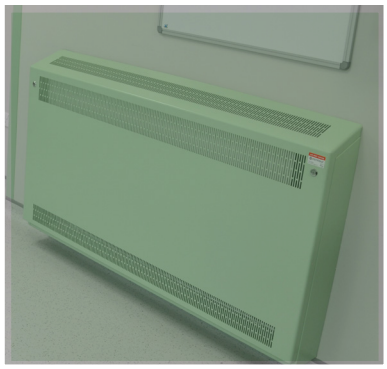
contour

Colour Psychology



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Introduction

In the UK, we often hear stories of overcrowded hospitals, bed-blocking and stretched services that don't have the capacity for even the most vulnerable of clients. With space being a primary concern, the need for hospital environments to be optimised to improve patient well-being and speed up recovery times to relieve the pressure on these spaces is a paramount concern. Research is being conducted into how the psychology of a space can affect its users. One of these research areas is colour.

Colour psychology examines the impact of hues on human behaviour and well-being. It's a well-understood fact that certain colours have particular connotations, such as red provoking images of passion or danger. But, it's also a factor in how humans read and react to certain situations. Colour has been proven to influence behaviour and reactions to medications, including placebos in medical trials. Extensive research has been carried out into the implications of colour and human behaviour.

Contour Heating have now created this detailed guide to how the colour of a space could be used to improve patient well-being and recovery times and relieve the pressure on our stretched healthcare sector.

With our extensive guide to colour psychology, you will learn how to create healthcare spaces with combinations of shades and tones that will improve the atmosphere and aid the recovery of service users.

This book will:

- Teach you the science of colour psychology and the impact that the research has had on the healthcare sector.
- Explore colour association and how it has affected the way spaces are designed and certain industries use this to their advantage.
- Discuss which tones are considered warm and cool colours and how they are most effectively used.
- Introduce you to how Contour Heating uses colour psychology in their product designs to provide heating solutions with additional design benefits for service users.
- Explore a case study into colour psychology: Leighton Hospital, where Contour have worked to provide colour specific heating solutions to improve patient well-being.

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Chapter One

The Science Of Colour Psychology

Colour psychology has a huge impact on design choices in the marketplace. Whether it's to brand your product most effectively or create an environment that will inspire service users, colour psychology is relevant to every aspect of design.

Research into the influence of colours shows that the human brain can be drawn towards - or away from - a company, product or service, purely because of the brand colour palette.

According to Psychology Today, 90% of judgements made about products are based on colour alone.

Colour counts in first impressions. It's the first thing we notice and the last thing we remember, so it's important to get your colour choices right.

So, here's how the science behind colour psychology works. Once you understand this, you'll be equipped to make colour choices for all of your product designs.

Colour tends to be too dependent on personal experience to be universally translated into a wider meaning. This means that we can't make generalised, concrete statements like, 'red reminds people of passion.' Because red reminds each individual of something different depending on their continuously evolving experiences.

However, research has noted broader patterns in the moods that colours evoke. These are based on stereotypes and societal conventions that, though evolving, arouse similar associations for large groups of people (i.e. blue = Conservative, red = Labour).

Recent research shows that humans are hardwired towards particular colours. It's important to think about the context in design: While 'brown' has many connotations, these vary wildly in the contexts of wood, brick and sand. It all depends on individual perception.

How We Perceive Colour

There are three factors that determine our perception of colour: hue, value and chroma.

Hue

Hue refers to the overall colour e.g. purple, yellow, blue. A common mistake in design is to centre your products on hue only. Value and chroma play a much larger part in emotional resonance.

Value

Value refers to the brightness of a colour. The brighter a colour, the higher it's value.

Chroma

Chroma refers to the saturation of a colour – its vividness. The more vivid a colour, the higher it's chroma.

The Psychology Behind Colour Preference

Once we've absorbed the hue, value and chroma of a colour, we use these factors to develop colour preferences. Colour preference is typically based on three things

- Biology/evolution
- Gender schema theory
- Ecological valence theory

Biology and Evolution

Evolution means that our biological mechanisms change, gradually affecting our colour preferences. Female brains are believed to have developed a preference for reddish tones because of their ancestral duties to gather fruit while their husbands hunted. Colour psychologists believe that this is the history behind the gendered convention that pink is a feminine colour.

Gender Schema Theory

Humans have reinforced gendered expectations and stereotypes like this by labelling colours (amongst other concrete and abstract items) according to gendered ideals. While many children grow up feeling that they should conform to gendered ideals, society is in the midst of upheaval, contradicting, questioning and neutralising colour stereotypes that attach meaning to items in all walks of life.

