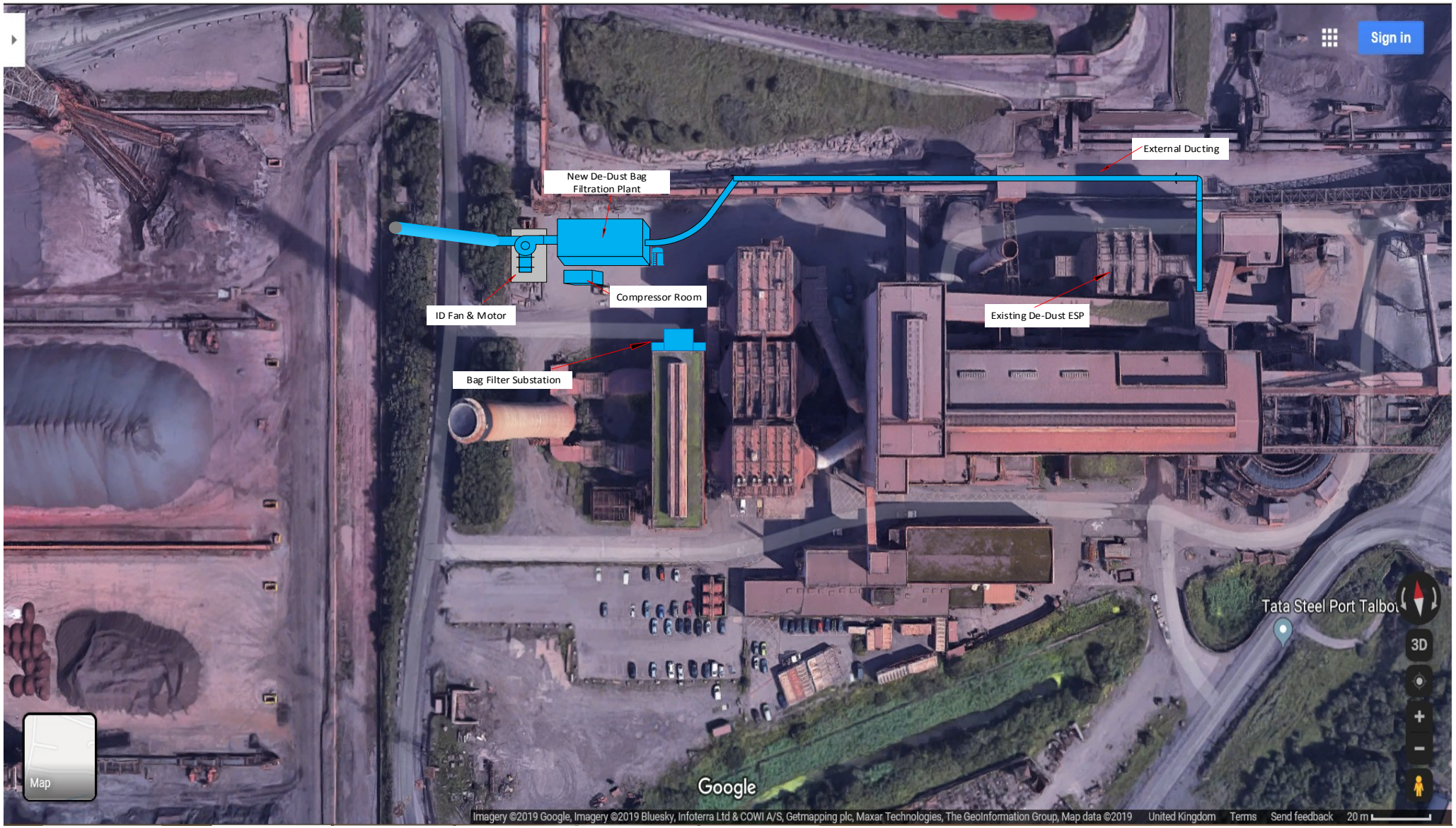
TATA STEEL

TATA

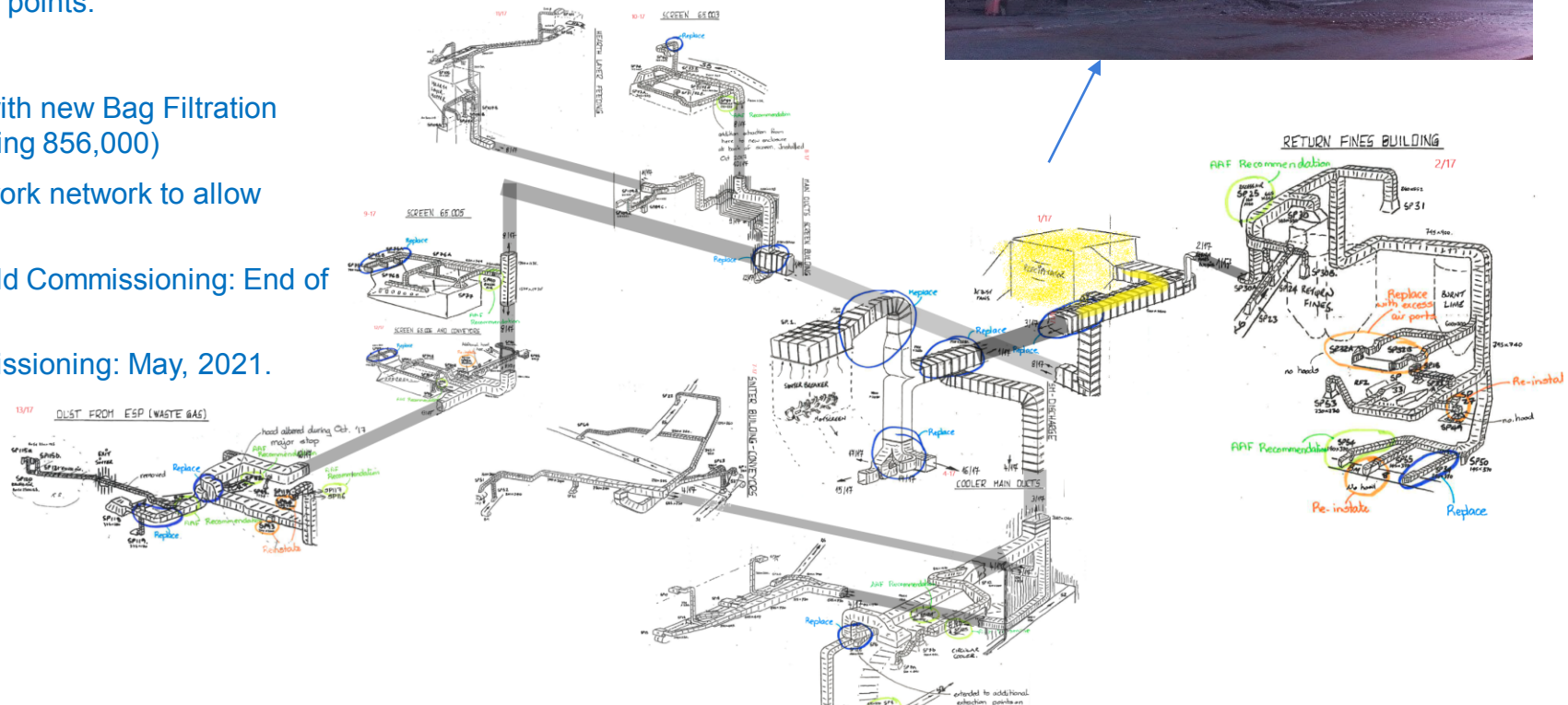
De-Dust Bag Filter Project Overview

Project Description and Scope



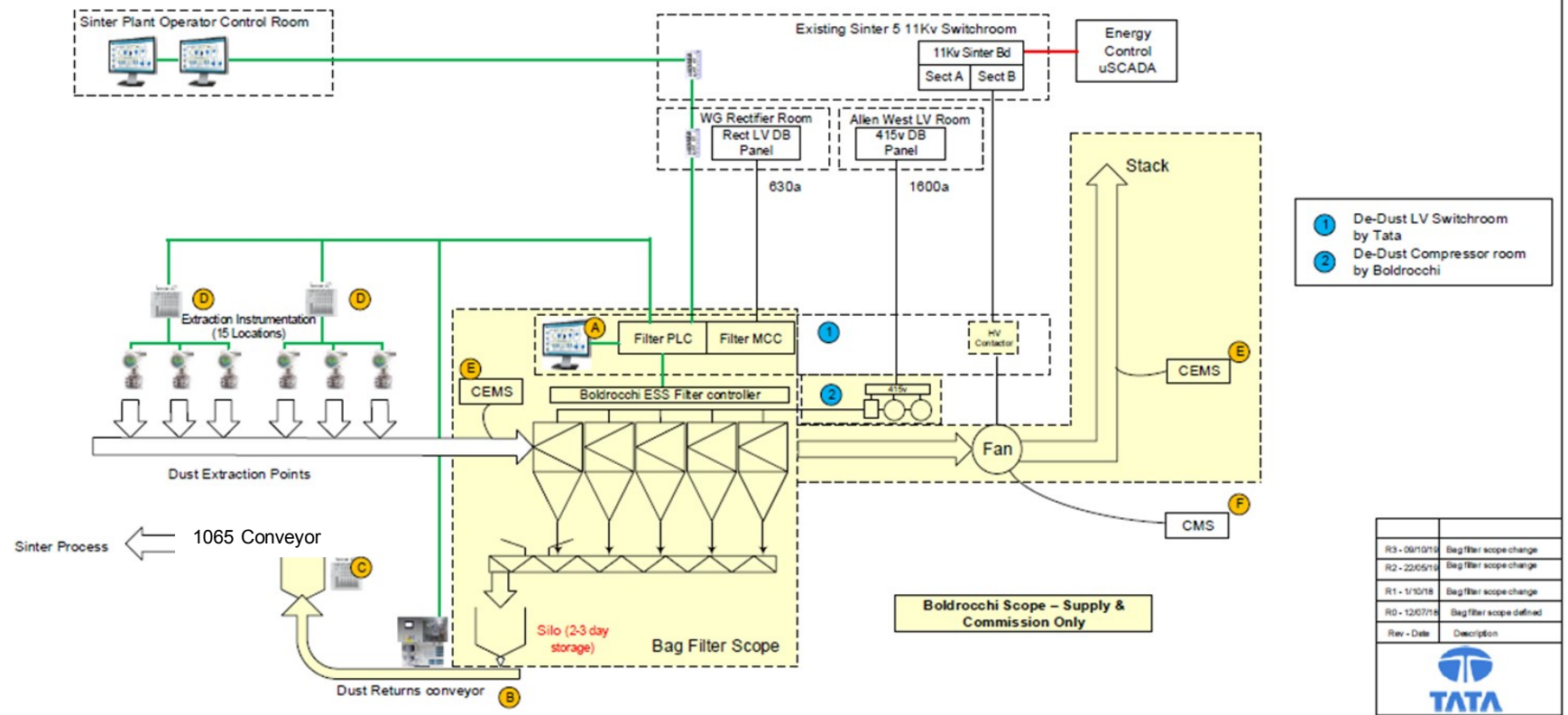
New De-Dust Bag Filtration Plant

- Overview:
  - Network of internal ductwork to extract the dust from various points in sinter plant.
  - Existing ESP in poor condition and does not comply with the new Industrial Emissions Directive to reduce the stack emissions below 10mg/Nm^3.
  - Internal ductwork network in poor condition providing insufficient suction at extraction points.
- Scope:
  - Replacement of existing ESP with new Bag Filtration Plant. 900,000M3/hr flow (existing 856,000)
  - Improvements to internal ductwork network to allow efficient extraction.
