

Project Profiles – Technical Facilities

Contents

1.0 Project Profiles – Technical Facilities

Discovery Park

Leeds Beckett University

Shell Flagship Energy Hub

University of Kent Eliot Plant Room

University of Kent Energy Centre

University of Kent Ingram Building

University of Surrey

Zotefoams Factory 2

Zotefoams Factory 3

Zotefoams Factory 4

2.0 Example Working Drawings

Section 1.0
Project Profiles – Technical Facilities

Introduction:

Wilson & Partners were appointed to advise on concept design for a specialist manufacturing and assembly facility, to be created via a developer led “Cat A” base build, and traditionally precured “Cat B” fit out based on full design. Wilson & Partners acted as lead consultants and Principal Designer providing building fabric and MEP design services.

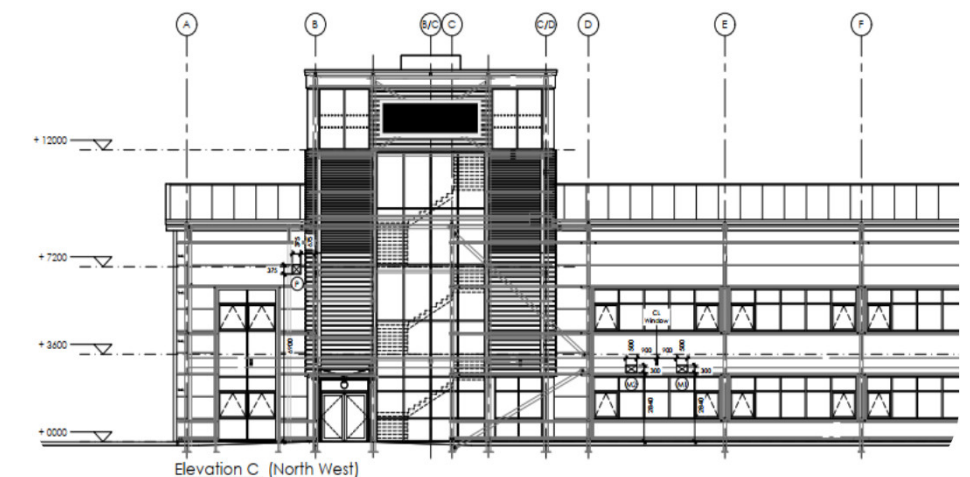
The Brief:

The initial brief was to develop a Basis of Design capturing all requirements for the new facility in conjunction with the client's strategic advisors who were tasked with locating a site, and providing a building capable of accommodating business elements drawn from 4 other locations, and with sufficient capacity for projected expansion. The facility provides manufacturing and assembly spaces, product development and test areas, warehousing, goods in and out, administration and welfare accommodation, external service yard, and car parks. Accommodation is predominantly at ground floor level, but with ancillary and administrative support offices on upper levels.

Project Delivery:

The base build involvement was focused on concept, utilities demand and internal space planning around the client's process needs and projected occupancy. The developer was responsible for Planning and procurement of the contract for construction with Wilson & Partners acting as Employers Agent to ensure specification compliance and quality.

The fit out phase of the project involved detailed design of all elements to support a traditional, competitively tendered procurement route with close liaison between client and the directly appointed Quantity Surveyors. The scheme involved R&D, and specialist manufacturing suites with significant coordination impact.



Specialist Manufacturing & Assembly Facility

Client | Subject to NDA

Project Timeline | 2016 -2019

Project Value | £4.7M

Introduction:

Wilson & Partners were appointed by a specialist laboratory supplier/installer to provide multi-disciplinary detailed design services as a package “turn key” solution for refurbishment and upgrade of existing teaching laboratories.

The Brief:

The scope involved strip out and full refit of an entire upper floor in the science building including specialist equipment e.g. safety cabinets.

Project Delivery:

A key aspect to delivery was a logistics plan developed with the University to minimise impact on occupied floors above and below the new facility involving a fast track programme, with implications of materials delivery to the 7th floor of an 11 storey building. Whilst the space created was for teaching purposes, environmental control was a key issue, needing to cater for significant changes in occupancy for short periods.



Laboratory Refurbishment

Client | Leeds Beckett University
Project Timeline | 2013
Project Value | £0.4M



Introduction:

Wilson & Partners were involved in the development of a flagship “Energy Hub” for Shell, with strategic expansion into supplying electricity for transport. This project was established to set a model for future “Energy Hubs” integrating traditional fuel, and electric vehicle charging.

The Brief:

Redevelopment of an existing “traditional” petrol station nominated by Shell, to create a facility with traditional fuel sales, electric vehicle charging, exhibition space and retail provision, including a café. The client's aspirations were to provide an exemplary sustainable building, achieving a BREEAM rating of “Outstanding”.

Project Delivery:

Wilson & Partners role was to provide innovative M&E design covering the following aspects:

- New site utility services including provision of 2no electrical substations supplying 2.5 MVA load for the electric vehicle charging points
- Hybrid VRF heating and cooling
- Hot and cold water systems
- Mixed mode ventilation incorporating centralised mechanical ventilation system with heat recovery and natural ventilation
- Lighting
- Small power
- Power supplies to 160kW electric vehicle charging points
- Fire alarm
- Data
- Access control
- CCTV
- Lightning protection system



Flagship Energy Hub

Client | Shell UK

Project Timeline | 2019

Project Value | £2.2M

Introduction:

Wilson & Partners were appointed as the MEP designer for emergency refurbishment works within the main plant room of Eliot College following failure of a high-temperature hot water shell and tube heat exchanger. Requiring rapid mobilisation, the project required survey and modelling of the existing plant, calculation of design parameters and implementation of a remedial scheme, following tender, during the limited summer recess.

The Brief:

The works involved the removal and replacement of the existing high temperature hot water system interface within the sub-station plant room. The aim of the project was to remove the large pressure vessels and replace them with more compact and efficient plate heat exchangers and included provision for integration of future phases into the design

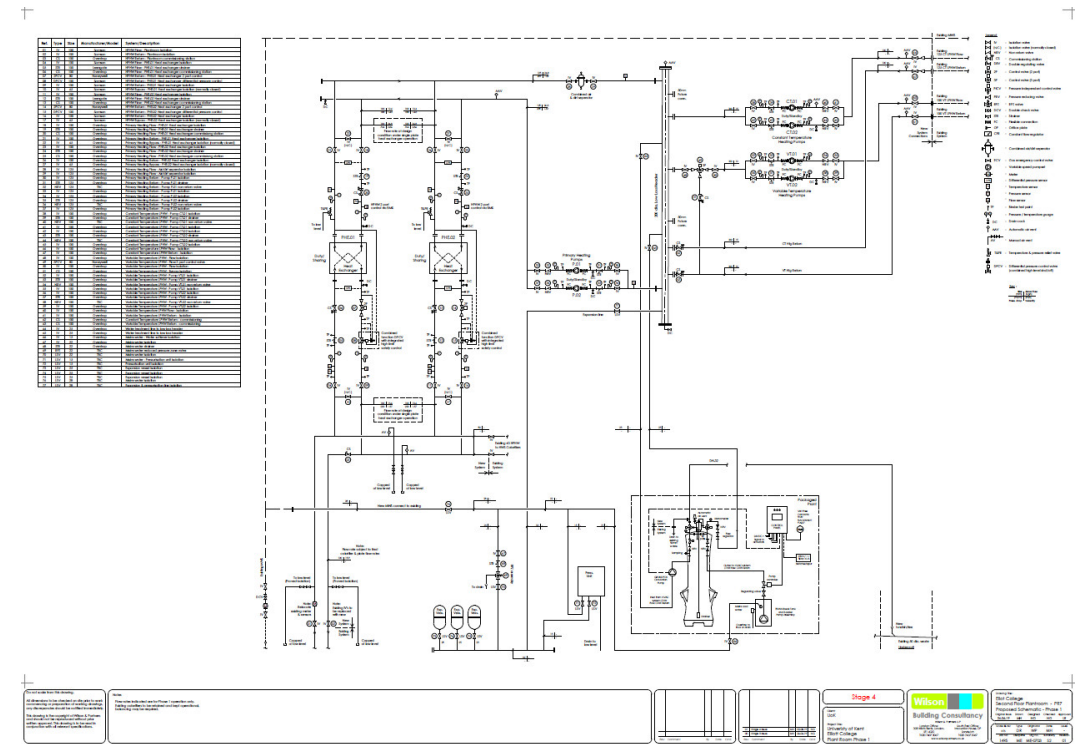
The scope of services included:

- Detailed site survey including 3D modelling of all existing pipework, plant, equipment and surrounding plant space
- Detailed design works
- Detailed cost estimate
- Installation drawings
- Assistance with the procurement of temporary heating system while Plant room was undergoing essential works
- Weekly site visits
- Snagging, commissioning and defects inspections
- Stage 6 As Built Drawing information

Project Delivery:

Site survey was undertaken by Wilson & Partners engineers/technicians and a fully detailed 3D model was developed as a basis for new equipment installation.

