



Mapua University
School of Architecture, Interior Design and Built Environment (ARIDBE)
ARCHITECTURE DEPARTMENT

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BUSINESS MANAGEMENT & APPLICATION FOR ARCHITECTURE 2

Submitted By:

LAPUZ, JOSEPH MICHAEL B.

SN: 2020-101875

Submitted To:

Ar. Aristeo Garcia, Ph.D.

Class Adviser

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EXTERIOR PERSPECTIVES



INTERIOR PERSPECTIVES



ABSTRACT

This research study investigates the intricacies surrounding the implementation of Activity-Based Working (ABW) in workspaces in the post-pandemic era. Focused on the Philippines, the study delves in the dynamics, potential drawbacks, and overall adaptability of employees to the evolving ABW workplace arrangement. The study aims to explore the implementation of ABW and the implications in the social and technical components within the office environments. This includes the challenges and potential opportunities that may be associated with the adoption of ABW considering the factors affecting employee performance, collaboration, and well-being. The research employs an integrated conceptual framework drawn upon the concepts discussed on the Productivity Model (Swift, 2011), Conceptual Framework of Workplace Environment (Naseem, Sikander, Hameed, & Khan, 2012), and the Hexagonal Socio-technical Systems Framework (Clegg, Robinson, Davis, & McKay, 2017) to deepen the understanding of the relation of the aspects that influence productivity and performance in a workplace.

This research explores ABW and sociotechnical dynamics through qualitative approach. Key informants were interviewed to discuss their perspectives and provide solutions to some of the challenges of ABW implementation. The study identifies challenges like space inadequacy and coordination issues. To help address some of the issues related to ABW, sociotechnical aspects were also examined, emphasizing the positive impacts on collaboration and information access. Strategies such as spatial management and communication protocols were discussed as potential solutions. Aligned with the objectives of the study, the findings offer insights for effective ABW implementation. A conceptual framework was provided as a practical guide in the exploration of different aspects of ABW in the context of post-pandemic needs. The recommendations include in-depth analysis of challenging transitions and comparative studies with traditional workspaces. This research lays a foundation for understanding ABW's evolution in post-pandemic workplaces.

Keywords: activity-based working, co-working, office, sociotechnical theory, workplace

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PART I COMPANY PROFILE



LITECASTING SOLUTIONS

LIGHTER AND STRONGER PRECASTING SOLUTION

LITECASTING SOLUTIONS

Office: Regalado Avenue West, Fairview, Quezon City, Metro Manila

+63 9696418010

jmblapuz@mymail.mapua.edu.ph

Mission

Our mission at LiteCasting Solutions is to provide high-quality and innovative precast concrete solutions that meet the needs of modern construction while prioritizing sustainability and efficiency with our products.

Vision

At LiteCasting Solutions, our vision is to transform the precast concrete industry through the use of advanced technologies and sustainable practices that promote innovation, enhance efficiency, and minimize our environmental footprint.

Core Value

1. **Innovation:** Continuously improving and integrating advanced technologies in our products and processes.
2. **Sustainability:** Committing to environmentally friendly practices that reduce our carbon footprint.
3. **Quality:** Ensuring all our products meet the highest standards of durability and performance.
4. **Customer Focus:** Prioritizing the needs and satisfaction of our clients through customizable solutions and exceptional service.
5. **Integrity:** Maintaining transparency and ethical practices in all our business operations.

Strategic Initiative

1. **Content Marketing:** Create informative and engaging content such as blog posts, videos, and infographics to educate potential customers about the benefits of our products.
2. **Digital Marketing:** Utilize social media platforms, email marketing, search, and online advertising to reach potential customers and drive traffic to our website.
3. **Influencer Marketing:** Partner with industry influencers and thought leaders to promote our products and increase brand awareness.

Integrated Management System Objectives

1. Achieve customer satisfaction by delivering high-quality and reliable precast concrete solutions.
2. Continuously improve our production processes to enhance efficiency and reduce waste.
3. Ensure compliance with environmental regulations and promote sustainable practices.
4. Foster a safe and healthy work environment for all employees.
5. Maintain open communication channels with stakeholders to address their needs and concerns.

Integrated Management System Policy

LiteCasting Solutions is committed to providing superior precast concrete solutions through the implementation of an integrated management system that emphasizes quality, sustainability, and continuous improvement. We adhere to industry standards and regulations, ensuring our operations are environmentally responsible and focused on customer satisfaction.

Service Offered

1. Manufacturing of lightweight precast concrete panels
2. Custom design and production of precast concrete elements
3. Installation services for residential, commercial, and infrastructure projects
4. Consulting services for sustainable construction practices

Selling Features of the Proposal

1. **Lightweight:** Significantly lighter than traditional precast concrete panels, reducing transportation and installation costs.
2. **Durable:** Provides long-lasting strength and durability.
3. **Customizable:** Designed to meet specific project requirements.
4. **Cost-effective:** Offers a cost-effective alternative to traditional precast concrete panels.
5. **Easy Installation:** Features a simple interlocking system for secure and efficient installation.

Company Goals

1. To become a leading provider of sustainable precast concrete solutions in the construction industry.
2. To achieve a break-even point of 4,828 units of lightweight precast concrete panels monthly, thereby creating profit and ensuring financial stability.
3. To expand our market reach through strategic marketing initiatives and partnerships.
4. To continuously innovate and improve our products and services to meet the evolving needs of the construction industry.
5. To foster a culture of sustainability and responsibility within our company and across all our projects.

GENERAL BACKGROUND STUDY

LiteCasting Solutions is a burgeoning enterprise specializing in the production and retail of high-quality precast concrete panels. Recognizing the increasing demand for durable and efficient construction materials, LiteCasting Solutions focuses on providing innovative and sustainable solutions. As a small-scale operation, the company aims to carve out a niche in the market by offering branded precast panels known for their superior quality and reliability. The business operates from a compact establishment designed to integrate all necessary functions within a single building, ensuring efficiency and convenience.

General Description of the Key Spaces of Establishment

The establishment will be a building that provides all the necessary functions to keep the business operational within its walls. To describe the layout of the building, the establishment will house all the retailing, office spaces, and warehouse operations within the building. Therefore, the building is a retail store that acts as the main office and warehouse for Litecasting Solutions.

1. **Retail Store** – this portion of the operation will be in front of the building where clients are mainly entertained and make purchases. Products will be displayed, and information will be provided about their selling points and applications in the construction. The layout for this part of the building should have display/showcasing rooms, and consultation rooms or desks.
2. **Office Spaces** – integrated within the building which is typically behind the retail area or second floor of the building if the story is planned for a two-storey plan. This is where the administrative operations, strategic planning, customer service, marketing and sales departments are located to provide most of the main functions required for the office to be operational and manageable. The layout will include areas such as the reception area, open-plan workspaces, closed private office or meeting rooms for conferences and confidential discussions and planning strategies for the company.
3. **Warehouse** – located in the back of the building and separated away from the retail area. This is where products of raw and finished products are stored and safety and security are ensured. The storage and management of inventory is essential for this business as it houses most of its products in various selections and customizations. Production is also being facilitated in this area, especially in the small-scale manufacturing of precast panels such as casting and curing stations. The layout of the warehouse will include areas for storage and shelving, production areas, as mentioned earlier, and quality control zone for inspection and testing of panels before they are moved for display and transportation.

Method of Profit Revenue of the Facility

LiteCasting Solutions will primarily generate revenue through the sale of its branded precast concrete panels. These panels will be sold directly to customers from the retail store, which serves as the main point of contact for clients. The target market includes small to medium-sized construction projects, DIY home builders, and local contractors. By offering high-quality precast panels at competitive prices, LiteCasting Solutions aims to attract a steady stream of customers. The pricing strategy is designed to balance affordability with the premium quality of the products, ensuring customer satisfaction and encouraging repeat business.

In addition to direct sales, LiteCasting Solutions will offer customized panel designs to meet specific client requirements. This service will cater to customers who need bespoke products for unique construction projects. Custom orders will be priced at a premium due to the specialized design and production processes involved. This additional revenue stream not only diversifies the company's offerings but also allows for higher profit margins on specialized products.

Another significant source of revenue will come from bulk sales. By providing discounts for larger orders, LiteCasting Solutions aims to attract business from construction companies and contractors who require large quantities of precast panels. These volume discounts will make the company's products more attractive to large-scale buyers, increasing sales volume and market penetration. To further encourage repeat business and build long-term relationships, the company will implement customer loyalty programs. These programs will offer incentives such as discounts on future purchases, exclusive access to new products, and personalized customer service.

Operations within the retail store and office will be closely integrated to ensure efficiency and customer satisfaction. In the retail store, sales representatives will engage with customers, offering detailed information about the products and their benefits. In-depth consultations will help customers choose the right panels for their specific needs, ensuring they receive the best possible solutions for their projects. Orders will be processed through an integrated system that links the retail store, warehouse, and office operations, allowing for seamless transaction management and inventory tracking.

The office operations will handle all administrative functions, including paperwork, billing, and customer service inquiries. The management team will develop marketing campaigns and sales strategies to increase brand awareness and drive sales. Customer relationship management will be a key focus, with a database maintained to follow up on orders, gather feedback, and offer after-sales support. This comprehensive approach ensures that every customer interaction is managed efficiently, contributing to overall customer satisfaction and loyalty.

