

# Rainwater Management System

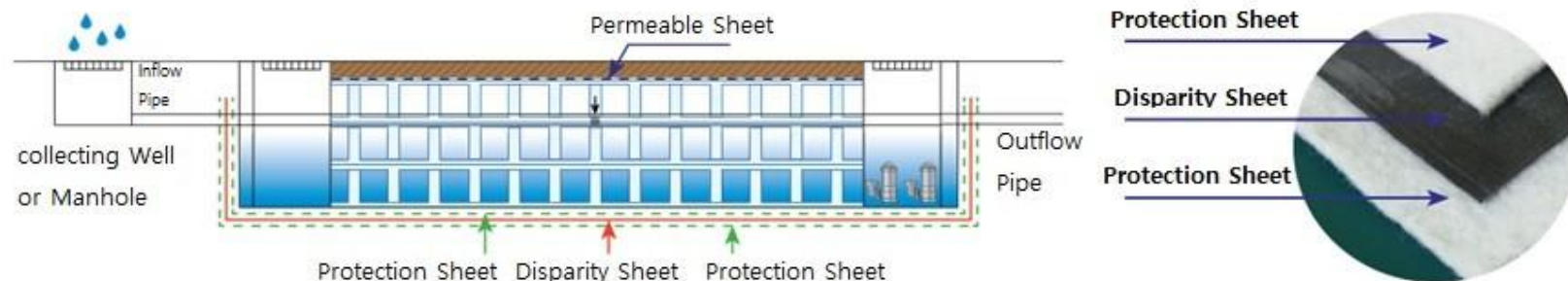
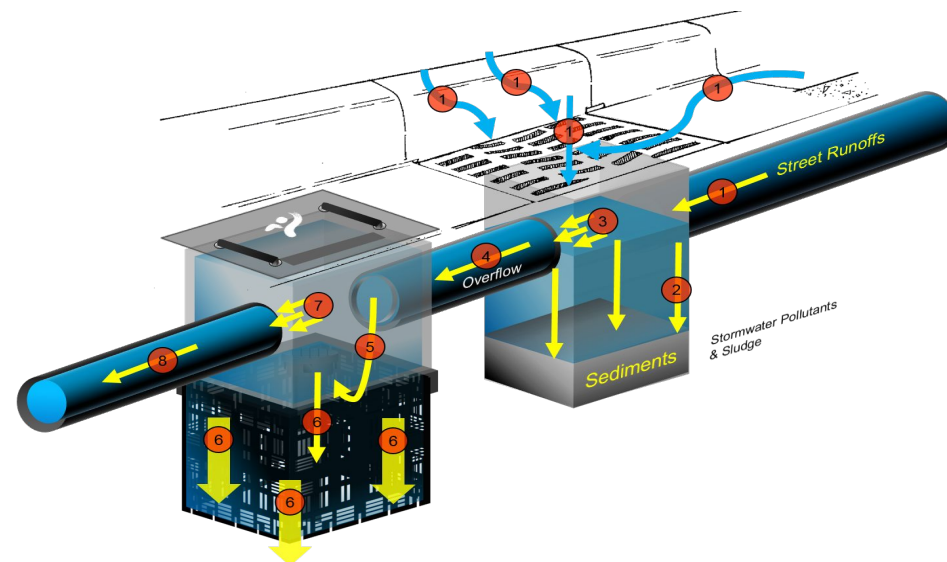


## What are we offering?

Conservation of rain water resources by creating ground water penetration system

that offers multiple benefits:

- ✓ Prevention of flooding of streets during heavy rain
- ✓ Prevention of groundwater depletion
- ✓ Prevention of land hollowing
- ✓ Collection of rainwater for landscape and agriculture



