

# Environ-Solutions Group

---

Climate Action Advocates

Done by: Luzia Xavier Manuel



# Outline

- Project topic
- Project Overview
- Tools used
- Understanding the user
- Starting the design
- Refining the design
- Going forward

# Project Topic: Digital Solution for Efficient Waste Management

## **Brief Description of the project**

My dedication is to provide efficient and sustainable solutions for waste collection and recycling. The website helps to reduce the release of greenhouse gases such as methane and carbon dioxide which contribute to climate change. By reducing waste, we can decrease the amount of organic waste sent to landfills and reduce methane emissions. Additionally, by minimizing energy consumption and adopting more sustainable waste management practices, we can mitigate the overall carbon emissions associated with waste aligning with our SDG targets.

## **Services Offered:**

- 1. Waste Collection**
- 2. Recycling Programs**
- 3. Composting and Organic Waste Management**

# Project Overview



## The Product:

The product is a waste management website dedicated to providing efficient and sustainable solutions for waste collection and recycling.



## Project duration:

22<sup>nd</sup> May, 2023 to 30<sup>th</sup> May, 2023

Home page of our product



# Tools used in designing

- Paper and pen
- Google docs
- Figma



# Project overview



## The Problem:

Inadequate waste management practices have become a significant environmental and health concern worldwide. Communities and individuals face challenges in managing waste effectively, leading to pollution, health hazards, and inefficient resource utilization.



## The Goal:

The goal is to minimize waste generation, maximize recycling and resource recovery and ensure safe and responsible disposal of non-recyclable waste.



