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GLASS FURNACES

Meet us at E02
GLASSMAN
EUROPE 2025
14-15 May 2025, Istanbul, Turkey

GIZAZ GLASSWORK PROJECT IN QATAR

FROM CONCEPT TO REALITY: A LOOK INSIDE THE PROJECT AND TO ITS IMPLEMENTATION PATH

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PROJECT FLOW

1 PRELIMINARY ACTIVITIES /BACKGROUND
1.1 DESTINATION PLOT
1.2 PRELIMINARY ARRANGEMENT

2. CONTRACT DEFINITION
2.1 NEW PRODUCTION REQUIREMENT
2.2 EPC CONTRACT INDUSTRIAL

3 PROJECT DEVELOPMENT
- 3.1 BASIC ENGINEERING
- 3.2 DETAIL ENGINEERING
- 3.3 PROCUREMENT AND LOGISTICS
- 3.4 CONSTRUCTION ACTIVITIES
- 3.5 START-UP

CONSTRAINTS, CRITICAL POINTS AND CHALLENGES

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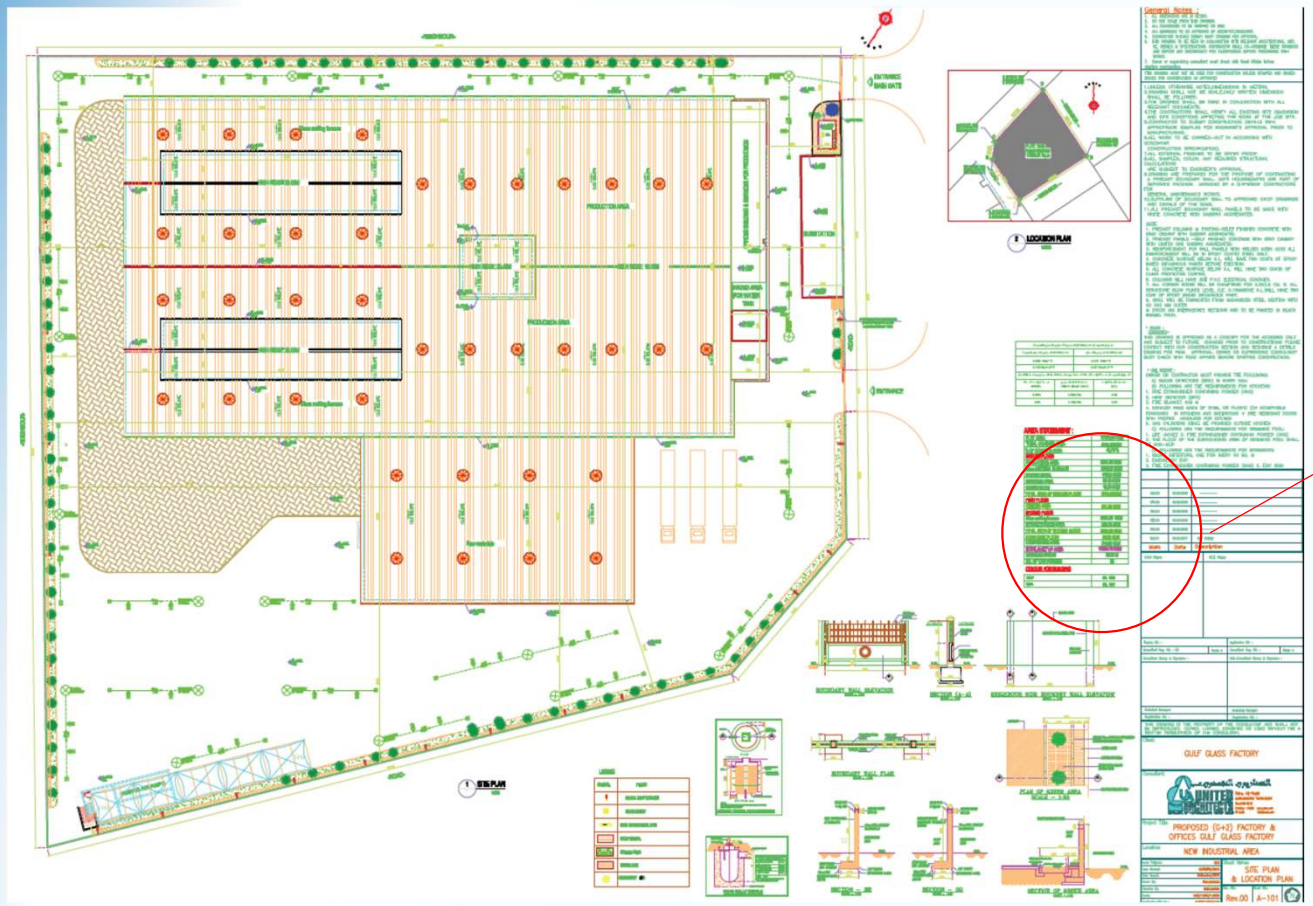
1. BACKGROUND/INPUT DATA