Following appointment of a specialist contractor Wilson & Partners worked alongside their team to deliver the scheme before the district heating system was fully operational. A very challenging, but rewarding project, delivered within a tight programme to ensure continuity of service to one of the University larger colleges.



Eliot College Plant Room Phase One

Client | University of Kent

Project Timeline | 2019

Project Value | £0.25M

Introduction:

Through our long-standing relationship with the University of Kent Wilson & Partners were approached to develop a Canterbury campus site wide heating infra-structure scheme.

The Brief:

The University Energy Management Team required a full evaluation of the existing buildings connected to the centralised district heating system. The aim of the project was to upgrade 26 existing plant rooms across the campus and completely renovate the central systems to convert the 12MW high temperature hot water system to a more efficient and safe, low temperate hot water system. The design incorporated a large 1.5MW Combined Heat and Power Unit into the network.

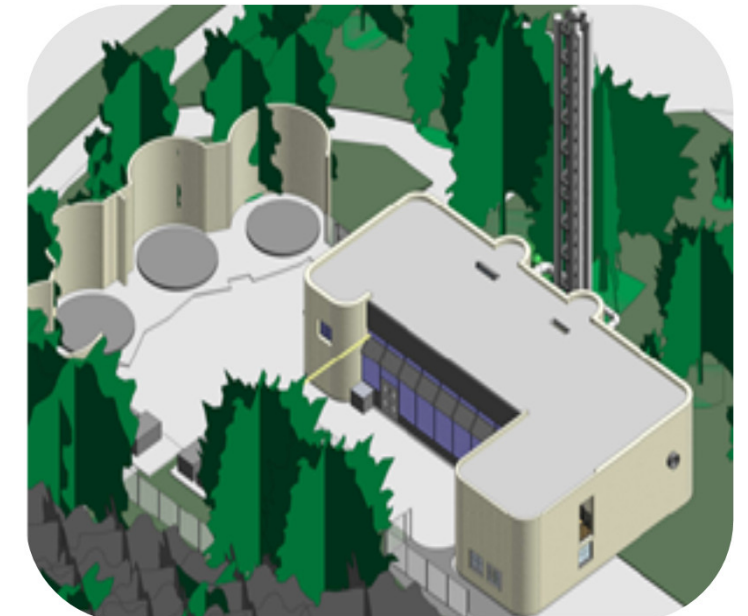
The scope of services included the following:

- Detailed cost estimate
- Detailed validation study
- Detailed energy analysis
- Stage 2 design for HTHW to LTHW Alterations and CHP
- Stage 2 design for HTHW direct replacement
- New flue design management including Planning documentation preparation and submission
- Flue Gas Dispersion Modelling

Project Delivery:

In order to deliver the project within the challenging programme provided, Wilson & Partners relocated two Engineers to site, for an extended period of time. This allowed optimisation of surveys across the campus to review and assess plant room equipment in each building.

The project has lead to progressive upgrade of individual plant rooms and upgrade of the main boiler plant in phases to suit the University's capital expenditure programme.



HTHW District Heating and Energy Centre

Client | University of Kent / Atkins Global

Project Timeline | 2019

Project Value | £0.25M

Introduction:

Wilson & Partners have a long association with University of Kent and have been commissioned on several projects since 2012. The commission to upgrade Ingram Building laboratories was awarded in parallel with other commissions in early 2013.

The Brief:

As part of an overall upgrade programme, Wilson & Partners were commissioned to provide the detailed building services design for refurbishment of the Ingram Building. The project included full technical design as part of a multi-disciplinary team based on a traditional competitive tender procurement route and a supervisory role of the building works including the following areas; laboratories, entrance foyers, and toilet facilities.

Project Delivery:

The works involved most areas within the building, W&P collated information on the existing building services required to develop a strategy for the refurbishment and replacement of the following building services and zones:

- Air conditioning systems and ventilation systems
- Fume extraction systems
- Public Health systems
- Laboratory gas systems
- Lighting systems
- Small Power systems
- Data systems
- Access control systems
- Fire alarm systems
- CCTV systems

Wilson & Partners completed the building services elements of the project within budget and on programme.



Ingram Science Teaching Block Refurbishment

Client | University of Kent

Project Timeline | 2013

Project Value | £0.6M

Introduction:

Wilson & Partners were appointed as lead consultants covering multi disciplinary design services in connection with a Class 3 containment suite.

The Brief:

The initial brief involved assessment of an existing facility where performance and quality were below expected standards. The assessment process involved detailed site inspection, critique of design documents, review with stakeholders and interrogation of maintenance records.

Following publication of findings Wilson & Partners were engaged to deliver a feasibility study focused on rectification of deficiencies combined with operational changes to accommodate emerging science needs.

Project Delivery:

The assessment and subsequent feasibility study exercises involved specialist advice relating to containment facilities, appraisal of main plant and equipment capable of retention, total refit of the laboratory and change spaces.

Order of magnitudes costs were developed in collaboration with the client directly appointed Quantity Surveyors.



CL3 Laboratory Modifications

Client | University of Surrey

Project Timeline | 2020 - On going

Project Value | TBC

Introduction:

Wilson & Partners have had a long standing relationship with Zotefoams based in Croydon, acting as lead consultants and Principal Designer over multiple projects of varying nature, including upgrade of essential sites infrastructure, factory expansion projects, process plant installations, office space creation, and provision of conditioning laboratories. Design duties have included building fabric, civil design, full MEO design and process coordination.

The Brief:

Alternations within Factory 2 to create sufficient space to integrate a new process related to Factory 4 specialist production involving relocation of process lines, sub-division of space to create separation of clean and dirty processes and complete fit out of new area.

The factory was in continuous operation with impact on servicing of construction work and infrastructure services.

Project Delivery:

- Production of fully coordinated 3D model incorporating process elements and specialist equipment
- Creation of detail drawings and scope in collaboration with specialist process enquiries and equipment suppliers compliances with client insurers requirements and Building Regulations



Zotefoams Factory 2

Client | Zotefoams PLC
Project Timeline | 2019
Project Value | £0.75M

Introduction:

Wilson & Partners have had a longstanding relationship with Zotefoams based in Croydon and have been appointed as lead consultants and Principal Designer over multiple multi-disciplinary projects including essential site infrastructure upgrades; factory expansion projects, process plant installations.

In 2013 Wilson & Partners were appointed in connection with a substantial extension to Factory 3

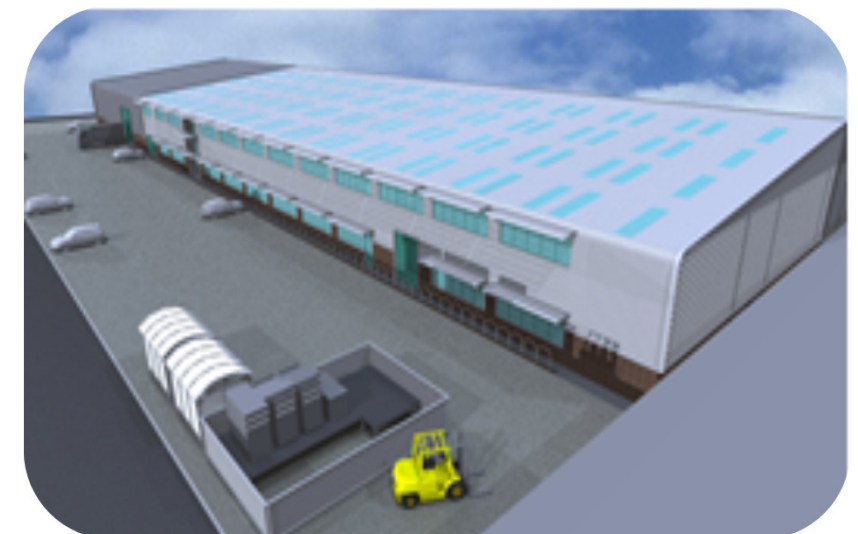
The Brief:

The initial appointment was to lead a Front End Study to assess feasibility and order of magnitude cost for extension of an existing factory operating 24/7, as part of a site-wide development plan. Production logistics and process/material flows were developed with the client and capacity studies supported the scheme.

