Green Roof Systems

High-Level Feasibility Study

Submitted to:

The Ministry of Digital Economy and Entrepreneurship

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Table of Contents

Table of Tables

Table of Figures

Executive Summary

This high-level feasibility study explores the strategic, technical, and financial viability of a startup focused on green roof systems for an agricultural startup project aiming to improve Jordan's urban landscape through the introduction of a modular green roof tray system for urban areas. This system is designed to be installed on various building types, promoting sustainable development, and enhancing urban biodiversity. It will address critical issues such as urban heat island effects, water inefficiency, and the lack of green spaces in Amman and all Jordanian cities. Jordan has a high urbanisation rate, and the government is giving emphasis to sustainable initiatives as part of the Vision 2025 strategy. By improving building energy efficiency and supporting urban agriculture, the project contributes to healthier urban environments.

The green roof system features modular trays made from lightweight, durable, and eco-friendly materials. These trays can support a variety of plant species tailored to Jordan's climate, incorporating integrated irrigation and drainage systems to optimize water use and reduce maintenance needs.

Revenue generation will come from three revenue streams: the sale of modular trays, professional installation services, and ongoing maintenance contracts.

The startups technical approach includes pre-structural assessments, cost-effective solutions, and collaboration with stakeholders like urban planners, municipalities, and environmental organizations. By aligning with national sustainability goals and leveraging cross-sector partnerships, the company is positioned to impact Jordan's urban infrastructure and contribute to a more sustainable future.

1. Introduction

The proposed startup is an urban green infrastructure venture that introduces a modular green roof tray system designed for easy installation on urban buildings. It aims to promote sustainable development and enhance urban biodiversity in Jordan's cities. Moreover, it addresses urban heat island effects, improves building energy efficiency, and supports urban agriculture, contributing to healthier urban environments. This system is scalable and adaptable to various roof sizes and shapes, suitable for residential buildings, commercial properties, and public structures.

2. Market Analysis

Jordan's economy is gradually recovering from the impact of the COVID-19 pandemic. According to the World Bank, Jordan's GDP growth rate is projected to be around 2.3% in 2024. Urbanization in Jordan is increasing, with over 90% of the population living in urban areas. The government has been pushing for sustainable development and green initiatives as part of its Vision 2025 strategy, which aims to promote environmental sustainability and improve urban living conditions.

According to the Jordan Department of Statistics, there are approximately 1.4 million buildings in urban areas, including residential commercial, and public structures. If just 5% of

these buildings adopt modular green roofs, this would represent a market size of 70,000 buildings.

Ther average cost for installing green roofs ranges between JOD 50 -100 per square meter. Assuming an average roof size of 100 square meters, the potential market value in Jordan ranges from JOD 350 million to JOD 700 million.

Green roofs provide numerous benefits, including reduced air conditioning demand because of their insulation effect, which in turn lowers air pollution and greenhouse gas emissions. They also decrease energy consumption by removing heat from the air through evapotranspiration, reduce and slow rainwater runoff in urban areas, and filter pollutants from rainfall. Green roofs enhance human health, comfort, and overall quality of life[1].

The target audience for the startup includes homeowners in urban areas looking to improve energy efficiency and add green spaces, commercial building owners aiming to enhance their corporate social responsibility (CSR) profiles and reduce energy costs, urban planners seeking sustainable solutions for urban development, and municipalities interested in promoting infrastructure to improve urban living conditions.

3. Business Model

The products and services offered are:

- Modular Green Roof Trays: Customizable and easy-to-install green roof modules designed for various building types and sizes.
- Installation Services: Professional installation services ensuring proper setup, integration, and compliance with structural requirements.
- Maintenance Plans: Ongoing maintenance contracts to ensure the longevity and performance of green roofs, including irrigation system management, plant care, and periodic inspections.

The design and materials of the modular trays are customised for easy installation and scalability, making them adaptable to various roof sizes and shapes. These trays can be interlocked to cover large roof areas efficiently. Made from lightweight, durable, and UV-resistant materials, the trays are made for longevity and should require minimal maintenance. The materials used should also be eco-friendly in order to promote sustainability. Additionally, the trays contain a specially formulated soil mix that supports a wide range of plant species, with the plan selection made to suit the local climate conditions, thereby enhancing urban biodiversity.