1.1 Destination plot

Reference plot by United



AREA STATEMENT :	
PLOT AREA	17838.00 SQM
TOTAL COVERED AREA	8164.00SQM
% OF COVERED AERA	45.76 %
GROUND FLOOR	
PRODUCTION AREA	3644.50 SQM
Glass MELTING FURNACE	2946.00 SQM
RAW MATERIAL	1457.0 SQM
SERVICES AREA	98.00 SQM
GUARD ROOM	18.50 SQM
TOTAL AREA OF GROUND FLOOR	8164.00SQM
FIRST FLOOR	
OFFICES AREA	341.00 SQM
SECOND FLOOR	
Glass melting furnace	5524.50 SQM
SERVICES ROOM AREA	328.70 SQM
TOTAL AREA OF SECOND FLOOR	5853.20 SQM
STAIR CASE FLOOR	38.50 SQM
CAR PARKING AREA	218.60 SQM
TOTAL BUILT UP AREA	14396.70 SQM
MAXIMUM HEIGHT	26.00 M
NO. OF CAR PARKING	25

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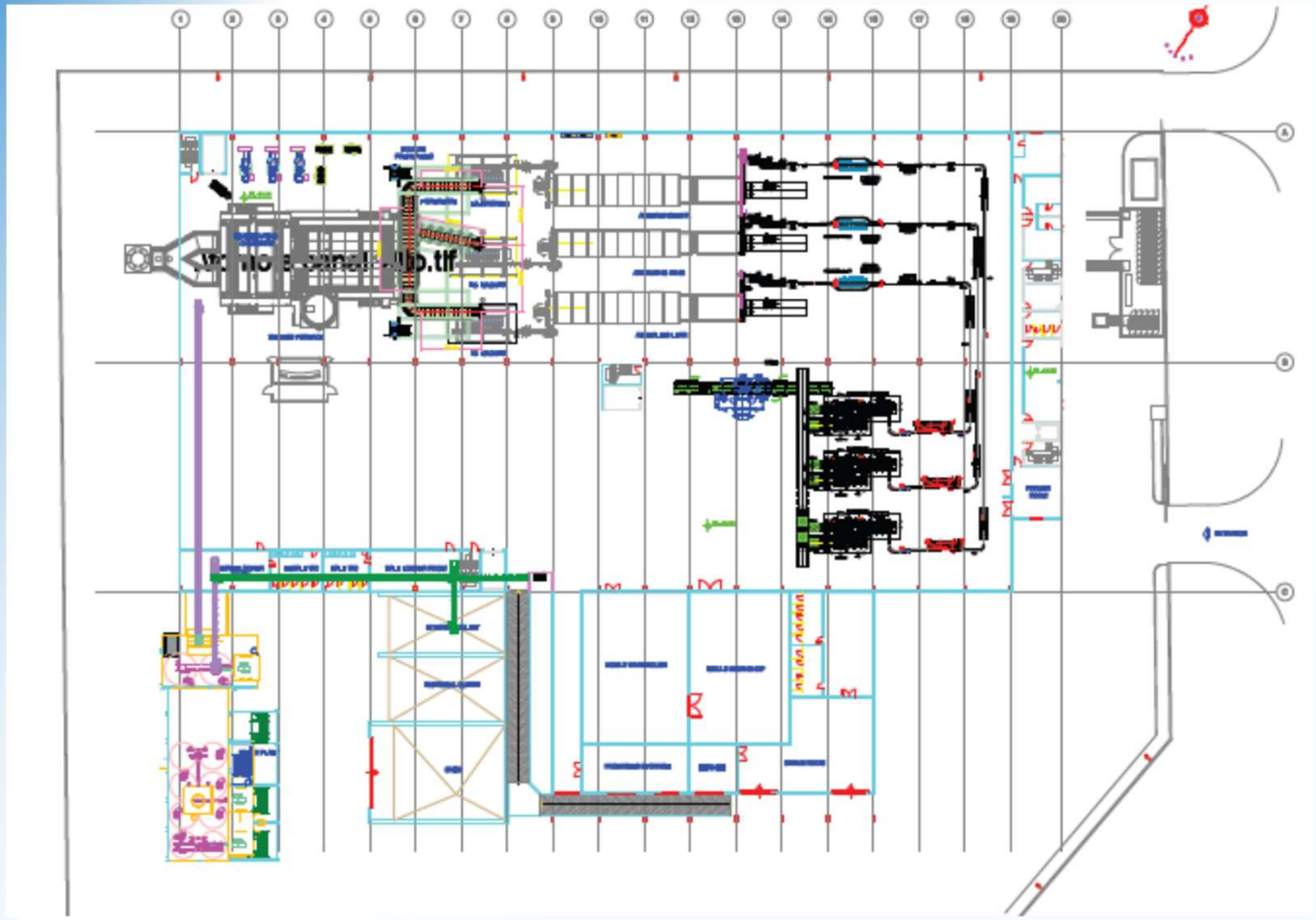
1. BACKGROUND/INPUT DATA

