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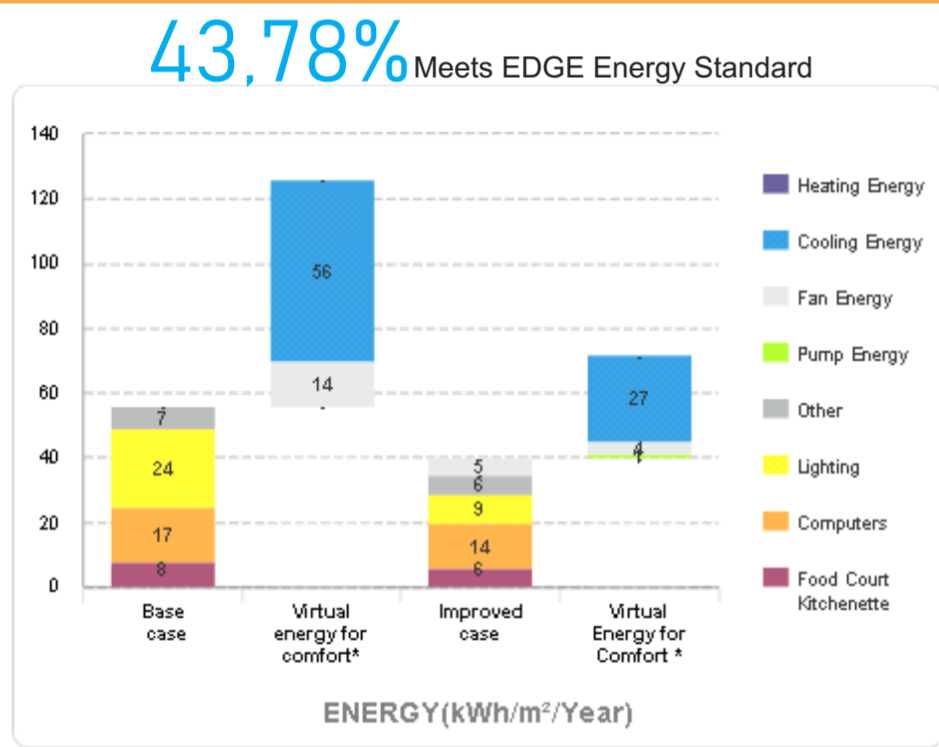
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Office as a Language of Space

Rhythm/Grammar/Link

Topic : ConceptBased Framework
Approach Biophilic Design

Goals implementation of Green Design



Project Narrative

Designing Rented Office with concentration on the user as the top priority and type of office that is applied namely flexible (private business) and non-flexible (government-owned) office. The issue raised is the lack of rights of staff that can be met and an increase in stress level ratios or depression that afflicts urban communities and productive workers. work comfort is the focus of the goals of this office design.

Designing increase energy savings, embodied energy and water and maintenance operational also minimalized of energy cooling consumption which they are was the biggest role of energy consumption in operational of building. With the arrangement of optimization main orientation the building and then comparized with Based case. he Based case raise up the energy consumption into **-0,12%** and the result of calculating energy consumption **43,78%**.

RESULTS	Final Energy Use	Operational Co2 Saving	Incremental Cost
	18.114,38 kWh/Month	55,64 tCO2/Year	47.982,56 Thousand
	Final Water Use	Base Case Utility	Payback in Years
	1.056,68 m3/Month	45.519,61 tCO2/Year	0,38 Years.

Applicated Concepts

Office as A Language as a Space dipilih sebagai konsep dengan bertujuan untuk dapat memberikan makna bagi staf dalam menjalani aktivitas kerja dengan nyaman. Pemakaian ruang kerja sebagai sebuah Rhythm, Link/ Grammar diharapkan dapat memberikan ikatan bagi Para Staff agar lebih kerasan atau betah dan merasa bahwa ruang kerja atau kantor adalah rumah kedua yang nyaman dan memberikan efek positif dalam kehidupannya.

