



Integrated Solutions For Global Impact

MAA GROUP

COMMON UTILITY DUCT



MAA Sustainable Engineering Action



Founded in 1975, MAA is a leading engineering and consulting service provider in the East and Southeast Asian region with a broad range of focus areas including infrastructure, land resources, environment, buildings, and information technology.

To meet the global needs of both public and private clients, MAA has developed sustainable engineering solutions - ranging from conceptual planning, general consultancy, engineering design to project management.

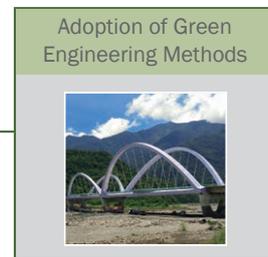
MAA employs 1000 professional individuals with offices in the Greater China Region (Beijing, Hong Kong, Shanghai, Taiwan), Mekong Region (Bangkok), and Southeast Asian Region (Singapore), creating a strong professional network in East/Southeast Asia.

MAA's business philosophy is to provide professional services that will become an asset to our clients with long lasting benefits in this rapidly changing social-economic environment. ASSET represents five key components that underline MAA's principles of professional services:

- A**dvanced technology
- S**afety
- S**atisfaction
- E**conomical solution
- T**imely completion

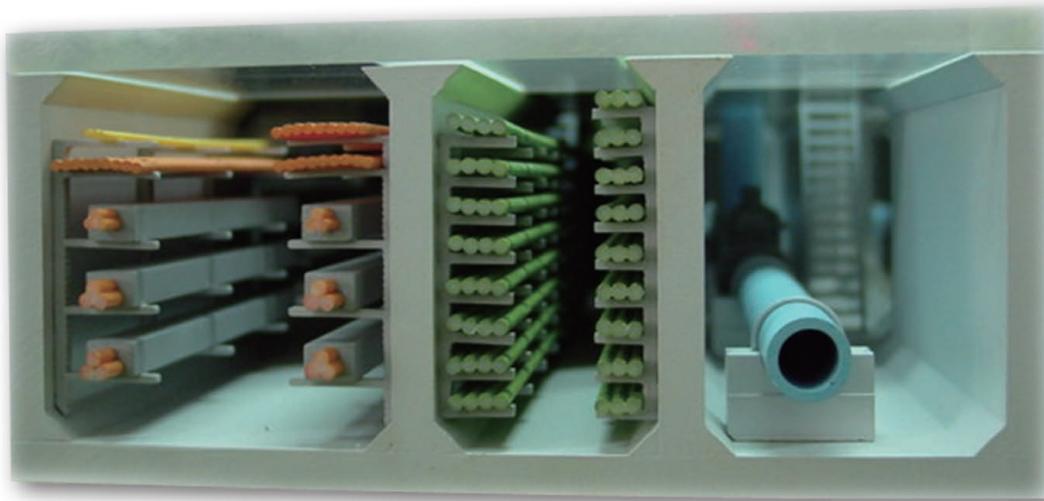


MAA Sustainable Eng. Concepts



Definition

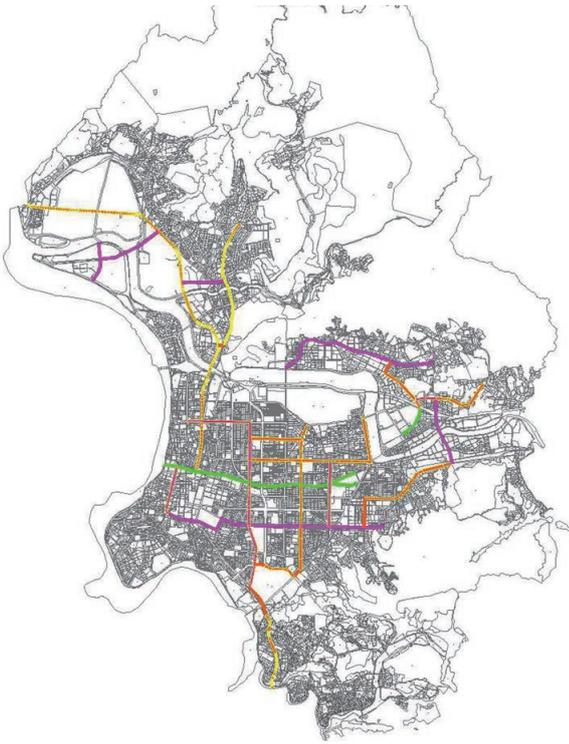
A structure that accommodates two or more kinds of public utilities equipped with drainage, ventilation, lighting, communication, power or security systems.



