∴ atamate

Children's Home

The Client

The <u>Lighthouse Pedagogy Trust</u> is a charity who provide safe, nurturing homes for children in care. Starting as a derelict old people's home, the trust has produced a warm, light and welcoming environment for the six 12-17 year old children, and an independent flat for two 16+ care leavers.

The Problem

Providing a secure, safe comfortable environment for the young people and their carers while keeping capital build costs and ongoing operating costs as low as possible.

It was important that the end result looked as little like an institution as possible, and the addition of Atamate into the design had to be low impact.

Any solution had to be easy to use for all residents, and have the capability to be flexible depending on the needs of the occupants. Ensuring the ongoing safety of the residents was of paramount importance.

AT A GLANCE

Location	Sutton, London
Project Description	Control of services and entry for a London children's home
atBOS Control Apps	Metering, Heating, Lighting, Ventilation, Entry (including Intercom)
atBOS Cloud Apps	Analysis, Alerts, Responses, MessageMe
Mechanical systems	Air source heat pump Zonal underfloor heating Zonal Far infra-red heaters Demand controlled ventilation Mechanical extract ventilation Exhaust air heat pump Dimmable (DMX) and non-dimmable lighting NFC entry for all internal and external doors Internal & external intercom

The Atamate Solution

Atamate provided mechanical services design consultancy alongside the provision of the Atamate Building Operating System (atBOS).

REDUCING COST AND COMPLEXITY

Using atBOS meant that the client could simplify complex mechanical systems to reduce capital and operating costs.

Heating on the ground floor is provided by zonally controlled underfloor heating coming off an air source heat pump. On the first and second floor, electric far-infrared heaters are used to provide occupancy based, fast response, easily controlled heating in bedrooms and ensuites. This not only removes the need for a wet heating system, but also reduces energy use. The Atamate HAZE switches are installed on the upper floors and are used to control lighting and as a Boost for the heating. The managers are able to set the temperature of both the regular set point and the boost set point.

Demand controlled ventilation is used throughout the building to provide optimum airflow and indoor air quality while avoiding any unnecessary losses caused by over ventilation. This method of ventilation is controlled using the indoor air quality (IAQ) data (CO_2, VOC, temperature and humidity) and occupancy. Rooms are ventilated only when the IAQ is below a set point. This reduces the amount of energy used to ventilate, and reduces heat losses. Up to 50% of heat loss can be due to ventilation in eco builds, so not over-ventilating has a significant impact on heating design and energy consumption. The Demand Controlled Ventilation (DCV) extraction is connected to two exhaust air heat pumps. Exhaust heat from the ventilation system is used to provide hot water throughout the building.
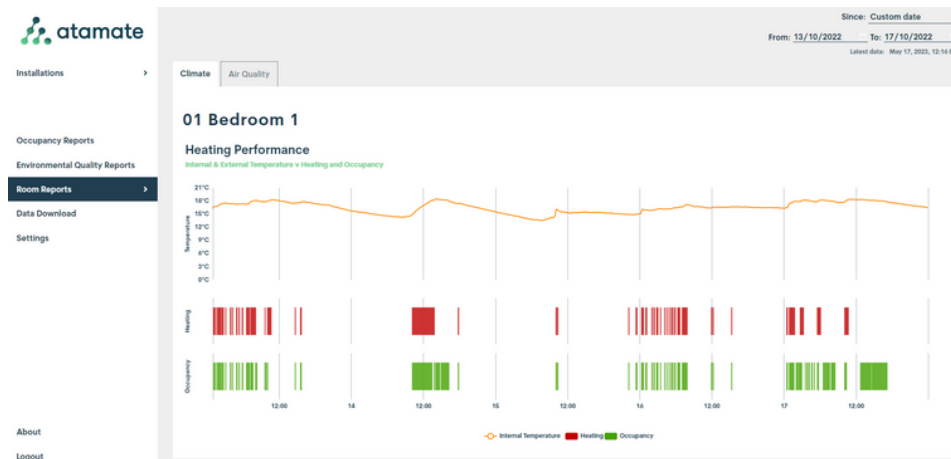

Figure 1. Heating zones based on occupancy ensures that the temperature is kept at a comfortable level, and energy is saved by not heating areas that are not in use.

