

Includes details on the new  
**DeepClean IP3x Extra** anti-ligature  
radiator and guards series

# ▶ **Contour LST and anti-ligature radiators & guards**

An information guide for healthcare specifiers



# Why specify **Contour radiators & guards?**

Contour has been at the forefront of **Low Surface Temperature (LST)** and anti-ligature radiator & guard design for over 14 years.

Our position as the innovation leaders **UK LST & anti-ligature radiators and guards market**, is exemplified by the following:

- The patented quick access design of our **DeepClean™** radiator guards has potentially saved the NHS and other public bodies millions, every year in cleaning costs (*see our costings exercise example further in this document*)
- Contour was the **first** UK radiator guard manufacturer to incorporate anti-bacterial technology into its guards, setting new standards in hygiene and user protection
- Our specialist anti-ligature radiator guards, equipped with fully shrouded TRVs, Home Office compliant security grilles and tamper-proof fixings to prevent unauthorised access, are widely recognised as setting the standard. **Contour guards have been used in the vast majority of NHS Mental Health Trusts, across the UK.**

**Additional reasons for specifying Contour:**

- We offer a UK wide free survey facility along with a competitively priced guard installation service
- We design and manufacture in the UK allowing us to produce and deliver orders on short lead times
- We can produce bespoke guard designs to meet specific room requirements
- We provide **10 year** product warranties\* on our radiator emitters and **5 year** warranties on our guards.

\* Terms and conditions apply. See <https://www.contourheating.com/terms-conditions/>



# Why is radiator hygiene such an important issue?

An LST or anti-ligature radiator guard interior that has not been cleaned combined with the convection process, work together to form the perfect conditions for the growth and distribution of potentially dangerous bacteria and particles.

*“Covered heat emitters raise the most infection control concern. Heat emitter covers allow dust to build up beneath and inside the grille. The dust has been found to contain MRSA and other potentially pathogenic organisms. When emitters are turned on during the winter, dust and bacteria are dispersed by convection to the ward area...estates departments have had to prioritise their resources in line with decreasing budgets.”*  
**Source: NHS Estates (2002) Infection Control in the Built Environment guidelines.**

*“In less stringently cleaned environments airborne routes such as the convection process of an LST radiator have been identified as sources of microbial dissemination.”*  
**Source: King et al 2013 Bioaerosol Disposition in single and two-bed hospital rooms.**

*“MRSA can survive in a desiccated state in dust for long periods of time – up to 175 days.”*  
**Source: Long-term-in-vitro survival of an epidemic MRSA phage-group III-29 strain J.H.T Wagenvoort and R.J.R Penders.**

Accessing the interior of radiator guards for cleaning and maintenance is a recognized and continual problem. In addition budgets cuts and understaffing make it difficult to maintain recommended cleaning schedules, with internal cleaning of radiator guards rarely taking place.

This creates a greater risk to both end users and providers, with potentially higher infection rates.

# Why choose Contour DeepClean™ radiators & guards?

## I. Major cost savings through ease and speed of cleaning

Many traditional design radiator guards are heavy and awkward to lift with internal cleaning of the units requiring complete disassembly and assistance from Estates personnel. Typically one traditional style radiator guard can take well over 1 hour to disassemble, remove, clean, reassemble and refit, including the removal and subsequent reapplication of silicon sealant between the wall and guard.

The DeepClean design makes it possible for a single cleaning operative to access every internal and external surface of the radiator guard without any support from the Estates department. This significantly improves cleaning efficiencies, helps reduce overheads and more importantly raises hygiene standards.



The radiator guard itself has a unique, patented door design (UK Patent No. 2 410 544) and quick release locks, which allows the complete front of the radiator guard to lower and lie flat on the floor. The open hinge arrangement also permits complete front door removal if required.

Rotarad™ rotating radiator valves can also be retrofitted to existing panel radiators to allow the emitter to also fully pivot down to the floor – delivering access behind the radiator for unrivalled cleaning and maintenance.

