

PROCESS TECHNOLOGIES INC.

Integrated Engineering & EPC Solutions



Subsidiary Company

PROCESSTECH PTE LTD

20 Collyer Quay, #09-01, Singapore, 049319, Singapore

PTI

**ENGINEERING EXCELLENCE
IN PROCESS SOLUTIONS**



Office Address:

228 Cityland 8, 98 Sen. Gil Puyat Ave.,
Makati City, Philippines 1200



Website:

www.ptiph.net



Tel:

(63) 2369 9967



Since 1987

Trusted Partner in
Process Industries

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We Are Complete

I We provide services from basic engineering to complete EPC projects (Engineering, Procurement, Construction and Commissioning).

Customized Solutions

II We work with you on evaluating concepts and options, project feasibility and costing.

Our Team

III Our Engineering Design Team is composed of fully competent licensed engineers with extensive experience in designing and implementing projects.

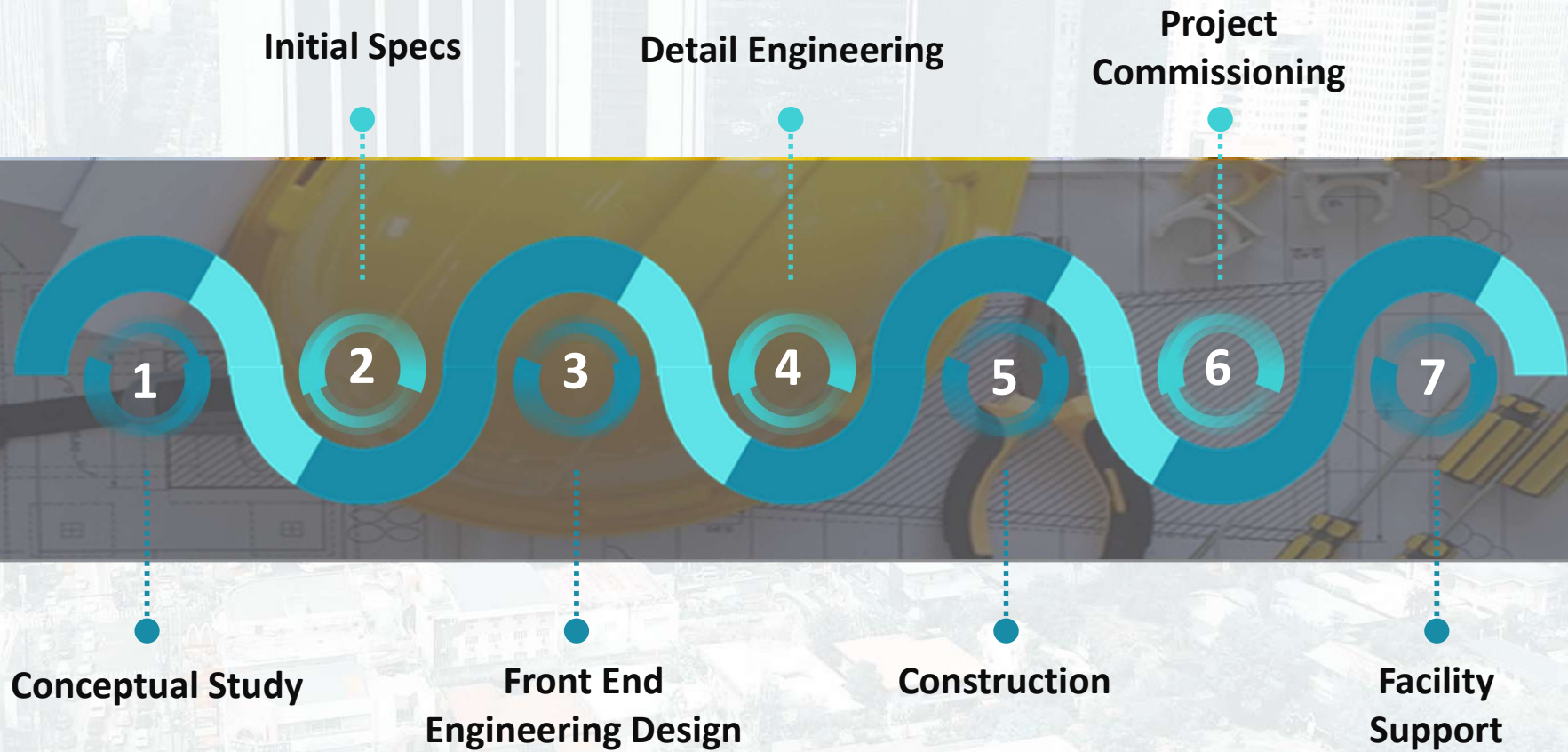
Value Creation

IV We always strive to provide the best value possible for your investment to allow faster return on investment.

Process Improvement

V We design and improve systems that give you a competitive edge by reducing costs, enabling cheaper materials, and increasing yield while maintaining high product quality.

PTI COMPLETE ENGINEERING SOLUTION





Refining

PTI began in 1987 and quickly became a trusted name in the industry by developing refining processes that lower costs and use energy more efficiently—now common in advanced edible oil refineries.



Chemicals

Driven to lead in emerging markets, PTI is one of the few companies active in biodiesel. With its strong background in fat and oil refining, PTI is well positioned to serve clients in the biochemical industry.



Power

PTI has expanded into the power generation sector. Most recent projects integrate power production into plant designs to meet energy needs, with a focus on converting biomass into electricity to support environmental goals.



Other Projects

PTI has taken another step and continue to grow into executing projects that are outside our expertise. Other projects that PTI has been involved are milk fat formulation for a multinational company, ice cream fat for several ice cream makers, cocoa butter substitutes, confectionary fats and frying fats for several multinational food companies.

OUR BUSINESS FIELDS

03-ENGINEERING CAPABILITIES

PROCESS ENGINEERING

- Feasibility Studies and Process Evaluation
- Process Basis of Design Development
- Process Flow Diagram (PFD) Development
- Piping and Instrumentation Diagram (P&ID) Development
- Heat and Mass Balance Calculations
- Hydraulic and Utility System Calculations
- Process Simulation and Optimization
- Reaction and Kinetic Process Design
- Equipment Sizing and Process Specifications
- Relief Valve and Control Valve Sizing
- Utility Consumption and Load Summary
- Material Selection and Process Data Development
- Process Control Philosophy and Narrative
- Process Safety and Operability Review
- Vendor Document Review and Technical Coordination

MECHANICAL ENGINEERING

- Pressure Vessel and Tank Design
- Heat Exchanger Design and Evaluation
- Rotating and Static Equipment Specification
- Mechanical Design of Process Equipment
- Mechanical Simulation and Design Verification
- Pump and Piping System Hydraulic Analysis
- Piping and Instrumentation Design Coordination
- Equipment Layout and Installation Review
- Preparation of Mechanical Data Sheets
- Equipment Design Calculations and Specifications
- Vendor Technical Bid Evaluation
- Equipment Inspection and Shop Review
- Material Certification and QA/QC Document Review
- Existing Equipment Assessment and Re-rating
- Technical Bid Evaluation and Vendor Coordination
- Applicable Codes and Standards Compliance Review

03-ENGINEERING CAPABILITIES

PIPING ENGINEERING

- Piping Layout and General Arrangement Development
- Plot Plan and Equipment Modeling
- 3D Plant Modeling and Model Review
- Pipe Routing and Tie-in Engineering
- Piping Isometric Development
- Pipe Stress Analysis and Flexibility Review
- Pipe Support Design and Coordination
- Piping Material and Purchase Specifications
- Piping Service Index and Line List Development
- Vessel Nozzle Orientation and Layout Coordination
- Clash Detection and Constructability Review
- Demolition and Existing Facility Tie-in Planning
- Technical Bid Evaluation and Vendor Coordination
- Material Certification and Inspection Review

ELECTRICAL ENGINEERING/AUTOMATION AND CONTROLS

- Load Flow and Short Circuit Calculations
- Voltage Drop and Motor Starting Analysis
- Arc Flash and Transient Stability Studies
- Grounding and Lightning Protection Design
- Cable Tray, Conduit, and Routing Layout
- Electrical Heat Tracing Design
- Lighting System Design and Calculations
- Single-Line and Auxiliary System Diagrams
- Schematic, Wiring, and Interconnection Diagrams
- PLC / DCS System Architecture Development
- Instrumentation and Control System Design
- Instrument Index and Loop Diagram Development
- Cause and Effect Matrix Development
- Area Classification and Hazardous Area Review
- Substation and MCC Layout Design

03-ENGINEERING CAPABILITIES

CIVIL AND STRUCTURAL ENGINEERING

- Site Development and Demolition Planning
- Reinforced Concrete and Structural Steel Design
- Equipment Foundation Design and Analysis
- Pipe Rack and Process Structure Design
- Structural Analysis and Design Verification
- Structural Detailing and Shop Drawings
- Pipe Support and Miscellaneous Steel Design
- Drainage, Slumps, and Culvert Design
- Seismic and Dynamic Equipment Foundation Review
- Building and Industrial Structure Design

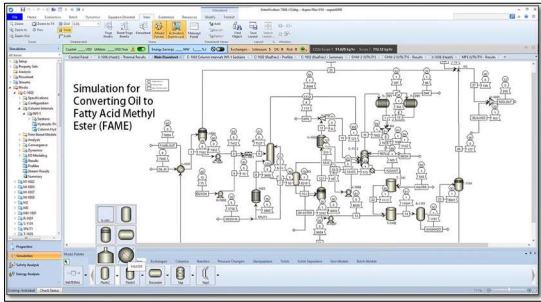
ENGINEERING SOFTWARES

- Aspen Plus
- Aspen EDR
- Bentley AutoPLANT (3D)
- Bentley Autopipe (pipe stress)
- AutoCAD
- Codeware Compress

PROJECT MANAGEMENT

- Project Planning and Scheduling
- Cost Estimation and Budget Development
- Project Monitoring and Progress Control
- Procurement and Vendor Coordination
- Construction Management and Site Supervision
- Risk Assessment and Mitigation Planning
- Quality Assurance and Quality Control Coordination
- Project Reporting and Documentation Control
- Engineering Change and RFI Management
- Resource Planning and Manpower Coordination
- Commissioning and Startup Coordination
- Client and Contractor Interface Management

PROCESS ENGINEERING



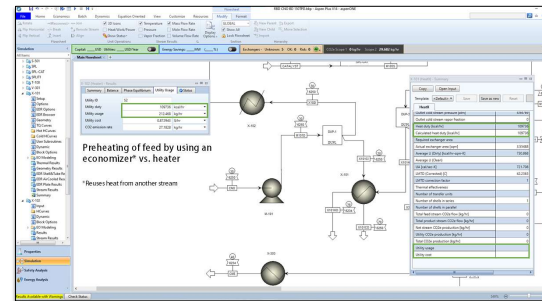
Designing of the Process

Equipment	Type	Material	Volume	Weight	Cost
HE-1	Heat Exchanger	STEEL	10.4	1.2	10000
HE-2	Heat Exchanger	STEEL	10.4	1.2	10000
HE-3	Heat Exchanger	STEEL	10.4	1.2	10000

