

Planning and Designing of Common Duct



Moh and Associates, Inc.



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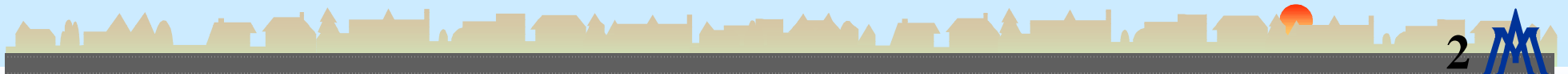
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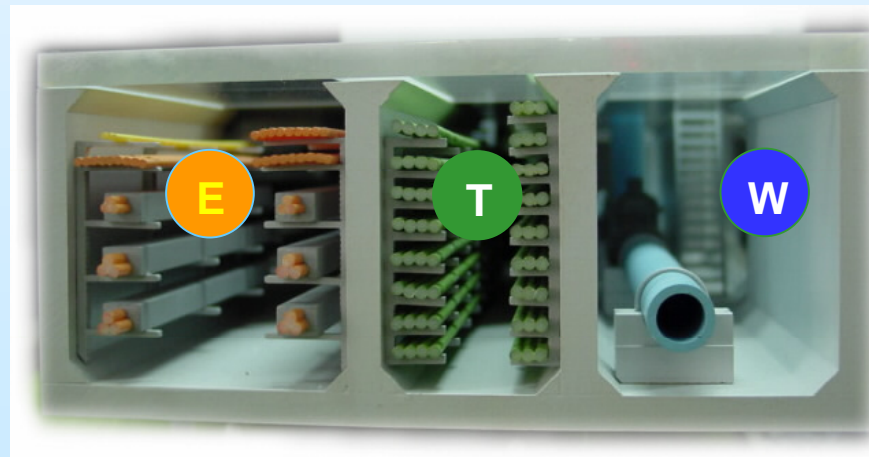
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I. Preface

■ Definition

- ❖ The structure accommodates two or more kinds of public utilities and its own drainage, ventilation, lighting, communication, power or security system.



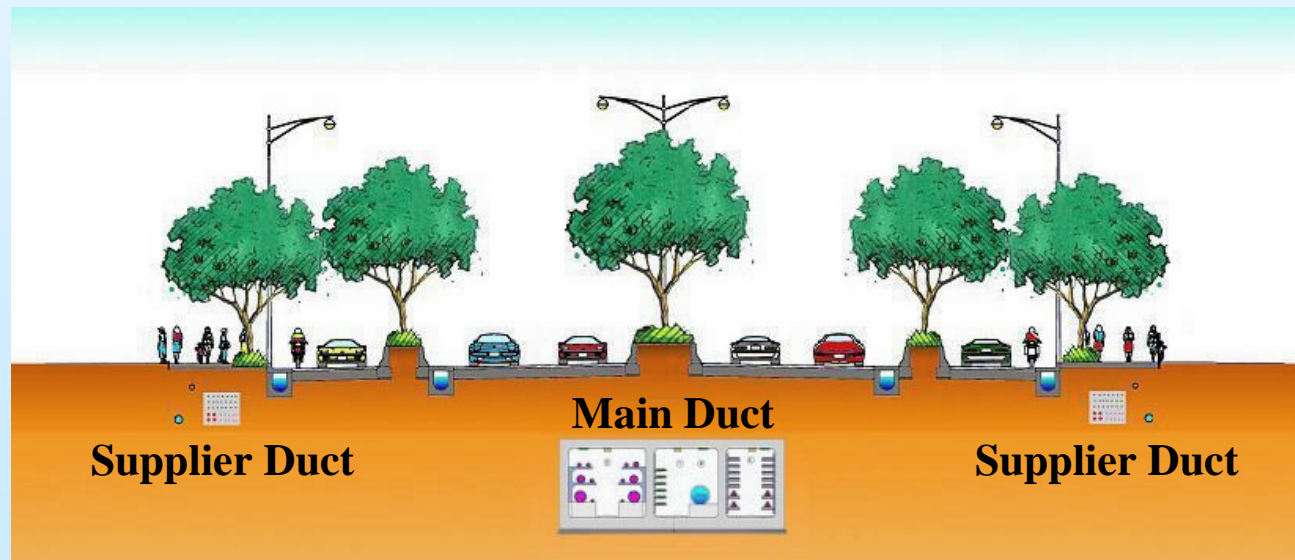
Function of Common Duct

- Avoid road excavation
- Maintain Urban Appearance
- Efficient Use of Underground Space
- Easy Maintenance



