

specific environments

# Case Studies

# Client Portfolio

- Abbott Diabetes Care
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- Actavis
- Allergy Therapeutics
- APS Berk
- BAe Systems
- British Gas
- Cambridge Sensors
- Catalent
- Covidien
- Dalkia
- Eurocaps
- e2v
- F.E.D.S.
- Firco Construction
- GE Healthcare
- GlaxoSmithKline
- GR Lane
- IDC Cleanrooms
- Institute of Animal Health
- Intense Photonics
- Intervet
- Intratech
- Jakemans
- Johnson Controls
- Lilly Research
- MacFarlan Smith
- Merial
- MRC Systems
- Merck Sharp and Dohme
- Medimmune
- MSS Clean Technology
- Munters
- National Institute for Biological Standards and Control
- PA Consulting
- Patheon
- Philips
- Syngenta
- Technographics
- Thales
- Thame Labs
- The Austin Company
- Thompson & Capper
- Tilbury Container Services
- TSL Projects
- Unipath
- Various NHS Trusts
- DEFRA
- Warings
- Wrafton Laboratories
- Wrigley
- Wyeth

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# Low Humidity Areas

Specific Environments has designed and installed low humidity systems for areas such as medical diagnostics manufacturing, gelatin encapsulation, tableting suites and product drying / finishing areas.

Abbott Diabetes Care	Design and installation of all low RH systems (7½% RH ± 2½%RH) on the Abingdon and Witney sites over the last 25 years, including some 200 air handling systems, 100 Munters dehumidifiers and extensive Trend controls
Eurocaps	Design and install of all systems providing low RH to a new extension building for gelatine encapsulation, including low RH to 34 drying tunnels controlled at 5% RH
Aesica	Design and install of low RH systems serving product Dry Finishing suite
Catalent	Design and install of HVAC to low RH gelatin encapsulation facility inclusive of a full turnkey project to deliver product drying tunnels
Catalent	Design and install of HVAC services to a pilot lab with variable humidity and temperature set points (± 1°C within 12°C – 24°C, and ± 3% RH within 5% RH – 30% RH)
Jakemans	Low RH system to confectionery manufacturer

Other low RH works have been provided to: Wyeth, Unipath, Actavis, GlaxoSmithKline and Cambridge Sensors.

# Cleanrooms

Specific Environments has designed and installed M&E services systems for cleanrooms in the pharmaceutical, biotechnology, defence and microelectronic industries. We have also undertaken turnkey cleanroom projects where we have specified and installed mechanical, electrical and builders works - including fabric and finishes.

MG Pharma, Syria	HVAC design for ISO Class 7 and 8 BFS cleanroom facility in Syria, including 10 separate air handling systems serving process lines and support areas
e2v	HVAC design and install for ISO class 4 microelectronic cleanroom
Unipath	Turnkey project to design, supply and install ISO class 7 cleanroom suite for diagnostics manufacture
Patheon	ISO class 5 aseptic cleanroom suite for cephalosporins filling and ISO class 5 cleanroom suite for injectables filling
GE Healthcare	ISO class 5 aseptic cleanroom suite
Europa Magnets	ISO class 6 area for wafer fabrication
British Aerospace	ISO class 7 suite for infra red instrument manufacture
Guys Hospital	ISO class 7 Radiopharmacy
Intratech	ISO class 7 Cleanroom suite
Actavis	ISO class 7 small batch cleanroom
Colchester Hospital	ISO class 7 Pharmacy support unit
Thame Labs	ISO class 7 Cleanroom suite
ADT	ISO class 7 electronics cleanroom
Wrafton Laboratories	ISO class 8 microbiology laboratories

# Animal Facilities

Satisfying stringent Home Office licensing requirements. Specific Environments has designed and installed a number of M&E services systems for animal facilities.

Merck Sharpe & Dohme	Design and install of HVAC services for new quarantine transgenic and behavioral neuroscience animal house with some 30 holding, observation, testing, monitoring, preparation and operations rooms
Medimmune	Design and install of M&E services for 10N° New Animal and Procedure rooms at the Babraham Institute together with cage wash facility, autoclave and technical areas
IAH Pirbright	Design of HVAC systems for a DEFRA Category 4 facility which also included a number of ACDP CL3 areas
Intervet	HVAC to animal building to provide supplementary cooling, increased air changes and revised room pressures
DEFRA, Slough	New Controlled Environment Unit at the Central Science Laboratory in Slough.
National Institute for Biological Standards & Control	11 N° existing animal rooms; installation of air tight shut off dampers and associated fumigation control modifications
Lilly Research	Amphibian holding facility

# Containment Suites

Specific Environments has designed and installed services systems for containment suites. These have varied from pilot facilities with a stringent pressure regime and local extract HEPA filtration to ACDP categorised areas complete with safe change HEPA filters and formaldehyde gassing facilities.

