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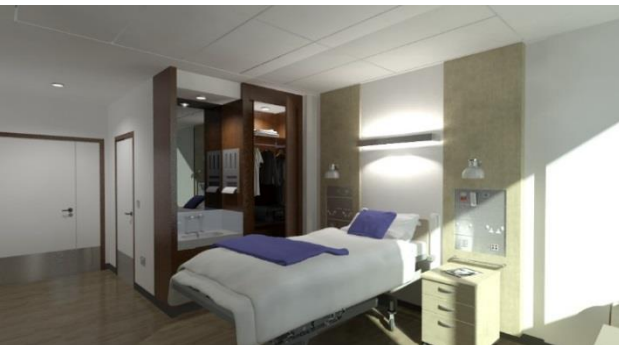
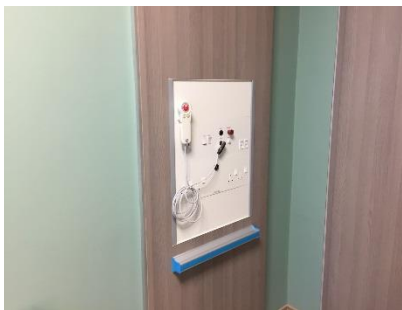
**SOLO**<sup>TM</sup> *vertical bedhead services containment*



**CABL**  **FLOW**<sup>TM</sup>  
H E A L T H C A R E

applications

CABLEFLOW™





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THE QUEEN'S AWARDS  
FOR ENTERPRISE:  
INNOVATION  
2005

Innovation is at the heart of an evolutionary healthcare infrastructure. Challenging boundaries whilst being respectful of clinical skills are two valued philosophies which ensure knowledge led developments in bedroom architecture.

At CABLEFLOW we recognise the need to be different, to ensure product development offers practical and sustainable progression whilst always ensuring full compliance with Patient Safety Standards and improving the clinical environment.

We are proud of our British healthcare heritage which offers universal application around the world. Having been conferred a prestigious Queens Award for Innovation our client's take confidence in that unique recognition as a market leader.



As Britain's leading medical supply unit manufacturer our range of solutions meet a vast array of design concepts throughout all clinical environments whether primary or tertiary care areas, and every speciality in-between.

In 2005 our **integra** product range became the first and only bedhead trunking system to achieve Royal recognition with the conferment of a **Queens Award for Enterprise: Innovation** from Her Majesty Queen Elizabeth II.

Improving the clinical architecture, the patient experience and ensuring flexibility and adaptation in later use are hallmarks of our innovative integrated lighting solutions. At home in an acute hospital setting or more domestic environments such as Hospice's and the like our systems can be tailored to your requirements.



## PRODUCT OVERVIEW

**SOLO** represents a broad range of vertical bedhead services trunking enclosures where aesthetics contribute to the healing process as much as function in the patient care environment.

Designed with clean yet subtle lines, flexibility in approach and clearly defined patient and clinician services layouts are key to this multi-function containment system.

High quality laminate finished facias are offered in a range of colours, finishes and textures from leading laminate brands and ensures coordination of appearance within the clinical environment is a high priority. Whether as a feature product or wanting to simply blend into the room décor, **SOLO** offers a multitude of options to the specifier.

Manufactured in five different size configurations, each dictated by the volume of medical gas outlets and ancillary equipment provision required, there is a system to meet every need in every hospital environment. Whether general consult/exam rooms or anywhere through the patient journey through in-patient bedrooms and high dependency care alike.

The system flexibility also offers **SOLO5** with the integration of waste gases extract systems to meet HTM 02-01 requirements for theatre and other recovery areas.



**SOLO** is beautifully practical for so many applications. Equally at home in all types of care areas, especially where a large volume of monitoring equipment is required and where wall space is limited, **SOLO** creates an optimised working environment where technologies appear seamlessly integrated, and where intelligent design delivers improved efficiencies in clinical function.

**SOLOBESPOKE** offers, as the name suggests, a bespoke build option, usually integrated as part of bedhead joinery arrangements to ensure full compliance to ISO 11197 for the medical supply unit element of bedhead joinery, which may otherwise be non-compliant.

## INNOVATION

Innovation is what drives Cableflow and is reflected in a Queen's Award for Enterprise: Innovation in 2005.

Going that bit further, searching and probing for solutions that make health care more efficient and safer for patients and clinicians alike. Our ability to offer something innovative and which is flexible, adaptable and user friendly are key hallmarks of the continued Cableflow success story, and all designed and manufactured in Great Britain.



## FLEXIBILITY

The **SOLO** concept is modular with an array of equipment and a multitude of 'add on' accessories available from a design which can be adapted to suit specific project needs.

Unlimited configuration arrangements ensure that any application can be accommodated and provides a 'future-proof' solution ensuring that the design of today will meet the needs of tomorrow.

## SERVICES PROVISION

**SOLO** provides mains power, medical gas, data, patient monitoring, ambient night lighting, IV posts, monitor screen mounting, fluid bag supports, earth bonding, cable and pipeline management solutions - all in one composite bedhead services trunking system.

Services are positioned within easy reach of clinicians and offer an uncluttered workflow area ensuring a usable patient space with full 360° access. By presenting an increased field of use and uncluttered floor area, **SOLO** is tailored to your specific application from a range of widths, heights and specifications.

