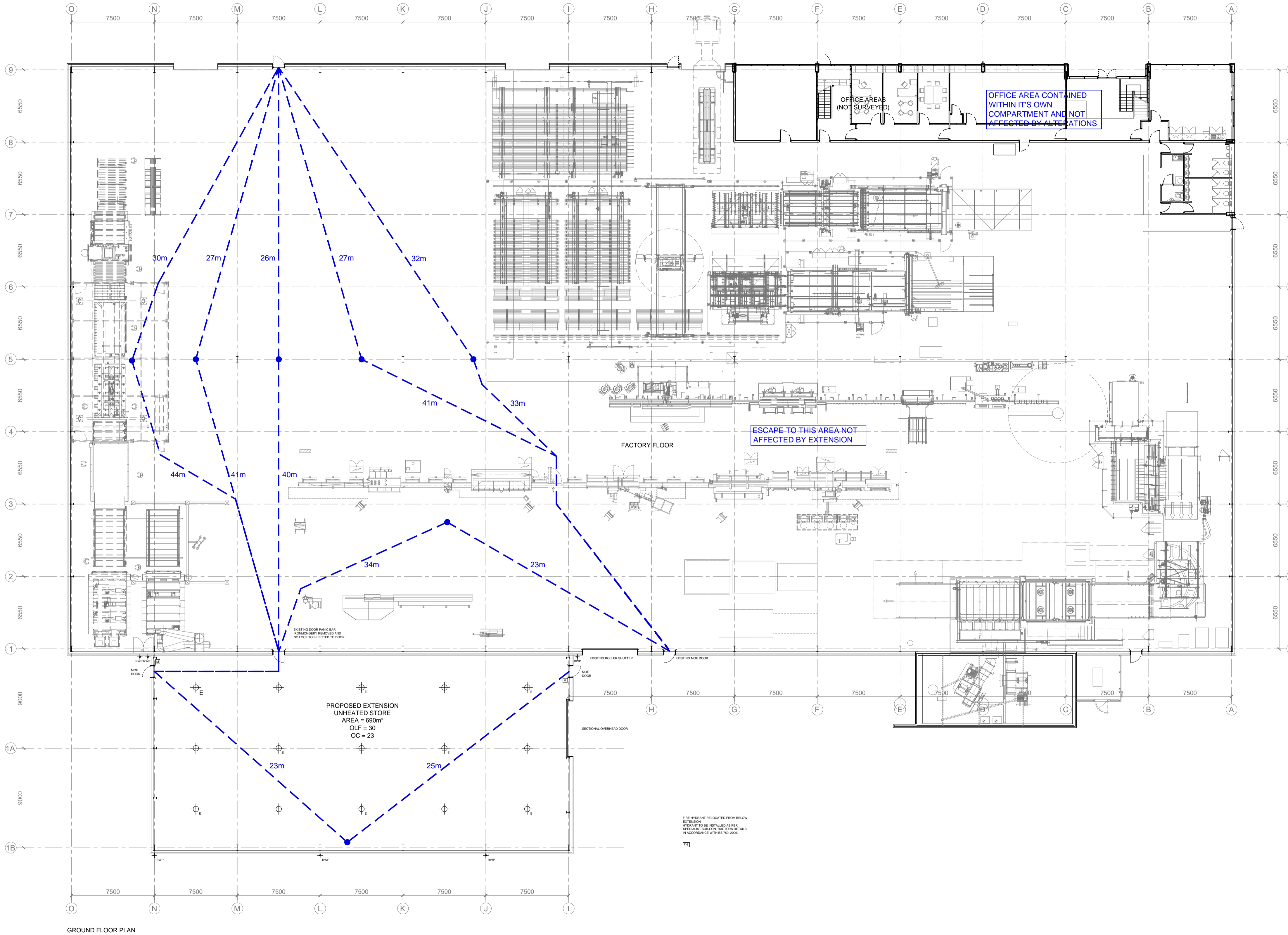


0 4 8 12 16 20

SCALE 1:200 (A1) LENGTHS SHOWN IN METRES

All dimensions and levels to be checked on site prior to the commencement of work. Architect to be informed of any discrepancies prior to the commencement of work. Unspecified dimensions are not to be scaled off this drawing. All dimensions are in millimetres unless stated otherwise. If any dimensions or details conflict please notify the Architect immediately. This drawing is to be used for STATUTORY purposes only. This is not a CONSTRUCTION drawing.



