

# Precedent Report

## VanSplash: Vancouver Aquatics Strategy

OCTOBER 2019

Vancouver Board of  
Parks and Recreation





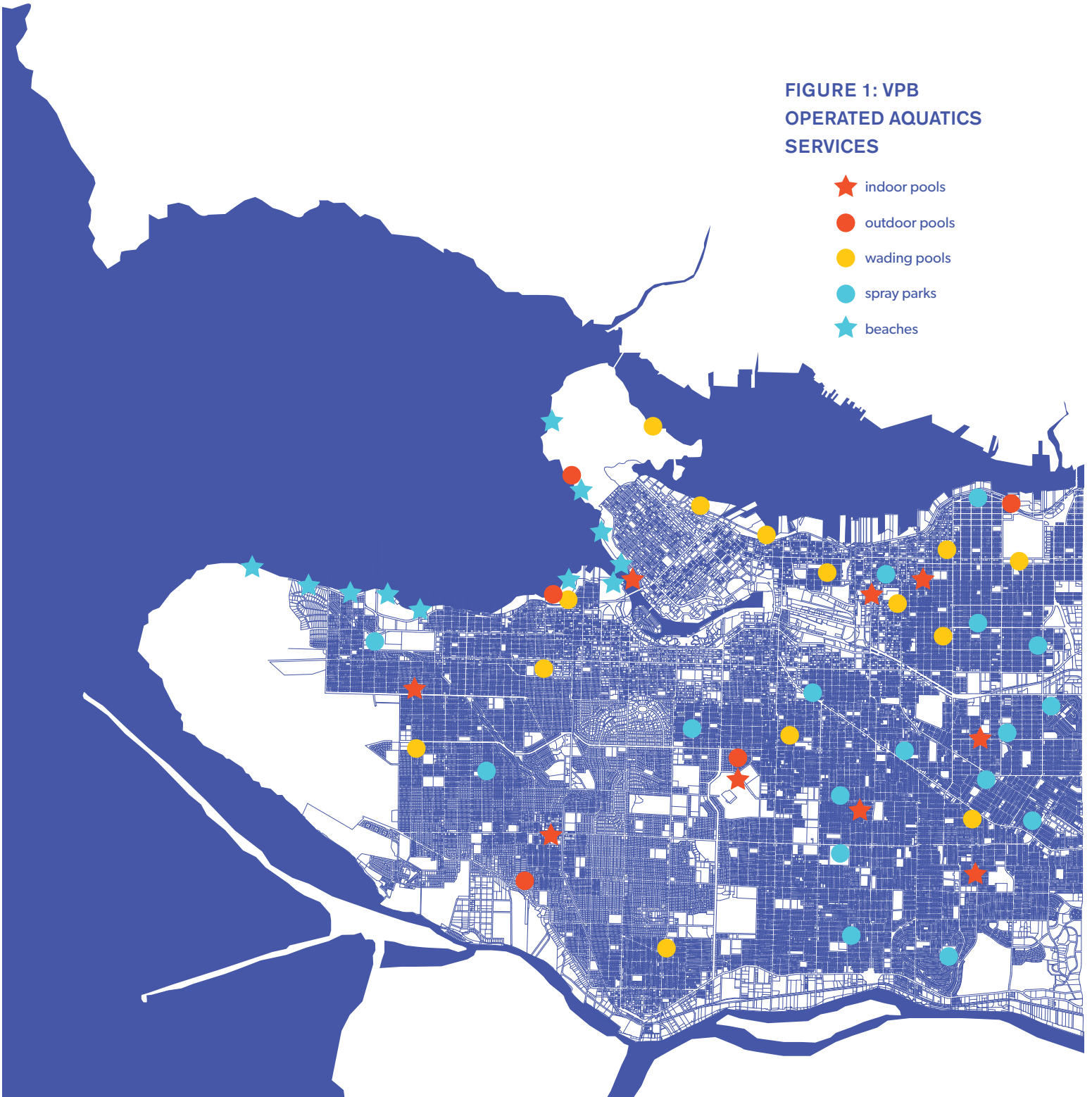
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**FIGURE 1: VPB  
OPERATED AQUATICS  
SERVICES**

- ★ indoor pools
- outdoor pools
- wading pools
- spray parks
- ★ beaches





# Executive Summary

In 2016, HCMA Architecture + Design (HCMA), in collaboration with RC Strategies (formerly PERC), were engaged by Vancouver Board of Parks and Recreation (VPB) to develop a new long range vision for the future of aquatics in Vancouver. The future vision will be informed by a core belief that along with providing opportunities for physical health and well-being, aquatic services play a key role in supporting community and personal well-being, and in enhancing social inclusion.

From beaches to pools, there is a long history of providing aquatic services within the City of Vancouver. Vancouver is uniquely positioned as a coastal City and our relationship to water is deep in our roots. This is reflected by our high swims per person per year rate in comparison with other urban centres. The VPB currently manages nine indoor pools, five outdoor pools, three stand-alone indoor whirlpools, 14 spray parks, 15 wading pools, and nearly 18 km of beaches, including Trout Lake swimming beach (see Figure 1). In 2012 the VPB developed a Strategic Plan<sup>1</sup> with the mission to "provide, preserve and advocate for parks and recreation to benefit all people, communities and the environment."

The future vision for aquatics being developed in the 2017 Vancouver Aquatic Strategy (*VanSplash*) will be based upon: an understanding the current state of existing public aquatic infrastructure (including indoor and outdoor pools, spray parks, wading pools, and beaches); public opinion sought through a robust public engagement strategy that sought to ascertain the public's hopes and aspirations for the future of aquatics in the city; and looking worldwide for inspiration related to best practices, trends and innovations in aquatics and assessing their applicability to Vancouver's unique physical and social context.

*VanSplash* is intended to update the *2001 Aquatic Services Review* and the *2011 Pool Assessment Study* (both of which are described in the next section), and to build on the scope of the previous studies by increasing the targets and measures of success to include social inclusion and community well-being, by including considerations related to environmental sustainability, and to expand the range of aquatic amenities within the City to include beaches as a key component for inclusion in the overall vision and recommendations.

The vision and recommendations in *VanSplash* will be developed through three phases:

## PHASE 1: POLICY REVIEW, INVENTORY, AND CURRENT STATE ANALYSIS

- *Current State Report*
- *Precedent Report*
- *Public Engagement Report*

## PHASE 2: SERVICE LEVELS AND POLICY UPDATE

- *Interim Report: Recommendations for Service Delivery and Policy*

## PHASE 3: FINAL STRATEGY AND IMPLEMENTATION

- *Final Strategy Report*

This report represents the second of the three reports to be delivered in Phase 1, and is focused on providing an overall review of innovative aquatic experiences found locally and throughout the world. Each section provides an overview of aquatic amenities by category as well as a high level description on local suitability. The *Precedent Report* should be read in conjunction with the findings presented in the other two reports being delivered as part of the Phase 1 deliverables: the *Current State Report* and the *Public Engagement Report*.

<sup>1</sup> <http://vancouver.ca/files/cov/park-board-strategic-plan-presentation-20120627.pdf>

# Background

In 2001, HCMA and PERC worked with the Vancouver Park Board on the *2001 Aquatic Services Review*. The purpose of the review was to develop a comprehensive strategy to reconfigure the VPB's aquatic services and facilities and to lay a foundation for a 10-15 year revitalization plan. The specific outcome of this work was to provide the Board with recommendations that would enable them to:

- Operate the services and facilities in a cost-effective and fiscally sustainable manner
- Meet current and future demands of the City's residential and working population
- Balance the local neighbourhood services and needs with those of the City and Region as a whole

As a result of the outcomes and recommendations in the 2001 review, in 2002 the VPB endorsed the objectives for aquatic renewal consisting of:

- One city-wide (Destination) facility (up to 800,000 swims/year)
- Two community level facilities (up to 400,000 swims/year)
- Four neighbourhood level facilities (up to 200,000 swims/year)

Subsequently, the Vancouver Park Board implemented the first phase of recommendations which included:

- Building a new, city-wide destination aquatic facility at Hillcrest (2010) (replaced the Percy Norman Pool)
- Re-building Killarney Pool (2006) to a community-level pool
- Renovating Renfrew Pool (2005), which was maintained as a neighbourhood-level pool

Since 2001, the VPB has also:

- Decommissioned two neighbourhood-based outdoor pools (Mount Pleasant and Sunset) at the end of their functional lifespan and replaced them with an outdoor pool located at the Hillcrest Aquatic Centre (2010)
- Decommissioned five wading pools (Norquay Park in 2011, Prince-Edward Park in 2012, Pandora Park in 2015, Carnarvon Park in 2015 and Riley Park in 2016).
- Carnarvon and Riley Park have been converted into greenspace, and Mount Pleasant pool was converted to community garden and skateboard park
- Provided new spray parks at Prince Edward Park, Norquay Park and Pandora Park

In 2010, the VPB engaged HCMA to deliver an Aquatic Services Review. The objective of this study was to provide an update that measured the progress made with regard to recommendations and targets set in the 2001 review. The work also considered existing pool-use data to lay the groundwork for future aquatic facility renewal in the City of Vancouver. The study was intended to provide a comprehensive picture of the City's current aquatic network, and to identify new trends and issues.

Working closely with aquatics and planning staff, HCMA reviewed relevant documentation, assessed the major indoor and outdoor facilities, assessed wading pools and spray parks and conducted interviews with aquatic staff across all levels. Combining this work with research into aquatic trends and best practices, the *2011 Pool Assessment Study* provided both new findings and recommended updates to the 2001 recommendations to inform the future of aquatics relative to the 10 year capital plan.

The *2001 Aquatic Services Review* made recommendations for facility renewal and policy directions, and recommended phasing out wading pools to be replaced with spray parks, as informed by public consultation.

<sup>1</sup> Greenest City Action Plan, 2020 Target: reduce community based GHG emissions by 33% from 2007 levels, and 2050 Target: reduce GHG emissions by 80% below 2007 levels.

The 2011 study served as an excellent touch point for services review but did not provide an over arching strategy evaluated through a community engagement process, nor was it endorsed by the VPB as policy. The scope of work also did not include other aquatic service opportunities such as aquatic services at beaches, innovative approaches for new outdoor facilities such as natural pools or alternative modes of urban ocean swimming being seen in other marine cities, nor did it consider the role of aquatic services in supporting well-being and social inclusion.

