

Effects of Construction Industry and its Technology in Attaining Sustainable Development in Cabanatuan City

Jeric R. Aduna¹, Noel T. Florencondia², T2 DC. Salmos³, Aaron Kevin B. Reyes³

¹Director, Infrastructure Development Office, Nueva Ecija University of Science and Technology, Cabanatuan City, Nueva Ecija, Philippines.

²Professor, EE Department, Nueva Ecija University of Science and Technology, Cabanatuan City, Nueva Ecija, Philippines.

³Student, Nueva Ecija University of Science and Technology, Cabanatuan City, Nueva Ecija, Philippines.

Corresponding Author: t2salmos@gmail.com

Abstract— The construction industry has become one of the most important economic sectors in the world. It is a major contributor to economic growth and development. The construction industry is also responsible for a significant portion of global resource consumption and waste production. As the world moves towards a more sustainable development path, the construction industry must play an important role in achieving this goal. This paper will explore the effects of the construction industry on sustainable development and discuss the ways in which this sector can help in attaining sustainable development goals.

Index Terms—Sustainable Development, Construction Industry, Resource Management.

1. Introduction

The economic hub of Nueva Ecija is Cabanatuan. The city and its neighboring towns make up its metropolitan area, which is home to over 640,000 people. Despite the absence of substantial industrial businesses, Cabanatuan's thriving service and agricultural sectors are what propel the city's economy ahead.

The discussion of sustainable development has focused heavily on Construction, not only in the city of Cabanatuan. The environmental component continues to be at the center of the prevalent concept of sustainability in buildings and real estate. Along with the construction of public and private structures with the aim of supplying housing, employment, education, health care, and recreation in the city, and country.

Manuscript revised April 15, 2024; accepted April 17, 2024. Date of publication April 27, 2024.
This paper available online at www.ijrse.com
ISSN (Online): 2582-7898; SJIF: 5.59

The construction industry plays a major role in the development of Cabanatuan City, both in terms of economic growth and urban development. The industry provides many jobs, generates substantial revenues, and contributes to the city's social, cultural, and environmental sustainability. Construction technology is critical for the industry's success, as it enables the industry to build faster, safer, and more efficient structures.

2. Conceptual Framework

A. Stakeholder Engagement

Establishing effective and meaningful engagement between stakeholders, including the local government, construction industry, and communities, to ensure that the development of Cabanatuan City is sustainable.



Fig.1. Frame work

Stakeholder engagement in Cabanatuan City is an important part of the city's development and growth. The Cabanatuan City government places a strong emphasis on building relationships among the city's stakeholders, including local businesses, residents, and non-governmental organizations. The city's stakeholders work together to identify the needs of the community and develop plans to address them. The Cabanatuan City government has established a few programs in order to facilitate good stakeholder engagement. These programs include regular meetings between the city government and stakeholders to discuss current projects, issues, and ideas. The

city also holds regular town hall meetings to ensure that all stakeholders are involved in the decision-making process. Additionally, the city has a website dedicated to stakeholder engagement initiatives, which includes resources for stakeholders to access information about current projects and issues, as well as tools for participation in the decision-making process. Stakeholders in Cabanatuan City are also encouraged to participate in the city's community-driven development projects. These projects involve stakeholders in the planning and implementation of projects that will help improve the quality of life in the city. For example, the city has established a participatory budgeting process, which allows stakeholders to decide how the city's budget will be allocated. Additionally, the city has initiated several projects to improve public safety and infrastructure, such as the installation of closed-circuit television cameras and the construction of a new bridge. These projects are designed to be carried out in partnership with the city's stakeholders. Overall, the city of Cabanatuan City has taken a proactive approach to engaging its stakeholders in the development of the city. Through regular meetings, town halls, and community-driven development projects, the city is able to ensure that all stakeholders are involved in the decision-making process and that the city is able to meet the needs of its citizens.

