

**GINDA CITY POLICY ON
CONSTRUCTION AND DEMOLITION WASTE - 2019**



**GREATER NOIDA DEVELOPMENT AUTHORITY
UTTAR PRADESH**

(Prepared in compliance of Rule 9 sub-rule 1 of C & D Waste Management Rules, 2016)

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1. Background

It is very common to see huge piles of Construction and demolition (C&D) waste stacked alongside of major roads resulting in traffic jams, congestion and disruption & chocking of drains. It is one of the heaviest and most voluminous waste streams generated in the present scenario. Around 25% - 30% of all waste generated in the country comprises of C&D waste in developed countries.

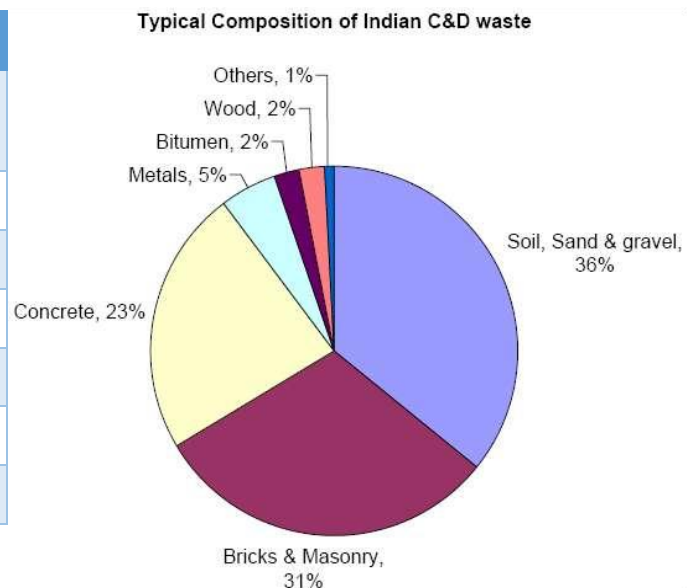
Construction and demolition (C&D) waste is generated from construction, renovation, repair, and demolition of houses, large building structures, roads, bridges, piers and dams etc. C&D materials included in this document are steel, wood products, drywall and plaster, brick and clay tile, asphalt shingles, concrete, and asphalt concrete. These estimates represent C&D material amounts from construction, renovation and demolition activities for buildings, roads and bridges, and other structures.

First of all, many of the materials used in the construction of buildings are produced in a non-sustainable way. The factories that make these materials, causing harmful CO2 emissions. There is a huge environmental impact associated with the extraction and consumption of raw materials for production of building materials.

As per the study conducted by Centre for Science and Environment of India, a new construction generates 40-60 kg of C&D waste per sqmt, then taking an average of 50 kg per sqmt, building repair produces 40-50 kg per sqmt of waste. The waste produced per sqmt of demolition is 10 times that generated during construction. As per Technology Information Forecasting and Assessment Council (TIFAC), considering 300-500 kg of waste generation per sqmt, India must have generated about 50 million tons (MT) of C&D waste in 2013.

Typical composition of Indian C & D waste (TIFAC)

#	Material	Composition
1	Soil, Sand & Gravel	36%
2	Brick & Masonry	31%
3	Concrete	23%
4	Metals	5%
5	Bitumen	2%
6	Wood	2%
7	Others	1%



2. Vision

“Greater Noida Industrial Development Authority to achieve the scientific management of C&D waste as per guidelines mentioned in the Construction & Demolition (C&D) Waste Management Rules, 2016.

3. Goal

To effectively use the construction and demolition waste in the state by scientifically manage all the C&D waste of the state to achieve 3 E's.

- i. Save **Environment**: Reduce air, water & noise pollution, health hazard etc.
- ii. Save **Energy**: Energy consumed in the production of the construction material from natural resources.
- iii. Enhance **Economy**: Potential high value of recycled material not tapped and gets buried in landfills or illegal dumps leading to economic loss. Reduce demand-supply gap in these sectors and save the natural resources. Reduce the valuable waste going to landfill.

4. The policy specifically endorses the following core principles:

- i. To protect the environment and the City valuable land resources
- ii. Treatment of C&D waste at the local level so that value addition is done to the waste
- iii. Promoting use of the C&D waste at the city level and recycle & reuse of the waste for construction, land filling and other uses.
- iv. To make the recycling of C&D waste at the residential, commercial and the institutional level, which is economical and environmentally sustainable.
- v. Ensuring, protecting and proper use of the C&D waste.
- vi. Exploring Public Private Partnership (PPP) at the residential, commercial and the institutional level for C&D waste management and use.
- vii. Establishment of an efficient, effective, affordable and accountable system for managing the C&D waste, effective recycling and its reuse.