In the warehouse, inventory management will be critical to ensure the availability of products. Efficient tracking and management of stock will help maintain optimal inventory levels, preventing shortages and overstocking. The production process will involve the small-scale manufacturing of panels, with rigorous quality control measures in place to maintain high standards. Logistics will be coordinated to ensure the timely movement of products from the warehouse to the retail store and to customers. This streamlined process will help LiteCasting Solutions deliver products efficiently and reliably, reinforcing the company's reputation for quality and service.

By maintaining a small but efficient operation, LiteCasting Solutions can focus on delivering high-quality products and exceptional customer service, establishing a strong foundation for future growth. The company's diversified revenue streams, integrated operations, and commitment to customer satisfaction will drive its success in the competitive construction materials market.

TECHNICAL DESCRIPTION OF THE PROJECT

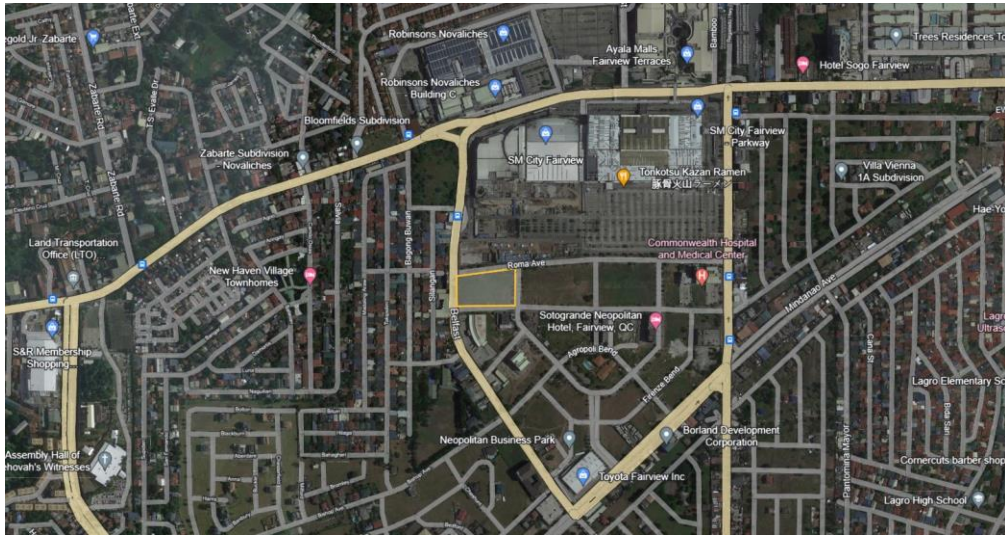


Figure No. 1
Vicinity Map of TCT of the Proposed Project

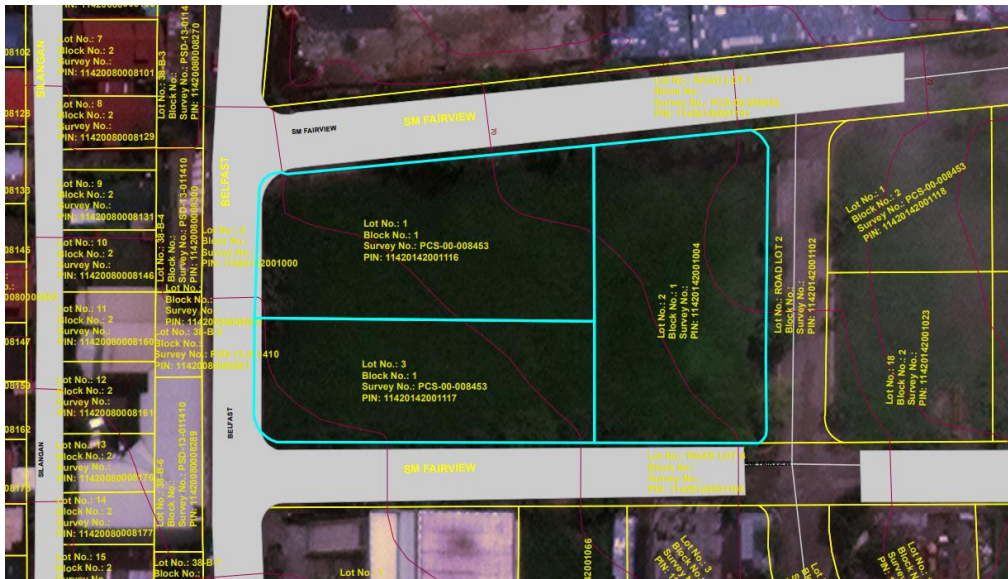


Figure No. 2
Lot Map Details - Lot No. 2, Block No. 1

Table No. 1
Technical Descriptions of the Project

Descriptions	
Establishment Name	Lightcasting Solutions
Land Area	3414.5840 sqm
Site Topography	Generally Flat
TCT Number	TCT No. 004-2013000566

Type of Development	Commercial
Architecture Theme	Modern Architecture
No. of Floors	2 Storeys
No. of Parking Slots	45 Parking Slots
	<i>Retail Stores – One (1) Parking Slot per 50 square meters of GFA</i>
	<i>Office Buildings – One (1) Parking Slot for every 125 square meters of GFA</i>
	<i>Warehouse – One (1) Parking Slot for every 200 square meters of GFA</i>
Outdoor Amenities	Landscaping Bicycle Parking Racks Parking Spaces
Indoor Amenities	Customer Restrooms Employee Restrooms

Technical Description of TCT

Table No. 2
Lot Technical Description

LOT TECHNICAL DESCRIPTION						
LINE (PT.)	BEARINGS					DISTANCE (METERS)
	N/S	DEG		MIN	E/W	
	N	6	-	52	W	1515.34
1	S	89	-	51	W	81.45
2	N	26	-	0	W	26.22
3	N	42	-	6	E	6.00
4	N	84	-	8	E	78.09
5	S	0	-	22	W	38.44

TCT No.: 004-2013000566
Page No.: 2

OWNER INFORMATION (Continued from page 1)
Owner: THE PHILIPPINES

TECHNICAL DESCRIPTION (Continued from page 1)
2 BY LOT 1 BLK. 1 OF THE CONS- SUBDN. PLAN, ALONG LINE 2- 3 BY RD. LOT 1; ON THE NE. ALONG LINES 3- 4- 5- 6 BY RD. LOT 2; ON THE SE. ALONG LINE 6- 7 BY RD. LOT 4 OF THE CONS- SUBDN. PLAN; AND ON THE NW. ALONG LINE 7- 1 BY LOT 3 BLK. 1 OF THE CONS- SUBDN. PLAN. BEGINNING AT A POINT MARKED " 1" ON PLAN BEING N. 6 DEG. 52' W. 1515.34 M. FROM CM 84, TALA ESTATE; THENCE N. 0 DEG. 22' E. 38.44 M. TO PT. 2; THENCE N. 84 DEG. 8' E. 40.89 M. TO PT. 3; THENCE S. 48 DEG. 6' E. 6.01 M. TO PT. 4; THENCE S. 0 DEG. 32' E. 68.67 M. TO PT. 5; THENCE S. 44 DEG. 52' W. 6.00 M. TO PT. 6; THENCE S. 89 DEG. 50' W. 42.02 M. TO PT. 7; THENCE N. 0 DEG. 22' E. 34.44 M. TO PT. OF BEGINNING; CONTAINING AN AREA OF THREE THOUSAND FOUR HUNDRED FIFTEEN (3415) SQ. M. ALL PTS. REFERRED TO ARE INDICATED ON THE PLAN AND ARE MARKED ON THE GROUND BY ES. CYL. CONC. MONS. 15 X 40 CM. ; BEARING TRUE, DATE OF THE ORIGINAL SURVEY, SEPT. 1, 1907 - MAR. 31, 1908 AND THAT OF THE CONS- SUBDN. SURVEY, JAN. 9, 1998 - JAN. 24, 1998. APPROVED MAR. 17, 1998.

Figure No. 3
Technical Description from TCT Document

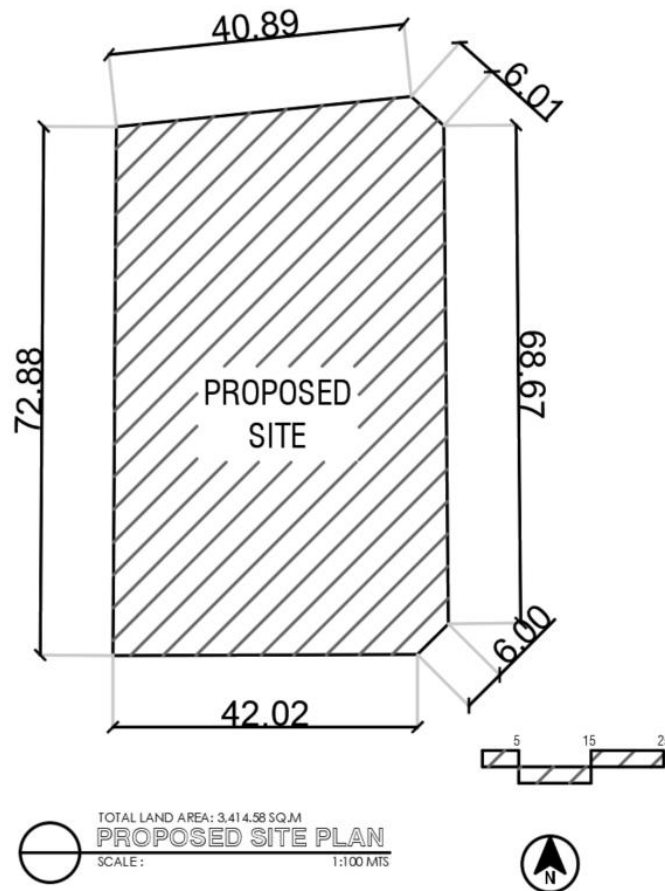


Figure No. 4
Drawing of Technical Description of Proposed Site

General Description of the Building

The retail store is located at the front of the building, featuring product displays and a customer service desk. Customers can browse the products, receive assistance from knowledgeable staff, and make purchases on-site. Behind the retail area, the small warehouse stores inventory, allowing for quick restocking of the store and efficient order fulfillment for online sales.