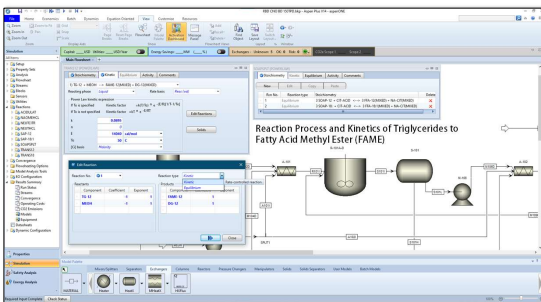
Equipment Sizing and Optimization

Name	CAS#	Formula	Molecular Weight
Water	7732-18-7	H ₂ O	18.015
Methanol	67-58-0	CH ₃ OH	32.042
Triglycerides			

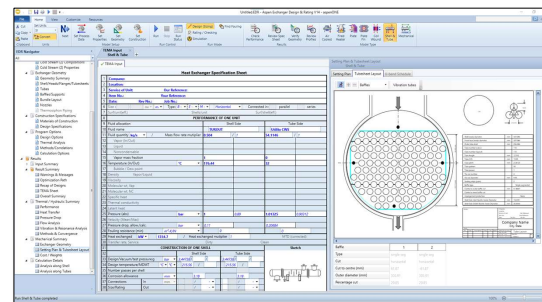
Generation of Raw Material and Product Properties Data



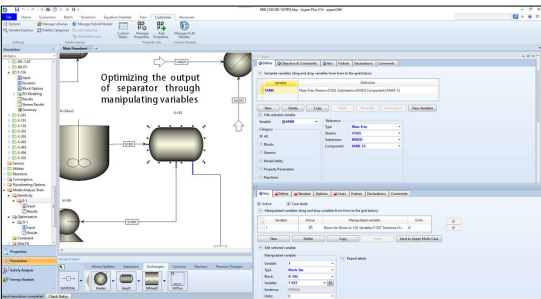
Auditing of Energy Streams and Optimization of Heat Recovery



Designing of Reaction Process and Kinetics of Reaction

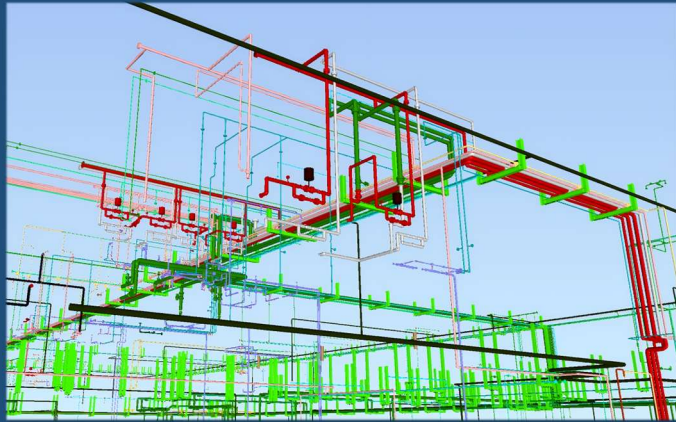


Simulation of Process and Shell and Tube Heat Exchanger

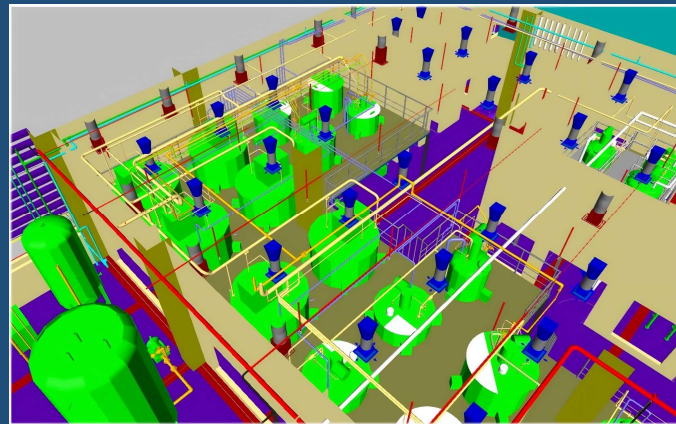


Simulation of Process and Optimization of the Process Parameters

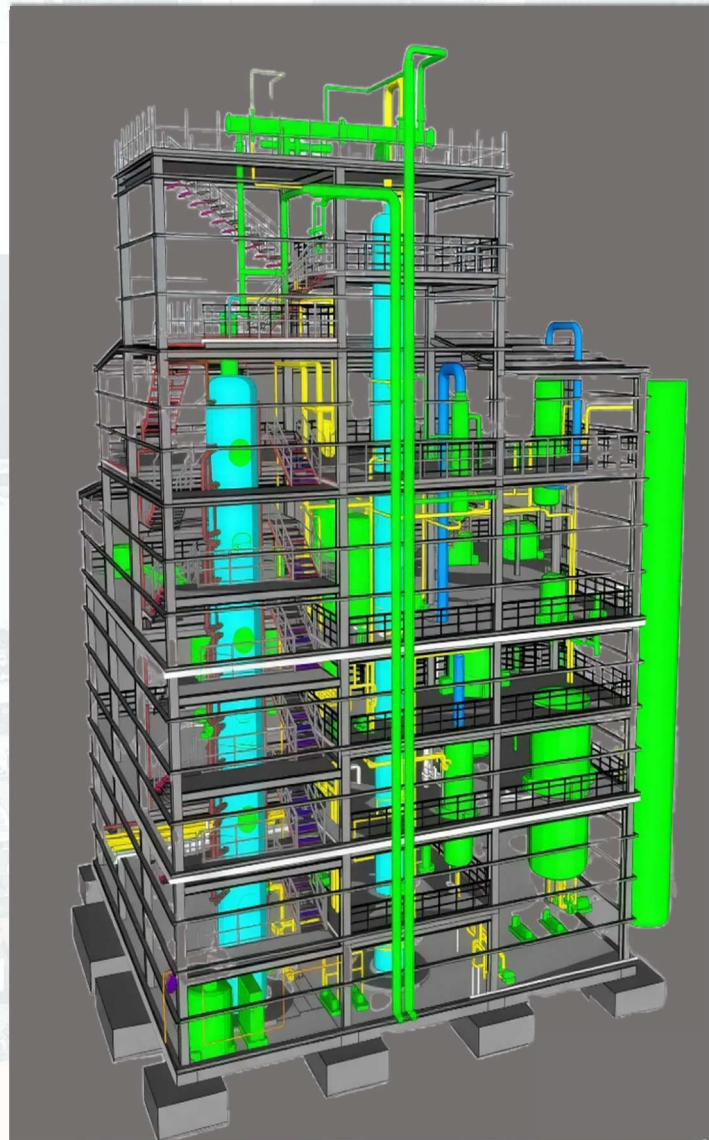
3 D MODELING



Piping and Utilities
International Pharmaceuticals Inc.
Cebu, Philippines



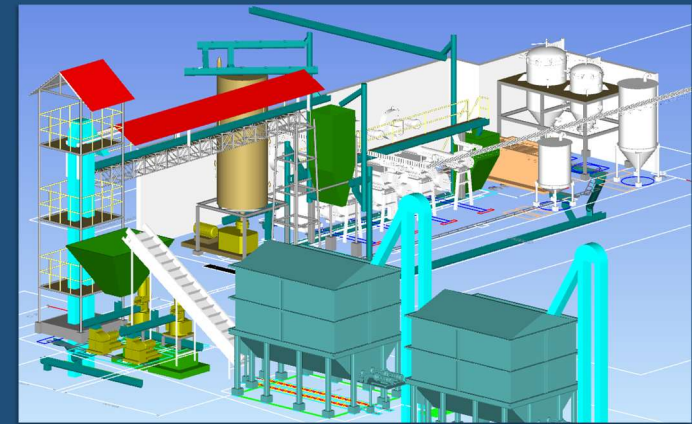
Pharmaceutical Building – Production Area
International Pharmaceuticals Inc.
Cebu, Philippines



Biodiesel Refinery Project
Greenfuel Extremadura
(Badajoz, Spain)



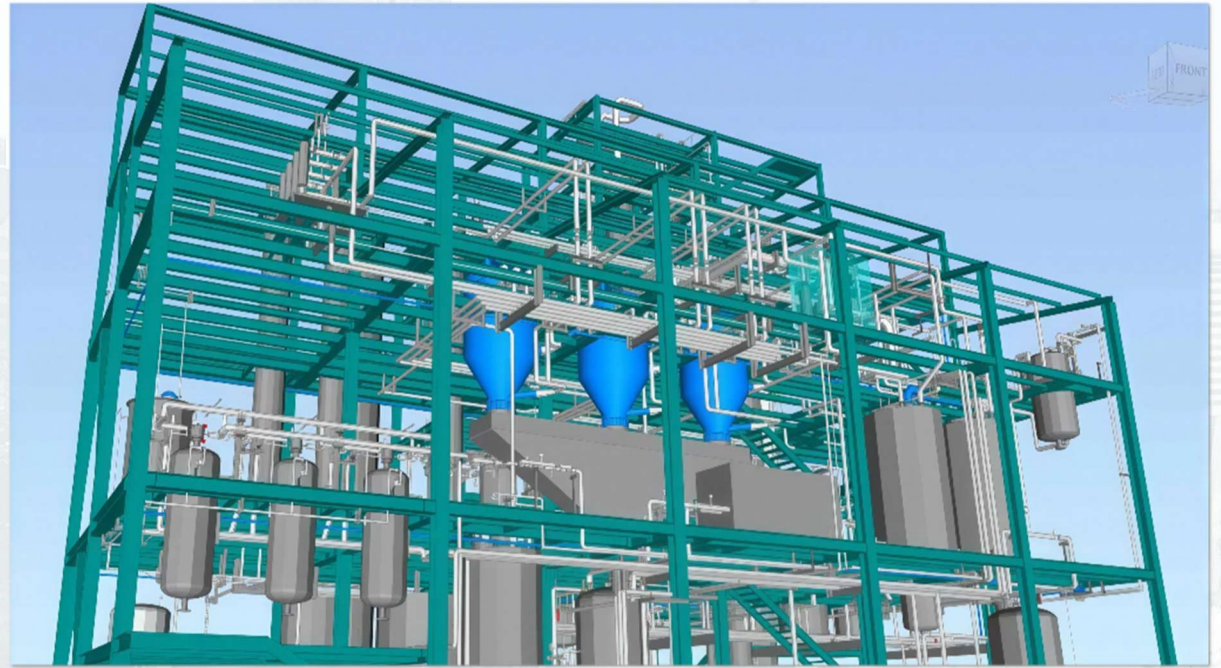
Axelum Refinery Plant Expansion
Axelum Resources Corp.
Medina, Misamis Oriental, Philippines



