

Pee Pee (Tanzania) Ltd Tanga, Tanzania

New Project Commercial Plan

Located on Plot No. 1, Kange Heavy Industrial Area, Tanga

October 2020

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Project Summary

Background

Pee Pee (Tanzania) Ltd is a company registered in Tanzania with certificate of incorporation no. 24636 dated 26th day of January 1994.

The new project to be located on Plot no. 1, Kange Heavy Industrial Area, Tanga has been planned with a view to improving the sustainability of the woven sack industry with a focus on recycling and value addition to waste. The project will focus on the following product lines:

1. Recycling of Polypropylene (PP) & Polyethylene (PE) waste into high quality granules that can be used for manufacture of household goods and other related products.
2. Conversion of PE granules into planks that can be used as an alternative to wood for decking and furniture, thereby directly reducing the cutting of trees.
3. Conversion of PE granules into stitching twines and ropes, thereby directly reducing usage of new plastic material.
4. Production of yoghurt cups and related products using virgin materials for the dairy industry using the process of Thermoforming.

Project Financing

The project is being financed by Equity and Loans from the promoters as well an external long-term loan secured from AgDevCo Limited, funding and utilization summary is as per below:

Pee Pee (Tanzania) Ltd New Project on Plot 1		
	Investment Plan	
1	Working Captal Investment	\$500,000
2	Building - Design, Engineering & Survey	\$10,000
3	Building Plot 3 & 4 - Civil Works	\$400,611
4	Building Plot 3 & 4 - PEB Steel Structure	\$251,818
5	Furniture & Fittings	\$15,000
6	Forklifts	\$30,000
7	Equipment	\$1,062,571
	Totals	\$2,270,000
	Funding Plan	
1	Equity Investment - Holding Company	\$500,000
2	Holding Company Loan - DRN 2019054	\$670,000
3	AgDevCo Loan - DRN 2020028	\$1,100,000
		\$2,270,000

Construction & Equipment Costs

The construction and equipment costs are estimated as follows:

Project Civil Works and Steel Structure Budget				
1	Civil works & erection of steel structure		\$400,611	
2	Steel structure		\$251,818	
		Building Total	\$652,429	
Project Equipment List - Estimates Subject to change as Project Develops				
1	Recycling & Plank Machines	1	\$412,000	\$412,000
2	Rope Making equipment	1	\$87,000	\$87,000
3	Thermoforming Equipment	1	\$379,000	\$379,000
4	Utilities - Transformer, Panels, Compressors, Chillers, Dryers, Dosing Units, etc	1	\$109,571	\$109,571
5	Stand by generators	1	\$75,000	\$75,000
		Machinery Total		\$1,062,571

Pre-Engineered Building (PEB) Structure

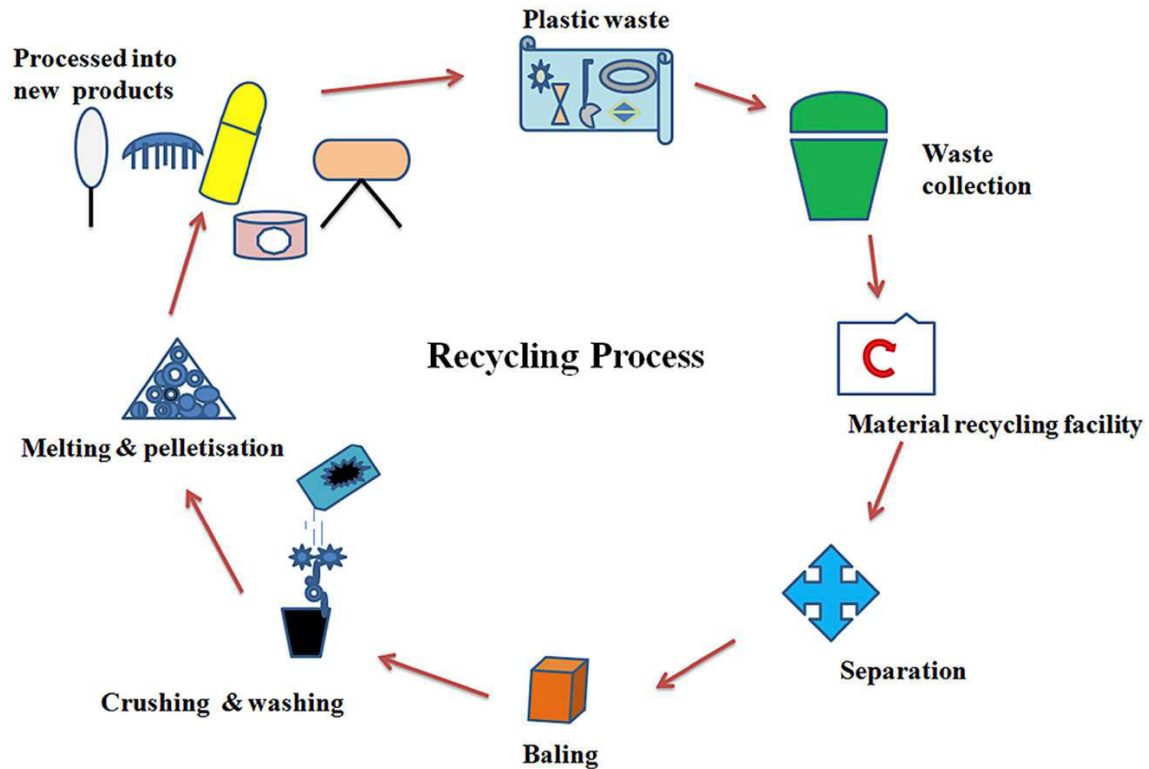
Whilst the company has been able to identify a suitable Tanzanian company for the civil works, there are currently none with the capacity to manufacture the steel structure as required to meet the specifications of the building. We have further canvassed for manufacturers within the East African Community, but found that the one potential manufacturer in Kenya was unable to meet the project standard requirements.

Thus, we had to look beyond to the U.A.E and India and have successfully identified a suitable manufacturer based in Ahmedabad, India. Steel PEB structures are classified under customs code 9406.90.90 which as per the current tariffs is dutiable at 25%. Taking into consideration the size of the project, the employment creation and specific nature of the building requirement we humbly request that the specialized steel structure be considered for import duty exemption.

Recycled Products

Recycled Material Granules

Manufacturing recycled material granules is the first step in the process and allows the recovered plastic to be converted into alternative products. The diagram below illustrates the various steps in the process.



Polypropylene Granules

The business plan envisages that the Polypropylene Recycled material granules will be sold on to secondary manufacturers. Potential anchor customers have been contacted and identified as per the below list:

Sr	Customer Name	Sector	Location
1	MJM Manufacturing Ltd	Recycled Woven Bags	Dar es Salaam
2	Fuxing Manufacturing Ltd	Recycled Woven Bags	Dar es Salaam
3	Kishan Industries Ltd	Plastic Household Items	Dar es Salaam

Polyethylene Granules

The company is targeting to convert the Polyethylene Recycled material granules into value added products specifically focusing on planks and ropes & twines. As compared to polypropylene which is rigid, polyethylene is naturally more elastic and resistant to UV degradation, thus making it ideal for outdoor use and for applications that require flexibility.

Manufacture of Planks using Polyethylene Granules

The product is being developed and will be marketed in conjunction with Dunia Designs Eco Friendly Creativity Limited who are based in Arusha, Tanzania. Manually manufactured prototype planks have been successfully tested and proven for use in decking and furniture applications. Pictures below show some of the applications that the planks have been tested in - bedroom furniture, outdoor chair, dining table, and open-air decking.





Manufacture of Ropes & Twines using Polyethylene Granules

These products will be developed in-house and the focus will be on stitching twines for agriculture bags and general use ropes. Some pictures of products under development are shown below:



Dairy & Egg Sector Commercial Market Study*

*The food packaging market study was outsourced to an independent consultancy firm, Africa Insight Advisors, who are based in Dar es Salaam.

MARKET SIZING FOR FOOD PACKAGING



Prepared For PPTL



AFRICA
INSIGHT ADVISORS

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Project Overview

Introduction

Established in 1994, Pee Pee Tanzania Limited (PPTL) is a regional leader in producing woven polymer based extruded plastic products. PPTL aims to be the leading extruded plastic manufacturer in East and Southern Africa, with a focus on bags, sacs, and tarps for the agriculture and cement industries, while also offering additional value products that can be sold both through the existing distribution network, and to new clients.

PPTL is keen on venturing into the Tanzanian food packaging market and wants to understand the different kinds of packaging currently used in the sector (i.e., milk sacks, yogurt cups and egg crates), the types used, client needs and specifications, as well as the market size. AIA seeks to assist PPTL in conducting a market study to determine the market size for these products, as well as examining sources, trends, and specifications in Tanzania.

Scope of the Report

The scope of this report includes a comprehensive look at the food industry to identify key trends and the main players in the industry that actively source and use milk sacks, yogurt cups, and plastic egg cartons. Additionally, the report presents the formal total addressable market for yogurt cups and plastic egg cartons in Tanzania.

Methodology

To assess trends, a comprehensive approach incorporating both qualitative and quantitative tools was developed. First, the report assessed the wider market by looking at the industry facts, figures and trends, and identifying companies that actively source and use the following packaging materials: milk sacs, yogurt cups, and egg crates. Second, a sample of the identified companies was interviewed to identify price points, specifications, and preferences. Finally, based on interview findings and desk research, the report estimates potential market size for each of the products.

Chart 1: Methodology



Dairy Industry



Sector Overview

The Tanzanian dairy industry makes up 1.8% of the national GDP with a per capita consumption of 40 liters¹. With a population of 60 million people, Tanzania consumes a total of 2.4 billion liters of milk annually. The industry has a plant utilization rate of only 30%; key players in the Tanzanian dairy industry process only 41,704,000 liters of milk per year. This means that only 2% of the total milk produced in the country is being processed locally while 98% is not processed but rather traded and consumed informally.

Tanzania's Minister for Livestock and Fisheries has recently stressed that the current low rate of local dairy processing is due to poor management of the processors and the low quality of milk sourced from farmers, which often leads to sub-standard milk for processing, despite the high production of milk in the country, and the large number of dairy cattle². Despite the setbacks, the government is working with the dairy processors to increase the amount processed locally to 210 million liters of milk per year.

Trends show that the Tanzanian dairy market will keep growing in the upcoming years. The country is targeting a FAO recommended annual per capita consumption of 200 liters, which signals plans to increase production and processing capacities to serve increasing demand. Additionally, recent restrictions on the importation of milk and milk products has revitalized local production and energized more players to enter into the domestic market. In 2019, 15 new dairy processors opened in Tanzania with a total capacity of 90,400 liters per day³. This expansion of the dairy sector will likely give rise to the demand for packaging materials for milk products.