The 2011 work confirmed the current understanding that the renovated and new facilities (Renfrew, Killarney and Hillcrest) have affected the number of annual swims, which have increased from approximately 1.36 million in 1999 to 2.2 million swims in 2014. While greatly improved, this is still below the target of 2.4 million swims set in 2001, and less than the goal of 4 indoor swims/capita set by the Vancouver Board of Parks and Recreation. With a 2011 census population of 603,500, Vancouver's swims/capita was 3.6.





# Precedents

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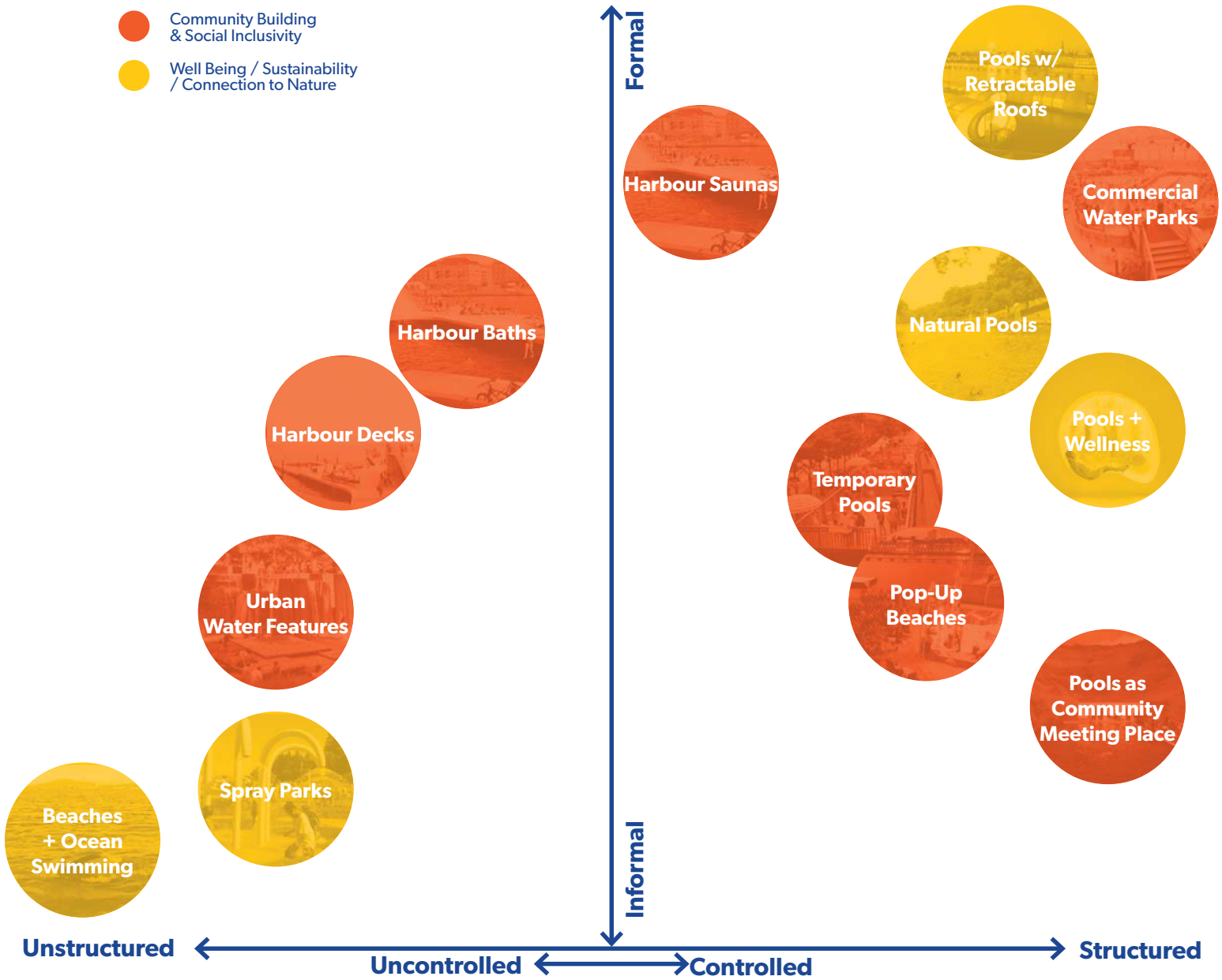
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- Community Building & Social Inclusivity
- Well Being / Sustainability / Connection to Nature





# Introduction

As part of the 2017 Vancouver Aquatics Strategy (*VanSplash*), the project team carried out a global precedent review of current trends around the world related to aquatic experiences in the broadest sense of the word. The questions we asked as part of this research were:

- What are the latest trends in aquatic experiences around the world?
- What new specialty pool typologies are emerging?
- What are the current best practices and how do we see them being applied in new aquatic forms?

In addition to traditional indoor and outdoor pools, there has been a recent rise in aquatic experiences that do not fit the traditional model of a user-pay aquatic facility focused on fitness and leisure swimming. There has been a shift to include a broader range of water based experiences that focus on social gathering, community building, health, joy, and a renewed connection to nature, in many cases through no-cost entry facilities.

The goal of this precedent study is to provide an overview of recent global aquatic trends, highlighting precedents that are considered representative of a particular trend. The example projects will be considered in the overall *VanSplash* work to help develop an aspirational vision for the future of aquatics in Vancouver. In Phase 2 of *VanSplash*, the precedents will be considered in more detail in terms of their appropriateness and applicability to Vancouver as well as their success in achieving the system's objectives and goals. Ultimately, each typology will be considered to determine which trends and innovations could best be used to enhance the range of aquatic experiences offered in Vancouver in the future.

# Commercial Waterparks

Commercial water parks are amusement parks that feature water play areas, recreational bathing, and 'spectacle' in the form of wave pools, surf pools and water slides. They were introduced in the United States in the 1940s and have continued to grow in popularity ever since. The first indoor water park was the West Edmonton Mall World Waterpark, which was constructed in 1985.

Where water parks were originally constructed for fun and leisure experiences, more recent parks have been built to augment the (visitor) experience of a specific town or region, especially at ski resorts, where their goal is to increase and extend recreation seasons. Whistler Blackcomb, for example, announced early in 2016 that they will build an indoor water park at Blackcomb's upper base.

In addition to the traditional slides and lazy rivers, these new resort water parks will often have a strong wellness and spa component, will have indoor and outdoor components, and are designed with a strong connection to nature in mind as they are often set in stunning natural surroundings. Visitor experiences are enhanced by offering packages that include not only water park access but also access to biking, hiking and chairlifts.

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## Thoughts on Local Suitability

According to Whistler Blackcomb Holdings Inc., plans are in the works for a "year-round indoor water-based play area at Blackcomb's upper base," pending local approvals. (The Canadian Press Published Wednesday, April 6, 2016) Such a development is likely a good fit for Whistler from a context, audience, and revenue perspective given the large percentage of tourists. It may also boost interest in water based play in our local context; however, a commercial water park seems out of context for Vancouver and does not appear to be a good fit for operation by municipal government.

A large indoor waterpark with a complex structure of slides and a lazy river. The facility is housed under a massive, high-ceilinged glass and steel structure. In the foreground, a lazy river winds through the park, with several people floating on inflatable tubes. To the right, there are lounge areas with tables, chairs, and umbrellas. In the background, multiple slides of varying heights and curves are visible, along with other water features and people walking around. The overall atmosphere is bright and active.

## Examples

- Mount Bromont Waterpark, Quebec, Canada
- Pump House Waterpark, Jay Peak Resort, Vermont, USA
- Wavegarden Surf Parks, Various Locations



# Mount Bromont Waterpark

## Bromont, Canada

**Completed** 1984  
**Client** Bromont Ski Hill  
**Size** 2,230 m<sup>2</sup> wave pool  
**Description** Set on a ski hill, the water park helps make the mountain a year-round amenity with skiing during the winter seasons and water leisure in the warmer months. It provides water slides, concessions, and a massive zero-entry heated wave pool.



Images: [skibromont.com](http://skibromont.com); [tripadvisor.ca](http://tripadvisor.ca)



# Pump House Indoor Water Park

## Jay Peaks Resort, Vermont, USA

**Completed** 2011

**Client** Jay Peaks Resort

**Size** 4,645 m<sup>2</sup>

**Description** The facility contains leisure areas, one of the longest lazy rivers in the USA, water slides, free fall slides, and has a massive skylight roof structure to let natural light in the facility while allowing it to remain open all year. The roof is retractable allowing the entire facility to convert to a semi-outdoor park during summer weather. The pool includes an under-floor mechanical system with defender filters, ultraviolet systems to kill bacteria, bromine system, and a heat-recovery loop for energy efficiency.



Images: [jaypeakresort.com](http://jaypeakresort.com)





# Wavegarden Surf Parks

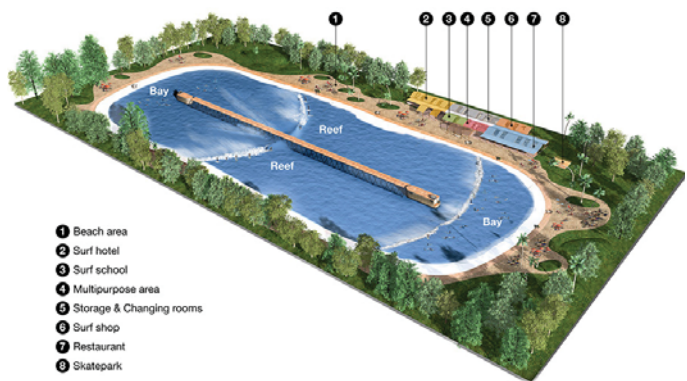
## Surf Snowdonia, Wales, UK

## NLand Surf Park, Austin, USA

**Description** In 2005, a skate park designing engineer developed a system for creating ocean waves for surfing in an artificial wave lagoon. The company vision is to create high quality, affordable surf spots in natural, environmentally friendly settings around the world. Minimal engineering work is required and setup is similar to the construction of a shallow lake. Two Wavegarden centres exist currently. The first opened in Wales (Surf Snowdonia) in 2015. The second opened October 2016 in Austin Texas and features a 14-acre lagoon using 100% collected rainwater. It includes beach area, restaurants and other amenities.