# Understanding the user

- User research
- User analysis
- Persona
- Empathy map
- Problem statement

# User Research: Survey and Summary

SN	SEX	AGE RANGE	Highest level of education	Demography	Number of household	How frequent do you dispose waste	Type of waste generated	Method of waste disposal	Aware of waste disposal facilities?	Aware of environmental impact	How concerned are you?	Ever used a website?	Interested in an website?	Features interested in
1	F	25-34	Bachelor's degree	U	3-5	Once a week	Paper, Plastics, food, tin & can	Composting, Trashbin/Landfill	Yes, Never used	Yes	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
2	F	25-34	Bachelor's degree	U	3-5	Once a week	Paper, Plastics, food, tin & can, glass	Recycling, Incineration	Yes, Occasionally	Yes	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
3	F	25-34	Bachelor's degree	U	6 above	Once a week	Paper, Plastics, food	Incineration	No	Yes	Very	No	Yes	Recycling guidelines and tips
4	F	25-34	Bachelor's degree	U	1-2	Daily	Plastics	Composting	Yes, Occasionally	Yes	Somewhat	No	No	N/A
5	F	25-34	Bachelor's degree	U	6 above	Daily	Plastics, food, tin & can	Trash Car	No	Yes	Very	No	Yes	Waste Pickup schedules and reminders, Recycling guidelines and tips
6	F	18-24	Other	U	3-5	Every 2 days	Paper, Plastics, food, tin & can	Trashbin/Landfill	No	Yes	Very	No	Yes	Recycling guidelines and tips, Information
7	F	25-34	Bachelor's degree	U	3-5	Once a week	Paper, Plastics, food, tin & can, Glass	Recycling, Incineration	Yes, Occasionally	Yes	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
8	M	25-34	Bachelor's degree	S-U	6 above	Once a week	Paper, Plastics, food, tin & can	Trashbin/Landfill	Yes, Never used	Yes	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
9	M	18-24	Other	S-U	3-5	Once a week	Plastics, tin & can	Trashbin/Landfill	No	Yes	Not at all	No	No	N/A
10	F	18-24	Bachelor's degree	U	3-5	Daily	Paper, Plastics, food, tin & can, Glass	Trashbin/Landfill	Yes, Regularly	Yes	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
11	F	25-34	Bachelor's degree	U	3-5	Once a week	Paper, Plastics, food, tin & can, Glass	Trashbin/Landfill	Yes, Occasionally	Maybe	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
12	F	25-34	Bachelor's degree	S-U	3-5	Daily	Paper, Plastics	Trashbin/Landfill	No	Yes	Not at all	No	No	N/A
13	M	18-24	Other	S-U	1-2	Daily	Paper, Plastics, food, tin & can, Glass	Trashbin/Landfill	Yes, Never used	Yes	Neutral	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
14	M	25-34	Bachelor's degree	U	3-5	2 to 3 times	Plastics, food, tin & can	Recycling/Incineration	Yes, Regularly	Yes	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
15	F	18-24	Bachelor's degree	U	6 above	Daily	Paper, Plastics, food	Trashbin/Landfill	Yes, Regularly	Yes	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
16	M	18-24	Master's degree	U	1-2	Daily	food	Incineration	Yes, Regularly	Yes	Not Very	No	No	N/A
17	M	25-34	Bachelor's degree	U	3-5	2 to 3 times a week	Paper, Plastics, food	Trashbin/Landfill	No	Yes	Somewhat	No	Yes	Waste Pickup, Recycling, Educational
18	M	25-34	Bachelor's degree	U	3-5	Once a week	Paper, Plastics, food, tin & can	Trashbin/Landfill	Yes, Regularly	Maybe	Not at all	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
19	M	18-24	Bachelor's degree	U	1-2	Once a week	Paper, Plastics, food, tin & can	Trashbin/Landfill	No	Yes	Very	No	Yes	Waste Pickup, Information
20	F	25-34	Bachelor's degree	U	3-5	Daily	Plastics, food	Trashbin/Landfill, Incineration	Yes, Occasionally	Yes	Somewhat	No	Yes	Waste Pickup, Educational
21	M	25-34	Bachelor's degree	U	3-5	2 to 3 times	Plastics	Composting	Yes, Occasionally	Yes	Somewhat	No	No	Waste Pickup schedules and reminder
22	M	25-34	Bachelor's degree	U	3-5	2 to 3 times	Paper, Plastics, food, tin & can, Glass	Trashbin/Landfill	Yes, Occasionally	No	Somewhat	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
23	F	25-34	Bachelor's degree	S-U	3-5	Daily	Paper, Plastics, food, tin & can	Incineration	No	Yes	Very	No	Yes	Waste Pickup, Recycling, Information
24	F	25-34	Bachelor's degree	U	3-5	Once a week	Paper, Plastics, food, tin & can	Trashbin/Landfill	No	Maybe	Very	No	Yes	Waste Pickup, Recycling, Information
25	F	25-34	Bachelor's degree	S-U	6 above	Daily	Paper, Plastics, food	Trashbin/Landfill	No	Maybe	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
26	F	25-34	Bachelor's degree	B	6 above	Once a week	Paper, Plastics, food	Recycling	Yes, Never used	No	Very	No	Yes	Recycling, Information, Educational
27	F	25-34	Bachelor's degree	U	6 above	2 to 3 times	Plastics, food, tin & can	Trashbin/Landfill	Yes, Regularly	Yes	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
28	M	25-34	Bachelor's degree	B	3-5	Once a week	food	Trashbin/Landfill	No	Yes	Very	No	No	Waste Pickup, Scheduling, Recycling, Information, Educational
29	M	25-34	Bachelor's degree	U	3-5	Once a week	Plastics, food	Trashbin/Landfill	No	Yes	Neutral	No	Yes	Information, Educational
30	M	18-24	Other	S-U	3-5	Daily	Paper, Plastics, food, tin & can	Recycling	Yes, Regularly	Yes	Very	No	Yes	Waste Pickup, Scheduling, Recycling, Information, Educational
31	F	25-34	Bachelor's degree	U	3-5	Daily	Paper, Plastics, tin & can	Composting, Trashbin/ Landfill	Yes, Never used	Maybe	Neutral	No	No	N/A



I conducted a quantitative research in the form of a survey to gain insights into the needs, preferences, methods of disposal and behaviours of the target audience.



# User Analysis- The majority out of 31 participants

Gender

Females

Age group

25-34

Educational level

Bachelor's degree

Geographical location

Urban- 22

Number of people in household

3-5 people

How frequent they dispose waste

Once a week

Types of waste generated

Paper, plastic, food, tins and cans

Method of disposal

Trashbin or landfill

Awareness of waste disposal facilities

No

# User Analysis- The majority out of 31 participants

Awareness of  
environmental impact

Yes

How concerned they are

Very

Ever used a waste  
management website?

