ECOSMART™

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President & CEO,
ECOSMART Foundation

Industry Canada. Globe 2006 Visit.

ECOSMART™ CONCRETE
A Concrete Contribution to the Environment

Sustainable Building Technologies

Energy

Water

Material

Land

Health

EcoSmart Concrete Objectives

To minimize GHG “signature” of concrete
by optimizing replacement of Portland cement with SCM
while improving or maintaining

- Cost
- Performance
- Constructability

EcoSmart is a non-profit organization based on a partnership between

- Federal government
- Building industry
- Building professionals

Sustainable Buildings

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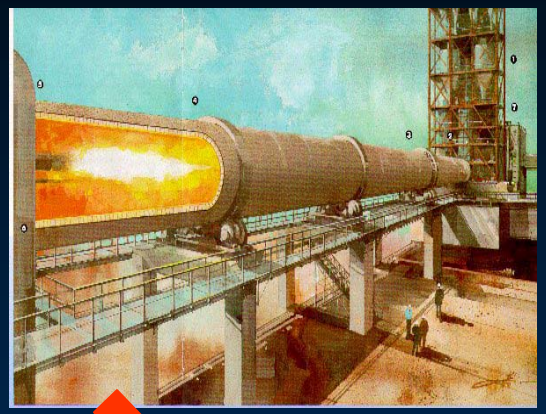
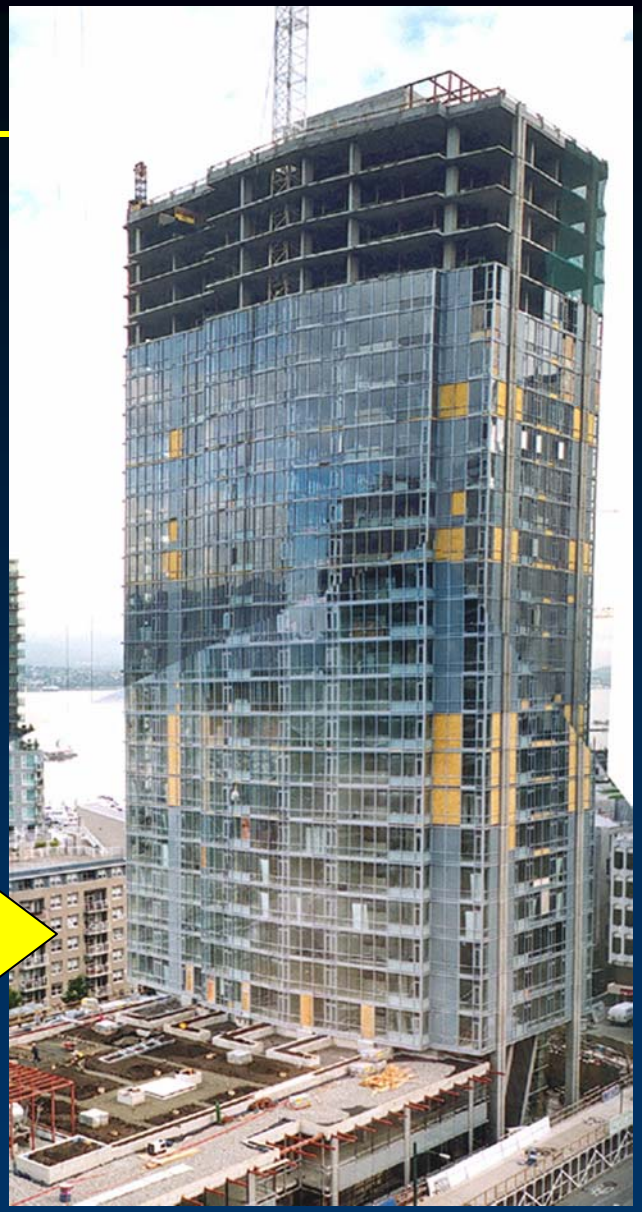
SCM Concrete



50%

50%



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SCM : Traditional

Case Studies

How much SCM replacement can be achieved, what effect on:
Cost – Performance - Constructability