**SOLO** offers a visually appealing enclosure fully compliant with ISO 11197 and HTM 08-03. Screw-less facias provide a neat and functional appearance whilst softened lines ensure this sleek medical supply unit integrates seamlessly into any clinical environment.

### FACTORY ASSEMBLY

A growing demand for pre-fabricated, pre-gassed and pre-wired medical supply units has bought about evolutionary change to healthcare construction. Benefitting from reduced costs of in-house fabrication versus site costs, all **SOLO** products are available pre-wired for mains power and pre-gassed.

Supported by test certification to BS 7671 & HTM 02-01 (BS EN 737) each unit is tested and certified in accordance with the prescribed manufacturing and installation standards.

### MAINS POWER

Electrical socket outlets from the UK, continental Europe, the US and other geographical regions can be accommodated, including switched or unswitched versions for standard or non-standard supplied circuits. Where called for these can be colour co-ordinated subject to the respective manufacturer's product range.

Where outlets are supplied by a Medical IT system (IPS) then these are generally colour coded blue, unswitched with an isolated earth and labelled 'Medical Equipment Only' in accordance with BS 7671 Section 710.

### EQUIPOTENTIAL EARTH BONDING

Equipotential earth bonding connections are fitted in accordance with BS7671 Section 710, using our Cableflow POAG-PES outlet (see separate data sheet).

### NURSE CALL SYSTEMS

All Cableflow bedhead trunking & containment products are universally adaptable to accommodate any manufacturers nurse call system.

**SOLO** offers a variety of options for nurse call system integration, whether mounted within the side sections, or facia mounted onto the front panel.

Where the re-use of existing wall mounted nurse call components is more economical for the project the front mdf facia can be factory or site prepared to accept conventional wall mounted plates. In addition, where the nurse call system is unknown at order stage this can be easily added post manufacture, and easily installed on site by simply cutting into the mdf facia. A nurse call back box and conduit link to high level is supplied centrally as standard to allow for future adaptation and flexibility.



### MEDICAL GAS TERMINAL OUTLETS

As with all other patient care services provision, **SOLO** is able to accommodate any type of medical gas terminal outlets, each hospital or installer having a preference for a particular type. Terminal outlets are located to allow vertical and horizontal adjustment for precise alignment within the system.

Medical gas pipelines are fully segregated from cabled services, accessible by their own cover section meaning terminal outlets can be positioned almost anywhere in the module and the pipeline maintained in total safety.

The number of gas specific outlets which can be fitted varies depending on the exact product configuration selected and accommodates any variation of terminal outlets as defined HTM 02-01. Dual gas circuits can easily be accommodated.

### MEDICAL EQUIPMENT RAIL

Where required, **SOLO** also incorporates Medical Equipment Rail complying with the global constructional requirements for rail as defined in ISO 19054.

The rail can be located on the front face of **SOLO** at a variety of heights as required by the customer, generally as defined in HTM 08-03. A concealed internal mounting support facilitates appropriate loading of the rail to ensure safety in use.



## DATA, PATIENT MONITORING & TV SERVICES

TV, data, fibre optic and voice services are all accommodated within the **SOLO** system. Proprietary supplied outlets can be surface mounted or flush fitting for a co-ordinated appearance.

Where 'Patient Power' initiative products are bedside, such as Hospedia, Airwaves, HTS and the like, then the support bracketry and mountings may be built into **SOLO** to reduce the impact upon the bedhead wall, both visual and engineering wise. Power and data feeds are then integral within **SOLO** meaning a reduced interface requirement with the wall and less 'post install' works in the patient environment.

## CONCEALED LID FIXINGS

In keeping with our screw free fascia concept, **SOLO** uses a bespoke lid retention slug that neatly slides into a channel created by the base-lid assembly preventing it from being opened inadvertently.

A specific lid removal tool accesses the channel and allows the lateral movement of the slug, thus ensuring that no damage is caused to the powder coated finish. The transparent slug has no visual impact on the appearance of the trunking, contributing towards the superb aesthetics of all CABLEFLOW medical trunking systems .

## IV SUPPORT POSTS

The inclusion of a 25mm diameter IV post or 38mm accessory arm support to the front fascia allows infusion bottle holders, IVAC pumps, perfusion equipment, collection jars etc, to be located and moved as required.

These are available in two standard lengths of either 1200mm or 1600mm although almost any length is available as a non-standard.

## ORIO™ CABLE AND PIPELINE MANAGEMENT

**SOLO** can also integrate the award winning\* ORIO cable and tube management disc, where called for by the project specification.

*ORIO is a registered trademark of Inora AS with patents pending.*

## CLINICAL MONITOR INTEGRATION

An ancillary patient/clinical/vital signs monitor mounting channel allows the fitment and connection of an LCD flat screen monitor and adjustable arm with tilt capability, along with associated power and data inter-connectivity.

These channels are available in a variety of lengths with concealed structural support allowing fitment during manufacture or where called for, retrofitted after installation.

