



CONSTRUCTION MACHINES PRODUCTION
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Dear gentlemen,

We appreciate your interest in our machines and are pleased to submit you the following quotation according to the "General Terms of Delivery of the **PiTAC Gulf**".

CONCRETE BATCHING PLANT

BP-120

FULL – AUTOMATIC MODEL IN-LINE HOPPER.

1. INTRODUCTION

The concrete batching plant BP-120, described below makes the production of wet or dry concrete with high quality and homogeneity. Materials which are inserted in high quality plant and all kinetic moves of machine are controlled over electro-hydraulic and electro-pneumatic units, and also controlled by electronic units made by world recognized manufacturers. Besides that, plant is made in several modules, which gives possibility of adapting of whole equipment according to every specific demand from buyer.

In continue, offer is made by basic needed technical entering parameters of batching plant:

- Twin shaft concrete mixer TM3000 liters of output of fresh vibrated inserted concrete;
- Construction type: Cones for hoppers 35 m³each;
- Coming construction for support;
- Height of overhang [exhaust] 4 m;
- Nominal production of capacity of 120 m³/h of fresh vibrated inserted transporting concrete in continuous work (based on 90 sec continuous cycles);
- 5 types of aggregates;
- Weight dosing of cement, aggregates and liquid additives;
- Volumetric dosing of water;
- Control by manual and automatic [by computer] with 200 different programs [different concrete mixtures];



BASIC TECHNICAL DATA OF PLANT	
Model	BP-120
Production capacity of wet concrete based on 30 sec mixing time	120 m ³ /h
Ambient oversea height	Until 1.000 m
Ambient temperature for work	-10 to 50 °C
Working temperature of machines inside of plant	5 to 35 °C
Maximum allowed wind	120 km/h
Power supply	380-420 V, 50 Hz [EC standard]

MANUFACTURERS OF PARTS INSERTED IN PLANT	
Electronics [PLC]	SIEMENS, LAUMAS
Electrics and energetic	SCHRACK
Pneumatics	Camozzi,
Scales	Laumas
Reducers	Varvel

SMALL READY MIX PLANT – 40 M³



2. DESCRIPTION OF SOME PARTS OF PLANT



Concrete batching plant is made from next basic elements:

1. Equipment for mixing of concrete;
2. Equipment for storage and dosing of aggregates;
3. Equipment for storage and dosing of cement;
4. Equipment for dosing of water;
5. Electric installation and controlling;
6. Optional equipment;

Complete concrete batching plant, before delivery, is protected with basic color layer and also with two layers of white color RAL 9002 and blue color RAL 5012.

2.1 Equipment for mixing of concrete



Twin shaft mixer

Equipment consists from mixer transport belt for raw material and standing support platform where mixer are located. Mixer is mounted on frame made from metal profiles with support platform where is mounted the protection fence and stairs for approach to mixer.

The reducer for driving of mixer with 2 planetary gear reducers is mentioned for work in heavy duty conditions. The system of mixing is made with star with 20 mixing blades. The construction of mixing blades and covering of mixer is made from anti-wear material. It is possible to make mixing blades from anti-wear rubber.

The system for water distribution into the mixer is made over peripheral side of mixer with inserted nozzles. There are doors with special rubber on the mixer, for mixer inspection.

Manual hydraulic pump makes possible opening of the door in case of power failure.

Movable skip for loading mixer with proper mixture of aggregates form track dosing device by motor, with reducer which lifts up skip over steel wire rope. Mechanical and electromechanical safety devices will stop falling down of skip in case of rope ripping of.

TECHNICAL DATA OF MIXER	
Volume size of mixer's drum	4500 l
Output of fresh concrete	3500 l
Output of fresh vibrated inserted concrete	3000 l
Nominal production capacity of concrete	120 m ³ /h
Engine power for mixer	2x55 kW
Engine power for hydraulics	2.2 kW
Mixing shafts speed	24.3 rpm
Number of circles of hand (for planetary mixers)	17.5 rpm
Number of mixing blades	20 pcs
Output doors	1 pcs
Covering of bottom – quality	Ni Hard Cast Iron 530 HB hardness
Maximum size of aggregate	180 mm
Weight of mixer without skip	9300 kg
Weight of mixer with skip	13850 kg

TECHNICAL DATA FOR SUPPORTING FRAME	
Height for construction / exhaust	4.000 mm
Stairways and protection fence	Included
The model of construction	Approachable



2.2 Equipment for storage and dosing of aggregates

Equipment consists from boxes for storage, cones for hoppers, flaps with pneumatic cylinders, construction support, weighting belt, installation lines for pneumatics and electric.

There are boxes for storage of aggregates on self standing construction.

Output for aggregates is over flaps with pneumatic cylinders, which make needed dose of aggregates on track scale, which hangs on measure cells for precise setting of needed amount of aggregates. Mechanical regulation of output diameter of border for opening is insured with manual shutter.

There are vibrators mounted on separate plate, on the conical outlets of output hoppers for sand.

On the exit of track scale is additional reversible track for splitting aggregates for mixer 1 or 2.



