



项目地址: 荷兰鹿特丹市
项目面积: 9 000m² (包括街道和停车场)
项目委托: 鹿特丹市政府、(由水务局资助的)“鹿特丹气候行动计划”委员会
景观设计: DE URBANISTEN城市研究和设计工作室
项目费用: 200万欧元
首席设计师: Florian Boer
项目团队: Roberto Schumacher、Jens Jorritsma、Eduardo Marín、Tim Peeters、Dirk van Peijpe
项目合作: 瓦伦德公司(施工协调)、德国亚科集团(不锈钢水槽施工)
设计时间: 2011~2012年
施工时间: 2012~2013年
建成时间: 2013年

Location: Rotterdam, the Netherlands
Area (size): 9,000 m² (including street and parking)
Client: City of Rotterdam, Rotterdam Climate Initiative supported by Waterboard Schieland & Krimpenerwaard
Landscape Architecture: DE URBANISTEN
Cost Item: EURO 2 million
Chief Designer: Florian Boer
Project Team: Roberto Schumacher, Jens Jorritsma, Eduardo Marín, Tim Peeters, Dirk van Peijpe
Collaborator: Wallaard (coordinating construction), ACO (construction of stainless steel gutters)
Design Period: 2011 ~ 2012
Construction Period: 2012 ~ 2013
Completion Time: 2013

1. 暴雨来临时班特布雷水广场鸟瞰图 © DE URBANISTEN
2. 班特布雷水广场区位图 © DE URBANISTEN

1. weather © DE URBANISTEN
2. Location map of Water Square Bentheimplein © DE URBANISTEN



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荷兰鹿特丹市班特布雷水广场

Water Square Bentheimplein in Rotterdam, the Netherlands

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摘要

作为一项创新的双重战略，班特布雷水广场将城市蓄水与城市公共空间质量的提升结合起来。广场在平时保持旱景状态并作为年轻人运动和玩耍的空间；当遭遇强降雨时，广场将一改往常的外观和功能，“变身”为一个临时的雨水储存设施。三个下沉广场被用来收集雨水：两个较浅的广场在平时能够迅速收集广场周边的雨水；一个较深的广场只有在遭受连续降雨时才会启动雨水收集功能。

关键词

水广场；参与式设计；雨水储存设施；不锈钢水槽

Abstract ...

The design of Water Square Bentheimplein is an innovative twofold strategy that combines water storage and improves the quality of urban public space. Most of the time the square is dry and used as a recreational space for youth sports and play. When confronted with heavy rainfall, the square changes from its usual appearance and function, becoming a temporary rainwater storage facility. Three basins were designed to collect rainwater: two undep basins will receive water for the immediate surroundings and one deeper basin will only receive water when it is consistently raining.

Key words ...

Water Square; Participatory Design; Rainwater Storage Facility; Stainless Steel Gutter