¹ FAO (2019) Reducing enteric methane for food security and livelihoods. Derived from <http://www.fao.org/3/CA3215EN/ca3215en.pdf>

² Daily News (2019, June, 6) Minister concerned for dairy industries' such poor performance. Derived from <https://www.dailynews.co.tz/news/2019-06-065cf8cbb7c54ef.aspx>

³ Tanzania: Control On Random Milk Imports Pays Off. (2019, June 7). Retrieved from <https://allafrica.com/stories/201906070446.html>

Industry Players

Table 1: Dairy Industry Players

Region	Processing Plants	Capacity (LPD)	Status	Production (LPD)	Capacity Utilization
Dar es Salaam	Azam Dairy	3000	Operating	2000	0.67
Dar es Salaam	Tommy Dairy	15,000	Not Operating	0	N/A
Dar es Salaam	Profate Dairy Investment	1000	Operating	300	0.3
Dar es Salaam	Manow Dairy	1000	Operating	300	0.3
Dar es Salaam	Tan Dairies	15000	Operating	6000	0.4
Coastal	Chawakimu Cooperative	1000	Operating	500	0.5
Coastal	SADO Farm Dairy	1000	Operating	500	0.5
Tanga	Tanga Fresh Ltd	50000	Operating	30000	0.6
Tanga	Ammy Brothers Ltd	2000	Operating	400	0.2
Tanga	Irente Farm	1000	Operating	500	0.5
Tanga	Montensory Sister's	1000	Operating	300	0.3
Arusha	Northern Creameries	45000	Not Operating	0	N/A
Arusha	International Dairy Products	5000	Operating	3000	0.6
Arusha	Mountain Green Dairy	1500	Operating	500	0.33
Arusha	Agape Dairy group	500	Operating	200	0.4
Arusha	Jitume Dairy group	300	Operating	150	0.5
Arusha	Idafaso Dairy group	300	Operating	100	0.33
Arusha	Inuka Dairy group	300	Operating	500	1.67
Arusha	Arusha Dairy Company	5000	Operating	800	0.16
Arusha	Kijimo Dairy Cooperative	1000	Operating	300	0.3
Arusha	Longido (Engiteng)	500	Operating	300	0.6
Manyara	Terrat (Engiteng)	500	Operating	250	0.5
Manyara	Orkesumet (Engiteng)	500	Operating	400	0.8

Manyara	Naberera (Engiteng)	1000	Operating	450	0.45
Kilimanjaro	Nronga Women	3500	Operating	900	0.26
Kilimanjaro	West Kilimanjaro	1000	Operating	300	0.3
Kilimanjaro	Mboreni Women	1000	Operating	300	0.3
Kilimanjaro	Marukeni	1000	Operating	450	0.45
Kilimanjaro	Ng'uni Women	1000	Operating	350	0.35
Kilimanjaro	Kalali Women	1000	Operating	550	0.55
Kilimanjaro	Same (Engiten	500	Operating	300	0.6
Kilimanjaro	Fukeni Mini Dairies	3000	Operating	800	0.27
Kilimanjaro	Kondiki Small Scale Dairy	1200	Operating	600	0.5
Mara	Musoma Dairy	120000	Operating	30000	0.25
Mara	Utegi Plant (Ex TDL)	45000	Not operating	0	N/A
Mara	Victoria Maziwa Mara	1500	Operating	1000	0.67
Mara	Baraki Sisters	3000	Operating	2100	0.7
Mara	Nyuki Dairy	1000	Operating	500	0.5
Mara	Mara Milk	15000	Operating	6000	0.4
Mwanza	Mwanza Mini Dairy	3000	Operating	500	0.17
Mwanza	Tukwamuane Dairy	500	Operating	200	0.4
Kagera	Kagera Milk (KADEFA)	3000	Operating	400	0.13
Kagera	Kyaka Milk Plant	1000	Operating	450	0.45
Kagera	Del Food	1000	Operating	300	0.3
Kagera	Bukoba Milk Bar	500	Operating	300	0.6
Kagera	Bukoba Milk Bar Soko Kuu	500	Operating	300	0.6
Kagera	Mutungu Milk Bar	800	Operating	200	0.25
Kagera	Salari Milk Bar	800	Operating	200	0.25
Kagera	Kashai Milk Bar	800	Operating	200	0.25
Kagera	Kikulila Milk Processing Plant	1000	Operating	500	0.5
Kagera	Kayanga Milk Processing	1000	Operating	300	0.3

Plant					
Kagera	MAVIWANYA	1000	Operating	350	0.35
Morogoro	SUA	3000	Operating	200	0.07
Morogoro	Shambani Graduates	4000	Operating	1000	0.25
Tabora	New Tabora Dairies	16000	Operating	200	0.01
Iringa	ASAS Dairy	12000	Operating	6000	0.5
Iringa	CEFA Njombe Milk Factory	6000	Operating	3200	0.53
Mbeya	Mbeya Maziwa	1000	Operating	500	0.5
Mbeya	Vwawa Dairy Cooperative Society	900	Operating	600	0.67
Dodoma	Gondi Foods	600	Operating	200	0.33
Singida	Singidan Dairy	500	Operating	200	0.4
Lindi	Narunyu Sisters	500	Operating	200	0.4

(Table Source: Ministry of Livestock and Fisheries Development, 2009)

Interview Findings

Large Scale Processors

There are 3 main large-scale dairy processors in Tanzania: Azam Dairy Products Ltd, ASAS Dairies Ltd, and Tanga Fresh Ltd. These large-scale companies have the capacity to process more than 40,000 liters of milk per day. Of these three companies, two were interviewed: ASAS dairies and Tanga Fresh. It is important to note here that out of the 3 large-scale processors, ASAS dairies and Azam dairy products have an in-house packaging line. Tanga Fresh is the only company that outsources their packaging material.

Key Findings

Tanga Fresh produces 3 main products: yogurt, fresh milk, and cultured milk. A majority (85%) of their UHT and fresh milk is packed in sachets while just 15% is packed in 1L boxes. Yogurt is packed in 175ml cups, and in 4L and 20L buckets.

Cultured milk is their highest selling product that gets packed into 250ml, 500ml sachets.

Source of Packaging and Unit Prices

On average, Tanga Fresh requires 6,000 yogurt cups a day (175ml), which are currently sourced directly from Kenya. Furthermore, the company also sources milk sachets from Kenya. The sachets are purchased by the kilogram, with 1Kg containing about 87 sachets. Tanga Fresh has a monthly demand of 7000Kgs, which is equivalent to 609,000 500ml sachets.

The interview also revealed that the company procures larger package sizes locally; Tanga Fresh sources approximately 1,500 20L buckets, and 5,000 4L buckets per month from a Tanzanian producer, but was very interested in sourcing from PPTL due to their close proximity.

According to the interview, the unit prices of each packaging material are listed below:

- ❑ 175ml yogurt cups – Tshs. 86 per unit
- ❑ 4L buckets – Tshs. 1,400 per unit
- ❑ 20L buckets – Tshs. 5,000 per unit
- ❑ 500 milk sachets – Tshs. 8,200 per Kg

Packaging Specifications

Tanga Fresh provides the packaging manufacturer with the size and designs specifications that they require. From the source file provided by Tanga Fresh, the packaging company provides a sample unit, and upon confirmation, full production starts. For a 4L and 20L containers, the design doesn't change depending on the flavor, but a sticker is applied at the factory to indicate the flavor. With respect to yogurt cups, each unit must come with an aluminum foil top.

Serviceable Addressable Market

The addressable market for large processors is based on the packaging demands of only one company, as the other two produce in-house.

Yogurt packaging

- ❑ Number of 175ml yogurt cups per day: 6,000
- ❑ 4L yogurt buckets: 5,000 units per month (~20 units a day)
- ❑ 20L yogurt buckets: 1,500 units per month (~75 units a day)

Milk packaging

- ❑ 500ml sachets: 609,000 sachets per month (~30,450 sachets per day)

Medium Scale Processors

Medium-scale dairy companies process an average of 2,500 to 3,000 liters of milk per day. Out of 18 identified companies in Tanzania, AIA interviewed 6 mid-sized companies:

- ❑ International Dairy Products Tanzania (IDPTZ)
- ❑ Grande Demam
- ❑ Profate Milk
- ❑ Kilimanjaro Fresh
- ❑ Njombe Milk Products
- ❑ Shambani Milk

Key Findings

Out of 6 interviewed companies, only 2 processors (IDPTZ & Grande Demam) currently package yogurt in 100ml, 150ml, and/or 175ml cup sizes. Njombe Milk packages yogurt in 1L and 500ml bottles, and Shambani Milk packages yogurt in 4L buckets. Kilimanjaro Fresh and Profate Milk only produce cultured milk and fresh milk, however both companies are expecting to start yogurt production in the near future.

All 4 medium-scale processors that do not pack yogurt in cups are keen and interested to start using yogurt cups. However, difficulties in sourcing yogurt cups have been the main barrier limiting the processors from this packaging option. Specifically, the main challenges mentioned during the interviews were high transportation costs from Kenya to Tanzania and customs delays at the border.

5 of the 6 processors package fresh milk and cultured milk into 450ml and 500ml sachets. Interviews revealed that 500ml milk sachets are the most common packaging for both fresh milk and cultured milk for medium-scale processors.

Source of Packaging and Unit Prices

3 of the identified medium-scale companies (IDPTZ, Grande Demam, and Kilimanjaro Fresh) source their packaging units from Kenya. Two Kenyan companies were identified as the packaging unit suppliers, namely Ashut Kenya and Thermopack.

According to the interviews, medium-scale companies source packaging units for the following prices:

- ❑ 100ml cups ~Tshs 48 per unit (Ashut)
- ❑ 100ml cups ~Tshs. 78 per unit (Thermopack)
- ❑ 150ml cups ~ Tshs. 78 per unit (Thermopack)
- ❑ 1L milk bottle ~Tshs. 40 per unit (Locally sourced)

Packaging Specifications

Interviews revealed that a majority of medium-scale processors manually label their products using plastic labels. IDPTZ requires in-mould labeling, and the sourced yogurt cups must come in a specific size and shape in order to fit in the filling machine.

Processors who are keen to shift from using yogurt bottles to cups will need the cups to be delivered with plastic labels or in mould labeling.

Addressable Market

Based on interviews, medium-scale processors have an average capacity of 3,000 liters of milk per day. 50% of the milk is processed into fresh milk/cultured milk, 40% is processed into yogurt, and 10% is processed into other dairy products (i.e., cheese, butter and ghee). Out of the 40% that goes into yogurt production, 60% is packed into bottles and 40% is packed into yogurt cups. Interviewees had a very hard time answering questions regarding the exact numbers on packaging used, and preferred to discuss product breakdown instead. The most common packaging units are 500ml bottles and 150ml yogurt cups.

The below illustration outlines what we calculated to be the addressable market of packaging units for medium size companies:

Average daily processing: 3,000L of milk per day

- ❑ 50% for milk production = 1,500L
- ❑ 40% for yogurt production = 1,200L
- ❑ 10% other (cheese, ghee and butter)

Milk Packaging

70% of processed milk is packed into 500ml sachets and 40% is packed into bottles.

Sachets packaging:

70% of 1,500L = 1,050L per day

1,050L filled in 500ml sachets = 2,100 sachets per day

Yogurt packaging

60% of produced yogurt is packed into 500ml bottles & 40% into 150ml cups, However, there is an increased interest in packing in cups if a local supplier was available.

Daily demand for yogurt bottles

60% of 1,200L = 720L

720L filled in 500ml bottles = 1,440 bottles per day

Daily demand for yogurt cups

40% of 1,200L = 480L

480L yogurt filled in 150ml = 3,200 cups per day

Small Scale Producers

Small-scale processors have an average operating capacity of 300 – 500 liters of milk per day. Out of 51 identified companies, AIA interviewed 3 companies. Access to contact information and locations of these small-scale dairy processors proved quite challenging due to a general lack of an online presence and the small size of their operations i.e., these companies would not be available in mainstream markets, or outside of their immediate geographical area.