LMM Facility
Dumaguete Coconut Mills, Inc
Bacong, Negros Oriental, Philippines

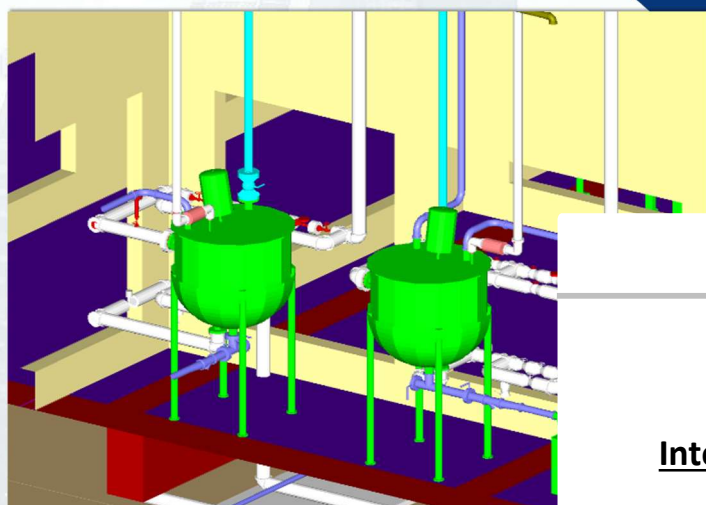
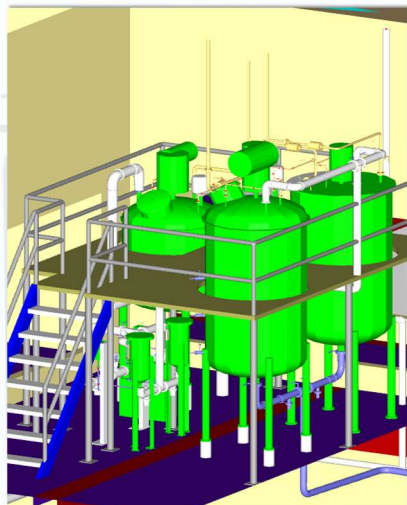
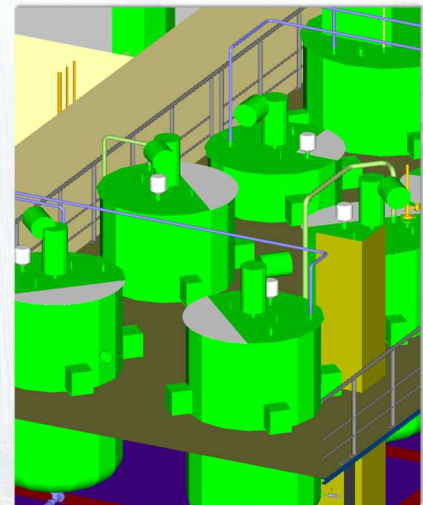
**Greenfuel Extremadura–
Biodiesel Refinery Project**
(Badajoz, Spain)

*Date Taken: October 2025
(During Commissioning Activities)*



3D MODEL VS. ACTUAL





3D MODEL VS. ACTUAL

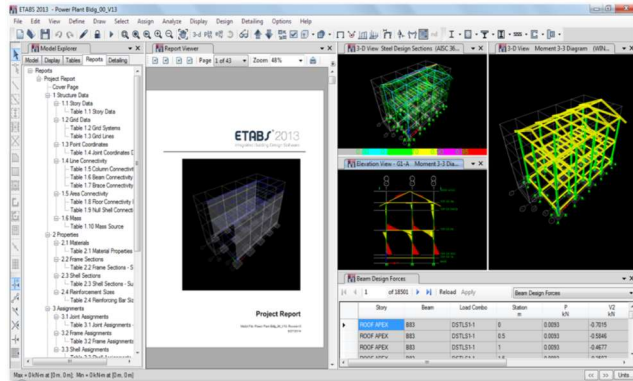
**International Pharmaceuticals Inc. –
Pharmaceutical Building
Production Area
Cebu, Philippines**

*Date Taken: June and October 2023
(During Punch Listing Activities)*

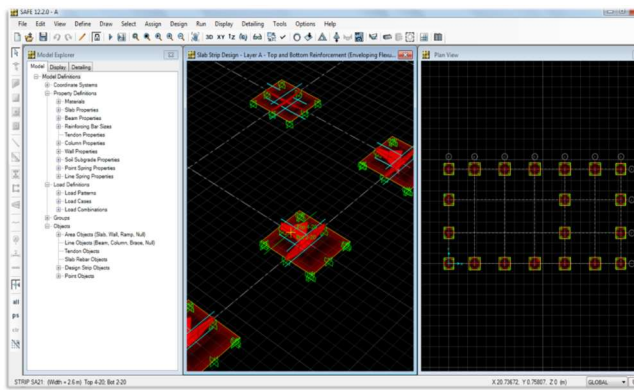


CIVIL AND STRUCTURAL ENGINEERING

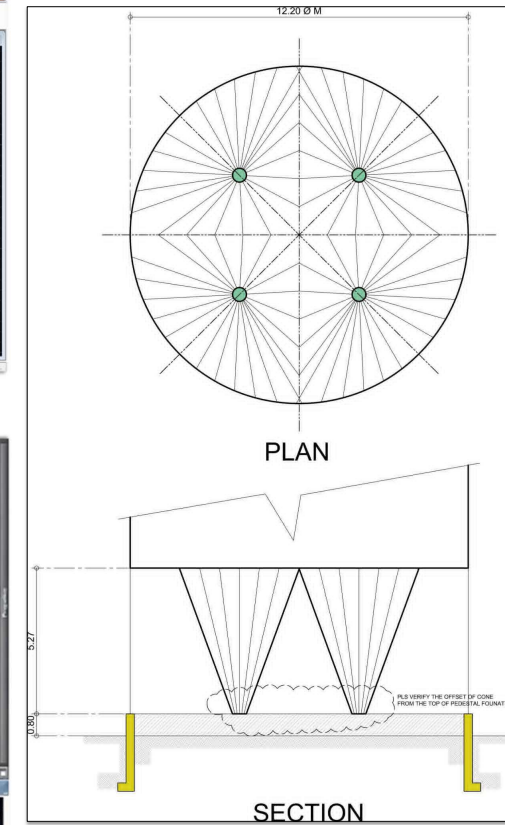
1. Simulation of Structures



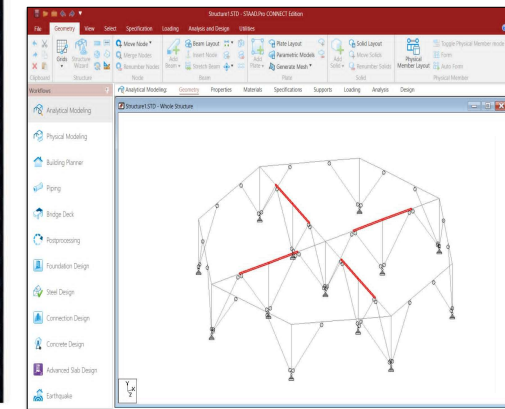
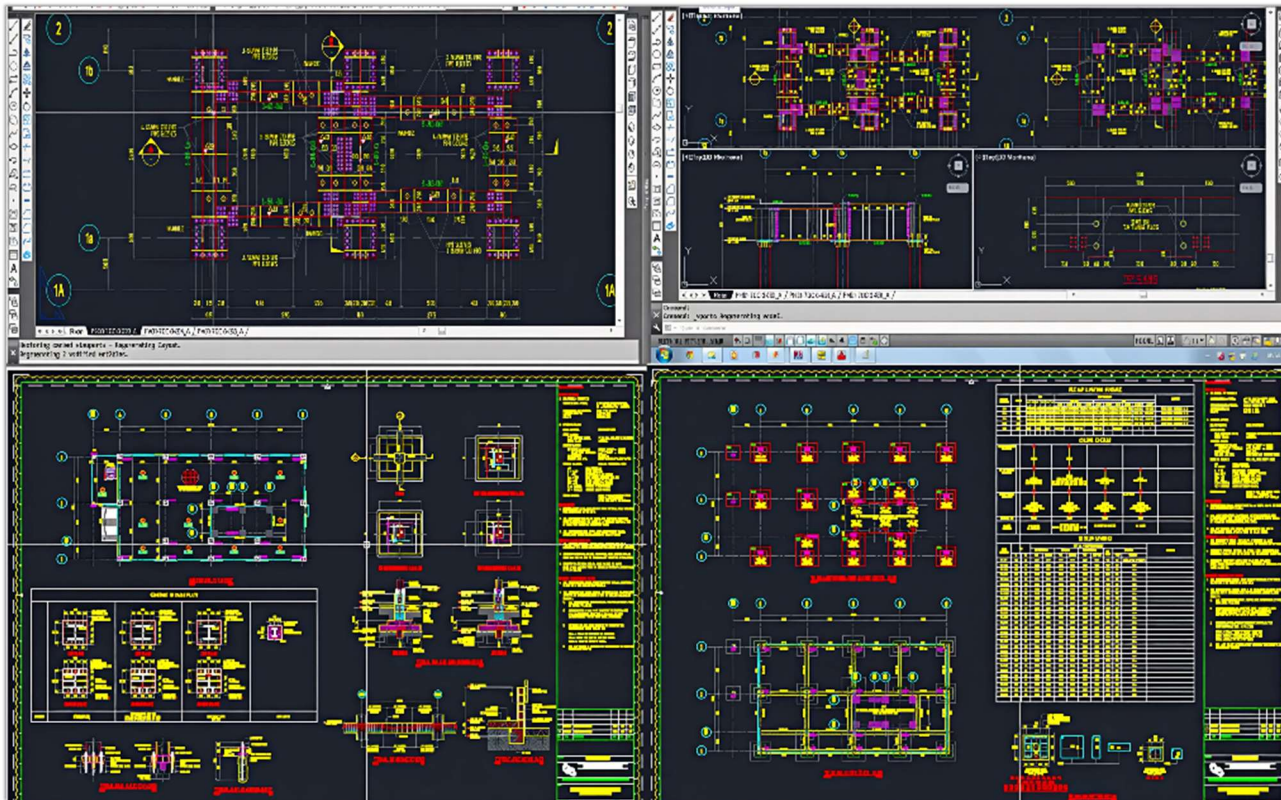
2. Simulation of Foundation



4. STAAD – Structural Analysis



3. Structural Detailing





KEY PROJECT OBJECTIVES

- 01 Cost Objective
- 02 Schedule Objective
- 03 Quality Objective
- 04 Safety and Environmental Objective

PROJECT REPORTING

Monitoring and Control



Structure Progress Reporting – Weekly and Monthly Reports

- Data collection
- Progress measurement
- Update of schedule
- Provide forecasts



Early Identification of Delays



Early Rectification of Problems

JNJ Oleochemicals Inc.		July 2015 Monthly Progress Report		Process Technologies Inc.			
Project Name		Jnj 100 TPD FAME Fractionation Plant		Project Code: JN113 JN113-11PK-021			
Project Number	JN113	Client	JNJ Oleochemicals, Inc.				
Report Month Coverage	July 2015	Project Manager	Karl Caudal				
Distribution		Process Technologies Inc.		JNJ Oleochemicals Inc.			
1. K. Caudal	Project Manager	1. Rolando Jao					
2. A. Diamante	Process Engineer	2. Jay Jao					
3. B. de Torres	Mechanical Engineer						
Summary							
Additional activity of the Team for the week was the preparation of Equipment Datasheet included on the Process Improvement for Approval. This must be done for us to be able to obtain approximate prices of the said equipment. This month the focus of the engineering team was to establish all design documents by accomplishing the process improvement parameters that are also sent to the client for approval.							
Work Week	Area	Discipline	ACTIVITY	Due Date	Actual Date Submitted	Status	REMARKS
WEEK 28-31-15 2015	100	PTI-CS	Civil Engineering Design Criteria & Material Selection Diagram	25-Aug-15			Target date: 7-Oct-15
	100	PTI-CS	Structural Eng Design Criteria & Material Selection Spec	25-Aug-15			Target date: 7-Oct-15
	100	PTI-ECS	Power Supply Plant Requirements	16-Aug-15			Target date: 14-Oct-15
							For process review, to be incorporated on Process Improvement Plans Documents/Deliverables included are PFD, Line 1 - S, Cosmetics Lines 1 - 7, Utilities
	100	PTI-PRO	Process Description	1-Sep-15		On-going	Target date: 9-Oct-15
	400	PTI-ECS	Power Supply Plant Requirements	1-Sep-15			Refer to remarks on Process Description
	100	PTI-PRO	PFD, Line 1 - S	14-Sep-15		On-going	
	100	PTI-MEC	Equipment List	15-Sep-15		On-going	Initial draft done, for alignment with Process
						On-going	For Data sheets issuance
						On-going	Refer to remarks on Process Description
					On-going	For internal review	
							PTI will proceed after finalizing the Process Improvement for Approval