On completion and approval of the Front End Study W&P were appointed to act as lead consultant across building fabric, MEP services and as contract administrator for delivery of 2900m² of Production, Research and Technical Development space. The Production space was to be fully functional with the related Technical and Administration spaces constructed on a “shell and core” basis for future fit out, once full requirements had been assessed by the client.

Project Delivery:

- Erection of new factory extension
- Rationalisation of delivery and packaging operations
- Creation of new Production space with “plug and play” services to suit existing equipment relocation and new process lines
- Facilitate future consolidation of office facilities as separate fit out scheme
- New staff welfare facilities (departmental) and supporting accommodation
- BREEAM “Excellent” targeted



Zotefoams Factory 3 Expansion Phase 1 & 2

Client | Zotefoams PLC

Project Timeline | 2013 - 2014

Project Value | £4M

Introduction:

Wilson & Partners have had a long standing relationship with Zotefoams based in Croydon, acting as lead consultants and Principal Designer over multiple projects of varying nature, including upgrade of essential sites infrastructure, factory expansion projects, process plant installations, office space creation, and provision of conditioning laboratories. Design duties have included building fabric, civil design, full MEO design and process coordination.

The Brief:

In 2018 Wilson & Partners were appointed to lead a Front End Study to assess feasibility and order magnitude cost for development of a new factory in the centre of the site to accommodate a specific new production facility. The site operates 24/7 and production logistics and process/material flows were developed with the client.

Wilson & Partners were appointed to act as lead consultant, multi-disciplinary design consultant, and contract administrator and principal designer for delivery of 1650m² of production and space with ancillary offices and support facilities. This is the first phase of comprehensive large scale industrial redevelopment for which Planning Permission was granted in late 2018. The production space was to be fully functional within 12 months and related administration space within 15 months.

Project Delivery:

- Erection of a new factory
- Creation of new production space to suit equipment for new process lines
- New staff welfare facilities (Departmental) and supporting accommodation
- BREEAM "Very Good" targeted
- Delivered on time and in budget