The following small-scale dairy processors were interviewed:

- ❑ Nasinya Dairy
- ❑ Kijimo Dairy
- ❑ Mwanza Mini Dairy

Key Findings

Of the 3 interviewed small-scale processors, only Kijimo Dairy Cooperative packages yogurt into 100ml and 150ml cups, while the rest pack their yogurt in 500ml bottles. Kijimo Dairy also packages milk into 250ml and 500ml sachets.

All 3 small-scale companies expressed interest in packing yogurt in cups. Mwanza Mini Dairy is the process of investing in filling machines for yogurt cups.

Source of Packaging and Unit Prices

2 out of the 3 interviewed small-scale processors source their packaging from Kenya. Nasinya and Kijimo Dairy purchase 500ml bottles, and 100ml and 150ml yogurt cups, respectively, from Kenya. Mwanza Mini Dairy is currently producing yogurt and is interested in packing into cups once their new equipment is installed.

Serviceable Addressable Market

Small-scale dairy companies process an average of 300 liters of milk per day. From our interviews, an average of 70% goes into milk production, 20% is used for yogurt production, and 10% is used to process other products i.e. cheese, ghee, and butter.

Average production: 300L per day

- ❑ 70% for milk production = 210 L
- ❑ 20% for yogurt production = 60L
- ❑ 10% other (cheese, ghee and butter)

Milk packaging

Only one (Kijimo dairy) interviewed small-scale dairy processor use sachets for milk packaging. 40% of the milk is packed into 500ml sachets

Sachets packaging

40% of 210L = 84L

84L packed into 500ml sachets = 168 sachets

Yogurt packaging

80% of produced yogurt is packed into 500ml bottles & 20% into 150ml cups

Daily demand for yogurt bottles

80% of 60L = 48L

48L filled in 500ml bottles = 96 bottles per day

Daily demand for yogurt cups

20% of 60L = 12L

12L yogurt filled in 150ml = 80 cups per day

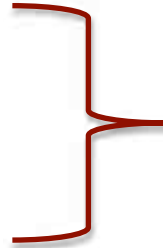
Total Addressable Market

This section summarizes the combined total market for dairy products. As Tanga Fresh is a large formalized business, there is no need to adjust the figures. However, small and medium size processors are likely to face supply constraints and other production challenges. As such, estimated figures should be sharply adjusted down from the numbers calculated at full capacity.

YOGURT CUPS

Large-scale processors Demand

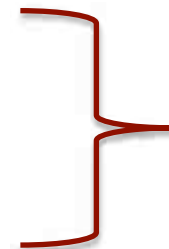
- ❑ Yogurt cups: 6,000/day
- ❑ Large-scale processors: 1
- ❑ Total daily demand: 6,000



TOTAL YEARLY (240 DAYS)
DEMAND
1.4M

Medium-scale processors Demand

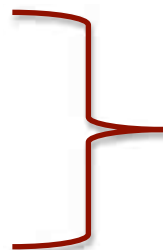
- ❑ Yogurt cups: 3,200
- ❑ 50% capacity adjustment
- ❑ Medium scale processors: 18
- ❑ Total daily demand: 28,800



TOTAL YEARLY (240 DAYS)
DEMAND
6.9M

Small-scale processors Demand

- ❑ Yogurt cups: 80
- ❑ 50% capacity adjustment
- ❑ Medium scale processors: 51
- ❑ Total daily demand: 2,040

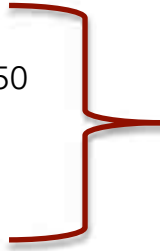


TOTAL YEARLY (240 DAYS)
DEMAND
489K

MILK SACHETS

Large-scale processors Demand

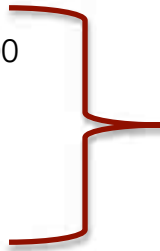
- ❑ Sachets demanded per day: 30,450
- ❑ Large-scale processors: 1
- ❑ Total daily demand: 30,450



TOTAL YEARLY (240 DAYS)
DEMAND
7.3M

Medium-scale processors Demand

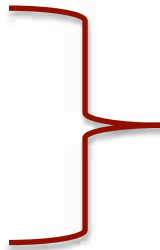
- ❑ Sachets demanded per day: 2,100
- ❑ 50% capacity adjustment
- ❑ Medium scale processors: 18
- ❑ Total daily demand: 18,900



TOTAL YEARLY (240 DAYS)
DEMAND
4.5M

Small-scale processors Demand

- ❑ Sachets demanded per day: 168
- ❑ 50% capacity adjustment
- ❑ Small scale processors: 51
- ❑ Total daily demand: 4,284



TOTAL YEARLY (240 DAYS)
DEMAND
8.5K

TOTAL ANNUAL YOGURT
CUPS DEMAND
8.7M

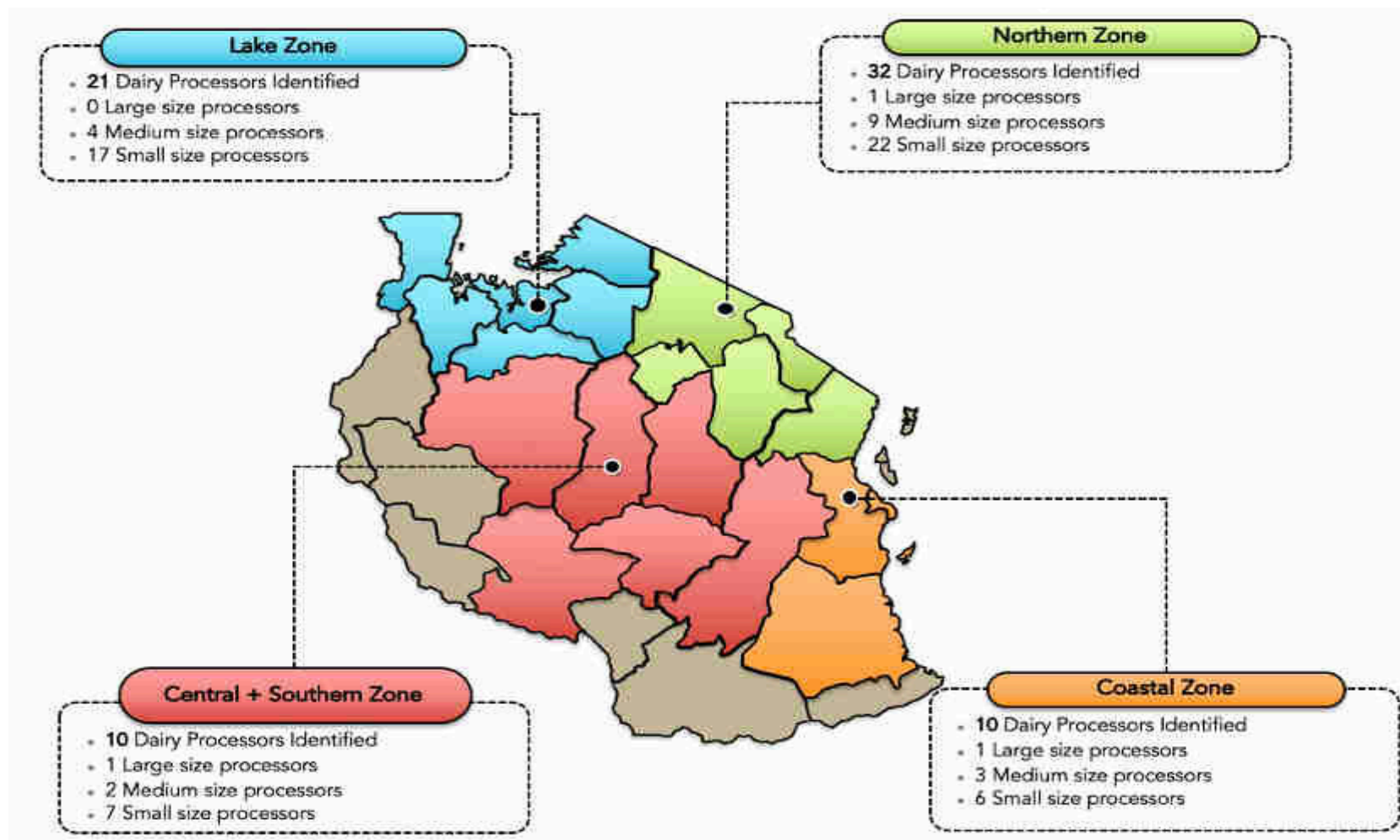
TOTAL ANNUAL SACHETS
DEMAND
11.8M

Conclusion

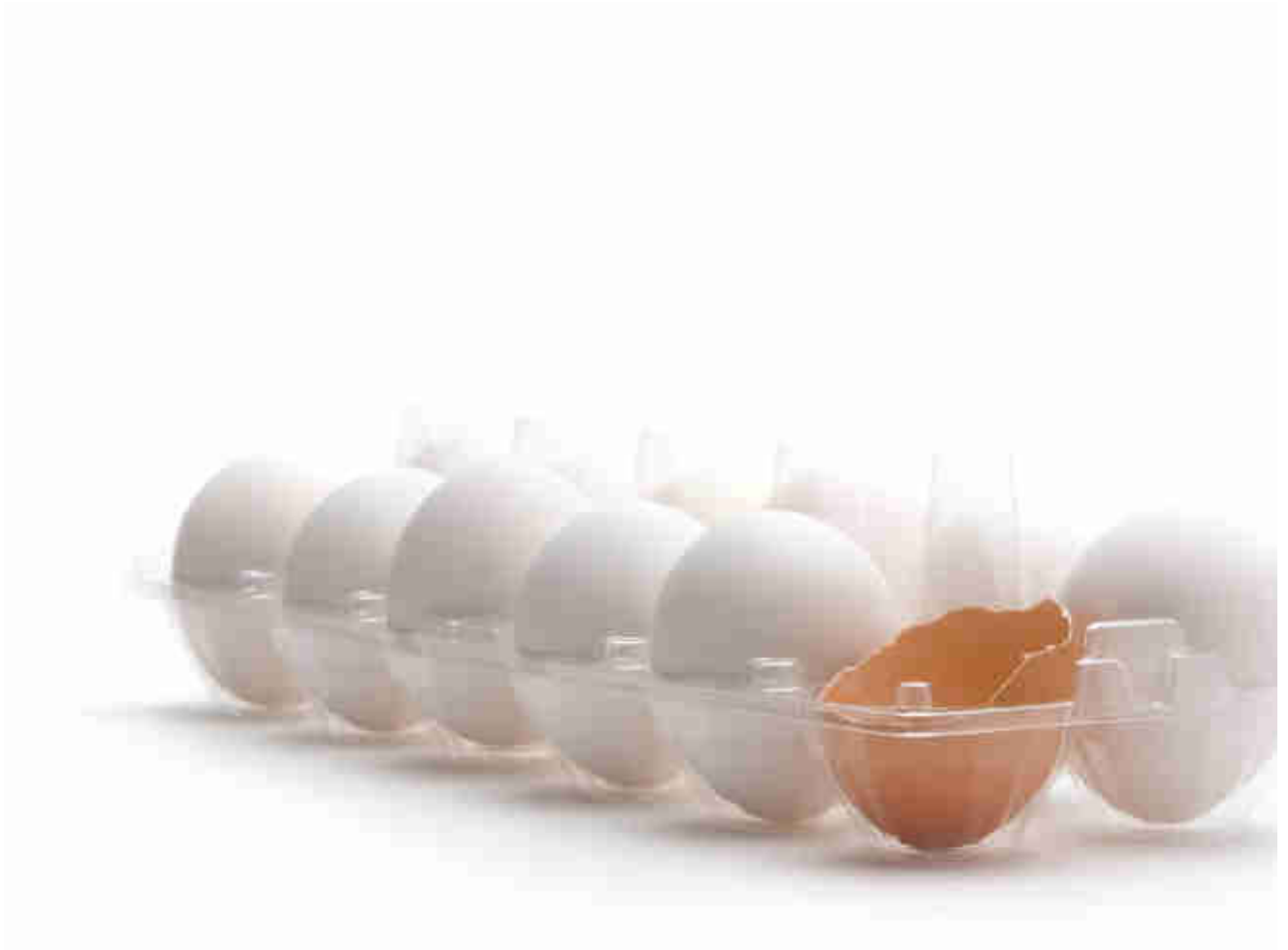
There appears to be significant local demand for milk sachets and yogurt cups, which is currently being serviced by the Kenya market. While many of the players are unable to utilize a significant portion of their capacity, the dairy industry is growing, both in terms of supply and demand. If processors can source higher volumes from farmers, create more efficient aggregation and logistics channels, and increase quality, their output will increase in turn.

