TECHNOLOGIES FOR LOW-CARBON & LEAN CONSTRUCTION

INSTITUTE OF EMINENCE
RESEARCH INITIATIVE

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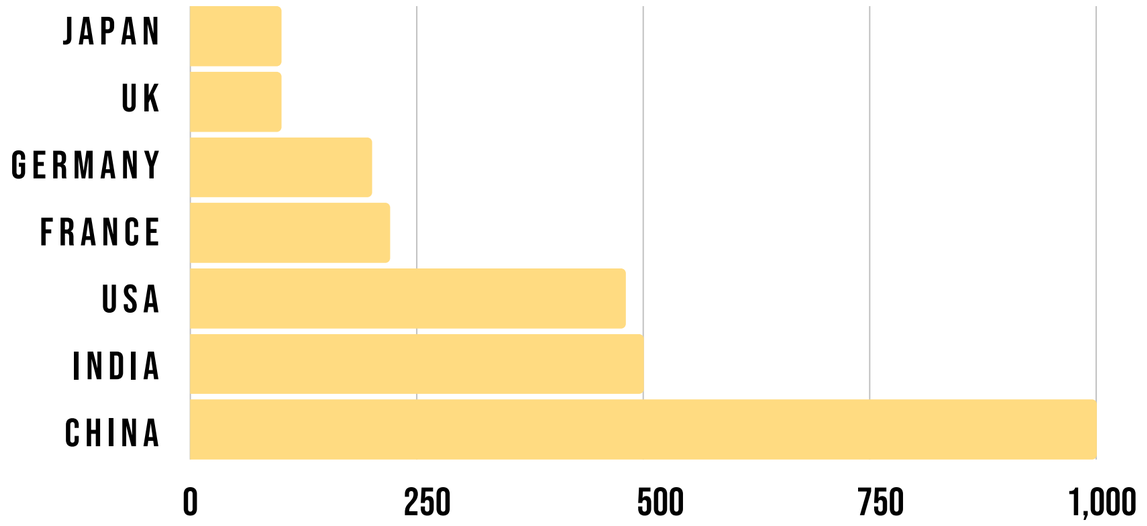
EXPERTISE: CONSTRUCTION MATERIALS, CONSTRUCTION MANAGEMENT AND BUILDING SCIENCE

WASTE & SUSTAINABILITY

CONSTRUCTION AND DEMOLITION WASTE BY COUNTRY (MILLION TONNES)



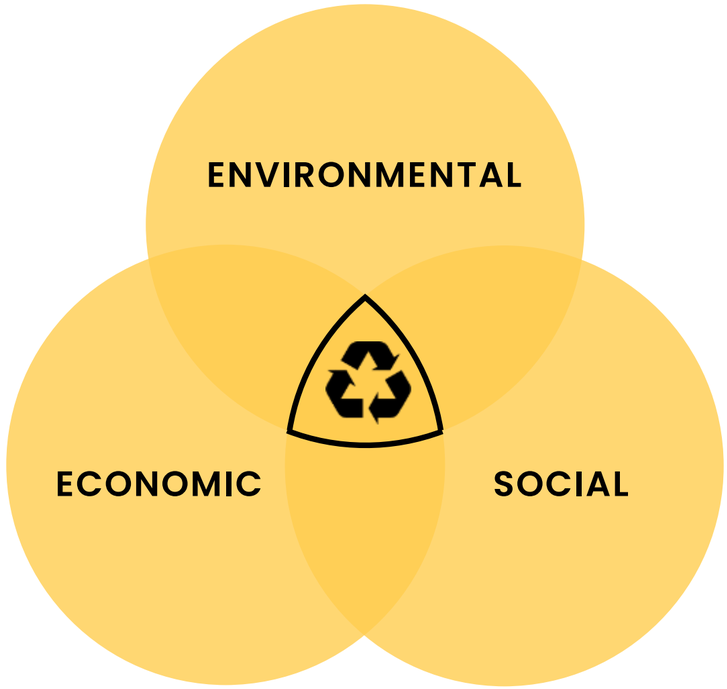
Source : Akhtar and Sarmah (2018)

DEMAND AND AVAILABLE RESERVE OF CONCRETE INGREDIENTS

MATERIAL	DEMAND (TONS/YR)	RESERVE (TONS)
SAND	751M	RESTRICTED
STONES	1.6B	126B
LIMESTONE	320M [a]	89.3B

Source : GIZ 2016; [a]Statista2019

ABOUT CENTER



VISION:

To be the primary destination in India for all interested in developing and implementing ideas on low-carbon, lean construction technologies.

