

United Polio Brothers and Sisters Association Mixed-Use Development

in Freetown, Sierra Leone





Table of Contents

Introduction Key Considerations	3
Team Structure	4
Our Project Timeline	5
Site Analysis	6
Design Brief	7
Design Proposal	8
Design Concept	9
Environmental Assessment Summary	10

Addressing Local Issues	11
Evaluation of Community Benefits	12
Appendix and Justification	13
Key Actors & Responsibilties	14
Local Material Vendors in Sierra Leone	15



Introduction

IDEAL Studios is a dynamic team committed to excellence in all aspects of life.

Our core values

I: Inclusion

D : Diversity

E: Equity

A:Adaptability

L:Leadership

Shapes our approach to design, ensuring that our projects reflect the needs and aspirations of the communities we serve.

Our Strategy

- Research and document local customs, traditions, and building practices to inform our design approach.
- Collaborate with local artisans and craftsmen to incorporate traditional materials and techniques into the development.
- Engage with community members to ensure that our design resonates with their cultural identity and reflects their values and aspirations.
- Present our proposal in a way that highlights the cultural significance of our design choices and demonstrates our commitment to honoring Freetown's heritage

Key Considerations

Green Economy & Sustainable Living

- Maximize resource efficiency and promote sustainable living practices.
- Incorporate renewable energy sources, such as solar power, to minimize energy demand.

Green Spaces & Climate Resilience

- Designate ample green spaces for community use and climate resilience.
- Implement rainwater harvesting systems to manage water resources efficiently.

Circular Resources & Waste Management

- Promote circularity by minimizing resource use and implementing sustainable waste management practices.
- Introduce portable water kiosks and sustainable water management solutions

People-Centered Streets & Mobility

- Design streets and mobility solutions that prioritize pedestrians and accessibility.
- Create a 15-Minute City concept to reduce long commutes and improve quality of life.



Team Structure

IDEAL Studios is committed to delivering a winning design proposal that creates a Green & Thriving Mixed-Use Development that celebrating the cultural richness of Freetown, Sierra Leone. With our team's expertise, innovative design approach, and dedication to sustainability and community well-being, we are confident that our design will set a new standard for urban development in the region

Micheala Kargbo

ELECTRICAL ENGINEER
SUSTAINBLE ARCHITECT

Leads the team and oversees the overall progress of the project, ensuring coordination among team members and alignment with project objectives. Applies electrical engineering knowledge to ensure energy-efficient solutions in the design and contributes to sustainable architectural design. Collaborates with the team to integrate green initiatives.



Abraham Turay

ARCHITECT | INTERIOR ARCHITECTURE STUDENT)

Assist in various aspects of the project, including research, design development, and community engagement. Bring fresh perspectives and creativity to the team while learning from experienced professionals.



Jima Rose Vincent

ARCHITECT | INTERIOR ARCHITECTURE STUDENT)

Assist in various aspects of the project, including research, design development, and community engagement. Bring fresh perspectives and creativity to the team while learning from experienced professionals.



Davepine Tholley

CIVIL ENGINEER (WATER) | OPERATIONS AND MANAGEMENT | PROJECT MANAGEMENT

Leads the conceptualization and development of the design proposal, overseeing project management tasks and ensuring project objectives are met. Utilizes civil engineering expertise to address technical aspects of the project, including water management, storage, and distribution. Collaborates with the team to integrate sustainable water solutions into the design.

Princess King

SUSTAINABLE INTERIOR ARCHITECT | PROJECT MANAGEMENT | URBAN PLANNING ENTHUSIAST

Leads research on sustainable design practices, identifies opportunities for environmental conservation, and integrates green initiatives into the project. Also contributes to the conceptualisation and development of the design



Weekly Meetings & Communication

Date & Time: Every Wednesday
18:00PM

Attendees All Team Members

- The IDEAL Studios team holds weekly meetings to discuss project progress, share insights, and coordinate tasks.
- We maintain open communication channels throughout the design process to ensure that everyone is informed and engaged.

