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DESIGN WEEK 2022

24hrs Design Now Challenge



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Problem Statement

Anand Pujari

Education Account Manager | [@anandvpujari](https://www.linkedin.com/in/anandvpujari)

Mohammed Shereef

Deputy Manager - Design Team Manager

Smart Garbage Facility

ABC waste management company planning to develop a Garbage bin for the urban societies in order to streamline the collection of garbage without human interface.

In urban societies, often garbage bins are overflowed with different waste materials which leads to following problems:

- Health issues to the garbage collectors.
- Solid waste present around the bin creates disturbance to commuters, sometimes it may lead to accidents.
- Workers find difficult as well as discomfort to collect the garbage from roads and footpaths to load into the truck or bin.
- Sometimes the spilled garbage is consumed by domestic animals like dogs, cows, which leads to serious health issues to them.
- Foul smell is created due to lack of maintenance of the garbage bin.

Problem Statement with Design Considerations

Research & Develop a Design on “**Smart Garbage Facility**” which does smooth loading, unloading and collecting garbage in a smart way which solves the social issues of hygiene in urban societies.

The “Smart Garbage Facility” should focus on quick disposal of waste from public to the waste management company by ensuring the hygiene in that society.

- Garbage Collector should segregate and collect Dry, Wet and Bio-Waste in separate containers.
- The garbage collector capacity should not exceed 300 litres wastage (overall).
- Vehicle should be capable of loading and unloading the wastage to the Garbage Truck.
- Select the appropriate material to make the Garbage collector light in weight and easy to transport
- Max size of the Garbage collector should not exceed 200cm L/100cm W / 120cm H
- Implement the industry 4.0 applications like IOT, AI to create a “Smart Garbage facility”.

Submission Criteria

ABC waste management company planning to develop a Garbage bin for the urban societies in order to streamline the collection of garbage without human interface.

- All the design and research files must be saved in the dedicated Fusion 360 project folders. (Jury members will be tracking your designs at regular intervals).

<Team Name> - <Team 01> - <Work under this project folder>

- Students must prepare presentation (PPT) file to explain their design and working mechanism to jury members
- Min 1 component must be optimized using “Generative Design Module”.
- Students must submit the High Quality Rendered images of their Product
- Students must create a short animation clip about their Product.

Judging Criteria

Judging criteria for Round 1:

- 15%- Research Work (Framing the Design Objectives)
- 25%- Design Process (Fusion 360 Software usage)
- 20%- Creative and Novelty (Smart facilities in the bin)
- 10%- Render and Animation of the model
- 10%- Usage of Generative Design
- 10%- Material Selection and simulation studies
- 10%- Rigidity, Stability and Durability of the Bin

Judging Criteria for Final Round:

- 20%- Creativity Ideas and Novelty (Design objectives/Free hand sketch/References)
- 35%- Software usage (Design Processes, Part modelling, Assembly, and Generative design)
- 25%- Feasibility (Rigidity, Stability and Durability of the Bin, Manufacture feasibility, Material selections, Cost estimation)
- 20%- Presentation (Render images, Animation video and No. of Questions Answered)

All the Best!



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