ZIRAI ISLAND
Central Asia’s first carbon neutral master plan in Baku, Azerbaijan
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CLIENT: AVROSITI HOLDING
ENGINEERS: RAMBOLL
COLLABORATORS: KOSAR DEMIR
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CREDITS:
PARTNER IN CHARGE: BJARKE INGELS
WITH ASSOCIATE PARTNER ANDREAS KLOK PEDERSEN
PROJECT MANAGEMENT: KAI-UWE BERGMANN
TEAM: SYLVIA FENG, DIANA MA, ZYNOVZIDES, PRL, ANNETTE
TRODDAHL, PÅL ARNULF, MAXIME ENRICO, OANA SIMIONESCU, ALEX COZMA, MOLLY PRICE, NIELS DAMSGAARD, DOUG A. STECHSCHULTZE, ONDREJ JANKU.
VISUALS: OCEANPIC LTD
GRAPHIC DESIGN: ERNESTO MONCADA

AVROSITI HOLDING
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Azerbaijan has long been called “The Alps of Central Asia”. Its natural landscape continues to play an important role in present day Azerbaijan. Shaped by the Caucasus Range towards the north and the coastline of the Caspian Sea, Azerbaijan is a strategic gateway between east and west full of contrasts and contradictions.

The landscape of Azerbaijan includes many snow-capped peaks exceeding 4,000 meters, lush green valleys towards the south and large swathes of arid semi-desert in between. Just a few hours drive away from timeless mountain villages clad in lush orchards sits the Azerbaijani capital of Baku which in Persian means “the wind swept city”, whose medieval center is a UNESCO World Heritage site and home to the Zira Island Master Plan.

1.1 THE LANDSCAPE

Azerbaijan has long been called “The Alps of Central Asia”. Its natural landscape continues to play an important role in present day Azerbaijan. Shaped by the Caucasus Range towards the north and the coastline of the Caspian Sea, Azerbaijan is a strategic gateway between east and west full of contrasts and contradictions.

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1.2 THE SKYLINE

"Zira Island proposes an architectural landscape derived from the natural landscape of Azerbaijan."

Located within the crescent shaped bay of the capital city Baku, Zira Island includes the Seven Peaks of Azerbaijan which is envisioned to be a sustainable model for urban development, and an iconic skyline recognizable from the city’s coastline. The Seven Peaks is an architectural landscape based upon the reality’s dramatic natural setting.

Each of the Seven Peaks house a residential mixed-use development derived from the geometry of a famous mountain in Azerbaijan. Individually each mountain becomes a principle for mixing private and public functions. Together the mountains form an outdoor skyline merging with the natural topography of the island. A diverse island-wide community connected by a series of private resort villas by a series of public paths linking mountain and beach villages or the top of all seven peaks. The mountains form a series of public pathways that provide access to the beaches or trails that take advantage of their setting with panoramic views out over the Caspian Sea.
The vision of Zira Island is to create an island that is entirely independent of external resources. A self-contained closed. By combining the best of the traditional Azerbaijani building tradition with the newest technology, Zira Island will provide excellent living spaces for people, with a minimum use of resources. A showcase to the world combining high-end living with low end resource usage.

The Seven Peaks of Azerbaijan propose an architectural landscape derived from its natural landscape. This new architecture not only recreates the iconic silhouettes of the seven peaks, but more importantly, creates an autonomous ecosystem where the flow of air, water, heat and energy are channeled in almost natural ways. A mountain creates biotopes and eco-niches, it channeled water and stores heat, it provides viewpoints and valleys, access and shelter. The Seven Peaks are conceived not only as icons, but engineered as entire eco-systems, a model for future sustainable urban development.

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Zira Island, formerly known as Nargin, is part of the Baku Archipelago, which consists of several islands. Zira Island is the largest of these which separates the Bay of Baku from the sea south of the Absheron Peninsula. The island is visible from the entire Bay of Baku and its 3.5 million inhabitants. The island has a length of 3.1 km and a width of 600 m. The northwestern side of the island is vertical and steep, flattening out towards the south.

