

Cambium - vertECO®

Closing water and nutrient cycles

Cambium - Community living in Fehring (Styria, Austria) transforms a former military site into a sustainable living environment for more than 70 people. As a demonstration site of the EU projects HOUSEFUL and GEORGIA, an innovative green wall for wastewater treatment and reuse is operated using the vertECO® system developed by alchemia-nova. Thereby, Cambium combines technological innovation with community living and regional value creation.



Resources in the Loop

- **WATER** - domestic wastewater (toilets, showers, kitchen) is treated and reused for irrigation
- **NUTRIENTS** - nitrogen, phosphorus and potassium are recovered and reused as valuable fertilizer

Technology & Processes

- **vertECO® SYSTEM** - a vertical green wall and constructed wetland as a local, nature-based solution
- Combination of treatment steps:
 - Pre-treatment in a four-chamber septic tank
 - Biological treatment in aerated planted basins
 - Hygienisation using ozonation
 - Reuse of the treated water within a closed loop



Impact & Added Value

The vertECO® system is the first green wall in Austria to treat domestic wastewater in accordance with EU reuse standards. It integrates water and nutrient cycles directly at the building level and demonstrates a transferable model for decentralised wastewater treatment and circular economy solutions.

At the Cambium site, implementation is particularly successful due to the active community, suitable infrastructure and close collaboration with research partners.



Ecological Benefits

- Reuse of water & nutrients
- Replacement of conventional fertilizers
- Savings of drinking water
- Improvement of local microclimate



Social Benefits

- Strengthening of community cohesion
- Educational & demonstration impact
- Increased resilience & self-sufficiency



Economic Benefits

- Savings in water & wastewater costs
- Use of local resources instead of external inputs
- Reuse of materials