Prefect

Cleverly simple
control of energy.

irus

Central control
building energy management system

Take control of **Energy, Safety, Compliance, Maintenance and Welfare**
with a system **designed specifically** for **student accommodation.**

The provision of student accommodation presents many challenges. Safety, comfort and affordability being top of the list.

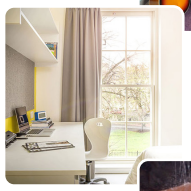
Since 1997 we have been developing products and systems specifically for this sector.

Our core focus is to help our customers provide comfortable accommodation, conducive to study while **avoiding using energy unnecessarily.**

Prefect Irus is a centrally controlled building energy management system, initially designed to monitor and manage energy consumption at point-of-use. Over time, software development and the employment of additional devices has expanded the capabilities of the system. It now encompasses control and monitoring of individual room heating and environmental conditions, water heating, leak detection, water wastage, and kitchen safety.

Energy and accommodation managers maintain comfortable environments remotely via a secure internet portal. They are confident of efficiency, knowing that energy is only being consumed when needed.

Room heating control



Environmental conditions

Water heating

Leak detection

Water wastage

Kitchen safety

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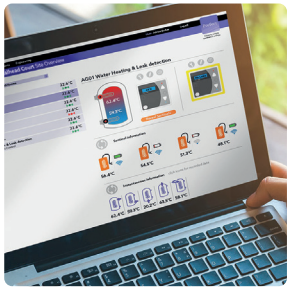
ROOM CONTROL

The 3-Stage profile

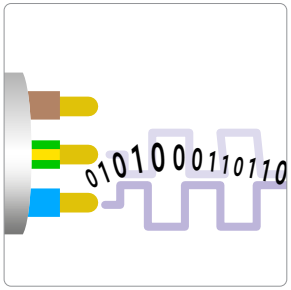
Temperature and time settings are programmed on the portal for three states - **Boost**, **Setback** and **Frost/Off**. Room occupants have control over their environment but only within these set parameters. **Setback** keeps the room at a comfortable temperature. If more heat is required the 'UP' button is pressed to enter **Boost**. When the time elapses **Setback** engages.

If the occupant leaves the room while **Boost** is operating, the PIR detects absence and reverts to **Setback**. When a room is empty for longer periods **Frost/Off** state is activated. This means a minimal heat input to avoid damp or frost in the room. When either button is pressed again **Setback** resumes.



Internet based portal

The user friendly, intuitive web based portal provides access to the system and control from anywhere with internet connectivity. Managers have complete control of individual environments without ever having to set foot in a room.



Mains Borne Signalling (MBS)

The system uses the existing electrical circuits within the building to transmit data via the Earth and Neutral wires. MBS makes installation quick, on average just 45 minutes per room, negating the need for data cabling or extensive interference with the building's infrastructure.

Window-open technology

If windows or doors are opened, the control unit will detect a sudden drop in temperature and Irus will reduce heat input. This prevents thermostats from being set to maximum and left on while heat escapes outside.

Electric or 'wet' systems

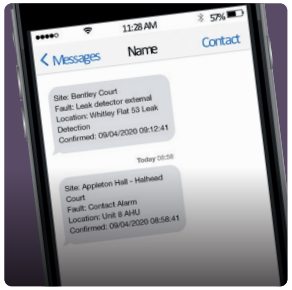
Irus is compatible with both **electric heaters** and **'wet'** radiators making it ideal for retro-fitting to existing heating systems or new-builds.

EnergyLock

Our patented key enables 'no controls' electric panel heaters and fluid-filled radiators to be installed that comply with LOT20 legislation.

Student welfare

It's not all about energy savings with Prefect Irus – light, humidity, CO_2* and sound pressure levels are also monitored. This means issues such as damp, noise, air quality, failed lamps or illicit cooking are reported before they become a major problem. Alerts are sent by text or email and appropriate action can be determined. *(*Optional)*



Maintenance

Maintenance staff are sent email and/or SMS messages so they can pinpoint works that need to be carried out. From changing a light bulb to major leaks in hot water tank housings. Irus identifies the fault, generates the message, records and reports data to build up a minute by minute log of the issues found, and actions taken.