Limitation of the Projects :

- Profitable, Buildtable,
- Capacity of 300 employees
- Efficiency Energy and Low Impact to the Environment
- Green design

03 Natural Ventilation

+13,71% There are some space in this Rented Office which applicated Open Spcae area for Working, and that area used natural ventilation as an Cooling thermal and Comfort the Air. in the reason to make a comfort co -working spcae for the saff and make a new experience of work with nature, this effort can be enforce the low energy efficiency as well.

05 AC with Air Cooled

+23,66% The Site factor is an insentive reason for used Air Conditioner with Air Cooled, caused it too dificult to have an fresh and Clean Air and wind for coming inside the Building.

06 Energy Saving Light Blubs - Internal Spaces

+34,87% Used an Blubs for the Lamp is one of the other factor which can reduce energy operational and cost mantanance. For low efficiency energy, choosing an energy saving ligh Blubs needs to be get more attentions of its.

07 Sensor in Bathroom and Closet Cabins

+35,90% Automatic sensors are used to reduce energy for electricity and water used. To enforce energy efficiently the application of sensors in the bathroom, both from the lights and tap water, allows a reduction in energy consumption both from water and electricity

01 Low E-Coated Glass

+8,15% an effort to reduce reflections of sunlight that are bad like UV with the use of e low glass and this material having an impact to reducing thermal from the outside.

02 WWR (Window to Wall Ratio)

+11,33% an effort which applicated in design to reducing the wide of window to Wall ratio, and fot this design the ratio is up to 20% till 40%. The benefit of the applicated of Calculation Window to Wall Ratio is reducing the cooling energy which used to thermal cooling at office space.

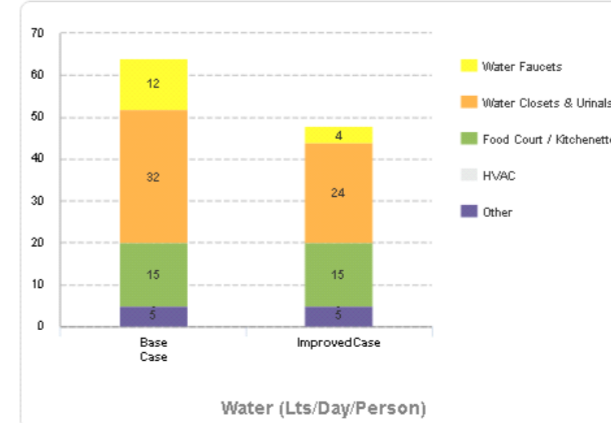
04 Ceiling Fans

+17,19% Ceilling fans are used to reduce the use of air conditioners which are more expensive than maintenance and operating costs, the use of ceiling fans is applied to rooms that have more thermal cooling requirements

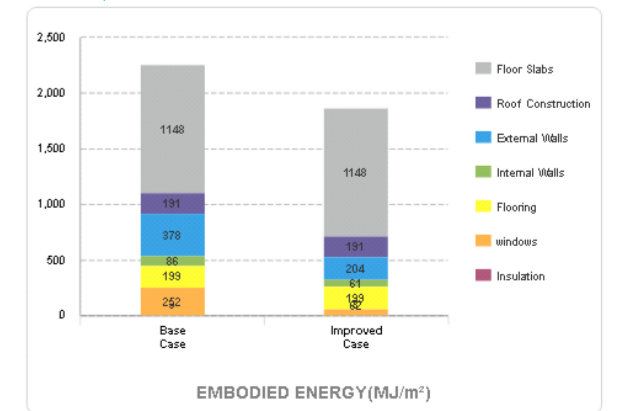
08 Solar Photovoltaic

+43,78% Renewable Energy Source among all the benefits of solar panels, the most important thing is that solar energy is a truly renewable energy source, Reduces Electricity Bills, Diverse Applications, Low Maintenance Costs, Technology Development, Cost, Weather Dependent.