面对频繁出现的极端灾害性天气，许多城市正遭受越来越强的暴雨侵袭。陈旧的城市排水系统无法经受暴雨的考验，是造成城市内涝和积水的主要原因。

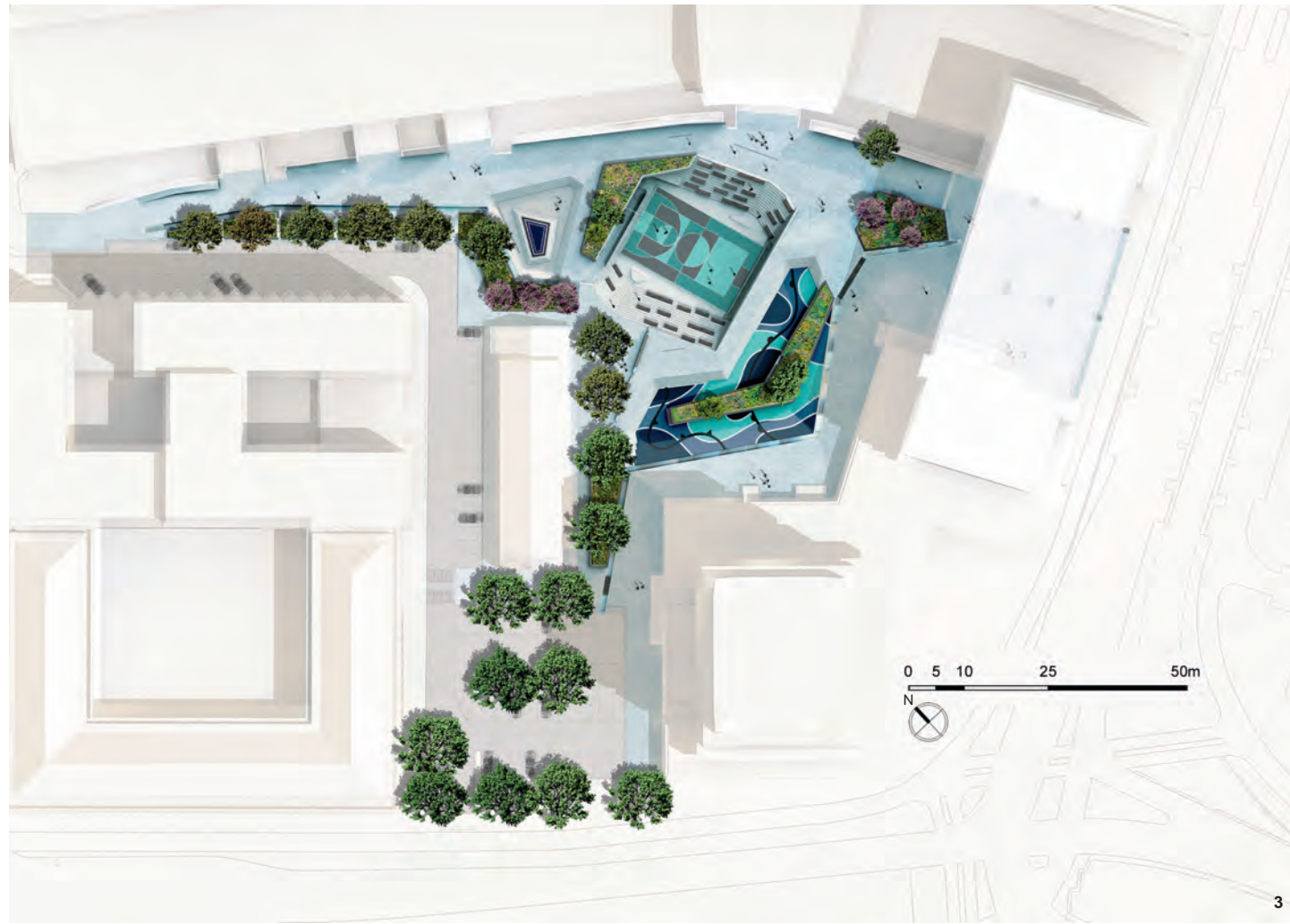
位于人口密集的城市三角洲地区的鹿特丹拥有处于海平面以下的特殊地势，因而面临着严峻的气候变化所带来的挑战。作为欧洲最大的海港，鹿特丹的经济发展依赖于水，来自河流的淡水滋养了这片土地上的作物。因此，鹿特丹政府非常重视与水相关的问题，并致力于发展各种创新的解决方案。“水广场”正是这样一项创新的双重战略——将城市蓄水与城市公

共空间质量的提升结合起来。该方案使得在蓄水方面投资的每一分钱都变得明明白白，物有所值。同时，它还具有改善环境质量的潜力，并有助于确立其作为附近社区的自身特色。

第一个水广场将在班特布雷广场建成。通过参与式设计——与各类使用人群和社区成员进行积极互动，这些使用人群包括扎德金学院和图形学会的学生及教师、附近教会的成员、青年剧院的观众、森社区的居民——形成了广场的设计构思。我们就广场的可利用方式、对基调风

格的预想以及暴雨造成的影响进行了三次讨论。设计理念由此而生：水广场应该是一个充满活力的场所，不仅能够为年轻人提供玩耍和逗留的空间，同时还拥有私密的绿色空间。水将成为场地中的一个可见元素，流经整个广场并形成迂回的路线。加之社区群众的热情参与，最终形成了一个非常优秀的设计方案。