Many players are forced to package in bottles, due to sourcing challenges and the lack of a local option. If PPTL were to begin producing cups for the local market, there is likely to be significant demand. Tanga Fresh, due to its proximity to PPTL, volumes, and current sourcing from Kenya, is a very strong anchor client for this new line of business. Many of the medium sized businesses would also be viable customers. However, while many of the small customers may have an interest in these products, the irregular nature of their business, small orders, and logistical challenges in supplying them may not make them the best customers.

Maps of the Identified Dairy Processors



Poultry Industry



Sector Overview

The poultry industry in Tanzania is experiencing steady growth. While the rise of the middle class has immensely contributed to the growth of this industry, interventions by both the public and private sectors, as well as the government's country-wide campaign to increase egg consumption, are set to increase the production of eggs to a total 4.2 Billion by 2022 (International Livestock Research Institute and the Tanzania Ministry of Livestock and Fisheries Development).

In Tanzania, egg production is carried out both traditionally, through small scale rearing of indigenous breeds, and commercially through the rearing of improved breeds. While the majority of the national flock is reared traditionally, commercial production is on the rise with investments in the private sector. A few private sector businesses such as Mkuza Chicks Ltd (Kibaha), Alaska Tanzania Industries Ltd, and Afro Farm Limited (TanEgg) have established large-scale poultry production units mostly for the urban markets.

Despite the growth in commercial investments in the poultry industry, there is still a large growth potential due to the improved availability of inputs for poultry farming.

As expected, the per capita consumption of eggs is lower in rural areas as compared to urban areas. In rural areas, the per annual per capita consumption is 41 eggs and in urban areas, the per capita consumption is ~100 eggs (Bureau for Food and Agricultural Policy, Poultry Subsector in Tanzania: A Quick Scan). The per capita consumption of eggs is likely to increase with the government campaign to increase consumption that was launched in early 2019 (The Guardian).

Current Eggs Packaging Materials

Eggs have a limited shelf life of about 3-4 weeks refrigerated. This means that there is a relatively high product turnover, and thus potential to create packaging for the sector: specifically for packaging that does not get reused. There are three types of packaging used for eggs:

- Rice husks
- Fillers (trays)
- Packs (Cases)

Based on an analysis of the market in Tanzania, it was found that the storage in rice husks is mostly done in rural areas where eggs are produced at a small scale for subsistence consumption. In urban and semi-urban areas, the main packaging used is fillers and packs. Refer to table 1 for further details on the packaging types. The table below outlines the types and characteristics of packaging used in Tanzania

	Pulp Trays	Plastic Trays	Plastic Cases	Pulp Cases
Capacity	30 eggs	30 eggs	6 eggs, 15 eggs	6 eggs, 15 eggs
Market Segment	These trays are often found in small shops (dukas) primarily used for storage of eggs before sales. These trays are also often found in households and restaurants. Some large-scale producers e.g. Alaska package in these trays.	These trays are often found in small shops (dukas) primarily used for storage of eggs before sales. These trays are also often found in households and restaurants.	Medium-large scale companies use these trays as the packaging with which the eggs will be sold. These packages are most found in supermarkets and are associated with the high-end customer.	These are the least used eggs packaging in Tanzania, rarely used in small shops (dukas) and supermarkets.
Source of packages	Locally Produced	Locally produced	Kenya, India, China	Kenya, India China
Retail Price	Tsh 500	Tsh 2,000	Not sold in retail	Not sold in retail

Interview Findings

Large Scale Commercial Poultry Farmers

Out of the 8 identified players in the poultry sector, only 2 (Alaska & SMJ farms) are considered large scale that produce more than 30,000 eggs per week. Out of the 2, AIA was able to get eggs packaging information from Alaska.

Serviceable Market

On average, Alaska needs 5,000 packs of 6's egg boxes which are currently sourced locally. The serviceable market for large scale commercial poultry farmers is based on Alaska's packaging demand only, as SMJ poultry farm from Mwanza could not be reached for an interview.

Eggs packaging

- Number of 6 pack boxes demanded per week = 5,000
- Price range Tsh.250 – Tsh 350

Medium Scale Commercial Poultry Farmers

Medium scale commercial poultry farmers own an average of 1,500 birds that produces ~2,250 eggs a day. Out of the 6 identified companies in Tanzania. AIA interviewed 3.

- HHABAC Farm
- JSJ Farm
- Namanga Farm

Key Findings

All 3 Medium scale commercial poultry farmers pack eggs in 6's and 15 boxes that are sold in formal markets (Shoppers plaza, Village supermarket, Target Supermarket, etc.) Interviewees have expressed a higher demand of 6 pack boxes in the formal market compared to the 15 pack boxes. The main challenges that interviews mentioned were low quality boxes that are sourced from India and shortage of locally sourced boxes forcing them to look for alternative sources like Kenya, which is costly due to transport expenses and customs delays.

Sources of Packaging and Unit Prices

All three interviewed medium scale commercial poultry farmers sources packaging units locally. The price ranges between Tsh.250 to Tsh 350 for the 6 pack eggs boxes and Tsh.500 to Tsh.600 for the 15 pack eggs boxes. Two of the three (HHabac Farm and JSJ farm) source their egg packaging from Kenya during shortages of locally sourced packages while one (HHBAC Farm) sources from Dubai or India during shortages.

Addressable Market

The below illustration outline what we calculated to be the addressable market of packaging units for eggs boxes.

- ❑ HHABAC Farm
 - 6's eggs boxes = 2,000 packs / month
 - 15 eggs boxes = 2,000 packs / month
- ❑ JSJ Farm
 - 6's eggs boxes = 1,000 packs / month
 - 15 eggs boxes = 750 packs / month
- ❑ Namanga Farm
 - 6's eggs boxes = 1,200 packs/ month
 - 15 eggs boxes = 500 packs /month

Total Addressable Market

Large-scale Commercial Poultry Farmers

- ❑ 6 pack eggs boxes: 20,000 / month



TOTAL YEARLY
DEMAND FOR 6 PACK EGGS BOXES
240K

Medium-scale Commercial Poultry Farmers

- ❑ 6 pack eggs boxes: 4,200 / month
- ❑ 15 pack eggs boxes: 3,250 /month



TOTAL YEARLY
DEMAND FOR 6 PACK EGGS BOXES
50k

TOTAL YEARLY
DEMAND FOR 15PACK EGGS BOXES
39K

*Average price for 6 pack boxes Tsh.300

*Average price for 15 pack boxes Tsh.550

TOTAL ANNUAL MARKET SIZE FOR
6 PACK BOXES
TSH. 87M (\$38K)

TOTAL ANNUAL MARKET SIZE FOR
15 PACK BOXES
TSH. 21M (\$9K)

In Conclusion

Bases off AIA findings, at the present time, the market for egg packaging seems to be far too small to justify an investment, especially considering the low price that can be achieved per pack. Medium scale producers order in low quantities from locally available sources in Kariakoo. Despite the fact that these orders are for small quantities, local Kariakoo sources cannot fulfill the demand forcing the farmers to source packaging from Kenya, India or Dubai. So, while there is certainly demand, and this demand will likely grow, the fact that the vast majority of the egg market is informal means that the formal market isn't really worth servicing.

Appendix 1 – Products in the Market



Shambani Milk Farm

Based off AIA interview, a medium scale milk processor, Shambani Milk, mention that they will be launching new packaging for their milk and yogurt products. They also mentioned they are interested to pack yogurts, but availability of the cups has been a barrier



Nasinya Dairy Farm

The processor sources bottle directly from Thermopak, Kenya. Further interviews revealed that **Grande de ma** a medium scale processor also sources the same type of bottles from thermopak for **Tsh.0.78** for 100mls, 500mls for **Tsh.200**.

Other products seen in supermarkets, retail points.



