



GREENHOUSES OF EUROPE



ICTA-UAB

Barcelona, Spain

<https://www.uab.cat/icta/>



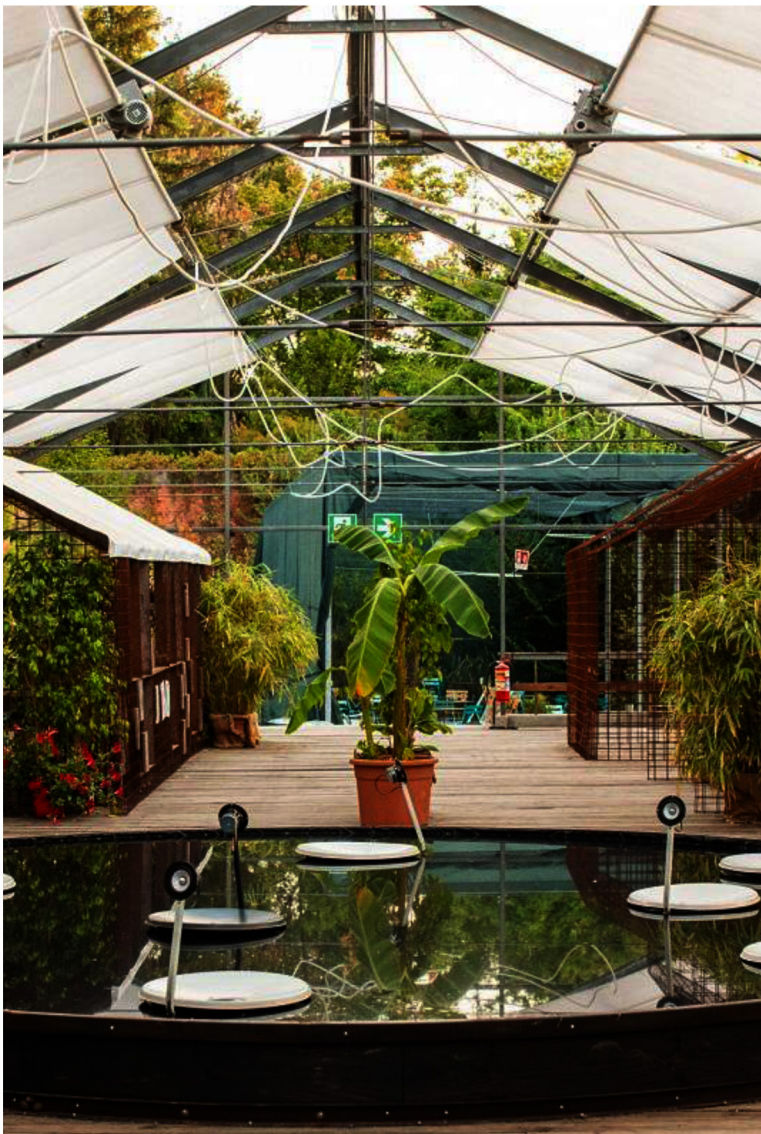
The Institute of Environmental Science and Technology (ICTA-UAB) is a multidisciplinary centre that promotes academic research and postgraduate education in the environmental sciences. It aims to improve our understanding of global environmental change, and the nature and causes of environmental problems. In addition, it studies policies, strategies and technologies to foster a transition to a sustainable economy.

In accordance with the research fields of the building users, they chose, from the beginning, a building prepared to give an ambitious response to the challenges of sustainability.



Serra Madre Bologna, Italy

<https://leserredeigiardini.it/>



The Serre dei Giardini are a regenerated space and cultural centre hybrid within the Margherita Gardens, in Bologna, which comes to life in the redeveloped 650 square meters of the former municipal greenhouses. To bring this ambitious project to life, Kilowattis privately investing around 2 million euros – also thanks to the support of the Region Emilia Romagna in 2015 and 2021, through action 5.1 “Support for the development of infrastructure for competitiveness and the territory” – to redevelop a public space received under concession for 15 years from the Municipality of Bologna and return it to the city after a long period of abandonment.