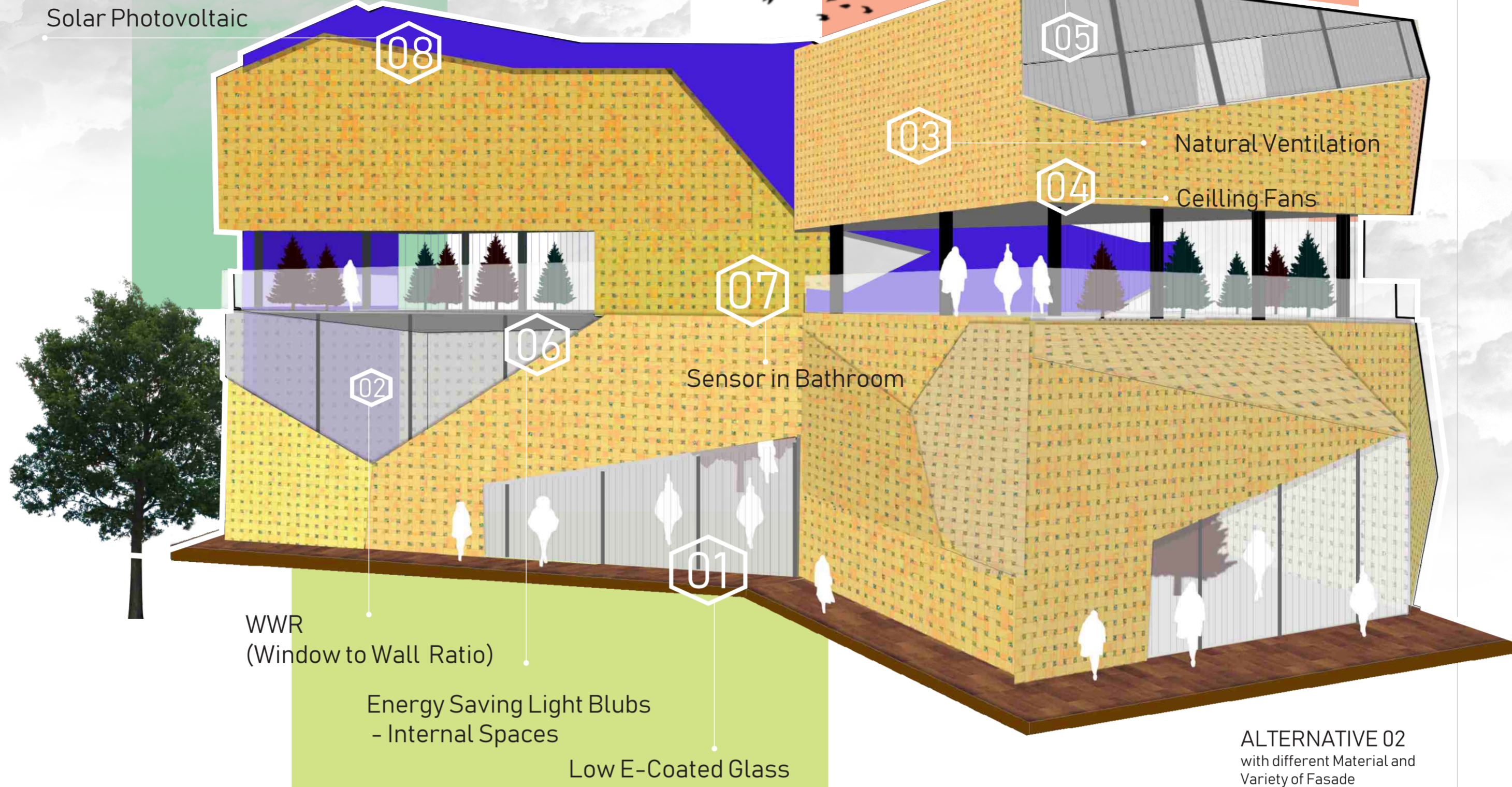
24,52% EDGE Water Standard



51,22% Embodied Energy Savings



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ALTERNATIVE 02
with different Material and Variety of Fasade

