The Hubble Project
The Beeches, Parkhaven Trust

Information Pack

March 2021

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Introduction

Thank you for your interest in the Hubble Project, and the Parkhaven Trust.

This information pack is based on the information we provided to people who took part in the 'virtual visits' to The Beeches in 2020.

The pack summarises the key issues discussed during the visits, and provides you with further details to support the choices you make about introducing digital technology into your care service.

You can use the information here to build your business case for investment in technology, and to support planning, implementation and evaluation of impact.

You can access all of The Hubble Project resources, which were developed by The National Care Forum, on the Digital Social Care website at www.digitalsocialcare.co.uk/hubble.

This includes:

- Videos from the three hubs: The Beeches, Parkhaven Trust; Rashwood, Elizabeth Finn Homes; and Spey House, Johnnie Johnson Housing
- Information packs from the three hubs
- Resources from all the suppliers, including technical specifications and brochures
- Templates, checklists and guides on commissioning and managing digital tech projects.

We see the Hubble Project as a brilliant opportunity to enable social care providers to see a range of digital tech in action, learning from their peers. We hope that we have inspired you to take the next step on your digital journey - wherever you are starting it!

Vic Rayner   James Palmer   Kim Crowe
Chief Executive   Programme Head, Social Care   Chief Executive
National Care Forum   NHS Digital   Parkhaven Trust

www.digitalsocialcare.co.uk/hubble

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The Hubble Project

The use of digital technology has rapidly expanded during the coronavirus (COVID-19) outbreak. Yet many social care providers are still struggling to make the most of technology to improve care.

The Hubble Project developed by the National Care Forum with funding **from NHS Digital's Digital Pathfinders Programme**, aimed to help care providers to understand the benefits of technology, how to build a business case for investment, and how to successfully introduce, use and evaluate technology.

The Hubble Project offered senior decision makers the chance to virtually visit 'innovation hubs' (via webinar) to learn how other care providers have introduced, used and evaluated digital technology to improve care. The sessions – which were held in 2020 - covered a wide range of technology so that they would be of value to all care providers, regardless of where they are on the digital journey.

The films and resources from these virtual visits are now being shared with everyone in the care sector. They are available on the specialist website Digital Social Care which is a dedicated space to provide advice and support to the care provider sector on technology and data protection.

Find all The Hubble Project resources at www.digitalsocialcare.co.uk/hubble

Speaking at the start of the project in 2020, Vic Rayner, chief executive of NCF said:

> *"Many care providers want to progress along their digital journey – but they feel they don't have the knowledge or confidence to make what can be big decisions about investment and implementation in technology. Being able to learn from colleagues who have been there and done that can overcome some of those concerns.*
>
> *"These are warts-and-all sessions, where care providers will share the lessons they have learned. Our virtual visitors will also have access to a wide range of resources after the visits, including a toolkit to support building a business case, getting buy in, and implementation. And the tech suppliers featured during the sessions are also offering participants a time-limited reduction on the cost of their technology."*

James Palmer, Social Care Programme Head at NHS Digital, said:

> *"Involving care providers was a core founding principle of the NHS Digital Social Care Programme when it was established in 2015. All projects funded through the Pathfinders programme were required to support products and services that have the potential to make a big difference to the digitisation of the sector.*
>
> *"We are delighted that NCF is using this innovative approach. It is so valuable to share direct experiences of introducing and using tech and these virtual visits will be accessible to a greater number of organisations than a physical visit would be."*

The hubs were based in three care settings in England and showcased a range of technologies including, electronic care planning, eMAR, acoustic monitoring, circadian lighting, sensor technology and telecare.

During the virtual visits, managers and staff demonstrated the technology that they use, and share their digital journey, including how they came to adopt it, the challenges and the benefits of implementing and using it, and the use of data to improve the quality of care.

Parkhaven Trust's tech journey

About The Beeches

The Beeches is a new residential and nursing service for people with dementia in Maghull, Merseyside. The service was designed with guidance from the Dementia Design Centre at Stirling University to provide the highest quality environment to cater for the needs of people with dementia. It consists of three households which care for up to 15 people each – 45 in total.