5. Objectives:

To overcome the problem of collection, transportation and disposal of the C&D waste at the landfill site. The policy is drafted to ensure C&D waste is stored, collected, transported and processed properly so that it is put to effective use. The processing of the C&D waste is to reduce the burden of disposal as well as convert the C&D waste into meaningful product.

- A. **Reduction of C&D Waste: Less waste leads to** fewer disposal facilities, which leads to less environmental issues. Rehabilitate an existing structure in place of planned demolition. Use deconstruction techniques rather than demolition of a building.
- B. **Reuse of C&D Waste:** It does not require any further processing to convert into a useful product. The items which are usable directly to be screened out from the debris and put into the possible use without further processing.
- C. **Recycling of C&D Waste:** Once the waste generated from construction and demolition activities has been segregated and reusable items are taken out, the leftover is available for further processing i.e. recycling into next useful stage.
- D. **Re-buy of processed material:** Purchase recycled-content building materials by authorized contractor. In each new construction 10% material (minimum) should be used recycled C&D waste materials.

To ensure the above objective following activities should be followed:

- i. To ensure 100% collection of the C&D waste.
- ii. To ensure 100% processing of the C&D waste in the city.
- iii. To improve the environment and reduce the pressure on the landfill sites, water bodies, roadside or elsewhere in the city.
- iv. To ensure the C&D waste recycled is used for meaningful purpose in construction, road, filling etc.
- v. To reduce the dependence upon the fresh construction material at the local level.
- vi. To ensure alternative use of C&D waste material in the city.
- vii. Recycling of aggregate material from construction and demolition waste.

Storage, Collection and Transportation of C&D Waste:

C&D waste should be kept in the generator's compound in a properly segregated way and then transported to designated disposal sites prescribed by the local authority. Local authority will formalize a collection system with adequate tracking, monitoring.

To create a framework for organized storage, collection, reuse or disposal waste generated. The C&D waste should be transported to the designated location/s on self-arrangements by generators or through other systems provided by ULB, whichever is mentioned in the by-laws of the ULB. Either way, both the generator and the transporting entity should maintain records of the quantum of waste transported to the designated processing/ dumping area. Vehicles carrying C&D waste should be covered to avoid

dust, air pollution and spilling of debris on roads. These trucks can also be enabled with GPS devices for tracking of waste flow from the collection points or generation site to the waste processing facility.

Disposal:

C&D waste should not be allowed to be dumped in landfills before recovering useful materials from the waste stream. The small fraction of C&D waste that comes out as unusable waste product after processing to be used in landfilling or pavement making and the rest needs to be disposed properly in a sanitary landfill and should not be mixed with other MSW.

The hazardous fraction of C&D waste needs to be dumped in a hazardous waste landfill. More than 90% of the C&D waste composition in Indian cities can be processed/ recycled and reused as secondary raw materials. Even for cities which do not have dedicated recycling facilities, the C&D waste debris can be used to some extent for approved public works construction projects where possible, and the rest should be disposed at designated dumping sites which provides an opportunity for recycling them in the future.

Processing and Utilization of C&D Waste:

In India, currently material streams in C&D waste of immediate market value like metals, wood frames, etc. are recovered for the secondary market (usually by the informal sector), while the rest of debris is left behind. While a small fraction of this debris is used for backfilling and as daily landfill cover, most of it is not utilised. Delhi and Ahmedabad have successfully set up of C&D waste processing facilities that are manufacturing a wide range of products. As required under the new Rules, such processing units need to establish in Greater Noida.

6. Duties of Service Provider and Their Contractors

- i. The service providers shall prepare a comprehensive waste management plan covering segregation, storage, collection, reuse, recycling, transportation and disposal of construction and demolition waste generated within their jurisdiction.
- ii. The service providers shall remove all construction and demolition waste and clean the area every day, if possible, or depending upon the duration of the work, the quantity and type of waste generated, appropriate storage and collection, a reasonable timeframe shall be worked out in consultation with the concerned local authority.
- iii. In case of the service providers have no logistics support to carry out the work specified in sub- rules (i) and (ii), they shall tie up with the authorised

agencies for removal of construction and demolition waste and pay the relevant charges as notified by the local authority. All such logistic supports shall be equipped with GPS device and the service provider will provide daily report on collection and disposal of C&D waste.

- iv. Dust control Plan: Suitable measures shall be taken by the Concessionaire to control and manage the dust generated during processing of C&D Waste and ensure that dust generation is minimal even during the dry seasons. Failing to do so will attract heavy penalty as decided by the authority from time to time through notifications,
- v. Development of Re-cycle Material: the service provider shall develop the recycled materials which will be certified by BIS and will be sold for various works at construction site (Public and Private both). An audit trail shall be maintained by the service provider to keep track of C&D waste collected and their utilization.