GROUND FLOOR PLAN

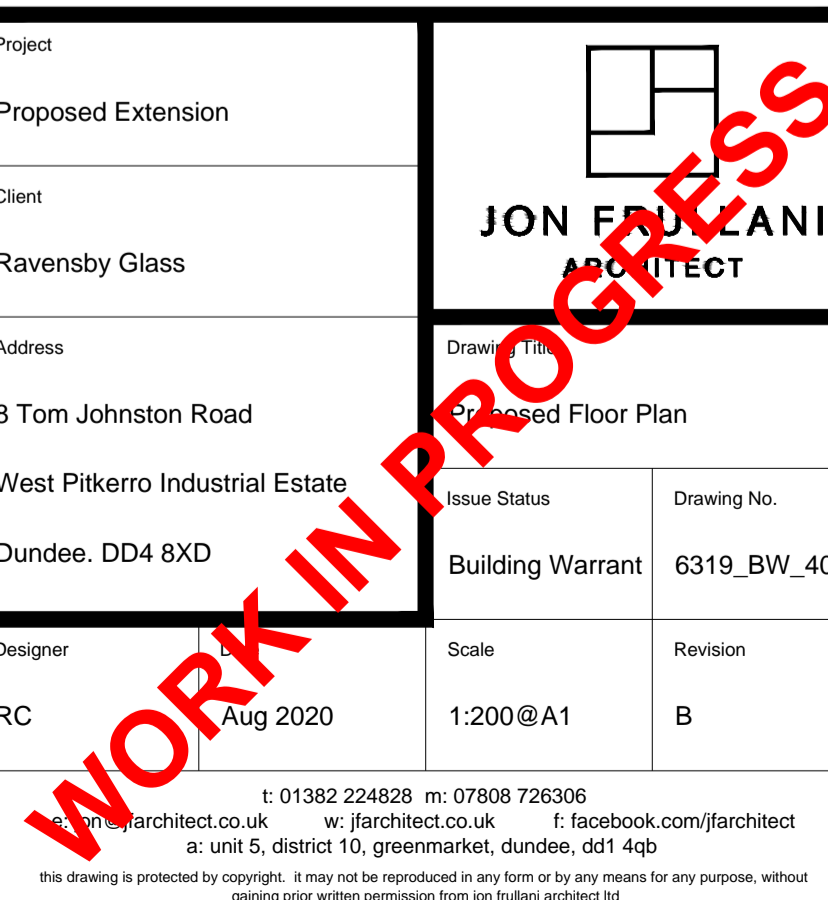
- GENERAL**
- ALL NEW WORKS TO BE CARRIED OUT IN ACCORDANCE WITH BUILDING (SCOTLAND) REGULATIONS 2019 AND ALL CURRENT AMENDMENTS.
- ALL NEW WORKS, PRODUCTS AND PROCESSES ARE TO BE IN ACCORDANCE WITH THE RELEVANT BRITISH STANDARDS AND MANUFACTURERS' GUIDANCE.
- EXTENSION TO BE UNHEATED NON-DOMESTIC BUILDING
- FOR THE PURPOSES OF SATISFYING THE SCOTTISH TECHNICAL STANDARDS STORAGE AREA TO HAVE A TRAVEL DISTANCE OF 18M IN ONE DIRECTION AND 45M IN MORE THAN ONE DIRECTION.
- REGULATION 1.2.2**
RISK GROUP 3 (FACTORY CLASS 1)
- REGULATION 2.1.1**
MAXIMUM AREA OF COMPARTMENT 33,000m²
- FOUNDATIONS**
FOUNDATIONS AND SUB-STRUCTURE IS TO BE CONSTRUCTED IN ACCORDANCE WITH STRUCTURAL ENGINEERS' DETAILS AND SPECIFICATION.
- STEEL FRAME**
STEEL FRAME IS TO BE CONSTRUCTED IN ACCORDANCE WITH STRUCTURAL ENGINEERS' DETAILS AND SPECIFICATION.
- FLOOR**
IN-SITU REINFORCED CONCRETE FLOOR SLAB TO STRUCTURAL ENGINEERS SPECIFICATION WITH VISQUEEN HIGH PERFORMANCE DAMP PROOF MEMBRANE (OR E6A) ON SAND BINDING ON HARDWOOD TO S.E. SPECIFICATION
- FLOOR SURFACES**
FLOOR SURFACES TO CORRIDORS AND CIRCULATION AREAS TO BE UNIFORM, PERMIT EASE IN MANOEUVRING AND BE OF A MATERIAL AND FINISH THAT, WHEN CLEAN AND DRY, PROVIDES A LEVEL OF TRACTION THAT WILL MINIMISE THE POSSIBILITY OF SLIPPING.
- EXTERNAL WALL CONSTRUCTION**
75mm THK. (40mm CORE) KINGSPAN KS1000 RW TRAPEZOIDAL COMPOSITE CLADDING PANEL (OR E6A) FIXED TO STEEL CLADDING RAILS ON STRUCTURAL STEELWORK. PANELS & ASSOCIATED FLASHINGS TO BE FITTED TO MANUFACTURERS' RECOMMENDATIONS.
- PANEL COLOUR TO MATCH EXISTING CLADDING
- EXTERNAL AND INTERNAL FACES OF PANEL TO BE CLASS 0 IN ACCORDANCE WITH BUILDING REGULATIONS WHEN TESTED TO BS 476:PART 6:2008 AND PART 7:1987
- A SANDWICH PANEL USED FOR INTERNAL WALLS OR LININGS IN A NON-RESIDENTIAL BUILDING TO BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE DESIGN, CONSTRUCTION, SPECIFICATION AND FIRE MANAGEMENT OF INSULATED ENVELOPES FOR TEMPERATURE CONTROLLED ENVIRONMENTS, INTERNATIONAL ASSOCIATION OF COLD STORAGE CONTRACTORS (EUROPEAN DIVISION), 2008.
- ROOF CONSTRUCTION**
75mm THK. (40mm CORE) KINGSPAN KS1000 RW TRAPEZOIDAL COMPOSITE CLADDING PANEL (OR E6A) FIXED TO STEEL PURLIN ON STRUCTURAL STEELWORK. PANELS & ASSOCIATED FLASHINGS TO BE FITTED TO MANUFACTURERS' RECOMMENDATIONS.
- DOORS**
STEEL DOORSET COLOUR TO MATCH ADJACENT CLADDING PANEL TO PROVIDE MINIMUM CLEAR WIDTH OF 1050mm
- AS BUILDING IS NOT OPEN TO PUBLIC ALL EXIT DOORS ARE FITTED WITH EMERGENCY EXIT DEVICE (LEVER HANDLE/PUSH BAR/PAD) TO BS EN: 179:2008 INTERNALLY. (I.E. NO LOCKS ON SIDE OF DOOR APPROACHED BY OCCUPANTS MAKING AN ESCAPE)
- WIDE NOTES**
AS BUILDING IS NOT OPEN TO PUBLIC ALL EXIT DOORS ARE FITTED WITH EMERGENCY EXIT DEVICE (LEVER HANDLE/PUSH BAR/PAD) TO BS EN: 179:2008
- EXTERNAL GROUND LEVELS TO BE GRATED TO FINISH LEVEL WITH INTERNAL FINISHED FLOOR LEVEL. I.E. NO STEPS. MINIMUM
- FINAL EXITS TO BE PROVIDED WITH A LEVEL PLATT EXCEPT FOR ANY NOMINAL SLOPE FOR DRAINAGE HAVING AN AREA OF AT LEAST 1.2m x 1.2m, AND A THRESHOLD THAT DOES NOT FORM A TRIP HAZARD AND WILL PERMIT UNASSISTED EGRESS TO OCCUPANTS IN A WHEELCHAIR
- SECTIONAL OVERHEAD SHUTTER**
4.5m HIGH GALVANISED STEEL SECTIONAL OVERHEAD SHUTTER INSTALLED TO MANUFACTURERS SPECIFICATION. SUPPORT STEEL TO S.E. SPECIFICATION
- COLOUR TO MATCH ADJACENT WALL CLADDING PANELS
- EMERGENCY MANUAL OVER-RIDE TO BE PROVIDED IN CASE OF POWER FAILURE
- VENTILATION**
NATURAL VENTILATION PROVIDED BY WAY OF SECTIONAL OVER HEAD SHUTTER.
- CLEAR AREA PROVIDED = 24.70m²
- 100% FLOOR AREA = 690m² = 30 x 23m²
- TRICKLE VENTILATION WITH AN OPENING AREA OF 400mm² FOR EACH SQUARE METRE OF ROOM AREA TO BE PROVIDED
- SURFACE WATER DRAINAGE**
