

CSE Online Roundtable
C&D Waste Management Strategies
Release of CSE's new publication:
"Another Brick off the wall"

Release

Bring the bricks back home

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C&D Management Rules 2016: Slow progress



Target = recycling plants in **53** cities by 2017

Reality = **13** cities have recycling plants in 2020

Total installed official recycling capacity is about **6,500 TPD**, or just about **1%** of latest official generation estimate (150 million tonnes by BMPTC). Unofficial estimates are **3-5 times higher**.



Swachh Survekshan 2021 sets new and better benchmarks



Swachh Survekshan 2021 has moved away from the blanket requirement of recycling plants.

Highlights:

It has **recognized nonstructural applications** of C&D waste that don't require the specialized processing.

Ranking points for C&D waste management have been doubled to 100 points

Management infrastructure criteria: cities need to have in place a **C&D waste collection system**, notified **charges for C&D services**, and **segregation of waste in five streams**.

Waste processing efficiency criteria: ranking points will be awarded based on percentage of collected waste that is processed and re-used.



Inadequacy in governance



There has **not been even preliminary discussion and planning** on C&D waste management in most cities and towns.

Many cities have wasted money on studies that have not helped cities with implementation.

Lack of planning, implementation, and monitoring capacity/resources

Lack of experience in C&D waste management

Concerns about finances and business case

Low involvement of state government agencies/departments



Inadequacy in practice and infrastructure



Cities don't have uniformity among their C&D waste estimation methodologies and what to segregate. TIFAC's thumb-rule is not only outdated but also doesn't apply to new-age construction practices and infrastructure work.

No city has proposed provisions for segregated transportation, collection, or storage.

Confusion over estimation of C&D waste both at project and city level

Constraint of land for collection and recycling facility

Special needs for transportation of C&D waste and its affordability

Pricing of C&D services higher than penalty for littering



Inertia of the construction industry



Proper C&D waste disposal has been part of EIA requirement for large projects for over a decade, but hardly any evidence of it seen on ground.

Approach of organizing awareness drives, orientation seminars, and pilot projects won't work with this industry. **Just look at the adaptation status of ECBC.**

Reducing and managing waste is an additional cost. No financial pull available to move them.

Poor accountability framework within construction project

Lack of confidence in recycled products

Low engagement by public construction agencies



Inadequacy in building design and construction management



According to global estimates, **33 per cent of wasted materials** in any construction project is due to **architects' failing to design out waste** during preconstruction stage.

In India, architecture professionals don't account for waste their design would generate.

No forecasting and designing out waste during preconstruction stage is available

No guidelines or standards available for on-site construction waste reduction and management during construction phase

Very poor understanding of end-of-life waste recovery, recycling, and circularity



Ignored informal sector



Every component of C&D waste has a **well established network of informal traders** who are involved in **salvaging, transportation, recycling and selling** of these materials.

It is a repeat of the MSW and ragpickers story.

Rules have completely ignored the informal resources (land, market, livelihood) that already exists. Instead is **burdening the city administration with unnecessary duplication.**

Cities are not capitalizing on their informal resource, and in most cases are actively harming the informal sector to secure C&D waste for their own system, which is not as efficient.

Informal sector has multiple environmentally unacceptable practices that need to be discontinued



Ignored demolition management



In India, demolition service is overwhelmingly dominated by the **unorganized sector with small players** that generally don't have professional expertise nor are registered with ULB or other professional body.

Most cities don't record demolitions and very few actually issue demolition permits.

Role of demolition management is not understood by the professional practices. **Quick demolition without resource recovery** to save time is fast becoming **norm with the industry**

Resource recovery standards and guidelines for demolition are unavailable



Addressing infrastructure waste



DMRC has set up an in-house C&D waste recycling plant of 150 TPD capacity to process the waste being generated during construction of Phase-IV metro lines.

DMRC is still **struggling** to sustainably manage its excavation waste.

No data is available from infrastructure agencies (but DMRC) on how they are managing their waste.

