

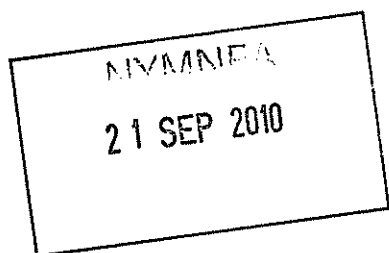
ADDITIONAL AMENDMENTS

- Amended layout of buildings/outside areas
- Additional background information
- Amended design
- Revised access arrangements
- Change of description of proposed development - as indicated on the previous page
- Change in site boundaries
- Other (as specified below)

CARBON FOOTPRINT REPORT

FOR

PROPOSED COLD STORE EXTENSION



AT

WHITBY SEAFOODS LIMITED

FAIRFIELD WAY

WHITBY BUSINESS PARK

WHITBY

COLD STORE CARBON FOOTPRINT

Referring to Appendix 3 Energy Benchmarks p.64 of Renewable Energy Supplementary Planning Document - April 2010 and assuming Storage & Distribution warehouses factor (worst case) CO₂ emissions are identified as 48 kgCO₂/m²/year.

As per our Planning and Economic Statement the Cold Store development is for 1260 sq.m.

Hence CO ₂ emissions	=	48 x 1260
	=	60,480 kg CO ₂
	=	<u>60.48</u> tonne CO ₂

The above is for interest only as the true footprint is well in excess of this as we demonstrate below.

NVMNPA
21 SEP 2010

LOADING DOCK (Common to both schemes)

Condensing Unit

One LH135-4H-25-2Y absorbs 19.47 kw (COP 2.18) Operating for 11 hours average/day/year

$$\text{Therefore } 19.47 \times 11 \times 365 = 78,172 \text{ kwh/yr}$$

$$\text{From NEF, factor for CO}_2 \text{ from kw} = 0.43$$

$$\text{Therefore CO}_2 \text{ emissions} = 33,614 \text{ kg} \quad *$$

21 SEP 2010

Evaporators

Three H & C 406, one fan at 0.75kw

$$\text{Therefore } 0.75 \times 3 \times 11 \times 365 = 9,033.75$$

$$\text{Therefore CO}_2 \text{ emissions} = 3,884.5 \text{ kg} \quad *$$

Evaporator Defrost 7.2 kw 4 times daily for 30 minutes

$$\text{Therefore } 3 \times 7.2 \times 4 \times 0.5 \times 365 = 15,768 \text{ kw}$$

$$\text{Therefore CO}_2 \text{ emissions} = 6,780 \text{ kg} \quad *$$

Heater Mat - none proposed - NIL

Loading Dock Equivalent CO₂ emissions

$$33.6 + 3.88 + 6.78 = \underline{\underline{44.26}} \text{ tonne}$$

Converting plant to heat pump version would save evaporator defrost load.

$$\text{Saving percentage} = \frac{6.78}{44.26} \times 100 = 15.32\%$$

COLD STORE

ORIGINAL

Condensing Units

Six off LH135/6H-25-2Y absorb 16.04 kw each = 96.24 kw
 Operate for 11 hours average per day/year

Therefore $96.24 \times 11 \times 365$ = 386,404 kw/h/an.

From NEF factor CO₂ from kw = 0.43

Therefore CO₂ emissions = 166,153.7 kg *

Evaporators

Fans - Six off x 0.55 x 2 x 11 x 365 = 26,499 kwh
 = 11,394.6 kg *

Evaporators defrost (18.48 kw) 4 times daily for 45 mins

Therefore $6 \times 4 \times 18.48 \times 0.75 \times 365$ = 121,413.6 kwh
 $\times 0.43$ = 52,207.85 kg *

Heater Mat: $9360 \text{ ft}^2 @ 0.75 \text{ w/ft}^2$ = 7078.2 w

Operational 24 hours per day = 168 kw
 per year x 365 = 61,477 kwh
 $\times 0.43$ = 26,435 kg CO₂*

