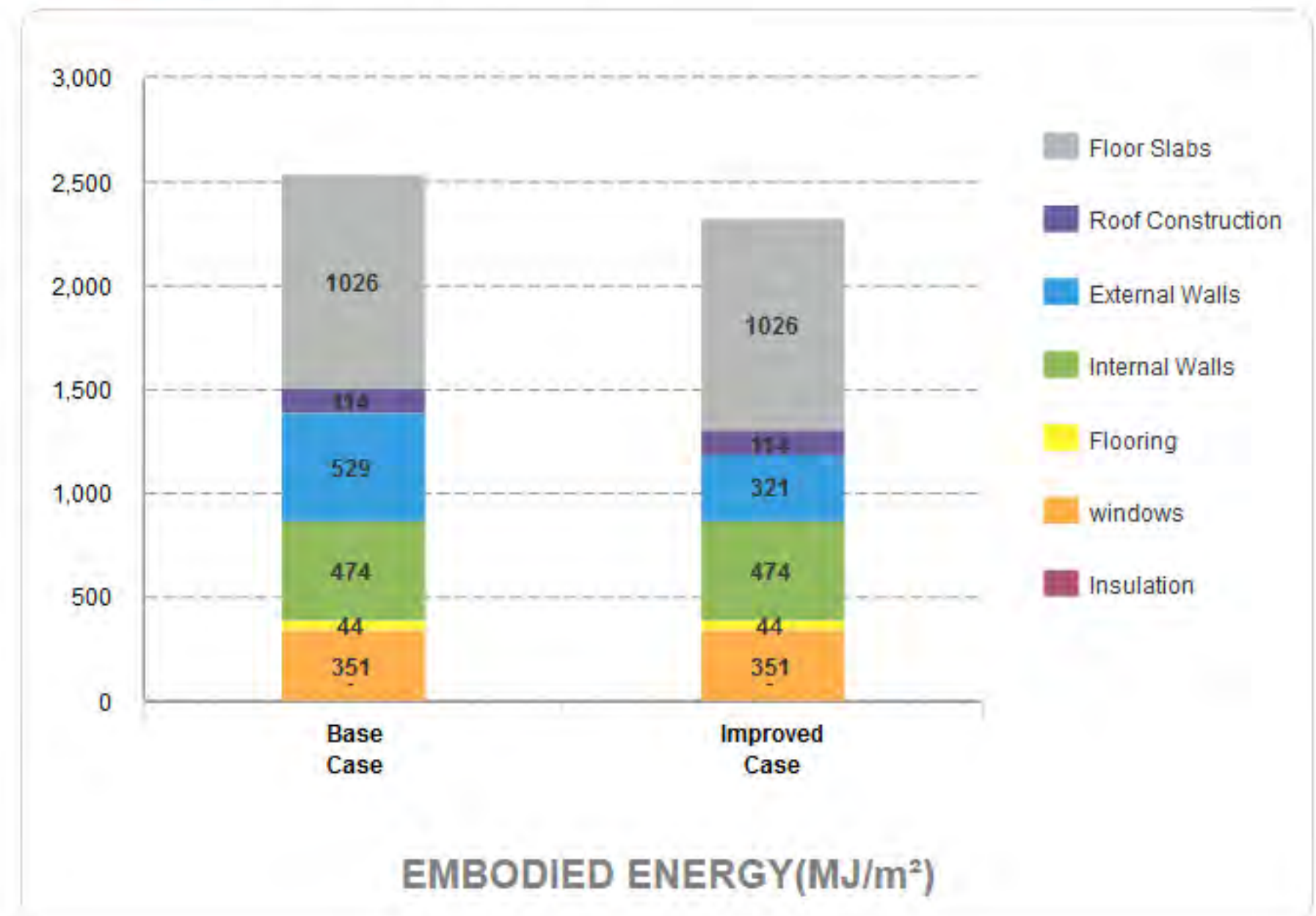
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HMM03*	External Walls Upload Document(s)	Type 1 Facing Brick and Hollow Concrete Blocks	100 %	200 mm	
HMM04*	Internal Walls Upload Document(s)	Type 1 Common Brick Wall with Plaster on Both Sides	100 %	mm	
HMM05*	Flooring Upload Document(s)	Type 1 Ceramic Tile	100 %		
HMM06*	Window Frames Upload Document(s)	Type 1 Aluminium	100 %	Single Glazing	