Boxes for storage



Weighting belt for raw material and conveyor belt

TECHNICAL DATA FOR INLINE BOXES	
Storage capacity per box	35 m ³
Number of boxes	5 pcs
Box dimensions	3.500 x 4.000 mm
Total capacity storage	175 m ³
Quality of inserted materials	Fe 360B – Fe 410B
Pneumatic cylinders for dosing of aggregates	10 pcs, dimensions 300 x 80 mm
Maximum size of aggregates	60 mm
Thickness of side sheet metal	4 mm
Thickness of flaps sheet metal	5–8 mm
Vibrator on the conical outlets of boxes for sand	2x 270 W. IP 65. kl. F

TECHNICAL DATA FOR WEIGHTING BELT	
The way of dosing	By weight measuring
Load cells for weight measuring	Electronic ec atest
No. of cells for measuring	4 pcs
Maximum capacity of scaling	6.000 kg
Minimal resolution of scale	5 kg
Accuracy of scaling of aggregates	Until 3%
Dimensions of weighting belt for emptying	800 mm x 20 m
Thickness for rubber belt	12 mm
Breaking off strength of rubber belt	630 kP
Number of layers for canvas	4 layers [3 nylon + 1 polyester]
Thickness of upper wearing layer	4 mm
Thickness of down wearing layer	2 mm

TECHNICAL DATA FOR COMPRESSOR	
Volume for reservoir	200 l
Nominal air flow	270 l/min
Working pressure	6 bars
Air prepare group	Included
Safety valve	Inserted on 12 bars
Power of motor for compressor drive	4 kW, LP 65, kl. F

2.3 Equipment for storage and dosing of cement

Equipment consists from cement silo, screw transporter [snail] and scale for cement weighting.

Cement silo is monolith made. Montage of silo will be made on the location of plant during installation whole plant. On cone output of cement silo is mounted mechanical butterfly valve which is connected on screw transporter for transporting of cement from silo into dosing scale of same one.

Equipment for indication of charge of cement in silo has 1 electrical sensor which emits minimal charge of cement in silo. Equipment for fluidization has role to blow air into cone output how there will not be present clusters of cement and make difficult output of the same one into the screw transporter.

Cement silo, supporting eco normative, has to be equipped with needed filter for protection from let off cement in the atmosphere. Filter with mounting on the top of silo has capacity of 18 m³. Filter is last generation of filters for environment protection, because emptying is doing on pneumatic way, not by vibrator device. How silo is property of user, in continue are given technical data of equipment for dosing of cement.

TECHNICAL DATA FOR SCREW TRANSPORTER - SNAIL	
Diameter	273 mm
Length	8.000 mm
Ball joint	Included
Number of snails	3 pcs
Power drive	11 kW, 400 V, 50 Hz, IP 55, kl. F
Nominal capacity	90 t/h

TECHNICAL DATA FOR CEMENT WEIGHTING SCALE	
The way of dosing	By weight
Sensor for weight measuring	Electronic EC attest
No. of cells for measuring	3 pcs
Maximum capacity of scaling	1.200 kg
Geometric volume of basket for scaling	300 l
Minimal resolution of scale	1 kg
Vibrator on output of basket for scaling	180 W, 400 V, 50 Hz, IP 65, kl. F
Opening for cleaning of conveyor	Mounted
Diameter of input into scale	273 mm
Diameter of electro pneumatic valve for emptying	200 mm
Accuracy of scaling	Until 3%

TECHNICAL DATA FOR THE REST OF GEAR INSIDE OF EQUIPMENT FOR CEMENT	
Equipment for indication of minimal charge of cement silo	2 pcs
Type of gear for indication	Electronic 48 V
Equipment for fluidization of cement	Included
Number of pedals for fluidization of cement	6 pcs

2.4 Equipment for dosing of water

Dosing of water is done with water scale which measures water weight by loading cells and turn it into electric signal, which are processed electronically.

TECHNICAL DATA FOR EQUIPMENT FOR DOSING OF WATER	
Capacity of water scale	600 kg
Measuring resolution	3 %

2.5 Electric installation and controlling

Electric installation of concrete batching plant includes all electrical connections of voltage, controlling and part for measuring of the plant. All installations and safety devices are made by EC regulations, protection IP 67, both way of work, manual or automatic.

Owner of the plant has responsibility to install needed electrical power line until control panel unit in cabin. Manufacturer will provide needed drawing for that purpose.

Control panel unit in cabin has to be located in circle until 4 m from the supporting platform of mixer.

Controlling of whole plant is by **PLC Siemens** controller which gives returning connections of the system which are part of safety demands.

Controlling gives setting up the sequence of dosing of every each aggregate, cement, additives and water, needed for getting optimal work and production of concrete batching plant.