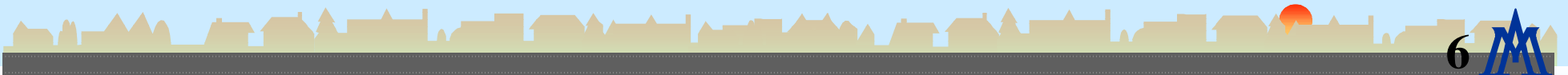
II. Brief Introduction

- Main Ducts
- Supplier Ducts
 - ❖ Branch Duct
 - ❖ Cable Trench/C.C.Box



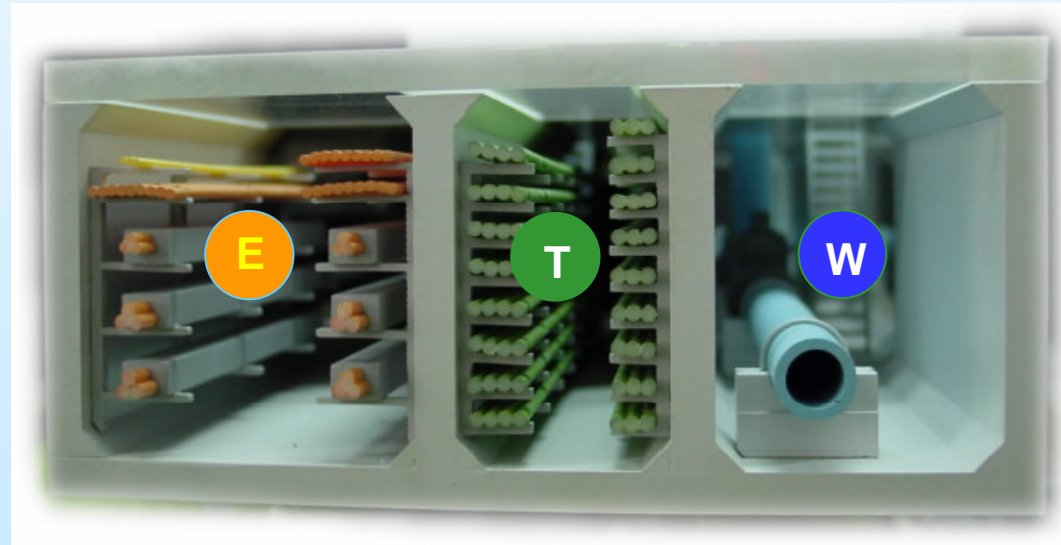
■ Main Ducts

- ❖ Accommodate large diameter, high voltage or numerous passage main pipeline system
- ❖ Do not directly connect with users
- ❖ Mostly installed under main roads
- ❖ Equipped with Walkway, Monitoring, Lighting, Ventilating and Drainage System