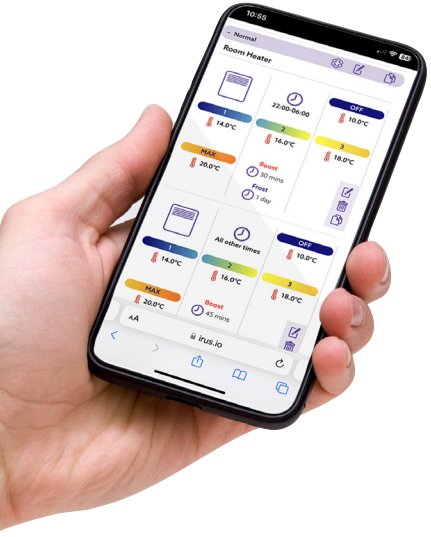
ROOM CONTROL

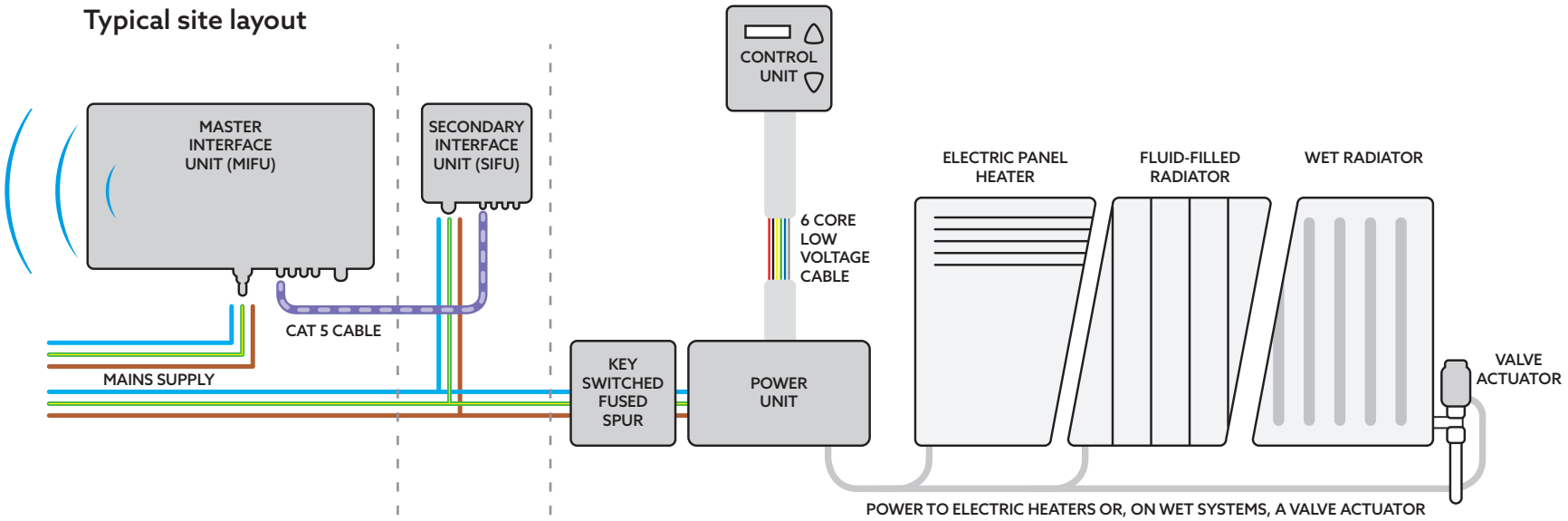
The diagram illustrates a typical layout for the Irus hardware. Data is transferred between the room controller and Secondary Interface Unit via the Earth and Neutral wires of the existing electrical circuits. The SIFU boosts the signal and sends the data along Cat. 5 cable to the Main Interface Unit. The MIFU processes the data, returns instructions to the controllers, valves and any connected devices. Information from the MIFU is then presented to the Irus Portal.

Installation and Commissioning

Installation is quick and efficient, usually 45 minutes per room. When all hardware fitting is complete, one of our Project Managers will install the MIFU, test and commission the system. Time and temperature parameters, or profiles, are set, and the project is complete.

