KEEPING HEATING
SAFE IN EDUCATION

Everything you need to know about safe heating in education environments, from pencil-proof grilles to official guidance.

contour

SAFE HEATING IN EDUCATION: CONTOUR'S OFFICIAL GUIDE

Contour Heating share some of their insights on the provision of safe, economical heating for children and young people in education today.

CONTENTS

Introduction	04
Mainstream School Settings	05
What Is An LST Radiator?	06
Why Specify An LST Radiator Or Guard For Your School Project?	07
Coughs And Sneezes Spread Diseases	08
Making Radiators Child-Proof	11
Top Tips For Heating Efficiency	13
Part 2: Special Educational Needs	14
Is There A Need For Anti-Ligature Solutions In SEN?	15
The Benefit Of Colour In Autism Education	16
Case Studies	18
Walton Hall Academy	18
Beck House Children's Resource Centre	19
Conclusion	20
About Contour	21

INTRODUCTION

Contour has provided safe heating solutions for a range of educational settings all over the UK. This eBook was born out of the need to share some of their insights on the provision of safe, economical heating for children and young people in education today.

Tightening budgets have forced schools to assess their most expensive assets, and quite often, heating is one of them. For that reason, many schools are choosing to invest in LST radiators for their efficient heating output properties.

Not only this, but the dangers of standard panel radiators are ever-present in the media, with hundreds of children falling victim to surface temperature scalds yearly, causing avoidable injury and tarnishing school's reputations.

This guide is split into two parts. Part one covers education as a whole, mainly focusing on mainstream settings. In part two, we explore SEN settings and challenging environments, where a different approach to safety is needed.

Who's This Guide For?

If you're involved in the design, refurbishment or specification of an educational establishment, this eBook will aim to highlight some of the key considerations for efficient, safe heating, ensuring you make the right choices-rooted in sound knowledge and experience from the experts here at Contour.

MAINSTREAM SCHOOL SETTINGS

We'll begin by addressing the official government guidance on safe surface temperature regulations for schools and nurseries.

The Education (School Premises) Regulations states that radiators and exposed pipes which are located where pupils might touch them must not become hotter than 43°C. This is the surface temperature deemed to be safest in the event of a young person coming into contact with a radiator or piece of exposed piping.

Are Your School's Standard Radiators Causing A Risk?

Standard panel radiator surfaces could reach up to 70°C - 80°C, which poses a severe risk of burn.

In 2010, some alarming figures emerged, stating that 1,970 people were injured in a public building by either a radiator or a section of hot pipework over a twelve-month period.

Of these accidents, 1,399 occurred in a place of education.

As you can imagine, this prompted authorities to address radiator surface temperatures to ensure that they don't exceed 43°C.

Despite this, many schools are failing to address the dangers of their standard panel radiators, placing children and young people at unnecessary risk.

WHAT IS AN LST RADIATOR?

Low surface temperature (LST) radiators provide a modern solution for the provision of safe, efficient heating in environments where safety to users is a priority.

As you might have guessed, LSTs are designed not to exceed a surface temperature that is deemed unsafe to the user, thus mitigating any potential surface scalding.

Whilst providing a safe surface temperature, LSTs ensure efficient heat output, meaning that users can be safe, whilst comfortable in a warm environment.

WHY SPECIFY AN LST RADIATOR OR GUARD FOR YOUR SCHOOL PROJECT?

In most cases, school funding is managed by the governing body who is responsible for the financial decisions made throughout the academic year.

For both Governors and Headteachers, it is in their best interest to adhere to safety standards as set out by government policy.

Section 175 of the Education Act 2002, and The Education (Independent School Standards) Regulations 2014 place a duty on the boards of maintained schools and academy trusts to have arrangements in place to ensure that they:

- Carry out their functions with a view to safeguarding and promoting the welfare of children; and
- Have regard to the statutory guidance issued by the Secretary of State in considering what arrangements they need to make for the purpose of that section