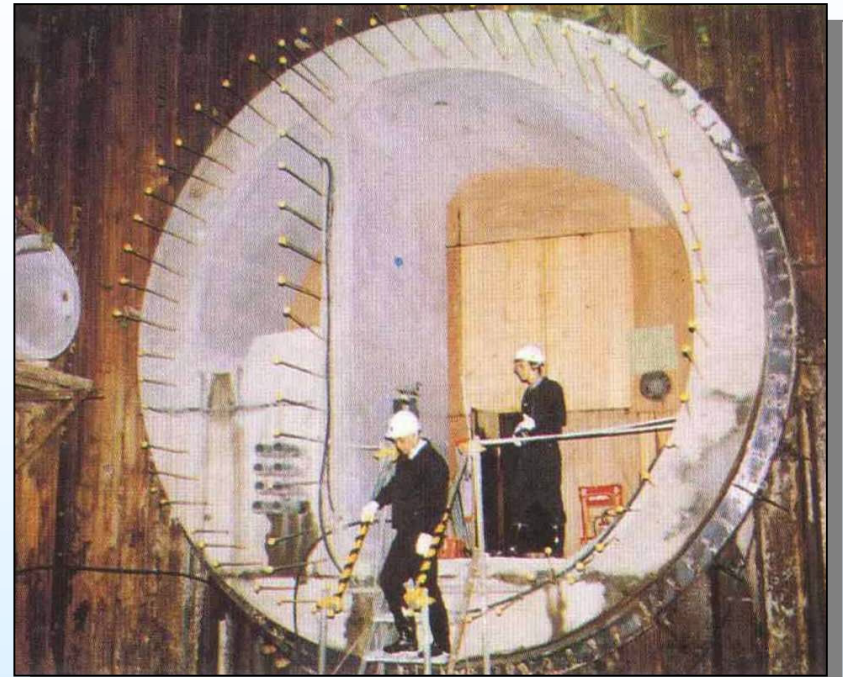
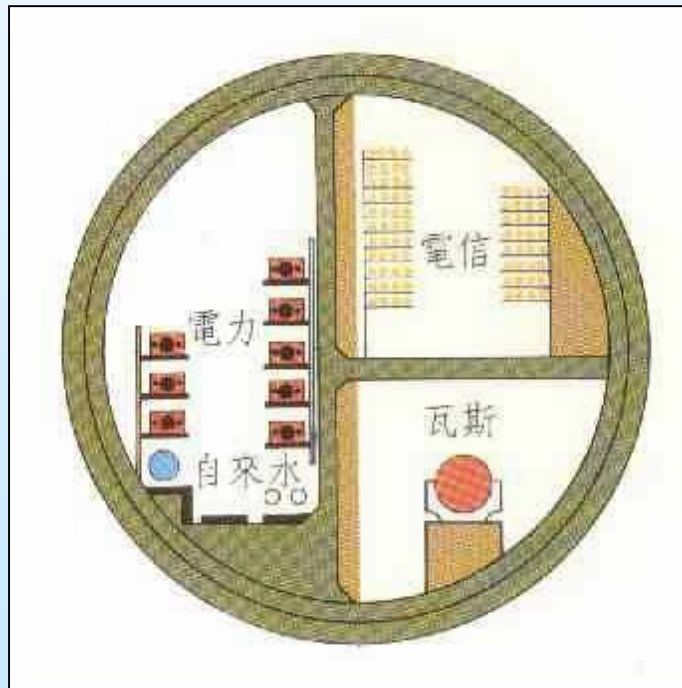
Main Ducts

■ Rectangular—Open
Cut



Main Ducts

■ Circular—Shield Tunnel/Pipe Jacking



❖ Main Duct — Utility types accommodated

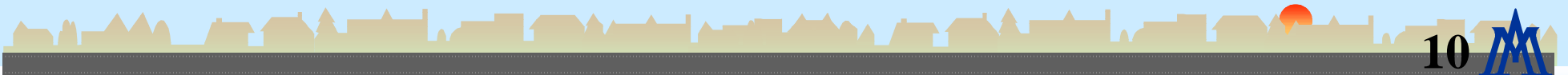
Type of Utility	Material of Utility	Characteristics of utility and conditions of taking in	Accept or not
Power	Cable	● Being able to tie in with the space and profile of CD	○
		● High excavation frequency	
Telecommunication	Cable	● Being able to tie in with the space and profile of CD	○
		● High excavation frequency	
Water supply	DIP	● Life maintaining utility	○
		● Being able to tie in with the profile of CD	
Oil/Gas supply	DIP/SP	● Life maintaining utility	○
		● Pressure pipes	
		● Toxic gas	
Drainage	RCP/BOX	● Gravity flow utility	X
		● Profile can't tie in with CD	
Sewage	DIP/RCP	● Gravity flow utility	X
		● Profile can't tie in with CD	
		● Generating toxic gas	

