



# RURAL WATER & ECOLOGICAL RESTORATION SOLUTION DESIGN EXPERIENCES

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# 会议交流内容

## CONTENTS

灰\_绿\_蓝+

### 01 我们是谁

Who Are We-NORDiQ Group

### 02 中国双碳2030/2060气候发展目标和十四五规划中水目标

China 2030/2060 Carbon neutrality Climate Targets and  
14thFYP Water Related Green Targets

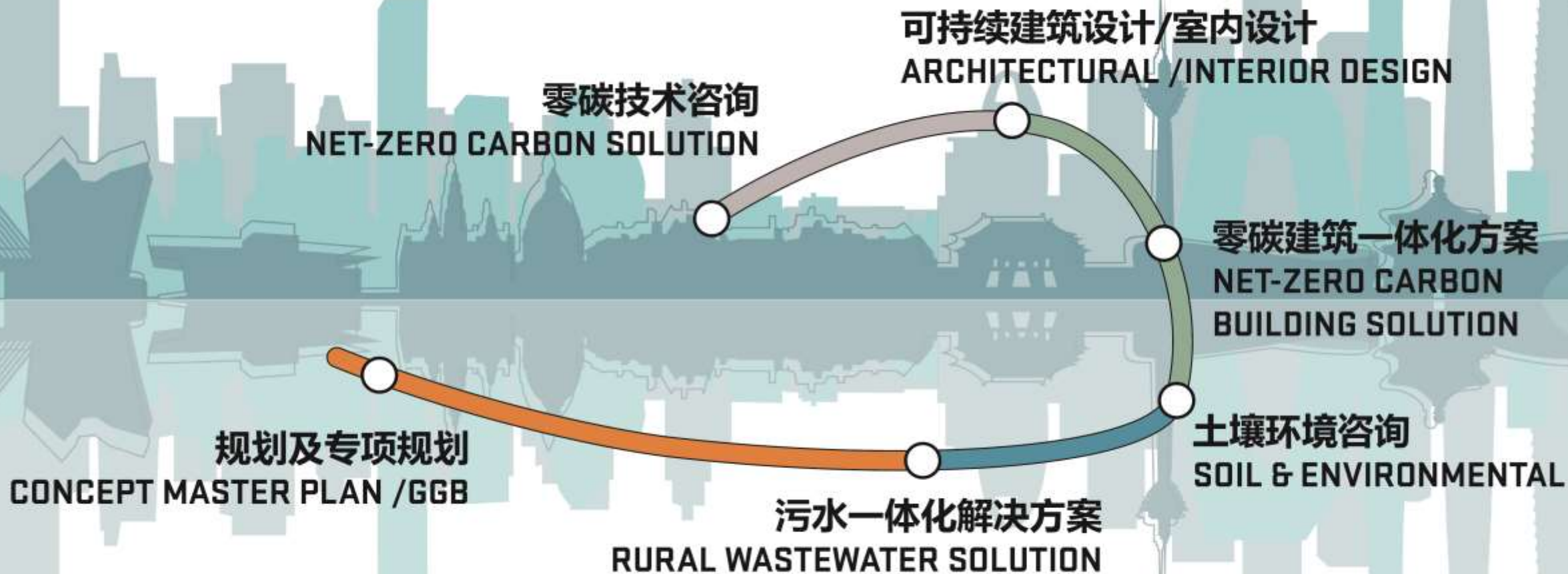
### 03 乡村振兴生态环境污水综合提升国际示范项目

Recent NBS of rural ecological restoration and wastewater  
upgrading pilot projects in China