Images: [wavegarden.com](http://wavegarden.com)





# Harbour Baths, Decks + Saunas

Recent years have seen a surge in the construction of ‘harbour baths’ in Northern European cities like Copenhagen, Oslo, and Helsinki, which have similar climates and urban environments to Vancouver. These urban swimming structures extend the urban landscape into the water, often in former industrial areas that are being revitalized, encouraging city dwellers to interact and connect with the water that surrounds their cities. These public swimming holes, through extensions to the public promenade or seawall, offer an urban harbour landscape of piers, ramps, cliffs, playgrounds, and pontoons, completing the transition from land to water and making it possible to go for a swim in the middle of the city. Swimming in these types of pools occurs in either harbour water or in floating pool structures with filtration systems.

Public gathering is a key component of these projects, which are often free (i.e. no entry fee) and sometimes uncontrolled. Areas for seating, sunning, socializing, and taking in the spectacle and the activity are as important, if not more important, than the areas dedicated for fitness and leisure swimming and diving platforms.

One of the earliest of the “harbour baths” was Islands Brygge, constructed in Copenhagen in 2002. The Islands Brygge project was conceived after Copenhagen made significant upgrades to their water treatment infrastructure to improve water quality to meet public health requirements for swimming. Islands Brygge combined the city’s larger aspirations and commitment to sustainability initiatives with a public amenity that celebrates their success in reaching their water quality goals. Connection with the water fosters environmental stewardship and responsibility, and as some of the precedents from ports around the world illustrate, ongoing industrial uses can be effectively balanced with public enjoyment of the water and may lead to strengthened stewardship of the marine environment.

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## Thoughts on Local Suitability

Vancouver is a city surrounded by water and has a similar climate to most of the examples presented. A harbour bath could be implemented in Vancouver by using the actual harbour to swim in or as a floating, treated tank depending on the water quality at a given location. (See examples in the following precedents for some local initiatives)



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## Examples

- Islands Brygge, Copenhagen, Denmark
- Kalvebod Bølge, Copenhagen, Denmark
- Sørenga Sjøbad, Oslo, Norway
- + Pool, New York, USA
- Löyly Harbour Sauna, Helsinki, Finland
- Deutzer Hafen Proposal, Köln, Germany
- Harbour Deck Proposal, Vancouver, Canada
- City Surf Proposal, Vancouver, Canada



# Islands Brygge Copenhagen, Denmark

**Completed** 2003  
**Client** Copenhagen Municipality  
**Architect** BIG + JDS  
**Budget** \$1 million CAD  
**Size** 2,500 m<sup>2</sup>  
**Description**

The dock structure extends an existing park out beyond the water's edge. The structure is divided to contain five pools including two designated for children. The shallowest of which is a wading pool with a depth of 30 cm. It contains 1,3, and 5 m diving towers. The natural harbour waterway provides swimming for the public. Water quality is checked daily and is approved by local authorities to open the area for swimming.



Images: [jdsa.eu/bad](http://jdsa.eu/bad)





# Kalvebod Bølge

## Copenhagen, Denmark

**Completed** 2010

**Client** Copenhagen Municipality

**Architect** JDS Architects, KLAR

**Budget** \$10.1 million CAD

**Size** 4,000 m<sup>2</sup>

**Description** Pedestrian bridges and walkways continue from the boardwalk along the water's edge, extending the space over the existing waterway. The structure creates an 'urban pier' that brings people to the edge of the water and is designed to contain a larger plaza to allow events. The undulating design breaks the water into smaller activity zones.



Images: [jdsa.eu/kal](http://jdsa.eu/kal)



# Sørenga Sjøbad

## Oslo, Norway

**Completed** 2015

**Description** A wood dock built off the end of a pier was converted into a public park space. It is open to the public year-round and, in addition to the dock being a free public space, offers amenities such as cafes and restaurants on land. The design, constructed of wood, concrete, and polystyrene, creates a 200m length lap pool, diving and lounge areas, creating a variety of shallow and deep swimming zones near an urban area. The water is natural, untreated seawater.



*Images Top:* visitnorway.com

*Image Bottom Left:* sorenga.no, foto: Katrine Lunke

*Image Bottom Right:* sorenga.no, foto: Pudder Agency



# + Pool Proposal

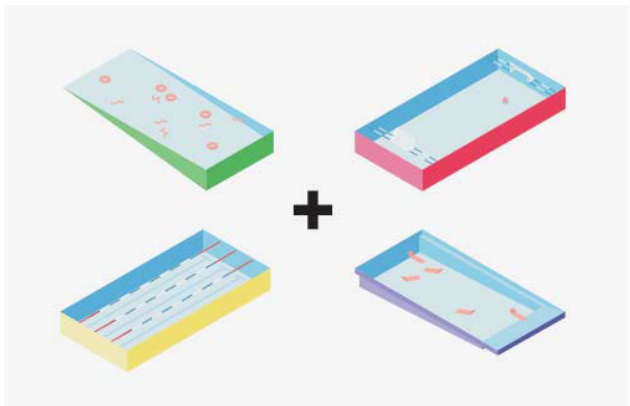
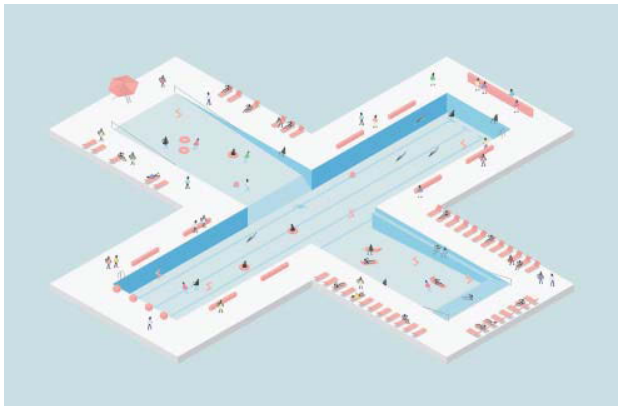
## New York, USA

**Size** 1,909 m<sup>2</sup>

**Description** Designed as a "giant strainer that sits in the water" the proposed pool would filter the river that it floats in through the structure of the walls. It is anticipated to be a seasonal pool, with a length of 200' per pool and average depth of 5'. It will contain leisure, lap, and beach entry areas as well as a lounge deck and will be tethered to the shore with a pedestrian bridge. The pool water itself will contain no chemicals; it will be filtered river water. The pool is in research and development stages and a recent test has shown the filtration wall design has been successful in the harbour. The size of the pool is designed to clean up to half a million gallons of water every day.



*Images: from pluspool.org; familynewyork.com*





# Löyly Harbour Sauna Helsinki, Finland

**Completed** 2016  
**Client** Antero Vartia and Jasper Pääkkönen, Kidvekkli Oy  
**Architects** Avanto Architects  
**Size** 1,071 m<sup>2</sup>  
**Description** The structure contains a traditional continuously heated sauna, once-heated sauna (that is heated before opening and stays warm throughout the day), and a traditional smoke sauna as well as a cold water basin and fireplace room. It provides access to the sea, providing swimming access at the edge of the spa area. A hole is carved in the ice to provide winter swimming access. This project was the first Finnish structure to receive Forest Stewardship Certification.



Images: avan.to



# Deutzer Hafen Proposal

## Köln, Germany

**Client** Stadt Köln + Moderne Stadt

**Architects** COBE Architects

**Size** 500,000 m<sup>2</sup>

**Description** In the fall of 2016, the Danish design firm won a competition for the design of a new masterplan to revitalize Köln's urban water district. It will include housing, public plazas, a pedestrian/bicycle bridge and a public infinity pool along the river filled with purified collected rainwater and heated from waste heat off of surrounding buildings. The large central public pool is designed to cleanse and waterfall-down the Rhine River. The tide of the Rhine River is accounted for, with water zones intended to flood or remain dry depending on tidal conditions while public plazas remain accessible.



Images: cobe.dk (Beauty and the Bit)





# Harbour Deck Proposal

## Coal Harbour, Vancouver, Canada

**Architect** HCMA Architecture + Design

**Description** A wooden deck features integrated seating and a proposed outdoor performance space and surrounds a variety of aquatic spaces including a 25 m lane swimming area, shallow splash zone, an open swimming area with access to the harbour under a lifted portion of deck, and a zero entry shallow swimming zone. It aims to activate the park and waterfront area with a structure that is not quite park, pier or pool, but a combination of the three.



Images: hcma.ca



# City Surf Proposal

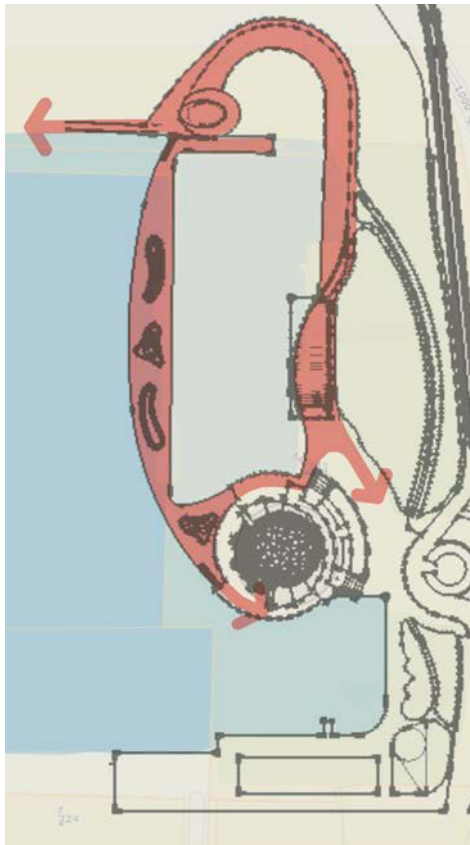
## False Creek, Vancouver, Canada

**Designer** Reviver Sport + Entertainment

**Description** The proposal would consist of a pay-for-use surf park, and a publicly accessible beach and pier for lounging. A wave pool would be enclosed by the dock to filter water from False Creek and geothermally warm it.



Images Lower: citysurfpark.com



# Natural Pools

Natural Swimming Pools are defined as pools that use naturally occurring biological water filtration and treatment methods to provide pure and clean bathing facilities that mirror natural bodies of water without the use of chemical treatment.