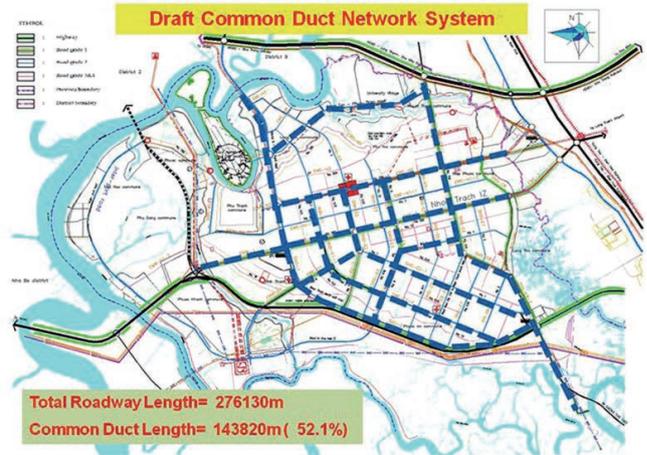
Sustaining the Urban Environment

- Large reduction of road excavation for utility system maintenance
- Improved urban appearance
- Efficient use of underground space
- Efficient utility systems planning and maintenance
- Improved roadway pavement quality and reduction of traffic disruption
- Reduction of environmental, economic and social impacts to all stakeholders
- Improved hazard mitigation and monitoring process

