

COMPANY PROFILE



Zircono Company Limited

บริษัท เซอร์โคโน จำกัด

335/24 Prime State building, 3rd fl.
Soi Pukmith, Srinakarin Rd., Nongbon
Prawet District, Bangkok 10250 Thailand
Tel : +66 (0) 2366-0358-9
Fax : +66 (0) 2366-0360
E-mail : contact@zircono.com
Web Site : www.zircono.com

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Company in Brief

Zircono Company Limited (Zircono) was established in late of 2003. We are engineering and construction company. In decade, we have had several kinds of engineering design works and construction works. We provide the services by professional engineer who has experience and skill in the particular work whether design or construction works. We have experience with customers in Thailand and other countries (such as Germany, Vietnam, India, etc.)

Plant design engineering either vertical process or horizontal process is one of our strength which included process plant, utilities plant, tank farm, warehouse and auxiliary plant. We serves our business in widely kind of customers such as power plant, solar power plant, petrochemical plant, polymer plant, chemical, semi-conductor, consumer product as well as general factory.

Our designed plant able to be designed based on 3 - dimensional modeling concept which enable client to review, comment and walk through to investigate constructability, safe operation and easy maintenance. Plant model is also valuable tool especially during construction phase, it present graphical vision which is clearer than normal drawing paper do.

Corporate contains expert engineer staff in process, mechanical, structural, piping, electrical and instrument, commissioning and construction supervision.

Our business is operated based on engineering professional, commitment and client satisfaction.

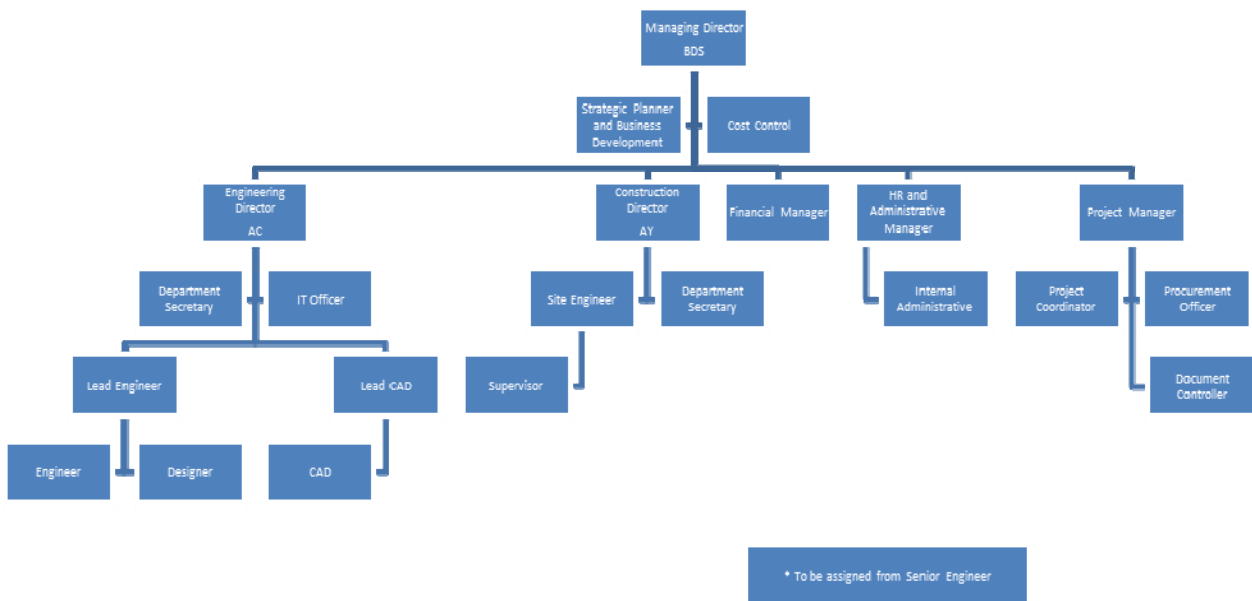
Company Information

Company Registration no.: 0105546140291

Capital Investment: 5,000,000 THB (fully amount paid)

Bank Account: Bangkok bank PCL.
Onnuch Branch

Organization



Management Team

Managing Director: Mr. Bundit Sriwongsajarn
MBA., B. Eng (EE)

