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## ● CITIES AT CROSSROADS

# Towards sustainable urban development

Following international practices, it is important to set standards and have quality certification for recycled materials so that more and more builders are encouraged to use these materials

**O**UR LAST COLUMN ('REUSING WASTE for building'; FE, September 26; <https://goo.gl/KT9a85>) highlighted the growing menace of construction and demolition (C&D) waste in Indian cities and its harmful effect on environmental pollution and public health. In this column, we spell out the crucial responsibilities of municipal corporations, municipalities and other urban local bodies in responding to the challenge of rapidly growing volume of C&D waste in India, while building awareness among waste gener-

ators for the common cause of clean, healthy and sustainable cities.

The C&D Waste Management Rules were notified by the ministry of environment, forest and climate change in March 2016. For these to be translated into action, municipal corporations, municipalities and other urban local bodies need to prepare waste management plans, notify by-laws with penalties for non-compliance, and put in place enforcement mechanisms. Facilitating recycling of C&D waste has to be an important plank of waste management plans. All this is still a work in progress

and there is wide variation across cities.

First and foremost, waste generators must be made aware of the nature of the hazard posed by C&D waste, as cooperation from the community is critical for the success of the efforts of urban local bodies. C&D waste increases particulate matter in the air and leads to air pollution. Compared with municipal solid waste, it causes more traffic congestion and also pollution from dust. People must understand that as water gets trapped in the debris, this becomes a breeding ground for mosquitoes and no amount of spraying can reach the hidden pockets of water. They also have to be made aware that as lakes, storm-water drains, ponds and other water bodies get choked, the city becomes more vulnerable to floods. Dumping C&D waste in lakes for encroachment, a common practice in large cities, also results in loss of wetlands, which are necessary for water purification.

As in the case of municipal solid waste, so in C&D waste, it is important to begin with the first basic principle of waste management that unmixed discards can almost all be put to use. Deconstruction of buildings enables much larger recovery of unmixed materials for reuse than mechanical demolition. As the Report on Resource Efficiency in the Indian Construction Sector by GIZ and Development Alternatives (2015) points out, manual demolition by hammers and pickaxe is the norm in northern India, primarily due to the higher rates of reuse of building materials, especially good quality whole bricks, and the low wage rate. This makes for large recovery of reusable material. By contrast, mechanised demolition through wrecking balls is more common in cities like Chennai, Mumbai and Ahmedabad in southern and western India, making C&D waste management much more difficult.

One of the requirements under the Rules, for example, stipulates that all waste from construction and/or demolition for large projects be stacked onsite unmixed, with different heaps for soil, stone, bricks, cementitious waste, plastics, wood, etc, to make reuse and recycling easier. This can only be accomplished with community cooperation and oversight. For example, Mumbai requires all debris from repairs to be brought down from upper floors only in used cement bags, not loose, and stacked for rapid removal. An example of citizen cooperation is how housing societies in Mumbai encourage this by providing used sacks for a small fee which covers the cost of transporting the waste offsite.

A proactive effort on the part of municipalities is called for to keep C&D waste off the roads, pavements and

vacant sites, and encourage its transport to recycling units. Bengaluru, while giving sanction to building plans, also collects ground rent for the use of pavement for storing C&D materials for 1-2 years of construction. Such pavement use should be limited to 2-3 months or until completion of the first slab, and thereafter progressive escalation of the ground rent should be explored, to discourage on-site stacking of construction materials. Municipalities must also remove unauthorised dumpsites on vacant land—public or private—while recovering the cost of transporting the waste to the recycling plants through penalty from the owner. Exclusive right to property and laws of trespass ought not to come in the way of removing a public nuisance. Vacant site owners are often untraceable in the records, and owners, titles and boundaries are typically unclear. Debris dumping is often accepted if not welcomed by owners to prevent encroachment.

Citizens have already begun to agitate, often successfully, to curb the rights of property owners; for example, banning commercial activity or noisy bar music in a residential area as it inconveniences their vehicle parking or their sleep. If public benefit curbs on occupied spaces are entertained, and rightly so, then why not curbs on vacant sites that invite pollution and ill-health?

There is a need for public discussion on measures to ensure beneficial uses of vacant sites without harming the rights of site owners but supporting the rights of neighbours for a pollution-free environment. Property tax on unfenced vacant sites should be the same as the tax on a ground floor building on a similar plot area, and interest must be charged on tax dues. Admittedly, property tax rates tend to be very low in most Indian cities, but tax on vacant sites would give a signal to owners to get on with building. Unfenced plots in any case should be periodically cleaned or fenced for nuisance-proofing by the municipal corporation and charges added to property tax dues.

Where site owners are untraceable and the vacant site is unfenced, the municipal corporation should put up a notice on the site that this is proposed to be used as a green park or playground with no structures on it, while giving a hotline contact number for objections. Usually some unknown caretaker or relative shows up and negotiations can be carried out. The green space can be maintained by the resident welfare association (RWA). An agreement can be entered into with the owner that converting the vacant site into a green space or sports area in no way confers property rights to anyone other than the rightful owner and will not be deemed trespass.

Even though Delhi is ahead of other cities in recycling its C&D waste, it also has a long way to go. IL&FS Environment has three recycling plants with a total capacity of 2,650 tonnes per day in Delhi, turning out aggregates (*kankar*), RMC (ready-mix concrete), kerb stones, tiles, paver blocks and manufactured sand, etc, for use in construction, but much of their installed capacity lies underutilised. In September 2018, 5.6 lakh tonne of processed C&D material was lying at these plants for want of offtake despite stipulation for use of recycled materials. Backward and forward linkages need to be forged with all recycling plants so that C&D waste reaches the recycling plants and there is effective demand for the output from these plants. Bengaluru, Ahmedabad and Indore also have plants for recycling C&D waste and more are being planned. Government construction works can set an example by using the recycled products as prescribed in Sec 9 (4) of C&D Waste Management Rules (2016). Reputed builders can also give a lead in this respect. Following international practice, it is important to set standards and have quality certification for the recycled materials so that more and more builders are encouraged to use these materials and contribute to the cause of sustainable urban development.