* $\Sigma \text{CO}_2 \text{ emissions} = 166.15 + 11.39 + 52.21 + 26.44$

= **256.19 tonne**

MANIPAL
 21 SEP 2010



WHITBY SEA FOODS

REVISED SCHEME - HEAT PUMP MODIFICATION

CO₂ emissions

Four off 6F-40.2Y compressor units
 @ 22.6 kw x 4 x 11 x 365 = 362,956 kwh
 (0.43 factor) = 156,071 kg *

Condenser 3 fans @ 2.2 kw

Therefore 3 x 2.2 x 11 x 365 = 26,499 kwh
 (0.43 factor) = 11,394.6 kg *

Evaporators (as previous) 11,394.6 kg *

Evaporator Defrost (as previous) 52,207.85 kg *

Heater Mat Requirement - as previous (28,178 kw) 12,116.6 kg *

Saving is evaporator defrost + heater mat
 = 52.21 + 12.12 = 64.33 tonne

as percentage of original $\frac{64.33}{256.19} \times 100 = 25.11\%$

as percentage of alternative $\frac{64.33}{257.5} \times 100 = 24.98\%$

As percentage of alternative including Loading Dock

$\frac{(64.33 + 6.78)}{(257.5 + 44.26)} \times 100 = 23.56\%$

* * * * *

Common to both is saving of 66 tonne by vehicle reductions.

MINPA
 21 SEP 2010

RAW MATERIALS TRANSPORT EMISSIONS

Additional CO₂ information

The weekly raw materials requirement is 208 pallets under current production rates.

At present the raw materials are stored at Yearsley Cold Storage facility in Seaham, County Durham.

The above requirement at 26 pallets/vehicle requires 8 return journeys per week. The return journey from Seaham to Whitby Sea Foods covers 170 km.

From the Transport Conversion Table for the Calculation of CO₂ emissions an Articulated Lorry with diesel engine will use 0.35 litres fuel/km.

