



**EU INNOVATE**

**SUSTAINABLE INNOVATION IN ACTION:  
THE CASE STUDY “SNAPSHOT” SERIES**

**NOEM**

Creating Sustainable Designer Homes



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[www.eu-innovate.com](http://www.eu-innovate.com)

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## About EU-InnovatE

Between 2014 and 2016, the EU-InnovatE project investigated the potential of citizen innovation and sustainable entrepreneurship to achieve sustainable lifestyles in Europe by 2050. The following is one of a series of case study “snapshots” illustrating how new enterprises are being created by passionate, visionary individuals to benefit society at large.

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### The Case of Noem:

#### Creating Sustainable Designer Homes with Minimal Environmental Impact

*Noem ('no emission' living) designs and manufactures modular houses that are fully constructed from sustainable materials. They are energy efficient and minimise CO2 emissions, both during manufacture and subsequent occupation.*

The company, based near Barcelona, was co-founded by entrepreneurs Rosa Vilarasau and Pol Guiu in 2009, whose aim was to provide clients with prefabricated eco-homes in weeks, rather than the usual protracted timescale associated with conventional construction methods.

Noem consults with its clients to determine custom high-tech features in homes in which the principal building material is timber sourced from local forests. The company offers three house types to potential users and customers:

1/ *Noem Go* – a home that if called for can be moved and re-erected. It consists of a 'Hub' module with all essential facilities and, 'Space', an open module that can be configured to requirements;

2/ *Noem Stay* – a customised, tailor-made, prefabricated home that is energy efficient and sustainable;

3/ *Noem Concept* – a one-off, fully customised home based on three prefabricated modules that can be configured to meet the unique ideas and requirements of clients and the intended site.

#### Collaborative Innovation in Practice

Extraordinarily, neither of the founders possessed a background in construction. Vilarasau's professional experience was in marketing and Guiu's was in mechanical and aeronautical engineering. At one time, however, Guiu had worked in France with wood prefabrication processes where he had become familiar with the construction of energy-efficient buildings. Both founders had in common personal experience of building their own homes and the frustrations of trying to find sustainable building materials in Spain.

Despite a recession in the construction sector during the early stages of the company, Vilarasau and Guiu were convinced that there was a place for affordable housing constructed from renewable materials. They also concluded that stylish modular homes could be built quickly through the merger of prefabrication processes and computer-aided design and manufacturing. A further consideration was to build homes to a fixed price and timescale – an unusual, but welcome innovation in house construction.

As a demonstration of their commitment and passion for their fledgling company and the concept of sustainable housing, they self-financed (a strategy that they maintain to this day) the design and construction of a modest, transportable, modular home. It was submitted and accepted for Solar Decathlon Europe, an inter-university competition to build houses that have minimal environmental impact. Following public interest and exposure during the event, an order was made for the first portable Noem house, which was completed in 2012.

Other commissions followed and in response to customers' housing aspirations, Vilarasau and Pol developed modular permanent buildings, and an attention-grabbing 'spaceship' house that consisted of high-tech, custom-built, modules inspired by the client's vision of a contemporary home. With growing demand, the founders took on an architect and other team members. By 2014, a total of five houses had been completed on time and on budget. Noem has continued to grow steadily ever since.

### **Summary of User-Driven Innovation**

With personal experience of self-build, both founders saw the potential of taking an innovative approach in the design and construction of homes. Vilarasau and Guiu also recognised the merit of working closely with clients at the design stage, aided by the use of 3D software to visualise the internal layout and exterior design of future homes. Giving clients a central role in design enabled Noem to incorporate innovative features and specific requirements from the outset.

### **Influence on Core Business**

The founders of the company could see that there were few options for eco-housing in Spain other than costly one-off projects. This was a gap in the market that Noem could fill. In founding the business, Vilarasau and Guiu were not motivated by monetary gain; rather, each had a passion for creating high-quality affordable modular homes that would minimise CO2 emissions, and be sufficiently versatile to meet customers' immediate and future housing needs. Although the initial stages of marketing emphasised the low-emissions nature of Noem homes, subsequent experience indicated that potential customers were attracted by the idea of eco high-tech houses that could be constructed in a matter of weeks.

### **Cross-Sector Relevance: Top Three Insights**

- High-tech design and manufacturing used imaginatively can challenge conventional methods and approaches, whilst contributing to sustainable outcomes and lifestyles.
- Personal needs, convictions and interests can be the inspiration for entrepreneurs to set up new businesses.
- A gap in the market for specialised and customised products and services can be an opportunity for a startup business.

### **To Learn More About the Case...**

Please contact the lead investigators from the EU-InnovatE research team:

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### **Further Information**

Noem: [www.noem.com](http://www.noem.com)

Solar Decathlon: [www.solardecathlon.gov](http://www.solardecathlon.gov)

ESADE Business School: [www.esade.edu](http://www.esade.edu)

[www.esade.edu/research-webs/eng/socialinnovation](http://www.esade.edu/research-webs/eng/socialinnovation)