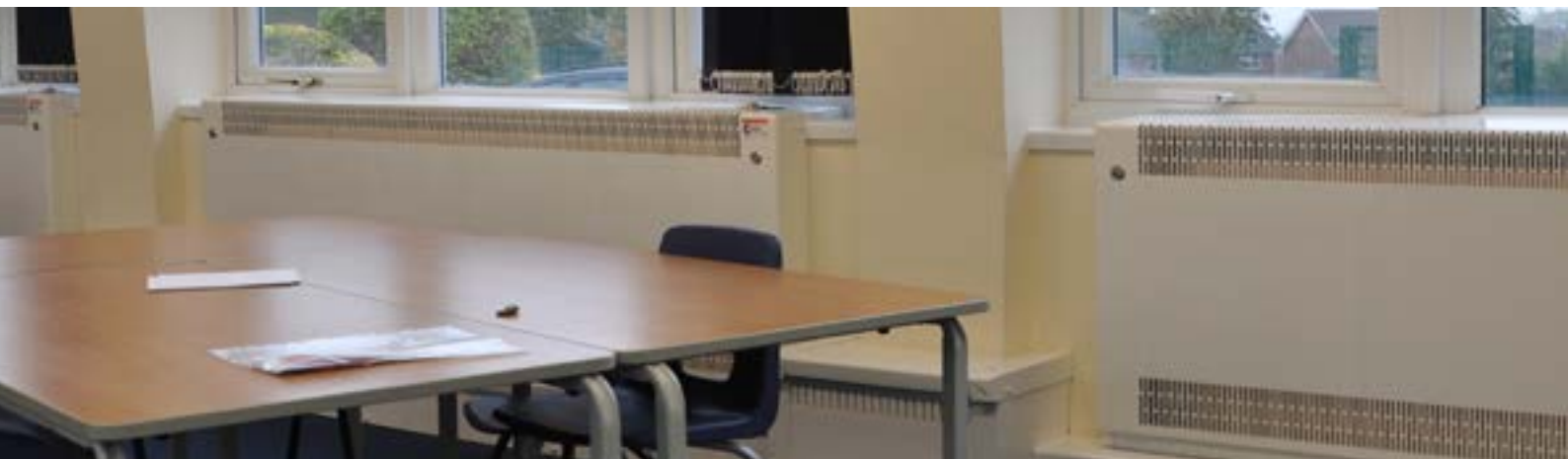
(Source: Governance handbook For academies, multi-academy trusts and maintained schools, 2019)

Furthermore, The Headteacher's Standards state that Heads must,

"Provide a safe, calm and well-ordered environment for all pupils and staff, focused on safeguarding pupils."

Clearly, the safety and well-being of pupils is of paramount importance, and in order for lead decision-makers to comply with the standards set out by the government, they must adhere to these guidelines.

The points raised above link directly to the need to provide safe resources for pupils-and in all cases-manage avoidable risks that could cause harm. Therefore, an LST radiator is a key feature for a safe educational environment.



COUGHS AND SNEEZES SPREAD DISEASES

In the previous chapter, we explored the need to provide safe radiator surface temperatures for the well-being of pupils, and for senior staff members to adhere to government standards.
In this chapter, we'll delve into the ever-present issue of germs and bugs which seem to plague school environments throughout the year.

In March 2019, The Department for Education released a document which highlighted pupil absence in schools in England. The report found that overall absences have increased since 2016/2017 with illness remaining the main driver for overall absence rates.

With an unprecedented rise in unauthorised absences, schools are being pressured into taking a firmer stance on absenteeism through fears of it reflecting negatively on the school itself.

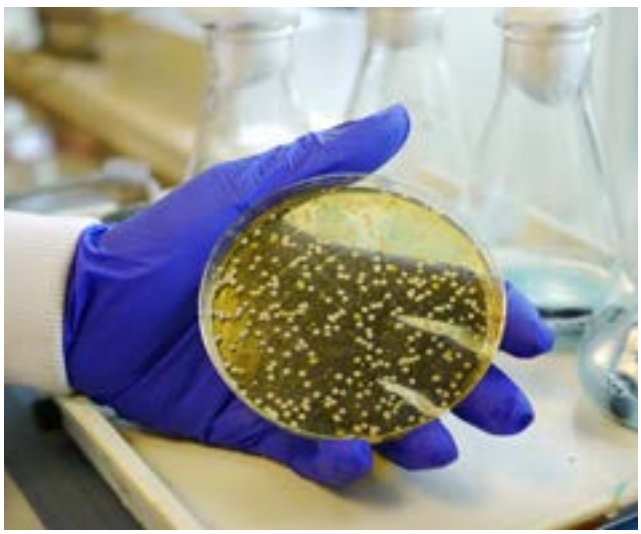
How Does This Relate To Low Surface Temperature Radiators?