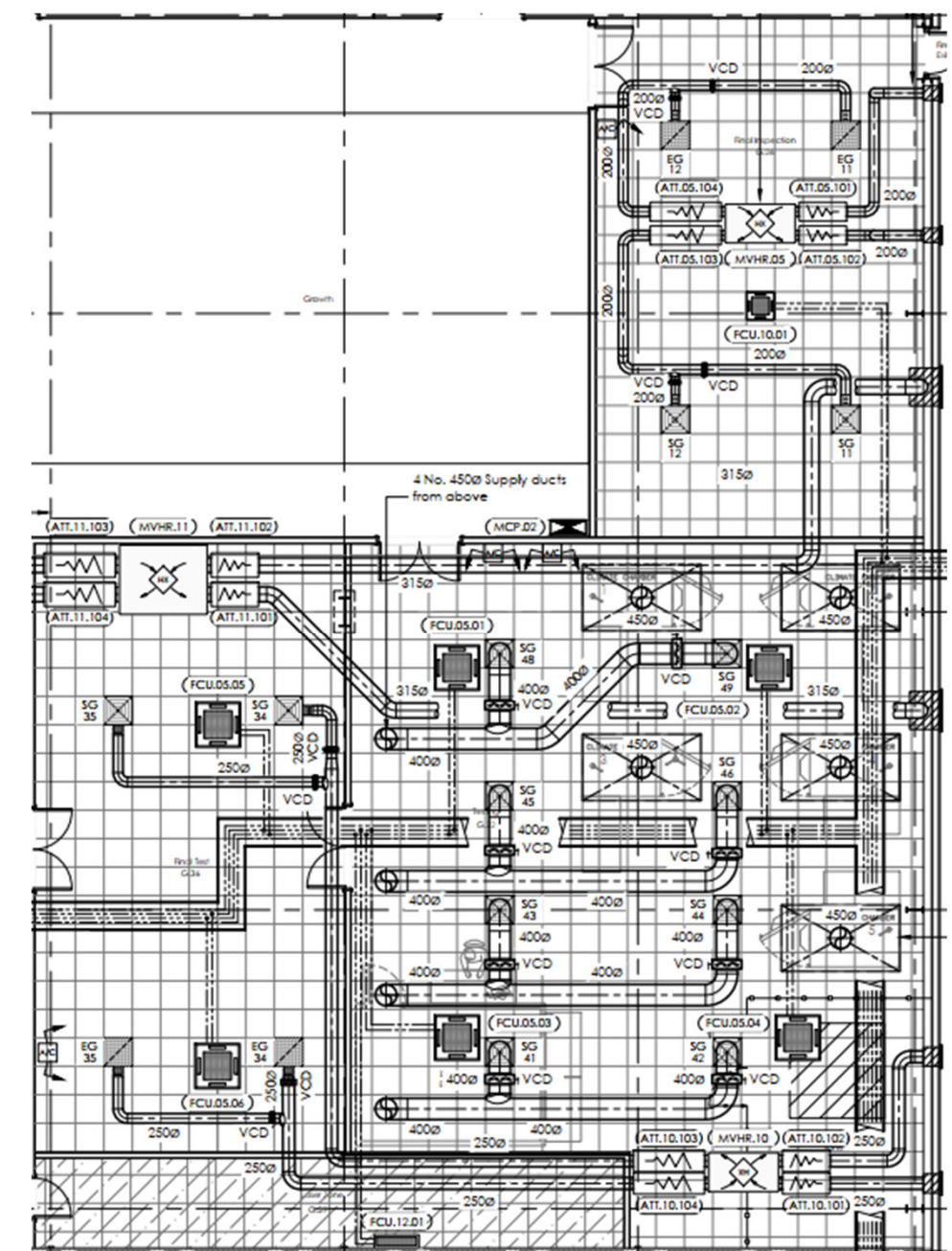
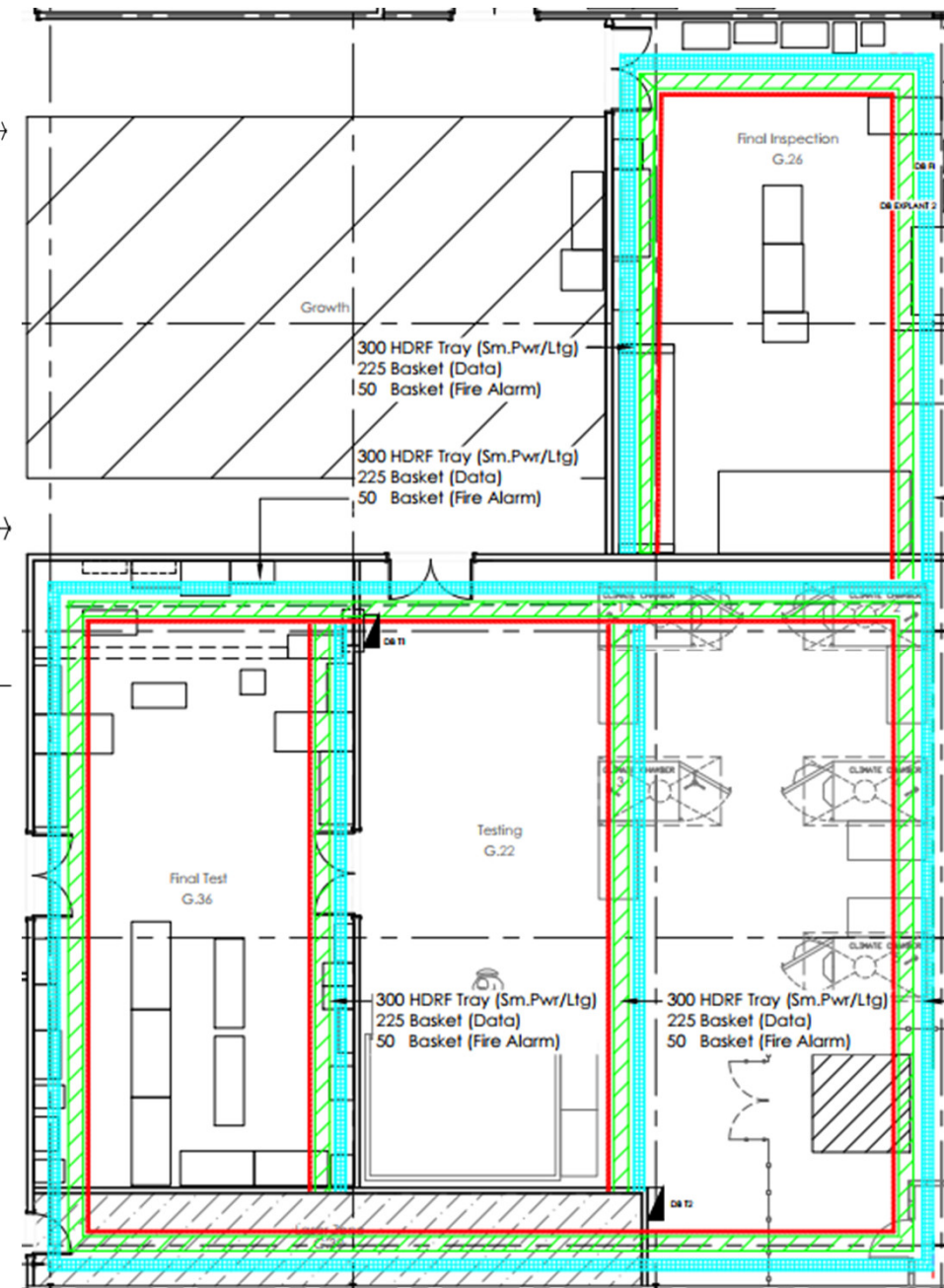
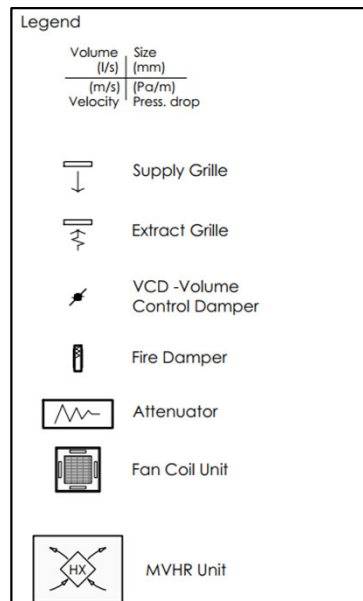
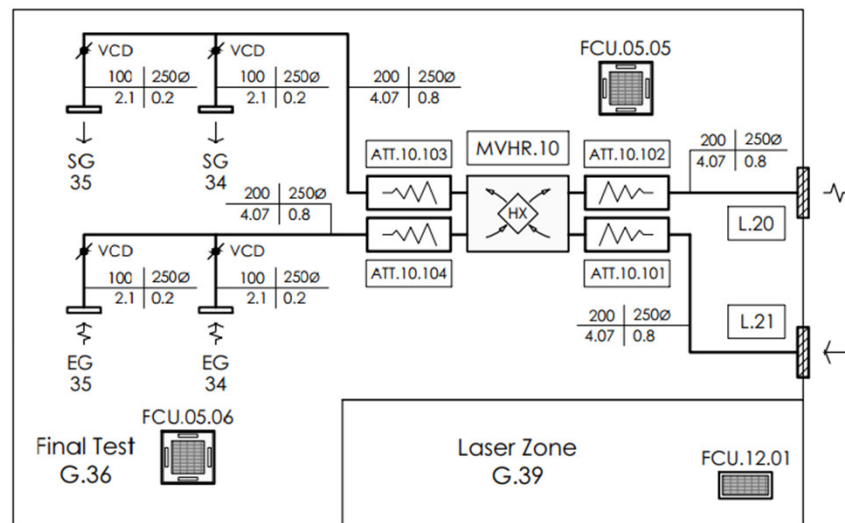
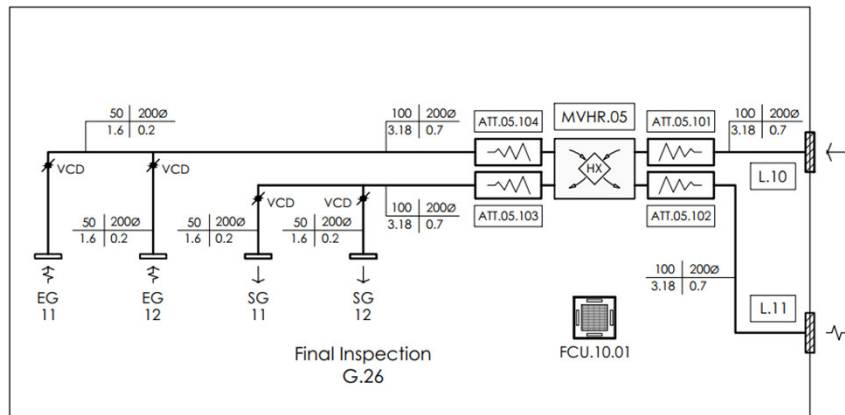
Zotefoams Factory 4 LP Expansion