Engineering Director: Mr. Anan Charoenthavornsuk
MBA., B. Eng. (ME)

Construction Director: Mr. Anan Yungsiri
B. Sc., VD (EE)

Range of Services (Design/ Owner Engineer/ EPC/ EMCM/ Construction)



Process

- Design basis
- Process and instrument diagram P&ID
- Process flow diagram PFD
- Hydraulic / pressure drop calculation
- Equipment lists
- Data for equipment
- Process calculation / utilities consumption
- List of consumption figure
- Fluid data
- Process data for final control elements

Equipment

- Equipment design – vessel, silo, tanks
- Equipment specification
- Material selection
- Fabrication drawings
- Rotating equipment specification
- Technical evaluation

Piping

- Piping specification in various standard B31.1, B31.3 etc.
- Insulation specification
- Piping lists
- Stress Analysis with CAESARII software
- Nozzle orientation
- Isometric drawing with MTO by Auto PLANT
- Specification required for pump data
- Specification for special parts
- Piping 3D modeling
- Piping arrangement drawings
- Pipe supports specification and detail drawings
- Document for erection



Instrumentation

- Control concept
- Instrument loops
- Control function, signal and alarm
- Installation plan for field instrument
- Instrumentation specification
- Specification for engineering service
- DCS , PLC system
- Document for erection

Range in Services (Design/ Owner Engineer/ EPC/ EMCM/ Construction)



Electrical

- Single line diagrams
- Electrical equipment specification
- Cable routing diagram
- Consumption load
- Typical installation drawings
- Short circuit analysis
- Lighting system
- Lightning / Grounding system
- Material Take off

Plot plan and equipment layout

- Overall plot plan
- Equipment arrangement plan
- Loading data
- Room specification
- Steel Structure detail
- Concrete Structure detail
- Underground coordination plan
- Document for erection

Structural works

- Material specification
- Surface coating specification
- Structural calculation
- Load case analyze
- Loading data
- Installation / typical drawings
- Assembly drawings
- Fabrication drawing
- Material Take off



Construction Services

- Execution plan
- Mobilization plan
- Inspection test Plan
- Quality control
- Construction procedure
- Safety supervisor
- Manpower loading and planning
- Daily construction control
- Progress measurement report
- Trouble shooting
- Material / inventory control

Project Reference Lists

Contract No.	Contract name	Client	Year	Location	Detail of contract	Type of works
4102	Piping design works for Polyplex chip plant	EETH Electrowatt-Ekono Ltd.	2004	SEIP, Rayong Thailand	Engineering services for piping design -Polyester Batch plant -Review and upgrade P&ID -Equipment layout -Piping Engineering ,pipe arrangement , isometric drawings -Stress analysis - Heat transfer medium pipe -Review and comment fabrication drawing -Issue piping specification , support specification -Material take-off and erection bill of material	Design
4105	Pipe compounding line III	QTECH Qualitech engineering & construction co.,Ltd.	2004	MTPIE, Rayong Thailand	Design and detail eng for Compounding Plant line III - PCL#3 -Equipment arrangement drawing -Piping and support specification -Equipment drawing checking -Pipe arrangement drawing - plan view and section view -3 dimension plant modeling -Material take-off and erection bill of quantity -Isometric drawings with MTO -Construction supervision	Design
4106	NPC Fix monitor system	QTECH Qualitech engineering & construction co.,Ltd.	2004	MTPIE, Rayong Thailand	Design and detail eng for fix monitor system -Calculation and issue specification of fix monitor for 9 Tanks -Pressure drop calculation -Isometric drawing with piping arrangement -Construction supervision and commissioning	Design
4108	Piping design works for Polyplex chip plant	EETH Electrowatt-Ekono Ltd.	2004	SEIP, Rayong Thailand	Engineering services for piping design Polyester -film grade -Review and upgrade P&ID -Equipment layout -Piping Engineering ,pipe arrangement , isometric drawings -Stress analysis - Heat transfer medium pipe -Review and comment fabrication drawing -Material take-off and erection bill of material	Design
4109	ATC - Stress calculation	QTECH Qualitech engineering & construction co.,Ltd.	2004	MTPIE, Rayong Thailand	Stress calculation for pipe rack -Stress analysis of benzene loading lines	Design
4110	Polyplex - HTM pipe: Stress calculation	EETH Electrowatt-Ekono Ltd.	2004	SEIP, Rayong Thailand	Stress calculation for jacket and htm lines -Stress calculation of piping system of HTM lines -Design special support	Design
4113	PPP#1 - Polymer Pilot Plant	TPE Thai Polyethylene Co.Ltd.	2004	MTPIE, Rayong Thailand	Engineering for new polymer pilot plant -P&ID of process plant -Tie -in points identification -Equipment specification - reactor , pump , exchanger , agitator -Fabrication drawing for reactor , exchanger , vessels -Strength calculation for equipment -Civil engineering -3 Dimension plant modeling -Piping engineering -Electrical and instrument engineering -Hazop study meeting -Issue Request for quotation (RFQ) -Construction supervision	Design
4116	TSES - Gas pipe line 3"	Thai summit	2004	SEIP, Rayong Thailand	Design , construct 3" gas line from PTT's metering -Design piping work from PTT metering skid to end user -Procurement erection material -Construction the piping work -Commissioning the gas lines	Design/ Procurement Assistance
4117	Utility System and Pipe rack	QTECH Qualitech engineering & construction co.,Ltd.	2004	Rayong Thailand	Subcontract for design & Engineering work -Civil engineering for new pipe rack -Piping design for utilities lines -3 Dimension plant modeling -Erection documents	Design