## The Company – Hankuk Suan

- ❑ Headquartered in the Republic of Korea
- ❑ Established in 2002
- ❑ Provides a complete gamut of rainwater management systems – design, construction, maintenance, and technical consulting
- ❑ 20 Years of experience in the field of water technology
- ❑ 12 patents in rainwater management systems
- ❑ Winner of Korea Best Disaster Prevention Technology Award in 2014
- ❑ Technology implemented by Incheon Metropolitan City Development Corporation; Defense Ministry of Korea; Ministry of Land, Infrastructure, and Transport of Korea; Korea Land and Housing Corporation and Korea Water Resource Corporation
- ❑ Participated in Jecheon Green Rainwater Infrastructure Project

### List of Registered Patents

- (No. 10-1030605) – PN Storm Water Detention Tank
- (No. 10-1285727) – Counter-Flow Inducing Floating-Substance Inflow Prevention Management
- (No. 10-1195091) – Ground-Permeating Nonpoint Pollution Reduction Facility
- (No. 10-1145050) – Initial Rainwater Managing Street Inlets with Oil Separator
- (No. 10-0952596) – Foundation Structures for Wetland
- (No. 10-0917669) – Assembly System of Stored Light Emitting Device
- (No. 10-0813995) – Construction Method for Detention Tank & Its Structure Using Cast-Iron
- (No. 10-0799910) – Construction Method for Cast-Iron Retaining Wall
- (No. 10-1158632) – Manhole Designed for Reducing Nonpoint Pollution
- (No. 10-1051766) – Manufacturing Method for Antimicrobial-Injected Concrete Structures
- (No. 10-0911876) – Construction Method for Prefabricated Cast-Iron Structure & Ditch Bank
- (No. 10-0914342) – Reinforced Earth Manufacturing Method Using Cast-Iron

## Current Offerings

### ❑ SA INFILTRATION-TYPE STREET INLET

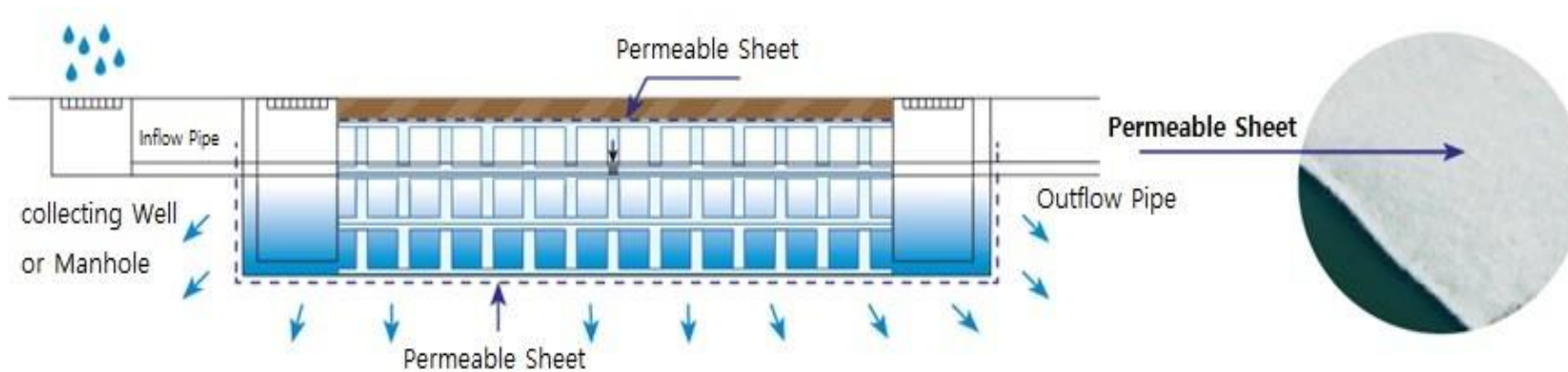
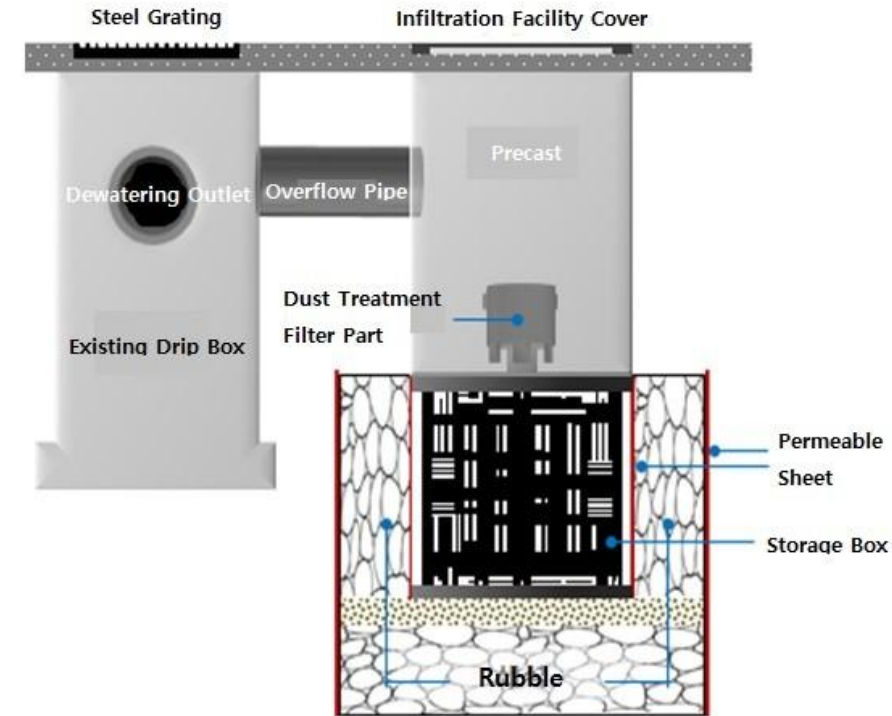
This is a solution which captures the rainwater/floodwater from the surface and induces the rainwater to secure water resources and improve ground water concentration. It filters the rainwater captured from the street level and then releases it into the ground.