The office section, located in a separate part of the building, houses the management and administrative staff. This area includes offices for key personnel, a conference room for meetings, and a break room for employee relaxation. Daily operations include processing orders, managing inventory, coordinating logistics, and planning marketing activities.

By maintaining a streamlined workflow between the retail store, warehouse, and offices, Lightcasting Solutions ensures a smooth and efficient operation that meets customer needs and drives business growth. The combination of modern architectural design and functional space utilization supports both the aesthetic appeal and operational efficiency of the business.

Lot Computation

Table No. 3
General Lot Descriptions

Descriptions	
Type of Lot	Corner-Through Lot (3 Frontages)
RROW Width	Around 24.00 meters or less (based on ocular inspection)
Front Setback (NBCP)	5.00 meters
Rear/Side Setback (NBCP)	3.00 meters

Table No. 4
Table of Lot Computations

	Percent (%)	Computed Total
TLA		3,414.58
ISA - Paved Open Spaces	15%	512.19
USA - Unpaved Open Spaces	5%	170.73
TOSL - Total Open Space	20%	682.92
PSO - Percentage Site Occupancy	80%	2,731.67
TFGA - Total Gross Floor Area	30*80%	81,950.02
AMVB - Allowable Maximum Volume of Building	60*80%	163,900.03
FLAR/FAR	NO FAR (2 storeys for this project)	
GFA	2 storeys	5463.3344
Parking Slots - Retail Stores (Assume Half of GFA of Ground Floor)	per 50 sqm	27.32
Parking Slots - Office Buildings (Assume GFA of Second Floor)	per 125 sqm	10.93
Parking Slots - Warehouse	per 200 sqm	6.83
Total Parking Slots		45

DETAIL ESTIMATION WITH BILL OF MATERIAL

Table No. 5
Budgetary Cost Estimates

Item No.	Description	Quantity	Unit	Unit Cost	Estimated Total Direct Cost	Indirect Cost			Total Indirect Cost	Total Cost
						OCM	Profit	VAT		
1.0	GENERAL REQUIREMENTS									
	Project Documentation, Permits, and Licenses	1.00	l.s.	200,000.00	200,000.00	30,000.00	20,000.00	12,500.00	62,500.00	262,500.00
	Temporary Facilities and Utilities	1.00	l.s.	175,000.00	175,000.00	26,250.00	17,500.00	10,937.50	54,687.50	229,687.50
	Temporary Site Enclosure	236.50	m	250.00	59,125.00	8,868.75	5,912.50	3,695.31	18,476.56	77,601.56
	Occupational Safety and Health Requirements	1.00	l.s.	125,000.00	125,000.00		12,500.00	7,500.00	20,000.00	145,000.00
	Sub-Total				559,125.00				155,664.06	714,789.06
2.0	SITE PREPARATION AND EARTHWORKS									
	Building Layout	1.00	l.s.	100,000.00	100,000.00	15,000.00	10,000.00	6,250.00	31,250.00	131,250.00
	Structural Excavation	500.00	cu.m.	500.00	250,000.00	37,500.00	25,000.00	15,625.00	78,125.00	328,125.00
	Gravel Bedding	100.00	cu.m.	800.00	80,000.00	12,000.00	8,000.00	5,000.00	25,000.00	105,000.00
	Backfilling and Leveling	500.00	cu.m.	400.00	200,000.00	30,000.00	20,000.00	12,500.00	62,500.00	262,500.00
	Soil Poisoning	3414.00	sqm	50.00	170,700.00	25,605.00	17,070.00	10,668.75	53,343.75	224,043.75
	Sub-Total				800,700.00				250,218.75	1,050,918.75
3.0	STRUCTURAL WORKS									
	Formworks & Scaffolding	500.00	sqm	250.00	125,000.00	18,750.00	12,500.00	7,812.50	39,062.50	164,062.50
	Concrete Works	500.00	cu.m.	4,000.00	2,000,000.00	300,000.00	200,000.00	125,000.00	625,000.00	2,625,000.00
	Reinforcement Bars	10000.00	kg	70.00	700,000.00	105,000.00	70,000.00	43,750.00	218,750.00	918,750.00
	Sub-Total				2,825,000.00				882,812.50	3,707,812.50
4.0	MASONRY WORKS									
	Exterior Wall Masonry Works	1000.00	sqm	1,000.00	1,000,000.00	150,000.00	100,000.00	62,500.00	312,500.00	1,312,500.00
	Interior Wall Masonry Works	1000.00	sqm	800.00	800,000.00	120,000.00	80,000.00	50,000.00	250,000.00	1,050,000.00
	Sub-Total				1,800,000.00				562,500.00	2,362,500.00
5.0	CARPENTRY WORKS									
	Ceiling Works	1500.00	sqm	500.00	750,000.00	112,500.00	75,000.00	46,875.00	234,375.00	984,375.00
	Sub-Total				750,000.00				234,375.00	984,375.00
6.0	ROOFING WORKS									
	Structural Roof Steel Framing	500.00	sqm	1,200.00	600,000.00	90,000.00	60,000.00	37,500.00	187,500.00	787,500.00

	Pre-painted Roofing Panels	500.00	sqm	1,000.00	500,000.00	75,000.00	50,000.00	31,250.00	156,250.00	656,250.00
	Sub-Total				1,100,000.00				343,750.00	1,443,750.00
7.0	ARCHITECTURAL FINISHES									
	Wall Plastering Works	1500.00	lot	300.00	450,000.00	67,500.00	45,000.00	28,125.00	140,625.00	590,625.00
	Doors & Windows	1.00	l.s.	500,000.00	500,000.00	75,000.00	50,000.00	31,250.00	156,250.00	656,250.00
	Sub-Total				950,000.00				296,875.00	1,246,875.00
8.0	PLUMBING AND SANITARY WORKS									
	Drainage and Sewer Systems	1.00	l.s.	300,000.00	300,000.00	45,000.00	30,000.00	18,750.00	93,750.00	393,750.00
	Catch Basin w/ Steel Cover	1.00	l.s.	100,000.00	100,000.00	15,000.00	10,000.00	6,250.00	31,250.00	131,250.00
	Plastic Purifying Septic Tank (PPST)	1.00	l.s.	200,000.00	200,000.00	30,000.00	20,000.00	12,500.00	62,500.00	262,500.00
	Ceramic Water Closet Dual Finish Type	10.00	unit	10,000.00	100,000.00	15,000.00	10,000.00	6,250.00	31,250.00	131,250.00
	Ceramic Lavatory w/ Faucet	10.00	unit	5,000.00	50,000.00	7,500.00	5,000.00	3,125.00	15,625.00	65,625.00
	Waterline System	1.00	l.s.	300,000.00	300,000.00	45,000.00	30,000.00	18,750.00	93,750.00	393,750.00
	Consumable Items	1.00	l.s.	100,000.00	100,000.00	15,000.00	10,000.00	6,250.00	31,250.00	131,250.00
	Sub-Total				1,150,000.00				359,375.00	1,509,375.00
9.0	ELECTRICAL WORKS									
	Lighting Fixture	1.00	l.s.	300,000.00	300,000.00	45,000.00	30,000.00	18,750.00	93,750.00	393,750.00
	Convenient Outlet	1.00	l.s.	200,000.00	200,000.00	30,000.00	20,000.00	12,500.00	62,500.00	262,500.00
	Wireless Electrical Conduits	1.00	l.s.	200,000.00	200,000.00	30,000.00	20,000.00	12,500.00	62,500.00	262,500.00
	Sub-Total				700,000.00				218,750.00	918,750.00
10.0	PAINTING WORKS									
	Masonry Walls Painting Works	1500.00	sqm	200.00	300,000.00	45,000.00	30,000.00	18,750.00	93,750.00	393,750.00
	Ceiling Painting Works	1500.00	sqm	150.00	225,000.00	33,750.00	22,500.00	14,062.50	70,312.50	295,312.50
	Painting Work on Metal Surface	1.00	l.s.	100,000.00	100,000.00	15,000.00	10,000.00	6,250.00	31,250.00	131,250.00
	Sub-Total				625,000.00				195,312.50	820,312.50
11.0	MOBILIZATION/DEMOBILIZATION									
	Mobilization/Demobilization	1.00	l.s.	300,000.00	300,000.00	45,000.00	30,000.00	18,750.00	93,750.00	393,750.00
	Sub-Total				300,000.00				93,750.00	393,750.00
12.0	MISCELLANEOUS WORKS									
	1.05 m ² Dumpster/Trash Bin	10.00	units	5,000.00	50,000.00	7,500.00	5,000.00	3,125.00	15,625.00	65,625.00
	Sub-Total				50,000.00				15,625.00	65,625.00

	Total Estimated Budget for the Contract				11,609,825.00			3,609,007.81	15,218,832.81
	Engineering and Administrative Overhead	3.50%							532,659.15
	TOTAL BUDGETARY COST ESTIMATE								PHP 15,751,491.96 PHP 15,751,491.96

GENERAL CONSTRUCTION MATERIALS

Division 1 General Requirements

This contract involves providing all necessary materials, labor, equipment, transportation, and facilities for project completion in line with specifications. The contractor must scrutinize and address any discrepancies in the plans and specifications, seeking clarification or correction as needed.

