

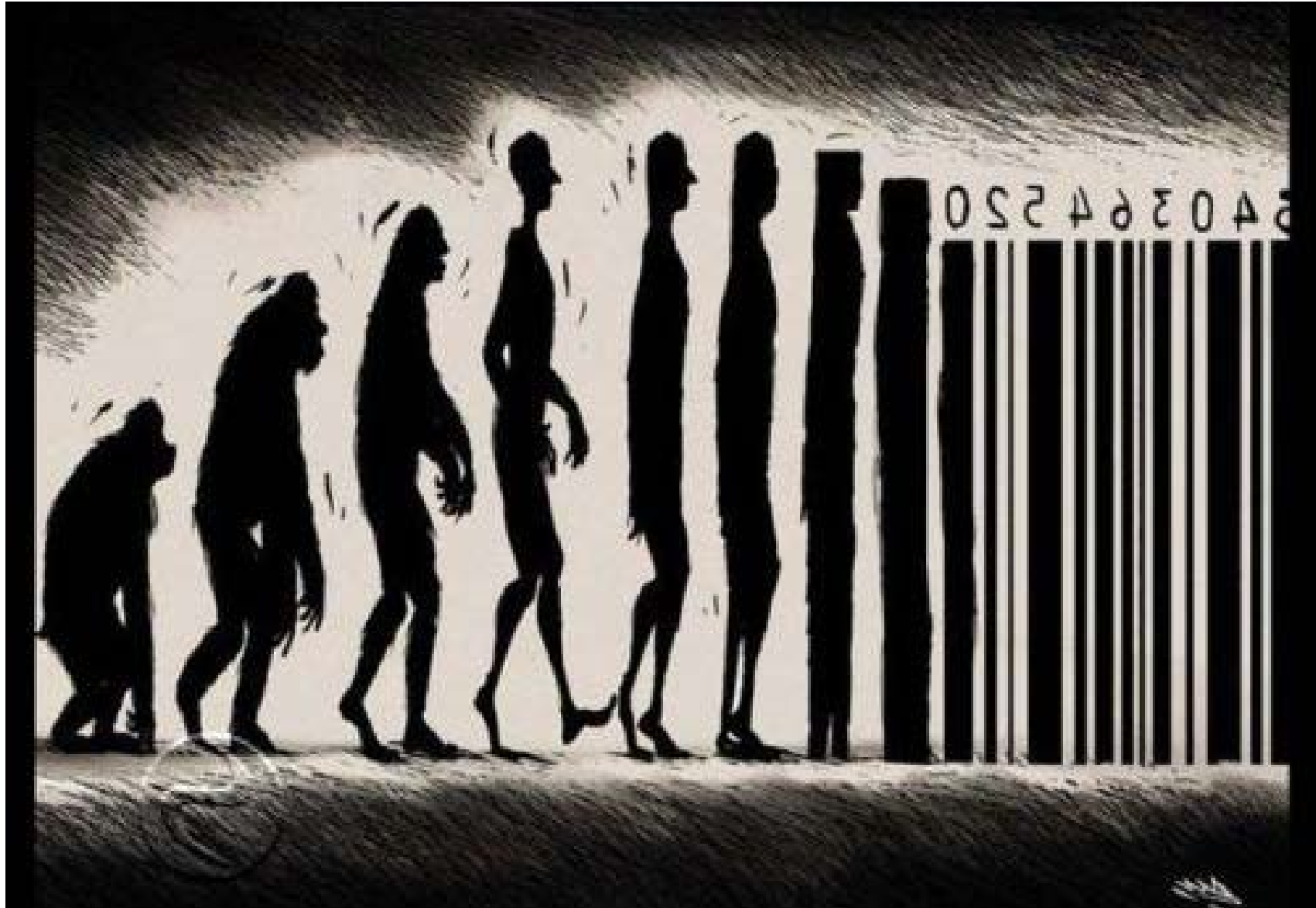
Circular Economy, Built environment & us

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28.02.2019 Championing Smart & Liveable Infra Solutions
Circular Economy Session
Mumbai First. NEERI. CSIR








Air
Water
Land

Food
Energy
Waste

What and how we eat, drink?
How we build?
What we wear?
How we commute, travel?
What we use?

How we Live?
Work?
Play?