SURFACE WATER DRAINAGE SYSTEM TO BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS IN BS EN 12056-3:2008.
- FOR BELOW GROUND DRAINAGE PLEASE REFER TO STRUCTURAL ENGINEERS DRAWINGS AND SPECIFICATIONS
- ELECTRICAL INFORMATION**
ALL ELECTRICAL WORK WILL BE CARRIED OUT BY A COMPETENT ELECTRICAL CONTRACTOR. THE INSTALLATION IS THE DESIGN CONSTRUCTION, INSPECTION AND TESTING WILL BE COMPLETED IN STRICT ACCORDANCE WITH BS 7671:2008 INCORPORATING ANY AMENDMENTS (IE WIRING REGULATIONS 17TH EDITION) AND IN COMPLIANCE WITH OTHER BUILDING REGULATIONS. IN PARTICULAR, WILL NOT COMPROMISE FIRE STOPPING, STRUCTURAL INTEGRITY, SOUND INSULATION, THERMAL INSULATION AND OTHER RELATED MATTERS. THE CONTRACTOR WILL PROVIDE THE RELEVANT CERTIFICATION AT THE COMPLETION OF HIS PART OF THE WORK.
- OUTLETS AND CONTROLS OF ELECTRICAL FIXTURES AND SYSTEMS SHOULD BE POSITIONED AT LEAST 300MM FROM ANY INTERNAL CORNER, PROJECTING WALL OR SIMILAR OBSTRUCTION AND, UNLESS THE NEED FOR A HIGHER LOCATION CAN BE DEMONSTRATED, NOT MORE THAN 1.2M ABOVE FLOOR LEVEL. THIS WOULD INCLUDE FIXTURES SUCH AS SOCKETS, SWITCHES, FIRE ALARM CALL POINTS AND TIMER CONTROLS OR PROGRAMMERS, WITHIN THIS HEIGHT RANGE:
- LIGHT SWITCHES SHOULD BE POSITIONED AT A HEIGHT OF BETWEEN 900MM AND 1.1M ABOVE FLOOR LEVEL
 - STANDARD SWITCHED OR UNSWITCHED SOCKET OUTLETS AND OUTLETS FOR OTHER SERVICES SUCH AS TELEPHONE OR TELEVISION SHOULD BE POSITIONED AT LEAST 300MM ABOVE FLOOR LEVEL, ABOVE AN OBSTRUCTION, SUCH AS A WORKTOP. FIXTURES SHOULD BE AT LEAST 150MM ABOVE THE PROJECTING SURFACE
 - WHERE SOCKETS ARE CONCEALED, SUCH AS TO THE REAR OF BUILT-IN APPLIANCES, OR OBSTRUCTED BY BUILT-IN FURNITURE, SEPARATE SWITCHING SHOULD BE PROVIDED IN AN ACCESSIBLE POSITION, TO ALLOW APPLIANCES TO BE ISOLATED.
- LIGHTING TO BE DESIGNED AND CONSTRUCTED IN SUCH A WAY THAT THE ARTIFICIAL OR DISPLAY LIGHTING INSTALLED IS ENERGY EFFICIENT AND IS CAPABLE OF BEING CONTROLLED TO ACHIEVE OPTIMUM ENERGY EFFICIENCY LIGHTING TO BE INSTALLED IN LINE WITH THE GUIDANCE ON THE EFFICIENCY OF FIXED INTERNAL AND EXTERNAL LIGHTING GIVEN IN THE NON-DOMESTIC BUILDING SERVICES COMPLIANCE GUIDE FOR SCOTLAND.
- LIGHTING**
LIGHTING TO MEET THE RECOMMENDED MINIMUM STANDARDS FOR:
- A. EFFICACY (AVERAGED OVER THE WHOLE AREA OF THE APPLICABLE TYPE OF SPACE IN THE BUILDING) AND CONTROLS IN TABLE 42 OF THE NON-DOMESTIC BUILDING SERVICES COMPLIANCE GUIDE FOR SCOTLAND OR
- B. THE LUMEN IN TABLE 44 OF THE NON-DOMESTIC BUILDING SERVICES COMPLIANCE GUIDE FOR SCOTLAND. THE LUMEN SHOULD BE CALCULATED USING THE PROCEDURE DESCRIBED IN SECTION 12.5 OF THE NON-DOMESTIC BUILDING SERVICES COMPLIANCE GUIDE FOR SCOTLAND.
- THE LIGHTING SHOULD BE METERED TO RECORD ITS ENERGY CONSUMPTION IN ACCORDANCE WITH THE MINIMUM STANDARDS IN TABLE 43 OF THE NON-DOMESTIC BUILDING SERVICES COMPLIANCE GUIDE FOR SCOTLAND.
- LIGHTING CONTROLS IN NEW AND EXISTING BUILDINGS SHOULD FOLLOW THE GUIDANCE IN BRE DIGEST 498
- SELECTING LIGHTING CONTROLS: DISPLAY LIGHTING, WHERE PROVIDED, SHOULD BE CONTROLLED ON DEDICATED CIRCUITS THAT CAN BE SWITCHED OFF AT TIMES WHEN PEOPLE WILL NOT BE INSPECTING EXHIBITS OR MERCHANDISE, OR BEING ENTERTAINED.
- EMERGENCY LIGHTING**
EMERGENCY LIGHTING TO BS 5266 PART 1: 2016, REGULATORY REFORM (FIRE SAFETY) ORDER (PRO) 2006, BS EN 1838:2013 AND SSSA TECHNICAL HANDBOOK (NON-DOMESTIC) 2016.
- FIRE DETECTION AND ALARM**
CATEGORY M FIRE ALARM SYSTEM TO BE INSTALLED TO EXTENSION AS A MINIMUM IN LINE WITH CLAUSE 2.11.11 OF THE TECHNICAL HANDBOOK (NON-DOMESTIC)
- MANUAL CALL POINTS AS SPECIFIED IN BS EN 54: PART 1: 2001 (TYPE A) SHOULD BE INSTALLED AND SITED IN ACCORDANCE WITH BS 5839: PART 1: 2002.
- CLIENT TO CONFIRM IF ANY ENHANCEMENT TO FIRE ALARM SYSTEM IS REQUIRED TO SATISFY THEIR SPECIFIC NEEDS AND TIE IN WITH EXISTING SYSTEM.