Project Financials

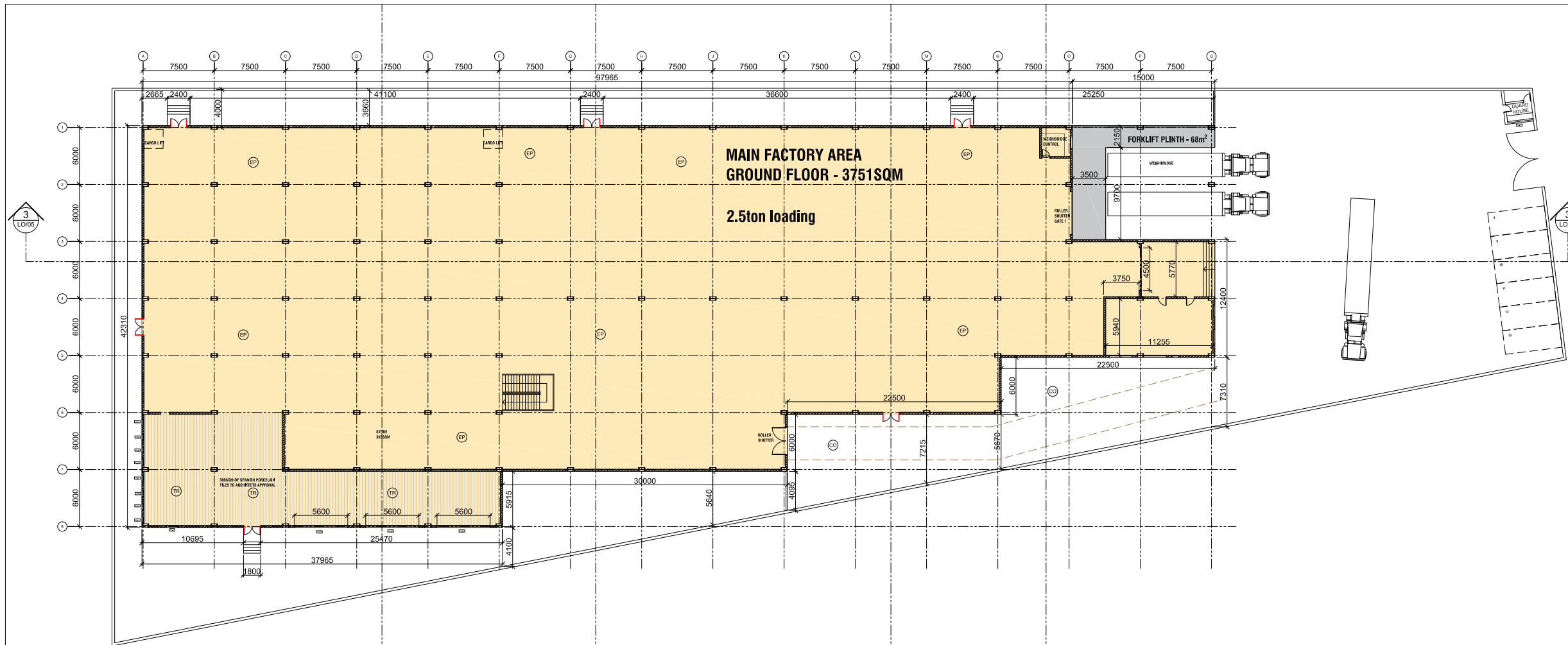
Profit & Loss Account										
	2022		2023		2024		2025		2026	
Sales - Recycled Material	\$758,400.00		\$728,160.00		\$693,384.00		\$653,391.60		\$607,400.34	
Sales - Planks	\$151,800.00		\$174,570.00		\$200,755.50		\$230,868.83		\$265,499.15	
Sales - Ropes & Twines	\$216,000.00		\$248,400.00		\$285,660.00		\$328,509.00		\$377,785.35	
Sales - Thermoforming	\$864,000.00		\$1,008,000.00		\$1,152,000.00		\$1,296,000.00		\$1,440,000.00	
Revenue	\$1,990,200		\$2,159,130		\$2,331,800		\$2,508,769		\$2,690,685	
COS - Raw Materials	\$970,872	49%	\$1,027,421	48%	\$1,083,969	46%	\$1,140,518	45%	\$1,197,067	44%
Gross Margin	\$955,723	48%	\$1,066,072	49%	\$1,180,149	51%	\$1,298,511	52%	\$1,421,800	53%
COS	\$464,448	23%	\$476,222	22%	\$488,046	21%	\$499,922	20%	\$511,851	19%
Gross Profit	\$491,275	25%	\$589,851	27%	\$692,103	30%	\$798,589	32%	\$909,950	34%
SG&A	\$100,000	5%	\$102,500	5%	\$105,063	5%	\$107,689	4%	\$110,381	4%
Adjustments										
EBITDA	\$391,275	20%	\$487,351	23%	\$587,040	25%	\$690,900	28%	\$799,568	30%
Calculation of PAT										
Depreciation	\$94,093		\$94,093		\$94,093		\$94,093		\$94,093	
Interest Cost	\$110,500		\$110,500		\$99,298		\$81,679		\$64,059	
Other Income										
Profit Before Tax	\$186,682		\$282,758		\$393,650		\$515,128		\$641,416	
Current Tax	\$0		\$0		\$87,016		\$138,379		\$184,681	
Deffered tax liability adjusted	\$56,004		\$84,827		\$31,078		\$16,159		\$7,743	
Total Tax	\$56,004		\$84,827		\$118,095		\$154,538		\$192,425	
Transfers to reserves										
Other Extraordinary Items										
PAT Transferred to retained earnings	\$130,677		\$197,930		\$275,555		\$360,590		\$448,991	
Profit Before Tax%	9.38%		13.10%		16.88%		20.53%		23.84%	

Tax Computation										
Calculation of Current tax										
PBT as per Books	\$186,682		\$282,758		\$393,650		\$515,128		\$641,416	
Add Depreciation as per books	\$94,093		\$94,093		\$94,093		\$94,093		\$94,093	
Less Depreciation as per Income tax	-\$334,976		-\$334,976		-\$185,361		-\$147,957		-\$119,904	
PBT for tax calculation	-\$54,202		\$41,875		\$302,382		\$461,264		\$615,605	
Loss Carried forward	\$54,202		-\$41,875		-\$12,327		\$0		\$0	
Taxable Profit	\$0		\$0		\$290,055		\$461,264		\$615,605	
Normal Tax	\$0		\$0		\$87,016		\$138,379		\$184,681	
Minimum Alternate Tax	\$0		\$0		\$0		\$0		\$0	
Current tax	\$0		\$0		\$87,016		\$138,379		\$184,681	
Depreciation for tax purposes										
WDV										
Class1 WDV	-		-		-		-		-	
Additions										
Total	-		-		-		-		-	
Depreciation	-		-		-		-		-	
Class2 WDV	-		598,462		598,462		448,846		336,635	
Additions after initial allowance @ 50% in first ye	598,462		-		-		-		-	
Total	598,462		598,462		598,462		448,846		336,635	
Depreciation	-		-		149,615		112,212		84,159	
Initial Allowance	299,231		299,231		-		-		-	
Total	299,231		299,231		149,615		112,212		84,159	
Class3 WDV	-		-		-		-		-	
Additions										
Total	-		-		-		-		-	
Depreciation	-		-		-		-		-	
Class6	-		714,906		714,906		714,906		714,906	
WDV	-		679,161		643,415		607,670		571,925	
Additions	714,906		-		-		-		-	
WDV	35,745		-		-		-		-	
Depreciation	\$35,745		\$35,745		\$35,745		\$35,745		\$35,745	
Class 7	-		-		-		-		-	
WDV	-		-		-		-		-	
Depreciation	-		-		-		-		-	
Opening WDV	-		1,277,622		1,241,877		1,056,516		908,559	
Additions	1,313,368		-		-		-		-	
Qualifying for Initial Allowance	598,462		-		-		-		-	
Disposals										
Depriciation	35,745		35,745		185,361		147,957		119,904	
Initial allowance	299,231		299,231		-		-		-	
Total Depreciation for tax	334,976		334,976		185,361		147,957		119,904	
Closing WDV	1,576,853		1,241,877		1,056,516		908,559		788,655	
	-		299,231		-		-		-	
Calculation of Deferred Tax liability										
WDV as per FAR	\$1,817,736		\$1,723,643		\$1,629,550		\$1,535,457		\$1,441,364	
Total WDV as per I tax	\$1,576,853		\$1,241,877		\$1,056,516		\$908,559		\$788,655	
Difference in WDV	\$240,883		\$481,766		\$573,034		\$626,898		\$652,709	
Difference in Provisions			\$0		\$0		\$0		\$0	
Tax Loss Carried forward	-\$54,202		-\$12,327		\$0		\$0		\$0	
Net Difference	\$186,682		\$469,439		\$573,034		\$626,898		\$652,709	
Deffered tax liability	\$56,004		\$140,832		\$171,910		\$188,069		\$195,813	
Change in deferred tax liability	\$56,004		\$84,827		\$31,078		\$16,159		\$7,743	