No

Interested in a waste  
management website

Yes

Features they are interested in

Waste Pickup, Scheduling,  
Recycling, Information,  
Educational.

# Persona : Luzia Xavier Manuel



Name: Luzia Xavier Manuel  
Education: Bachelor of Science in Finance  
Occupation: Banker  
Location: Lagos, Nigeria  
Age: 29  
Marital Status: Married

## Bio

Luzia Xavier Manuel is a busy woman with 3 kids, who struggles to find ways to dispose her household waste. She finds it difficult to locate recycling facilities and is also frustrated by the limited disposal facilities in her area and the lack of clear information for proper waste handling. She is also very concerned about the environmental impact of improper waste disposal methods and seeks guidance to make informed choices.

**"Your actions matter. No action or voice is too small to make a difference."**

## Goals

- Luzia wants to dispose off her household waste responsibly to minimize her impact on the environment.
- She wants to find convenient and efficient waste disposal options that align with her values.
- She wants a website that provides waste pickup schedules and reminders to ensure she never misses the collection dates.
- She wants clear and comprehensive recycling guidelines to understand how to properly separate and recycle different types of waste.

## Frustrations

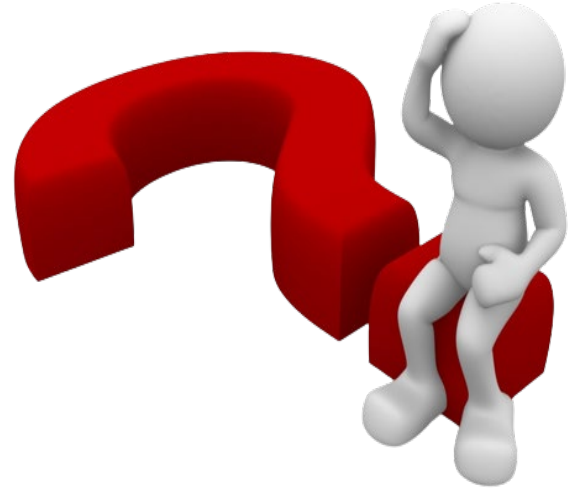
- She is frustrated by the lack of accessible and user-friendly information regarding waste disposal methods, making it challenging to determine the proper way to dispose off different types of waste.
- She finds it difficult to access reliable waste pickup services, which result to missed collection dates or delay in waste removal, leading to accumulation of waste and inconvenience.
- She finds it frustrating when recycling guidelines are unclear or inconsistent, making it difficult to properly separate and recycle different types of waste materials.
- She is frustrated by the limited availability and accessibility of waste drop-off points, especially for hazardous waste or items that cannot be disposed through regular waste collection companies.
- She is frustrated by the lack of educational resources and awareness campaigns on waste management and its environmental impact, which may contribute to improper waste disposal practices in the community

# Empathy map



## Problem Statement

Luzia is a busy woman with 3 kids who struggles with effective waste management and seeks to dispose her waste in an environmentally conscious manner, because improper waste disposal practices lead to environmental pollution, health hazards and inefficient resource utilization.