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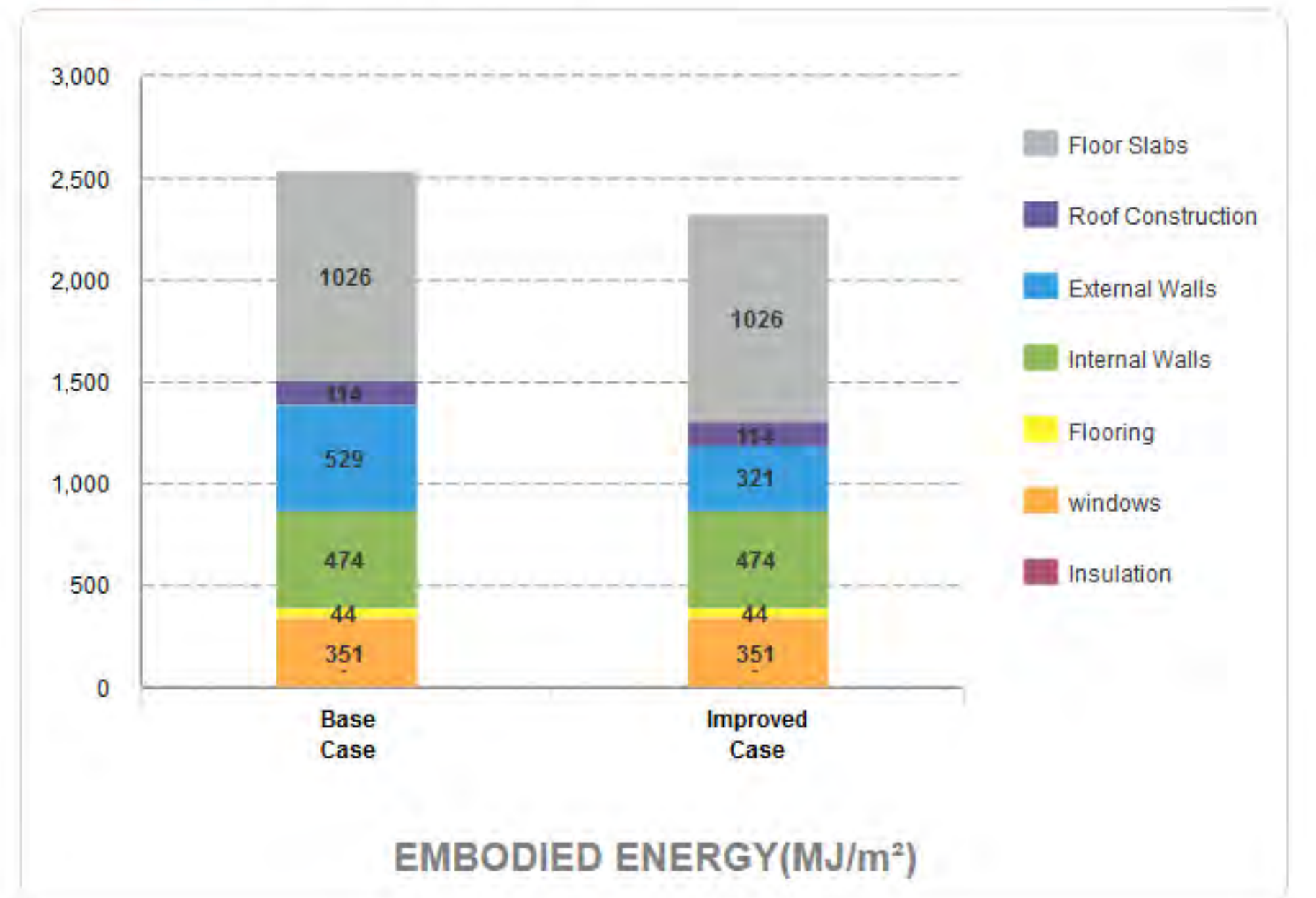
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