



View over the Urriðaholt site from west



Site plan

Project Name: Urriðaholt Master Plan

Project Location: Garðabær Town, Iceland

Project Type: Master Planning

Type of Client: Private Development

Completion Year: 2020

Website: www.urridaholt.is

Site Plan

1. Entry plaza
2. Business street – offices, retail and services
3. Business plaza
4. Hilltop plaza
5. Building for environment and cultural facilities
6. Chapel
7. Services, sports
8. Primary school
9. School area for secondary school
10. Retail, services and health care
11. Green corridor – south
12. Green corridor – north
13. Playschool
14. Old farmstead
15. Amphitheatre and sleigh/ski slope
16. Residential area
17. Lakeshore path
18. Pier
19. Wetland
20. Lake
21. Retail park
22. Regional road connection
23. Lava finger
24. Apartments for seniors, nursing home
25. Walking path from lake to hilltop

Project Description

Residential: 1,625 dwelling units

Office and Retail: 90,000 m² (970,000 sq.ft.)

Civic uses: 65,000 m² (700,000 sq.ft.)

The Urriðaholt project is a large-scale urban extension located in Garðabær Town, on the outskirts of Reykjavík, the Capital of Iceland. Urriðaholt offers several district advantages. Its quick access to Reykjanesbraut, the main highway, ensures easy communication within the capital area, and rapid transfers to the international airport at Keflavík. The premiere quality of the site is its location within the natural environment. The majority of the developable area is favoured with panoramic views of the Reykjavík capital area, a magnificent ring of mountains and the North Atlantic Ocean.

The site encompasses a hill formed during the last ice age. It rises about 50 m (160 ft.) above the more recent volcanic lava field that embraces its north side and the pristine lake at its southern edge. Located between residential neighbourhoods and a nature reserve, the site serves as a gateway from the city to the natural Icelandic landscape beyond. The most unique aspect of the site is Lake Urriðavatn, which is formed by a tongue of lava that wraps around the foot of the hill. This geography provided many opportunities and challenges during the planning process.

From the outset of the planning process the underlying emphasis of the project has been to use new ideas and techniques to create an environmentally, socially and economically sustainable development. The development plan creates a compact, and diverse, mixed-use neighbourhood with numerous local amenities on a 100 hectare (250 acre) site. Woven together with 35 hectares (90 acres) of open space, the neighbourhoods will provide a walkable community with a variety of dwellings.

Enhancement of the Landscape

Green Space and Recreation

Urriðaholt is envisioned as a gateway between the seaside community of Garðabær and the island's vast inland nature preserve. Right from the beginning of the planning process the connection to the natural landscape was emphasized in the site design. The plan establishes a hierarchy of open space and landscape typologies. These spaces have been laid out to respect the unique landscape immediately adjacent to the site, with walking path connections allowing direct access to both the lakeside and the edge of the lava field.

Within the development the plan is split into distinct areas by two large green wedges that run up the hillside. These provide landscaped routes between the top and bottom of the hill and also play an important strategic role in the storm water system as areas for infiltration and retention. To emphasize the link between the built environment and the adjacent natural landscape, vegetation in the green wedges will be similar to the vegetation found in the surrounding nature. While the main purpose of the sustainable urban drainage system is to protect Lake Urriðavatn and ensure natural flow of water to the lake, another important aspect of the system is to bring water features into the built environment and strengthen the connection between the lake and the built environment.

Pedestrian connections between the various parts of any community are critical to the life and success of a place. Within the natural and man-made landscape, places will be provided for people to have casual, chance interactions. The business street features a dignified row of trees organized in a median at its centre, which provides a prominence and character unique in the capital area. Trees and plants are located at road bends designed to slow down traffic, break

wind speeds and embellish the environment on residential streets.

Hillside Development

The development is organized around civic and family-oriented recreational uses on the hilltop with a view of Mt. Esja, the Snæfellsnes peninsula and the Reykjanes volcanic ridge. Many studies of the hillside were carried out before a final block structure was established. The design team was particularly concerned with long distance views. An organic approach to urban design was adopted to allow the built form to respond more sympathetically to the topography, and create an impression of a traditional hilltop settlement. Views from the hill were maximised to add value to the development, and the roofscape carefully designed to ensure views towards the lake were not compromised.

A network of streets with different characters was laid out along the contours, intersecting at regular intervals with a second system permitting traffic to climb to the top of the hill. The residential neighbourhoods are arranged on the south- and west-facing slopes overlooking the lake and offer spectacular views of the local landscape. To reinforce the connections between the built environment and the surrounding natural setting, buildings carefully step aside to allow view corridors from the public spaces to these natural features. Providing these visual connections encourages the use of the pedestrian connections from the residential areas to the natural areas to the north.