Revisions :

A RC 16.09.2020
UPATED IN LINE WITH BUILDING CONTROL REQUIREMENTS.

Project		 JON FULLANI ARCHITECT	
Proposed Extension			
Client		Drawn: J.F.	
Ravensby Glass		Proposed Floor Plan	
Address		Issue Status	
8 Tom Johnston Road		Drawing No.	
West Pitkerro Industrial Estate		Building Warrant	
Dundee, DD4 8XD		6319_BW_406	
Designer		Scale	
RC		1:200@A1	
Aug 2020		Revision	
		B	

t 01382 224828 m 07808 726306
w /jonfullani.co.uk f /jonfullani.co.uk
a unit 5, district 10, greenmarket, dundee, dd1 4qb
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PUJOL-100 SYSTEM QUOTE

“COMPLETE LINE FOR PRODUCTION OF LAMINATED GLASS WITH
PVB & EVA WITH A PUJOL-100 SYSTEM OVEN”

RAVENSBY GLASS CO LTD

To the attention of: Mr. Nicholas G Cunningham

UK

Email : ngc@moco1847.co.uk

Telephone:

Quotation Number: O6524 + O6525

Your Ref.

Date: 18/02/2015

Our Ref.

Our Letter:

Section:

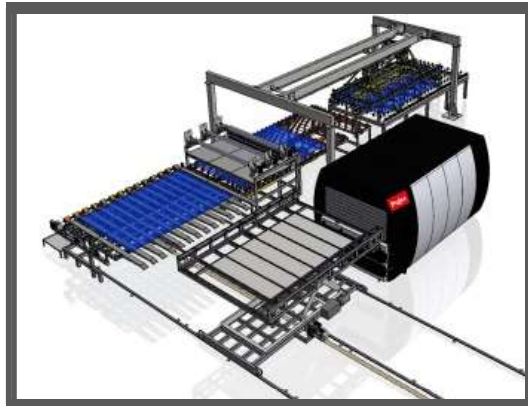
Dear Sirs,

Hornos Pujol S.A is nowadays present in more than 54 countries. After more than a century we have complied with the aim of providing a total service: furnaces, consumables, training and technical assistance.

In response to your request we are pleased to send you the following document for your consideration.

Pujol 100 Explanation Video

To watch the video just click the image of Pujol 100 or enter the link into your browser



http://youtu.be/pOo3isVr_aM

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1. - OVEN TYPE

1.1 General Technical Data

Batch type of	Close vacuum chamber
Heating media	Electrical
Models	2-C (Chambres) 4-C (Chambres).
Moving platforms / cars	Over metallic heat bearings
Working Temperature	PVB Process: 130 ÷ 145 °C EVALAM Process: 80÷135 °C
Maximum Temperature	150 °C
	52 Kw. 40x24 /2C 63 Kw. 40x28 /2C 72 Kw. 50x28 /2C
Total Power Installed x Model	105 Kw. 40x24 /4C 118 Kw. 40x28 /4C 130 Kw. 50x28 /4C
Electrical Tension	380-410 v. III + N.- + E.-
Type of Heating Source	Black radiation plates of Low Radiation wave
Number of Heating Plates	180 Elements /2C 360 Elements /4C
Type of atmosphere required	Double Vacuum Process.



1.2 Production Rates Performance

PRODUCTIVITY STUDY RAPPORT 2C

Production Rate

	M	M	mm	M2	
Glass size	Large	Width	Thickness	Surface	Model
	4,6	2,6	4	11,96	50x28
	3,6	2,5	4	9	40x28

Random Occupancy: **100%**

Total loading thick: mm

Production rate: Cycles/24 hours Cycle time: Hours

Production x Batch:

50 x 28 **2C** M2 / Batch Tn. /Batch

40 x 28 **2C** M2 / Batch Tn. /Batch

Production per day:

50 x 28 **2C** M2 / Day Tn. / Day

40 x 28 **2C** M2 / Day Tn. / Day

PRODUCTIVITY STUDY RAPPORT 4C

Production Rate

	M	M	mm	M2	
Glass size	Large	Width	Thickness	Surface	Model
	4,6	2,6	4	11,96	50x28
	3,6	2,5	4	9	40x28

Random Occupancy: **100%**

Total loading thick: mm

Production rate: Cycles/24 hours Cycle time: Hours

Production x Batch:

50 x 28 **2C** M2 / Batch Tn. /Batch

40 x 28 **2C** M2 / Batch Tn. /Batch

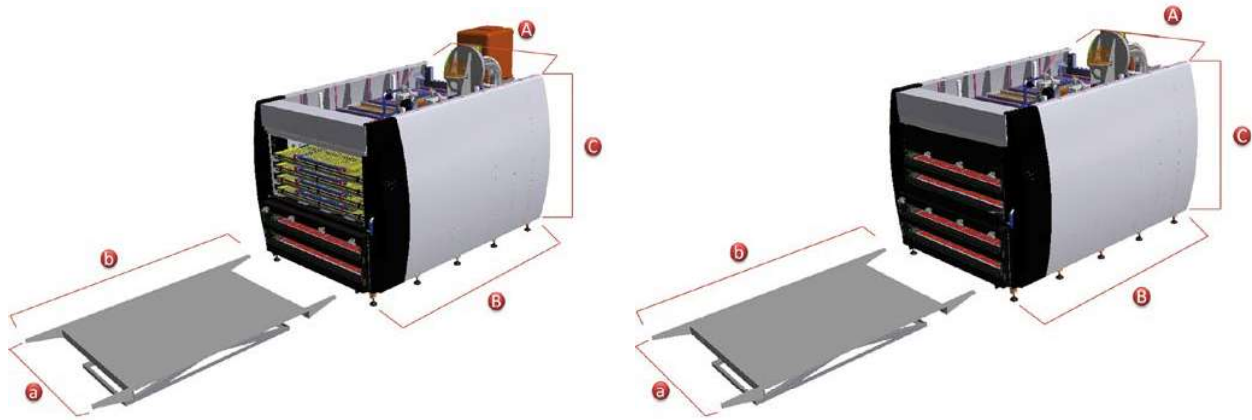
Production per day:

50 x 28 **2C** M2 / Day Tn. / Day

40 x 28 **2C** M2 / Day Tn. / Day

*** Production rates are considering 100% of occupancy and are related to float glass. Other calculation available on request.-

1.3 General dimensions of the installation



Medidas exteriores/external size

MODELO / MODEL	Medidas exteriores/external size		Bandeja/tray	a	b	Vidrio/ glass	kw
	ancho/width	largo/length					
40x24-2C	A	B	C				
40x24-4C	3450	5800	3300	4000	2400	3.6x2.1	107
40x28-2C	3850	5800	3750	4000	2800	3.6x2.5	68
40x28-4C	3850	5800	3300	4000	2800	3.6x2.5	127
50x28-2C	3850	6800	3750	5000	2800	4.5x2.5	72
50x28-4C	3850	6800	3300	5000	2800	4.5x2.5	134

2. SYSTEM DESCRIPTION AND PERFORMANCES

The **PUJOL-100 SYSTEM** has been developed & designed to perform customer to work basically PVB films without need to install and keep on running additional costs of a climate control room, calandre installations or accessories climate BOX of humidity and temperature control.

Thanks to our double vacuum and High Uniformity temperature distribution System, we are the only Process in the market which can warranty a 100% of traceability and repeatability of each working process in Autoclave free systems and as additional performance without need of climate the PVB films during stockage or during processing.

