

Biospheric project

**MIF** Manchester International Festival

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# BIOSPHERIC PROJECT

Visit to explore the



Indoor  
aquaponics  
farm



Organic  
mushroom  
pods



Vertical  
growing  
systems



Rooftop  
permaculture  
garden



BIO





**BIOSPHERIC  
PROJECT**  
Urban farm, laboratory  
and research centre

Commissioned by the Greater London Authority  
in partnership with the Greater London Authority  
and the Greater London Authority  
Supported by the Greater London Authority and Greater London Authority



**BIOSPHERIC  
PROJECT**  
Visit to explore the

- Indoor  
hydroponic  
farm
- Organic  
meat from  
pigs
- Vertical  
growing  
systems
- Biological  
pest control  
and fish



**BIOSPHERIC**

IRWELL HOUSE

**BIOSPHERIC  
PROJECT**  
Visit our shop 78 Steps  
for fresh fruit and vegetables,  
whole foods and groceries











# FOREST GARDEN

Forest gardening has been a natural way of growing food in rural areas for centuries. The world's first forest garden was created in the 1920s by Robert Hart in China and it has since been adapted to many different climates. Forest gardens are a type of agroforestry system that combines trees, shrubs, herbs and vegetables in a single garden. They are designed to be self-sustaining and to provide a range of food crops for humans. From edible crops to medicinal plants.

The forest garden is being designed to grow more than 30 species of trees and more than 50 plant species, including fruit, berries, perennial vegetables, medicinal plants, herbs and spices, edible flowers and other supportive species. Its location in a densely populated area of the city allows us to study how urban city food may be modified and adapted for food production.

The forest garden has been created using agricultural processes such as deep ripping, sub-soiling and

guiding. For more on these terms, please see the separate information sheets. Creating a low maintenance, high yield growth system. The layout and composition of the garden will be developed and evolved over the next five to ten years into one of the densest forest garden systems in the UK.

For more background about the forest garden, please see information sheet: Forest Garden.



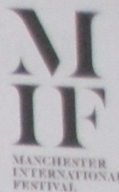






# The Biospheric Project

urban farm, laboratory and research centre



## Solar Panels

South-facing solar panels due to be installed in Autumn 2013 will produce a natural energy source for the project.

## Polytunnel

Higher growing temperatures increase crop yields and give options to experiment with crops grown in warmer climates. 5,000 leaf crops receive nutrient-rich waste water from fish tanks on the second floor and upcycle compost created by waste from other growing systems.

## Mushroom Farm

High-value shiitake and oyster mushrooms grown to generate income and provide local restaurants and communities with fresh supplies.

## Roof Garden

Home to chickens, bees and polytunnels creating fresh food sources for the local community.

## Greenius Wall

New technology developed with BDP and Queen's University, Belfast explores using south-facing sides of city buildings to grow food crops.

## Windows

Vertical growing systems are installed in the windows to test growing tomato plants, strawberries, beans, peas and micro vegetables.

## Aquaponic Fish Tanks

Edible fish (perch, tilapia and carp) grow and produce waste which is pumped to the rooftop polytunnel to help grow edible leaf crops.

## Heat and power

Ener-G's combined heat and power system will be installed in Autumn 2013 to cut electricity costs and reduce carbon emissions by up to 20%.

## Monitoring

Siemens' advanced monitoring systems allow elements like pH, temperature, light levels, CO2 to be monitored on-site and remotely.

## Wormery

Worms used as key players in the overall system – aerating soil, breaking down organic waste, creating nutrient rich castings for plants and feeding fish.

## Enterprise

On-site shop and veg box scheme offers ultra-local, low-carbon produce to local restaurants and communities.

## Education

Bespoke space for events, conferences and workshops on subjects relevant to the project – supporting local people to learn about growing and producing their own food.

## Forest Garden

Over 80 tree and plant species, including fruits, berries, perennial vegetables, medicinal plants, herbs, spices and edible flowers create sustainable food production using planting patterns which replicate nature own.

















SEVENTY EIGHT STEPS

WHOLEFOODS ST

VEG - COFFEE - NUTS - FRUIT - WHOLEFOOD

WHOLEFOOD FOR EVERYONE  
LOVE LOCAL  
COME AND JOIN THE  
SUPPORT YOUR COMMUNITY  
Wholesome  
LOVE YOUR EARTH  
BEST SHOP TO

78

SEVENTY EIGHT STEPS  
LOCAL & ORGANIC

VEG - COFFEE - NUTS - FRUIT - WHOLEFOOD

WHOLEFOOD