Some LST radiator manufacturers incorporate an element of hygiene protection within the paintwork of the radiator.

And pressures, from both a financial and government angle, are forcing schools to consider resources that serve a multitude of purposes. Every penny counts when budgets are tight.

When specifying an LST radiator, we recommend that you choose one that incorporates antimicrobial protection within the radiator's paintwork. This will significantly protect users from a range of dangerous bacteria.

Many radiator manufacturers have taken measures to incorporate an element of anti-bacterial protection within their paintwork, and we urge specifiers closely consider the effectiveness of this protection before making a purchasing decision.



Opt For Anti-Microbial Protection

An antimicrobial is an agent that kills bacteria by stopping their growth. This is a much more aggressive method for combatting a wide range of dangerous bacteria, as opposed to an 'anti-bacterial' solution.

Contour Recommends BioCote®

BioCote® is a unique, patented additive that provides an effective, safe and long-lasting solution to combatting a wide range of dangerous bacteria, including MRSA and E.coli.

The benefits of BioCote® can be attested to a variety of environments including offices, hospitals and schools.

BioCote's most recent school case study tested the effectiveness of the antimicrobial solution, where they monitored two classrooms throughout the academic year. One classroom had been completely refurbished with BioCote® protected products, whilst the other- (the control environment) - used standard, yet comparable products.

Staggeringly, the antimicrobial classroom saw a 96% reduction in bacteria when compared to the 'control' classroom, with all antimicrobial products harbouring significantly fewer bacteria than their standard counterparts.

Interestingly, this resulted in a 20% reduction in pupil absenteeism over the course of the academic year.

What Do We Learn From BioCote®?

The study above demonstrates that the presence of BioCote® can significantly reduce the levels of bacteria on a commonly used surface and the amount of pupil absenteeism, highlighting that a school is the perfect environment for the application of antimicrobial technology.

Enhanced Cleaning Properties

Of course, anti-microbial protection is just one method for maintaining a hygienic heating solution within education.

For the day-to-day cleaning of a radiator or guard, users need something that can be manually cleaned efficiently, yet thoroughly.

When specifying an LST radiator, a key question to ask the manufacturer is,

How can this LST radiator/guard help with cleaning efficiencies?

LST radiator design is at the heart of this. As we know, warm environments can create a hotbed for germs and bacteria. That's why it's important that your LST radiator allows for access to the entire product and wall behind it.

What's more, access to the interior of the radiator should be made as simple as possible to allow the cleaning staff to effectively carry out cleaning practices independently – without the support of colleagues.

To learn more about cleaning efficiencies, read our informative articles here:

- How To Clean Behind A Radiator
- How To Remove Radiator Covers For Cleaning

MAKING RADIATORS CHILD-PROOF

So far, we've considered the importance of safe surface temperatures and the need to avoid the spreading of germs within an educational setting.

We now turn our attention to the need for manufacturers to provide a robust, durable solution to meet the everyday demands that a school environment faces.

We commonly hear the term 'child-proof' and it's absolutely true: things don't last long when there are little fingers around.

Radiators can be subjected to varying degrees of wear and tear in a classroom. It's not uncommon for children to bang tables and chairs into them, or for vents to be the target for pens, pencils and other forms of classroom stationery.

The implications for this are significant from a cost perspective; the need to replace furniture and fixings can be a sore subject for the tightening budgets of schools.

For specifiers, we recommend that you choose a radiator that:

- **Is made from strong, Zintec steel that is a least 1.5mm thick**
- **Has 'pencil proof' grilles that prevent large objects from getting pushed through**

What Are Pencil Proof Radiator Grilles?

Whilst some radiators offer a low surface temperature option, they often contain wide slots, making it easy for pencils and other stationery/objects to be pushed through.

It's important to consider a design that has grilles that are smaller than a diameter of a pencil (typically 6-8mm) so that pencils cannot pass through them.

Not only do small items affect the heat outputs of the radiator, but they present a challenge from a cleaning perspective.

Therefore, when specifying LST radiators and guards for classrooms, look for ones that have small, 'pencil-proof' grilles.

Added Benefits of Pencil-Proof Grilles

Small grilles also make it difficult for children to poke their fingers inside the radiator. As you can imagine, a finger caught inside a radiator can pose a serious risk to a young child.

In specifying a 'pencil proof' grille, you're reducing the risk of potential injury caused by a child's finger being caught inside the grille.