Project Reference Lists

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5101	Home office	Jankasaem Yothakarn(2000)	2005	Amata City IE, Rayong Thailand	Construction work for home office -Installation HVAC system -Installation of electrical work -Construction the civil work -Communication system -Lighting installation -Architectural work -Construction supervision	Construction
5103	Tubular Screw Conveyor Z-301	REPCO Rayong engineering & plant service co.,Ltd.	2005	MTPIE, Rayong Thailand	Supply tubular screw conveyor -Design ,issue specification of tubular screw conveyor -Fabrication the tubular screw conveyor	Design/ Supply
5104	Piping work for 300 MW power plant	TREL Thai Rotary Engineering Limited	2005	Uong Bi Vietnam	PDS 3D modeling - interconnecting rack -Loading data for pipe rack -Pipe arrangement -Piping design for Fuel oil storage area , loading area and pipe rack -3 Dimension plant modeling -Stress analysis -Isometric drawing - PDS (micro station) -P&ID development -Interface the all facilities	Design
5105	Instrument work for 600 t/d PET Lithuania	EETH Electrowatt-Ekono Ltd.	2005	Lithuania	Instrument work for 600 t/d PET Lithuania -Design instrumentation for utility lines -Issue specification of tapping instrument -Issue specification of inline instrument -Prepare the document for installation and commissioning	Design
5106	Water recycle project	ATC The Aromatics (Thailand) Plc.	2005	MTPIE, Rayong Thailand	Supply and erection water recycle unit -Procurement material for erection of Water recycle unit (RO) -Construction supervision -Erection the piping work and equipment installation	EPC
5110	Sorbitol & Maltitol Powder Plant	Purechem Purechem Co.ltd.	2005	Banglee Thailand	Detail engineering and construction supervision for Sorbital and Martitol Powder Plant -Piping engineering -Civil engineering -Instrument engineering -Electrical engineering -Project management -Construction supervision	Design/ Construction Supervision
6101	PL#4 - Pipe Compounding Line IV	TPE Thai Polyethylene Co.ltd.	2006	MTPIE, Rayong Thailand	Engineering for new building PL#4 in same location of PCL#3 -Civil engineering -3 Dimension plant modeling -Piping engineering -Plant layout	Design
6102	Pipe Stress Analysis	Polyplex Polyplex (Thailand) PLC.	2006	SEIP, Rayong Thailand	Pipe stress analysis -Stress analysis of hot oil system in PET plant -Modification type of support to suit with result of calculation	Design
6103	Heat Exchanger Thermal calculation	TPE Thai Polyethylene Co.ltd.	2006	MTPIE, Rayong Thailand	Thermal calculation - Sizing 4 SHELL and TUBE exchanger	Design
6104	ARC Metering skid	Sas Tech Solution co.,Ltd.	2006	MTPIE, Rayong Thailand	Engineering for 8 Gasohol metering skids -Project management -Piping Engineering -Construction supervision	Design
6106	PMC for Ethane separation plant -PTT	Span Co.ltd.	2006	Maptaphut Rayong Thailand	Engineering Services on behalf of Fluor and Span Consortium -Technical bid evaluation	Consulting

