Students Reinventing Cities

Shiyezhou Island, Zhenjiang

Dantu District, Zhenjiang, Jiangsu Province, China (212100)

Shiyezhou Island is located in Shiye Town, west of Zhenjiang and is the fourth largest island in the Yangtze River. The area covers 1.2 square kilometers and has a total population of 14,400, with 5 administrative villages under its jurisdiction. Shiyezhou Island, also known as the *'green island in the river'* and the '*ecological island*", has in total 120 hectares of natural open parks and wetland landscapes. The Runyang Bridge is a large bridge that crosses the Yangtze River and spans Shiyezhou from north to south, providing the island with easy access to transportation. In recent years, Shiyezhou has successfully developed green industries such as recreational tourism, efficient modern agriculture, as well as health preservation. Looking ahead, Shiyezhou is striving towards carbon neutrality, which promotes the overall integration of climate change, ecological environmental protection, and high-quality agricultural and tourism development. In addition, Shiyezhou aims to improve the ecosystem's carbon sink capacity, and create a "zero-carbon island" based on Shiyezhou's existing planning foundation and ecological civilization construction.

Shiyezhou Island has been chosen as a site for this competition due to its potential to become a 'carbon-neutral island'. The area identified is Shiyezhou Music Plaza, which is located north of the island. Students should consider innovative ideas and strategies to develop a zero-carbon island by focusing in particular on sustainable waste management, recycling, resource consumption, sustainable tourism as well as developing green energy infrastructure on site, while preserving the natural environment.

Approx. site area:
7.2 hectares.

Key Information:
Shiyezhou Island is a key component of the regional growth channel and has a total population of approximately 14,400. The selected site, Shiyezhou Music Plaza, is a vacant plot of land which was previously used as a venue for music festivals and the city aims to reimagine and transform the site.

Priority areas & main expectations:
The project aims to advance Shiyezhou's efforts in achieving a 'carbon-neutral island' by 2035. Students should consider strategies to improve energy infrastructure within the site in order for the island to become more self-sufficient through the provision of green energy. Proposals should also promote circular resource management and the development of sustainable and low-carbon tourism industry and agriculture, as well as promoting community development and a more sustainable lifestyle. The projects must also preserve natural resources and biodiversity of the island.

Presentation of the site and development expectations

Shiyezhou is located in the Yangtze River Delta region, under the jurisdiction of Dantu District, Zhenjiang City, and is surrounded by a 26.5-kilometer-long flood control embankment. Its unique location and natural benefits offer a wide variety of rich regional resources for tourism and have increasingly become a focus of attention. The Runyang Bridge spans Shiyezhou from north to south, making Shiyezhou well-connected in the regional development channel.

Figure 1: Site location map

Shiyezhou Island is characterised as a '*ecological pastoral village, pleasant music island and leisure and health preservation area*'. The site chosen for the competition, Shiyezhou Music Plaza, is located within music island which belongs to a space that has already been built, as shown on Figure 2. As shown in the figure below, services on the island include agricultural planting and harvesting, tourism, education and training, conference services, cultural and artistic exchange activities, organisational planning and training of outdoor sports, catering and accommodation services, as well as quality development training.

Figure 2: Current planning map

The project is expected to prioritise, but not be limited to, the following two aspects.

Firstly, circular **resource management and recycling**, to reduce waste and resource consumption. Shiyezhou Island has established a productive planting industry for corn, wheat, and medicinal materials. Traditional amusement parks, farmhouses, and village picking are the primary tourist attractions within Shiyezhou. To reduce carbon emissions, Shiyezhou has fully built a sewage pipe network, adopted a rainwater harvesting system as well as prohibiting straw burning during autumn and summer to reduce air pollution.

Projects should also consider how to promote circular resources and low-carbon development of existing agriculture and tourism industry.

Secondly, **improvements to energy infrastructure**, in order to accelerate green and prosperous development of residential communities and the low-carbon development of Shiyezhou Island. Currently the main energy consumption of Shiyezhou Island is electricity and transportation energy consumption, including residential and agricultural consumption.