7. Duties of Local Authority:

- i. issue detailed directions with regard to proper management of construction and demolition waste within its jurisdiction in accordance with the provisions of these rules and the local authority shall seek detailed plan or undertaking as applicable, from generator of construction and demolition waste;
- ii. chalk out stages, methodology and equipment, material involved in the overall activity and final clean up after completion of the construction and demolition;
- iii. seek assistance from concerned authorities for safe disposal of construction and demolition waste contaminated with industrial hazardous or toxic material or nuclear waste if any;
- iv. shall make arrangements and place appropriate containers for collection of waste and shall remove at regular intervals or when they are filled, either through own resources or by appointing private operators;
- v. shall get the collected waste transported to appropriate sites for processing and disposal either through own resources or by appointing private operators;
- vi. shall give appropriate incentives to generator for salvaging, processing and or recycling preferably in-situ;
- vii. shall examine and sanction the waste management plan of the generators within a period of one month or from the date of approval of building plan, whichever is earlier from the date of its submission;

- viii. shall keep track of the generation of construction and demolition waste within its jurisdiction and establish a data base and update once in a year;
- ix. shall device appropriate measures in consultation with expert institutions for management of construction and demolition waste generated including processing facility and for using the recycled products in the best possible manner;
- x. shall create a sustained system of information, education and communication for construction and demolition waste through collaboration with expert institutions and civil societies and also disseminate through their own website;
- xi. shall make provision for giving incentives for use of material made out of construction and demolition waste in the construction activity including in non-structural concrete, paving blocks, lower layers of road pavements, colony and rural roads.
- xii. Higher incentives will be provided to the developer/project who has used higher amount of recycled materials.
- xiii. The incentives will be provided to the developer/project based on the ranking / rating as described in the following table:

#	% of re-cycled Material used in the project	Rating / Ranking
1	10%	Minimum
2	More than 10% - up to 13 %	4
3	More than 13 - up to 17%	3
4	More than 17 - up to 20%	2
5	More than 20 - up to 25%	1

- xiv. The CEO, GNIDA will be responsible for implementing policy through various legislative acts & rules and will be finalizing the benefit/fine the authority can provide or levy to Developers/Project. The decisions taken by the CEO will be informed to the Board

8. Duties of the Waste Generator:

- i. Every waste generator shall prima-facie be responsible for collection, segregation of concrete, soil and others and storage of construction and demolition waste generated, as directed or notified by the concerned local authority in consonance with these rules.

- ii. The generator shall ensure that other waste (such as solid waste) does not get mixed with this waste and is stored and disposed separately.
- iii. Waste generators who generate more than 10 tons or more in one day or 300 tons per project in a month shall segregate the waste into four streams such as concrete, soil, steel, wood and plastics, bricks and mortar and shall submit waste management plan and get appropriate approvals from the local authority before starting construction or demolition or remodeling work and keep the concerned authorities informed regarding the relevant activities from the planning stage to the implementation stage and this should be on project to project basis.
- iv. Every waste generator shall keep the construction and demolition waste within the premise or get the waste deposited at collection center so made by the local body or handover it to the authorised processing facilities of construction and demolition waste; and ensure that there is no littering or deposition of construction and demolition waste so as to prevent obstruction to the traffic or the public or drains.
- v. Every waste generator shall pay relevant charges for collection, transportation, processing and disposal as notified by the concerned authorities; Waste generators who generate more than 10 tons or more in one day or 300 tons per project in a month shall have to pay for the processing and disposal of construction and demolition waste generated by them, apart from the payment for storage, collection and transportation. The rate shall be fixed by the concerned local authority or any other authority designated by the State/City Government.
- vi. On a later stage, upon discretion of the CEO of GNIDA, the project costing INR 500 Cr or above, will be directed not to take out the C&D Waste to any other recycling/dumping ground. The generator need to setup a mandatory C&D waste processing plant at the site itself. The recycled product derived from the waste, shall be used within the site, as far as possible

10. Criteria for site selection for storage and processing or recycling facilities for construction and demolition waste:

As per guideline given in the Schedule I of C&D Waste Management Rules, 2016. Land size should be large enough to last for 20 to 25 years.

11. On Legislation and Institutional Arrangements:

- a. Legislation and institutional arrangements for the development and use of C&D waste shall be periodically reviewed. Gaps shall be filled, and updating of the institutional arrangements with parallel legislation shall be made periodically to cope with varying circumstances and for this government shall notify an agency giving full power to take necessary action in this matter.
- b. The role of the Government shall be fine-tuned and its involvement reduced to be regulatory and supervisory. Involvement of the stakeholders in C&D waste processing and marketing shall be introduced and expanded.

12. On Standards, Regulations and Quality Assurance

- a. Particular attention shall be focused on adopting and enforcing the C&D waste to be done at appropriate level.
- b. Extensive and comprehensive monitoring programs shall be developed so that the C&D is collected and processed properly.
- c. Data collected from the monitoring process shall be entered and stored, processed and analyzed through computer software, and results are to be published periodically by the local body.