MISSION:

To develop India's first integrated testbed for evaluating the usage of agricultural, industrial, and construction & demolition waste in concrete for directing practices, policies, and standards for waste reduction in Indian construction industry.

To utilize technology for minimization of material and process waste

THE APPROACH

REUSE MATERIAL WASTE

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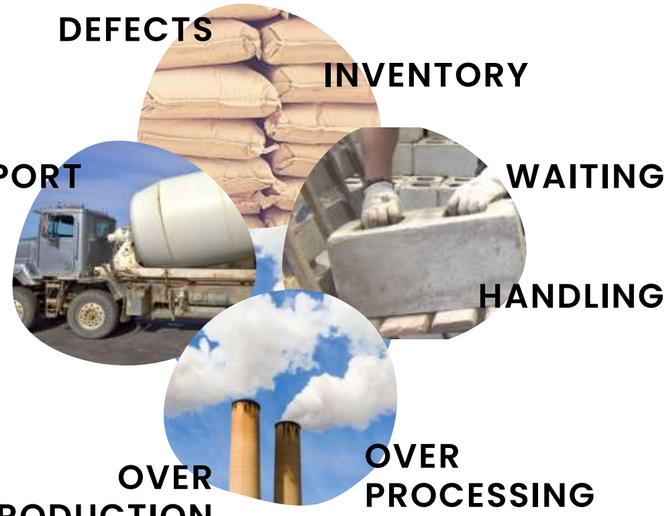