TECHNICAL DATA FOR CONTROL UNIT OF PLANT	
Manufacturer of PLC controller	Siemens
Number of different concrete mixtures	200 programs
Other electronic components	ABB, Siemens

THE VIEW OF TOTAL INSTALLED POWER	
Mixer	110 kW
Skip	30 kW
Pump for hydraulics	2.2 kW
Weighting belt	18 kW
Screw transporter for cement [snail]	11kW
Vibrators on exhaust of sand from boxes – 2 pcs	0.54 kW
Vibrator on exhaust of cement from scale	0.18 kW
Vibrator on exhaust cone in truc mixer	0.18 kW
PLC, electronics and electrics in control panel unit	1.45 kW
TOTAL	173.55 kW

Not all devices work at once, therefore highest power need is about 135 kW.

3. OPTIONAL EQUIPMENT

3.1 Equipment for cement filtering

Cement silo, supporting eco normative, has to be equipped with needed filter for protection from let off cement in the atmosphere. Filter with mounting on the top of silo has capacity of 18 m³. Filter is last generation of filters for environment protection, because emptying is doing on pneumatic way, not by vibrator device.

TECHNICAL DATA FOR EQUIPMENT FOR OUT DUSTING	
Cement filter	1 pcs – mounting on the top of the cement silo.
Capacity of out dusting of filter for cement	18 m ³
Emptying of filter	Pneumatic

3.2 Equipment for printing of plant's work

There is a printer device connected on the computer which prints report for every mixing and report about total amount of concrete components at the end of day, working shift or month.

TECHNICAL DATA FOR EQUIPMENT FOR PRINTING OF PLANT'S WORK	
Way of printing	Dot print or laser
Mounting	On control panel unit
Size of track for print	57.5 mm

3.3 Equipment for dosing of liquid additives by scaling

Dosing of additives is by scale which is located over mixer and consists from the basket for scaling made from anti-wear material, electro pneumatic valves for input and output of additives, measuring cell, pump, check valve, supporting construction. Output of additives is into the mixer.

TECHNICAL DATA FOR ADITIVES WEIGHTING SCALE	
The way of dosing	By weight
Sensor for weight measuring	Electronic EC attest
No. of cells for measuring	1 pcs
Maximum capacity of scaling	50 kg
Geometric volume of basket for scaling	50 l
Minimal resolution of scale	0.2 kg
Power of the pump	3x 0.75 kW, 400 V, 50 Hz, IP 55, kl. F
Pump flow	0.5 l/sec
Emptying	Nature way into the mixer
Length of input pipe	10 m
Additive type	Liquid
Maximum viscosity	300 cSt
Working temperature	0 – 40 °C
Amount	For 2 types of different liquid additives
Accuracy of scaling	Until 2%

3.4 Equipment for dosing of liquid additives by volumetric dosing

Dosing system for additives consists from gear pump which takes liquid additive from reservoir – barrel, and do dosing of needed amount by the information which gets from impulse dosing device, as programmed values for specific type of concrete.

TECHNICAL DATA FOR EQUIPMENT FOR DOSING ADDITIVES	
Additive type	Liquid
Maximum viscosity	300 cSt
Dosing type	volumetric
Diameter of input and output pipe	¾ “
Impulse dosing device flow	50 l/min
Accuracy of dosing	Until 2%
Power of the gear pump	0.75 kW, 220 V, 50 Hz, IP 55, kl. F
Amount	2 pcs

4. PRODUCTION CAPACITY

Measuring of capacity is into continuous work which presents production of concrete without stopping of work in automatic mode with standard quality wet concrete.

Picture of technologic time flow of concrete mixture production:

Scaling aggregates	30		30		30		30	
Emptying aggregate scale		30		30		30		
Skip lifting up			26			26		
Loading mixer				4			4	
Skip lifting down					22			
Scaling cement	20					20		
Water dosing					4			
Cement dosing			20				20	
Additives dosing					4			
Mixing				44			44	
Mixer emptying						20		
Closing mixing door							6	
	Start cycle: 156 sec				Continuous cycle: 82 sec			

Production capacity of concrete in automatic mode can be observed on 3 possible ways, depending from the type of work modes.

Calculation for all 3 ways of measuring:

1. Concrete mixing in automatic mode – 1 cycle: 3 m³
2. Concrete mixing in automatic mode – 4 cycles: 12 m³
3. Concrete mixing in automatic mode – continuous.

Production capacity of concrete in m ³ /h			
	1 cycle	4 cycles	Continuous
Theoretical	70	98	131
In real production	68	90	120

5. PRICES FOR EQUIPMENT, INSTALLATION, STARTING UP AND DELIVERY TERMS

Description	Qty	Unit Price EURO	Total Price EURO
PITAC CONCRETE BATCHING PLANT - BP 120 (120 M³/H)			
5 x 35 = 175 m ³ Aggregate Bunker and weighing belt conveyor	1		
Moisture Probe	1		
Twin shaft mixer 4.500 /3.000 litre, with skip, made in Italy	1		
Main Chassis Structure ;			
• Cement weighing scale (1200 kg)	1		
• Water weighing scale (600 kg)	1		
• Additive weighing scale (50 kg)	1		
• Pneumatic equipment and air compressor (2000 lt/min)	1		
Automation control system of the plant. With computer and “SCADA” software and Control Panel (SIEMENS)	1		
Cement silo – capacity 100 ton	3		
Equipments of cement silos (WAM)	3		
Silo-top filter (WAM)	3		
Cement screw conveyors - 273x8000 mm	3		
Insulated Control Cabin	1		

