GERMAN JURY REPORT

Prize-winners

AF111 – Concrete cymatics

Joanna Burton, Pablo Humanes, University of Applied Sciences, Cologne and Sadaf Mirzaei, Macromedia University for Media and Communication, Cologne

The work transfers a natural science procedure for the visualisation of sounds and waves to architecture, and thereby ventures into new fields of creating and shaping space. Hitherto, the application of cymatics processes has produced visualisations in the form of images or video recordings. By proposing the use of extremely fast curing concrete for this process, the designers succeed in a mental experiment to transfer sound into a spatial dimension.

The project therefore represents an outstanding approach to the subject. A specific property of concrete is utilised in an innovative and independent interpretation of the term "energy". Energy in the form of sound is transposed into tangible form and made visible during the material curing process. At the same time the project attempts an emotional approach, in that the fleeting moment of the transition from a fluid, amorphous condition to a solid state is manifested. The authors have approached the briefing in an innovative and playful manner which attaches considerable charm to the project.

In spite of the visionary character of the work, its point of departure is one of quite traditional research. The illustration of the results of the different practical test theories is compelling. However, the jury is not fully in agreement with the conclusions for the applications of the proposed process. Details of the possibilities for practical implementation are still sketchy. Nevertheless, the jury fully supports the approach and vision of the work: with reference to the freeform property of concrete, the authors propose a production process that is virtually without formwork. This develops an idea and an objective which should be further substantiated in order to achieve solutions also at the technical level which would go far beyond current concrete processing and production methods.

In this project, the potential for shaping concrete as a material goes beyond conventional limits, providing considerable stimulus to the imagination. If the image of "frozen music" can be applied to architecture, the submission expands on the

subject with a vision of "shock-frozen concrete", thus expanding the potential future application of the material.

Prize-winners

WA628 – Ernst-Reuter-Platz

Michael Albertshofer, Sebastian Awick and Steffen Winkler, Technical University Berlin

The design approaches the subject from the premise of a modern metropolis, with one of its essential features being that of mobility. As a traffic intersection from the 1960s, Ernst-Reuter-Platz in Berlin is a space that accommodates the flow of traffic and energy but, at the same time, is empty in respect of other functions. A vacant urban space, devoid of function, must be considered wasteland from the point of view of social interaction. The project focuses on this problem and draws on opportunities for extended urban development in the context of the adjacent university campus.

The systematic development of the architectural guidelines reflects the morphology of energy. Like an infrastructure building, the proposed structure is developed from the notion of moving vehicles. In this way, the project is inspired by the kinetic energy of the location and translates it into architecture. The scale of the design does justice to the location and the concept impresses with its morphological implementation. This activates the existing vacant space and regains it for the city's users. The city's existing energy resources are utilised in a positive manner and their effectiveness is increased.

The visual presentation of the project is compelling at first sight, but also stands up to closer examination. The layout plans have been worked out appropriate to the depth of the scale, thus confirming the functional solidity of the building beyond its presentation in the perspectives.

Overall, the project presents a convincing solution with an appropriate use of materials from the construction and aesthetics point of view. Although the basic structure of the building has been defined, changes in future uses have been allowed for. In this way the authors demonstrate their awareness of sustainable solutions that accommodate future changes, and thus the responsible long-term use

of valuable resources. The design provides an opportunity for concrete as a material to fully develop its inherent strength. The feasibility of the structure is achieved by reducing loadbearing elements to just a few, which at the same time provides the desired flexibility of use. The proposed fare-faced concrete surfaces contribute to the charm of the building, both in the residential and car parking areas. In addition, the project playfully alludes to concrete as used for infrastructure buildings.
The work's special merit lies in its urban character, which is particularly expressed in the newly gained city square. The authors achieve a balance between transparency and enclosure, thus creating a central space for the surrounding urban fabric.

Commendation

AC123 – Metropolitan design

Andrea Escudero Hoelscher and Carlos Carcia Criado, University of Applied Sciences, Cologne

This work focuses on sound as a constituent component of energy. Architecture is seen in its protective function that is designed to increase the well-being of users. By relating topics of sound insulation and room acoustics to the design task, an important subject with practical relevance is tackled.

