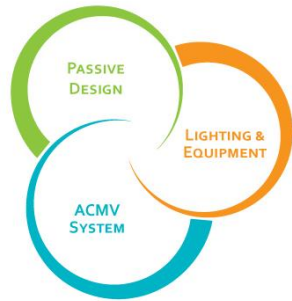


Integrated Design Approach



The **5 key steps** we employ towards an energy efficient building

- Reduce – Optimized Orientation, Good thermal envelope, Improved Shading
- Make Passive – Natural Ventilation, Daylighting
- Make Efficient – Electric Lighting, Air Conditioning System (Air Distribution & Chiller Plant) Plug Loads, Building Management System, Innovative Cooling Solutions
- Generate – Solar PV
- Proper commissioning & fine tuning



Case Study – LEO Building (KeTTHA)



Key Data

Gross Floor Area: 20,000sqm

Year of Completion: 2004

Building Energy Intensity: 114kWh/m²*year

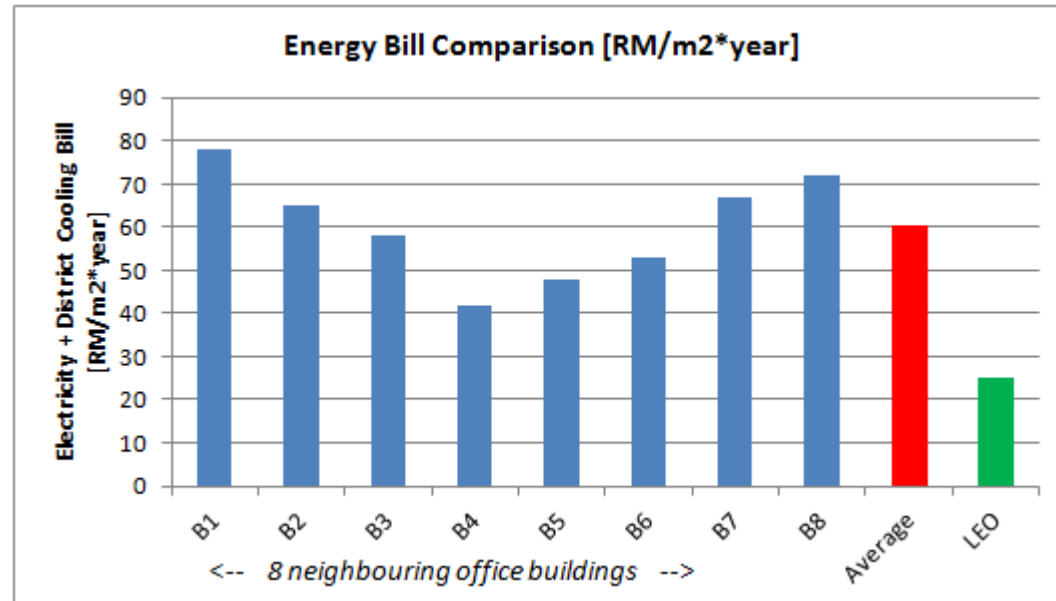
Additional EE Cost: 5%

Payback Period: 5years

IRR: 23% (based on 10year Lease Term)

