EmiratesGBC Technical Workshops
by Readymix Gulf, a member of Holcim

Decarbonizing the UAE Built Environment

Presented by
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DECARBONIZING THE UAE BUILT ENVIRONMENT

Naved Sayed, VAP & Solutions Manager
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HOLCIM COMMITMENT TO DECARBONIZATION
HOLCIM
GLOBAL LEADER IN INNOVATIVE AND SUSTAINABLE BUILDING SOLUTIONS

~60K Employees

29 B CHF Net Sales

21% reduction in our CO₂ per net sales by 21%

1.5°C-aligned 2030 & 2050 targets validated by SBTi

100+ Startups

Net Zero

2300 Operating Sites around the world

60 Markets around the world

#1 R&D organization in our industry

5 worldwide R&D hubs
ON A MISSION AT HOLCIM
FOUR PILLARS OF DECARBONIZATION / REDUCING EMBODIED CARBON

GREEN OPERATIONS
Decarbonizing Holcim

BUILDING BETTER WITH LESS
Decarbonizing construction

CIRCULAR CONSTRUCTION
Building new from old

MAKING BUILDINGS SUSTAINABLE
Decarbonizing cities
MEGA TRENDS DRIVING CONSTRUCTION & INNOVATIVE SOLUTIONS
SIX MEGA TRENDS DRIVING CONSTRUCTION
BUILDING BETTER FOR A CHANGING WORLD

POPULATION GROWTH
From ~8 billion today to ~10 billion by 2050

URBANIZATION
~ 2.5 billion more people are expected to live in cities by 2050

SUSTAINABLE CONSTRUCTION
Higher demand due to resource scarcity

BETTER LIVING STANDARDS
and more efficient infrastructure demand growing

INNOVATION DRIVEN BUILDINGS
Accelerated by light and Modular construction solutions

REPAIR & REFURBISHMENT
Driven by urban demand
THE GLOBAL OPPORTUNITY
LOW-CARBON & CIRCULAR CONSTRUCTION IS THE SOLUTION

Climate adaptation will require more resilient cities

Global building floor area will double by 2060

The built environment generates nearly >40% of global emissions

80% of the world's buildings in 2050 already exist

SMART DESIGN & LOW CARBON CONSTRUCTION

- Building better with less using low carbon materials + efficient design
- Climate adaptation means upgrades to cities and infrastructure
- Building strong durable buildings and infrastructure to extend the operational life of assets

RETROFIT & REUSE & RECYCLE

- Retrofitting buildings to be more energy & space efficient
- Reusing material in the next life
- Circular construction using recycled materials

1 United Nations - Climate Action, 2022: Climate Adaptation
2 Architecture 2030, 2022: Why the built environment
3 McKinsey & Co, 2021: Call for action: Seizing the decarbonization opportunity in construction
BUILDING BETTER WITH LESS
COMBINING SMART DESIGN WITH LOW CARBON SOLUTIONS

Smart Design + Right Materials + Right Location = Lower Carbon Footprint

CEM I/OPC

Low Carbon Concrete

HOLLOWCORE

HOLLOWCORE

C25 Mix
40kg Steel
112 kg CO₂/m²

C25 Mix
40kg Steel
91 kg CO₂/m²

C30 Mix
20kg Steel
60 kg CO₂/m²

C30 Mix
20kg Steel
48 kg CO₂/m²

C20 Mix
6kg Steel
28 kg CO₂/m²

C20 Mix
6kg Steel
21 kg CO₂/m²

Using CEM I mix

Using low carbon concrete

Using CEM I mix

Using low carbon concrete

0.28 m³

0.28 m³

0.14 m³

0.14 m³

0.10 m³

0.10 m³

1: https://www.holcim.com/media/media-releases/eth-and-holcim-unveil-innovative-floor-system
Example: Pervious Concrete to act against floods & heavy rains

Video Link: https://vimeo.com/769419487
RETROFITTING FOR PERFORMANCE
INCREASING THE ENERGY EFFICIENCY OF BUILDINGS

- Globally the energy efficiency of old buildings can have poor performance compared with new buildings.

- Retrofitting the building envelope with efficient insulation or reflective and green roofs is one of the most effective and easy to reduce emissions & running costs.

- Updating building codes is key to designing an effective retrofit of buildings capitalizing on existing energy efficient systems.

- Incorporating passive design where possible and onsite renewable systems should be a focus for designers.
RECYCLING - CIRCULAR CONSTRUCTION
BUILDING NEW FROM OLD

- Recycling *construction & demolition materials* to be used inside concrete & cement can have a great impact with *no compromise on performance*:
  - *Close the loop* in construction
  - *Reduce waste* sent to landfill
  - *Reduce consumption* of virgin raw material
  - Make a positive impact on *biodiversity* by extracting fewer natural resources

*Video Link:* https://video.holcim.com/circular-construction-follow-us
CASE STUDIES
Up To 40% Less CO2 Emissions

45% of total volume in 2023

10 EPDs For Top selling mixes
THERMAL INSULATING CONCRETE
AIRIUM

Al Wasl Tower, Dubai
One of the most sustainable towers in Dubai

250 to 1000 kg/m³ Mineral Insulating Foam

Up To 0.12 W/(m.k) Thermal Conductivity

100% Recyclable
BUILDING NEW FROM OLD
ECOCYCLE - SOON IN UAE

7 MILLION
TONS OF CDM
Recycled in 2022

10% to 100%
Recycled Construction and Demolition Materials

“Recygénie”, Paris, France
The first fully recycled concrete building in the world

Video Link: https://www.holcim.com/who-we-are/our-stories/fully-recycled-concrete-building
Interactive Session
WHAT ARE THE CHALLENGES & SOLUTIONS TO
DECARBONIZE UAE BUILT ENVIRONMENT?

Groups Activity:

Come up with the top challenges and corresponding solutions to decarbonize UAE Built Environment.