

GROUNDBREAKING CEREMONY IN DUBAI

CAMPUS GERMANY CELEBRATES START OF CONSTRUCTION WORK AND PRESENTS EXAMPLE SUSTAINABILITY EXHIBITS

With one and a half years to go until Expo 2020 Dubai opens its doors, the German Pavilion invited guests and members of the media to a groundbreaking ceremony on the plot where CAMPUS GERMANY will come to life over the coming months. After the ceremony, Commissioner General Dietmar Schmitz and his team presented some of the sustainability exhibits that will be on show and the pavilion's climate management system. While the ground was being broken in the far-off desert, the new website for Germany's presence at the upcoming world exhibition went live in Cologne.

"Our top priority is making sure that everything is ready on time for the opening of the Expo on 20 October next year. So it's important to stick to the tight schedule and start work on construction in good time," said Gerald Böse, President and Chief Executive Officer of Koelnmesse, summing up what the entire pavilion team is busy working on. Koelnmesse is in charge of coordinating all of the preparations on behalf of the Federal Ministry for Economic Affairs and Energy and will run the pavilion in 2020/2021. The groundbreaking ceremony on the German plot, right next to the host pavilion, highlighted the fact that work on the German Pavilion is well on schedule.

Commissioner General Dietmar Schmitz was particularly impressed by the Expo organizers' progress with construction work on the site. The metro line is already visibly coming to life, the United Arab Emirates Pavilion and the thematic pavilions are beginning to take shape and the domed structure of the Al Wasl Plaza is growing ever taller. "Now it's our turn to start construction work on CAMPUS GERMANY and become part of this story," said Schmitz. He also thanked the Expo 2020 Dubai Bureau and its Executive Director, Najeeb Mohammed Al-Ali, for the outstanding support they had given. "In fact, our collaboration is itself a superb illustration of the 'Connecting Minds, Creating the Future' idea," he added, continuing that he firmly believed that "together, we will deliver an unforgettable Expo 2020."

As the German Pavilion plot, which measures approximately 4,600m², is located in the Expo's Sustainability District, sustainability will be the main focus at CAMPUS GERMANY. Visitors will "enrol", like at a university, and then embark on a curriculum that takes them through a Future Energy Lab, Future City Lab and a Biodiversity Lab to "graduate" in an exciting show at the end of the tour. This graduation will be a milestone for everyone – full of emotion and knowledge, with a multitude of possibilities and opportunities for sustainability combined with an appeal to take advantage of them.

Presented by



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Each of the graduates will take on an active role on a mission to use their newly acquired knowledge to shape the future, true to the Expo theme of “Connecting Minds, Creating the Future”.

Superconductors, solar power from concrete and mini invaders

Dietmar Jähn, a managing director at agency facts and fiction, which shares responsibility with NÜSSLI Adunic for the concept design, planning and realisation of the German Pavilion, brought three examples from the CAMPUS GERMANY curriculum to Dubai. The Cologne-based agency is in close contact with more than 30 research institutions, universities and companies to develop a crowd-pleasing, inspiring and well-thought-out showcase of pioneering innovations for a sustainable future.

AmpaCity, a project by Essen-based company innogy, is the only superconductor in the world that is already integrated into grid operations. The underground cable links together two transformer substations, a kilometre apart, in Essen city centre, transmitting electricity with almost no loss. This technology innovation is based on German physicist Johannes Georg Bednorz’s discovery of high-temperature superconductors, for which he was awarded the Nobel Prize in Physics in 1987. AmpaCity replaces up to five conventional 10,000 volt cable systems. Superconductors are also capable of transmitting large volumes of electricity at low voltage, reducing the number of substations needed and freeing up valuable urban space for other purposes. In view of the huge potential this technology offers, AmpaCity is truly a paradigm shift for the energy supply of the future. The project will be on display in the Future Energy Lab at CAMPUS GERMANY.

