



CEPC CIVIL ENGINEERING And digital Management

*Zhe Jiang Hu Zhou **Site***

2021.11

one of the CEPC representative sites

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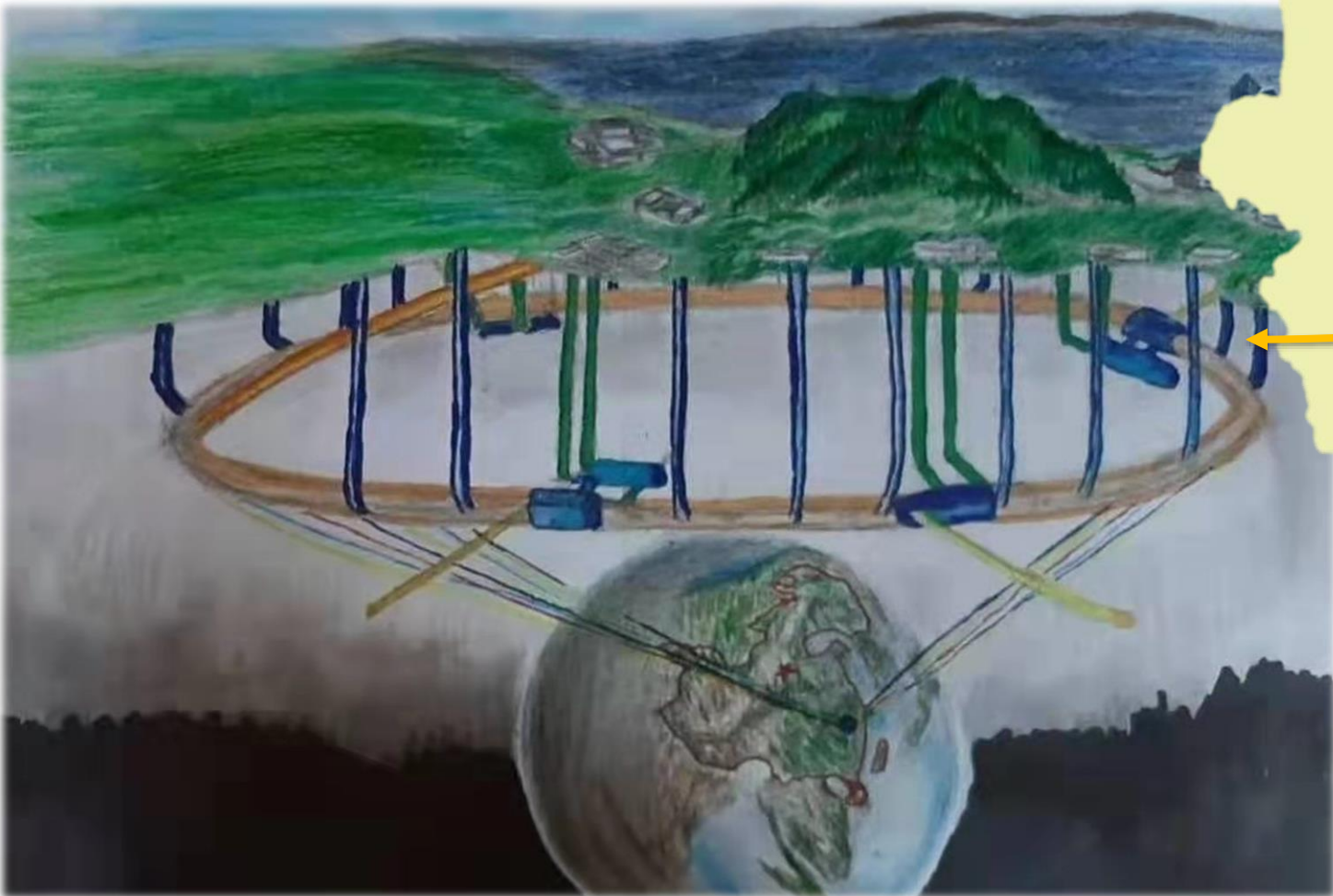
- 1 introduction to Zhe Jiang Hu Zhou Site
- 2 In-depth study of the Hu Zhou Site
- 3 A Preliminary Study on digital Management
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▶ introduction to Zhe Jiang Hu Zhou Site