TOP TIPS FOR HEATING EFFICIENCY

To end part one of our eBook, we would like to highlight how schools can monitor their heating efficiency to ensure the best value for money.

For the specifier, this may provide a useful point of reference when discussing heating solutions in an educational setting.

The comfort of pupils and staff is of high importance. A room that is too hot or too cold can stifle and distract learners, leading to poor productivity and compromised educational outcomes.

As reducing cost is a key aim in many school's stretched budgets, Contour has provided a comprehensive guide on improving school's heating efficiency. Read the detailed article here.

To summarise, we recommend that you:

- Keep to recommended room temperatures
- Time your school's heating appropriately
- Prevent interference with the radiator throughout the day
- Don't block heat with classroom resources
- Consider upgrading to a quality product.

Part 2 of this eBook explores the varying challenges of a special educational needs (SEN) environment, giving key considerations for the specifier or professional involved in the design and refurbishment of a SEN school.

PART 2: SPECIAL EDUCATIONAL NEEDS

Children with special educational needs (SEN), challenging behaviours and physical limitations will require a different approach when it comes to the safety of the resources and furniture in their specialist environments.

Here, you may consider an anti-ligature radiator or guard to address these additional needs.

What Is An Anti-Ligature Radiator?

Contour has released an ultimate guide to anti-ligature, which you can access via this link.
In short, anti-ligature refers to a product that reduces the risk of an individual threading or tying rope or cord around a 'ligature point' to inflict harm on themselves.

Standard radiators pose a variety of ligature risks. Firstly, their multi-panelled construction means that they are weaker in design, making them vulnerable to damage. Secondly, they contain wide grills and external temperature controls. It's a sad fact that those most vulnerable often find themselves using such ligature points as a means of self-harm.

An anti-ligature radiator is manufactured to avoid those 'ligature points' through their design characteristics.

IS THERE A NEED FOR ANTI-LIGATURE SOLUTIONS IN SEN?

Children with special needs are known to exhibit signs of self-injurious behaviour. The National Autistic Society identified that about half of autistic people engage in self-injurious behaviour at some point in their life.

And all UK SEN classrooms are geared up for this risk, with preventative measures and specialist resources readily available.

Depending on the individual environment, specifiers should consider when an anti-ligature radiator or guard would be suitable, as opposed to an LST radiator. Our experts at Contour will always provide advice and guidance in the specification of appropriate heating solutions.

When choosing an anti-ligature radiator or guard, specifiers should not compromise on additional features that LST radiators possess, for example, antimicrobial protection and robust Zintec steel.

For this reason, Contour's anti-ligature radiators and guards all contain BioCote® protection, boasting all the anti-microbial properties as highlighted in part one of this eBook.

Why is Anti-Microbial Protection Necessary in an SEN Setting?

When immune systems are compromised and the risk of infection is heightened, anti-microbial protection is a necessity.

Looking into the behaviours exhibited by those receiving specialist education, safe cleaning practices are a high priority, which is why we highly recommend that those involved in the specification of resources in an SEN setting should choose a solution that delivers a substantial level of hygiene.

THE BENEFIT OF COLOUR IN AUTISM EDUCATION

Throughout this eBook, we have covered the safety elements when specifying radiators in education. However, the impact of colour is a widely discussed topic within care and SEN environments, with many studies suggesting that it aids the healing process, as well as providing a calming atmosphere.

Contour's colour psychology eBook takes an in-depth look at this topic. You can download your copy, for free, here.

However, we're now going to explore the impact of colour in autism education. If you decide to choose a heating solution that allows for a range of colour options, you'll find this chapter useful.

Heightened Senses

Children and adults with autism tend to have heightened senses. Sights, sounds, smells, touch, sunlight and colour can have various pronounced effects.

In other words, for people with autism, sounds are louder, touch is more acute, smells are stronger, lights are more glaring, and colours are more colourful.

Whilst autism-and any special educational need-is based on a broad spectrum, some colours may be better suited for children with SEN. We recommend toned down colours, as opposed to bright colours. The 'safest' colours for autism are green and blue as they bring a balance of harmony and are an instant de-stressor.

Individual Colours For Radiators In Autism

Red

This is a very powerful colour. Children with autism may experience red as fluorescent, making it painful for them to look at, which can impair their behaviour and mood.