大部分情况下，广场都保持旱景状态并作为年轻人运动和玩耍的空间。当遭遇强降雨时，广场将一改往常的外观和功能，“变身”为一个临时的雨水储存设施。我们设计了三个下沉广场来收集雨



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水：两个较浅的广场能够在平时迅速收集广场周边的雨水；一个较深的广场只有在遭受连续降雨时才会启动雨水收集功能。三个广场采用不同的设计材料以满足不同的功能：第一个较浅的广场可供男女老少进行各种轮滑运动；第二个较浅的广场中包括一个铺设光滑镜面地板的小岛；第三个较深的广场则被设计为球类运动场，其大剧院的建筑形式可供人们在此休息或观看表演，亦可成为景观中的一部分。

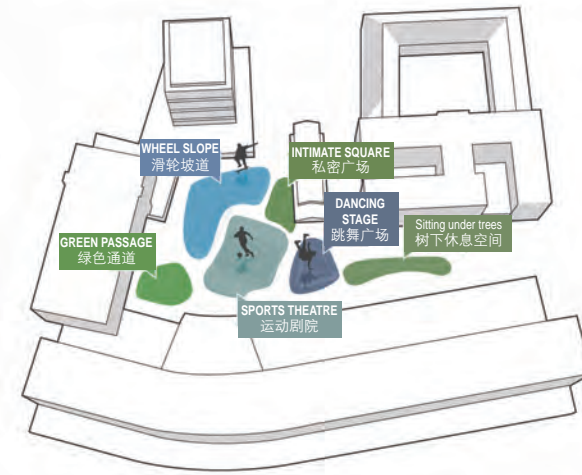
广场周边更大范围地区的降雨则通过大型的不锈钢水槽被收集到广场中，这些超大的钢铁构件同时非常适合用作滑板运动场地。水广场设置了两个特殊的设计元素——水墙和雨水井——从而在广场中形成喷涌流动的壮观水景。水墙将从距离广场较远的地区收集的雨水引入较深的下

沉广场，来自广场上空的大量雨水在此形成瀑布。雨水并被设计成不锈钢水槽的开端，其高于地面并将来自周围建筑的雨水排入水槽之中。另外还有两个水元素是保证设计完整性的不可或缺的部分：一个是位于广场教堂旁的露天洗礼池，泉水从这里流出，在广场上蜿蜒流动，最后汇入一个较浅的广场之中；另一个是位于较深广场中的、与城市管道连接的自动饮水机，为运动者提供饮用水。

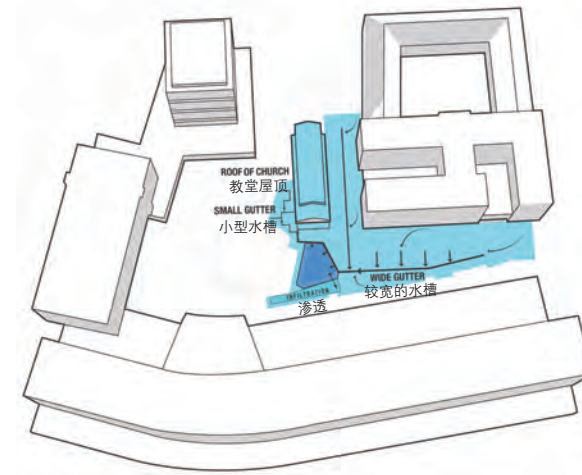
水广场的色彩设计方案强调了其功能上的不同。可被淹没的空间都被涂以蓝色，所有用于汇输雨水的空间均使用闪亮的不锈钢材料。在突出水体的流动性的同时，水槽也获得了额外的关注，它们也被赋予了漂亮的外观。三个下沉广场的地面被漆成蓝色，从而与其各自周围的环境色

彩相呼应。种植设计意在突出其美丽的现有树木。树木的周围种植高草和野花，并使用混凝土边墙进行围合，以营造一种非正式的供人们休息和放松的环境。一个利用不同的植物色彩的绿色结构，将广场的入口和中心区域分隔开来。LAF