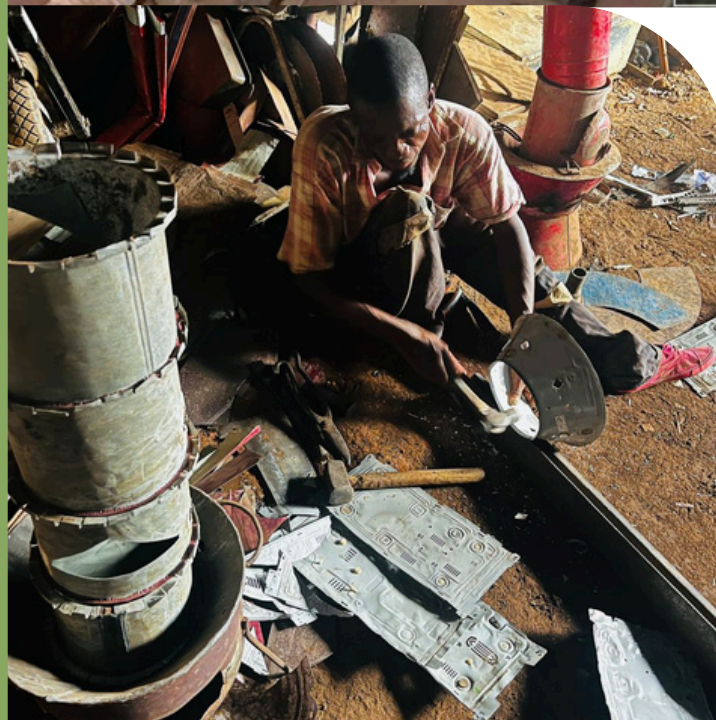
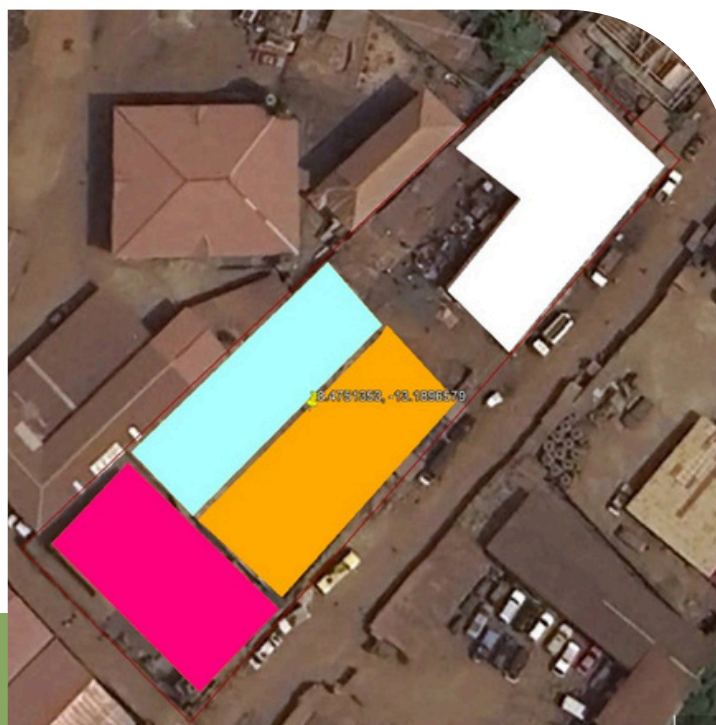
Our Project Timeline

Ensuring Efficient Progress and Timely Completion



Site Analysis

Our team at IDEAL Studios recently conducted a comprehensive site visit to the mixed-use development project location in Freetown, Sierra Leone. This visit included thorough site assessments, community engagement sessions, and data collection activities. Key findings highlighted the flat terrain and existing structures, the community's need for improved housing and infrastructure, and challenges such as potential flooding and waste management. The enthusiastic community support for sustainable practices and the use of local materials presents significant opportunities. These insights will inform our design and planning processes, ensuring a project that addresses local needs and promotes sustainability.





Design Brief

The United Polio Brothers and Sisters Association (UPBSA) Mixed-Use Development project in Freetown, Sierra Leone, aims to transform an industrial area into a vibrant, sustainable, and people-centred community. Guided by the principles of the C-40 technical workshop and the city's priorities, our goal is to design a green and thriving neighbourhood that addresses environmental challenges while improving the quality of life for residents.