White

White reflects colours that surround it. For someone with autism, white can be so overwhelming that it can hurt their eyes. Bright white surfaces, in particular, can be overwhelming, especially if the surfaces are highly reflective.

Green

Green is the safest colour for someone with autism. Green brings a balance and harmony to any environment. Lynne Harrison, a child psychologist, suggests that soft green is one of the best colours for environments of autistic children.

Blue

Blue is an instant de-stressor. Cool colours like this are calm and peaceful, making it ideal for autistic children.

Pink

Pink is a good colour for people with autism, providing that it is a lighter hue.

Whilst safety is the most important factor when choosing your anti-ligature radiator covers for Specialist Educational Facilities, we recognise that the mental well-being of children is of equal importance.

Of course, any educational professional should look at the environment as a whole, analysing the number of sensory stimuli on walls, floors and counter surfaces. Too many can wreak havoc on the minds of individuals with neurodevelopmental disorders.

CASE STUDIES

The following case studies demonstrate Contour's commitment to providing safe heating solutions within the UK education sector. Selecting two contrasting educational environments – in this case a mainstream and SEN setting - you will see the differing requirements of both settings, emphasising the need to carefully select anti-ligature or LST radiators/guards.

WALTON HALL ACADEMY

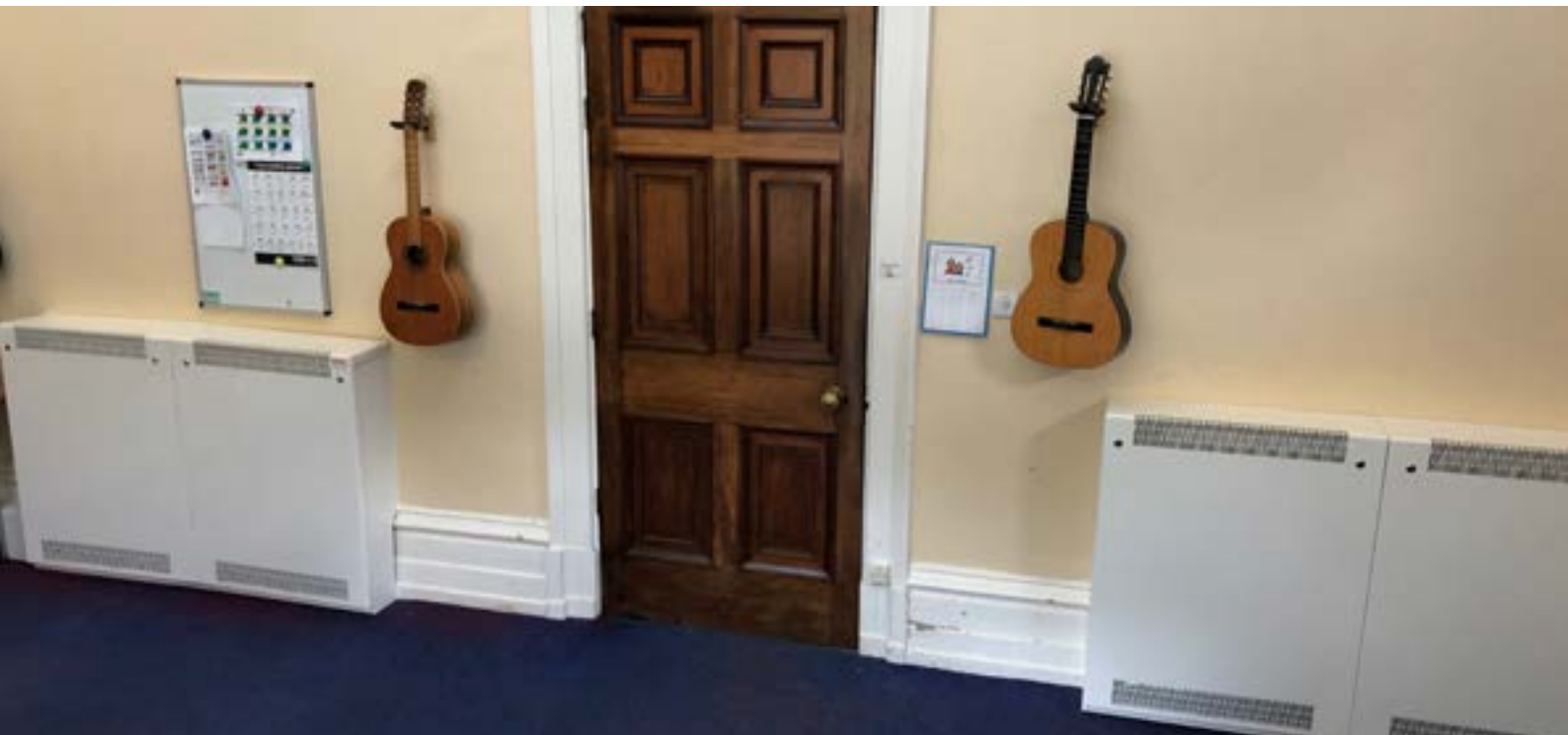
Our client's old, damaged radiator covers needed to be replaced with casings that allow easy access for maintenance and cleaning, due to children inserting small items through the grilles.