## COLOUR & FINISH OPTIONS

Supplied as standard in a polyester powder coated RAL9010 white finish with light grey (RAL 7023) or white (RAL 9010) trims as standard, **SOLO** is available in an array of RAL colours to enhance, brighten and co-ordinate in any environment.

As an option, choose from our standard range of colours which are all supported by our Applicators Guarantee for 25 years, laminate timber effect or decorative central infill's to enhance the appeal of the product and installation. Your only limit is your imagination!



## STANDARDS COMPLIANCE

Manufactured from extruded aluminium, **SOLO** is certified compliant to the Medical Devices Directive 93/42/EEC and offers ergonomically considered shaping. The product is CE marked accordingly.

**SOLO** fully complies with the requirements of the product and performance standards as listed in this brochure, specifically when used in a UK healthcare facility.

**SOLO** has been designed by Cableflow and is manufactured in Great Britain using, wherever possible, components sourced and fabricated in the UK.

## HYGIENE AND INFECTION CONTROL

Infection control has never been more at the forefront of healthcare design. **SOLO** has been developed taking advantage of and embracing our knowledge of trunking product design whilst meeting the requirements of HBN 00-09.

With proven resilience to most agents used in healthcare cleaning operations, careful consideration of cable and pipeline management, easy to clean surfaces and sterilisable components are all integrated features of the **SOLO** design concept.





## LIGHTING INTEGRATION

Examination lighting is a key functional element of nursing care and the location of easy to reach adjustable arm lights is at the heart of the concept.

High quality light sources that provide examination illumination to satisfy CIBSE LG2:2008 and EN 12464-1 as well as allowing the clinicians to safely navigate their way around the room at night are essential components for the environment. **SOLO** will accommodate adjustable arm lights from all major suppliers.

## DE-STRESSING THE PATIENT

Integration of the cleverly designed **WAVE™** up/downlight by Cableflow adds to the overall offering of an engineered yet stylish environment.

De-stressing patients in often challenging environments is a heartfelt holistic consideration of clinical care, recognised in the evolution of **SOLO**. Knowing the patient is in the appropriate clinical place is one thing, but having an array of medical equipment in a disorderly manner with flashing lights and sounds all adds to patient stress. **SOLO** provides composite and co-ordinated solutions to minimise and manage these issues efficiently and integrates competently with other products.



## MODULARISED FACTORY ASSEMBLY

Fully factory assembled, pre-wired and pre-gassed in accordance with HTM 02-01, **SOLO** is simple and quick to install. Either fitted to 'float' on the wall and rear fed from concealed wall supplies or, fitted up to the underside of the ceiling for top feed, **SOLO** offers a range of design options.

**SOLO** must be mounted onto solid walls or on lightweight partitioning using appropriate fasteners and wall supports as defined in the product installation instructions.

## EASE OF MAINTENANCE

With a low maintenance requirement **SOLO** represents excellent investment and improved life-cycle cost. Optimising equipment lifespan is key in design to ensure as near 'maintenance free' equipment as is practicable. Using modular components makes access easier with reduced down time and where flexibility allows for adaption in provision over the installation life-cycle.

## SOLO1

Designed specifically for use in Neo Natal Intensive Care Units (NICU), **SOLO1** offers the lowest possible visual impact in the care environment without compromising in any way the functionality of clinical care, but enhancing it.

A compact design, the ability to carry, locate and support the plethora of care equipment required in these areas sets **SOLO** aside from alternative NICU services solutions whilst meeting the recommendations of HTM 08-03 and HBN 09-02.

Whether single room locations or multi-space areas where the need for vision panels are a necessity between rooms, **SOLO** can be neatly positioned to allow clear lines of visual communication between such areas. Designed to locate either side of a cot or bed to facilitate dual sided nursing care, **SOLO** can also be manufactured to service two patient locations from one enclosure if located centrally between patient spaces.

BS 1363 Power outlets are mounted at ninety degrees to the vertical to facilitate cable egress in an orderly fashion whilst getting more outlets in a reduced space. This design uses the wall as a cable routing mechanism for cleaner and tidier residual cable-management.



## SOLO2

This configuration offers the slimmest profile (at 450mm wide) on the wall and allows for up to three piped medical gas terminal outlets in an HTM compliant triangle, or four outlets in two rows of two.

Alternatively, where only two gases are required, typically Oxygen & Vacuum, then these are located adjacent to each other with additional capacity for a further terminal unit at a later stage. If required this aperture and terminal unit grid can be supplied with a fascia blanking plug for simplicity of fitment.

## SOLO3

Offering a slightly wider option, the width of **SOLO3** at 570mm allows for three medical gas terminal outlets to be positioned in-line on 135mm centres. In all other instances gases are spaced at 150mm for ease of use with dual flowmeters.

This configuration can also be used in higher dependency areas where dual gas circuits supply multiples of the same outlet, or indeed where more than three specific gases are required, thus in two rows of three outlets.



## SOLO4

Our broadest option is developed for anaesthetic or recovery rooms where multiple medical gas terminal units are required, either on single or dual gas circuits.

Adopting spacings between terminal units of 135mm this offers the narrowest of widths at 750mm for such a volume of outlets, so as not to impinge upon much needed wall space for clinical equipment. Offering up to two rows of outlets appropriately spaced, access and use of outlets is prioritised. Ensuring a co-ordinated approach to all clinical areas the ability to add IV posts and vital signs monitors is easy.