The features of the modular trays include integrated irrigation systems for water distribution which reduce water waste and promote healthy plant growth. As a further step, these systems

[1] https://www.epa.gov/heatislands/using-green-roofs-reduce-heat-islands#:~:text=Reduced%20energy%20use%3A%20Green%20roofs,to%20provide%20cooling%20and%20heating.

may be connected to rainwater harvesting setups. The trays also must incorporate effective drainage systems to prevent waterlogging and ensure proper root aeration.

The installation process beings with a preliminary structural assessment of the building roof to ensure it can support the additional weight of the green roof. Following this, the roof surface is prepared, including waterproofing and installing a root barrier to protect the building structure. Next, the modular trays are placed and interlocked across the roof surface, and the irrigation and drainage systems installed. Finally, the selected plant species are planted, taking into consideration local climate conditions and maintenance requirements.

Maintenance involves regular inspections to check for plant health, irrigation system functionality, and any potential issues. Routine weeding and pruning are performed to maintain the aesthetic and functional quality of the green roof. Periodic fertilization ensures optimal plant growth and health. Additionally, the irrigation system needs to be maintained to remain functional and efficient, with adjustment made as needed based on seasonal requirements.

The innovative aspects of the modular green roof system include its scalability, allowing for easy adaptation from small residential roofs to large commercial buildings. Its design prioritizes sustainability through the use of eco-friendly materials and efficient water systems. Additionally, the system supports a variety of plant species, enhancing urban biodiversity[2][3][4].

Revenue is generated through the sale of modular green roof trays, installation services, and maintenance contracts. The primary products are customizable green roof trays designed for easy installation and adaptability to various roof sizes and shapes. Installation services ensure proper setup and integration, while ongoing maintenance plans ensure the longevity and performance of the green roofs.

Over the first five years, revenue is projected to grow significantly due to increasing adoption of green roof technology. Initial revenues start from JOD 60,000 in Year 1, reaching JOD 400,000 by Year 5, driven by sales, installations, and maintenance services.

The table below shows an itemized projection for revenues over the first five years of operation:

Table1 : Revenue Projection

Description / Year	1	2	3	4	5
Green Roof Tray Sales (unit)	5,000	8,000	12,000	15,000	20,000
Green Roof Tray (JOD per unit)	6	6	7	7	7
Subtotal Green Roof Tray (JOD)	30,000	48,000	84,000	105,000	140,000
Installation Services (unit)	2,000	3,000	5,000	8,000	10,000
Installation Services (JOD per unit)	10	10	10	10	10
Subtotal Installation Services (JOD)	20,000	30,000	50,000	80,000	100,000
Maintenance Services (unit)	1,000	2,000	4,000	8,000	16,000
Maintenance Services (JOD per unit)	10	10	10	10	10

[2] "Green Roofs and Urban Biodiversity," Urban Sustainability Journal, 2022.
[3] "Innovations in Modular Green Roof Systems," Journal of Environmental Technology, 2021.
[4] "Sustainable Urban Infrastructure: Case Studies," World Bank, 2022.

Subtotal Maintenance Services (JOD)	10,000	20,000	40,000	80,000	160,000
Total Revenues (JOD)	60,000	98,000	174,000	265,000	400,000

Each component of the product mix contributes differently to the total quantity sold and revenue over five years. Green Roof Tray Sales make up the majority of the quantity sold, with units increasing from 5,000 to 20,000, but contribute a smaller portion of the total revenue (45.3%) due to their lower price per unit (JOD 6 – 7). Installation Services, although constituting a smaller quantity (2,000 to 10,000 units) contribute significantly to revenue (26.22%) due to their higher unit price of JOD 10 per unit. Maintenance Services show a similar trend, with a balanced contribution, representing a moderate quantity (1,000 to 16,000 units) and contributing about 29% to the total revenue at the price of JOD 10 per unit. Overall, the mix shows reliance on high-volume, low-price products and moderate-volume, moderate-price services, indicating an opportunity to further optimise pricing and sales strategies in the future.