Materials should be new and of top quality, with a preference for local sourcing under equal conditions. Workmanship should meet the highest standards, and any deviation requires approval. The contractor is accountable for weather-tight temporary facilities, safeguarding the work, and the owner's property. Cleanup entails removing excess materials and equipment before handing it over to the owner.

Division 2 Sitework

This division provides a comprehensive overview of the site-related aspects of a construction project, covering three key sections: Earthwork, Soil Treatment, and Concrete Block Paving, providing a comprehensive guide for contractors to follow during construction.

Earthwork

This section outlines the comprehensive scope of work, including site clearing, grading, excavating, filling, and backfilling. It details the degree of compaction required and provides specifications for excavation, cutting, filling, grading, and sub-grade preparation for proper drainage.

Soil Treatment

This section covers the provision of materials, labor, and equipment for ground and soil treatment focused on termite control. It specifies qualifications, guarantees, the approved product, and execution procedures for pre-construction and post-construction treatments, including re-treatment.

Concrete Block Paving

This section outlines the responsibilities of the contractor for interlock concrete paver works. It includes general requirements, submittals, product specifications for concrete paver

blocks and stamped concrete, and execution details for excavation, compaction, and installation procedures.

Division 3 Concrete

This division focuses on concrete-related aspects in construction. The content encompasses a detailed overview of cast-in-place concrete in Section 3.01. It includes the general scope of the process and specific instructions for the delivery and storage of key components such as cement, aggregates, and reinforcement.

Cast-In-Place Concrete

The section provides a comprehensive guide to cast-in-place concrete, covering the entire process. It includes instructions regarding the handling and storage of essential components, namely cement, aggregates, and reinforcement. Specific storage guidelines are provided for each material, underscoring factors such as elevation, airtight structures, and distinct storage for aggregates of varying sizes.

Division 4 Masonry

This division provides a comprehensive guide to concrete masonry unit work, covering all aspects of the process. The range of coverage involves instructions regarding the transportation, management, and storage of materials, with a focus on appropriate protocols for cement, cementitious materials, and mortar. Storage prerequisites include intact containers with distinct manufacturer labeling, and mortar components are stored in sheds that are dry and weather-tight to prevent the inclusion of foreign materials and water damage. Special attention is given to the careful handling of concrete masonry units to prevent chipping or breakage, and explicit recommendations are given for stacking materials on recently constructed floors.

Concrete Masonry Unit Work

The scope of this section includes all aspects of the process, providing detailed instructions for the delivery, handling, and storage of materials crucial to the work. Specific guidelines are outlined for cement, cementitious materials, mortar, and concrete masonry units. Emphasis is placed on proper storage conditions, including unbroken containers with clear labeling and dry, weather-tight sheds for mortar materials.

Division 5 Metals

This division revolves around metals, covering a broad range of topics related to their use and application. It includes standards from diverse reputable organizations, delineating responsibilities for quality control, as well as the handling and storage of metal products. It emphasizes measures for protection during installation and the importance of examining existing work conditions. It also covers a wide array of topics related to the fabrication and installation methods of metals used in the project. The section underscores inclusivity, addressing all metals used along with their corresponding fabrication and installation techniques.

Metals

This section provides a comprehensive guide to metal-related work within the division of metals. The section covers source quality control, guidelines for product delivery, handling, and storage, with a specific focus on preventing damage.

Metal Materials and Methods

The section concludes with a comprehensive overview of the products and methods outlined. The section also emphasizes precise specifications for each material, covering factors such as grade, composition, finish, and coating. In execution, it details the installation of fittings and fixtures, including specific requirements for floor gratings and material dividers.

Structural Steel Work

This section provides a guide focusing specifically on structural steel work. It defines the scope, emphasizing completeness in covering all aspects of structural steel work. The section details meticulous handling, shipping, and storage guidelines to ensure material integrity.

Division 6 Wood and Plastics

The division focuses on wood and plastics providing a detailed guide on carpentry work. The section outlines the general scope, encompassing all materials, labor, equipment, and operations necessary for finish carpentry work. Quality assurance measures include qualifications for workmen and a no-allowance policy for lack of skill. The product handling part emphasizes protection, replacement in case of damage, and specific conditions for work-

in-place. The submittals section details requirements for shop drawings, samples, and manufacturer's certificates.

Carpentry

This section covers finish carpentry work, encompassing materials, labor, and equipment as per contract terms. The execution details include conditions for work-in-place, fabrication standards, and installation procedures, highlighting the need for precise workmanship, protection measures, and careful inspection.

Division 7 Thermal and Moisture Protection

The division encompasses a range of construction and finishing materials for building exteriors, focusing on elements such as roofing, caulking, sealants, metal roofing, roofing tiles, fiber-cement boards, and skylights. It provides detailed specifications for the selection, handling, and installation of these materials, emphasizing the importance of quality workmanship and adherence to manufacturer recommendations. The division covers various roofing options, including metal and tile systems, as well as the use of fiber-cement boards for fascia boards.

Integral Type Waterproofing (Capillary)

This segment deals with waterproofing and treatment of concrete structures susceptible to hydrostatic pressure. It outlines procedures for preparing surfaces, mixing, and curing.

Damp-Proofing

This section outlines the scope of work for damp proofing, specifically focused on the supply and installation of moisture vapor barriers for slab-on-fill constructions. Quality assurance involves qualified applicators and manufacturer certification. Submittals include material lists and guarantees.

Caulking And Sealants

This section provides guidelines for caulking and sealant applications. It emphasizes qualifications, submission of brochures and samples, and addresses product delivery, handling, and storage.

Metal Roofing

This section provides guidelines for the installation of metal roofing, emphasizing the importance of quality assurance and proper product handling. Installation involves fastening with metal cleats and screws, and accessories include individual hip and ridge caps. Careful attention is given to roof framing, proper anchoring, and minimizing damage during installation.

Roofing Tiles

This section outlines the specifications for roofing tiles installation. The required roofing tiles are described, and emphasis is placed on quality assurance, with work carried out by trained professionals familiar with the materials and recommended installation methods.

Fiber Cement Boards

This section pertains to the installation of fiber-cement boards for Fascia Board, requiring qualified and experienced workmen. The contractor must ensure proper protection of materials and make prompt repairs in case of damage.

Skylight

This section pertains to the installation of skylight roofing systems, covering both polycarbonate and tinted, tempered, and sandblasted glass variants. The guidelines emphasize careful handling and proper storage of skylight glazing to prevent damage.

Division 8 Doors, Windows & Glass

The division encompasses specifications related to doors, windows, and glass in construction projects. It provides detailed guidelines for the selection, installation, and maintenance of various types of doors and windows, including materials, hardware, and finishes. The division covers a range of products, such as wood and metal doors, aluminum and PVC windows, glass, and glazing systems, as well as specialty items like steel casement windows. Additionally, it outlines quality assurance measures, storage requirements, submittal procedures, and installation instructions to ensure compliance with industry standards and project specifications.

Steel Doors and Frames

This section outlines the specifications for steel doors and frames, encompassing all components, including louvers, glass stops, and hardware provisions.

Aluminum Doors and Frames

This section provides specifications for sliding-type aluminum doors and frames, detailing the materials, fabrication, and installation requirements. It references applicable publications and outlines submittal requirements, including shop drawings, samples, descriptive literature, and certificates of compliance.

Wood Doors

This section outlines specifications for wood doors, covering submittals, product handling, and warranties. It details the types of wood doors, including flush hollow-core and panel doors made of Tanguile or Narra wood.

Polyvinyl Chloride (PVC) Doors and Windows

This section outlines specifications for PVC doors, windows, and frames. It emphasizes adherence to quality standards, storage precautions to prevent damage, and the requirement for submittals for Architect's approval.

Aluminum Windows and Frames

This section outlines the requirements for aluminum windows and frames, encompassing diverse elements ranging from qualifications and submission guidelines to materials, dimensional tolerances, and performance criteria. It emphasizes the significance of appropriate storage, safeguarding measures, and on-site measurements.

Special Windows

This section outlines specifications for special windows, such as clerestory and transom windows. It covers qualifications, submittals, material requirements, dimensional tolerances, finishes, and performance specifications.

Finish Hardware

This section outlines specifications for finish hardware, covering general conditions, scope, schedules, approval processes, templates, and quality standards. It details products, including locksets, hinges, floor hinges, flush bolts, door closers, cabinet hardware, and various other hardware items.