Project Reporting – Monthly Update

JNJ Oleochemicals Inc.		Weekly Coordination Meeting		Process Technologies Inc.	
Date		23-July-2015		Project Code: JN113 JN113-WCM-001	
Commenced	1400H	Venue	Adjourned	JNJ Oleochem Plant 1630H	
ATTENDEES					
Process Technologies Inc.		JNJ Oleochemicals Inc.			
1. K. Caudal – Project Manager	5. C. Layson – Process Engr.	1. J. Jao – Plant Manager			
2. A. Carandang – Cons. Mgr.		2. E. Aldovino – Engineering			
3. I. Bajaro – Mech. Engr.		3. M. Tan – Production			
4. A. Diamante – Process Engr.		4. G. Melliza – R&D			
Items	Action Required	Person-In-Charge	Deadline	Remarks	
MeOH Start Up Report					
A. Choked flow wastewater outlet line	Install/re-route piping direct to wastewater receiver	A. Carandang	25-Jul	All work will commence after shutdown, 24-Jul @ 3pm To be finished before start up, 27-Jul	
	To check downwater for any blockage				
B. MeOH Start Up Manual		A. Diamante	29-Jul		
FAME Preparation for Start Up					
				B. de Torres/E. Aldovino to update and monitor checklist every Monday	
PTI Representatives:					

Project Reporting – Weekly Update

REQUEST FOR INFORMATION / APPROVAL FORM	 PROCESS TECHNOLOGIES, INC.
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I. RFI/A DETAILS

I.1. RFI/A Ctrl No.	A28P09-INF-100-B0165				
I.2. Subject	DIL Water Consumption at Production Facility 2 - Soapery	Request for Approval			
		Request for Information			
I.3 Area	Production Facility 2 – Soapery				
I.4. Action	Rona Y. Arrabis	IPI PF2-Soapery	Approved	Answered	Closed
	Neil Arvie Andal	PTI	Approved	Answered	Closed
I.5. Request Summary	Request for Information for DIL Water Consumption at Production Facility 2 - Soapery				

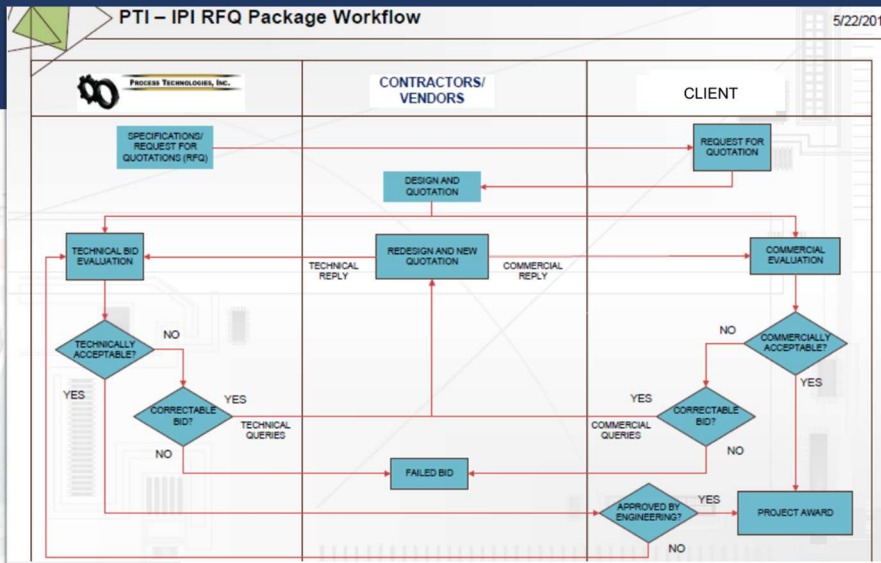
REQUEST INFORMATION		REPLY INFORMATION	
I.6. Request by	Neil Arvie Andal	I.10. Reply by	Rona Y. Arrabis
I.7. Company	PTI	I.11. Company	IPI – PF2-Soapery
I.8. Request Date	April 12, 2024	I.12. Actual Reply	
I.9. Response by	April 17, 2024		

II. REQUEST FORM

REQUEST DETAIL/S:

Since DIL end-user points at Production Facility 2 – Soapery has increased from 3 to 8 sup, we are requesting for the average DIL consumption in order to design the DIL generation and distribution system. To be more precise, kindly align the data pattern on DIH which is in

Request for Information (RFI) Procurement Flowchart



PROJECT CONTROL CHANGE	 PROCESS TECHNOLOGIES, INC.
Project Code: B-B27P07 B27P07-CO-PIP-0022-003 R1	

Project Name	APC Palm Oil Processing Facility		
Project Number	B-B27P07	Client	Agri Pacific Corporation

CHANGE REQUEST		
Requestor	Date of Request	Change Request Doc No.
Karl C. Caudal	18-Nov-2016	B27P07-CO-PIP-0022-003 R1
Items to be Changed		Reference (s)
Labor, Consumable and Material cost for the installation of insulation and cladding for the Vapour Scrubber (SCR702).		Salvei Quotation
Description of Change (reasons for change, benefits, date required)		
Reason for Change-/Benefit:		
Oitek instructed to install insulation on the vapour scrubber. Since the insulation is not indicated on the PID, it was not included on the initial quotation presented; therefore, it will be a change order item.		
Estimated Cost and time to implement (Quotation attached? YES NO)		
Estimated Cost: \$10,000.00 See attached quotation for breakdown of price.		
<ol style="list-style-type: none"> Rockwool, Aluminum Sheet Metal, Flatbar Consumables = Support, Welding Rod, Equipment 		
Priority/Constraints (Impact on other deliverables, implications of not proceeding, risks)		
Cost and schedule implication.		

CHANGE EVALUATION					
Discipline Lead	Accepted	Rejected	Deferred	Signed	Date
Karl Caudal					18-Nov-16
Comments: Changes approved. Cost and Schedule Impact Acceptable.					

Project Control Change Form Construction Safety Manual

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Tropicana Foods ,Inc. 30 TPD Physical Refining Plant Construction (Laguna, Philippines)



SITE CONSTRUCTION PLAN

Development of Site Construction Plan

The construction support team shall begin the formulation of construction programs necessary at site for a safe and effective execution of the project.

Listed below are the areas of concern:

01

Site Construction Plan

03

Site Quality Management

02

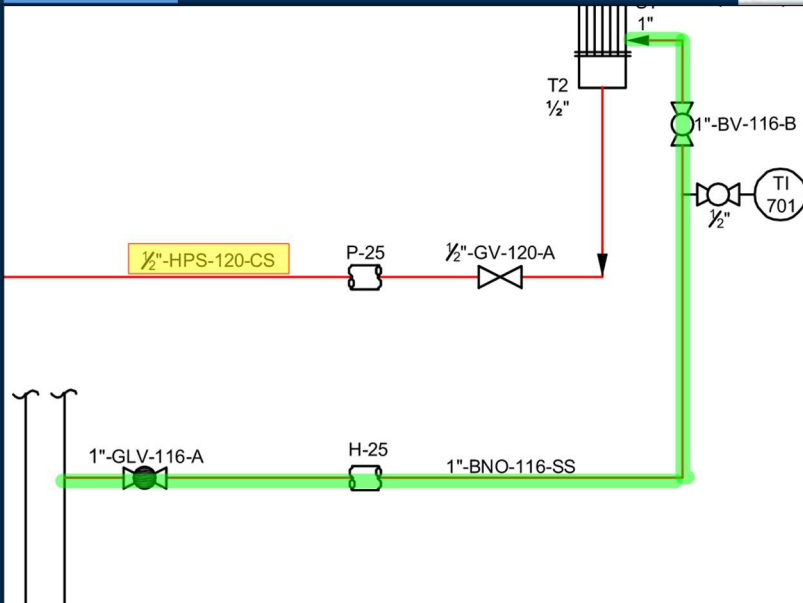
Site Construction Health, Safety and Environmental

04

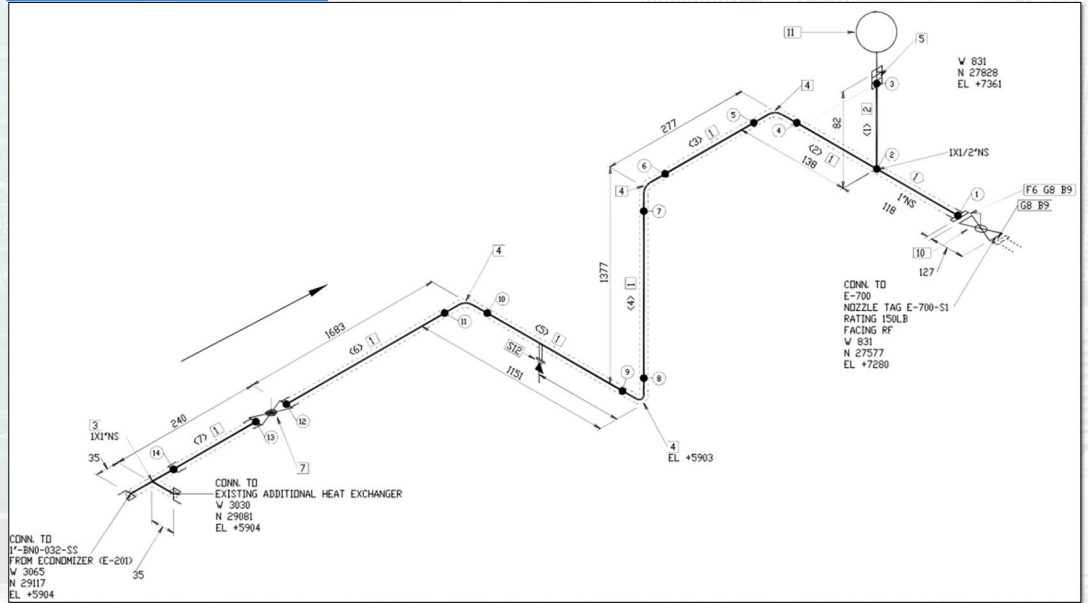
Rigging Plan

Piping Fabrication and Planning

From P&ID



To Isometric Drawing



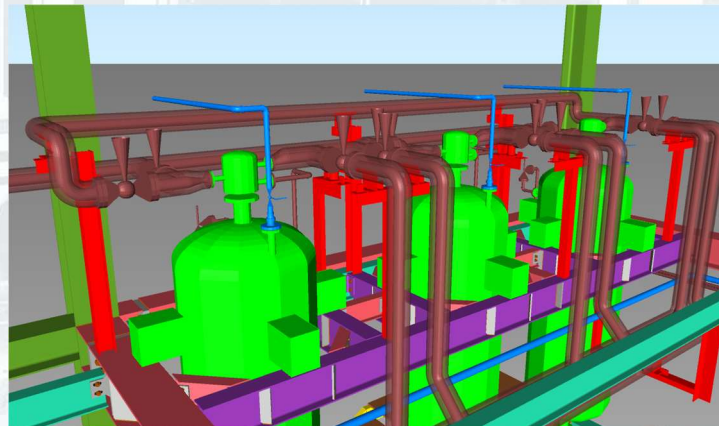
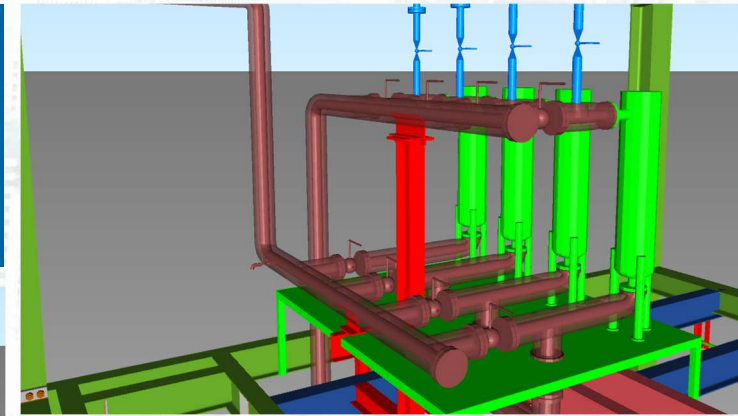
To Actual Pipe Fabrication



Activity	Benefit
Bill of Material download	<ol style="list-style-type: none"> 1. Purchase of material in bulk. 2. Exact quantities are purchased, 10% surplus/overage. 3. Delivery and purchase can be done in stages.
Installation and Fabrication	<ol style="list-style-type: none"> 1. Fabrication can be done offsite. 2. 50% faster during fabrication and installation. 3. Material monitoring during installation and fabrication.

