



Session 7A: Green buildings to
green neighborhoods:
effective tools to fight climate
change

Incentives to progress

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- Introduction
- The green loan
- Building design methodologies
- Methodologies and energy efficiency
- Design intent vs. green loan
- Matrix
- Strategic vision addressing multiple criteria

The state of building design/energy efficiency in Beirut

- There is no strategic directive (building law, code...)
- All initiatives result from:
 - Agencies: Central Bank, OEA
 - Ministries: Public Works, Industry, Environment...
 - NGOs: LGBC, LSES, TERRE
 - Municipalities: Beirut, Baakline, Saida,
 - Personal initiatives (to benefit from particular incentives)

The green loan (of Central bank and LCEC) has been providing the best incentive.

Since the inception of NEEREA:

- 691 loans have been approved - corresponding to a total amount of 400 M\$
- 27 approved “green” buildings projects - total loan value of 241 M\$
- 27 projects integrated EE measures in the envelope (wooden houses, double glazing, wall insulation, roof insulation, double walls, etc.) – total loan value of 20 M\$
- 47 projects integrated EE measures in systems and appliances (LED lighting, efficient HVAC, BMS, etc.) in addition to the EE envelop measures – total loan value of 43 M\$

Definition:

Environmentally sensitive = response to climate (sun, wind, light) + material selection + operation

There are 4 levels of response to the environment:

A – No response to the environment

B - Least response to the environment (solar panels, lighting, appliances, etc.)

B – Adequate response to environment (envelope materials, shading strategy, etc.)

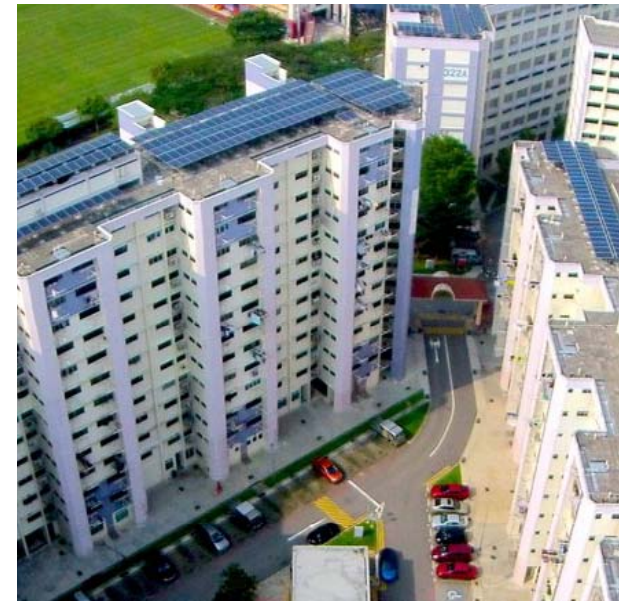
C – Enhanced response to the environment (massing, building form, spatial configuration, etc.)

A – No response to the environment

B – Least response to the environment

C – Adequate response to the environment

D – Enhanced response to the environment



A – No response to the environment

B – Least response to the environment

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D – Enhanced response to the environment

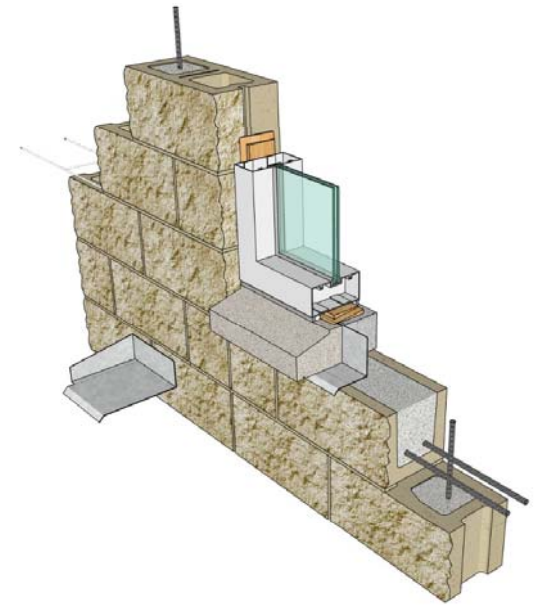


A – No response to the environment

B – Least response to the environment

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D – Enhanced response to the environment