Site Overview

- Located in Freetown, Sierra Leone, the site is owned by the Freetown City Council and leased to stakeholders, including the UPBSA.
- Currently, the site comprises a multifunctional unit with elements such as a garbage collection transfer station, a training school, retail shops, and temporary residential units.
- Challenges include poor air quality, noise pollution from nearby industrial activities, lack of accessible infrastructure, and shortage of green spaces.

Opportunities

- Proximity to the high street and accessible infrastructure.
- Presence of a training centre catering to vocational skills development.

Potential for incorporating cultural elements and local materials in the design.

- Flat terrain with space for green areas and rainwater harvesting.

Challenges

- Noise pollution from nearby industrial activities and heavy machinery workshops.
- Lack of open and green spaces for community gatherings.
- Dusty roads and upcoming garbage collection areas lead to air pollution.



Design Proposal

Facilities

- A training centre,
- Water kiosk (partner with World Hope International & Water4Ever)
- Rainwater harvesting systems,
- Solar energy infrastructure,
- Public toilets, and waste collection facilities.
- Community Hub
- Guest house for ex-pats UPBSA stakeholders
- Green Space eg outdoor setting area/ garden

Residential Building

Design accommodation for 75 residents (22 families) to foster a close-knit community atmosphere.

To ensure sufficient accommodation for all 75 residents across 22 families, we have adjusted the distribution of units as follows:

5 two-bedroom units, providing a total of 10 bedrooms.

11 three-bedroom units, offering a total of 33 bedrooms.

7 four-bedroom units, providing a total of 28 bedrooms.

This distribution results in 71 bedrooms, ensuring ample space for all residents while accommodating families of varying sizes.