As experienced by

Supply

Cement manufacturers , ready-mixed concrete producers, SCM producers / suppliers

Design

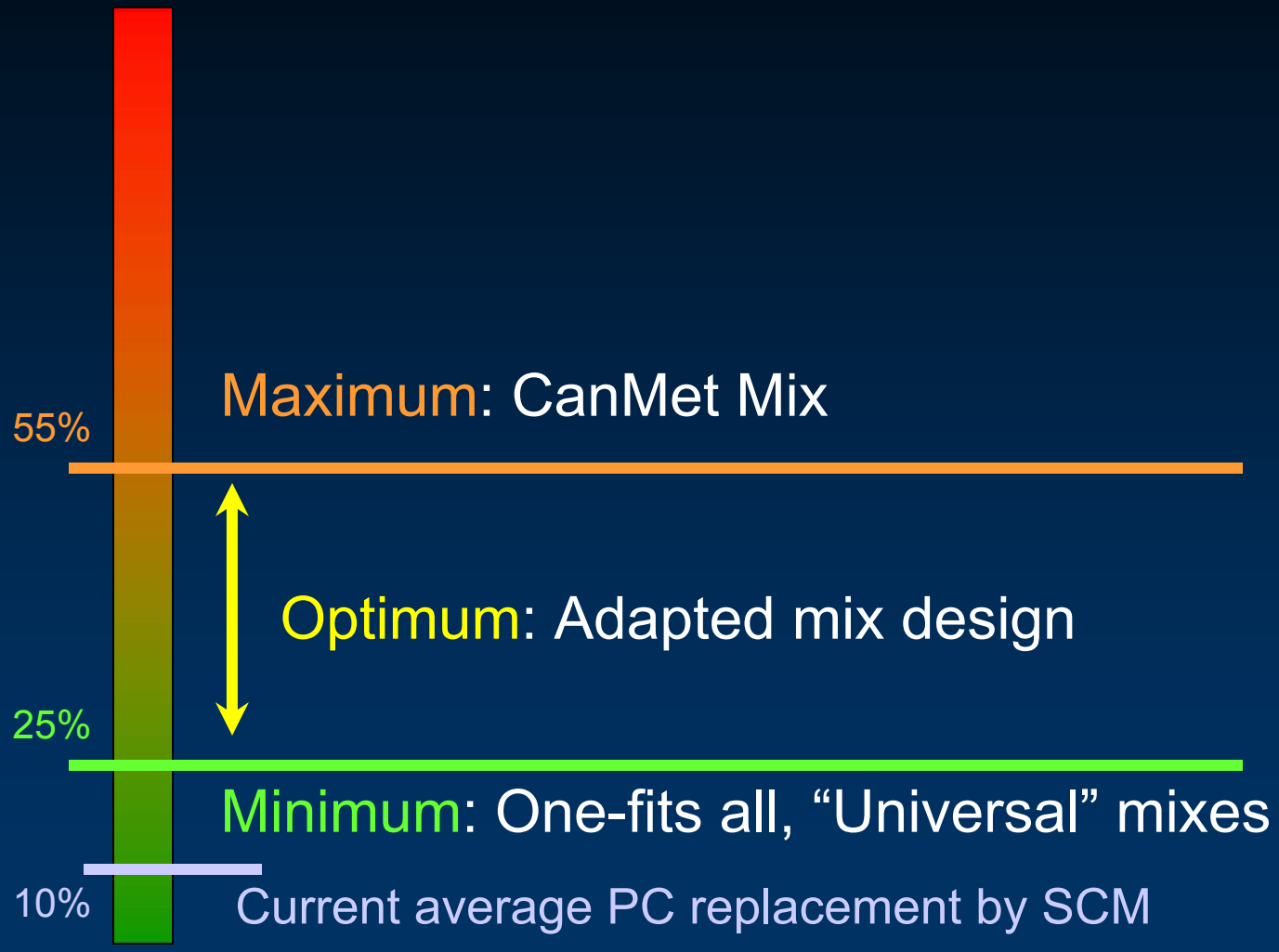
Developers & owners, architects, structural engineers, Material engineers & test labs, code officials