Two tenders

- without energy efficient features
- with energy efficient features



Case Study – ST Diamond Building



Key Data

Gross Floor Area: 14,000sqm

Year of Completion: 2011

Building Energy Intensity: 69kWh/m²*year

Total Construction Cost: RM60mil

Additional EE Cost: 3.2%

Payback Period: < 3years

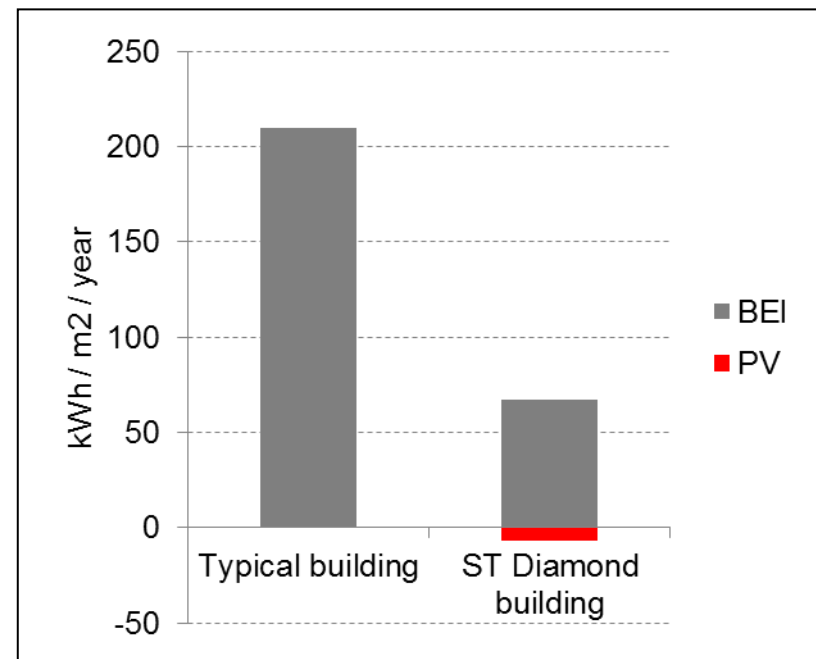
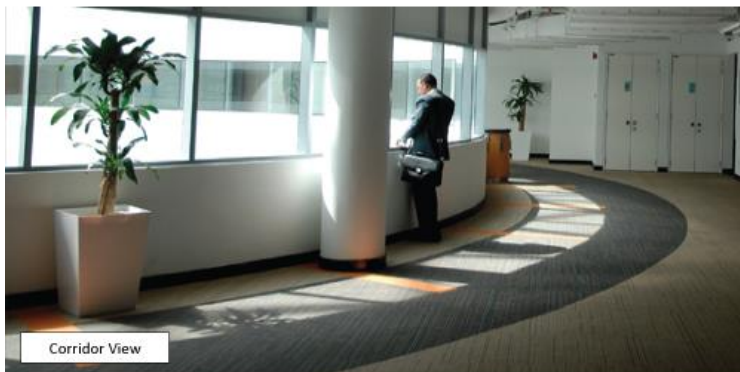
IRR: 34% (based on 7year Lease Term)