REDUCE PROCESS WASTE

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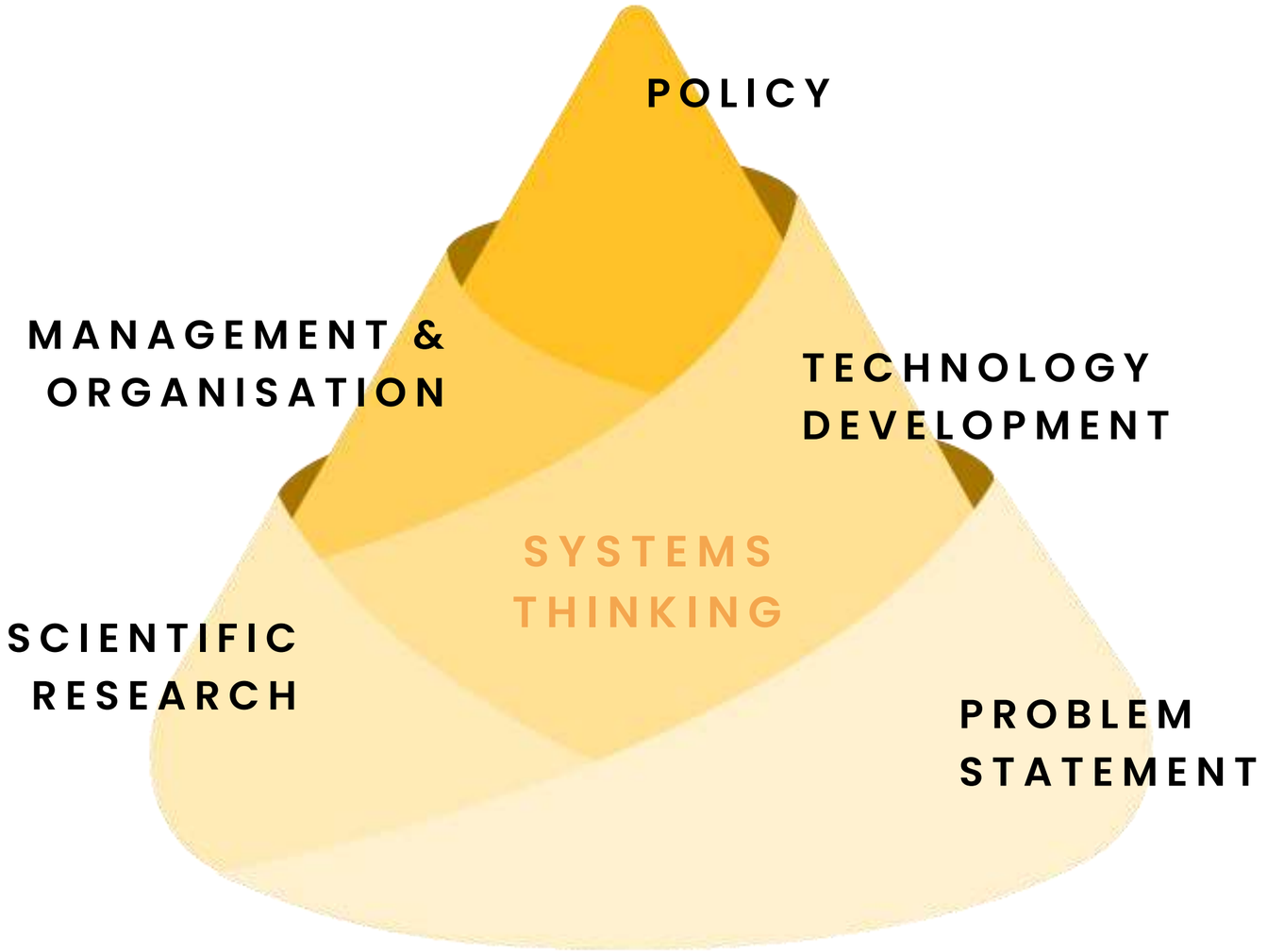
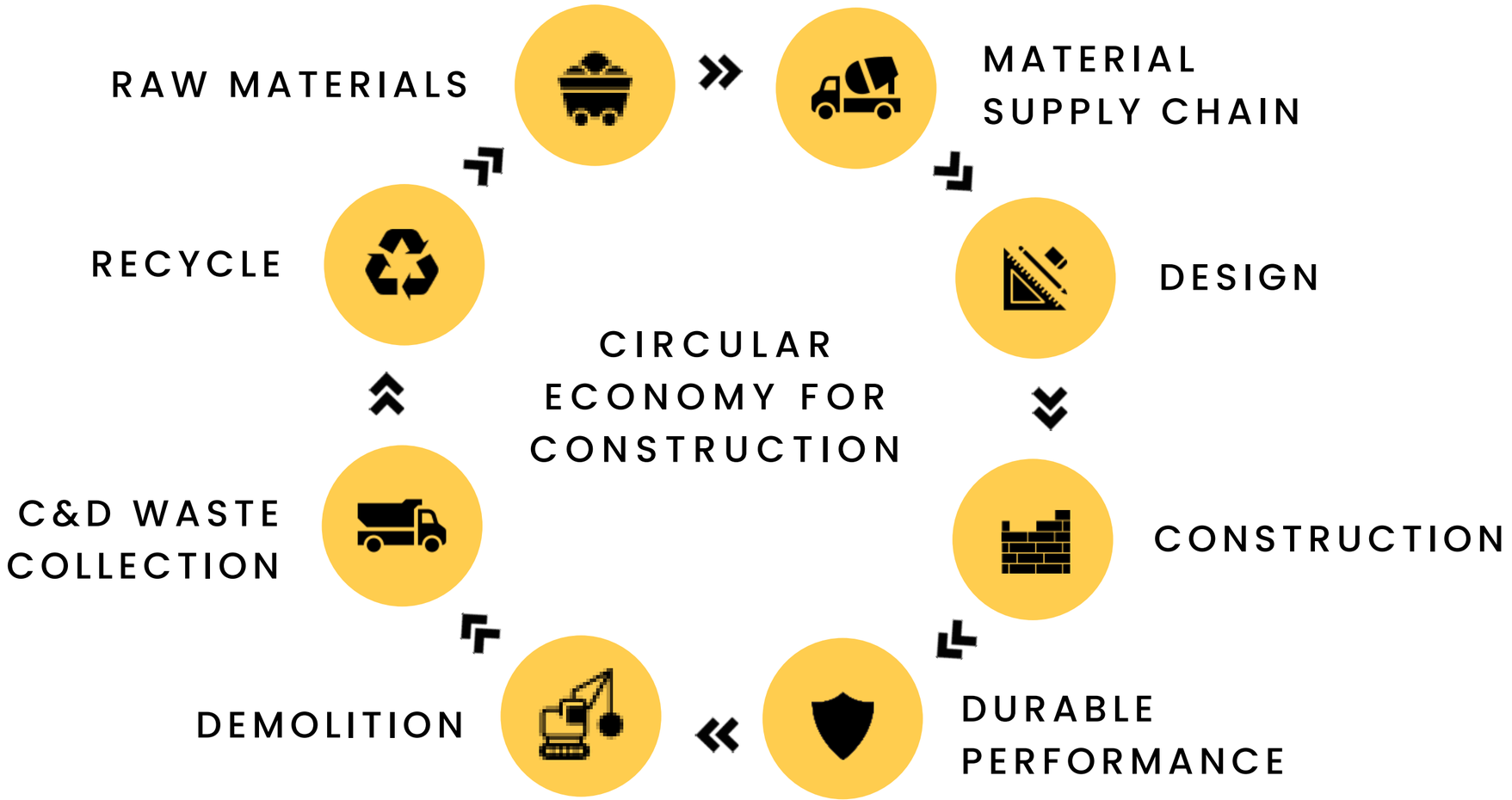
SUSTAINABLE CONSTRUCTION