B. Sustainability

Implementing sustainable construction practices, such as using low-carbon building materials, incorporating energy efficiency measures, and reducing waste and emissions, to ensure that the development of Cabanatuan City is sustainable.

Construction sustainability in Cabanatuan City is a growing focus of the city government, as well as local businesses and organizations. The city's Sustainable Cabanatuan program aims to make the city more environmentally friendly, economically vibrant, and socially equitable. The program works to reduce energy use, promote renewable energy, increase green spaces, and create more sustainable transportation options. The city has also committed to creating a green building program, encouraging green building practices, and increasing the use of recycled materials in construction projects. Additionally, the city has implemented a green procurement program to ensure that city-funded projects use certified green building materials and products. Finally, the city is working to develop a green infrastructure strategy to ensure that sustainable practices are incorporated into all aspects of the city's infrastructure.

Sustaining development of Cabanatuan in relation to construction can be achieved through several strategies, including:

- **Improving Infrastructure:** Improving infrastructure in Cabanatuan is essential to create a sustainable environment for construction. This includes expanding public transportation networks, building roads and bridges, and making sure that basic services such as electricity, water, and sanitation are available.
- **Enhancing Regulatory Framework:** The regulatory framework governing the construction industry in

Cabanatuan needs to be improved to ensure that construction activities are conducted in a safe and sustainable manner. This includes introducing regulations to address environmental and safety standards, as well as introducing incentives for responsible construction practices.

- **Investing in Education and Training:** Investing in education and training for construction professionals is essential for Cabanatuan's development. This includes providing financial support for those wishing to improve their skills and knowledge in the field, as well as providing access to modern technology and equipment.
- **Promoting Sustainable Construction Practices:** Sustainable construction practices should be promoted to ensure that construction activities have a positive impact on the environment. This includes using renewable materials, minimizing waste, and utilizing green building technologies.

These strategies should be implemented in a coordinated manner in order to ensure that the development of Cabanatuan is sustainable and resilient.

C. Sustainable Development Goals

- End poverty in all its forms everywhere
- End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Ensure healthy lives and promote well-being for all at all ages
- Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Achieve gender equality and empower all women and girls
- Ensure availability and sustainable management of water and sanitation for all
- Ensure access to affordable, reliable, sustainable, and modern energy for all
- Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Reduce inequality within and among cities
- Make every district and human settlements inclusive, safe, resilient, and sustainable
- Ensure sustainable consumption and production patterns
- Take urgent action to combat climate change and its impacts.
- Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests,

combat desertification, and halt and reverse land degradation and halt biodiversity loss

- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels
- Strengthen the means of implementation and revitalize the national partnership for sustainable development

D. Resource Management

Properly managing and conserving natural resources, such as water, air, and soil, to ensure that the development of Cabanatuan City is sustainable.

- Implement conservation and management plans: Develop and implement plans that promote conservation and management of natural resources in Cabanatuan City. These plans should include strategies for reducing pollution, promoting water conservation, protecting air quality, preserving soil quality, and promoting sustainable development.
- Create incentives for conservation: Offer incentives for businesses and individuals to conserve natural resources, such as providing tax breaks for businesses that use renewable energy sources or that take steps to reduce their energy use.
- Educate the public: Educate the public about the importance of conserving natural resources and the dangers of pollution.
- Establish protected areas: Establish protected areas in and around Cabanatuan City to ensure that natural resources are conserved.
- Promote renewable energy: Promote the use of renewable energy sources, such as solar and wind, to reduce reliance on fossil fuels and reduce air pollution.
- Establish efficient public transportation: Establish efficient public transportation options in Cabanatuan City to reduce reliance on private vehicles and reduce air pollution.
- Implement waste management systems: Implement waste management systems to reduce the amount of waste being produced and creating pollution.
- Improve infrastructure: Improve infrastructure to ensure that natural resources are managed and conserved properly. This includes improving drainage systems, constructing dams to control floodwater, and creating water treatment plants to reduce water pollution.
- Monitor natural resources: Monitor natural resources in and around Cabanatuan City to ensure that they are being properly managed and conserved.
- 10. Promote sustainable development: Promote sustainable development practices in Cabanatuan City to reduce the impact of development on natural resources.