Parkhaven Trust has installed circadian lighting, acoustic monitoring and electronic care planning to ensure that people are supported and cared for using the latest technology and to support staff to spend more time with people.

Key messages from Parkhaven Trust

- Make sure you know what you want to achieve, and what you want delivered.
- Choose your suppliers carefully. Ensure they understand your objectives and work closely with them. Ensure they are flexible to adapting as required – build in some uplift into your budget.
- Don't underestimate the time it takes to get staff on board and to change practice.
- Don't stand still – keep looking for new and developing tech solutions. Think five or ten years ahead and build tech into your services.
- Keep measuring the benefits, and feed this back to staff and management. Share studies about how tech improves care – it can help with future recruitment as technology is attractive particularly to the future workforce.
- While it is easier to build circadian lighting and acoustic monitoring into new developments – it is also possible to introduce to existing schemes.
- Having some level of inhouse technical skills and knowledge is valuable – but also look to external experts to provide advice on developing the specification and selecting suppliers.
- Take the positive risk of introducing tech – and encourage staff to try it out.

Vision and rationale

Kim Crowe, Parkhaven Trust's chief executive, says that they wanted to "achieve the best experience for our residents, and our staff. As The Beeches was a new development, we had the advantage of a new building and capital investment." (The technology at Beeches can also be adapted for existing properties.)

Technology was a key part of The Beeches service, because following the initial investment they assessed that it would actually save them money in the long term.

The Trustees were very supportive of taking an innovative approach. They did not want to see what had been done in the past, and they had a broad range of experiences, and knew what good care looked like. The Project Team for the development – including all the technical developments – reported to the Board throughout.

The chief executive recognised that in order to achieve what they wanted at The Beeches, they would have to change the way that care staff worked to enable them to spend more time with service users. The challenges of getting good staff, combined with the risk that they would still be spending a disproportionate amount of time record keeping rather than providing direct care, led them to introduce mobile planning systems.

Parkhaven's estates manager attended a dementia design course at Stirling University where he identified a number of opportunities to use technology to improve care. The chief executive, also attended a one-day course where she was introduced to, amongst other tech, circadian lighting:

> *"When I saw the circadian lighting I thought it absolutely makes sense that people get a good nights' sleep."*

With acoustic monitoring, Parkhaven wanted to ensure that night shift staff were able to spend their time with residents who most needed support – rather than physically checking and monitoring all residents and disturbing their sleep unnecessarily. Night time carries more risk of falls and unexpected incidents, with less staff to respond

Mobile care planning was introduced to improve accuracy and efficiency in developing and updating care plans, which in turn supports Care Quality Commission requirements.

Circadian lighting was introduced in order to improve residents' sleeping patterns.

Kim Crowe, Chief Executive of Parkhaven Trust describes the decision to go paperless:

> *"I have a background working in the NHS where most records are held on a digital database. Staff were complaining about how difficult filling in paperwork was. They wrote copious notes in the residents' lounge at the end of their shift, but it was impossible to remember everything they'd done.*

> *"I wanted us to use a digital system at The Beeches that would bring together all the records, enable us to raise alerts, save staff time on documentation, while giving us more robust records. We were delighted to discover Person Centred Software's Mobile Care Monitoring system for real-time digital recording, care planning and reporting.*

> *"We found out about Person Centred Software's system at an exhibition and introduced the software in August 2019 prior to moving the service into the new building. The nurse call, door entry system, acoustic monitoring, and mobile care planning are interlinked. The circadian lighting system is programmed throughout a*

24-hour period creating natural daylight during the day and "biological darkness" at night, helping keep the body in a solid circadian cycle. Everything comes together to enable staff to have an accurate and up-to-date picture of each resident and to provide a better environment in which to live and work.

Kim Crowe reflects on the developments saying:

"It was mind blowing. I'm a bit of a luddite really but I understood what the end result should look like so I wanted something that would make the job easier for staff and would give service users a better experience – those were our two drivers."