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6108	TPT 235m3/h Waste water reclamation	Thai Alliance Engineering and construction	2006	MTPiE, Rayong Thailand	Detail engineering for 235m3/h waste water reclamation project -Piping engineering -Civil engineering -Instrument engineering -Electrical engineering	Design
6109	Steam 8 inch to TOCC	Thai Alliance Engineering and construction	2006	MTPiE, Rayong Thailand	Piping engineering for high pressure steam to TOCC -Piping engineering -Stress calculation	Design
6111	TPI Asphalt storage tanks	Thai Alliance Engineering and construction	2006	MTPiE, Rayong Thailand	Engineering for new asphalt storage tanks for IRPC -Piping engineering -Plant layout -Civil engineering	Design
7106	Asia Pet CP2	Asia Pet (Thailand)	2007	Lopburi Thailand	-Provides Engineering Services Including Piping, Layout. Process (OSBL), Instrument and Electrical for Expansion PET plant with capacity 120 ton per day.	Design
7109	CDA Utilities Installation for Air Comp.	Maxim Integrated Products (Thailand) Co., Ltd.	2007	Amata Nakorn Industrial Estate Chonburi	The Scope of work include detail design - Electrical - Existing Remove - Equipment Foundation - Piping and Commissioning	Design
7110	PMC for Ethane separation plant -PTT	Span Co.ltd.	2007	Rayong Thailand	Engineering Services on behalf of Fluor and Span Consortium for Mechanical conceptual design, review EPC document and drawings	Consulting
7111	Khon Kaen BOP Project	Dontum Enterprised Co.,Ltd.	2007	Khon Kaen	-Provide for Piping Design of superheated steam high pressure -Medium Pressure -Low pressure and dematerialized water	Design
8102	Asia Pet CP2	Asia Pet (Thailand)	2008	Lopburi Thailand	Construction for equipment installation, polymer piping and piping work Project management for expansion PET project. Project scale is piping 35,000 DB Equipment installation 250 Ton	Equipemtn and Piping Erection
8109	Sunflag Shutdown	Sunflag (Thailand) LTD.	2008	Ayudhaya Thailand	Shut down services	Erection
8112	Detail Engineering for Tuntex Modification	Indo Poly (Thailand) LTD.	2008	Rayong Thailand	The Scope of work include detail design - Service awarded to Zircono by Tuntex for detail engineering of various process points the work included Piping work, Instrument / Electrical and Civil engineering	Design
8113	Sarayuth Petrol Station- PTT	PTT Public Company Limited	2008	Nakorn Pathom Thailand	Service to renovate Sarayuth Petrol station, As per PTT drawing. The work included demolish existing facilities, Sign board, electrical, civil, sanitary work, Underground tank, Water system and distribution island and Project management.	Construction
8114	Polyester Chips Plant in India	Aquafil Engineering GmbH	2008	India	Scope of services -Piping Engineering -E&I Engineering -Site supervision and as built revision as an optional Number of line is approx. 650 (B0801) and existing building 400 (B0801-R) Number of field instrument is 536, 128 motor (B0801) , 313 field instrument and 50 motor for B0801-R	Design
9102	9.9 MW Biomass LP-Steam	Power Prospect Co.,Ltd.	2009	Ayudhaya Thailand	-Design 12" LP-Steam 0.7 km. -Support design -Stress calculation	Design
9104	9.9 mw Biomass HP-Steam	Power Prospect Co.,Ltd.	2009	Ayudhaya Thailand	-Review routing from boiler to turbine 8" HP steam 420 C -Stress calculation	Design