E. Local Capacity Building

Supporting the development of local capacity and skills to ensure that the development of Cabanatuan City is sustainable and equitable.

Cabanatuan City is a rapidly growing city in the Philippines. With its increasing population and economic development, it is vital that the development of the city is both sustainable and equitable. Supporting the development of local capacity and skills is one of the most effective ways to ensure this. Local capacity and skills refer to the ability of individuals and communities to utilize the resources available to them to improve their lives and reach their goals. By strengthening local capacity and skills, Cabanatuan City can ensure that its development is both sustainable and equitable. One way to do this is by investing in education and training programs for local communities. This would allow them to gain the skills and knowledge needed to take advantage of new opportunities and become more self-sufficient. For example, investing in agricultural training would enable local farmers to increase their yields and improve their livelihoods. The city can also support the development of local businesses by providing access to capital, resources, and training. This would enable local entrepreneurs to start and grow businesses, creating jobs and stimulating economic growth. Furthermore, Cabanatuan City should invest in infrastructure that is designed to benefit the local population. This could include the construction of roads, bridges, and other public works that would make it easier for residents to access services and markets. This would also help to improve the quality of life for residents. Finally, the city should provide access to healthcare and other social services that can help to improve quality of life. This could include a range of services such as mental health services, childcare, and elderly care. In conclusion, supporting the development of local capacity and skills is essential for ensuring that Cabanatuan City's development is both sustainable and equitable. Investing in education and training, providing access to capital and resources, and investing in infrastructure and social services can all help to ensure that everyone in the city has the opportunity to benefit from the city's growth.

F. Local Capacity Building

- Investing in education and training: The city government should invest in providing educational and training opportunities to its citizens to ensure that they have the necessary skills to participate in the city's development. This should include educational opportunities such as technical and vocational training, and apprenticeship programs.
- Developing public-private partnerships: The city should develop partnerships with local businesses, investors, and other stakeholders to create apprenticeship and training programs for residents. This should include providing mentorship and guidance to the participants of the programs.
- Creating employment opportunities: The city should

create employment opportunities for residents to ensure that they have a chance to participate in the city's development. This should include initiatives such as job fairs and recruitment drives.

- **Supporting small businesses:** The city should provide support to small businesses through initiatives such as tax incentives, grants, and other forms of assistance. This will ensure that local businesses have the resources to expand and create more jobs for local residents.
- 5. **Involving local communities:** The city should involve local communities in its development plans to ensure that their voices are heard and their needs are taken into consideration. This should include initiatives such as public consultations and community-led planning processes.

G. Strategic Planning

Cabanatuan City is a vibrant city located in the province of Nueva Ecija in the Philippines. The city is the center of trade, commerce, and industry in the region, and is also home to many educational and cultural institutions. To ensure the city's long-term success and development, it is important to develop a strategic plan that will guide its future growth and development.

It provides a framework for decision-making and helps ensure that the city's resources are used efficiently and effectively. The plan also helps to set goals, develop strategies to achieve them, and monitor progress over time. Furthermore, a long-term strategic plan gives the city a sense of direction and purpose. This can help to attract investment and resources from outside the city, as well as motivate the citizens to work together to achieve their goals.

Key Components of a Long-Term Strategic Plan for Cabanatuan City should include several key components. It should identify the city's strengths and weaknesses in terms of infrastructure, resources, and potential opportunities. It should also include a vision and mission statement that outlines the long-term goals of the city and its citizens. The plan should also identify the strategies that will be used to achieve these goals, as well as the resources and stakeholders that will be involved. Finally, the plan should also include a timeline for implementation, as well as a system for monitoring progress and adjusting strategies as needed.

