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HM Government

Industrial Strategy: government and industry in partnership



Construction 2025

Lower costs

33%

reduction in the initial cost of construction  
and the whole lifecycle cost of built assets

Faster delivery

50%

reduction in the overall time, from inception to  
completion, for new build and refurbished assets

Lower  
emissions

50%

reduction in greenhouse gas emissions  
in the built environment

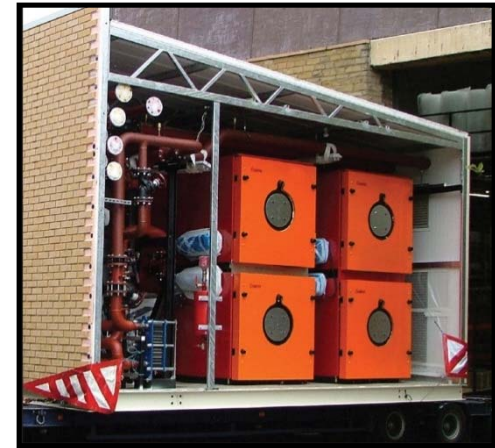
Improvement  
in exports

50%

reduction in the trade gap between total exports and  
total imports for construction products and materials



**Designers and off-site manufacturers of bespoke packaged plantrooms, and skid mounted systems**







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*5 piece plantroom 18 meters long  
positioned on site in one day*





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*Chilled water pump skid*



*Ormandy offsite packaged pump  
plantroom*





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*Steam to LTHW package*





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*Hot Water Plantroom for British  
Antarctic Survey*