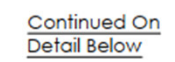
Client | Zotefoams PLC

Project Timeline | 2018 - 2020

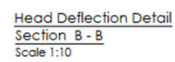
Project Value | £15M

Section 2.0
Example Working Drawings

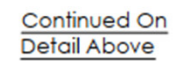




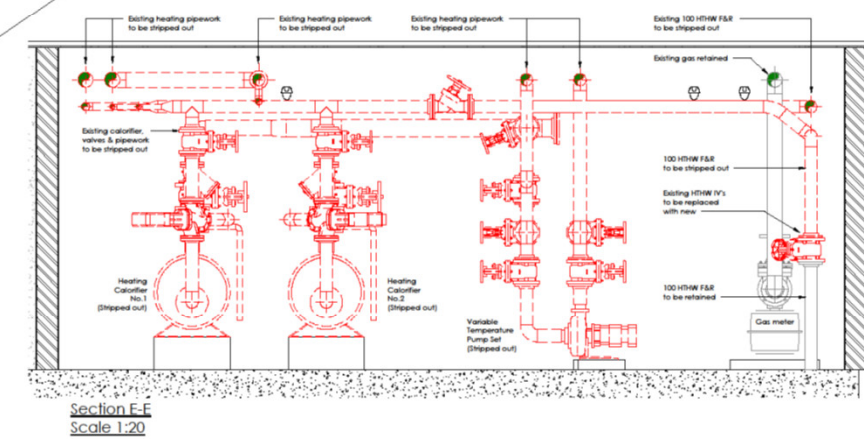
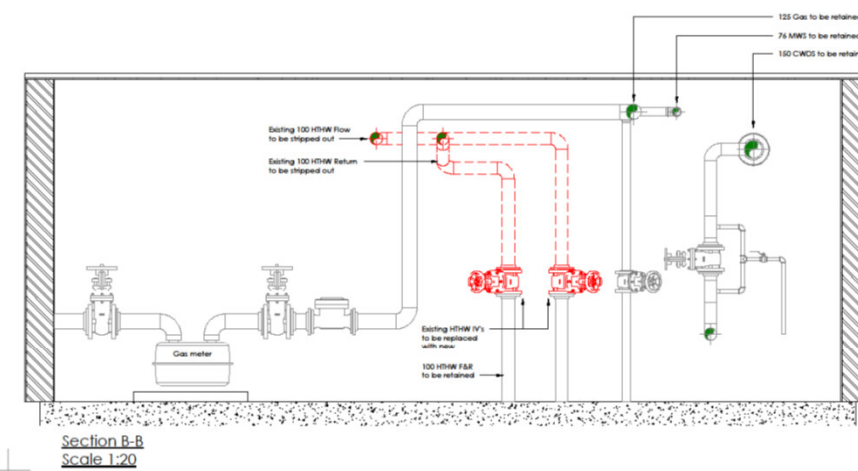
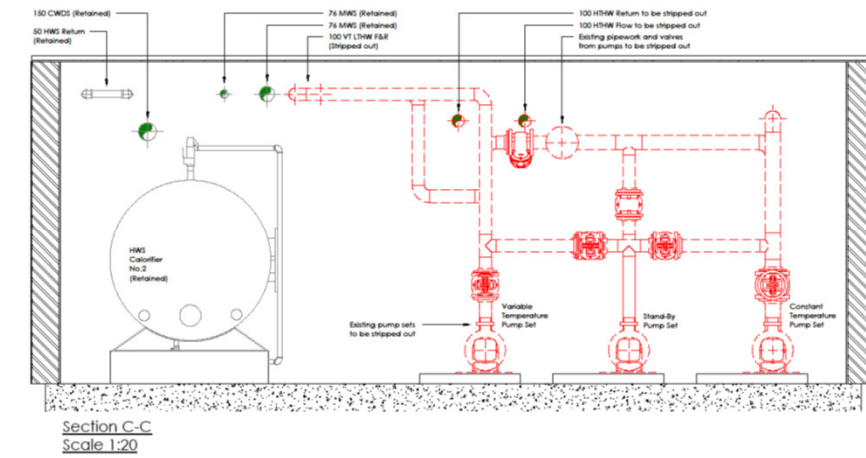
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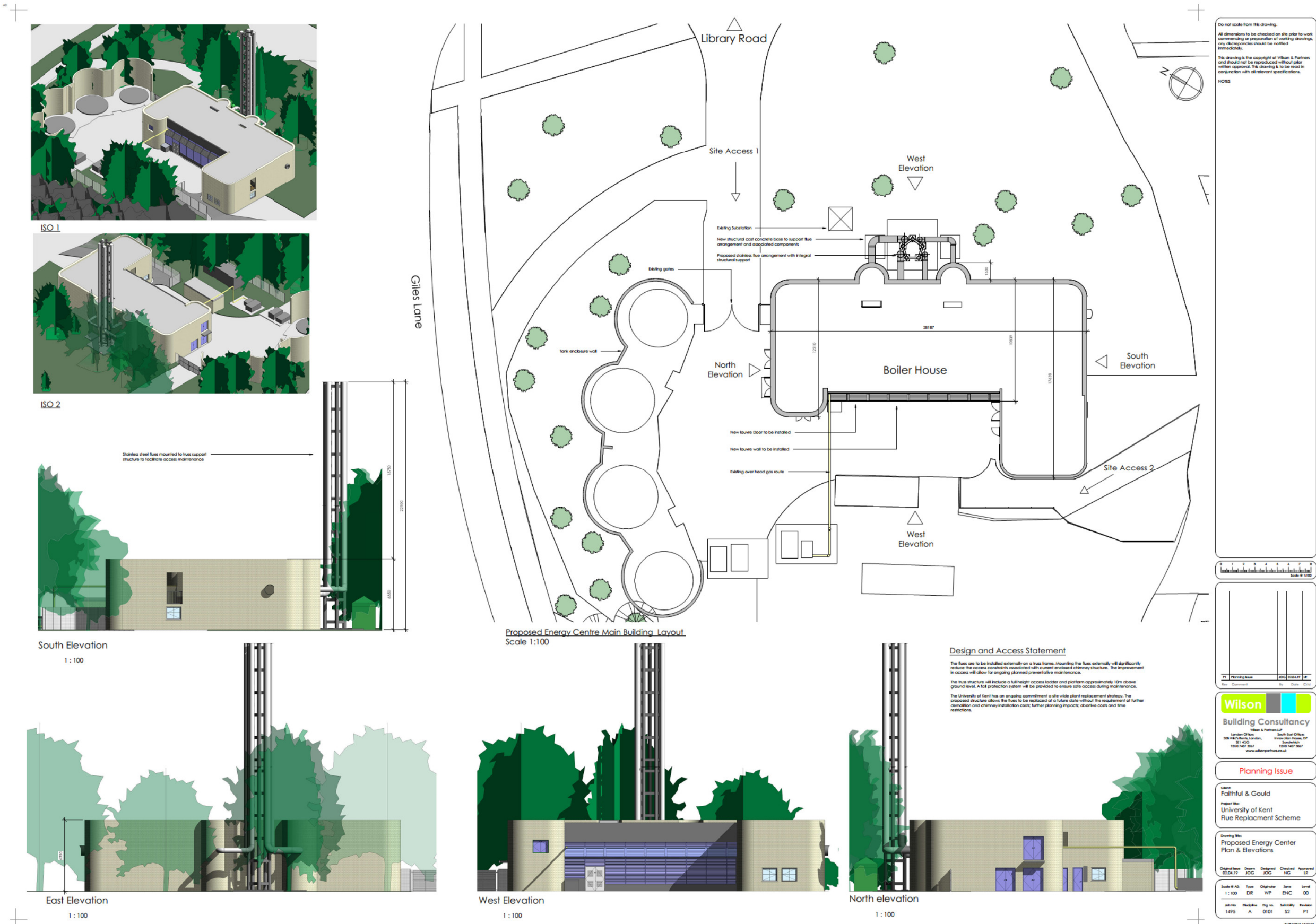
Head Deflection Detail
Section B - B
Scale 1:10