Image 1. Bedrooms use infrared heaters and demand controlled ventilation to manage climate and air quality. Dimmable DMX lighting is also incorporated in atBOS

SIMPLICITY

All lighting throughout the building is controlled by atBOS. DMX dimmable lighting is used in all living areas and non-dimmable in ensuites and other areas. Lighting is controlled using both switches, encoders and Atamate HAZE switches which are also used to boost the heating.

At the front door the intercom is programmed to call staff mobiles and tablets so access is both simple and controlled.

IMPROVING RESIDENT SAFETY

All doors, internal and external have an NFC (near field communication) pad installed so access can be managed and monitored. Residents can use either NFC cards, key fobs or 'discs' to gain access to rooms. atBOS Entry control allows different users into different areas. e.g. staff have 'access all areas', whereas younger residents have access to their room and some common areas, and older residents have access to their rooms and different common areas.

Using atBOS entry allows each occupant access without the need for physical keys. This is very convenient and gives better security for the young people. Records are kept of when and how often the door is opened, information which can be used to track attempts at unauthorised entry. Information on access is kept for 30 days on request of the client. It is simple to set up a new NFC tag if lost or to change its access rights i.e. which rooms/doors it opens and when it starts and expires. All NFC readers have anti-tamper measures in place.

Figure 2. atBOS Metering gives granular usage data on individual circuits for an individual flat or across the whole building
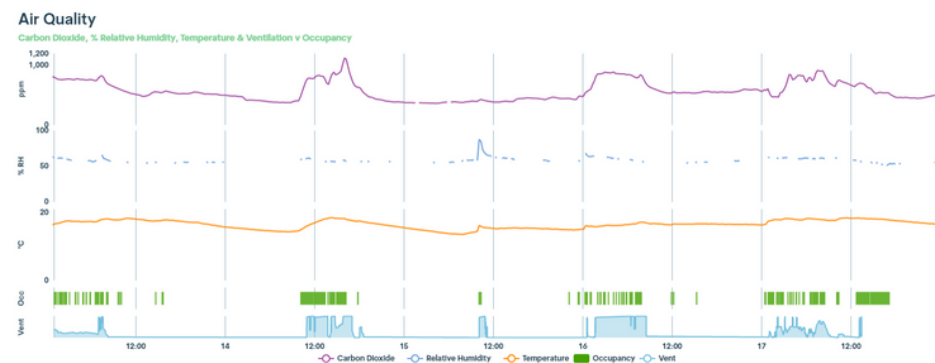

Figure 3. Average patterns of energy use can be viewed on a daily, weekly or monthly basis and as a total used

Using atBOS has allowed the client to avoid the need for night staff who have to be awake all night. There are door sensors on all residents' rooms. If any of the residents doors are enabled, using atBOS Responses, an audible alarm sounds, the lights in the staff sleep-in room come on and the HAZE switches flash red. This ensures a fast response time while allowing staff the peace of mind to sleep. Simple on/off switches are provided to disable the Response and silence the audible alarm.

The Result

Using Atamate has allowed this client to provide a safe, secure and healthy building for vulnerable young people. The key to success was reducing complexity of mechanical systems needed for a sustainable residence and ensuring that the operation of the building was simple while providing the bespoke features that improve resident and manager safety.

DOOR RELEASES					
Door Release	Common Access	Keypad	Open Time (s)	Tamper?	
(1-1-DOORR1) Electrical Cupboard Door Release 1		✓	3		EDIT
(1-2-DOORR1) Plant Room Door Release 1		✓	3		EDIT
(1-3-DOORR1) Plant Room Door Release 1		✓	3		EDIT
(1-5-DOORR1) Ground Bunkroom Door Release 1		✓	3		EDIT
(1-6-DOORR1) Basement Stairwell Door Release 1		✓	3		EDIT
(1-7-DOORR1) Ground floor stores			3		EDIT

Figure 4. atBOS provides a simple Entry solution using NFC or keypads. Access to zones easily can be controlled and monitored.

**For more information or to get in touch about this project, please call
01865 920101 or email us on info@atamate.com**