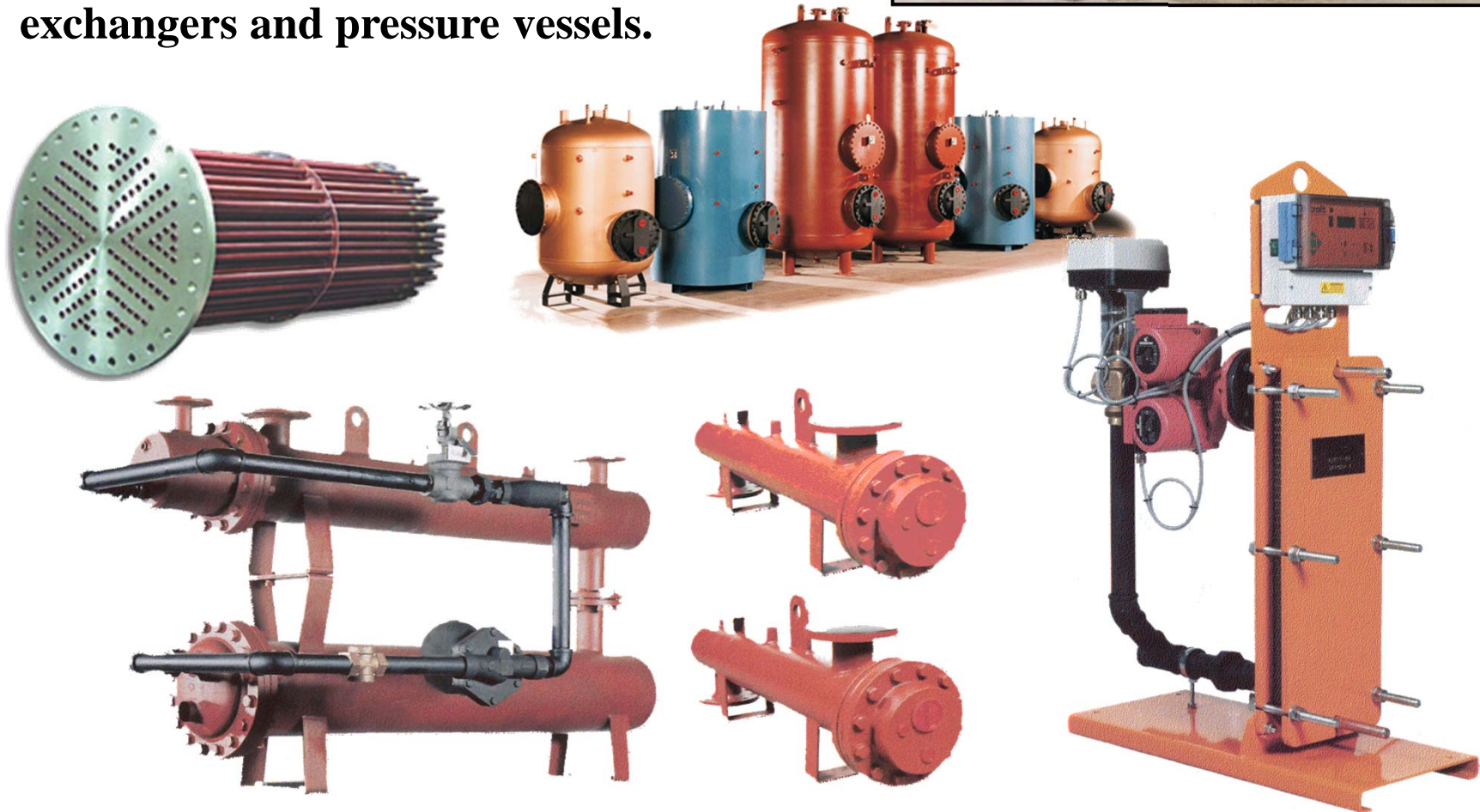








**Commercial water heating equipment, calorifiers, heat exchangers and pressure vessels.**





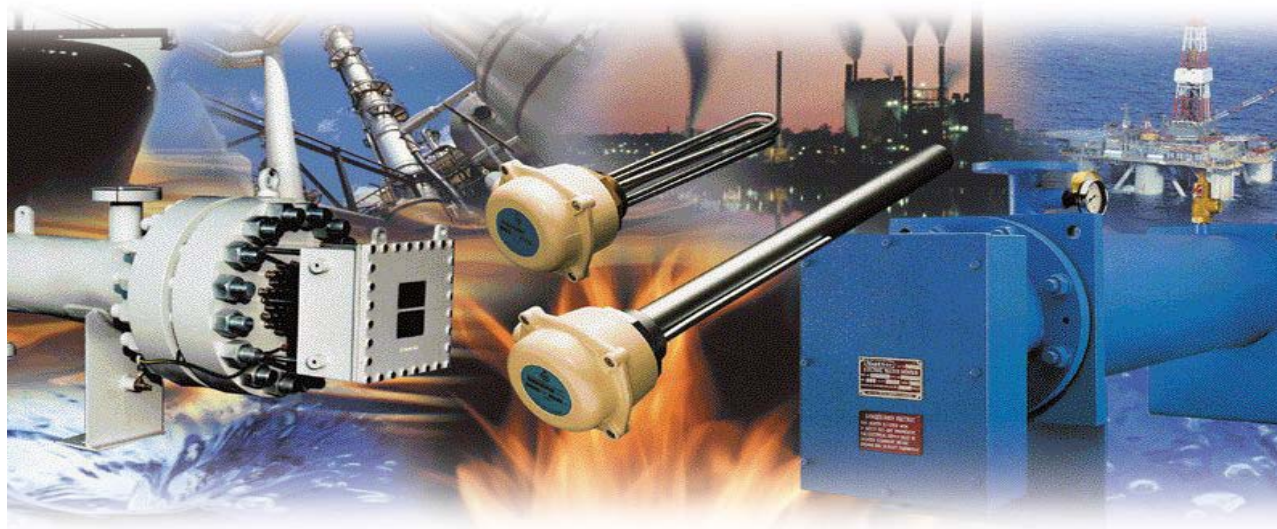
*50,000 litre thermal stores leaving  
the Bradford factory*



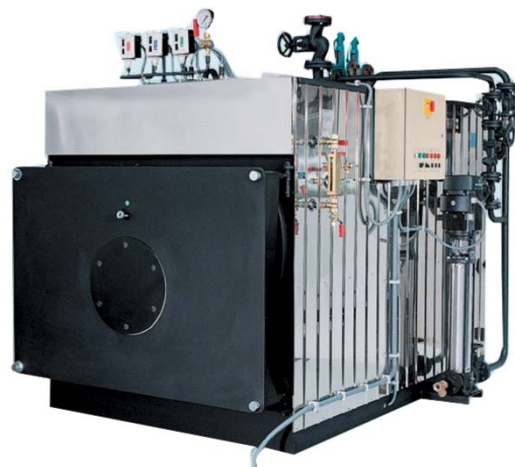


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**Electric**  
ELECTRIC HEATING & CONTROLS