Typical site layout





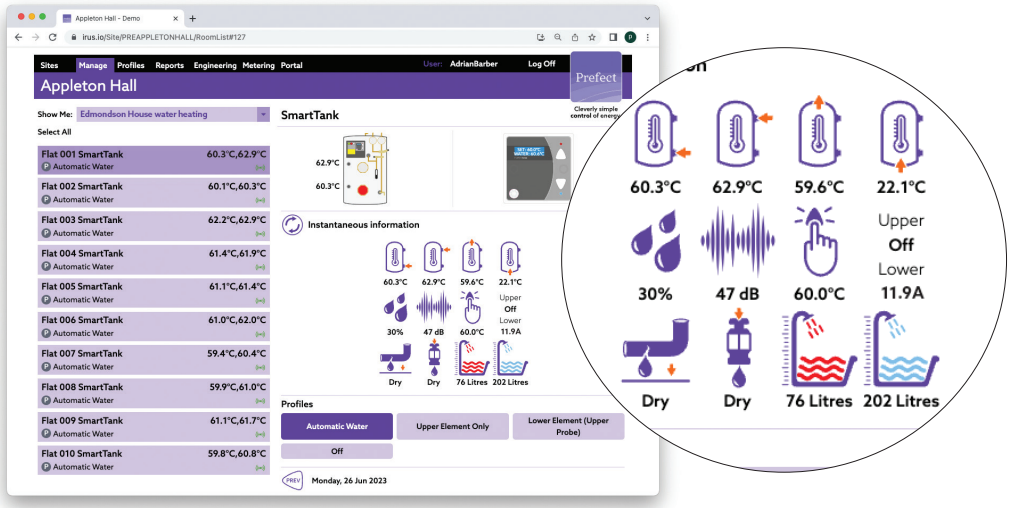
One MIFU is required for each site and is usually located in the Comms. Room.

An SIFU is usually required for each floor/ring.

A Control Unit, Power Unit, and Key Switched Fused Spur is required in each room along with a 'no-control' heat source.

Water control

Monitoring the volume and temperature within a hot water system provides data that is used to develop strategies for efficiency. Irus SMART Tank is the ultimate hot water control which monitors volume of incoming and outgoing water, and the temperature of incoming cold, outgoing hot and the water within the tank around the upper and lower elements. There is a temperature sensor for return water, if required and it also alerts to water flow through the tundish and connects to leak detection pads.



Reporting

Information is easily exported from the Irus Portal and is used to produce many and varied reports/displays of real-time data regarding consumption of both water and energy.

All temperatures are recorded, and this effectively compiles a log of evidence to prove compliance with water safety plans to guard against Legionella.

Installation

SMART Tank is the only pre-plumbed, pre-wired hot water cylinder with on-board controls.

Pipework, wiring, meters and sensors are all factory fitted. Mechanical installation is simply connection to the mains water and cold/hot pipes. Electrical wiring requires connection to the incoming mains supply and cylinder elements.

Factory fitting, testing, and quality control means all tanks can be installed identically ensuring consistency across the entire site.

Retro-fit water control

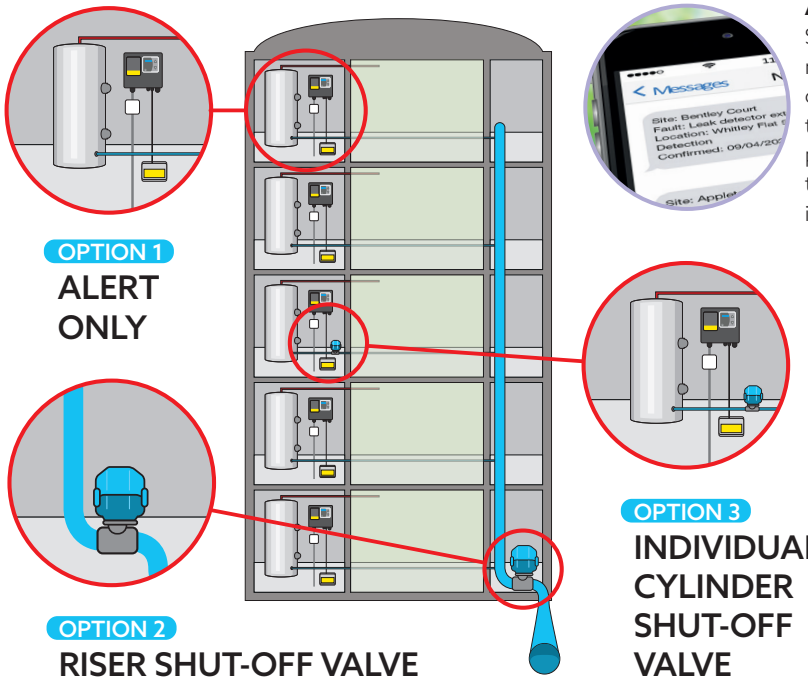
For situations where new tanks are not required there is a hot water tank kit that includes sensors for attachment to existing tanks. The kit also comprises a power unit and all necessary hardware, leads and a control unit for connection to the Irus system.

Leak detection and Water wastage

Leak detection

Irus keeps buildings safe by monitoring leak detection pads and pipe sensors, and automatically sending alerts while closing off water supply. In the vicinity of hot water cylinders, in kitchens or under shower pods, wherever there is potential for water escape, Irus will keep watch.