1.2 Preliminary Arrangement



Furnace melting capacity 200 tpd

No 3 production lines:

- **Nr 2 IS 10 machines**
- **Nr 1 IS 8 machine**

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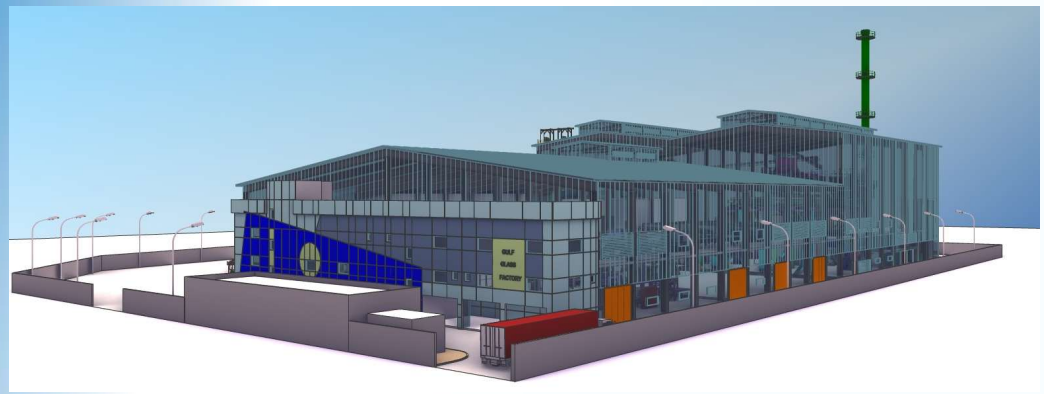
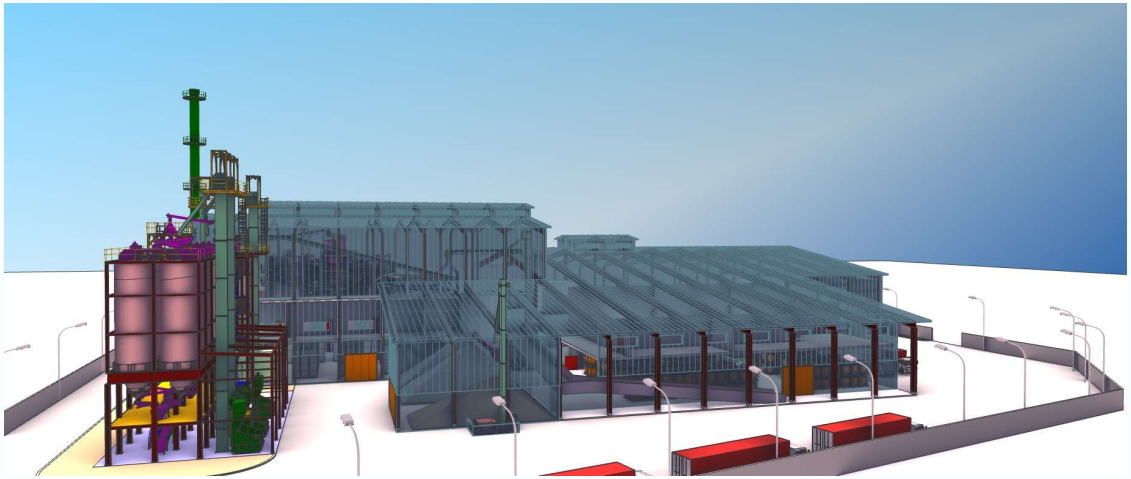
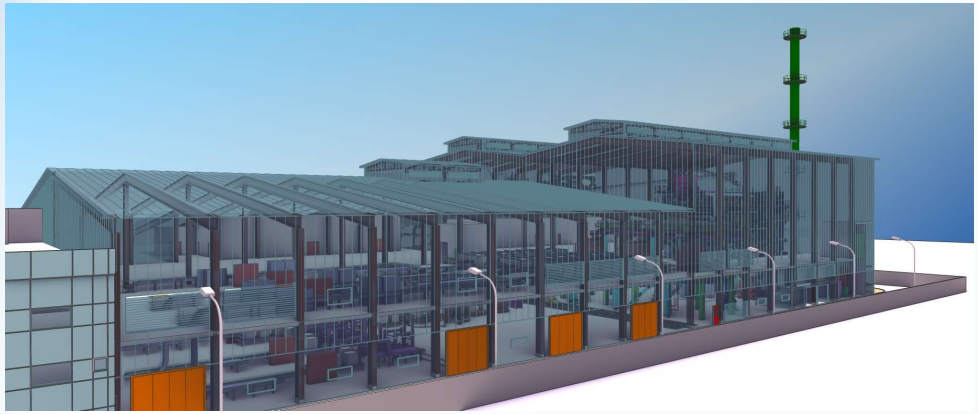
1. BACKGROUND/INPUT DATA

