

# **GLOBAL WARMING, SUSTAINABLE ISSUES AND CONCRETE TECHNOLOGY**

by

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# SUSTAINABLE ISSUES AND CONCRETE TECHNOLOGY

- Use less portland cement
- Use less unit water content
- Use more supplementary cementing materials, that is, fly ash, blast-furnace slag, rice-husk ash, silica fume, activated fly ashes and slags
- Use more limestone powder in the production of cement clinker
- Use lightweight concrete where possible

# SUSTAINABLE ISSUES AND CONCRETE TECHNOLOGY (cont'd)

- Use high-volume fly ash concrete especially for pavement construction
- Use recycled aggregates in concrete where possible
- Where possible, specify concrete strength acceptance criterion at 56 or 91 days instead of 28 days
- Use stainless steel reinforcement in critical parts of structures to make them more durable
- Use less concrete by innovative design methods

# ENVIRONMENTAL ISSUES

The production of one tonne of portland cement clinker releases approximately one tonne of CO<sub>2</sub> into the atmosphere.

# CEMENT PLANTS

In an effort to reduce CO<sub>2</sub> emissions,  
“Should we phase-out the cement plants?”

The answer is:

“Of course, not. This is not an option.”

# CEMENT PLANTS (cont'd)

Due to the potential demand to meet the  
infrastructure needs of the world,

“Should we build new cement plants?”

The answer is categorically “NO!”  
because we have other options

# EXTINCT HOMO SAPIENS 2500 BC - 2500 AD ?

Cause of death :

- Self inflicted, by excessive GHG emissions and excessive use of natural resources, including water and cement.