Zhe Jiang Hu Zhou Site

*the center of the Yangtze River Delta
Northern Zhejiang Province*



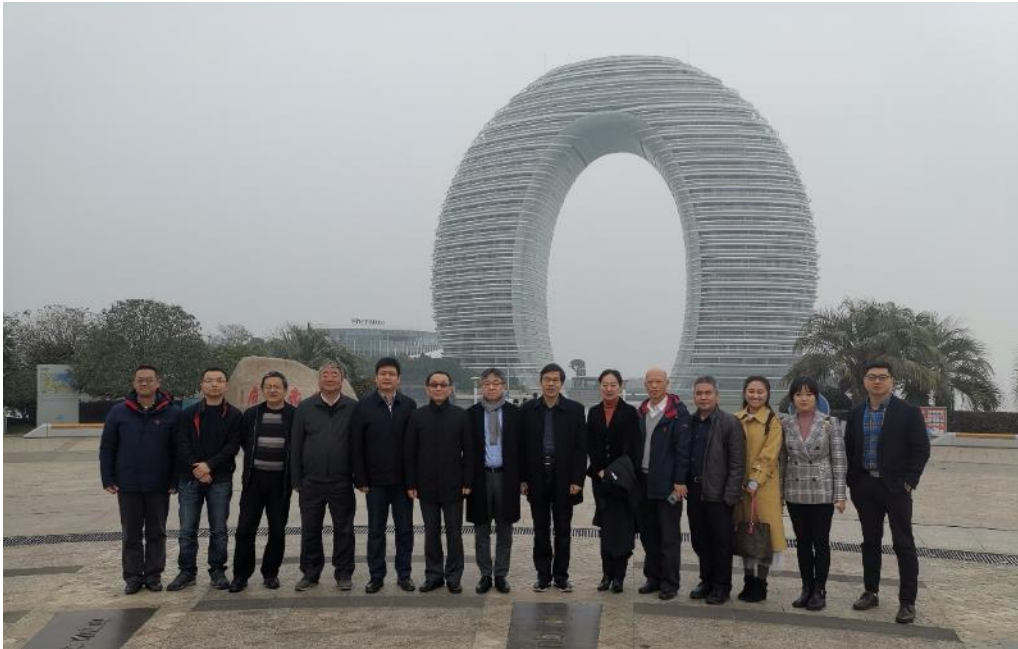
introduction to Zhe Jiang Hu Zhou Site

From March 25 to 29, 2018

The starting point of huzhou site

By October 2020

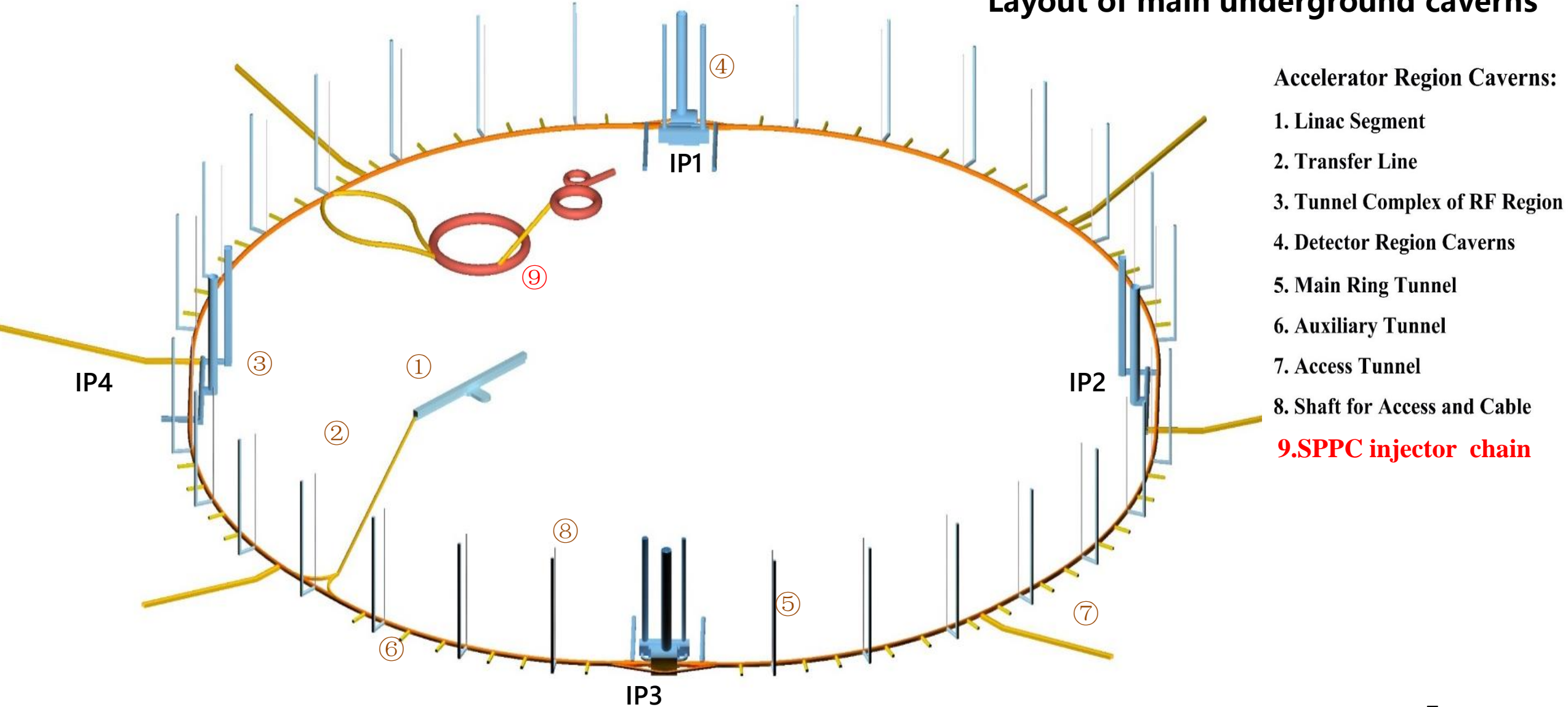
the work that has been done is as follows



