

Architecture,

an utilitarian art which embraces both Humanities + Science

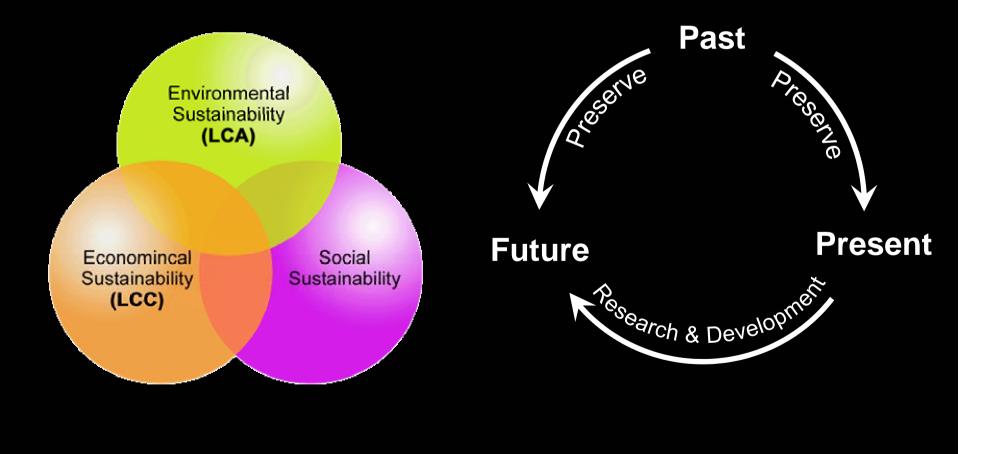
Design, problem solving

Architects,

apply their design skills creatively in different arenas, in particular our built environment

Imminent Problem & Challenge

Sustainability



Immediate Economical Gains

VS

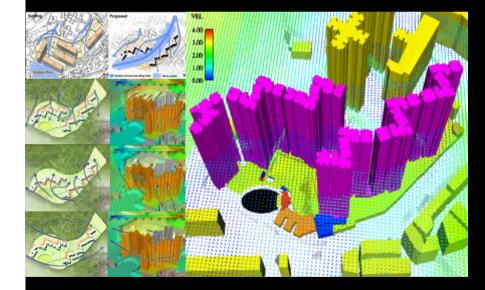
Longer Term Environmental Benefits

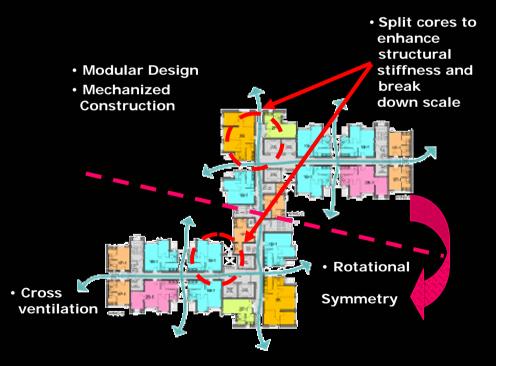
Paradigm Shift for Better Future

- value on longer time perspective
 i.e. whole life cycle of building of 50 years +
- Research & Development on sustainability
- application of technology and sensitivities

Environmental Sustainability

- environmental comfort
- energy saving





Ventilation Performance at UNTK

Wing Wall Performance

Environmental Study on Eastern Harbor Crossing Site Phase 4 Ventilation Study

With the state of the state

Internal Environment - Ventilation Performance at EHC

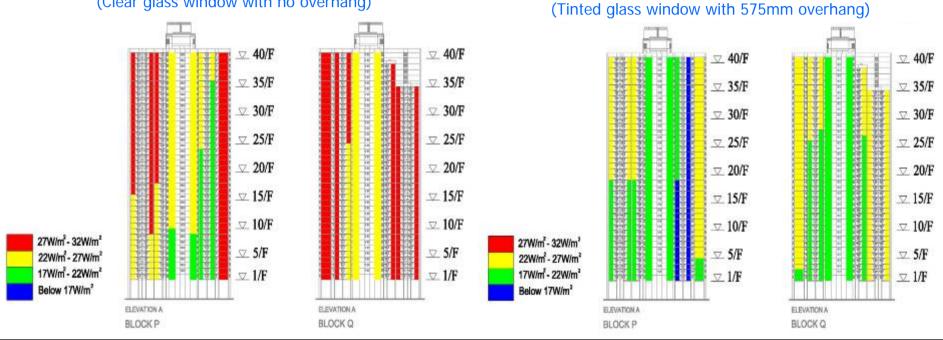
Proposed Wing Wall

Clear glass with no overhang

Tinted glass with overhang

Average Heat Gain for the West Envelopes of Block P & Q

Average Heat Gain for the West Envelopes of Block P & Q (Clear glass window with no overhang)