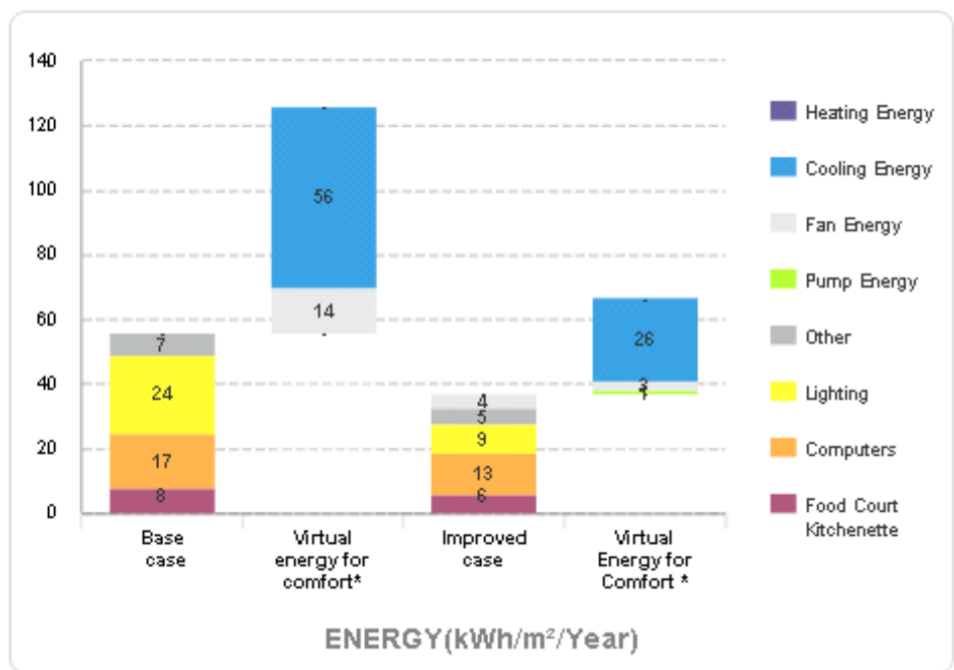
RESULTS

Final Energy Use **56,07.61** kWh/Month
Final Water Use **807.51** m3/Month

Operational Co2 Saving **3.43** tCO2/Year
Base Case Utility **1,017.25** tCO2/Year

Based Case Utility Test **91,499.61** Thousand
Utility Cost **2,638.62** Thousand
Reduction
Incremental Cost **184,716.48** Thousand
Payback in Years **5.83** Years.

46.49% EDGE Energy Standard



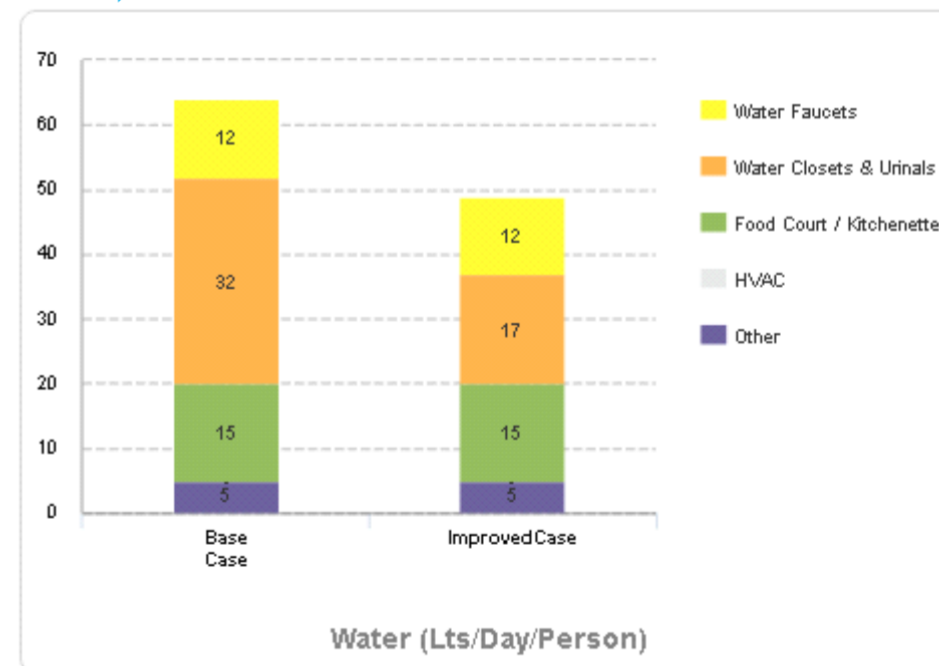
To enforce the efficiency energy in ways Designing Rented Office there are point to arrangement of Energy Consumption

