

BETTER ENERGY DESIGN

—Take Sangji Fish Pond in Nanxun and
Hefu Town of Huzhou as an example.

Instructor: Gao Ning (高宁)

Team member: Zhang Xiao (张潇), Shen Niping (申妮平), Shangguan Shurong (上官淑蓉)

chapter two



results show

chapter one



Course purpose and topic selection site

CONTENTS

contents

第一章

PART.1

Course purpose and
topic selection site



Course purpose

Understand the current strategies such as "peak carbon dioxide emissions" and "carbon neutrality"

Discussion on the innovative perspective of sustainable energy development in environmental design

Put forward the solution of environmental facilities and environmental public art direction under the background of "double carbon"



Current situation of complementary development of fishing and light



Difficult construction

The number of water foundations is large, the construction cost is high, and the construction period of water foundations is long.



Weak visual effect

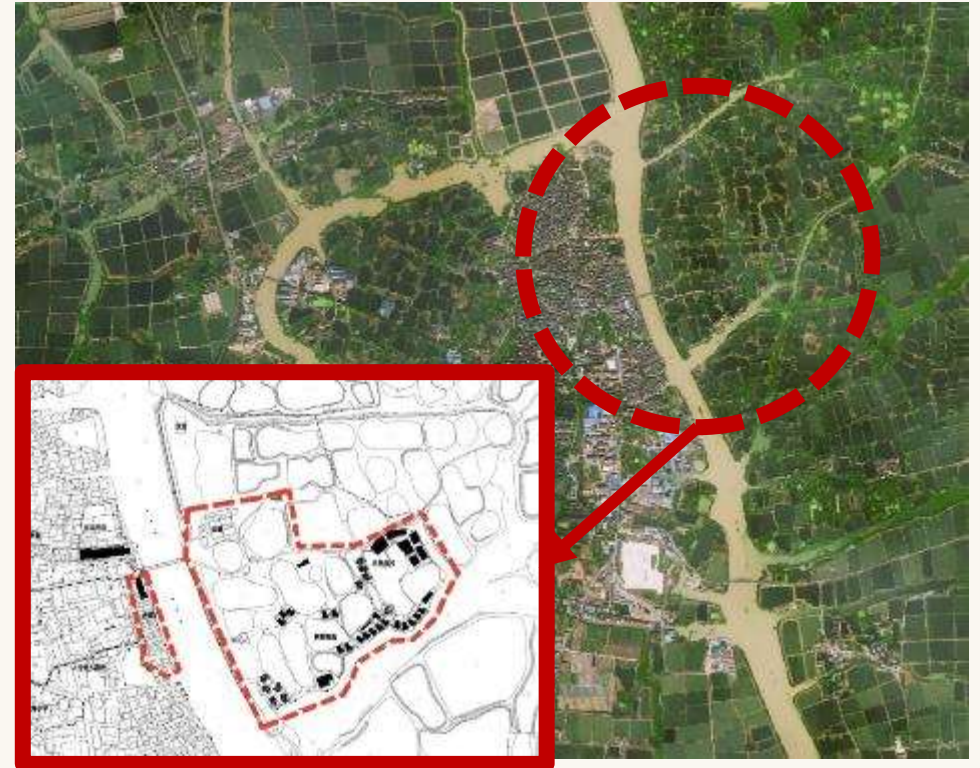
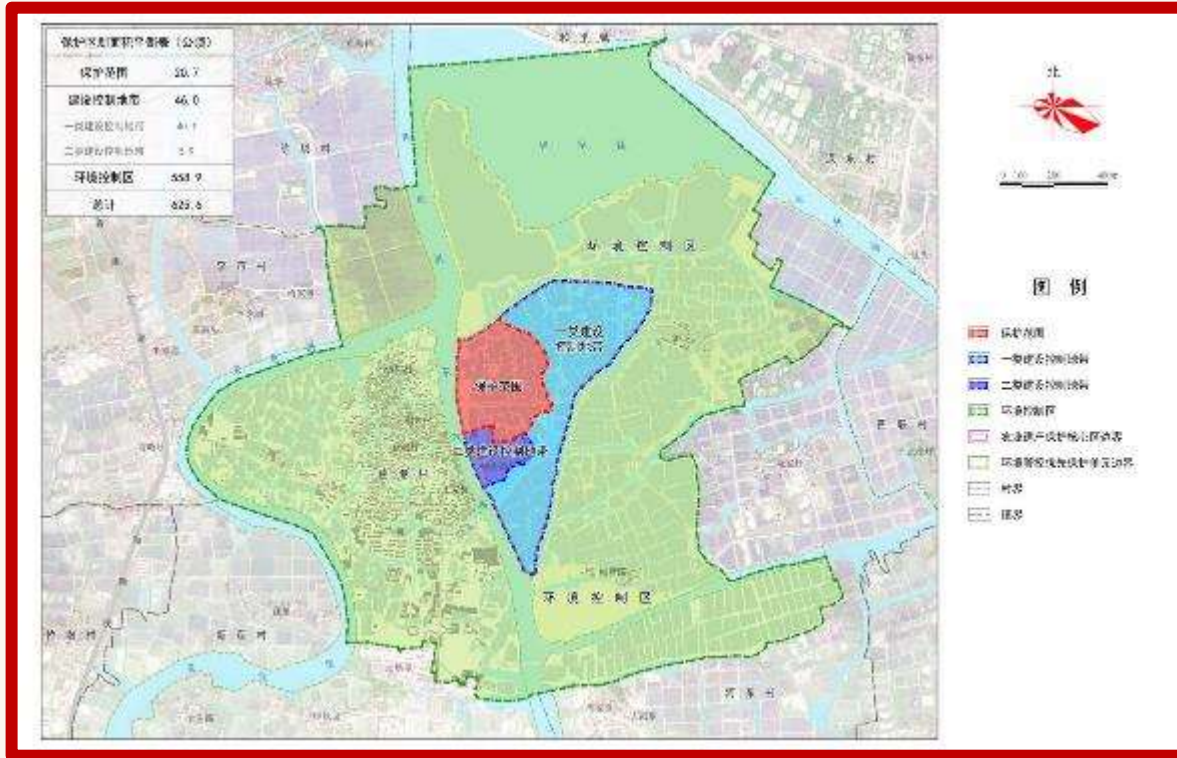
Fish ponds have low land utilization rate and lack of aesthetic appearance.