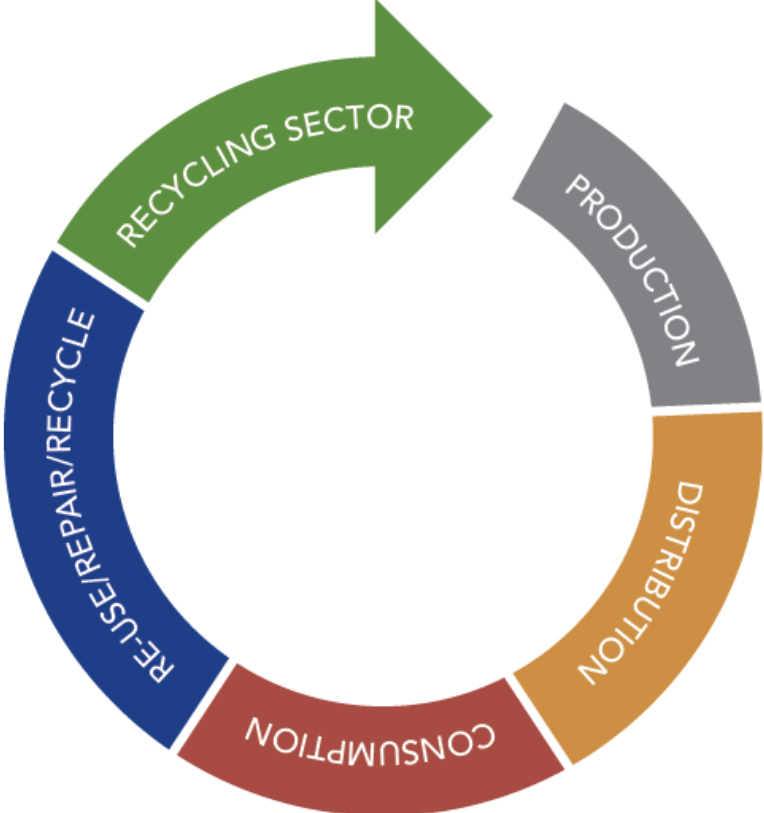


Nature already
has the answer.
No extraction,
no waste...
Circularity

LINEAR ECONOMY



CIRCULAR ECONOMY



Circularity Gap
Only 9% of the global economy

SDG	
	3 Good health and wellbeing
	6 Clean water and sanitation
	7 Affordable and clean energy
	8 Decent work and economic growth
	9 Industry, Innovation and Infrastructure
	11 Sustainable cities and communities
	12 Responsible consumption and production
	13 Climate Action

Circularity directly impacts
 several key UN SDGs
 And concerns practically all
 sectors of the economy

- Water
- Energy
- Agriculture
- Mining
- Manufacturing
- Transportation
- Governance
- Architecture, Engineering & Construction
- Financial services
- Electronics, white goods...
- Fashion, clothing and accessories
- Retail
- Tourism & Hospitality
- Health
- Social sector
- Entertainment
- FMCG
-

Circularity and the built environment

Circular supplies
Product as a service
Product Lifetime Extension
Sharing Platform
Resource recovery

Reduce / stop extraction

High recyclable content

Avoid non-essential use. Avoid extravagance

Optimal performance design: planning, passive & active features

Innovation: Technology, design, construction

Optimal planning

Design for change. Mixed use.

Collaborate across stakeholders

Operational Efficiency

Renewable (energy)

Change in ownership patterns

Change in financial models

Multi-layered life cycle

Extend producer responsibility

Maximise recovery Recycle / Upcycle / downcycle

BIG SHIFT



Timber is the ONLY renewable construction that we have. The AEC sector in India can hardly afford to ignore this wonderful and versatile material.