## SOLO5

For use predominantly in theatre and recovery areas **SOLO5** offers a product solution concept to the problems of extracting anaesthetic waste gases from within the environment. This may also be used in environments where Plume is also a side product of clinical procedures and requires extraction to external atmosphere.

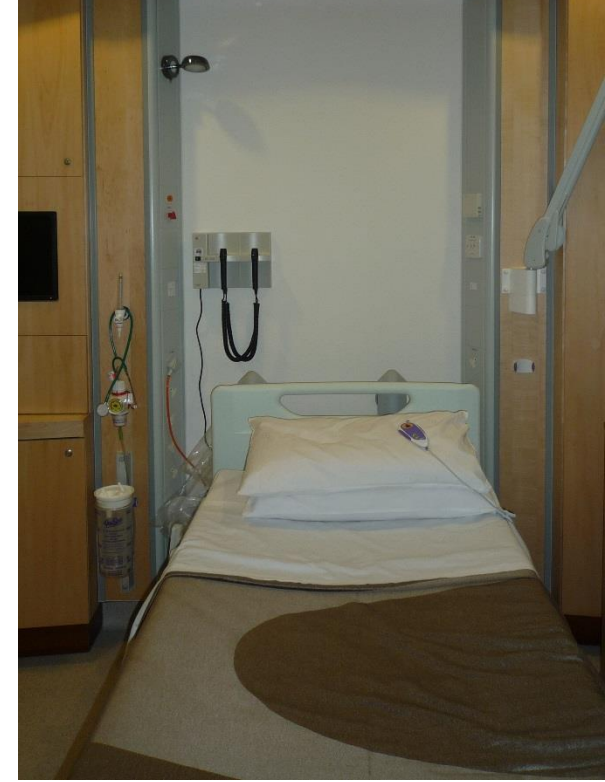
Providing all patient care services within the side sections the central area accommodates a sealed air extract duct of suitable cross section to facilitate low level waste gas extract. The design is co-ordinated with the overall extract ventilation and requires each solution to be specific in its design and size to suit the environment volume.



## SOLObespoke

The increasing desire for in-patient healthcare bedrooms to look and feel like a patient hotel has brought with it a proliferation of unsuitable designs which disregard patient safety. Where using enclosures assembled by builders, joinery manufacturers and cabinet makers they must take on the responsibility of 'manufacturer' under the Directive and as such must certify the products accordingly.

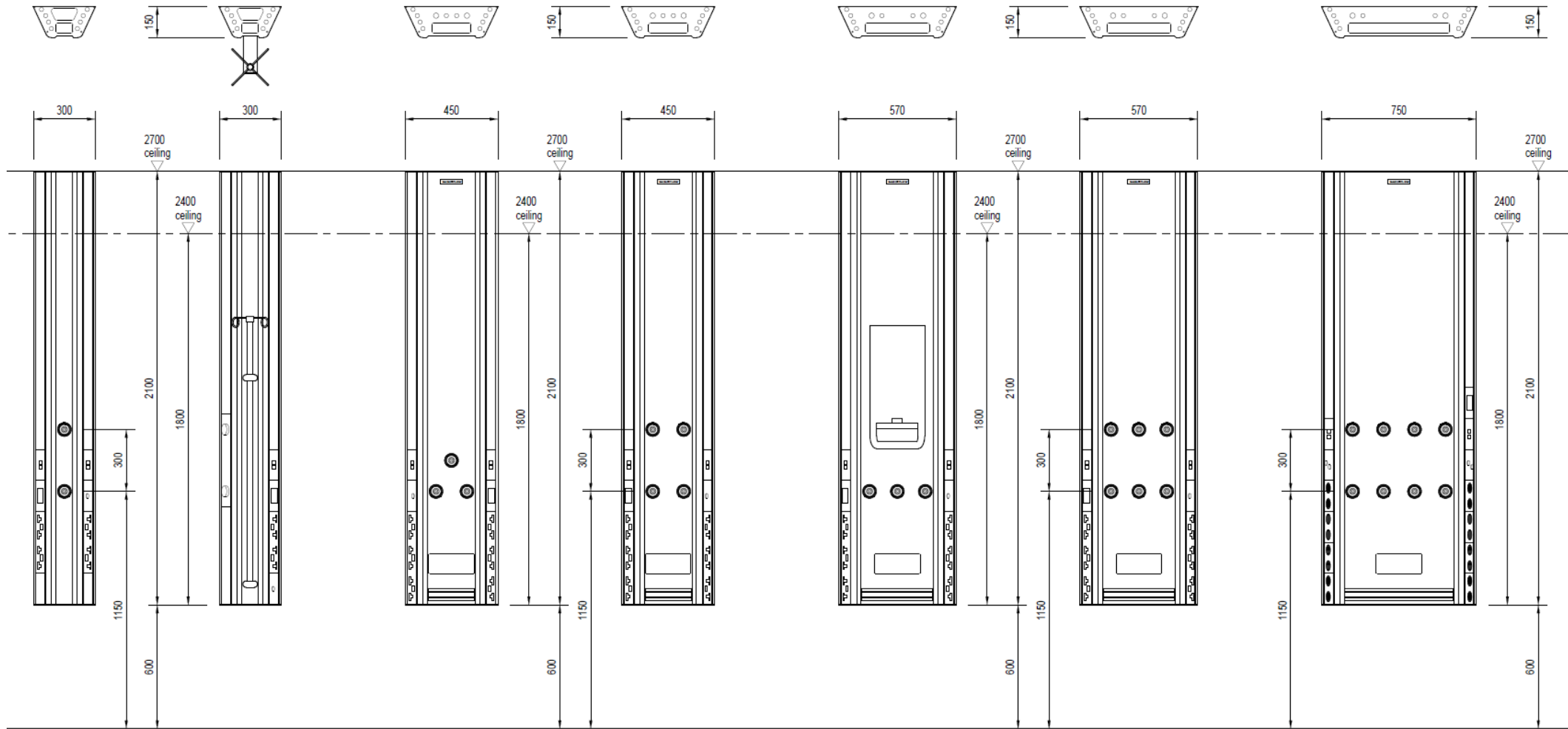
**SOLObespoke** utilises a mix of **SOLO** medical supply unit components to embrace the need for standards compliance at the bedhead, whilst being seamlessly integrated into conventional joinery. This ensures the design, integration, manufacture and test procedures are fully complied with by a reputable and proven product design. And satisfies the onus of compliance as the 'manufacturer' defined by ISO 11197.