Low efficiency

It is not conducive to fishery farming and fishing, and affects fishery production and operation activities.

Site analysis



This topic includes two areas: the landscape design of Wenchuang Block in the ancient village of Digang and the landscape design of Sangji Fish Pond. The ancient village of Digang and Sangji Fish Pond are adjacent in spatial location. The Wenchuang Block project is a 370-meter renovation and upgrading of Wenchuang Block, which is located in the scenic spot of Digang ancient town. The existing two old streets, Lixiang and Waixiangdai, are renovated, and the total area of Sangji Fish Pond project is.



The base of this research object is located in Tangdong Natural Village, Digang Village, Hefu Town, Nanxun District, Huzhou City, Zhejiang Province.

There are 60,000 mu of mulberry fields and 150,000 mu of fish ponds in Nanxun Sangji Fish Pond. There are more than 5,000 residents in Digang Village, and about 1,000 people in Tangdong Natural Village of Sangji Yutang.

Huzhou Nanxun Hefu Town Sangji Fish Pond

塘上种桑、桑叶喂蚕、蚕沙养鱼、鱼粪肥塘、塘泥壅桑

- The ancient village of Digang is formed by the river. Because the water becomes a street, Shili Water Market is prosperous. It reflects the continuous commodity trading grand occasion and prosperous culture.
←-----→
- At present, there are three cultural tourism-related constructions: Digang scenic spot, newly-built silkworm house and high-altitude observation tower (under construction), with perfect infrastructure and good tourism foundation.
←-----→
- Part of the houses and streets and lanes in Digang Village still maintain the features and traces of life during the development and prosperity of Ming and Qing Dynasties, with complete public infrastructure and beautiful environment.