Project Reference Lists

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9105	Nhon Trach II 750 MW CCPP - BOP Lot3	Torishima (Hong Kong) Co.,Ltd.	2009	Vietnam	-Spring hanger design Design balance of plant. - The system include main cooling water system, fuel gas system, fuel oil system, nitrogen system, compressed air system, service air, water system and waste water system. - Scope of work include piping work, civil work, coordinate to other process packages.	Design
9106	Sorbitol Capacity Expansion 24,000 MTPY	Siam Sorbitol Co.,Ltd.	2009	Nakornrachasrma Thailand	Design expansion process "Sorbitol capacity expansion 24,000 MTPY - Engineering work included process, civil, mechanical, piping, electrical and control. - Scope of work include all new buildings, warehouses, pipe racks, utilities, process plants conformed GMP	Design
9109	Electrical Panel Board Installation at Final test Production	Maxim Integrated Products (Thailand) Co., Ltd.	2009	Amata Nakorn IE Chonburi	Supply and Installation additional electrical system.	Construction
10103	Solar Power Plant - Kanchanaburi	Raiwin Maintenance & Service Co.,Ltd.	2010	Kanchanaburi	Design Solar power plant - Scope of work include Piping design, isometric drawing, GA drawing, stress analysis, support and insulation design.	Design
10104	Vung Ang1 Thermal Power Plant - MCW M4A	Torishima (Hong Kong) Co.,Ltd.	2010	Vietnam	Design Main Cooling Water System for 2x600 MW in Vung Ang - The system include main cooling water system Lot M4A, - Scope of work include sea water intake, main cooling pump house, discharge channel. - Service divided in to 5 major activities; Civil Design, Mechanical Design, Special CFD Design, Electrical engineering, instrumentation & control.	Design
10106	Impress Ethanol Plant	KNM Project (Thailand) Co.,Ltd.	2010	Chachaengsao	Scope of work - Preliminary planning & administration which includes obtaining all authority approvals, technical support during tender and construction stage, preparation of Plant's Perspective in 3D Model and other. - Civil Design Package which includes Buildings, Mechanical & Electrical, Services, Architectural, Structural, Infrastructure, Drainage System, Utilities and Other. - Preparation of tender documents.	Design
10107	Cytac A300 LCR project	Thaisia Engineering Co.,Ltd.	2010	MTPIE, Rayong Thailand	Scope of work Engineering services provide process and technologies for plant modification.	Design
10112/10113	PET Form Plant in Nigeria SSP Plant in Nigeria	Aurus Packaging Limited Indorama PET Nigeria Limited	2010	Lagos , Nigeria Port Harcourt,Nigeria	Engineering services for Relocation SSP Plant from Europe to Nigeria and supply necessary engineering services / technical documents to erection and start-up plant. Design various engineering work for PET Form plant in Nigeria complex.	Design
11102	Furfural and Furfuryl Alcohol Plant	Poyry Energy Limited	2011	Egypt	Services included : Piping design for process side start from raw material handling to product storage. Piping design for utilities supply such as steam, compressed air, Nitrogen,instrument air cooling water,demin water etc. 3D modelling for all pipes , structural , building and major facilities. Stress analysis for critical temperature lines. Pipe arrangement drawings and isometric drawings with bill of material. Material Take off	Design
11103	ODL - Rachaburi	SCG Paper	2011	Rachaburi Thailand	Services included : Equipment design and calculation of Oxygen reactor ,piping design , 3Dmodelling	Design
11104	PPPC- Debottlenecking project	SCG Paper	2011	Khonkaen Thailand	Services included : ODL 1 &2 Project and Evaporation II Debottlenecking	Design
11109	WWTP Hatyai	Siemens Limited	2011	Hatyai Thailand	Services included : Piping design , electrical , instrument , 3 D Modelling for Waste water plant at Hatyai	Design
11110	Waste heat recovery unit	PTTME	2011	Khanom GSP Thailand	Services included : Piping design for WHRU unit at Khanom PTT separation plant	Design
11112	Gas metering skid - Wangnoi	PTTME	2011	Ayutthaya Thailand	Services included : Piping ,civil , instrument , electrical design for Gas skid distribution to Wang noi Power plant	Design