THE APPROACH

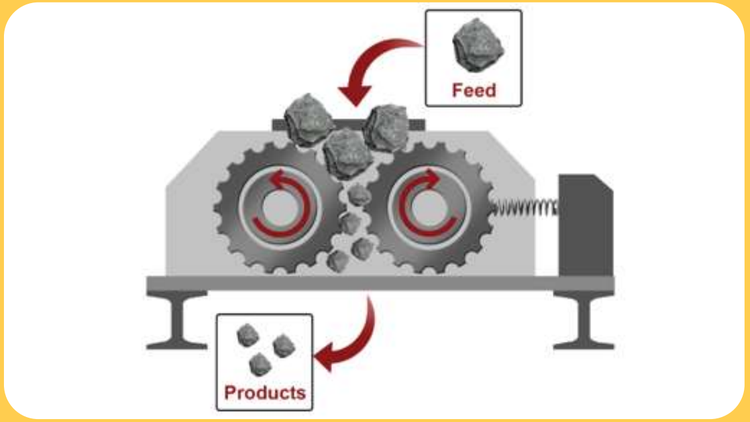


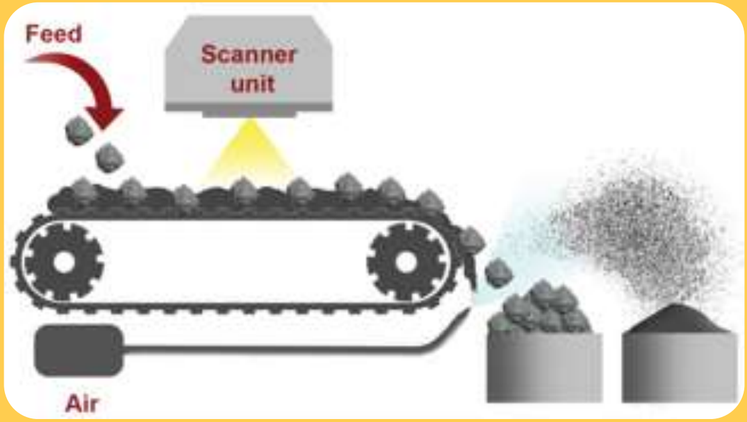

RAW MATERIALS
MATERIAL SUPPLY CHAIN
DESIGN
CONSTRUCTION
DURABLE PERFORMANCE
DEMOLITION
C&D WASTE COLLECTION
RECYCLE
CIRCULAR ECONOMY FOR CONSTRUCTION