  - Plant ready for Power On & Cold Commissioning: End of April 2021
  - Duct Changeover & Hot Commissioning: May, 2021.



Tata Port Talbot

Sinter Plant De-Dust Power & Control Block Diagram



A Local bag filter operator and engineering HMI – filter status and control software by Boldrocchi
Dust returns equipment status and plant extract point instrumentation mimic and analogue value trending – by Boldrocchi
Bag filter screens to be duplicated on existing plant SCADA screens in main plant control room.- by TATA?

B Dust returns conveyor.

C Interlocking between existing plant conveyor & hopper is required to prevent operation if the plant conveyor is on stop. Receiving hopper levels and conveyor status to be displayed on the bag filter HMI. This may be new RIO to discrete values, or mapped from existing PLC network.

D RIO grouped in geographical areas with fibre connectivity – number of areas to be defined. Pressure transmitters Siemens with local indication – TSI recommend 12 points only

E Continuous Emissions Monitoring system supplied by Tata – PCME – STACK 980 and QAL 181 Plus single channel sensor – WHO?

F Fan & Motor vibration and temperature continuous on line monitoring. Site standard is ITA Iconet – TSE Supply, Boldrocchi supply locating points on fan/motor

Rev - Date	Description
R3 - 09/10/19	Bag filter scope change
R2 - 22/05/19	Bag filter scope change
R1 - 1/10/18	Bag filter scope change
R0 - 12/07/18	Bag filter scope defined