第二章

PART.2

• r e s u l t s s h o w •



1

风

动

怡

情



The whole landscape consists of several photovoltaic panels and colorful ribbon acrylic art installations. The ups and downs of photovoltaic panels maintain a sense of dynamics, simulating the scattered forests and echoing the rich flowers and plants around them. The acrylic art device passes between the road and the photovoltaic device in a curved trend, such as water ripple fluctuation; The device is evenly arranged with colored plexiglass, and the color of sunlight passing through the device is more gorgeous, such as fish scales and water surface sparkling. The wind passes through the gap between acrylic, driving the colored light to flicker, and mapping the dynamic potential of the wind in the form of light on the road environment.

The device magnifies the landscape advantages of wind and light, does not need to consume energy, and can also have the function of generating electricity by light energy. The device emphasizes the dynamic visual effects of three different objects: people walking, the dynamic sense of device modeling and the interaction between wind and light, which increases the interest of pacing fish ponds and forms a sense of rhythm with other landscape points.

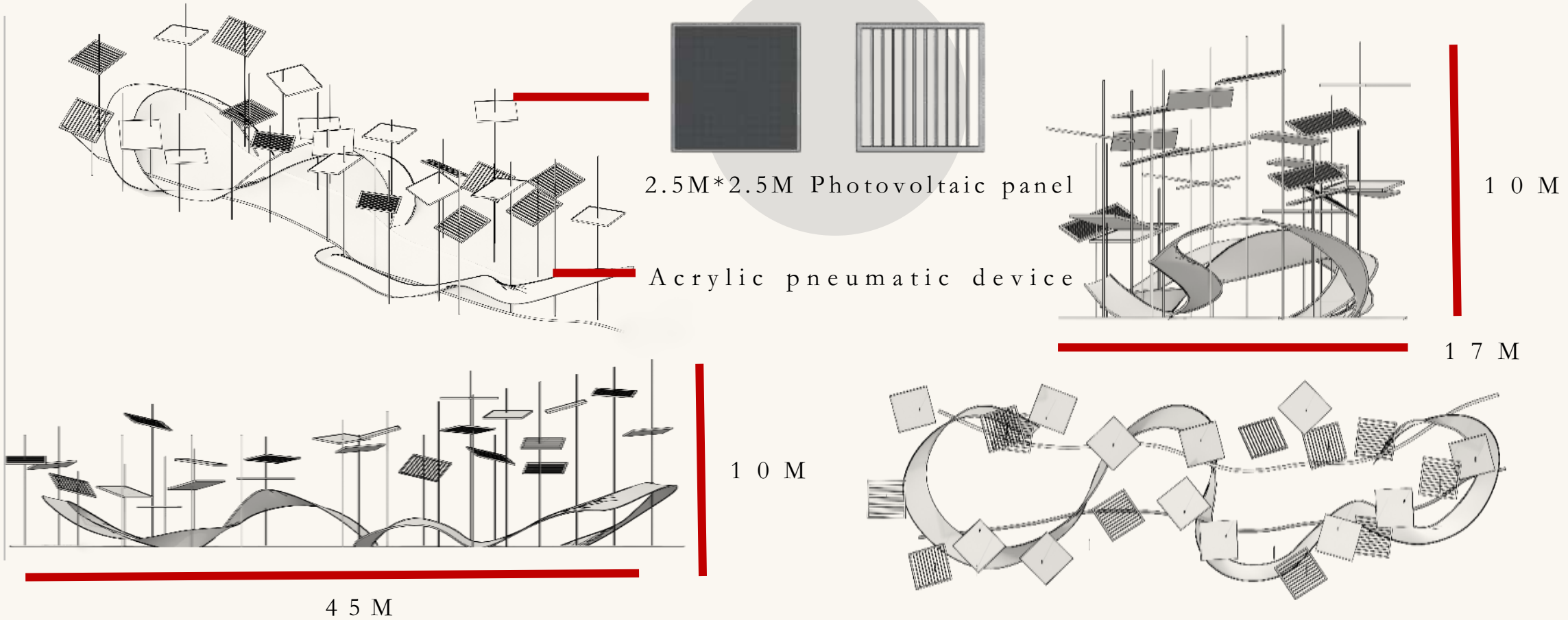
1

风

动

怡

情



