

Early 20C

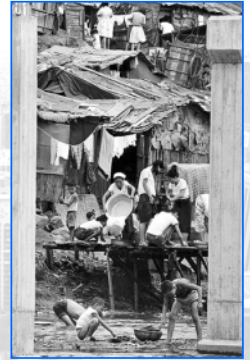
Introduction



Source: Wikimedia Commons

Problem: sanitation

Introduction



Source: Wikimedia Commons

Solution: covering

Introduction



Source: Wikimedia Commons

Covering work (1958~1977)

Introduction



Source: Wikimedia Commons

Cheonggye Highway (1967~1971)

Introduction



Source: Wikimedia Commons

Highway in 1990s

Introduction



Source: Wikimedia Commons

II. Cheong Gye Cheon 2002

Cheong Gye Cheon Area

Cheong Gye Cheon 2002



- Building: over 6,000
- over 100,000 small shops
- Nation's biggest commercial area

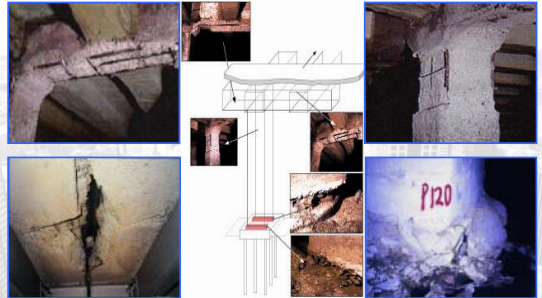
Declining old CBD

Cheong Gye Cheon 2002

- ❑ CBD redevelopment stopped where the Cheonggye Expressway started
- ❑ Population and employment reduced
 - Population: 40,000
 - Employment: 80,000 in 10 years
- ❑ Business headquarters moved to Gangnam (new sub-center)
- ❑ Industries in CBD lost competitiveness

Safety problem

Cheong Gye Cheon 2002



✓ Over all "C", partially "D" or "E"

Safety problem

Cheong Gye Cheon 2002



- Only small cars were allowed from 1997
- Maintenance cost soared: JPN ¥5,000,000,000 ('94~'99)

III. The Restoration Project

- Background
- Outline
- Challenges
- Progress

Decision to restore: July 2002



III. The Restoration Project

- Background
- Outline
- Challenges
- Progress

Site location

□ Total length: 5.84 km

- Restoration of upper reaches of CGC on a long term basis
- Divided into 3 sections to reduce the construction schedule



Demolition

□ Covered structure and highway: 5.4 km

- Waste (concrete+asphalt): 872,400ton (96% recycled)

Step 1 Step 2 Step 3



Demolition

- Dust and noise control was vital



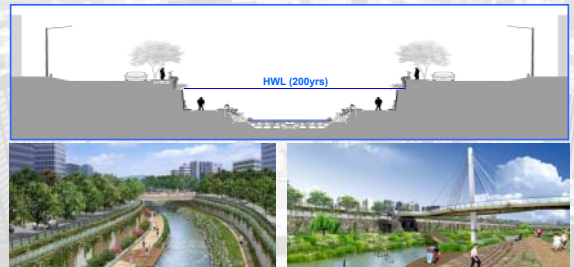
River design

□ Design Criteria

- Secure the stream capacity for 200 years frequency rainfall (118mm/hr)

□ Access to Water:

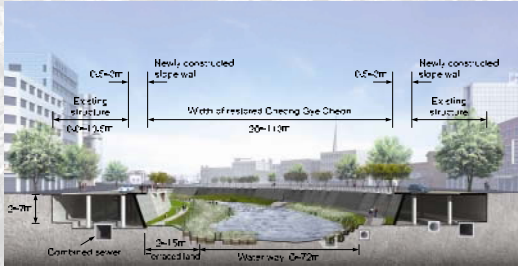
- Install sidewalks along the lower level of the bank



Flow Section

□ Basic design

- secure flood capacity for 200 years frequency rainfall
- introduce lower terrace to enhance easy access to water



Source: Minwon Design Corporation

Flooded in Aug 3, 2003

for intensity of 60mm/h, upstream near Cheong-Gye Plaza



Source: Minwon Design Corporation

Water supply

□ Water supply plan

- Water from the Han river: 120,000 ton/day
- Underground water from subway stations: 22,000 ton/day

□ Waterway plan

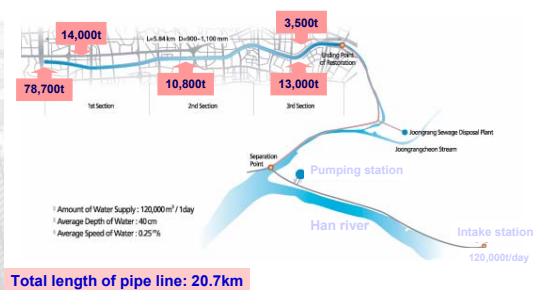
- Depth: average 40 cm
- Flow velocity: 0.24 m/sec
- Measures to prevent water loss

□ Water quality: better than the 2nd grade

- BOD: 3mg/l or less
- SS: 25 mg/l or less
- DO: 5 mg/l or less
- Total N: 10 mg/l or less
- Total P: 1 mg/l or less

Source: Minwon Design Corporation

□ Pipe line system



Source: Minwon Design Corporation

Sewer system

□ Design Criteria

- Combined sewer system for rainfall and wastewater
- Capacity : 3 times of estimated wastewater

□ Combined Sewer System



Source: Minwon Design Corporation

Bridge design

□ Number of bridges: 22

□ Design Criteria

- Minimize flow resistance
- Harmony with surrounding area
- artistic landmark

□ International concept design competition



Source: Minwon Design Corporation