Existing Urban areas Planning - Taipei City



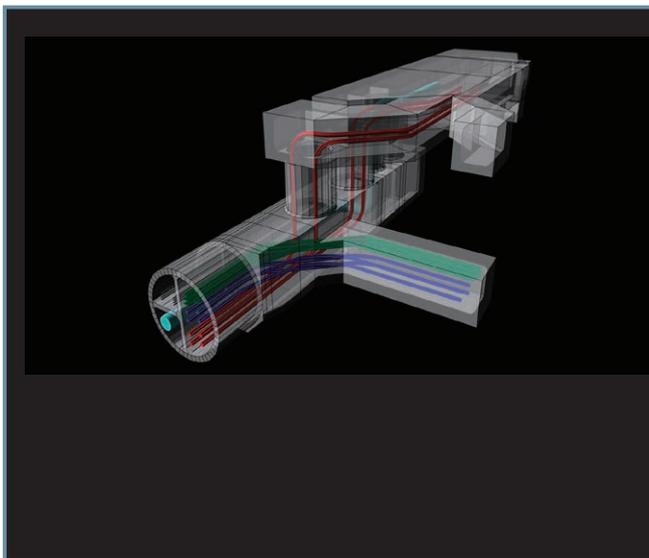
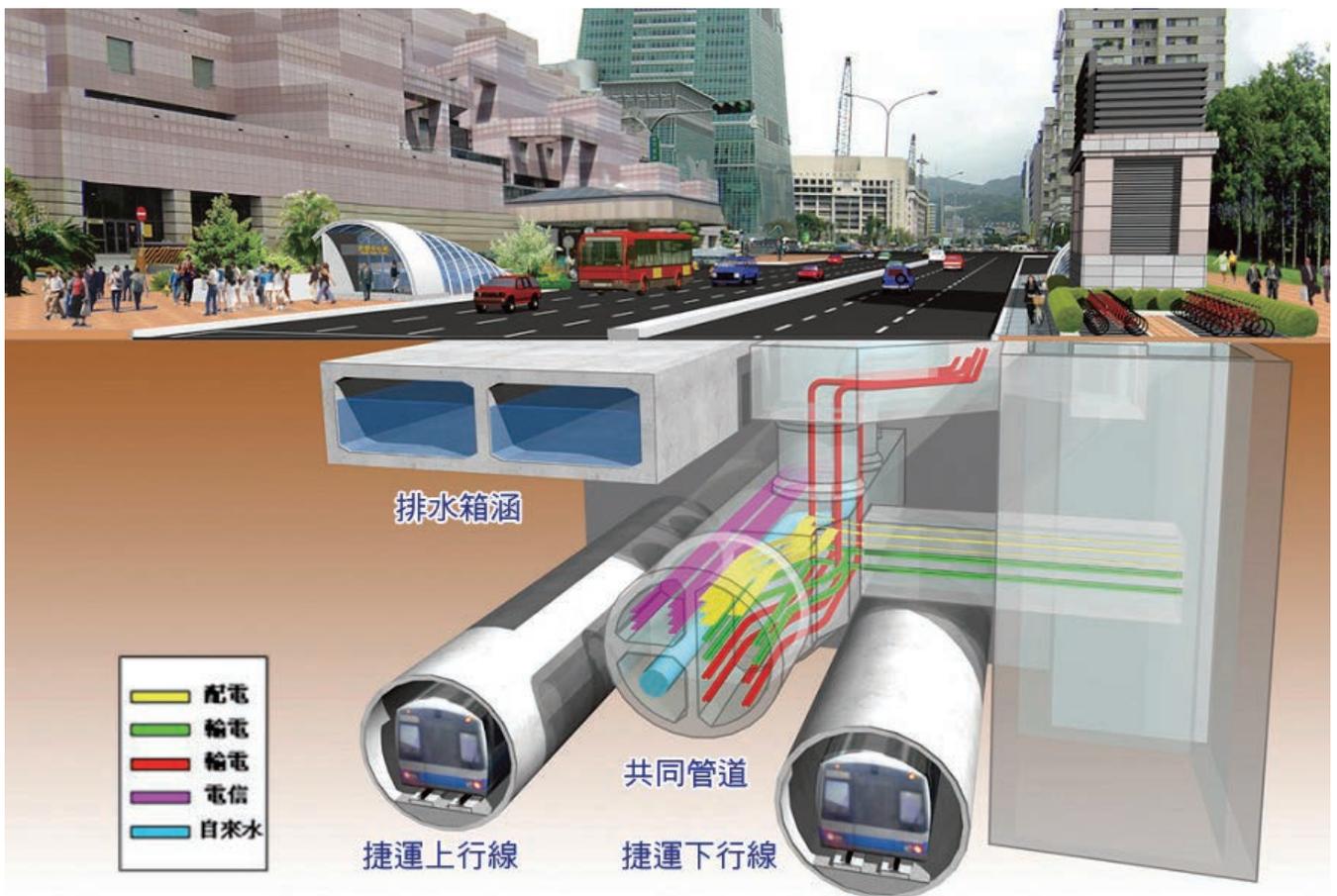
New Town Planning - Vietnam Dong Nai Province Nhon Trach District



Commerce Park Planning and Design - Nankang International Trade and Commerce Park