Glass And Glazing

This section outlines specifications for glass and glazing work, encompassing various types of glass and glazing materials, as well as installation procedures. It emphasizes quality assurance, including the qualifications of installers and compliance with relevant codes and standards.

Steel Casement Windows

This section outlines specifications for glass steel casement windows, covering aspects such as scope, handling, storage, and submittals.

Division 9 Finishes

This division of specification encompasses the final touches in construction, focusing on finishes that enhance aesthetics and functionality. It includes sections on interior and exterior finishes, covering diverse materials such as paint, coatings, flooring, and wall coverings. Detailed specifications ensure the proper installation of finishes, emphasizing the importance of qualified workmanship, material quality, and adherence to recommended procedures.

Finishes

This section outlines standards for the installation and upkeep of finishes in construction endeavors. It emphasizes the credentials of manufacturers and installers, highlighting their awareness of environmental conditions and project specifications. The section delves into procedures for product delivery, handling, and storage, aiming to uphold the materials' integrity.

Plastering Stuccoing

The section provides comprehensive guidelines for the application of plaster and stucco in construction projects. It references key publications and defines terms, emphasizing the submission of manufacturer instructions.

Concrete Finish

This section outlines the specifications for concrete finishes, covering materials and procedures to achieve various surface textures as indicated in the project schedule. The section details the use of different substrate materials, forms, and finishes such as form finish, fair-faced concrete finish, steel-troweled finish, and more.

Cement Textured Finish

The section covers the delivery and storage of materials, specifying Portland cement, masonry cement, sand, water, and hydrated lime. It details the proportioning and mixing of plaster for base coats and textured finishes, emphasizing the use of mechanical mixers and the importance of maintaining specified proportions.

Gypsum Board

This section outlines the specifications for gypsum board installation. It covers qualifications, product delivery, quality control, and repair guidelines.

Ceramic Tiles

This section provides guidelines for ceramic tile installation. It covers submittals, protection measures, and product specifications.

Local & Other Stones

This section outlines the scope of work, including furnishing, delivering, and installing local stones. The size, grout width, setting bed thickness, and pattern are crucial aspects defined in the product section.

Ceiling Suspension System

This section covers the installation of the Ceiling Suspension System, specifically the Lay-In Acoustic Ceiling Tile System with an Exposed T-Bar system. It includes the description, qualifications, submittals, product details, and execution procedures.

Painting

This section covers the painting requirements for the project. The section emphasizes protection measures during painting, including lead content and warning labels. It details the field quality control, repair of defective work, and cleaning upon completion. The approved brands for paint are specified, with provisions for substitution under certain conditions.

Water Repellant

This section outlines the application of water repellent on local stones, slate stones, and brick wall installations.

Wood Preservative

This section outlines the application of wood preservative on exterior woodworks, exposed wood rafters, and designated areas according to plans.

Wall Covering

This section outlines the incorporation of special wall covering for interior wall finishes. It specifies the submission of wallpaper material samples, including brochures or catalog cuts, for approval before procurement.

Vinyl Tiles

This section details the installation of vinyl tiles, covering labor, materials, and procedures. It emphasizes the need for qualified workmen, proper product handling, and inspection of existing work.

Wood Parquet Flooring

This section outlines the requirements for wood parquet flooring installation, covering labor, materials, and procedures.

Division 10 Specialties

This division encompasses a diverse set of specialties involved in construction projects, ranging from plumbing fixtures and fittings to lighting, louvers, and various

accessories. It specifies the materials, installation methods, and standards for these miscellaneous specialties.

Miscellaneous Specialties

This section covers a range of specialties, including plumbing fixtures, lighting, louvers, and more. Submittals such as shop drawings, samples, and brochures are required for approval.

Division 11 Equipment

The division comprehensively addresses a broad spectrum of specialized items essential for various building functions. From commercial and residential equipment to healthcare, educational, and entertainment facilities. This division categorizes and organizes equipment for different purposes within a construction project.

Equipment

This section focuses on the operation and maintenance of various types of equipment, covering activities such as maintenance, repair, rehabilitation, replacement, and restoration.

Vehicle And Pedestrian Equipment

This section encompasses equipment associated with vehicles and pedestrians. It includes various categories such as vehicle service equipment, parking control equipment, loading dock equipment, and pedestrian control equipment.

Commercial Equipment

This section covers equipment associated with commercial facilities. It includes categories such as retail and service equipment, banking equipment, hospitality equipment, and office equipment.

Residential Equipment

This section encompasses built-in or free-standing residential appliances and components designed specifically for residential use. It covers a wide range of products,

including kitchen appliances like refrigerators, cooktops, and dishwashers, as well as laundry appliances such as washers and dryers.

Foodservice Equipment

This section encompasses a broad range of equipment tailored for commercial and institutional kitchens, bars, and back bars. It covers food storage equipment, including refrigerated cases and walk-in coolers. Food preparation equipment, such as blenders, food grinders, and slicers, is also included.

Education And Scientific Equipment

This section encompasses a diverse range of equipment tailored for educational and scientific institutions, including libraries, laboratories, planetariums, observatories, and museums. The section includes library equipment, such as automated book storage systems and theft protection equipment. It extends to audio-visual equipment, covering projection screens, projectors, and audio-visual equipment supports.

Entertainment And Recreational Equipment

This section encompasses equipment for entertainment and recreation, covering broadcast, theater, and stage equipment, musical instruments, athletic gear, and recreational offerings like bowling, shooting ranges, and climbing walls. It also includes playfield equipment for exterior recreational activities such as playgrounds and athletic facilities.

Healthcare Equipment

This section encompasses a diverse range of healthcare equipment, including medical sterilizing equipment, examination and treatment equipment, patient care equipment, dental and optical equipment, operating room, and radiology equipment, as well as mortuary equipment for handling cadavers.

Collection And Disposal Equipment

This section covers a spectrum of facility maintenance and operation equipment, addressing tasks from cleaning and housekeeping to solid waste handling. It includes floor and wall cleaning equipment, housekeeping carts, vacuum cleaning systems, façade access equipment, and fall protection systems.

Other Equipment

This section encompasses diverse equipment categories, including religious, agricultural, horticultural, veterinary, arts and crafts, security, and detention equipment.

Division 12 Furnishings

The division focuses on furnishings, covering a wide spectrum of interior elements such as art, window treatments, casework, furniture, and accessories. It delves into the intricacies of design, maintenance, and operation, offering a comprehensive guide for creating functional and aesthetically pleasing interior spaces.

Furnishings

This section focuses on the care and management of various interior elements within a building. It outlines procedures for maintenance, repair, rehabilitation, replacement, and restoration of furnishings.

Art

This section includes murals, photo murals, sculptures, wall decorations, and art glass. Murals cover various media, excluding building products, and specific types like photo murals, sculptured brick panels, ceramic tile murals, and trompe l'oeil.

Window Treatments

This section focuses on window treatments, covering various elements such as window blinds, curtains, drapes, interior shutters, window shades, and operating hardware.

Casework

This section encompasses casework, including manufactured metal, wood, plastic, and specialty casework. This involves stock modular cabinets, countertops, and sinks integral with countertops.

Furnishings and Accessories

This section encompasses furnishings and accessories, covering a wide array of interior elements not permanently connected to construction. This includes office accessories like desk and table accessories, ceramics, flatware, hollowware, glassware, and table linens.

Furniture

This section focuses on furniture, covering a diverse range of movable interior elements designed for various applications. The section includes office furniture like case goods, filing cabinets, and office tables. Seating options encompass chairs, upholstered seating, office seating, healthcare seating, and custom seating.

Multiple Seating

This section encompasses multiple seating solutions for various venues, including theaters, auditoriums, lecture halls, stadiums, arenas, gymnasiums, religious facilities, and restaurants. It covers portable, fixed, and telescoping seating, as well as fixed booths and seat-table combinations.

Other Furnishings

This section encompasses diverse furnishings, including interior planters, artificial plants, and public space fixtures like bicycle racks and trash receptacles.

Division 13 Special Construction

The division provides detailed specifications for materials, structural computation, forms, mixing, cladding, finishes, curing, metal frames, reinforcements, and optional insulation layers, offering comprehensive guidelines for unique and specialized construction processes.

Modular Steel Frame Ferro-Concrete Structures

The section covers aspects like forms, proportioning, mixing, cladding, finishes, curing, metal frames, reinforcements, and optional insulation layers, offering comprehensive guidelines for the specified construction method.

Division 14 Conveying Systems

The division addresses a broad spectrum of vertical and horizontal transport systems within buildings such as elevators, escalators, lifts, turntables, scaffolding, and specialized systems like facility chutes, pneumatic tube systems, and slide pole systems. Each section

delineates the operation, maintenance, and specifications unique to its respective conveying technology, providing a comprehensive guide for the installation and upkeep of diverse conveyance systems throughout various built environments.

Conveying Equipment

This section addresses the operation and maintenance of conveying equipment, encompassing tasks such as maintenance, repair, rehabilitation, replacement, restoration, and preservation.

Dumbwaiters

This section covers dumbwaiters, encompassing both manual and electric types. It includes packaged or field-assembled units, addressing motorized or hand-operated systems.

Elevators

This section encompasses elevators, covering passenger, freight, residential, and service elevators of various types. It includes components such as cars, entrances, controls, safety equipment, hoistway equipment, and elevator machinery.

