## SMART PUBLIC RESTROOM

PROBLEM DEFINITION

Traditional public restrooms face numerous challenges, including cleanliness, accessibility, resource inefficiency, and user dissatisfaction. These issues negatively impact the public's experience and public health. To address these problems, there is a need to design and implement smart public restrooms that leverage advanced technology to enhance efficiency and user satisfaction

KEY PROBLEM AREAS

Cleanliness and Maintenance

* Traditional public restrooms often suffer from inadequate cleanliness and maintenance, leading to unpleasant user experiences and public health concerns.

Resource Inefficiency

* Many public restrooms waste valuable resources such as water, electricity, and cleaning supplies, which is unsustainable and costly.

Accessibility

* Ensuring accessibility for all individuals, including those with disabilities, remains a challenge in many existing facilities.

User Experience

* Users frequently encounter inconveniences, discomfort, and dissatisfaction when using traditional public restrooms.

Safety and Security

* Public restrooms can be unsafe or lack security measures, potentially jeopardizing user well-being.

Real-time Information

* Users often struggle to locate clean and available restrooms, particularly in crowded settings, such as airports or shopping malls.

Sustainability

* Traditional restrooms contribute to environmental issues through excessive waste and energy consumption.

Maintenance Alerts

* Identifying and addressing maintenance issues in a timely manner is a persistent challenge.

DESIGN THINKING APPROACH

Empathize:

* Understand the needs and pain points of restroom users, facility managers, and maintenance staff through surveys, interviews, and observation.

Definition:

* Clearly define the problem areas and goals for the smart public restroom project, focusing on improving cleanliness, resource efficiency, accessibility, user experience, safety, real-time information, sustainability, and maintenance.

Ideate

* Brainstorm innovative solutions to address each problem area, such as automated cleaning systems, water-saving fixtures, inclusive design features, touchless technology, safety measures, real-time monitoring, eco-friendly materials, and maintenance alert systems.

Prototype

* Create prototypes of the smart restroom features and technologies, allowing stakeholders to visualize and test potential solutions before implementation.

Test

* Pilot the smart restroom prototypes in real-world settings to gather feedback from users, facility managers, and maintenance personnel. Iterate on the design based on their input.

Implement

* Develop a comprehensive plan for implementing the smart restroom solutions, considering factors like cost, scalability, and regulatory compliance.

Measure and Improve

* Continuously monitor the performance of the smart public restrooms, collecting data on cleanliness, resource usage, user satisfaction, accessibility, safety, and sustainability. Make improvements based on data-driven insights.
* By applying the principles of design thinking, smart public restrooms can be designed and implemented to effectively address the identified problem areas while continuously improving to meet the evolving needs and expectations of users and stakeholders.