



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

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Section

Master

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Advanced project Management

Instructions:

- اخر موعد للتسليم هو يوم الخميس 2021-05-20 في تمام الساعة ٩ مساءً.
- الإجابة متاحة باللغة الإنجليزية أو اللغة العربية مع مراعاة أن تكون المصطلحات العلمية باللغة الانجليزية.
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Instructor's Name: Eng. Dr. Akram M. S. Ali

Establishment of Sustainable, Affordable Housing in Vancouver

Introduction

Upgrading residential houses is one of the most significant economic sectors that ensure urban development's growth and long-term viability (Rahman et al. 2018). The wide range of design solutions and cutting-edge technology posed numerous challenges in lodging efficiency and resident satisfaction. Designers often aim to uphold the aesthetics of housing appearances while ignoring clients' individual needs. In comparison to commercial buildings, residential architecture must answer the day-to-day needs of people's lives and issues relating to their life experience and environment. Moreover, housing building must be maintained due to unnecessary energy usage. As a result, an optimal balance between sustainable housing and customer satisfaction is needed for effective, sustainable housing growth. (Anderson et al., 2016).

Project Plan Summary

The Aziz Non-Government Housing Foundation (ANGHF) choose to invest in Downtown Eastside (DTES), Vancouver. After the end of federal support for social housing in the city, it has been the hardest hit by homelessness issues. We are concerned with providing residents with housing that is socially, environmentally, and financially sustainable. Our mission is to assist low- and moderate-income families in finding affordable housing. There will be three main types of houses in our Affordable Housing architecture: 1 bedroom – 30 m², 2 bedroom – 40 m², 3 bedroom – 60 m²

Our foundation encourages partnership with the national government and other private investors to provide secondary essentials to the residence like schools, hospitals, banks, supermarkets and childcare facilities.

Objectives

- To develop innovative approaches to building affordable, long-term housing in Vancouver.
- To include positive social, environmental, and financial factors in the design and construction of affordable housing in the designated city.

- To monitor and assess the implications of the affordable housing initiative in Vancouver's sustainability outcomes.

Literature Review

Meeting human needs and enhancing their quality of life while mitigating negative environmental impacts is the aim of sustainable development (Ingra et al., 2018).

The housing design should reflect social, aesthetic, and environmental concepts, as well as all elements necessary to create an interior space that suits people's or communities' lifestyles. One of the most important factors influencing people's quality of life and behavior in living spaces is their satisfaction with their residency. To achieve full impact, social, economic, and environmental aspects should be considered. According to Shach-Pinsly (2019), people feel better when engaging with others in urban areas free of crime and strife, resulting in increased confidence and reciprocity among residents and enhanced community sense of belonging.

The impact of a sustainable housing project is often assessed by determining how satisfied residents are with their needs, demands, and aspirations. Individual satisfaction is influenced by a variety of factors, including demographic and socioeconomic factors. (Dewancker, 2016).

Methodology

To achieve the project's goals, a thorough analysis of the literature on green and sustainable building construction was conducted first. A survey questionnaire was used to uncover problems in the Vancouver construction industry and green affordable housing in general and solicit potential solutions. Our respondents were Green construction managers who received the questionnaires via email.

Planned Project Scope

To develop standards for environmentally friendly and affordable housing and adapt a Universal design for disabled people and people with disabilities.

To provide subsidized housing regulated by the (ANGHF) under the national housing policy. We also intend to partner with any registered partner to achieve the growth of affordable houses.

To ensure that the mix of tenants and rent environment meets the project's continuing financial feasibility without resorting to government assistance.

To enable accessibility to households with very poor, low, and moderate incomes by ensuring rent is within the client's financial means and is does not exceed 30% of a household's income. The Lease terms will be limited to ten years.

Implementation

- **Construction**

The developer and private contractors will construct the projects, which will be supervised by senior engineers who will track operations on-site and report progress on the project's expense, time, efficiency, and risk factors (ANGHF project management committee).

- **Project Controls**

The following project controls will be under the oversight of the project management committee: planning and scheduling;

- ❖ Estimation and control of costs.
- ❖ Measuring progress and results.
- ❖ Control and management of documents.
- ❖ Approving the annual operating budget.
- ❖ submitting monthly financial reports to both the Fund Manager and the Board of Directors

- **Health, Safety and Environmental Policy**

The management committee will ensure that their employees operate in a safe and healthy atmosphere by;

- ❖ Negotiating for health and safety decision-making criteria in the supply chain department.

- ❖ Providing sufficient funding and services that lead to a secure and stable working atmosphere, such as supervision, training, and the appointment of qualified professionals; and
- ❖ putting in place business regulations, as well as health and safety legislation;

- **Asset Handover and Project Completion**

All contractual obligations must be demonstrated and accepted by the ANGHF project management committee before a project can be considered complete.

The asset handover agreement will be signed to ensure that the completed housing units are purchased within two months of construction completion.

- **Delegation of A Management Committee**

The committee will be made up of members of the ANGHF board of directors and delegates from duly elected households. Its responsibilities will include:

- ❖ Taking care of the collection and administration of service or facility management fees from homeowners;
- ❖ Maintaining the land and ensuring that the common property is in good working order;
- ❖ Notifying homeowners of any potential violations and taking appropriate remedial measures
- ❖ Managing the funds set aside for the facility's operation and maintenance.

Projected Time Frame and Budgeted Cost

[illegible]

Enumeration and verification of beneficiaries												2
Ongoing monitoring and evaluation												1.8
Total cost												15

Financial Capacity

The (ANGHF) Finance policy will be the foundation for the financing system. It consists of secure voluntary donations of approximately \$ 10.5 million and more from prospective tenants. As a long-term funding source, the project will depend on the Affordable Tax Relief Act. The informal sector is expected to contribute a considerable amount of funding as well. The capital market liquidity will be accessed only when necessary. Therefore, the project will have stable cash flows and financing mechanism.

Monitoring and Evaluation

The Managing Committee will handle both aspects of the project selection process and presentation to the market. This will include conceptualizing and identifying possible proposals, preparing tender paperwork, publishing the invitation to bid, holding a pre-bid meeting, and responding to bidders' and other stakeholders' requests for clarification.

Assessment of Resident's Satisfaction



The diagram depicts a conceptual model for determining resident satisfaction, which involves four distinct contributing factors and parameters according to (Ogu, 2002). The factors include;

- I. Resident comfort with the house's design and architecture.

- II. The house's functionality.
- III. The degree of accessibility.
- IV. The geographical location of the residence.
- V. The expectations, socioeconomic trends, and demographic composition.

Key Stakeholder

The key stakeholders will be

- The national government representative
- Developers/ investors/financiers
- Construction (Design/Engineering)
- Operation and maintenance (management committee)
- Potential tenants.

Results and Discussion

Social, Environmental and Financial Sustainability Conclusions

- Affordable living: The project offered rentals far below market rates, we are sure that most residents will agree that the project's affordable housing goals have been met.
- Resident satisfaction: The high-quality designs and convenient location were praised by the majority of tenants. Concerns were raised, however, regarding considerations for special-needs families.
- Environmental performance: The solar-assisted hot water systems and mechanical ventilation systems did a good job of shading the walls. In most instances, however, daylight access was not completely utilized. The trees and green parks have provided people with a steady supply of fresh air and space for social gatherings.
- Budget constraint: The project was well implemented under the budget despite several engineering issues and construction contracts variations. There were no major cost overruns.

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