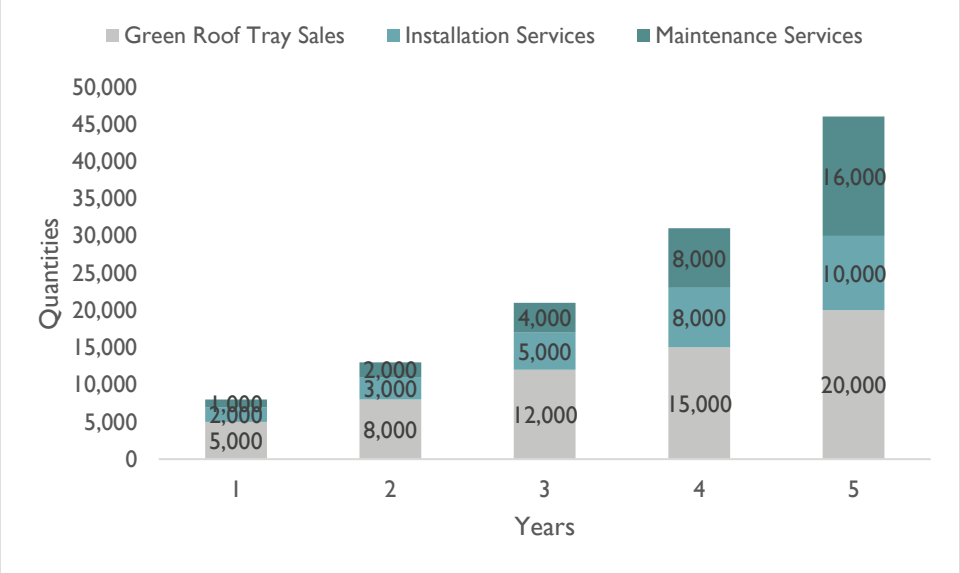

Figure 1: Product Mix by Quantity

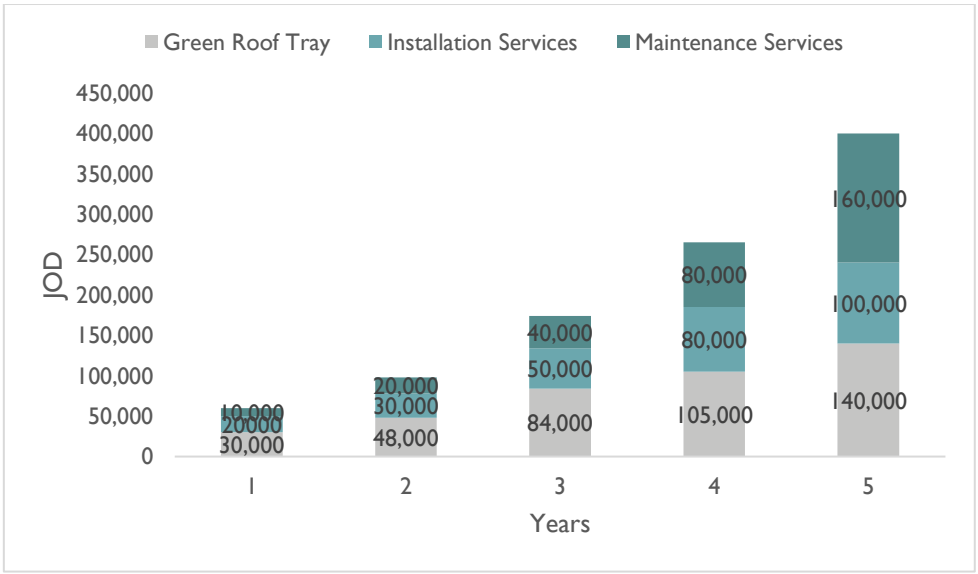

Figure 2: Product Mix by Revenue

4. Technical Analysis

Costs of goods sold (COGS) include the manufacturing costs of the trays, installation expenses, and maintenance. These costs are projected to increase from JOD 17,000 in Year 1 to JOD 108,000 in Year 5 as the business scales.