FRESH

Bettembourg, Luxembourg

<https://www.urbanfarming-greenhouse.eu/fresh-ifs-b-luxembourg>

FRESH is the Luxembourgish pilot project that has been installed on the roof of the existing restaurant extension of the Institut de Formation Sectoriel du Bâtiment (IFSB). The institute's stated objective is to position itself as the expert centre for sustainable construction in Luxembourg and neighbouring countries (France, Germany, Belgium). To strengthen the link between vegetable production and vegetable use in restaurants, a corridor around the greenhouse will allow visitors to view the production area without disturbing operational activities. Finally, the connection to the building for CO₂ and heat recovery will make sense for the building sector. CO₂ recovery is an upcoming challenge for this sector in Luxembourg.



Serr'ure Liege, Belgium

<https://www.urbanfarming-greenhouse.eu/serrure-ulg-belgium>

The Center of Research in Urban Agriculture (C-RAU) is dedicated to the development of research and analysis of production systems and tools for farming adapted to urban and peri-urban environments. This includes both low-tech and high-tech approaches, such as SPIN (small plot intensive farming), agroforestry, permaculture, bioponics, rooftop farming and indoor cultivation. Therefore, the RTC will complete an ecosystem of research infrastructures, including experimental fields, aquaponics systems and container systems.

The RTC will be dedicated to research associated with the production systems adapted to rooftop farming at technical, scientific and economic levels. Besides, the greenhouse will also host educational activities and demonstrations of innovative plant production systems.





Agrotopia

Roselare, Belgium

<https://inagro.be/agrotopia>



The living lab 'Agrotopia' is supported by the 9000 m² Agrotopia rooftop research greenhouse on top of the agricultural market in Roeselare. 6000 m² cultivation area, a compartment for multilayer indoor growing with artificial lighting and a 12 m high vertical compartment allows to co-create, develop, validate and demonstrate innovative best practices for vegetable hydroponic systems. To stimulate sustainable urban and greenhouse horticulture, further developments are required in using residual streams (heat, water and CO₂), recycling of resources, automatisisation, climatisation and maximizing use of available space and energy efficiency.



