

SEMI NATURAL GREEN DANUBE ISLANDS IN THE GRASP OF MEGACITIES

TERMÉSZETES, VAGY FÉLIG TERMÉSZETES DUNA- SZIGETEK A NAGYVÁROSOK SZORÍTÁSÁBAN

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The majority of European cities have been developed on the banks of natural rivers, often in places where the shallow riverbed river helps to form natural crossing points and islands. The fate of islands in the urban environment has been varied in different countries and cities. In terms of urban development, a determining factor is how capricious the river flow is and how often the island is flooded. Permanent buildings or neighbourhoods may have developed mainly on islands that are not exposed to flooding (e.g. Ile de Cite, Paris). Accordingly, flooded islands have remained in a more natural state and are nowadays a valuable element of the green space system of large cities.

The 2850 km long Danube is the largest river in central Europe, originating in the Black Forest (Germany) and reaching the Black Sea on the Romanian coast. Along its long route it breaks through mountains and meanders across plains, and on its banks many settlements have developed over

the millennia. The four major Danube-coast metropolises (Vienna, Bratislava, Budapest and Belgrade) are all located on the lower, alluvial river courses, where the river forms islands by depositing debris from the mountains. Thus, all the above-mentioned cities have more or less natural islands. Many of these islands have not been affected by urban development and have not been built on because of the constant threat of flooding. However, some of them have been removed over time, mainly to provide safe waterways and flood protection, but the remaining islands are the most valuable elements of the green space systems of capital cities. Today, urban pressure on these islands is increasing. Modern methods of flood protection offer the possibility of making the islands flood-free and thus they have become target areas for various urban developments. The question is whether the aim is to change permanently these last remaining semi-natural areas with valuable fauna and flora in large cities

and give them an urban character. Current development plans still tend to treat these islands as green spaces, but envision a much more intensive use of open spaces, with the associated infrastructural investments. The question is whether due to the proposed developments these unique element or elements of the green space system will finally disappear from the Danube metropolises, which will permanently change the character of these cities.

In this article, we compare the Donau (Danube) Island in Vienna and the Óbuda (Shipyard) Island in Budapest. Although the circumstances in which the two islands were created are very different, their development principles in the 1970s and the urban pressure for development since the 2000s show many similarities. In our article, we highlight these interesting parallels (Auböck and Bakay, 2020). **As the Vienna Danube Island is ahead of the Budapest Óbuda Island in terms of development, it is interesting to draw lessons from the developments there.** What are the directions to keep in mind in the increasingly urgent development of Óbuda Island, and what are the traps and dead ends to avoid. These lessons can also be applied at the development other semi-natural Danube-islands in an urban environment.

FORMATION, LOCATION AND SIZE

Danube Island, Vienna

Vienna is characterized by three major landscapes: the Vienna Woods as part of the Alpine foothills, the Vienna Basin, and the Danube Basin. The Vienna River in the west and the streams flowing

from the north and northwest into the city have their origins in the headwaters of the Alpine foothills. Many of the streams are at present canalized, and the Vienna River, in the heart of the city, is only partially visible. In these central districts, the channelization of the Danube Canal and the Vienna River held off dangerous flooding (Berger and Ehrendorfer, 2011).

For centuries, in Vienna, the Danube Basin had been endangered by flooding. (Fig. 1.) Not until the late nineteenth century, river regulation (1870–1875) was the city protected. (Fig. 2) (Fig. 3.) Subsequently, large swathes of the riverfront became the site of urban expansion. During the twentieth century, the changes to the aquifers' flow were detrimental to existing parks and the agriculture on the city's northeast side. (Fig. 4) The most recent flooding, which occurred in 1954, prompted further improvements to the flood control. The Danube contributes less to Vienna's urban image than to Budapest's, because over the course of several centuries – up until 1875 – extensive wetlands had developed between Vienna's historic center and the river. The introduction of the inundation area changed the aquifers, and for this reason too, a century later, additional river control corrections became necessary. These concerns propelled the process that led to the creation of the Danube Island, and, in parallel, the establishment of the Danube-Auen National Park, which made it possible to protect the remaining non-regulated areas.

