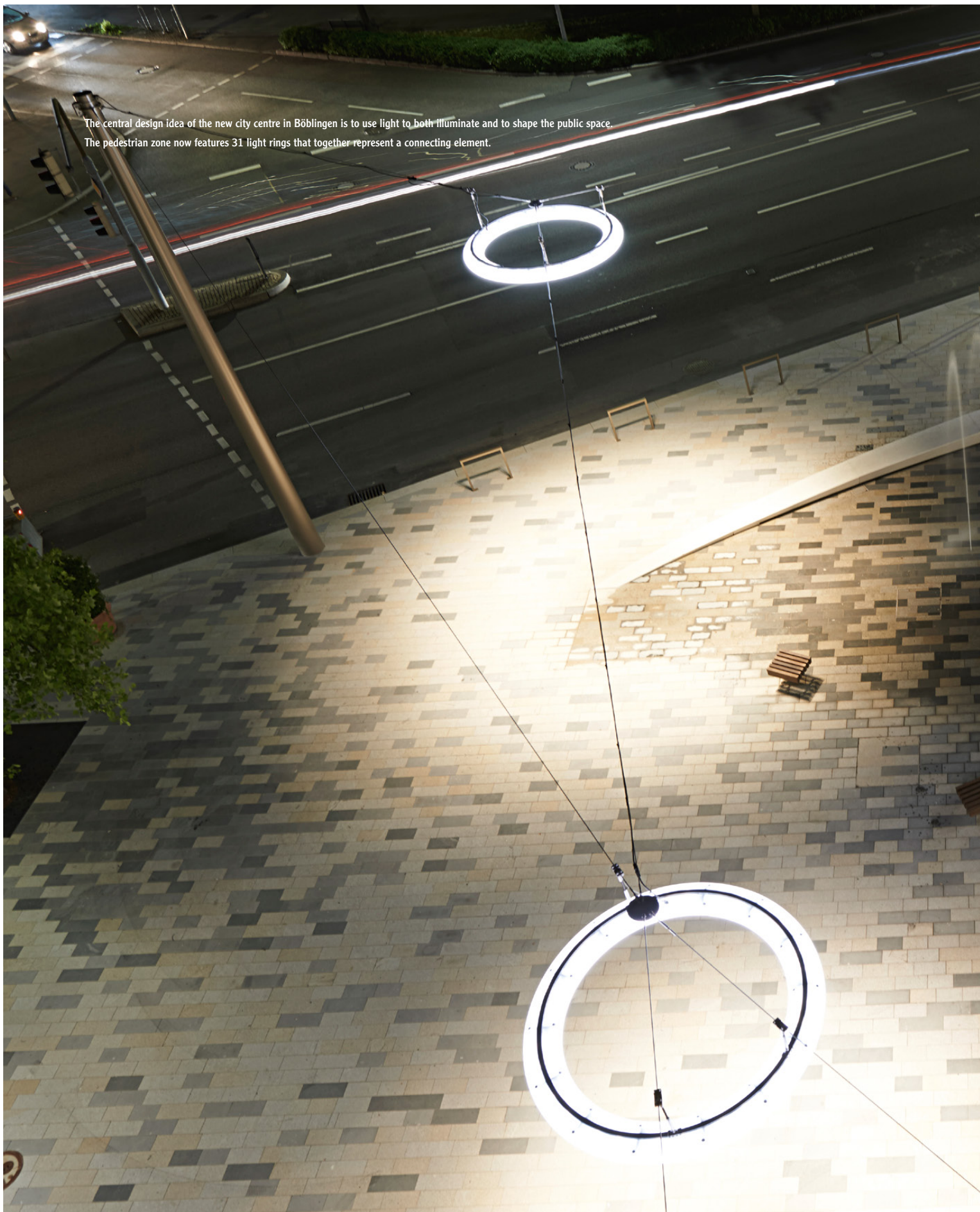



The central design idea of the new city centre in Böblingen is to use light to both illuminate and to shape the public space. The pedestrian zone now features 31 light rings that together represent a connecting element.