# Why choose Contour DeepClean™ radiators & guards?

## 2. Reduced risk of microbial cross contamination and infection

The issue of Healthcare Acquired Infection (HCAI) is an ever present concern to clinical and facilities management and remains high in the public consciousness due to perennial media coverage of outbreaks.

### BioCote® - Effective and proven defence

Contour incorporates BioCote® anti-microbial protection, as standard into the paintwork of all DeepClean LST radiator guards.

This technology provides effective and permanent protection to the surface of the LST radiator guard, preventing the growth of harmful microbes such as bacteria and fungi.

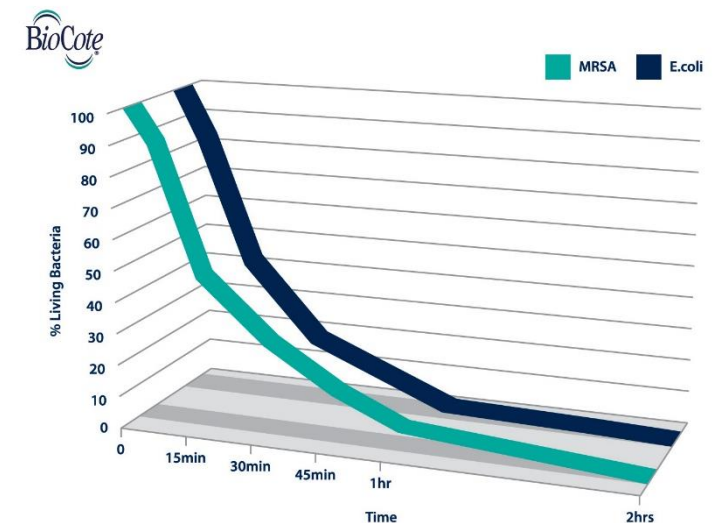
BioCote® is:

**Effective** - The silver ions in BioCote® damage the cell wall, disrupting energy production and other cellular functions and stopping microbes from reproducing.

**Proven** - BioCote® is a proven broad spectrum anti-microbial technology, effective against a wide range of bacteria, fungi and the H1N1 virus.

**Fast acting and long lasting** - BioCote® treated surfaces show significant reductions within just 15 minutes and up to 99.5% reduction in under 2 hours (see graph to right). This performance will last for the expected lifetime of the product.

**Safe** - The active ingredient is the element silver which is a natural antimicrobial and has been used in this way for centuries.



# BioCote® efficacy

The active agents in BioCote® have been used extensively in hospitals as excellent anti-microbials with low toxicity against non-target organisms. They do not function in the same way as antibiotics and there is no evidence to date to demonstrate that bacteria have become resistant to BioCote® as they have to some antibiotics.

BioCote® is tested to be effective against the following bacterium:

- Staphylococcus Aureus (including MRSA)
- Escherichia Coli (E-Coli)
- Listeria Monocytogenes
- Streptococcus faecalis
- Salmonella enteritides

A regular schedule of laboratory-based QC testing is conducted to ensure the continual efficacy of Contour's LST guards treated with BioCote®.

[Full test certification can be accessed through the archive on our website.](#)

Contour also commissions in situ studies, which demonstrate significant reductions in bacteria on modern, full access radiator guards and identifies BioCote® as an integral component of good hygiene practice.

## LIFE TIME PROTECTION

Products treated with BioCote have been tested for the simulated life of the product / material with no significant reduction in the anti-microbial performance noted, therefore demonstrating anti-microbial efficacy for the life of the radiator guard.

