



# Circadian Plus

Lighting The Future Of The Care Environment

## An affordable, end-to-end, spectrum-control lighting solution for the care environment.

Circadian Plus combines specialist expertise in design from It Does Lighting, with lighting products from Swann Bio-enhance LED and amBX sophisticated control software. The colour spectrum of visible daylight is managed to optimise health and wellbeing for building occupants.



### Circadian Plus in the Care Environment

Managing the colour spectrum and intensity of lighting is particularly important in environments for elderly care.

As the human body ages, both day and night vision deteriorate. Moreover, light can often cause confusion if there is a glare or an unusual pattern. This is heightened when a person suffers from some sort of cognitive condition, such as dementia. The Alzheimer's Society report that around 80% of care home residents experience some sort of severe memory problem.

Care home residents are surrounded by artificial light 24 hours per day. This emphasises the importance of good lighting, and the potential impact Circadian Plus could have upon a care home resident's quality of life.

### Improved wellbeing and comfort

True human-centric bio-adaptive lighting can improve residents and employees mental and physical health.

### Improved resident and employee experience

Offer residents and employees the best level, intensity, and colour of light to match their natural human circadian cycles.

### Improved safety

Minimise the risk of trips and falls.

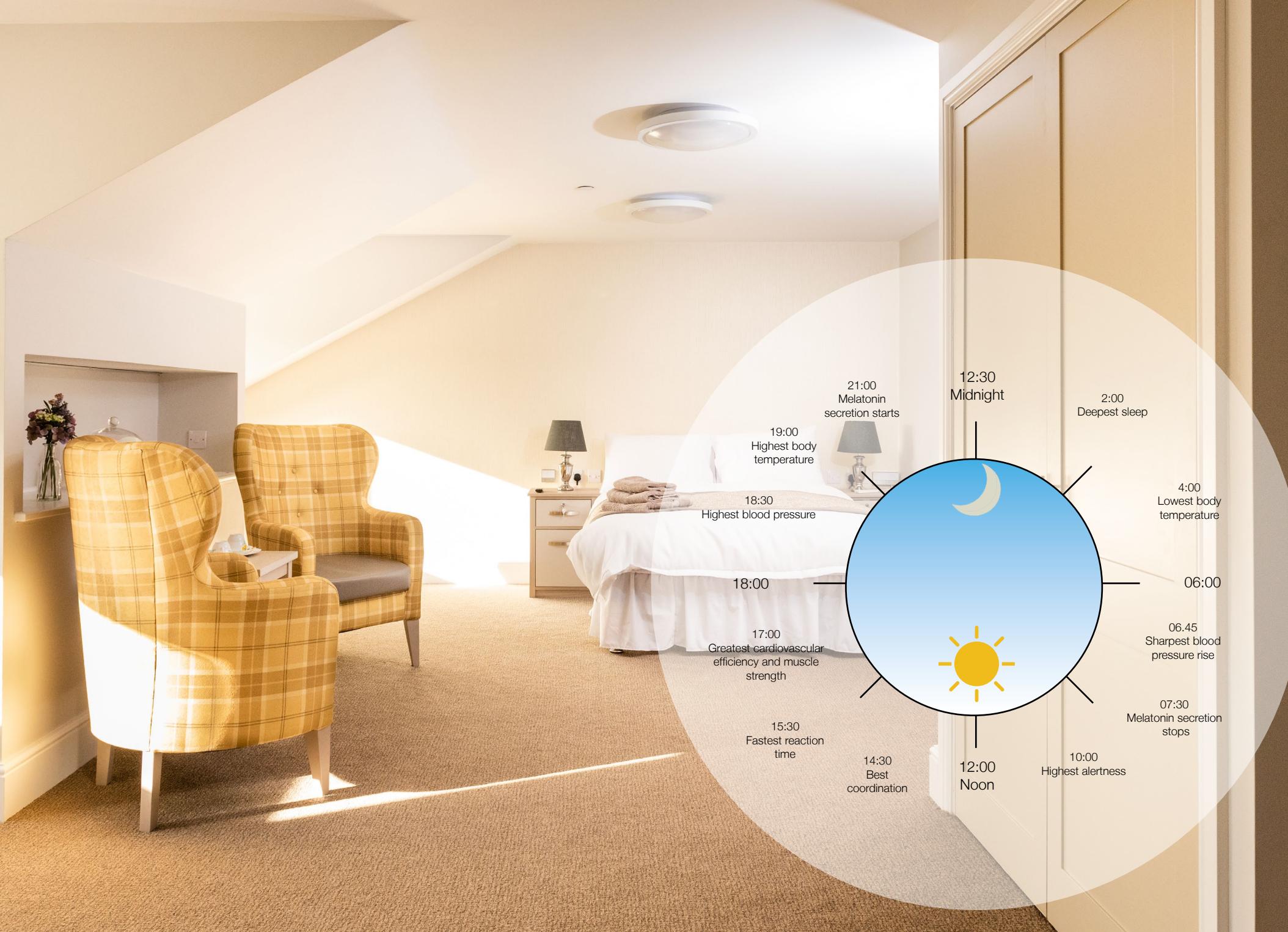


### How does it work?

The principle of Circadian Plus lighting is to provide artificial light controlled in such a way as to match the needs of human biological cycles, or circadian rhythms. It provides improved health and wellbeing and supports aspects of human behaviour that benefit from varied and changeable lighting.

We are all governed to some degree by the circadian cycle (which is a little over 24 hours long), light information from the environment resets the circadian clock every day to keep us in sync. Light is the most powerful synchronizer of the human circadian clock. The timing of light exposure throughout the day is responsible for how we feel and how our bodies function.