**Safe and hazardous area electric  
heaters for air, gas, oil and water.**



**Steam, hot water and  
biomass boilers.**







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*6000 kg/hr Boilers pre-assembled  
in Bradford*



**Stainless steel pressure vessels and fabrications for the HVAC, food and Pharmaceutical industries.**





**Designers and manufacturers of bespoke packaged equipment & pressure vessels for Process, Offshore and Marine markets.**







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*Aircraft Carrier Alliance*





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*Aircraft carrier skids in production*





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*Offshore, DHW Storage Vessels*





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**Dreh**

COPPER & MHD FITTINGS

**Copper and MHD fittings. soil  
and waste fabrications.**







**Aquatherm Sales UK Ltd** is the supplier of Aquatherm GmbH plastic piping systems for all building services including heating for the whole of the United Kingdom.



**climatherm**  
Pipe System

**fusiotherm®**  
Pipe System

**firestop**  
Sprinkler Pipe System

# PP-R

## Ideal for green building initiatives

- No mining required
- Low carbon production – requires less energy to produce than any comparable alternative
- 100% recyclable...
- ...or safe incineration – no VOC's or noxious greenhouse gases
- Free from hazardous contaminants – no nickel, iron, copper or lead at risk of contaminating the water
- Clean welding process – no gluing, soldering or chemically bonding
- Maintained system performance – no corrosion or lime scale build up let the pumps work at their designed level throughout the systems entire life cycle with no increase of resistance





# Prefabrication

- Light weight product for quick and easy installation
- Reduced time spent on site
- Less manpower needed to install on site
- Less waste to clear from site
- Fast turnaround time from receiving order to delivery of goods
- Full AutoCAD and estimating services
- Free no obligation quote





**aquatherm**

# Quality assurance



**kiwa**







# **Commitment to Quality**

ISO 9001:2008

\*\*\*

# **Sustainable Manufacture**

Accredited to ISO 14001:2004

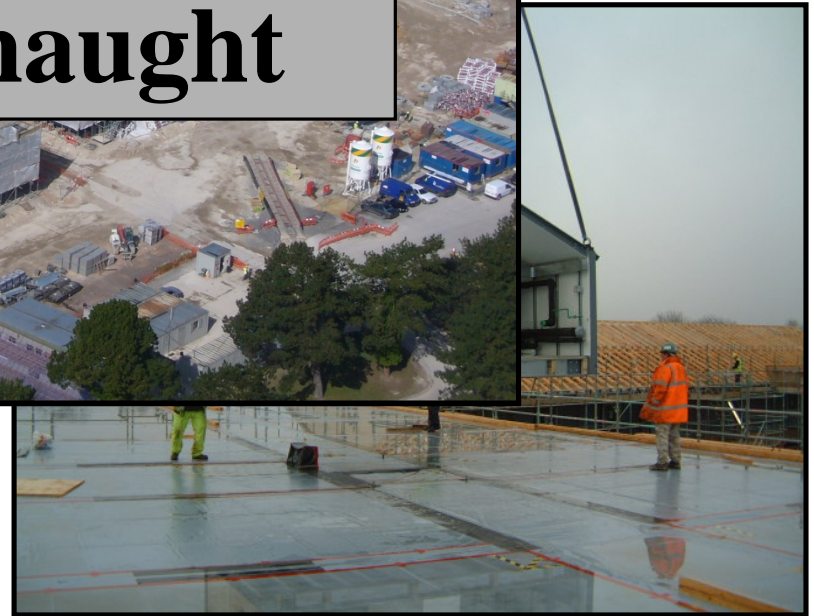
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# **Health and Safety**

