



Karet Green Office
Jakarta

Dewi Luthfi A | 18/436600/TK/48111



Office Building Jakarta

Coordinat location = $6^{\circ}12'27.90''S$ $106^{\circ}49'00.8''E$
Plot size is 60 m x 60 m (3600 m²)



DESIGN REQUIREMENTS

1. Designed to the highest standards of green building to achieve **Zero Net Carbon**
2. Lowest possible water use and embodied energy of materials
3. A high level of daylight and design for natural ventilation
4. An iconic aesthetic which brings green, affordable, and local design together

SPACE DESCRIPTION

- Total internal floor area of 4500 m²
- Open plan offices and meeting rooms
- Occupancy of 250 employees
- Parking space for 100 cars and 100 bikes



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Architectural Design Strategies

Conceptual

- Rental Office with green design
- Modern Facade
- Central Jakarta Office District
- 8-storey with net rental area 448 m²/floor
- Parking available for 102 cars and 100 bikes
- Open layout office
- Module 16 x 32 m²

Materials

- Floor Slabs : Composite In-Situ Concrete and Steel Deck
- External Walls : Aluminium-clad Sandwich Panel
- Internal Walls : Plasterboard on Metal Studs
- Flooring : Finished Concrete Floor
- Window frame : Aluminium

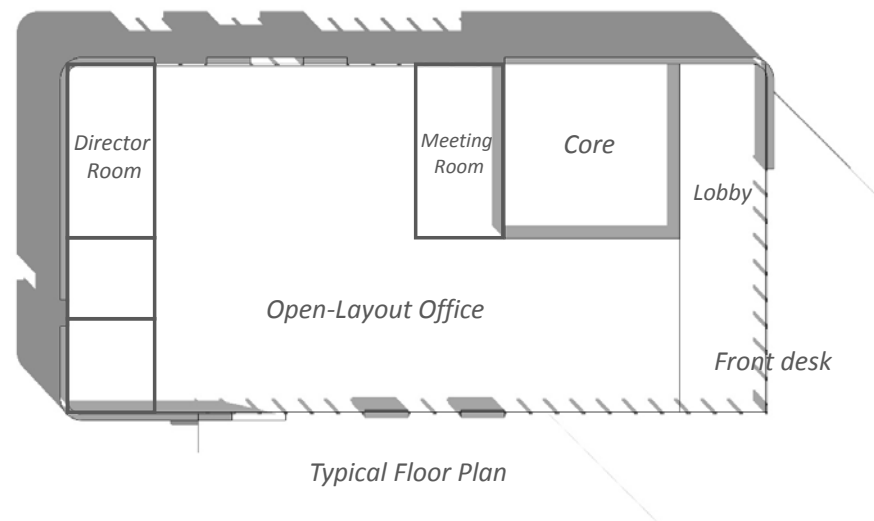
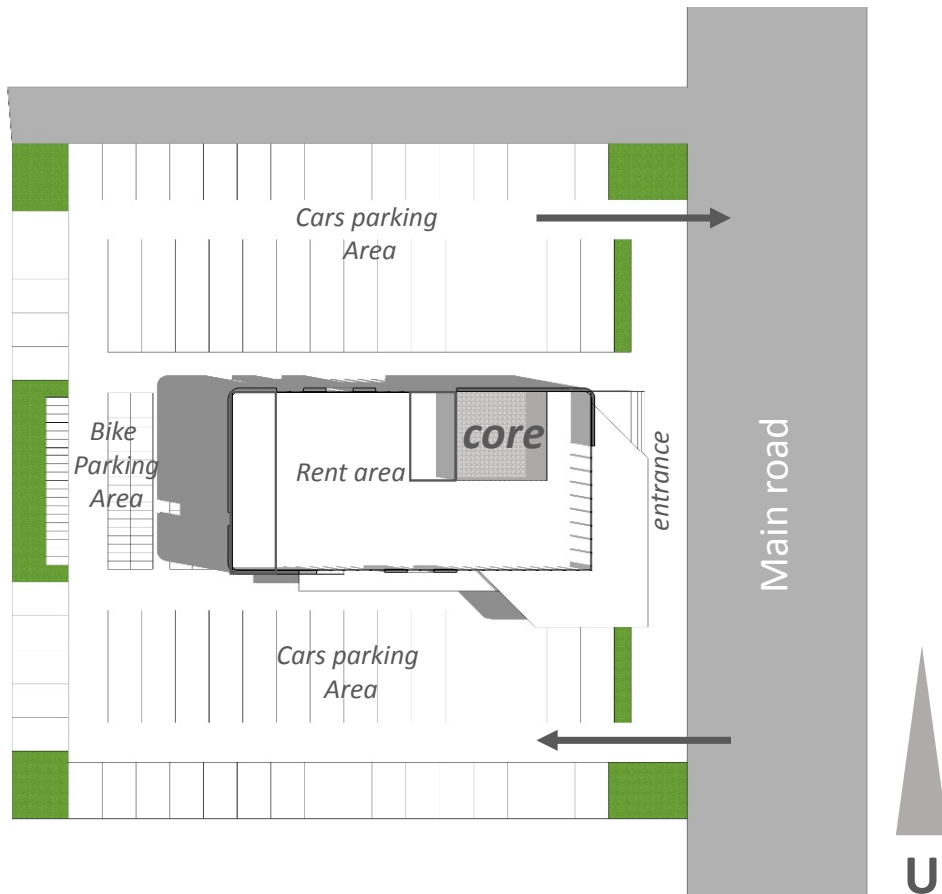