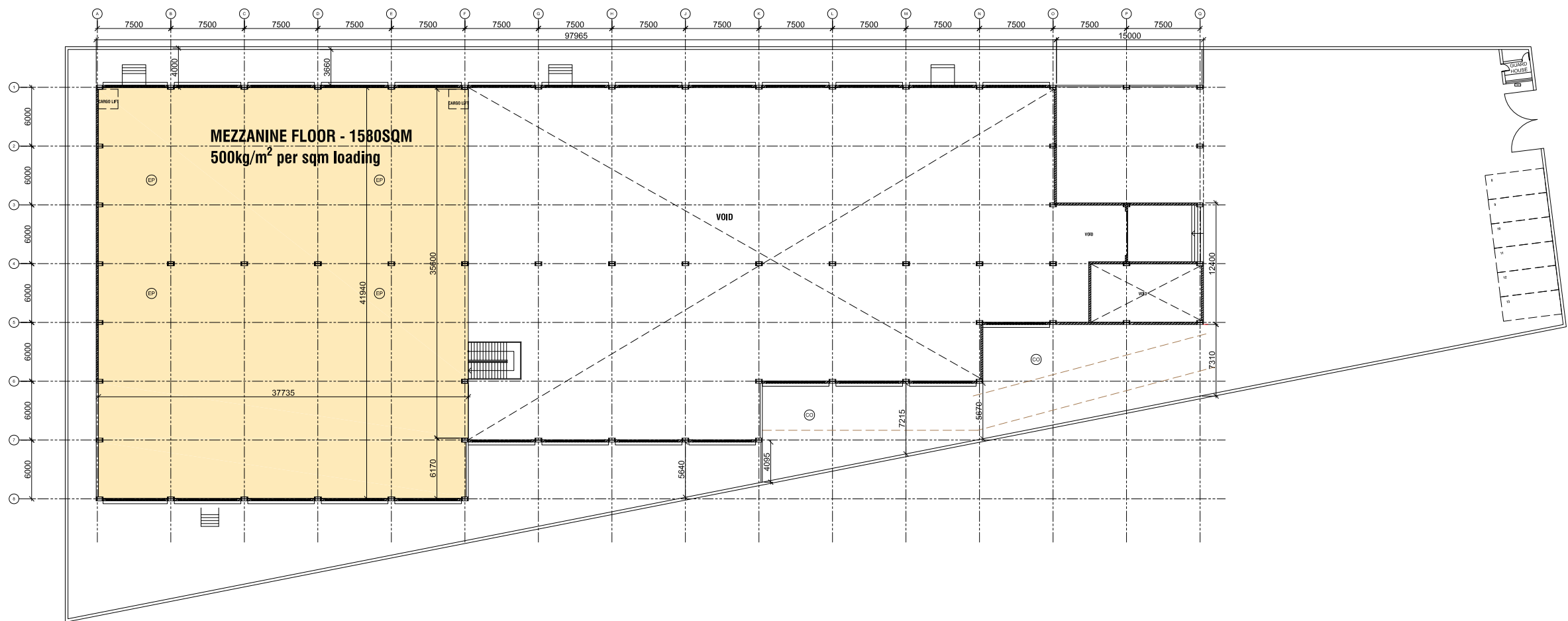
Balance Sheet & Cash Flow Statement							
	2020	2021	2022	2023	2024	2025	2026
Assets							
Cash and cash Equivalents	\$1,816,609	\$358,171	\$175,474	\$417,270	\$498,737	\$649,319	\$878,735
Closing stock	\$0	\$0	\$572,523	\$621,120	\$670,792	\$721,701	\$774,033
Trade and other receivables	\$0	\$0	\$436,208	\$473,234	\$511,079	\$549,867	\$589,739
Income tax recoverable							
Total Current Assets	\$1,816,609	\$358,171	\$1,184,206	\$1,511,624	\$1,680,608	\$1,920,887	\$2,242,506
Property Plant and equipment	\$0	\$0	\$1,911,829	\$1,911,829	\$1,911,829	\$1,911,829	\$1,911,829
Capital Work In Progress	\$453,391	\$1,911,829	\$0	\$0	\$0	\$0	\$0
Accumulated depreciation	\$0	\$0	-\$94,093	-\$188,186	-\$282,279	-\$376,372	-\$470,465
Net Property Plant and equipment	\$453,391	\$1,911,829	\$1,817,736	\$1,723,643	\$1,629,550	\$1,535,457	\$1,441,364
Total Non Current Assets	\$453,391	\$1,911,829	\$1,817,736	\$1,723,643	\$1,629,550	\$1,535,457	\$1,441,364
Total Assets	\$2,270,000	\$2,270,000	\$3,001,942	\$3,235,267	\$3,310,159	\$3,456,344	\$3,683,870
Liabilities							
Accounts payable and other current liabilities	\$0	\$0	\$545,260	\$591,542	\$638,849	\$687,334	\$737,174
Minimum Alternate Tax	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Post Import Loan	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bank overdraft	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total current liabilities	\$0	\$0	\$545,260	\$591,542	\$638,849	\$687,334	\$737,174
Trem Loan-PPHL(Shareholders)	\$670,000	\$670,000	\$670,000	\$574,285	\$478,570	\$382,855	\$287,140
Term Loan-AgDevCo	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$916,667	\$733,334	\$550,001
Deferred tax liability			\$56,004	\$140,832	\$171,910	\$188,069	\$195,813
Total non current liabilities	\$1,770,000	\$1,770,000	\$1,826,004	\$1,815,117	\$1,567,147	\$1,304,258	\$1,032,954
Total outside liabilities	\$1,770,000	\$1,770,000	\$2,371,265	\$2,406,659	\$2,205,996	\$1,991,592	\$1,770,128
Shareholders funds							
Common equity	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
Non distributable capital reserve	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Retained earnings	\$0	\$0	\$130,677	\$328,607	\$604,162	\$964,752	\$1,413,743
Total shareholders' Funds	\$500,000	\$500,000	\$630,677	\$828,607	\$1,104,162	\$1,464,752	\$1,913,743
Total Liabilities	\$2,270,000	\$2,270,000	\$3,001,942	\$3,235,267	\$3,310,159	\$3,456,344	\$3,683,870
Cash flow Statement	2020	2021	2022	2023	2024	2024	2024
Profit before Tax	\$0	\$0	\$186,682	\$282,758	\$393,650	\$515,128	\$641,416
Adjusted for Interest	\$0	\$0	\$110,500	\$110,500	\$99,298	\$81,679	\$64,059
Adjusted for Depreciation	\$0	\$0	\$94,093	\$94,093	\$94,093	\$94,093	\$94,093
Cash Operating Profit	\$0	\$0	\$391,275	\$487,351	\$587,040	\$690,900	\$799,568
Increase/(Decrease) in Current liabilities							
Accounts payable and other current liabilities	\$0	\$0	\$545,260	\$46,282	\$47,307	\$48,485	\$49,840
Income Tax Paid	\$0	\$0	\$0	\$0	-\$87,016	-\$138,379	-\$184,681
Total Change in Current Liabilities	\$0	\$0	\$545,260	\$46,282	-\$39,710	-\$89,894	-\$134,842
(Increase)/Decrease in Current Assets							
Closing stock	\$0	\$0	-\$572,523	-\$48,596	-\$49,672	-\$50,909	-\$52,332
Trade and other receivables	\$0	\$0	-\$436,208	-\$37,026	-\$37,845	-\$38,788	-\$39,872
Income tax recoverable	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Change in Current Assets	\$0	\$0	-\$1,008,732	-\$85,622	-\$87,517	-\$89,697	-\$92,204
Cash flow from Operating Activities	\$0	\$0	-\$72,197	\$448,011	\$459,813	\$511,308	\$572,523
Change in Term Loan-PPHL	\$670,000	\$0	\$0	-\$95,715	-\$95,715	-\$95,715	-\$95,715
Change in Term Loan-AgDevCo	\$1,100,000	\$0	\$0	\$0	-\$183,333	-\$183,333	-\$183,333
Interest Payment	\$0	\$0	-\$110,500	-\$110,500	-\$99,298	-\$81,679	-\$64,059
Change in Equity Share Capital	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0
Cash flow from financing Activities	\$2,270,000	\$0	-\$110,500	-\$206,215	-\$378,346	-\$360,727	-\$343,107
Change in fixed Assets	\$0	\$0	-\$1,911,829	\$0	\$0	\$0	\$0
Change in Capital WIP	-\$453,391	-\$1,458,438	\$1,911,829	\$0	\$0	\$0	\$0
Cash Flow from Investing activities	-\$453,391	-\$1,458,438	\$0	\$0	\$0	\$0	\$0
Net cash Generated/(Used) for the year	\$1,816,609	-\$1,458,438	-\$182,697	\$241,796	\$81,468	\$150,582	\$229,415
Opening cash and Bank Balance	\$0	\$1,816,609	\$358,171	\$175,474	\$417,270	\$498,737	\$649,319
Opening Bank overdraft	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Net opening Cash and cash equivalents	\$0	\$1,816,609	\$358,171	\$175,474	\$417,270	\$498,737	\$649,319
Net Closing cash and cash Equivalents	\$1,816,609	\$358,171	\$175,474	\$417,270	\$498,737	\$649,319	\$878,735
Represented By							
Closing Cash and Bank Balance	\$1,816,609	\$358,171	\$175,474	\$417,270	\$498,737	\$649,319	\$878,735
Closing Bank overdraft	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$1,816,609	\$358,171	\$175,474	\$417,270	\$498,737	\$649,319	\$878,735

Building Architectural drawings

Do not scale from drawing. Contractor to check all dimensions on site. Report discrepancies to the architect.



1 PLOT 1 - GROUND FLOOR PLAN
- 1:25



1 PLOT 1 - MEZZANINE FLOOR PLAN
- 1:25

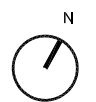
EDGE PLAN DEVELOPMENT LTD
ARCHITECTS, PLANNERS & PROJECT MANAGERS

P.O.BOX 6884, DAR ES SALAAM
E-mail: edgearch@gmail.com

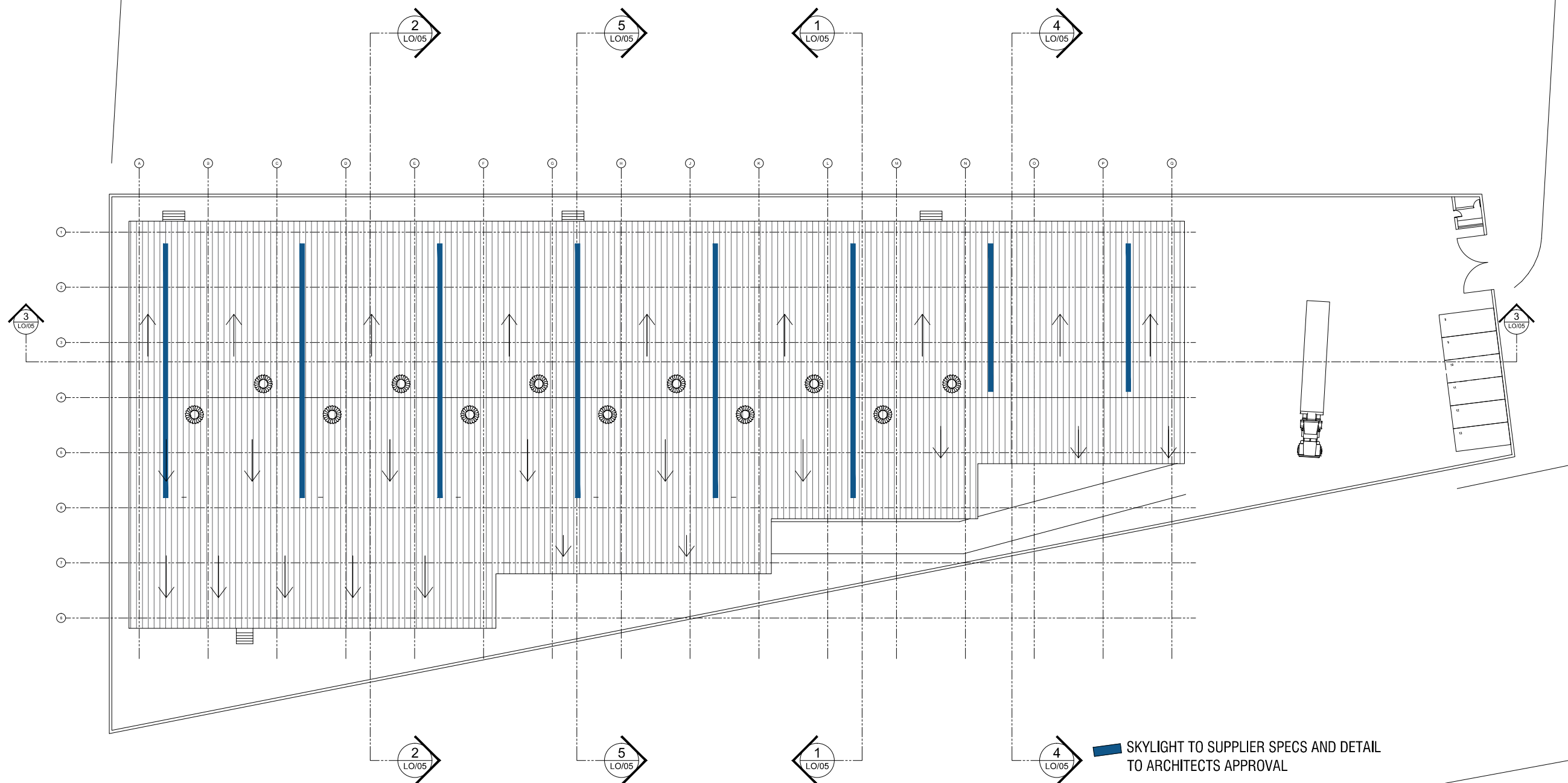
PEE PEE TANZANIA LIMITED
PLOT 1
P.O.BOX 34
KANGE, TANGA

SCHEME DESIGN
PROPOSED
SITE PLAN

Date	16.08.2020	Scale (A1)	1:250 @ A1
Drawn by	HM	Rev	E
Drawing No.	19TZ50A/LO/001	Cad File	19TZ50-LO-001.dwg



Do not scale from drawing. Contractor to check all dimensions on site. Report discrepancies to the architect.