The man-made Danube Island is approx. 21,1km long and its width varies between 70 and 210m. The size is approx. 300 ha. It is located east

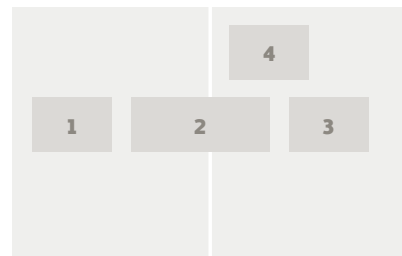
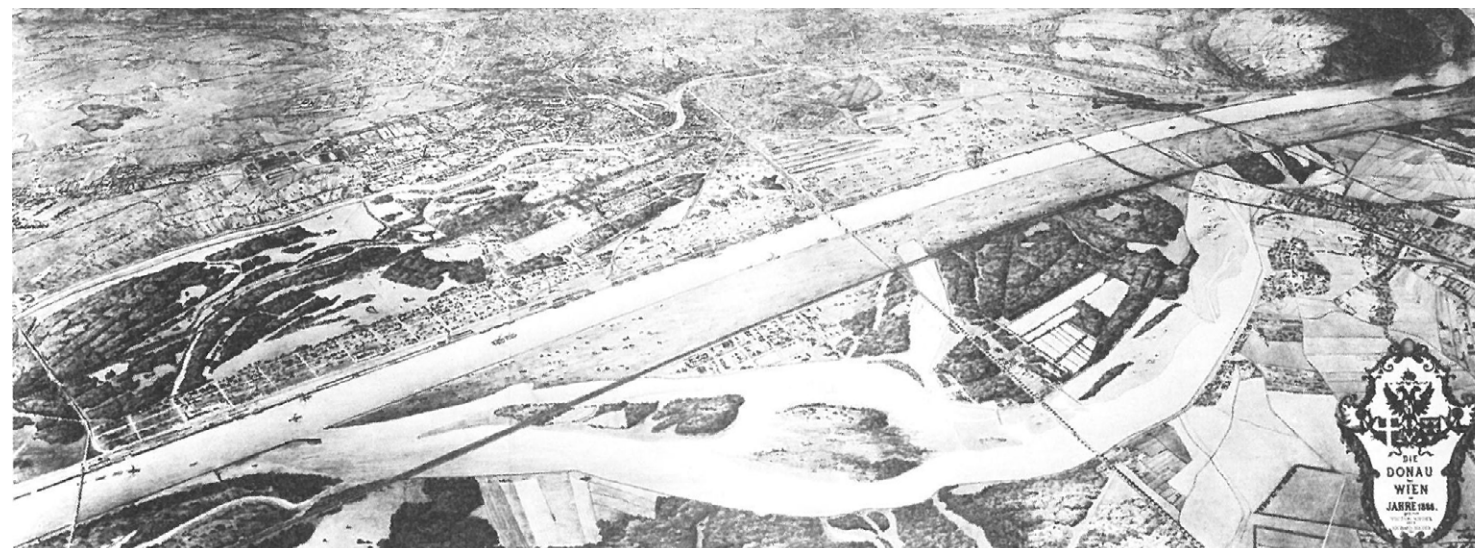


Fig. 1: The plan of “Josephinische Landesaufnahme 1790” shows the original riverbed of the Danube (FOTO: WIENMUSEUM – THE RED LINE SHOWS THE OUTLINE OF THE REGULATION PROJECT 1874)

Fig. 2: The painting by Adolf Obermüller and Alexander Bensa show the clearing of ice cover of the Danube for husbandry by means of a ice-breaker ship in January 1880 (FOTO: WIENMUSEUM)