Joint investigation team of
ZheJiang government and IHEP

- **CEPC report on site selection (Zhejiang Huzhou)**
Answer the questions-Why did CEPC choose huzhou
- **CEPC report on socio-economic assessment**
Answer the questions-Why did huzhou choose CEPC
- **CEPC Technology Design Report on Civil engineering of the first stage**
- **CEPC report on science city concept plan**
Find a comfortable home for scientists

Layout of main underground caverns

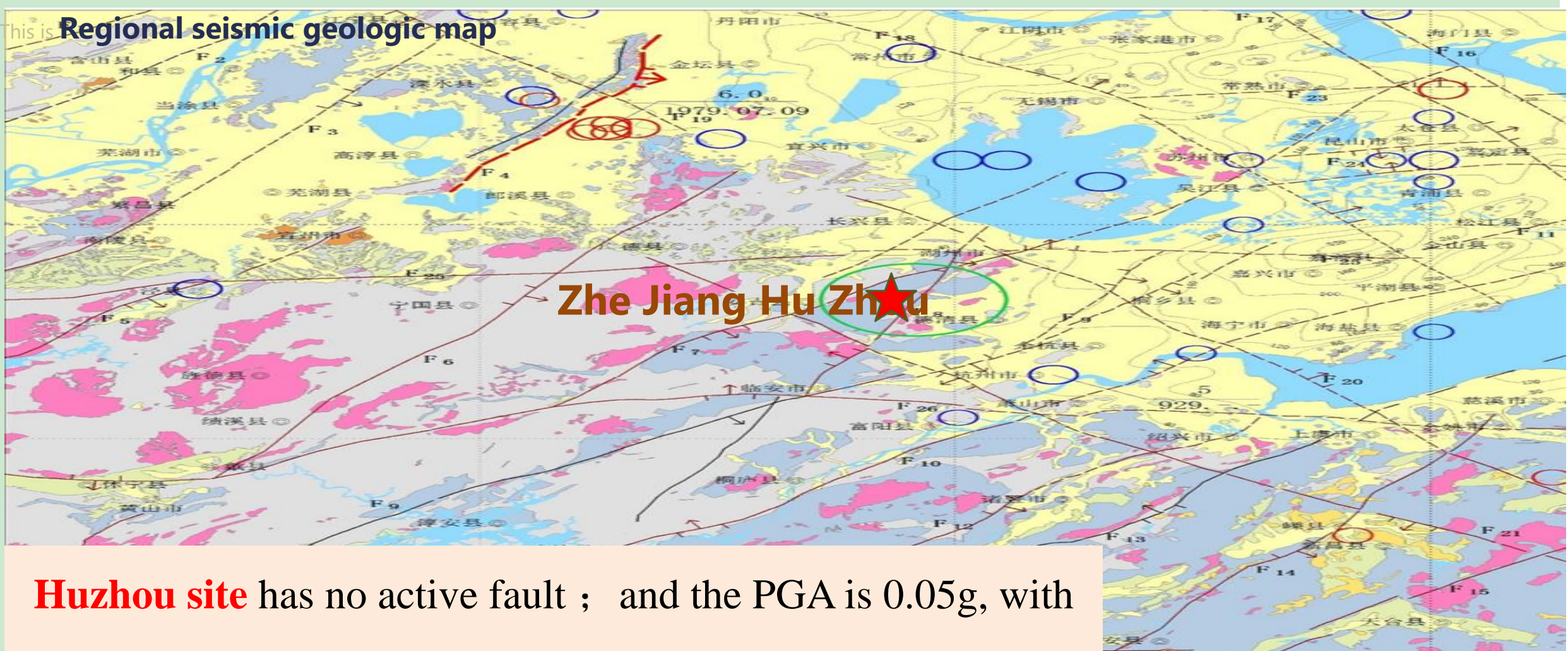


Accelerator Region Caverns:

- 1. Linac Segment
- 2. Transfer Line
- 3. Tunnel Complex of RF Region
- 4. Detector Region Caverns
- 5. Main Ring Tunnel
- 6. Auxiliary Tunnel
- 7. Access Tunnel
- 8. Shaft for Access and Cable
- 9. SPPC injector chain

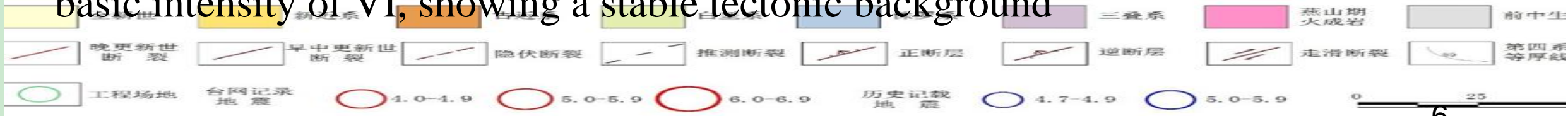
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Regional seismic geologic map