Water quality in these pools depends on ecological conditions, frequency of use and the biological system used. Impurities introduced into the pool are eliminated through natural filtration, such as gravel screens, and then through biological purification using a 'regeneration zone' housing plant material.

The treatment method used in natural pools is a naturally occurring, safe and sustainable alternative to mechanical and chemical treatment commonly used in the majority of indoor and outdoor pools worldwide. Natural Swimming Pool systems have been successfully applied to public and private new-build pools in addition to the conversion of existing chemically treated pool facilities.

Natural pools have been shown to have environmental and health benefits, as well as an enhanced experiential quality, based on its design.

A sustained growth of Natural Swimming Pools is predicted, facilitated by rising public concern related to possible risks associated with current pool chemical treatment methods often linked to allergy and respiratory symptoms as well as eye & skin irritation syndromes in swimmers caused by disinfection by-products (DBPs) including trihalomethanes and chloramines.<sup>1</sup>

<sup>1</sup> Florentin, Hautemanière & Hartemann (2011) Health effects of disinfection by-products in chlorinated swimming pools.

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## Thoughts on Local Suitability

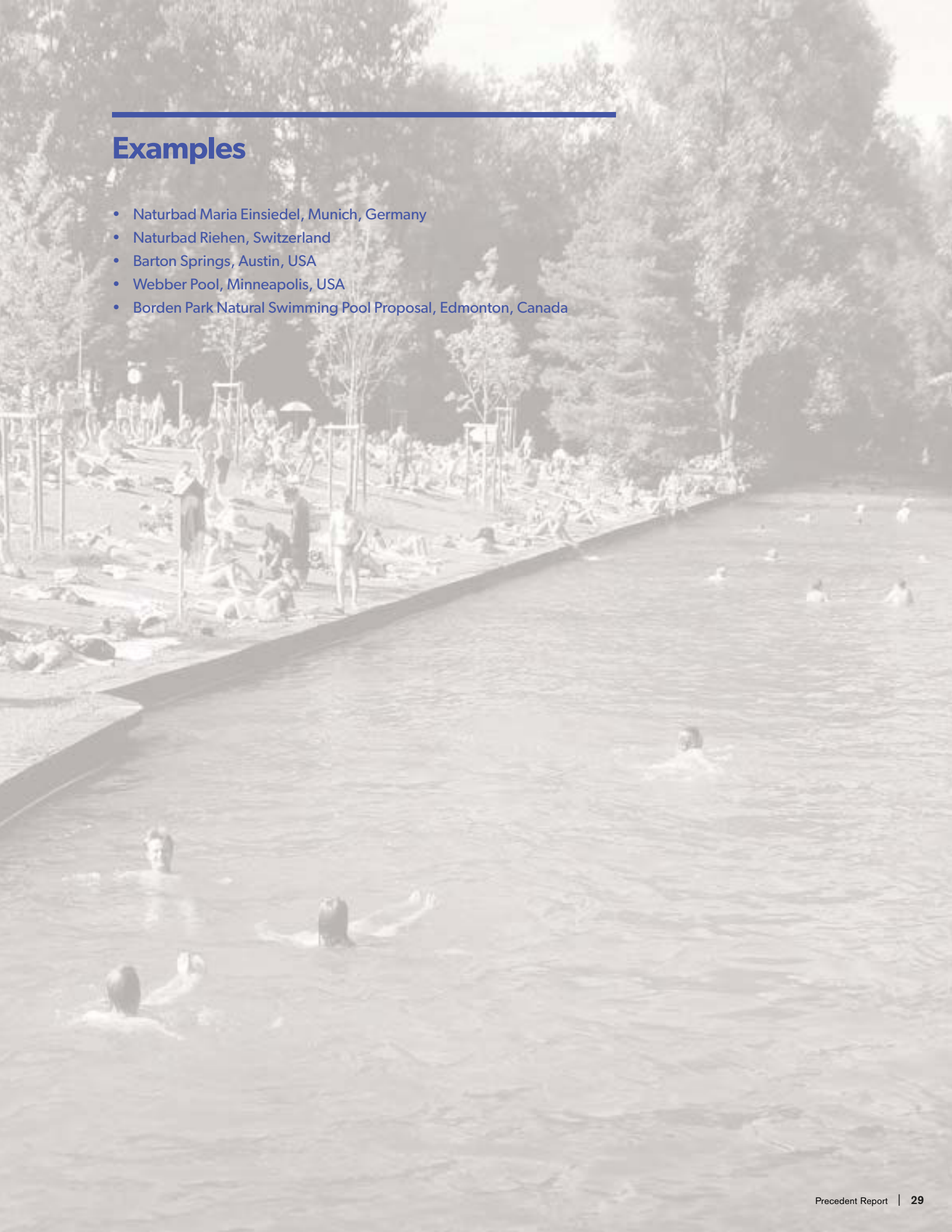
Vancouver has an excellent climate for consideration of a new-build natural outdoor pool. Potential also exists for a retrofit or conversion of an existing chemically treated outdoor pool into a natural pool. This type of conversion has become a trend in Germany, as shown in Munich's Naturbad Maria-Einsiedal precedent.



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## Examples

- Naturbad Maria Einsiedel, Munich, Germany
- Naturbad Riehen, Switzerland
- Barton Springs, Austin, USA
- Webber Pool, Minneapolis, USA
- Borden Park Natural Swimming Pool Proposal, Edmonton, Canada



# Naturbad Maria-Einsiedel

## Munich, Germany

**Completed** 2008

**Client** SWM Munich

**Budget** \$4.75 million CAD

**Size** 2,750 m<sup>2</sup>  
(includes children's area, shallow and deep pool area)

**Description** Conversion of a previously existing standard outdoor swim facility that now contains a children's swim area, shallow pool, and deep pool zones. The filtration system consists of aquatic plants and two below-ground gravel filters. The pools have a green lining to help provide the impression of natural, lake-like swimming.



Left: [muniqueando.com](http://muniqueando.com)  
Top Right: Before Naturbad Conversion  
Top Left: After Naturbad Conversion  
(Images both from Google Earth)





# Naturbad Riehen

## Riehen, Switzerland

**Completed** 2014

**Client** Gemeindeverwaltung Riehen

**Architects** Herzog + de Meuron

**Budget** \$3.5 million CAD

**Size** 1,000 m<sup>2</sup> pool; 5,000 m<sup>2</sup> land area.

**Description** Designed to evoke the feeling of the traditional wooden pools located along the Rhine River. Naturbad Riehen modifies the traditional outdoor bathing experience to have a natural, lake-like feel with its design and materiality. Rather than chemicals, the pool contains a regeneration basin with aquatic plants and gravel layers that has a cleaning capacity for up to 2000 bathers a day.



*Top Left:* [www.blickamabend.ch](http://www.blickamabend.ch)  
*Top Right:* [kubusmedia.com](http://kubusmedia.com)  
*Bottom:* P. Fast



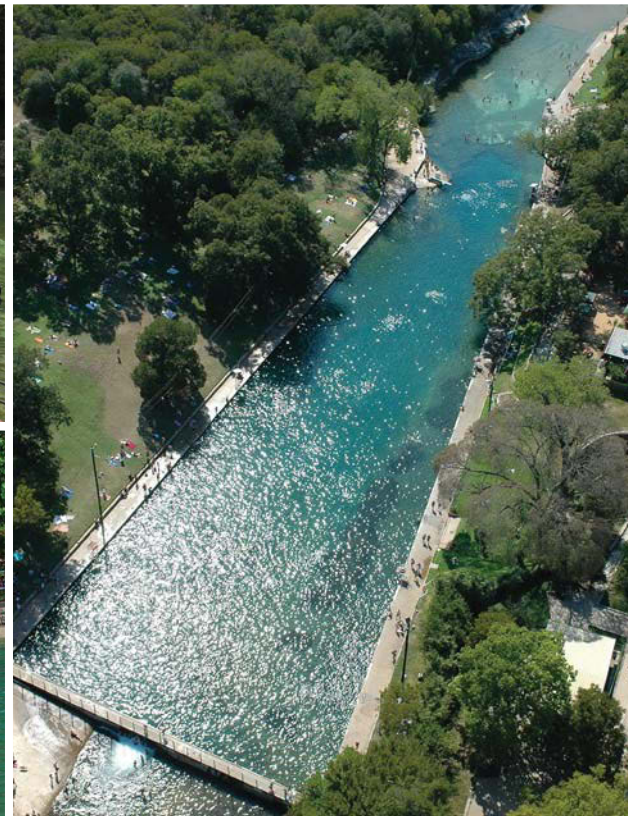
# Barton Springs

## Austin, USA

**Completed** 1920s  
**Client** City of Austin  
**Size** 1.2 ha  
**Description** Fed from underground springs with an average temperature that is ideal for year-round swimming (68-70 degrees), the pool is created by a dam which contains the spring water. Cleaning is done once a week and consists of draining the pool, scrubbing away the algae build up and cleaning out any debris.



Images: [austintexas.gov](http://austintexas.gov)





# Webber Pool

## Minneapolis, USA

**Completed** 2015  
**Client** Minneapolis Park + Recreation Board  
**Designers** Landform  
**Size** 1,560 m<sup>2</sup> swimming area + lap pool  
420 m<sup>2</sup> wading pool area  
275 m<sup>2</sup> bathhouse with common space  
1,510 m<sup>2</sup> regeneration basin

**Description** The first chemical-free, all natural public swimming pool in the United States. Webber pool is a self contained pool that uses plants and natural microbes from a regeneration pond to clarify and purify water. The system cleans up to 500,000 gallons of water daily.