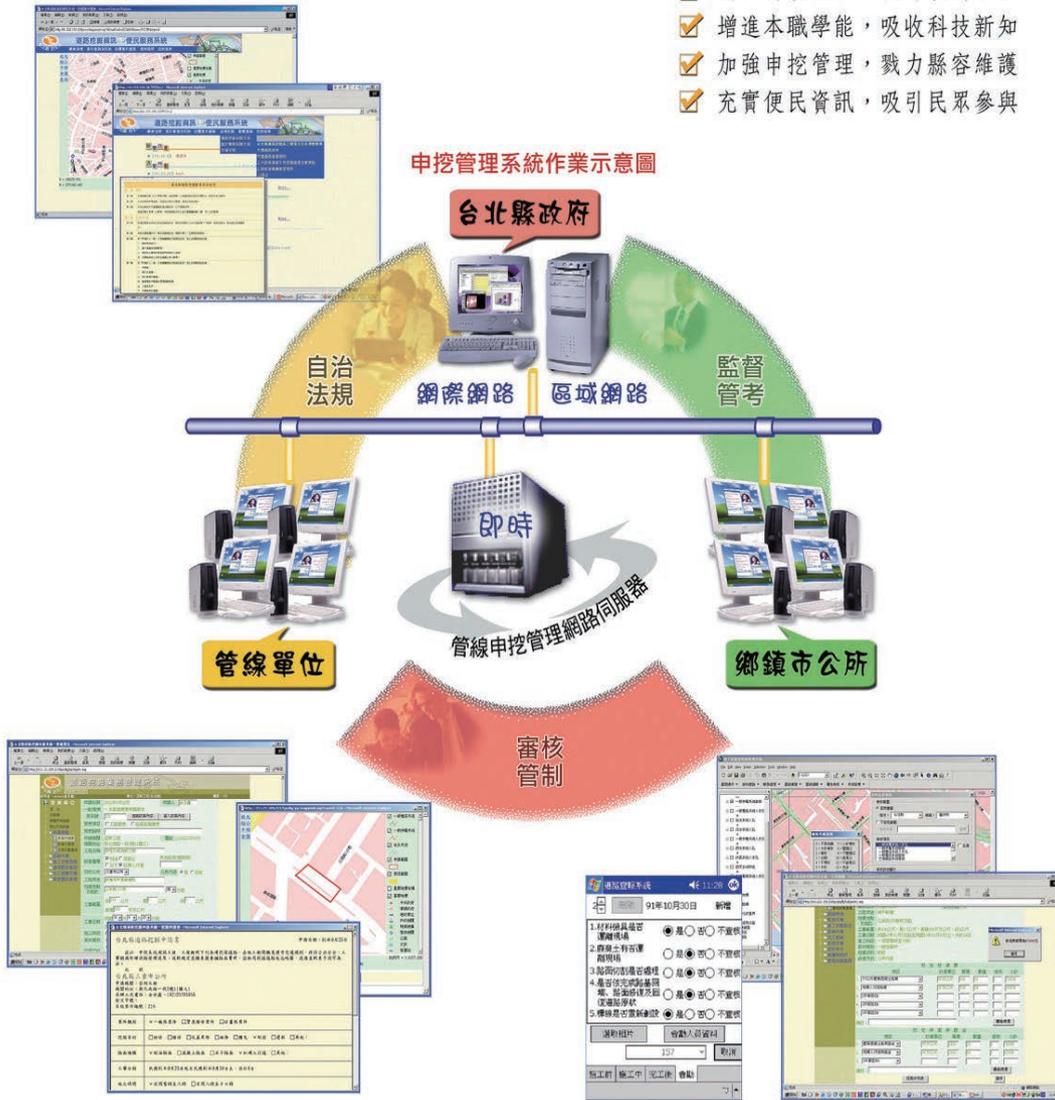


Integration with Underground Transportation System - Taipei Xinyi Metro Line



Use of Geographic Information System

系統應用架構



Monitoring Center



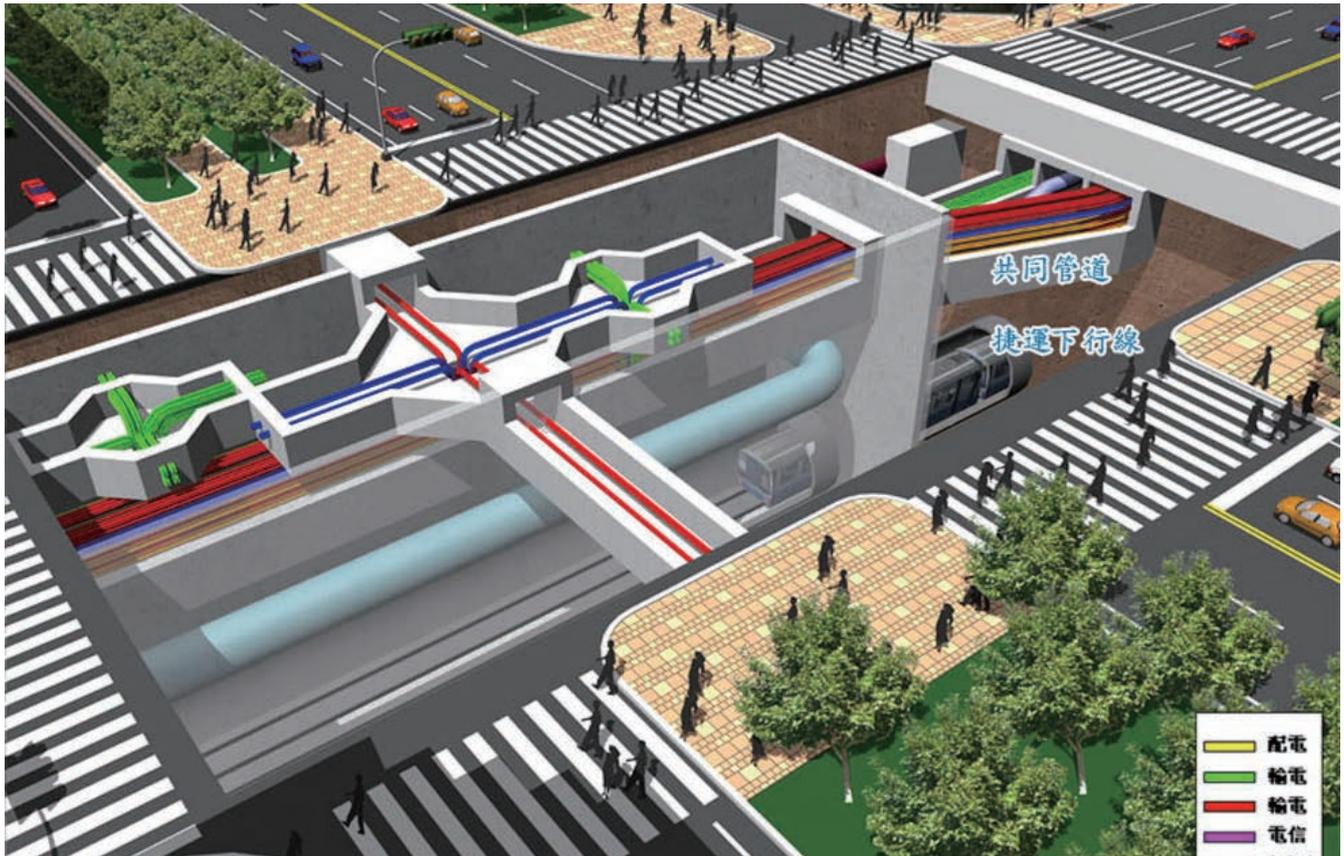
Open cut construction



A completed Common Utility Duct



Integration of Underground Space Usage



Aesthetic Appearance - Control station at High Speed Rail Hsinchu Station



NOTABLE PROJECTS

“Study on the design standard of common duct system”, (2001), Construction and Planning Agency Ministry of the Interior