TECHNOLOGIES FOR LOW-CARBON & LEAN CONSTRUCTION

RAW MATERIALS

RECYCLE





INTEGRATED TEST-BED

WASTE SOURCE

SUSTAINABLE INFRASTRUCTURE

PRELIMINARY PROCESSING

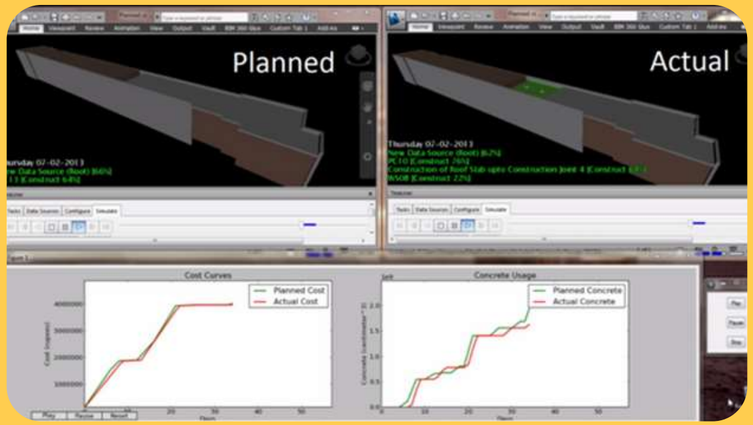
ADVANCED SORTING

ENGINEERED PRODUCTS

BENEFICIATION

ADVANCED PROCESSING

TECHNOLOGIES FOR LOW-CARBON & LEAN CONSTRUCTION



ND BIM SIMULATIONS

MATERIAL SUPPLY CHAIN

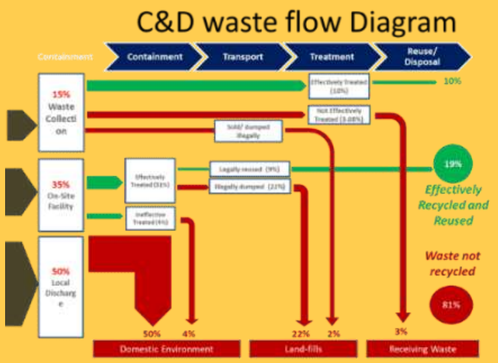
DESIGN

CONSTRUCTION

DURABLE PERFORMANCE

NATIONAL MAPS FOR WASTE MATERIAL USE IN CONSTRUCTION

INDIA'S FIRST 3D PRINTED HOUSE (IITM-TVASTA INITIATIVE)



FRAMEWORK TO TRACK C&D WASTE FLOW AT A CITY LEVEL

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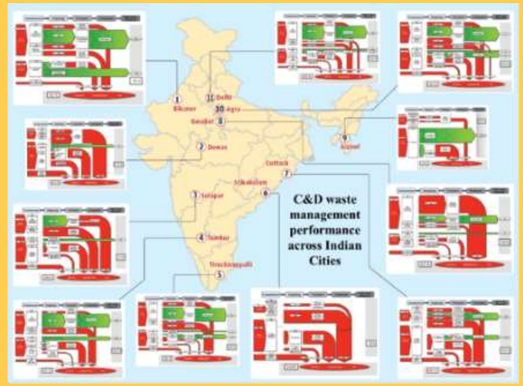
COUNTRY-WIDE CASE STUDIES FOR C&D WASTE FLOW