Another fascinating project, to be shown in the Future City Lab, has been developed by the Building Art Invention research platform at the University of Kassel. Professor Heike Klussmann and her team started their research with experiments in which they poured fruit juice over a slab of concrete. This simple idea led them to develop a system of photoactive layers that can actually be used to generate electricity – solar power from concrete! The system is inspired by the principles of dye-sensitized solar cells and photosynthesis and turns concrete components into mini power stations – without any toxic emissions and using commercially available parts. The method has the potential to provide a low-cost energy source offering almost unlimited applications, especially in the megacities of the future. A source that is renewable, recyclable and environmentally friendly.

In Germany, the earthworm is held in high esteem, but it is increasingly under threat. How can it be, then, that this beneficial organism has itself become a threat to the biodiversity of the North American ecosystem? The EcoWorm research project at the German Centre for Integrative Biodiversity Research (iDiv) is exploring the complex relationship between worms and the environment and the dependencies between the two. Using futuristic climate chambers, called “EcoUnits”, the researchers can simulate key natural factors that influence an ecosystem. Their aim is to expand human understanding of the resource that is quite literally the foundation of life – soil. The ultimate goal is to draw on the project’s findings to ensure that the basis of our very existence, Planet Earth itself, is used in a sustainable manner. In Dubai, the project will be presented in the Biodiversity Lab.

Sustainability in the planning and construction of the building

For Commissioner General Dietmar Schmitz, who has managed the German presence at world exhibitions for several years, the topic of “sustainability and expos” is by no means a new one. At the press briefing following the

groundbreaking ceremony, he explained that he was “... often asked whether a temporary building that will be dismantled after six months is really compatible with the Expo’s sub-theme of sustainability.” However, since a number of the strategies available take decades to pay off, the planners decided to use lightweight construction methods for CAMPUS GERMANY to minimize the materials used. And the aim is to make sure that the material that *is* used, steel for example, is *reused* as far as possible. “In fact, 5,900 metric tons or 77% of the material used in our CAMPUS GERMANY pavilion will be recyclable,” he added. A computer-based planning process is already helping to achieve this. It generates new structures from the scrap left over after dismantling, using an algorithm dubbed “Mine the Scrap”.

The climate management system for the German Pavilion is particularly innovative. Architect Professor Tobias Wallisser, from the LAVA firm of architects, explained in Dubai that, when designing the concept, his team had precisely calculated the best way for the pavilion to provide its own shade and how to take advantage of the pleasant temperatures during the cooler months of the Expo. Part of the system is an innovative ETFE material, which will be used in the façade to draw heat away from the building. In addition, the visitors move through different temperature zones that cool them down gradually during their pavilion journey. This starts in the entrance queue, where they will be sprayed with a refreshing dry mist. The temperature in the atrium will be between 26 and 28°C, and it will be possible to open parts of its façade, weather permitting, to provide a natural cooling system, backed up by fans. “Our climate management system for CAMPUS GERMANY is an example of LAVA’s work to integrate nature and technology using innovative engineering and materials to produce efficient and beautiful spatial structures. And of how buildings develop on various sustainable levels – ecological, structural and social,” said Professor Wallisser, outlining his firm’s work for CAMPUS GERMANY.

These and other topics can now be found on the German Pavilion’s new website, www.expo2020germany.com, which went online as the ground was broken in Dubai.

Background information EXPO 2020 Dubai and the German Pavilion

The next World Expo will take place from 20 October 2020 to 10 April 2021 in Dubai, where the theme will be “Connecting Minds, Creating the Future”. More than 190 countries will be participating in what will be the first expo to be held in the Arabic-speaking region. The organisers are expecting over 70% of the visitors to come from overseas.

Koelnmesse GmbH will be organising and running the German Pavilion at Expo 2020 Dubai on behalf of the Federal Ministry for Economic Affairs and Energy. The “German Pavilion Expo 2020 Dubai Consortium”, comprising facts and fiction GmbH (Cologne) and NUSSLI Adunic AG (Hüttwilen, Switzerland), is in charge of concept design, planning and realisation. facts and fiction will be responsible for content, exhibition and media design, and the pavilion will be built by NUSSLI Adunic. The architecture and interior will be designed by LAVA – Laboratory for Visionary Architecture (Berlin).

For more information, visit www.expo2020germany.com.