For example: Late-evening light exposure delays circadian rhythms, resulting in later sleep and wake times. Early-morning light exposure advances these circadian rhythms, resulting in earlier sleep and wake times.



## Improved sleep pattern

White light exposure (with blue content) gives the greatest effect to the body for alertness and ultimately, for sleep at the end of the day. Prolonged poor exposure to white light during the morning will mean that sleep patterns suffer. However, restricting white light exposure later in the day will have an adverse effect, making residents feel as if they are ready for bed.

## Less risk of developing certain medical conditions

Research has suggested that getting the correct amount of light and sleep can significantly reduce the chances of developing serious medical conditions, such as type 2 diabetes!

## Reduced costs

The energy-efficient control software allows energy consumption to be reduced, only using lighting when it is required and at the right level and intensity. In addition, the system can be integrated with sustainable energy sources e.g. solar panels allowing buildings to go 'off-grid'.

## Improved mood

An improved sleep pattern, in turn, provides an improved mood. In addition, a study in a Sacramento Municipal Utility care home in the US, reported that a pilot installation of bio-adaptive lighting recorded a reduction in resident behaviour episodes, with one dementia resident showing an improvement of 41%.

## Improved staff retention

Our research has suggested that one of the biggest issues for care home Managers is maintaining staff members. However, the installation of Circadian Plus will mean employees are happier at work, have improved sleep patterns and most importantly feel that their employer cares about their wellbeing, therefore, having a positive impact on retention levels.

## Improved control

Real-time data provides improved insight and full control of care home lighting, allowing operators to utilise Light-Scene technology to create different zones e.g. for reading, sleeping and socialising.