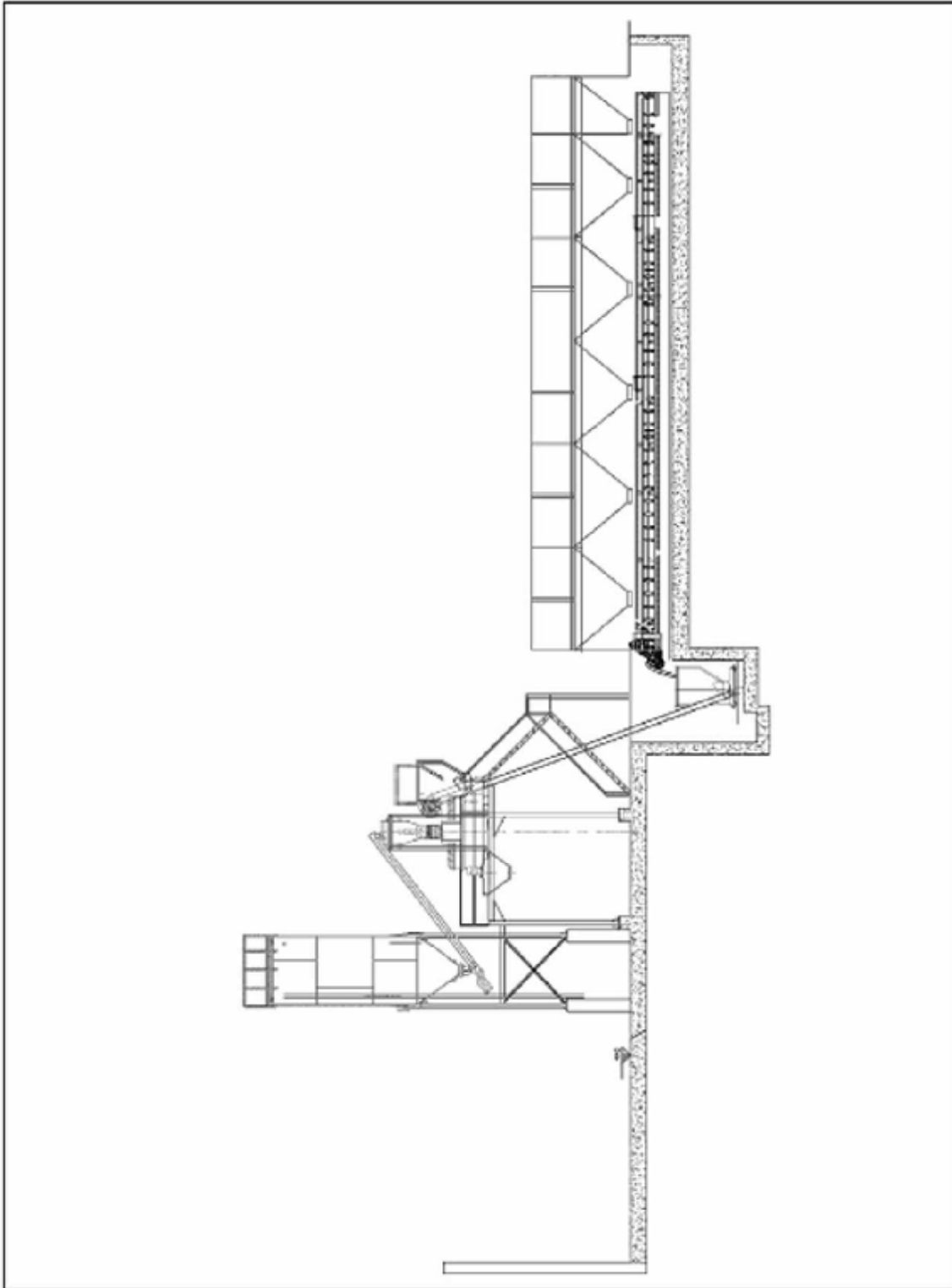
TRANSPORT, INSTALLATION AND STARTING UP		
No. of 40' containers and for transport		
Installation	Period	15 days
	Price	250 EUR/day/tecnician
	Profession quality	Technicians and mechanical workers
	Buyer's obligation	Helping workers
Starting up	Lasting	5 days
	Price	EUR
	Profession quality	Technician
	Buyer's obligation	Cement, water and aggregates Future operator to be available
Travel expenses	Returning tickets for 2 fitters.	EUR