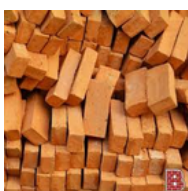
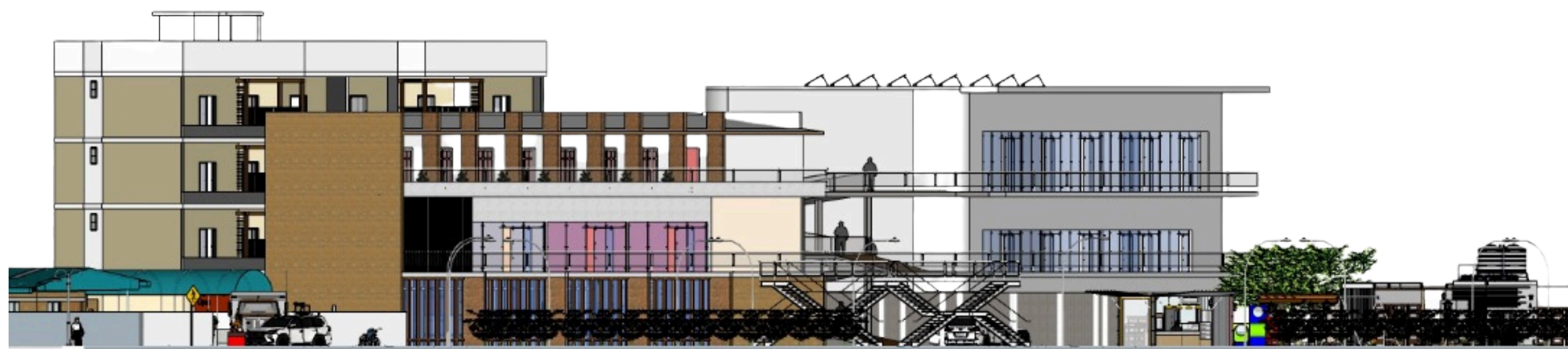
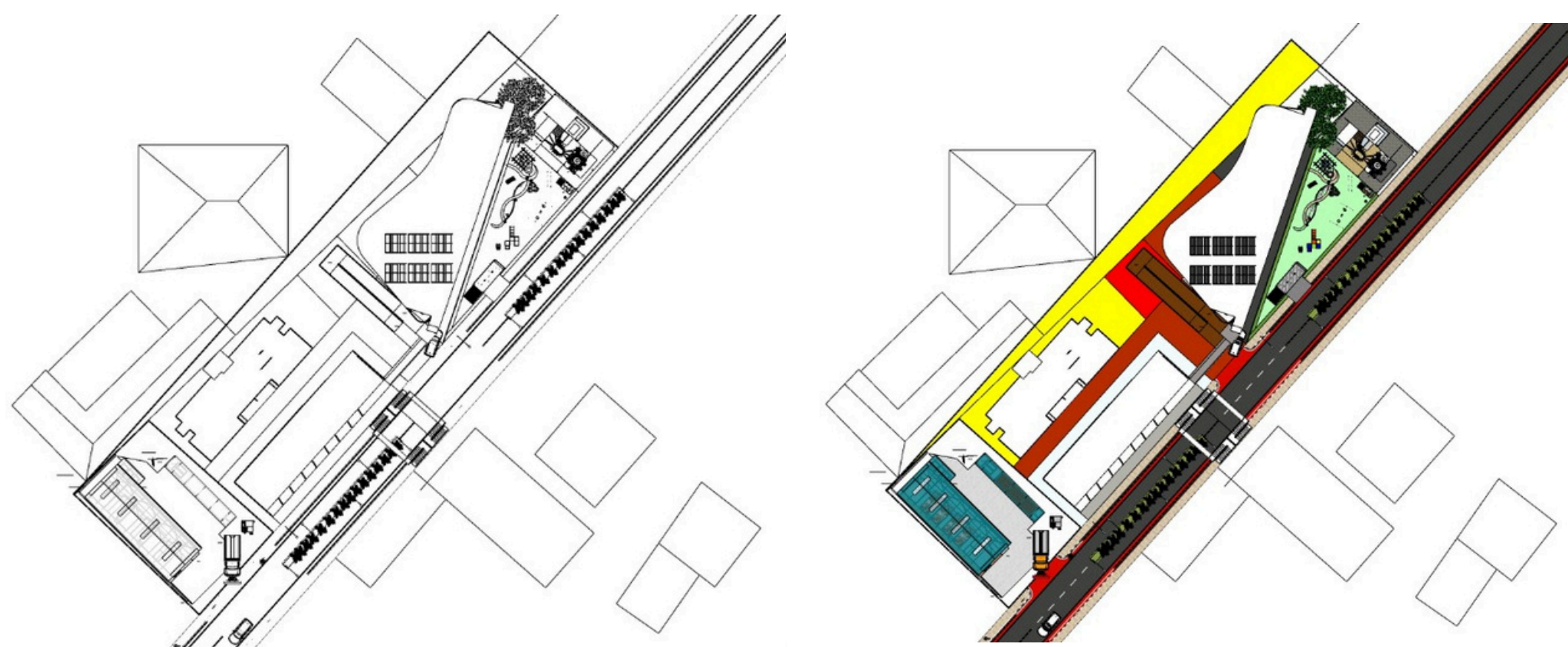
We will also incorporate health and well-being features, such as green spaces, into the centre of the design to enhance the living environment.

Design Style - Vernacular Architecture

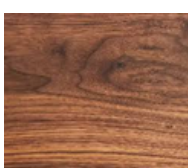
By embracing vernacular architecture principles in our design Sierra Leone can benefit from the inherent sustainability, resilience, and cultural richness embedded in traditional building practices. Additionally, by integrating modern design innovations and technologies with vernacular methods we can further enhance the environmental performance and liveability of the built environment. utilizing materials such as timber, bamboo, earth, stone, and recycled materials, along with traditional construction techniques like rammed earth, adobe, cob, and natural insulation would reflect an understanding of our local environment and cultural context, creating a sustainable community



