



Sustainable housing

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BIOLOGICAL HOUSE IS BUILT FROM UPCYCLED FARMING WASTE



A collaborative project supported by the Danish Ministry of the Environment uses agricultural waste as building materials in sustainable housing.

Increased demands for better use of space and sustainability is leading to innovative approaches in housing, whether that's rapidly assembled [modular homes](#) or equally portable [solar abodes](#), and now a Denmark-based project is focusing on using more sustainable materials for home builds.

The project, led by [GXN](#) in collaboration with design firm [EEN TIL EEN](#) and supported by the Danish Ministry of the Environment plus some forty partners overall, aims to demonstrate the capability of upcycling and sustainability in housing concepts. Beginning from the ground up, the Biological House doesn't require the permanence of concrete; instead the architects opted for screw piles, meaning the homes can be uprooted and moved elsewhere relatively easily and with little land disruption. The majority of building materials were sourced from what is usually considered farming waste. Referred to as 'biowaste' in the farming industry that would normally be sent for incineration for energy production, these materials included the stems from harvested tomato plants, straw, seaweed, wood chips and more. Following many tests for robustness and static properties, the materials were made into a composite boarding used in the walls of the Biological House. The home was then finished with cladding from Norway-based Kebony, sustainability-oriented wood specialists that have devised a patented technique where softwood is treated to give it properties similar to hardwood, making it durable and appealing, even producing a silvery coating over time through exposure. Even the design process was chosen to minimize waste: EEN TIL EEN uses advanced digital techniques to ensure projects move from proof-of-concept to actual builds rapidly and with

less chance of error. The Biological House is being presented as part of the BIOTOPE project in Middelfart, Denmark.

The upcycling revolution continues, whether that's re-purposing old campaign material into [handbags](#) or turning beach plastic into [sleek kitchenware](#). What else could be upcycled into what else?

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