Escalators and Moving Walks

This section addresses escalators and moving walks, encompassing passenger conveying systems with moving belts or treads installed horizontally or inclined.

Conveying Lifts

This section encompasses lifts, including vertical or inclined lifts for various purposes.

Turntables

This section focuses on turntables, covering structural turntables designed for various applications.

Scaffolding

This section focuses on scaffolding, including suspended scaffolding variations like beam, carriage, and hook scaffolding. The section also covers rope climbers, elevating platforms, and powered scaffolding, offering diverse solutions for elevated work in construction and maintenance.

Other Conveying Equipment

This section encompasses various conveying equipment beyond traditional elevators and escalators. It includes facility chutes like coal, escape, laundry, and trash chutes, serving building operations.

Division 15 Mechanical/Plumbing

This division involves the intricate planning, installation, and testing of plumbing, water service, and sanitary sewer systems, ensuring they meet specified standards for a well-functioning building. This division includes a detailed scope of work, specifying the installation of pipes, fittings, fixtures, and various mechanical systems, ensuring compliance with relevant codes and standards. It addresses the selection of materials, installation procedures, and quality assurance measures to guarantee the effective functioning of mechanical and plumbing elements in the completed structure.

Plumbing System

This section outlines the comprehensive installation of the plumbing system, covering soil, waste, vent pipes, cold and hot water lines, valves, hose bibbs, faucets, floor drains, and toilet and bath fixtures. It specifies approved materials, manufacturers, and installation procedures.

Water Service System

This section delineates the installation requirements for a water service system, encompassing labor, materials, equipment, and procedures.

Exterior Sanitary Sewer System

This section outlines the installation requirements for an exterior sanitary sewer system, including appurtenance structures up to building connections. It emphasizes adherence to excavation and backfilling standards defined in the Earthwork section.

Division 16 Electrical

This division is dedicated to the comprehensive management of electrical systems in construction. It involves the installation of lighting, power systems, and related components. The division prioritizes adherence to industry standards, quality assurance, and meticulous documentation, emphasizing the creation of accurate "as built" drawings to ensure a thorough and compliant electrical setup.

Electrical Works

This section outlines the comprehensive scope of electrical installation, covering interior lighting and power systems. It includes the necessary labor, materials, and equipment, emphasizing compliance with industry standards such as Underwriter's Laboratories, NFPA, and NEMA.

General Plans, Elevations, and Sections



Figure No. 5
Floor Plan



Figure No. 6
Front Elevation

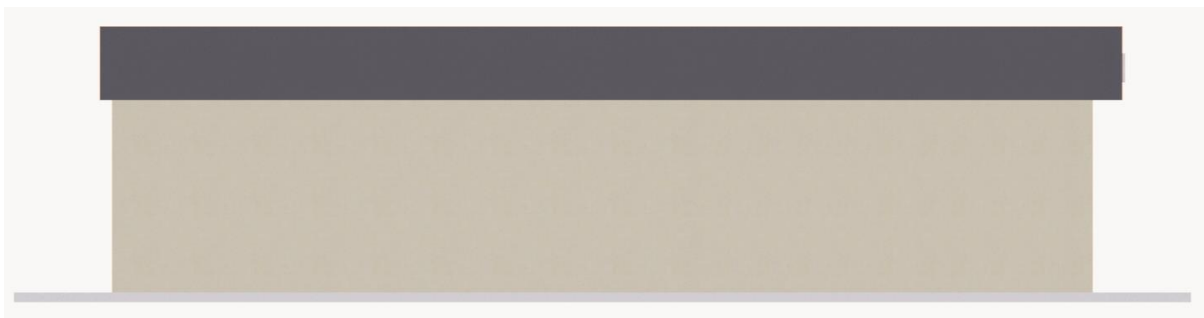


Figure No. 7
Side Elevation

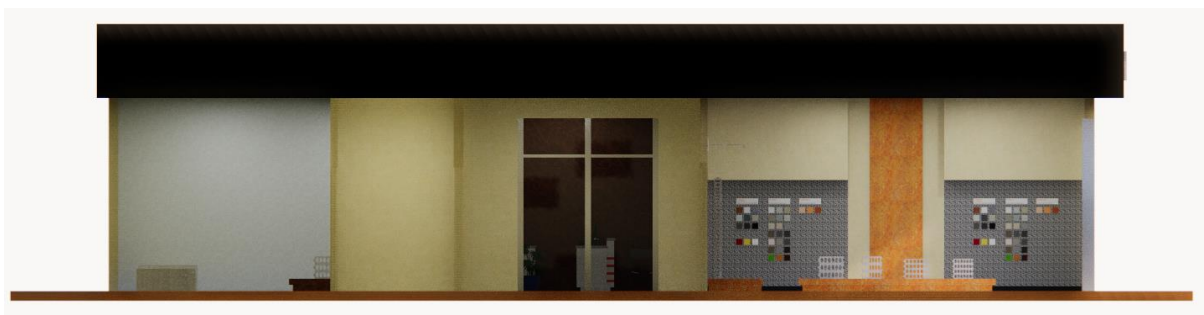


Figure No. 8
Section

SITE ANALYSIS

Macro Setting

The site is a generally flat land with a total area of 3414.5840 sqm, situated in Quezon City, Fairview, Philippines. The land is rectangular, providing ample space for a two-storey commercial building with parking and outdoor amenities.

The environmental conditions in Quezon City are typical of an urban setting, with exposure to city noise, pollution, and urban heat island effect. However, the area is also subject to efforts for green spaces and better environmental practices.

The site's topography is generally flat, which is advantageous for construction and minimizes the need for extensive land grading or excavation. The soil in Quezon City is predominantly composed of adobe and clay loam. This type of soil is suitable for building foundations, although specific soil testing should be conducted to determine the exact composition and bearing capacity.

The average annual temperature in Quezon City is around 26-27°C. The warmest months are typically April and May, with temperatures often exceeding 30°C. Quezon City receives significant rainfall, particularly during the wet season. The average annual rainfall is around 2000-2500 mm. The heaviest rainfall occurs from June to September, often leading to localized flooding in some areas. Quezon City receives ample sunlight throughout the year, with longer daylight hours from March to May.

Micro Setting

The current site is a flat, undeveloped plot of land. The surrounding area consists of mixed-use developments including residential, commercial, and institutional buildings. The site is nearby SM Fairview which creates an opportunity for the building to leverage the commercial advantages given by being near the mall. This includes proximity for transportation access for commuting, easily accessible roads, and exposure to company and product in potential heavy commercial activities.

The site is well-connected by major roads and highways. It is accessible via Quirino Highway and Commonwealth Avenue, with several minor roads providing additional connectivity. The road network supports easy access for customers and logistics operations.

The site is subject to typical urban noise levels, with higher noise levels during peak traffic hours. The design should incorporate soundproofing measures to ensure a comfortable environment for both customers and employees.

Traffic flow in the area can be heavy during rush hours, particularly on major roads. The site should have well-planned ingress and egress points to manage vehicle flow efficiently and ensure safety.

PART II

PROJECT STUDY

Market Study

The market study for Lightcasting Solutions involves analyzing the demand for branded panels in Quezon City and surrounding areas. The demand for construction materials, particularly branded panels, is expected to grow due to ongoing urban development, infrastructure projects, and residential construction. The market research should include surveys, interviews with potential customers, and analysis of industry reports to gauge demand.

Market Strategies

1. **Product Differentiation:** Emphasize the unique features and benefits of Lightcasting Solutions' branded panels, such as durability, aesthetic appeal, and energy efficiency.
2. **Competitive Pricing:** Offer competitive pricing while maintaining high-quality standards to attract cost-conscious customers.
3. **Marketing Campaigns:** Utilize digital marketing, social media platforms, and traditional advertising to create brand awareness and attract customers.
4. **Partnerships:** Form strategic partnerships with construction companies, contractors, and real estate developers to ensure steady demand.

Market Trends

- **Sustainability:** Increasing demand for eco-friendly and sustainable building materials.
- **Technological Advancements:** Integration of smart technology in building materials.
- **Customization:** Growing preference for customized panels that meet specific design requirements.

Competitors include other local manufacturers and suppliers of construction materials, such as Holcim Philippines and Republic Cement. Analyzing competitors' strengths, weaknesses, market share, and pricing strategies is essential to positioning Lightcasting Solutions effectively.

The construction industry in the Philippines is projected to grow at a CAGR of around 9.5% from 2021 to 2025. This growth is driven by government infrastructure projects and the housing sector, providing a positive outlook for Lightcasting Solutions.

The primary target market includes construction companies, contractors, real estate developers, and DIY homeowners in Quezon City and nearby areas.

Technical Study

The project involves a two-storey commercial building with a retail store, warehouse, and office spaces, covering a total land area of 3414.5840 sqm. The location is in Quezon City, Fairview, which is strategically positioned for easy access to major roads and highways, facilitating logistics and customer access.

Production Process

The production process involves sourcing raw materials, manufacturing branded panels using advanced machinery, quality control, and packaging. The process must adhere to industry standards for safety and quality.

Corresponding Physical Resource Requirements

- **Machinery:** Panel manufacturing machines, cutting tools, packaging machines.
- **Materials:** Raw materials for panel production, packaging materials.
- **Labor:** Skilled workers for manufacturing, quality control, packaging, and logistics.