Design Concept



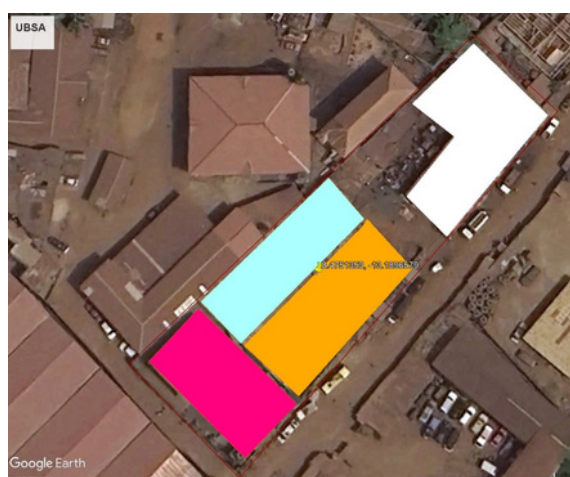
Fired Clay Brick



Wood



Glass



Environmental Assessment Summary

This assessment evaluates the benefits of the proposed mixed-use development project, particularly in terms of reducing greenhouse gas (GHG) emissions. The assessment focuses on key areas such as energy efficiency, renewable energy integration, sustainable construction practices, and transportation.



Key Areas of Impact

1. Energy Efficiency

- Building Design: Incorporating energy-efficient building designs reduces energy consumption. Features include high-performance insulation, double-glazed windows, and energy-efficient lighting and appliances.

2. Renewable Energy Integration

- Solar Power: Installing solar panels on rooftops and other available surfaces to harness solar energy for electricity needs.

3. Sustainable Construction Practices

- Low-Carbon Materials: Use of low-carbon materials such as locally sourced timber, bamboo, fired clay brick and recycled materials for construction.

4. Water Management

Rainwater Harvesting: Implementing systems to capture and reuse rainwater for non-potable purposes, reducing the demand on local water supplies.

Greywater Recycling: Reusing greywater for irrigation and flushing toilets.

5. Waste Management

Recycling Programs: Establishing comprehensive recycling programs to manage waste efficiently.

Composting: Encouraging organic waste composting to reduce landfill usage and methane emissions.

6. Transportation

Non-Motorized Transport: Promoting walking and cycling through dedicated pathways and bike-sharing programs.

Public Transport Access: Ensuring easy access to public transport to reduce reliance on personal vehicles.

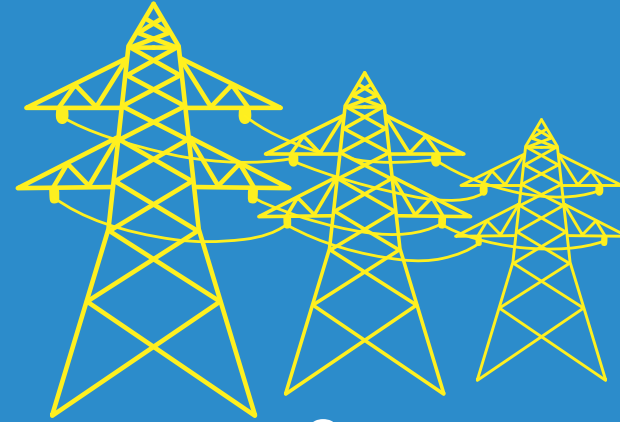


Addressing Local Issues



1. WATER MANAGEMENT

Water Scarcity:
Providing clean and pure drinking water with a solar-powered water treatment and distribution kiosk



2. INSUFFICIENT ENERGY SUPPLY

Energy Resilience: Enhancing local energy resilience through renewable energy sources.



3. BAD ROADS

Infrastructure Improvement:
Contribution to local infrastructure through better road design and maintenance.



4. POOR WASTE MANAGEMENT

Waste Management Integration: Effective management of the garbage collection centre by integrating recycling programs.

Community Benefits

- Economic Benefits: Job creation during construction and operational phases. Support for local businesses through retail stores and use of local building materials
- Social and Health Benefits: Improved living conditions, health, and fitness through communal spaces and fitness areas.
- Educational and training opportunities from the training center.
- Infrastructure and Accessibility: Enhanced transportation options

Conclusion

This proposed development offers substantial environmental benefits through integrated sustainable practices. By prioritizing energy efficiency, renewable energy, sustainable materials, effective water management, and green transportation, the project not only contributes to reducing GHG emissions but also sets a benchmark for future sustainable urban development.