# 我们是谁

# WHO ARE WE

# 01



# 我们的使命

## 致力于提高城乡居民环境生活品质

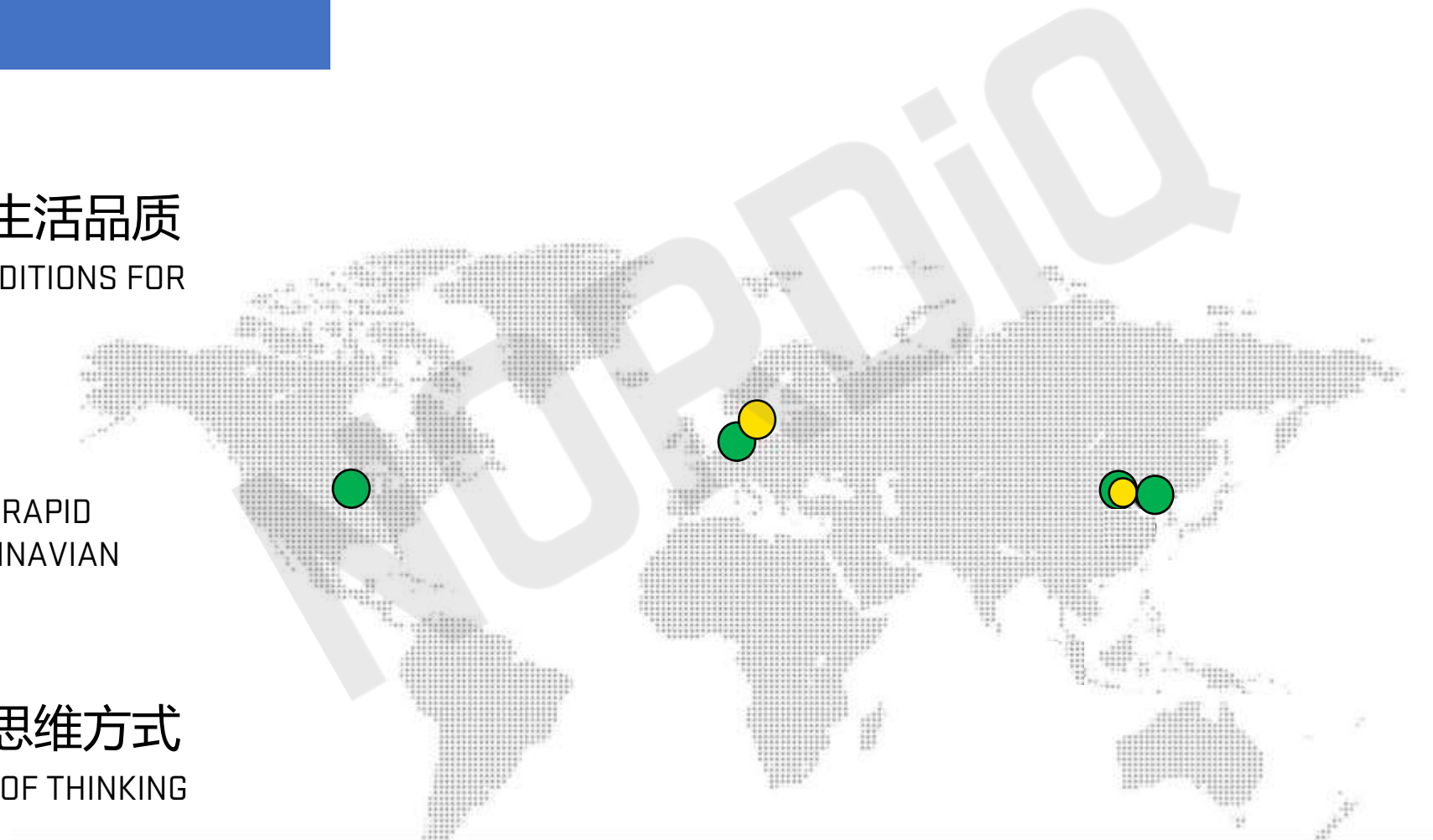
WE CREATE THE BEST POSSIBLE CONDITIONS FOR URBAN LIFE

## 中国城镇化融合北欧质量

WE COMBINE KNOWLEDGE FROM THE RAPID URBANISATION OF ASIA WITH SCANDINAVIAN QUALITY OF LIVING

## 不断反思挑战我们既有的思维方式

WE CHALLENGE ESTABLISHED WAYS OF THINKING



- NORDIQ GROUP
- SUB BRANCHES AND PARTNERS



# 主要客户 CLIENTS

灰\_绿\_蓝+



Funded by  
the European Union



CHINA  
EUROPE  
Water Platform  
[www.cewp.org](http://www.cewp.org)