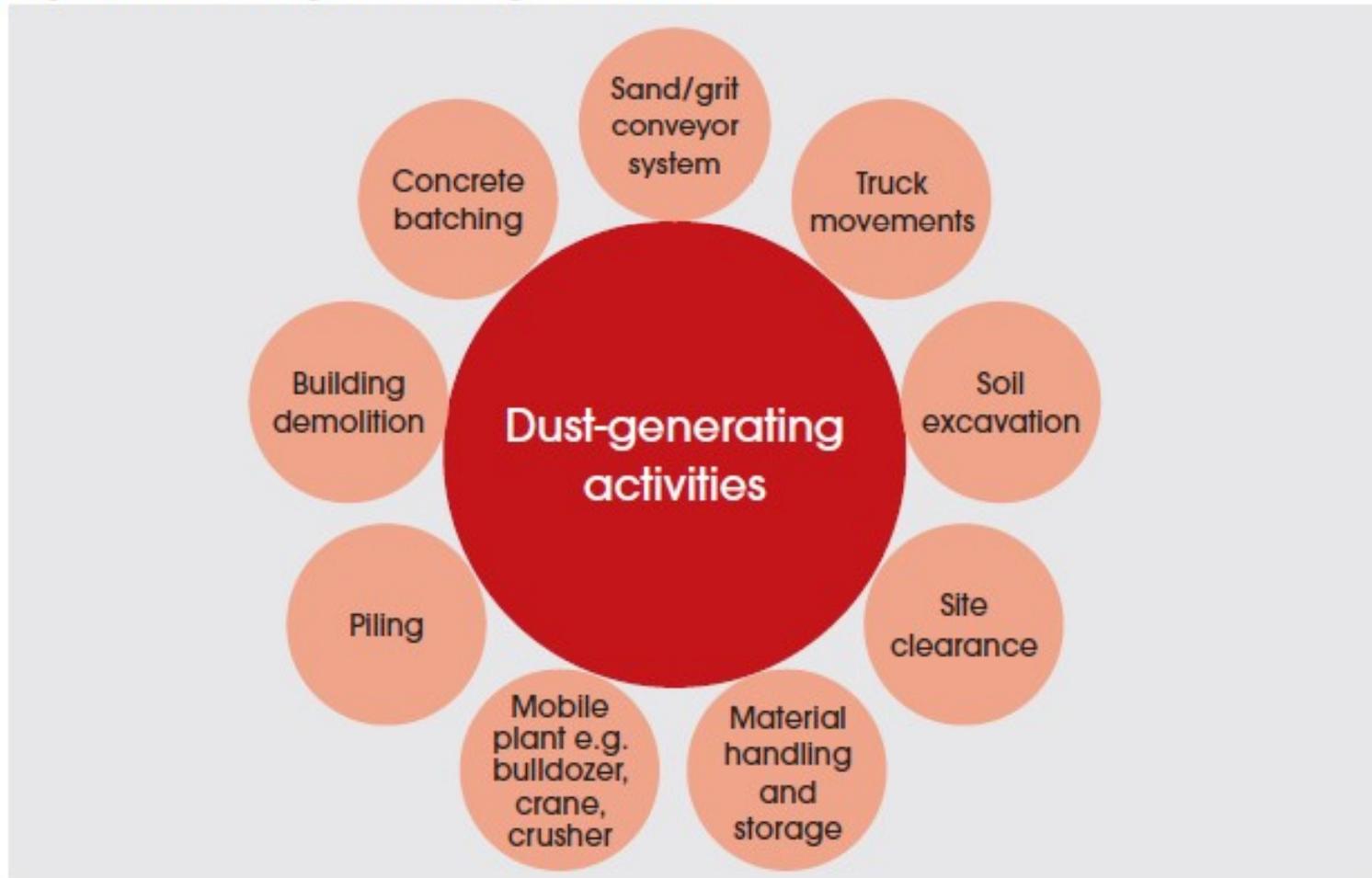
Other infrastructure projects like highway and roadwork where bituminous material forms a considerable portion of the waste, recycling is challenging.



Poor understanding of linkages between waste reduction and dust-pollution control in construction projects



Figure 1: Dust-generating activities





Need is to develop a circular economy around the unavoidable waste and not a system that would require generation of more waste to sustain itself.

Takeaways



Don't need to be generating C&D waste



Globally, it has been noted that the **proactive prevention of waste** through the modification of existing on-site construction practices, rather than the retroactive management of waste after it has been generated, is more effective and efficient.

Architects need to **start designing out waste** and establish **mitigation plans during pre-construction phase itself.**

Construction managers need to plan ahead to utilize unavoidable waste on-site

This would require building technical knowhow, training of professionals and construction labor.

It is a new area of intervention. Globally, development of codes and standards for designing out waste have started only in 2010s. **India needs to start too.**



All C&D waste does not need to go to a recycling facility



TIFAC itself noted that of all the materials produced in demolition about **25 per cent** from old buildings and **75 per cent** from new buildings **can be recovered for reuse**.

Recovery rate can be even higher if proper deconstruction practices are adopted. **Cities should not be spending money and energy in uselessly recycling them.**

Proper monitoring and enforcement would be needed to ensure that this doesn't lead to spike in environmentally unacceptable and structurally dangerous applications



Bricks-concrete are not the only C&D waste that require recycling



No city is developing recycling facilities for non-brick non-concrete components of C&D waste.

Plastics?

Insulation material?

Glazing?

Composite material???

Most of these are going to be uneconomical to recycle, and would require regional level planning.



Make recycled waste products competitive, stop patronising it



Reduce GST on products made from recycled C&D waste. Currently it is at **18%**, while same products with conventional material are taxed at lower rate.

Don't burden recyclers with manufacturing and marketing of value-added products. **Develop and promote new entrepreneurship and competition.**

Ensure access of small and medium scale building projects to recycled waste.

Mandatory utilization by government agencies is good for initial uptake. But this is not a long term strategy.



Cities need support but don't force them to build “white elephants”



Cities need to **innovate and design to reduce their burden**. They need to avoid rushing into setting up recycling plant and first need to:

- Promote waste reduction and in-situ reuse of generated waste to reduce requirement of collection, transportation, and processing.
- Capitalize on the existing informal sector to further reduce handling and processing burden on the city.
- Design a collection and transportation service that reduces cost of disposal for generator and land requirement for city.
- Build recycling facility factoring in resource recovery and reuse at construction site

There is no cookie-cutter solution, each city would have to design their C&D waste management based on their unique attributes.

This would need handholding by experts but there is acute shortage of quality technical expertise in this field.

There is a need for developing C&D waste management focused academic and professional capacity in India.



Understand the co-benefits and interdependencies to optimize implementation



Air pollution

Building material shortage

Livelihood creation



The goal needs to be focused on minimization of waste and not monetization of it.

Thank you.

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