This creates interesting decisions in design – do you want to conform to expectation, or build something new and inspiring?

Ecological Valence Theory

There is more to colour psychology than biological evolution though. Humans prefer certain shades because of ecological valence theory (EVT). Though we share similar biological compositions, differences emerge in our colour preferences because of our emotional experiences.

Nodes in the human brain acquire semantic meaning when colour is encountered. This means that your perception of colour is constantly evolving, gradually enough for you not to notice. Affected by emotion, culture, context and sensory experience, your associations alter each time you encounter colour.

Physical Reaction To Colour

Each time you encounter colour (all the time), your adrenaline, blood pressure and heart rate either increase or decrease. Usually, warm colours increase these and cool colours stimulate a decrease.

This is why cool colours are often recommended for relaxing environments, such as psychological health facilities. Meanwhile, a combination can be useful in schools, for learning inspiration and classrooms and relaxation in study rooms.

You can use colour in your designs to:

- Influence brand choice
- Draw attention to your products
- Improve design visibility
- Trigger a desired mood or atmosphere
- Enhance perceived marketplace authority

The psychological reaction to colour needs to be core to your design research. This shouldn't just be based on emotional or semantic meaning though; consider what is visually appealing and what echoes your brand image.

A common mistake is to create a colour palette that matches your audience's colour preferences. Instead, think about the image that you want to project. What are the problems that you solve? Which colours reflect this?

Chapter Two

Colour Association

Colour association describes how particular colours provoke certain emotions. Each colour can have more than one emotion or thought associated with it depending on the context. The shade of a colour also affects the connections we make to it.

Red, for example, has strong connotations of danger and is often seen on warning signs for drivers, alerting them to potential hazards on the roads. Fire bells or extinguishers are generally coloured red and emergency service lights include red as a warning to drivers to get out of the way or to pull over if instructed to.

However, red isn't a colour that humans exclusively connect to danger. It has positive connotations as well. Red provokes thoughts of romance, passion and love. It features heavily in St Valentine's Day product marketing campaigns and at Christmas for its association with warmth and richness.

Colour association appears in almost every aspect of our lives, sometimes noticeably and other times in extremely subtle ways that we might not even realise. Children's toys are often coloured because of a sociological connection to gender. This impacts the way parents choose to direct play for their children and can affect choices of clothing colours cased the association with a certain gender.

Because of the association with purity, white has become a traditional wedding dress colour and the negative associations of the colour black, it's considered unacceptable to wear it to a wedding. Research has been carried out into the way that our colour choices can affect the outcome of job interviews because of how the mind of a manager connects colours to certain personality traits.

It's not unreasonable to say that colour association can affect how we live our lives.

It isn't just lifestyle that colour can affect. Research conducted by Angela Wright of Colour Effects found that adjective word association can be affected by colours.

To prove this, participants in an experiment were given groups of related words about human characteristics and asked to allocate them to certain colour wheels with five colours on. The experiment ran twice to cement the findings of the first test.

The data gathered showed proved that words and colours have connections in the human mind. For example, a colour wheel of pastel colours was consistently labelled as representing formality, elegance and modesty.

Hospitals and other healthcare environments carefully consider colour association when designing each area individually. Certain departments in a hospital are better suited to a certain colour than others. For example, while yellow is associated with positivity, it can have a distressing effect on young babies so is not typically used in maternity or paediatric wards.

According to Building Better Healthcare "aside from how colour makes patients feel, it can also have an impact on diagnosis". Even on a subconscious level, the colour of a room can impact the mood and overall outlook of a patient; strong colours, like red with its connotations of danger and warning, causes an elevation in heart rate, making it an inappropriate choice to paint the walls in a cardiac unit.

Building Better Healthcare writes that it isn't just patients who are affected by the colour choices of a hospital; staff are too. Surgeons, working for long hours at a time on an operation, spend much of their time looking at the violent red shades of a person's internal structure. Operating theatres are generally painted green to counteract this:

"This is a very deliberate move to counteract the effect on the eye of prolonged staring at the deep red of open wounds. As green is the complementary colour to red, it can neutralise the afterimage produced by the surgeon's concentration. A cooler, muted palette is recommended in these areas."

Colour experts Dulux reported on colour in healthcare and found that colour can also be beneficial visual aids to signpost and to "help reception desks stand out and corridors can be divided with strong accent colours to reduce confusion." This makes a clear demonstration of the significance of colour; it isn't just about the paint on the wall but the way that it is used.