Health and Safety committee with representation throughout the company



# Project : Allenby & Connaught





# **Aspire Defence, Allenby & Connaught**

- **Largest modular construction project ever seen in UK**
- **Project valued at £8 Billion (£1.2 Billion construction)**
- **Junior Ranks Single Living Accommodation (JRSLA)**
- **36 accommodation rooms per building**
- **Complete modular concept: accommodation/stairways/plantroom**
- **153 Plantrooms to be built before summer 2011**
- **Fits perfectly with the Ormandy ethos**







# Challenges for Ormandy

- **Timescales for design of initial units was reduced**
- **Facilitate production within our existing manufacturing facility**
- **Finished weight**
- **Production time was reduced to one complete plantroom per week**
- **Utilising off-site techniques**
- **New manufacturing techniques (Aquatherm pipe work)**
- **Construction of 14 plantrooms prior to first commissioning**
- **Green production process – (Pallets / Recycling)**





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# **Client's off-site decision process**

**Comments by the senior project manager**

- **Speed of construction**
- **Labour required on-site & security clearance**
- **Lack of skilled labour available in the local vicinity**
- **Finished quality / tested prior to delivery**
- **Health & Safety**
- **Reduced site supervision and management**

**By utilizing off-site manufacture the programme was cut from 37 weeks to 14 weeks for whole build process**





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*The Shard, London*



# **Ormandy scope of supply**

**Packaged pump assemblies**

**\*\*\***

**Packaged heat exchangers**

**\*\*\***

**Packaged DHW calorifiers**

**\*\*\***

**Heat interface packages**

# **Client's approach**

**M&E philosophy for the Shard was modelled around offsite manufacture from its initial conception.**

**\*\*\***

**Client had the mindset to simplify the engineering sequence, improve quality, de-risk the project programme and minimise onsite M&E interfaces.**

**\*\*\***

**At the beginning of the project the client team developed a clear strategy to maximise the amount of work that could be manufactured away from site.**

**\*\*\***

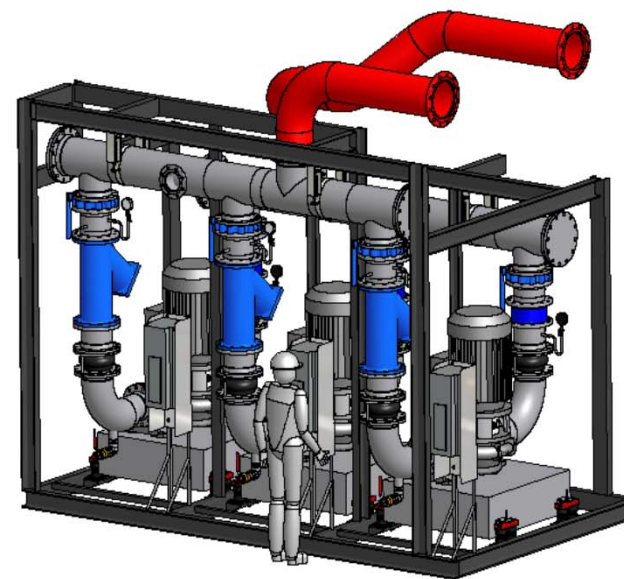
**Strategic project documents were peer reviewed, challenged, debated, optimised and agreed.**