### ❑ STORM WATER PREDAM TANK

This is a solution which captures the rainwater/floodwater from the surface and collects it for landscaping and agriculture. This design filters the rainwater and keeps it in storage to be utilised for landscaping and agricultural purposes.

## SA INFILTRATION-TYPE STREET INLET

- ✓ Prevents flooding of streets by minimizing rainwater inflow to existing ducts even during heavy rainfall
- ✓ Prevents hollowing and sinking of ground level due to water on the surface
- ✓ Easy to connect with existing outflow ducts
- ✓ Easy to maintain with cleaning of infiltration part
- ✓ Dust treatment of rainfall during infiltration
- ✓ Decreases overflow of water onto street due to temporary reservoir



## SA INFILTRATION-TYPE STREET INLET – Rainwater Distributed Processing & Treatment

① - Inflow of Rainwater from the roads

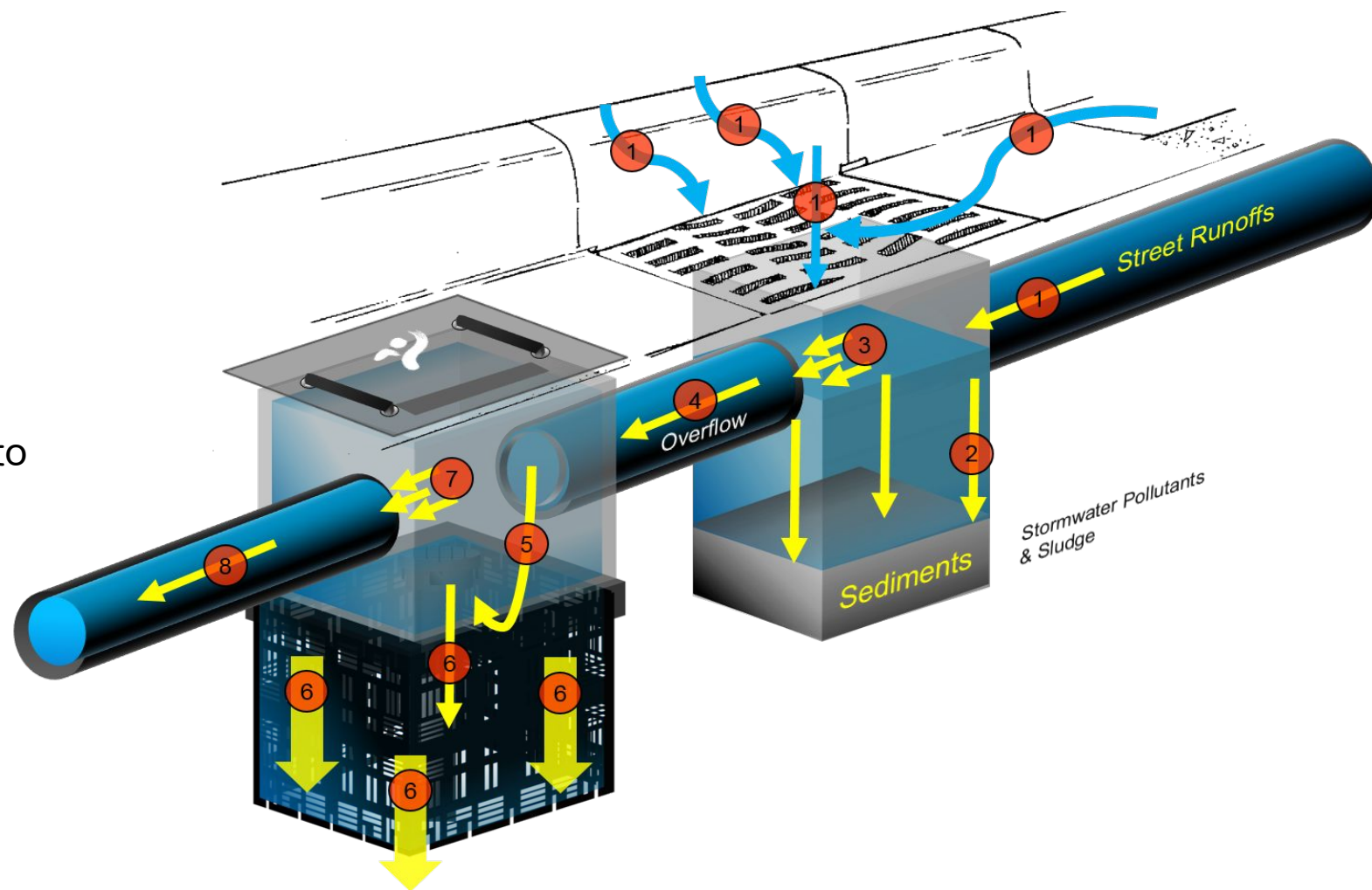
② - Pollutant & Sediment

③ and ④ - Overflow

⑤ Dust-pollution treatment using differential-head

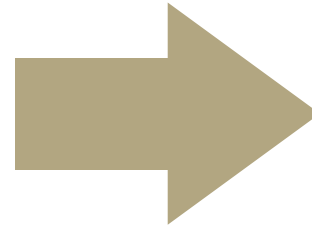
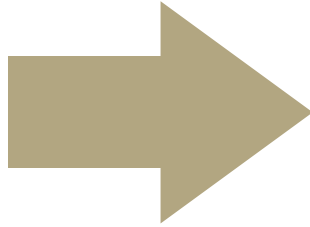
⑥ Infiltrated and treated water flows into the drip box → penetrates to underground soil