Developing a long-term strategic plan for the development of Cabanatuan City to ensure that the development is sustainable and equitable.

- **Develop an overarching vision for the city:** Establish a shared vision for the future of Cabanatuan City that will provide a framework for the long-term strategic plan. This vision should outline the desired future state of Cabanatuan City and how the city will achieve this desired future state.
- **Increase public engagement:** Establish a greater level of public engagement with the city's residents to ensure that the long-term strategic plan reflects their wants and needs. This can be achieved through public

forums, surveys, and focus groups to gather feedback from the community.

- **Strengthen infrastructure:** Invest in the city's infrastructure to ensure that Cabanatuan City is able to meet modern and future needs. This includes investing in transportation, energy, water, and sewer systems, as well as developing new public spaces and green spaces.
- **Encourage economic development:** Develop a plan to attract and foster new businesses, startups, and investments in the city. This includes incentives for businesses that create jobs, increase the city's tax base, and improve the quality of life for residents.
- **Improve access to services:** Ensure that all residents of Cabanatuan City have access to quality healthcare, education, and other services. This includes improving the quality of public services, increasing access to basic services, and providing incentives for private sector investment in providing services.
- **Enhance environmental sustainability:** Incorporate environmental sustainability into the long-term strategic plan. This includes investing in renewable energy sources, promoting energy efficiency, encouraging green spaces, and investing in clean-up initiatives.
- **Foster equitable development:** Ensure that all residents of Cabanatuan City benefit from the city's growth and development. This includes investing in public services and infrastructure in underserved areas, creating more affordable housing, and providing incentives for businesses to hire locally.

H. Monitoring and Evaluation

Establishing a system for monitoring and evaluating progress towards sustainability goals to ensure that the development of Cabanatuan City is in line with the United Nations Sustainable Development Goals (SDGs) is essential for effective implementation. The monitoring and evaluation system should focus on the following aspects:

- **Data collection:** It is important to collect relevant data to measure the progress of the city towards achieving the SDGs. This includes data on the city's political, economic, social, and environmental performance. Examples of data could include population growth, GDP, unemployment rate, access to clean water and sanitation, carbon emissions, energy consumption, and poverty rate.
- **Benchmarking:** Comparing the city's performance to other cities can help to identify areas for improvement and prioritize efforts. This can be done by comparing the city's performance to the global average as well as to local cities or towns that have achieved success in achieving the SDGs.
- **Evaluation:** Regularly evaluating the performance of

the city against the SDGs can help to identify areas where progress needs to be made and ensure that any interventions are effective. This should include an assessment of the extent to which the city is meeting the goals as well as examining potential barriers to progress.

- *Reporting:* Reporting on the progress of the city towards the SDGs can help to ensure transparency and accountability to the public. Reports should include an analysis of the data collected, an evaluation of the city's performance, and the actions taken to address any gaps.

By setting up a monitoring and evaluation system, Cabanatuan City can ensure that its development is in line with the SDGs and that progress is tracked, monitored, and reported on. This will ensure that the city is able to make informed decisions and take appropriate actions to achieve the goals.

3. Research Questions

1. What are the current policies and regulations in place to promote sustainable development in Cabanatuan City's construction industry?
2. What strategies can be implemented to reduce the environmental impact of the construction industry in Cabanatuan City?
3. How can the construction industry in Cabanatuan City be made more efficient and sustainable in terms of energy, water and material use?
4. How can the construction industry in Cabanatuan City create more jobs and economic opportunities for local residents?
5. What technologies can be employed to reduce the carbon footprint of the construction industry in Cabanatuan City?
6. What social and economic benefits can be derived from investing in sustainable construction projects in Cabanatuan City?
7. What policies and incentives can be put in place to encourage sustainable construction practices in Cabanatuan City?
8. How can the construction industry in Cabanatuan City improve access to green and affordable housing?