Evaluation of Community Benefits



The proposed mixed-use development project in Freetown, Sierra Leone, is designed to create a sustainable and thriving community. The project includes a variety of spaces such as a car park, retail stores, a water kiosk, a garbage collection and plastic waste recycling centre, a residential building with communal spaces, a fitness area, a kitchen, a guest house, and a training centre. This assessment evaluates the broader impacts of the project on the quality of life for the community.

Key Economic Benefits

Economic Benefits

Job Creation: The development will create numerous job opportunities during construction and through the operation of retail stores, the recycling centre, and other facilities. This will significantly reduce unemployment rates and improve economic stability in the community.

Local Business Support: The retail stores will provide a platform for local entrepreneurs to sell their products, fostering economic growth and supporting local businesses.

Environmental Benefits

Sustainable Waste Management: The garbage collection and plastic waste recycling center will manage waste more efficiently, reducing pollution and promoting recycling. This initiative will help in creating a cleaner and healthier environment.

Water Conservation: The water kiosk will ensure access to clean and safe drinking water, reducing waterborne diseases and improving overall public health.

Infrastructure and Accessibility

Transportation: The car park will facilitate better transportation and reduce traffic congestion. Proper parking facilities will also enhance safety and convenience for residents and visitors.

Guest House: The guest house will provide accommodation for visitors and professionals, fostering cultural exchange and potentially attracting more investment into the community.

Social Benefits

Improved Living Conditions: The residential building with communal spaces will provide modern, safe, and affordable housing, enhancing the living standards of residents. Communal spaces will foster a sense of community and social interaction.

Training and Education: The training centre will offer vocational training and educational programs, empowering residents with new skills and improving employability. Education is a key driver for personal and community development.

Health Benefits

Health and Fitness: Including a fitness area encourages physical activity, contributing to better health and well-being of the residents. Regular physical activity reduces the risk of chronic diseases and improves mental health.

Community Cohesion

Social Spaces : Communal areas such as the lounge, shared kitchen, and dining spaces will promote social interaction, community events, and a sense of belonging among residents.

Safety and Security: The project design incorporates safety features such as well-lit areas, secure entrances, and community watch programs, enhancing the overall security of the area.



Appendix and Justification

• Site Visit Summary

- Conducted comprehensive site assessments
- Engaged with community stakeholders
- Collected data for design and planning Identified key challenges and opportunities

• Design Strategy

- Research local customs and building practices
- Collaborate with local artisans
- Incorporate traditional materials and techniques
- Ensure designs resonate with cultural identity

• Environmental Assessment

- Energy efficiency through high-performance insulation and efficient appliances
- Renewable energy integration with solar panels
- Use of low-carbon materials such as locally sourced timber and recycled materials
- Water management through rainwater harvesting and greywater recycling
- Sustainable waste management with recycling and composting programs
- Transportation improvements with non-motorized pathways and public transport access

• Community Benefits

- Job creation and economic growth
- Improved living conditions and health benefits
- Enhanced infrastructure and accessibility
- Educational and training opportunities

This project addresses several key areas essential for modern urban development, focusing on environmental sustainability, community well-being, and economic growth.

1. Environmental Sustainability: The project incorporates energy-efficient building designs, renewable energy sources such as solar power, and sustainable construction practices. These measures will significantly reduce greenhouse gas emissions and promote resource efficiency. By utilizing low-carbon materials and integrating green infrastructure like rainwater harvesting systems, the project will also address water conservation and waste management, creating a cleaner and healthier environment.

2. Community Well-Being: The design includes various communal spaces such as lounges, fitness areas, and green spaces that foster social interaction and community cohesion. The training center will offer vocational training, enhancing the skills and employability of residents. These features are aimed at improving the overall quality of life, promoting physical activity, and ensuring that the community has access to essential services and amenities.

3. Economic Growth: The development will create numerous job opportunities during both the construction and operational phases. By supporting local businesses through retail stores and using local building materials, the project will stimulate economic activity and foster economic stability in the community. The inclusion of a guest house will further boost local tourism and business activities, attracting more investment into the area.

4. Addressing Local Challenges: The project design incorporates strategies to mitigate local challenges such as flooding, insufficient energy supply, poor waste management, and bad roads. By enhancing local infrastructure, integrating renewable energy sources, and implementing effective waste management practices, the project aims to create a resilient and adaptive urban environment.