Green wedges



View of hillside from north

Weather-oriented Design

Though the climate is significantly milder than its name suggests, the winds in Iceland are a constant reminder that they need to be carefully addressed. This led the team to embrace the wind as a factor in shaping design forms during the planning process and the master plan was heavily influenced by Winter City urban design approaches. A number of strategies were employed to mitigate the effects of the cold winds blowing from the east in winter, and the cool sea breeze that blows off the sea from the northwest in summer. The sun is equally important in defining urban form in this northern latitude, where the solar angle never reaches 50 degrees above the horizon.

The ridge of the hill is oriented along an axis that runs from the southeast to the northwest. This axis provides the logic for the primary site organization where the residential areas are oriented to the southwest for solar access and protection from the cold easterly winds. A favourable microclimate was developed using meandering streets, barrier buildings and landscape belts to create shelter public space, and the detailing of buildings to break wind speeds and stop funnelling effects. Buildings are located on the windward sides of public spaces and belts of trees are planted in green corridors to protect the residential streets. All of the major landscaped spaces will receive the maximum levels of sunlight during the day.

In terms of psychological effects, a strong use of colour will be encouraged throughout the scheme to provide a vibrant environment on even the darkest of days. This strategy includes interesting landscaping with green areas, trees, street furniture and attractive street lighting. The overall aim was to create an outdoor environment that can be used for longer periods of the year, and to encourage the development of communal activities, which can help with people's sense of well being during the winter months.

Heritage Management

Archaeological Remains

An extensive survey was carried out on site relating to archaeological remains, and the master plan has responded to this in several areas. The most important remains are the ruins of an old farmhouse and its vegetable garden which face the lake. These remains have been incorporated into a square in the phase one area and will become an interpretive landscape feature that forms an important event on the route between the lake and the top of the hill. A WWII encampment in the eastern part of the site has been used as the location for a kindergarten with the road and path system in this area laid out to reflect the original design. The circular nature of the area will make for a focused community facility. Two locations on the hillside are believed to be enchanted with elves. According to Icelandic folklore such places should not be developed so as not to disturb the elves and risk becoming the victims of their wrath. These places will remain untouched but with enhanced accessibility.



The old farm in Urriðaholt

the foot of the hill. The lake provides a peaceful setting, a visual focus and is an important ecological resource. In order to protect the lake, it was critical to maintain the natural hydrology of the site. To accomplish this, impervious materials were kept to a minimum and a natural storm water drainage system was designed, ensuring the rain falling within the watershed area will continue to feed the lake naturally.

Information signs on the geology, biological diversity and history of the area will be put up around ecologically and culturally important places such as the lake, the lava fields and the archaeological remains.

Geological Fissures

Several geological fissures are located on the site. These fissures have been accommodated in the development plan by shifting the location of green wedges, which serve the storm water drainage system, to cover some of the fissures. Besides using an undevelopable land for a necessary function, this provides an attractive irregular trail that reflects the natural landscape of the area and gives an interesting shape to the urban form.

Natural Hydrology

The most unique aspect of the site is the lake formed by the tongue of lava wrapping around



Walkable street character



Bio-swales integrated in landscape design

Environmentally Sensitive Practices

Sustainable Urban Design Strategies

In Iceland land is generally cheap and plentiful, and this is fuelling urban sprawl. Driving out from the intimate central core of Reykjavík, the European model of compact urban form soon gives way to a North-American scenario with large, low-density, residential suburbs. Here, people are pushed apart, distances become too far to walk, pavements disappear, and bus routes become unviable. Everything has become designed around the car. Urriðaholt presents an opportunity to reverse this trend. The new plan will recall the walkable character of downtown Reykjavík with the additional benefit of being only a footstep away from the natural environment.

The project approaches Urriðaholt with restraint, treading gently on the natural environment by interlacing with nature rather than overpowering it. To minimize power consumption, buildings along the business street will be sited and designed to take advantage of daylight and reduce glare from low-angled sun. In addition to natural ventilation, the use of energy-efficient mechanical systems will be encouraged for heating and ventilating all the buildings.

Guidelines on sustainable design are being prepared for designers and others who are involved in development on the site, where the use of local and sustainable materials will be promoted. To protect the sustainable urban drainage system and the hydrology of Lake Urriðavatn, the use of building materials containing particular heavy metals (zinc, copper and lead) has been restricted on the outer surface of buildings. To reduce fossil fuel consumption, travel by bicycle and public transportation will be encouraged.

Safe disposal of hazardous materials and recycling of glass, paper, plastics and metal will

be encouraged. Educational material on environmental practices will be provided for residents and the school will have a special environmental and ecological focus.

Sustainable Urban Drainage System

This project provides opportunities to engage with the natural environment while requiring responsibility for its sensitive stewardship. At the outset, the design team felt it was critical to protect the natural resources and features of the site and surrounding area. Foremost in this effort was careful consideration of the lake and protection of its watershed. To meet this goal the team integrated site access and open space with the sustainable management of storm water to reduce the impacts of development on the hydrologic cycles. The development proposal features the first large-scale sustainable drainage system in Iceland. The system was fully integrated in the master plan to ensure that the ecologically sensitive lake, which is also protected by an environmental exclusion zone, will not dry up in summer.