**IMSL** INDUSTRIAL MICROBIOLOGICAL SERVICES LTD

**CERTIFICATE OF ANALYSIS** Page 1 of 1

**CUSTOMER**  
BioCote Ltd,  
BioCote House,  
Oak Court, Pilgrim's Walk,  
Prologis Park,  
Coventry,  
CV6 4QH  
UK

**CERTIFICATE NO.** 1030346.357/10579  
**CUSTOMER REF.** 100/271

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**SAMPLE DETAILS**  
CONTOUR CASINGS  
SALOP

**DATE RECEIVED** 22/06/2016  
**ORDER NO.**

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**METHOD:** Determination of Antibacterial Activity using Test Based on MOD ISO 22196

**DATE ANALYSED** 22/06/2016 **DATE REPORTED** 24/06/2016

**RESULTS (AS CFU CM<sup>-2</sup>)**


SAMPLE	SPECIES	CONTACT TIME		REDUCTION (INITIAL)	
		0 hrs	24 hrs	Log 10	%
POLYPROPYLENE	<i>E coli</i>	1.2E+04	6.8E+05		
STEEL WITH TREATED POWDER PAINT	<i>E coli</i>	1.2E+04	< 11.11	≥ 3.03	≥ 99.91%
POLYPROPYLENE	MRSA	2.0E+04	4.6E+03		
STEEL WITH TREATED POWDER PAINT	MRSA	2.0E+04	< 11.11	≥ 3.26	≥ 99.94%

Key: NS = Poor survival on control supplied.  
The above data show the difference in the population following contact with the surface of the samples listed for 24 hours at 35°C under a RH of > 95% relative to the initial population.

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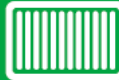






MANAGING DIRECTOR  
Peter D Askew



Industrial Microbiological Services Ltd Registered in England No 3264423 Registered Office The Oddfellows Hall Oxford Road Reading Berkshire RG1 7NG

# The business case for specifying Contour

An example costing based on a hospital with 150 radiators in high risk areas, requiring full weekly cleaning\*.

Traditional LST	DeepClean LST
 <p>2 person job involving estates personnel.</p>	 <p>1 cleaning operative alone can now open the LST casing.</p>
 <p>Conservatively estimate at least <b>30</b> minutes to remove 1 LST casing, clean casing internally, clean radiator, clean wall, clean floor and refit casing (wall &amp; back of radiator cannot be cleaned). Excludes replacing silicon sealant around unit.</p>	 <p><b>5</b> minutes to clean every internal surface of the casings and the radiator, including back of radiator and whole wall space. No need to replace sealant around units.</p>
 <p>7 hours working day = 14 LST radiator guards cleaned per day per team.</p>	 <p>In an average day of 7 working hours, 1 person can clean 84 radiators.</p>
 <p>Over 10 days required for 2 people to clean the 150 radiators in the property.</p>	 <p>Allow 2 days for 1 person to clean every radiator in the property.</p>
 <p>Weekly cleaning of these radiators would require 2 teams of two staff, both working at least 5 days a week to complete 1 cleaning cycle.</p>	 <p>Weekly cleaning would now realistically require only 1 dedicated cleaner, with little or no support from the estates department.</p>
 <p>An annual budget of at least <b>£52,416 at the National Living Wage</b> (£7.20 ph as of 1/4/16) would be required to clean all 150 radiators on a weekly basis.</p>	 <p>At the <b>National Living Wage</b> (£7.20 ph as of 1/4/16) weekly cleaning of these radiators would cost the hospital <b>£5,241.60 per year.</b></p>

In this example, replacing traditional LST units with DeepClean LST radiators or guards could save **£47,174.40 in cleaning costs by the end of year 1, or over £314.50 per radiator/guard.**