PIPING INSTALLATION

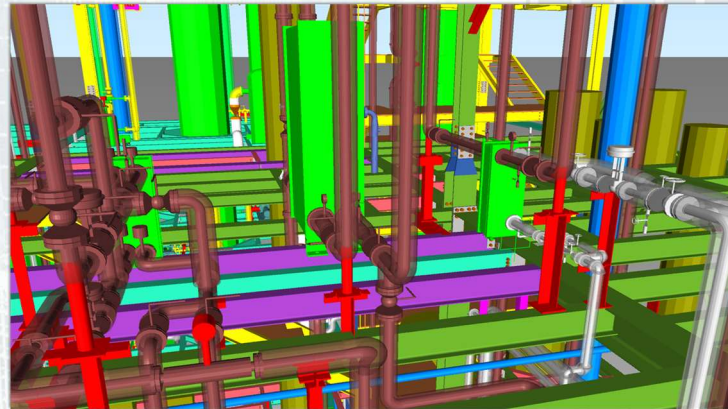
ION RESIN SECTION



HEAT EXCHANGER



FILTRATION SECTION



06-Completed and Current Projects



Oil Extraction



Oil Refining and Fat Modification

06-Completed and Current Projects

Fatty Acids and Glycerin



Fatty Acid Esters



06-Completed and Current Projects



**Saponification and
Amination/ Amidation**



Utilities and Facilities

Some of Key Clients

Delivering Success

Clients value our expertise, dependability and our capability to execute projects around the world.



TRACK RECORD
LOCAL CLIENTS



List of Projects Undertaken and Completed



AXELUM REFINERY PLANT EXPANSION

Client: Axelum Resources Corp.
Location: Medina, Misamis Oriental, Philippines
Capacity: --
Year: October 2025
Scope: Axelum Refinery Plant Expansion involves the design and capacity upgrade of Axelum's refinery facility, increasing refining capacity from 15 TPD to 25 TPD. The project covers process design and engineering for the expanded system, including evaluation of new equipment, integration with existing facilities, and coordination of design deliverables to support the plant expansion.

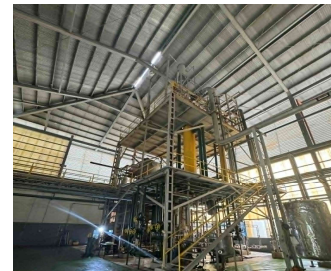
Link: <https://axelum.ph/>



SOLID CEMENT CONVERSION OF BFO TANK TO SILO PROJECT

Client: Conreat Holdings Philippines, Inc.
Location: Antipolo, Rizal, Philippines
Capacity: ---
Year: September 2025
Scope: This project involves the conversion of the existing 4x Bunker Fuel Oil (BFO) storage tank into a solid cement silo facility. The scope covers process and mechanical design for the tank modification, assessment of structural integrity and suitability for solid material storage, development of material handling and discharge systems, and integration of the converted silo with existing plant operations. Engineering support includes preparation of design drawings, equipment evaluation, and coordination to ensure safe and efficient conversion.

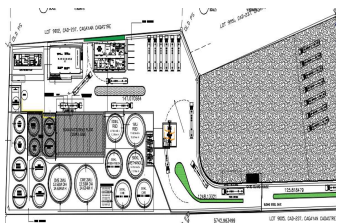
Link: <https://www.chp.com.ph/>



GJ HOLDINGS SULFONATION AND BETAINE PLANT PROJECT

Client: GJ Holdings
Location: Silang, Cavite & Calaca, Batangas, Philippines
Capacity: ---
Year: May 2025
Scope: The GJ Holdings project covers the design and construction of chemical processing facilities, specifically a sulfonation plant and a betaine production plant, located in Silang, Cavite and Calaca, Batangas. The scope includes process design development, preparation of PFDs and P&IDs, equipment sizing and selection, plant layout and 3D modeling, utilities and offsite integration, and coordination of civil, mechanical, electrical, and instrumentation works.

Link: <http://gjholdings.com/>



150 TPD BIODIESEL AND FRACTIONATION PLANT (FEED)
 Client: Bioenergy 8
 Location: El Salvador City, Misamis Oriental
 Capacity: 150 TPD
 Year: 2024
 Scope: Process Design and Equipment Engineering of: *150 TPD Biodiesel Plant*. Raw material: refined coconut oil; Products: CME Biodiesel and crude glycerin & *150 TPD Fractionation Plant*. Raw material: CME; Products: C8-10 methyl ester and CME biodiesel (C12-18)

Link: ---



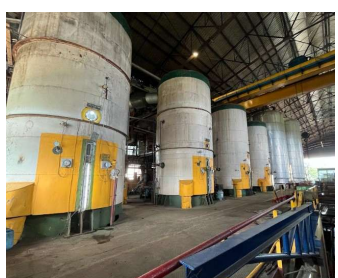
COCONUT WATER JUICE PLANT AUDIT AND TRANSFER PLAN
 Client: Nurture Brands Ltd.
 Location: Batangas, Philippines
 Capacity: ---
 Year: 2023
 Scope: Process and Equipment audit of a Coconut Water Juice Plant. The plant had numerous problems and had to be re-engineered. Subsequently transferred to another location.

Link: ---



400 TPD SUGAR CANE MILL TECHNICAL AUDIT
 Client: HDJ Bayawan AgriOventure Corp.
 Location: Negros Oriental, Philippines
 Capacity: 400 TPD
 Year: 2023
 Scope: Technical audit of the existing 400 TPD Sugar Cane Mill Plant and engineered improvements. The existing sugar mill is very old and needed to be rehabilitated to increase the capacity, increase the yield recovery, and improve the quality of the raw sugar.

Link: ---



100 TPD LOW MOSH MOAH
 Client: Dumaguete Coconut Oil Mills, Inc.
 Location: Negros Oriental, Philippines
 Capacity: 100 TPD
 Year: 2023
 Scope: Process Design and Equipment Engineering of a 100 TPD Low MOSH MOAH coconut oil mill. A separate oil mill was needed to exclusively produce low MOSH MOAH coconut oil which is required in Europe to sell the coconut oil for food applications.

Link: ---



400 TPD COCONUT OIL MILL AUDIT AND LOW MOSH MOA
 Client: Dumaguete Coconut Oil Mills, Inc.
 Location: Negros Oriental, Philippines
 Capacity: 400 TPD
 Year: 2021
 Scope: Audit performance of the existing 400 TPD full press coconut oil mill plant and recommended improvements. Conducted training for operations and maintenance of the process equipment before turnover to the customer. Development of low MOSH MOAH coconut oil process.

Link: ---



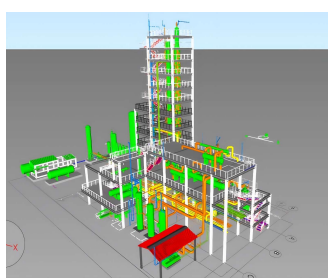
WASTE MATERIALS RECYCLING PLANT
 Client: Guun, Co., Ltd.
 Location: Cebu, Philippines
 Capacity: ---
 Year: 2021
 Scope: Engineering of a recycling plant for waste materials. The recycling plant was upgraded and modified to increase the capacity and efficiency of the process.

Link: https://www.iesc.or.jp/Portals/0/center/training/11thasia3r/11thasia3r_e3_guun.pdf



200 TPD GLUCOSE PLANT
 Client: CCPC RMC Bulacan
 Location: San Rafael, Bulacan, Philippines
 Year: 200 TPD
 Completed: 2021
 Scope: Construction of a 200 TPD Glucose plant. The end products are glucose and maltodextrin of various grades. The glucose products are sold to the local food Industries such as Nestle'.

Link: ---



165 TPD FATTY ACID AND FATTY ALCOHOL PLANTS
 Client: Magnakron
 Location: Camarines Norte, Philippines
 Capacity: 165 TPD
 Year: 2019
 Scope: Engineering of a 165 TPD Fatty Acid and Fatty Alcohol plants. The existing plant was first generation fatty alcohol process of its kind. The plant was re-engineered in order to increase the efficiency, product yields, and product quality.

Link: <https://magnakron.com>





DESIGN AND CONSTRUCTION OF MULTIPLE INDUSTRIAL PLANTS

Client: All Natural Coco Products, Inc.
 Location: Negros Oriental, Philippines
 Capacity: 20 – 200 TPD
 Year: 2019
 Scope: Process Design, Equipment Engineering and construction of:
 1.) A 150 TPD Fatty Acid plant. Products: C6, C8-10, C8, C10, C12, C14, C16, and C18 fatty acids.
 2.) 20 TPD Glycerin refining plant. Product: USP grade refined glycerin.
 3.) 20 TPD medium chain triglycerides (MCT) plant. Raw material: C8-10 or pure C8 fatty acid and USP glycerin. Product: MCT which is exclusively exported.
 4.) 200 TPD Coconut oil physical refinery. Raw material is crude coconut oil; End product: refined coconut oil- the raw material for the fatty acid plant.
 5.) 3TPH Prilling plant. The prilling plant is used to make prills (fine solid) particles of C12, C14, and C16. The prills are bagged and shipped out in container vans. All products are exported.

Link: <https://allnatcoco.com>



CONSTRUCTION OF MULTIPLE INDUSTRIAL PLANTS

Client: Agri Pacific Corp.
 Location: Tanza, Cavite, Philippines
 Capacity: ---
 Year: 2017
 Scope: Construction of:
 1.) 80 TPD refinery plant.
 2.) 50 TPD fractionation plant.
 3.) 24 TPD texturizing plant.
 The fractionation plant products are refined palm olein and palm stearin. The olein is sold as cooking oil, and the palm stearin is used to make shortening and margarine in the texturizing plant.