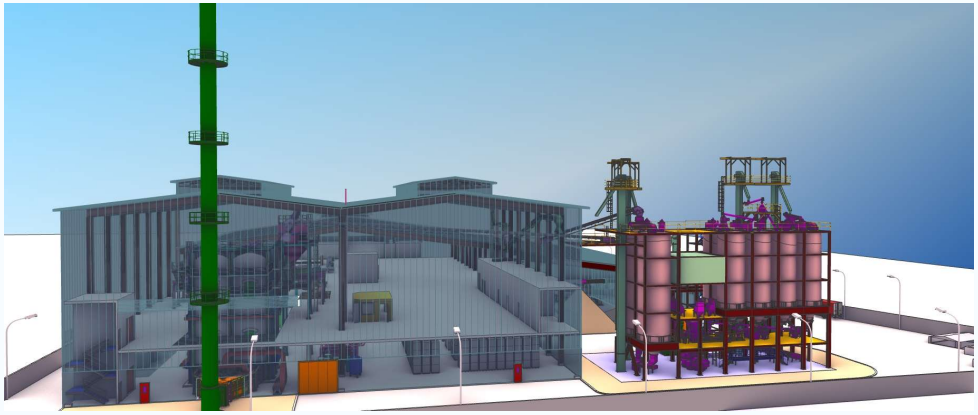
1.2 Preliminary Arrangement

Preliminary 3D rendering









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2. CONTRACT DEFINITION
2.1 New Production Requirement

PRODUCT MIX

Product	Bottle Height	Volume (Brimful Cap.)	Weight	Body Dia	Process
		(ml)	(g)		
LINE 1 (T.G. 8 SECTION 4.25)					
250 ml. NEW DORICA	231,5	270	265	49,5	BB
200 ml. WIDE MOUTH BOTTLE	161	213	170	53,6	BB (PB)
275 ml. NRB NEW BUZZ	210,5	282,94	205	57,2	BB
300 ml. NON REFILLABLE 7-UP	222	317	210	57,58	BB
300 ml. LW RANI JUICE	179	320	185	60,7	BB (PB)
500 ml. CANADIAN BOTTLE	262,5	522	330	66,6	BB
500 ml. DORICA BOTTLE	277,5	522,5	400	61	BB
750 ml. DORICA BOTTLE	300	772,5	506,6	70,3	BB
250 ml. NADAC JAR	120,7	250	180	67,5	PB
370 ml. JAR HEINZ	119	370	170	73,4	PB
LINE 2 (D.G. 8 SECTION 6.25)					
290 ml. HEXAGONAL JAR	105	290	260	77.2/69	PB
500 ml. FOOD JAR	148,1	528	248	78,3	PB
635 ml. JAR	137	635	268	85,42	PB
1000 ml. JAR	180	1025	410	96,3	PB
720 ml. JAR	149,2	720	310	87,5	PB
1300 ml. JAR	185	1300	420	105,8	PB
750 ml. RAYYAN WATER BOTTLE	294,2	768	480	88	BB
750 ml. NRB SEAGRAMS BOTTLE	288,5	794	525	79,2	BB
750 ml. MINERAL WATER BOTTLE	295	768	480	82	BB
1000 ml. BOTTLE	310,71	1025	520	83,3	BB
750 ml. BVS PUNTED BORDEAUX	297	762	500	76,6	BB
1250 ml. RB COCA-COLA CONTOUR	337	1285,88	880	93,5	BB
1000 ml. MARASCA BOTTLE	299,9	1021	640	97.6/73.8	BB
750 ml. MARASCA BOTTLE	302	770	520	82/65	BB
LINE 3 (T.G. 8 SECTION 4.25)					
370 ml. JAR (A)	118,8	370	180	72	PB
250 ml. FOOD JAR	97,6	262	150	67,4	PB
370 ml. TALL JAR	150	370	220	67,6	PB
375 ml. FOOD JAR	127,6	392	190	72,3	PB
250 ml. NRB MIRINDA	200,7	263,5	170	51,7	NNPB
355 ml. NRB PEPSI COLA BOTTLE	229	373	230	57,7	BB
330 ml. WATER BOTTLE	220	345	200	62	NNPB
500 ml. NATAKHTARI BOTTLE	263,8	520	345	68,4	BB
250 ml. SQUARE BOTTLE	211	265,4	249	59.5/46.5	BB
500 ml. SQUARE BOTTLE	259	520	392	73.74/58	BB
250 ml. RAYYAN WATER BOTTLE	195,4	264	170	61,6	NNPB
250 ml. NRB JUICE	155	262	155	60,2	NNPB