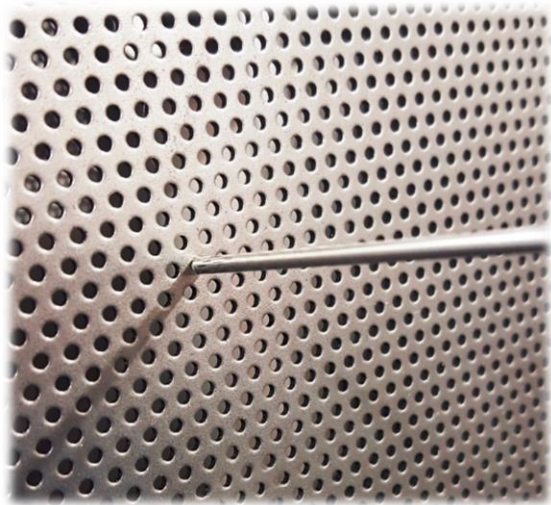
\* Standards based on NHS guidelines that state radiators should be cleaned on a weekly basis and that radiator guards should be removed as part of a 'damp-dusting' cleaning regime. For reference these specifications can be found in NHS National Patient Safety Agency documents 'The national specifications for cleanliness in the NHS: Guidance on setting and measuring performance outcomes in primary care medical and dental premises', August 2010 and 'The Revised Healthcare Cleaning Manual', June 2009.

# The DeepClean™ anti-ligature range

## NOW EVEN SAFER ...

Recent design and manufacturing improvements ensure that Contour's renowned anti-ligature range continues to set the standard for radiators and guards for in use in secure environments, including mental health facilities

To minimise the risk of self harm, our new anti-ligature grille design uses **2mm holes at 4mm centres, in a triangular formation**. This meets the requirement laid out in **The Home Office Police Buildings Design Guide – Custody, July 2009, section PD3.02.14** and means that Contour's grille design is compliant and suitable for use in the most demanding of secure environments.



The grille design has been independently tested and certified by a UKAS accredited laboratory and effectively exceeds **IP3x standards (BS EN 60529)**. This tests materials for protection against the ingress of objects greater than 2.5mm in diameter – which could include the width of a shoelace for example.





# The DeepClean™ anti-ligature range

## ...AND STRONGER

The new design range uses an ventilation grille pattern punched directly into the radiator case rather than a mesh welded separately onto the case interior.

An integrated grill design makes the whole guard stronger by reducing the number of potential weak points, such as mesh spot welds. This subsequently reduces the opportunities for tamper points and damage.

It also makes the interior of the guards quicker and easier to clean, and generally more hygienic as there is no grille mesh to act as an impediment for cleaning materials or crevices between a mesh and the case where dirt and debris could build up.



# The DeepClean™ anti-ligature range

## More efficient heating performance

**The replacement of an anti-ligature mesh with an all-in-one grille, has increased the surface area available for airflow by over 15%, raising effectiveness of the convection process and improving heating efficiency.**

The grille pattern is maximised across the surface of guards employing the new grille and is applied consistently across the whole guard, including on the under surfaces such as the base of access doors, where applicable.

## Manufacturing materials and finishes

Contour anti-ligature guards are manufactured from mild steel available in various thicknesses ranging from 1.5mm to 3mm depending on the installation environment.

We can also manufacture guards in aluminium for use in wet or damp environments if required.

## The following are available across all Contour anti-ligature guards:

- A tough PPC finish inside and out in RAL White 9003 white as standard. Virtually any other BS or RAL colour is available as option, subject to minimum order quantities
- BioCote® anti-microbial protection incorporated as standard, into the paintwork of the guard.
- Where appropriate, a patented front of guard access panel that can be dropped fully to the floor or even removed, to allow full access to panel radiators or fin heat emitters for cleaning and maintenance
- A secure base plate as standard
- Internal fixings as standard
- External TRVs with anti-ligature shrouds supplied as standard, with internal valves kits available as options
- A wide range of security fittings and fasteners designed to stop unauthorised access



Detail of bottom of guard panel at inspection prior to paint.

# The DeepClean™ anti-ligature range

NEW

## The DeepClean Extra IP3x: designed to deliver extra user safety and full access for cleaning, even on uneven walls

The DeepClean Extra IP3x now overcomes the safety issues raised when installing guards on uneven walls, without compromising easy internal access for cleaning.

Installation on uneven walls can result in gaps between radiator guard and wall, providing potential ligature fixture points and raising additional safety concerns for service providers.