With its material-oriented approach, the work combines two sound insulation strategies: designing shapes and selecting materials. A highly porous concrete with the associated sound absorption properties is used to develop surface textures which in themselves have attenuating and sound reducing properties. The proposed design displays an appropriate robustness for the selected building task – an underground railway station – and at the same time creates flexible design opportunities. The work does not fully explain the technological implementation. For example, it is not clear whether the sound reduction element is installed separately or forms part of the structural tunnel shell.

The design offers interesting approaches for dealing with the interaction between acoustics and the perception of space. However, it does not pursue the opportunity for developing new patterns of experiencing space. Thus the project remains firmly on the level of practical implementation, which, should it come about, nevertheless opens up the expectation of interesting spatial experiences.

Commendation

AZ253 – Wicon

Franziska Adler and Ronny Zschörper, University of Technology, Business and Culture, Leipzig

Based on a solid analysis of the relationship between energy generation and consumption, the work applies current discussions in society to architectural issues. The jury welcomes the idea of integrating energy generation devices in the outer envelope of buildings. For this purpose, the design uses small-scale turbines integrated into specially developed façade elements. The idea appears plausible in its application within the construction, even though the question arises as to whether the back ventilated façade is able to provide the energy gain that is necessary to justify the required technical investment.

The design of the shape of the façade panels convincingly reflects technical considerations and studies. However, there are only tentative approaches to the use of the material properties of concrete. Overall, the design impetus deriving from the façade principle has not been fully transferred to the architectural design of the overall project. Nevertheless, the documentary evidence supporting the implementation of prototypes and test series is positive.

Overall the work, which demonstrates how additional energy resources can be harnessed via building designs, is a valuable contribution to the range of issues and deserves special commendation.

Commendation

CP143 – Moving clouds

Florian Zschoche, University of Applied Sciences, Constance

The work focuses on the problem of overheated inner city areas using the design of a square in Trieste in Italy as an example. The proposed design centres on light and shadow as energy aspects. The author is fully aware of the positive and negative implications of solar irradiation and develops a flexible, movable solution. In addition, the cooling effect of water basins is harnessed and solar energy is stored for night-time illumination.

The potential of glass-fibre reinforced concrete is utilised in the conceptual design strategy in order to develop a monolithic roof structure without any separate individual elements such as columns or beams for the loadbearing structure. The choice of material is justified in the context of the briefing. The material allows the design of a large, polymorphous shape which motivates the designer to propose that the elements be movable in order to increase flexibility of use. Open questions remain with respect to the details of the semi-transparent interior space and design of the square. The design options presented by the choice of material and its construction parameters are only utilised in part.

A review of the self-imposed complex questions relating to the city climate, taking into account the proposed solution, would have enriched the work. Nevertheless, the manner in which the subject is approached and the resulting design implementation deserves special commendation.

Commendation

DV535 – The 24-hour square

David Vogel, University of Applied Sciences, Constance

As part of a design for a square in Freiburg, the designer combines quite common everyday tasks of urban design, such as lighting and information, with ideas for energy conservation and the city climate. The proposed project is a very self-assured development of these ideas and is compelling in its formal application.

The governing idea is that of utilising solar radiation for the generation of energy. In this context, established solutions for the interior of buildings such as that of activating thermal mass – for example underfloor heating or cooling through solid floors – are applied to urban design. This idea does not lack credibility, although the technical aspects of the implementation have only been shown very superficially. A more in-depth verification of the energy potential of this project would have been desirable.

The material properties of concrete are utilised in a number of ways in the design. First of all, the thermal storage capacity of the material contributes to the improvement of the overall energy balance. The manufacturing process makes it possible to insert the installations required for energy generation, as well as efficient pre-fabrication. Beyond that, the designer expands on the conceptual

design idea in order to generate additional levels of significance. In addition to the sense perception of unexpectedly cooler or warmer zones in the city, the project provides very practical support for its users by integrating control and information systems as well as lighting elements. Overall, this results in an urban space which appeals through its level of comfort and density of information.