Catalent	Turnkey project to provide a new mixing suite complete with two mixing rooms, dispensary, technical area, storage room and corridor
MacFarlan Smith	HVAC to new methylation pressure filter dryer suite
Merial	Ventilation to site main effluent pit head
Cardinal Health	Phleum pratense grass pollen extract production line
National Institute for Biological Standards & Control	Prion laboratory extract system
Abbott Diabetes Care	Carbon mill lab (Zone 1 area)
Lilly Research	Hydrogenation lab services design and install
PA Consulting	ACDP containment level 2 development laboratory HVAC
Wyeth	Design study of dispensary HVAC
GlaxosmithKline	Pilot Plant and sustained release facility HVAC
Guys Hospital	HVAC to radiopharmacy

# Laboratories

Specific Environments has designed and installed M&E services systems for laboratories in the pharmaceutical and healthcare sectors. We have also undertaken turnkey laboratory projects where we have specified and installed mechanical, electrical and builders works – including fabric and finishes.

GE Healthcare	Turnkey project to provide a new microbiology laboratory suite complete with general labs, safety room, incubator rooms, autoclave, and sterile cleanrooms
Lilly Research	Hydrogenation lab design and install of services
Abbott Diabetes Care	Design and install of HVAC to blood labs, IMA labs, carbon mill Lab, screens labs and chemistry labs
NIBSC	HVAC to electron microscope lab and prion lab extract system
GE Healthcare	Mechanical services to chemistry lab including general lab areas and safety cabinet room
PA Consulting	HVAC to ACDP containment level 2 development laboratory
Wyeth	HVAC to biology lab suite.
Guys Hospital	HVAC to radio pharmacy
Wrafton	HVAC to microbiology lab



# Pharmaceutical Production & Packaging

Specific Environments has designed and installed services systems for pharmaceutical production and packaging facilities.

Aesica	Design and install for six new packaging lines (3 of which are low RH) in the dry finishing area. Works include HVAC, dust extract and BMS
Abbott Diabetes Care	A number of high value projects for low humidity diagnostics production facilities including design and install of primary utilities, HVAC, mechanical services, BMS and sprinklers
Eurocaps	Low humidity production suite for gelatine capsule production, including primary utilities, HVAC, mechanical services and BMS
Catalent	Design and install of low humidity production line including HVAC, M&E, BMS, EMS and builders work
Actavis	Design and Install of HVAC services to new three storey pharmaceutical packaging facility
Patheon	Eye drops and Injectables filling lines cleanroom suite. HVAC, M&E, BMS and cleanroom construction
Glaxosmithkline	Design and install of HVAC systems serving production areas, including dust extraction
Cambridge Sensors	Turnkey project including incoming supplies, HVAC, BMS, M&E and builders work for diagnostics production facility
Unipath	Turnkey project including HVAC, BMS, M&E and builders work for diagnostics production facility

# Calibration Rooms and Product Storage

Specific Environments has designed and installed M&E services for a number of these areas where equipment calibration takes place or where product storage is required at specific environmental conditions.

Abbott Diabetes Care

Mechanical services to calibration lab and association support areas. Design: (21°C ± 0.5°C). Measured: (21°C ± 0.3°C)

Abbott Diabetes Care

Over 25 product storage or standout areas controlled at ± 1°C, with some areas also being held at below 5% RH

Cardinal Health

Finished goods warehouse

Wyeth

Design and install of temperature controlled high bay warehouse including a 900 m<sup>2</sup> chill store with 100% redundancy on all plant and controls items

# Chilled Water Systems

Specific Environments has designed and installed many new central and distribution chilled water installations.

Abbott Diabetes Care	Design and replacement of existing chillers and major expansion of the site chilled water system, including chiller plant, pumping and pipework, Installed cooling capacity: 7MW .
Abbott Diabetes Care	Design of complete new facility on a green field site, currently in phase 6 with a total installed chiller capacity of 8MW with all associated pumping and distribution pipework.
Wyeth	Design and replacement of existing chillers and major reconfiguration of the site chilled water system. Installed cooling capacity: 3.5MW.
Parke Davis	Design and replacement of existing chillers with new ammonia water cooled plant. Installation included chiller, and ammonia detection system. Installed cooling capacity: 2MW of cooling.
Lilly Research	Design of chilled water installation including replacement of water cooled plant for air cooled chillers. Installed cooling capacity: 2.2MW.
Patheon	Replacement chilled water plant and pumping. Installed cooling capacity: 2.1MW.

Other chiller plant and chilled water installations have been provided to: GE Healthcare, Actavis, Covidien, RAF Kinloss, RAF St Mawgan, Unipath, e2v, Cambridge Sensors, Glaxo Smithkline, Royal College of Physicians.

