Naked Energy

System Design

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- System design

At Naked Energy, we take a whole system approach to decarbonising heat

Our System Design solution helps clients plan and deliver low-carbon energy systems from the initial concept through to final handover.

Modern energy systems often integrate multiple technologies together such as solar thermal, heat pumps, boilers, and thermal storage. Each has its own design specifications, performance characteristics and control logic. Without a coordinated strategy, integration can lead to inefficiencies, needless expenses, and lost opportunities for carbon reduction.

Our System Design service brings everything together in a single, integrated process. We create bespoke designs that ensure every technology communicates and works effectively together. Tailoring system design to the building, available space, operational needs and energy profile, rather than applying a one-size-fits-all approach. The unique design of our Virtu solar heat and power collectors allows us to maximise efficiency where sites have limited roof or ground area.

Our engineers handle everything from dynamic energy modelling to detailed design and documentation. We don't just provide input to hydraulic design; We can also deliver the entire designed solution, whether a plant room or industrial energy centre to meet your energy strategy needs and technical input to the entire project, including wind loading and structural analysis, M&E installation works and controls or BMS upgrades where required. When we are appointed to design your system, the result is a turnkey solution.

We have delivered system designs across hospitality, healthcare, leisure, industrial, commercial as well as multi-dwelling residential projects. With practical design across different industries, we understand how to integrate technologies effectively and how Virtu solar thermal can complement other heat sources to maximise renewable contribution and reduce operating costs.
By considering the entire energy system rather than a single component, we help clients achieve genuine decarbonisation, not just equipment upgrades.

Our in-house design team delivers end-to-end support, giving clients one partner from concept through to completion. This reduces uncertainty, improves coordination, and ensures performance targets are met at every stage

Our System Design team works within the guidelines of the Royal Institute of British Architects (RIBA) Plan of Work from 2020

RIBA

Strategic Definition	The best means of achieving the Client Requirements confirmed
Preperation and Briefing	Project Brief approved by the client and confirmed that it can be accommodated on the site
Concept Design	Concept approved by the client and aligned to the Project Brief
Spatial Coordination	Engineering information Spatially Coordinated
Technical Design	All design information required to manufacture and construct the project completed
Manufacturing and commissioning	Manufacturing, construction and Commissioning completed
Handover	Building handed over, Aftercare initiated and Building Contract concluded
Use	Building used, operated and maintained efficiently

The process

System design stages

01 Concept development and energy modelling

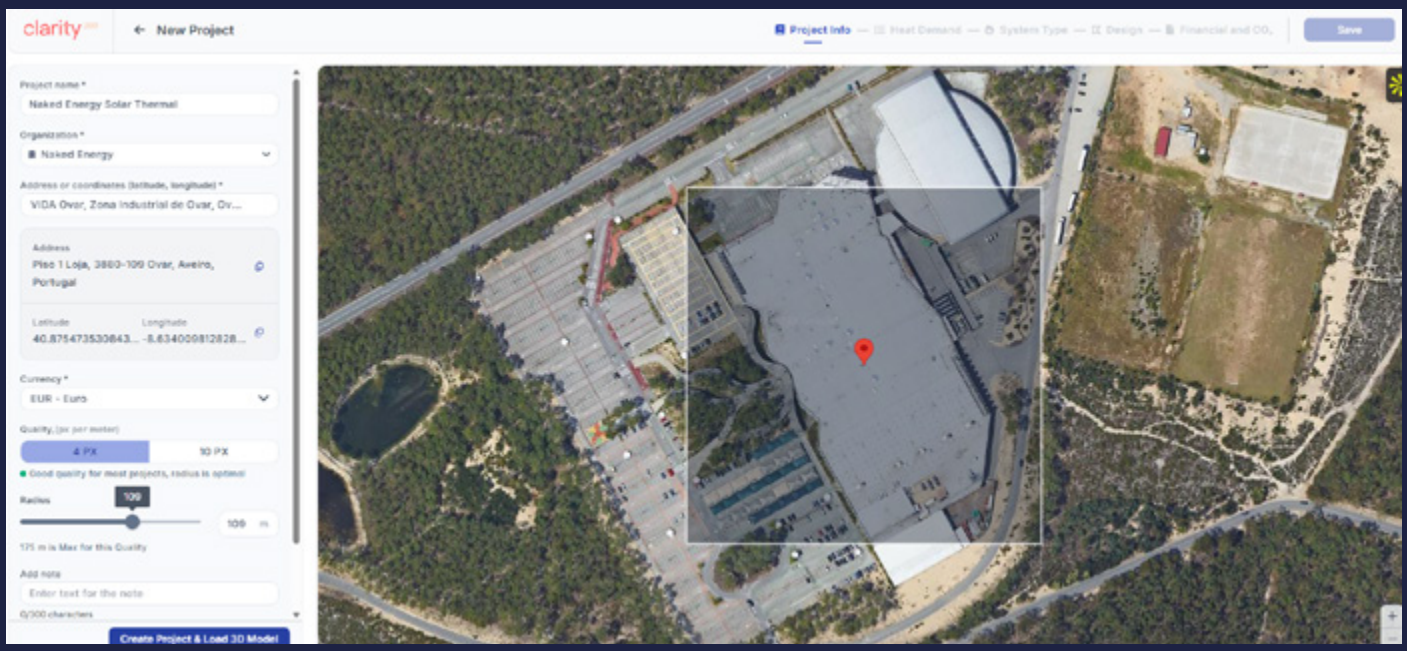
At the initial development stages, we assess energy demand, expected performance and costings by modelling various design options using programmes like Polysun & Energy Pro. Utilising this alongside the output from our in-house modelling platform Clarity^{360} for Virtu, we ensure the most accurate simulation of system performance.