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These typical examples demonstrate the various product designations and typical arrangements, although they can be easily tailored to your specific needs.

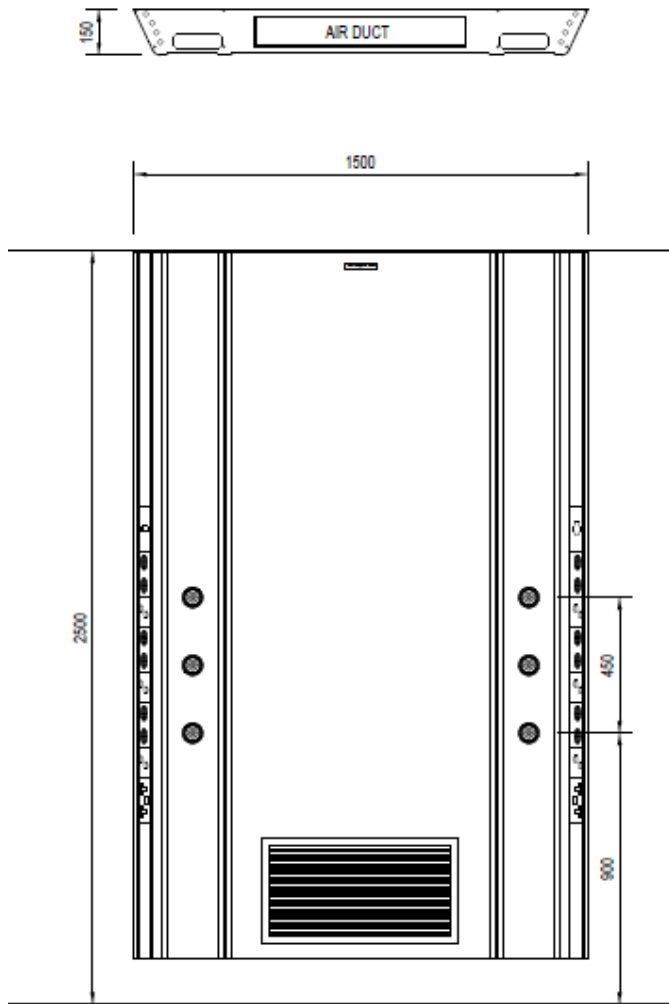