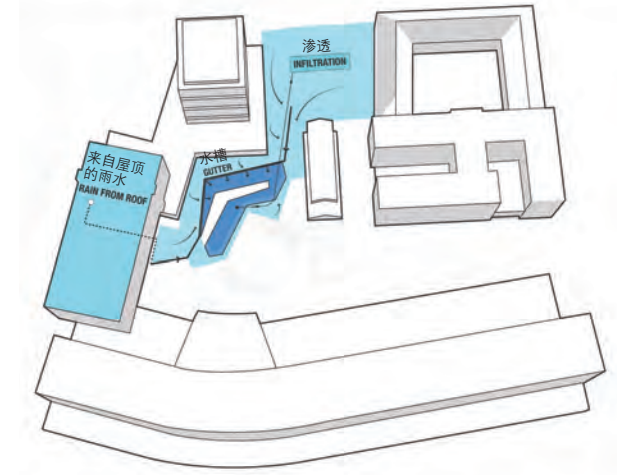
- 3. 水广场平面图 © DE URBANISTEN
- 4. 水广场的活动空间分布 © DE URBANISTEN
- 5. 1号下沉广场排水示意图 © DE URBANISTEN
- 6. 2号下沉广场排水示意图 © DE URBANISTEN
- 7. 3号下沉广场排水示意图 © DE URBANISTEN
- 3. Plan of Water Square © DE URBANISTEN
- 4. The activity spaces of Water Square © DE URBANISTEN
- 5. The drainage schematic diagram of the first basin © DE URBANISTEN
- 6. The drainage schematic diagram of the second basin © DE URBANISTEN
- 7. The drainage schematic diagram of the third basin © DE URBANISTEN



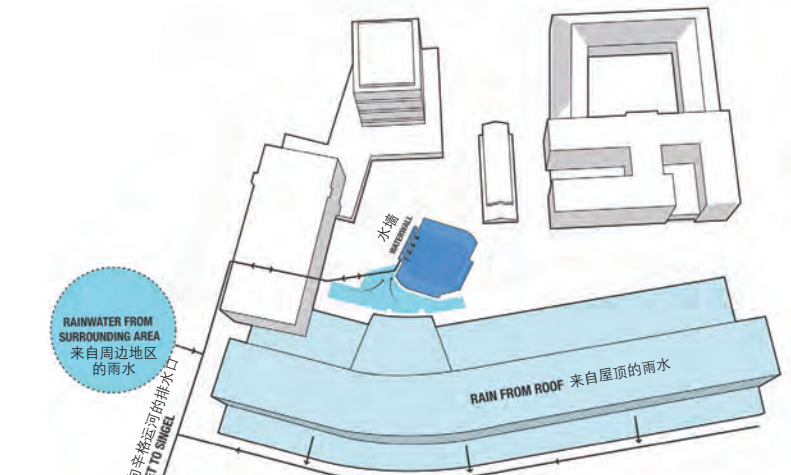
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Faced with a high frequency of extreme weather events, many cities are encountering more and more strong storm attacks. Dated urban drainage systems that cannot withstand these torrential storms are increasingly becoming a primary cause of flooding or waterlogging in a city.