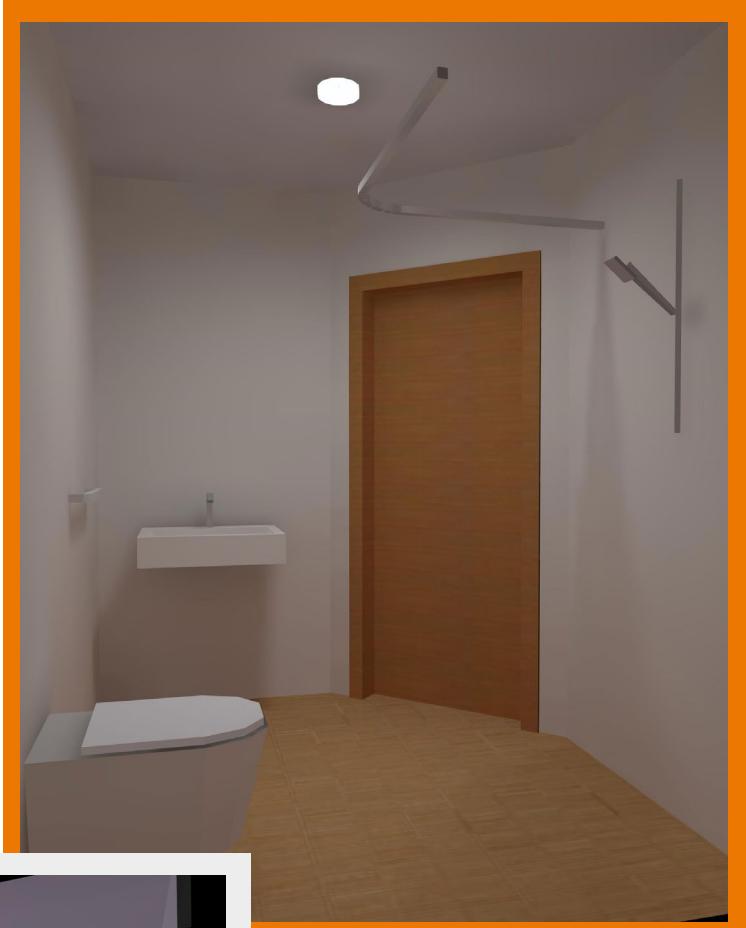
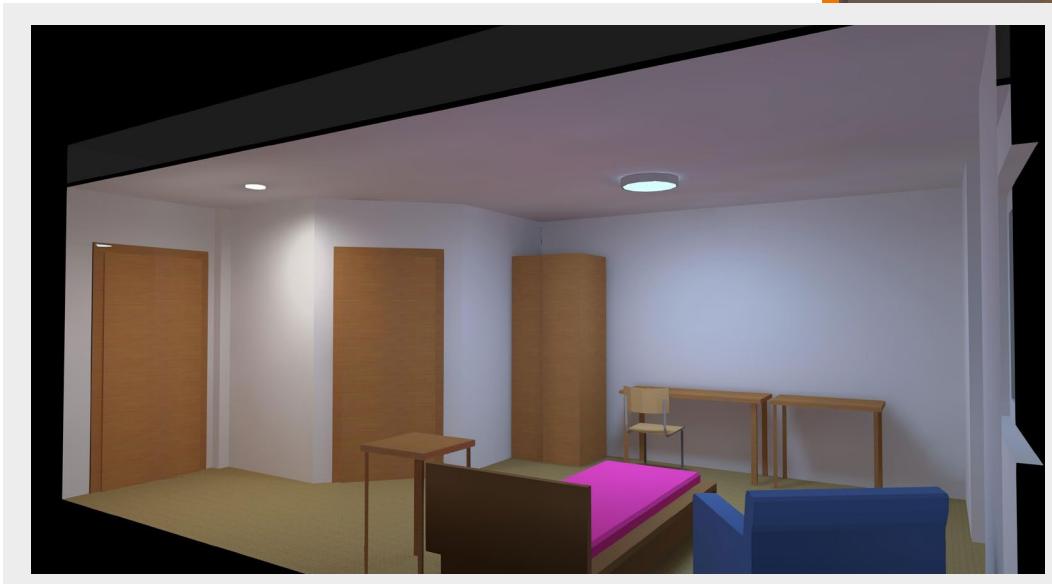




## Expert lighting design consultation

It Does Lighting Ltd offers a diverse range of experience covering all types of lighting design.

- Bespoke lighting design consultancy – Covering the individual aspects of each project and its many separate areas of compliance, such as emergency lighting, exterior, interior and architectural.
- Circadian Plus lighting design – Spectrally specific design to meet recognised international standards with lighting. This type of lighting is superior in its application as it uses different aspects of the spectrum to work on the biology, rather than just the psychology of those within the space. This helps deliver improved sleep, reduced anxiety and increased overall wellness.
- Designs optimised for improved health and wellbeing – Lighting is no longer just about functional tasks; we deliver better quality light for bio-natural enhancement.



Bringing  
ideas to light



## The Bio-enhance Light Range

The Swann Comfort lighting range is fully compatible with the amBX SmartCore control system.

The wide range of lighting products, sizes, shapes, and outputs make bespoke customer lighting designs easy to fulfil.

Request a product sheet for more information about any of the products listed on the next page.



Innovative.  
Creative.  
Collaborative.

## Comfort Round

The Comfort Round has a 120° wide beam angle and an output of 2600 lumens. Decorative options include halo effect and additional trims.



## Comfort Cornice

Corner profile with uniform distribution. The Cornice has an aluminium extrusion with opal polycarbonate diffuser. It can provide lengths of up to 3m.



## Comfort Round XL



Manufactured in white polycarbonate with incorporated heatsink and control gear. The Comfort Round XL has an output of 4000 lumens.

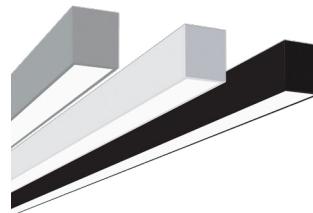
## Comfort Polo

Decorative polo available in a range of sizes, and with a choice of surface or suspended mounting.



## Comfort Linear

Direct, extruded linear profile suitable for surface, recessed or suspended mounting. Available as an individual or continuous luminaire, up to 2400mm in continuous length. Choice of grey, white or black finish.



