

PROJECT 7 : SMART PUBLIC RESTROOMS

Phase 1: Problem Definition and Design Thinking

Problem Definition: Designing smart public restrooms

Public restrooms are a vital part of urban infrastructure, but they often face various challenges related to cleanliness, accessibility, and efficiency. The problem of creating smart public restrooms can be defined as follows:

- ✦ Inefficient energy management issues like water wastage, energy wastage, inefficient cleaning schedules and high utility costs.
- ✦ Hygiene and Sanitation issues like flushing, bad odour, maintenance and ensuring cleanliness of the restroom.
- ✦ Availability of restrooms for the users and mostly making it convenience for differently abled people.

Design Thinking:

- ✦ Inefficient energy management can be solved by applying IoT for water and sewage monitoring, automated lights, automated floor cleaning at a set of time.
- ✦ Application of IoT in automated flushing, automated freshner for bad odour, responding user complaints like broken faucets, clogged toilets and depleted supplies such as toilet papers will be notified and sent directly to the maintenance team.
- ✦ Displaying of number of people inside restroom using sensors and enabling a limit to avoid over crowding. For the convenience of differently abled people, automated door system will be implemented.

By following this design thinking approach, you can create smart public restrooms that leverage IoT technologies to provide a more efficient, user-friendly, and hygienic experience for the users while also optimizing resource usage and maintenance efforts.