Table 2: Cost of Goods Sold – Five Year Projection

Description / Year	1	2	3	4	5
Green Roof Tray (unit)	6,000	8,000	12,000	15,000	20,000
Green Roof Tray (JOD per unit)	1	1	1	1	1
Subtotal Green Roof Tray (JOD)	6,000	8,000	12,000	15,000	20,000
Installation Services (unit)	3,000	5,000	7,000	8,500	10,000
Installation Services (JOD per unit)	4	4	4	4	4
Subtotal Installation Services (JOD)	12,000	20,000	28,000	34,000	40,000
Projected Demand Maintenance Services (unit)	1,000	2,000	4,000	8,000	1,000
Maintenance Services (JOD per unit)	3	3	3	3	3
Sub-total Maintenance Services (JOD)	3,000	6,000	12,000	24,000	3,000
Total COGS (JOD)	21,000	34,000	52,000	73,000	63,000

The team composition starts with key roles such as the Founder/CEO, a Sustainable Construction Engineer, a Horticulturist, and a Business Operations Manager who is added in Year 3. The staffing strategy allows for gradual expansion, increasing from three members in Year 1 to six members by Year 5 as shown in the table below.

Table 3: Manpower recruitment plan – five-year projection

Title / Year	1	2	3	4	5
Founder/CEO	1	1	1	1	1
Sustainable Construction Engineer	1	1	1	1	2
Horticulturist	1	1	1	1	2
Business Operations Manager	0	0	1	1	1

The table below provides an overview of human resource annual salaries, accounting for social security and health insurance expenses. Social security contributions were computed at 14.25% of the gross salary, following the guidelines set by the Social Security Corporation.

Table 4: Manpower total cost (JOD) – five-year projection

Title / Year	1	2	3	4	5
Founder/CEO	14,000	14,700	15,435	16,207	17,017
Sustainable Construction Engineer	8,400	8,820	9,261	9,724	20,421
Horticulturist	8,400	8,820	9,261	9,724	20,421
Business Operations Manager	-	-	9,261	9,724	10,210
Total HR Salaries	**30,800**	**32,340**	**43,218**	**45,379**	**68,068**
Social Security Cost	**4,389**	**4,608**	**6,159**	**6,466**	**9,700**
Health Insurance Cost	**900**	**900**	**1,200**	**1,200**	**1,800**
Total HR Cost	**36,089**	**37,848**	**50,577**	**53,045**	**79,568**

Operating expenses for ECOROOF include electricity, water, rent, fuel, and maintenance, which remain consistent across the five years. Major cost increases are seen in advertising and research & development.

The subtotal OpEx shows a progressive increase from JOD 47,640 in Year 1 to JOD 111,087 in Year 5. Additionally, other contingency costs, calculated as a percentage of the subtotal OpEx are added.

The table below outlines the operational expenditures.

Table 5: Operational Expenditures – five-year projection

Description / Year	1	2	3	4	5
Electricity	300	300	300	300	300
Water	30	30	30	30	30
Rent	3,000	3,000	3,000	3,000	3,000
Fuel	30	30	30	30	30
Maintenance	100	100	100	100	100
Telecommunication	100	100	100	100	100
Website Charges	10	10	10	10	10
Advertising	2,000	3,000	5,000	10,000	15,000
Cleaning Material &	50	50	50	50	50
Research & Development	1,000	1,000	1,000	2,000	2,000
Legal & Accounting Fees	600	600	600	800	800
Sub-total OpEx	**43,309**	**46,068**	**60,797**	**69,465**	**100,988**
Other Costs	4,331	4,607	6,080	6,947	10,099
Total OpEx (JOD)	**47,640**	**50,675**	**66,876**	**76,412**	**111,087**

Initial capital expenditures include R&D for developing the modular system, manufacturing equipment, and facility setup, with a total initial investment of JOD 30,000. Additional investments in manufacturing equipment and R&D are planned for subsequent years.

Table 6: Capital Expenditures Cost – five-year projection

Description / Year	0	1	2	3	4	5
R&D for Modular System	10,000					10,000
Manufacturing Equipment	15,000			5,000		
Facility Setup	5,000					
Total CapEx (JOD)	30,000			5,000		10,000

5. Financial Analysis

5.1 Financial Study Assumptions

The feasibility study is based on the following key assumptions:

Discount Rate: The study employs a conservative discount rate of 14%, reflecting a cautious approach to valuation.

Financing Structure: The project is entirely financed by equity. This conservative approach avoids the financial leverage and thus underestimates project value, given the lower cost of debt compared to equity.