- WWR (Window to Wall Ratio) 20-50%
- Natural Ventilation
- Low E-Glass
- Solar Photovoltaic
- Ceiling Fans
- AC with Air Cooled
- Sensor in Bathroom and Cabins
- Energy Saving Light Blubs - Internal Spaces

To enforce the efficiency energy in ways Designing Rented Office there are point to arrangement of Water Consumption

- Grey water Recycle
- Single Flush water Closet in Bathroom
- Water Efficiency Urinal in All other Bathroom

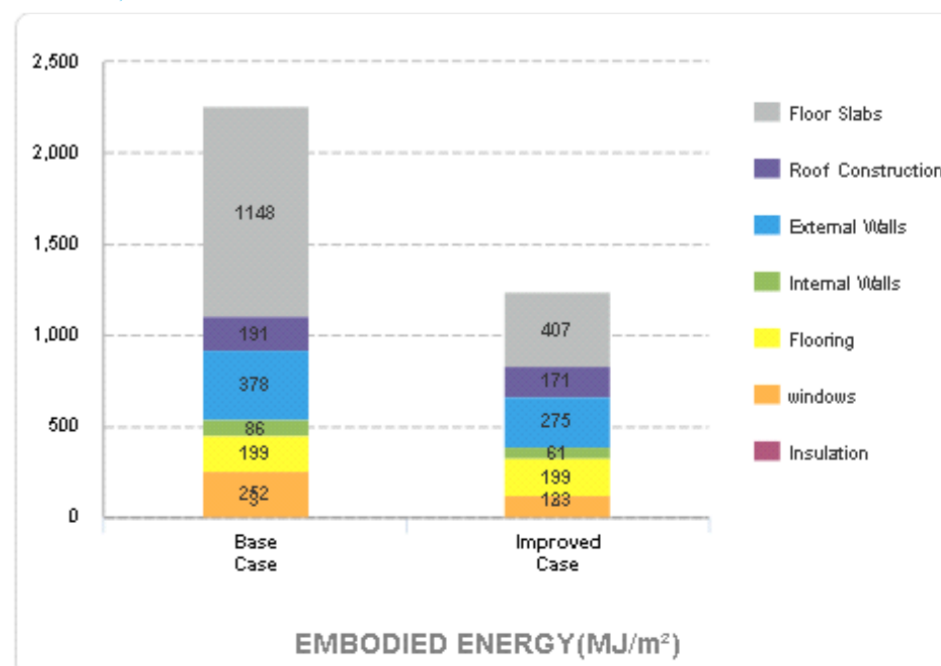
23.58% EDGE Water Standard



To enforce the efficiency energy in ways Designing Rented Office there are point to arrangement of Material Consumption or Production

- Floor Slab - Composite In Situ Concrete and Steel Decking
- Roof Construction - Thin Precast Concrete Deck Composite
- External Walls - Exposed Brick Wall with Internal Plaster
- Internal Walls - Precast Concrete Panels
- Flooring - Ceramic Tile
- Window Frame - Aluminium Clad Timber, Aluminium

45.07% EDGE Material Standard



Conclusion

Each Alternative have an variative Result of The Energy Consumption, Water Efficiency and Embodied Material production. Between the each Alternative there are little bit different of The Result.

Alternative 01 **43.78%** EDGE Energy Standard
Alternative 02 **46.49%** EDGE Energy Standard

24.52% EDGE Water Standard
23.58% EDGE Water Standard

51.22% EDGE Material Standard
45.07% EDGE Material Standard