## Comfort Erebus

Formed from extruded aluminium with a high-performance heat sink. It can be formed into any shape to suit both client and application. Available in lengths of up to 3m.



## Comfort Tube

Suspended tube light with round LED profile and 360° light output. Complete with opal polycarbonate diffuser. Lengths range from 520mm - 2420mm in 100mm increments.

## Comfort Downlight

Choice of 4 bezel sizes, with a 120° beam angle. Available in white, silver or black bezel finish and with optional drop bowl glazing.





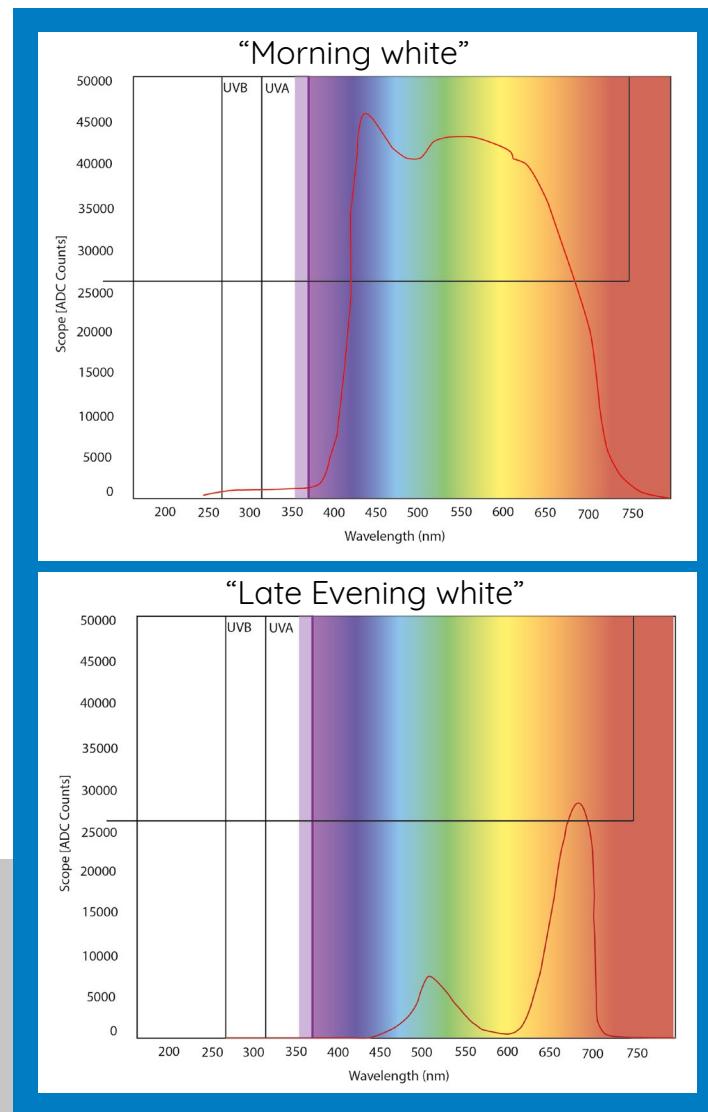
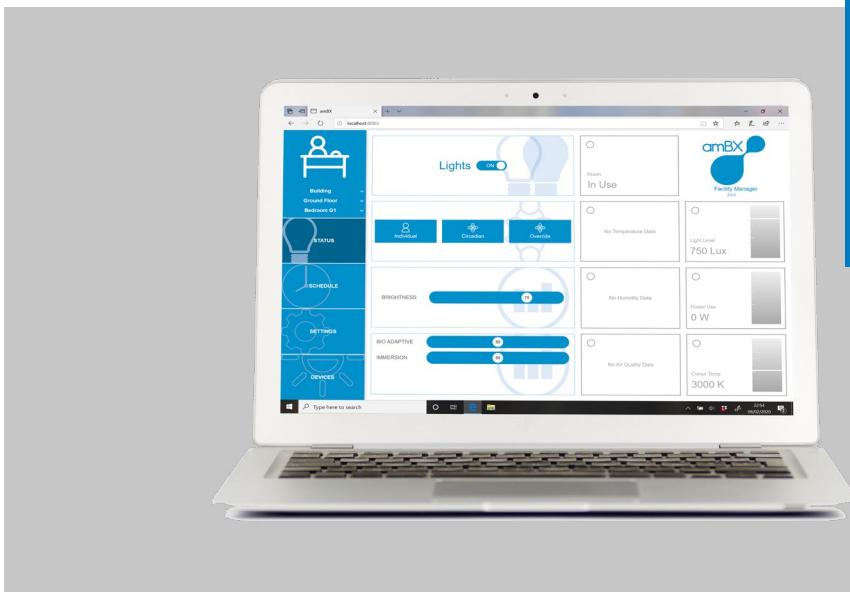
## Sophisticated Circadian Plus lighting control

ambX SmartCore software powers the solution, giving you full control or complete automation.