Traditionally these gaps have been filled and eliminated with anti-pick mastic. However the application of mastic can stop ready access to inside the guards for cleaning and radiator maintenance, unless the material is cut or removed. This can be a messy and time consuming activity for cleaning staff and estates' department personnel.



By using an extra frame that sits between the wall and the top of the guard door, the DeepClean Extra IP3x door can be unlocked and opened easily. Gaps between the guard frame and a wall can still be eliminated with anti-pick mastic, but without impeding operation of the door.



The new Extra IP3x guard carries as standard features common to the existing DeepClean anti-ligature range including a grille design incorporating 2mm holes at 4mm centres punched directly into the guard case. This exceeds the requirements of the British Standards test measuring for Ingress Protection, IP3x (BS EN 60529)

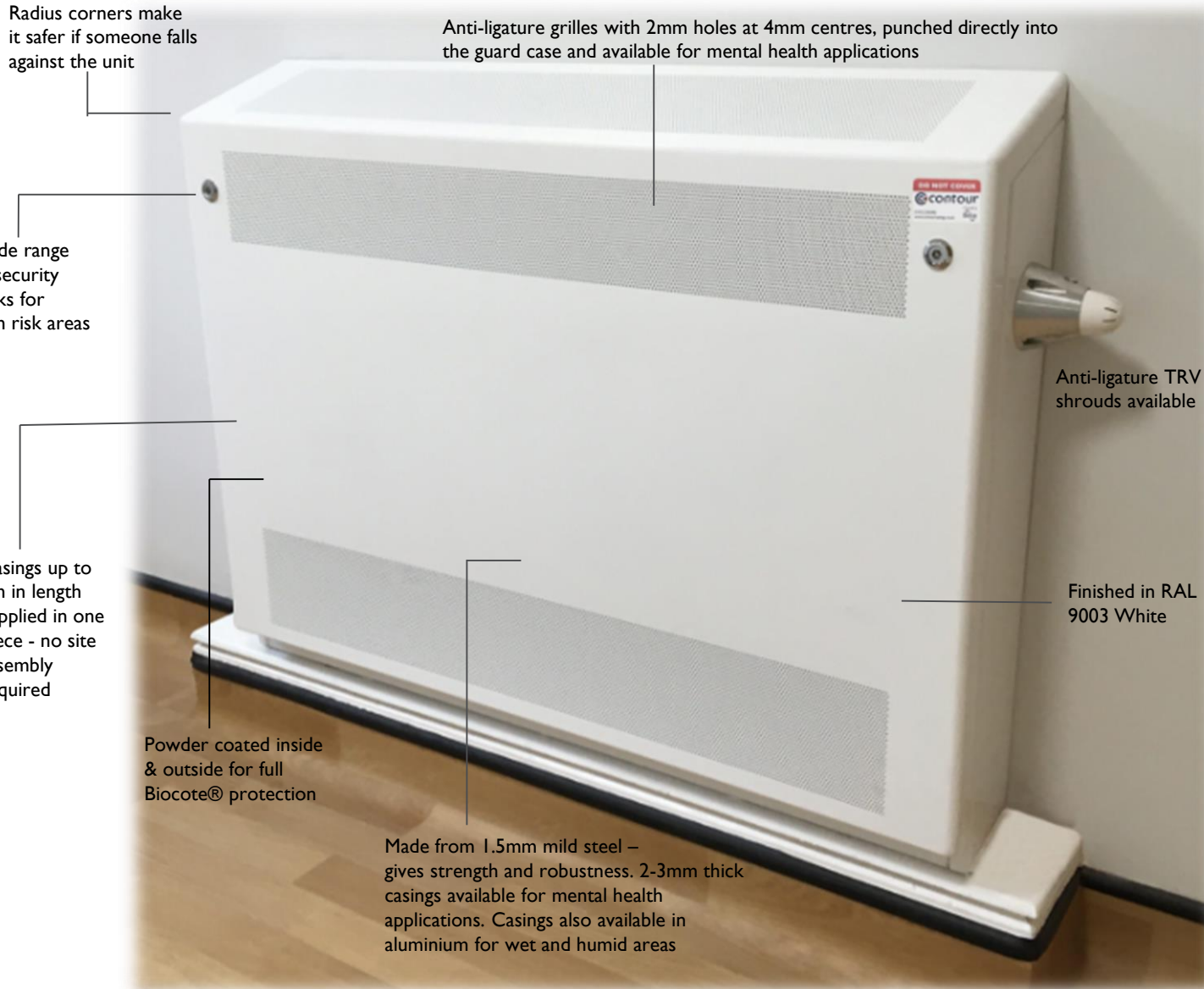
A full radiator and guard package is also available for DeepClean Extra IP3x, with single casing lengths up to 2000mm.