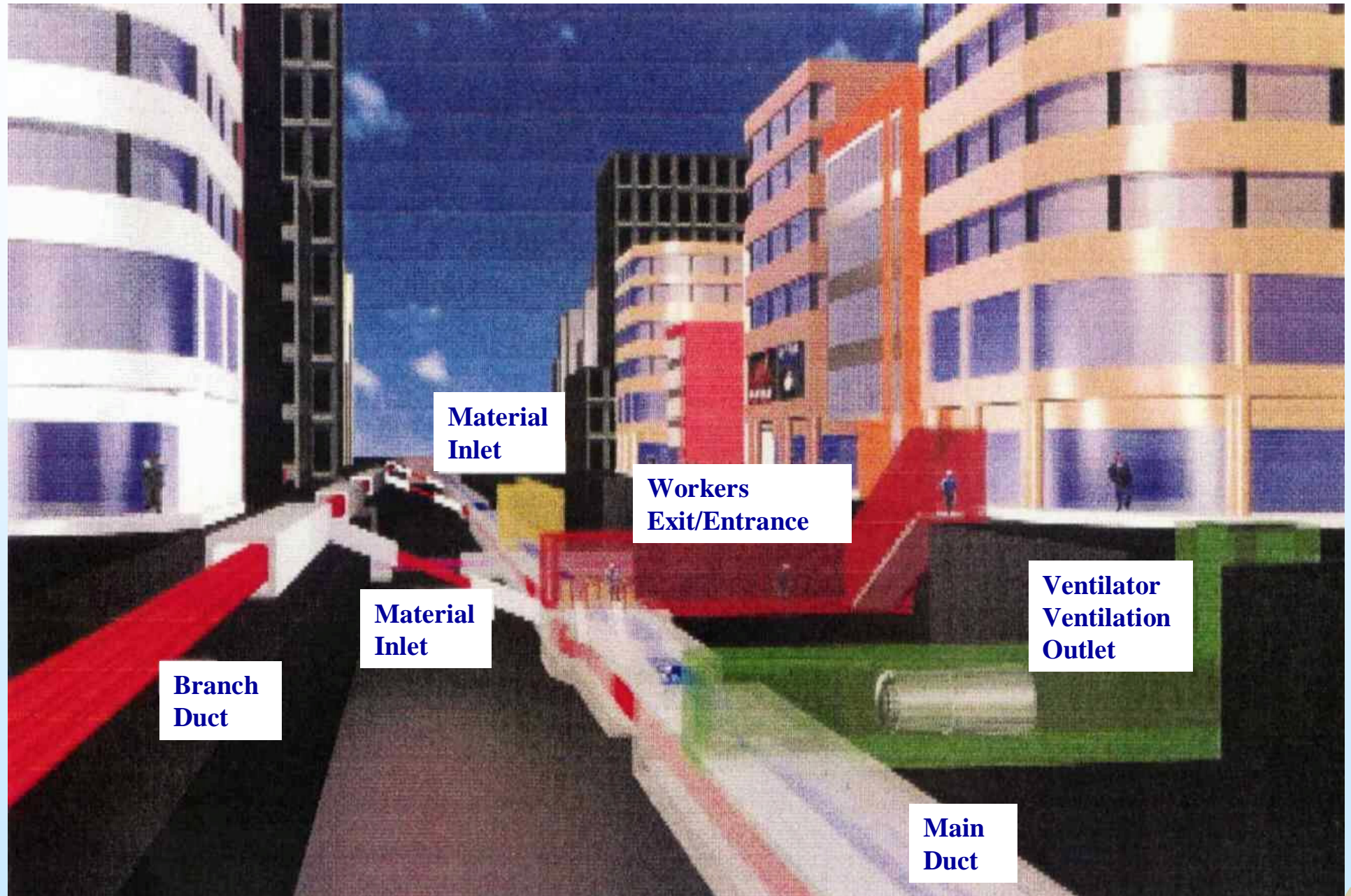
■ Special units Configuration

❖ Structures to maintain the operation of utility institution or CD itself, installed at the position that utility institution needs or at specified interval.

❖ Special units contain:

- For CD operation—Workers Exit/Entrance, Natural Ventilation Inlet, Ventilator Ventilation Outlet
- For Utility Needs—Branch Unit, Cable/Pipe Joint Unit, Material Inlet





❖ Workers Exit/Entrance

- For the convenience of workers exit and entrance shall be located at sidewalk
- Installed at 800~1,000m interval, may be combined with natural ventilation inlet



❖ Natural Ventilation Inlet

- Induct air naturally for CD
- Installed in turns with Ventilator Vent at 200m intervals
- Better to set up at road medians



❖ Ventilator Ventilation Outlet

- Using ventilator to exhaust the air of CD
- Installed in turns with natural vent at 200m intervals
- Better to set up at road medians



❖ Branch Unit

- Special structure for cable branch or turn into cross roads
- Location and No. of branch based on the demand of utilities