1) *What are the current policies and regulations in place to promote sustainable development in Cabanatuan City's construction industry?*

Currently, the local government of Cabanatuan City has issued a number of policies and regulations to promote sustainable development in its construction industry. These include:

- The adoption of the 'Construction Waste Management Plan' which requires all construction companies in the city to properly manage and dispose of their construction waste.

- The implementation of the 'Green Building Code' which requires all new buildings to meet certain standards of environmental sustainability.
- The issuing of the 'Energy Efficiency Regulations' which mandates that all new buildings must meet certain standards of energy efficiency.
- The implementation of the 'Water Efficiency Regulations' which mandates that all new buildings must meet certain standards of water efficiency.
- The adoption of the 'Environmental Impact Assessment Guidelines' which requires all new construction projects to assess and mitigate their environmental impact before proceeding.

2) *What strategies can be implemented to reduce the environmental impact of the construction industry in Cabanatuan City?*

- Encourage the use of renewable energy sources, such as solar and wind, to reduce reliance on fossil fuels.
- Implement measures to reduce the amount of construction waste produced, such as recycling and reusing materials.
- Adopt green building practices and technologies, such as energy-efficient lighting, insulation, and HVAC systems, to reduce energy consumption.
- Increase the use of regional materials and resources in construction.
- Utilize non-toxic and low-impact construction materials, such as fly ash and recycled concrete.
- Promote the use of green roofs, green walls, and other vegetation-based technologies to reduce the urban heat island effect.
- Develop and implement water conservation measures, such as the use of rainwater harvesting systems.
- Invest in public transportation and green infrastructure to reduce the amount of air pollution generated by the construction industry.
- Establish an environmental management system to ensure compliance with all applicable environmental regulations.
- Educate workers on the importance of reducing the environmental impact of construction.

3) *How can the construction industry in Cabanatuan City be made more efficient and sustainable in terms of energy, water and material use?*

- Increase the use of renewable energy sources such as solar and wind power for construction projects.
- Implement water-saving strategies such as rainwater harvesting and greywater recycling for irrigation and other construction needs.
- Reduce the use of materials and resources by making use of existing materials and resources such as scrap wood, reclaimed building materials, etc.
- Promote green building practices such as maximizing

natural light and ventilation, using low-flow plumbing fixtures, and using energy-efficient lighting and appliances.

- Encourage the use of green construction materials such as recycled materials, eco-friendly products, and low-VOC paints and finishes.
- Educate contractors, builders, and other industry players on the importance of sustainable construction practices.
- Establish a green building certification system to reward and recognize those who implement sustainable construction practices.

4) *How can the construction industry in Cabanatuan City create more jobs and economic opportunities for local residents?*

- Introduce green construction projects, such as green buildings, solar and wind energy, and water conservation.
- Promote education and training programs in the construction industry to equip local residents with the necessary skills.
- Encourage the use of local construction materials, such as bamboo, coconut husks, and other natural materials, to stimulate the local economy.
- Develop a job placement program that links local residents to employment opportunities in the construction industry.
- Increase the number of construction projects by partnering with local companies and government agencies to fund local development initiatives.
- Develop partnerships between local companies and international companies to attract foreign investment in the construction industry.
- Create incentives for businesses in the construction industry to hire local residents, such as tax credits and loan guarantees.

5) *What technologies can be employed to reduce the carbon footprint of the construction industry in Cabanatuan City?*

- Use of Renewable Energy Sources: Utilizing renewable energy sources such as solar, wind, and geothermal power can help reduce the carbon footprint of the construction industry in Cabanatuan City. Renewable energy sources provide clean, reliable, and affordable energy that can reduce carbon emissions significantly.
- Use of Sustainable Building Materials: Incorporating sustainable building materials such as bamboo, recycled materials, and reclaimed lumber can help reduce the carbon footprint of the construction industry in Cabanatuan City. Sustainable building materials are renewable, durable, and require less energy to manufacture, resulting in reduced CO2 emissions.
- Use of Eco-Friendly Construction Techniques:

Utilizing eco-friendly construction techniques such as green roofs, rainwater harvesting, and green walls can help reduce the carbon footprint of the construction industry in Cabanatuan City. These techniques help conserve energy, reduce waste, and promote healthier indoor air quality, all of which can reduce CO2 emissions significantly.