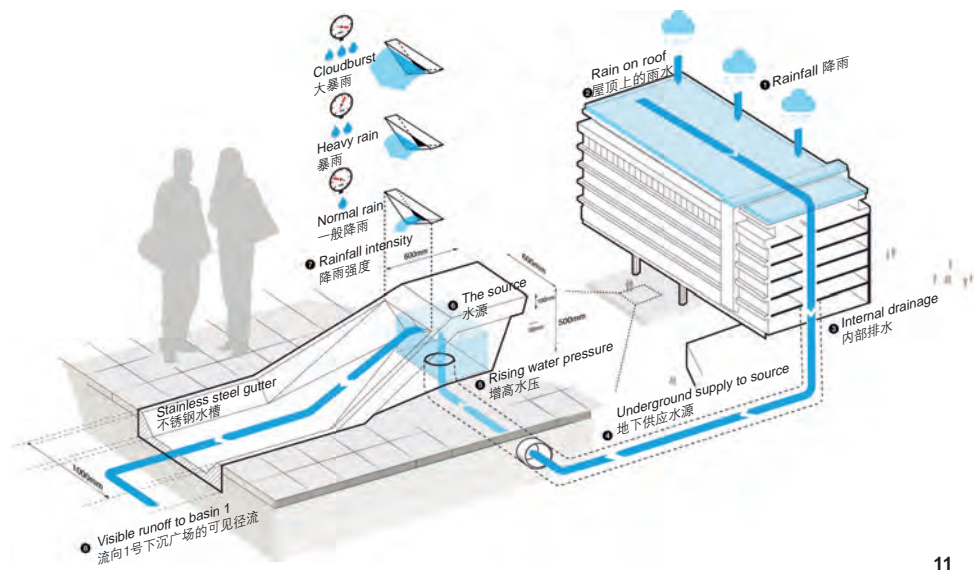
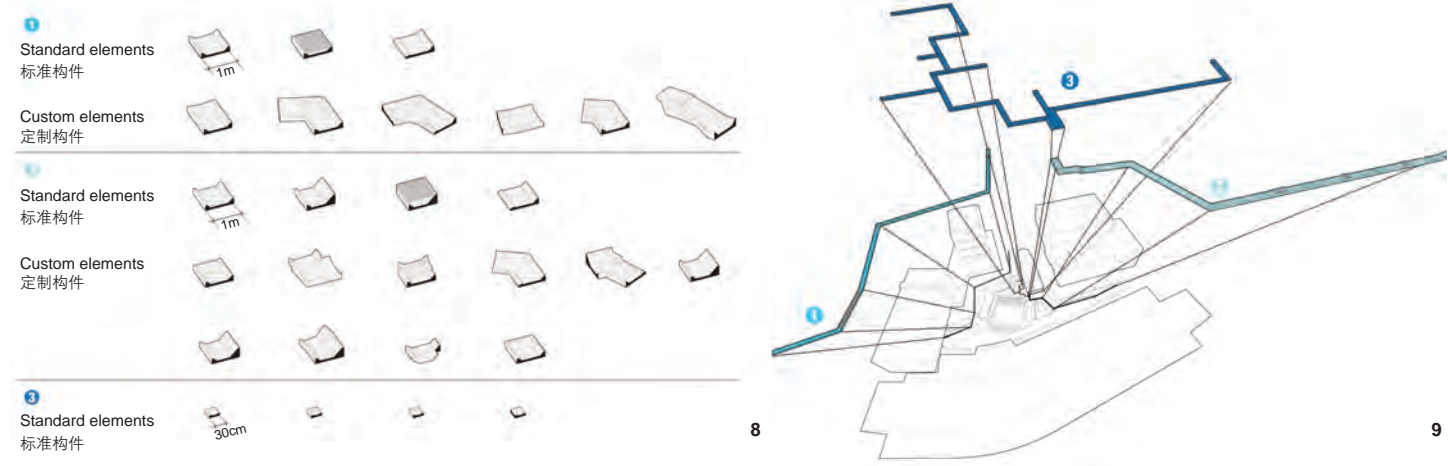
Rotterdam, in particular, faces climate challenges because of its position below sea level in a densely urbanized delta. As Europe's largest sea-harbor, the city is economically dependent on the water and the fresh water from the rivers feeds the crops on the land. An innovative approach to water related problems is, therefore, one of the main goals of the city government. The design of Water Square is an innovative twofold

strategy that combines water storage and improves the quality of urban public space. It makes money invested in water storage both visible and enjoyable, and has the potential to improve environmental quality and help define the identity of the central spaces of nearby neighborhoods.