Pioneer to common utility duct concept for Taiwan

Common Duct Planning at Taiwan High Speed Rail Hsinchu Station Special District Development

“The Eye of Hsinchu”

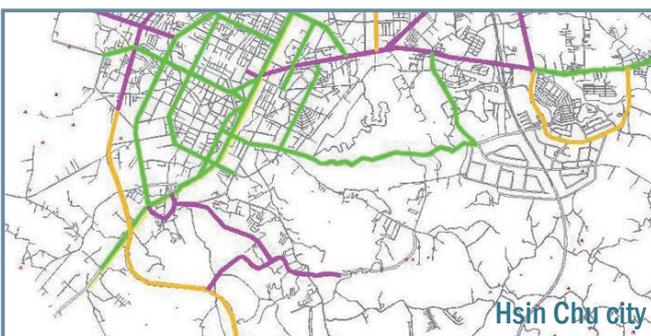
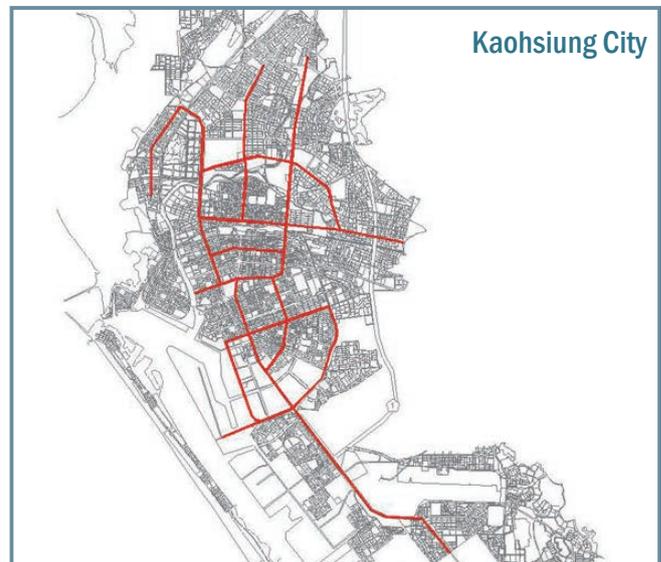
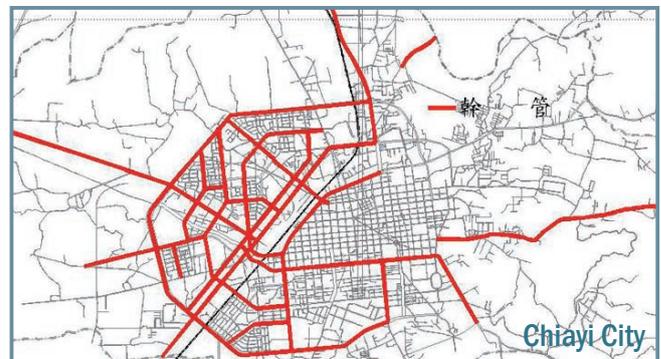
HSR Hsinchu station special district: To coordinate the HSR Hsinchu station special district development, the 2.7 km common duct were planned. Special attention were made for the architectural design of the control center.