There are three levels of action that can be taken to minimise damage when leaks occur. For all options, leak detection sensors are positioned where leaks are most likely to occur. in the event of a leak the Irus Portal sends an alert in the form of either email, SMS or both, to designated addresses and numbers detailing location and intensity of the incident.



Alerts

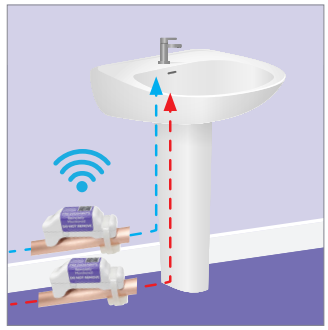
SMS or Email messages or both, are sent to designated personnel detailing the location and intensity of the leak.

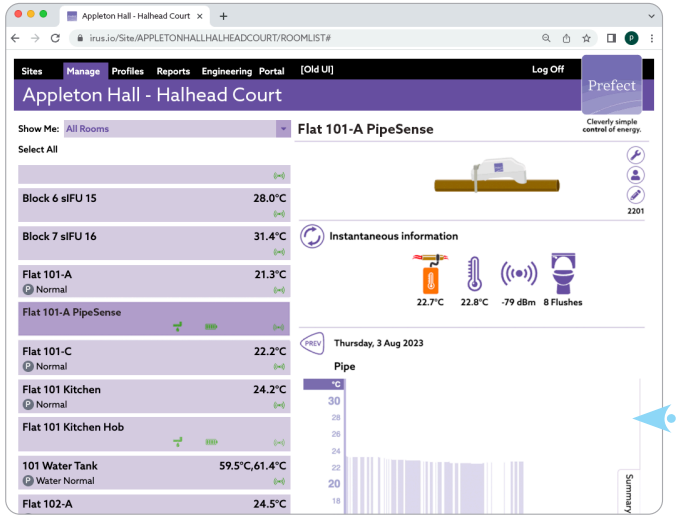
Water wastage and temperature monitoring

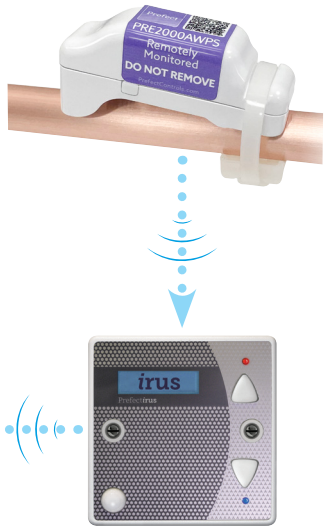
Saving unnecessary consumption of water can have a significant effect on the bottom line of businesses that provide multi-occupancy dwellings. If left unchecked, dripping taps and faulty cisterns are major contributors to significant water wastage. Remote temperature monitoring takes the legwork out of water safety testing.

PipeSense

PipeSense has two sensors, one for pipe temperature, the other, room temperature. Any differential between the two readings signifies water flow. This could be as little as five litres per hour. When attached to water outlet pipes, PipeSense reads and reports water temperature