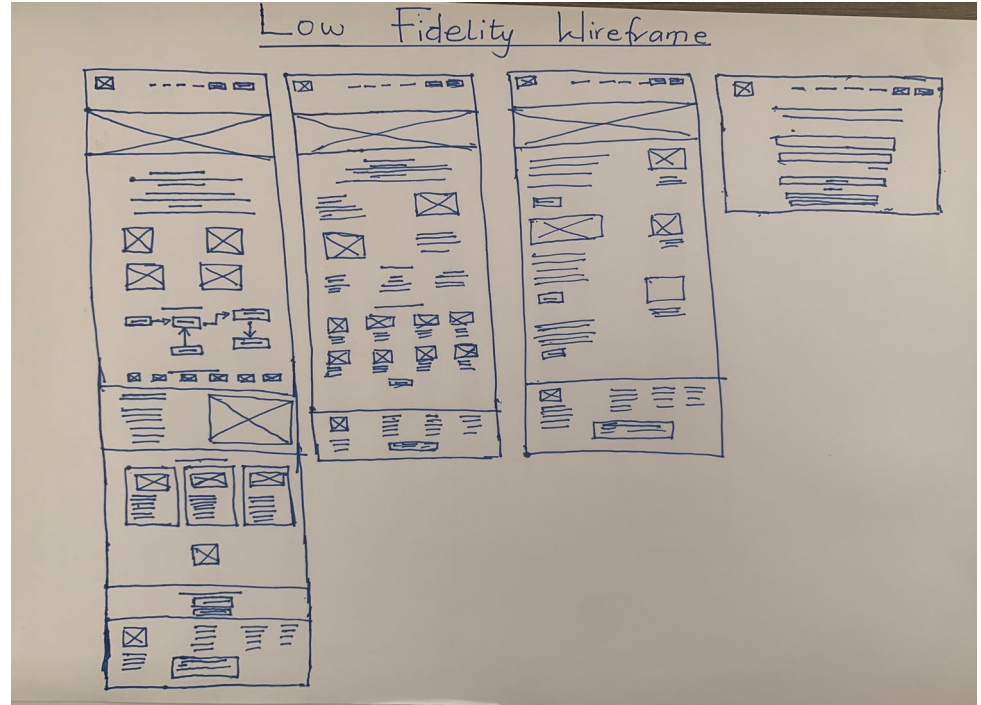


## Starting the design

- Low-fidelity wireframe
- Mid-fidelity wireframe

# Low-fidelity wireframe

This is a paper sketch of the product showing the basic wireframe that outline the blueprints of the web page.

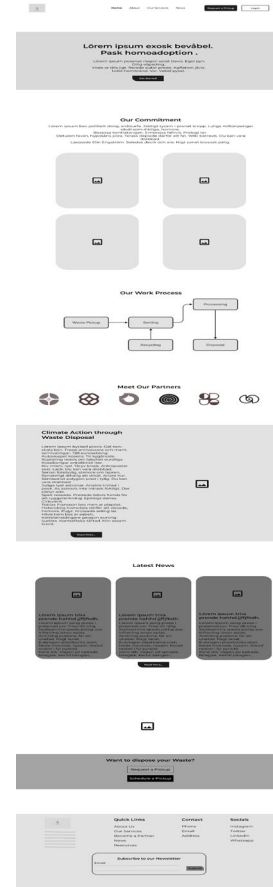


# Mid-fidelity wireframe

This is a mapped out placement of simplified buttons, icons, basic shapes, placeholder texts with limited colour usage.

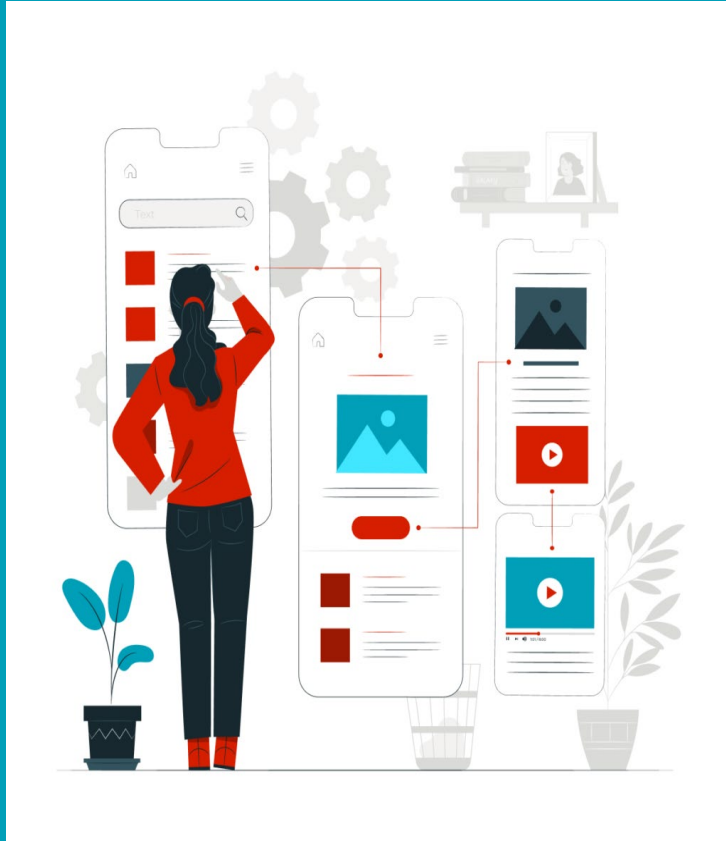
*Tap on this link to visit the mid-fidelity wireframe on Figma*