VIBORG  
KOMMUNE



ØLLGAARD  
RÅDGIVENDE INGENIØRER A/S



midt  
regionmidtjylland



KØBENHAVNS KOMMUNE



Sino-German  
Urbanisation  
Partnership



HOFOR



北京水务集团有限公司



Frederiksberg  
Forsyning



boltselskabet  
Mageløse



FREDERIKSBERG  
KOMMUNE



hølscher  
jensen a/s  
Et Hølscher-Wasserbau og C.B. Jensen selskab



HØRSENS  
KOMMUNE



Energistyrelsen



giz  
Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH



DGA  
Design  
og arkitektur  
Hørge



BALLERUP



SEGURO  
Management



Hjørring Kommune



RØDOVRE KOMMUNE



AARHUS  
KOMMUNE



ERHVERVSSTYRELSEN



SKANSKA



Allerød  
Kommune



Ringsted  
Kommune



On behalf of:  
Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety



KlarMiljø



CNC  
arkitekter a/s



SJÆLSØ  
Management



BNS



北京国际设计周  
BEIJING DESIGN WEEK



ROSKILDE  
KOMMUNE



BYENS TEGNESTUE ApS



JORD  
KONSULENTERNE



VANDFAX A/S



BARSLUND



ENTREPRENØRFIRMAET  
SEJER  
PEDERSEN A/S



LYNGBY-TAARBÆK  
KOMMUNE



IXDA  
INTERACTION DESIGN ASSOCIATION



LM BYG A/S



GENTOFTE KOMMUNE



江苏省环境科学研究院  
JIANGSU PROVINCIAL ACADEMY OF ENVIRONMENTAL SCIENCES



ARKIL



Nestlé



ORBICON



歌华集团  
BEIJING GEHUA CULTURAL DEVELOPMENT GROUP



Ministry of Environment  
and Food of Denmark  
Nature Agency



北京市水务局  
BEIJING WATER AUTHORITY



泰州市海陵区人民政府  
[www.tzhl.gov.cn](http://www.tzhl.gov.cn)



中国大唐集团新能源股份有限公司  
China Datang Corporation Renewable Power Co., Limited



天府新区公园城市  
TIANFU NEW AREA THE PARK CITY



大同市人民政府  
[www.dt.gov.cn](http://www.dt.gov.cn)



北京市规划和自然资源委员会  
Beijing Municipal Commission of Planning and Natural Resources



NORDIQ  
ENGINEERS PLANNERS ARCHITECTS



当好能源革命  
对外开放尖兵

中国双碳2030/2060  
气候发展目标

CHINA 2030/2060

CARBON NEUTRALITY CLIMATE TARGETS

02

## The 14th FYP & Water Related Green targets

# 14<sup>th</sup> FIVE-YEAR PLAN & 2035 TARGETS



China will try to achieve carbon peak by 2030 and carbon neutrality by 2060. The 14th FYP specifies that China will implement a sustainable development strategy, improve the coordination mechanism for improving ecological civilization, construct an ecological civilization system, promote the establishment of a green economy and green society, and build a beautiful China. The green industry will, therefore, present huge opportunities. China's green industry has grown exponentially in recent years, the environmental protection industry generated revenue of RMB1.78 trillion in 2019, up 11.3% from 2018.

The major Water related policies on the green industry outlined in the 14th FYP are as follows:

- Moving towards the full implementation of the pollution permit system, bringing all fixed pollution sources under the pollution permit system, ensuring that target dates for achieving emission standards for industrial pollutants are met, and developing markets for trading pollutant emission rights, energy use rights, *water use rights* and carbon emission rights (11.38.5)
- Launching *national water conservation* projects, establishing a system for limiting the use of water resources, enhancing water conservation and efficiency in agriculture, stepping up water conservation and emission reduction in industrial production, implementing water conservation and reducing water loss in cities and towns, encouraging the use of reclaimed water, and striving for a 16% reduction in water consumption per unit of GDP (11.39.1)

Source: China's Environmental Protection Industry Development Report 2020, Department of Science, Technology and Finance of the Ministry of Ecology and Environment and China Association of Environmental Protection Industry, September 2020. The environmental protection industry in the report refers to the six sectors of water pollution prevention, air pollution prevention, solid waste disposal and resource utilization, noise and vibration control, soil remediation and environmental monitoring.