Project Title: Sinter Plant De-Dust

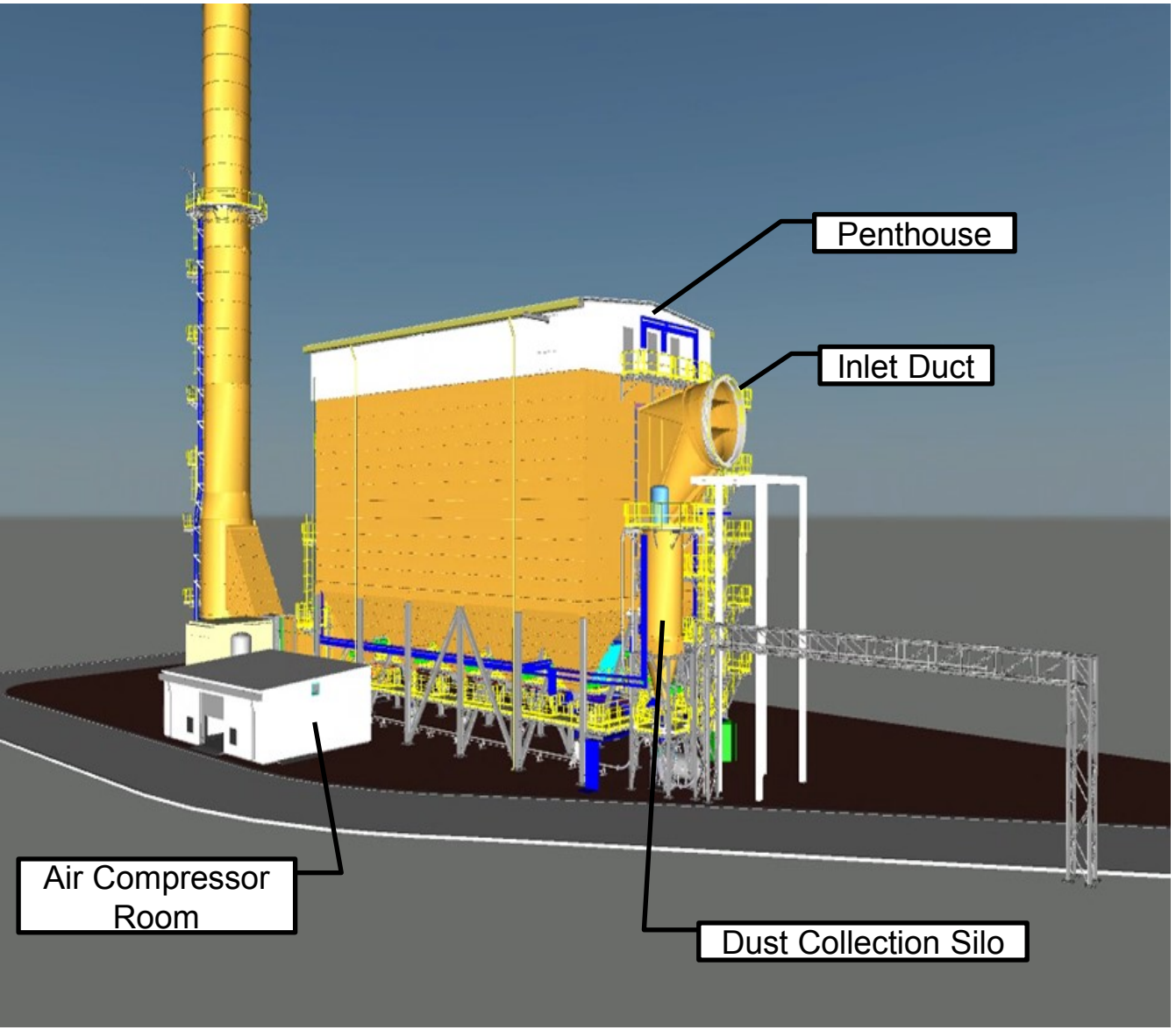
Drawing Title: Process Overview – Boldrocchi Scope

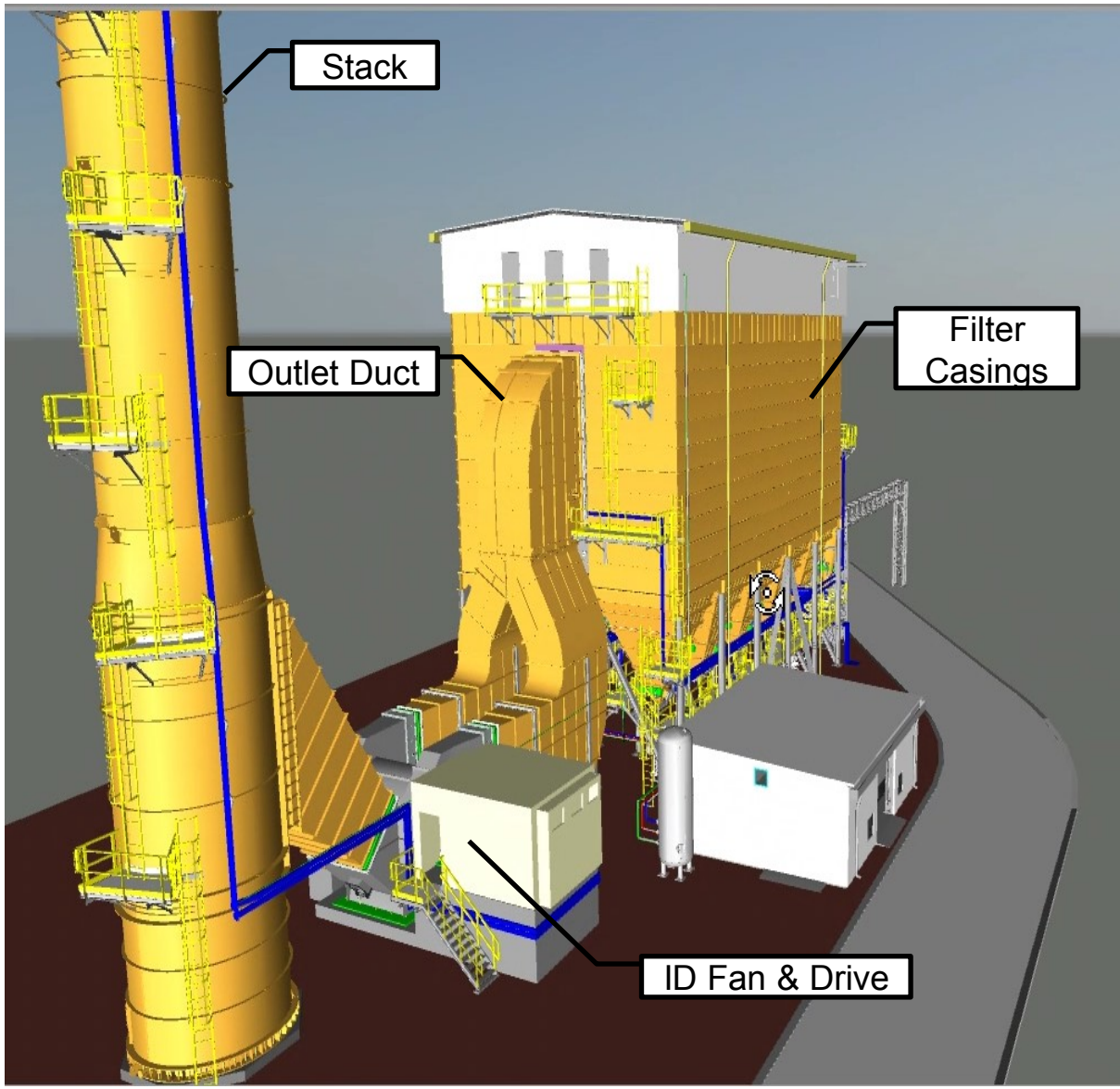
Scale	Drawn By	Drawn Date
	MJW	04/06/2018
Checked By	Approved By	Compartment