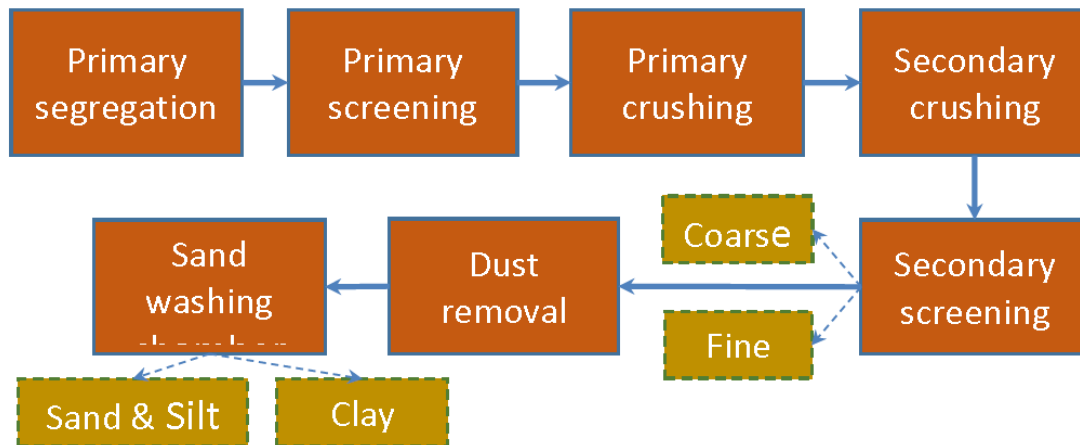
13. Public Awareness:

- a. The public shall be educated through various means about the advantage associated with the C&D waste handling and processing.
- b. Programs on public awareness shall be designed and conducted to promote the C&D waste at different levels.
- c. Public awareness campaigns shall also be waged to educate the public on the importance of C&D waste and its advantage to the environment.
- d. It is observed that the system is dependent on the appreciation of the beneficiaries to the advantages and importance of the system to them and thereby working together towards making it successful.
- e. A conscious campaign has to precede the planning and implementation of the C&D waste policy. Local body, Non-Government Organizations and local neighborhood committees could give the process a thrust.
- f. A public participation process will not only aid in identifying potential consumers but also serve as a public education program.

14. How the Policy will be executed in the Cities/Towns:

All efforts will be done to follow the execution method to be mentioned in the strategy, however, depending upon the budget availability the ULB may choose any ward. If due to some environmental factors the ward level selection for implementation may vary.

15. C&D Waste Processing Flow Chart:



16. Monitoring & Evaluation:

Local authority will develop an M&E framework to measure cities' performance, and also devise data collection and reporting systems using indicator framework developed for C&D waste. A cell will be created inside ULB to monitor and evaluate the composting being done. The cell will be created by funds from external agency funding or from the funds of 14th finance commission or through the state budget.

A Management Information System (MIS) will be developed accordingly to monitor and evaluate the progress.

17. Tax Incentive

The tax incentive will apply in following conditions:

- i. All the builders/contractors who will treat their C&D waste as per the norms laid will be eligible tax incentive after a year based on the evaluation of their performance.
- ii. All the new apartments which will be constructed and if they adhere to all C&D norms may get a rebate in construction permit fee.

- iii. All the new malls, big hotels, industries, clubs, colleges, universities, hospitals, sports stadiums etc. which will be constructed and if they adhere to all C&D norms may get a rebate in construction permit fee.
- iv. A separate head of the user fee and penalty namely called 'C&D User Fee and Penalty' will be created which may be levied as per the norms laid out.

18. Capacity Building & Training

The City Government, will formulate a strategy on capacity building and training on C&D waste to support the local body to build their personnel capacities and organizational systems for delivery of C&D waste services. It will identify agencies that will train the local level personnel on aspects related to C&D waste. These agencies could be the empaneled agencies by MoUA.

19. Expected Outcomes

As this Policy is implemented in the city, it is expected to yield significant benefits in terms of improved public health indicators, considerable reduced pollution of water bodies and groundwater from C&D waste, and resource recovery leading to reuse of treated waste and other end products. Some key projected outcomes are:

- i. Safe containment, collection and conveyance of 100% C&D waste to treatment and disposal sites
- ii. Continuous improvements in efficiency and effectiveness in the entire C&D waste cycle collection, treatment, recycle & reuse and disposal
- iii. Contamination of water bodies and groundwater from human waste (Faecal matter) reduced to zero levels in all the towns and cities
- iv. Nuisance from C&D waste reduced to minimum levels, resulting in nuisance-free living space
- v. Maximum reuse of recycled C&D waste at the city level and making wealth out of waste.