GBI
Platinum



Green Mark
Platinum



Case Study – Sarawak Energy Berhad New HQ



Key Data

Gross Floor Area: 40,000sqm

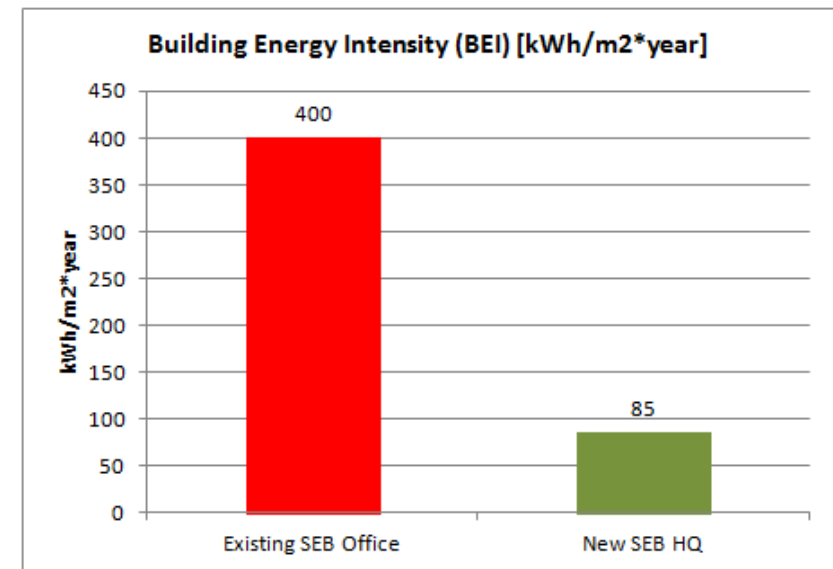
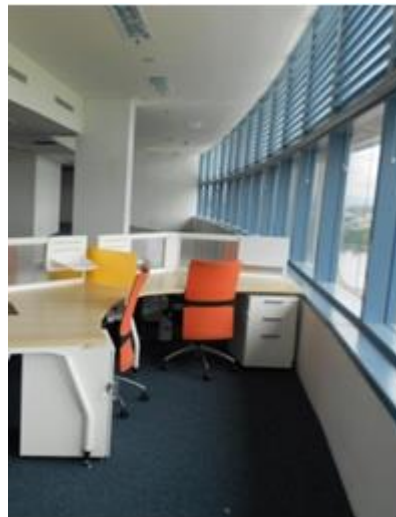
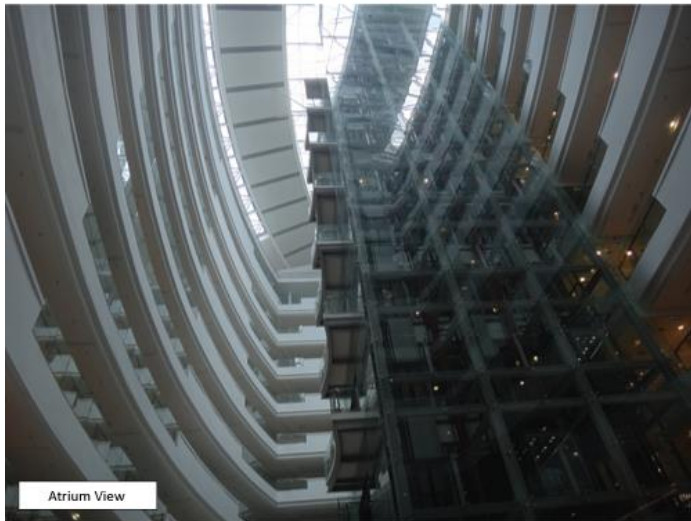
Year of Completion: 2012

Building Energy Intensity: 85kWh/m²*year

Additional EE Cost: 5%

Payback Period: <5 years

IRR: 22% (based on 10year Lease Term)

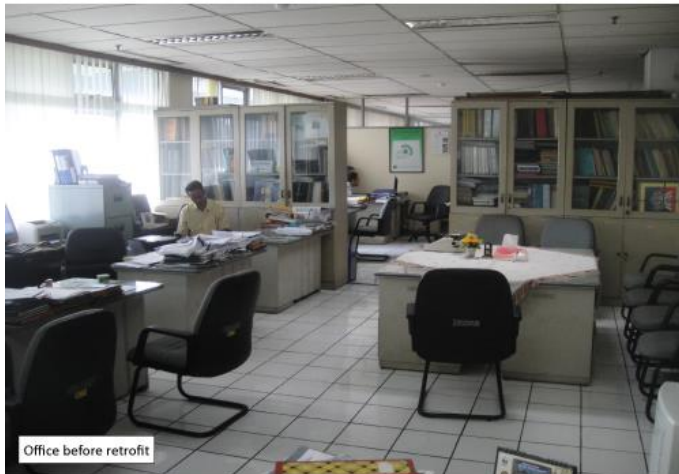


Case Study – Retrofit Existing Office



Before Retrofit

Blinds always down
Lights ON
Central Cooling System
No fresh air control
Leaky Facade
Single Glazing



ENERGY
SAVED 40%

After Retrofit

Natural daylight
Lights OFF
Efficient VRF Cooling System
Demand Controlled Ventilation
Air Tight Facade
Double Glazing