With colour playing such a clear role in the operational capacity of hospital staff and the overall outlook for patients, the need for streamlined thinking when it comes to the design of healthcare environments becomes clear. Hospital management shouldn't just be considering the colour of the walls when working to create a space; the whole environment needs to be considered. This includes the type of work taking place, the service users in that area and the type of equipment being used. All of these factors play a role in the potential outlook for a patient.

Chapter Three

Warm Colours

Throughout the year, as the seasons change, the human mind uses colour to connect itself with the look of the landscape at the time. Often, in the height of summer, we find ourselves pining for the trees to turn to the oranges and browns of the autumnal months that signal cooler times are on their way.

During the winter months, when darker colours such as black, deep blues and particular shades of grey washout the longer nights, we begin to look for colours in the world around us to tell us that warmer times are coming. In effect; we are all guided through the year by the colours of the seasons.

Seasons are an excellent indicator of warm colours and cold colours. Autumn, while naturally colder than the previous season, is when strong colours with warm associations are most commonly found on the trees, and in the marketing put out by companies adapting to the upcoming festive season.

Think of Halloween and Guy Fawkes Night; orange pumpkins and reddened glows from bonfires, brown and red leaves on the trees and lining the pavements, golden sparklers and fireworks. All these tones are considered warm colours.

Warm colours act as a signal to us that the seasons are changing from the hot weather of summer to the colder winter months and the festive period, and often, because of the events that take place throughout, make us feel better about the drop in temperature and comfortable within ourselves thanks to the events that go on throughout the season.

Marketing campaigns in the clothing industry often use warm colours such as deep red, orange or bright yellow, to promote seasonal offers that relate to annual holidays taking place.

For example; Christmas adverts for food companies often feature an emphasis on red cranberries, warm coloured table cloths and imagery of crackling fireplaces to solidify that feeling of comfort that comes with the Christmas holiday break that many people experience.

The presence of warm colours in spaces makes rooms feel closer and can impact on the way people behave within a space, often on a subconscious level. Art Therapy Blog suggests that in places where food is consumed, warm colours can directly impact appetite. Warm colours orange and yellow are closely associated with food in the human mind, they stimulate our appetite and can make us feel hungry. In the healthcare sector, these colours are avoided in places where eating disorders are treated.

Warm colours are at the heart of creating an area where people feel safe and comfortable. In care spaces, it is about putting the mind at ease without the use of distressing colours that could negatively impact on the service user. Through warm colours, this can be successfully achieved.

Chapter Four

Cool Colours

As seen in the previous chapter, seasonal changes are often signified to the human mind by the colour shift that we see in the natural environment. In the height of summer, when temperatures are soaring to the mid to high twenties, the thought of cooler weather or cold drinks often make us feel more comfortable in the often uncomfortable heat.

The clothing industry tactically markets its colours in summer differently to how it does in winter. Colours in the summer are often paler, in "baby" shades rather than the more striking, bold colours that we see when the months are colder.

These colours don't just make us feel cooler because they are less intense to look at, but actually hold less heat than dark colours, such as black, that hold more heat and therefore make us feel hotter when we wear them.

It isn't just the clothing industry that uses cool colours in a tactical fashion, however. Certain healthcare environments use cool colours in waiting areas or particular wards because of the effect that they can have on patient behaviour.

Art Therapy Blog, who have researched the implications of both warm and cooler colours for human behaviour, report that the effect of cooler colours such as pale blue or green can create calmer, more tranquil feeling environments.

Often, these colours are used in school environments to encourage a more peaceful learning atmosphere for students. Green can also help learners when it comes to decision making; potentially making it beneficial to have in classrooms where students are carrying out experiments and have to make predictions about what the outcome could be.

According to Shift eLearning, cool colours can influence the way that we behave within a particular space. In environments with a heavy focus on the colour blue, there is more likely to be a higher creative output than in other spaces as it encourages creative thinking. Blue is also associated with honesty, cleanliness and well-being. Large healthcare providers such as the NHS use certain shades of blue because of the trust signals that it can send to people.

Other colours, such as purple, which classifies as a cool colour because of the influence of blue in the pigment, can be known to promote problem-solving centred thinking.

These colours could be used in school environments to promote particular parts of the brain to work around a particular subject, such as purple in maths classrooms or blue in an art or English classroom.

Cool colours can be used in particular environments to promote calmer thinking, positivity and tranquil settings. They can also be used to promote particular emotions such as trustworthiness and cleanliness or to activate certain areas in the brain to deal with different tasks, such as problem-solving.

Other industries use cool colours to promote comfort in hotter weather or to promote certain products at a particular time of year.

