

# Earthship Communities Research Project

A project involving **South Ayrshire Council, Sustainable Communities Initiatives and Earthships Moray**

## What is an Earthship?

### **Flexible design concept perfectly suited to affordable housing provision**

An Earthship is an innovative type of housing design. It is a flexible design concept rather than a set design and can be adapted to any climate and situation worldwide. The concept has been developed over 30 years by US architect, Michael Reynolds and Earthships now exist all over the world. Earthships could be ideal for building affordable housing. This is because there is a large shortfall of affordable housing in the UK and Earthships are inexpensive to build. The simple building methods used also means that people can help to build the homes that they are going to live in or own. Once built, Earthships are highly energy efficient and have low running costs, keeping the home affordable. They are also low impact buildings, meaning that they have less visual effect on the environment. There is no doubt that there is a great need for houses to be built and the Earthship may be the way to build them with less effect on the landscape.

### **Uses recycled materials – cheaper to build**

An Earthship can be built from recycled and reclaimed material (often the walls are built using disused car tyres rammed with earth). In addition, Earthship building techniques are low-tech and easy to learn. These two factors can keep the costs of building an Earthship low while looking after the environment at the same time.



*Tyre wall before plastering  
Earthship Fife*

### **Self-sufficient, low running costs and eco-friendly**

An Earthship doesn't have to depend on mains services such as water, electricity and sewage.

Electricity and back-up heating are produced from renewable energy sources such as the wind, the sun and even the heat that exists below the ground.

# **Earthship Communities Research Project**

A project involving **South Ayrshire Council, Sustainable Communities Initiatives and Earthships Moray**

Rainwater is collected for the water supply from the roof and stored in a tank close to the house, before going through a series of water filters and being used by the householder. Drinking water goes through extra filters to make sure that it is fit for consumption.

It also has its own in-built sewage system as well as a system to deal with and re-use greywater – the waste water produced from washing dishes, showering, etc.

Once built, the Earthship has no or low utility bills.

## **Highly energy-efficient**

It is very energy-efficient and it is estimated to need very little back-up heating, even when built in the UK. The east, west and north parts of the building are earth-sheltered - so all you can see is the roof and the south face of the building, making less of a visual impact on the environment than conventional housing. The remaining south face of the house consists of vertical glass on the front with a second layer of glass inside the building, creating a glazed corridor conservatory area to capture the energy from the sun to warm the house. The thick walls act as a battery, storing the heat during the day and warming the air in the rooms at night. This conservatory area also acts as a corridor to access all of the rooms of the home and is used to grow plants and food all year round. Thermal blinds can be put up to hold the heat in at night and for privacy.

## **Modular building system – saves money**

The rooms are usually U-shaped and a home would consist of a lot of U's placed next to each other, east to west. The open part of the U faces south and the long conservatory would be added to the front of the open U's.

## **Earth and people-friendly construction methods**

An Earthship reduces the pressure on the environment by being eco and people friendly. An Earthship home has very low carbon emissions compared to conventional homes. A lot of the Earthship building techniques are easy to learn and so a lot of owners or occupiers of Earthships help to build the Earthships they live in. This makes Earthships ideal for community buildings and facilities as well as homes.

***What is an Earthship?***

# Earthship Communities Research Project

A project involving **South Ayrshire Council, Sustainable Communities Initiatives and Earthships Moray**

## Are there any Earthships in the UK?

There are currently two Earthships in the UK. The first one was built in Kinghorn, Fife in Scotland and the second in Brighton, England. Both are visitors' centres and community education buildings and can be visited by the public. There are no Earthship homes in the UK as yet.



*Earthship Fife  
under construction*



*Brighton Earthship*

## Where can I find more information?

For information on Earthship development in Scotland and Earthship Fife:  
[www.sci-scotland.org.uk](http://www.sci-scotland.org.uk)

For Earthship promotion and development work in Moray, Scotland contact  
Earthships Moray:  
[earthshipsmoray@hotmail.com](mailto:earthshipsmoray@hotmail.com)

For information on Brighton Earthship and the group promoting Earthships in  
England:  
[www.lowcarbon.co.uk](http://www.lowcarbon.co.uk)

For Earthship Biotecture's information-packed website on Earthships, including  
details about Michael Reynolds' books, *Earthship Volume 1, 2, & 3*; and  
*Comfort in Any Climate*:  
[www.earthship.org](http://www.earthship.org)

***What is an Earthship?***