Drawing No.: DD RFQ 001

Sheet

Project Description and Scope





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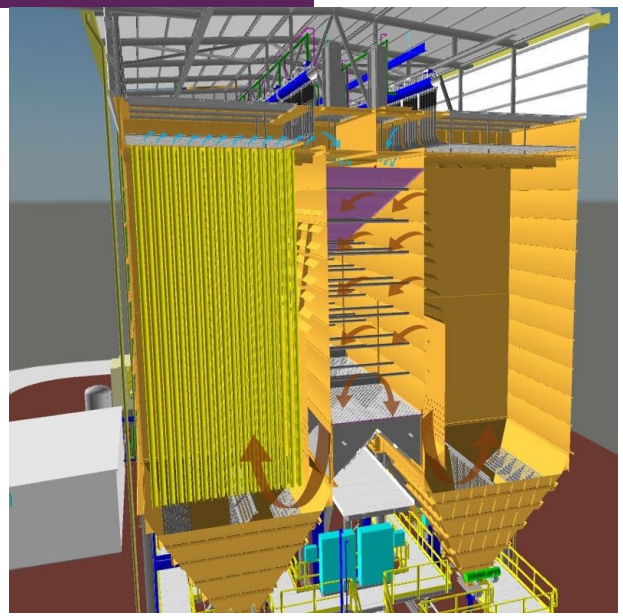
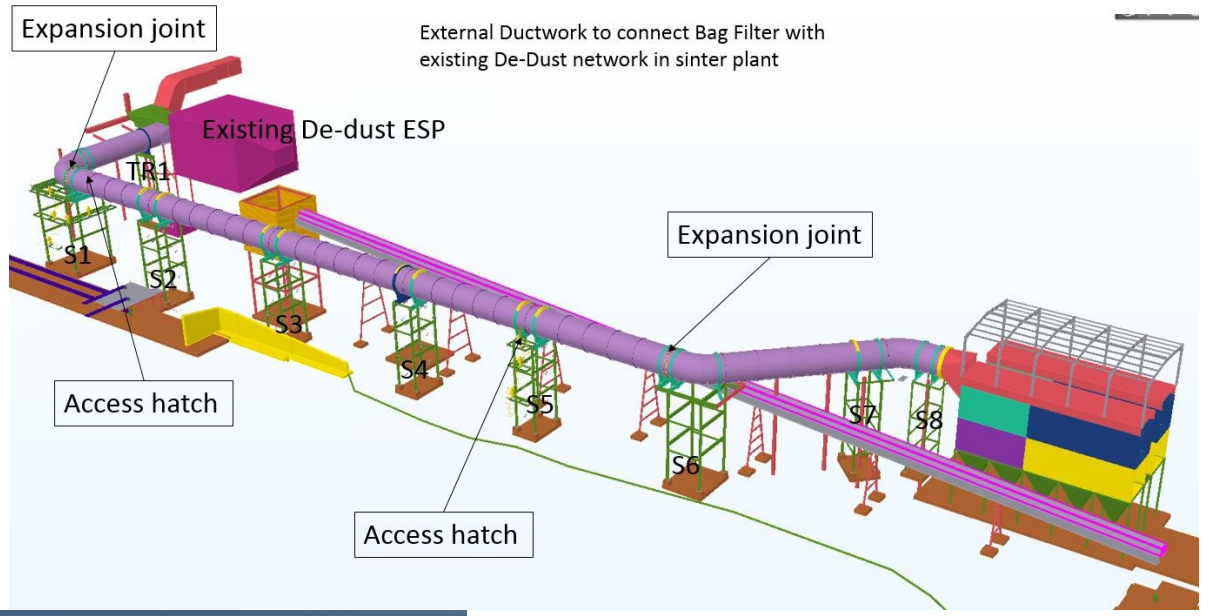
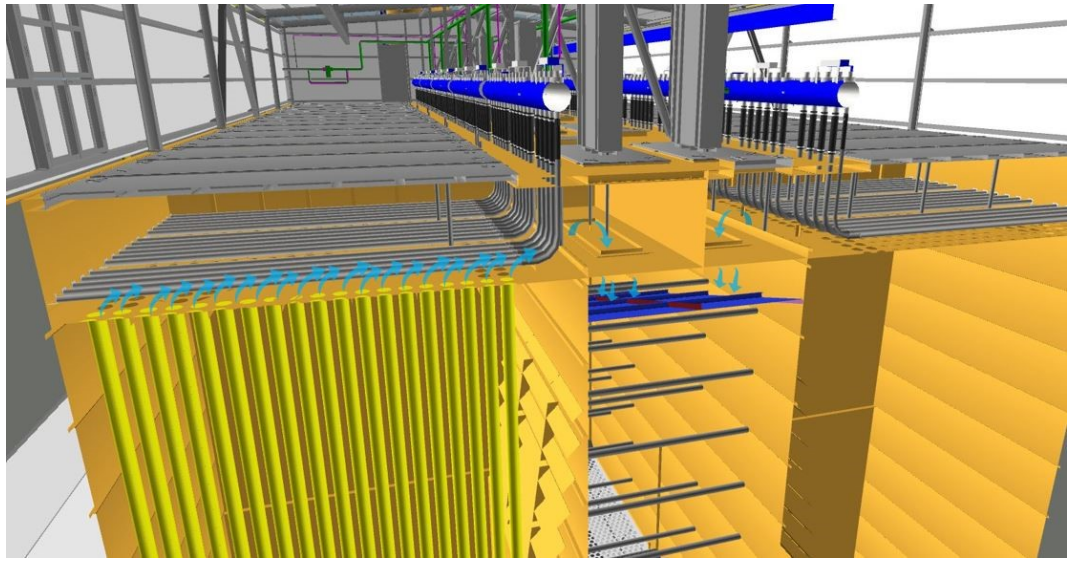
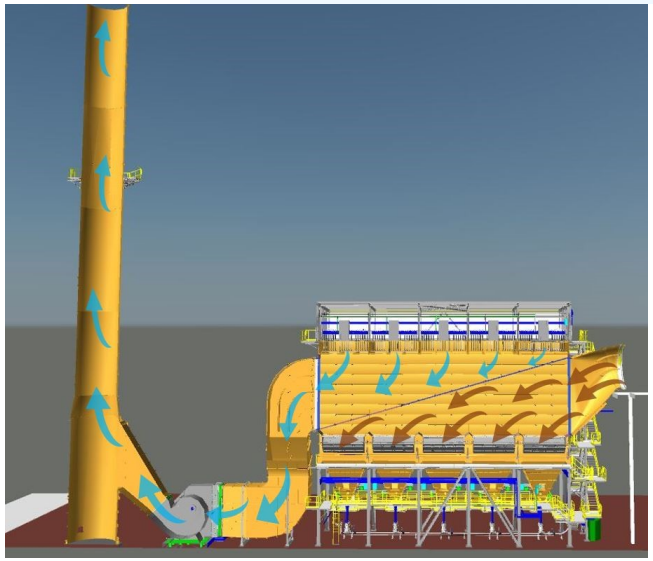