# Contour DeepClean™ LST & anti-ligature guards

## key features

Radius corners make it safer if someone falls against the unit

Anti-ligature grilles with 2mm holes at 4mm centres, punched directly into the guard case and available for mental health applications



Wide range of security locks for high risk areas

Anti-ligature TRV shrouds available

Casings up to 2m in length supplied in one piece - no site assembly required

Finished in RAL 9003 White

Powder coated inside & outside for full Biocote® protection

Made from 1.5mm mild steel – gives strength and robustness. 2-3mm thick casings available for mental health applications. Casings also available in aluminium for wet and humid areas



Patented easy to open front panel that can lie flat to floor when fully open. The design also facilitates complete removal of the door if required.



Contoured side panels tailored to specific wall and flooring requirements

# Case study: Mid Cheshire Hospitals



<b>PROJECT:</b>	Children's ward 16 refurbishment, Leighton Hospital
<b>M&amp;E CONTRACTOR :</b>	HPI Building Services
<b>MAIN CONTRACTOR:</b>	Red Tree Building Contractors
<b>SUMMARY:</b>	Supply of 23 LST guards finished in RAL Green 6019 and RAL White 9003. Supply of column casing finished in RAL Brown 1019

A key objective for the Estates Management Team at Mid Cheshire Hospitals, was to design a look and feel that transformed a cold and clinical ward into friendly and calming environment for the children, whilst ensuring the highest levels of healthcare hygiene and functionality.

The Leighton-based team, created an innovative scheme for the rooms that used large format prints of wildlife in different forest and jungle settings, applied to the walls behind beds and supported by soft natural colours on walls, panels and fixtures – including the LST radiators in the ward.

Contour was delighted to help bring this scheme to life by finishing most of the DeepClean LST radiator guards in the ward, in RAL Green 6019.



[READ MORE AND DOWNLOAD A PDF OF THIS CASE STUDY](#)

# Case study:

## Hertfordshire Partnership University NHS Foundation Trust



<b>PROJECT:</b>	Kingfisher Court, Hertfordshire Partnership University NHS Foundation Trust
<b>M&amp;E CONSULTANT:</b>	The Barn Partnership
<b>MAIN CONTRACTOR:</b>	Medicinq Osbourne
<b>SUMMARY:</b>	Supply 96 DeepClean LST radiator systems, fully shrouded TRVs and Rotarad kits

This huge £42 million, two-phase construction project was undertaken on behalf of Hertfordshire Partnership University NHS Foundation Trust (HPFT). Located at the Kingsley Green site near Radlett, Kingfisher Court has 86 bedrooms, on five separate wards, and provides a healing and therapeutic environment to support people in their recovery from mental illness.

Contour supplied DeepClean LST anti-ligature radiators, with guards manufactured from 1.5mm mild steel, to provide a safe, secure and durable low surface temperature solution. The DeepClean units were fully welded incorporating anti-ligature grilles and fitted with fully shrouded TRV controls.

Contour also supplied revolutionary **LST Rotarad™** kits to increase the efficacy of the radiator cleaning regime. By incorporating this unique rotary valve system, radiators can be easily lowered down to floor level by a single person. Effective cleaning is now possible on the top, front, sides and back of the radiator, as well as the wall around and behind the radiator.