$$\text{Hence:-} \quad 8 \times 170 \times 0.35 = 476 \text{ l/wk}$$

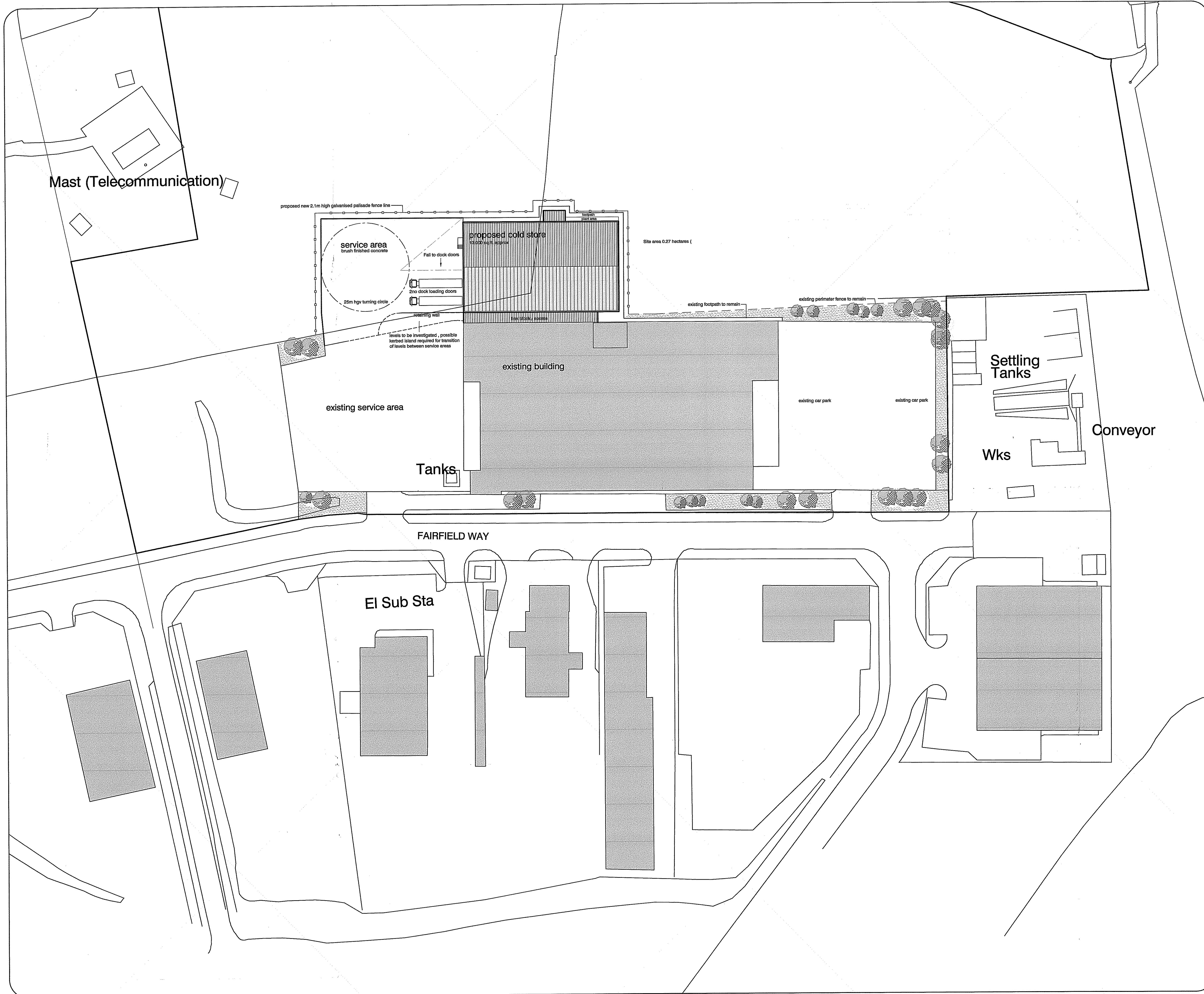
From Fuel type conversion for diesel fuel each litre of diesel equates to 2.68 kg of CO₂.

$$\begin{aligned} \text{Hence:-} \quad 476 \times 2.68 &= 1,275.68 \text{ kg CO}_2/\text{wk} \\ &= 66, 335 \text{ kg} \end{aligned}$$

With expansion plans forecast this could double or even triple within three years.

The proposed development of nominal 1400 pallets will remove this emission entirely.

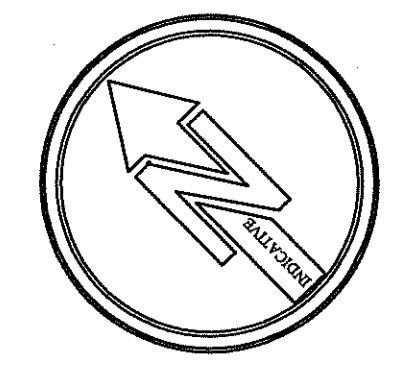
NYMNEA
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Revisions

Rev	Date	Description
Rev.A.	Sept.09	position of plant room amended
Rev.B.	Nov.09	Proposed extension mirrored
Rev.C.	July 2010	Building footprint amended
Rev.D.	Aug 2010	Steps added edj, drying room, plant area added
Rev.E.	Sept.10	Drawing revised to match latest floorplans

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Building Management Services