Link: <https://www.rebisco.com.ph>



300 TPD BIODIESEL PLANT

Client: JNJ Oleochemicals, Inc.
 Location: Lucena City, Philippines
 Capacity: 300 TPD
 Year: 2017
 Scope: Process Design, Equipment Engineering, and Construction of a 300 TPD Continuous Biodiesel Plant. JNJ has an existing 150 TPD biodiesel batch type plant which is inefficient and high production cost. A new continuous biodiesel plant was built using cavitation reactors. *This is the only cavitation reactor biodiesel plant in the Philippines.*

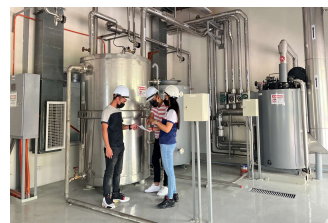
Link: <https://www.injoil.com/>



DESIGN OF MULTIPLE INDUSTRIAL PLANTS

Client: Tongsan Industrial Development Corp.
 Location: Candelaria, Quezon, Philippines
 Capacity: 60 TPD
 Completed: 2017
 Scope: Process Design and Equipment Engineering of:
 1.) 60 TPD Esterification plant.
 2.) 60 TPD Transesterification plant.
 3.) 60 TPD Fractionation and distillation plants.
 Raw materials: oil residues and fatty acid distillates.
 Products: C8-10 methyl ester, C12-14 methyl ester, and C16-18 methyl ester. The products are for export.
 4.) Engineering of a 10 TPD virgin coconut oil (VCO) plant. Raw material: whole coconuts. The VCO product is exported.

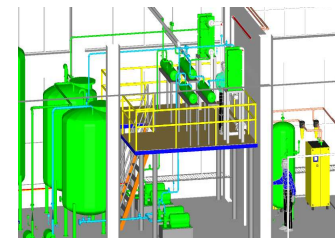
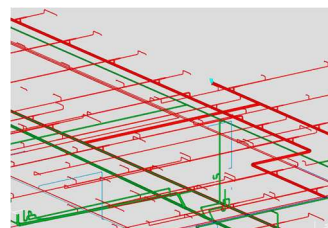
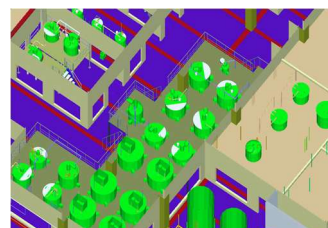
Link: ---



DESIGN OF PHARMACEUTICAL PLANT

Client: International Pharmaceuticals Inc.
 Location: Cebu City, Philippines
 Capacity: ---
 Completed: 2017
 Scope: The old manufacturing plant site of IPI in Mabolo Cebu was repurposed in a joint venture with Rockwell to build a mixed use property development. A new manufacturing plant in Tingub Cebu was built. Plant Design and Equipment Engineering of the following:
 1.) Soaps and detergents plants, various capacities and types. (Bioderm, etc)
 2.) Pharmaceutical plant for various products for internal use.
 3.) Pharmaceutical plant for Liniments and ointments such as Efficascent oil, Omega pin killer, Aceite de manzanilla, etc.
 4.) Deionized water system for ethanol products (Casino) and Soapery Plant
 5.) Design of Utilities for IPI Research and Development Laboratories
 6.) As-Built Drawings for Pharma and Soapery Plant
 7.) Facilitated Client Trainings

Link: <https://ipi.ph/>





100 TPD INTERGRATED COCONUT OIL PLANT

Client: Wilmar Edible Oils Philippines
 Location: ---
 Capacity: 100 TPD
 Completed: 2015
 Scope: Technical design and commercial evaluation of a 100 TPD integrated coconut oil project. Raw materials: whole coconuts; Products: virgin coconut oil (VCO), desiccated coconut (DCN), coconut cream, coconut water, coconut paring oil.

Link: ---



DESIGN OF MULTIPLE INDUSTRIAL PLANTS

Client: JNJ Oleochemicals, Inc.
 Location: Lucena City, Philippines
 Capacity: ---
 Completed: 2014
 Scope: Process Design, Equipment Engineering and construction of
 1). 3 TPH Methanol distillation plant Raw material: wet methanol recovered from the existing biodiesel plant; End product: dry pure methanol to be recycled back into the biodiesel plant process.
 2). 150 TPD Fatty acid methyl ester fractionation plant. Raw material: coconut methyl ester (CME) and biodiesel C8-18. Products: C8-10 methyl ester and C12-18 methyl ester. The C8-10 methyl ester is exported at a premium price over biodiesel. The C12-18 methyl ester is sold as regular biodiesel.

Link: <https://www.jnjoil.com/>



200 TPD PALM OIL FRACTIONATION PLANT

Client: Tongsan Industrial Development Corp.
 Location: Candelaria, Quezon, Philippines
 Capacity: 200 TPD
 Completed: 2013
 Scope: Engineering of a 200 TPD Palm oil fractionation plant. The products are palm olein (liquid portions) and palm stearin (solid portion). The palm olein is sold locally as cooking oil and the stearin is used to make shortening and margarine.

Link: ---



OLEOCHEMICAL PLANT TECHNICAL AUDIT

Client: PGE/Cocochem
 Location: Bauan, Batangas, Philippines
 Capacity: ---
 Completed: 2013
 Scope: Technical Audit of an oleochemical plant. The plant is an existing fatty acid plant, glycerin refining and fatty alcohol plant. The design of the plant is first generation and has to be upgraded to increase the purities, lower the production costs and improve the product quality.

Link: ---



DESIGN OF PERSONAL SKINCARE PLANT

Client: Dumaguete SUY
 Location: Negros Oriental, Philippines
 Capacity: ---
 Year: 2013
 Scope: Designed and engineered a personal skincare products plant, creating a line that met the exacting standards of Godiva, even for initiatives with a specific market lifecycle.

Link: ---



3 MW COAL FIRED CO-GENERATION POWER PLANT

Client: Philippine International Development Inc.
 Location: Zamboanga City, Philippines
 Capacity: 3 MW
 Year: 2013
 Scope: Process Design and Equipment Engineering of a 3 MW coal fired co-generation power plant. The power plant serves the oil mill and refinery plants. The steam requirements of the oil mill and refinery also comes from the power plant steam turbine (extraction).

Link: ---



20 TPD PHYSICAL REFINERY PLANT

Client: Fiesta Brands, Inc.
 Location: Medina, Misamis Oriental, Philippines
 Year: 20 TPD
 Completed: 2012
 Scope: Process Design, Equipment Engineering and Construction of a 20 TPD physical refinery plant. The raw material is paring coconut oil from the desiccated coconut oil manufacturing plant. The crude paring oil is then refined into cooking oil. The cooking oil is branded (Romantika) and packed for local sale.

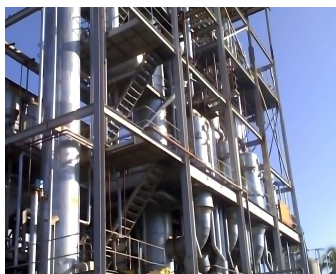
Link: <https://axelum.ph/>



20 TPD RE-ESTERIFICATION PLANT

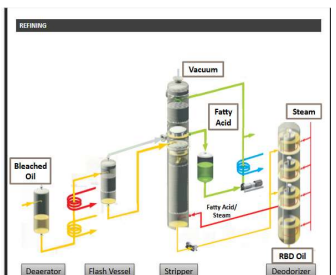
Client: Tongsan Industrial Development Corp.
 Location: Candelaria, Quezon, Philippines
 Capacity: 20 TPD
 Year: 2012
 Scope: Process Design and Equipment Engineering of a 20 TPD re-esterification plant. The raw material is coconut fatty acid distillate and the product is blended back to the crude coconut oil.

Link: ---



200 SOLVENT EXTRACTION PLANT

Client: Philippine International Development Inc.
 Location: Zamboanga City, Philippines
 Capacity: ---
 Year: 2012
 Scope: Engineering of a 200 solvent extraction plant. The process extracts more residual oil from the pressed copra cake. The product is crude coconut oil and pellet mill for export.
 Link: ---



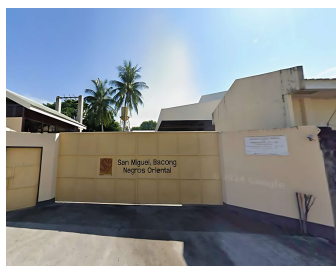
DUCOM PLANT CAPACITY UPGRADE

Client: Dumaguete Coconut Oil Mills, Inc.
 Location: Negros Oriental, Philippines
 Capacity: Upgrade from 150 TPD to 400 TPD
 Year: 2010
 Scope: Increase plant capacity from 150 TPD to 350 TPD through debottlenecking and installation of additional equipment. The upgrade improves process efficiency to reduce production cost, increase RBD oil yield, and optimize energy and utility consumption. It also ensures product quality is maintained or improved in compliance with existing standards.
 Link: ---



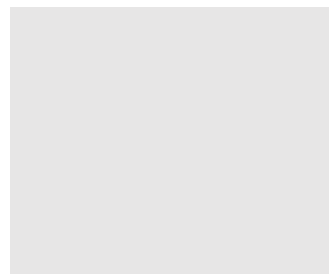
10 TPD PYROLYSIS PLANT

Client: Tongsan Industrial Development Corp.
 Location: Candelaria, Quezon, Philippines
 Capacity: 10 TPD
 Year: 2009
 Scope: Engineering of a 10 TPD pyrolysis plant for used tires. The products are oil used as burning fuel for the boiler, and scrap steel wires.
 Link: ---



DESIGN OF MULTIPLE INDUSTRIAL PLANT

Client: Dumaguete SUY
 Location: Negros Oriental, Philippines
 Capacity: ---
 Year: 2007
 Scope: Various project category:
 1). Design and Engineering of a 5 TPD Continuous Soap Finishing Plant. The raw materials are various soapchips. The product were laundry soap bars for the localmarket.
 2). Process Design and Equipment Engineering, and Product Formulation of a 1.5 TPH (tons per hour) texturizing plant. The raw materials are coconut oil, palm olein, and hydrogenated palm stearin (HPS). The products are shortening and margarine sold to the local bakeries. *The brand is Sunny Suy.*
 Link: ---



30 TPD COMBINED ESTERIFICATION AND TRANSESTERIFICATION PLANT

Client: Lipitech, Inc.
 Location: Carmona, Cavite, Philippines
 Capacity: 30 TPD
 Year: 2007
 Scope: Process Design, Equipment Engineering and Construction of a 30 TPD combined esterification and transesterification plant. The raw materials are fatty acid distillates and acid oils. The product are various types of methyl ester. The plant was a joint venture with a Malaysian company and the products were exported to Malaysia and Indonesia.
 Link: ---



1.5 TPH TEXTURING PLANT

Client: Samar Coco
 Location: Samar, Philippines
 Capacity: 1.5 TPH
 Year: 2005
 Scope: Process Design, Equipment Engineering and Construction of a 1.5 TPH (tons per hour) texturizing plant. The products were shortening and margarine sold to the local bakeries.
 Link: ---



DESIGN OF VARIOUS PROJECTS

Client: Philippine International Development Inc.
 Location: Zamboanga City, Philippines
 Capacity: 125 TPD, 50 TPD and 12 TPB
 Year: 2003 - 2005
 Scope: **2003**, Process Design and Equipment Engineering of a 125 TPD Oleochemical plant. The products produced by this plant were C8-10 fatty acids, C12-14 fatty acids, C18-18 fatty acids, and USP grade refined glycerin. The fatty acid products were made into soap chips/noodles.
2004, Process Design, Equipment Engineering and Construction of a 50 TPD semi-continuous saponification plant. The product is soap chips/noodles that were tailor made to customers specifications.
2005, Process Design and Equipment Engineering of a 12 TPB hydrogenation plant. The raw material is C8-10 fatty acid and the process done to make the fatty acid heat stable.
 Link: ---



DESIGN AND CONSTRUCTION OF VARIOUS PLANTS

Client: International Pharmaceuticals Inc.
 Location: Cebu City, Philippines
 Capacity: 10 TPD, 50-100 TPD, 20 TPD, 5 TPD and 150 TPD
 Completed: 2003-2005
 Scope: **2003**, Process Design and Equipment Engineering of a 10 TPD Virgin Coconut oil extraction plant. *This was the first commercial production of virgin coconut oil in the Philippines.*

2004, Process Design, Equipment Engineering and Construction of a 50 - 100 TPD Oleochemical plant. The raw materials are palm oil and coconut oils. The products were C8-10 fatty acids, C12-18 fatty acids, and individual cuts C12, C14, C16, and C18 fatty acids, and USP grade refined glycerin. The products were exported.