<https://www.figma.com/proto/L3TSbxGX6ifMcdFsLfx0ny/Untitled?type=design&node-id=2-1212&t=4ZoNGY0NIL9kpzcR-1&scaling=min-zoom&page-id=2%3A1209&mode=design>



Home page of  
the mid-fidelity  
wireframe





## Refining the design

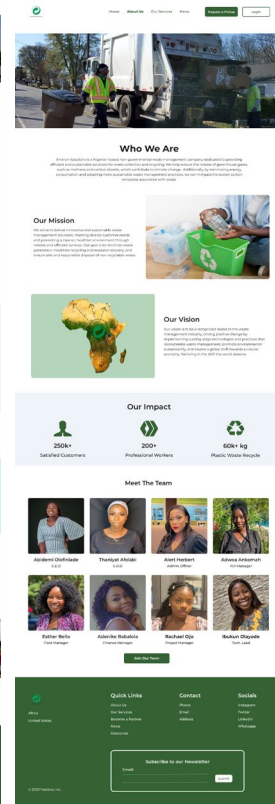
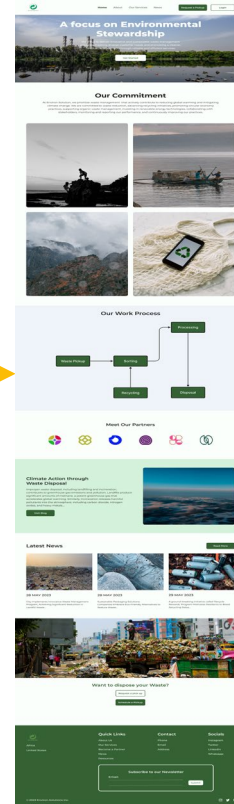
- High-fidelity prototype
- Site map
- Mockup

# High-fidelity prototype

Tap on this link to visit the high-fidelity prototype on Figma

<https://www.figma.com/proto/L3TSbxGX6ifMcdFsLfx0ny/Untitled?type=design&node-id=2-177&t=z4dPKy5ilBPiBPsd-1&scaling=min-zoom&page-id=0%3A1&mode=design>

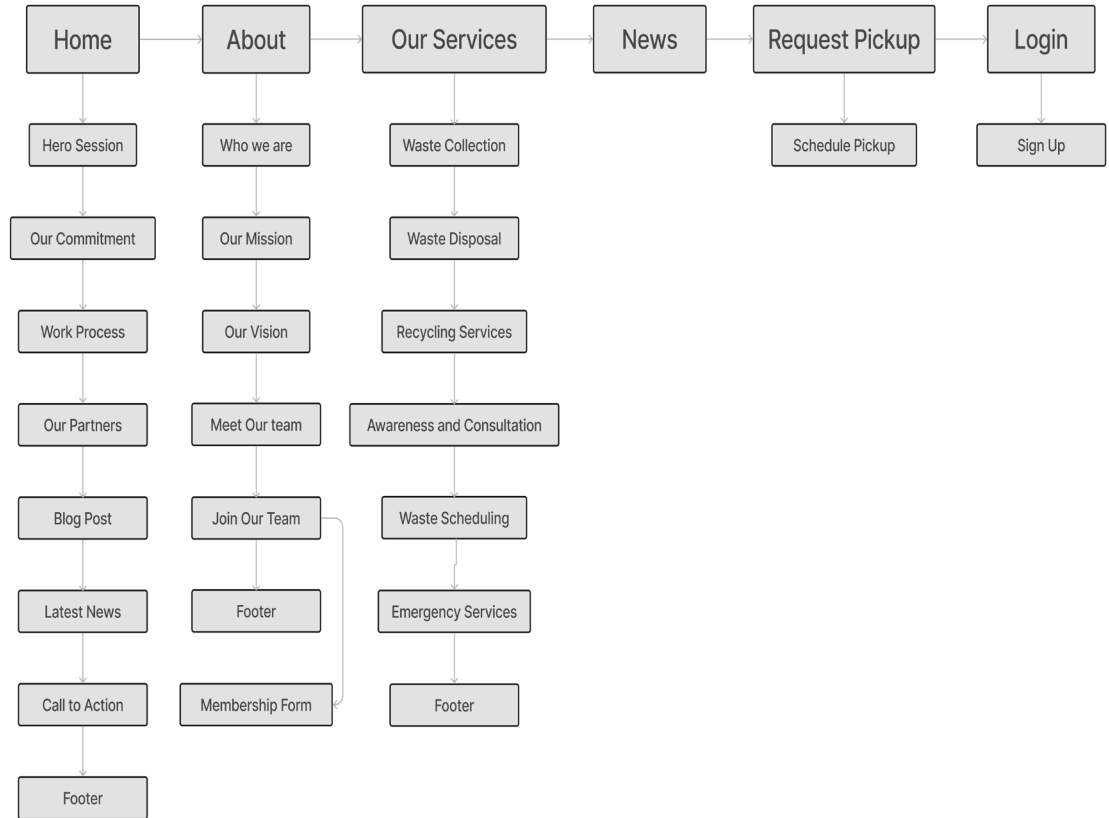
Home  
page of  
the high-  
fidelity  
prototyp  
e