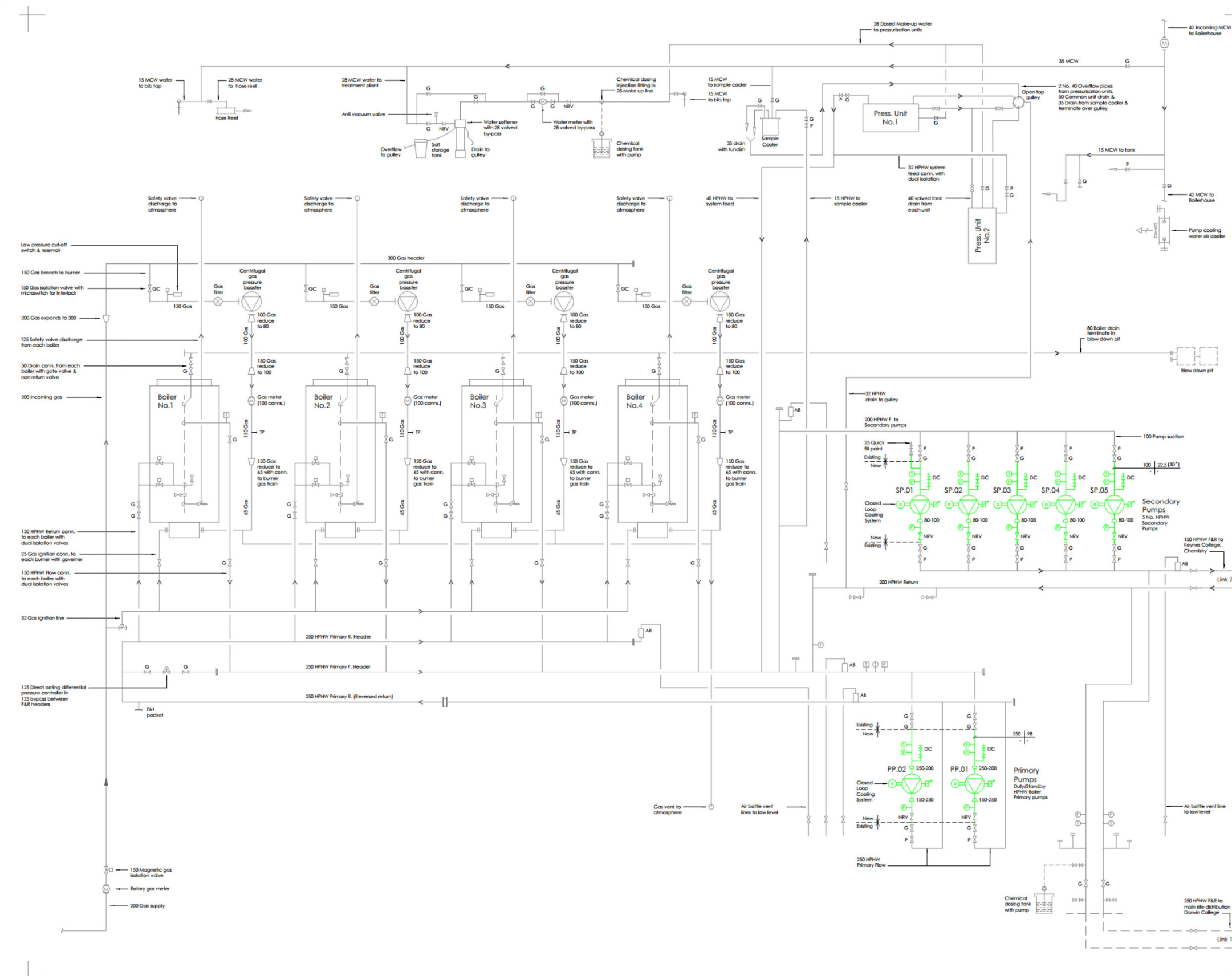
Section E-E



Drawing Title: Eliot College Second Floor Plantroom - PR7 Existing Services Strip-Out					
Original Issue 26.06.19	Drawn MH	Designed NG	Checked NG	Approved LR	
Scale & AD: As indicated	Type DR	Originator WP	ELC ELC	Level -	
Job No.	Discipline	Dwg no.	Suitability	Revision	
1495	ME	ME-0802	S2	00	



A1



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Notes

Legend

- NRV - Non Return Valve
- ISV (Plug) - Isolation Valve (Plug)
- ISV (Gate) - Isolation Valve (Gate)
- ISV (Ball) - Isolation Valve (Ball)
- MV - Motorised Valve
- DPV - Differential Pressure Valve
- SV - Safety Valve
- DC - Drain Cock
- GF - Gas Filter
- AB - Air Bottle
- PS - Pressure sensor
- PG - Pressure Gauge
- TS - Temperature sensor
- TG - Temperature Gauge
- M - Meter
- S - Strainer
- CV - Check Valve
- VSD - Variable speed drive
- Existing pipework/equipment
- Proposed pipework/equipment

KEY:

Size (mm)	Mass Flow (kg/s)	Design flow rate at maximum duty in reconfigured arrangement
150	1.5	1.5
200	2.0	2.0
250	2.5	2.5
300	3.0	3.0

01	Stage 4 Issue	MH	13.03.20	NG
00	Stage 3 Issue	MH	07.02.20	NG
Rev	Comment	By	Date	Cl'd

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Stage 4

Client:
University of Kent

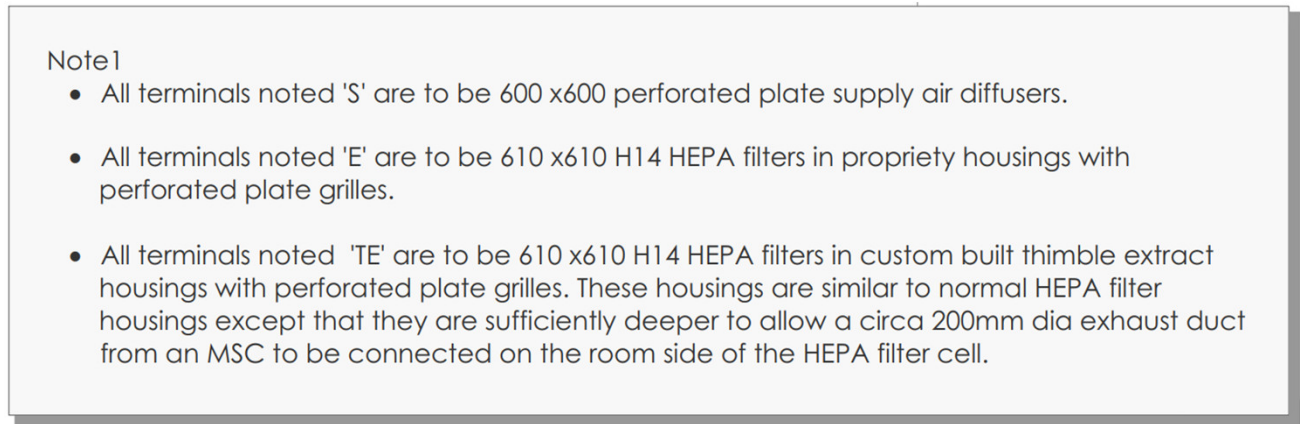
Project Title:
University of Kent
2020 Boiler House Works

Drawing Title:
Boiler House
Plantroom
Proposed HPHW Schematic

Original Issue	Drawn	Designed	Checked	Approved
07.02.20	MH	NG	NG	LR







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NTS 5	WP	BH	00
Job No	Dwg No	Submittal	Revision
1653	M - 0703	S2	01

11/03/2020 16:19:01



Notes:

All ductwork to be fully welded PVC.

	610x610 H14 HEPA filters in custom built thimble extract housings with perforated grilles.
	610x610 H14 HEPA filters in proprietary housings with perforated plate grilles.
	600x600 perforated plate supply air diffusers.
	300x300 Extract grille with perforated plate.
	300x300 Supply diffuser with perforated plate.
	600x600 Ceiling access hatch

