

**Precast Concrete: A sustainable
alternative of Cement in
Construction Industry**

Hello!
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1.
Construction industry



Construction industry is one of the fastest growing industry with several negative impacts on environment.

Problem statement

Industries are exploiting the natural resources and affecting the environment to meet the needs of exponentially increasing human population.

Construction industry uses about 25% of wood and 40% of stones.

Cement industry has high carbon and water footprint (Onat, 2020).

Cement industry released 2.9 billion tons of carbon dioxide in 2021 (Ali, 2011).



Impacts of Construction industry

- Water pollution
- Air pollution
- Noise pollution
- Loss of biodiversity
- Deforestation
- Material acquisition



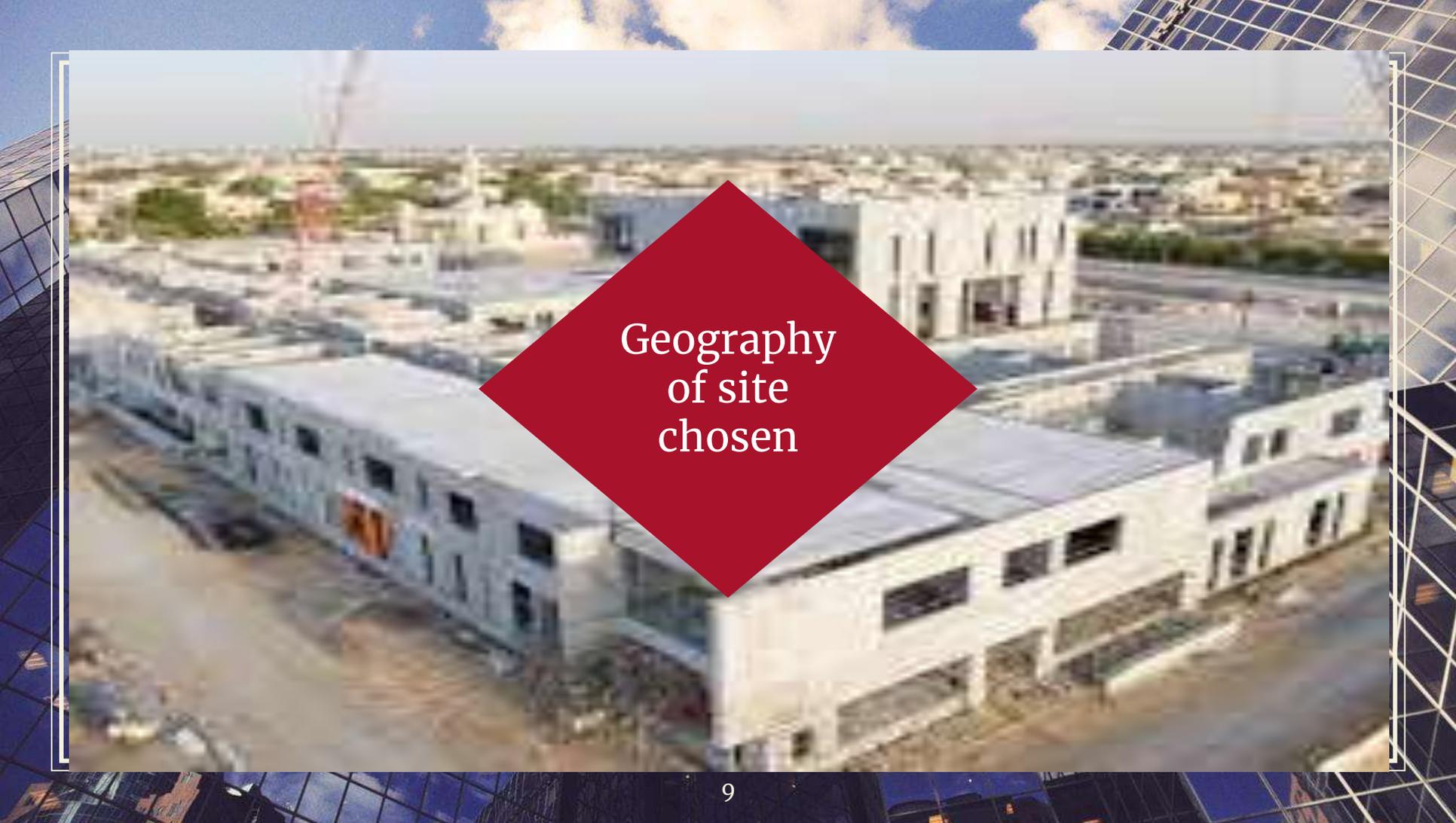


*This presentation will give a brief
overview of sustainable alternative of
cement in UAE.*

What is sustainability?

Sustainability is fulfilling the needs of the present-day without exploiting the resource for future generations. But, it simultaneously consider the social, economic, and environmental aspects in business.

Sustainability aims to achieve long-term goals by considering the environment and welfare of society (Mensah, 2019).



Geography
of site
chosen

United Arab Emirates

UAE is a middle east country with numerous sand dunes.

The hottest months are July and August when maximum average temperatures on the coastal plain exceed 45 °C.

So, material that is heat resistant and having cooling affect would be the best alternative.



Solution

*Precast concrete is a sustainable substitute of
Portland cement.*

Advantages of Precast Cement

- Durable
- Cost-effective
- Heat resistant
- Water resistant
- Fire resistant
- Earthquake resistant
- Ultraviolet resistant
(Vangeem, 2006)



Conclusion

The Precast concrete is heat resistant so it can help residents sustain the extreme temperature.

Moreover, this would reduce cost of air-conditioning the buildings.

Replacing Portland cement with precast cement will help construction industry to reduce its environmental footprint.

Advantages of Precast Cement

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4. VanGeem, M., 2006. Achieving sustainability with precast concrete. *PCI journal*, 51(1), p.42.

Thanks!

ANY QUESTIONS?



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