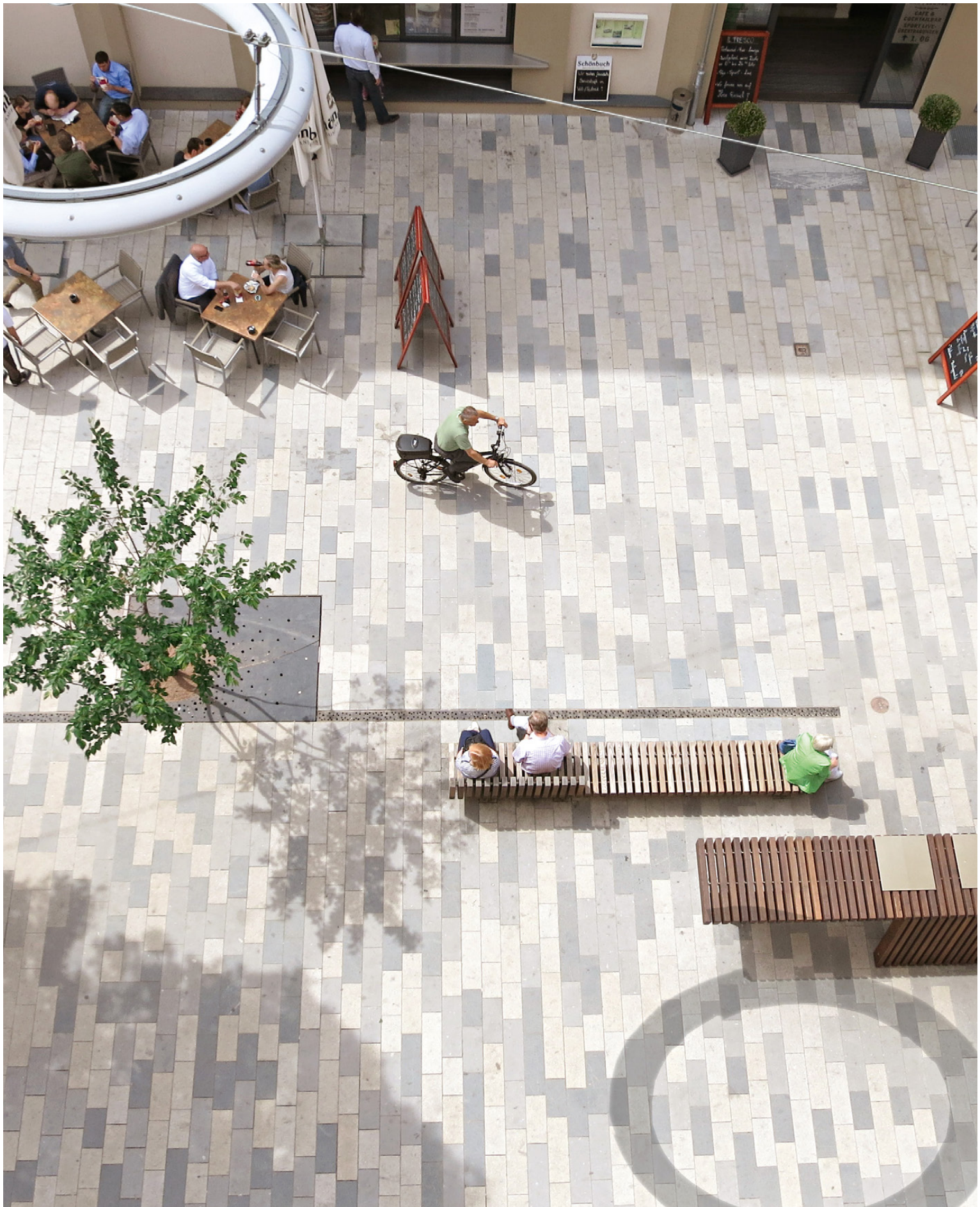




Heike Vossen

DANCING LIGHT

Most architects tend to leave the plans for the lighting until the very end. Yet the concept for the redesign of the railway station area in the German town of Böblingen turned this convention on its head, putting light first and using it to form the very foundations of the project. The German-Austrian landscape architects and urban planners Bauchplan started their plans by developing a luminaire, the so-called “Lichtring” (ring of light), to enable the creation of decelerated spaces.



