14. Europe VI: A house made of car tires

The construction of new buildings is very harmful to the climate and causes lots of greenhouse gas emissions. To change this, an American architect has come up with a construction method that is as environmentally friendly as possible in 1970. One such special building, which he called "Earthship," is located in Luxembourg, one of the smallest countries in Europe.


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Moien from Lëtzebuerg. This is our "Äerdschëff", what is earthship in lëtzebuergesch, our national language. It may look a little different from your home. That's because we've used almost only recycled and reusable materials that don't have to be transported from far away. The back wall is made from 1000 old car tires, which also saves concrete and is therefore much more environmentally friendly.

Using things in a way so that they can be used again and again is called circularity. If something breaks, it is repaired or rebuilt instead of simply being thrown away. The floor panels on the right are also various leftover pieces from other buildings. They make a nice pattern.


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Did you notice the large windows? This not only provides a lot of light, but also allows the sun to shine in almost all day. It warms the interior when the weather is good so that no extra heating is needed. As there are only windows at the front and cool air can come in from the ground through tubes, it still doesn't get too hot. The solar system installed on the roof also uses the sunlight to generate electricity.


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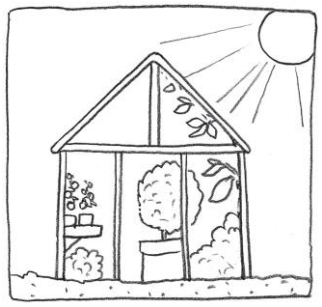
One goal of the Äerdschëff is to be as self-sufficient as possible. This includes collecting and cleaning rainwater so that it can be used to flush toilets, water plants or even as drinking water. We also grow our own fruits and vegetables in the large garden.

And because our Äerdschëff is not used as a home, it is a place where everyone can learn about sustainability and circular economy, regardless of age, origin or place of residence. Maybe you come visit us one day?

Äddi (goodbye), your Äerdschëff team!

Questions and tasks: Europe (Luxembourg)



For the younger ones

- How does the Äerdschëff, as this special building is called in lëtzebuergesch, use the energy of the sun?
- Why were car tires used for the walls of the building? What would have happened to the old tires otherwise?
- How is rainwater used? Can you imagine collecting rainwater and what could you use it for?

Exercise: Try to make a small model of your own Earthship. Only use materials that you no longer need, such as old cardboards or empty packaging.

For the older ones

- The Äerdschëff uses solar energy for heating. Challenges does this pose and how can they be tackled?
- Why can't we build every house like the Äerdschëff? What would happen if you stacked car tires higher than one floor?
- Rainwater is collected in the Äerdschëff cistern. How many litres would have to be stored here to supply your whole class with water for a day?
  The average water consumption per person per day in Germany is 126 litres.

Exercise: Use your creativity and draw your own Earthship made from a variety of recycled materials. You can then hang your pictures in the classroom.

Tip: We can try to live according to the circular economy concept not only when building houses, but also in everyday life. Take a look at the swap shelf idea in the teacher manual (page 39, module 37).
You can learn even more about renewable energy in the worksheets for module 33 (pages 55, 56).
Here you can take a look on the Äerdschëff website: https://aerdscheff.lu/