# **How were the client's expectations met ?**

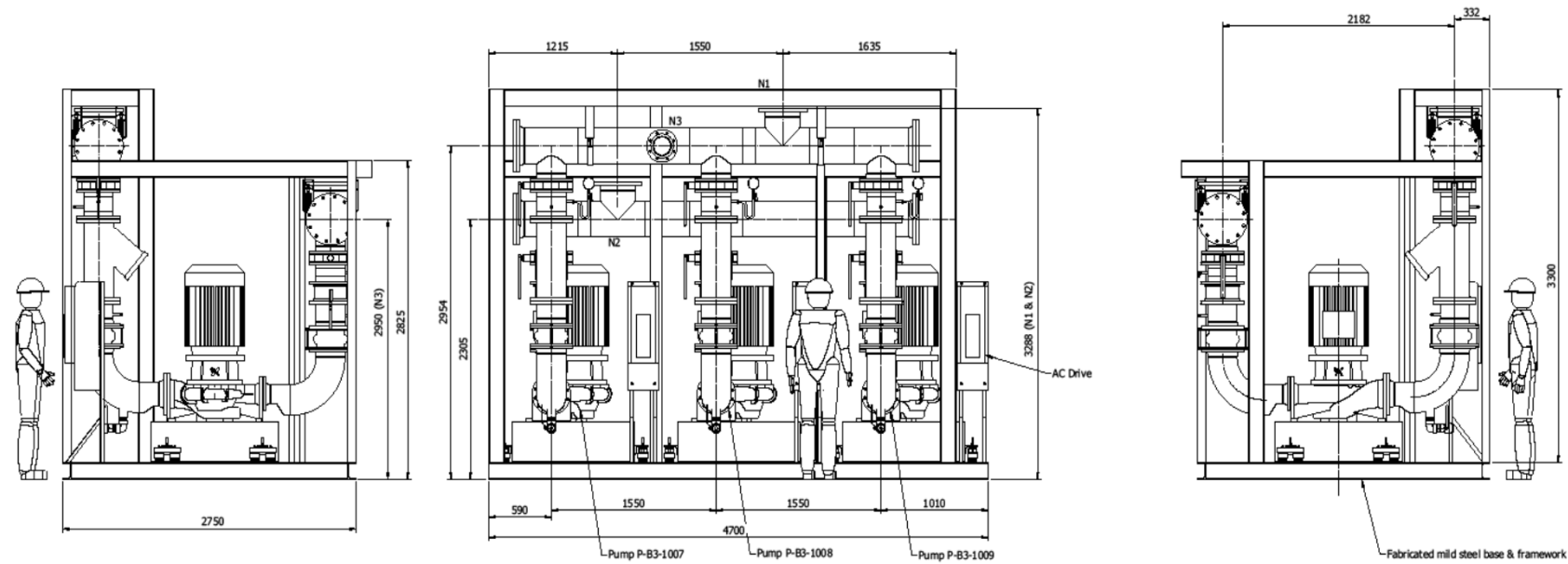
- **Ormandy appointed a dedicated bid team**
- **Ormandy drawings were integrated into the M&E model**
- **Off-site supply was discussed at the site project team meetings**
- **Equipment was scheduled for completion 1 month before delivery**
- **Sign off and snagging carried out at Ormandy works**
- **Lessons learnt were debated as the project developed**
- **No free issue equipment to Ormandy**
- **Trust**

DGR to manufacture makeup pipework shown in Red





IF IN DOUBT-ASK

**Connections**

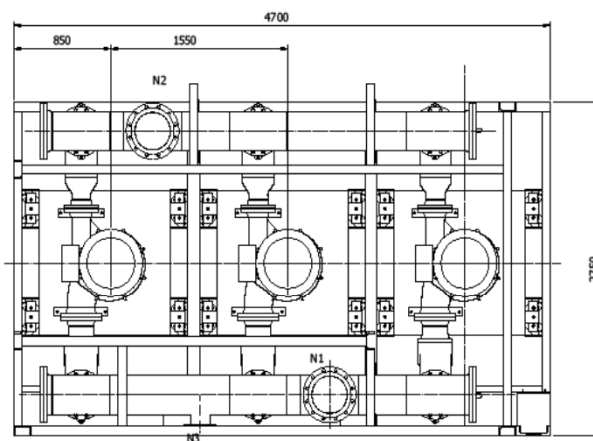
N1 - 300NB BSEN1092 PN16 Flow from Boilers  
 N2 - 300NB BSEN1092 PN16 Flow to System  
 N3 - 150NB BSEN1092 PN16 Flow from CHP

**Pump Details (Grundfos)**

P-B3-1007 - TP150-650/4  
 P-B3-1008 - TP150-650/4  
 P-B3-1009 - TP150-650/4

**Equipment Details**

Pumps- Grundfos (see other note for details)  
 Inertia Bases - Grundfos  
 Anti-Vibration Mounts - Isolated Systems  
 Spring Hangers - Pipe Solutions  
 Flexible Bellows - Pipe Solutions  
 Valves - Tour & Andersson



PLAN (1 : 20)