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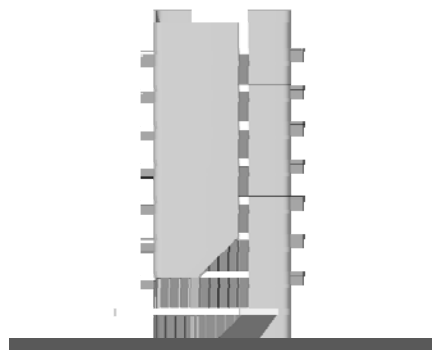
- Building shape : 16 x 32 m (512 m²/floor)
- Main Orientation : South
- Floor Depth : 16 m
- Floor Above Grade : 8
- Floor to Floor Height : 4.5
- NET Rental Area : 448 m²/floor



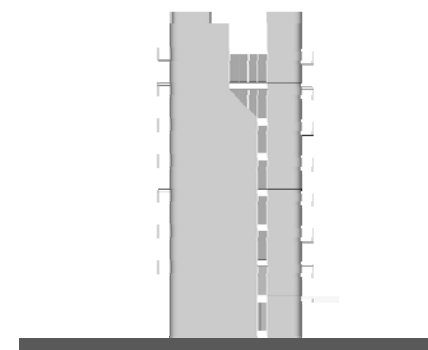


Karet Green Office Jakarta

East



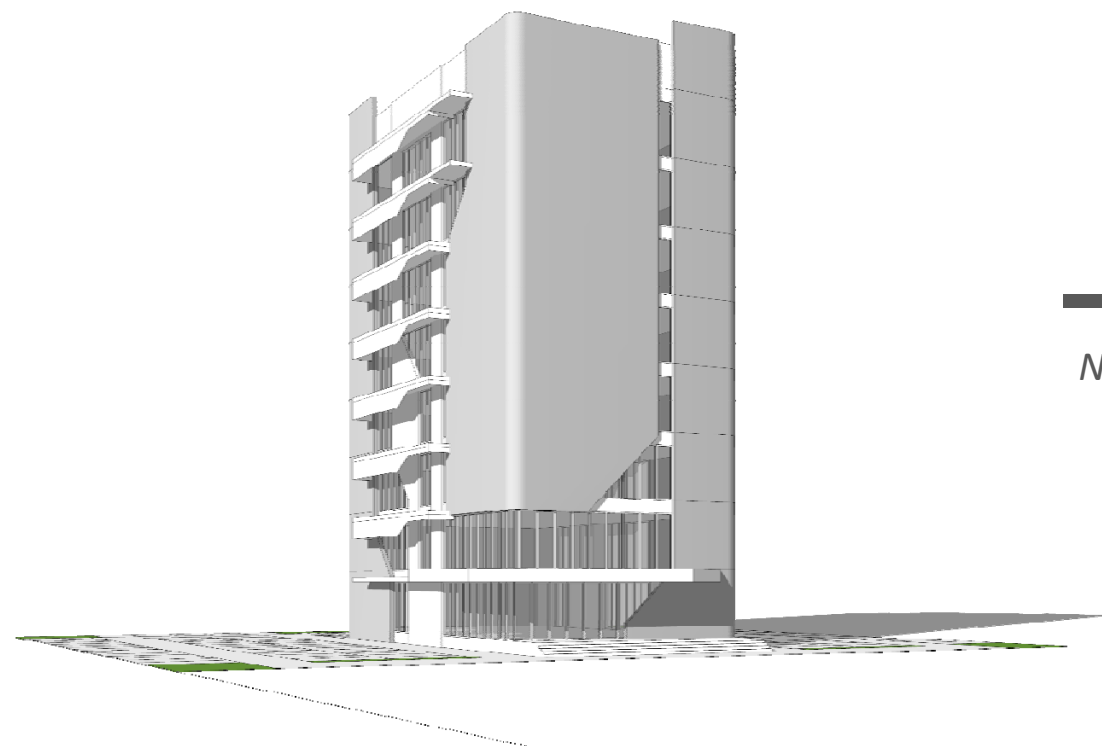
West

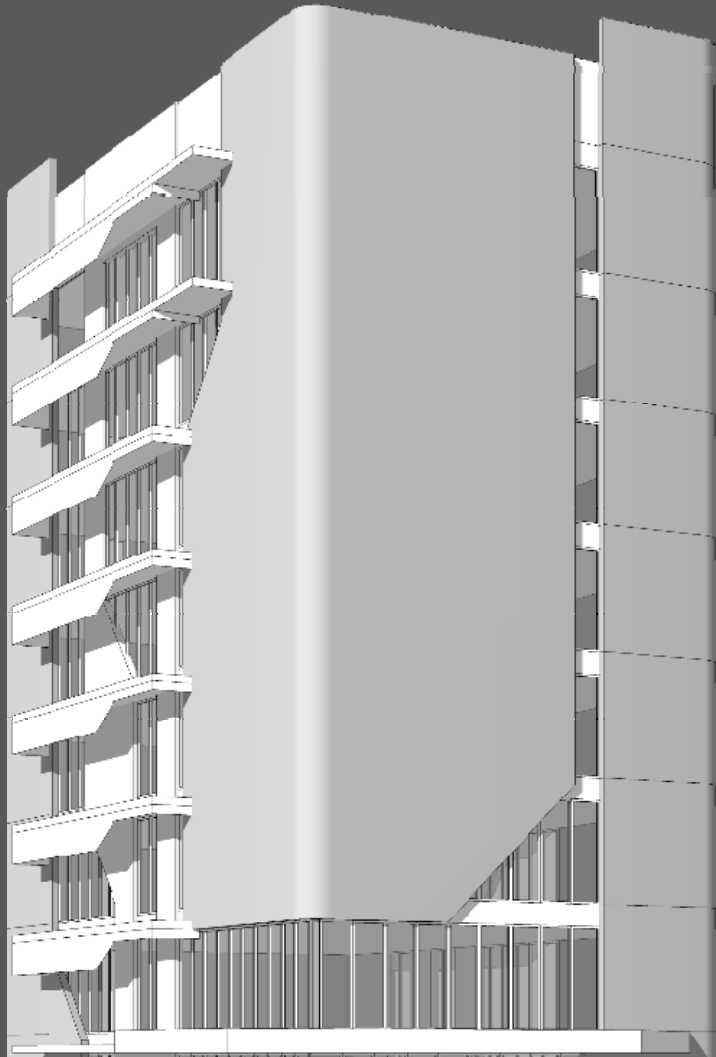


North



South





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Green Design : Technical Strategies

Energy

- Reduced Window to Wall Ratio
- External Shading Devices
- Low-E Coated Glass
- Air Conditioning with Water Cooled Chiller
- Energy-Saving Light Bulbs and Lighting Controls

Water

- Low-flow Faucets for Bathroom
- Dual Flush for Water Closets
- Water-Efficient Urinals
- Water-Efficient Faucets for Kitchen Sinks
- Rainwater Harvesting System