In conclusion, this development project is not only a response to the immediate needs of the community but also a forward-looking initiative that sets a benchmark for sustainable urban development in the region. The IDEAL Studios team's expertise and commitment to sustainability and community well-being ensure that this project will be a model for future developments in Sierra Leone.



Key Actors & Responsibilities

Local Artisans and Craftsmen

Key contributors to the construction process, bringing local expertise and traditional building practices.

Responsibilities:

- Provide materials and construction services.
- Incorporate traditional techniques and materials into the project.
- Ensure quality craftsmanship and cultural authenticity.

Environmental Consultants

Experts in sustainable development and environmental impact assessment.

Responsibilities:

- Conduct environmental impact assessments.
- Advise on sustainable practices and materials.
- Ensure compliance with environmental regulations.
- Monitor and report on the project's environmental performance.

Financial Institutions and Investors

Entities providing the necessary funding and financial support for the project.

Responsibilities:

- Provide loans, grants, and investment capital.
- Monitor financial performance and ensure accountability.
- Support project sustainability and profitability.

Community Members and Stakeholders

Local residents and businesses affected by and involved in the project.

Responsibilities:

- Participate in community meetings and provide feedback.
- Support and engage with the project initiatives.
- Benefit from job opportunities and improved infrastructure.

Contractors and Construction Workers

Responsible for executing the construction phase of the project.

Responsibilities:

- Carry out construction according to the design plans and specifications.
- Ensure safety standards and quality control.
- Work with local artisans and suppliers.

IDEAL Studios Team

IDEAL Studios is the primary team responsible for the overall design, planning, and execution of the project.

-

Freetown City Council

The legal custodian of the land and a key stakeholder in the project's development.

Responsibilities:

- Provide necessary permits and approvals for the project.
- Ensure alignment with local regulations and development plans.
- Support community engagement initiatives.
- Facilitate infrastructure development and maintenance.

The successful execution of the mixed-use development project in Freetown relies on the coordinated efforts of these key actors. Each group has specific responsibilities that contribute to the project's overall goals of sustainability, community well-being, and economic development. By working together, these stakeholders can create a thriving, sustainable community that serves as a model for future developments.



Local Material Vendors in Sierra Leone

Highlighting local material vendors is essential for promoting local businesses and ensuring the affordability of the project. Below are a couple of local vendors in Sierra Leone known for their sustainable building materials, including those that utilize plastic waste to make blocks.

1. **CEMENCO (Sierra Leone Cement Corporation)**
2. **Guoji Industry & Investment Sierra Leone Co., Ltd.**
3. **LEOCEN (Sierra Leone Cement Corporation Ltd)**
4. **Greenblock Sierra Leone :** Greenblock Sierra Leone specializes in creating construction blocks from recycled plastic waste.
5. **EcoPlast Blocks :** An innovative company using recycled plastic waste to produce durable and sustainable building blocks.
6. **Water Partners:** Water4Ever is a privately operated water utility organization based in Waterloo, Sierra Leone, Africa. Founded in 2015, we seek to provide reliable and safe drinking water in the Waterloo area and the Western Area Rural District of Sierra Leone.
7. **Sierra Leone Steel Company (SLSC):** SLSC is a leading supplier of steel products in Sierra Leone. They offer a wide range of steel materials essential for construction, including reinforcement bars, steel beams, and sheets.
8. **Lion Steel Industries Ltd.:** known for manufacturing high-quality steel products suitable for various construction needs.
9. **West African Iron & Steel Company (WAISCO):** Their offerings include tempered glass, laminated glass, and insulated glass units.
10. **Crystal Clear Glass Ltd:** They focus on energy-efficient and durable glass solutions.
11. **Transco Glass Industries:** involved in manufacturing and supplying glass products for construction, including safety glass and custom glass solutions.
12. **Bamboo & Timber Suppliers:** Local suppliers provide sustainably harvested bamboo and timber, which are ideal for various construction needs, including framing, flooring, and furniture.
13. **Recycled Materials:** Vendors that focus on recycled materials offer a variety of products made from recycled content, including construction blocks, panels, and other building materials.