Approx. DRY weight - 11500kg

**Pipework Details**

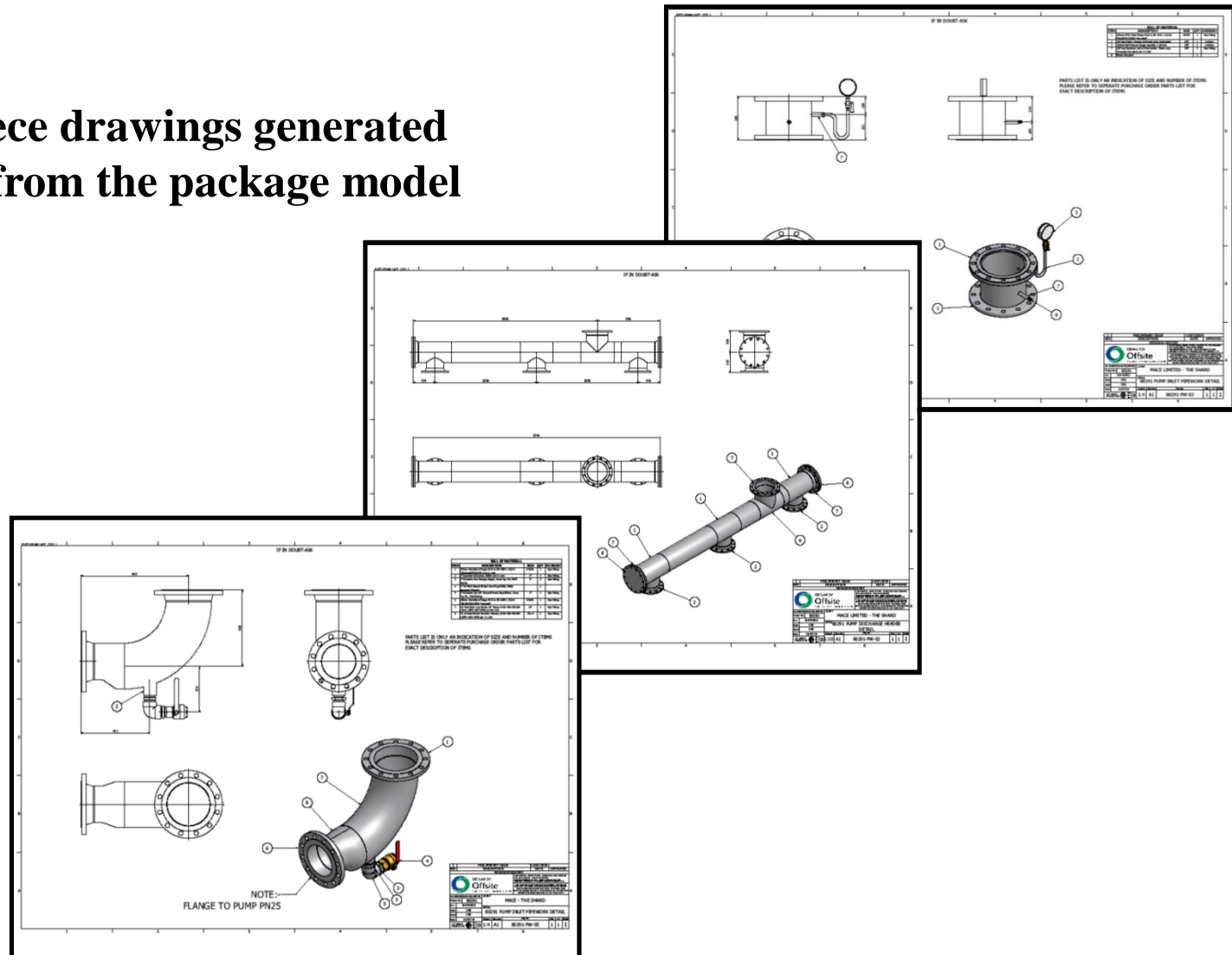
Steel Flanges - BSEN1092 PN16  
 Steel Pipework - APISL SCH20  
 Screwed Fittings LTHW - Malleable Iron with Taper Thread to BS21  
 Copper Pipework - BSEN1057 - R250  
 Copper Pipework Fittings - End Feed - Brazed or Soldered  
 Gaskets - Novus Graftec