- Use of Smart Technologies: Incorporating smart technologies such as energy-efficient lighting, intelligent building management systems, and smart sensors into construction projects can help reduce the carbon footprint of the construction industry in Cabanatuan City. Smart technologies can help reduce.

6) *What social and economic benefits can be derived from investing in sustainable construction projects in Cabanatuan City?*

- Increased Employment Opportunities: Sustainable construction projects in Cabanatuan City offer employment opportunities for local people, helping to reduce unemployment, increase wages and create a more secure economic environment.
- Improved Quality of Life: Sustainable construction projects can improve the quality of life for local residents by providing better housing, improved infrastructure, and access to clean water and energy.
- Increased Tax Revenues: Sustainable construction projects can increase tax revenues for the city, providing a source of revenue for government services and programs.
- Improved Environment: Sustainable construction projects can reduce air and water pollution, reduce energy consumption, and restore natural habitats.
- Improved Public Health: Sustainable construction projects can improve public health by providing better access to healthcare, improved sanitation and access to safe drinking water.

7) *What policies and incentives can be put in place to encourage sustainable construction practices in Cabanatuan City?*

- Create and enforce green building codes and standards: Develop green building codes and standards that will incentivize and incentivize sustainable construction practices. These codes and standards should include requirements such as energy efficiency, water efficiency, waste management, and materials selection.
- Tax incentives: Provide tax incentives for builders, developers, and homeowners who use sustainable construction practices. Incentives could include reduced property taxes, or tax credits for certain types of energy-efficient materials and construction techniques.
- Subsidies: Provide subsidies to builders, developers,

and homeowners who use sustainable construction materials and techniques. These subsidies could be in the form of grants, loans, or other forms of financial assistance.

- Education and awareness: Educate the public about the importance of sustainable construction practices and their benefits. This could include outreach programs, workshops, or seminars.
- Public-private partnerships: Encourage public-private partnerships to promote sustainable construction practices. These partnerships could involve government subsidies, grants, or other forms of financial support.

8) *How can the construction industry in Cabanatuan City improve access to green and affordable housing?*

Cabanatuan City could improve access to green and affordable housing through a variety of strategies. These include incentivizing developers to create more green and affordable housing by offering tax breaks and other financial incentives, increasing public transportation options to make it easier for residents to access green and affordable housing, creating a housing trust fund to provide additional financial support for green and affordable housing projects, and increasing funding for community-based organizations that provide green and affordable housing services. Additionally, the city could implement zoning laws that restrict the development of luxury housing in favor of green and affordable housing and could explore the use of community-led development models to ensure that local residents are involved in the decision-making process.

4. Data Gathering

The data analysis for the effects of construction industry and its technology in attaining sustainable development in Cabanatuan City will involve the collection of quantitative and qualitative data from various sources such as surveys, interviews, focus groups, and other primary sources. The data will then be analyzed to identify the key factors that have an effect on the development of the city and the construction industry.

The data techniques used to analyze the effects of construction industry and its technology in attaining sustainable development in Cabanatuan City will include a variety of techniques. These techniques include the use of Geographic Information Systems (GIS) to map out the location of construction sites, the use of remote sensing to assess the impact of construction activities, and the use of survey techniques to assess the opinions of construction industry stakeholders. Finally, the use of qualitative techniques such as interviews, focus groups, and case studies will be used to gain a deeper understanding of the impacts of the construction industry on sustainable development.

5. Findings

Construction industry plays a major role in the growth of any economy. The construction industry is closely related to investment and spending, both of which are major contributors to economic growth. Spending on construction projects creates jobs that increase the money circulating in the economy and boosts economic growth.