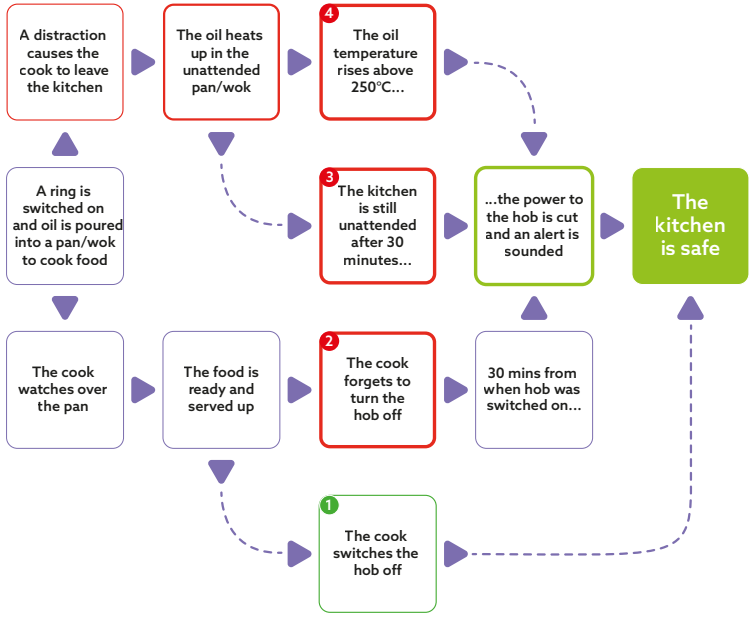


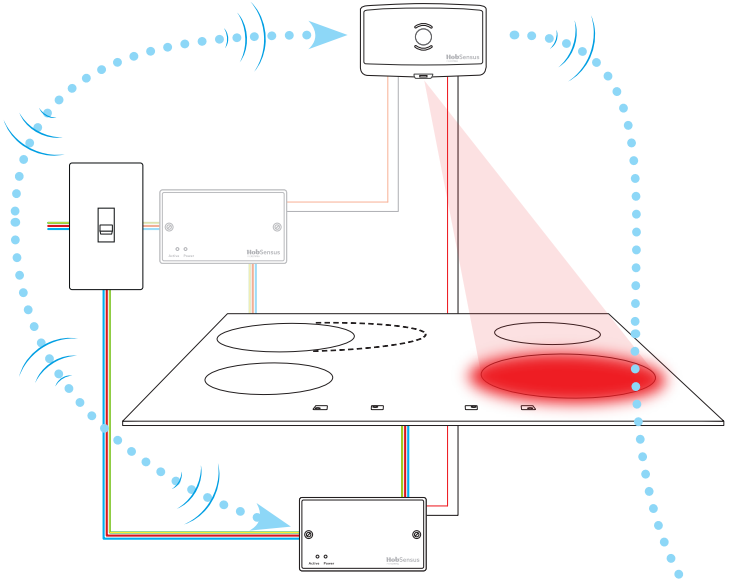
Hob safety

Making kitchens safer

HobSensus alerts residents to unattended pans on a hob. The Sensor Head monitors the cooking surface and if the temperature approaches a dangerous level, the power to the hob will be cut.

Likewise, if the kitchen is left unattended while the hob is switched on even, if the surface doesn't reach dangerous temperatures, after the pre-set time* elapses, the hob will be made safe by the power being turned off.

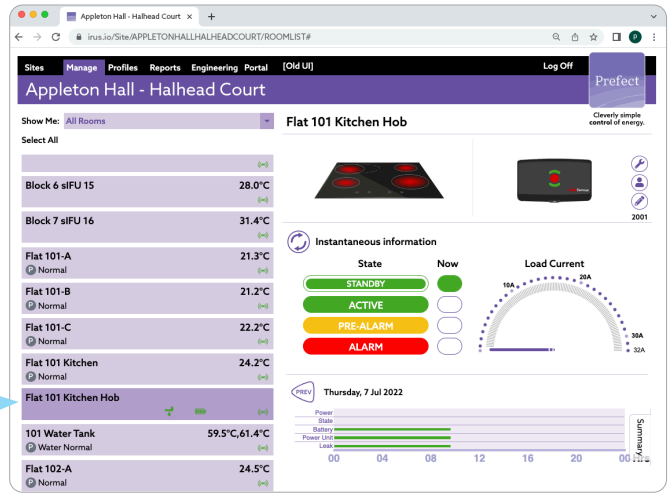




Installation and operation

The Sensor Head is affixed to the wall behind the hob. The Power Switching Unit is installed close to the isolator switch, either on the wall or below the hob in a kitchen cupboard.

Bluetooth technolgy provides communication between the two units, and to the closest Irus control, thus linking it to the portal.



Reporting

The portal enables remote monitoring of each HobSensus unit to show;

- **Current state**
- **Standby**
- **Active**
- **Pre-Alarm**
- **Alarm**
- **Tamper status**
- **Setting switch position**
- **Real time current flow**
- **Signal strength**
- **Battery level**
- **Leak detection**
- **VFC status**

* Pre-set time - 15, 20, 30 or 120 minutes

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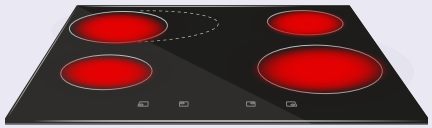
System overview

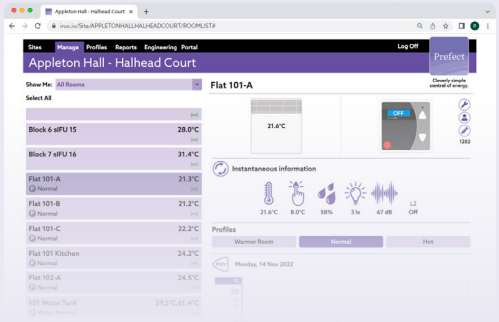
Irus is a building energy management system, centrally controlled via a dedicated, secure internet portal.

Room Heating Control and Environmental Conditions Monitoring

Hob Safety Control



Central Control



Water Monitoring, Heating and Control

Leak Detection and Water Wastage