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# Case study:

## Royal Bournemouth NHS Foundation Trust



<b>PROJECT:</b>	Royal Bournemouth NHS Trust
<b>M&amp;E CONSULTANT:</b>	Dixon Mechanical
<b>MAIN CONTRACTOR:</b>	Wilmott Dixon
<b>SUMMARY:</b>	Supply 44 complete DeepClean LST radiators for new stroke unit

To make cleaning a simple and straightforward process at the new, purpose-built stroke unit at the Royal Bournemouth Hospital, the project team decided on the installation of Contour's innovative radiators that cleaning staff can easily and safely lower to the floor for full access. This enables staff to give usually impossible to reach areas, a thorough clean without having to call on assistance from the estate's team, while also aiding infection prevention.

Alison Reeves, a project manager with the trust's estates team, said: *"The main reason we made the choice is that the cleaners usually have to call in estates if they need to clean the standard radiators. With the new style, if they need to do a clean they can do it without a tradesman. One of our concerns was that if you keep dropping the radiators down to clean them the valves might get damaged or might burst. But it appeared to be well made and easy to operate"*

Alison added: *"We try and standardise on products, we don't chop and change. We have a standard radiator that had been costed into the budget for the project. So my concern was: could we have the Contour radiator within the scheme, could we afford it? The answer was yes – it was cost neutral."*

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# Case study: Royal Gwent NHS Trust



<b>PROJECT:</b>	Survey and installation of radiator guards at 45 Sites across South Wales
<b>CLIENT:</b>	Aneurin Bevan Health Board
<b>DESIGNER:</b>	Contour Casings Limited
<b>SUMMARY:</b>	Supply & Install of 1500 DeepClean radiator guards, survey and fixing of 2000m of Plywood Pipe Boxing

Paul Harrison, Works and Estates Officer at Royal Gwent NHS Trust, explains the reasons for specifying Contour: *“We chose to use the DeepClean LST Radiator guard from Contour Casings because of its robust construction and the ease and efficiency with which our staff can independently clean and maintain the product, helping them meet cleaning audits without difficulty”.*

He continues, *“Retro-fitting radiator guards to properties comprising of modern buildings and Victorian structures presents a vast array of problems. Thankfully, somebody was always available from the technical department at Contour Casings to provide a fast and effective solution to whatever we encountered. We always received a very personal, holistic service, with the Contract Manager attending regular infection control meetings and working closely with independent advisors and H&S Executives.”*



[\*\*READ MORE AND DOWNLOAD A PDF OF THIS CASE STUDY\*\*](#)



# Case study: University Hospital North Staffordshire



<b>PROJECT:</b>	Stoke City General Hospital
<b>CLIENT:</b>	University Hospital North Staffordshire NHS Trust
<b>ARCHITECT:</b>	Burgess Design Associates
<b>SUB CONTRACTORS:</b>	F Blaize & Lee Plumbing
<b>SUMMARY:</b>	Supply & install of 160 DeepClean radiator guards

The LST radiator guards were spread across numerous wards and were bespoke-designed to fit inside an alcove detail, with a punch-out on top of the casing for access to the thermostatic radiator valve.

The guards were installed quickly and without disruption due to the one-piece design of the casing and prefabricated cut-outs for pipework and skirting.



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# DeepClean™ models & specifications

Standard LST and anti-ligature radiators available as:



Square top / floor mounted



Gradient top / floor mounted



Square top / wall mounted



Gradient top / wall mounted

[DOWNLOAD LST RADIATOR OUTPUT DATA](#)

# DeepClean™ models & specifications

Standard LST and anti-ligature guards available as:



Square top / floor mounted



Gradient top / floor mounted



Square top / wall mounted



Gradient top / wall mounted





**For further information visit:**  
**[www.contourheating.com](http://www.contourheating.com)**

**Or call the Contour Sales Team on  
01952 290498**