21 SEP 2010

Client
 Notes
WHITBY
 -SEAFOODS-

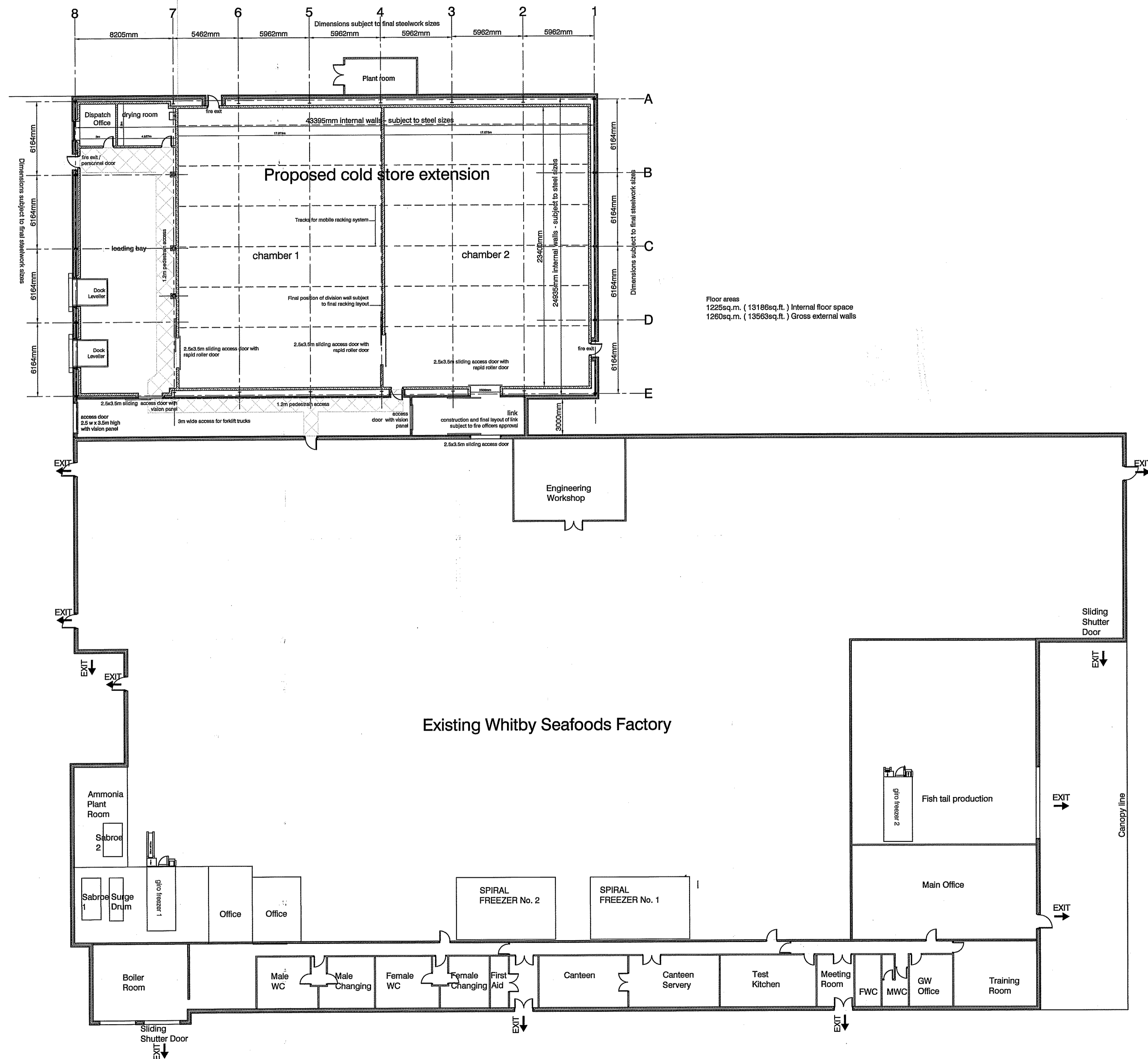
Project
 proposed cold store with ancillary service area
 fairfield industrial park, whitby

Sheet
 proposed site plan

Drawn ndj/bdl Date sept.09

Scale 1:500 @ A1

Drawing No. M2590-01 Revision Rev.E.