Terminal Value: The project assumes a zero-terminal value at the end of year five, aligning with the study's conservative outlook.

Cash Flow Projection: Cash flows beyond year five are excluded from the analysis, focusing on the initial project phase.

Tax Rate: The assumed tax rate of 0% complies with Jordan's income tax law.

Depreciation Rate: Capital expenditure (CapEx) is depreciated at an annual rate of 20%. Any deviation from this rate may impact projected profitability but not project feasibility, as depreciation is a non-cash expense.

Working Capital Assumptions

Operational liquidity requirements are guided by the following assumptions:

- **Cash Reserves:** The project will maintain cash equivalent to 30 days of projected annual operational expenses, ensuring robust liquidity management.
- **Accounts Receivable (A/R) Collection Period:** The average collection period for receivables is 45 days, reflecting expected credit sales conversion into cash.
- **Accounts Payable (A/P) Payment Period:** The average payment period for payables is 0 days, indicating the timeframe for settling supplier obligations.
- **Inventory Management:** Inventory levels will be maintained to cover an average of two months of sales quantity, ensuring optimal stock levels to meet demand efficiently.

Capital expenditures expected to be incurred in the first year were included as part of the initial costs of the project.

Provisions were made within the initial cost to cover any potential negative net free cash flow that may arise during the first five years of operation, if needed.

5.2 Financial Study:

5.2.1 Projected Working Capital

This table shows that the net working capital needed for the project for the first year of operation is JOD 16,970, which has to increase steadily year over year to reach JOD 66,757 in the fifth year of operation. The steady increase in the working capital comes to cover the rapid increase in the project operations and mainly the increase in the projected revenues.

Table 7: Working capital projection (JOD)

Description/Year	1	2	3	4	5
Cash	3,970	4,223	5,573	6,368	9,257
Accounts Receivable (A/R)	9,500	14,750	24,250	33,750	42,500
Inventory	3,500	5,667	8,667	12,167	15,000
Accounts Payable (A/P)	-	-	-	-	-
Net Working Capital	16,970	24,640	38,490	52,284	66,757
Changing in Working Capital		7,670	13,850	13,795	14,473

5.2.2 Project Initial Cost

The project's initial cost is projected to be JOD 46,970, comprising JOD 30,000 as CapEx and JOD 16,970 as net working capital.

Table 8: Initial Cost Summary (JOD)

Description/Year	JOD
CapEx	30,000
Net Working Capital	16,970
Total Initial Cost	**46,970**

5.2.3 Projected Income Statement

The projected income statement indicates that the project will generate a profit of JOD 1,360 in the first year of operation. Furthermore, net profits are expected to increase gradually over the study period, reaching JOD 129,913 in the fifth year of operation.

Table 9: Projected Income Statement (JOD)

Description/Year	1	2	3	4	5
Total Revenues	76,000	118,000	194,000	270,000	340,000
COGS	21,000	34,000	52,000	73,000	90,000
Gross Profit	**55,000**	**84,000**	**142,000**	**197,000**	**250,000**
OpEx	47,640	50,675	66,876	76,412	111,087
Net Profit Before Tax and Depreciation	**7,360**	**33,325**	**75,124**	**120,588**	**138,913**
Depreciation	6,000	6,000	7,000	7,000	9,000
Net Profit Before Tax	1,360	27,325	68,124	113,588	129,913
Tax Expense	-	-	-	-	-
Net Profit	**1,360**	**27,325**	**68,124**	**113,588**	**129,913**

In the first year of operation, the project is expected to generate positive profit margins, and revenue growth will dramatically increase the gross and net profit margins in the following years. In the fifth year of operations, the gross profit margin is expected to be 73.5%, and the net profit margin is 38.2%. This is shown in the figure below.