The whole device is composed of several groups of photovoltaic racks and a group of acrylic pneumatic devices. The example device is 45 meters long and 17 meters wide. Suitable for setting on the shore near the waterscape, combined with vegetation and flower border, it can create a sense of atmosphere between water and plants, increase emotional ups and downs for the flat and boring ridge road, reduce the tedium of the road, and tourists are more willing to stop and watch the scenery, and can also cater to the needs of tourists to take photos, which is helpful for tourists to spontaneously promote tourism. Using the gap between devices and inserting photovoltaic power generation devices can also store more electric energy for the local area.

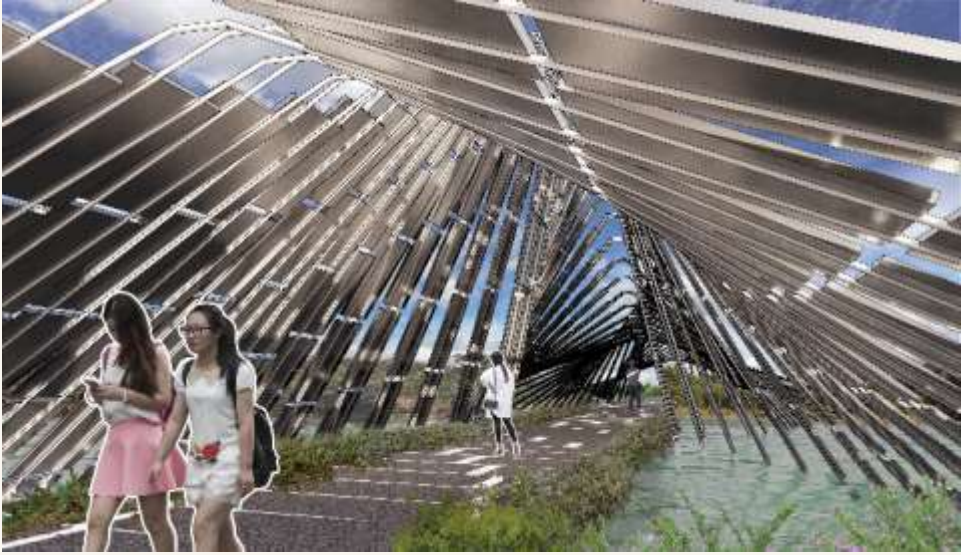
2

鸢

飞

鱼

跃



The structure is designed with the original intention of "flying kites and jumping fish", which means that everything has its place. The structure is supported by steel pipes, and the photovoltaic panels are overhead on the water surface and on the pond ridges between fish ponds, which expands the new way of complementary fishing and light, so as to gain more natural gas energy.

The structure is built on the pond ridge, which makes greater use of the vertical space compared with the traditional complementary support system of fishing and light, avoids the problems of low water surface temperature caused by the absorption and reflection of sunlight by photovoltaic panels on the fish pond in the past, has little impact on aquaculture in the fish pond and improves the land utilization rate of the fish pond. On the road, photovoltaic panels form a natural sunshade road, and show different visual effects on the inside and outside.