2004, Process Design, Equipment Engineering of a 20 TPD continuous fatty acid saponification plant. The raw materials were fatty acids. The product is soap chips/noodles that was used for making Bioderm soap.

2005, Process Design and Equipment Engineering of:
 1). 150 TPD oil mill. The oil was used to make their Sun Valley brand cooking oil.
 2). 5 TPD continuous esterification process. The raw materials were salicylic acid and methanol. The product is methyl salicylate is a raw material that is used to make Efficascent oil products.

Link: <https://ipi.ph/>

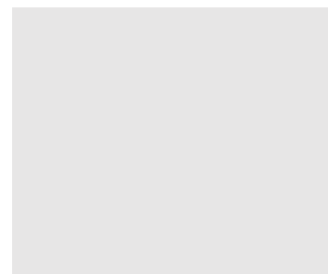
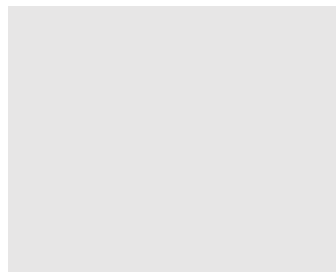


Marine Tank Terminal
(Cebu, Philippines)

150 TPD CONTINUOUS PHYSICAL REFINERY

Client: New Leyte Edible Oil Mill
 Location: Tanauan Leyte, Philippines
 Capacity: 150 TPD
 Year: 2002
 Scope: Process Design, Equipment Engineering and Construction of a 150 TPD continuous physical refinery. The design of this process was the only one of its kind and tailor made to the specifications of Fuji Oil. The refined coconut oil product was exclusively exported back to Japan..

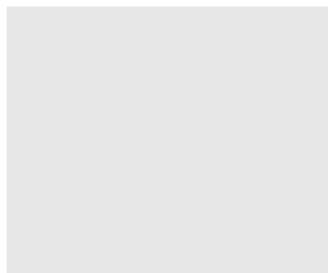
Link: <https://www.fujioil.co.jp/en/index.html>



1.5 TPH TEXTURING PLANT

Client: Unistar
 Location: Quezon City, Philippines
 Capacity: 1.5 TPH
 Year: 2000
 Scope: Equipment Engineering and Construction of a 1.5 TPH (tons per hour) texturizing plant. The raw materials are refined coconut, palm olein, and hydrogenated pam stearin. The products were shortening and margarines sold to the bakeries.

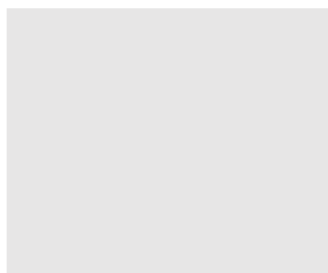
Link: ---



150 TPD CONTINUOUS LOW ACID PLANT

Client: New Leyte Edible Oil Mill
 Location: Tanauan, Leyte, Philippines
 Capacity: 150 TPD
 Year: 1998
 Scope: Process Design, Equipment Engineering and Construction of a 150 TPD continuous low acid oil plant. New Leyte Edible Oil Mill is owned by Fuji Oil of Japan. Crude coconut oil is processed by neutralization of the free fatty acid and subsequent bleaching. The low acid oil product was exported back to Japan..

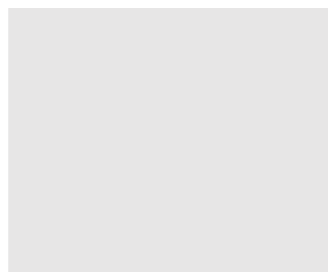
Link: <https://www.fujioil.co.jp/en/index.html>



DESIGN OF VARIOUS PROJECTS

Client: Specialty Oils, Inc.
 Location: Carmona, Cavite, Philippines
 Capacity: 20 TPD, 30 TPD and 50 TPD
 Year: 1996
 Scope: Process Design, Equipment Engineering and Construction of:
 1.) 50 TPD interesterification plant to produce fats for margarines (DariCreme). An enzymatic interesterification process was also developed for DariCreme.
 2.) 20 TPB hydrogenation plant. The products produced were fully hydrogenated coconut oil for export (Goodman Fielder) and partially hydrogenated soybean oil for cooking donuts. And frying fats for commercial applications.
 3). 30 TPD texturing plant. The plant was built to toll manufacture flavored Star and DariCreme products for then PDPC (now Magnolia).

Link: ---





TECHNICAL ASSESSMENT OF OIL PROCESSING EQUIPMENT

Client: Proctor and Gamble Philippines
 Location: Philippines
 Capacity: ---
 Completed: 1995
 Scope: Technical assessment, Dismantling and refurbishing of the oil processing equipment for making Star margarine and DariCreme. This was then transferred to PDPC (now Magnolia/SMC).

Link: <https://ph.pg.com/>

DESIGN AND CONSULTATION OF VARIOUS PROJECT

Client: Philippine Dairy Products Corp.
 Location: Gen. Trias, Cavite, Philippines
 Capacity: 50 TPD
 Completed: 1995
 Scope: Various category of projects:
 1.) Consultancy for the construction of the butter and margarine products plant.
 2.) Process Design, Equipment Engineering and Construction of a 50 TPD oil processing plant. The oil processing plant was designed to supply the fat products required to make DariCreme.
 3.) Development of a new reaction process for the fat phase of DariCreme.

Link: [https://en.wikipedia.org/wiki/Magnolia_\(Philippine_company\)](https://en.wikipedia.org/wiki/Magnolia_(Philippine_company))



10 TPB OIL EXTRACTION PLANT

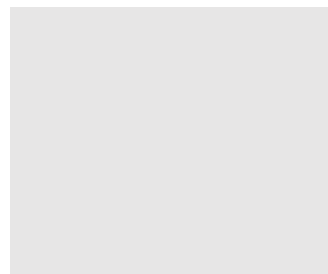
Client: Green Eco
 Location: San Pablo City, Philippines
 Capacity: 10 TPB
 Year: 1994
 Scope: Process Design, Equipment Engineering and Construction of a 10 TPB oil extraction plant. The raw material was spent clay which is the waste of the oil refineries. The oil recovered was sold to the animal feed manufacturers..

Link: ---

100 TPD FULLY CONTINUOUS CHEMICAL TYPE REFINERY

Client: San Lorenzo Oil Mill
 Location: Lucena City, Philippines
 Capacity: 100 TPD
 Year: 1994
 Scope: Process Design, Equipment Engineering and Construction of a 100 TPD (tons per day) fully continuous chemical type refinery. The refined coconut oil product was sold as cooking oil as well as raw material to produce biodiesel.

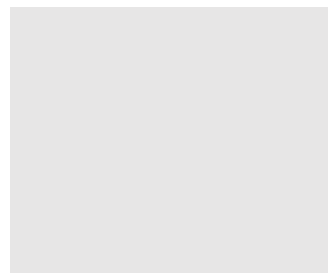
Link: ---



10 TPD GLYCERINE REFINING PLANT

Client: Richco
 Location: Carmona Cavite, Philippines
 Capacity: 10 TPD
 Year: 1994
 Scope: Process Design, Equipment Engineering and Construction of a 10 TPD glycerine refining plant. Raw material: crude glycerin from various sources but largely low-grade raw material. So, the process was non-traditional, and by distillation then by ion exchange resins processing to produce USP (US Pharmacological) grade glycerin. The products were sold to industrial users.

Link: ---



DESIGN AND CONSTRUCTION OF VARIOUS PROJECT

Client: Oleo Manufacturing Corp.
 Location: Carmona, Cavite, Philippines
 Capacity: 30 TPD and 150 TPD
 Year: 1993
 Scope: Process Design, Equipment Engineering and Construction of:
 1.) 150 TPD physical type refinery. Raw materials: palm-based oils. Main product: palm olein and this was sold to the industrial users including Nestle and SMC.
 2.) 30 TPD dry type fractionation plant. The crude palm oil was procured from mindanao, refined then fractionated into palm olein (liquid portion) and palm stearin (solid portion). The olein was sold to Nutri Asia for their Golden Fiesta brand cooking oil while the stearin was sold to shortening and margarine makers. A proprietary fat blend was developed specifically for Nestle' omega 3 milk.

Link: ---



200 TPD CONTINUOUS CHEMICAL TYPE REFINERY

Client: Malabon Soap and Oil Co.
 Location: Malabon City, Philippines
 Capacity: 200 TPD
 Year: 1993
 Scope: Process Design, Equipment Engineering and Construction of a 200 TPD continuous chemical type refinery. The raw material is crude coconut oil and the refined coconut oil product is sold under their brand name Spring.

Link: <https://www.facebook.com/@springcookingoilofficial/>

30 TPD DRY TYPE FRACTIONATION PLANT FOR PALM OIL

Client: Mina Oil Mill
 Location: Cabuyao, Laguna, Philippines
 Capacity: 30 TPD
 Year: 1992
 Scope: Process Design, Equipment Engineering and Construction of a 30 TPD dry type fractionation plant for palm oil. The crude palm oil was procured from Mindanao, refined then fractionated into palm olein (liquid portion) and palm stearin (solid portion). The olein was sold to industrial companies while the stearin was sold to shortening and margarine makers.

Link: ---



50 TPD CONTINUOUS CHEMICAL TYPE REFINERY

Client: International Pharmaceuticals Inc.
 Location: Cebu City, Philippines
 Capacity: 50 TPD
 Year: 1991
 Scope: Process Design, Equipment Engineering and Construction of a 50 TPD continuous chemical type refinery. IPI needed to refine their crude coconut oil in order to produce the right quality oil for making their soap (Bioderm). So, we built a suitable refinery. The quality was food grade so they started selling the refined oil for consumer cooking, the cooking oil brand is Sun Valley.

Link: <https://ipi.ph/>

DESIGN AND CONSTRUCTION OF VARIOUS PROJECTS

Client: JNJ Oil
 Location: Lucena City, Philippines
 Capacity: 1.5 TPH and 150 TPD
 Year: 1992
 Scope: Process Design, Equipment Engineering and Construction of:
 1). 150 TPD fully continuous chemical type refinery. JNJ had to expand their capacity as their market had grown. The oils processed are palm olein and coconut oil.
 2). 1.5 TPH (tons per hour) texturizing plant to produce shortening and margarine. The product brand is Miyami (<https://jnjoil.com/product/MQ==>)

Link: <https://www.jnjoil.com/>



FRUIT JUICE MANUFACTURING PLANT

Client: W.L Foods Corp.
 Location: Caloocan City, Philippines
 Capacity: ---
 Year: 1991
 Scope: Process Design and Equipment Engineering of a Fruit juice manufacturing plant. W.L. is a big snack foods company and was looking to expand their product line so we built the drinks products. The brand is Drinky.