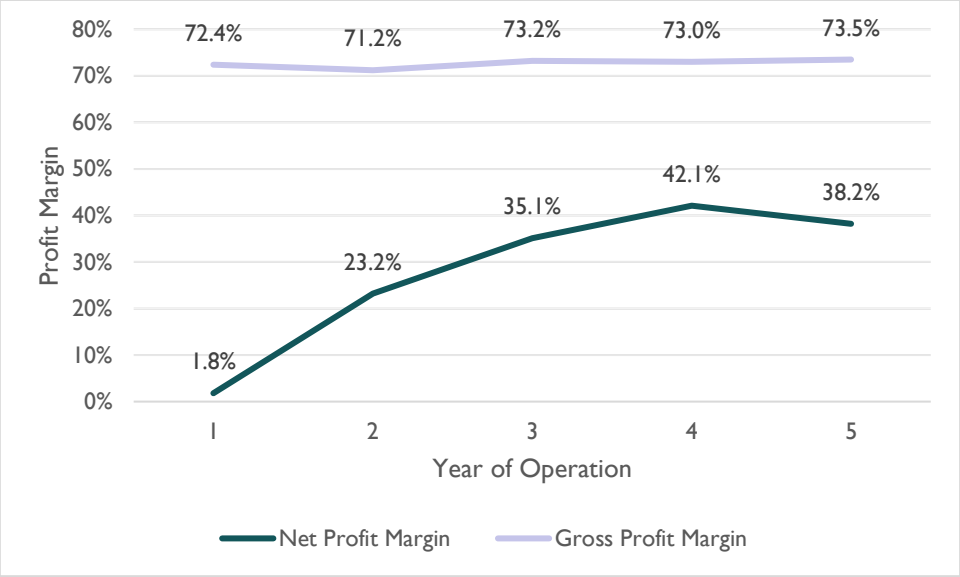

Figure 3: Gross vs Net Profit Margin

On the asset management side, the study shows that the return on investment will increase steadily from 2.9% in the first year of operation to 209.6% in the fifth year.

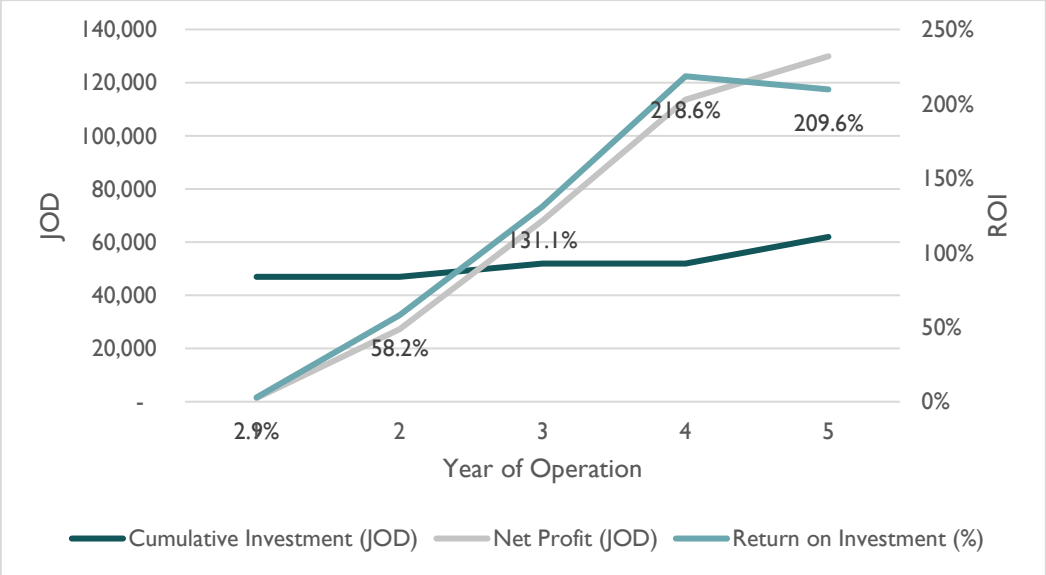

Figure 4: Return on Investment

5.2.4 Projected Free Cash Flow Statement

The table below demonstrates that the project can generate a positive free cash flow from the first year of operation, JOD 7,360. Moreover, due to the projected expansion in business operations, the project is expected to generate a steady positive net free cash flow growth in the following years. By the end of your five, the projected free cash flow will reach JOD 114,440.