It Improves Infrastructure, Construction industry is responsible for building and maintaining the infrastructure of a country. This includes roads, bridges, airports, hospitals, schools, etc. These improved infrastructure facilities help in providing better services, better healthcare, better education, better transportation, and an improved environment.

Provides Employment: Construction industry is one of the largest employers in the world. It provides employment to a wide range of skilled and unskilled workers. This helps in reducing unemployment and provides income to many people.

Stimulates Trade: Construction industry is a major driver of international trade. Construction projects require raw materials from all over the world, which stimulates international trade. This helps in creating jobs and improving the economy of both developed and developing countries.

Improves Quality of Life: Construction industry provides better housing, better water supply, better sanitation facilities, and other amenities that improve the quality of life of people. This helps in reducing poverty and improving the lives of people in the long run.

However, the construction industry has a negative effect on the city in several ways.

Firstly, construction activities can cause noise and air pollution, which can disrupt the peace of the city and cause health issues for its citizens.

Secondly, construction activities can displace many people, leading to displacement and displacement-related trauma.

Thirdly, construction activities often lead to a rise in the cost of living in the city, as prices of housing, food, and other basic necessities increase.

Finally, construction activities often result in the destruction of the city's natural environment, resulting in decreased access to clean air, water, and green space.

6. Recommendation

- Expanding Homeowner Market: The city's population is growing and so is the number of homeowners. This creates an opportunity for construction companies to build new homes and remodel existing ones.
- Developing Infrastructure: With the growing population, the city is investing heavily in infrastructure projects such as highways, bridges, and sewer systems. Construction companies can benefit from these projects.
- Commercial Building Projects: As businesses expand and the city grows, there is a need for new commercial buildings. This provides an opportunity for

construction companies to build office buildings, shopping centers, and other commercial structures.

- **Public Projects:** The city often funds or participates in public projects such as parks, trails, and recreational facilities. Construction companies can bid on these projects and benefit from the work.
- **Green Building Projects:** The city is increasingly focusing on green building projects and encouraging the use of sustainable materials and methods. Construction companies can take advantage of this trend and become leaders in green building.

7. Conclusion

The City Government of Cabanatuan has implemented sustainable development strategies in construction, such as the construction of green buildings, green infrastructure, and water-efficient systems. Green buildings are designed and constructed to reduce energy consumption and waste products, while green infrastructure is aimed at reducing the environmental impacts associated with urban construction. Water-efficient systems are also employed to ensure efficient utilization of water resources. The City Government of Cabanatuan has also created a Construction Code, which provides guidelines and regulations for the construction of buildings, infrastructure, and other development projects. This code ensures that construction activities meet the standards set by the government, such as energy efficiency and environmental protection. In addition, the City Government of Cabanatuan has established the Cabanatuan Disaster Risk Reduction Office (CDRRO). The CDRRO is responsible for ensuring that construction projects are constructed safely and are in the majority of developed nations have their own established systems for evaluating the sustainability of buildings.

For instance, BREEAM in the UK now offers a variety of tools for various building types, including eco-homes, healthcare, industrial, multi-residential, prisons, office, retail, and educational structures. Evaluating the environmental performance of a set of buildings is crucial, though. This entails reviewing the area's surrounds, or more specifically, the neighborhood of the structures. A district's common area can improve the quality of the environment and performance all around it. In order to consider a larger spectrum of urban development, the Comprehensive Assessment System for Sustainable Urban Development (CASSUD) is recommended.

References

- [1]. Nueva Ecija 1st District Engineering Office |
- [2]. Department of Public Works and Highways (dpwh.gov.ph) Discover Construction Companies in - Dun & Bradstreet (dnb.com)
- [3]. The 2021 Top Construction Technology Firms (constructionexec.com)
- [4]. Best Construction Technology Examples for Companies of All Sizes (idea lcrm.a pp)

- [5]. 30 Construction Startups Emerging as Industry Leaders | BigRentz