Link: <https://www.tongsan.com.ph/>
<https://www.wlfoods.com.ph/products/>



50 TPD FULLY CONTINUOUS CHEMICAL TYPE REFINERY

Client: Mina Oil Mill
 Location: Cabuyao, Laguna, Philippines
 Capacity: 50 TPD
 Year: 1992
 Scope: Process Design, Equipment Engineering and Construction of a 50 TPD (tons per day) fully continuous chemical type refinery. The plant can process various types of oils including coconut oil, palm oleic and corn oil. The refined oil products were sold to the industrial food and beverage companies.

Link: ---



DESIGN AND CONSTRUCTION OF VARIOUS PROJECT

Client: Philippine International Development Co.
 Location: Zamboanga City, Philippines
 Capacity: 50 TPD and 200 TPD
 Year: 1990
 Scope: Process Design, Equipment Engineering and Construction of:
 1). 200 TPD continuous physical refinery. *This was the first fully continuous physical type refinery using structured packings in the Philippines.* This was also the first refinery with counter current bleaching in the world. This process was later adopted by other international engineering companies. Raw material: crude coconut oil; Refined products: mostly exported commercially sold as cooking oil. The cooking oil brand is Washington.
 2). 50 TPD continuous neutral fat saponification plant. The plant manufactured soap chips sold to the soap bar manufacturers. *This was the first continuous neutral oil saponification plant in the Philippines.*

Link: <https://www.tridge.com/find-suppliers/basic/philippines-international-dev-inc>

50 TPD FULLY CONTINUOUS CHEMICAL TYPE REFINERY

Client: Worldwide Coco Products
 Location: Candelaria, Quezon, Philippines
 Capacity: 50 TPD
 Year: 1990
 Scope: Process Design, Equipment Engineering and Construction of a 50 TPD continuous chemical type refinery. The client had a coconut oil mill and had the refinery built in order to add value to their business. The owners eventually split and this business was taken over by one of the shareholders and became SC Global Coco Products Inc.

Link: <https://scglobal.com.ph/about-us/>



150 TPD CONTINUOUS CHEMICAL TYPE REFINERY

Client: JNJ Oil
 Location: Lucena, Quezon, Philippines
 Capacity: 150 TPD
 Year: 1989
 Scope: Process Design, Equipment Engineering and Construction of a 150 TPD fully continuous chemical type refinery. They previously had a batch type refinery that was very inefficient, so some equipment were repurposed and rebuilt the refinery to a new continuous process. Their cooking oil brand is Miyami.

Link: <https://www.injoil.com/>

150 TPD DEODORIZING PLANT

Client: Granexport Manufacturing Corp.
 Location: Iligan City, Philippines
 Capacity: 150 TPD
 Year: 1990
 Scope: Process Design and Equipment Engineering of a 150 TPD deodorizing plant. They had an old chemical refining plant but non-working deodorizer, so we designed and built a new system for them. The cooking oil brand they produce is Minola.

Link: <https://www.ciif.ph/index.php/consumer-industrial/>
<https://www.ciif.ph/>



100 TPD FULLY CONTINUOUS CHEMICAL TYPE REFINERY

Client: Licup Oil Mill
 Location: Candelaria, Quezon, Philippines
 Capacity: 100 TPD
 Year: 1988
 Scope: Process Design, Equipment Engineering and Construction of a 100 TPD fully continuous chemical type refinery. They previously had a refinery that did not work, so some equipment were repurposed and rebuilt the refinery plant. The product was sold as retail.

Link: <https://superstarcoconut.com/>

20 TPD FULLY CONTINUOUS CHEMICAL TYPE REFINERY

Client: Celebes Oil Mill
 Location: Butuan, Mindanao, Philippines
 Capacity: 20 TPD
 Year: 1990
 Scope: Process Design, Equipment Engineering and Construction of a 20 TPD fully continuous chemical type refinery. Celebes has a banana chips factory that uses coconut oil for cooking, but they could not find an oil with high enough quality that can pass the international standards, so the process was designed specifically for their required quality.

Link: <https://www.celebes.com/>



50 TPD FULLY CONTINUOUS CHEMICAL TYPE REFINERY

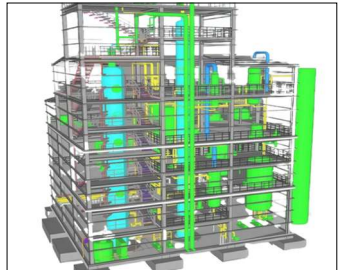
Client: Trans Asia
 Location: Caloocan City, Philippines
 Capacity: 50 TPD
 Year: 1987
 Scope: Process Design, Equipment Engineering and Construction of a 50 TPD fully continuous chemical type refinery. This was the first fully continuous dedicated chemical type refinery in the Philippines. Raw material is crude coconut oil and the product is sold to the industrial food companies.

Link: <https://www.transasiaphils.com/>



TRACK RECORD –
INTERNATIONAL
CLIENTS

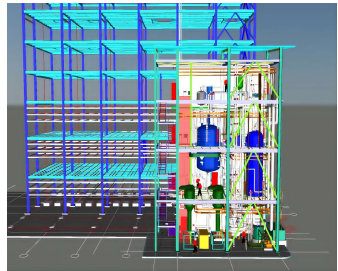
List of Projects Undertaken and Completed



DESIGN OF VARIOUS PROJECTS

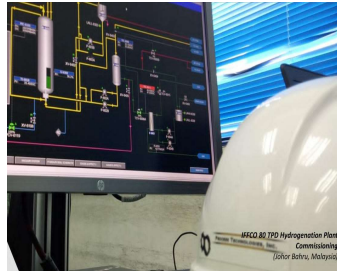
Client: Greenfuel Extremadura S.A
 Location: Badajoz, Spain
 Capacity: 150 TPD and 300 TPD
 Year: 2020
 Scope: Process Design and Equipment Engineering of:
 1.) a 150 TPD Continuous esterification plant.
 2.) Acid water treatment plant.
 3.) Methanol distillation plant.
 4.) 300 TPD UCO bleaching plant.
 5.) Spent bleaching earth oil recovery plant.
 6.) 300 TPD Ion exchange plant.
 The raw materials are oil residues, used oils, and various waste oils. The end products are esters and glycerides to be used as raw materials to make 2nd generation biofuels.

Link: <http://www.greenfuel.es/en/greenfuel-company-biodiesel-glycerin-extremadura.html>



DESIGN OF VARIOUS PROJECTS

Client: Sulzer/IFFCO
 Location: Singapore/ Malaysia
 Capacity: ---
 Year: 2015
 Scope: With Various Project Category:
 1.) Process Design and Equipment Engineering of a 70 TPD Fatty Acid Hydrogenation plant. The raw material is C8-10 fatty acid from palm kernel oil. Hydrogenation is done in order to make the fatty acid heat stable so it can be used to make medium chain triglycerides (MCT).
 2.) Process design development of:
 2.1). 20 TPB batch type IPM IPP plant. The end client was Sinarmas Oleochemical Indonesia
 2.2). Dodecanedioic acid (DDDA) plant for a US client. DDDA is used for many applications such as engineering plastic nylon, surfactants and polymers.
 2.3). 3 TPB hydrogenation plant for Lanolin.
 2.4). Ester quaternary ammonium (esterquat) plant. Esterquat is used as fabric softeners and rinse conditioner.
 2.5). fatty acid imidazoline plant. Fatty acid imidazoline are used as corrosion inhibitors, fabric softeners, dispersants, dispersants, etc.



Link: <https://www.sulzer.com/en>

300 TPD BIODIESEL PLANT

Client: Platinum Biofuels Sdn Bhd
 Location: Malaysia
 Capacity: 300 TPD
 Year: 2015
 Scope: Technical Audit of a 300 TPD Biodiesel plant. The raw material is palm oil and the product is biodiesel. The plant was not running properly and was not efficient. So the audit was done in order to identify the problems and come up with engineering solutions.

Link: ---

50 TPD BETAINE PLANT

Client: Grand Inizio (YPJ)
 Location: Johore Bahru Malaysia
 Capacity: 50 TPD
 Year: 2010
 Scope: Process Design and Equipment Engineering of a 50 TPD Betaine plant. The raw material is hydrogenated palm kernel oil or hydrogenated coconut oil. The process is two steps, first process is amidation and the second step is quaternization. The product is used to make shampoos and other personal care products.

Link: ---

30 TPD ESTERIFICATION AND TRANSESTERIFICATION PLANT

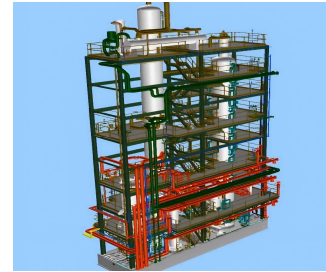
Client: Nexfuel
 Location: Surabaya, Indonesia
 Capacity: 30 TPD
 Year: 2009
 Scope: Process Design and Equipment Engineering of a 30 TPD esterification and transesterification plant. The raw material is waste palm oil. The product is biodiesel.

Link: ---

30 TPD JATHROPA OIL MILL

Client: Agritech Faso
 Location: Burkina Faso, Africa
 Capacity: 30 TPD
 Year: 2009
 Scope: Process Design, Equipment Engineering and Construction of a 30 TPD Jathropa Oil Mill. The Jatropha oil product is used to make biodiesel and sold within West Africa.

Link: <https://www.agritechgroup.com/overview/>



125 TPD CONTINUOUS ESTERIFICATION PLANT

Client: BIONOR/ CIE Automotive Group
 Location: Berrantevilla, Spain
 Capacity: 125 TPD
 Year: 2008
 Scope: Process Design and Equipment Engineering of a 125 TPD continuous esterification plant. Raw materials: various used recycled oils, residues, and refinery wastes. Products: methyl ester used to make biodiesel and other chemical products. This process was the first of its kind in the world. *This process was patented in the Philippines.*

Link: <https://www.alfalaval.com/globalassets/documents/media/stories/bionor.pdf>

600 TPD SOLVENT PLANT

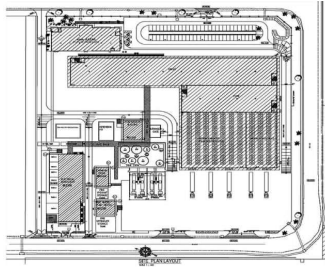
Client: Settlemyre Industries, Inc.
 Location: L'Aiglon in Benin, Africa
 Capacity: 600 TPD
 Year: 1999
 Scope: Process Engineering of a 600 TPD solvent plant. The raw materials are plant seeds. The plant produced seed oils such as soybean, canola, and sunflower. The product meal cake were sold as animal feeds.

Link: ---

100 TPD SOYBEAN OIL MILL

Client: Settlemyre Industries, Inc.
 Location: Quality Roastings, Wisconsin, USA
 Capacity: 100 TPD
 Year: 1999
 Scope: Equipment Engineering of a 100 TPD Soybean oil mill. The plant produced soybean oil and roasted soybean meal for animal feeds.

Link: ---





THANK YOU



Tel.: (63) 2369 9967



www.ptiph.net



228 Cityland 8, 98 Sen. Gil Puyat
Ave., Makati City, Philippines 1200



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