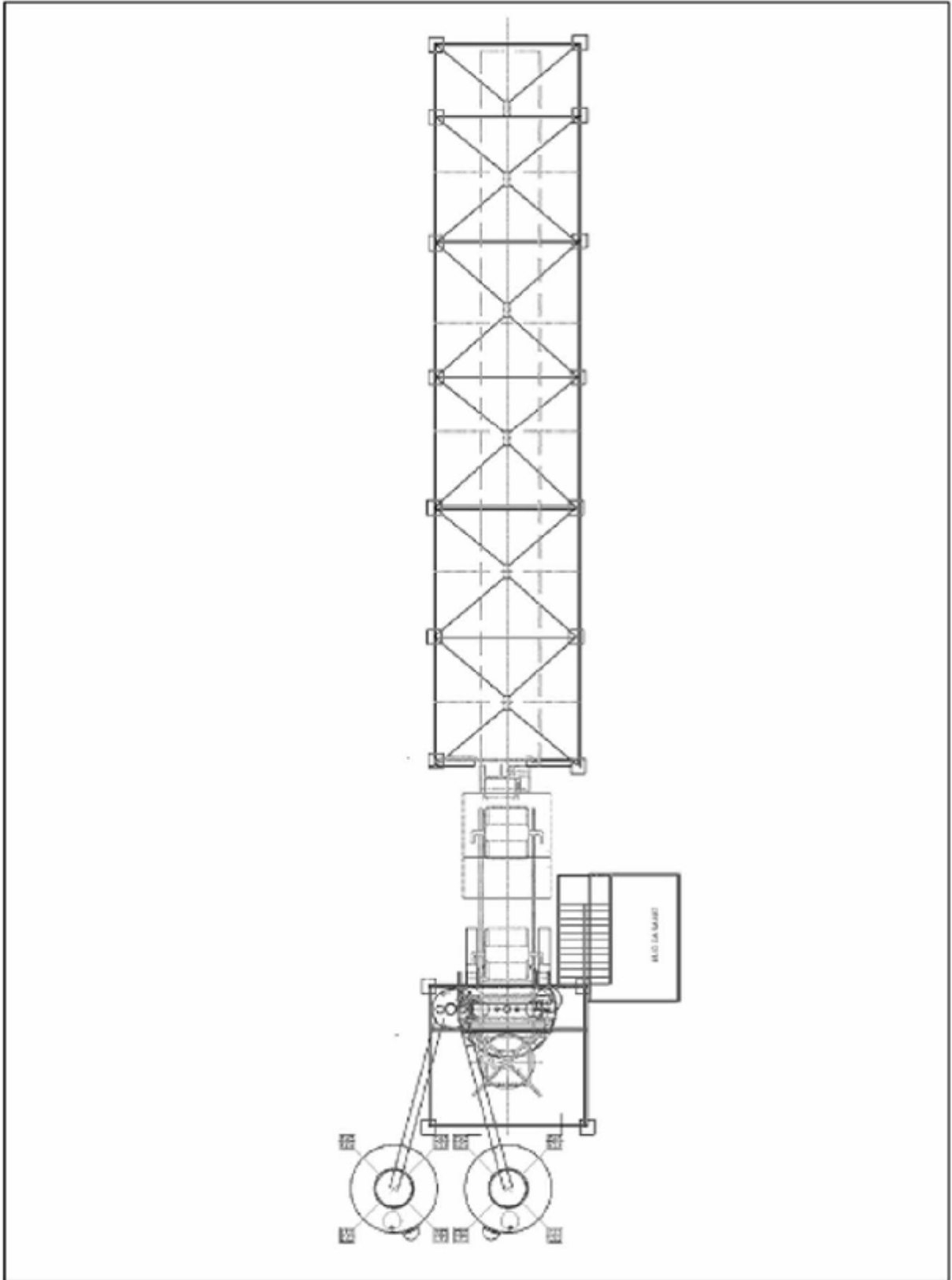
DELIVERY TERMS	
Manufacturer	Serbia
Equipment parity	Ex-Factory prices, loaded in container or truck
Offer validity	30 days.
Paying terms	40% for order confirmation, 60% before delivery
Delivery time [without transport time]	To be agreed
Guarantee	12 months
Projecting, installation and starting up the system	Included
Technical documentation and Manual for using and maintenance	On English language

For all additional information or selling conditions You can contact us over phones and email bellow [in the footer of every page of this Offer].