 SKYLIGHT TO SUPPLIER SPECS AND DETAIL TO ARCHITECTS APPROVAL

 MECHANICAL ROOF VENTILATION TO SUPPLIER SPECS AND DETAIL

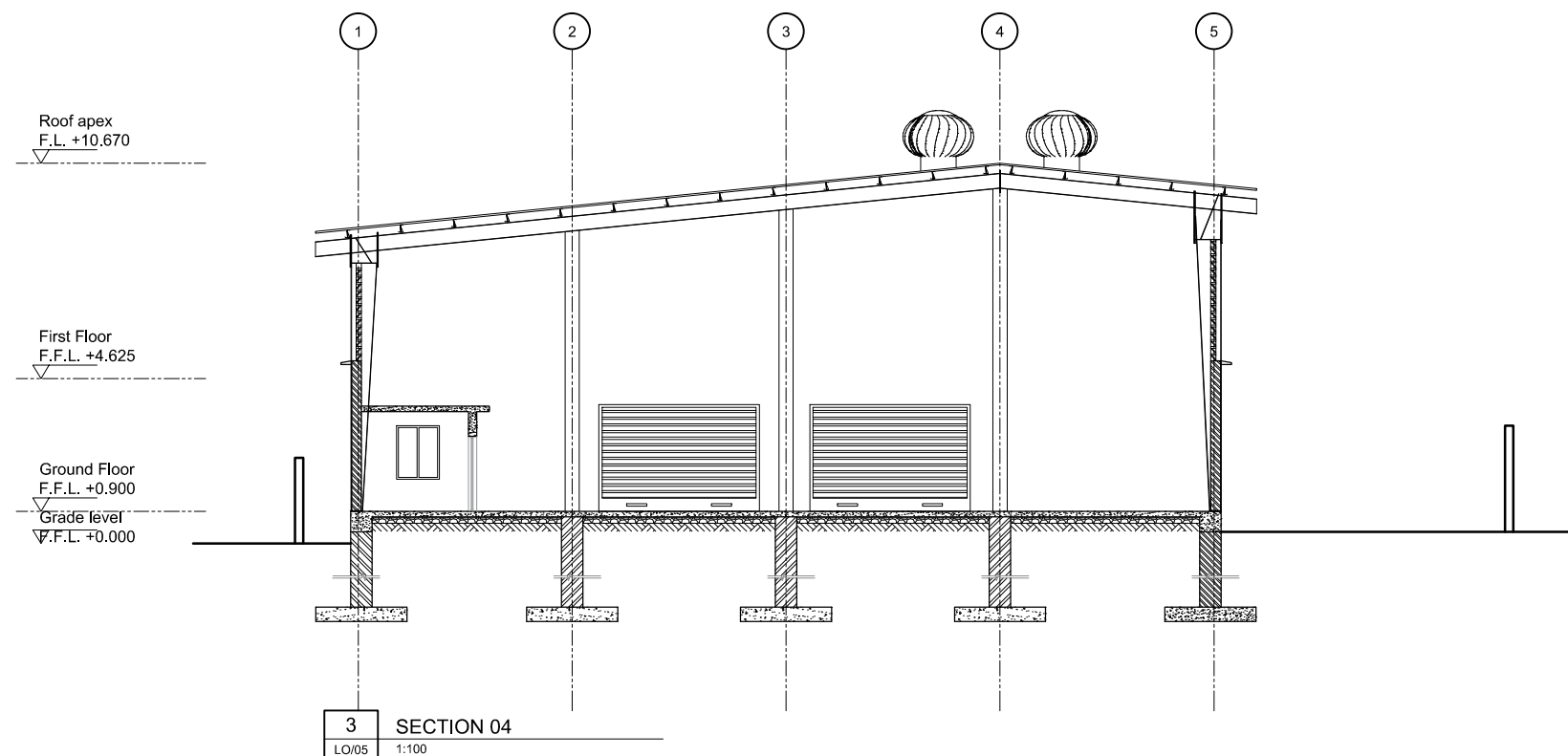
- NOTE:
1. ROOFING SHEET COLOUR TO BE CONFIRMED BY THE ARCHITECT WITH SUPPLIER.
 2. STEEL SUPPLIER TO PROVIDE INSULATION UNDER ROOFING SHEETS

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 PROJECT MANAGERS
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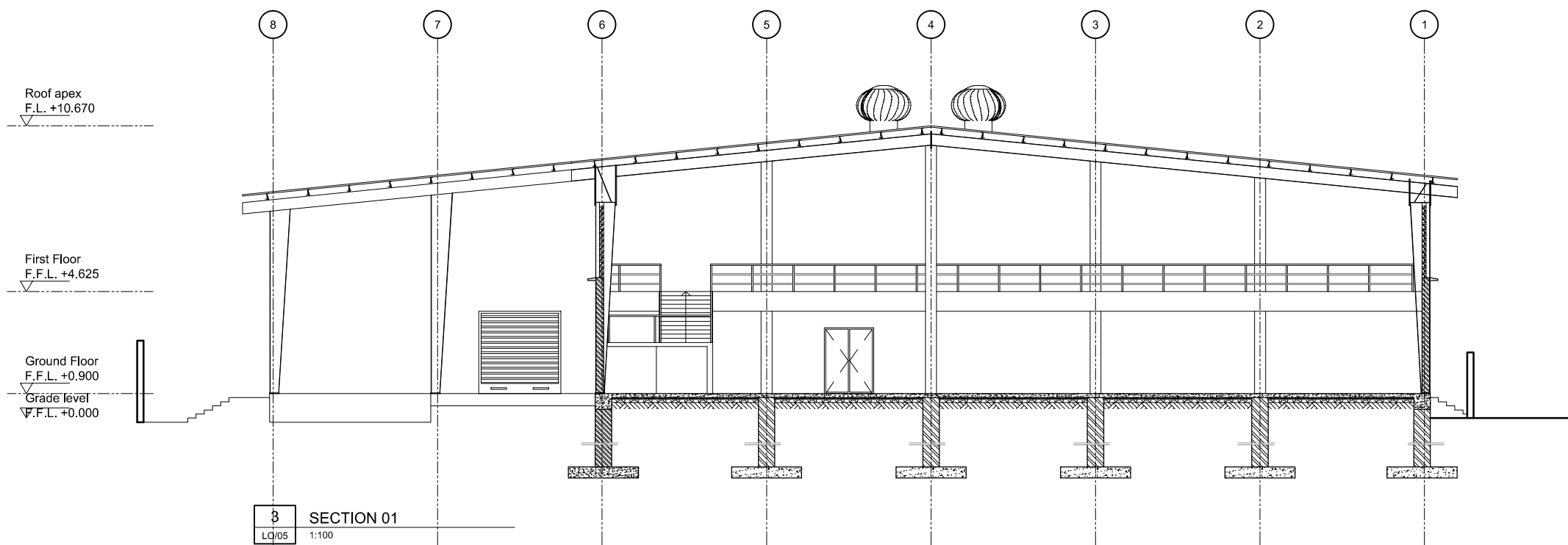
PEE PEE TANZANIA LIMITED
 PLOT 1
 P.O.BOX 34
 KANGE, TANGA

SCHEME DESIGN	
PROPOSED ROOF PLAN	
Date	Scale (A1)
10.07.2020	1:200 @ A1
Drawn by	HM
Drawing No.	Rev
19TZ50A/LO/004	D
Cad File	
19TZ50-LO-001.dwg	

Do not scale from drawing. Contractor to check all dimensions on site. Report discrepancies to the architect.



3 SECTION 04
LO/05 1:100



3 SECTION 01
LQ/05 1:100

NOTE:
1. REFER STRUCTURAL ENGINEERING DRAWINGS FOR STRUCTURAL DETAILS.
2. REFER DRAWINGS FROM APPOINTED STEEL SUPPLIER FOR DETAILS ON STEEL SECTIONS, ROOFING ETC.

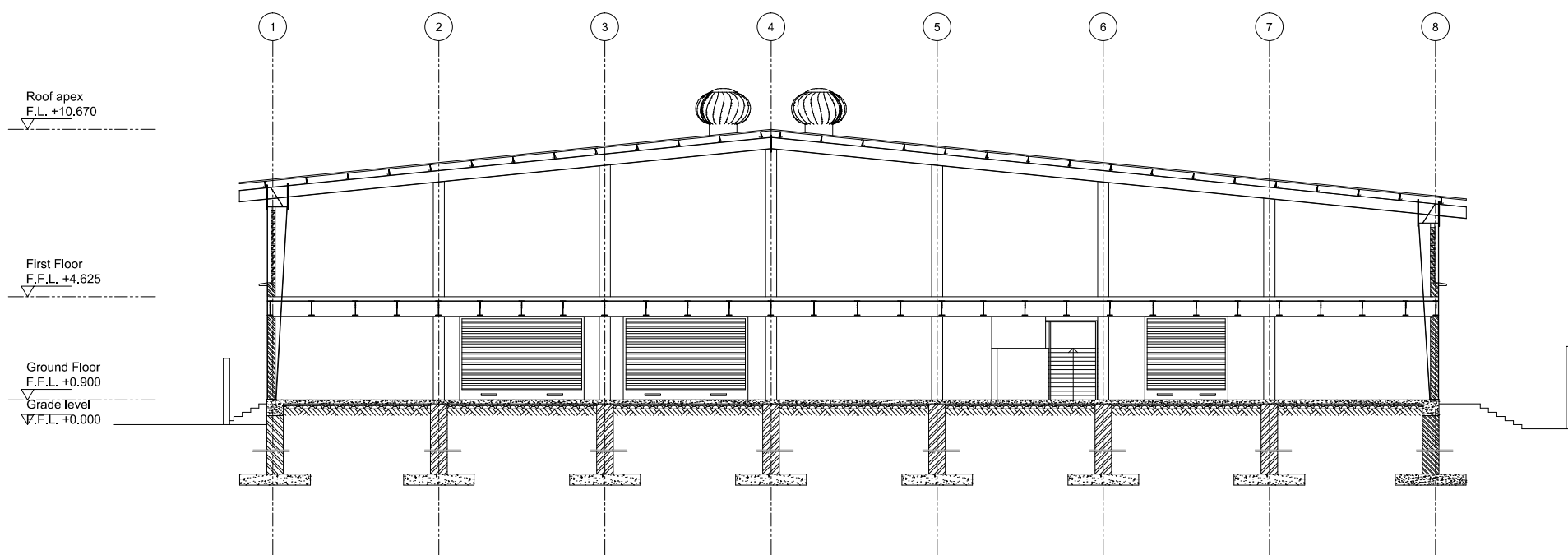
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E-mail: edgearch@gmail.com

PEE PEE TANZANIA LIMITED
PLOT 1
P.O.BOX 34
KANGE, TANGA

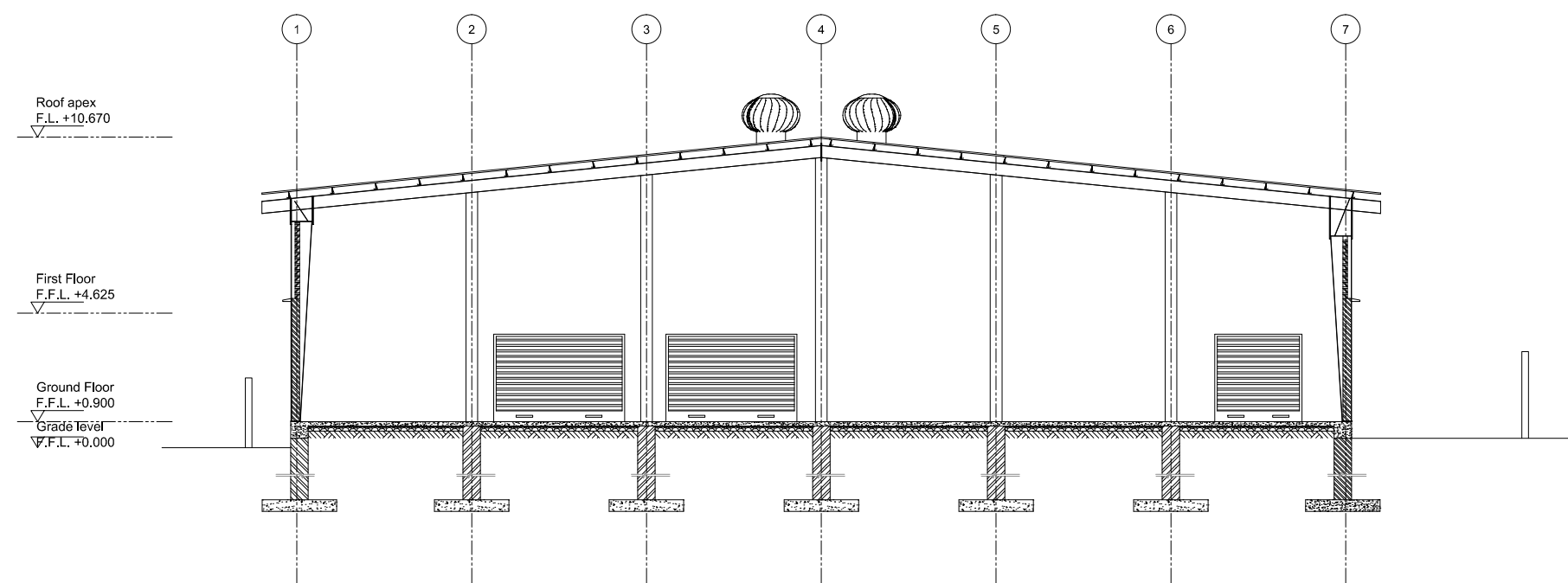
SCHEME DESIGN
PROPOSED SECTION

Date	Scale (A1)
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Drawing No.	Rev
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Cad File	
19TZ50-LO-001.dwg	