Images: [minneapolisparcs.org](http://minneapolisparcs.org)





# Borden Park Natural Swimming Pool Proposal

## Edmonton, Canada

**Completed** Spring 2016

**Client** City of Edmonton

**Architect** GH3

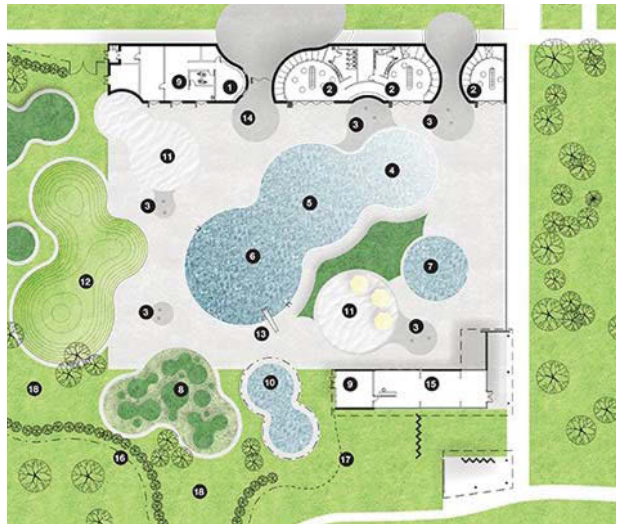
**Budget** \$12 million CAD

**Size** 829 m<sup>2</sup> building + site

**Description** The natural pool consists of a regeneration pond, bio-filter, and hydroponic planting. The lack of soil results in consumption of all nutrients needed for algae growth by plants. Filtration is achieved biomechanically, through a constructed wetland and gravel filter, and in-situ, through zooplankton. There is capacity for 400 swimmers.



Images: [awards.canadianarchitect.com](http://awards.canadianarchitect.com) (gh3 architecture)





# Retractable Roofs

Retractable roofs provide an opportunity to connect indoor pools with the outdoors/nature, when weather permits. This design solution provides for a facility that offers the joy of outdoor swimming with fresh air and sun on skin during the warm summer months, but also allows the operator to extend use of the pool for year round use through a moveable roof that encloses the pool for the remainder of the year. This facility type can offer the best of both an indoor and an outdoor facility in one. As shown in the precedents, typologies for pools with retractable roofs include both traditional pools built on land, and floating pools.

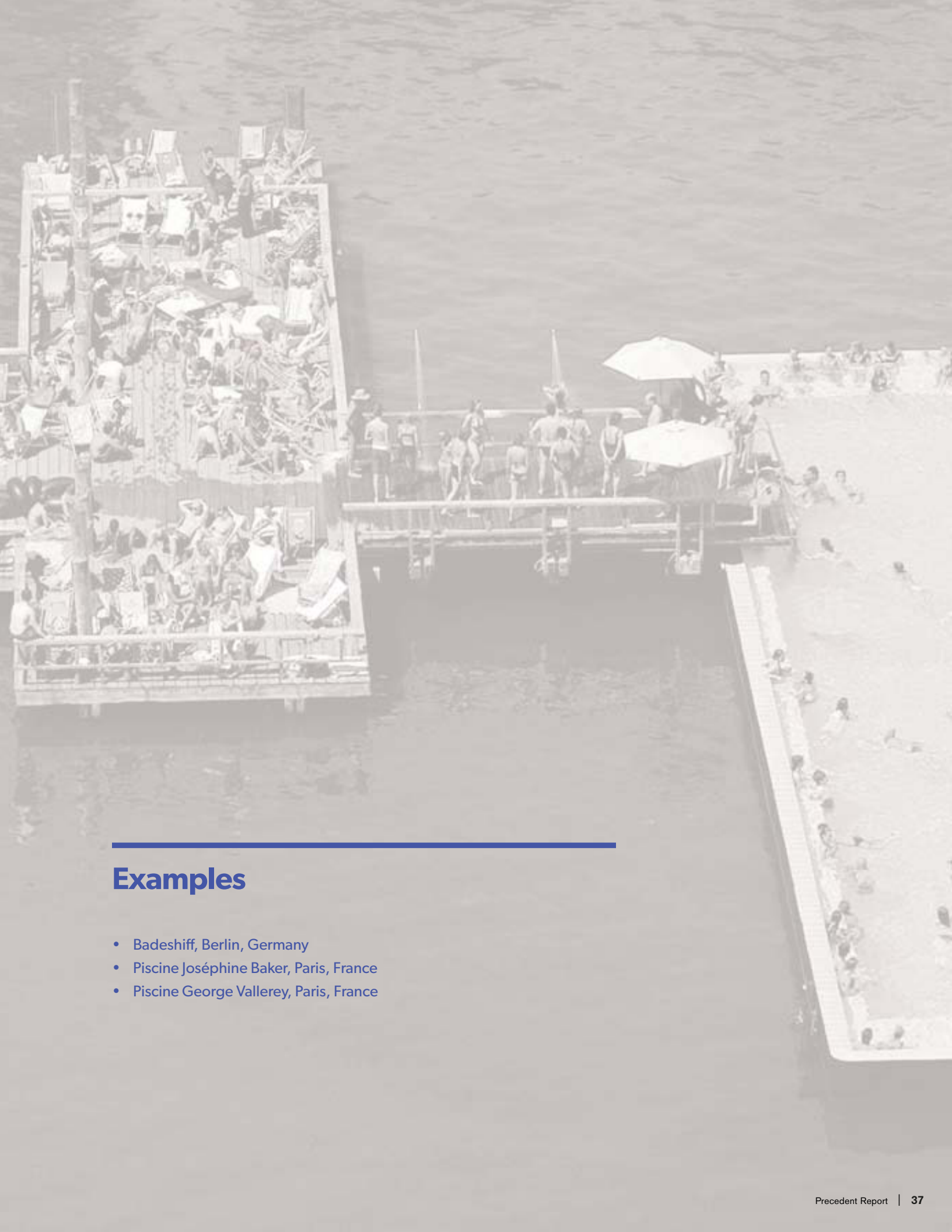
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## Thoughts on Local Suitability

Both the BC Building Code (BCBC) and the Vancouver Building By-law (VBBL) require energy efficiency compliance paths. These energy efficiency compliance requirements do not outright prohibit the use of retractable roofs; however, they do make it quite complicated.

Issues to consider for a pool with a retractable roof in Vancouver include code compliance and energy efficiencies. A retractable roof is inherently less energy efficient and may not meet minimum energy efficiency performance as prescribed by current VBBL requirements. This option may be challenging given Vancouver's Greenest City action goals.





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## Examples

- Badeshiff, Berlin, Germany
- Piscine Joséphine Baker, Paris, France
- Piscine George Vallerey, Paris, France

# Badeshiff

## Berlin, Germany

- Completed** 2004
- Client** City art Project Society of Berlin
- Architect** AMP Architects with artist Suzanne Lorenz
- Size** 1,400 m<sup>2</sup>
- Description** Conversion of a harboured barge into a floating, heated swimming pool. The design contains a series of stepped piers leading down to a lap and lounge pool close to the surface of the river beyond. In the summer months, the piers remain open-air, and in the winter the entire structure is enclosed to contain a lounge, sauna, and indoor pool to maintain heating efficiency. At other times in the winter, the docks have been used to host a local Christmas Market.



Images: [wilk-salinas.com](http://wilk-salinas.com) and [amparquitectos.com](http://amparquitectos.com)





# Piscine Joséphine-Baker

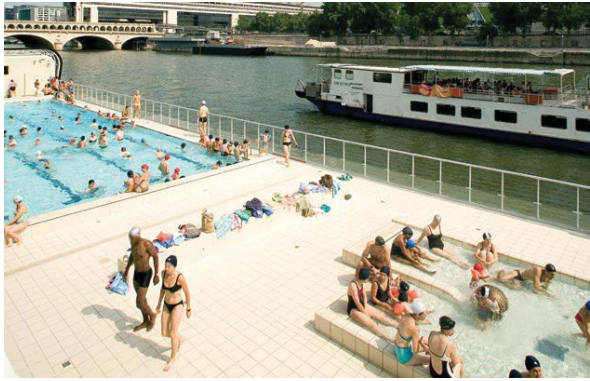
Paris, France

**Completed** 2006  
**Client** Paris  
**Size** 25 m-4 lane pool

**Description** A floating pool anchored on the edge of the river Seine in a Parisian suburb, this 25 m pool provides both indoor and outdoor swimming with its retractable roof that is adjusted depending on weather conditions to allow it to remain open year-round. It also contains a lounge deck, lap pool, wellness centre, and fitness centre.



Images: [parisinfo.com](http://parisinfo.com)





# Piscine Georges Vallerey

Paris, France

**Completed** 1924 (Renovated 1989)

**Client** Olympic Committee

**Description** A 50 m length pool that can be divided by an underwater partition has a translucent, glazed, retractable roof and viewing stands for events. It was originally built for the 1924 Summer Olympics and is now used as a local facility in a Paris suburb.



Images: piscine-vallerey.fr





# Spectacle + Joy

Almost everything in life is now available immediately at the touch of a button. The craving for instant rewards has grown and in aquatics this translates into a grouping loosely described as 'Spectacle.' This category includes installations and facilities that deliver an exhilarating experience. This may not be something you would want to do every week, but something that provides a thrill and that people are willing to pay for. They tend to generate large crowds, provide a great amount of excitement, and, in some cases, deliver a high level of fitness. These amenities also offer a high potential for social connectivity and community building for spectators as they provide an opportunity for social engagement around a shared viewing experience.

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## Thoughts on Local Suitability

Vancouver is a great location for aquatic experiences that focus on spectacle and joy. As a city surrounded by water, the potential for temporary facilities and events offering inflatables, as shown in the Kelowna example, would be a good fit. As well, supplementing the excellence of the existing aquatic facility infrastructure with aquatic opportunities that offer a complimentary and more purely "fun" focused alternatives would likely be well received.





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## Examples

- Slide the City, North Vancouver , Canada
- Okanagan Wibit, Kelowna, Canada

# Slide the City

## North Vancouver, Canada

**Completed** 2015, 2016 (annual event)

**Client** City of North Vancouver

**Description** The city hosts an annual Car Free Day festival and has recently installed a 305 m (1000') long, inflatable water slide down the middle of a main street to allow visitors and pedestrians to slide and hang out along the massive temporary water feature.



Images: [cnv.org](http://cnv.org)



# Okanagan Wubit

## Kelowna, Canada

**Completed** 2014

**Description** A privately owned inflatable play structure moored off the beach in the summer season contains trails, climbing areas, and slides for both children and adults. Lifeguards are on site and users are required to wear life jackets. The business is now expanding to various locations throughout the Okanagan lakes, including Kelowna, Penticton, and Osoyoos.



Image: [kelownanow.com](http://kelownanow.com)





# Spray Parks + Urban Water Features

Traditionally, water spray parks combine water spray features on a drainage pad. They are most often found in parks and include children's play structures. Recently, in many cities around the world, these spray features are being combined with public art and urban water features, creating a more 'mature' environment that appeals to a wider age range of people, and are often located in prominent places. They are free and readily accessible to everyone and can be enjoyed by a larger cross section of users in warmer months, while still serving a public-space function in colder months.