⑦ and ⑧ - Overflow



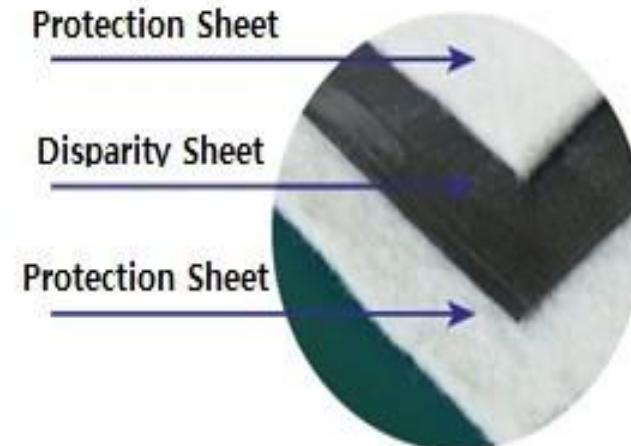
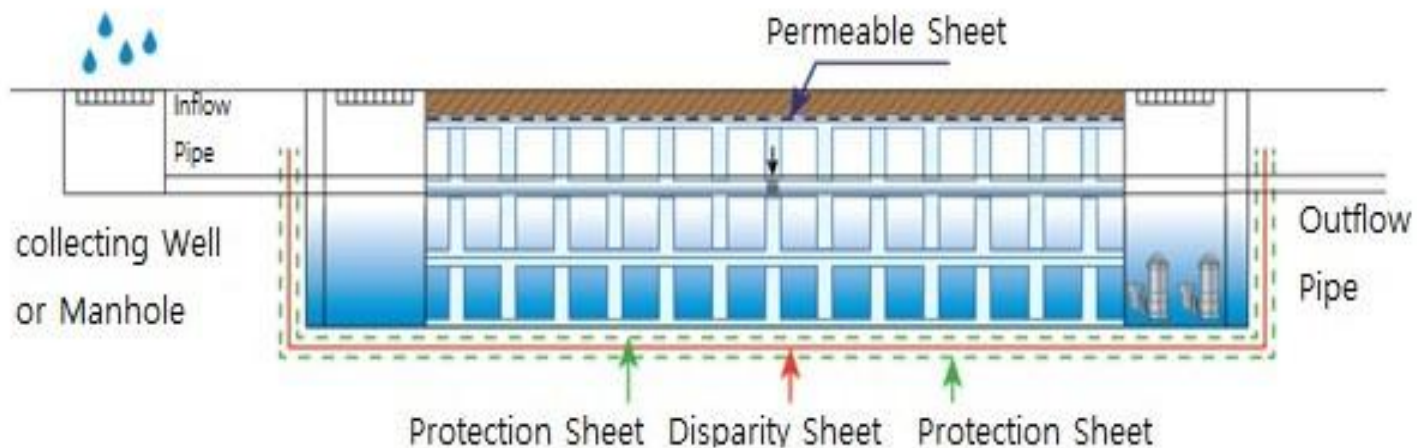
# PROJECT IMPLEMENTATION IN SEOUL – PRE and POST PROJECT

## GWANGHWAMUN GATE (SEOUL)



## STORM WATER PREDAM TANK

- ✓ Treats rainwater as a water source and collects it for landscaping and agriculture
- ✓ Plastic laminating method resulting in high porosity and enabling speedy construction
- ✓ Easy to maintain facility with Cast-Iron maintenance passage
- ✓ 93% high porosity to maximise water storage
- ✓ Can be constructed to filter and store water for further use