Build

Contractors, Sub-trades (concrete placers, finishers, form installers)

Learning by doing

Case Studies



50% FA

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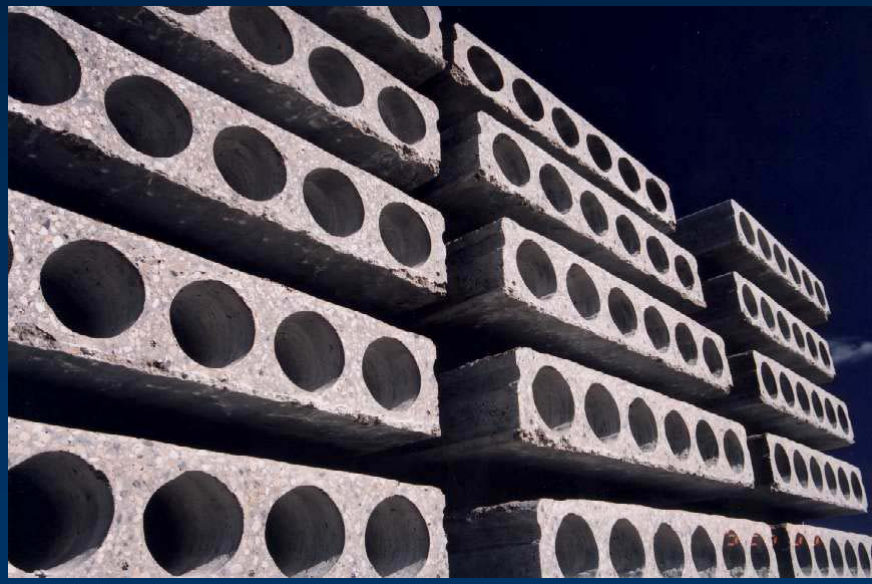
Minimum

25% SCM

Yellowknife

Other Applications



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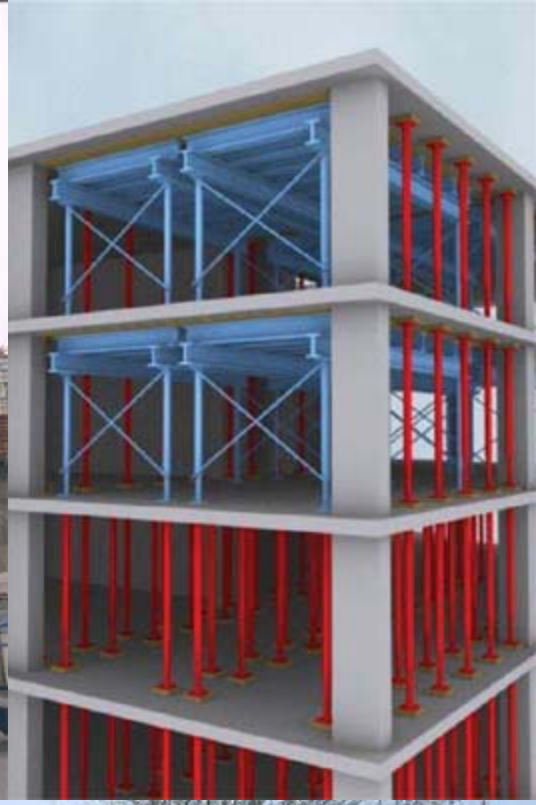
Optimization

Element	Min. 28 Day Strength (mPa)	% flyash replacement (Ledcor Standard)	% flyash replacement (Actual)	W/CM
Parking Slabs & Slab Bands	35	15	33	0.40
Slab on Grade Interior Parking	25	20	20	0.50
Slab on Grade Exterior	32	20	20	0.45
Core Footing	30	40	45	0.50
Other Footings	25	40	45	0.50
Shear Walls & Columns				
Foundation to 8th Floor	40	15	33	0.45
8th to 12th Floor	35	15	33	0.45
12th to 16th Floor	30	20	33	0.45
16th Floor to Roof & Other Walls	25	20	33	0.45
Tower Slabs	25	15	15 to 25	
Toppings & Housekeeping Pads	20	15	45	