Project Reference Lists

Contract No.	Contract name	Client	Year	Location	Detail of contract	Type of works
12104	Polyester plant	Aquafil Engineering GmbH	2012	Alabama USA	Services included : Piping , instrumentation and electrical design for new polyester plant	Design
12105	SRF Thailand	Poyry Energy Limited	2012	HESIE, Rayong Thailand	Services included : Engineering Design Services for utilities (mechanical, electrical and piping)	Design
12120	Indorama Pet Form Plant	Indorama Group	2012	MTPIE, Rayong Thailand	Services included : Engineering work for BOP (Utility Pipe) work for the Husky and drier machine	Design
12109	Install Husky Machine No.3	Indorama Group	2012	Lopburi Thailand	Services included : Install Husky machine No.3 at Pet Form Plant	Erection
12107	Remove Husky & Dryer Machine	Indorama Group	2012	Lopburi Thailand	Services included : Remove Husky & Dryer Machine (Flooding)	Erection
12114	Install Husky Machine No.5	Indorama Group	2012	Lopburi Thailand	Services included : Install Husky Machine No.5	Erection
12115	Install Husky Machine No.7	Indorama Group	2012	Lopburi Thailand	Services included : Install Husky Machine No.7	Erection
12127	SRF Thailand	SRF Industries (Thailand) Limited	2012	HESIE, Rayong Thailand	Services included : Piping Erection for Hot Oil/ Cooling Water/ Compressed Air/ Nitrogen/ Chilled Water	Erection

Selected Projects Reference



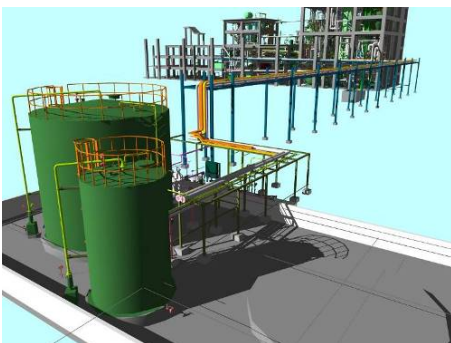
2006-Uong Bi 300 MW coal fired power plant

Plant located in northern part of Vietnam. Zircono perform detailed engineering for interconnecting pipe rack system to services all packages inside the plant boundary. The model design on PDS software. Piping arrangement , isometric drawing with BOM and stress calculation for high pressure and medium pressure steam lines. Piping load have to calculated as a civil input for pipe rack design.



2009-Nhon Trach II 2x300 MW CCPP power plant

Plant located south part of Vietnam , 50 km from HCMC. The scope of work included plant layout and balance of plant for water treatment , gas metering , fuel oil storage tank and all interconnection. Civil input data to provide loading data to another packages. Engineering team did the design work and coordination work in Vietnam for 12 months.



2008-Polyester Chip Plant in India

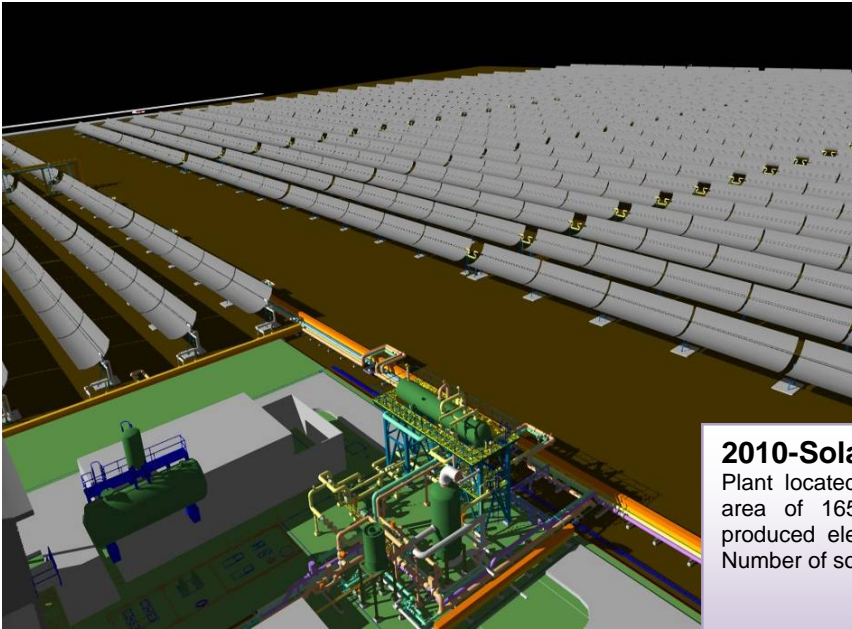
PET polymer plant in India. License and process supply from Aquafil Engineering GmbH. Detail of works included 1,100 pipe lines, 850 field instrumentations and 180 electrical motors. 3D modeling design on Auto PLANT software.