Projects should consider how to develop green energy infrastructure and make the island self-sufficient and supplied by renewable energy.

Starting from the selected site, students can propose solutions that can be replicated in other areas of the island.

City climate priorities and specific environmental challenges

Shiyezhou Island is based on the concept that green water and green mountains are golden mountains and silver mountains; these should be leading concepts for the students' work, focusing on ecological protection and sustainability. Students should comprehensively consider the protection and preservation of the Yangtze River and strengthen the protection of land, water, vegetation, biodiversity, wetlands and other ecological environments whilst planning strategies for self-sufficient green energy, low-carbon transportation systems and community development.

To help soak up excess rainwater and improve resilience to climate change within the city of Zhenjiang, the city has adopted the Sponge City concept. By 2025 the city aims to have the urban area entirely compliant with Sponge City standards. Shiyezhou Island is at a high risk of flooding as it is located in the middle and lower reaches of the Yangtze River with small rivers encircling its boundaries. It has a humid and mild climate, four distinct seasons, and moderate rainfall. It belongs to the northern subtropical monsoon climate and is prone to flooding in spring and autumn every year. Therefore, students should consider strategies within their design to reduce the risk of flooding.

In addition, we invite students to focus on the following climate-related risk, the Urban Heat Island (UHI) effect. Future heat waves are predicted to occur more frequently, proposals should consider measures to mitigate the risk of overheating and improve resilience. Self-sufficient green energy production and resource recycling should be considered in the planning and design process.

The low-carbon development of the tourism industry and agriculture, and the prosperity of residential communities are all aspects of great importance to consider in the proposed project.

Specific planning rules and regulations

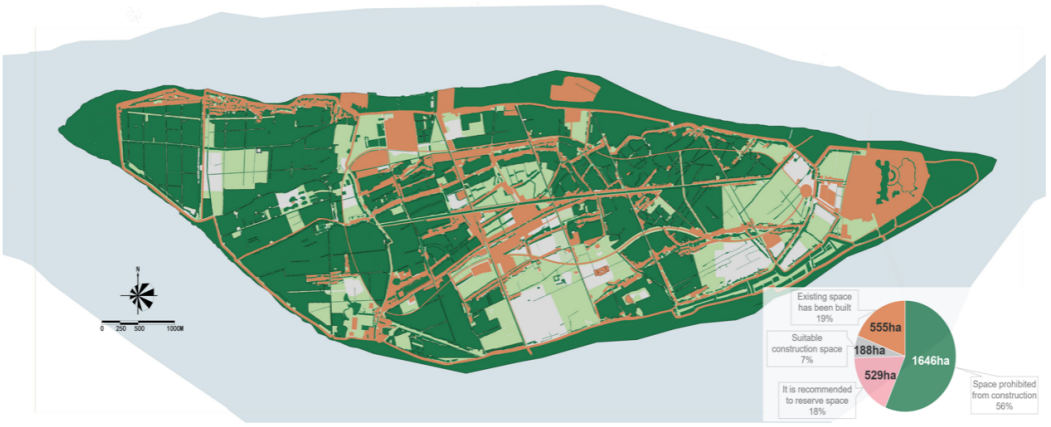

Figure 3: Land planning map

Figure 3 is a land planning map for Shiyezhou Island, which highlights how different spaces are used within the island. The map illustrates that the space prohibited from development and construction accounts for approximately 56% of the island - this is to ensure ecological security and conservation within the island. The music square belongs to the 19% of existing space that has already been built. For specific planning zones, please refer to the Shiyezhou Land Planning map.

Figure 4: Music square parking lot map

Language requirements

Proposals must be submitted in English or Chinese.

City-specific awards

Winning students will be invited to attend the International Low Carbon (Zhenjiang) Conference subforum in Shiyezhou to exchange ideas, present their project and discuss low carbon challenges in different fields. The International Low Carbon (Zhenjiang) Conference subforum is expected to be held after October. Please see links below to past conferences:
2017 International Low Carbon (Zhenjiang) Conference
2018 International Low Carbon (Zhenjiang) Conference
The Fifth (2021) International Low Carbon (Zhenjiang) Conference