- Black Water Treatment and Recycling System

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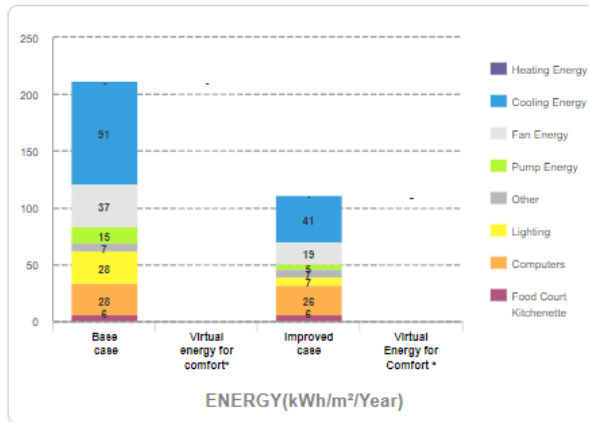
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Base Case

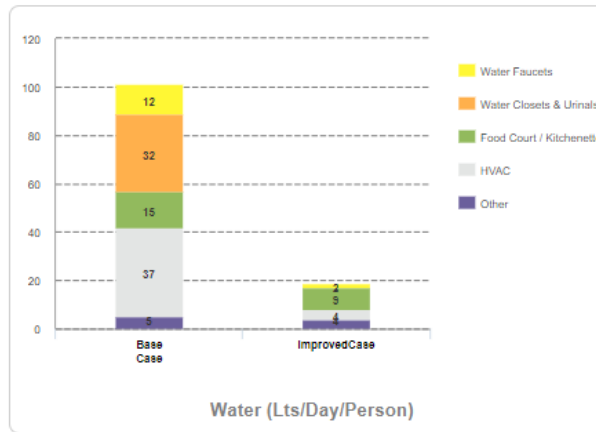
Final Energy Use : 78,191.08 kWh/Month
Final Water Use : 1,352.27 m³/Month
Operational CO₂ Savings : 13.84 tCO₂/Year
Incremental Cost : -2.344,79 (Thousand Rp)
Energy Saving : 1,82%
Water Saving : 0,99%
Material Saving : 3,24%

Project Design Case

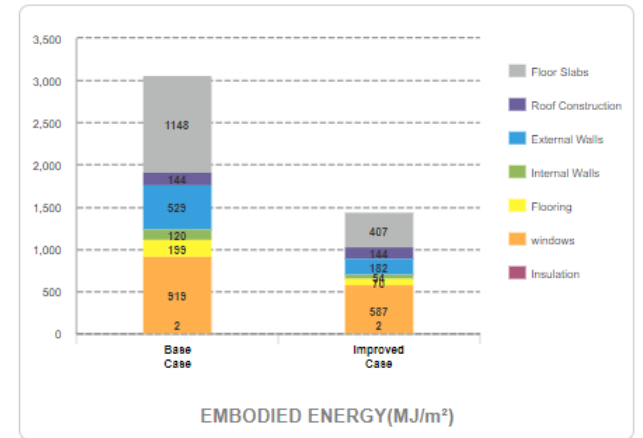
48.22% Meets EDGE Energy Standard



81.12% Meets EDGE Water Standard



52.77% Meets EDGE Material Standard



Project Design Case

Final Energy Use	: 41,236.28 kWh/Month
Final Water Use	: 257.85 m3/Month
Operational CO ₂ Savings	: 367.73 tCO ₂ /Year
Embodied Energy Savings	: 1,615.18 MJ/m ²
Incremental Cost	: 392,953.60 (Thousand Rp)
Payback in Years	: 0.47 years