Zira Island will be connected to the mainland via a variety of transportation options either by water or air. The island becomes linked to the mainland by regular shuttle service which would make the circa 10 km journey at regular intervals. On the island, a network of electric cars and taxis will provide an efficient circulation, while at the same time ensuring limited traffic on the island, and the ultimate privacy and well-being for its residents and visitors to the hotel and marina alike.
The master plan is conceived as a series of neighborhoods along the coastline, ranging from high density urban areas in the western part of the island to the villas areas in the eastern part. The neighborhoods are tied together by the central public park that leads to the centrally located main beach. The eastern most tip of the island is the location of three grand luxury villas with private beaches and heliports.

The Zira Island Master Plan is divided into two major phases. Phase 1 encapsulates the entire island, the design and construction of the 300 private villas with their own private beach as well as the Kapaz Mountain which includes a 5 star hotel. The ferry terminal and marina adjacent to Kapaz and the landscaping for all of these elements would also be included. All ancillary developments such as ferry terminals and parking facilities on the mainland would be planned and built during this time. Phase 2 would include the additional six mountain developments, completing the landscaping, the three luxury villas situated within 7 hectares on the northern tip of the island and the offshore windmill farm.

The two phases will work independent of one another and are driven by their individual development timelines.
INFRASTRUCTURE
The heart of the transport system of the island is the network of electrical cars, taxis and shuttle services utilizing the ring road along the park and creating an emission free environment. The shuttle ferry terminal connecting the island to the mainland is centrally located at the north shore facing Baku city. Two heliports on the island provide fast connections to several locations within the capital.

PUBLIC SPACES
Surrounding each of the seven peaks are a variety of attractive public spaces, from dense shopping streets to vibrant promenades with restaurants and cafés. The waterfront promenade ties the different neighborhoods together, while a public trekking path invites visitors to climb all the seven peaks in a single day!
BEACHES AND MARINAS

The coastline of Zira Island is dotted with marinas and beaches. The Island features three different marinas: Kapaz marina at the main port of the island including the shuttle ferry terminal, the large Savalan marina with the Babadagh marina surrounded by holiday apartments with private boat lots. A large beach in the center of the island, as well as a series of smaller lagoons along the coastline offers a variety of leisure activities in the clear waters of the Caspian Sea.

THE LANDSCAPE

The landscaping of the island is derived from wind simulations of the microclimates created by the mountains. The central park of the island will offer a lush green oasis creating the atmosphere of a tropical island.
Patterns created by the wind moving its way through the Seven Peaks will inform the planting of trees and the placement and design of public spaces and plazas. Where the winds and turbulence are strongest, trees become denser, creating lower wind speeds and thus a comfortable outdoor leisure climate.
The island deploys the three abundant resources – sun, water and wind – to achieve its zero carbon footprint. A showcase to the world combining high-end living with low-end resource usage.

3.1. ZERO CARBON FOOTPRINT

WIND

The island benefits from the fact that Baku is "The wind swept city". By harvesting the wind energy through an offshore wind farm, Zira island will have its own CO2-neutral power supply. The wind turbines will power the entire island, transforming the platforms and foundations of the existing offshore oil industry and replacing the forest of oil towers in the horizon of the Caspian Sea.

WATER

All waste water and storm water is collected and led to a waste water treatment plant, where it is cleaned, processed and recycled for irrigation. The solid parts of the waste water are processed and composted and finally turned into top soil, fertilizing the island. The constant irrigation and fertilizing of the island supports the lush green condition of a tropical island, with a minimal ecological footprint.

SUN

The buildings of the island are entirely heated and cooled by heat pumps connecting to the surrounding Caspian Sea. Solar heat panels integrated in the architecture create a steady supply of hot water, while photovoltaics on strategically located facades and roof tops power daytime functions as swimming pools and aquaponics.

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“Transforming the platforms and foundations of the existing offshore oil industry ...”