Implementation and project management

Acoustic monitoring and circadian lighting were introduced as part of the new building development, so these systems were wired in as part of the wider build.

Mobile care planning was introduced in the previous residential unit, prior to the move to The Beeches. This was to ensure staff felt comfortable using it before moving into the new building.

Parkhaven chose to select the specialist suppliers, and imposed them on the main building contractor. While there were challenges due to the more complex project management arrangements, this was the better option as Parkhaven's leadership and project team were very clear about the requirements, whereas the main building contractor did not have the experience in this area.

All of the systems come together, working as a whole package solution.

All areas of development were managed through a project team initially, and then through the estates manager, and registered manager at the Beeches.

The project team included external tech experts and internal people – including staff as end users. The team reported to the Trust Board.

Parkhaven had an experienced estates manager staff within the team, as well as external contractors who could interpret the Board's vision into a technical solution.

As the technology was being built in at the same time as the building work, it became an integral part of the build – albeit with more contractors to control. The estates manager attended site every day to ensure progress was being made and that the systems were correctly fitted.

There are limited suppliers of circadian lighting and acoustic monitoring, therefore selection was relatively straightforward. Developing a clear brief, including some flexibility for inevitable changes and uplifts as the build developed, and how the systems would be integrated was key.

Staff were involved in reviewing mock ups of the future bedrooms, being shown what tech would be in place and how it worked, and testing how they would want to use it.

With the circadian lighting system, Parkhaven requested a bespoke design to ensure lighting in certain areas were not too clinical.

With the mobile care planning system, Parkhaven identified a range of suppliers, and also visited other care homes who had the systems in place to see how they operated.

Ensuring that the technology was well integrated was a key part of the project management. Time is needed to embed, test and adapt the systems once they are introduced. Ensuring that suppliers were open to adapting the system was essential.

Ensuring that suppliers would provide flexible back up was also important as Parkhaven managers were also learning what the system could provide and how we could use it.

Integrating systems

The Parkhaven Trust has integrated its acoustic monitoring, nurse call and electronic care planning systems together using the handsets provided for the care planning software. This allows the operator of the acoustic monitoring system to trigger the nurse call system which sends a notification to one of the handsets operated by a member of staff. Every care worker has one of these handsets. The acoustic monitoring alerts can then be entered in the electronic care plan on the same device. The management of the Parkhaven Trust is able to use a series of dashboards which allows all the data to be seen in one place and can be analysed for trends.

The acoustic monitoring system provided by CLB does not use machine learning to determine the normal noise range of an individual although there is one in development and at least one other supplier of acoustic monitoring has this capability. Instead, the Beeches staff monitor any new admissions to the home over a series of weeks in order to manually set the normal noise patterns a resident makes at night. Anything abnormal from this pattern triggers the nurse call alert.

Information governance, data protection and consent

In terms of consent, the Parkhaven Trust makes it very clear to those looking to move into The Beeches, and their families, that acoustic monitoring, electronic care planning and circadian lighting are part of the care package and an essential part of the service agreement. In many cases, relatives and potential residents approach Parkhaven because they have this technology and can show it improves the quality of care.

To protect privacy the Parkhaven Trust has created a robust privacy policy, particularly around the acoustic monitoring system which involves both cameras and microphones in residents' rooms. The express purpose of this system is to support the night staff in their role and to ensure that residents are only disturbed at night if the system flags they may need help.

As such, the system is not used during the day, nor is it used to record people receiving personal care. The system can also be switched off or on depending on the wishes of the resident/families. The cameras are separate from the CCTV operating in communal areas.

When the system is operating at night it is only triggered by a noise beyond what is specified as normal. This alerts staff who can then view a live feed to understand if a resident needs help. For example the staff can see if a resident has had a fall. The relevant clip is not stored once seen and the system deletes the livestream recording. The system automatically overwrites livestream footage every day.

Families cannot access the livestream feeds.