48%
Energy

81%
Water

52%
Materials

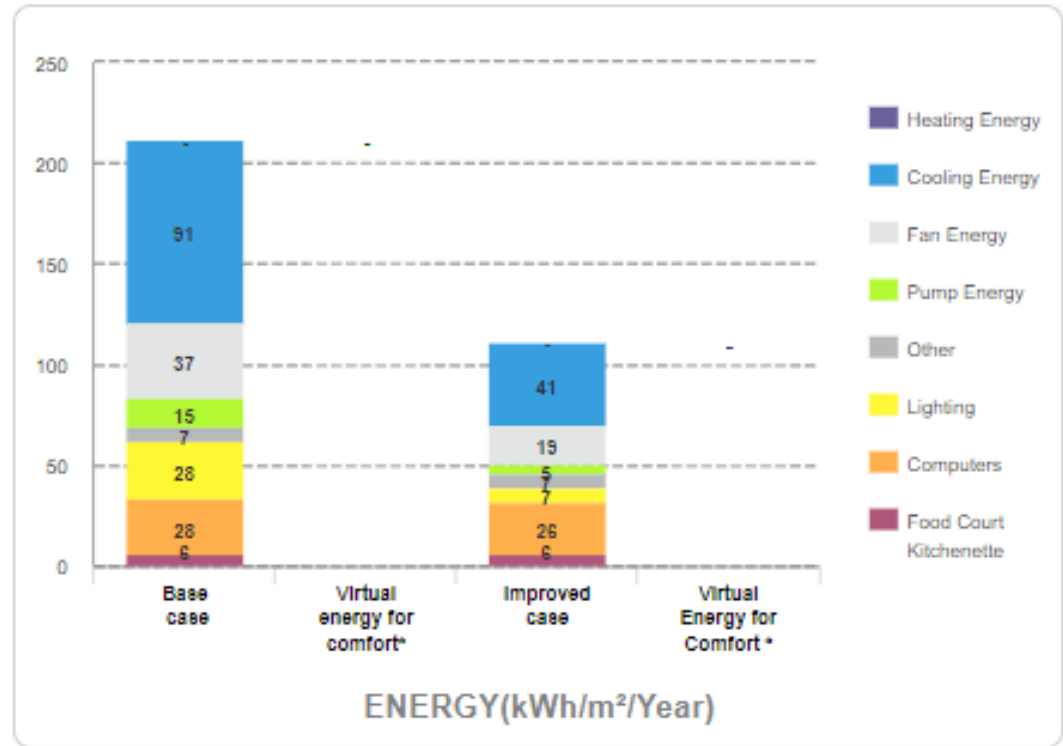
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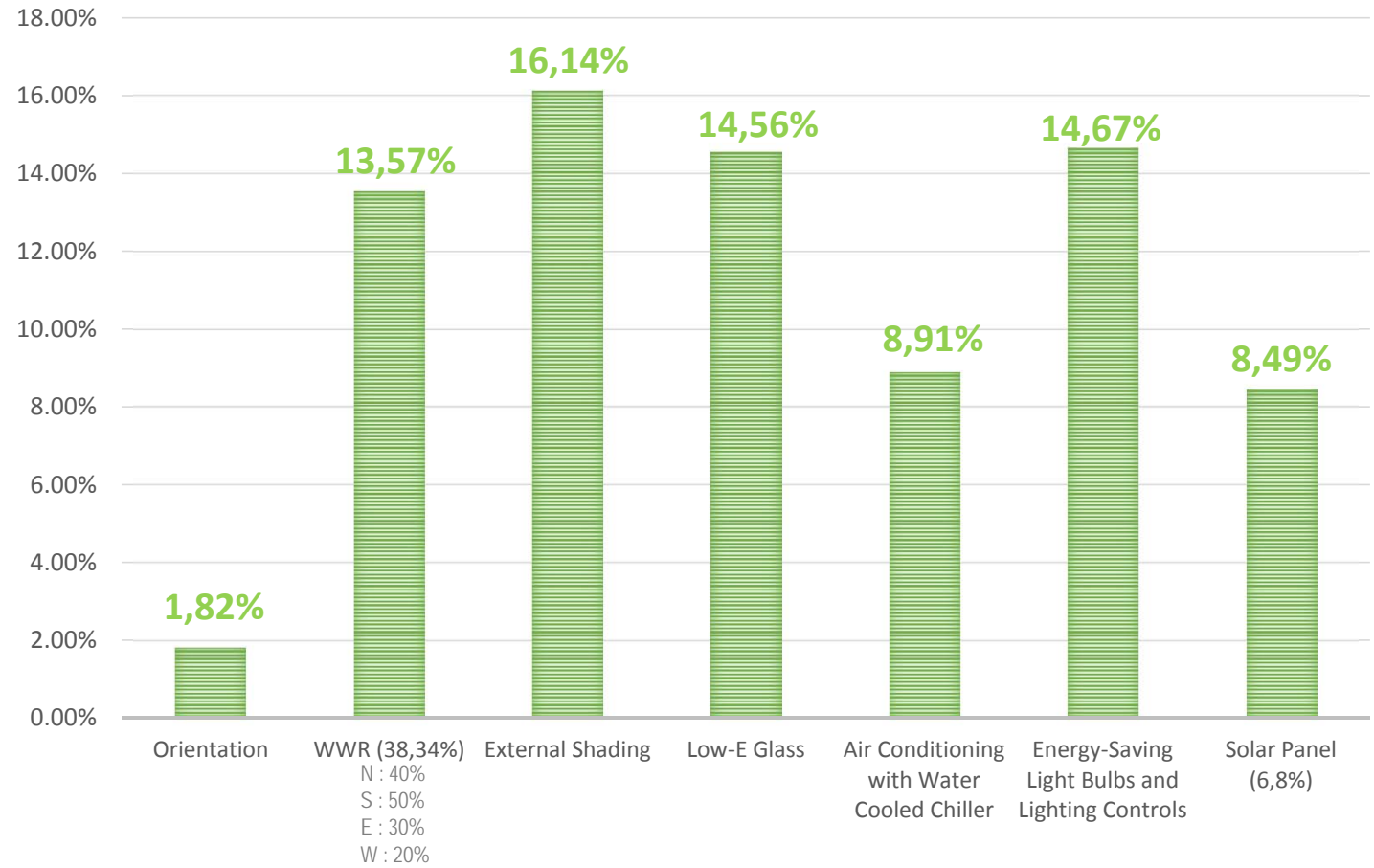