The 230-centimetre-diameter rings form an upper boundary of the space. From their 8 metre mounting height they reflect the daylight and cast distinctive shadows on the expressive floor of Böblingen's newly designed pedestrian zone.

In the beginning there was light – not only in Genesis, but also in the minds of the landscape architects from Bauchplan. During the workshop that was organised to gather suggestions for the central urban redevelopment of the Böblingen railway station area, planners came up with the idea of using light not only for night illumination, but also to mould and shape the public space. A lot to ask from the lighting solution, but certainly not impossible, as shown by the specially designed Lichtring luminaires, developed by Bauchplan in collaboration with the Bergmeister Leuchten luminaire manufacturer.

Visual overlays. For a long time the station area was little more than a transport space without any real amenities. The relocation of the bus station parallel to the railway by the local authorities offered the chance to reduce and reorganise the transport areas. As a result, Bauchplan transformed the Bahnhofstrasse (station street) into a pedestrian zone, framed neatly between two squares – the Bahnhofplatz (station square) and the Elbenplatz. At the same time a new shopping centre was built nearby at the railway station. “The open space is designed to act as a strong counterpoint”, explains Tobias Baldauf, partner of the planning studio. It was necessary to strengthen the small-scale structures along the open pedestrian zone in relation to the private commercial spaces of the shopping centre, whilst also creating an alternative offer. As a result, Bauchplan broke up the linear design of the transport axis. The designers distanced themselves from the typology of the road by devising

a promenade and recreation area, which carefully integrated the adjoining squares, courtyards and side streets. New trees stand deliberately outside the existing lines to break up the sequence of linden trees. The previously two-sided drainage has been reduced to a single strand that switches between the two sides. The backbone of this newly created urban space is formed by a meandering sequence of Lichtring light rings. The luminaires define different locations and signal possible changes of direction. This means that their installation follows no regular pattern, with “dancing” light rings on the side streets serving as decelerators for the space. They appear homogeneous in their entirety whilst simultaneously helping to define individual locations. Together with the changing colours of the natural stone flooring, the so-called “pixel parquet”, the light rings form a distinctive streetscape. In connection with the other street furniture, Baldauf talks about a “smart urban landscape” that supports fine details without damaging the overall cohesion.

The idea of a spatial ring appealed to Bauchplan on a number of different levels. The ring embodies the largest state of being of an object and at the same time highlights specific places, explains Baldauf. The Böblingen railway station area now features 31 torus-shaped luminaires that mark a series of locations. This is achieved during the day with the striking presence of the 230-centimetre-diameter rings, which form an upper boundary of the space from their 8-metre mounting height. When the sun shines, the suspended rings reflect the daylight and cast distinctive shadows on the floor. At night the luminaires form

annular islands of light in the pedestrian zone. The defined space is illuminated with at least one lux, the minimum level of standards-compliant light to meet the necessary security requirements. As Baldauf points out, this should help avoid feelings of insecurity at night, without having to resort to a uniform illumination of the space.

New spatial system. The planners created a “window to the old town” just south of the Bahnhofstrasse at the Elbenplatz, once one of the busiest squares for traffic in Böblingen. As a link between the adjacent old town on the top side and the new pedestrian area below, this key addition sets itself above the busy street space and incorporates water features to form an impressive prelude to the Bahnhofstrasse. A bunch of striking light rings indicate the new spatial system. They round off the large, centrally located body of water, strengthening the character of the space with their annular design. The Bahnhofplatz is formed by the beginning or the conclusion of the installation on the northern side, where the casual network of light rings meets a previously existing series of lighting columns. Here Bauchplan opted for a spatially defined “lighting break” to separate the field of columns from the first rings, clearly differentiating between the lighting effects and spatial quality of both solutions – ring and column. Munich-based lighting designers Lumen³ supported Bauchplan during the early stages of the project to help resolve a number of fundamental questions. How large should the ring be to maximise the light space in relation to the size of the luminaire? What

It was necessary to strengthen the structures along the open pedestrian zone in relation to the private commercial spaces of the shopping centre, as well as creating an alternative offer by breaking up the linear design of the main transport axis.