## STORM WATER PREDAM TANK

### 93% High porosity

- maximized storage amount

### Plastic Stacking Method

- short construction period

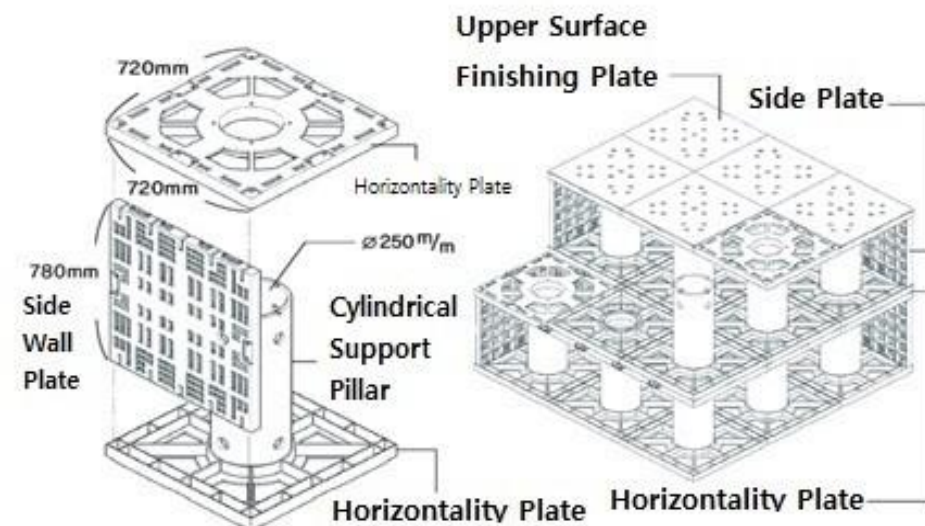
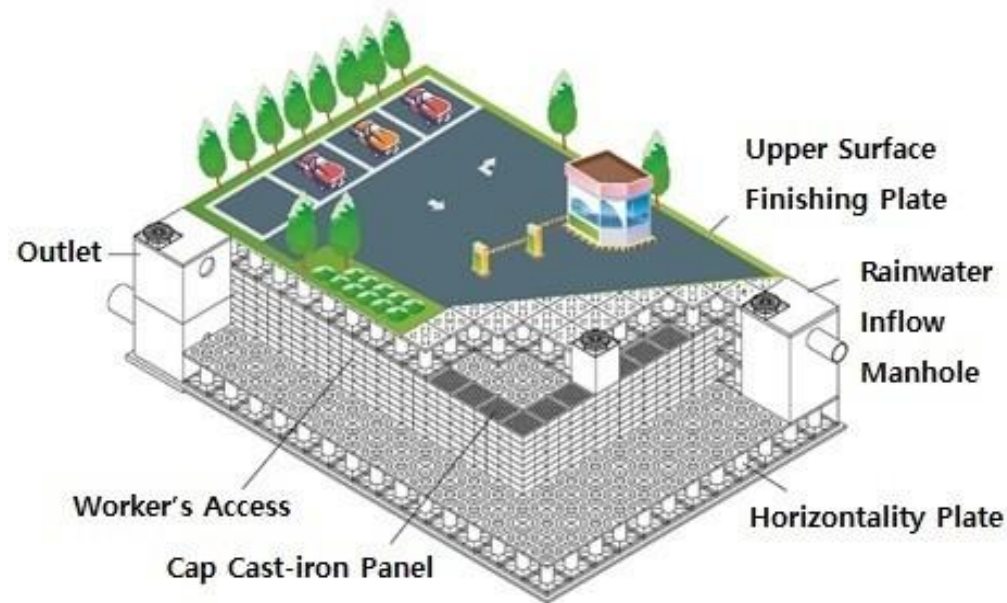
### Strong on weight load with cast iron and resin structure

- Utilizable upper surface (Parking lots, Playground, and others)