Proposed floor plans
Scale 1:200

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Revisions

Rev	Date	Description
Rev.A.	Sept.09	Height & position of plant room amended
Rev.B.	Sept.09	Note added to link corridor
Rev.C.	Nov.09	Proposed building mirrored & covered link added
Rev.D.	July.2010	Drawing width updated to suit new racking layout
Rev.E.	Aug.2010	Insulation added to loading bay, racking layout amended.
Rev.F.	Aug.2010	Fire exit added and repositioned, dispatch office added
Rev.G.	Sept.2010	Racking layout updated to suit storage drawing E13746-07 Plant room repositioned, division wall added, surface level door omitted, dock doors repositioned

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WHITBY SEAFOODS
 AMENDED

Project
 proposed cold store with ancillary service area
 fairfield industrial park, whitby.

Sheet
 proposed floorplan

Drawn ndj / bdl Date sept.09

Scale 1:200 @ A1





Drawing No. M2590-02 Revision Rev.G.

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all colours subject to client and planning authority approval

-  Hps200 - hamlet - RAL 9002
-  Hps200 - Sargasso
-  Hps200 - Merlin grey
-  Hps200 - albatross - RAL 260 80 05

Revisions

Rev	Date	Description
Rev.a.	Sept.09	Height & position of plant room amended
Rev.B.	Nov.09	Proposed extension mirrored
Rev.C.	July 2010	Building amended to match floor plans
Rev.D.	Aug.10	Window added to dispatch office, positions of fire exits amended
Rev.E.	Sept.10	Drawing revised to match proposed floorplans

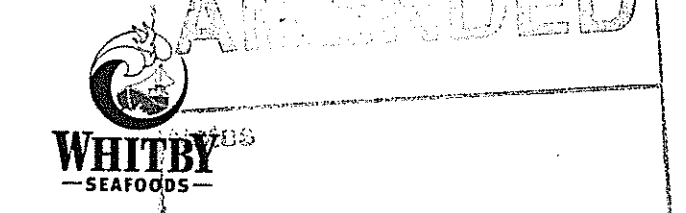
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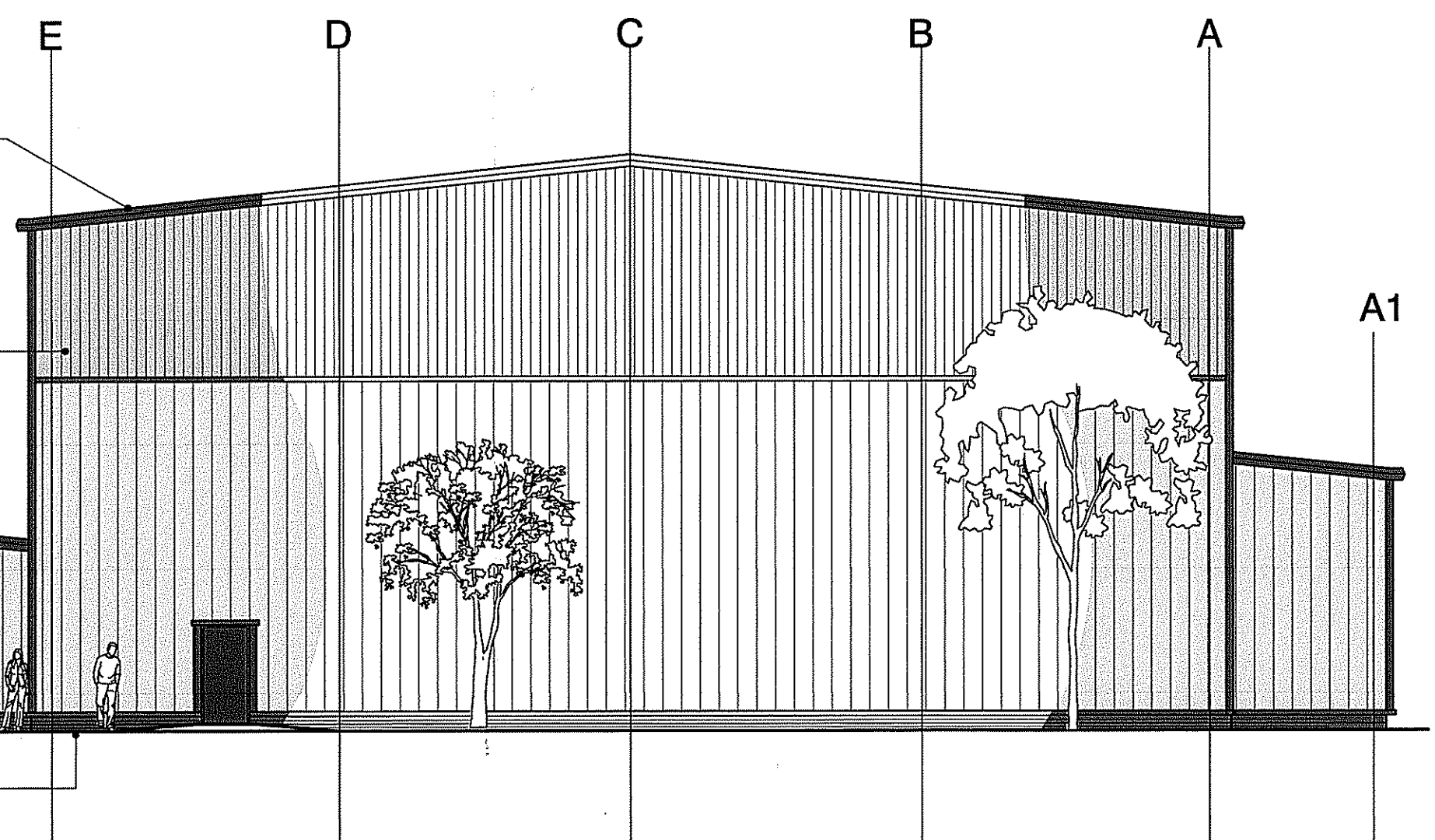
Project