Where site operational data is available, we can further refine the demand profile and match it with our generation profile. This gives the most accurate system model that can be achieved and supports confident design and investment decisions at the early stages of development.

02 Holistic system integration

As part of the system modelling workflow, we create design solutions that integrate various technologies with our Virtu range such as heat pumps, inter-seasonal thermal storage, combined heat & power and boilers. We can deliver a fully integrated design capturing these technologies within a single package and scope, or we can work with your supply chain to efficiently introduce our system into a wider installation.

Our aim is to ensure the full system works efficiently as one. Through detailed design, we aim to lower operating cost and improve heat generation, by providing a one-stop design and engineering function.


clarity
New Project
Project Info
Save
Project name *
Naked Energy Solar Thermal
Organization *
Naked Energy
Address or coordinates (latitude, longitude) *
VIDA Ovar, Zona Industrial de Ovar, Ov...
Address
Piso 1 Loja, 3880-109 Ovar, Aveiro, Portugal
Latitude
Longitude
Currency *
EUR - Euro
Quality, (px per meter)
4 PX
10 PX
Good quality for most projects, radius is optimal
Radius
109
109 m
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Add note
Enter text for the note
0/300 characters
Create Project & Load 3D Model

The process

System design stages

03

Detailed design

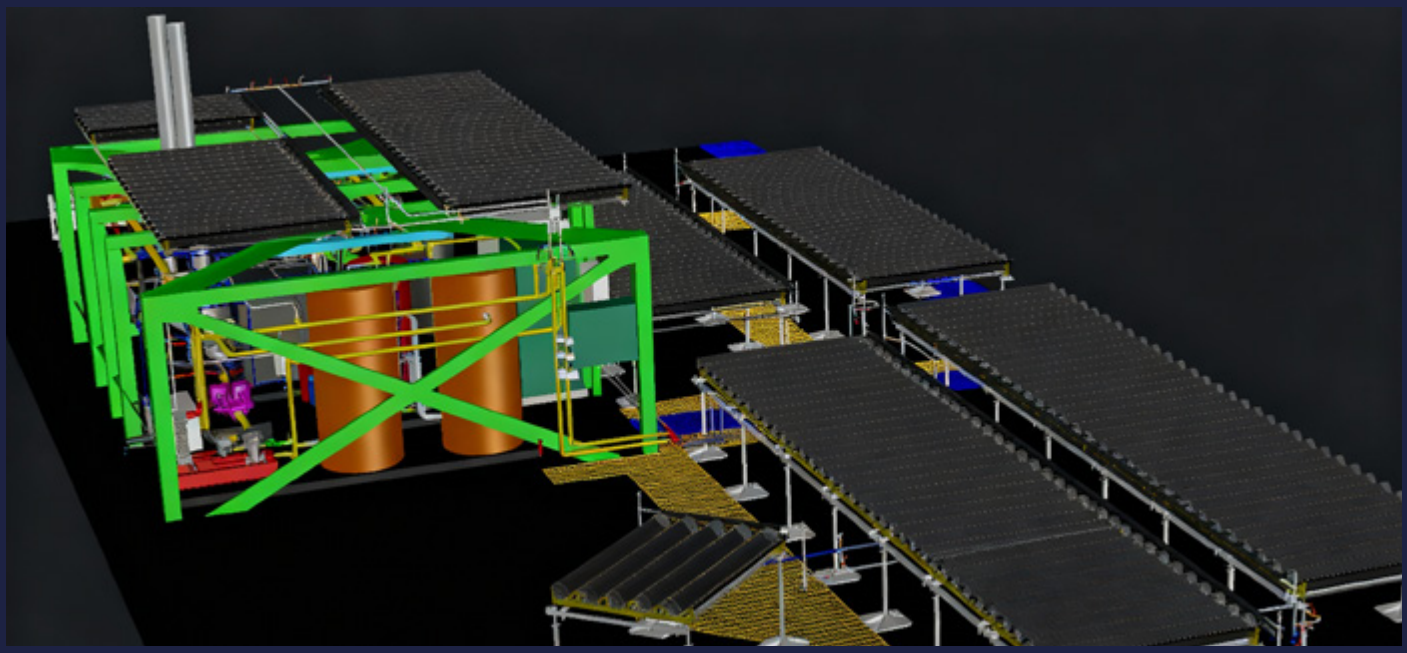
We produce full working designs which can be constructed and installed, with all associated documentation aligned to the relevant standards and CDM regulations. Our design team is experienced working throughout all RIBA stages covering both design and technical development throughout the project lifecycle.