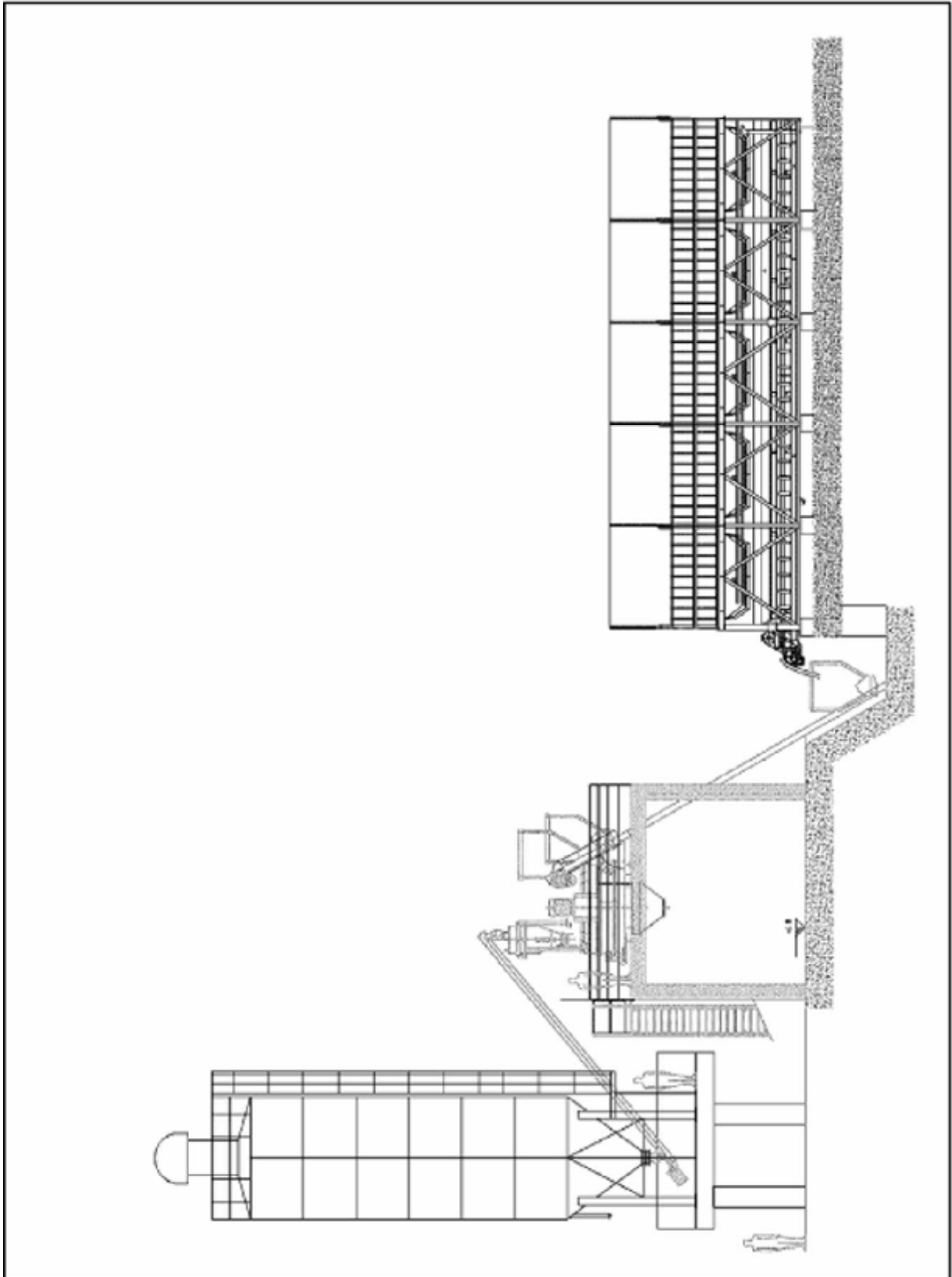
Best regards,
PITAC Gulf - team



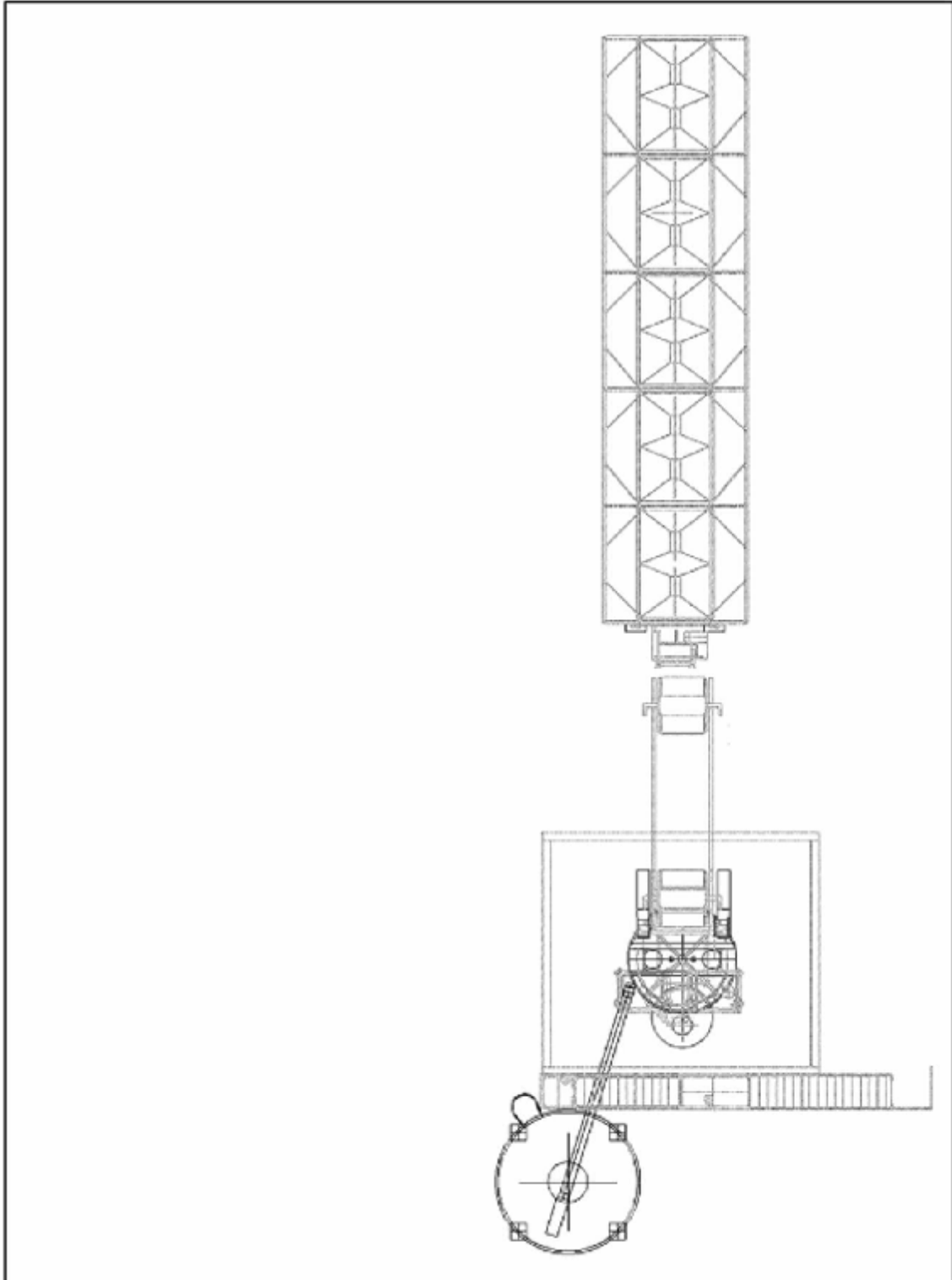
Scheme of plant with 2 cement silos, planetary mixer with 2 exit holes, and 5.5 hoppers.