Zhe Jiang Hu Zhou

Huzhou site has no active fault ; and the PGA is 0.05g, with basic intensity of VI, showing a stable tectonic background



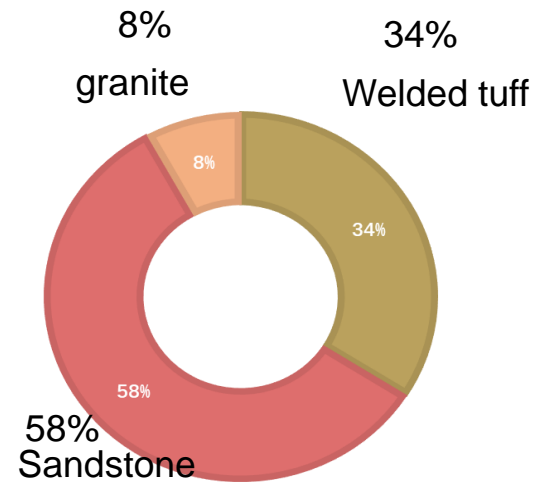
introduction to Zhe Jiang Hu Zhou Site

The minimum depth of the main ring is 70m

The geological work can be converted into three dimensions geological display

The sandstone and welded tuff in the site are relative moderate hard and stiff, respectively. The rock mass is intact along the tunnel.

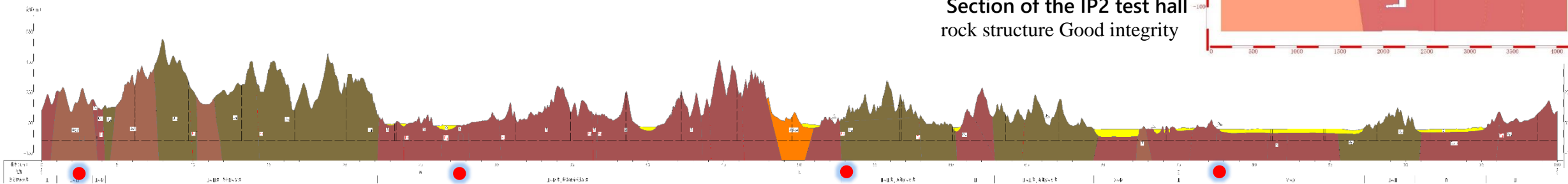
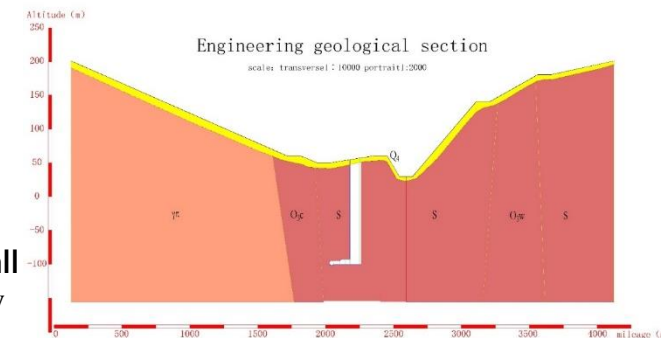
Therefore, it is believed that the rock shows high engineering quality here, and is suitable for the project constructions.



Lithologic of surrounding rock along tunnel axes

the 3 dimensional geological display

Section of the IP2 test hall rock structure Good integrity



IP2

IP3

IP4

IP1

主环轴线地质剖面 Geologic section of the ring tunnel along axes

➤ introduction to Zhe Jiang Hu Zhou Site

International Science City

the overall picture of science city



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Universal data management cloud platform



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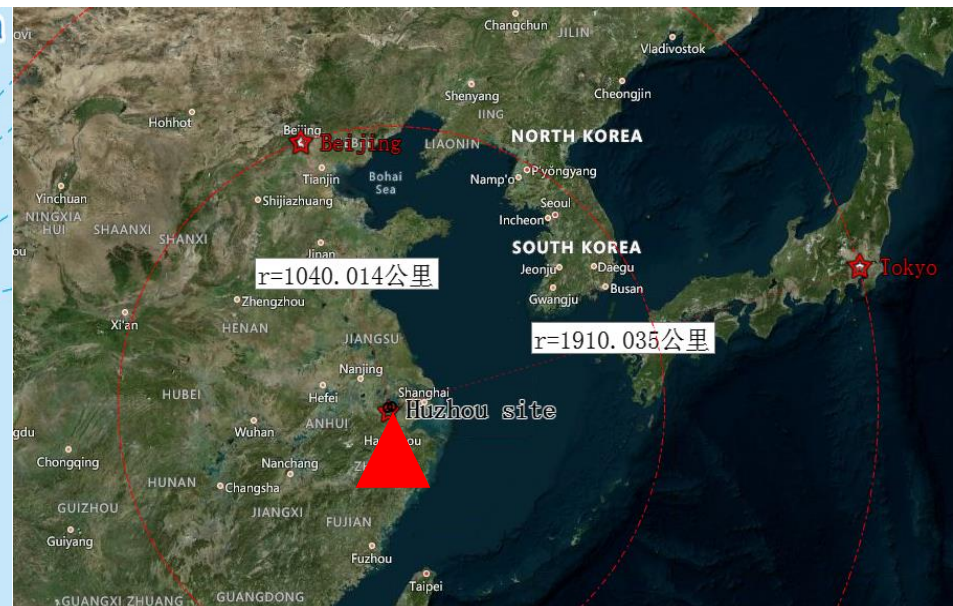
In-depth study of the Jiang Hu Zhou Site