BIGH

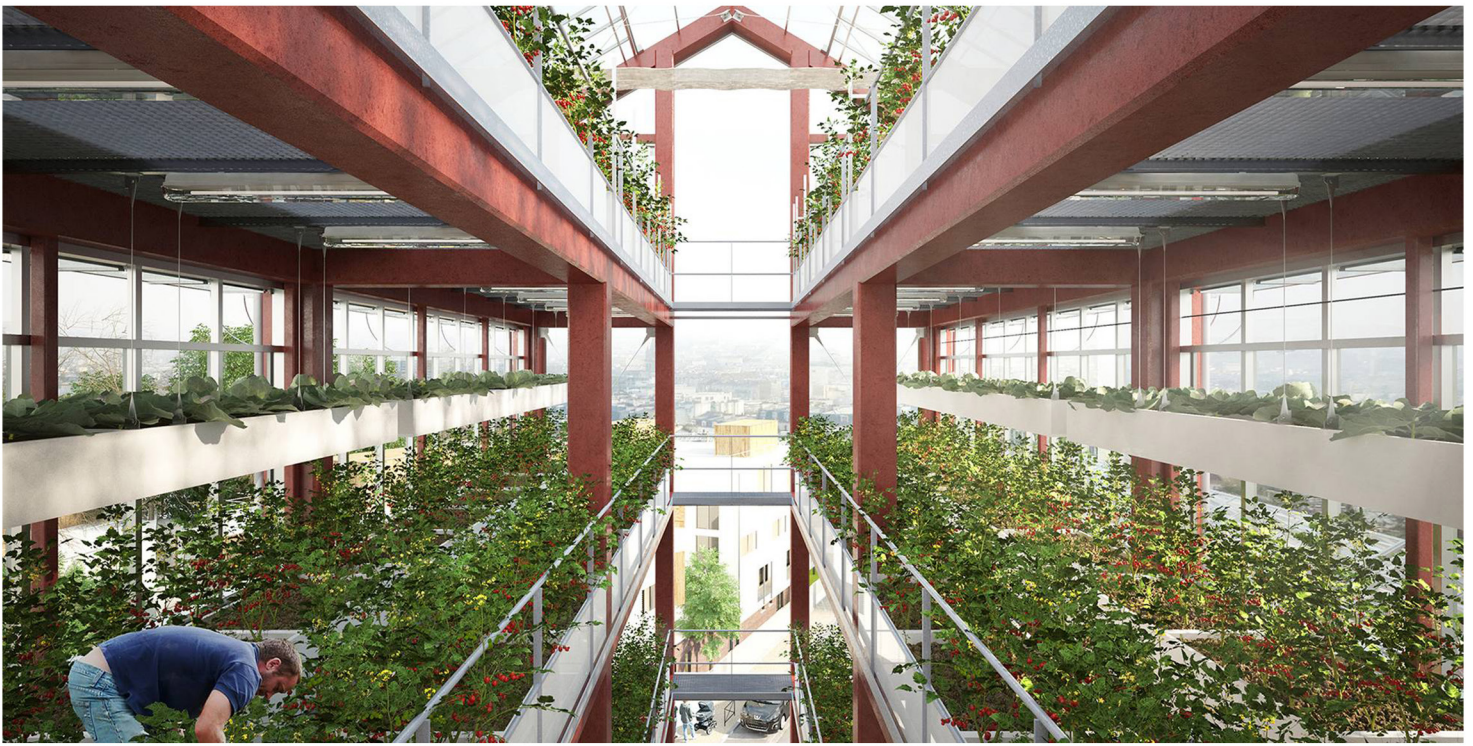
Brusselles, Belgium

<https://bigh.farm/>



The first aquaponic farm by BIGH (the Brussels aquaponic farm) was designed on the roof of the Foodmet building, a food hall which is part of the famous Anderlecht Abattoirs site in Brussels. Our first pilot farm located in Brussels is one of the largest rooftop aquaponic farms in Europe. It includes a high-tech greenhouse of approximately 2,000 m² as well as an outdoor vegetable garden of 2,000 m².

BIGH is based on the latest in sustainable technology: we use energy lost by the building, recycle rainwater from the site and harness renewable solar energy. All BIGH farms are integrated into existing buildings, to benefit from residual energy and reduce its impact on the environment.



Cité Maraîchère Paris, France

<https://foode.eu/vertical-farm-educational-garden-short-food-chain-social-agriculture-mushrooms-production-circular-innovation-and-community-rooftop-gardens/>

The Cité Maraîchère is a vertical greenhouse devoted to urban agriculture. Its challenges: bring out a new way of eating in a popular area located near the city centre; raise awareness and offer workshops on sustainable food, nature in the city and eco-citizenship; develop vocational training and promote social inclusion by setting up an integration project. The vertical market garden city hosts various equipment and activities such as a professional kitchen, a café-canteen, educational spaces, workshops for all audiences, meeting and cultural events, educational gardens and a collective compost.



Les Fermes de Gally Saint-Denis, France

<https://www.urbanfarming-greenhouse.eu/gally-fermes-de-gally-france>



One of the four GROOF pilot RTGs is located on the site of the “Ferme Ouverte de Saint-Denis”, near Paris (FRANCE). The farm is dedicated to production and education; it covers 2.3 hectares. It currently produces vegetables on a 1.7 ha area and in a 250-m² greenhouse. It also receives citizens, families, and companies eager to discover the basics of farming, healthy food, and nature, and how the farm works.

The farm is managed by Les Fermes de Gally, a French group of family companies specialised in landscaping and devoted to bringing nature and farming in and around the cities.



Symbiose

Nantes, France

<https://metropole.nantes.fr/actualites/2022/environnement-nature/agriculture-urbaine-symbiose>

A market garden greenhouse, has sprung up at 1, rue Jacques-Cartier, in the Nantes Nord district. Perched on the roof of a 1970s building renovated by Nantes Métropole Habitat (NMH), the structure, in service since this summer, stands out in the middle of the main social housing district of Nantes. The originality of Symbiose is not only due to its architecture, but rather the project allows both the cultivation of vegetables and the preheating of water of 24 housing units to reduce energy consumption. The idea is to develop agricultural activity in an urban environment, while exploiting the solar potential of our roofs.





5 Ponts Nantes, France

<https://5ponts-nantes.eu/>



The 5Ponts project was born from several observations made by the association Les Eaux Vives Emmaüs, an expert in responses to the social emergency.

The association aims to fight against all forms of exclusion, thanks to its reception and social support, accommodation and integration services and establishments. These services support people in serious social, psychological and/or psychiatric difficulties. It was in 2007 that the association launched a discussion to design a new project to bring together these aging and fragmented reception structures in the Nantes region. The founding ideas: promoting the continuity of services, stopping the phenomenon of wandering and promoting a change of outlook.



