

## The Mobile Robot that Charges the E-Car

Together with the companies ALVERI and ARTI Robots, TU Graz developed a charging robot that can autonomously refuel e-vehicles.

**How the robot works.**

In the developed prototype a mobile platform that moves autonomously in space and an automated robot arm that guides the charging cable to the car merge into one unit. This is a very complex task for an automated system. In order to orientate itself, the mobile platform permanently scans its surroundings for possible obstacles with laser scanners.

### OPTIMIZATION

Before the loading robot is ready for series production, it still needs to be optimized. The robot is still connected to a power cable, but this will be made obsolete in the future by a power supply via ground contacts, which is still under development. The software for controlling the robot, which currently runs separately, will also be integrated. Last but not least, although the robot arm is not yet perfect since there is currently no robot arm explicitly developed for this application, the team resorted to a conventional industrial robot arm for the prototype.



Lebensressort – Streibl

## Innovative Wood Technology for Roof Conversions

**Press release.**

Innovative timber construction technology can save valuable building stock in Graz and create additional living space for up to 36,000 people without making use of new ground

Researchers from TU Graz took a close look at 45 historic roof constructions in Graz. “82 per cent of the roof structures examined needed to be repaired in the next five years. It would be desirable to record a complete inventory of all historical roof structures,” emphasizes Gerhard Schickhofer from the Institute of Timber Engineering and Wood Technology at TU Graz.

Especially in urban areas, where the aim is to preserve green and recreational spaces, it is important to use the potential of already built-up areas, for example by adding storeys or converting attics. On the basis of a cadastre of added storeys compiled at TU Graz, the corresponding block structures were examined with regard to their potential for extension. The legal situation was also examined.

The aim of the study was also to investigate specific options for adding storeys using modular timber construction systems and thus offer concrete possibilities for creating new living space. The most suitable of all proved to be the “folded plate” solution, which uses prefabricated wooden elements, in which the original roof shape is retained. This innovative solution allows a support-free and enormously flexible design of the roof space in the form of a two-storey usage option. A pilot project has now been planned to establish the folded plate solution. Interested owners can contact the Institute of Timber Engineering and Wood Technology at TU Graz. Attic conversions for the creation of new living space are also eligible for funding in the framework of renovation subsidies from the State of Styria.



Frank – TU Graz