乡村生态环境振兴项目  
RECENT NBS OF RURAL  
ECOLOGICAL  
RESTORATION PROJECTS

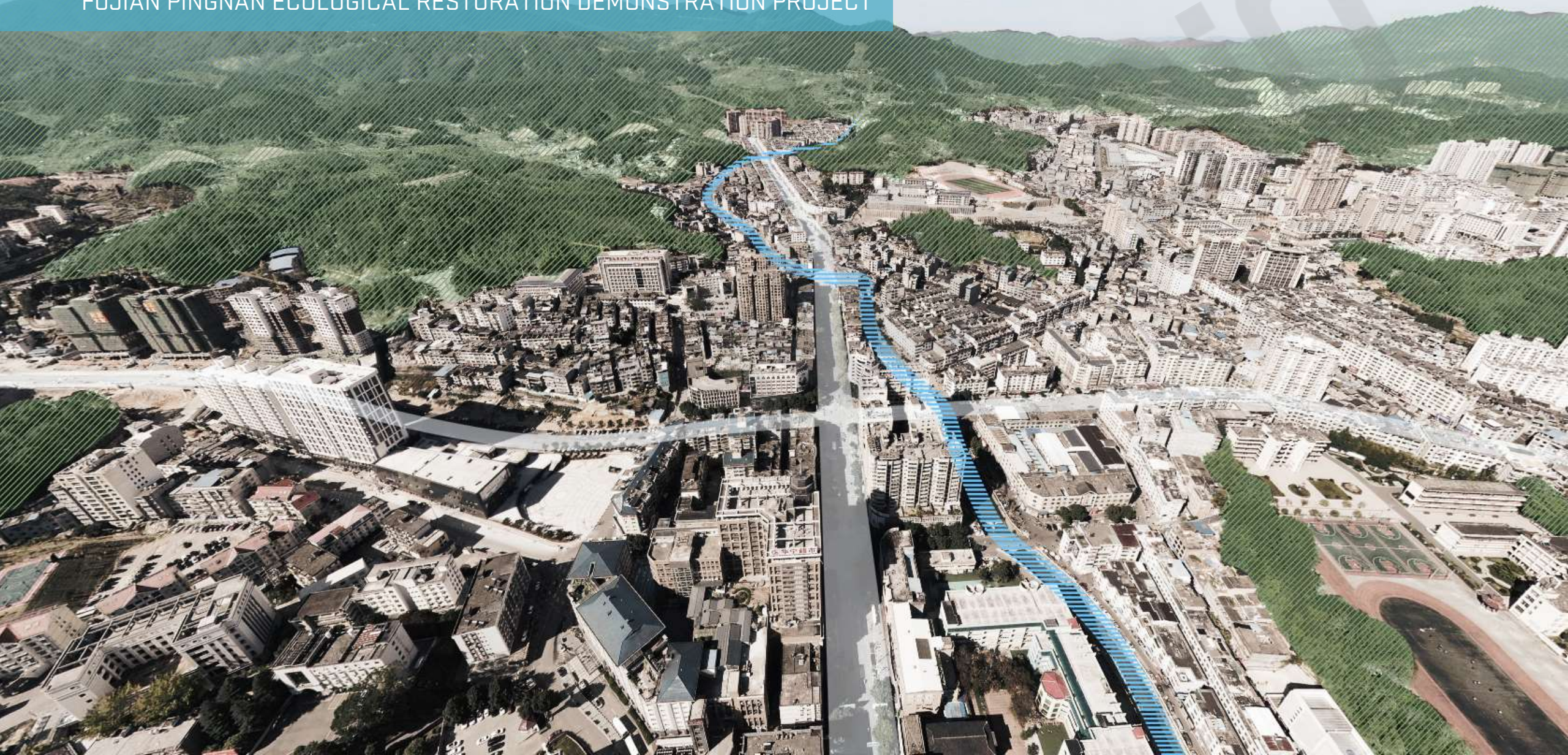
03

乡村振兴，大尺度环境生态多样性规划类



# 福建屏南长汾溪生态修复法开署贷款示范项目

## FUJIAN PINGNAN ECOLOGICAL RESTORATION DEMONSTRATION PROJECT





## 项目规模

- 长汾溪城区 3.1km 河段，工程上游起始点为西环北路与长汾溪交叉处，下游结束点为长汾溪与东环中路交接处。

## 任务分解



## 河道蜿蜒曲直恢复的目标、内容和意义

- 上位目标：修复长汾溪的生态、景观和城市功能，成为城区绿网中的核心廊道。
- 工作内容：通过对河道的河床和河岸进行物理改造，恢复自然河流的蜿蜒曲直，拆除或改造部分拦河坝，使河道外观和功能趋于自然和正常，并最终使河道在城市开发环境下回归健康的状态，为水质提升、生态多样性和栖息地的建立奠定基础保障。
- 项目意义：蜿蜒和自然的河道 水动力改善和河道自净能力提升 生态多样性增加河道及城市灵活应对极端气候变化 碳达峰与碳中和目标相一致生机勃勃的景观 公众生态教育和自然科普的场所