Common Utility Duct System Planning for Taipei City, Kaohsiung City, Hsin Chu city and Chiayi City of Taiwan

“Modernization of Cities”

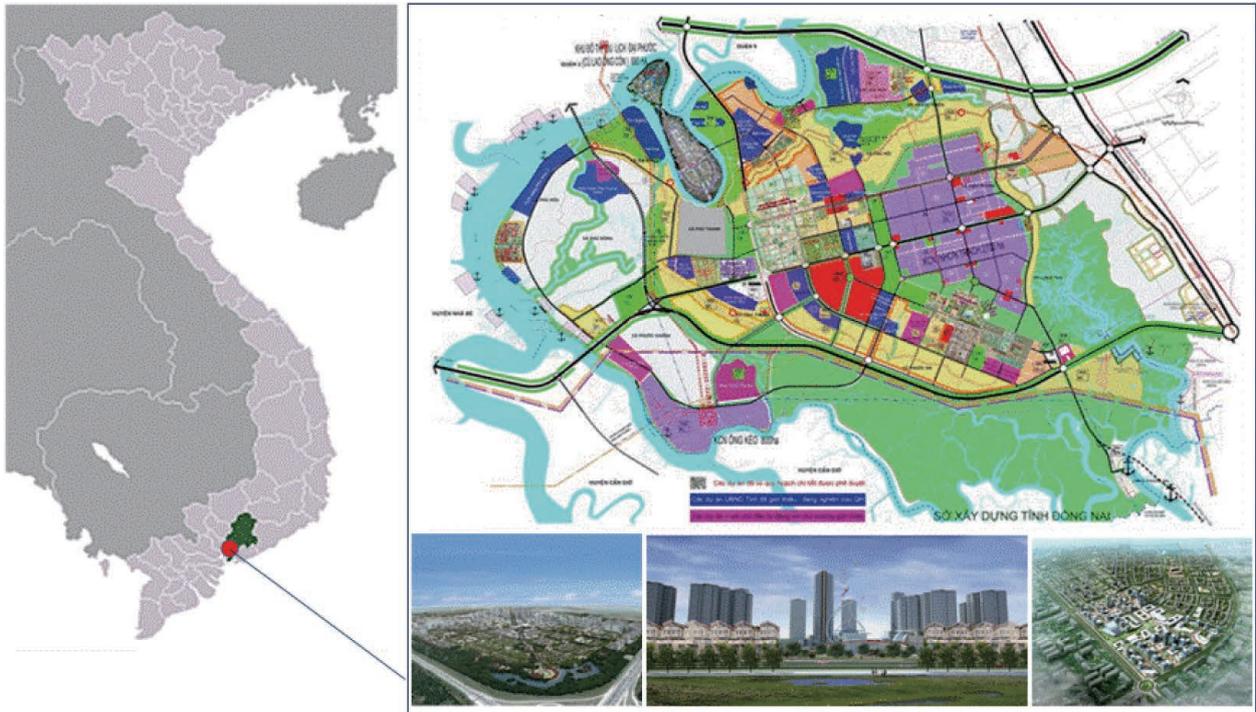
The central government chose 5 provinces and 2 municipalities to carry out the prototype planning and design of Common Duct systems for the whole Taiwan. MAA was engaged to plan the Common Duct system for 4 of the 7 designated areas, which are Taipei City, Kaohsiung City, Chiayi City and Hsinchu City. Planning includes quantity estimation, site investigation, development feasibility, model & structure selection, environmental impact, best economic solution, and development phasing.