proposed cold store with ancillary service area
fairfield industrial park, whitby.

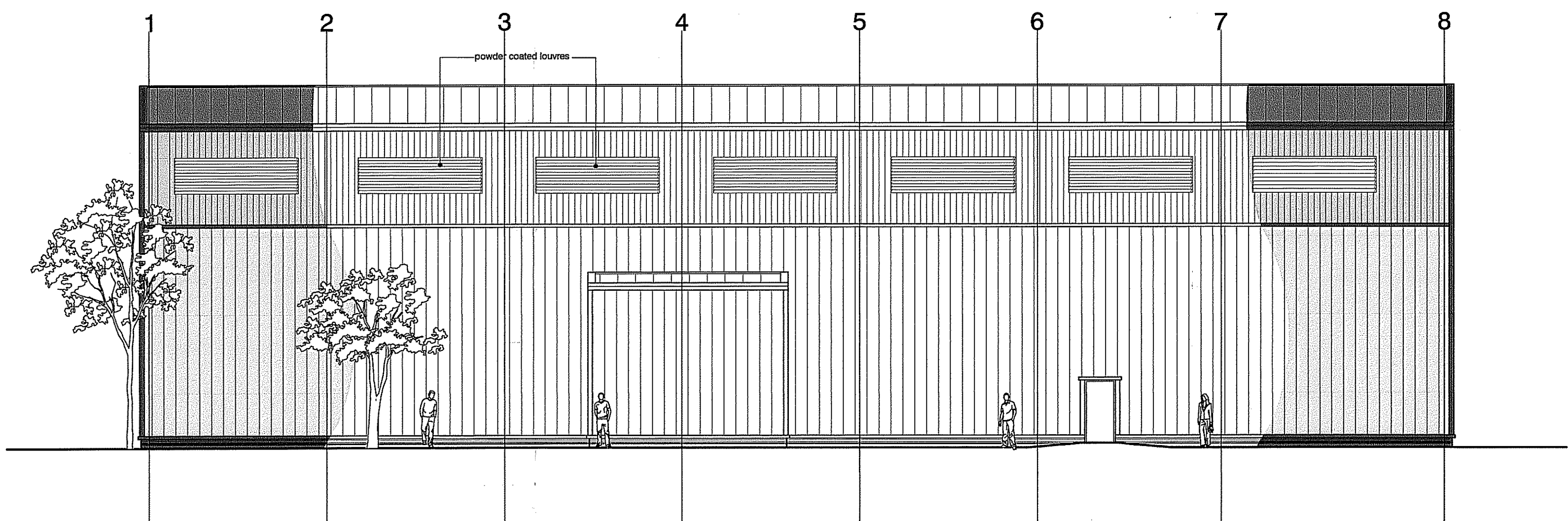
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proposed elevations