New requirement

- Flint glass furnace 200 tpd
- Production arrangement for:
  TG production
  NNPB process
- Future expansion second furnace 200 tpd flint&coloured glass

2. CONTRACT DEFINITION
2.2 EPC CONTRACT (INDUSTRIAL)

FALORNI EPC CONTRACT SCOPE OF SUPPLY

- **PROCESS LINE**

✓ Batch house
✓ Furnace & glass distribution
✓ Hot End
✓ Annealing lehrs
✓ Cold end & inspection machines

- **WORKSHOP**

✓ Mechanical workshop
✓ Chemical and quality laboratory

- **FLUIDS INFRASTRUCTURE**

✓ Compressor room and compressed air distribution
✓ Water station and water distribution
✓ Fuel (natural gas, light oil, LPG) distribution

- **ELECTRICAL INFRASTRUCTURE**

✓ LV distribution process line and utilities
✓ MV boosting distribution

OUT OF SCOPE OF SUPPLY (CIVIL CONTRACTOR)

Civil works & civil Equipment

✓ foundation & building
✓ external areas
✓ MV main transformers
✓ sewage system
✓ protection system (Fire-fighting, earthing, lighting rod)
✓ civil equipment (heating, cooling, lighting)
✓ LPG and Diesel Storage

CONSTRAINTS, CRITICAL POINTS AND CHALLENGES

PHYSICAL CONSTRAINTS/CHALLANGES

- **PLOT AREA DIMENSIONS**
  Approx 18000 sqm
  Short in width and length,
  Limited length of production building
- **SOIL CHARACTERISTICS**
  Rocky hard soil (impact on underground choices)
- **INTEGRATION WITH CIVIL WORKS SUPPLIER**
  Equipment requirement/civil constraints & standards
- **LOOK AHEAD AT INTERNAL LOGISTIC AND ERECTION ACTIVITIES**
  Limited area of action/access for lifting/handling

LOCAL CONSTRAINTS/REGULATION

- **CLIMATE AND ATMOSPHERIC ISSUES**
  High temperature and wet climate (Design 55 °C)
  Desertic, sea and windy area (dust and corrosion)
- **URBANISTIC AND CIVIL DEFENCE CONSTRAINTS**
  Limits in overground structures, building height , viability
  Safety regulation (firefighting, emergency procedures)
- **ELECTRICAL BODY CONSTRAINTS**
  Infrastructure and technical limitation (mandatory standard by local body)
  Approval and Commissioning process

3. PROJECT DEVELOPMENT
3.1 ENGINEERING FINAL

- **PLOT LAY-OUT** ⇒ Arrangement of **EXTERNAL AREAS and TECHNICAL AREAS**
- **PRODUCTION BUILDING LAY-OUT** ⇒ **Production line and equipment arrangement** for provision future second furnace
- **ELECTRICAL INFRASTRUCTURE** ⇒ No 2 electrical rooms with electrical infrastructure **fully automated**
- **FLUIDS INFRASTRUCTURE** ⇒ **Water station and distribution**
  Compressor room and distribution
  Natural gas distribution
  Back-up fuels
- **EQUIPMENT SPECIFICATION AND PROTECTION** ⇒ For climate and environmental conditions

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3. PROJECT DEVELOPMENT
3.2 PLOT LAY-OUT (FINAL)