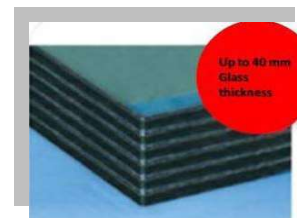
2.1 Highlights of the System

- 1 **No need** of climate control of humidity & temperature in stockage &/or processing.
- 2 **No pre-pressing unit required** (so no calandre and no pre-heating infrared tunnel required).
- 3 **No need** or requirement of BIG Compressor.
- 4 **No hazardous** ambient or risk of explosion like exist in Autoclave.
- 5 **Reduction costs** for energy efficiency UP TO 70% compared with Autoclave system of Total cost per unit produced.

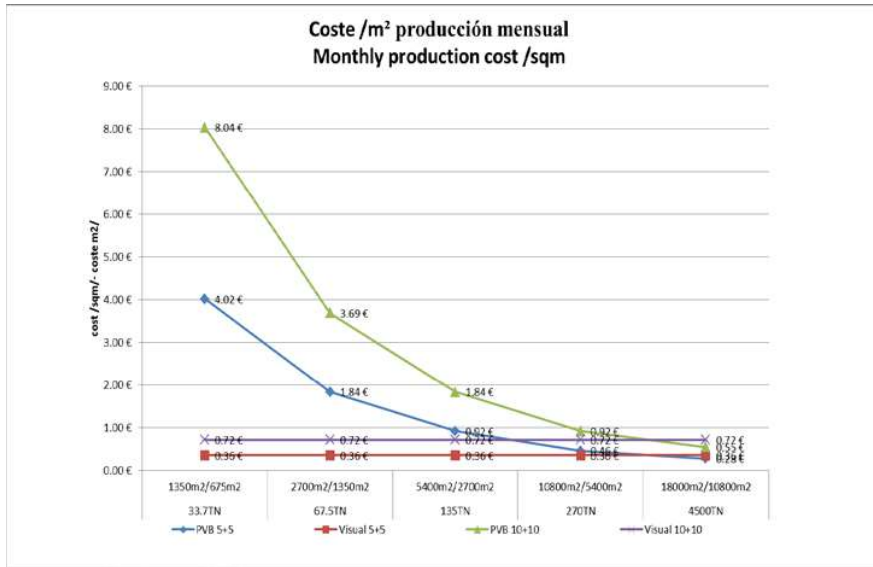
No additional Energy cost for:

- Compressor.
- Pre-Pressing Lines (Heating tunnel & Calandre)
- Cost of Climate Chambre & Assembly Room.
- Cost of Heating High Volume and Inertia space of Autoclave.

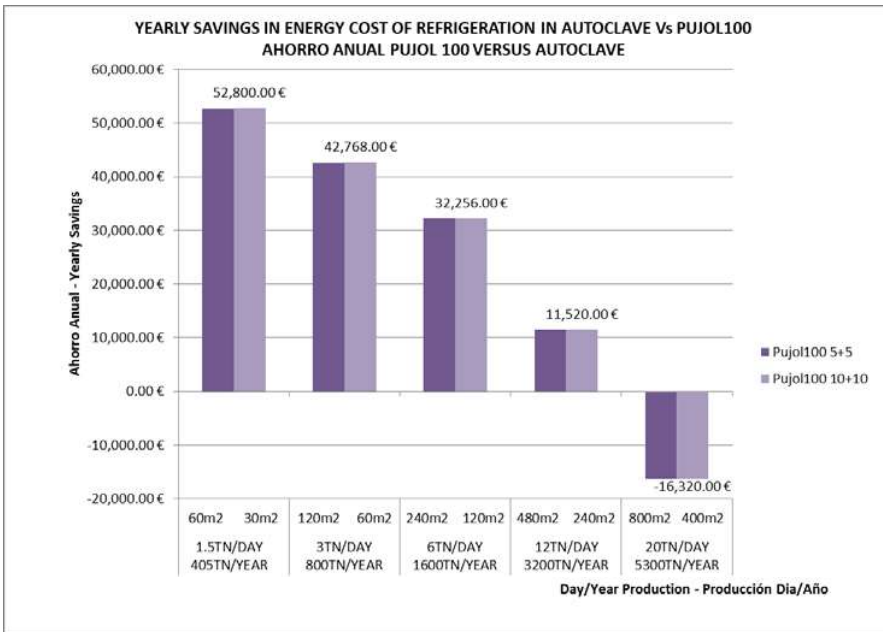
- 6 **Up to 40 mm. Glass thickness** processing in 1 piece or Multi-pieces independent compositions, depending on glass size.
- 7 **High temperature uniformity process** by using 96 Heating Plates radiating over up & down Surface of glass.
- 8 **Parking station & double platforms unit** allows optimize the process cycle times, during half are processing in oven, other half are unloading and loading for next batch, reducing to 10 minutes process of introduction & extraction and re-start LAM process in the oven.



3. - HIGH LEVEL PERFORMANCE OF PUJOL100 MODEL



It doesn't matter the production level, the new PUJOL 100 always keep the same energy consumption cost vs. Autoclave Systems.



High performance of PUJOL 100 even for just 500m2 per day

4. - SUPPLY, DELIVERY AND DESCRIPTION OF THE INSTALLATION.

4.1 Metallic structure

Built from our own original standardised designs but completely developed and adapted to the specific location needs of your factory.

The kiln module comprises a robust metal framework with braced steel of laminated profiles that lend greater soundness and strength allowing the structure to be self-supporting. Thus, the entire gas exhaust installation and heating device (with their electrical units) are anchored to it.

The exterior surface is steel and attached to it are the insulating refractory materials, resulting in a unit, which is very solid with a balanced design, and has an aesthetically pleasing outer appearance.

Due to the dimension of the kiln, it is delivered complete, with its own integrated bracing, reinforced vacuum beams & pipes, cooling registers, nozzle frames for the vacuum bags and corresponding parts for connecting to the exhaust pipes and special modules such as entrance and incorporated door mechanisms.

Once the entire structure has been assembled, a coat of anionic degreasing is applied to the sheet metal and a coat of anti-rust primer to both the inside and outside of the kiln.

The metallic sheets used in the internal face of the furnace are Fe+Zn++ fire protection coating. After this, or after completing the refractory assembly, we apply 2 coats of Gradur2-C industrial anti-corrosive paint for the external protection.

Door

Upper swindle Pneumatic hermetic Type.

Double way movement, with a high turning point at the final adjustment for an efficient heat-sealing,

Loading vacuum platforms:

The furnace is supplied with 4 re-enforced loading process platforms base over metallic wheels, ready to work up to 150 °C without deformation and blocking the bearings and the rolling elements.



Hydraulic elevator Platform:

A special reinforced elevator to adjust different levels of working chambers of oven and parking of the Oven will be supply.