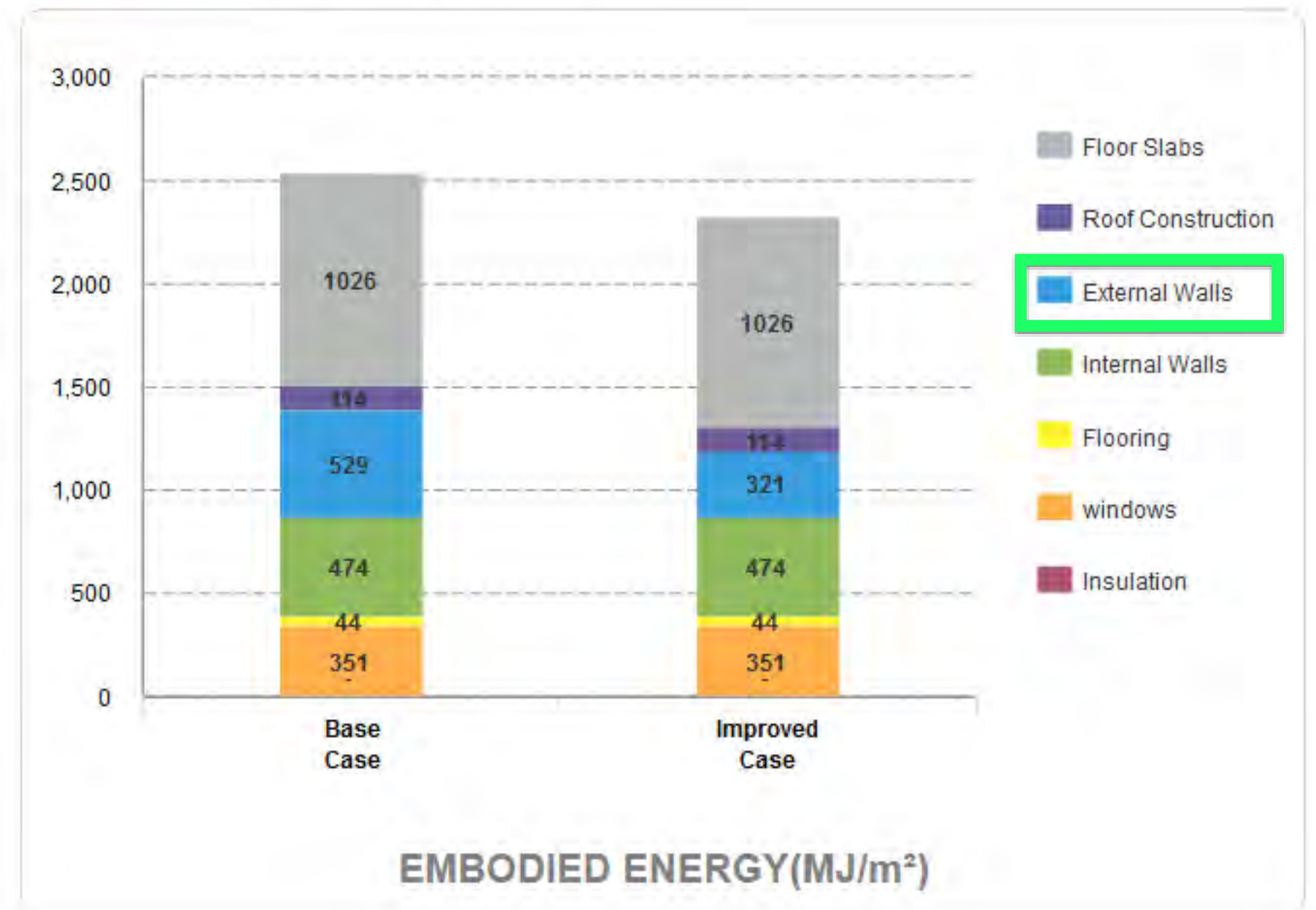
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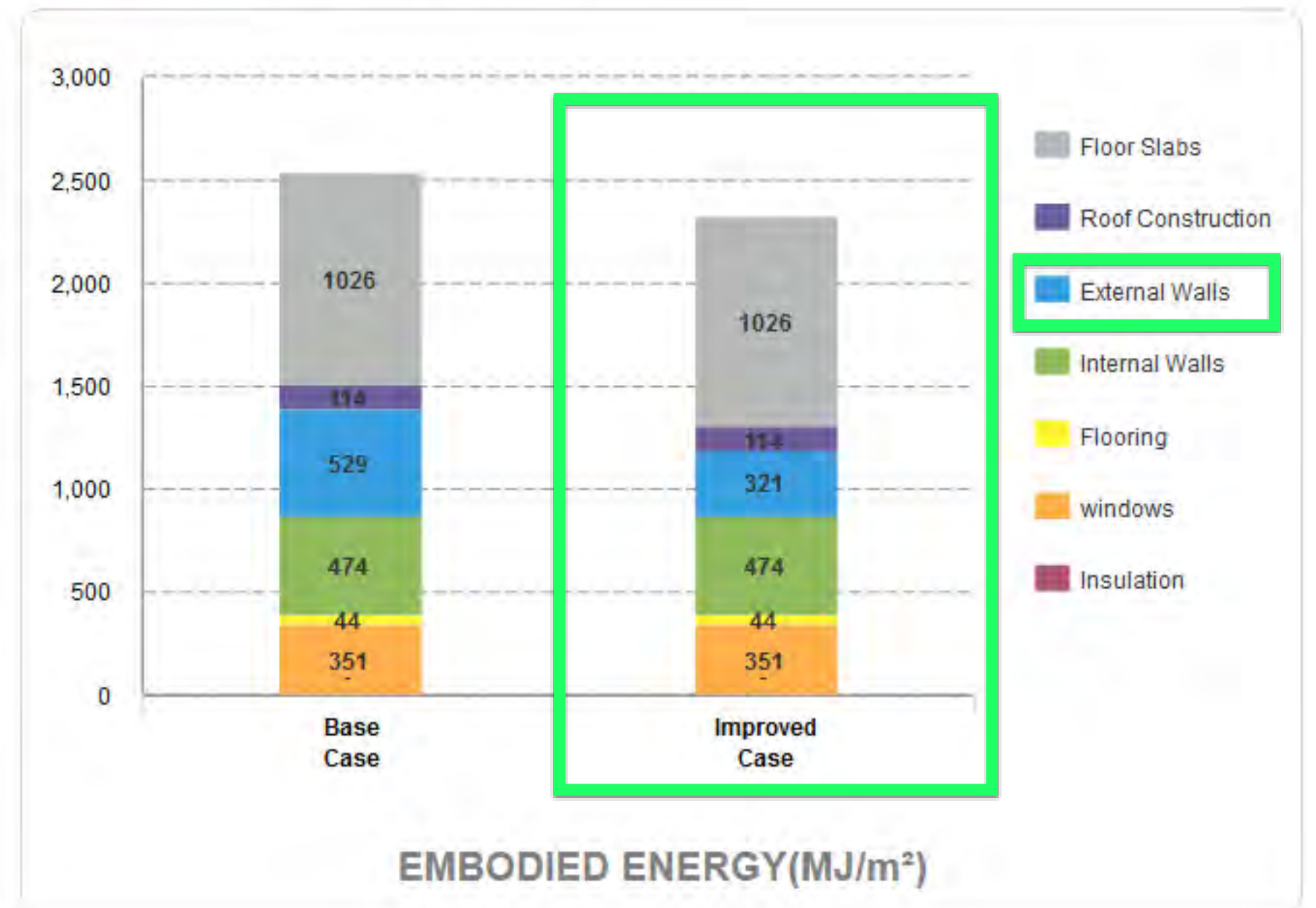