Table 10: Free Cash Flow (FCF) Projection (JOD)

Description/ year	0	1	2	3	4	5
Cash Inflow						
Net Profit		1.360	27,325	68,124	113,588	129,913
Depreciation		6,000	6,000	7,000	7,000	9,000
Injected Capital	46,970					
Total Cash Inflow	**46,970**	**7,360**	**33,325**	**75,124**	**120,588**	**138,913**
Cash Outflow						
Initial Cost	46,970		-	5,000		10,000
Changes in Working Capital			7,670	13,850	13,795	14.473
Total Cash Outflow	**46,970**	**-**	**7,670**	**18,850**	**13,795**	**24,473**
Free Cash Flow	**-**	**7,360**	**25,655**	**56,274**	**106,793**	**114,440**

Based on these results, the project's feasibility indicators demonstrate its viability, with a net present value of JOD 139,877.1 and a profitability index of 3.98. Moreover, the project's internal rate of return (IRR) is expected to be 68.36%, indicating feasibility is not sensitive to changes in market conditions.

Feasibility Indicators	
Net Present Value (NPV)	139,877
Profitability Index (PI)	3.98
Internal Rate of Return (IRR)	68.4%

5.3 Sensitivity Analysis

To assess the project's sensitivity to market conditions, a sensitivity analysis was conducted involving six unfavourable scenarios:

- Decrease projected revenues by 5% while keeping other variables constant.
- Decrease projected revenues by 10% while keeping other variables constant.
- Increase operational expenditure by 5% while keeping other variables constant.
- Increase operational expenditure by 10% while keeping other variables constant.
- Increase initial costs by 5% while keeping other variables constant.
- Increase initial costs by 10% while keeping other variables constant.

Table 11: Sensitivity analysis outcomes

Sensitivity Scenario	Net Present Value (NPV)	Profitability Index (PI)	Internal Rate of Return (IRR)
Original case	139,877	3.98	68.36%
Drop in revenues by 5%	108,634	3.31	57.87%
Drop in revenues by 10%	77,152	2.63	46.54%
Increase in OpEx by 5%	128,082	3.72	63.83%
Increase in OpEx by 10%	116,286	3,46	59.33%
Increase in initial cost by 5%	137,529	3.79	65.87%
Increase in initial cost by 10%	135,180	3.62	63.54%

The sensitivity analysis shows that the project is feasible and not sensitive to unfavourable market conditions. The project's economic feasibility is strong and viable under all the above-mentioned scenarios. The drop in revenues has a more dramatic impact on the project viability than the increase in the OpEx or initial cost by the same magnitude. It is recommended that investors check and further study the market to ensure that the projected revenues are achievable within the thresholds of the proposed initial cost and operational expenditures.

6. Integration with Other Sectors

Modular green roof systems have potential for integration with various sectors:

Government and Policy Making: Data and results from green roof installations can inform urban development policies, helping cities to mitigate heat island effects, manage stormwater, and promote sustainability.

Environmental Management: Green roofs can improve air quality and urban biodiversity, supporting environmental agencies' goals of reducing pollution and enhancing ecological habitats.

Construction Industry: Partnerships with construction companies and architects can facilitate the incorporation of green roofs into new building projects, promoting sustainable building practices.

Education and Research: Universities and research institutions can use the installations as living laboratories for environmental studies, urban planning, and sustainable architecture.

Energy Sector: By improving building insulation, green roofs contribute to energy efficiency, reducing the demand on energy infrastructure and aligning with energy conservation initiatives.

These integrations enhance the startup’s impact, creating opportunities for cross-sector collaboration and amplifying the benefits of green roofs in urban environments.

7. Entrepreneur Persona

The ideal entrepreneur to lead the company should possess a blend of expertise in sustainable urban design, horticulture, and environmental engineering. This individual should have a strong background in green infrastructure projects and be passionate about urban sustainability. Key skills include strategic planning, project management, and the ability to navigate regulatory landscapes.

A visionary leader, they should be adept at fostering partnerships with government bodies, environmental organizations, and the construction industry. They must also possess excellent communication skills to advocate for the benefits of green roofs and educate stakeholders. Experience in managing a multidisciplinary team and driving innovative projects to fruition is essential.

This leader should be committed to the vision of transforming urban landscapes through sustainable practices, enhancing urban biodiversity, and improving the quality of life in cities across Jordan.

8. Stakeholders

Successful deployment of green roof systems involves engaging a diverse group of stakeholders:

Homeowners and Commercial Building Owners: Primary users of green roof systems, benefiting from enhanced building energy efficiency and increased property value. Their adoption and feedback are crucial for refining the product.

