

ISG's Performing Places:

An operational performance system

ISG

Creating transformational places for our clients and consultants, providing an unbeatable customer experience





Why is operational energy performance important?

Until now, limited attention has been paid to how buildings perform once in operation and how as an industry, we can help to ensure that they achieve maximum efficiency in use.

Organisations are experiencing increased pressure to achieve 'Net Zero Carbon', ahead of the 2050 deadline. This has reinforced the importance of not only managing carbon in the construction of a building but also in its operation and maintenance. Research by the UK Green Building Council has shown that all buildings will have to operate to stringent low energy in use (EUI's) targets, typically achieving a 60%-80% reduction compared to current performance.



What is ISG's Performing Places?

In support of creating places for people and businesses to thrive, ISG's Performing Places is an operational performance system; a service we provide to clients to support their effective day-to-day running of their building/estate to maximise performance. This covers energy, carbon, water, ventilation, and comfort conditions.

To support Net Zero Carbon in operation, the system:

- Monitors a building's energy performance through sub-metering
- Compares it to predicted 'in-use' energy targets from the thermal model
- Provides diagnostics as to how to achieve operational efficiency.

How does ISG's Performing Places work?

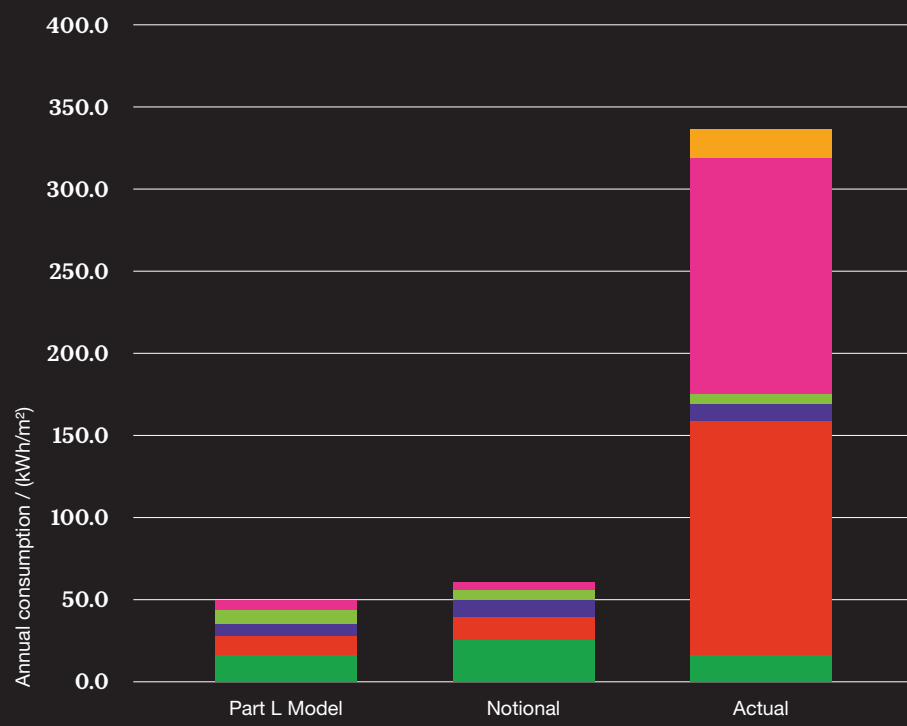
ISG's Performing Places monitors a building's performance by extracting data via intelligent metering and building management systems. We have partnered with Synapsys, who provide Synapsys SIP+ interface devices which connect to our clients metering and controls systems. Performance data is then displayed on an interactive dashboard using the Synapsys, Energy Building Information Software (EBIS). The process works as follows:

1. An energy target for a meter, system, or the total building is generated from the design and thermal modelling of 'in use' performance.
2. This provides a prediction of what the building's energy consumption should be. This prediction allows ongoing comparison against the actual energy usage.
3. With permission, ISG and Synapsys monitor a building's in-use performance and will provide diagnostics of operational performance, compared to the design intent, and recommendations for improvement. This could cover operational settings, occupancy patterns, maintenance regimes or changes in HVAC, controls, and lighting systems
4. The system enables building operators to receive intelligent messaging on their building's performance and energy consumption.
5. A quarterly report can also be requested which will provide information on how to improve a buildings Net Zero Carbon performance.
6. If the building is not performing in line with predicted energy targets, the EBIS system will automatically generate alarms, allowing diagnostics to identify the source of the problem. This will support the building management team/operators in addressing areas where equipment is not being used to its optimal performance, and potentially areas of the building which are currently being under-utilised.