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Energy



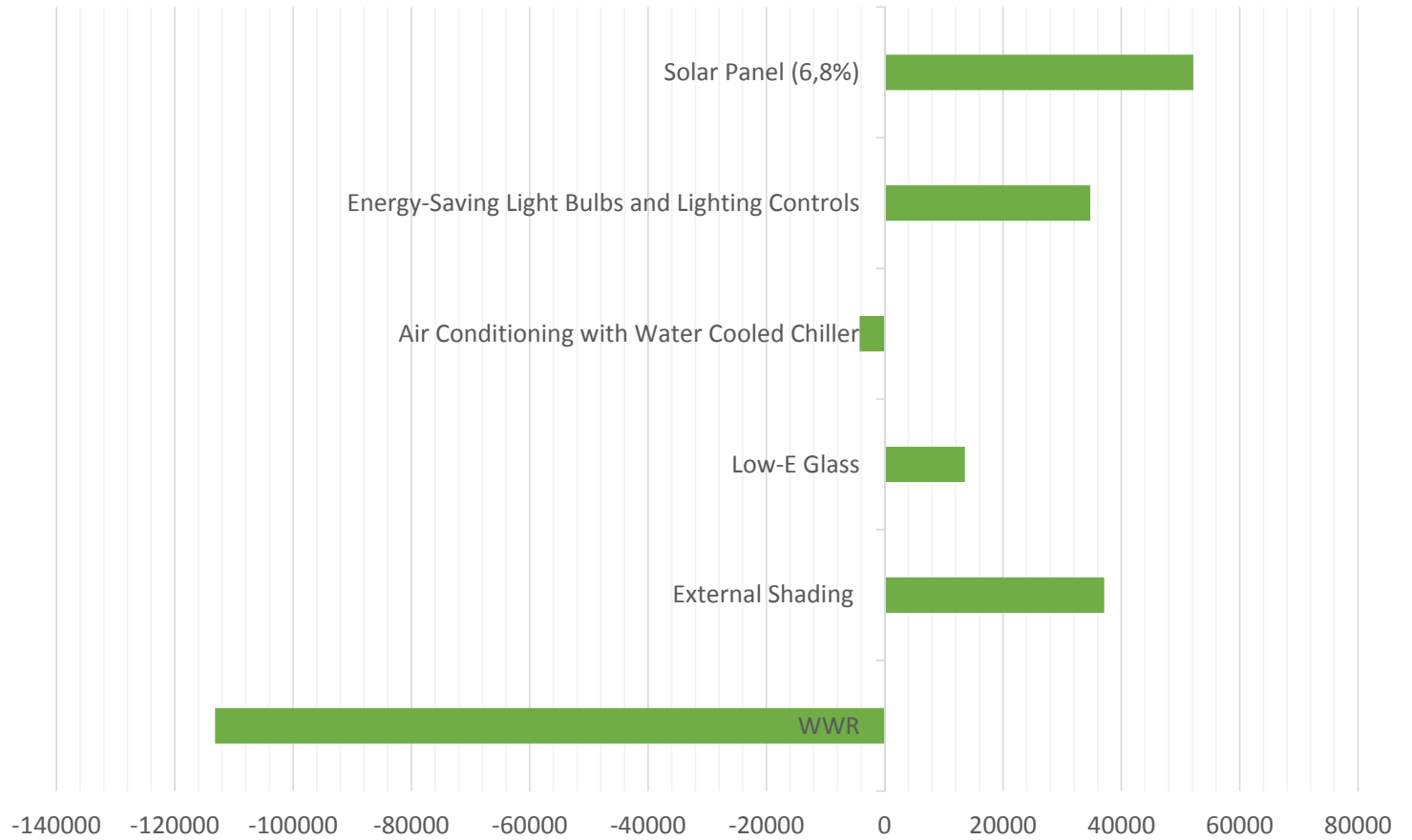
ENERGY SAVINGS (%)



48%
Energy



Incremental Cost (Thousand Rp)