Elevator suitable to move elevation weight up to **2.300 Kg.**

Parking Station:

Pujol-100 System has been developed & studied thinking in optimize the needed personnel required in the Line operation and for optimize and reduce the death times need to load & unload the platforms, which usually are large.

As well, the System includes a **smart vacuum bag sealing** and open/close system, which:

- 1 Reduce the time to open & close the bags.
- 2 Minimize the risk of breakage and leakage of the big dimension bags.
- 3 Optimize the needed space in factory to storage the bags.

4.2 Insulation

General description

TRANS type by low thermal inertia. The metallic structure has an inner lining using "SUPER-LIGHT" refractory material is specially designed for high temperatures. These materials have high refractory properties, which absorb less heat than normal (dense) materials, and in turn act as good insulation given their low level density.

The inner walls of the treatment chamber are lined with different layers of ceramic fibres with a thickness of 50 + 10 mm that allows for a reducing the temperature gradient and minimising power consumption.

4.3 Heating System

The system consists of a Kanthal electrical wire LOW IR plates special designed to work in vacuum atmosphere an in the Black spectre of radiation at low temperatures.

Note: More Technical specifications in paragraph 1,1 Technical Data.

4.4 Equipment to regulate and control automatic Firing

General Description

All the equipment necessary for regulating and controlling is delivered completely wired and assembled in 1 sealed electrical cabinet (depending on the model). These are located and attached to one side of the kiln (following EC electromagnetic standards). Each cabinet measurement is: 800 x 600 x 500.

The following regulating and control automatism can be found inside and on the front:

- Master Switch with a safety device for disconnecting power.
- Start up and stop buttons for vacuum Pump.

- Automatic Electronic Control by Control Zone by means of Temperature Regulators, Emergency Disconnection Master Switch with visual and sound alarm.
- 1 Overheating Regulators independent from those that regulate the main process which control the temperature by means of 2 thermocouples, independent from those that regulate the main Zone control and cut off the mains supply to the control panel.
- double pyrometer tube (temperature probes) "K" type scale 20-1,500 ° C. (for regulating the temperature of the process and as a safety measure against maximum overheating and for visualizing the final cooling curve)
- Electrical protection devices (transformer with galvanic insulation, magnetothermic and fuses).
- Relays and switches both for the power circuit and the start up control.

Visual and sound warning for the following failures:

- Excess or faulty temperature due to temperature change in the Process temperature that is in operation (4 independent alarms - 1 per Regulating Zone).
- Failure in the Vacuum pressure.
- Failure in the convection fan.
- Deviation or Excess T° of the firing curve Programme & Deviation or Excess Pressure of the vacuum.

Visual signals for the process indicating the following:

- On tension.
- Bag Vacuum done.
- Chamber Vacuum done.
- Electrical Heating on working.
- Automatic/Manual mode.
- Automatic Cycle in operation.
- Cooling Cycle in operation.
- End of programme.
- All the electrical control and safety devices are manufactured in strict compliance with EC standards
- Control panel technical documentation and electrical installation (drawings and diagrams).
- Configurable electronic temperature MAIN Visual panel regulators, with microprocessor control.
- Configuration of the modulating elements regulation, P.I.D. parameters, Death band, etc.
- Visual and sound signals for end of process.

Pyrometric and Control devices

The processing variables: “*Temperature-time*” is governed by an Electronic Controller format from a SIEMENS – PLC control with a front interface monochrome “Touch screen of 10”.



This controller allows the user to create up to 20 programmes from 200 free segments, to be divided in each free firing configuration as the user needs and creating 200 controlling points in only 1 program or 20 programs with up to 10 segments in each one.

- An extra “*watch dog*” controller works as a follower of the main controller to ensure if any temperature sensor fails or falls below the set parameter or an incorrect reading of temperature of the controller happens then it stops the machine immediately and returns the installation to the Zero point to ensure the correct function of the machine and to save it from destroying the product from over temperature.
- 16 **sensors Type “k”** thermocouples with a metallic Pythagoras cover, located along the kiln, to ensure daily uniformity control + additional thermocouple in the heating elements for Safety life according to CE standards

3.5 Assembly

The kiln leaves our factory workshops completely assembled (Structure and Refractory) and pre-wired. All that remains is a final *in-situ* coupling, electrical connection, assembly of the modules and definitive emplacement in the area where it will be used.

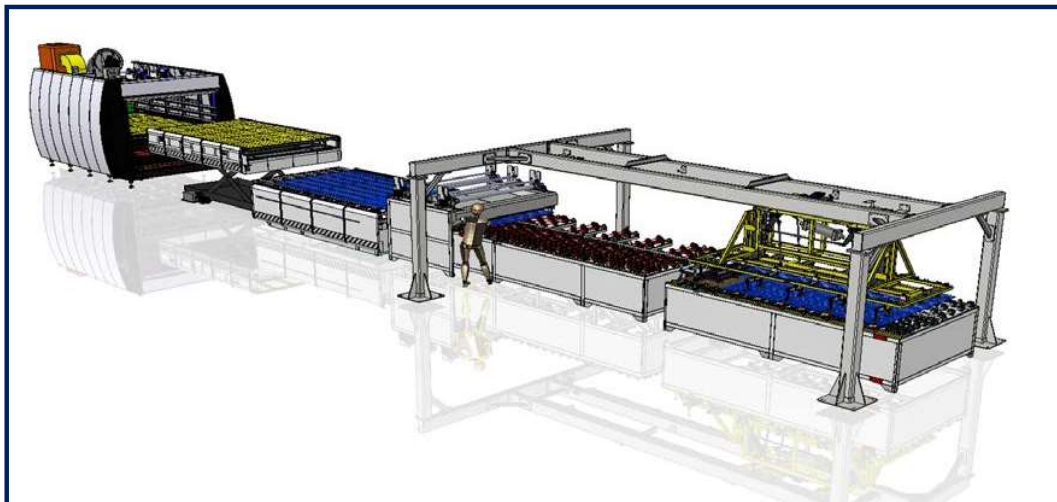
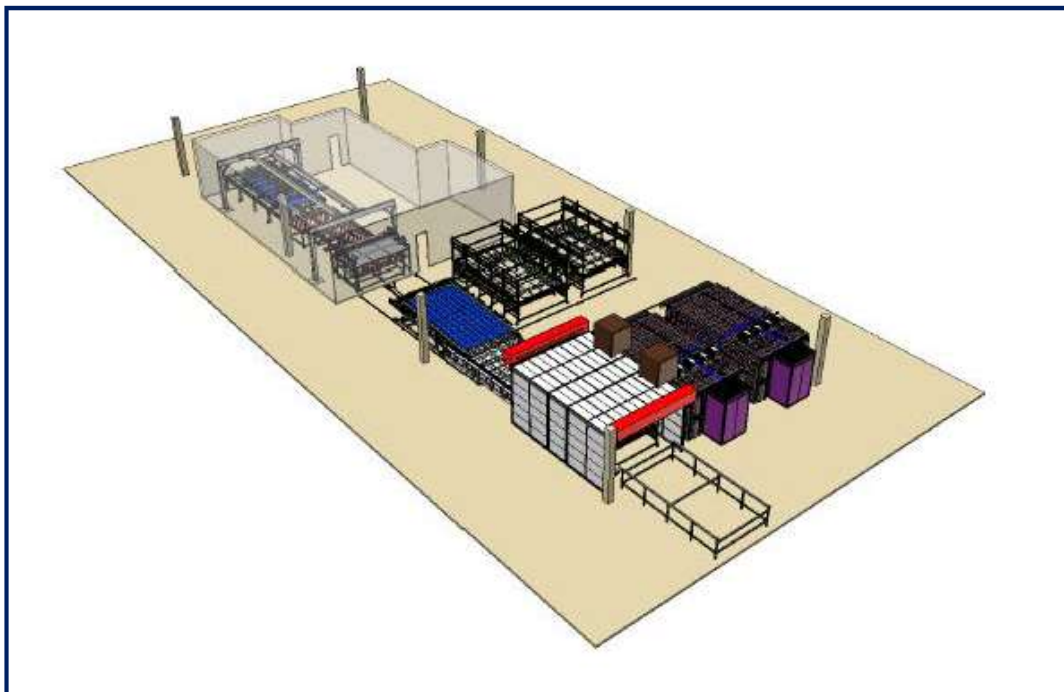
3.6 Commissioning