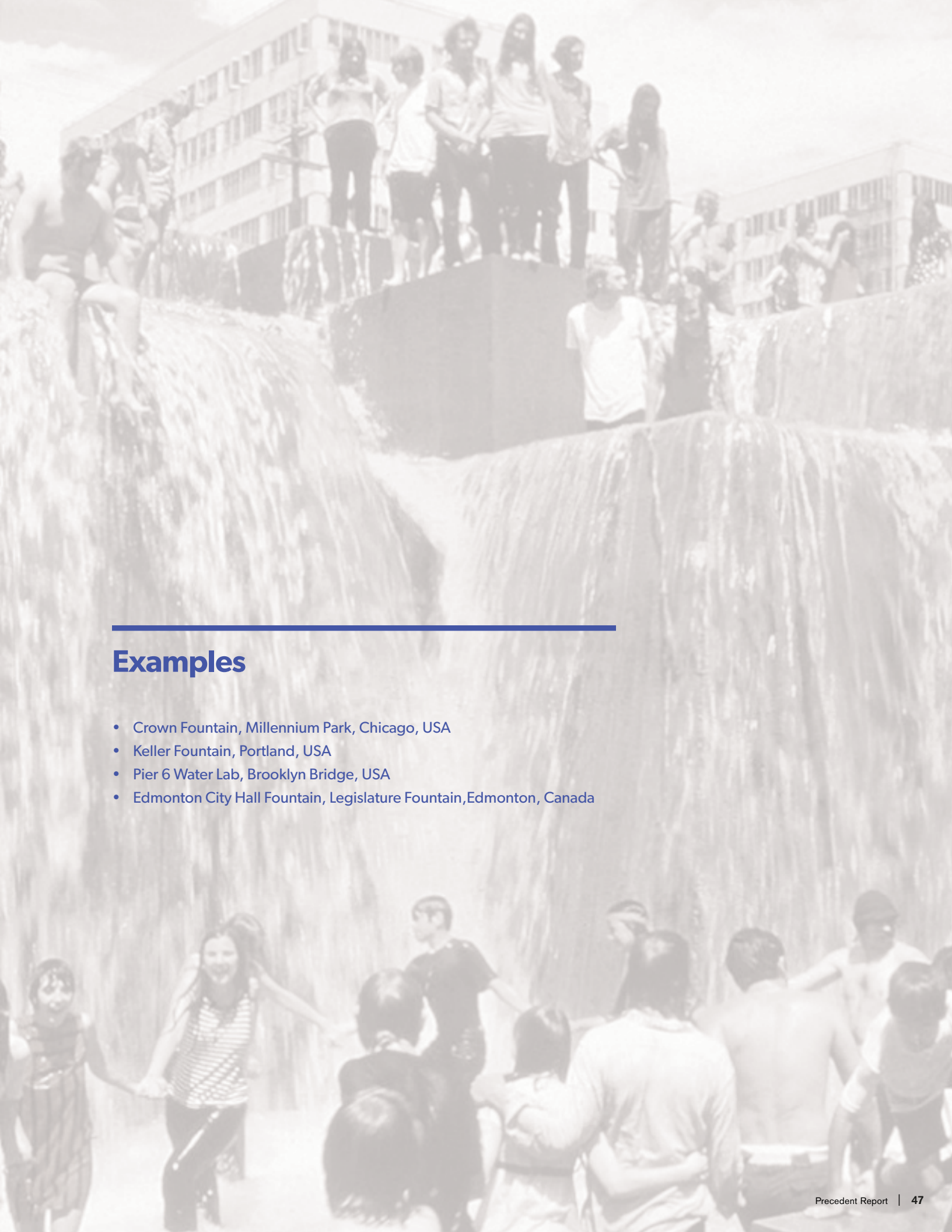
People are not only drawn to these places because they offer respite in a high-density urban environment on hot days, but also because they offer a high degree of 'spectacle' and community building. There are often ample opportunities for people-watching and social gathering. Many of the locations attract residents as well as tourists due to their stunning settings and opportunities for photos.

While some of these features originated as fountains primarily for viewing where public use was not the main intention (Keller fountain, Portland), others were designed with specific use by people in mind (Crown fountain, Chicago).

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## Thoughts on Local Suitability

Vancouver has a number of spray parks and wading pools, mostly located in parks, which are primarily geared towards young children. As a city with several public art installations, it should be possible to combine the two in a future endeavor. While the downtown core is surrounded by water, free and public opportunities for cooling off, apart from ocean swimming, are limited. Precedents show that when done right, these water features can become major tourist attractions on their own.



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## Examples

- Crown Fountain, Millennium Park, Chicago, USA
- Keller Fountain, Portland, USA
- Pier 6 Water Lab, Brooklyn Bridge, USA
- Edmonton City Hall Fountain, Legislature Fountain, Edmonton, Canada

# Crown Fountain

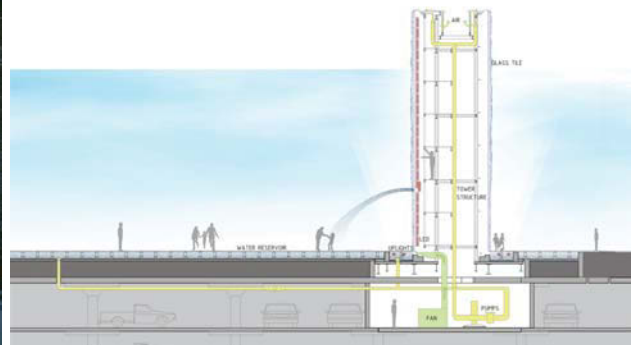
## Millennium Park, Chicago, USA

**Completed** 2004  
**Client** Lester Crown  
**Design** Jaume Plensa with Kruek + Sexton Architects  
**Budget** \$22.9 million CAD  
**Size** 15 m height  
(located in a larger public plaza)

**Description** A Large, sculptural fountain serves as an LED video projection screen with interactive water spout and splash pad area surrounding the tower. The design combines specialty integration of art, electronics, and water systems. Water is pumped through 15 m-high glass-block towers and cascades down its surface. The LED screen is located behind the glass blocks. The fountain is a popular subject for photographers and attracts locals and tourists alike for play and cooling off.



Images: ksarch.com





# Keller Fountain

## Portland, USA

**Completed** 1970  
**Client** Portland Water bureau  
**Architect** Lawrence Halprin + Associates  
**Size** 3,725 m<sup>2</sup>  
**Description** Designed as a fountain in the late 1960s, it is now known as one of Portland's urban water parks that is both a sculptural object and an interactive water feature for people of all ages.



Image: Portland city archives



# Pier 6 Water Lab

## Brooklyn, USA

**Completed** 2010

**Client** Brooklyn Bridge Park Corporation

**Description** This children's water play area is part of a series of parks and play spaces developed along the water's edge on Pier 6 in Brooklyn. It contains various areas of play, exploration and interaction with water jets and formal play structures.



Images: [brooklynbridgepark.org](http://brooklynbridgepark.org)





# Edmonton City Fountains

## Edmonton, Canada

**Project** Legislature Fountains  
**Completed** 1970s (Renovated 2015)  
**Architect** DIALOG  
**Description** The original legislature plaza was recently upgraded to add a children's wading area, update the fountain, and to reconnect the plaza to the city.



**Project** City Hall Fountain  
**Completed** 1992  
**Architect** Dub Architects  
**Description** This water feature converts between a wading pool and fountain in the summer months to a skating rink in the winter providing pedestrian amenities year-round.

*Upper:* Legislature ; edmontonjournal.com  
*Lower:* City Hall; City of Edmonton + dubarchitects.ca





# Temporary Pools

Temporary, or pop-up pools are a way to meet a short term or urgent demand for outdoor pools, especially in densely populated urban areas. These structures can consist of: Container Pools, Above Ground Pool (Prefabricated Residential Pool), Myrtha pools (Prefabricated Stainless Steel Pool), or custom built structures, although the latter defies the drivers of short term and economical installations.

These pools have been popping up globally to meet a demand for more opportunities for cooling off in urban areas, to make use of land that is to be developed in the near future, and as fun/leisure social installations that animate public spaces.

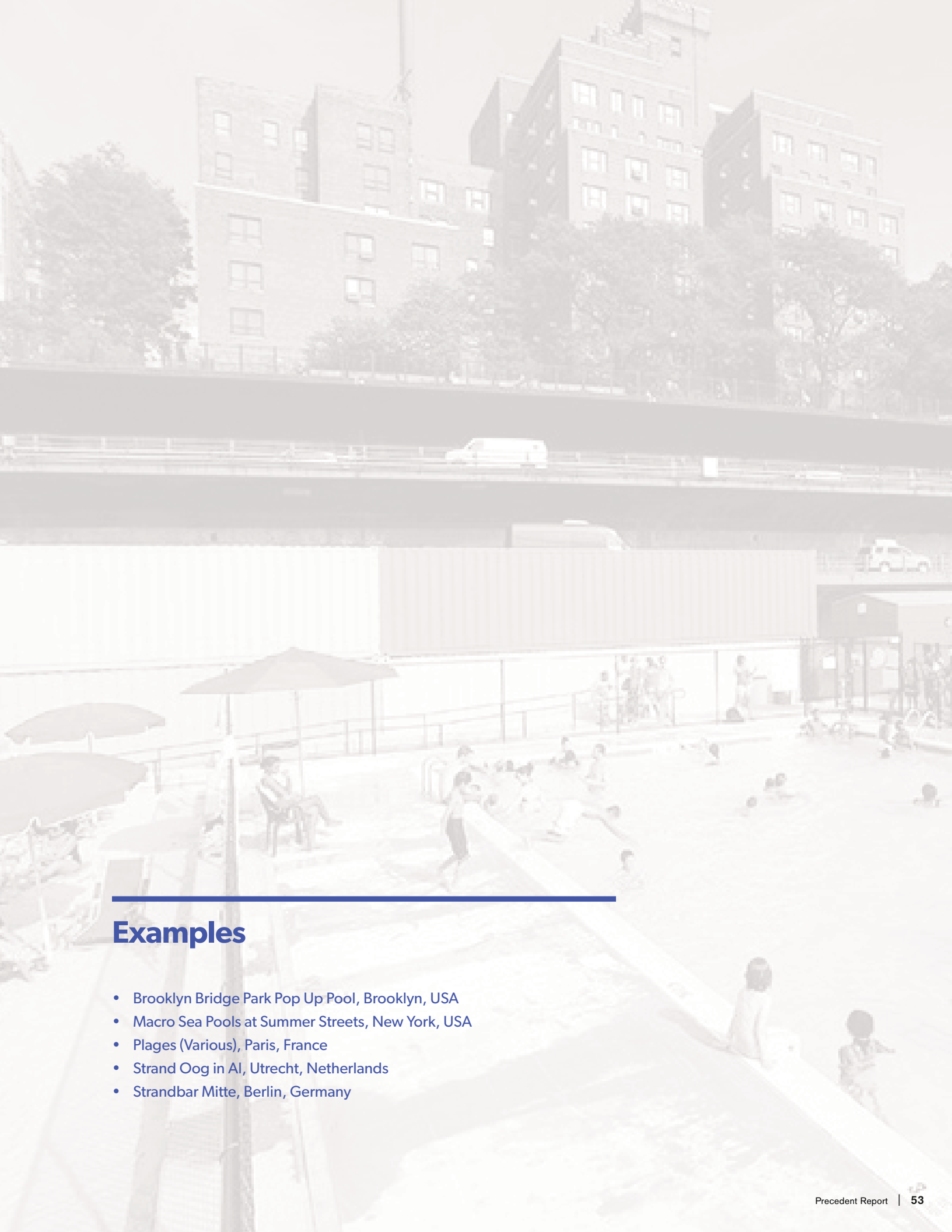
New York City, in particular, has been a leader with temporary pool installations in prominent locations; the Brooklyn Bridge park pop up pool has become so popular that residents have started petitions to keep the pool open after it had served its intended 4 year life span at the end of summer 2016.

