

Stuttgart, 30 June 2017

## **PRESS RELEASE**

**ThinKing June – New “Green Gate” planned in Stuttgart – A 45 meter wide lightweight landscape bridge to span the autobahn – a material and cost saving cable mesh construction to be used in the crossing for pedestrians and animals**

**A new lightweight green bridge – one of the first of its kind in the world – will soon span the A 8 motorway near Stuttgart. The unique feature of the project is the expansion of an existing 5 meter wide solid bridge through the addition of two cable nets to a total width of 45 meters. This design will allow for a material reduction of up to 90 percent in comparison to the typical tunnel forming method. This approach is good for both investors and the environment. For pedestrians, cyclists and even animals, it opens up a new green gate to the city, in the truest sense of the word.**

The State Agency for Lightweighting Baden-Württemberg is presenting this innovation as its ThinKing for July 2017. Leichtbau BW GmbH awards this distinction every month to give products and services in the Baden-Württemberg lightweighting sector a unique promotion platform.

The green bridge project is being developed by the Stuttgart engineering firm str.ucture. The unique feature of the green bridge is its new construction form as well as its integration into an existing motorway crossing. By adding a new lightweight structure, the existing bridge will be expanded to a curved green landscape bridge that simultaneously protects people and nature and significantly improves the quality of the path. The additive approach will create an expansion of the existing steel reinforced concrete bridge through the attachment of a net like structure on both sides.

### **90 percent less material and 50 percent less costs**

The lightweight loadbearing structure requires a double curved surface which is created out of arches and lateral support cables. A membrane will be laid across the mesh structure to provide a base for the extensive vegetation. An additional membrane will be stretched between the outer cable and the existing bridge for a uniform appearance when viewed from the motorway.

“The design selectively removes the motorway’s interruption of nature by creating a natural zone for people and animals and offers a green gate into the city from the perspective of the motorists,” explains Dr. Michael Herrmann, co-managing director of str.ucture. According to his estimates, the lightweight steel mesh construction will not only require 90 percent less building material, but can also help reduce CO2 emissions. The costs of construction are significantly less as well – by as much as 50 percent. A classic green bridge built as a typical covered steel reinforced concrete structure would cost about four million euros according to some estimates. The lightweight landscape bridge comes with a bill of only two million euros.

### **Green bridge conceals the motorway’s interruption of the landscape**

The concept of the green bridge could also be implemented in other motorway crossings or used to cover busy roads in urban areas and reduce the sealing of the

natural ground. By using additive solutions in combination with existing infrastructure, travel lanes can remain open for agricultural or forestry machines.

The engineering firm str.ucture specialises in developing innovative lightweighting solutions through integrated and interdisciplinary thinking. Their central strategy involves influencing material properties to optimally adapt them to various structural and functional requirements. The result is improved efficiency in material implementation and reduced material and energy requirements as well as a smaller carbon footprint.

This approach can be clearly seen in the green bridge. The steel mesh construction is designed for a typical bridge lifecycle of 80 to 100 years. At the end of the structure's lifecycle, recycling is easy since there are no sealed bonds between the materials allowing them to be easily separated and reused. The new "Green Gate" to Stuttgart is planned to be completed by 2027 in time for the International Building Exhibition (IBA).

Internet: <http://www.str-ucture.com/>

## Photos



Captions: (top left) Green bridge near Denkendorf from a pedestrian view / (top right) The lightweight bridge as a new green gate to Stuttgart as seen from the motorway / (bottom left) Plan for the envisioned green bridge over the A8 motorway / (bottom right) The existing motorway crossover bridge will be expanded through additive construction using a lightweight steel mesh and then covered with soil. Source: str.ucture GmbH. Higher resolution images are available from the editorial staff upon request.