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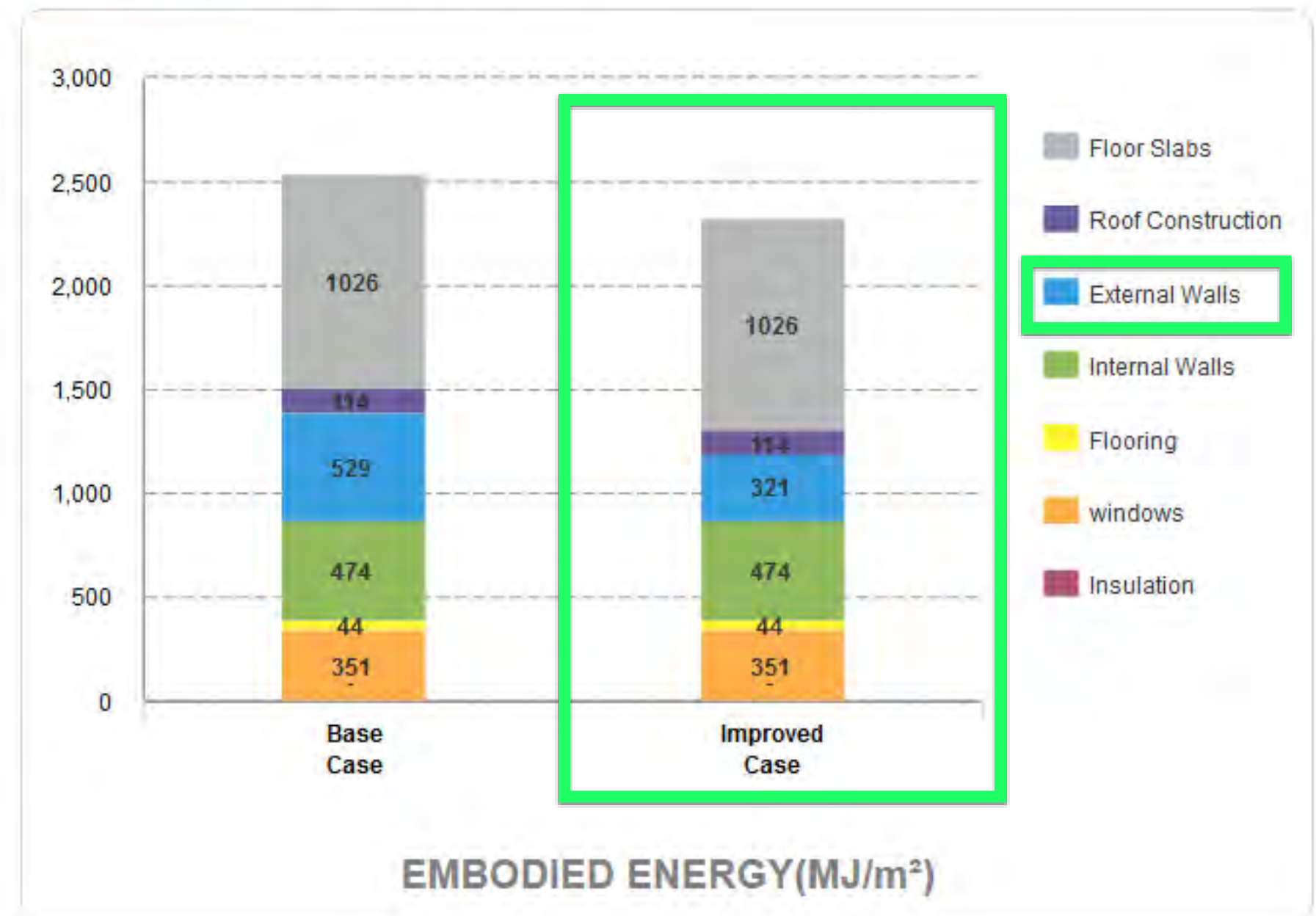
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8.19% EMBODIED ENERGY SAVINGS