八个步骤，多级校核，打造 **安全、生态、可持续的河流**



## ➤ Changfen River Remediation and landscape project

Overall Design Concept ——

### Natural-Based Solutions (NbS)

Reinventing Nature  
Perceived Nature  
Value Nature

Awaken people's awareness of the protection of nature



Restoring the ecological base

- Cleanliness of riverbed
- Base edge continuity
- Natural substrate



Create an ecological water bank

- Eco-engineering design



Improve the ecological water system

- Water replenishment
- Sponge system design



Build a water ecosystem

- Plant community construction
- Animal food chain construction

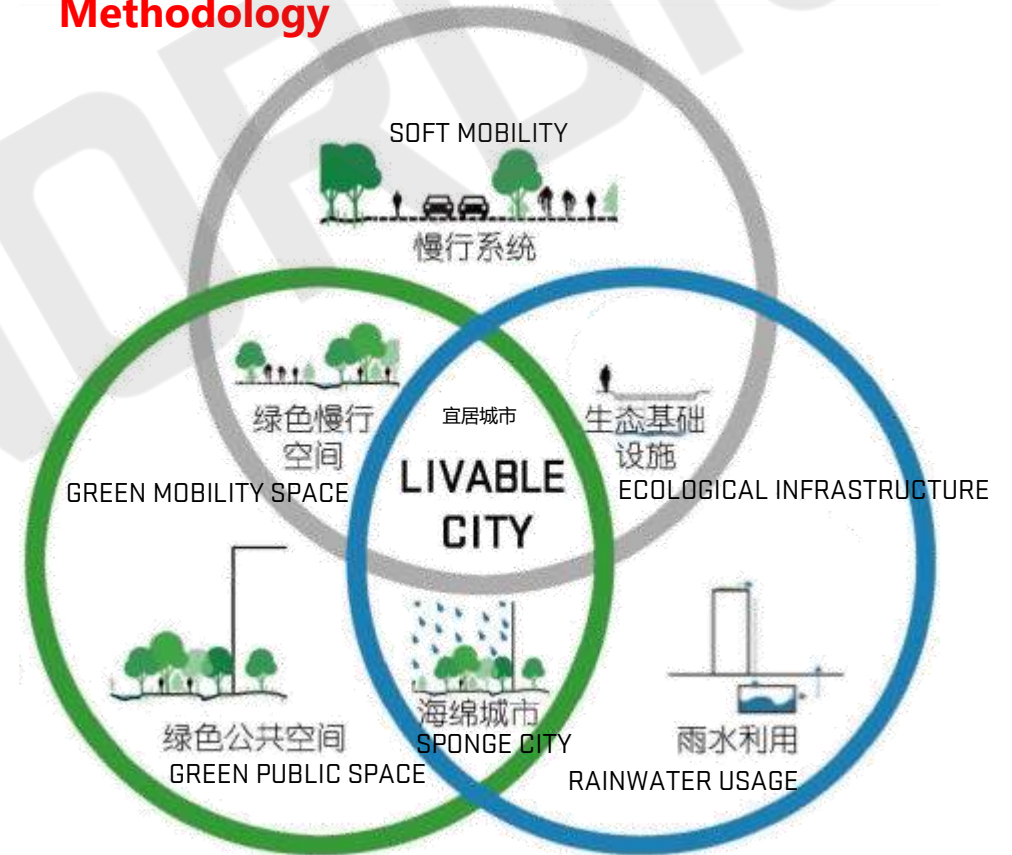


Specific measures for the upgrading of water ecology

- Eco-floating island
- Underwater forest
- Ecological dam

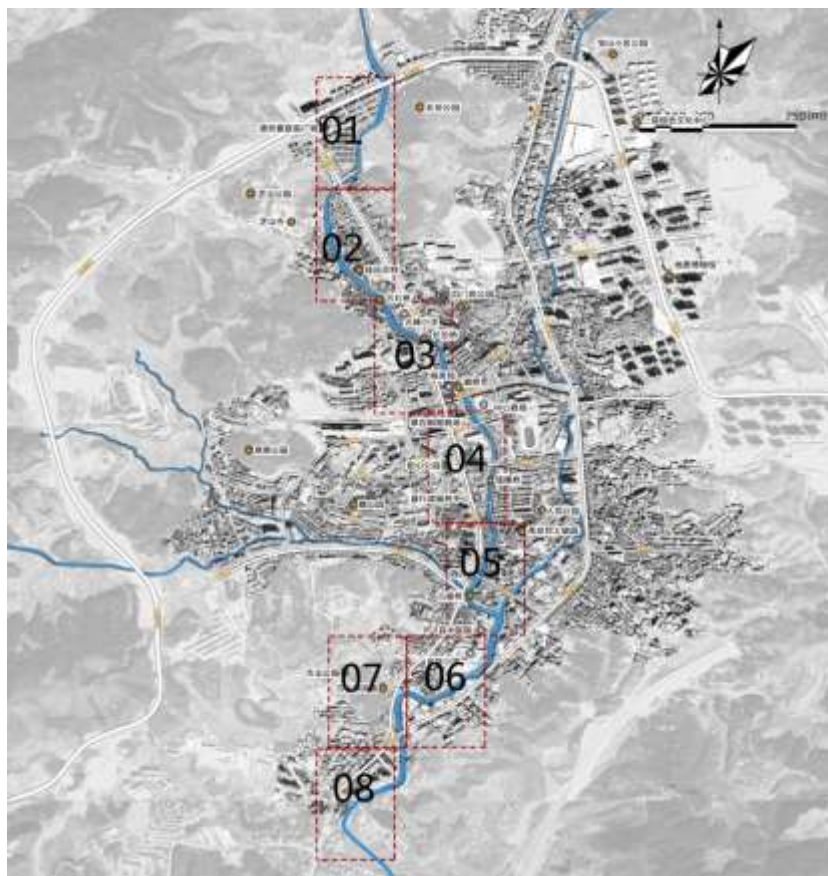
The Overall Design Concept ——

### "Grey Green Blue+" Planning And Design Methodology

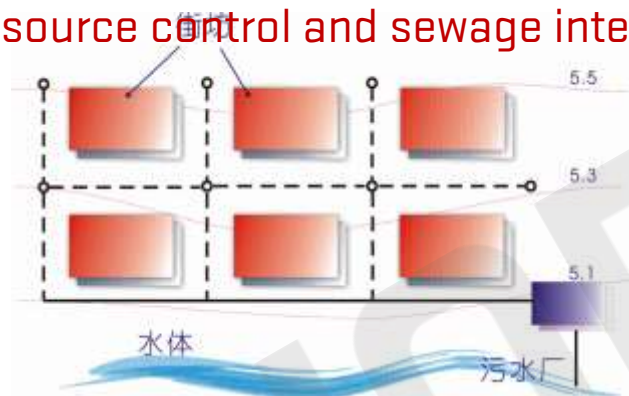




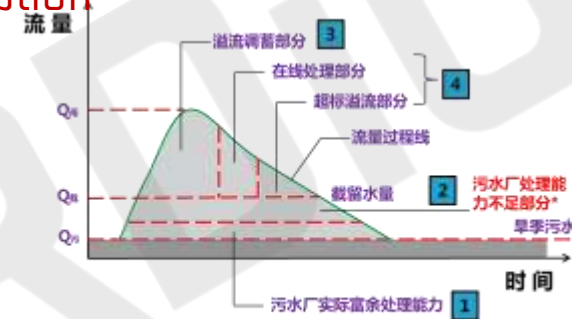
## ➤ Repair of sewage collection system: “source control and sewage interception”



The newly-added branch pipe of domestic sewage system is connected to the branch pipe network