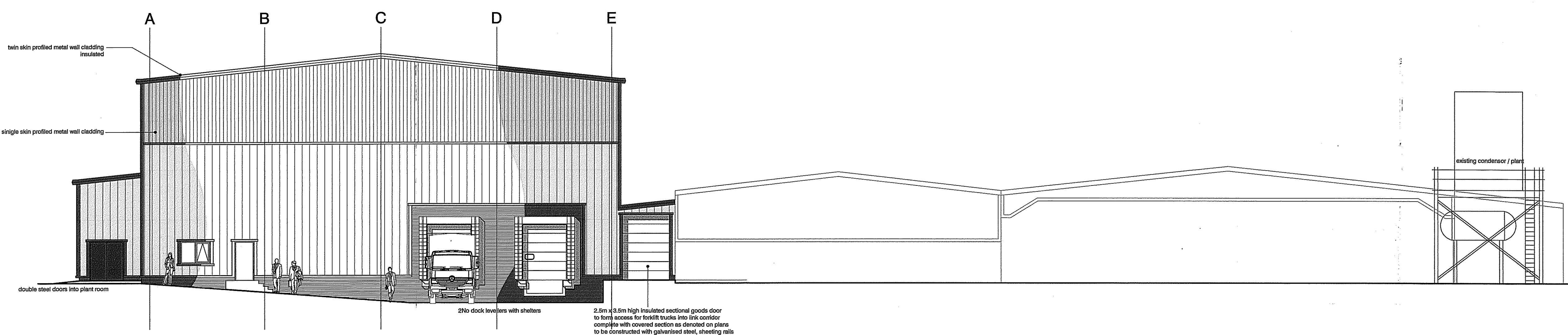
Drawn ndj / bdl	Date sept.09
Scale 1:125 @ A1	
Drawing No. M2590-03	Revision Rev.E.



north west elevation



north east elevation



south east elevation

2.5m x 3.5m high insulated sectional goods door to form access for forklift trucks into link corridor complete with covered section as detailed on plans to be constructed with galvanised steel, sheeting rails single skin profiled metal roof cladding

