

## RDF UPS and Inverter Systems for the Base Building at the Manchester Science Park.



Lighting-Power-Control



*Image: Base Building, Manchester Science Park*

Opening spring 2022, the £21m, 91,000 sq ft “Base” building at Manchester Science Park will be a hub for Industry 4.0, computer engineering, energy technology and low carbon, robotics, light manufacturing, materials science, gaming, and animation businesses. It will also be home to the Manchester Innovation Activities Hub (MIAH).

Located next door to the University of Manchester and the UK’s largest NHS Trust, Base provides a secure location, meeting rooms, roof terrace, event space, car parking and secure cycle storage, and 100GB ultra-fast broadband connectivity.

Early in the project planning phase, RDF Lighting Power and Control were contacted by Vaughan Engineering to provide a UPS solution for backup power for the building’s central IT servers, and a static inverter for backup power providing lighting for the whole building in case of emergency.

RDF, together with Vaughan identified the lighting load would require a static inverter with the ability to provide 3-hour duration for up to 3kVA, or 2.4kW. This meant that the perfect solution would be our Maxi Power Pro inverter from our RDF SI-Pro inverter range. These pure sine wave inverters are compatible with all types of 230V AC lighting. They are provided with multiple output circuits built-in and space inside the unit to house the 8-x long life Power Pro 135Ah batteries per the image below.

The next challenge was to provide a UPS system that matched the requirements of being rack mounted within the IT server space whilst also having N+1 configuration to ensure backup power is still provided even if there is a UPS or battery string failure.

RDF Technical Director, Rob McGuire explains. "In order to provide an N+1 system, with very high efficiency requirements we were able to select our rack mount Powergem plus series which has the ability to link several UPS systems where they are electronically locked to ensure the output phasing is synced between them. Subsequently, should any single rack UPS or battery fail then the other units automatically provide the full rated power backup requirement when necessary."

Both the inverter and UPS solutions have been delivered February 2022 ready for the opening of the building in the next few months.

Our RDF Si-Pro range of inverters are fully compliant to BS EN 50171 and designed to provide cover for emergency and standby lighting for loads up to 3000VA, with the smallest system providing 3 hours of cover for loads up to 400W or 500VA. Everything is contained within a single compact enclosure including 12-year VRSLA batteries, inverter, battery charger, control and alarm interface and a 6-way distribution output. The inverters can be configured to match the load requirements including changes to output distribution, controls and alarms, battery requirements and inrush needs. This configuration flexibility provides cost savings for the client rather than opting for more costly systems that are unnecessarily over-powered for the required application.

Compliant to BS EN 62040 parts 1,2 and 3, the PowerGem Plus RT is a unique range of high-density UPS systems that can be installed whether on the floor in tower form or in rackmount cabinet configurations powering a wide range of applications. The PowerGem is an ultra-efficient system resulting in improved operational performance up to 97% in ECO mode, 92% in inverter mode and over 90% in battery mode, providing a much greener product with smaller battery and longer autonomy backup times. The range is equipped with the latest digital signal processor (DSP) technology with versatile features demanded by IT managers enabling integration into all types of networking environments.

RDF have a wide range of inverters and smart addressable central systems for emergency lighting applications as well as a range of UPS systems for other back up power requirements.