### Cast-iron Pathway installation

- Easy to maintain

### Construction is available in Predam Type or Penetration type



## CONSTRUCTION PERFORMANCE IN KOREA

### PN STORM WATER PREDAM TANK: PREDAM TYPE

| Date    | Construction Section                    | Size | Date    | Construction Section                        | Size | Date    | Construction Section                       | Size |
|---------|---|------|---------|---|------|---------|--|------|
| Nov-12  | Chungbuk cheongwon country              | 50   | Sep-14  | Goseong Fire Station                        | 80   | Sep-16  | University of Baeje                        | 8    |
| Nov-12  | Gyeonggi provunce Hwaseomg-si           | 50   | Jan-14  | Taeon Fire Station                          | 80   | Sep-16  | Wanju-gun Dunsan Park                      | 250  |
| M ay-12 | Asan-si (LHPublic relations office 50m) | 50   | Sep-14  | Naju High school                            | 200  | Sep-16  | Seou Jongno-gu Changsin-dong               | 20   |
| M ay-12 | Daejeon Jung-gu Jumin center            | 15   | Sep-15  | Gongju Fire station                         | 80   | Jul-18  | Seoul buk-gajwa elementary school          | 280  |
| Nov-12  | Incheon Butterfly Park                  | 300  | Sep-14  | National Assembly security guard            | 70   | Jul-18  | Seoul sangchun elementary school           | 16   |
| Dec-12  | Suwon Children`s Park                   | 15   | Jan-14  | Jeonju Banwol APT                           | 80   | Jul-18  | Seoul seoulsamkwang elementary school      | 16   |
| M ay-13 | Goheung Podu M iddle School             | 70   | Nov-13  | Yongnam High School                         | 20   | Jul-18  | Jeollabuk-do Imsil Archery center          | 16   |
| M ay-13 | Naju nampyeong Elementary school        | 50   | Jan-14  | Seobuk M iddle school                       | 200  | Aug-18  | Sejong rotary                              | 93   |
| M ay-13 | M okpo Jeil Girl`s High School          | 50   | Nov-14  | Dongtan water conservation center           | 130  | Oct-18  | Sejong City Community Center               | 17   |
| M ay-13 | Damyang hanje M iddle school            | 70   | Nov-14  | Changwon M ilitary Government project       | 110  | Oct-18  | Ganseok 2-dong Community Service Center    | 69   |
| Sep-13  | Seoul maedong Elementary School         | 100  | Dec-14  | Suwon jangan-gu office                      | 400  | Oct-18  | Changwon fire defense headquarters         | 17   |
| Sep-13  | Daejeon wonnae APT                      | 10   | M ay-15 | Jecheon City Hall                           | 50   | Nov-18  | K.E.I.T Insitute Bulgwang goverment office | 65   |
| Sep-13  | Daejeom gyochoon APT                    | 10   | Jun-15  | Chungbuk cheongwon namil                    | 10   | Nov-18  | M apo KEPCO                                | 61   |
| Jan-13  | Gangdong-gu Seoul korea                 | 120  | Jul-15  | Okssan Sports Park                          | 35   | Nov-18  | Yangsan gym                                | 73   |
| Jan-13  | Korean Academy of Public history        | 80   | Aug-15  | Gwangju M etroplitan city hall              | 100  | Nov-18  | Odong Park                                 | 109  |
| Aug-14  | Muan High School                        | 200  | Dec-15  | Daejeon institute of LG chemical Technology | 8    | Dec-18  | Seoul Doseong elementary school            | 11   |
| Aug-14  | Dongtan Ecological Restoration Project  | 100  | Aug-16  | Sillim Apt                                  | 18   | M ay-19 | Seoul space sanlim                         | 182  |