**Other References**

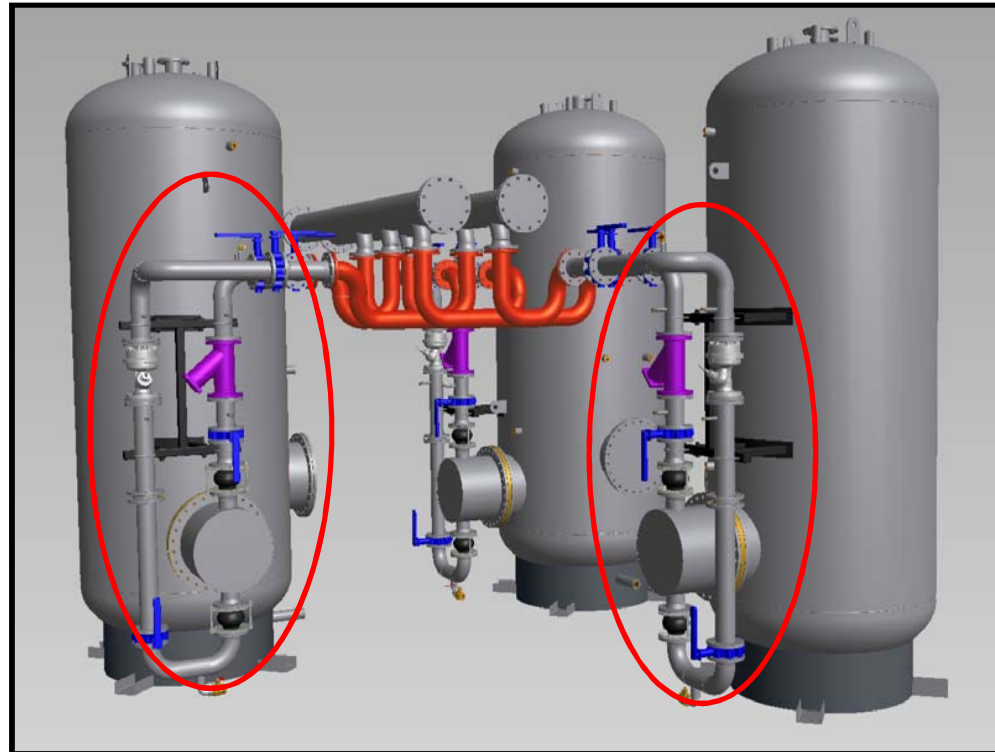
Schematic - OA-MP-0013

2	PIPEWORK REVISED TO SUIT CONNECTIONS	25/05/2010	CRE
1	FIRST ISSUE	20/05/2010	CRE
REV	DESCRIPTION	DATE	APPROVED
REVISION HISTORY			
<div> <p>ATLAS WORKS, GIBBY STREET, HALIFAX HS1 4HB, ENGLAND.            TEL: 01423 281111 FAX: 01423 280000            SALES@ORMANDY.CO.UK WWW.ORMANDY.CO.UK            ORMANDY OFFSITE IS A TRADING NAME OF ORMANDY LTD.</p> </div>			
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ALL DIMENSIONS IN MILLIMETRES		CLIENT	
Project No. 80291		MACE - The Shard	
Des	GC	DETAIL	
Chkd	CRE	OSA/LTHW/P/B2/006/1 TO 3	
Appd	CRE	SCALE	
Date	20.05.2010	1st size	Org No.
1ST ANGLE PROJECTION	1:20	A1	80291 - GA
		SH	OF
		1	2

## Spool piece drawings generated directly from the package model







**Offsite fabrication was maximised  
throughout the whole project**



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*Chilled water pump skid*





*Chilled water heat exchanger  
package*



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# **Three main benefits to the client**

**Offsite construction de-risks aspects of health and safety onsite, many of the construction interfaces with other building trades such as brick layers, plaster boards are eliminated.**

**\*\*\***

**Manufacturing quality is vastly improved in a controlled factory environment. All trades such as controls, electrical and insulation are completed and verified offsite, this ensures that when the package gets to site it is a complete finished article ready for installation and incorporation into the project.**

**\*\*\***

**Built in programme certainty, the offsite elements can be taken off the critical path. The client just needs to control logistics and sequencing.**



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