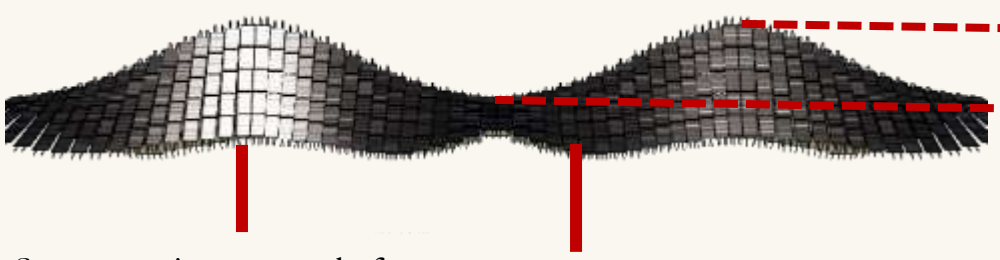
2

鸢

飞

鱼

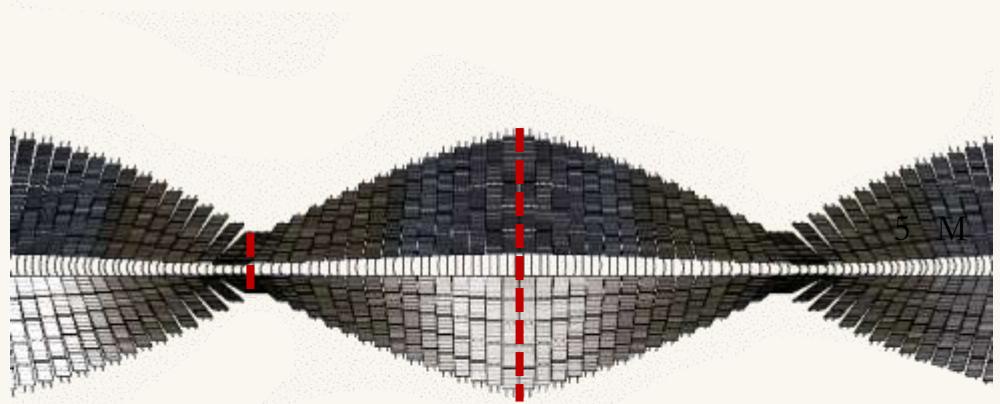
跃



Supporting steel frame 1.5M*1M Photovoltaic panel

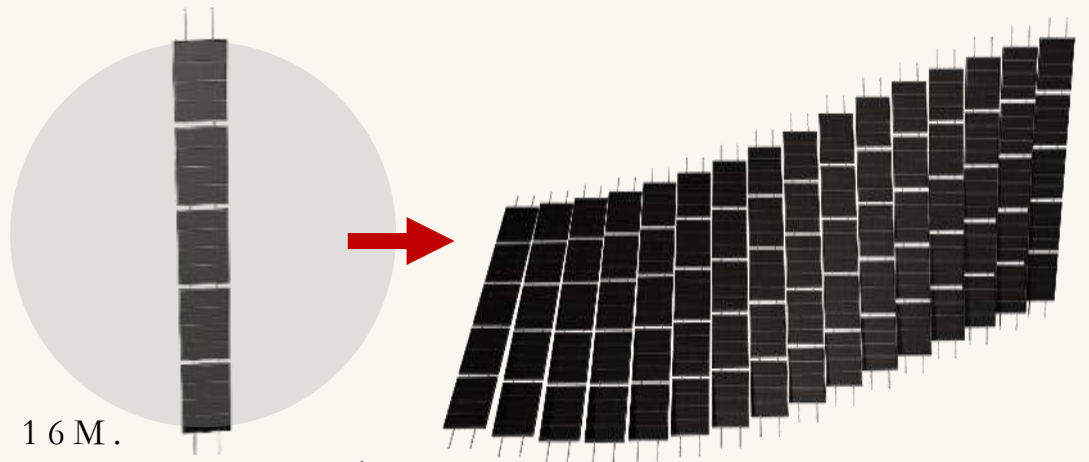
The highest point is 9M

The lowest point is 3M



The minimum span near
the ground is 3.8M

Maximum span is 16M.



single unit

The decoration is composed of a single piece. Extend inside and outside the arc to form a staggered order.

The inside shows a strong sense of depth, such as being covered by fish bones in the belly of a fish; The outside presents an orderly sense of order, like a fish jumping on the water, sparkling and shining. Looking closely, each photovoltaic panel symbolizes a fish scale, absorbing energy in the sun and giving back to the people.

3

如

鱼

得

水



The device adopts water and fish as the main design elements, integrates the shape of water waves into the photovoltaic grid structure, imitates the growth and arrangement of fish scales, and attaches solar photovoltaic panels to the grid, changing the unchangeable form in the past, and constructing a vivid picture of water waves and fish scales flying over the fish pond.