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Seymour Filtration Plant

	% FA	Mpa @56d
Footings	55	30
Mass Fill	55	25
Walls and columns	40	30
Extrior Slabs	35	30
Interior Slabs	35	30
Beams	40	30
Lean Concrete	50	10

Parameters

Material

- Type of SCM: FA, GGBFS, SF, other
- Cost, Availability, distance

Technical

- Type of element: slab, walls, footings, ..
- Strength: Stripping, 28d, 56d
- Durability, resistance to scaling, exposure
- Curing, carbonation
- Standards, liability

Construction

- Placing, finishing, forms, curing
- Setting time: Stripping and finishing
- Architectural aspect : Color, texture, finish

Environment

- GHG Signature
- Waste reduction
- Expected lifespan

Industry decision-makers

Supply

- Cement Manufacturers
- Ready-Mixed Concrete Producers
- SCM producers / suppliers

Design

- Developers
- Architects
- Structural Engineers
- Material engineers & test labs
- Code officials

Build

- Contractors
- Sub-trades: Concrete placers

Parameters

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Environment
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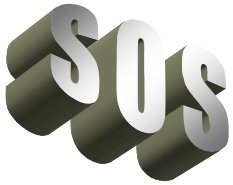
Collaborative
Interactive
Decision-supporting
tool



Interests

Supply
- Cement Manufacturers
- Ready-Mixed Concrete Producers
- SCM producers / suppliers

Design
- Developers
- Architects
- Structural Engineers
- Material engineers & test labs
- Code officials

Build
- Contractors
- Sub-trades: Concrete placers

SOS

SCM Optimization System

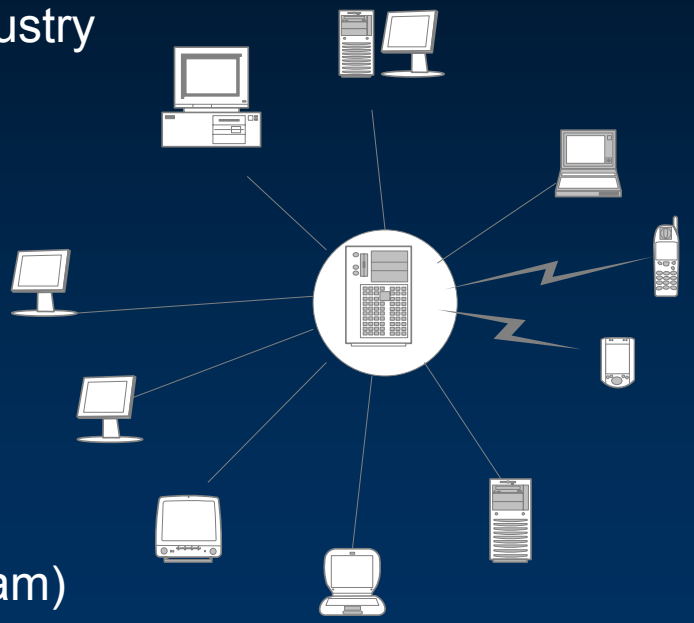
- Decision-supporting computer to optimize concrete performance according to multiple criteria.
- Collaborative, adapted to the needs of all industry groups

Three years project

- Identify resources and define scope
- Develop algorithm and database
- Develop computer system and interface
- Validate on cases studies.

Financing

- Government of Canada (sustainability program)
- Partnership of Canadian organizations and firms



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A Concrete Contribution to the Environment™

Advancing sound technologies to reduce the greehouse gas emissions related to concrete construction: an industry-government initiative.

Events

EcoSmart Presentation at Greenbuild 2003

Michel de Spot, Chair of the EcoSmart Concrete Project, will be presenting at the US Green Building Council's Conference.

News

EcoSmart Fall 2003 Newsletter available

GO >

Cedar Corner, Tofino, BC

Feature

Mountain Equipment Co-op, Montreal

Internet

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Thank You

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www.ecosmart.ca

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