PLOT LAY-OUT

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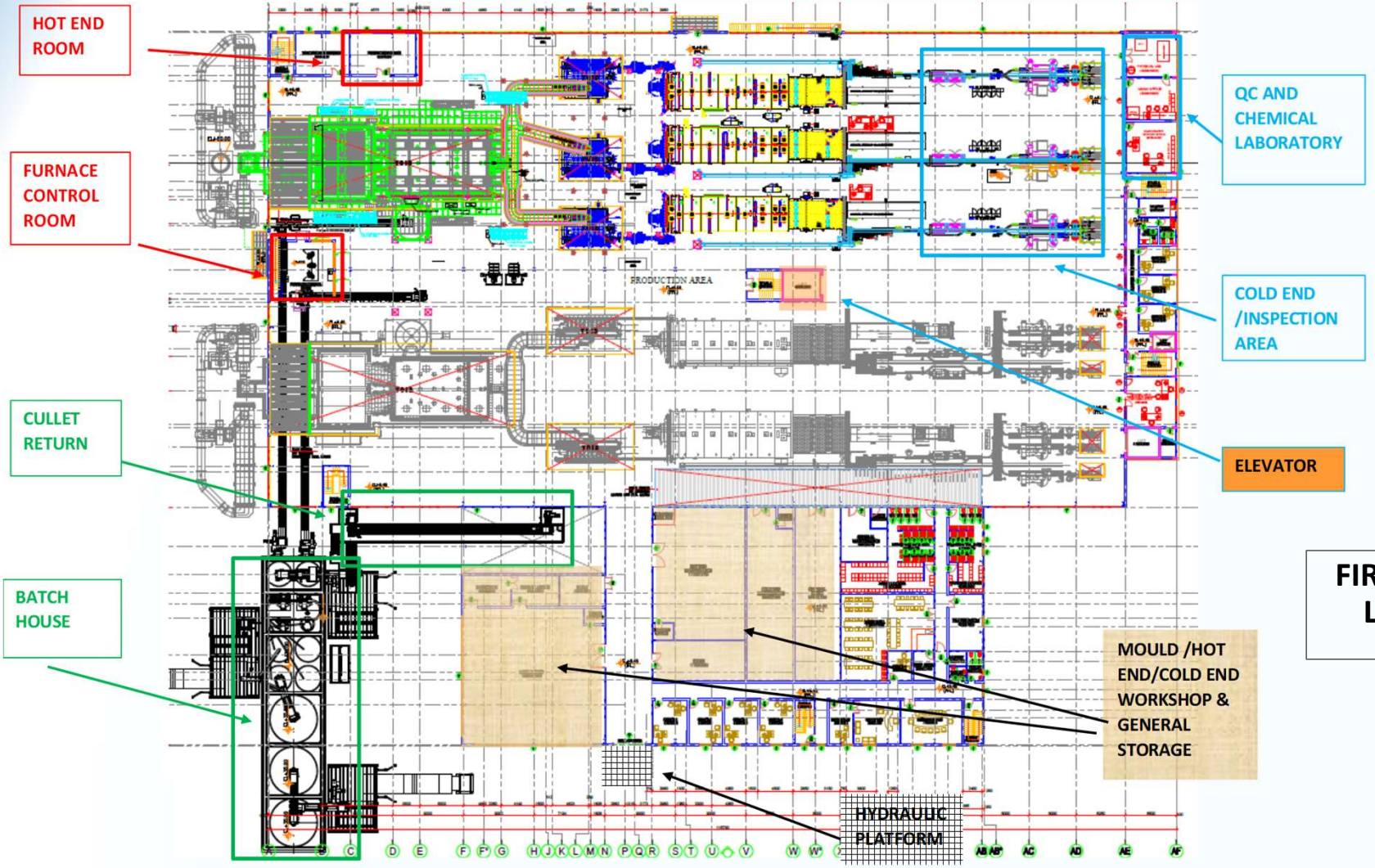
3. PROJECT DEVELOPMENT
3.3 MAIN BUILDING 1° FLOOR (FINAL)