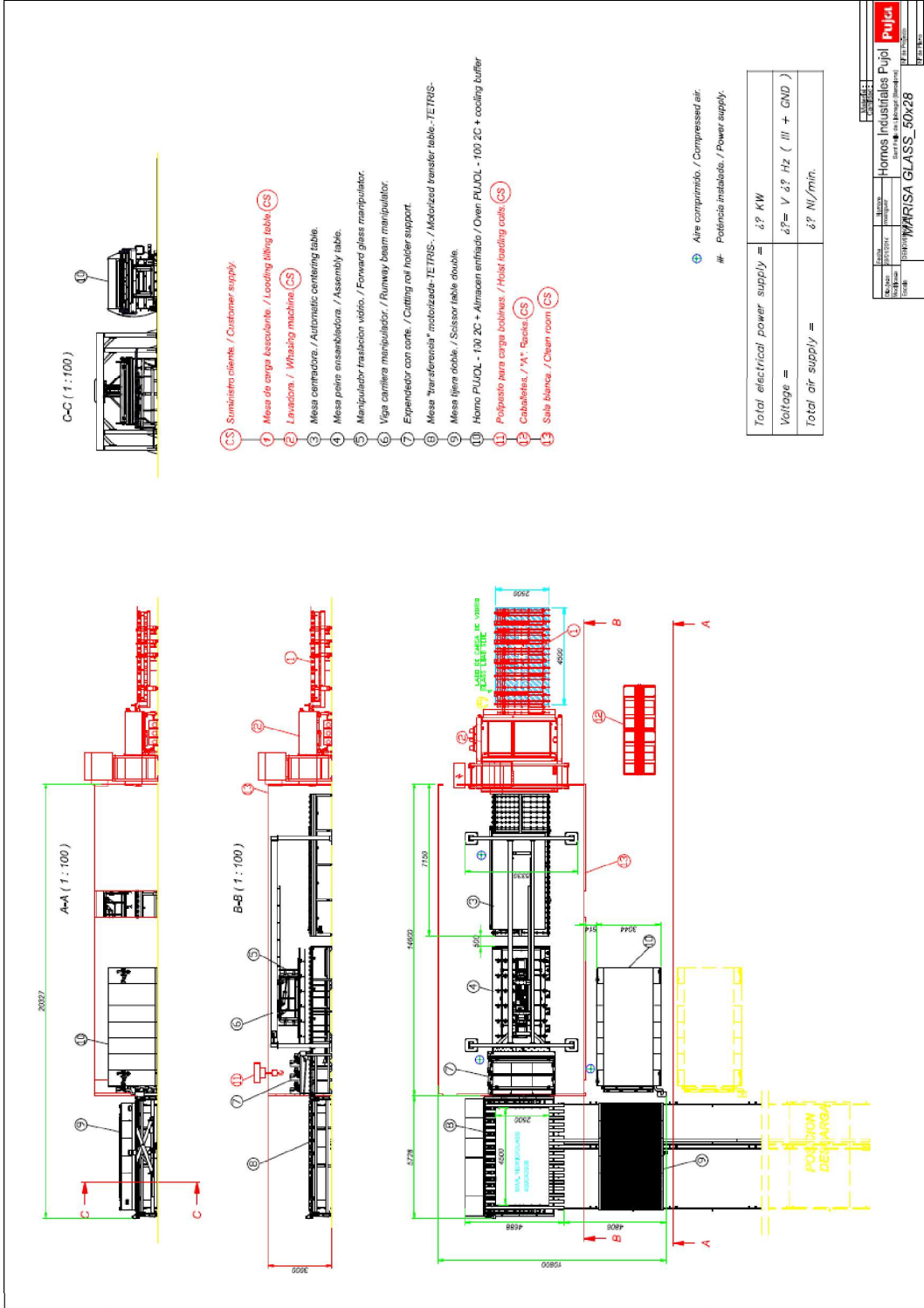
Our engineers will undertake the set up, commissioning and training.

Conditions of acceptance of the machine will be under Pujol Standard Protocol.