Application from structure to finishes

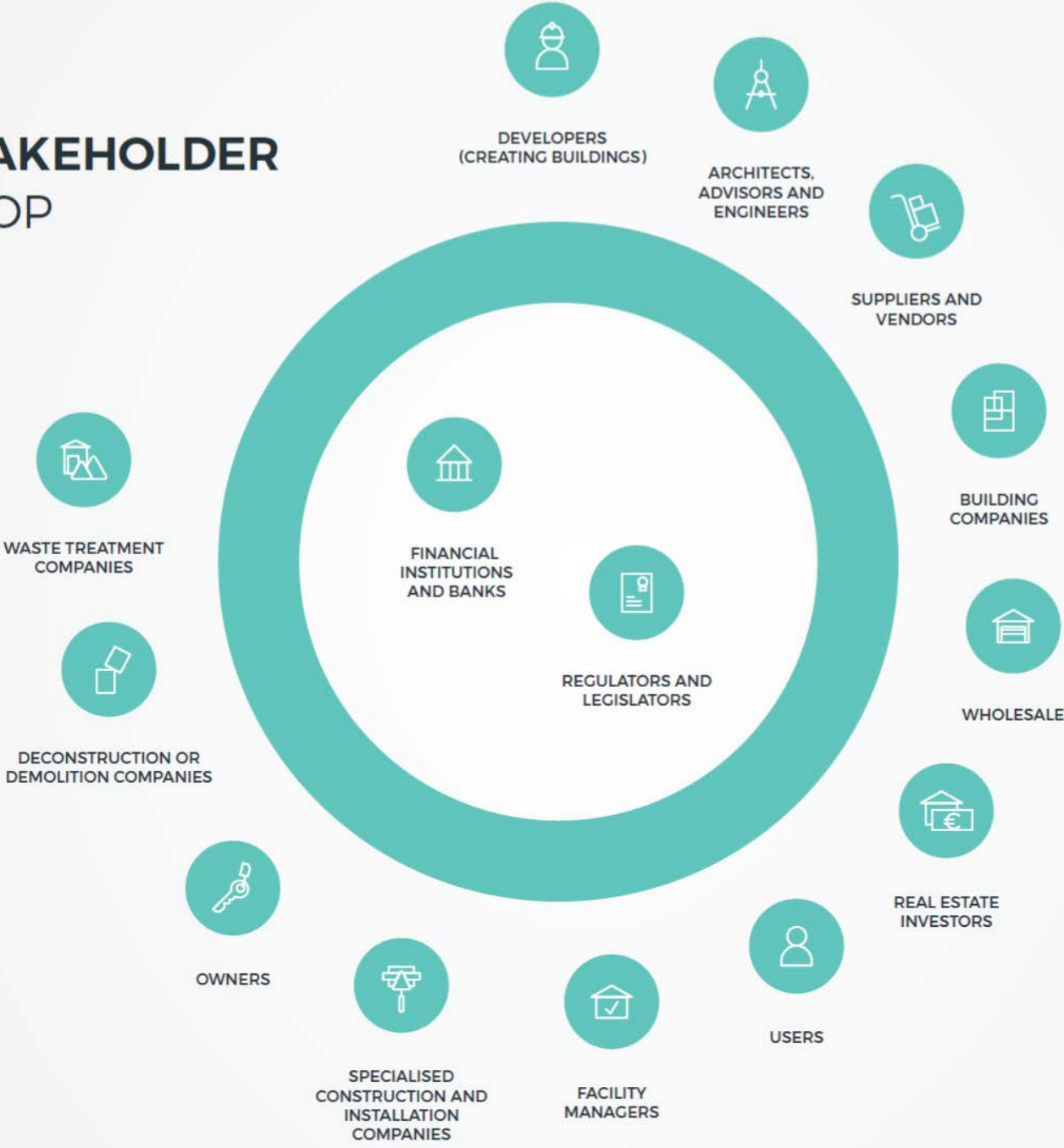
India needs clear strategies for rapid progress in sustainable forest management & large scale timber plantation.

The coming decades should see a massive return to the very primal construction material.

Engineered and treated wood offers a myriad of possibilities and demonstrates great advantages in addition to CIRCULARITY:

- Speed of construction
- Lightness / anti-seismic properties
- Versatility from large spans to domestic scale
- Cost effective
- Architectural value

STAKEHOLDER LOOP



- Build for use
- Build without waste
- Build to last
- Build to adapt
- Build for efficiency
- Built for recovery / reuse

1-5 YEARS

5 -10 YEARS

10 YEARS

10-15 YEARS

25 YEARS

20-25 YEARS

1. STUFF

The furniture, storage, carpeting, plants, etc. that is placed in buildings

2. SPACE PLAN

The way the floors are compartmentalized into separate spaces with different purposes, the type of materials used for compartmentalization.