Disclaimer: EDGE is designed as comparative software and is not a design tool. Therefore predicted results for energy, water and materials may vary from actuals.

Homes	Hotels	Retail	Offices	Hospitals
Base Case Utility Cost		402,432 \$/Month	Incremental Cost	0 \$
Utility Costs Reduction			Payback in Years	

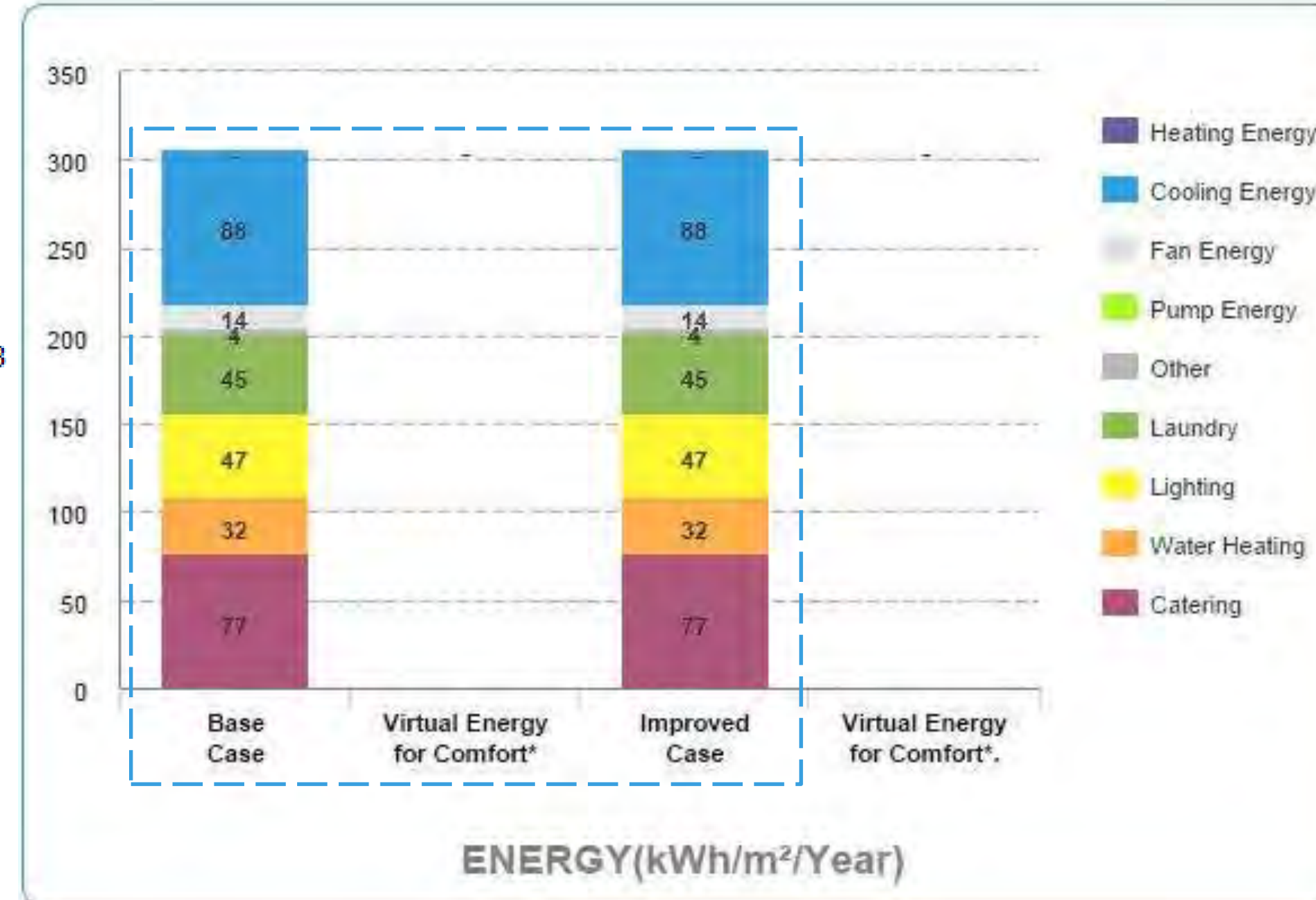
Energy Efficiency Measures

- Reduced Window to Wall Ratio - WWR of 40%
- External Shading Devices - Annual Average Shading Factor (AASF) of 0.58
- Insulation of Roof Surface - U Value of 0.45
- Insulation of External Walls - U Value of 0.45
- Low-E Coated Glass - U Value of 3 W/m² K and SHGC of 0.45

- Higher Thermal Performance Glass - U Value of 1.95 W/m² K and SHGC of 0.28

- Natural Ventilation - Corridors
- Natural Ventilation - Guest Rooms with Auto Controls
- Variable Refrigerant Volume (VRV) Cooling System - COP of 3.45
- Air Conditioning with Air Cooled Screw Chiller - COP of 3.2
- Air Conditioning with Water Cooled Chiller - COP of 5.39
- Ground Source Heat Pump - COP of 4.65
- Absorption Chiller Powered by Waste Heat for Space Heating- COP of 0.7
- Recovery of Waste Heat from the Generator for Space Heating
- Variable Speed Drives on the Fans of Cooling Towers
- Variable Speed Drives Pumps
- Sensible Heat Recovery from Exhaust Air - Efficiency of 60%
- High Efficiency Condensing Boiler for Space Heating - Efficiency of 90%
- High Efficiency Boiler for Water Heating - Efficiency of 90%
- Variable Speed Hoods with Automated Fan Controls