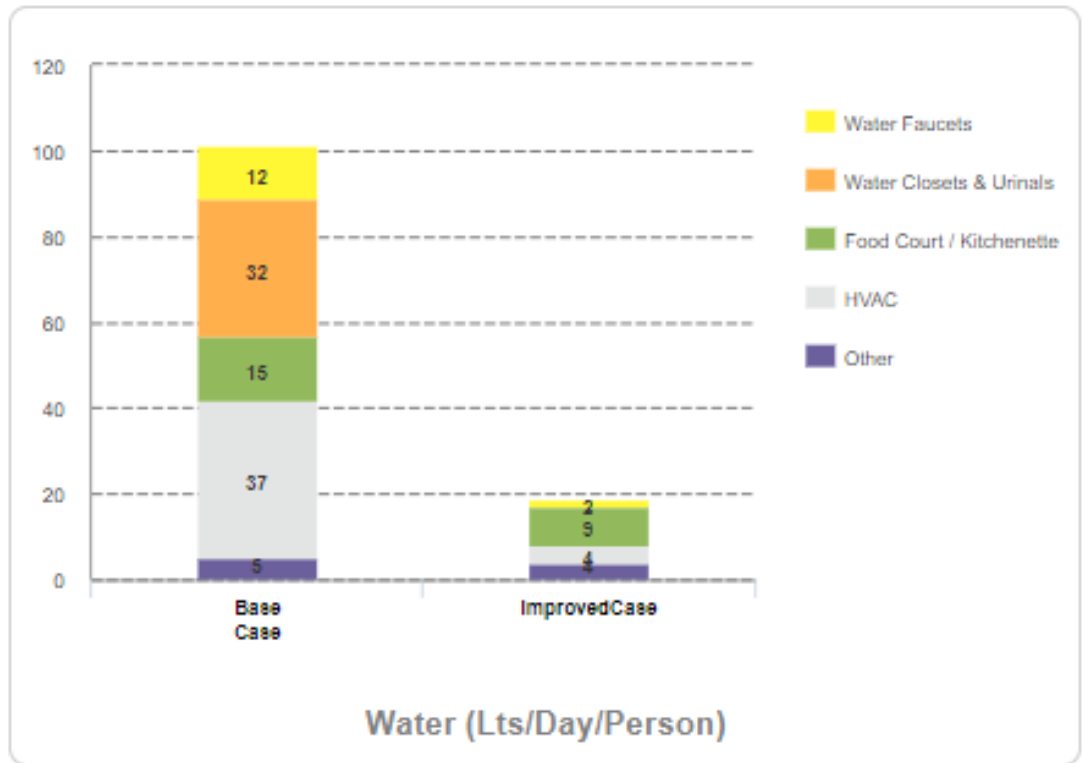
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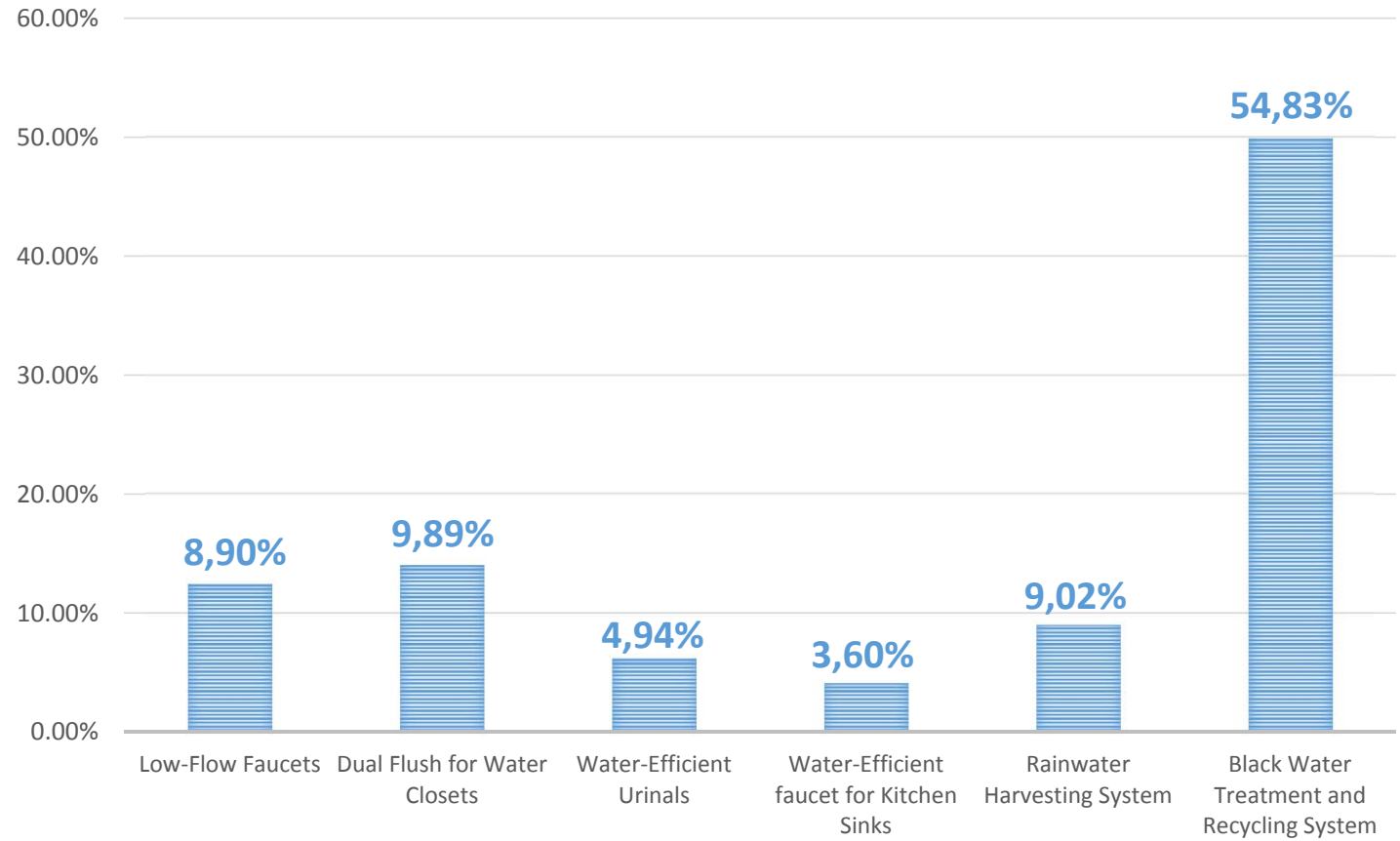