1. Try to give CEPC site selection evaluation factors and criteria
2. Supplementary analysis of site selection evaluation factors
3. Deepen the analysis of construction plan

► In-depth study of the Jiang Hu Zhou Site

2、 Supplementary analysis of site selection evaluation factors

external traffic



Convenient transportation The Zhe Jiang Huzhou site is 75km away from Hangzhou, 130km away from Shanghai, 1040km away from Beijing and 1910km away from Tokyo. It has a national first-class airport, and Extensive railways and highways

► In-depth study of the Jiang

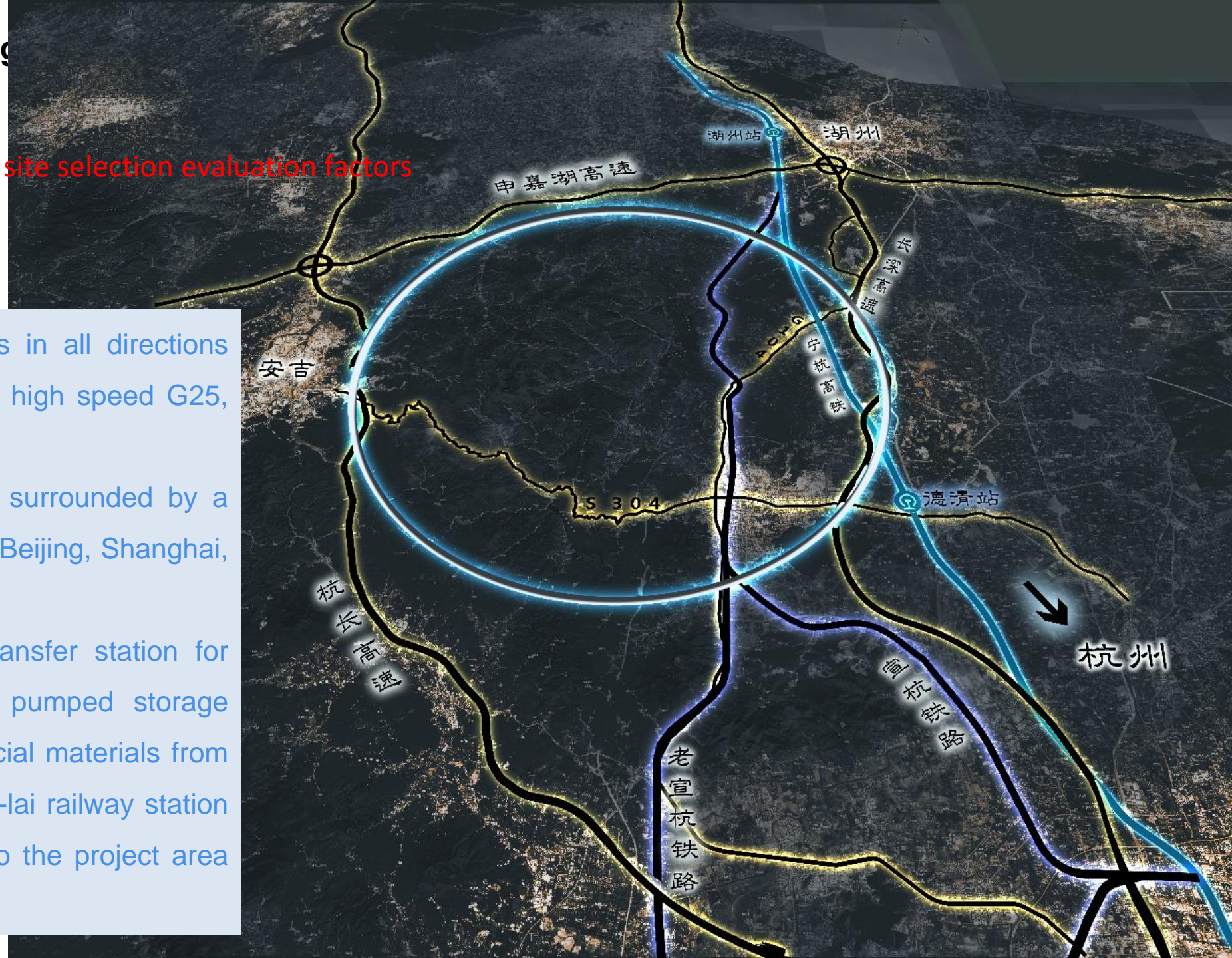
2、 Supplementary analysis of site selection evaluation factors

external traffic

highway: There are highways in all directions around the project area, such as high speed G25, S11, S14.