2010-Vung Ang I 2X600 MW TPP in Vietnam

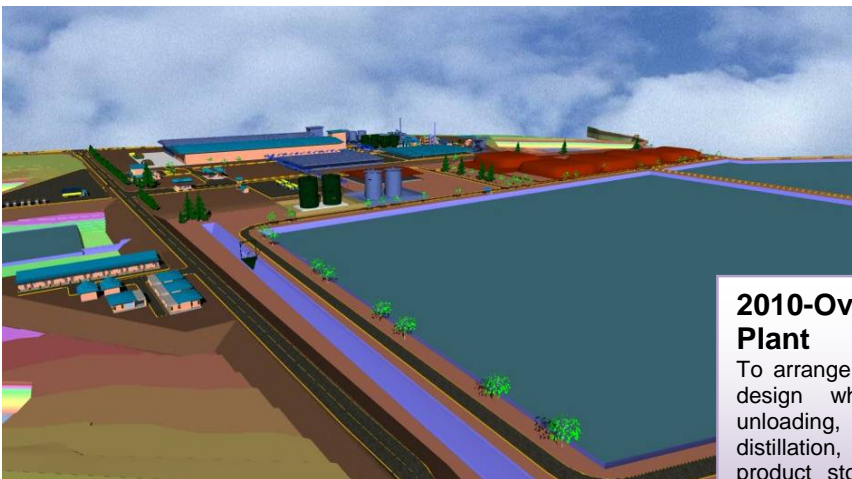
Design for Main cooling water system supply from sea intake structure via 2x3500 mm dia. Pipes, main cooling pump house and discharge channel. Responsible for hydraulic transient analysis, computerized flow dynamic and civil input information.

Selected Projects Reference



2010-Solar Power Plant

Plant located in Kanchanaburi with the area of 165,000 sq. m. Plant can produced electrical power at 4.5 MW. Number of solar cells is 788 in totally.



2010-Overall view Ethanol Plant

To arrange over all plot plan and civil design which comprised of chip unloading, warehouse, fermentation , distillation, Bio gas ,bio mass boiler , product storage, office, canteen and other facilities.

Selected Projects Reference (Construction Services)



2008 - Finisher Reactor lift up

PET 120 t/d polyester plant construction project. Project was started on 2008 in Lopburi province. Scope of supply included equipment installation approx. 200 ton , piping work more than 40,000 DB and polymer jacket lines.

Project finished in 8 months. In picture, finisher reactor was lifted up with crane 200 ton.



UPR reactor sit on place

Integrated three parts of reactor was lifted above the existing building to sit on steel structure platform on elevation 14 m.

Selected Projects Reference (Design and Construction Services)



2012 – 2013 SRF BOPET Film and Metallization Plant

SRF BOPET Film and Metallization Plant Project, The Project was started on 2012 at HESIE in Rayong province.

Scope of design works was M&E Utilities system design on behalf of Poyry Energy Ltd. The design works comprise 22 kV Incoming Electrical System, Main Power System for Process Equipment, Grounding and Lightning Protection System, Lighting System, Small Power System, Communication System, Fire Protection and Fighting System, HVAC System, Compressed Air System, Hot Oil System, Cooling Water System, Sanitary System as well as Water Treatment Plant.

Scope of Construction works was man power supply for Piping Erection (CS, SS) for hot oil system, cooling water system, chilled water system, compressed air system, chips conveying. The piping



Contact:

Mr. Bundit Sriwongsajarn

M. +66 81 646 6280

Email: bundit.s@zircono.com

Or

(For Engineering)

Mr. Anan Charoenthavornasuk

M. +66 81 550 2953

Email: anan.c@zircono.com

Or

(For Construction)

Mr. Anan Yungsiri

M. +66 81 345 1769

Email: anan.y@zircono.com

Zircono Company Limited

บริษัท เซอร์โคโน จำกัด

335/24 Prime State building, 3rd fl.

Soi Pukmith, Srinakarin Rd., Nongbon

Prawet District, Bangkok 10250 Thailand

Tel : +66 (0) 2366-0358-9

Fax : +66 (0) 2366-0360

E-mail : contact@zircono.com

Web Site : www.zircono.com