The handsets used for the electronic care planning system are location locked and locked down to only work with the applications the Parkhaven Trust wants the staff to use. These devices can be disabled remotely if they go missing. Data is automatically uploaded to the cloud and is not stored on the device.

Daily usage

Care workers at The Beeches us all of the systems on a daily basis.

The **mobile care planning system** in particular is used by frontline care workers on a daily basis. They are able to input and access information on the handheld devices while with the resident. This enables them to check issues such as checking levels of food and hydration, what medicines are due, what that person likes to do in the day etc.

Staff also use the hand held devices to respond to family members' questions, without having to retrieve notes or ask other colleagues for information. This in turn gives family members more confidence in the care and management of the service.

The **acoustic monitoring system** is switched on in the evening, and night staff are given hourly slots to monitor the system. Staff who are monitoring the system can alert colleagues if they see or hear anything that requires attention, such as a resident getting up who may be unstable on their feet and may require support. This reduces the risk of falls.It helps to keep people safe while helping them to get a good night's sleep.

> *"I was very sceptical at the start, but now I am used to it (acoustic monitoring) and see what it does, it's fantastic. And staff enjoy using it – they keep coming over to see what time they are on the computer. It's absolutely brilliant."*

> Gemma, Night nurse

The **circadian lighting system** is present in residents' bedrooms, and in communal areas. The colour temperature adjusts throughout the day (7am – 7pm) from a 'warm' (3,000K) in the morning to 'cool' (6,500K) in the afternoon back to 'warm' (3,000K) in the evening. Between the hours of 7pm – 7am the lighting was set to 3,000K and in circulation areas to a lower light level to ensure safe egress whilst minimising disruption. In the event of an emergency, the light fixtures would default to full output and 4,000K. The lighting system can be over-ridden manually by care staff using an override switch.

COVID-19

The use of acoustic monitoring and mobile care planning in particular have been a very valuable during the pandemic. These systems have allowed the Parkhaven Trust to monitor

COVID-19 cases and also identify them before the virus spreads. They have been able to remotely review care planning as well as complete best interest assessments and consent remotely. It has allowed for useful data analysis in real time. This data analysis has allowed more proactive, person-centred care.

Resources and costs

Parkhaven purchased the following for their 45 bed, three-unit care home:

Item	Cost (approx.)	Comment
Mobile care planning system: Licence Handheld devices x12	£6,652pa £2,820	Equivalent to one-third of a senior carers salary but actually providing a greater saving in staff time.
Circadian lighting	£107,00 for the whole building. Circadian lighting added approx. 50% to basic cost of lighting.	Circadian lighting, including specialist fittings, added approximately 50% to the cost of lighting (£53,000). Parkhaven chose to have bespoke, less clinical fittings which increased the cost, but improved the look and feel.
Acoustic monitoring Cameras x 45 rooms Connection to all systems inc nurse call, door entry etc	£14,000 £70,000	Connection of the systems was substantial due to the size of the development. The system reduces the time night staff spend on in-room monitoring, enabling them to focus support to residents who require it.
Total	**£148,445**	Small percentage of overall building costs of £4m

Prerequisites

Effective, reliable wifi is essential to ensuring all of the systems work and are fully integrated. Wifi costs are not included in the figures above.

If care providers are seeking to integrate this technology with existing systems, check if existing systems need to be upgraded.

PCS is a modern cloud-based system and is therefore very light on IT infrastructure requirements. You require an internet browser (PCS recommend Google Chrome) to access Monitor. This is normally done via a PC or Laptop in the care home manager's office or nurses' station. You also require some wifi coverage for accessing the care app on the Ascom hand held devices. The care homes do not require full wifi coverage of the home because the Care App works offline and will store data until the Carer walks past a WIFI signal, at which point the data will flow from the Care App into Monitor.

Time

- Mobile care planning system: A manager worked full-time for two months on managing implementation
- Circadian lighting: Excluding the overall project management time, introduction and implementation time was very limited. For example, training is straightforward
- Acoustic monitoring: 1 hour for each member of staff to be trained on the new system (carried out during night shift).