This system integrates the development with a network of swales placed to collect water from roads and allow infiltration as the rainwater runs along the contours. When the rate of infiltration of these swales is exceeded, they feed retention ponds in the green wedges that run down the hill located adjacent to blocks of flats to act as a visual amenity. Should these exceed capacity, water will flow down channels on the hillside and discharge into a final swale adjacent to the lake frontage. The central row of trees on the business boulevard grows from a swale featuring a cascading water course. On this most public connection through the site, water meanders through the swale and falls from stone to stone to showcase the sustainable urban drainage methods employed throughout Urriðaholt.



Community participation



Hilltop character: An enclosed space with a sense of place

Community Sustainability

Community Involvement

Community participation in its broadest definition has been a key element throughout the preparation of this plan. The master plan has been developed in close association with the town council, planning committee, town officials and key stakeholders. The planning process began in summer 2004, when several participatory meetings were held with the community. The primary aim of these meetings was to create a consensus-led vision for the site, but the events also revealed a general dissatisfaction with the current (zonal) planning approach in Iceland, and how this was leading to increasing amounts of time being spent in the car. Through dialogue, the participants came to an agreement that what they wanted was to live in a more sustainable, mixed-use neighbourhood.

As the master planning work began, the design team and key stakeholders, including the client, landowners, planning officers, local politicians and the mayor, went on a 'seeing is believing' study tour to Sweden and Germany, to witness at first hand more progressive approaches to planning. The project was then developed using a set of locally inflected urban design solutions. These were based on best practice, but tailored to the specific location: 'glocal' (global + local) solutions to sustainable place-making.

A Sense of Community

The scheme utilises mixed-use principles, not seen in Iceland outside of the small, downtown area of Reykjavik. Public buildings that create the most activity were located around a highly sheltered space on the top of the hill, at the geographic centre of the development to minimize walking distances. This hub of activity is surrounded by a series of residential neighbourhoods each with their own identity.

Densities vary across the site in response to the underlying topography, and increase towards focal points to permit a natural sense of way-finding.

To strengthen the sense of community and provide a variety of place character a range of housing types are planned. Within each neighbourhood, housing types include single family detached, row housing and apartments that provide diversity. Each street is given unique character through landscape, streetscape, traffic-calming and architectural treatments. To encourage neighbourly interaction, schools, shops, and offices are in close walking distance from the residential neighbourhoods. Small public gathering spaces with play structures, barbeques, and other amenities are located along pedestrian routes.

The plan outlines a liveable neighbourhood that will offer unique qualities due to its beautiful natural setting and the emphasis placed on high quality urban form. A residents' association will be organized at the very beginning of the development to establish a sense of community and involve residents in decision-making on the evolution of the neighbourhood. A website for the project (www.urridaholt.is) has been created with all the necessary information for prospective residents and other interested parties.



Land Use

Planning for the Future

The Master Plan

After establishing a vision that was based on consensus points from participatory meetings, the Garðabær Municipal Plan was revised in response to this input. An additional change was later made to the Capital Area Regional Plan to integrate the revised plan with the region issues. In November 2006, the master plan for Urriðaholt was officially adopted by the Local Authority. The goal of this master plan is to serve as broader guidance for future planning of the area. The plan is based on the goals of the Capital Area Regional Plan, the Garðabær Municipal Plan and Local Agenda 21 for Garðabær. The main goal is sustainable development, with a dense and mixed built environment and a good relationship with the natural landscape. The following themes, which reflect these goals, serve as guidelines in the master plan:

- Sense of place
- Hillside development
- Weather in northern latitudes
- Interesting urban form
- Sustainable urban drainage system
- Street design

In the master plan the main themes are described in detail along with strategies on how to carry out these objectives.

Since it was adopted, the master plan has been selected by the National Planning Agency as a best practice approach to development in Iceland, for a Scandinavian research project looking at urban design in northern latitudes. In early 2007, the project won an Urban Design Citation from the Boston Society of Architects.

A binding site plan for the residential area on the western slope of the hill closest to the lake,

based on the same principles as the master plan, has already been adopted and lots in that area have already been sold. Recently, work started on the second local plan for part of the business street and the entry plaza furthest to the north on the site. A protection plan for Lake Urriðavatn, which sets out a strategy on how to monitor the hydrology of the lake, will also be prepared. Work at Urriðaholt is due to start on site in 2008 and, if it is commercially successful, may herald the moment that Iceland switches from urban sprawl towards more compact forms of development.

Project: Urriðaholt Master Plan | **Local Authority:** Garðabær Town, Iceland | **Client:** Urriðaholt ehf, Iceland

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