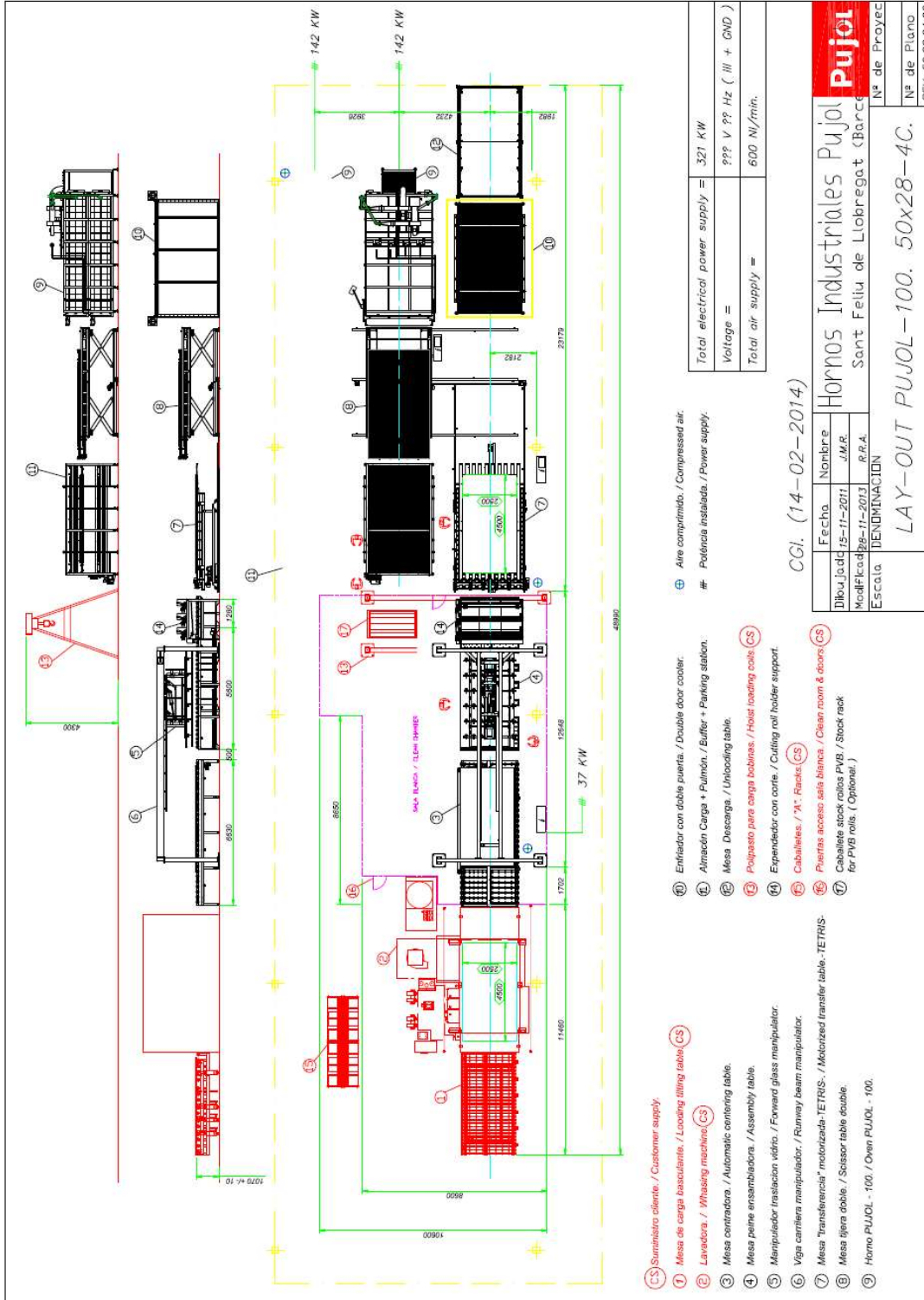
Firings as calibration test indicates (Full load & 10% load at 4+4 & 8+8) will be executed.

Is responsibility of customer to have the glass ready for full load calibration, in case that glass is not ready, machine will be understood accepted or customer will carry out all charges for additional travel of engineers for test full load acceptance.

5. - ASSEMBLY FULL AUTOMATIC LINE**4.1 Parts & elements of the assembly line description****Type -2C****Type-4C:**



Lay out PJ100- 5028.00.00/2C-U



Lay out PJ100 5028.00/4C

4.2 Description of machinery and parts that composes the laminated assembly plan supplied by Pujol



Under Lay-out PEV-4024.02.00

Technical data schedule

Glass thickness	2-19mm. Capacity of transport and assembly of laminated sheets of 19+19mm of maximum dimension.
Maximum dimensions of the glass by model	2100 x 3600 mm 2500 x 3600 mm 2500 x 4500 mm
Minimum dimensions in automatic with adjustable suction cups	800 x 250 mm
Minimum dimensions in automatic	800 x 800 mm
Maximum thickness of the set of laminated pieces	40 mm
Production cadence	0.2 m/min to 2 m/min.
Installed power	8 - 12 kW
Voltage	400 V III + T + N
Required air consumption	Compressor de 5 kW.
Height of the work surface	900 mm +- 20 mm

Delivery items included according to Lay-outs:

Pos. 3 AUTOMATIC FEEDING TABLE:

It is composed by 2 rolling sections tables to be able to make the transfer glass from the reception station from washing machine to the assembly and inspection table.

First section is the accelerating variable speed section located just after the washing machine, is just a transfer table. Made of Polyamide wheels with a coating of transparent Polyurethane rubber. This material prevent from any spot of glass to scratch glass surface.

Second section is in fact the centring table by oblique transport in the way of movement. The table has an Automatic cell, stoppers and devices which automatically positions and centres the glass with a tolerance deviation of $\pm 0,3$ mm.



Pos. 4:

Second table located after the first table is the final assembly and Inspection table.

Basically is the working table and Station, where full assembly, trimming and visual inspection is done. Is and adjustable wide table, to be able to work 2 persons at 2 sides of the glass and adjusting the size for an smart trimming job of the operators.



Pos. 5 & 6 VACUUM SUCKER SPIDER CRANE TRANSFER SYSTEM :

Double rail AUTOMATIC crane supply with vacuum suckers for loading big glass sizes from the reception table after washing machine up to the assembly & Inspection table.

The up & down movement is done by a Pneumatic – pump-jack which allows a soft and exact movement.

Sliding movement from table to table COPY is done fully Automatic.



Pos. 7 LOADING TRAFER TABLE –TETRIS:

Automatic Transfer table with lift open wheels to position glass over tilt table and transfer manually to the right/left position over the vacuum bag wants to be positioned.

The table rolls by motor-gear over floor rails from his loading reception position to his unloading position flying over the vacuum bag and the hydraulic lift position of the PUJOL-100System.

The transfer table is supplied with a pneumatic tilting system to tilt the glass and adjusted on his position over the vacuum bag before sliding powered by motorized rolls the glass and pull over the table to unload any size or thickness glass over vacuum bag.

Transference sequence

YOUTUBE VIDEO: http://youtu.be/pOo3isVr_aM



Pos. 8 WAGON – TRANSFER LOADING LIFT



Pos. 13 (optional) ELECTRIC ELEVATOR FOR LIFTING PVB ROLLS ON HIS WORKING POSITION



Pos. 14 CUTTING ROLL HOLDER SUPPORT

Cutting Roll-holder Support Table even for PVB or EVA. 3 POSTIONS / 3 independent rolls.

Available width of roller: 2.100 mm and max admissible length: 100 m. (other Major dimensions are under request) with motors for unrolling film (PVB or EVALAM) and roller winder of insertion. Blade for automatic EVA cutting.