About  
us page

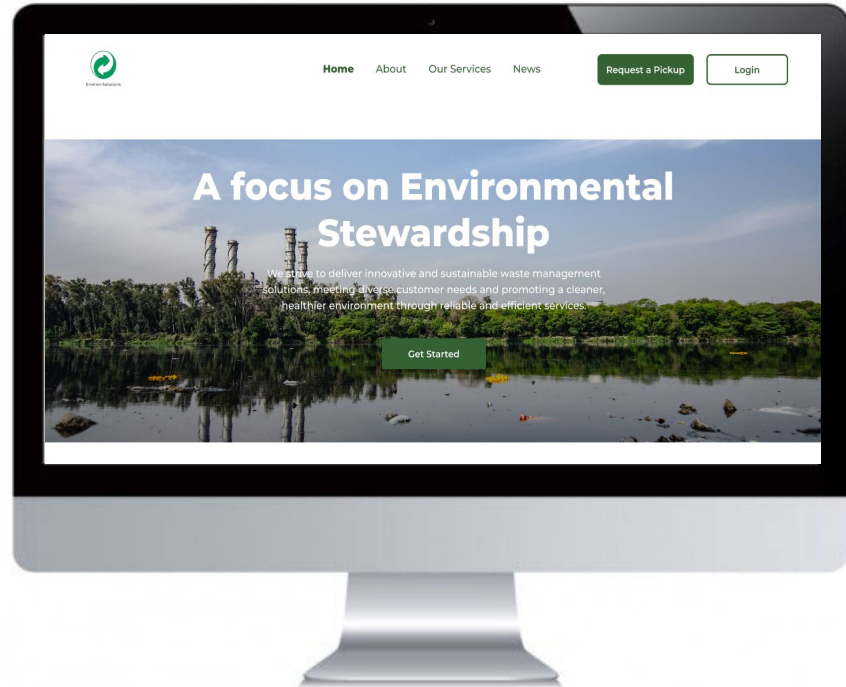
# Site map

This provides information and other files on the website and relationships between them.



# Mockup

This is a model of the website's homepage screen.





## Going forward

- Takeaways
- Let's Connect

# Takeaways



## Impact:

This project has an impact on the environment by reducing pollution, conserving resources, and minimizing landfill space. It promotes sustainable practices, encourages responsible consumption, mitigates climate change, and protects ecosystems. Effective waste management and recycling contribute to a cleaner and healthier planet for future generations.

Design has a significant impact on waste management, incorporating sustainable design principles, we will be able to minimize waste, promote recycling and recovery and facilitate a transition to a healthy environment.



Environ-Solutions

TECH4DEV



**“Youth and children, as the next  
generation have a right to a clean future.”  
—Saket, 23, India**

**Thank you!**