04

Delivery support

To support the installation process, our engineers collaborate with contractors, consultants, and installers during the construction process.
As we have a direct interest in the performance of the solar thermal product, our design team are involved throughout the commissioning and testing phases, supporting with system functionality to ensure performance targets set out within the design are achieved.

Our technical support continues throughout operation through performance analysis using our monitoring platform Clarity[24-7]. Each system has a dedicated interface, allowing our design and technical teams to review live system performance.



Isometric view of a Virtu^{HOT} system integrated into an existing heating system; including numerous secondary and tertiary site equipment, such as pumps, heat exchangers, boiler and various valves and ancillaries.

Working with our O&M team ensures we can optimise the installation against the original design parameters and KPIs specified within the detailed design phase of the project.

We understand that seasonal commissioning is critical for the success of the system, ensuring our clients can achieve the highest financial and carbon savings from their installation.

As the OEM we have an additional invested interest in the performance over the lifetime of the system. Our design and technical teams can provide ongoing assistance once the system is put into operation ensuring the installation controls and operation is fine tuned for seasonal variance. Providing our client's the reassurance their investment is working to it's optimal output.

Technology integration

Bespoke heat solutions engineered for reliability, efficiency and long-term value

We understand that today's energy landscape has shifted and that every project requires a bespoke solution for each application and specific client needs.

What works for one site may not work for another, so each system is designed to meet your needs, tailoring different technologies with our Virtu projects in the most effective way.

This might mean generating domestic hot water or space heating for commercial or district heating applications, process heat for industrial applications and even steam production for manufacturing.

Our systems can also integrate with absorption chillers to provide cooling processes in tandem with heat production, adding further flexibility and versatility of our offering.

Designing modern energy systems often means bringing new and existing technologies together and doing so with confidence. Before a single component is installed, we use modelling tools and in-house expertise to eliminate uncertainty and provide clients with a clear picture of how their system will function.

Our proprietary Clarity[360] software is the starting point for any detailed system design, providing our team with necessary information such as energy generation.

From there, our design engineering team model the interactions between each component of the system using different platforms such as Polysun and Energy Pro, simulating how each element of the system interacts. This dynamic approach allows us to test, refine and optimise performance long before the design reaches site.

At the heart of every design is Virtu, our solar thermal technology. We analyse how Virtu can best serve the wider system working alongside other heat sources such as heat pumps or gas boilers to deliver stable, low-cost, and low-carbon heat. Whether we are integrating into an existing setup or developing a new one, our goal is to ensure each component plays its part efficiently.

By combining precise digital modelling with real-world engineering insight, we create systems that perform exactly as designed reducing risk, saving energy and maximising value over the long term.

Retrofitting and reuse

In many cases, the most sustainable and cost-effective path to decarbonisation is to build on what already exists.

By repurposing boilers, thermal storage tanks or pipework we can reduce waste, cut embodied carbon, and prevent the disruption that comes with starting from scratch. It also means less new material production, transportation as well as faster installation periods.

By combining Virtu solar thermal collectors with either a pre-existing or new heat sources, we can create a hybrid system that lowers carbon emissions without the need for a full replacement. Reusing components minimises waste, keeps capital costs down, lowers emissions and improves system performance.

Environmental

Reduce waste, material usage and carbon emissions

Economic

Keep capital costs down and minimise disruption

Technical

Improve system efficiency and output

Working with Naked Energy

By working with Naked Energy, you'll have one team which looks after the full system design from concept through to completion. By combining technical models, engineering expertise, and on-site delivery support, we oversee the entire process.

We simplify the delivery and management of complicated energy projects by keeping everything in-house. The result is systems that perform better, last longer and reduces carbon emissions.

Experience	We've designed 150+ projects for different applications
Sustainability	Reduce emissions and improve efficiency
Reliability	Proven technology with expert support
Simplicity	One team that looks after the whole journey

Changing energy for good

To speak about your next project, contact:

+44 20 4542 2230
commercial@nakedenergy.com

nakedenergy.com