kinds of distances between the luminaires are feasible? Which types of facades are suitable for mounting and hanging? Where is additional support required? The lighting technology was also outlined in advance to help achieve excellent visual comfort and differentiated levels of brightness. According to Baldauf, the default lighting concept for the ideas workshop was initially somewhat disappointing. The specification of a non-zonal solution left facade lighting as the only design option. As the representative sides of the Bahnhofstrasse show little discernible quality, Bauchplan did not want to additionally showcase these with light. The landscape architects defied the specification to create their own lighting system that could respond more freely to the space available. In retrospect, the intensive work on the illumination was a clear competitive advantage for Bauchplan, who certainly scored additional points during the ideas workshop with their conceptual approach and specific luminaire design.

Customised lighting technology. The German luminaire manufacturer Bergmeister Leuchten from Tegernau, Germany, built the Lichtring to carefully reflect the ideas of the planners. A total of 14 LED spotlights are evenly distributed inside the ring. In combination with a narrow-beam aluminium reflector, the warm white spots deliver a uniform ring-shaped lighting distribution. Each LED spot can be individually dimmed via a DALI interface (Digital Addressable Lighting Interface). Although the maximum connected load is 390 watts, the luminaires in Böblingen are invariably dimmed, explains Simon Hochreiter, sales

manager and lighting designer at Bergmeister Leuchten. More efficient lighting is often associated with a greater risk of glare, yet the light rings in Böblingen are virtually free from glare. The main focus here was on the lighting effects rather than the efficiency. The exact specification of the luminaires varies, but the size remains the same, Hochreiter continues. In addition, RGB LED ribbons brighten the actual opal luminaire housing, helping the ring glow or shine with an array of colour nuances. A further DALI interface regulates the coloured lighting scenes for Christmas and other festive occasions. The light ring costs around five to ten times more than a conventional high-quality streetlight, explains Hochreiter. However, intriguingly, subsequent enquiries generally came to nothing because of the size of the luminaire, not the price. Bergmeister Leuchten had a customised thermoforming mould made for the diffuser, which means that the size cannot be varied. The plastic case is produced using weather and impact resistant “PMMA Resist” material. The inside of the multi-part luminaire housing contains 14 milled, curved and welded aluminium supports that together form a rounded basic framework. The light sources and connection devices are mounted in the inner part of the structure. The light ring itself hangs on three or four pendulum rods, which are fastened to a rotary stainless steel ring on the upper side of the luminaire. Height-adjustable threaded rods allow optimum alignment, in line with the varying lengths of the suspension cables. Unlike traditional streetlights, the Lichtring fittings do not usually need to be mounted on a column. The holding

cords of the luminaire are fixed and tightened with 27 facade anchors along the Bahnhofstrasse, helping the pedestrian zone to remain largely free from disruptive structural elements. Bauchplan only had to install a few columns by empty sites or where building owners rejected the notion of an anchoring system on their property. These smart masts are pre-fitted with power to avoid further intrusive components. The development of intelligent and networked street furniture and fixtures is seen by Hochreiter as a key future topic that offers the potential for further significant increases in efficiency. In addition to the Lichtring luminaire, the landscape architects also introduced a modern title for the Bahnhofstrasse, which is now known as the “New Mile”. Although the Böblinger mile measures less than 1600 metres in length, this name has quickly established itself in the minds of the local population and has thereby helped contribute to the formation of a new identity. The definition of a different name was an integral part of the design process for Bauchplan, explains Baldauf. The “design through words” approach helped when it came to clarifying their own ideas, as well as during the discussions with other participants involved in the planning. The success of this philosophy is reflected in the self-perception with which the new plan has been internalised by the town. “Bauchplan designs for Böblingen” was the way Christine Kraayvanger, the mayor responsible for the construction, summed up the design approach – an approach that has gone beyond the traditional confines of merely adding different places and equipment to instead create a completely new identity.

NEUE MEILE, BÖBLINGEN, GERMANY

Client: Stadt Böblingen (local authority)

Landscape architect: Bauchplan, Munich, Vienna

Lighting design: Lumen³, Munich

Luminaire manufacturer: Bergmeister Leuchten, Tegernau, Germany

Construction period: 2014–2015