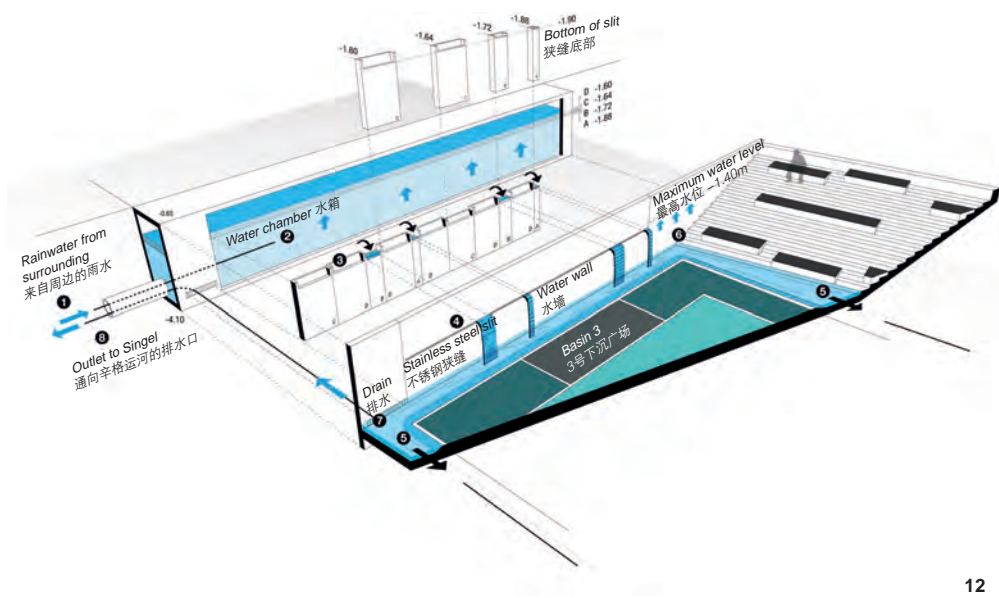
The first water square will be built on the Benthemsquare. The design of the square was conceived through participatory design involving multiple stakeholders and community members, including students and teachers of the Zadkine college and the Graphic Lyceum, members of the adjacent church, audiences of the the Youth Theatre, members of the David Lloyd gym, and residents of the Agnese neighborhood. Over

the course of three workshops, possible uses, desired atmospheres, and the role of stormwater was discussed. The Water Square should be a dynamic place for young people with lots of space for play and lingering, while incorporating intimate green spaces. Water needed to be a visible element throughout the site, running through the square and forcing detours. With enthusiastic community participation, a very positive design was developed.

Most of the time the square is dry and used as a recreational space for youth sports and play. When confronted with heavy rainfall, the square changes from its usual appearance and function, becoming a temporary rainwater storage facility. Three basins were designed



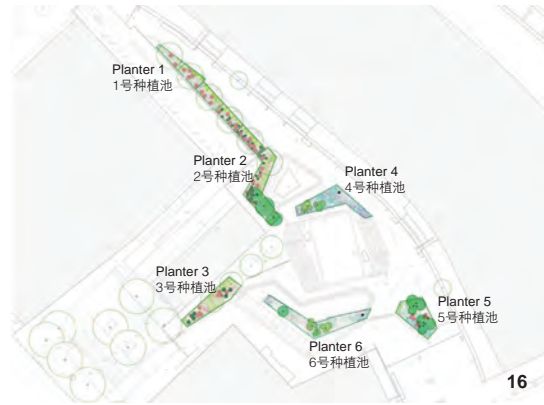
8. 由不同构件构成的1、2、3号不锈钢水槽 © DE URBANISTEN
9. 大型不锈钢水槽引导雨水流入两个下沉广场。 © DE URBANISTEN
10. 雨水井引导邻近建筑屋顶上的雨水流入广场。 © DE URBANISTEN
11. 雨水井的功能设置示意图 © DE URBANISTEN
12. 水墙的功能设置示意图，来自附近社区的雨水被收集于此。 © DE URBANISTEN
13. 晴天的水广场鸟瞰图 © DE URBANISTEN
14. 雨后的水广场鸟瞰图 © DE URBANISTEN
15. 水广场剖面图 © DE URBANISTEN
8. Different segments that compose stainless steel gutters 1, 2 and 3 © DE URBANISTEN
9. Large stainless steel gutters that guide the rain into two undeeep basins. © DE URBANISTEN
10. The rain well brings water from the adjacent building roof onto the square. © DE URBANISTEN
11. Function analysis of the rain well © DE URBANISTEN
12. Function analysis of the water wall which can collect water from the surrounding neighborhood. © DE URBANISTEN
13. Bird's eye view of Water Square in sunny day © DE URBANISTEN
14. Bird's eye view of Water Square after rain © DE URBANISTEN
15. A section of Water Square © DE URBANISTEN