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3 SECTION 02
LO/05 1:100



3 SECTION 05
LO/05 1:100

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P.O.BOX 6884, DAR ES SALAAM
E-mail: edgearch@gmail.com

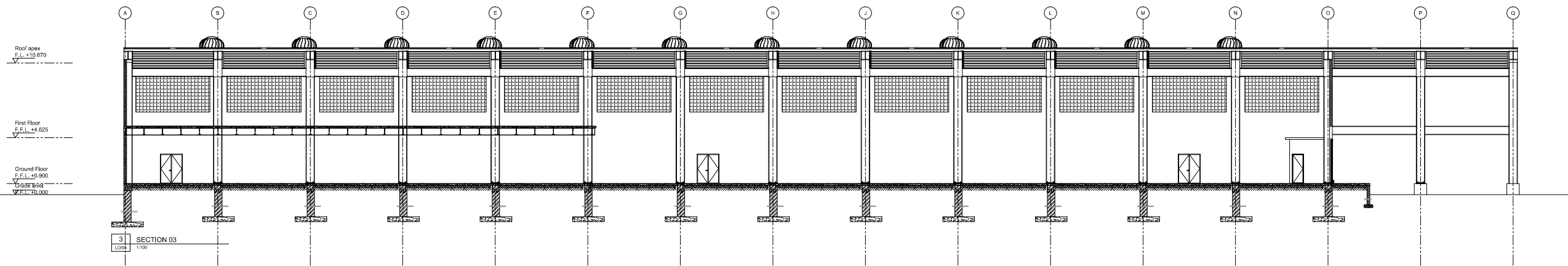
PEE PEE TANZANIA LIMITED
PLOT 1
P.O.BOX 34
KANGE, TANGA

SCHEME DESIGN
PROPOSED
SECTION

Date	Scale (A1)
10.07.2020	1:200 @ A1
Drawn by	HM
Drawing No.	Rev
19TZ50A/LO/004	D
Cad File	
19TZ50-LO-001.dwg	

NOTE:
1. REFER STRUCTURAL ENGINEERING DRAWINGS FOR STRUCTURAL DETAILS.
2. REFER DRAWINGS FROM APPOINTED STEEL SUPPLIER FOR DETAILS ON STEEL SECTIONS, ROOFING ETC.

Do not scale from drawing. Contractor to check all dimensions on site. Report discrepancies to the architect.



EDGE PLAN DEVELOPMENT LTD
 ARCHITECTS, PLANNERS &
 PROJECT MANAGERS

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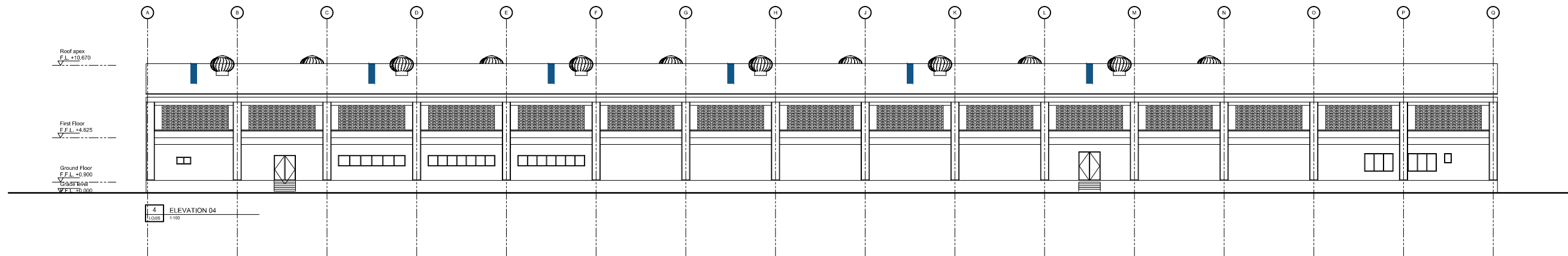
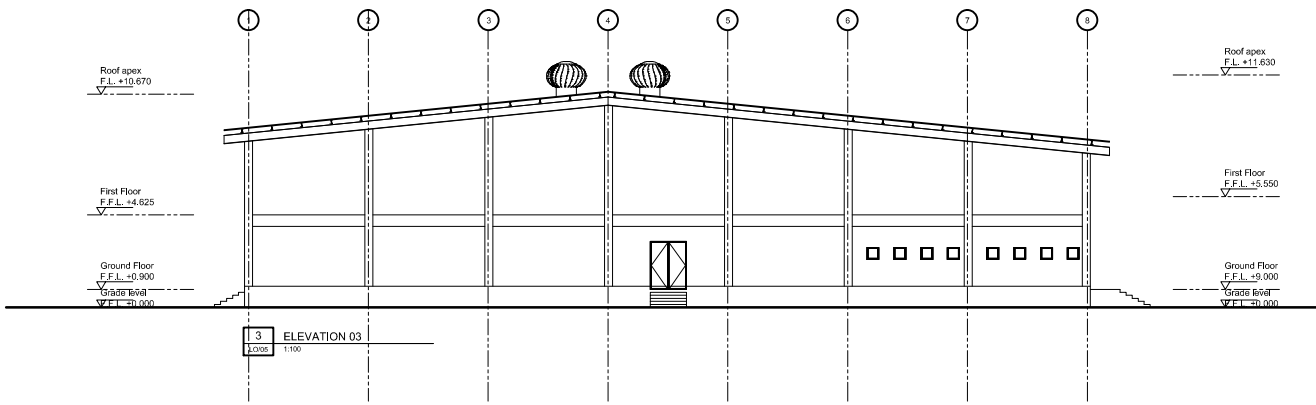
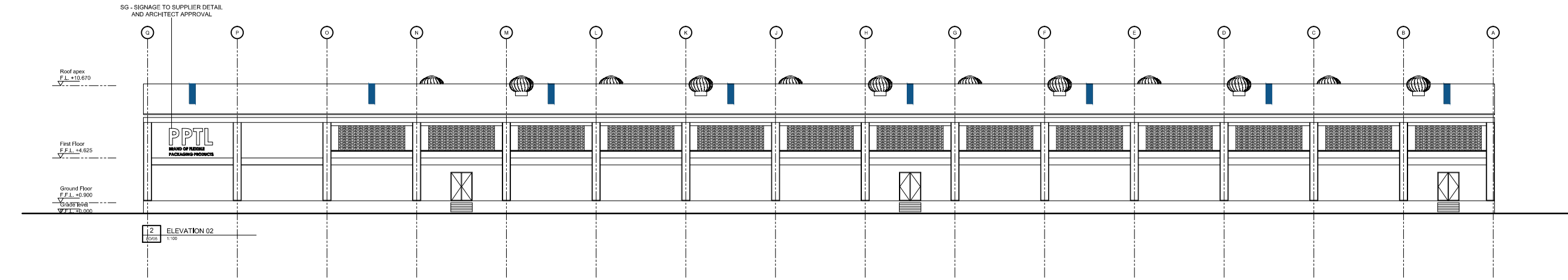
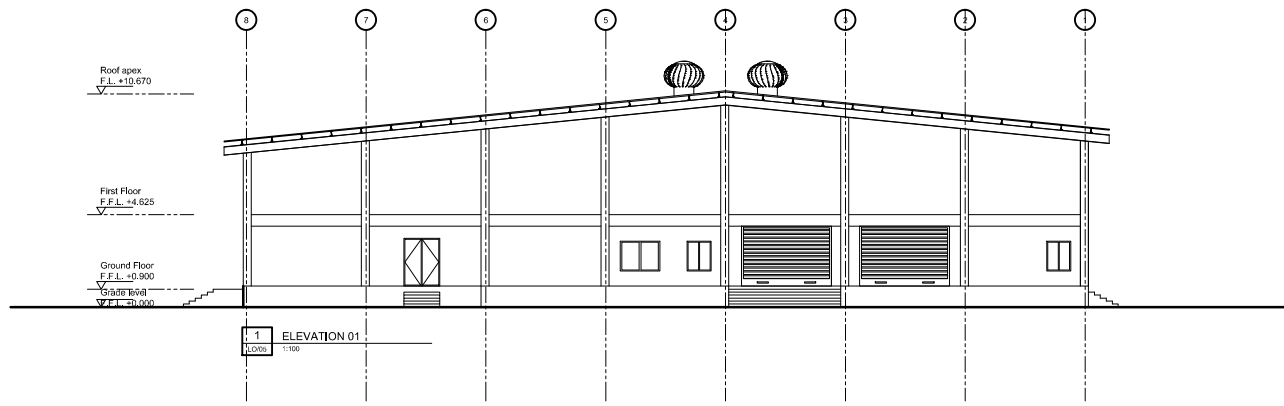
PEE PEE TANZANIA LIMITED
 PLOT 1
 P.O.BOX 34
 KANGE, TANGA

SCHEME DESIGN
 PROPOSED
 SECTION

Date	Scale (A1)
10.07.2020	1:100 @ A1
Drawn by	HM
Drawing No.	Rev
19TZ50A/LO/005	D
Cad File	
19TZ50-LO-001.dwg	

- NOTE:**
1. REFER STRUCTURAL ENGINEERING DRAWINGS FOR STRUCTURAL DETAILS.
 2. REFER DRAWINGS FROM APPOINTED STEEL SUPPLIER FOR DETAILS ON STEEL SECTIONS, ROOFING ETC.

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REVISION:
A - Updated heights on elevations 10.07.2020

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PEE PEE TANZANIA LIMITED
PLOT 1
P.O.BOX 34
KANGE, TANGA

SCHEME DESIGN	
PROPOSED ELEVATIONS	
Date	Scale (A1)
10.07.2020	1:200 @ A1
Drawn by	HM
Drawing No.	Rev
19TZ50A/LO/006	A
Cad File	
19TZ50-LO-001.dwg	