Benefits

Parkhaven has identified the following significant benefits from the use of these technologies.

Overall, the integrated technology has:

- Improved the use of staff time – freeing them up from routine paperwork and physical monitoring and enabling them to spend more time with residents
- Improved the experience and care of residents (e.g. reduction in falls, more direct care from staff)
- Improved safety by being able to identify risks and respond quickly (e.g. reduced risk of falls in the night, reduced risk of medication errors)
- Provided better analysis and evidence to support individuals' care planning, service development and CQC inspections
- Improved resource management through more accurate, up-to-date information
- Improved communication with other professionals including GPs, pharmacists, therapists, hospitals etc through secure sharing of more accurate, up-to-date data.

Mobile care planning has:

- enabled staff to identify and respond to changes in care more quickly
- ensured care plans are kept fully up-to-date in real time
- led to improvements in care as staff are spending less time on recording and more on supporting residents
- reassured family members, as staff are able to update them on their loved ones situation immediately
- reduced the use of paper.

Circadian lighting and acoustic monitoring have reduced agitation amongst residents, and improved sleeping patterns and privacy by reducing the need for staff to potentially disrupt residents during routine monitoring.

> *"The major difference I see is that staff have adapted to a different way of working. Because they are well-supported by the digital care system and acoustic monitoring, night staff are quiet at night, making sure that residents have a good night's sleep.*
>
> *"As residents get a good night's sleep, they are awake more during the day. This means that they are alert, eat more and their medication reacts better. Because of this and the architecture of the care home split into smaller households, residents*

have significantly fewer falls. This holistic approach with technology supporting our staff means that residents now live in a much calmer environment."

Kim Crowe, Chief Executive, Parkhaven Trust

Technology at The Beeches

The following technology was showcased during the Parkhaven Hub visits:

- Circadian lighting by Whitecroft Lighting
- Acoustic monitoring by CLB/Adaptive IT Solutions
- Mobile Care Monitoring by Person Centred Software

Other suppliers of similar systems are available, but the information provided here is specifically about the systems that were demonstrated during your virtual visit.

Circadian Lighting by Whitecroft Lighting

Circadian lighting aims to support healthy sleeping and waking patterns by using light to influence the human body clock and our natural 24-hour circadian rhythm.

Parkhaven Trust chose to invest in a dynamic lighting system, also known as 'human centric lighting'. Through the appropriate selection of light fittings and control system, the colour appearance of the light source and its intensity adjusts to 'mimic' the natural cycle of day and night.

Circadian lighting helps people to regulate their sleep pattern. Having a good night's sleep helps residents to be more active during the day, meaning they can take part in activities, eat better, take their medication at the right time, which in turn helps with absorption and impact.

Further information
Visit [The Hubble Project: Parkhaven Trust webpage on Digital Social Care](#).

Website: https://www.whitecroftlighting.com/

Acoustic Monitoring by CLB/Adaptive IT Solutions

Acoustic monitoring is in place in all 45 bedrooms at The Beeches. It non-intrusively listens to sleeping residents and triggers an alert when the sound level in a room exceeds individually set thresholds. This enables staff to swiftly respond to residents in need of care. Continuous monitoring replaces routine in-room checks, so peacefully sleeping residents are not disturbed and staff are free to focus on those whose sounds or movement has triggered an alert.

Acoustic monitoring helps The Beeches to monitor residents during the day and especially at night in a non-obtrusive way, without going into their room unless support is required.

It enables night staff to monitor residents, and provide direct support to those who require it, whilst not disturbing residents who are sleeping comfortably and safely. Traditionally night staff would go into each resident's room on a routine basis to physically check on them – often triggering a light to go on and disturbing residents who were sleeping.

Night staff can hear and see what is going on in a resident's room when the acoustic monitoring system is set. Individual sleep patterns are set and recorded (based on initial tracking of normal sleep patterns for that individual which were established during the first months of usage). If that pattern changes, it alerts the staff. Residents can also call out and ask for support, which also raises an alarm for staff.