Technical Service for Common Duct Planning of Nhon Trach New Town, Dong Nai Province, Vietnam

Vietnam's First Common Utility Duct Planning

As part of the government's promotion of urban underground construction and to increase the efficiency of utilities management, Dong Nai Provincial Government decided to use Nhon Trach new town as the location of common duct Nhon Trach New for the country's first common duct planning. Upon completion, it will be a model for all towns in Vietnam.



Common Duct for Keelung River New Community, Taiwan*The First Complete and Operating Common Utility Duct in Taiwan*

Client	New Construction Office of Taipei City Government
Location	Taipei City , Taiwan
Duct Length	Major : 1.5 kilometers , Minor : 5.5 kilometers
Duct Construction	Cut and cover
Type of Utilities	electricity (including 161 KV transmission wire and 22.8 KV distribution wire) and telecommunication conduits

Nankang Trade and Commerce Park, Taiwan*Seventy-six Hectares of International Trade and Commerce, Cultural, Recreational, and Business Informational Center*

Client	Taipei City Government
Location	Taipei City , Taiwan
Duct Length	Major : 0.9 kilometers , Minor : 1.4 kilometers
Duct Construction	Cut and cover
Type of Utilities	Electricity, telecommunication, oil, streetlight, traffic control systems, cable TV cables, and tap-water pipes
Other Characteristics	Adjacent to roads, drainage, sewerage systems, and potential of future development.

Common Duct Detailed Design Along Taipei Metro - Xinyi Line, Taiwan*First Common Utility Duct built simultaneously with a metro line**First Common Utility Duct in Taiwan to Use the Shield Tunneling System*

Client	Taipei City Government
Location	Taipei City , Taiwan
Duct Length	5 kilometers (3,134 m shield tunnel and 1,892 m open cut box culvert)
Duct Construction	Shield tunnel and open cut box culvert
Type of Utilities	Electricity, telecommunication, oil, streetlight, traffic control systems, cable TV cables, and tap-water pipes
Other Characteristics	Near existing sewage pipeline, drainage box culvert, shafts of the Tai-Power company shield tunnels, and parallel to the construction of the Taipei MRT - Xinyi Metro Line.

Taipei Dadu Road Common Utility Duct, Taiwan*Delivering Sufficient Electricity to New Urban Area*

Client	New Construction Office of Taipei City Government
Location	Taipei , Taiwan
Duct Length	3.2 kilometers
Duct Construction	Cut and cover, pipe jacking method
Type of Utilities	Contain electricity (including 161 KV transmission wire and 22.8 KV distribution wire), military signal lines, and future pipeline

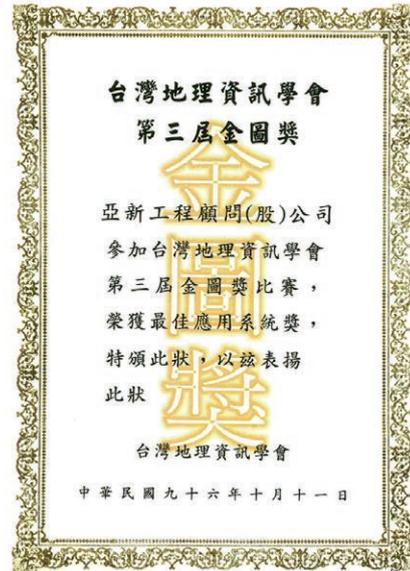
Road and underground utility information databank in Taipei County*Most used government databank by the public*

Client	Taipei County Government
Location	Taipei County, Taiwan

MAJOR AWARDS

Public Construction Commission 10th Golden Award (2010) - “Detail design for the construction of 161KV cable transmission links (Anan to Fucheng) and underground section from Anan (P/S) to Yun River”

3rd Taiwan Geographic Information Society Award (2007) - “Geographic Information System based road and underground utility information databank in Taipei County”



Outstanding Tunneling Award (2011) -by Chinese Taipei Tunneling Association for the tunneling construction of common duct on Taipei MRT Xinyi Line



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