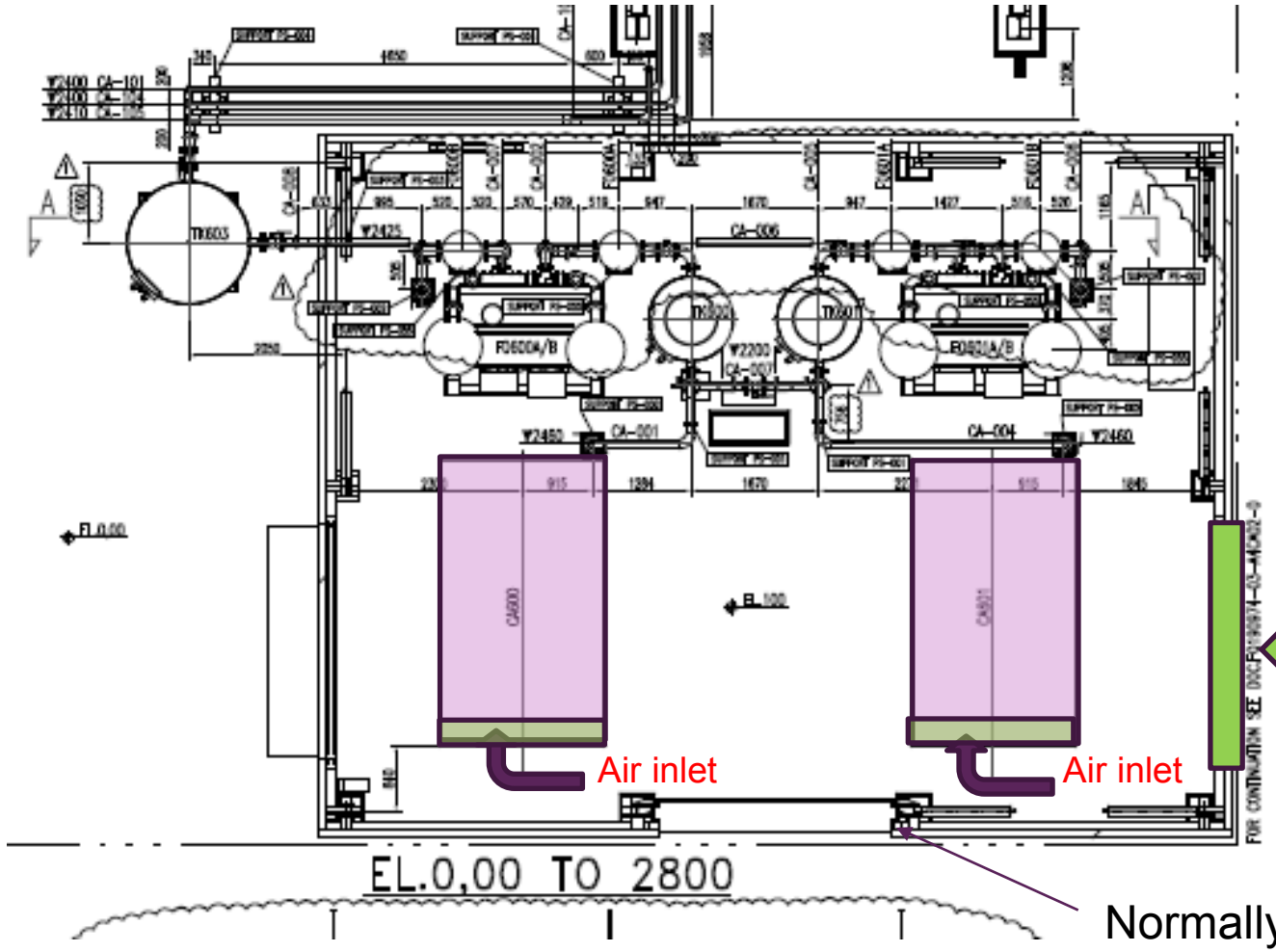




10 filter compartments in 2 rows of 5, each compartment contains 342 vertically hanging 9m bags.

2500Kw fixed speed fan.

Bag Filter Compressor House