ECF Farm Berlin, Germany

<https://www.ecf-farm.de/en>



In the ECF Urban farming project in Berlin fresh water fish (perch) is cultivated in collected rainwater in an old factory building. The water, enriched with fish excretion, is then used for vegetable growing in the greenhouses. The advantage of this system is that it is almost a closed water cycle: the production takes place close to the consumer and there is hardly a need for transport. The waste product of the fish production is also used as fertilizer to grow the vegetables. The company occupies around 1800 m² and delivers 30 tons of fish and 35 tons of vegetables per year



Altmarktgarten Oberhausen, Germany

<https://altmarktgarten-oberhausen.de/>



The ALTMARKTgarten was opened on the roof of the job centre in Oberhausen in 2019. With the inFARMING concept, Fraunhofer UMSICHT has developed a promising approach for the future of nutrition. The ALTMARKTgarten in Oberhausen is a real-world laboratory. Herbs, salads and strawberries grow on 1,100 square meters and are looked after by Exner Grüne Innovation. 160 square meters are reserved for research at Fraunhofer UMSICHT. The areas for growing food are limited, climate change forces us to conserve water, save CO₂, avoid pesticides and reduce transport routes. The solution: building-integrated agriculture. Here, growing areas for fruit and vegetables are created in urban areas.

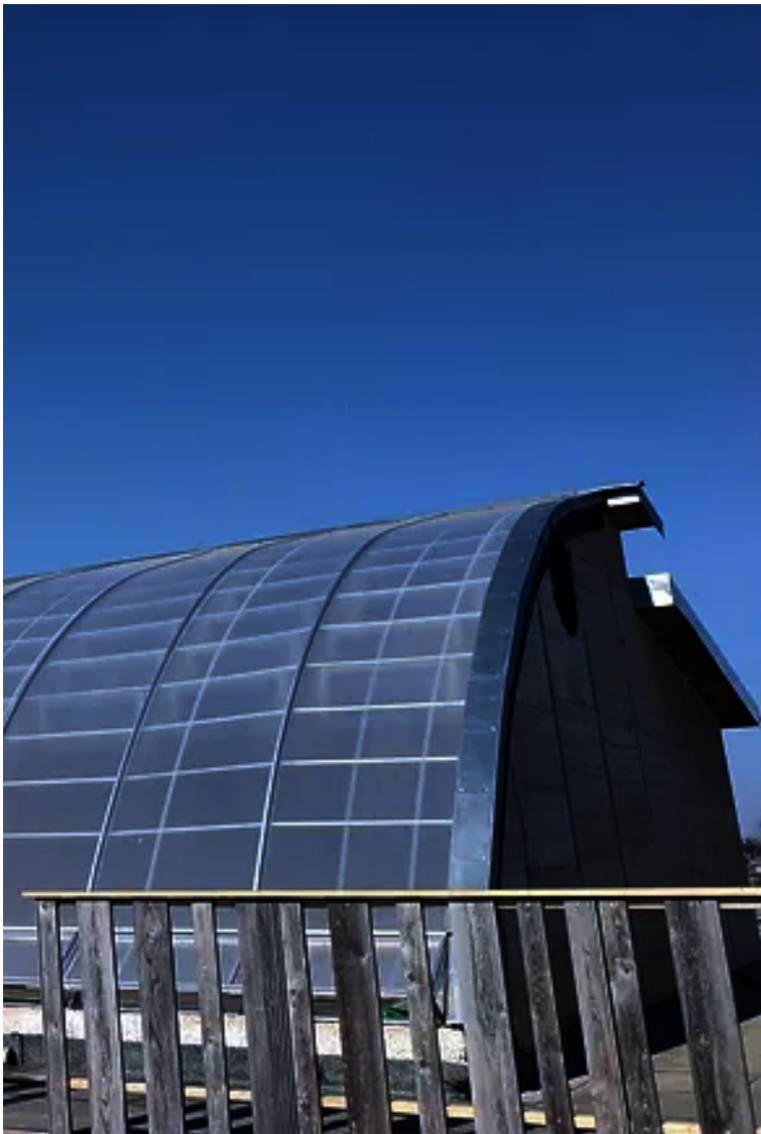


REWE Green Farm Wiesbaden - Erbenheim, Germany

<https://www.rewe.de/>



The Wiesbaden market is a prototype for a new adaptable and sustainable market concept, able to fit any site typology. An iconic and highly visible simple timber structure forms the main element of a new architectural identity for REWE. In a shift from conventional big shed supermarkets, a series of columns arch over the customers, creating a different shopping experience with a more human scale. The public's awareness of farming is increased by integrating it into an established and familiar shopping ritual. Food can be harvested locally, when it is needed, reducing wastage and allowing produce such as salad to be harvested and sold within a day.