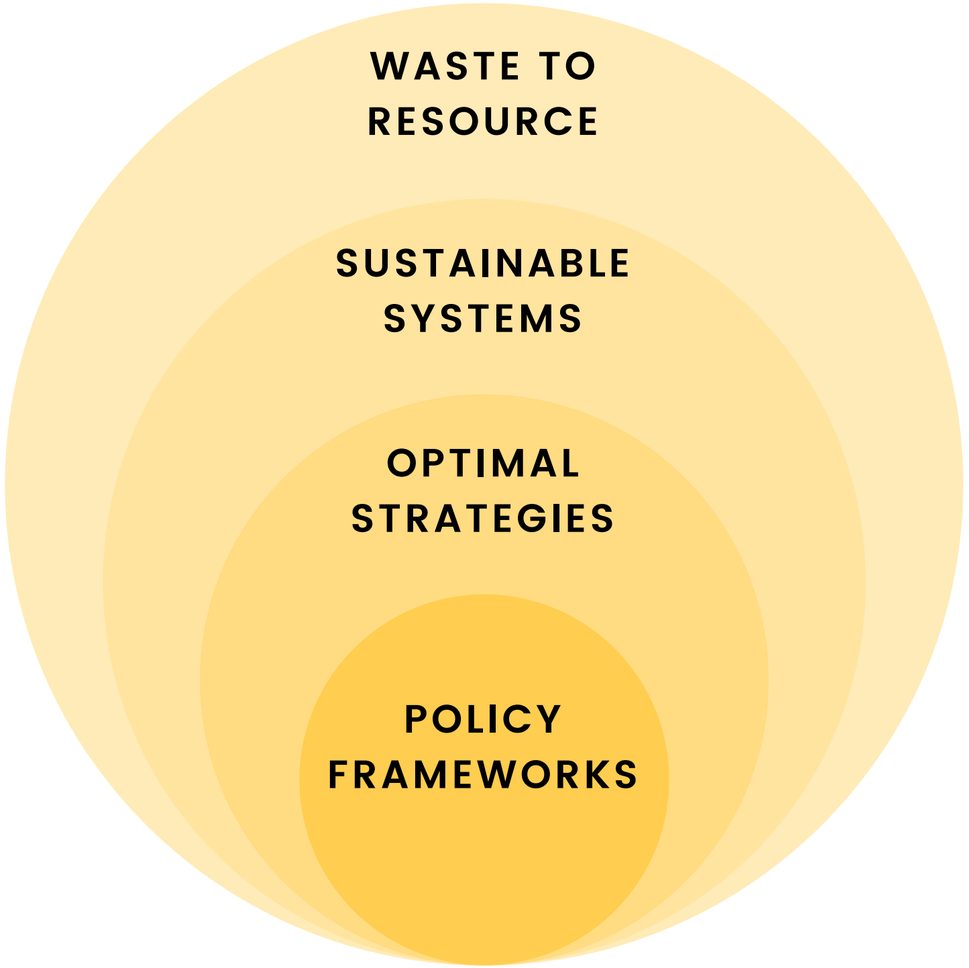


FRAMEWORK TO LEVERAGE PRIVATE SECTOR PARTICIPATION

C&D WASTE COLLECTION

DEMOLITION

THE IMPACT

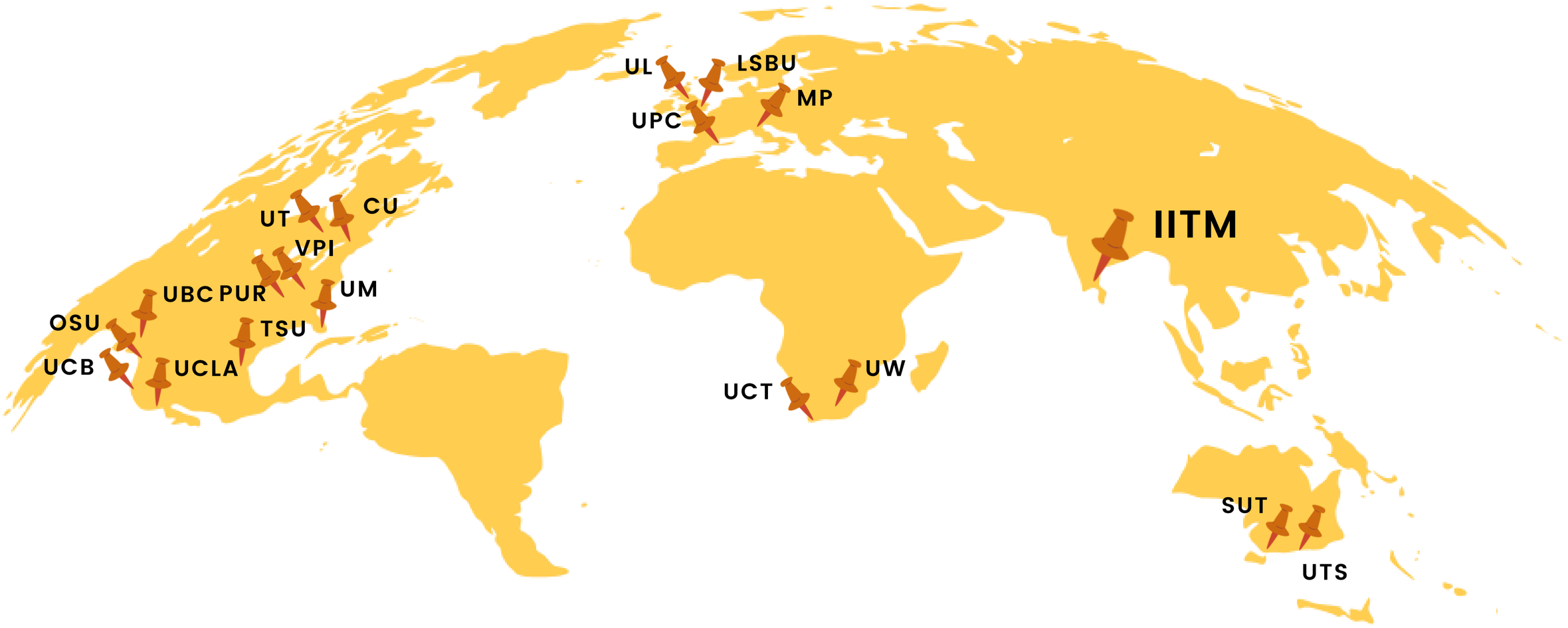


Recycling instead of landfilling (per ton of C&D waste)

- ✓ **Reduce 6.41 kg CO_2 equivalent**
- ✓ **Save 89.93 Mega Joule in energy**
- ✓ **Save 0.32 m^2 of arable land**

Source : Ram et al. 2020

INTERNATIONAL ENGAGEMENT



THANK YOU FOR ATTENDING!

You can visit us at-
http://civil.iitm.ac.in/pcoe/tlc

or, contact us at-
btcmoffice@civil.iitm.ac.in

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