In addition to pop up pools, pop up beaches have been installed in major cities, a trend that seems to have been started in Paris in 2006, but which has spread especially in large European urban centres located away from the ocean, on quays along rivers. There is not necessarily access to the water, as the water quality may not be safe enough to swim or there is freight traffic on the water, but the visual connection to the water is an important aspect. City beaches are usually open for the summer months only and will often have concerts and other performances scheduled on site. The emphasis is on creating a summer "vibe", and providing space for social gathering and interaction, similar to what one may find on a beach, in urban areas that are often more than 1000 kms away from ocean shorelines.

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## Thoughts on Local Suitability

Most of Vancouver's residents have access to parks within walking distance of their homes, and for most, the beaches are less than 30 minutes of travel away as well. Due to the amount of open space and urban tree canopy coverage, Vancouver suffers less from the heat island effect than cities such as New York or Chicago. Its climate is also much more temperate, with a less dire need for cooling spaces.



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## Examples

- Brooklyn Bridge Park Pop Up Pool, Brooklyn, USA
- Macro Sea Pools at Summer Streets, New York, USA
- Plages (Various), Paris, France
- Strand Oog in AI, Utrecht, Netherlands
- Strandbar Mitte, Berlin, Germany

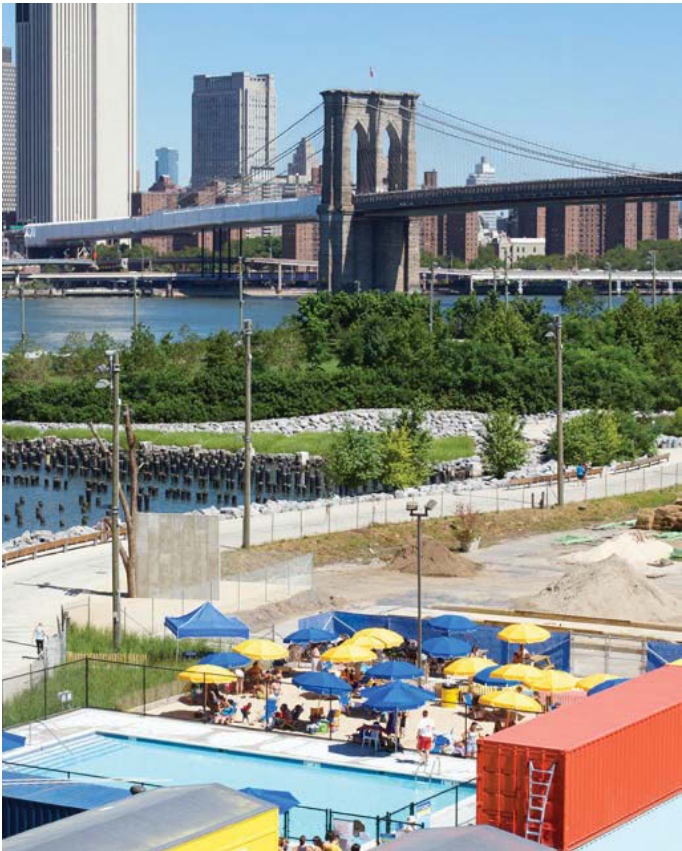
# Brooklyn Bridge Park Pop-Up Pool

## Brooklyn, USA

**Completed** 2012  
**Client** Brooklyn Park Board  
**Architect** Davis Brody Bond with Spacesmith  
**Budget** \$950,000 CAD  
**Size** 280 m<sup>2</sup> (3,000 sf)  
**Description** A 30' x 50' pop-up pool designed to be open for five seasons located on a pier in Brooklyn. Includes a 762 m<sup>2</sup> (2,500 sf) beach area, concession, showers, and washrooms. It functions as a free facility for the public. The beach significantly increases the draw and capacity of this amenity.



Left: [davisbrody.com](http://davisbrody.com)





# Macro-Sea Pools

## New York, USA

**Completed** 2010

**Client** NYC Mayor's Office; Department of Transportation

**Design** Macro-Sea

**Size** varies (includes deck space and pool swimming areas)

**Description** In 2009, the firm was invited to NYC's Third Annual Summer Streets event. This installation was set up in New York City in August 2010 for three weekends. The firm has now created the "dumpster pool" as a standardized object that is code-compliant and street legal. The hybridized "dumpster pools" contain a pool liner and electrical systems. The only on site requirement is a power source.



Images: [macro-sea.com](http://macro-sea.com)



# Plages (Various)

## Paris, France

**Description** Instigated by the City Mayor, Paris has hosted annual city beaches in various locations along the River Siene since 2006. They range from informal lounging spaces with umbrellas to sandy beach areas, some with fountains and water features. They are free public spaces open during the summer months for locals who can't escape to the seaside during the heat wave.



Left: [cntv.cn](#); [wikimedia commons](#)





# Strandbar Mitte

## Berlin, Germany



**Description** Palm trees and beach chairs convert the pedestrian path on the water into a public lounge space during the day and a lively bar, restaurant, or event space in the evenings. It is seasonally open, in the summer.

Images: berlin.de



# Strand Oog in AI (Soia)

## Utrecht, Netherlands



**Description** Open in the summer months, Soia is a park, beach, and lounge space with food and drink amenities. It provides community classes such as yoga as well as children's play areas.

Images: soia.nl





# Wellness

"Wellness refers to diverse and interconnected dimensions of physical, mental, and social well-being that extend beyond the traditional definition of health. It includes choices and activities aimed at achieving physical vitality, mental alacrity, social satisfaction, a sense of accomplishment, and personal fulfillment."<sup>1</sup>

Historically, in some cultures, saunas have played an important role as a part of daily culture. Finland, for example, has over 3 million saunas for a population of 5.4 million.

In Canadian cities, wellness has traditionally been a part of aquatic facilities, but typically with a minor role in the form of a sauna or small relaxation area. There has been a rise in the importance placed on wellness in aquatic facilities which can be seen by the front-and-centre location of wellness components as well as by aquatic facilities entirely focused on wellness. This importance could stem from the emphasis modern society places on wellness and well-being, as well as the aging population, causing a growing demand for facilities and programs that promote feeling better and more energized.

<sup>1</sup> Huseyin Naci; John P. A. Ioannidis, (June 11, 2015). "Evaluation of Wellness Determinants and Interventions by Citizen Scientists". JAMA. 314: 121. doi:10.1001/jama.2015.6160

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## Thoughts on Local Suitability

Most facilities in Vancouver have wellness components and some, such as Kensington Pool, put a higher emphasis on it than others. None of the current facilities, however, are wellness-based. Vancouver has an aging population for which greater emphasis on wellness components could increase use. The *VanSplash* public engagement survey revealed that, when asked which innovative pool or beach experiences they would like to see in Vancouver, 32% indicated they would like 'more spa experiences.'

In addition, Vancouver's outdoor pools and beaches could benefit from wellness components, such as hot tubs or saunas, to extend seasonal use.



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## Examples

- Aquamotion, Courcheval, France
- Bagneux Pool, Bagneux, France
- Therme Vals, Graubünden, Switzerland
- Various Community Pools: Hosfos Pool, Laugardalslaug Pool, Seljavallalaug Pool, Vesturbæjarlaug Pool, Iceland
- TuWass Rec and Thermal Baths, Tuttlingen, Germany
- Aquatic Centre Dolaondes, Canazei, Italy
- Virginia G. Piper Sports + Fitness Centre, Phoenix, Arizona, USA
- Nauthólsvík Geothermal Beach, Reykjavik, Iceland
- WA\_Sauna, Seattle, Washington, USA

# Aquamotion Courcheval, France

- Completed** 2015
- Client** Municipality of Courcheval + Aquamotion
- Architect** Auer Weber + Associates
- Budget** \$91 million CAD
- Size** 17,000 m<sup>2</sup>
- Description** This complex in a ski resort area in France contains a facility with leisure pools for families, a full service spa with outdoor pools, baths, spas, saunas, 25m lap pools, and a surfing pool. The chlorine pool system contains a UV lamp for bacteria elimination and a closed circuit system to recycle water. The Pool is heated on a wood (biomass) boiler with a backup electrical boiler system.