00	Stage 2 Issue	MH	04.02.20	CU
N*	Revision	By	Date	Ci/G



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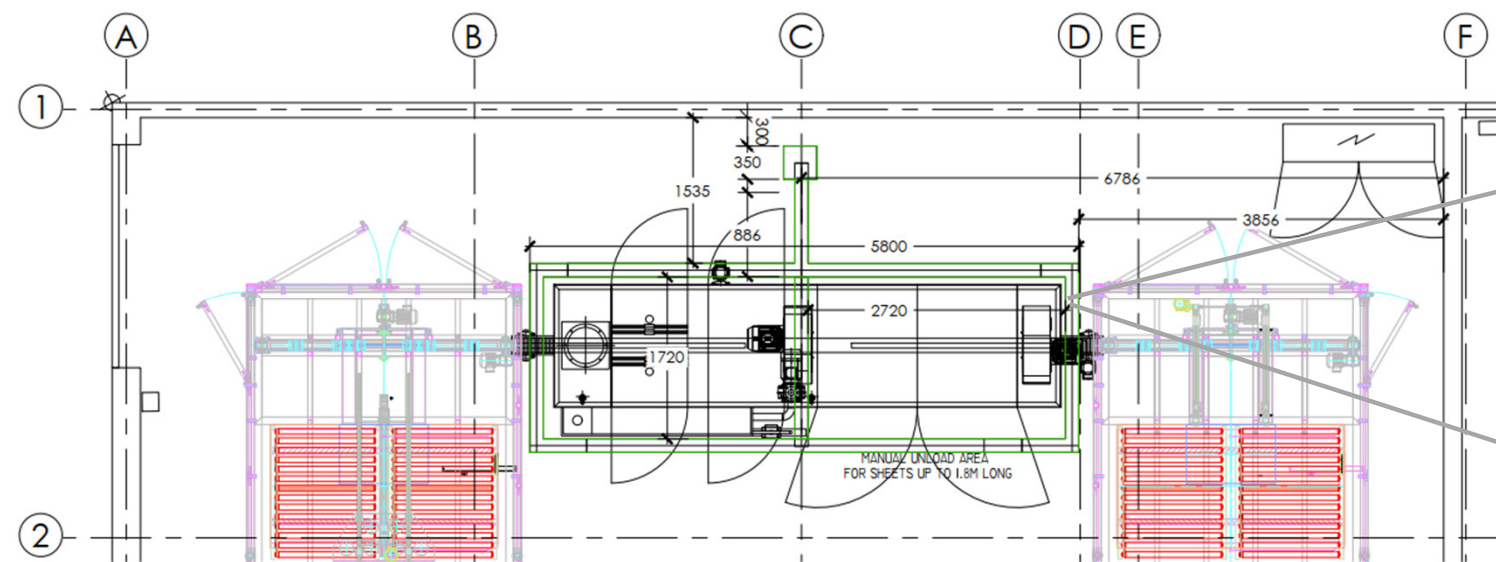
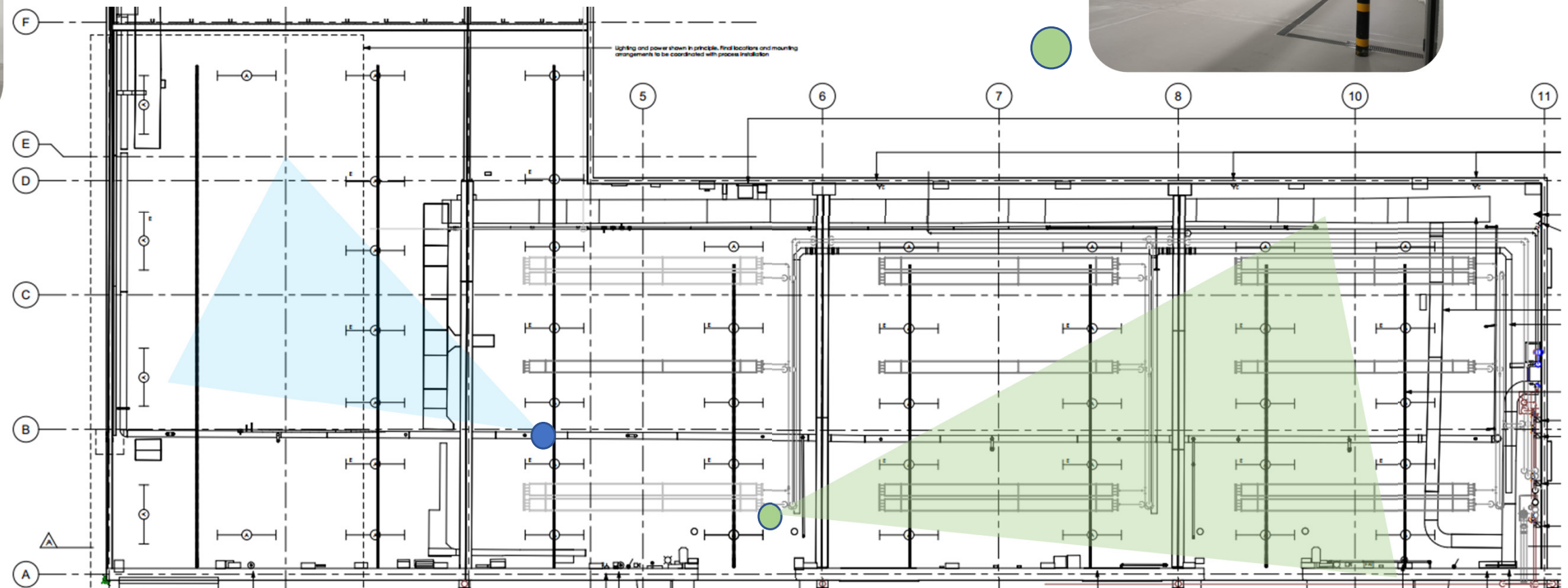
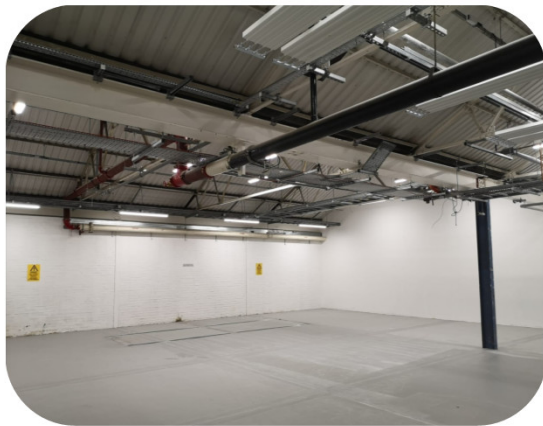
Stage 2

Client
University of Surrey

Project Title
Surrey University CL3
Laboratory Modifications

Title			
CL3 Laboratory Suite Proposed RCP & Air Terminal Positions			
Scale (A3)	Date	Drawn	Checked
1:50	04.02.20	JOG	CU

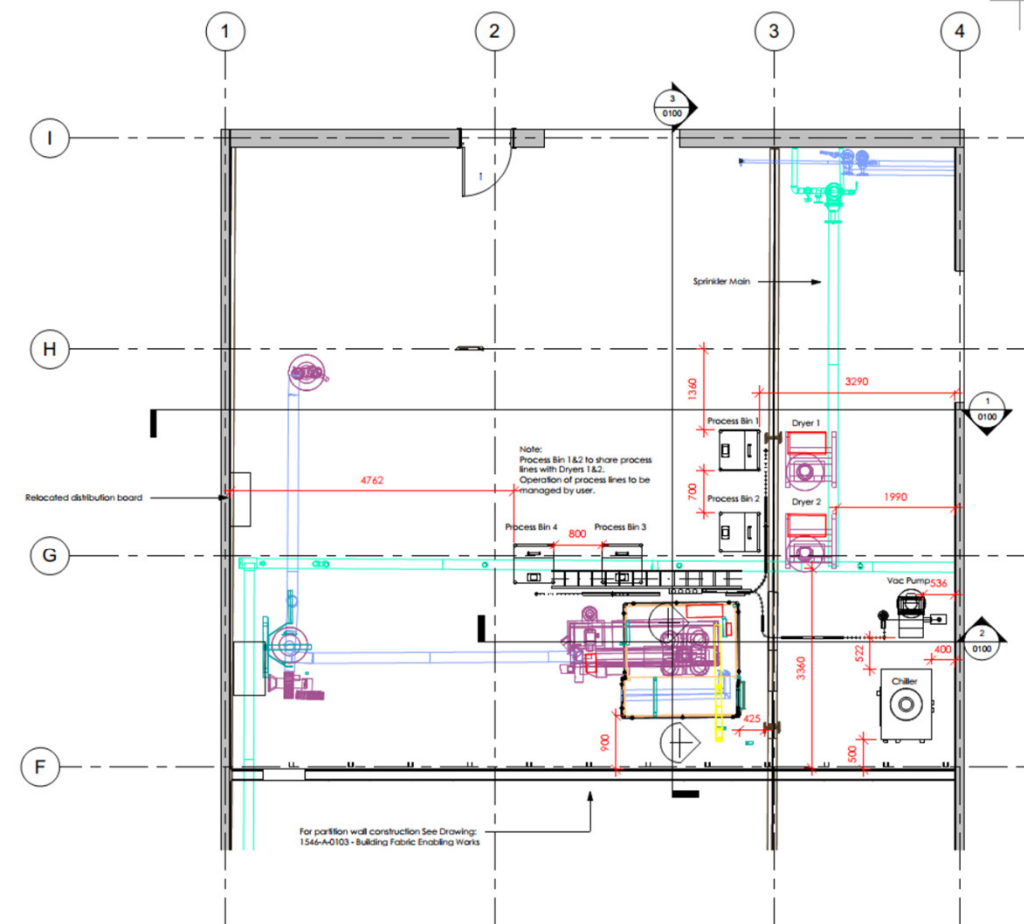
Project no.	Discipline	Drawing no.	Revision
1664	- M -	0100	00



Detail A Containment Drainage Washing Machine Area



A1



Straining Line Proposed Arrangement
Scale 1:50

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NOTES

Dimensions shown have developed from the 3D model, as such all measurements should be checked and coordinated at site level prior to installation.