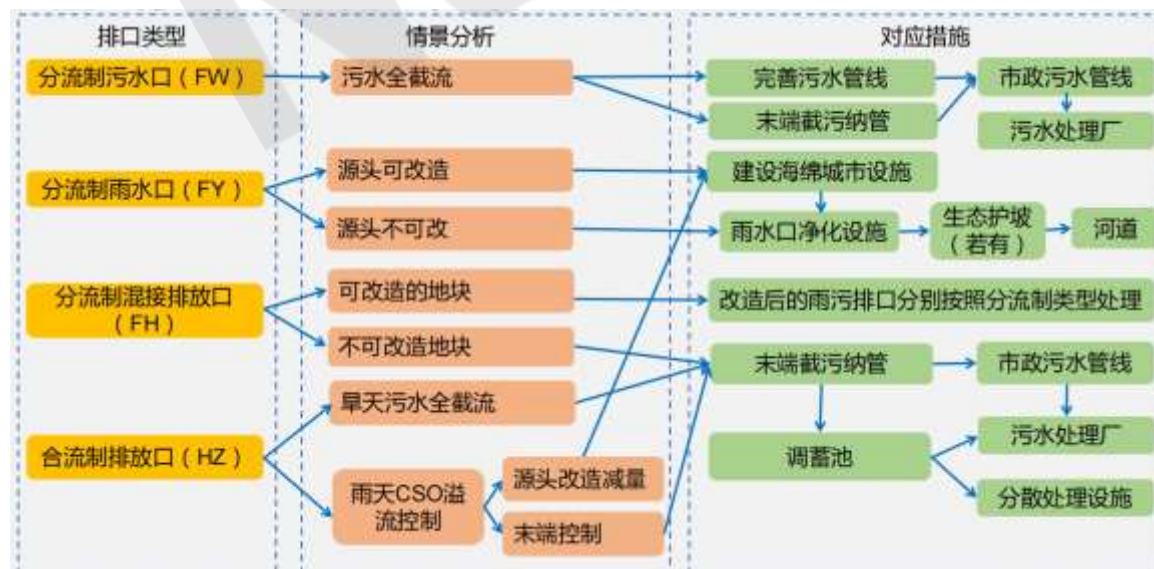


Making full use of the terrain and adopting gravity flow as much as possible



\*注：污水厂处理能力不足部分可通过①扩建污水厂、②新建初雨厂或③设置未铺装地面方式解决。

Ensuring comprehensive and efficient source control and sewage interception





# 长汾溪生态修复技术展示

灰\_绿\_蓝+

PRESENT

VS

PROJECT



自然河床+低干扰+生物多样性

水动力+纵向优化+生物廊道

自然做工+生态修复+蜿蜒曲直+两栖

水质提升+人工&自然生境

河口缓冲+蓝绿复合+亲水视野

自然演化+低强度开发

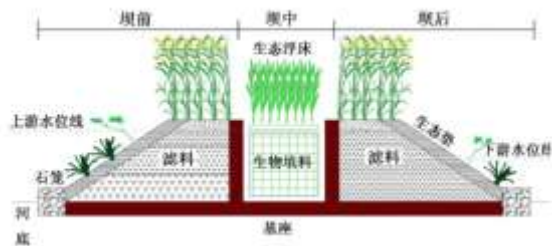
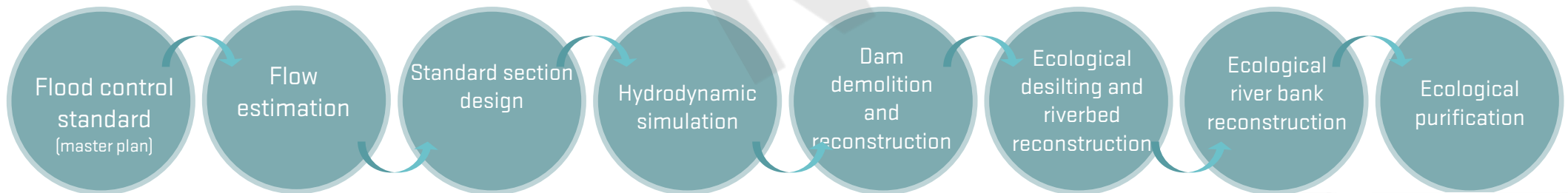


## Restoration of Changfen River

- Standardized estimation of water conservancy and flood control
- Scientific analysis of hydrodynamic model
- Landscape design of water system form
- Ecological hydraulic engineering method for revetment



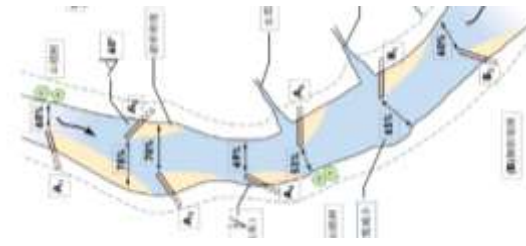
Building a safe, ecological and sustainable river with eight steps and multi-level checks



Ecologically purified weir



Pool and shoal



Ecological spur dike




Ecological engineering method




## Landscaping of Changfen River

According to different habitat bases, a variety of plant communities composed of “wet trees and shrubs, wet herbs, emergent vegetation, floating vegetation and submerged vegetation” will be formed.