Urban Planners and Municipalities: Key partners in integrating green roofs into urban development plans. Their support can drive policy changes and create incentives for adopting green infrastructure.

Environmental Organizations: Advocates for sustainability and biodiversity, these groups can help promote green roofs and provide valuable insights into environmental impacts.

Construction Companies and Architects: Partners in installing and integrating green roofs into new and existing buildings. Collaboration with these stakeholders ensures seamless implementation and adherence to building standards.

Academic and Research Institutions: Contributors to R&D efforts, these institutions can use green roofs as case studies for environmental and urban planning research.

9. Risk Assessment and Mitigation

Successfully deploying green roof systems in Jordan entails navigating several risks:

Risk	Impact	Likelihood	Risk Mitigation Technique
Structural Limitations of Buildings	High	Moderate	Conduct thorough structural assessments and provide solutions for reinforcement.
High Initial Investment Costs	High	Moderate	Offer financing options and phased implementation to spread out costs. Seek government grants and subsidies for green initiatives.
Market Adoption Rates	Moderate	Moderate	Implement comprehensive marketing and education campaigns to demonstrate the benefits and provide incentives for early adopters.
Regulatory Challenges	Moderate	Low	Engage with regulatory authorities to ensure compliance and advocate for supportive policies. Stay updated on changes in building codes and regulations.
Competition	Moderate	Low	Establish a strong market presence early and continuously innovate. Highlight the unique benefits of modular green roof systems over traditional methods.
Weather and Environmental Conditions	Moderate	Moderate	Select resilient plant species suitable for local climate conditions and incorporate robust irrigation and drainage systems.
Supply Chain Disruptions	Moderate	Low	Develop a robust supply chain with multiple suppliers and maintain an inventory buffer. Establish long-term contracts with key suppliers.
Economic and Political Instability	High	Low	Diversify market presence and monitor economic and political conditions closely. Adjust strategies as needed to mitigate risks.

Addressing these risks with careful planning and contingency measures is essential for the smooth operation and long-term success of the startup. First, working closely with Jordanian authorities to navigate the regulatory landscape will make it easier to adopt green roof installations and ensure they comply with local building codes. Starting pilot projects in various urban settings will demonstrate the benefits of green roofs, provide real-world data to refine our business model, and offer proof of concept to potential customers and investors. Forming strategic partnerships with urban planners, environmental organizations, and building contractors will boost technological capabilities and align with national urban development goals.

Raising awareness about green roofs through marketing and educational campaigns will target homeowners, commercial building owners, and municipalities, making the benefits clear to a wide audience. To mitigate the high initial investment costs, ECOROOF may offer financing options and phased implementation plans while seeking government grants and subsidies for green initiatives. Thorough structural assessments of buildings, coupled with reinforcement solutions, will address structural limitations.

Choosing resilient plant species suited to local climate conditions and incorporating robust irrigation and drainage systems will help manage weather and environmental risks. To prevent supply chain disruptions, the startup can develop a robust supply chain with multiple suppliers, maintain an inventory buffer, and establish long-term contracts with key suppliers. By diversifying market presence and closely monitoring economic and political conditions, the startup can adjust strategies as needed to handle economic and political instability. Finally, ongoing investment in research and development will ensure that green roof technology stays ahead of the curve, keeping the company competitive as new advancements and competitors emerge.

By implementing these strategies, the project can effectively navigate potential risks and achieve sustainable growth.

10. Conclusion

Green roof systems present a business opportunity in Jordan's urban green infrastructure sector. By addressing urban heat island effects, enhancing building energy efficiency, and promoting urban biodiversity, they contribute to creating healthier urban environments. The scalable, modular design of the green roof trays makes them suitable for a wide range of buildings, from residential to commercial and public structures. The projected financials indicate strong revenue growth potential, and the integration with various sectors enhances the startup's marketability and impact.

In conclusion, the project demonstrates promising feasibility indicators based on the assumptions formed during the development of this study. Nonetheless, entrepreneurs are advised to conduct additional analysis on projected demand, initial costs, and operational expenses to mitigate potential risks associated with adverse market conditions that could jeopardize its validity.

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