**SOLO1**

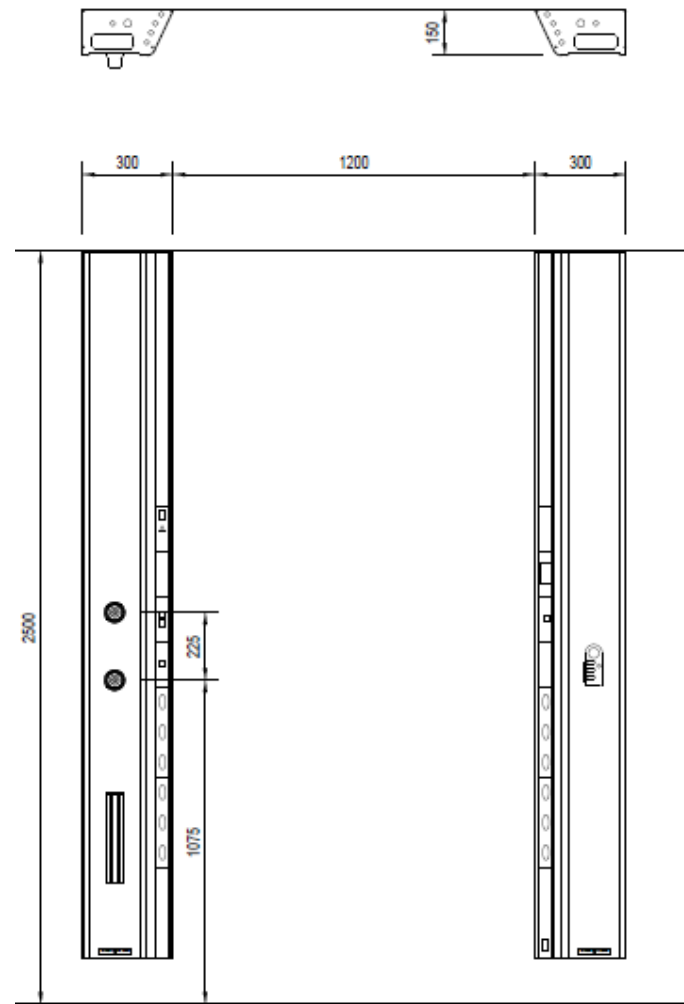
**SOLO2**

**SOLO3**

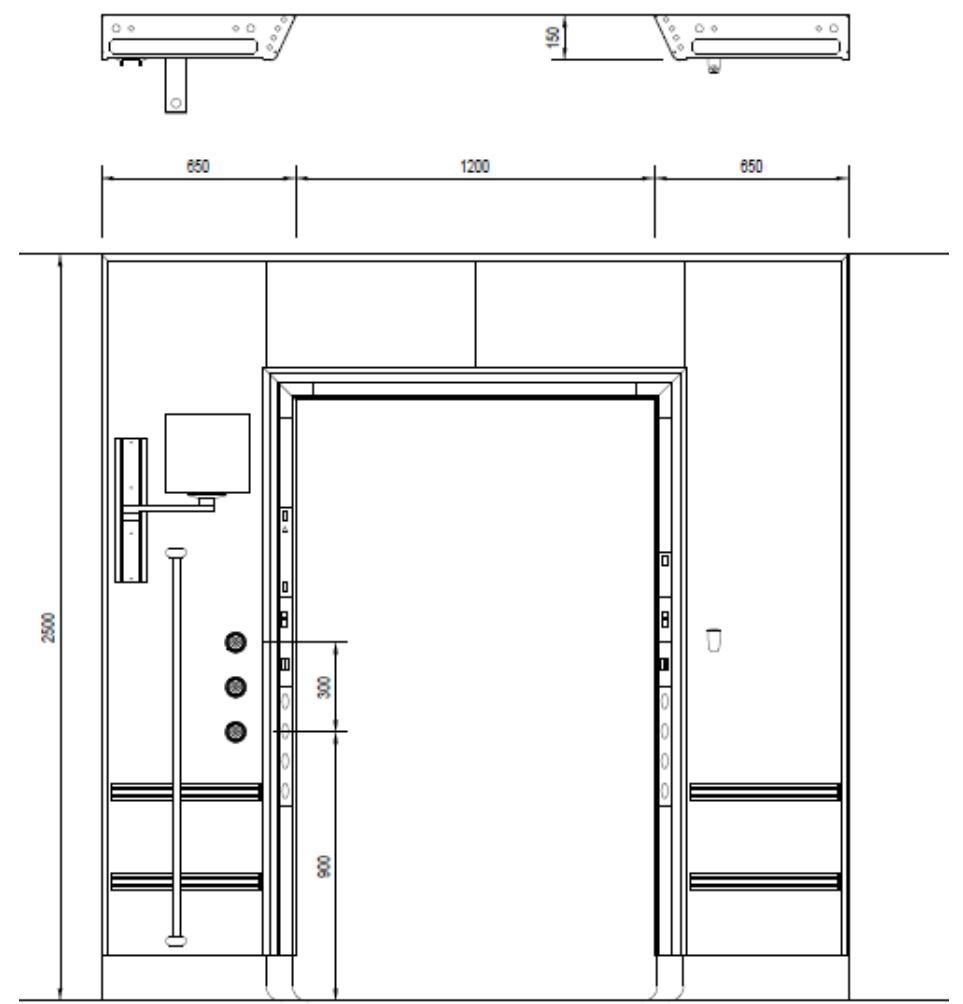
**SOLO4**



**SOLO5**



**SOLObespoke**

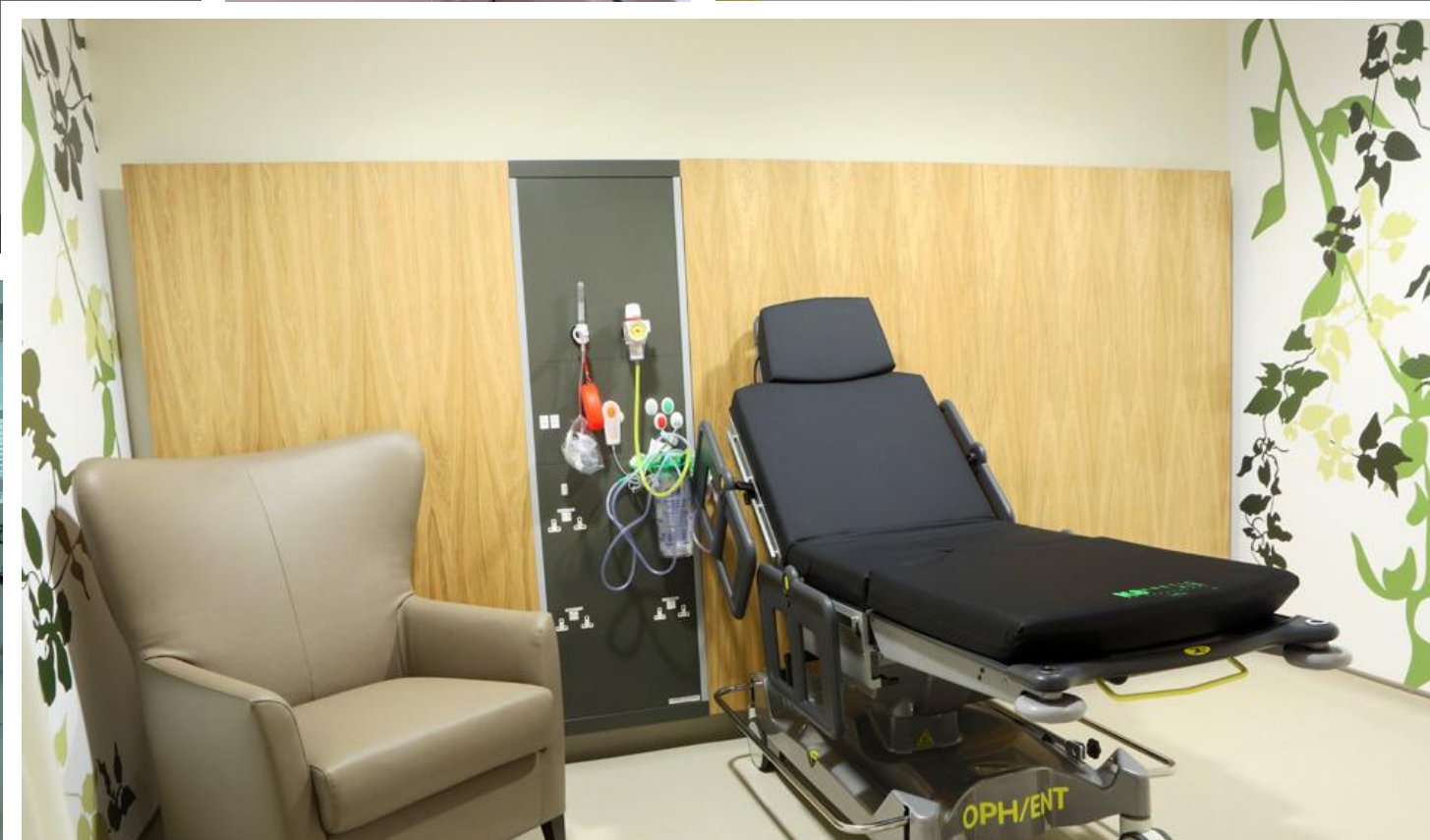


*These examples demonstrate how SOLO is interfaced with