Silicon Rush

05/10/2018 How architects are using the latest technologies to plan cities of the future.

London, Riverside, 22 Hester Road: the Foster + Partners studio. Eight hundred architects and engineers, many wearing earphones, sit in an enormous hall with abundant light and floor-to-ceiling windows facing the River Thames. But their attention is directed at their monitors. Here, in this ultramodern drafting room, urban spaces of the future are being planned. In one corner, two young architects survey a project in China with the help of augmented-reality headsets. In the building next door, 3-D printers are producing a model of buildings and streets at a scale of 1:500. Michael Wurzel carefully examines the results. A native of Nuremberg, he began working for star architect Lord Norman Foster right after receiving his degree in 1994. He recently headed the firm's office in New York. And now he is in London, working on a largescale project for San Francisco.

Digital tools are a standard part of Wurzel's everyday routine. "Architecture has always been quick at discovering and utilizing new technologies," he says. "Our drafts probably have 100 times the information density now than they did a decade ago." Digital building planning systems include codes for every detail, no matter how small—right down to the knobs and hinges. And artificial intelligence is knocking at the door. "These technologies enable us to work much faster," he says. "At the same time,

they give us the opportunity to sit back and reflect. After all, the creativity that people expect of architects can't just be turned on like a faucet."

Wurzel's team on the Thames is designing Oceanwide Center in California, which is scheduled for completion in 2022. The residents of this complex will no longer need to press any buttons to use its elevators. Facial recognition software will identify them as they walk through the lobby, and smart elevators will know where their passengers want to go. "Mobility will no longer come to a halt at the front door," says Wurzel. He and his colleagues are using cutting-edge computer programs for other purposes as well, such as simulating the flow of people in order to determine the best locations for escalators. For Wurzel these details are crucial to creating a seamless experience of mobility that takes people from point to point, such as from their apartment to their office, or a museum, or a shopping center.

Mobility heads the agenda at this project in San Francisco. Oceanwide Center will be very close to the Transbay Terminal, the city's major commuter hub, which opened in 2017. It is the point of arrival for both regional buses and trans regional trains. Plans also call for high-speed rail connections to Sacramento, Los Angeles, and San Diego by 2029. "This new hub was something like an incubator for the entire neighborhood," Wurzel notes.

He believes that Oceanwide Center will bring San Francisco a step closer to becoming a smart city. The prerequisites are already there for this transformation; in fact, one can sense them on the streets. Attracted by nearby Silicon Valley, many young founders, techies, and early adopters live and work in the city. Numerous pioneers of the digital transformation, such as Airbnb and Uber, started their successful trajectories here. Driverless cars can already be spotted on the streets of the City by the Bay.

But this greatly loved city is also under enormous pressure, because if it does not make some changes, it could well face collapse. It has very little unemployment, and continues to attract ever more people seeking professional opportunities in the booming Bay Area. City authorities expect San Francisco's current population of around 800,000 to increase by 25 percent over the next two decades. Around 50,000 people travel to it every day, primarily commuters from nearby cities and towns.

"It's almost like a second Gold Rush," says Wurzel. "But this time it's a Silicon Rush. We're by no means the only ones doing construction work right now—there's an incredible amount of planning going on." That in turn has to do with the city's high quality of life. The straight but quite hilly streets with their Old-World cable cars are not designed for a big influx of privately owned cars and a major rise in delivery traffic. There is a serious shortage and consequent high demand for housing. And tech companies are crowding into the city with their offices, in an attempt to attract the best talent.

The Foster + Partners project will create space for both working and living. It is a mixed-use concept for the center of the city in the South of Market neighborhood at the corner of First and Mission Streets. Public squares, new skyscrapers, and renovated historical buildings will share an area of two million square feet, with Oceanwide Center at its heart. When completed in 2022, two skyscrapers will contain more than 1.35 million square feet of office space for the tech industry and more than 650,000 square

feet of living space, along with a Waldorf Astoria Hotel. If you're looking for a room with a view, look no further—at 910 feet, the taller of the two towers will be the highest building with exclusive apartments to be found anywhere on the West Coast.

"We're bringing work and residential space together here," says Wurzel. "And that is in direct response to the needs of the city and its people." Oceanwide Center is essentially a vertical urban quarter. An unusual feature of this complex is that the actual building space only starts at eighty-two feet above street level. "The structural framework, columns, and elevators go down to the ground, of course. But there's a very attractive large public area in between." The resulting pedestrian zone opens up new connections to downtown. "San Francisco has a tradition of creating new public spaces with its new buildings. And that makes a big difference for the neighborhoods and the people who work here."

The mixed-use approach runs throughout the sixty-eight floors of the skyscraper. In addition to work space, each level has food and recreational facilities such as cafeterias and basketball courts. "They encourage people to interact with each other above and beyond their main activity," explains Wurzel. "A social component is very important; in fact, it's a priority for many people in the tech industry. When you work in very focused ways, you need social areas where you can gather, communicate, and brainstorm." Creating the space for a vibrant culture—that is important to Wurzel.

The planning stage placed a special focus on the needs of the tech community. "It's a building that will have a high proportion of young people, of different ethnic backgrounds, with a largely casual outlook—which makes it quite different from a conventional skyscraper for, let's say, a bank," says Wurzel. "For example, many companies are following Google's lead and allowing their employees to bring pets to the office. Moreover, many people work from home, but want an atmosphere with social components."

This new urban culture is also in part a return to values like livability. Streetscapes are no longer dominated by cars, whether in the form of parked vehicles or traffic jams. Instead, there is a greater preponderance of cafés and recreational areas with plants and trees. Workers of the future will want to get together with others, develop creative ideas, and enjoy a high quality of life. San Francisco, with its typical flair, is a perfect example. Even today, more small than large cars roll down its narrow streets, while cafés and restaurants set up tables on the sidewalks. For Wurzel, precisely that is a feature of the cities of the future. "As urban planners we're trying to encourage people to rediscover public spaces."

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