“... Zira Island will have its own CO2-neutral power supply by harvesting the wind energy through an offshore wind farm.”
The first mountain, Savalan, is conceived as a network of different programs that can be expanded. The hotel at the center, branching out into apartments, row houses and finally inversing into a dense street grid with shops, bars and cafés. The branches embrace a series of spaces for leisure activities, pools, sports and parks.
The Cave Mountain is designed as a mountain of luxury apartments with grand terraces and views to the Caspian sea. The apartments enclose a central public hall for various events, conferences, and exhibitions.
The most iconic and recognizable of the seven peaks, Ilandagh, is materialized in 3D in the simplest way possible – two silhouettes intersecting in a cross, recreating the epic profile seen from all directions around the island. The building contains a luxury hotel surrounded by four plazas with pools and restaurants.
1. HEIGHT DATA 2. SMOOTH GEOMETRY 3. LAYOUT OF TERRACES

The King's Mountain is a soft, silhouetted perforated by square courtyards. From Google earth, the mountain appears like a giant chessboard, an homage to Kasparov, native son of Baku. The building contains apartments, offices, and a grand theater hall.

4.4 SHAHDAGH

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The Kapaz mountain of Zira Island recreates the iconic silhouette of the “Bridal Crown Mountain” at Goy Gol Lajke when arriving by boat. Using the structural principles of Uruguayan engineer Eladio Dieste, the thin slab achieves stability by forming a sine curve at ground level. The resulting deformations create hillside terraces and covered public spaces on both sides of the mountain. It forms the main port of the island, and features a five-star hotel, a marina and a promenade with restaurants.
The five-finger mountain is a cluster of small towers connected by a single street of public programs bridging from tower to tower all the way from the base to the peak. The towers are angled in all directions to ensure sea-views from each façade. The lower floors feature offices, apartments and restaurants and shops in ground level.
The Water Shed Ridge is one of the many names for Babadagh Mountain in Azerbaijan. On Zira Island it is conceived as a giant courtyard wrapped around a central marina. The perimeter block increases and decreases in height and lifts off the ground to allow visitors to enter the marina from land as well as from the sea. The building contains apartments with large outdoor spaces and private boat lots.
Zira Island, envisioning a new level of luxury in Azerbaijan, is destined to be one of the most exclusive developments in the region with its exceptional facilities and exclusive location. The villas include an exclusive residential community, a stunning lagoon, a marina, and a world-class spa. All of the villas will be artfully designed over multiple landscape levels, ensuring unobstructed sea and lagoon views. Each villa is sited upon a 600 square meter site and range from 300 to 800 square meters.
Zira Island will introduce a sophisticated, elegant oasis to the heart of Central Asia, offering an exclusive haven for discerning international and regional patrons. The eastern tip of the island contains the 70,000 M² site dedicated to three luxury villas each measuring 2,500 M². The villas feature private beaches, marinas and a heliport.
5.1 THE DEVELOPER
Avrositi Holding is a property development company based in Baku, Azerbaijan. Avrositi Holding was established primarily to create world-class real estate developments in Azerbaijan and Central Asia. Avrositi Holding is actively involved in developing highly ambitious commercial and residential projects in Azerbaijan. The company is dedicated to excellence in all aspects of development, including design, functionality, and sustainability. Avrositi Holding is committed to setting new standards for both luxury and sustainable living in Baku, Azerbaijan. Avrositi Holding seeks to partner with the best of the best in luxury hospitality providers.

5.2 THE ARCHITECT
BIG is a Copenhagen-based group of architects, designers, builders, and thinkers operating within the fields of architecture, urbanism, research, and development. The office currently involves a large number of projects throughout Europe, the Middle East, and Asia. BIG’s architecture emerges out of a careful analysis of how contemporary life constantly evolves and changes. Like a form of programmatic alchemy, BIG creates architecture by mixing conventional ingredients such as living, leisure, working, parking, and shopping. BIG’s goal is to create a new urban laboratory in the center of Paris, to become the center of Paris, and to further the future of contemporary life forms.

5.3 THE ENGINEER
Ramboll is a leading engineering, design, and consulting company founded in Denmark in 1945. Today, Ramboll employs more than 8,000 ambitious experts and has a significant presence in northern Europe, India, Russia, and the Middle East. With a close-knit and dedicated team, Ramboll aims to achieve inspiring and exacting solutions that make a genuine difference to our customers, the end-users, and society as a whole. Ramboll operates within the areas of: Buildings & Design, Infrastructure & Transport, Energy & Climate, Environment & Nature, Industry & Oil/Gas, IT & Telecom, and Management & Society.

5.4 CONTACT INFO
To learn more about the Zira Island master plan, please visit www.ziraisland.com.

Press and Media: press@big.dk

www.ziraisland.com