EBF Solargreenhouse Bensheim, Germany

<https://www.urbanfarming-greenhouse.eu/b%C3%BCrstadt-ebf-germany>

The RTG is in Bürstadt, between Frankfurt and Heidelberg (Germany), on the roof of the packaging hall on a farm owned by ebf. The packaging hall is a building from the late 1950's, and right now it is heated by fossil fuels. In several iterations the heat supply on the whole site is going to be replaced by renewable heating in the next years. The solar greenhouse has a 160 m² growing area and is designed to have a low heating demand, produce electrical energy, and serves as a solar collector for the support building. Altogether, it achieves a net positive energy balance over the course of one year of operation.



Eden Project

Cornwall, England

<https://www.edenproject.com/>



The Eden Project explores how people can work together and with nature to change things for the better. Eden is famous for its

Biomes, the world's largest greenhouses which nestle in a giant 50 metre deep crater the size of 30 football pitches, forming the centrepiece of a spectacular global garden. Designing the biomes was an exercise in efficiency, both of space and material. Structurally, each dome is a hex-tri-hex space frame reliant on two layers.

The efficiency of the frame relies on the components of the geometric shapes: steel tubes and joints that are light, relatively small and easily transportable.



Ecco Jäger

Bad Ragaz, Switzerland

<https://www.ecco-jaeger.ch/>

Ecco-jäger has developed from a small vegetable trade in Fluppe into a significant vegetable wholesaler. The owner-managed, traditional company ecco-jäger Frucht und Vegetable AG looks back on over 90 years of history in the food trade. With a full range of fresh, cheese, dairy, refrigerated and frozen products, ecco-jäger supplies well over 1,000 customers with around 30 delivery vehicles.

The waste heat from the cold storage facilities is used to heat the the aquaponics roof farm, whose salads, herbs and fish complement the range.





Wageningen University & Research Wageningen, Netherlands

<https://foode.eu/plant-factory-for-demonstrational-purposes/>

Wageningen University & Research (WUR) has a unique research facility in Bleiswijk, in the heart of the Municipality of Lansingerland, the second largest greenhouse horticultural municipality in the Netherlands. The unit of "Greenhouse Horticulture" investigates all aspects of horticultural production in its 7500 m² of greenhouses and, together with the business community, science and government, translates the results into application-oriented research and innovation processes. The research facility includes greenhouses for sustainable crop protection research, energy-saving experimental greenhouses, measurement setups for greenhouse materials research and early warning of crop stress, two innovation and demonstration centers



The Green House

Utrecht, Netherlands

<https://www.thegreenhouserestaurant.nl/>



The Green House, a circular restaurant where chefs prepare the most delicious food using ingredients from the restaurant's own urban farm and the Utrecht region. The vertical farming greenhouse of eighty square meters is located on the floor next to the meeting rooms. Here vegetables and herbs are grown for the restaurant

kitchen. A vide in the pavilion makes the publicly accessible greenhouse visible from the restaurant below. The large green wall also contributes significantly to the experience of The Green House. The roof of the pavilion is filled with solar panels. The Green House is the first to have a ac-plug-free kitchen in which food is prepared without electricity but with energy-efficient ovens fired with renewable fuels.



The New Farm

Den Haag, Netherlands

<https://thenewfarm.com/>



The New Farm tries to attract innovative manufacturing companies that contribute circularly and socially. In this way we are building a hub for impact makers in The Hague. The themes of food production, circular economy and social impact can be found among the tenants in the building. Local entrepreneurs produce delicious products such as oyster mushrooms, vegetable pasta, beer and other tasty food. Circularity is reflected in companies that recycle used materials or residual flows such as work uniforms, ICT equipment or food waste. Finally, companies initiate social innovation by training people from all corners of society and thus offering them an opportunity to participate in society again.



De Ceuvel

Amsterdam, Netherlands

<https://deceuvel.nl/nl/>



De Ceuvel is a sustainable breeding ground for creative and social entrepreneurs on a former shipyard on the Van Hasselt Canal in Amsterdam North. The site contains creative workplaces, a cultural center around sustainability, a café-restaurant, spaces for rental and a floating hotel. This vision is expressed very concretely in sustainable workshops and lectures, but also arthouse films, music evenings and exhibitions that are not directly related to sustainability take place at the Ceuvel.