Railway: The project area is surrounded by a number of high-speed railways to Beijing, Shanghai, Hangzhou and other cities.

Shi-lai railway station is a transfer station for major parts of Tian-huang-ping pumped storage project. The major parts and special materials from outside can be transported to Shi-lai railway station by railway and then transferred to the project area by road.



➤ In-depth study of the Jiang Hu Zhou Site

2、 Supplementary analysis of site selection evaluation

external traffic

Waterway: In 2018, Huzhou port handled 105 million tons, ranking first among inland river ports of the same type in China.

Huzhou is connected with the seaports of the Yangtze River Delta and the Yangtze River, creating conditions for the combined transportation of rivers and seas



In-depth study of the Jiang Hu Zhou Site

2、 Supplementary analysis of site selection evaluation factors


Due to the wide scope of the project's plane location and its great impact on all aspects of society, the impact on the natural environment needs to be specifically investigated,

In 2021, the local government has organized transportation, water conservancy, cultural relics, land and environmental protection departments to closely cooperate to assess the major factors affecting the project.

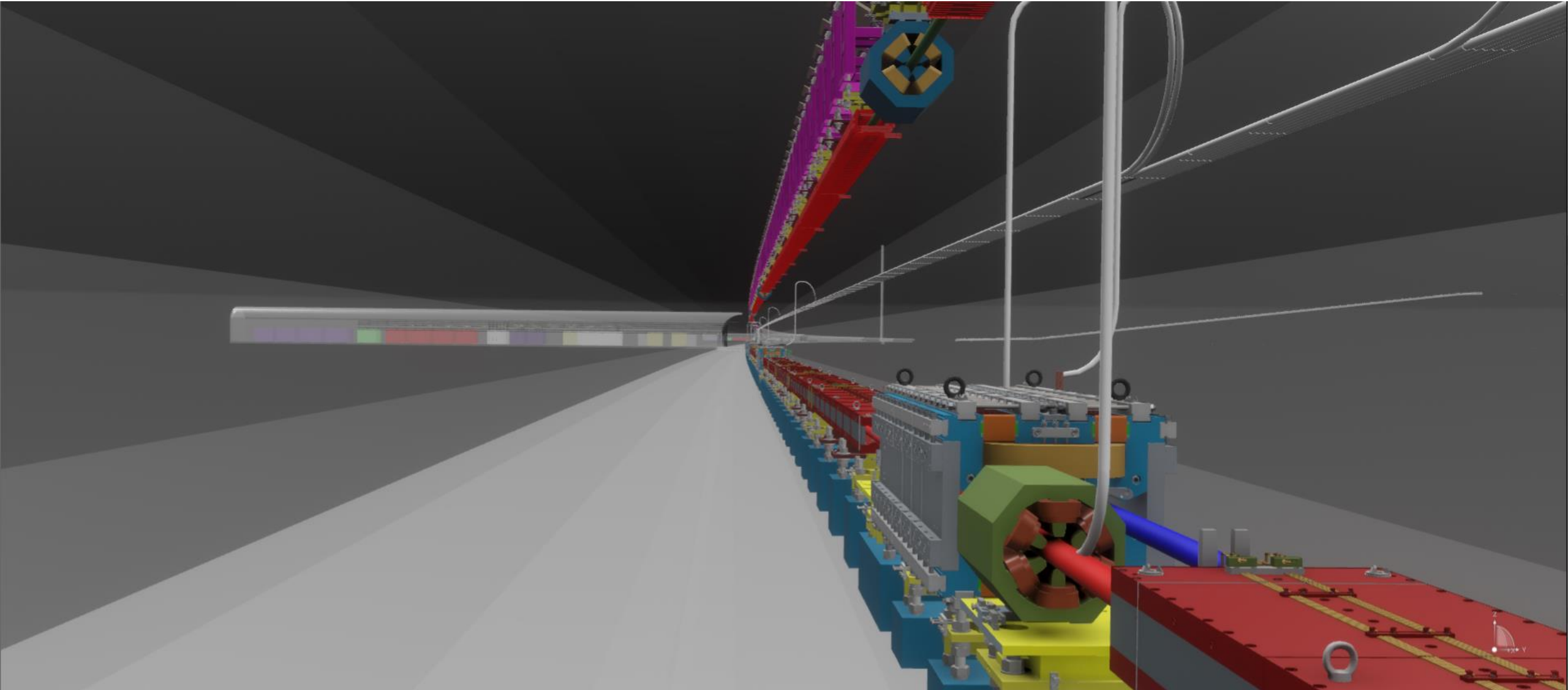
The conclusion is that the project is feasible and there are no local constraints on the project.