Chapter Five

How Do Contour Fit Into The Conversation?

When considering the colour scheme in a room, the hue of the radiator cover may be the very last thing that is considered. Contour Heating believe in changing this and have made colour coordination a primary factor of thought in the way that we supply our products.

While many of our customers are happy with a standard white radiator or guard, we have also carried out many jobs in which colour specification was at the forefront of customer concerns when bringing new radiator covers into their environment.

These include health care settings for dementia patients in need of calming environments and educational facilities where a distraction-free setting was key to student success.

Maxwell Centre, a research facility at Cambridge University, specified black radiator covers for their white-walled science building and laboratories. For those working inside the facility, the black and white combination of the radiators and the walls created an aesthetically pleasing environment.

In terms of colour psychology; Contour's solution of a heating solution that meets the aesthetic requirements of a room means a happier, more productive working environment because the entire space catered to the needs of the client.

While consulting with a client on a project for a ward for dementia patients, Contour's team were advised that service users were struggling to differentiate between the white radiator covers that were currently in the location and other white goods products such as toilets.

As a result, there were many incidents involving patients using radiator covers as urinals and toilets. For some patients, this confusing situation was a source of embarrassment and distress.

Concerned about giving patients their dignity by removing the risk of confusion, and to provide a more hygienic heating solution for service users and staff, Contour worked alongside the hospital's team to provide low surface temperature radiator covers that matched the paint on the walls, which was pastel blue, creating a blended environment that does not confuse vulnerable patients.

By imputing our expertise in colour psychology to the conversation with the client, Contour were able to provide a heating solution that, not only gave the environment a safer, low surface temperature solution, but also gave patients back their dignity by eliminating the risk of unsanitary incidents in public wards and communal areas in the care space.

We are able to provide any colour from a RAL chart, all our clients have to do is provide us with the four-digit code. We can also provide samples for clients to review to ensure that we provide the closest possible match to the requirements of a space.

Through close consultation with you, we can make recommendations using our expertise to ensure that the right colours are coordinated with your needs. We know that recommending a bright blue radiator guard to a facility treating those with eating disorders would be wholly inappropriate because of it's suppressing effect on appetite, so we would never do so. This is just one example kind of in-depth colour expertise that you can expect from our heating team.

If you are unsure of the most suitable colours, following a consultation, Contour can offer a trial of one sample guard fitted into space for you to measure the results. We're passionate about ensuring you always receive the best heating solution for you and through expert customer care solutions like this, we can do just that!

Chapter Six

Leighton Hospital - A Colour LST Case Study

In 2017 Contour worked on providing a coloured heating solution to one of the children's wards at Leighton Hospital in Crewe, with the second ward being completed in 2018.

Clinical hospital environments can be frightening for young children. Whatever the reason for their hospital stay, a white room loaded with the metal medical equipment and machinery can seem intimidating to a young child and their family, adding more distress to already emotionally charged situations.

Children in hospital aren't just facing the medical challenges that they need to recover from, they are also dealing with unfamiliar people, potential time away from their families and time in hospitals where there is often a lot of noise at all times of day and a lot of new sounds to contend with such as medical equipment, sirens going past the windows and air ambulances landing on the roof.

All of this can raise their levels of anxiety, the more upset a young patient is the likelihood of their recovery process taking longer than necessary increases.

At Leighton Hospital, which is managed by Mid Cheshire Hospitals NHS Foundation Trust, there was already a strong understanding of settling the mind of their youngest patients during their time on the ward. The walls were decorated with a green paint, a calming colour, and jungle themed images which engaged the children in a more positive way than a white wall would have done.

When searching for a heating solution, Leighton Hospital understood that while the paint on the walls and graphics hanging alongside them were working wonders on settling their young patients, the presence of a large, white, clinical looking radiator cover could distract from that and offset the hard work that they had put into creating calmer spaces for children.

Not wanting to cause any unnecessary stress to those already under pressure from their medical situation, Leighton Hospital reached out to Contour Heating for a solution.

Contour was delighted to help Leighton Hospital in the mission to bring a heating solution to the space that wouldn't upset the measures already put in place for their patients.

We supplied the required DeepClean LST radiator covers in RAL Green 6019, which was an almost exact match for the pastel colours used on the walls.

This also acts as a compliment to the graphics of jungle and forest animals that were located throughout the wards.

The overall effect was a calm, tranquil environment with a streamlined structure of wall paint, graphics and radiator covers that created a united environment with a settling effect.

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, designers, consultants, contractors and specified, 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 children's schools and nurseries.

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 relive 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.

Acknowledgements

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