Plan for Construction, Installation, and Operation

- **Construction:** Hiring contractors, securing permits, construction schedule, and milestones.
- **Installation:** Setting up machinery, installing utilities, and ensuring safety protocols.
- **Operation:** Establishing workflow, training staff, and launching the facility.

Financial Study

Capital costs include land acquisition, construction, machinery, and initial working capital. Seeking investments from banks, venture capitalists, or government grants is essential.

Operating expenses

- **Salaries:** For staff and management.
- **Utilities:** Electricity, water, internet, and other services.
- **Maintenance:** Equipment maintenance and facility upkeep.
- **Marketing:** Advertising and promotional activities.
- **Other Expenses:** Office supplies, transportation, insurance.

Financial Management Strategies for Your Company

- **Budgeting:** Establish a detailed budget and monitor expenses.
- **Cost Control:** Implement measures to control costs and improve efficiency.
- **Revenue Growth:** Focus on increasing sales through effective marketing and customer relations.
- **Investment Management:** Properly manage investments to ensure a steady cash flow.

S-Curve Chart

Table No. 6
Construction Schedule and S-Curve

Item No.	Description	Amount	Project Duration								Cumulative Accomplishments	Cumulative Cash Flow
			30 Days	60 Days	90 Days	120 Days	150 Days	180 Days	210 Days	240 Days		
1.0	GENERAL REQUIREMENTS	714,789.06								93.32%	100.00%	15,218,832.81
2.0	SITE PREPARATION AND EARTHWORKS	1,050,918.75								86.85%		
3.0	STRUCTURAL WORKS	3,707,812.50								76.64%	86.85%	13,217,270.31
4.0	MASONRY WORKS	2,362,500.00										
5.0	CARPENTRY WORKS	984,375.00									76.64%	11,664,145.31
6.0	ROOFING WORKS	1,443,750.00										
7.0	ARCHITECTURAL FINISHES	1,246,875.00									42.29%	6,436,020.31
8.0	PLUMBING AND SANITARY WORKS	1,509,375.00										
9.0	ELECTRICAL WORKS	918,750.00									21.45%	3,264,145.31
10.0	PAINTING WORKS	820,312.50										
11.0	MOBILIZATION/DEMOBILIZATION	393,750.00									8.29%	1,261,970.31
12.0	MISCELLANEOUS WORKS	65,625.00									0.00%	
Total and Amount		15,218,832.81									0.00%	0.00
Monthly Accomplishments			8.29%	5.03%	8.12%	20.84%	34.35%	10.21%	6.47%	6.68%		
Cumulative Accomplishments (%)			8.29%	13.33%	21.45%	42.29%	76.64%	86.85%	93.32%	100.00%		
Monthly Cash Flow			1,261,970.31	766,237.50	1,235,937.50	3,171,875.00	5,228,125.00	1,553,125.00	984,375.00	1,017,187.50	15,218,832.81	

Economic Returns Study

The commercial establishment is expected to appreciate over time due to increasing demand for construction materials and urban development in Quezon City.

The project will create job opportunities in manufacturing, sales, logistics, and administration, contributing to local employment. By sourcing materials locally and producing within the country, the project contributes to national self-sufficiency and security. The establishment will stimulate economic activity in the region, supporting local suppliers and contractors, and contributing to regional growth.

Operational Feasibility Study

1. Maintenance Management

Establish a maintenance schedule for machinery and the facility to ensure smooth operations and minimize downtime.

2. Construction Management

Efficiently manage construction activities by coordinating with contractors, suppliers, and workers to ensure timely completion.

3. Operational Management

Implement standard operating procedures for all processes, from production to sales, to ensure consistency and quality.

4. Project Management

Use project management tools to track progress, manage resources, and communicate with stakeholders. Regularly review project milestones and adjust plans as needed.

5. Facility Management

Ensure the facility is well-maintained, secure, and complies with safety regulations. Manage utilities and space efficiently to support operations.

Management Aspect Study

Focus on expanding the customer base, increasing market share, and improving brand recognition through strategic marketing and partnerships. Hire skilled employees, provide training, and create a positive work environment to retain talent and boost productivity.

Analyze income levels in the target market to set appropriate pricing and identify potential customers. Monitor competitors and adjust strategies to stay competitive. Offer unique value propositions and maintain high quality.

Planning, Organizing, Staffing, Directing, and Controlling

- **Planning:** Develop detailed business plans and set clear objectives.
- **Organizing:** Structure the organization to optimize workflow and efficiency.
- **Staffing:** Hire and train competent staff to fulfill business needs.
- **Directing:** Provide leadership and guidance to ensure staff are motivated and productive.
- **Controlling:** Monitor performance, implement quality control measures, and adjust plans as necessary.

Social Aspect Study

The project will provide high-quality building materials, contributing to improved infrastructure and housing in the community. Creating job opportunities and supporting local employment through direct and indirect jobs. Stimulating local businesses by sourcing materials and services locally. Increasing household incomes through employment opportunities and supporting local economies.

Environmental Consideration

Implement eco-friendly practices in manufacturing, such as using sustainable materials, reducing waste, and minimizing energy consumption.

Hazards

Design the site to include proper drainage systems to mitigate flood risks, particularly during heavy rainfall. Since the site is generally flat, landslide risks are minimal. However, ensure stable foundations and proper land grading.

Pollution

Implement wastewater treatment processes to prevent water pollution and comply with environmental regulations. Reduce emissions from manufacturing processes and implement air quality control measures. Manage waste effectively through recycling and proper disposal methods to prevent land pollution.

Appendices

Appendix A TCT Documents

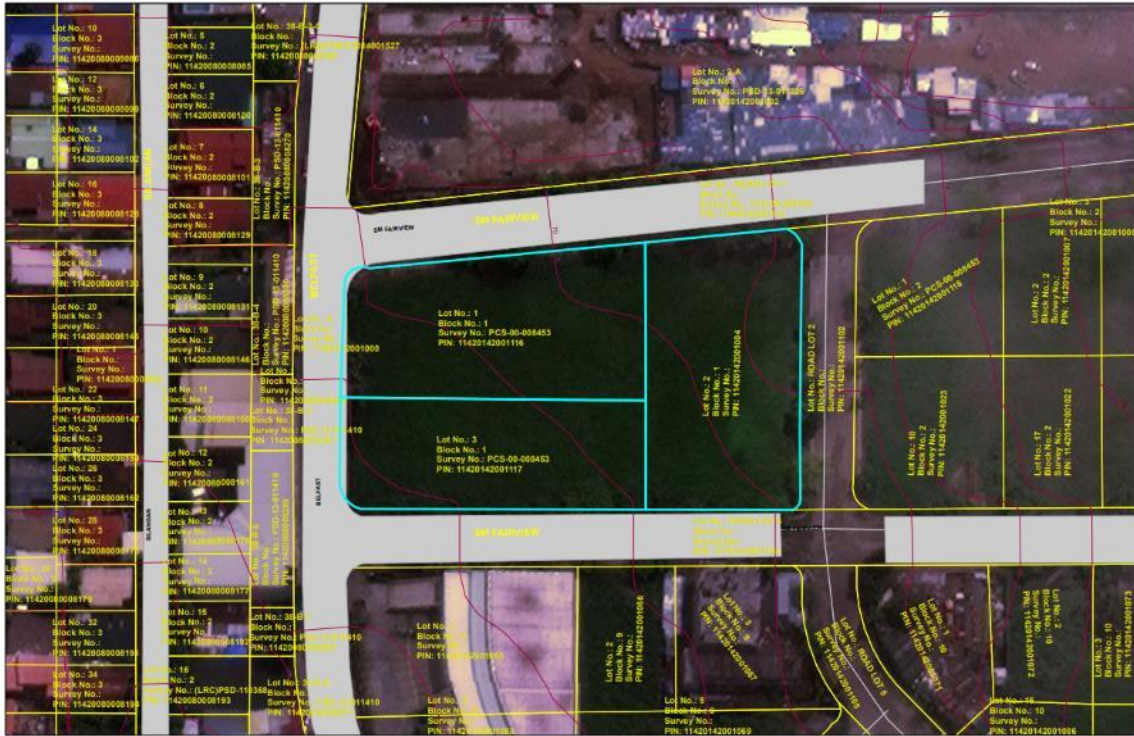


Figure No. 9
Map Detail of Site in Barangay Greater Lagro (Novaliches District), Quezon City

REAL PROPERTY ASSESSMENT RECORD.

Status [LiveRecord-TAX-Private]

Tax Declaration Number [F-142-00023] Property Index Numbers. -
 Owner / Married To / Previous Owner. Old Format [20- - - -]
 [FIBERWORLD INC] New PSPIN [20-142-001-004- - -]
 [TCT [004-2013000566 -01/16/2013]
 [FIBERWORLD INC] Date Release [12/19/2016]
 Owner Postal Address. Lot [2]
 [31 SITIO CENTRO LAWANG BATO VALENZUELA C] Block [1 PCS-00-008453]
 Location [] Area [3415.00] Sub-Clas: [Ca-6] CORNER [Y]
 Unit Cost [16500.00] Transaction [R][] Effectivity Year [2017]
 Previous TD [E-142-08502] Prev Assessment [3,380,850.00]

Class	Area	Market Value	AL	Assessed Value
[3415.00] [	56,347,500.00] [14%]	[	7,888,650.00]	
[.00] [	.00] [%]	[	.00]	
[.00] [	.00] [%]	[	.00]	
[.00] [	.00] [%]	[	.00]	
[2] [3415.00] [	56,347,500.00] [14%]	[	7,888,650.00]	

 Adjustment [-None Defined .00] Average Unit Cost [16500]

MEMORANDUM.