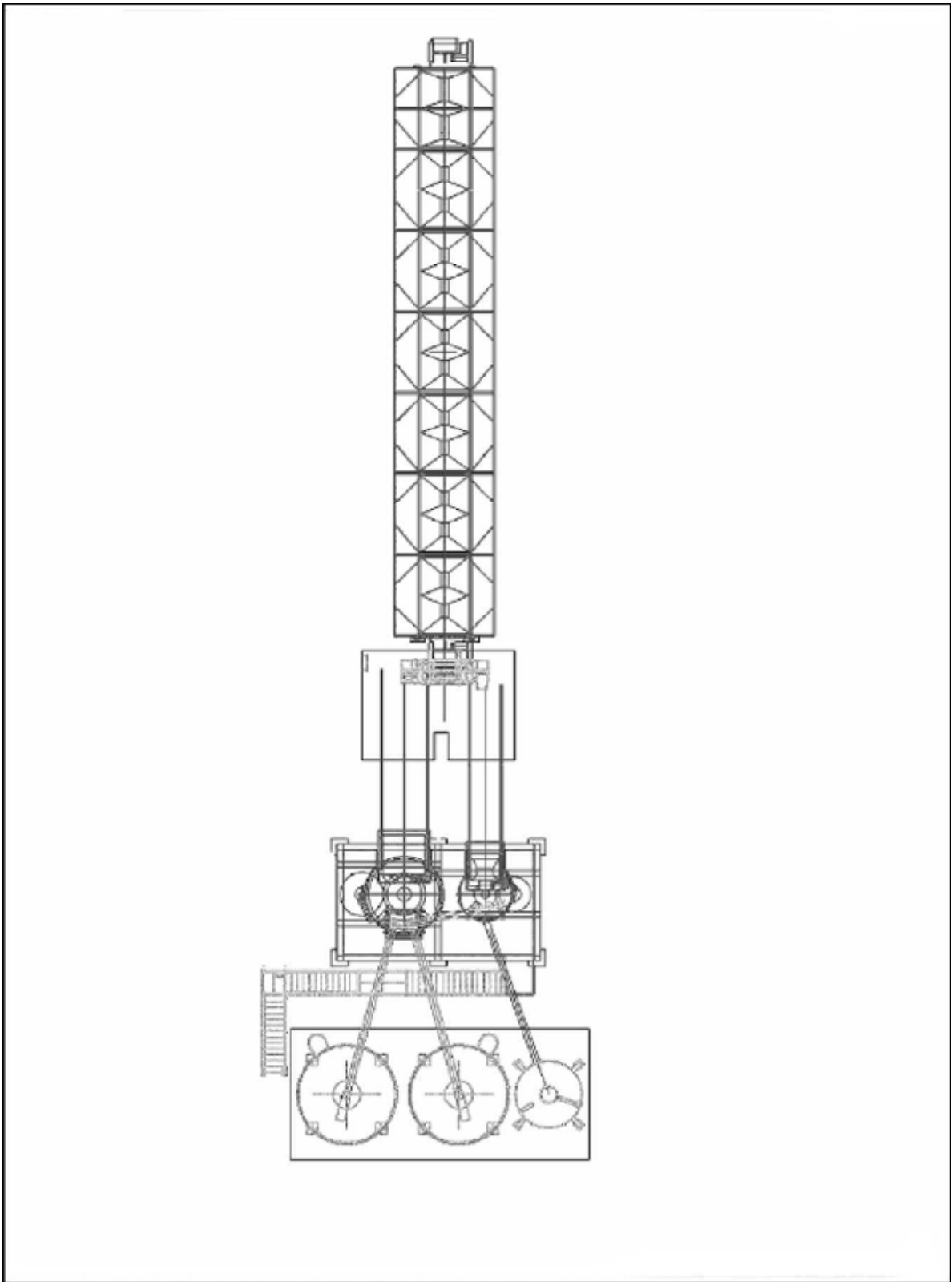
Scheme of plant with 2 cement silos, planetary mixer with 2 exit holes, and 5.5 hoppers.