0 1 2 3 4
Scale @ 1:50

P3	Dimensions added	JOG	03.06.19	DEP
P2	Amendments made to arrangement as per client requirements	JOG	23.05.19	DEP
P1	For Information	JOG	16.05.19	DEP
Rev	Comment	By	Date	Cx/d

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For Information

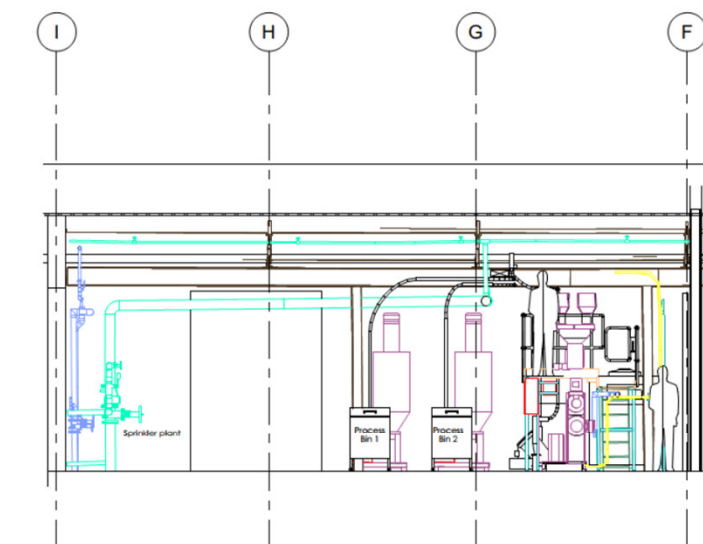
Client:
Zotefoams PLC
Project Title:
F2 - E2E

Drawing Title:
Straining Line Proposed
Layout, Sections &
Coordination Model

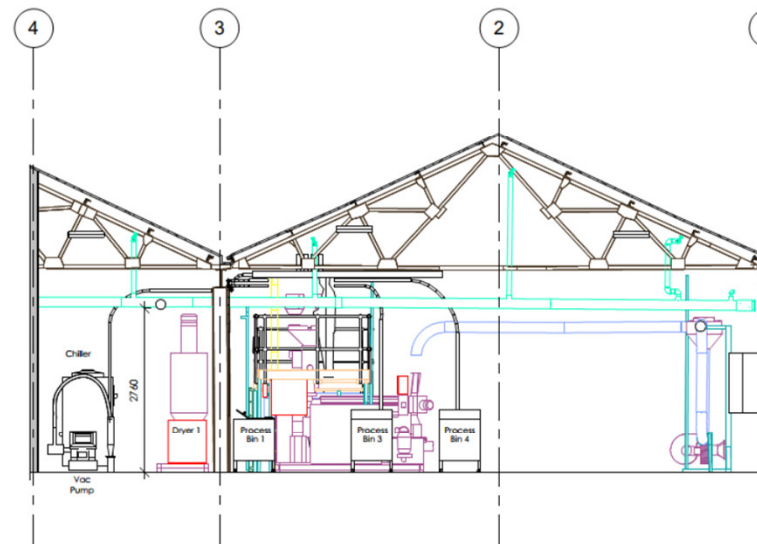
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Designed: JOG
Checked: DEP
Approved: DEP

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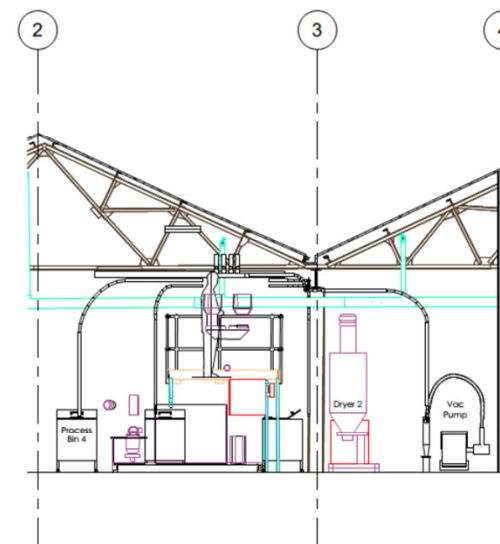
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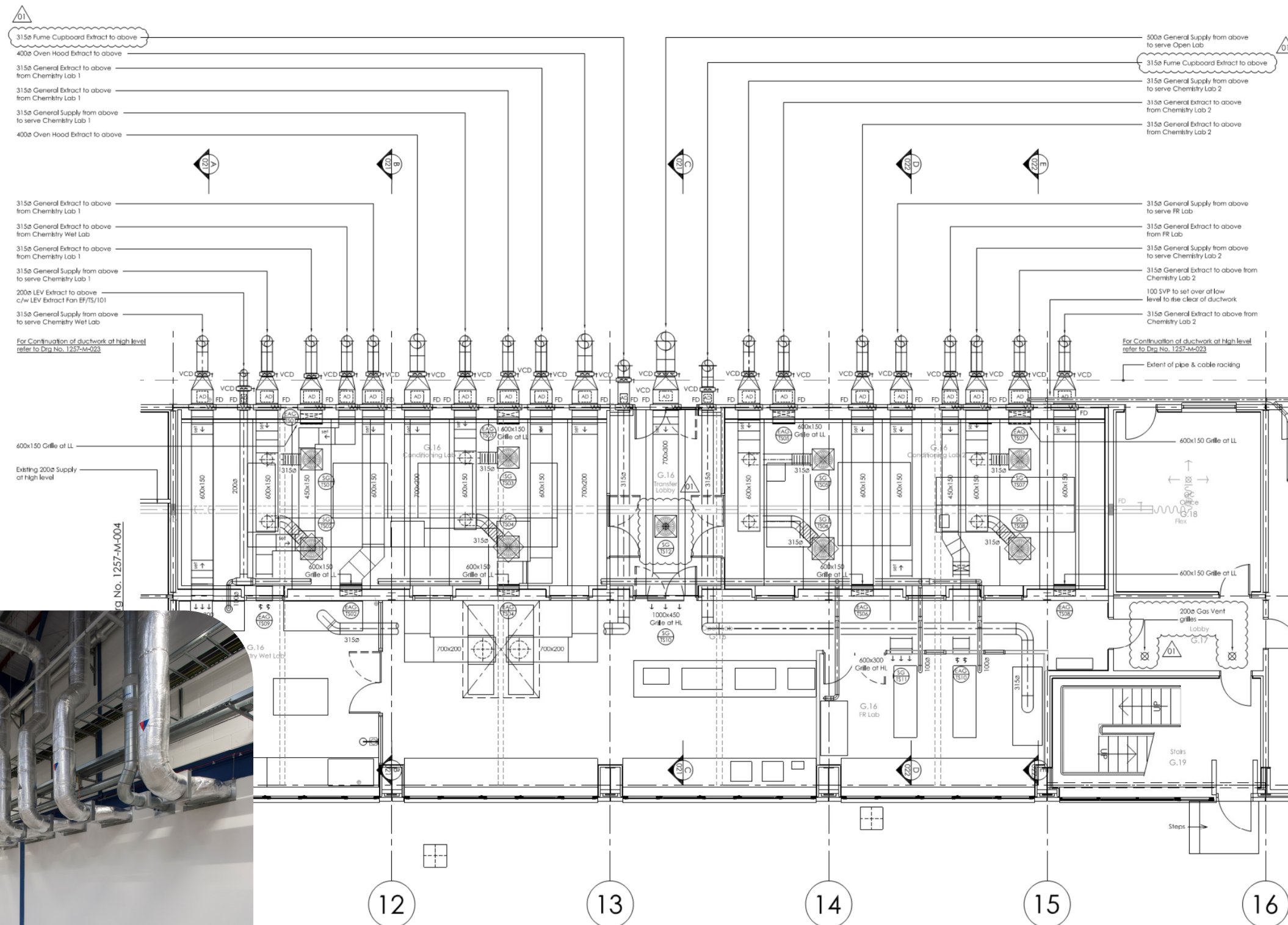
Straining Line Proposed Arrangement Section 3
Scale 1:50



Straining Line Proposed Arrangement Section 1
Scale 1:50



Straining Line Proposed Arrangement Section 2
Scale 1:50



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- Notes
- Maximum 300mm long flexible ductwork connection at each grille/diffuser.
 - Each branch/grille/diffuser to be fitted with OBD.

All existing works indicated as greyed
All proposed works indicated in bold

0 1 2 3 4
metres
Scale 1:50

01	Construction Issue	WP	23.10.15	AD
00	Tender Issue	WP	14.08.15	AD
	No change to drawing content			
A	Tender Issue	MH	31.07.15	AD
	By	Date	Crtd	

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Construction

Client
Zotefoams PLC
Project title
Zotefoams PLC
Factory 3
Phase 2

Title
Ground Floor
HVAC Layout
Sheet 2
Scale (A1)
1:50
Date
31.07.15
Drawn
MH
Checked
AD

Project no.
1257
Discipline
M
Drawing no.
005
Revision
01