TAX DECLARATION MEMORANDUM.

[2017 General Revision in compliance with Ordinance No. 99 25
 56 Series of 2016]

Appraiser Code [] Tax Mapper Code [] ENC [0000-12192016] PC-R-12/19/2016

TIN [] Marital Status [] Remarks: []

This is a live record. Certified true copy can
 be obtained from the City Assessor's Office.

Figure No. 10
Tax Declaration - Fiberworld Inc.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF JUSTICE
Land Registration Authority
QUEZON CITY
Registry of Deeds for Quezon City

Transfer Certificate of Title

No. 004-2013000566

IT IS HEREBY CERTIFIED that certain land situated in QUEZON CITY, PHILIPPINES, bounded and described as follows:
A PARCEL OF LAND (LOT 2 BLK. 1 OF THE CONS- SUBDN. PLAN PCS- CC- 008453, BEING A PORTION OF CONS. LOTS 262- B, PSD- 13- C11226, LRC REC. NO. 6563) , SITUATED IN THE BRGY. OF PASONG PUTIK (NOVALICHES) , QUEZON CITY, M- MLA. , IS. OF LUZON. BOUNDED ON THE NW. ALONG LINE 1- (Continued on next page)

is registered in accordance with the provision of the Property Registration Decree in the name of

Owner: FIBERWORLD INC., A DOMESTIC CORPORATION DULY ORGANIZED AND EXISTING UNDER AND BY VIRTUE OF THE LAWS OF

Address: 31 SITIO CENTRO, BRGY. LAWANG DATO, VALENZUELA CITY

as owner thereof in fee simple, subject to such of the encumbrances mentioned in Section 44 of said Decree as may be subsisting.

IT IS FURTHER CERTIFIED that said land was originally registered as follows:

Case No.:	Record No.: 6563
Orig. Reg. Date: 12 27 1910	Decree No.: 6563
Original RD: PROVINCE OF RIZAL	OCT No.:
Volume No.: A- 6	Page No.: 44
Original Owner:	

This certificate is a transfer from TRANSFER CERTIFICATE OF TITLE 2011007362 (TOTALLY CANCELLED) by virtue hereof in so far as the above-described land is concerned.

Entered at Quezon City, Philippines on
the 16th day of JANUARY 2013 at 01:09pm.

Carlo V. Alcantara
Acting Register of Deeds

It is hereby certified that this is a true electronic copy of TCT 2013000566 on file in Registry of Deeds of Quezon City, which consists of 3 page(s). This is a system-generated Certified True Copy, and does not require a manually-affixed signature. Printed at Land Registration Authority Central Office Kiosk. Requested By: TIP QC / BEA ERICKA P. CAPPAL



Ref. : 2024001274 OR No. : 1032416118
Date : 01/19/2024 OR Date : Jan 19 2024
Time : 03:00:13 PM Amt Paid : 235.16

Page 1 of 3

UNOFFICIAL COPY

LICP Form No. 0019 version 3
(revision date: 2022.10.01)

Figure No. 11
TCT - Fiberworld Inc (Page 1)

TCT No.: 004-2013000566

Page No.: 2

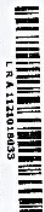
OWNER INFORMATION (Continued from page 1)

Owner: THE PHILIPPINES

TECHNICAL DESCRIPTION (Continued from page 1)

2 BY LOT 1 BLK. 1 OF THE CONS- SUBDN. PLAN, ALONG LINE 2- 3 BY RD. LOT 1; ON THE NE. ALONG LINES 3- 4- 5- 6 BY RD. LOT 2; ON THE SE. ALONG LINE 6- 7 BY RD. LOT 4 OF THE CONS- SUBDN. PLAN; AND ON THE NW. ALONG LINE 7- 1 BY LOT 3 BLK. 1 OF THE CONS- SUBDN. PLAN, BEGINNING AT A POINT MARKED "1" ON PLAN BEING N. 6 DEG. 32' W. 1519.34 M. FROM CM 64, PAIR ESTATED; THENCE N. 0 DEG. 22' E. 38.44 M. TO PT. 2; THENCE N. 84 DEG. 8' E. 40.89 M. TO PT. 3; THENCE S. 48 DEG. 6' E. 6.01 M. TO PT. 4; THENCE S. 0 DEG. 32' E. 68.67 M. TO PT. 5; THENCE S. 44 DEG. 52' W. 6.00 M. TO PT. 6; THENCE S. 89 DEG. 50' W. 42.02 M. TO PT. 7; THENCE N. 0 DEG. 22' E. 34.44 M. TO PT. OF BEGINNING, CONTAINING AN AREA OF THREE THOUSAND FOUR HUNDRED FIFTEEN (3415) SQ. M. ALL PTS. REFERRED TO ARE INDICATED ON THE PLAN AND ARE MARKED ON THE GROUND BY 25. CYL. CONC. MONS. 15 X 40 CM. ; BEARING TRUE, DATES OF THE ORIGINAL SURVEY, SEPT. 1, 1907 - MAR. 31, 1908 AND THAT OF THE CONS- SUBDN. SURVEY, JAN. 9, 1998 - JAN. 24, 1998. APPROVED MAR. 17, 1998.

It is hereby certified that this is a true electronic copy of TCT 2013000566 on file in Registry of Deeds of Quezon City, which consists of 3 page(s). This is a system-generated Certified True Copy, and does not require a manually-affixed signature. Printed at Land Registration Authority Central Office Kiosk. Requested By: TIP QC / BEA ERICKA P. CAPPAL



Ref. : 2024001274 OR No. : 1032418118
Date : 01/19/2024 OR Date : Jan 19 2024
Time : 03:00:13 PM Amt. Paid : 235.16

Page 2 of 3

EXCESSIVE COPY

LRCP Form No. 0019 version 2
revision date: 2021-10-01

Figure No. 12
TCT - Fiberworld Inc (Page 2)

Judicial Form No. 109

TCT No.: 304-2018014843

Page No.: 3

MEMORANDUM OF ENCUMBRANCES

... PE. 1583 - RESTRICTIONS (STA. LUCIA)
THE OWNER OF THE REAL PROPERTY SUBJECT HEREOF, HIS TRANSFERREES, SUCCESSORS OR ASSIGNS AGREES TO THE RESTRICTIONS ON USE OF THE PROPERTY AND OTHER STIPULATIONS FOUND IN ANNEX A OF THE DEED OF ABSOLUTE SALE FROM THE OWNER DEVELOPER OF THE SUBJECT SUBDIVISION IDENTIFIED AS DOC. NO. , PAGE NO. , BOOK NO. , SERIES OF , OF NOTARY PUBLIC OF, REFERRING BUT NOT LIMITED TO MEMBERSHIP ON THE HOMEOWNERS ASSOCIATION, CONSENT TO BE SUBJECTED TO IMPOSITION OF FEES, DUES, CHARGES AND ASSESSMENTS FOR COMMON BENEFITS AND SERVICES BY THE SAID ASSOCIATION; COMPLIANCE WITH ALL RULES AND REGULATIONS DULY PASSED BY THE SAID ASSOCIATION FOR THE OPERATION, MAINTENANCE, BEAUTIFICATION OF HOUSING UNITS AND COMMON FACILITIES IN THE SUBDIVISION, LIMITATIONS AS TO USE OF THE LOT FOR ONLY ... PURPOSES, OBSERVANCE OF EASEMENTS, LIMITATIONS AND SPECIFICATIONS AS TO BUILDINGS AND ARCHITECTURES TO BE CONSTRUCTED ON THE LOT, RULES AND REGULATIONS AS TO THE USE, CONSTRUCTION AND MAINTENANCE OF DRAINAGE AND WATER SYSTEMS, SEWAGE AND GARRAGE DISPOSAL AND FEES IN CONNECTION THEREWITH, WALL AND FENCES, VEHICULAR ENTRANCES, TENURE OF THE FOREGOING, RESTRICTIONS AND MANNER OF ENFORCEMENT OF THE SAME.
FOR FULL DETAILS ON THESE RESTRICTIONS, PLEASE REFER TO THE DEED OF RESTRICTIONS.

(SGD) CONSTANTE P. CALUYA JR.
DEPUTY REGISTER OF DEEDS II

THE FOREGOING ANNOTATION HAS BEEN COPIED FROM TCT NO. N-318873/1595.

Elbert T. Quilala
Register of Deeds

It is hereby certified that this is a true electronic copy of TCT 2018014843 on file in Registry of Deeds of Quezon City, which consists of 3 page(s). This is a system-generated Certified True Copy, and does not require a manually-affixed signature. Printed at Land Registration Authority Central Office Kiosk. Requested By: TIP QC / BEA ERICKA P. CAPPAL

10013301801

Ref. : 2024001272 OR No. : 1032418117
Date : 01/19/2024 OR Date : Jan 19 2024
Time : 02:59:04 PM Amt. Paid : 235.16

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LCRF Form No. 0013 version 3
Revision Date: 2022-10-01

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Figure No. 13
TCT - Fiberworld Inc (Page 3)