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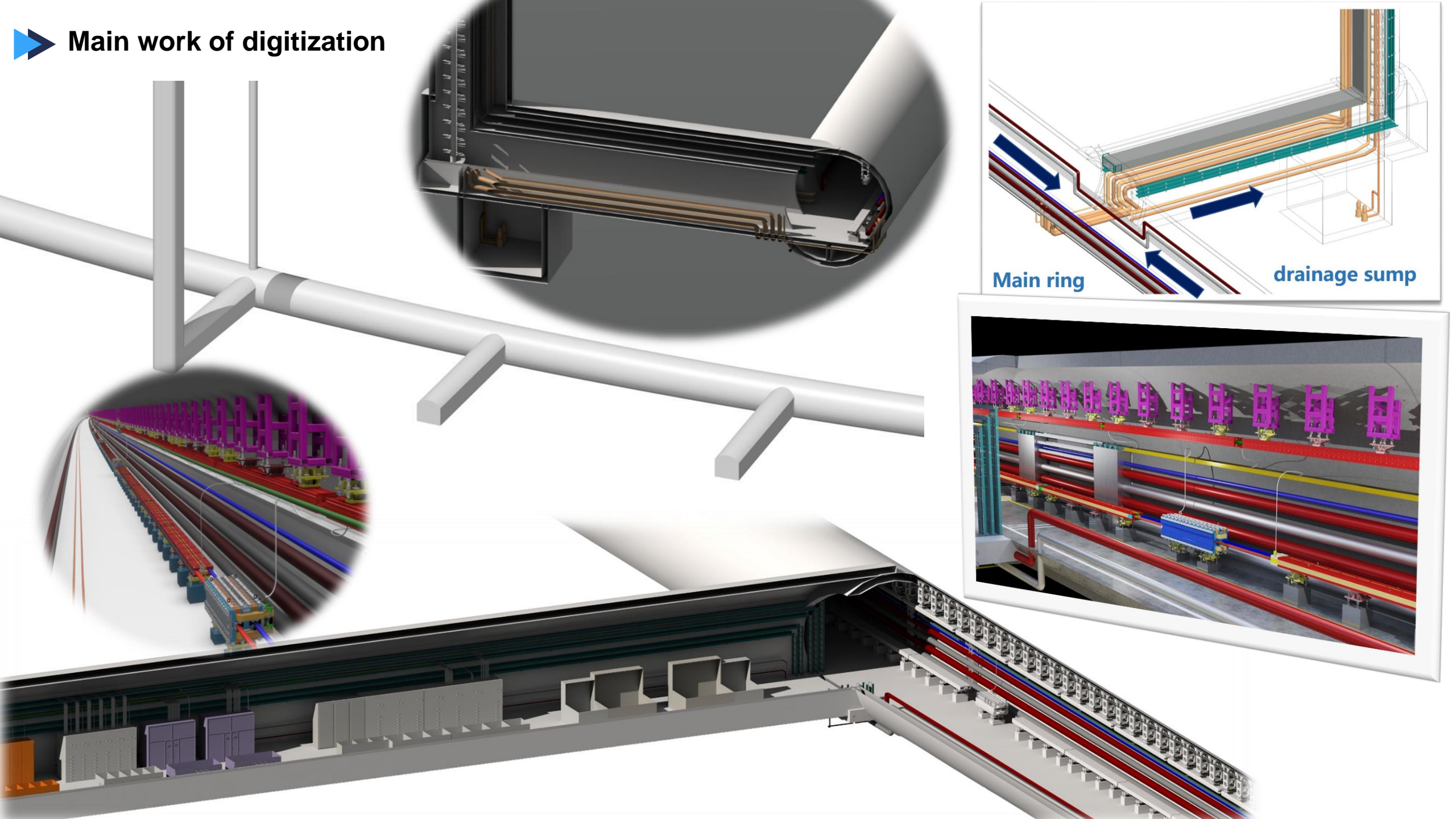
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➤ Main work of digitization