3. SERVICES

Services such as smart energy systems, lighting, air-condition that support the internal climate in a building.

100 YEARS

80- 100 YEARS

50 YEARS

40-50 YEARS

INFINITE

4. STRUCTURE

The construction of a building, which involves the structural skeleton of the building and determines its basic shape.

5. SKIN

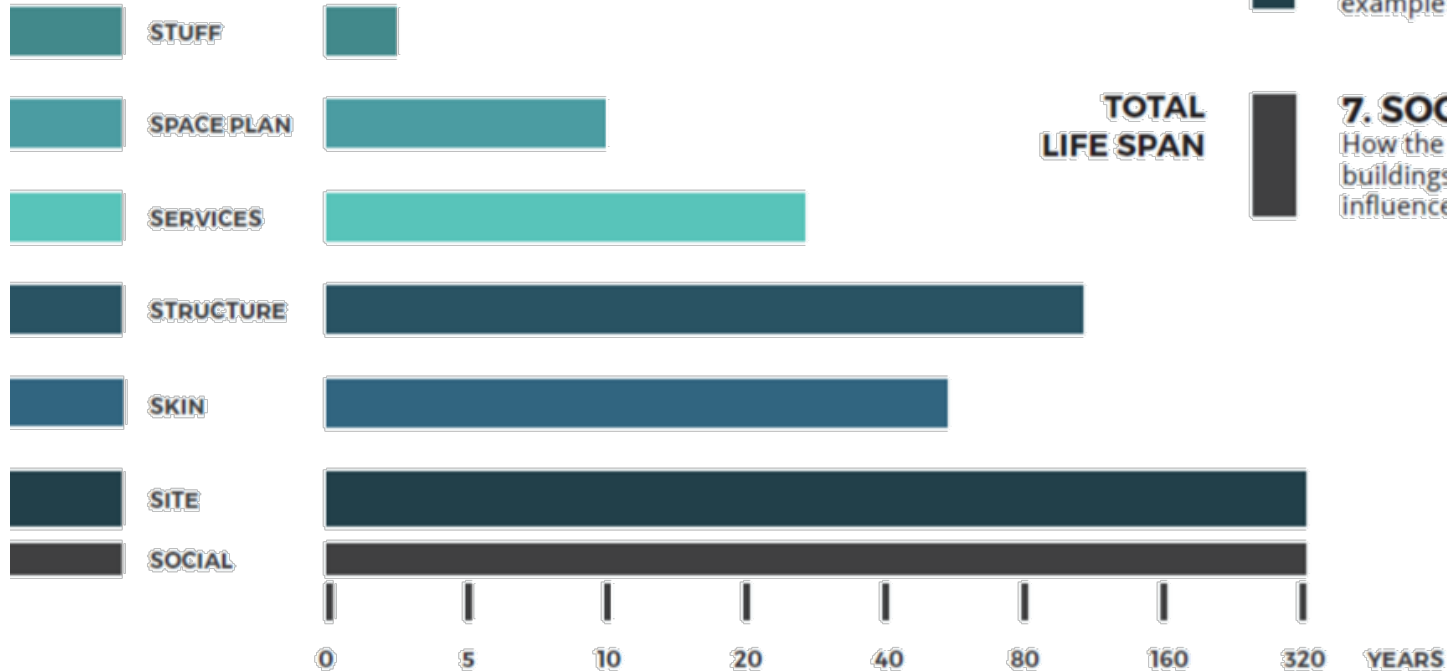
The outside layers of a building such as the façade, including windows, surface material and insulation.

6. SITE

The surface area and environment that the building is situated in. This determines the context the building is placed in. The environment can influence the energy and water management of a building (for example passive solar design).

7. SOCIAL

How the occupants live, work and use the buildings; how their behaviour influences the circularity of a building.



MULTI-LAYERED LIFECYCLE ASSESSMENT

LINEAR ECONOMY

Exchange	Use
Corporations	Communities
Profit	Purpose
Production	Wellbeing
Hierarchy	Network
Control	Empowerment
Privacy	Transparency
Competition	Competition
Disparity & Exclusion	Equity & Inclusion
Anthropocentrism	Bio / Eco-centricism

CIRCULAR ECONOMY

Thank You



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