A sensor is fitted in every room and, during its first weeks of operation, it monitors the normal sound patterns in that resident's room. When any sound profile exceeds its individually set threshold, an alert is sent to a central station or forwarded to a mobile device. The alert and the response to it is recorded on the mobile care monitoring system. This ensures a rapid, and well-documented, response.

Further information

[The Hubble Project: Parkhaven Trust webpage on Digital Social Care](#).

[Acoustic Monitoring by CLB/Adaptive IT Solution - website](#)

http://www.adaptiveit.co.uk/acoustic-monitoring-healthcare/

Mobile Care Monitoring by Person Centred Software

Parkhaven uses a range of Mobile Care Monitoring products to provide comprehensive evidence of care, care planning and a reporting system. Care staff use the Care App installed on work-issued mobiles to quickly write up daily records, health care notes and observations such as weight, height, BP, SPo2. They can also be used to communicate issues at handover using graphics and text.

The Care App is connected to Care Monitoring - a web application for team leaders and managers - which uses information from the Care App to track important actions, add planned care, monitor the effectiveness of care and improve the management of care delivery. Digital Care Planning tools also enable staff to view and amend care plans centrally or on the handset, ensuring that all colleagues have access to the most up-to-date care plan.

The biggest benefit of the mobile care planning system is that it saves staff time. It reconciles information in real time.

The mobile care planning system allows staff to spend more time delivering support directly to residents, and enables managers to identify and respond more immediately to any developing issue with a resident as their care plan is updated in real time.

Traditionally staff spent about 30 minutes per person at the end of their shifts trying to recall and update paper care records, and there was no transfer of data into a system to provide a bigger picture of what was happening with that particular resident, or across the service. Managers typically spent about 90 minutes per person per week on this task.

With the mobile care planning system, care workers update the care plan in real time. This also makes handover much more efficient as staff coming on the shift can review resident's care plans quickly.

The system also triggers 'flags' or concerns. For example, if someone is losing weight it will prompt the care manager to investigate and act on it.

The mobile care planning system links information and data about individual residents into one place.

The Beeches use Ascom devices to evidence care using Person Centred Software's icon-driven mobile app in real-time. Ascom devices are robust and water-resistant and designed specifically for healthcare environments. Ascom is PCS's specified device as its clinical grade and supported until 2026 – however the Care App will work on other Android devices.

> *"Evidencing care digitally is so much better than on paper. For instance, on paper managers had to look through folders and pieces of paper to track a residents' weight loss to see if something had changed. Now, everyone can see changes minute by minute, and receive automatic dashboard alerts if a resident's weight drops. I can see from my desk in real-time if a resident has eaten, what they've eaten and what their mood is.*
>
> *"I feel confident that we're providing robust data security with Person Centred Software's system."*
>
> Kim Crowe, Chief Executive, Parkhaven Trust

The system also ensures that the home has up to date care plans and records which can be analysed and evidenced during CQC inspections.

Further information
Visit The Hubble Project: Parkhaven Trust webpage on Digital Social Care.

Website: https://personcentredsoftware.com/gb/products/care-monitoring/

Resources and links

[The Hubble Project](#)

Access information from all three services involved in The Hubble Project.

[The Hubble Toolkit](#)

Guides and templates to help care providers to introduce tech-enabled care including:

- Business case template
- Project management guide
- Project plan template
- Writing a tech specification
- Tech supplier checklist

Care providers can download and adapt these resources to meet their own needs.

[Digital Social Care](#)

Digital Social Care is a dedicated space to provide advice and support to the sector on technology and data protection.

[Suppliers of tech-enabled care](#)

The Care Software Providers Association (CASPA) has a list of many tech and data software suppliers.

[The TEC Services Association (TSA)](#)

The TEC Services Association (TSA) is the representative body for technology enabled care (TEC) services.

[National Care Forum](#)

NCF is the membership organisation for not-for-profit organisations in the care and support sector. NCF delivered The Hubble Project as part of NHS Digital's [Digital Social Care Pathfinders Programme](#).

Contact the NCF Hubble team

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