Images: [auer-weber.de](http://auer-weber.de)





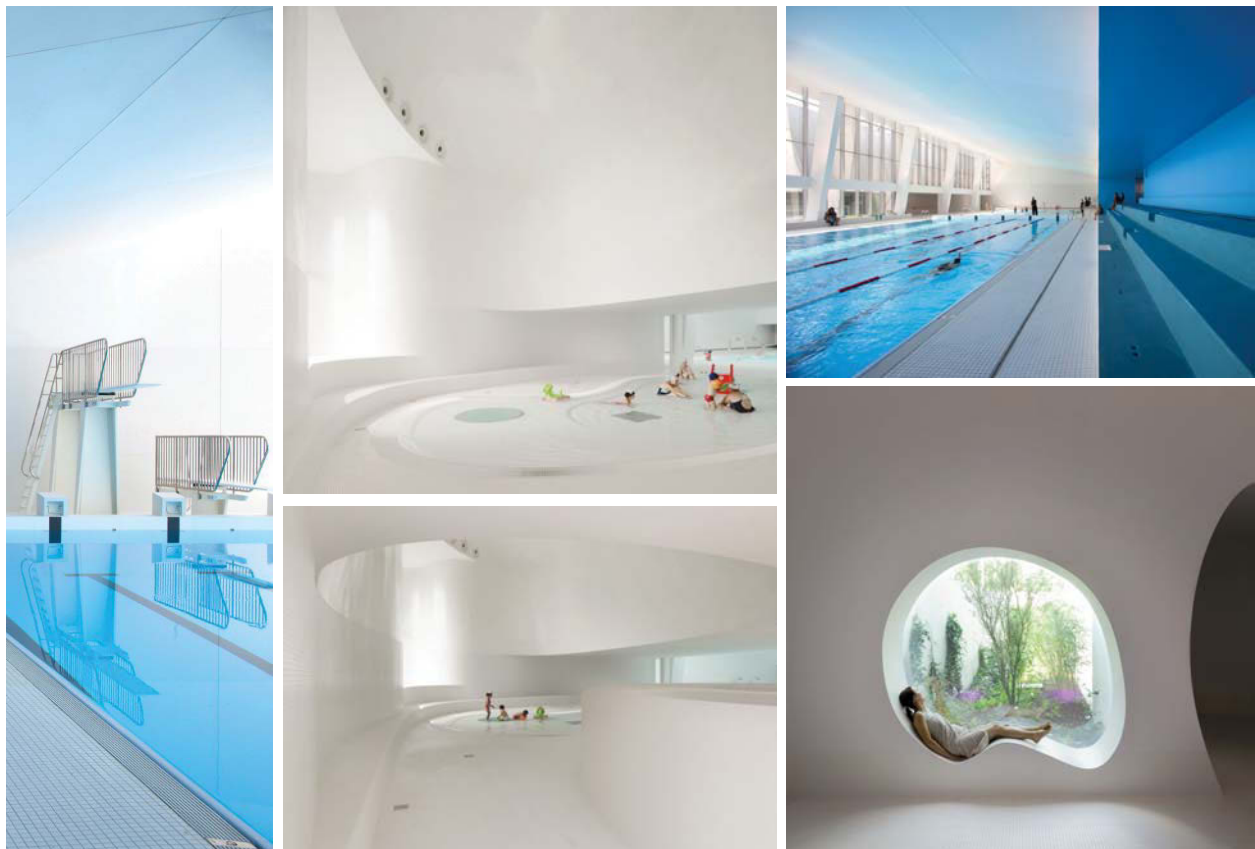
# Bagneux Pool

## Bagneux, France

<b>Completed</b>	2014
<b>Client</b>	Bagneux Municipality
<b>Architect</b>	Dominique Coulon & associés
<b>Budget</b>	\$11.6 million CAD
<b>Size</b>	3,431 m <sup>2</sup>
<b>Description</b>	A renovation and expansion of a local pool facility, the building has been expanded to contain the original lap pool as well as new saunas and a children's pool.



Images: [coulon-architect.fr](http://coulon-architect.fr)



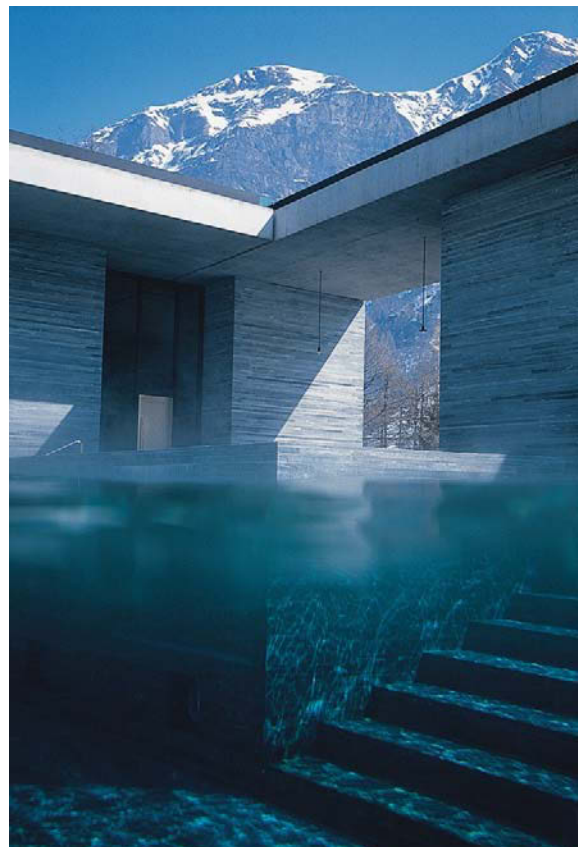
# Therme Vals

## Vals, Graubünden, Switzerland

- Completed** 1996
- Client** Municipal
- Architect** Peter Zumthor
- Description** These world-renowned spa and thermal baths are located in Switzerland. The building is constructed of local stone and sits on the hillside in a mountainous valley. The water is extracted from a local hot spring to create various spa, leisure, and hot/cold pool amenities.



Images: [archdaily.com](http://archdaily.com)



# Iceland Community Pools

## Various Locations, Iceland

Iceland is known for its community building around its abundant natural hot springs that are developed into indoor and outdoor facilities, most used year-round. Below are few examples across the country.

- Top left**      Hosfos Pool
- Completed**      2010
- Client**      A gift to the municipality from locals Lilja Pálmadóttir and Steinunn Jónsdóttir
- Top right**      Laugardalslaug Pool
- Completed**      1968, renovations various years
- Description**      Olympic sized pool with hot pools and leisure areas. Recently added Iceland's first natural saltwater hot tub.
- Bottom left**      Seljavallalaug Pool
- Completed**      1924
- Size**      A 25x10m natural hot pool.
- Bottom right**      Vesturbæjarlaug Pool
- Description**      A kids pool and leisure pool with an intimate, community feel.



Images: Massimo Vitali for the New York Times article "Iceland's Water Cure" (April 2016)



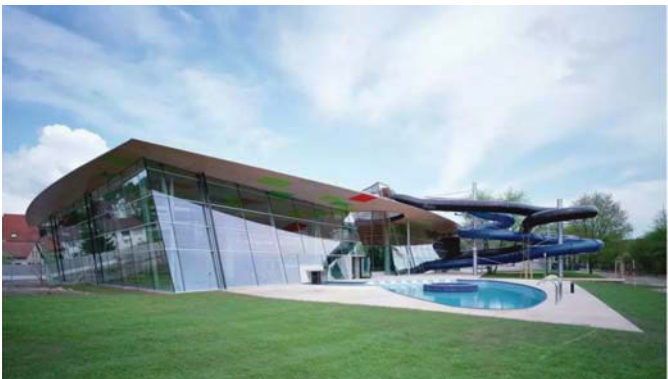


# TuWass Thermal Baths Tuttlingen, Germany

**Completed** 2001  
**Client** Tuttlinger Bäder  
**Architect** 4A Architekten  
**Size** 8,100 m<sup>2</sup>  
**Description** This facility contains indoor and outdoor family leisure area, thermal waters, and a sauna wellness area. Extracts water from local hot springs nearby the facility to heat its pools.



Images: 4A Architekten; divisare.com



# Dòlaondes Aquatic Centre

## Canazei, Italy

- Completed** 2012
- Client** S.I.T.C. Societa' Incremento Turistico di Canazei
- Architect** Ralf Dejaco + Partner
- Size** 25,400 m<sup>2</sup>
- Description** Aquatic and leisure facility located in the mountains of Italy. The pool combines both leisure and athletic experiences, with thermal outdoor baths, water slides, and indoor lounge and spa amenities. The salt water pool uses water extracted from local water sources nearby the facility.



Images: [ralfdejaco.it](http://ralfdejaco.it)





# Virginia G. Piper Sports + Fitness Center

## Phoenix, USA

**Completed** 2012  
**Client** Disability Empowerment Campus  
**Architect** Baldinger Architectural Studio  
**Size** 4,181 m<sup>2</sup>  
**Description** A fitness and sports centre developed to remove all barriers for disabled users. It contains athletic and fitness areas as well as climbing walls. The outdoor pool is designed to accommodate courses and swimming for disabled people.



*Images:* Photographs by Raul Garcia, from [archdaily.com](http://archdaily.com)





# Nauthólsvík Geothermal Beach

## Reykjavik, Iceland

**Completed** 2000

**Client** Municipal

**Description** The beach opened in 2000 and changing areas, a concession, and showers were added in 2001. The natural shape of the land trapped seawater in an eddy, which is then warmed by the sun and mixed with local geothermal waters. It provides water that is naturally warmer than the sea and serves as a leisure pool. More recently, a geothermal hot tub was added near the changing area with a view of the beach.



Image: iceland.is



# WA\_Sauna

## Seattle, USA

**Completed** 2015  
**Architect** goCstudio  
**Budget** \$34,000 CAD  
**Size** 22 m<sup>2</sup>

**Description** A floating sauna to be shared by the community that is registered as a self-propelling vessel on the lakes of Seattle. It accommodates up to six people and is an adaptation of Scandinavian principles of saunas as a place for gathering and community. The vessel is powered by a 36V electric trolling motor with plastic drums to keep it afloat.



Images: [gocstudio.com](http://gocstudio.com)



## Conclusion

The range of alternative aquatic opportunities appearing worldwide are inspiring, from sea-side public saunas to naturally filtrated pools and floating ocean structures. Many could easily complement and enhance the more traditional swimming amenities currently offered in Vancouver. In Phase 2 of *VanSplash*, VPB staff and the design team will work to determine which precedent typologies provide the best opportunities to offer lasting additions to Vancouver's overall aquatic culture, and to support the Park Board's aspirations for sustainability, engagement, and health and wellness into the future.





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