0.00%



Homes

Hotels

Retail

Offices

Hospitals

Base Case Utility Cost 102,432 \$/Month

Utility Costs Reduction 40,040 \$/Month

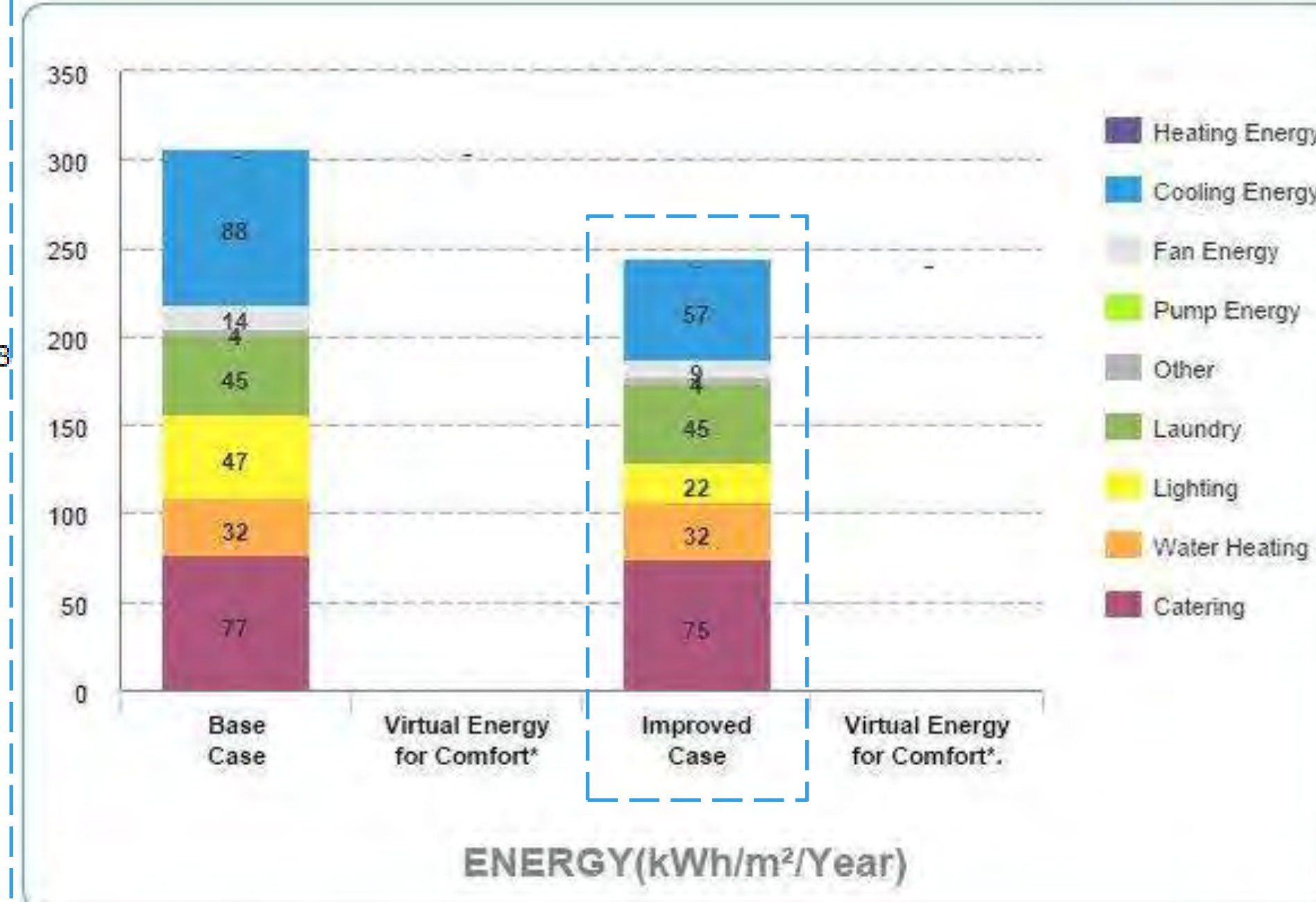
Incremental Cost 915,675 \$

Payback in Years 1.9 Yrs.

Energy Efficiency Measures

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39.3% Meets EDGE Standard



FOR A SMALL INVESTMENT, ACHIEVE EDGE
CERTIFICATION AND INCREASE THE SUSTAINABILITY
AND MARKETABILITY OF YOUR BUILDING.



Archetype Myanmar Projects:

Archetype Myanmar Projects:.....past



Archetype Myanmar Projects:.....past

Sanctum Inle Resort



















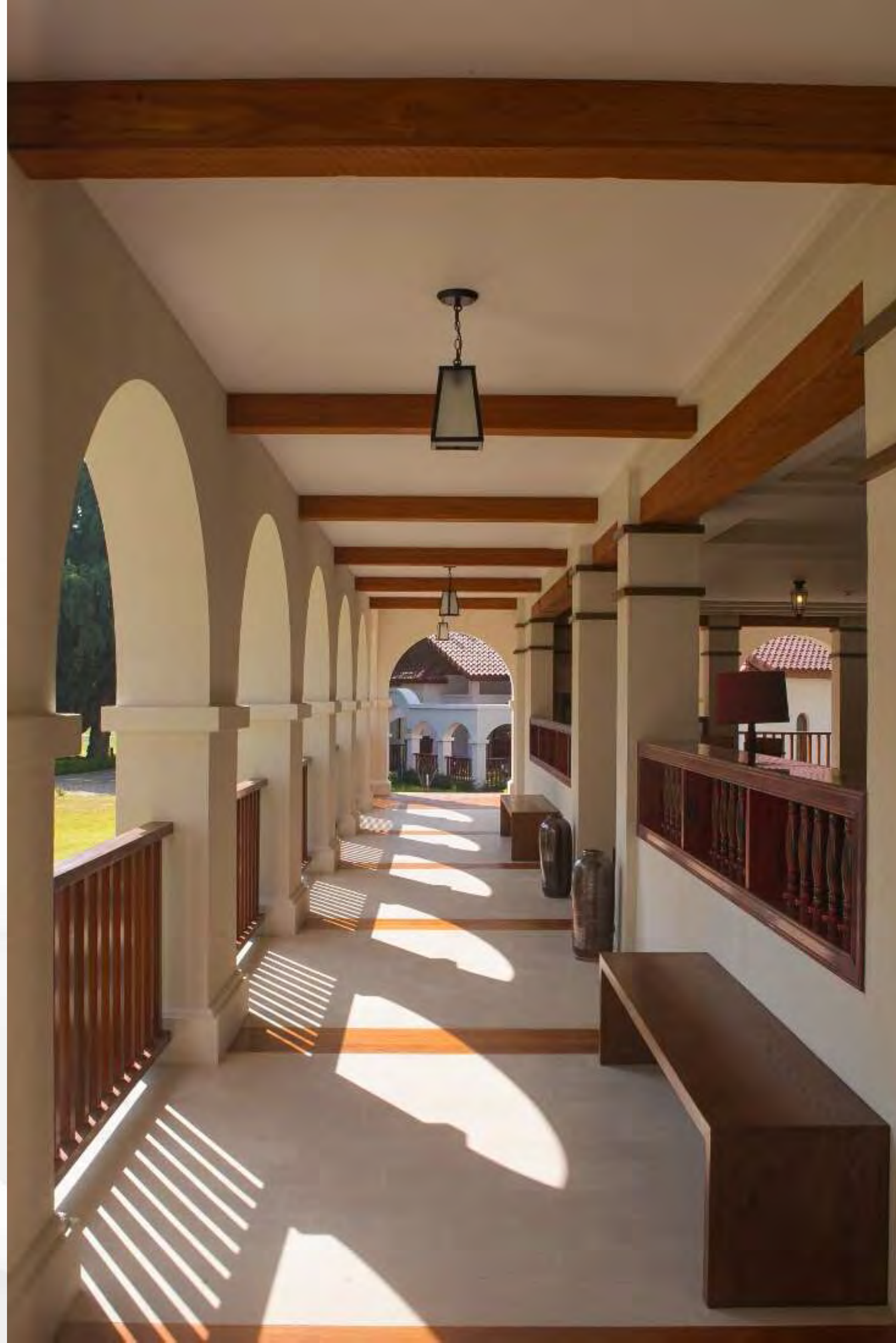














Archetype Myanmar Projects:.....past

Jotun Paint Factory























Archetype Myanmar Projects:

Archetype Myanmar Projects:.....present



Archetype Myanmar Projects:.....present

Excelsior Hotel









1-23-18 09:16

800,000 Safe Man hours



Archetype Myanmar Projects

Archetype Myanmar Projects:.....present

Archetype Myanmar Projects:.....present

Narnattaw Condominium

Archetype Myanmar Projects:.....present

Mandalay
Yedagon Taung Master plan









Archetype Myanmar Projects:.....present

Mandalay
Yedagon Taung Master plan
Showroom













Archetype Myanmar Projects:.....present

Mandalay
Yedagon Taung Master plan
3 Stars Hotel







Archetype Myanmar Projects:.....present

Mandalay
Yedagon Taung Master plan
Shop Houses





Archetype Myanmar Projects

Archetype Myanmar Projects:.....futur

KMT Towers

Archetype Myanmar Projects:.....futur

Mandalay

Yedagon Taung Master plan

.....others to come

Permitting and Codes

Permitting and Codes



Ministry of Construction



YCDC - Yangon City Development Committee

HIC - High-rise Building Inspection Committee



CQHP - CQHP Committee for Quality Control of High-Rise Building Construction projects



MFSD - Myanmar Fire Services Department



MIC - Myanmar Investment Commission



YHT - Yangon Heritage Trust



မြန်မာနိုင်ငံအင်ဂျင်နီယာကောင်စီ
Myanmar Engineering Council



MES - Myanmar Engineer Society



AMA - Association Myanmar Architects

Permitting and Codes

AUTHORITIES SUBMISSION SUMMARY

CATEGORY OF BUILDING	AUTHORITY SUBMISSION	DOCUMENT
3-1/2 STOREYD & BELOW(FOR PRIVATE RESIDENTIAL)	MIC*	ARCHI + BOQ
	YCDC(CONCEPT)	ARCHI
	YCDC(FINAL)	ARCHI + C&S
	YCDC(BCC)	LOG BOOK
FROM 4 STOREYED TO 8-1/2 STOREYED	MIC*	ARCHI + BOQ
	YCDC(CONCEPT)	ARCHI
	MFSD	ARCHI+ MEP
	YCDC(FINAL)	ARCHI + MEP+ C&S
	YCDC(BCC)	LOG BOOK + FIRE ARROVAL
FROM 9 STOREYED TO 12-1/2 STOREYED	MIC*	ARCHI + BOQ
	HIC(CONCEPTUAL)	ARCHI+ MEP
	MFSD	ARCHI+ MEP
	HIC(FINAL)	ARCHI+ MEP + C&S
	YCDC(CP APPROVAL)	HIC (FINAL)
	YCDC(BCC)	LOG BOOK + FIRE ARROVAL
13 STOREYED & ABOVE	MIC*	ARCHI + BOQ
	HIC(CONCEPTUAL)	ARCHI + MEP
	MFSD	ARCHI + MEP
	CQHP(FINAL)	ARCHI+ MEP+ C&S
	YCDC(CP APPROVAL)	CQHP (FINAL)
	YCDC(BCC)	LOG BOOK + FIRE ARROVAL