During the day, the device not only plays a visual role in enriching the landscape, but also greatly improves the interest of tourists and contributes to the publicity of the town. Moreover, the neatly arranged photovoltaic panels can absorb and store solar energy, convert it into electric energy, and transport it to the whole town, thus improving the utilization rate of energy.

3

如

鱼

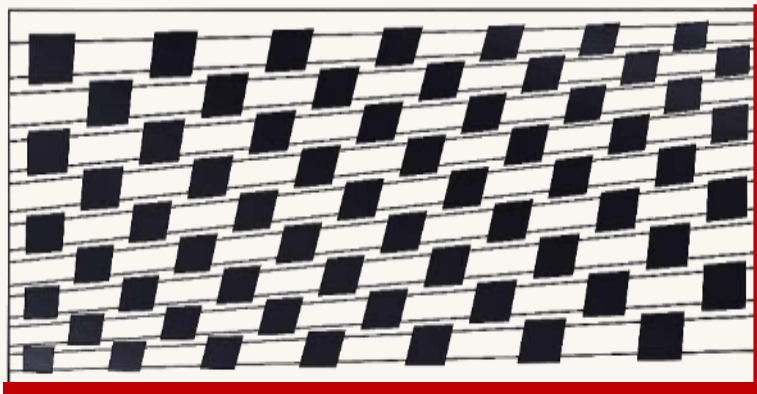
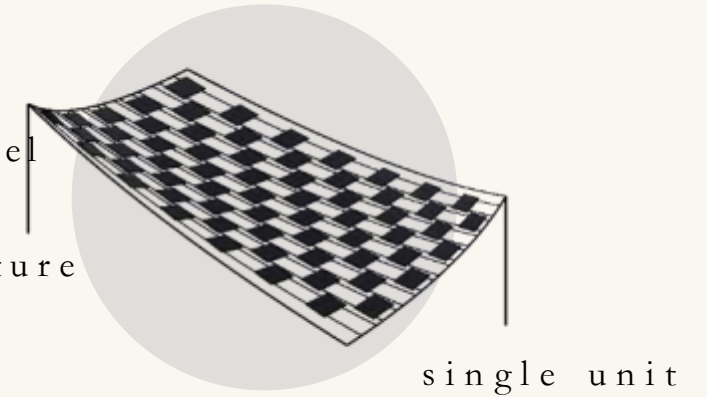
得

水



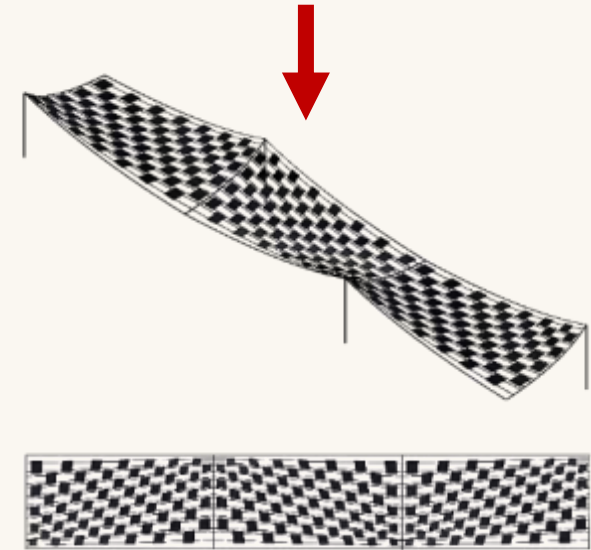
1M*1M Photovoltaic panel

Supporting grid structure



5 M

10 M



The structure of the device is formed by splicing multiple groups. The single group of devices is 10 meters long and 5 meters wide, which can be flexibly applied to different shapes and sizes of venues and can be spliced freely according to requirements. There are enough gaps between photovoltaic panels and photovoltaic panels, which are staggered. While fully absorbing solar energy, the lighting conditions required for crop growth in the fish pond are ensured, and the natural energy is maximized without affecting the original fish pond ecosystem.



T H A N K S