# Design Commissions

Specific Environments often undertake design commissions producing detailed tender packages including drawings, specifications, equipment schedules, project plan and budget costs.

Abbott Diabetes Care

Specific Environments has been the sole designer for HVAC, mechanical, sprinkler and BMS services for ADC over the last 25 years including individual high value projects such as the design commission for HVAC, mechanical, BMS and sprinkler services worth £6.5M

Intervet

3 year commission (2008 – 2011) to act as consultants for HVAC projects on the Milton Keynes site. Currently we have undertaken 36 separate design activities

MG Pharma, Syria

Design of HVAC systems for a 2500m<sup>2</sup> BFS cleanroom suite in Syria, including 10 separate air handling systems serving production areas

Institute For Animal Health

Design of HVAC and mechanical services to DEFRA SAPO 4 facility c/w ACDP CL 3 rooms

Catalent

Design to provide a tender package for the remodelling of a low RH production line, including HVAC, BMS, EMS, M&E and building works, project value over £1M

Catalent

Design to provide a tender package for a new mixing suite including HVAC, BMS, EMS, M&E and building works, project value £750K

Other design packages have been undertaken for: British Aerospace, Unipath, Intratech, Covidien, Patheon, Medimmune, Cambridge Sensors, Syngenta.

# Studies, Surveys and Reports

Specific Environments undertake many feasibility studies, conduct site surveys and produce reports into all aspects of services installations.

Syngenta	Feasibility study on decentralisation of boiler plant with new local boilers to serve an existing research building
GlaxoSmithKline	Survey and report on the routing and capacity of existing cooling plant
Patheon	Survey and report on existing CHW system to determine the capacity of the installed plant and distribution piping
Catalent	Survey and report on necessary works to achieve revised temperature, humidity and pressure regime in pharma production lines
Lilly research	Design study to convert a general laboratory for use as a hydrogenation lab
Lilly research	Conditional survey of site HVAC, CHW and LTHW systems
Wrigley	Survey of existing plant to determine feasibility and cost to provide additional dehumidification equipment to large production areas
Thales	Survey and report on services installations in simulator buildings at ten RAF bases throughout the country
Covidien	Survey and design of area and plant for new ethylene oxide steriliser installation

Other reports and surveys have been undertaken for: Abbott Diabetes Care, APS Berk, Wyeth.

# Validation

Specific Environments has undertaken validation activities for a number of clients including writing and execution of DQ, IQ and OQ documents and managing commissioning, DOP and particle count activities.

Eurocaps	Commissioning and validation of HVAC installation for a large low humidity cGMP manufacturing area. Works included air and water balancing, room pressure balancing, O&M manuals, record drawings, and writing and execution of the IQ and OQ protocols
Catalent	Commissioning and validation of HVAC installation serving a new production line, including air and water balancing, room pressure balancing, O&M manuals, record drawings, and execution of the IQ and OQ protocols
Unipath	Commissioning and validation of HVAC installation to new cleanroom including air and water balancing, room pressure balancing, O&M manuals, record drawings, writing and execution of the IQ and OQ protocols, executing particle counts and HEPA filter DOP tests
Medimmune	Successfully undertook Home Office 14 day stability tests on a new animal facility installation
Patheon	Commissioning and validation of ISO Class 5 injectables cleanroom, including writing IQ and OQ document and executing IQ, OQ, DOP tests and particle counts
Merck Sharp and Dohme	Successfully undertook Home Office 14 day stability tests on a new animal facility installation

Validation works have also been undertaken for: GE Healthcare, Cambridge Sensors, Thame Labs.

# Energy Surveys

GlaxoSmithKline

Energy survey of existing air handling plant serving packaging department. Proposal suggested reducing air flow and replacing existing belt drive fans with direct drive plug type units. Following the report the proposals were implemented and GSK are seeing a marked reduction in electricity consumption

Abbott Diabetes Care

Energy report on existing air and chilled water installations. Recommendations included reducing air flows to environmentally controlled production areas and variable pumping on secondary chilled water systems. Client has reported notable reduction in energy usage with no effect on space temperature or humidity control

# Specialist Services

Specific Environments has been involved in a number of interesting projects alongside their more regular line of works.

Catalent	Offload and positioning of five 24 tonne freeze driers and various associated cooling rigs
Abbott Diabetes Care	Survey and labelling of roof mounted exhaust systems
Catalent	Strip out of Kathabar dehumidification system and replacement with Silica Gel plant
GlaxoSmithKline	Dust Extract system dedicated to a number of sack tipping processes
Catalent	Filtered steam, purified water and boosted water services to new freeze driers
GE Healthcare	Modifications to WFI lines
Allergy Therapeutics	Study on mould tank design and associated services
Anhauser Busch	Design Study on humidity control in brewery to mitigate mould growth



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