- 24-hour circadian control system for all Circadian Plus lights
- Adjustable controls for individual rooms
- Override settings for interventions
- Integrates with systems such as Nurse Call
- User-friendly control and information screens
- Remote operation

The ambX control system is designed to adapt and adjust with ease for future requirements, so future-proofing comes as standard.

The software is ubiquitous across all devices, systems and platforms therefore it will never expire or become incompatible as technology evolves.



Creating The  
Future Of  
Lighting

Heanor Park is a new-build care home based in Derbyshire and is eighth in the Ashmere family.

Ashmere Derbyshire Ltd can compare their state-of-the-art care home with other homes in their Group which have traditional lighting installed, this will help reveal the benefits of smart lighting and judge whether they have successfully met their objectives.

### **Client Objectives:**

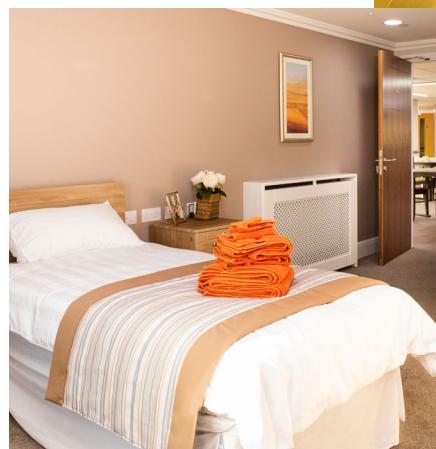
- To use spectrum-controlled circadian lighting to improve the general wellbeing of staff and residents. This should be evident within the first 3 months of opening and will be measured through qualitative research, comparing the results with another home in the Group.
- To improve the sleep and wake cycles of residents through the implementation of circadian lighting. This will be observed and measured by staff through regular assessments over 6 months of operation, again comparing results with another home in the Group.
- To provide an optimum environment for residents living with dementia which results in improved comfort and behaviour, again this will be monitored over a 6 month period. Staff in Heanor Park and another home in the Group will be asked to complete a short weekly survey - the results will then be analysed and compared.



### **Solution:**

An amBX Circadian Plus solution for spectrum-control lighting was designed to fit the brief and installed. The Circadian Plus solution provides complete control of the colour spectrum of visible daylight light through multiple colour channels in each light. This enables precise delivery of the right colour mix at the right time of day for human circadian cycles. Sensors turn off the lighting when no one is present and daylight-saving mode makes the most of the natural light. The system can also be integrated with sustainable energy sources e.g. solar panels allowing the care home to go 'off-grid' in the future. amBX software can also be easily integrated with other smart infrastructure such as Nurse Call systems, hence there is still a lot of scope for Heanor Park to add additional benefits in the future for employees and residents.

Over 400 colour-spectrum lights have been installed at Heanor Park in all the bedrooms, corridors, common areas, and bathrooms, this ensures that residents benefit from the circadian lighting to the maximum extent. The system manages intensity and colour settings throughout the installation over a 24-hour cycle and individual rooms can also be adjusted to suit specific individual needs.





### Result:

There has been a significant reduction in the number of falls a care home would usually experience, Heanor Park only had 2 falls within the first 3 months of opening. In addition, as the lighting helps to entrain residents circadian rhythms Heanor Park employees have noted residents are showing a greater level of engagement, they appear to feel more active and alert at the right times of the day and then as the lighting changes to mimic natural daylight throughout the day, by night time residents feel ready for bed and are getting a better night's sleep.

As a result of this employees are able to encourage more of a routine for residents to make night shifts in particular much easier as residents are sleeping, and their body clocks are synced correctly. For staff working in these conditions, they have commented how surprisingly they don't feel tired, are still able to carry out tasks, and feel alert as the circadian lighting is not installed in the staff room and office. For employees working dayshift the circadian lighting is also entraining their circadian rhythm, meaning they also get a better night's sleep.

*'We're seeing a greater level of engagement from the residents during the day because the lighting is helping their body clock become alert and ready for the day...we're not seeing people falling asleep in their chair or not wanting to engage in activities' - David Poxton, Managing Director*



# Circadian Plus

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