FIRST FLOOR LAY-OUT

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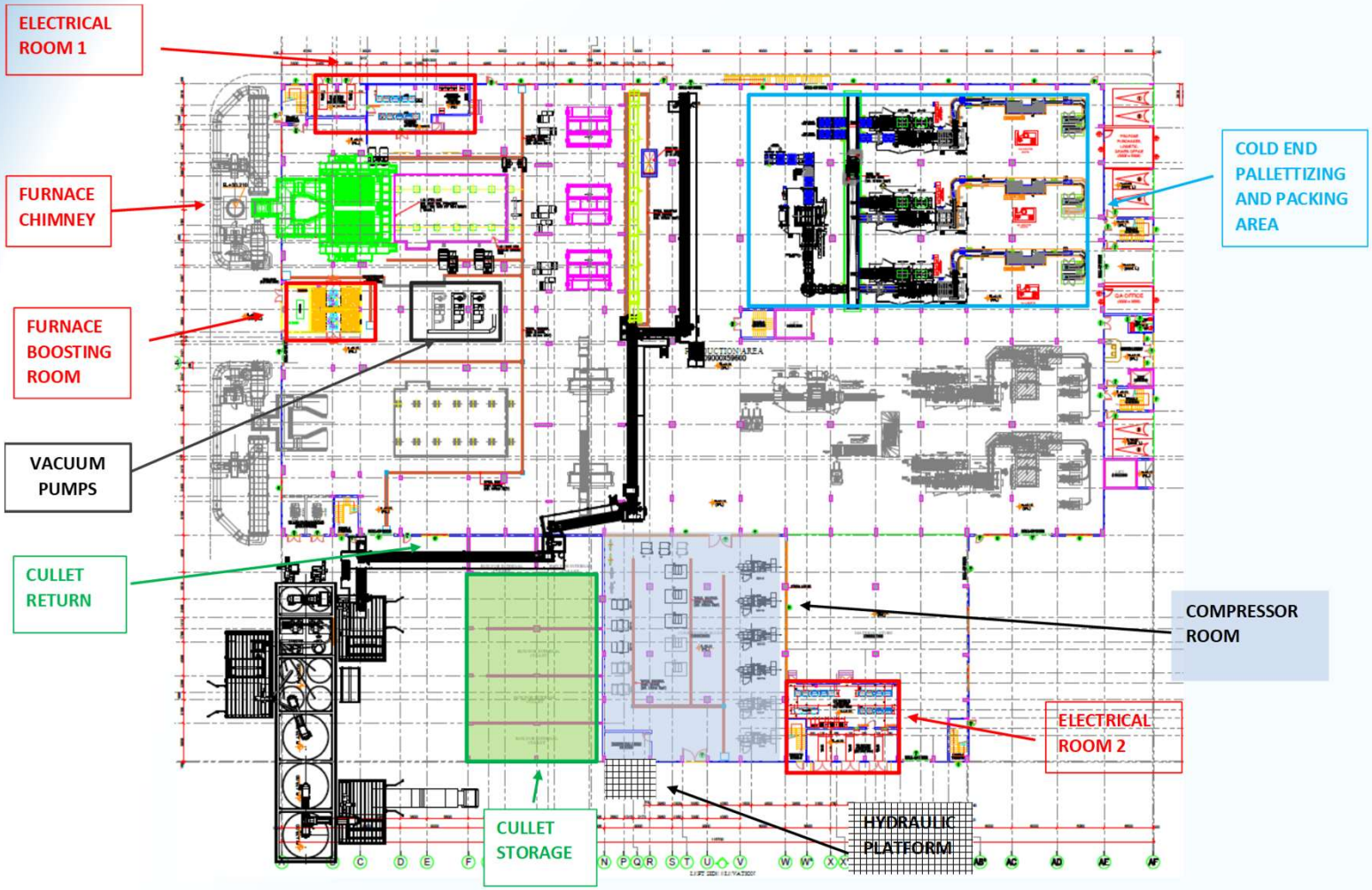
3. PROJECT DEVELOPMENT
3.4 MAIN BUILDING GROUND FLOOR (FINAL)



GROUND FLOOR LAY-OUT

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3. PROJECT DEVELOPMENT
ELECTRICAL ROOMS

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3. PROJECT DEVELOPMENT
COMPRESSOR ROOM