Contour provided onsite meetings to ensure that they knew exactly what we needed to achieve. Following Contour's return to take final measurements, it was only 2 weeks before our radiator covers were ready for instalment.

On behalf of Walton Hall, HPI are delighted with Contour's radiator guards – both the products and the service. The radiator covers are strong and allow caretakers full access to the inside of the casings for routine maintenance. The casings provide safe heating for the children without any sharp edges that could cause injury.

We can't rate Contour highly enough and would recommend their bespoke radiator covers to all SEN schools.

– Steve Kirbyshire, Director of Small Works and Refurbishment – HPI



BECK HOUSE CHILDREN'S RESOURCE CENTRE

North Yorkshire County Council's Beck House is a dedicated centre, offering short breaks and day care to children and young people with disabilities. Many of the children have complex health and behavioural issues and require substantial round-the-clock professional support.

Given the behavioural issues that many of the young people face who use the facility, the Council required radiators in the refurbishment also provided a robust, durable solution that should be easy to keep clean whilst of course minimising the opportunity for self-harm.

The client was experiencing issues with the heating system due to previous attempts to improve the safety of the radiators were flawed. During the cold snaps, the staff had to resort to adding in additional heating to the bedrooms which wasn't a safe-long term solution.

Contour helped to diagnose the issues and worked along side the client to put it right. This included the supply of new radiators, valves and casings, creating a safer heating solution for those with behavioural issues.

Based on the requirements, the Council specified the installation of 18 Contour DeepClean IP3x anti-ligature radiators, with external mounted TRVs fitted with anti-ligature shrouds.

The IP3x design is one of the latest versions of the market leading DeepClean anti-ligature radiator and guard range. It features a grille incorporating 2mm holes at 4mm centres, in a triangular pitch formation punched directly into the guard case.

CONCLUSION

Our eBook aims to address some common issues that those responsible for the design and/or specification of an educational environment faces, and how an appropriately specified radiator can improve safety standards within UK schools.

We hope that this resource will provide you with a breadth of design and performance characteristics to look out for during the specification process. Remember to closely consider:

- The surface temperature
- The building materials used
- The incorporation of antimicrobial protection
- 'Pencil-proof' grilles
- The heating efficiency
- Whether anti-ligature solutions are more appropriate for SEN
- The impact of colour in SEN environments

For your upcoming educational project, don't hesitate to get in touch with an expert at Contour – who will be able to guide you through the efficient specification of LST and anti-ligature radiators and guards.

ABOUT CONTOUR HEATING

Contour Heating are specialist experts in the design, production and installation of a range of safe heating solutions for healthcare, education and commercial sectors across the United Kingdom.

Working in close partnership with architects, M & E consultants, contractors and the end clients, we can bring their visions to life when it comes to creating safer heating in particular environments. Our portfolio includes hospitals, mental health facilities and SEN schools.

The company was founded in 2003 by Leigh Simpson, who saw the life-saving potential of the anti-microbial properties in silver.

Through extensive research, Leigh designed a series of low surface temperature radiator guards containing the silver properties in the surface with the view of bringing revolutionary hygiene benefits to the healthcare sector with the potential to relieve the growing problems with antibiotic resistance.

With the incorporation of colour psychology into this solution, Contour Heating was created; bringing safe surface, colour coordinated solutions to the market that would generate more harmonious environments for staff, service users, patients and students alike.

These developments quickly redefined the marketplace and have positioned Contour as a design and innovation leader within the sector.

Contour Heating
Products Ltd
The Mansions, 43 The Broadway, Shifnal,
Shropshire, TF11 8BB

+44 (0) 1952 290 498

sales@contourheating.co.uk