

自行北京

“AUTO”-MOBILE BEIJING:

A Prototype Bicycle Center to Revive the Former 'Bicycle Kingdom'

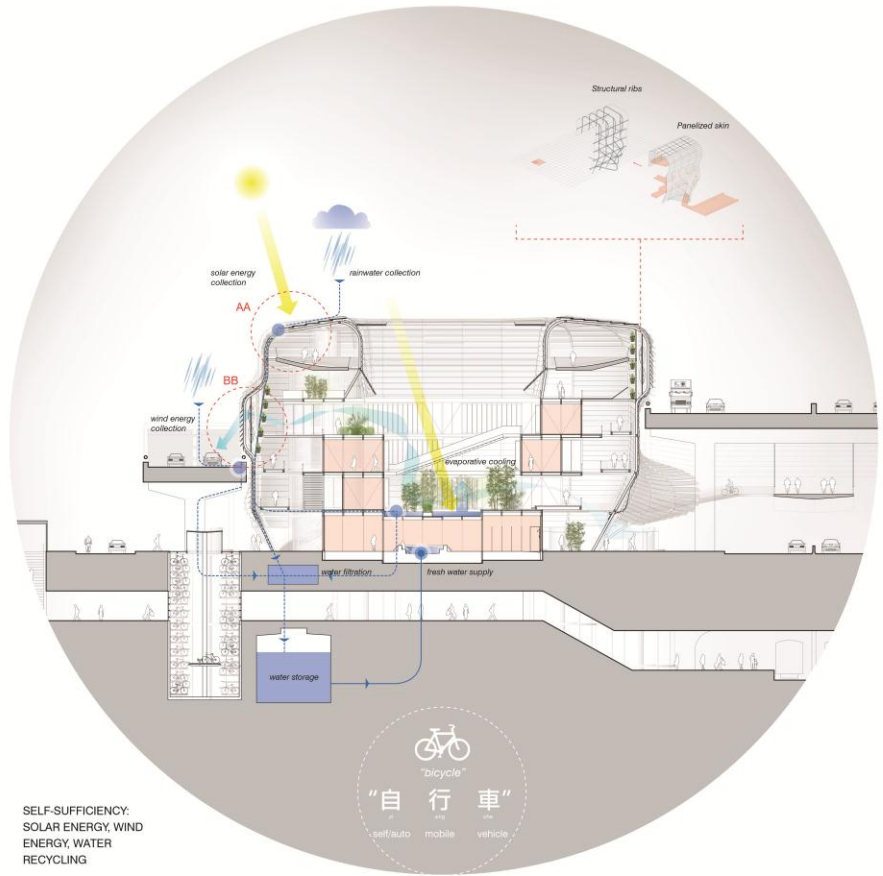
MATERIAL, CONSTRUCTION & ENERGY STRATEGIES

"Auto"-mobile / self-powered

The title of the project, "Auto"-Mobile Beijing, is a reference to the Chinese word for the bicycle, which literally translates to "self mobile vehicle". This name adequately captures the sustainable power of the bicycle - a vehicle which needs no external input other than one's own pedaling to propel it forward. This term became a guiding force in the project, and informed not only the greater conceptual strategies but also the construction and material thinking of the project. The project is designed as a fully self-contained, self-propelled system, tapping the unique resources available in its particular location.

A counter-culture to the car

As the goal of the project is to be a counter-cultural catalyst in opposition to rising car culture, the ways in which the bicycle center employs sustainable construction and material strategies are deliberately informed and motivated by this agenda. From the wind turbines which spin by the wind from passing cars, to the outer-skin which is composed of repurposed car metal and glass, the bicycle center makes the notion of this counter-culture an interactive and highly visible feature to its surrounding context. As the mechanical systems of a bicycle is exposed and part of its aesthetic, the cycle center shows off its material and energy systems as a way to advertise this reborn bicycle-oriented lifestyle for the city of Beijing - "Auto"-Mobile Beijing.



Sun and Rain

The roof acts as a collector both of solar energy as well as rainwater. The energy collected by the photovoltaic glass panels on the roof is fed directly into the bicycle center for its program uses. They also act to filter out harsh sunlight from the sport cycle track directly below it. Rainwater is collected via troughs on the roof and fed to the central pond and water storage tanks below. That water is then put through a filtration system and put to use for the locker / bath areas at the base of the bicycle center.

Collected water used for ponds as well as bath areas



DETAIL AA: PHOTOVOLTAIC PANELS AND RAINWATER COLLECTION

Wind Power, Air and Sound Filtration

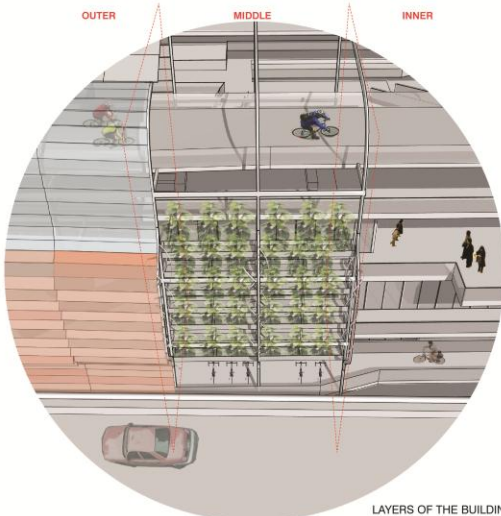
The skin of the building bulges out to meet the highway, creating a pocket for microturbines to capture wind energy from the suction created by passing cars. The skin is made of metal panels from recycled car metal, wrapped around an interior layer of recycled tire rubber. This acts to reflect and absorb noise from the highway. Behind these systems are a set of plant trays in which pollutant-reducing plants are grown. These act both as a buffer to the smog outside as well as further protect the bicycle center from noise.

Air suction created by passing cars



DETAIL BB: WIND ENERGY, AIR PURIFICATION, SOUND ABSORPTION

OUTER MIDDLE INNER



LAYERS OF THE BUILDING SKIN

A - Photovoltaic Glass



B - Wind Turbines



C - Pollution and noise-reducing shrubs



Beijing's discarded taxis



D - Glass panels from cars



E - Sheet metal from cars

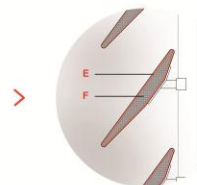


F - Old tires



Material Cycles

The materiality of the project deliberately reinforces the dichotomy between bicycle and car by using recycled car parts such as car windshields, car body metal, and old tires in the facade system. This therefore becomes the aesthetic expression of the bicycle center, a commentary of the large amount of material and embodied energy that goes into the production of automobiles.



DETAIL CC: CUSTOM RECYCLED METAL AND RUBBER PANELS