Compressor Room

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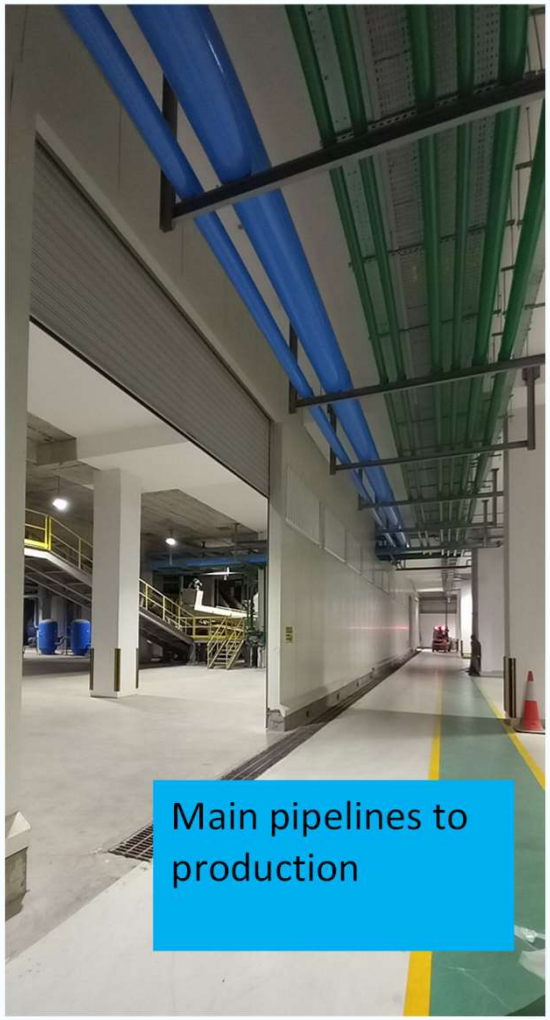
3. PROJECT DEVELOPMENT
WATER INFRASTRUCTURE



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3. PROJECT DEVELOPMENT
3.5 ENGINEERING SOURCES

ENGINEERING/ PROJECT SOURCES

- Project Management
- Technical Office
- Accountability
- Technical experts
  - Civil work
  - Steel structure
  - Batch house
  - Refractory
  - Hot End
  - Cold End
  - Fluids/equipment piping
  - Electrical design
  - Automation design
- External engineering companies

- More than 30 people involved !!

- More than 10. 000 technical documents (drawings, specification, flowsheet, P&I, dimensioning sheets) managed

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3. PROJECT DEVELOPMENT
3.3 PROCUREMENT KEY FIGURES

SOURCING FROM 15 COUNTRIES

- 11 Europe
- 2 Middle East
- 2 Asia

MORE THAN 85 SUPPLIERS

- 10 Strategic
- 5 Main
- 20 Equipment

3. PROJECT DEVELOPMENT
3.4 LOGISTIC KEY FIGURES

UNITS DELIVERED TO DOHA

- 250 CONTAINERS BY SHIP

- 50 TRUCKS BY ROAD

VOLUMES DELIVERED TO DOHA 3700 TONS

- 700 tons steelwork
- 2100 tons refractories
- 900 tons production line + equipment + utilities

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3. PROJECT DEVELOPMENT
3.4 ERECTION KEY FIGURES

KEY FIGURES INSTALLED MATERIALS

STEELWORK	700 tons	
FURNACE REFRACTORIES	2100 tons	
BATCH HOUSE + CULLET RETURN EQUIPMENT		
FURNACE EQUIPMENT		
NO 3 HOT END LINES, ANNEALING, COLD END LINES		
COMPRESSORS, VACUUM EQUIPMENT		
WATER CIRCUIT EQUIPMENT		
ELECTRICAL EQUIPMENT		900 tons
PIPING CONNECTIONS	3,7 km	
WATER	1,6 km	
COMPRESSED AIR + VACUUM	0,9 km	
NATURAL GAS + FUELS	1,2 km	
ELECTRICAL CONNECTIONS	36,4 km	
POWER CABLES	18,1 km	
SIGNAL CABLES	18,3 km	

3. PROJECT DEVELOPMENT
3.4 ERECTION KEY FIGURES

ERECTION/ PROJECT SOURCES

- Project Management and planning
- Technical Office
- Local company & Site organization
- Technical assistance
  - Falorni technicians
  - External experts
  - Sub-suppliers' technicians
- Construction companies
- Lifting/Handling means companies

- More than 30 people involved in technical assistance
- More than 10 companies local + foreign
- More than 120 workers on site (peak)

3. PROJECT DEVELOPMENT
3.5 START-UP KEY FIGURES

COMMISSIONING /START-UP SOURCES

- Project Management and planning
- Local company & Site organization
- Technical assistance
  - Falorni technicians
  - External experts
  - Sub-suppliers' technicians

- More than 60 people involved in commissioning/start-up
- After 7 days from glass draining all 3 lines in production and start packing good product
- After 1 month from production start factory Efficiency @ 90%

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3. PROJECT DEVELOPMENT
FROM ORIGIN TO GLASS FACTORY

3. PROJECT DEVELOPMENT
FACTORY ON THE RUN

VIDEO OF GIZAZ FACTORY ON THE RUN

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