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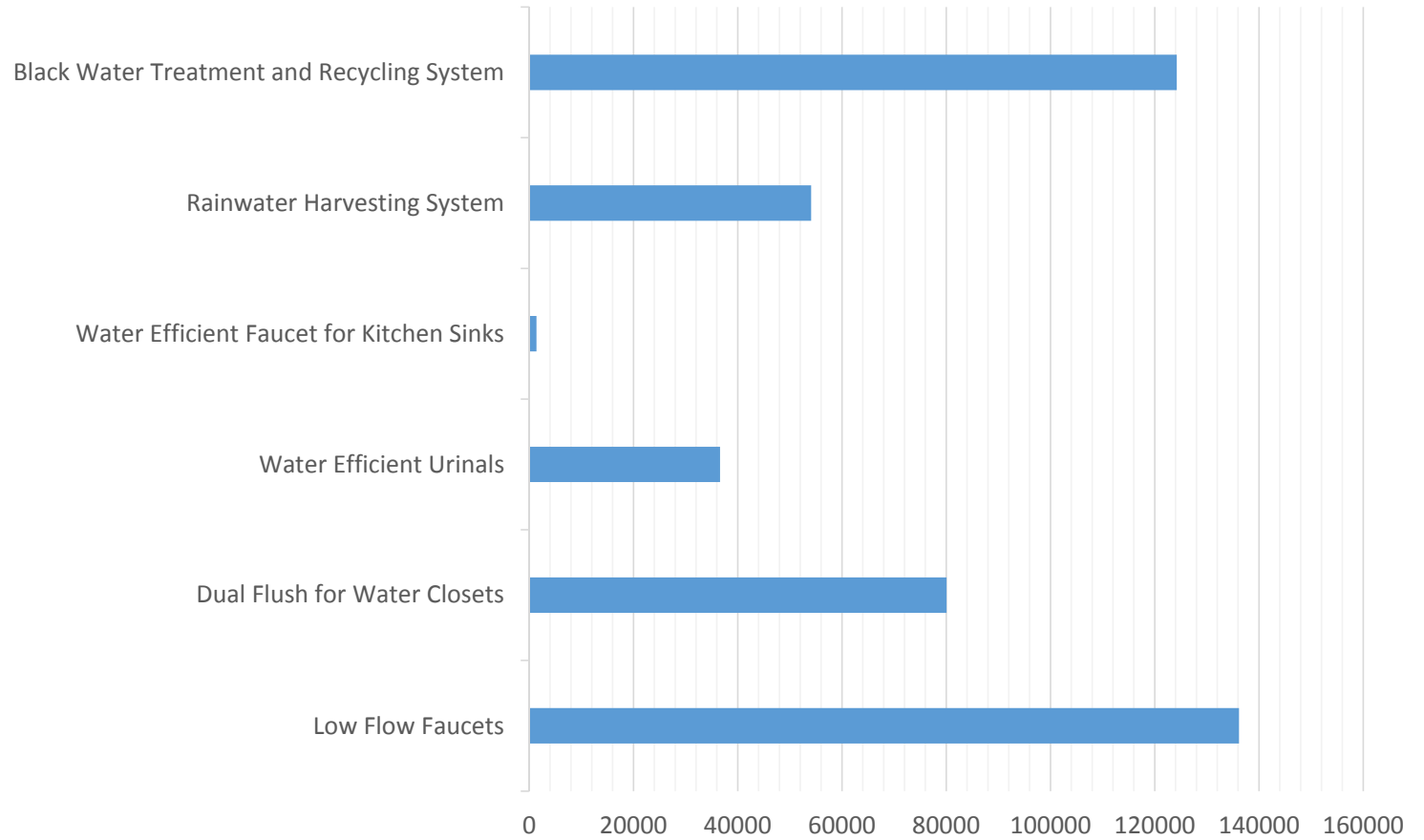
WATER SAVINGS (%)



81%

Water

Incremental Cost (Thousand Rp)



