

ECOSMART™ CONCRETE

'a concrete contribution to the environment'™

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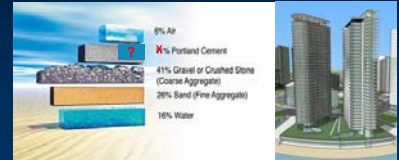
Sustainable Building and Concrete
Building Futures Gulf. Abu Dhabi, April 21 - 22, 2008

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EcoSmart Concrete Objectives

To minimize GHG "signature" of concrete by optimizing replacement of Portland cement with Supplementary Cementing Materials such as fly ash while improving or maintaining

- Cost
- Performance
- Constructability



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SCM: Zero (or low) GHG

Fly ash



Slag

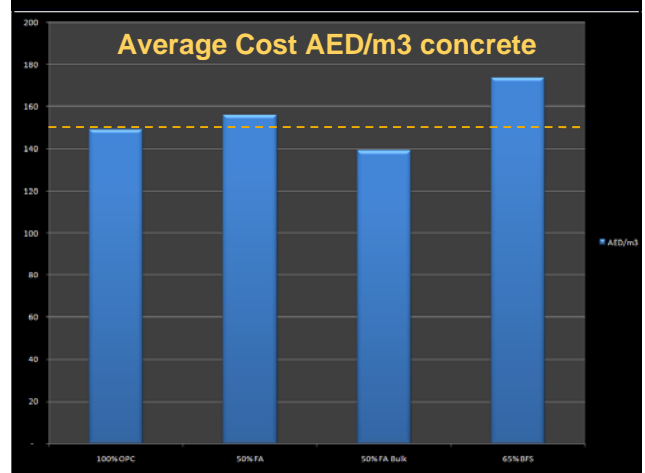
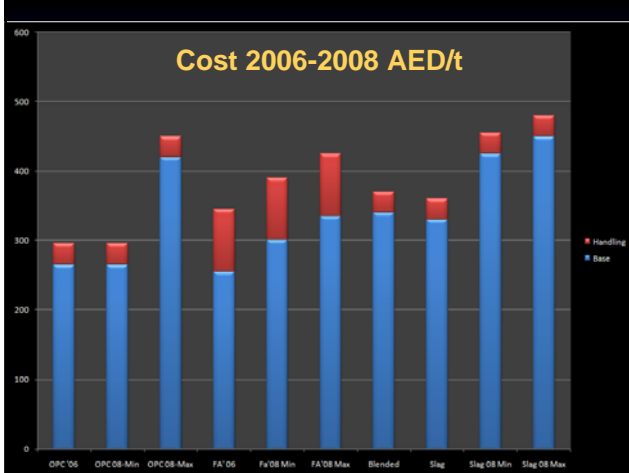


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Cement and SCM

	BFS	FA
Industry	Steel	Power
Origin	Asia	India
World Availability	25 Mt/yr	400 Mt/yr
Post Process	Quencing + Grinding	Classification
Particle Size	Must be ground	10 Microns
Quality	Constant	Variable
Max Replacement	70%	55%
GHG saving	0.9 t	1 t
Current Transport	Bulk	Bag / Containers
Reaction	Hydraulic	Pozzolanic
Industry acceptance	High	Medium
Advantage	Setting time, durability	Durability, longterm strength, less water, low heat of hydration

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In Conclusion: BFS or FA?

Both produce GHG saving and better concrete

BFS

- Solution familiar to local industry
- More expensive than OPC and FA
- Not much cost improvement potential
- Limited supply in the future

FA

- Relatively new to local industry as SCM
- Less expensive than BFS and slightly more than OPC
- Cost improvement potential
- Large availability world wide and in nearby India

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