Example of an output report that looks at performance against design intent of Net Zero Carbon

Part L Model versus actual energy use



- Heating (elec GSHP)
- Heating (gas)
- Hot water (gas)
- Cooling (elec)
- Fans, pumps, Controls (Auxilliary)
- Lighting
- Office Equipment



An operational database

The Performing Places interactive dashboard can be developed to have a built-in database that provides engineering and maintenance contacts that clients can use to rectify any issues. It is also possible to provide operation and maintenance guides for in-house users, linked to the BIM model. Ultimately, we strive for the Performing places system to provide intelligent messages to building operators on how to improve the energy efficiency of their building on a real time basis.

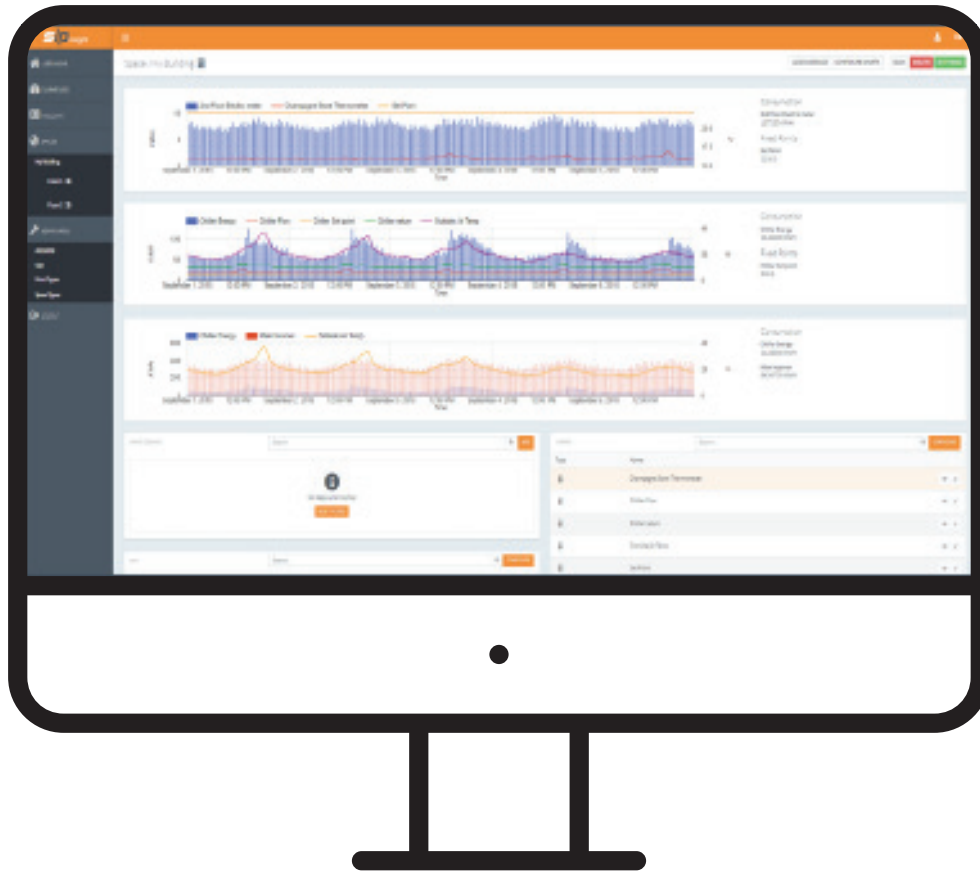
Performing places, allows the ISG team to provide confidence to clients that their building or wider estate is operating to maximum efficiency, and that they are on track to meet their Net Zero Carbon targets.

Costs:

To install a SIP+ device to monitor a building costs approximately £3,000 and is often installed by clients who want the ability to externally monitor their buildings.

The ISG team will then use the EBIS software to analyse your buildings performance and provide quarterly reports which can range from £10K to £30K per annum depending on the size and complexity of your building.

EBIS user dashboard





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