Project Design Case

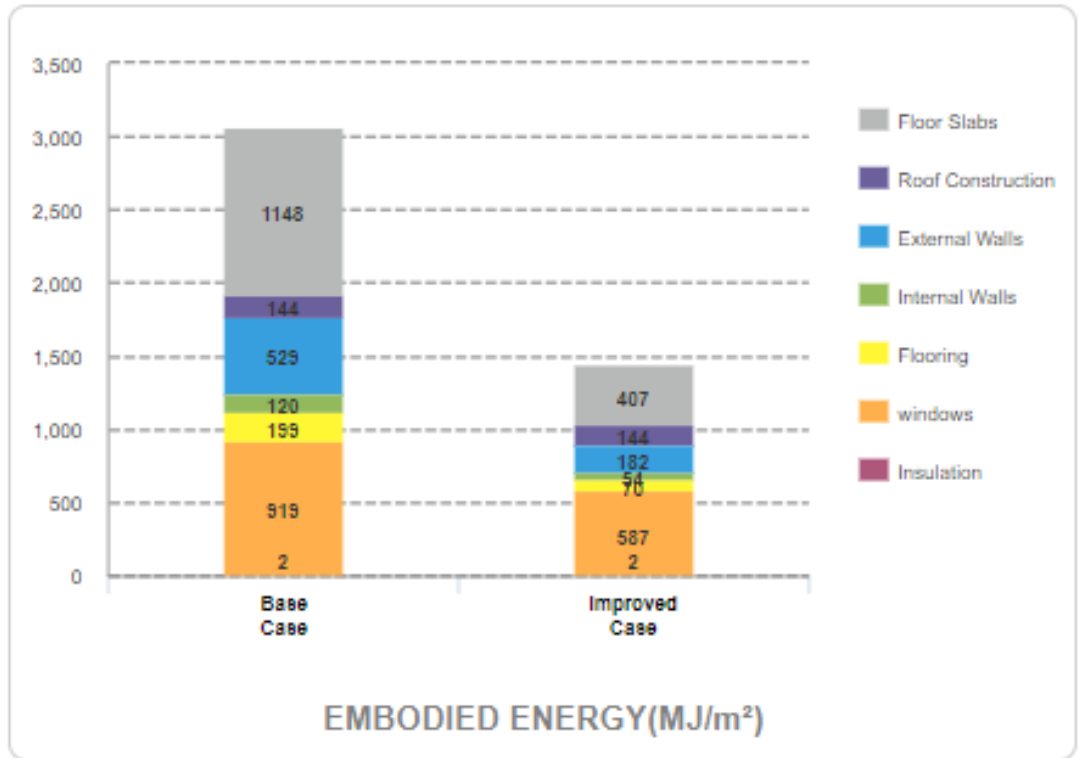
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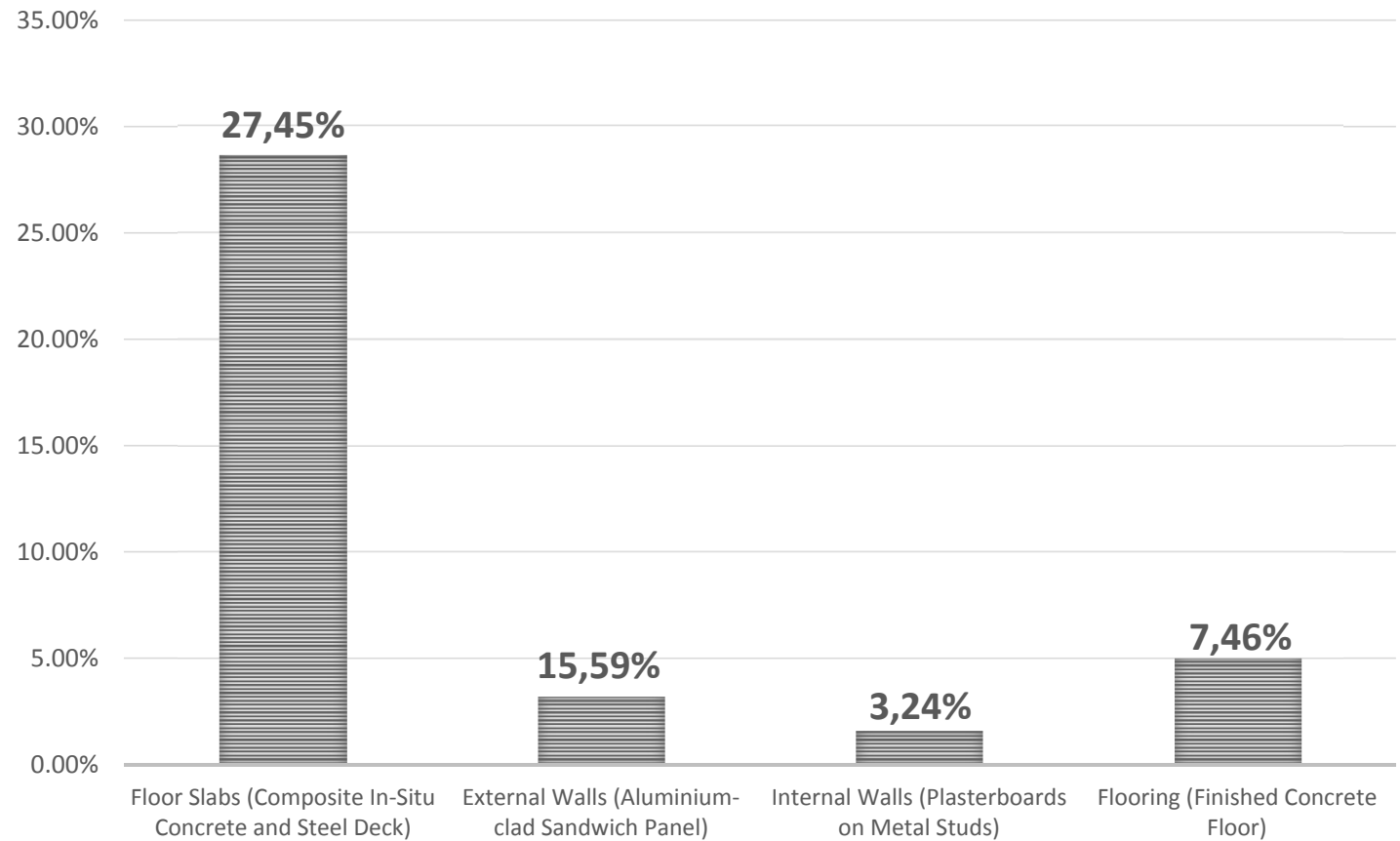
52.77% Meets EDGE Material Standard



52%
Materials



MATERIALS SAVING (%)





0,47

Payback in year

Rp. 392.953.600

Incremental Cost

Rp. 87.323/m²

+ Rp. 39.120.704

Rental Office Cost (448m²/Floors)

with payback in year = 0.47

Rp. 6.390.050/unit

Utility Cost per month

48%

Energy Savings

81%

Water Savings

52%

Material Savings