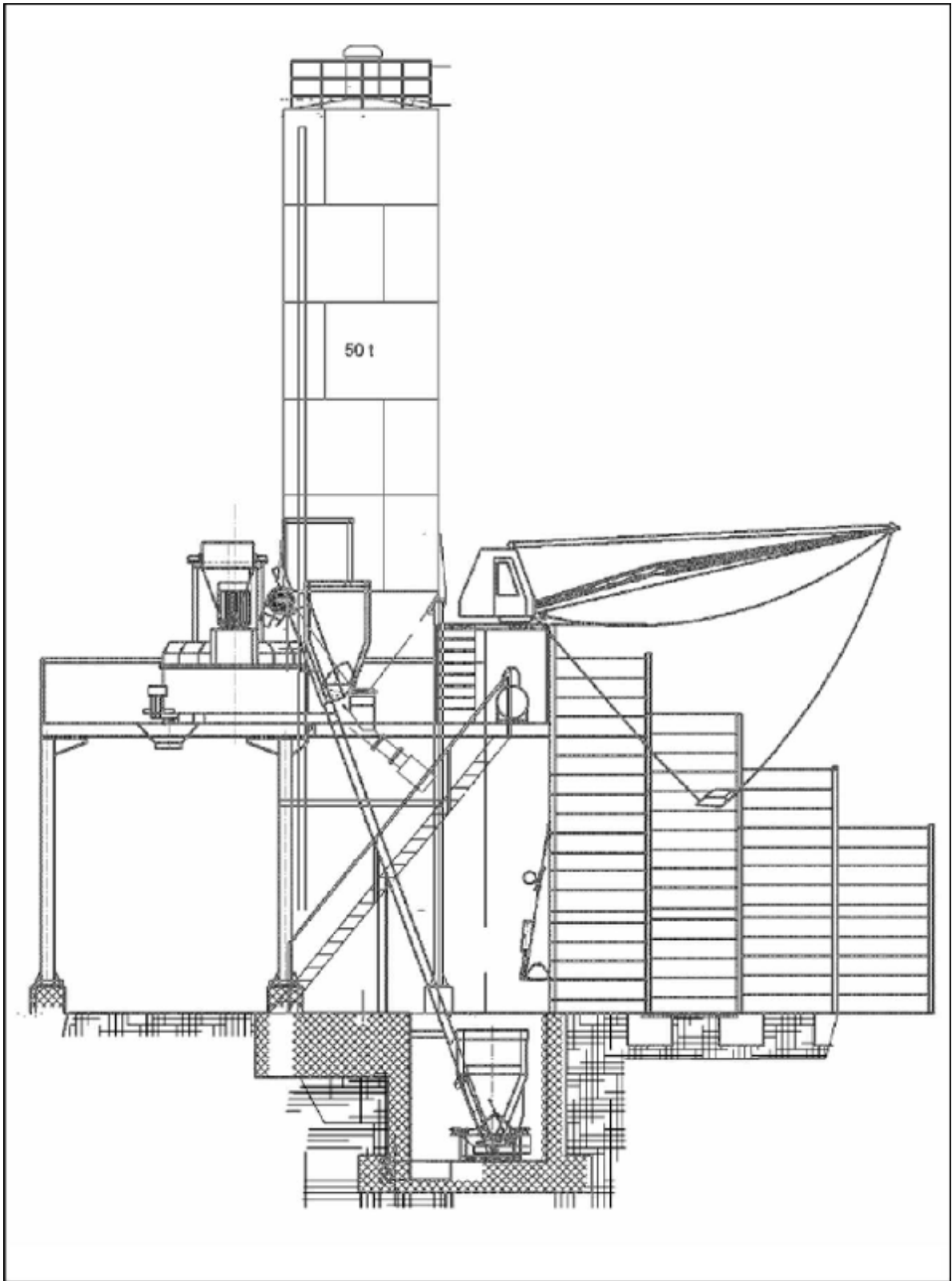
Scheme of plant with 1 cement silos, planetary mixer with 2 exit holes, and 5 hoppers.



Scheme for plant with 1 cement silo, planetary mixer with 2 exit holes and 5 hoppers.



Scheme with 2 separate planetary mixers and 3 cement silos, and 6 inline hoppers.



Scheme for STAR model of batching plant.