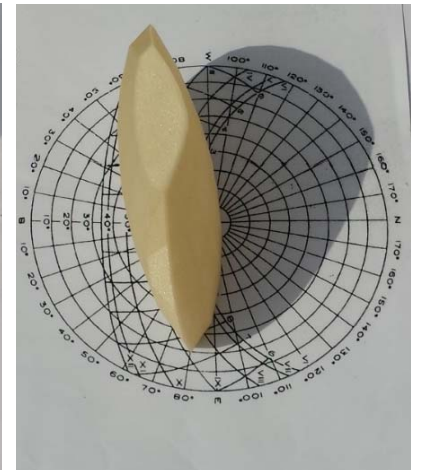
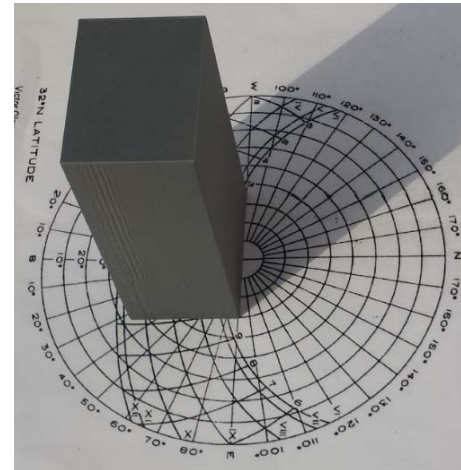


A – No response to the environment

B – Least response to the environment

C – Adequate response to the environment


D – Enhanced response to the environment




How the above mentioned methods are associated with energy efficiency

No response to the environment  Energy intensive

Least response to the environment  "Basic" energy efficiency

Adequate response to the environment  "Enhanced" energy efficiency

Enhanced response to the environment  Energy efficient

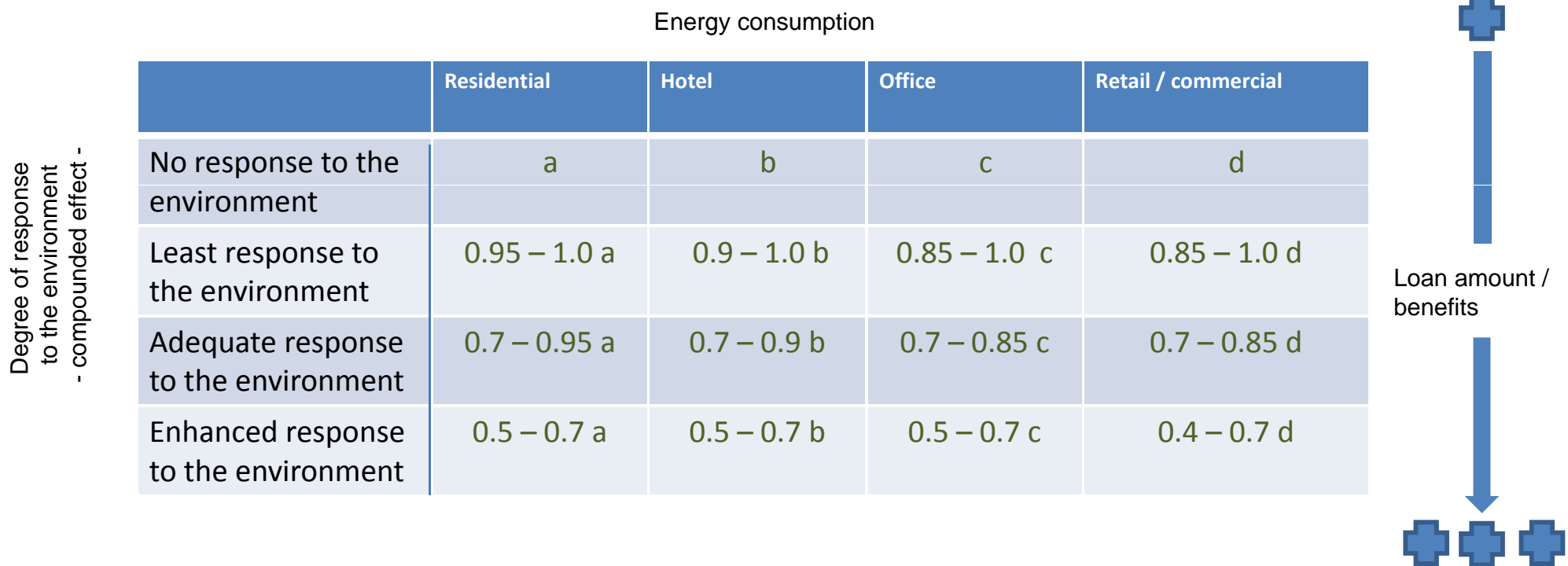
Identifying an association between the design intent of a Project and the application for a green loan.

| | | |
|--------------------------------------|----------------------------|-----------------------|
| No response to the environment | Energy intensive | Reduced loan amount |
| Least response to the environment | Basic energy efficiency | Medium loan amount |
| Adequate response to the environment | Enhanced energy efficiency | High loan amount |
| Enhanced response to the environment | Energy efficiency | Extensive loan amount |

Evaluate by:

Obtaining the “particular” mandatory points within rating systems upon addressing:

- Energy (reducing energy consumption with respect to a given reference)
- water,
- materials (waste) and
- operation)



The need for a strategic vision that addresses multiple criteria within an integrated model of governance ...

...to set the path for sustainability.