2 No dock levelers with shelters

existing condenser / plant

twin skin profiled metal wall cladding insulated

single skin profiled metal wall cladding

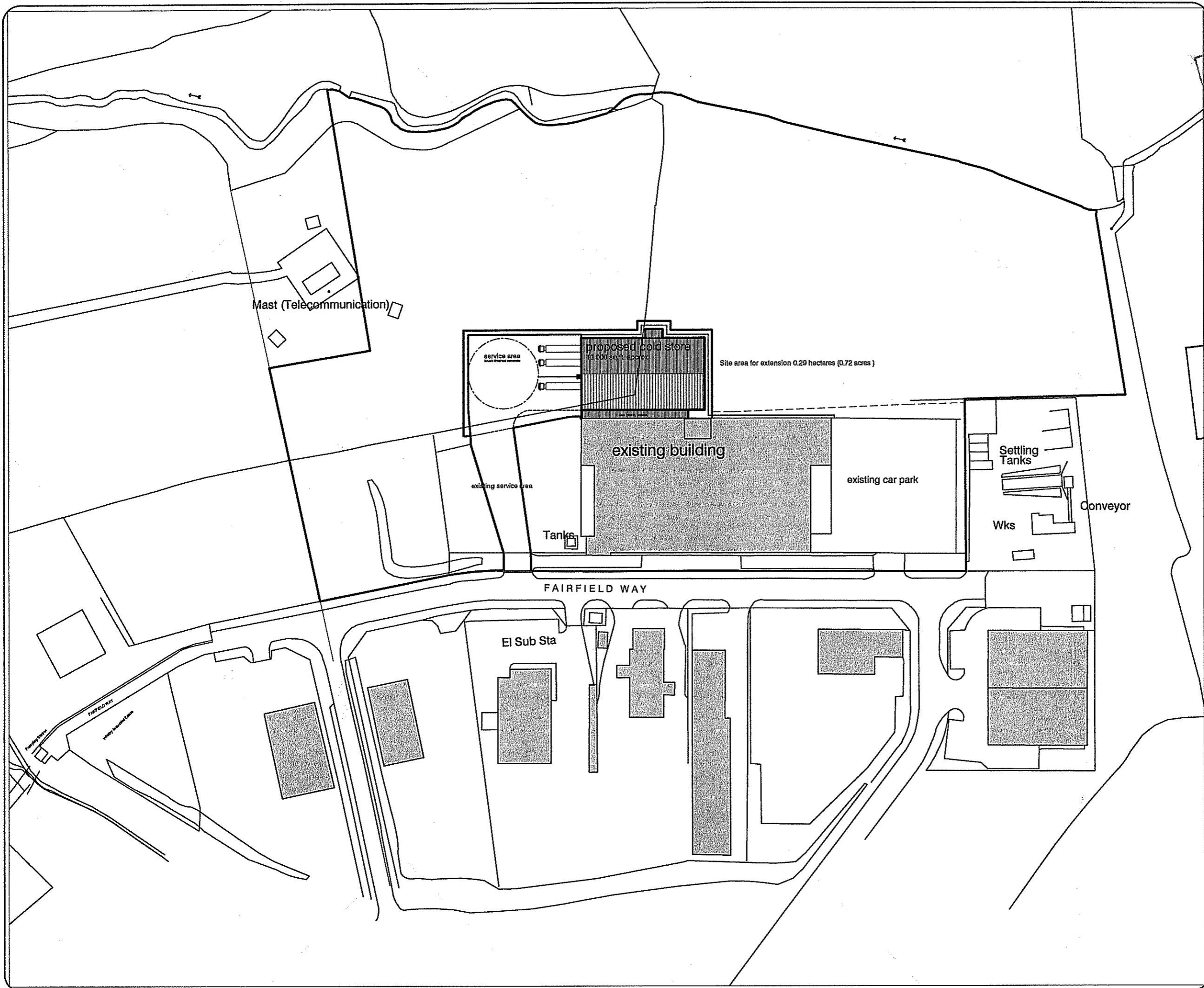
double steel doors into plant room

twin skin profiled metal wall cladding insulated

single skin profiled metal wall cladding

dado height facing brickwork

powder coated louvers



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Notes

APPROVED
Notes

Revisions

Rev	Date	Descriptions
Rev.A	Sept 10	Plant room repositioned

NYMNP
21 SEP 2010

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Building Management Services

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Project
Proposed Cold Store Extension
Fairfields Industrial Estate
Whitby

Sheet
Location plan

Drawn n.d.jordan Date July 2010

Scales 1:1250 @ A3

Drawing No
M2590-05

Rev.A