MIC -MYANMAR INVESTMENT COMMISSION
 YCDC - YANGON CITY DEVELOPMENT COMMITTEE
 MFSD- MYANMAR FIRE SERVICES DEPARTMENT
 HIC - HIGH-RISE INSPECTION COMMITTEE
 CQHP- COMMITTEE AND QUALITY CONTROL OF HIGH-RISE BUILDING CONSTRUCTION PROJECT
 CP - CONSTRUCTION PERMIT
 BCC - BUILDING COMPLETION CERTIFICATE

Permitting and Codes

Yangon Excelsior Hotel

Conservation Management plan



View of the entrance, lift and staircase



June 2017

- 1 Background
 - 1.1 Introduction
 - 1.2 Scope and Limitations
- 2 History
 - 2.1 Historical Development
- 3 Description
 - 3.1 Location and Surroundings
 - 3.2 The Building
 - 3.3 Physical Condition
- 4 Significance
 - 4.1 Statement of Significance
- 5 Adaptive Reuse Proposal
 - 5.1 Conservation Objectives
 - 5.2 The Yangon Excelsior Hotel
 - 5.3 The Yangon Excelsior Hotel
 - 5.4 Construction phase



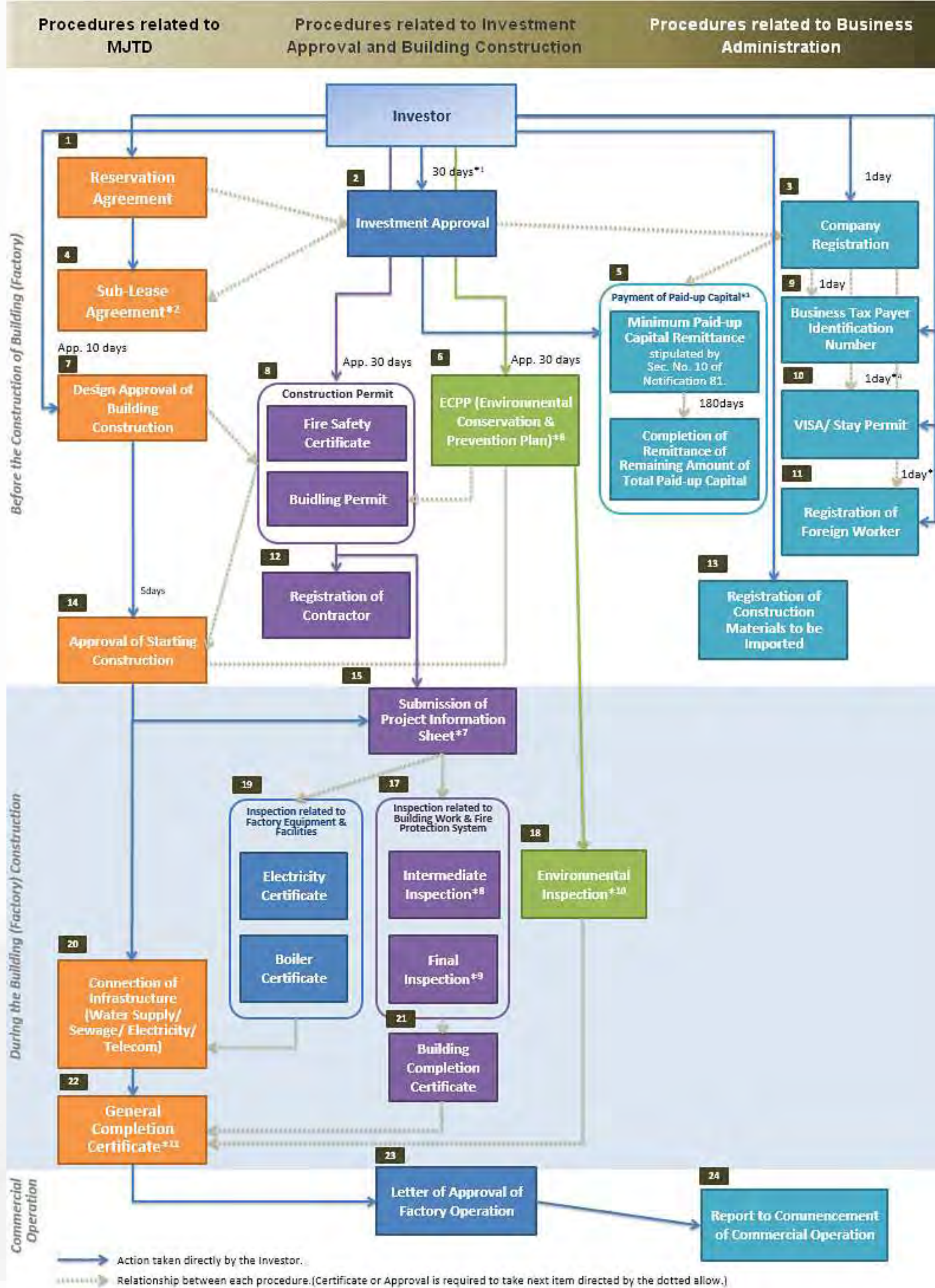
Facade corner tower



Structural Column existing conditions

Permitting and Codes

7 THILAWA SPECIAL ECONOMIC ZONE



THANK YOU

Q&A.....?

www.archetype-group.com

Shaping
Tomorrow

The logo for Archetype Group, featuring a stylized white line drawing of a person's head and shoulders in profile, facing right. The line is thick and continuous, forming a simple, abstract shape.