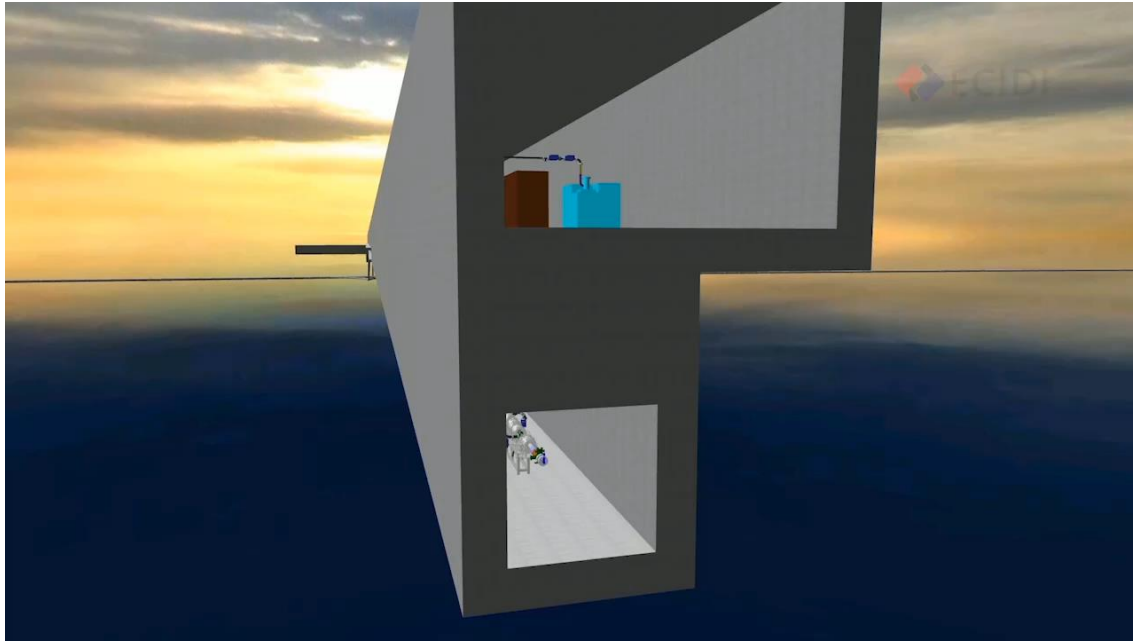


Integrated 3D model based on physical equipment to assist civil engineering design and site selection in Huzhou

➤ Main work of digitization

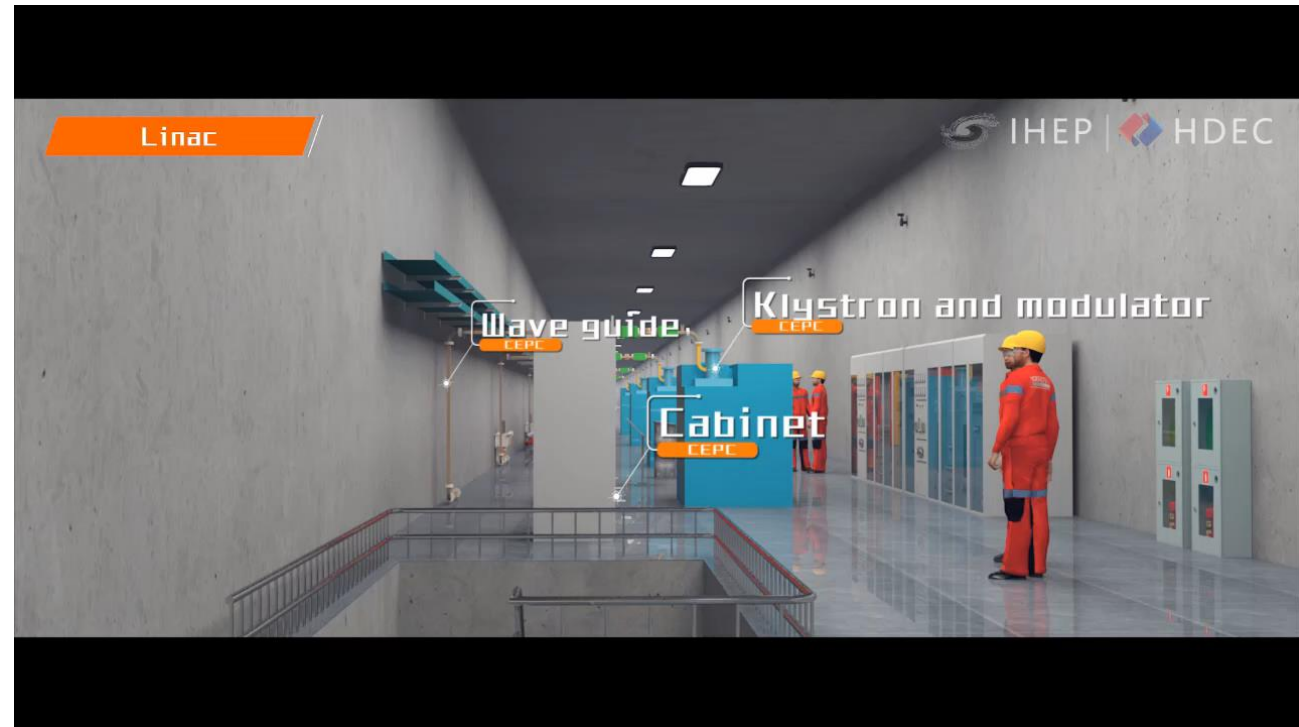


➤ Digital work review




2019, Reorganized the model data and updated the detailed physical device model

2018, Complete model integration for the first time



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➤ Conclusion

- Based on the preliminary comprehensive analysis of multiple influencing factors, **the CEPC site selection in Huzhou has no constraints and the conditions in Huzhou are superior.**
- Relying on CEPC, research on **digital solutions for collaborative management** of multi-source and massive data **has produced rich results with obvious spillover benefits.**

Wish CEPC settle in Huzhou, Yangtze River Delta early.



Thanks !