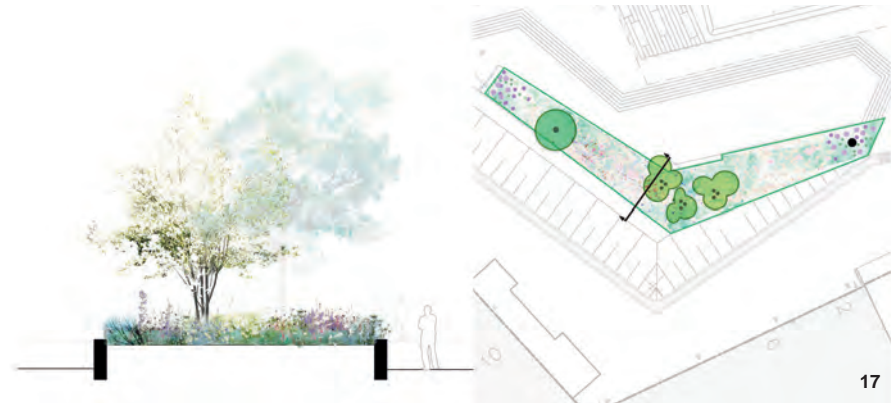
to collect rainwater: two undeep basins will receive water for the immediate surroundings and one deeper basin will only receive water when it is consistently raining. The three basins are designed with different materials for different functions. The first undeep basin is fit for everybody on wheels, the second will contain an island with a smooth mirror floor, the deep third basin is designed as a true sports pit for ball games and set up like a grand theatre to sit, see, and be seen.

The water is collected from the larger area around the square. Rainwater is transported into the basins via large stainless steel gutters, which are also oversized steel elements fit for skateboarders. A water wall and a rain well, two other special features, allow storm water to dramatically gush into the square. The water wall uses waterfalls, directed in relation to the amount of water falling from the sky, to bring water from further away into the deep basin. The rain well is designed as the beginning of a stainless steel gutter, lifting itself from the ground and bringing water from the adjacent building into the gutter. Two additional water features complete the design. An open-air baptistery is being built next to the church situated on the square. A small fountain starts from where the water





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meanders over the square into one of the undeep basins, and in the deepest basin, pipes are joined and a drinking fountain is installed for thirsty athletes to enjoy.

The color scheme emphasizes the function of the Water Square. Spaces that can be flooded are painted in shades of blue and all the spaces that transport water are a shiny stainless steel. In emphasizing the flow of

water, gutters receive extra attention and are made beautiful. The floors of the three basins are painted in blue colors that match with the colors of the surrounding. The planting plan emphasizes the beautiful existing trees. High grasses and wild flowers are planted around the trees, and are framed by a concrete border that doubles as an informal place to sit and relax. The square is defined and subdivided by

a green structure that calls out the differences in planting colors between the entrances and the center of the square. **LAF**

- 16. 班特布雷水广场种植方案 © DE URBANISTEN
- 17. 6号种植池放大图和剖面图 © DE URBANISTEN
- 18. 中心种植池详细方案：植物种类种植方案和规格 © DE URBANISTEN
- 16. Planting scheme of Benthemplein © DE URBANISTEN
- 17. Zoom and section of Planter 6 © DE URBANISTEN
- 18. Details of the central planter: planting scheme and specification of plant species © DE URBANISTEN

D New tree 新栽树木

C Shrub 灌木

B Grass (seasonal) 季节性草

A Grass (base) 地被草

Sun exposition 喜光性

- Sunny 喜阳
- Shadow 喜阴

Height 株高

- 150-200 cm
- 100-150 cm
- 50-100 cm
- 0-50 cm

Color and flower season 花色和开花季节

- Grass 草
- Shrub and trees 灌木和乔木
- W Sp Sm A
- 冬 春 夏 秋

A

- 蓝茎冰草 *Agropyron magellanicum*
- 蓝羊茅 *Festuca glauca*
- 蓝菖草 *Elymus magellanicus*
- 酸沼草 'Moorhexe' *Molinia caerulea*
- 地榆 *Sanguisorba officinalis*

