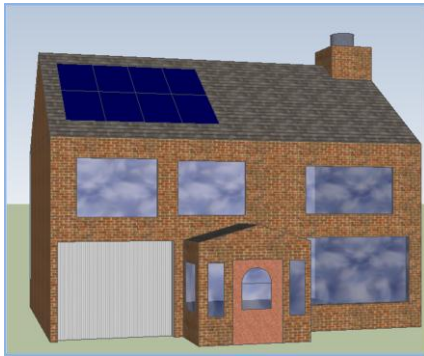


# Photovoltaic System design and monitoring



## Narec Distributed Energy

Distributed energy (also known as decentralised energy or embedded generation) is the supply of energy (electricity or heat) through a system of multiple small scale generators; with the energy produced generated close to the point of use. These energy systems tend to utilise renewable and low carbon technologies. Narec Distributed Energy (a business unit within the National Renewable Energy Centre) brings hands-on experience of deployment of these technologies through practical installations. Our independent technical insight and in-depth knowledge of the support available for low carbon projects enables Narec Distributed Energy to take a holistic approach to each project.

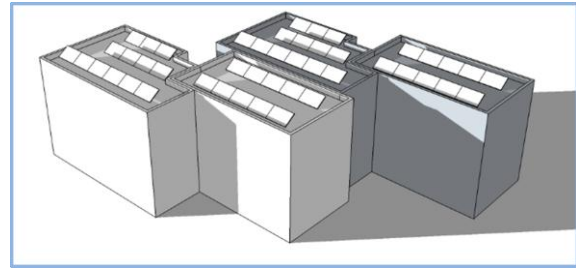


3D model of retrofit 1.96kWp PV system

## Photovoltaic Services

Narec Distributed Energy provides step-by-step guidance and technical support through the feasibility, design, planning, procurement, installation and performance monitoring stages of Photovoltaic system deployment. Narec Distributed Energy utilises commercial scale system design software to calculate energy yield and electrical losses.

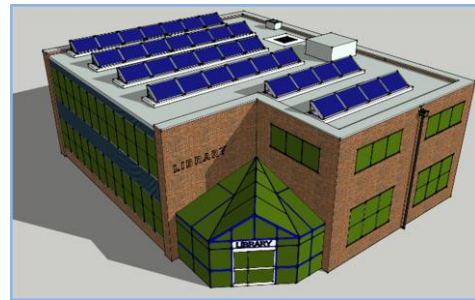
1. Project Planning
2. System Feasibility
3. Site suitability auditing
4. System and hardware proposals
5. Energy Yield Estimates
6. System modelling
7. Electrical Design
8. Liaison with District Network Operators
9. Mechanical Design including mounting
10. Bill of Materials
11. Assistance with procurement of MCS installers
12. Installation quality checking
13. System performance monitoring



Solar Shading 3D analysis

## System design examples

Narec Distributed Energy can develop a 3D model of the building and its surroundings using existing drawings or measurements taken during a site visit. The model provides the capability to calculate the optimal layout of PV modules, analyse of shading effects from surroundings and provides an excellent visualisation tool of the proposed array useful for planning applications.



Solar Shading 3D analysis

## Project examples

Narec Distributed Energy has successfully completed designs for retrofit of several large scale commercial installations within the North East as well as many systems for domestic housing.



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