our own or third party joinery enclosures but where full ISO 11197 compliance is assured due to the specific nature of the containment design.*

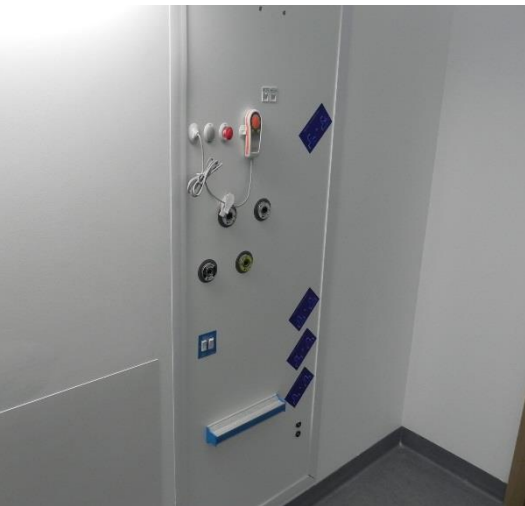
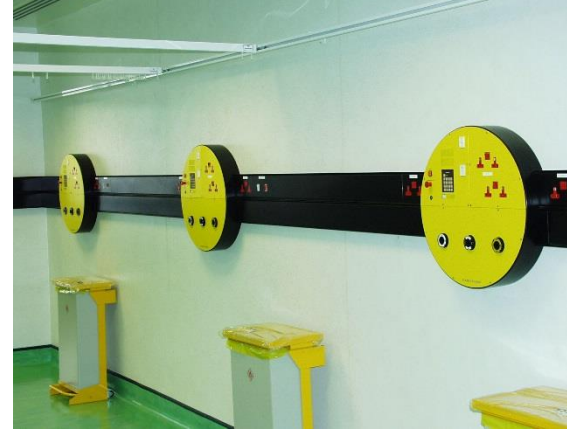
# Standards compliance