B

- 三叶草 *Anaphalis triplinervis*
- 高大圆头菊 *Anthericum liliago*
- 锦葵 *Filipendula vulgaris*
- 山尖车菊 *Centaurea montana*
- 蓝地鼠尾草 *Salvia pratensis*
- 蒿 *Achillea millefolium*
- 胡萝卜 *Daucus carota*

C

- 狭叶薰衣草 'Hidcote' *Lavandula angustifolia*
- 夏雪草 *Cerastium tomentosum*
- 细梗鼠尾草 'Dippon' *Deutzia gracilis*
- 蓝藤叶分药花 'Blue spira' *Perovskia atricpilifolia*

D

- 拉马克唐棣 *Amelanchier lamarckii*
- 日本五针松 'Glaucia' *Pinus parviflora*

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探索与过程 Experiment and Process

水是一种活跃机体

梭罗在《瓦尔登湖》一书中记录了冬季采冰轶事，他说，“虽然仍处在寒冷的一月，冰雪又厚又硬，但深谋远虑的乡绅已从村子里前来取冰，准备冰镇他夏天的饮料了……他切割着坚硬的湖冰，将鱼儿们居所的‘屋顶’掀开，把它们的生存媒介和空气，像捆绑木料一样用铁链和桩杆捆绑好，随后放到车上运走，穿越冬季凉爽的冷空气，来到冰冷的地窖，在那里等待着夏季的到来。当它们远远地被拉着拖过村子的时候，看起来仿佛是凝固的碧空。”

如同《瓦尔登湖》一样，本期刊登的两个项目使我们对“水”有了新的认知：梅格·斯杜德的“林中物流：描绘瓦尔登湖及其全球本土化资源传递”，通过制作“重测瓦尔登”系列地图，重现了那些从瓦尔登湖向外延伸的物流链，将其在1830~1860年间对于农业专业化、都市食物供给，以及支撑北方工业化的全球进口贸易的深刻影响进行了视觉化表达；川·苏帕旺斯的“曼谷水文和农业网络的重新构想”提议利用潮汐过程来发掘该区域多样的土地利用可能性，并将湄南河河口340km²的废弃水产养殖景观作为积极应对21世纪城市扩张、生态衰退、水文涨落、淡水供应、食物生产以及废物处理等多重挑战的景观设计干预的新机会。这两个项目都体现了“水”是一种能够在多时间跨度和空间维度上起到积极推动作用的活跃机体。

Water as an Active Agency

In *Walden*, Thoreau describes an ice-harvesting incident at Walden Pond as follows, “While yet it is cold January, and snow and ice are thick and solid, the prudent landlord comes from the village to get ice to cool his summer drink.... He cuts and saws the solid pond, unroofs the house of fishes, and carts off their very element and air, held fast by chains and stakes like corded wood, through the favoring winter air, to wintry cellars, to underlie the summer there. It looks like solidified azure, as, far off, it is drawn through the streets.”

Like *Walden*, two projects within this issue shed new light on our perception of water. First, “Logistics in the Woods: Mapping Walden and its Glocal Resource Relays” by Meg Studer, which works outward from Walden Pond through mapping logistical chains, visualizing their profound effects on agricultural specialization, urban food supplies, and the global imports underpinning northern industrialization between 1830 and 1860. Then “Re-envisioning Bangkok’s Hydro and Agro Network” by Chon Supawongse, which proposes an introduction of tidal process in discovering programmatic possibilities and positions the 340 square kilometers of the derelict aquacultural landscapes on the Chao Phraya Estuary as a site offering a fresh opportunity for landscape architectural intervention in addressing multiple challenges of urban expansion, decaying ecology, hydrologic fluctuation, freshwater supply, food production and waste in the 21st century. Both projects address water as an active agency, through a diverse range of times and spatial scales.