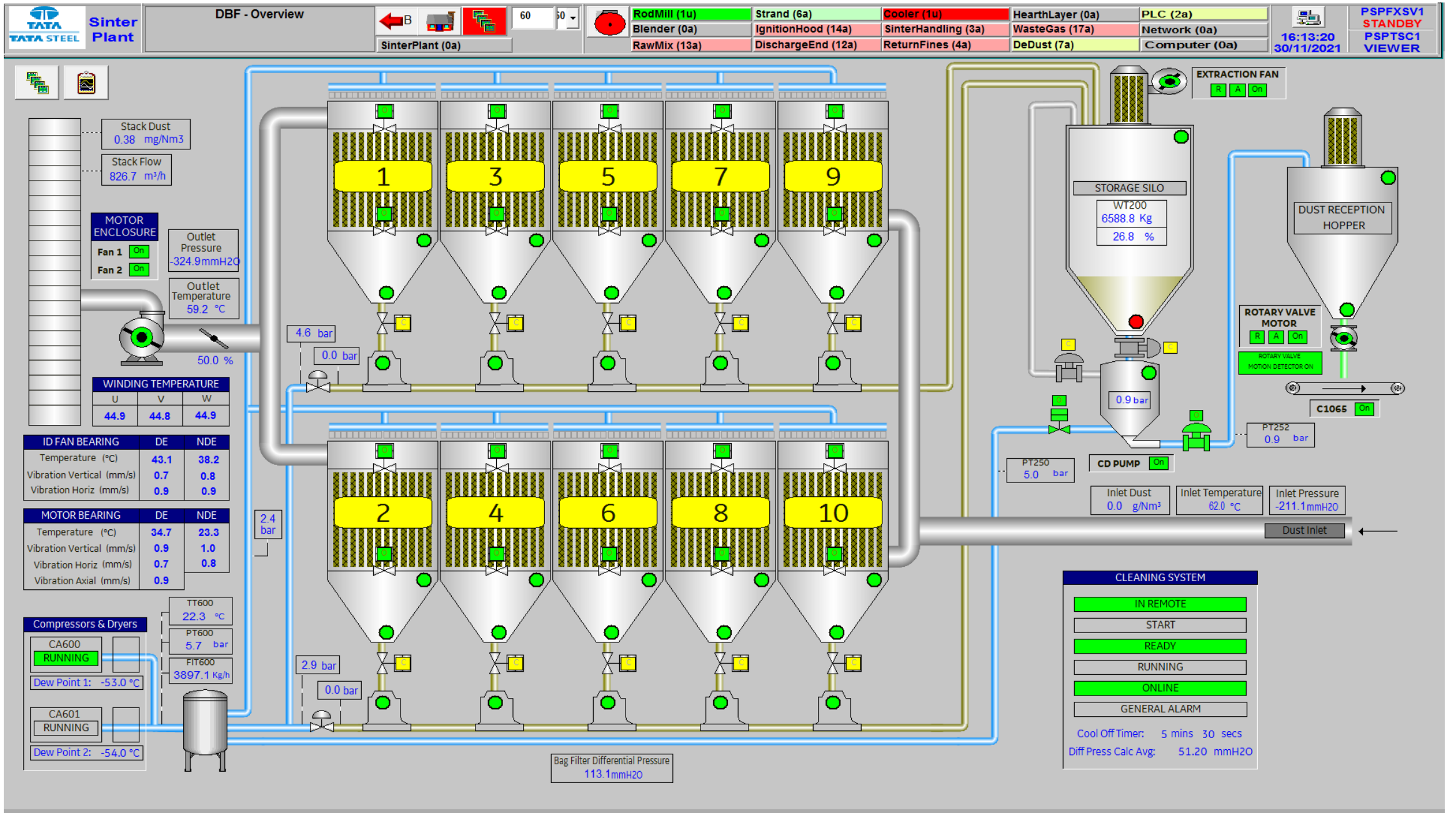
2 Compressors are Ingersoll Rand RS250n with VSD drives. Duty/Standby arrangement ie. only one runs at a time. Each requires 6800 CFM.