Document Reference	Document Description
BS 476-10: 2009	Fire tests on building materials and structures. Guide to the principles, selection, role and application of fire testing and their outputs
BS 1363-1: 1995	13 A plugs, socket-outlets, adaptors and connection units. Specification for rewirable and non-rewirable 13 A fused plugs
BS 1363-2: 1995	13 A plugs, socket-outlets, adaptors and connection units. Specification for 13 A switched and unswitched socket-outlets
BS 1363- 4: 1995	13 A plugs, socket-outlets, adaptors and connection units. Specification for 13 A fused connection units switched and unswitched
BS EN 60669-1:1999+A2:2008	Switches for household and similar fixed-electrical installations. General requirements
BS EN 60598-1:2015	Luminaires. General requirements and tests
BS 5733:2010+A1:2014	General requirements for electrical accessories. Specification
BS EN 12206-1:2004	Paints and varnishes. Coating of aluminium and aluminium alloys for architectural purposes. Coatings prepared from coating powder
BS 6701: 2010	Telecommunications equipment and telecommunications cabling. Specification for installation, operation and maintenance
BS 7671:2008+A3:2015	Requirements for Electrical Installations. IET Wiring Regulations
BS 8300:2009+A1:2010	Design of buildings and their approaches to meet the needs of disabled people. Code of practice
BS EN ISO 9170-1:2008	Terminal units for medical gas pipeline systems. Terminal units for use with compressed medical gases and vacuum (formally BS EN ISO 9170-1)
BS EN ISO 9170-2:2008	Terminal units for medical gas pipeline systems. Terminal units for anaesthetic gas scavenging systems (formally BS EN 737 -4)
BS EN ISO 7599:2010	Anodizing of aluminium and its alloys. General specifications for anodic oxidation coatings on aluminium (formally BS EN 12373:2001)
BS EN 12464-1: 2002	Light and lighting. Lighting of work places. Indoor work places
BS EN 13032-2: 2004	Light and lighting. Measurement and presentation of photometric data of lamps and luminaires. Presentation of data for indoor and outdoor work places
BS EN 61000-6-3:2007+A1:2011	Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments (formally BS EN 50081-1)
BS EN 61000-6-4:2007+A1:2011	Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments (formally BS EN 50081-2)
BS EN 61000-6-1:2007	Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments (formally BS EN 50082-1)
BS EN 50083-2:2012	Cable networks for television signals, sound signals and interactive services. Electromagnetic compatibility for equipment
BS EN 50085-1:2005+A1:2013	Cable trunking systems and cable ducting systems for electrical installations. General requirements
BS EN 50085-2: 2006	Cable trunking systems and cable ducting systems for electrical installations. Cable trunking systems and cable ducting systems intended for mounting on walls and ceilings
BS EN 60439-5: 2006	Low-voltage switchgear and controlgear assemblies. Particular requirements for assemblies for power distribution in public networks

Document Reference	Document Description
BS EN 60529:1992+A2:2013	Degrees of protection provided by enclosures (IP code)
BS EN 60598-2-22:1998+A2:2008	Luminaires. Particular requirements. Luminaires for emergency lighting
BS EN 60601-1-6:2010+A1:2015	Medical electrical equipment. General requirements for basic safety and essential performance. Collateral standard. Usability
BS EN 60601-1-2: 2007	Medical electrical equipment. General requirements for basic safety and essential performance. Collateral standard. Electromagnetic compatibility. Requirements and tests
BS EN ISO 11197:2009	Medical supply units
BS EN ISO 7396-1:2007+A3:2013	Medical gas pipeline systems. Pipeline systems for compressed medical gases and vacuum
ISO 19054	Rail Systems for supporting medical equipment
ISO 7396-2: 2007	Medical gas pipeline systems. Anaesthetic gas scavenging disposal systems
HBN 00-03	Designing generic clinical and clinical support spaces
HBN 00-04	Circulation and communication Spaces
HBN 00-09	Infection control in the built environment
HBN 04-01	Adult in-patient facilities: planning and design
HBN 04-02	Critical care units
HBN 4, Supplement 1	Isolation facilities for infectious patients in acute settings
HBN 6	Facilities for Diagnostic imaging and interventional radiology:
HBN 07-01	Satellite Dialysis Unit
HBN 07-02	Main Renal Unit
HBN 09-02	Maternity Care Facilities
HBN 09-03	Neonatal Units
HBN 57: 2003	Facilities for critical care
HTM 02-01	Medical gas pipeline systems
HTM 06-01	Electrical services: supply and distribution
HTM 06-02	Electrical safety guidance for low voltage systems
HTM 08-03	Management of bedhead services in the health sector
HTM 17	Health Building Engineering Installations
HTM 2014	Abatement of electrical interference
HTM 2020	Electrical safety code for low voltage systems
CIBSE LG 2: 2008	Lighting guide - Hospitals and health care buildings
CIBSE LG 3: 2001	Lighting guide - The visual environment for Display Screen Use
CIE	European Lighting Guide
IEC 60364-7-710: 2002	Electrical installations of buildings. Requirements for special installations or medical locations (UK BS7671 Section 7-710)
NHS SPEC C49: 1997	Nurse Call Systems. Revision 3
93/42/EEC	Medical Devices Directive









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[www.cableflow.com](http://www.cableflow.com)

Cableflow International Limited  
Windsor House | Abbey Barn Road  
High Wycombe | Buckinghamshire  
HP11 1NN | United Kingdom

(tel) 00 44 (0) 1494 52 88 11  
(fax) 00 44 (0) 1494 52 11 88  
(email) [sales@cableflow.com](mailto:sales@cableflow.com)

Registered in England 2356618

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