Resultant Application -

• 575mm overhang and 6mm tinted glass used in west facing facade

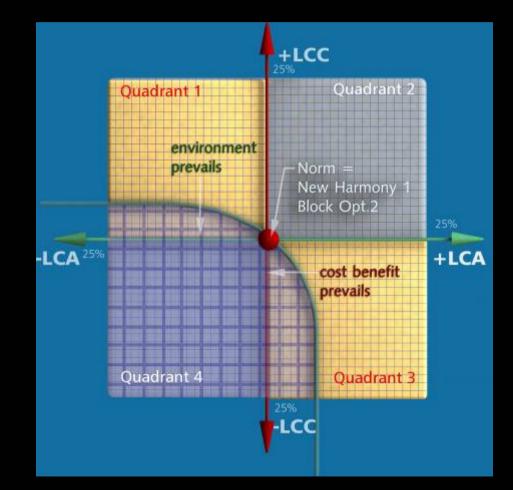
Internal Environment - Thermal Comfort at EHC

Environmental & Economical Sustainability

Research Study of Building Materials Life Cycle Assessment (LCA) and Life Cycle Costing (LCC) Tool

unctional Unit Properties	en Functional Unit List - Standard New Harmony 1 (Opt 2)	Le functional Unit Properties
Maintenance Element Code scottyton Element Code scottyton Element Code scottyton 5 45.3 Material Data 5 45.3 Statuent Statuel Networksee 0 000 Statuent Statuel Networksee 0 000 Statuent Statuel Networksee 0 000 Park - Vood Preservitre 0 000 Statuent Statuel Networksee 1 1000 Statuel Statuel Networksee 0 000 Park - Celubore Locuer 1 1000 Index - Material Data Networksee Material Data Networksee Materistore Networksee 1 10000 <tr< th=""><th>Functional Unit A/C Drain Pipes Air Duct Trunking Aluminium Door & Window - 1/F Aluminium Louvres - Plant Rooms Aluminium Windows - Bathroom Aluminium Windows - Bathroom Stainless Steel Grilles Aluminium Windows - Bathroom Stainless Steel Grilles Aluminium Windows - Bedrooms Aluminium Windows - Bedrooms Stainless Steel Grilles Aluminium Windows - Corridor Aluminium Windows - Kitchen Aluminium Windows - Kitchen Aluminium Windows - Litt Lobby Aluminium Windows - Living Area Aluminium Windows - Living Area</th><th>General Report Matternance Design Life Spear Hadesial Data Marcial Data Applied Applied <tr< th=""></tr<></th></tr<>	Functional Unit A/C Drain Pipes Air Duct Trunking Aluminium Door & Window - 1/F Aluminium Louvres - Plant Rooms Aluminium Windows - Bathroom Aluminium Windows - Bathroom Stainless Steel Grilles Aluminium Windows - Bathroom Stainless Steel Grilles Aluminium Windows - Bedrooms Aluminium Windows - Bedrooms Stainless Steel Grilles Aluminium Windows - Corridor Aluminium Windows - Kitchen Aluminium Windows - Kitchen Aluminium Windows - Litt Lobby Aluminium Windows - Living Area Aluminium Windows - Living Area	General Report Matternance Design Life Spear Hadesial Data Marcial Data Applied Applied <tr< th=""></tr<>
	Aluminium Windows - Living Area Stainless Steel Grilles	

LCA & LCC Decision Supporting Tool



	area of acceptability
1 Quadrant:	decrease in environmental impacts but increase in cost. DIFFICULT DECISION.
2 Quadrant:	increase in cost & environmental impacts to be avoided.
3 Quadrant:	
4 Quadrant:	decrease both in cost & environmental impacts. EASY DECISION.

Application of the LCA/LCC Tool



Ceramic tiles replaced by textured acrylic paint at lift lobby

Application of the LCA/LCC Tool



Door with soft wood instead of hard wood core

Application of the LCA/LCC Tool



Fibre glass in lieu of stainless steel laundry pole and curtain rail in bathroom



Extra metal bar normally required for earth bonding

Social Sustainability

Community engagement





History, Culture and Identity

Heritage building's reconstruction and adaptive use

- historical value
- architectural merit
- rarity



In Need of Conservation Policies

For built heritage

For natural heritage



Initiatives from Private Philanthropists



Try to imagine





Future

The goal of sustainability still requires

- enhanced public awareness
- heightened social conscience
- + corresponding government policies

Now

Building practitioners to exercise their professional skills with sensitivity to create and preserve more humanistic environments