Each compressor has a desiccant dryer to provide a dewpoint of -50C.

Air Inlet & Filter pack

Normally closed roller access door

Usual Wind Direction


TATA STEEL
Sinter Plant
DBF - Overview
SinterPlant (0a)
RodMill (1u)
Blender (0a)
RawMix (13a)
Strand (6a)
IgnitionHood (14a)
DischargeEnd (12a)
Cooler (1u)
SinterHandling (3a)
ReturnFines (4a)
HearthLayer (0a)
WasteGas (17a)
DeDust (7a)
PLC (2a)
Network (0a)
Computer (0a)
16:13:20
30/11/2021
PSPFXSV1
STANDBY
PSPTSC1
VIEWER
Stack Dust
0.38 mg/Nm3
Stack Flow
826.7 m³/h
MOTOR ENCLOSURE
Fan 1 On
Fan 2 On
Outlet Pressure
-324.9mmH2O
Outlet Temperature
59.2 °C
50.0 %
WINDING TEMPERATURE
U V W
44.9 44.8 44.9
ID FAN BEARING DE NDE
Temperature (°C) 43.1 38.2
Vibration Vertical (mm/s) 0.7 0.8
Vibration Horiz (mm/s) 0.9 0.9
MOTOR BEARING DE NDE
Temperature (°C) 34.7 23.3
Vibration Vertical (mm/s) 0.9 1.0
Vibration Horiz (mm/s) 0.7 0.8
Vibration Axial (mm/s) 0.9
Compressors & Dryers
CA600 RUNNING
Dew Point 1: -53.0 °C
CA601 RUNNING
Dew Point 2: -54.0 °C
TT600 22.3 °C
PT600 5.7 bar
FIT600 3897.1 Kg/h
1 3 5 7 9
2 4 6 8 10
4.6 bar
0.0 bar
2.4 bar
2.9 bar
0.0 bar
Bag Filter Differential Pressure
113.1mmH2O
EXTRACTION FAN R A On
STORAGE SILO
WT200
6588.8 Kg
26.8 %
0.9 bar
PT250
5.0 bar
CD PUMP On
DUST RECEPTION HOPPER
ROTARY VALVE MOTOR R A On
ROTARY VALVE MOTION DETECTOR ON
C1065 On
PT252
0.9 bar
Inlet Dust
0.0 g/Nm³
Inlet Temperature
62.0 °C
Inlet Pressure
-211.1mmH2O
Dust Inlet
CLEANING SYSTEM
IN REMOTE
START
READY
RUNNING
ONLINE
GENERAL ALARM
Cool Off Timer: 5 mins 30 secs
Diff Press Calc Avg: 51.20 mmH2O

Schenck pneumatic dust conveying systems, 1 per row of 5 hoppers feed in to an intermediate silo.

Dust is pumped from this silo to the Sinter plant in a similar pneumatic conveyor.

Transport system air supply pressure is 6 Bar

Note this image was during construction.