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Toyota's Woven City of the Future

If you live in a major city you probably expect that it will look quite different 50 years from now. In this hypothetical look into the future of your city, breakthroughs in each area of technology will leave their mark and yet one can expect that older forms of transportation, residential structures, office buildings, schools, and even forms of community life will remain the same. At best these older forms of transportation and physical buildings will just be maintained so they can function with only minor physical and technological updates.

At the 2020 Consumer Electronics Show I attended the Toyota press conference, a company known for its automotive technologies, and I expected a presentation that would focus on automobiles. The company's President and CEO, Akio Toyoda (Photo 1), told us how Toyota is ready to break ground on building an entirely new smart city of the future.

He described how Toyota was originally a weaving company and in homage to their early beginnings they have named their smart city of the future "Woven City" (Photos 2-5). The city that will soon rise in the shadow of Mt. Fuji was designed by the Danish architectural firm BIG (Bjarke Ingels Group). BIG has headquarters in Denmark, London, Spain, and New York City. Though you might not know their name, you probably have seen pictures, or even perhaps visited a past project that they designed—the new Two World

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Trade Center in New York City.

The BIG architectural team worked with Toyota designers and engineers to create the Woven City



Images courtesy Toyota

Photo 1—Toyota's President Akio Toyoda surprised everyone when he announced that Toyota is building the city of the future where no one will drive cars.

vision. It was visually designed to blend Japanese styles of construction and landscaping with maximum use of robotics, sustainable energy,



Photo 2—An architecturally rendered aerial image of the Woven City that will be built at the foot of Mt Fuji in Japan.

artificial intelligence, and autonomous modes of transportation.

Construction is scheduled to begin this year and will include architecturally innovative housing, schools, office buildings, medical

facilities, courtyards, parks, recreational areas, and more. The transportation system for residents will only include completely autonomous vehicles (Photo 6).

Completely out of sight below all these structures and courtyards an underground city will also exist, designed to provide all the necessary supportive infrastructure to meet the needs of the residents living above. All the utilities will be installed and controlled underground out of sight of the residents who live above.

In the underground city, autonomous vehicles will move all the products that the people purchase online from point of delivery in the underground city directly into their homes, offices, and schools, completely out of sight of the above ground residents. The upgrading of systems, as technologies evolve, will be carried out through the underground city using the special access points into all the above ground buildings.

Replenishment of food and other supplies will, where possible, be ordered by sensor-based artificial intelligence systems perhaps 1,000% more powerful than your current voice-controlled Alexa, Amazon Echo, or Google Mini personal assistant. Imagine what the most powerful

AI systems that are now available might be able to control compared to some of the smart technology that you now have in your home.

The goal is to build an entirely new city with all new systems that

can be updated as new technology evolves, out of sight of the residents who live in the above-ground community. The Woven City's inhabitants will get to test and use all the newest artificial intelligence home automation and robotic systems in their homes, at work, and at school. The Woven City will be powered by hydrogen fuel cell technology and other renewable sources of energy.

For Toyota, this city will be a human-occupied laboratory where researchers, engineers, and social scientists can observe and receive feedback from the inhabitants that live and work in the city. The goal is to learn how people interact with artificial intelligent systems, new forms of mobility, and the use of robotic systems in daily life. Toyota wants the Woven City to provide answers to many questions about the practicality of using future tech wherever it is possible to implement it, since new technology not properly vetted could bring about unforeseen negative outcomes.

Humans need and crave socialization. Providing it to the community is seen as critical and the social scientists will want to quantify if the technology improves or diminishes human socialization. If you want to learn more about the Woven City and perhaps even become a resident, visit: <https://www.woven-city.global/>.

The e-Palette vehicle (Photo 7) will autonomously transport residents around this community. Twenty of these fully autonomous vehicles will be used for the first time July 24-August 9 to transport athletes during this year's Tokyo Olympic and Paralympics games.

This Toyota video of Akio Toyoda's presentation can further your understanding of the design as well as what the laboratory aspect of the Woven City hopes to achieve. https://www.youtube.com/watch?time_continue=121&v=B5M0IRZPcwA&feature=emb_logo.

Taking It a Step Further

1. Search online to check out some of the BIG architectural firms past, under construction, and future architectural projects.
2. Do you feel the people who live in the Woven City will be living in a fish bowl? Why?
3. Research all the different types of utilities and infrastructure that would need to be placed in the underground city to meet the needs of the residents. ©



Photos 3-5 (above)—The Woven City is both a city and a laboratory where residents use and evaluate cutting edge technology.



Photo 6 (above)—Autonomous vehicles will transport residents where they want to go.

Photo 7 (left)—The e-Palette vehicle that will autonomously transport residents in the Woven City.