## CONSTRUCTION PERFORMANCE IN KOREA

### PN STORM WATER PREDAM TANK: PENETRATION TYPE

| Date   | Construction Section             | Size | Date   | Construction Section             | Size  | Date   | Construction Section                    | Size | Date   | Construction Section                     | Size |
|--------|----------------------------------|------|--------|----------------------------------|-------|--------|---|------|--------|--|------|
| Jun-12 | Butterfly Park                   | 1    | Sep-13 | Euljiro 1 ga                     | 80    | Oct-17 | SGI Singangbuk Center                   | 40   | Feb-19 | Doksan-dong officetel                    | 11   |
| Jan-12 | M apo Park                       | 4    | Sep-13 | Samgakji Station around          | 120   | Dec-17 | Seoul Naegok-dong nursery facility      | 6    | Mar-19 | Yangju junkyard                          | 7    |
| Nov-12 | Gwangmyeong 3 site               | 10   | Sep-13 | Cheongho-Daro                    | 65    | Feb-18 | Seoul Bangbae-1dong nursery facility    | 11   | Mar-19 | Jeju hyosungharrington court             | 2400 |
| Nov-12 | Homasil 1 site                   | 9    | Sep-13 | Sadang-dong                      | 80    | Feb-18 | Seoul Nonhyeon-dong Hanbook             | 40   | Mar-19 | Osan Daindnc factory                     | 147  |
| Nov-12 | Gu-un children Park              | 1    | Sep-13 | Jamsil Station around            | 45    | Feb-18 | Seoul Jamwon-dong nursery facility      | 7    | Apr-19 | Hongje-2dong community center            | 13   |
| Dec-12 | Dongtan 2 water center           | 10   | Feb-14 | Sejong City 1-1, 1-3 site        | 400   | Apr-18 | Seoul Wonji-dong muliti gym             | 79   | Apr-19 | Gugi-dong 125-5 villa                    | 55   |
| Dec-12 | Gahoe-dong office                | 5    | Apr-14 | Seoul City                       | 1,160 | Apr-18 | Hwacheon artillery regiment             | 70   | May-19 | Seoul Jongam-dong 25-68                  | 20   |
| Jun-13 | Gwanghwamun Squire               | 67   | May-14 | Seocho-Gu Reconstruction site    | 700   | Apr-18 | Gimcheon daeshin district               | 70   | May-19 | Seoul Doksan-dong 332-13 officetel       | 30   |
| Jun-13 | jongno 4 ga                      | 40   | Jun-14 | Wonpyeong-dong                   | 134   | Apr-18 | Univ. of Seoul Education center         | 18   | Jun-19 | Seoul Guui-dong Community Service Center | 30   |
| Jun-13 | Hapjeong-dong                    | 30   | Jul-14 | Sinbqng-dong                     | 9     | Apr-18 | Jeonju APT                              | 8    | Jun-19 | Seoul Singil-dong 65-10                  | 18   |
| Jun-13 | Sinwol 4 dong Omok-ro            | 60   | Oct-14 | Sinchon Hyundai Department store | 4     | May-18 | M angwon-dong villa                     | 1    | Jun-19 | Jeju Dongho artrium                      | 396  |
| Jun-13 | Hawgok-dong                      | 40   | Oct-14 | Suwon Green Rain infrastructure  | 2     | Jun-18 | M angwon-dong villa                     | 6    |        |  |      |
| Jun-13 | Siheung-dong                     | 12   | Apr-15 | Samsung R& D Center              | 17    | Oct-18 | Guro Family center                      | 10   |        |  |      |
| Jun-13 | Dangsan-dong                     | 30   | May-15 | Jamwon-dong                      | 17    | Oct-18 | Sangdo-1dong government office          | 27   |        |  |      |
| Jun-13 | M iseong-dong                    | 40   | Jul-15 | Suseo Express Railroad 1-1 site  | 143   | Nov-18 | Yeomchang-dong Officetel                | 2    |        |  |      |
| Jun-13 | National University of Education | 40   | Jan-15 | Sigyeobak-ro                     | 3     | Nov-18 | Cheonan solar power                     | 6    |        |  |      |
| Jun-13 | Daechi Station around            | 50   | Nov-15 | Convergence Road                 | 3     | Nov-18 | Ewha Womans University nursery facility | 19   |        |  |      |
| Jun-13 | M yeongil-dong                   | 45   | Sep-16 | Jeokseon-dong Parking place      | 210   | Nov-18 | Odong park                              | 3    |        |  |      |
| Aug-13 | Namdong-Gu, Incheon              | 4    | Aug-17 | Guui-1 dong nursery facility     | 54    | Dec-18 | Daejeong-eup welfare center             | 474  |        |  |      |



## EDVINCIBLE TECHNOLOGIES PVT LTD

- **Contact**  
+91-22-79613220 | +91-22-79613231
- **Email**  
[info@edvincible.com](mailto:info@edvincible.com)
- **Address**  
1001-02, 10th Floor, G Square, Jawahar Road, Pant Nagar, Ghatkopar East, Mumbai
- **Homepage**  
[www.edvincible.tech](http://www.edvincible.tech)



## HANKUK SUAN CO. LTD.

- **Contact**  
+82-1027268597
- **Email**  
[hksuan@naver.com](mailto:hksuan@naver.com)
- **Address**  
51-5, Haryul-ro 30beon-gil, Jang-an-gu, Suwon-si, Gyeonggi-do, Republic of Korea
- **Homepage**  
[www.hksuan.co](http://www.hksuan.co)