 Aquatic plants




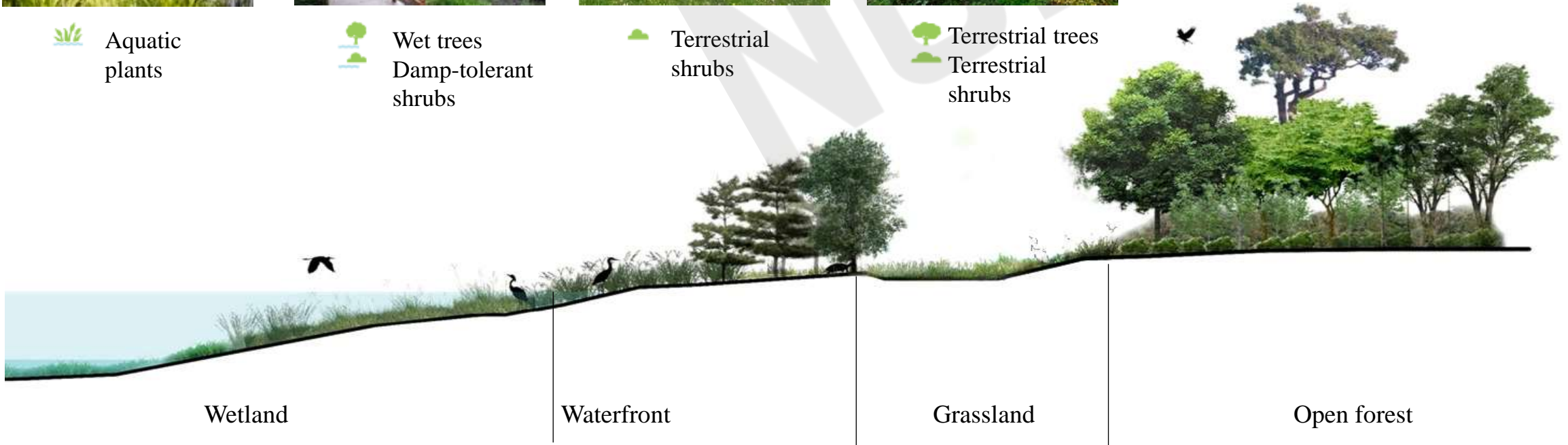
 Wet trees  
Damp-tolerant shrubs



 Terrestrial shrubs



 Terrestrial trees  
Terrestrial shrubs



Wetland

Waterfront

Grassland

Open forest



# 法开署津市毛里湖国家湿地公园生物多样性示范项目

BIODIVERSITY CONSERVATION AND UTILIZATION IN MAOLI LAKE NATIONAL WETLAND PARK





# 可持续发展 UNSDG SECTORS



## WATER

GROUNDWATER  
MANAGEMENT

CLIMATE ADAPTATION  
& SPONGE SOLUTIONS

WATER RESOURCE  
MANAGEMENT

WATER SUPPLY

WASTEWATER  
TREATMENT



## ENVIRONMENT

SOIL REMEDIATION

HANDLING OF  
CONTAMINATED BUILDING  
MATERIALS

ENVIRONMENTAL  
IMPACT ASSESSMENT

MUNICIPAL CASE  
MANAGEMENT



## URBAN DEVELOPMENT

GREY/GREEN/  
BLUE CONCEPT

CONCEPTUAL  
URBAN MASTERPLAN

DIGITALIZATION &  
SMART CITIES

CO-HOUSING  
FASCILITATORS



## STRATEGY

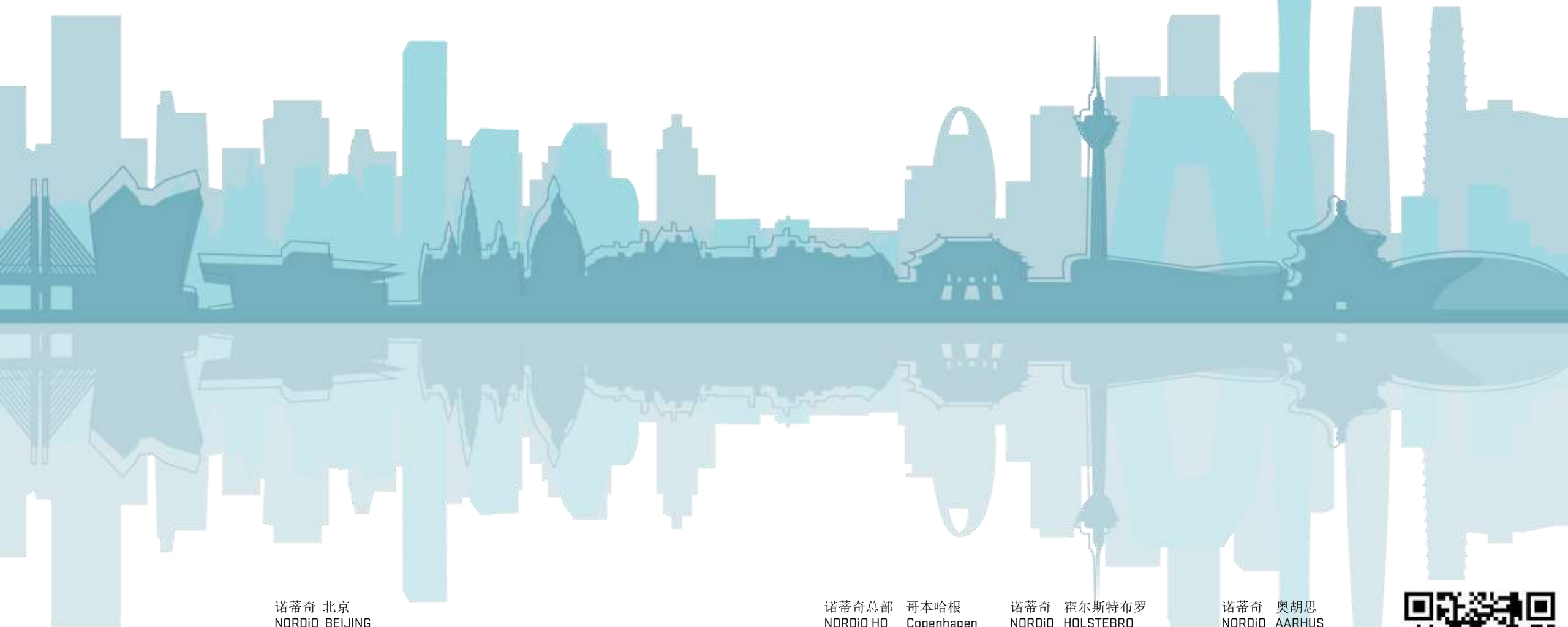
STRATEGIC PLATFORM  
DEVELOPMENT

ANALYSIS &  
RESEARCH

CO-CREATION  
PROCESSES

TECHNICAL  
PROCUREMENT  
CONSULTANCY

KEY NOTE SPEAKERS/  
WORKSHOP  
FASCILITATORS



# 谢谢!

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