Fig. 3: In 1875 the technical proposal of the Danube regulation – called „Danube Cut“ – was realized (FOTO: WIENMUSEUM)

Fig. 4: The Danube flowover area offered 1931 beach atmosphere for the Viennese (FOTO: ALBERT HILSCHER)



from the downtown of Vienna. (Fig 5.) The long and narrow island is between the Danube and a newly created river branch, which was originally called the *Entlastungsgerinne* (inundation channel), but the city’s residents soon referred to this body of water as the “Neue Donau” (New Danube). The inundation channel was conceived as “non-flowing body of water” which can be employed when water levels reach dangerous levels.

Óbudai Island, Budapest
Óbuda Island is a natural alluvial island of the Danube, located in the northern part of Budapest, along the banks of the Óbuda between river kilometre 1651 and 1654. It is separated from Óbuda (third District) on the Buda side by a 70-80 m wide Danube branch. It covers an area of 108 hectares, is 2 750 m long and has a maximum width of 500 m. It consisted originally of two adjacent parts. They were “united” only in the 19th century due to industrial development (Berza, 1993). (Fig 6.)

HISTORY

Danube Island, Vienna

In 1969, after the hydraulics construction engineer August Zottl prepared the water resource project, the Vienna City Council passed a broad resolution in which it committed to employing landscape architecture in concert with the technical flood control measures (Domany et al., 1981). That led to the decision to establish a national park to preserve the Lobau wetlands and to define the Danube Island as a long-term recreational zone. In 1999, Gisa Ruland summarizes: “The aims of flood control should coalesce with the recreational agenda. In several phases lasting from 1972 through 1988, and in keeping with a design foreseeing a large variety of different uses, the island and its banks were implemented. With its comprehensive design, the Danube Island’s outer areas (northern and southern parts) were devised to assume the role of close-to-nature recreational and

adventure spaces. The topography of the island’s northern and southern zones was shaped to produce a wide variety of growing conditions for the flora and diversified habitats for the fauna. By omitting or shifting the embankments, it was possible to retain stands of mature trees. Moreover, existing Danube branches such as Zinkerbachl and Tote Grund were preserved with the complete attendant vegetation and integrated in the new topography” (Auböck and Ruland, 1999). The oxbows - for instance, the Alte Donau - also continued to be developed as recreational landscapes, and the Tote Grund and Tritonwasser in the south were left intact and incorporated in the island’s design. Accordingly, at present we distinguish between the adjacent national park in the southeast and the parts of the city near the banks of the Danube and the Danube Island, which were devised expressly to support the recreational activities of the twentieth century. In 1973, the hydraulic engineering work

had already begun, and as a result, there was enormous pressure to determine the island’s design. By a two-stage competition - the program included the landscape design of the Danube Island and the shoreline of the “New Danube” - a team of highly qualified planners were selected in 1975, of which to be named are the landscape architects Maja and Wilfried Kirchner and Prof. Ernst Heiss (Redl and Wösendorfer, 1980)

In addition, in July 1977, the office “Koordinationsstelle Donauraum Wien” was set up, as initiators to be named are Bruno Domany and Otto Schwetz (Domany et al., 1981). Its task was to coordinate the proposals of the different disciplines. More than 1.8 million trees were planted, and 170 hectares of new landscape were created, and a network of bike paths and footpaths crisscrossed the terrain. On May 7, 1984, the Danube Island was officially zoned for recreational use. (Fig. 7)

To this day, the multifunctional landscape of the Danube Island has

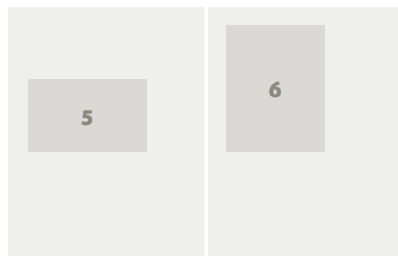
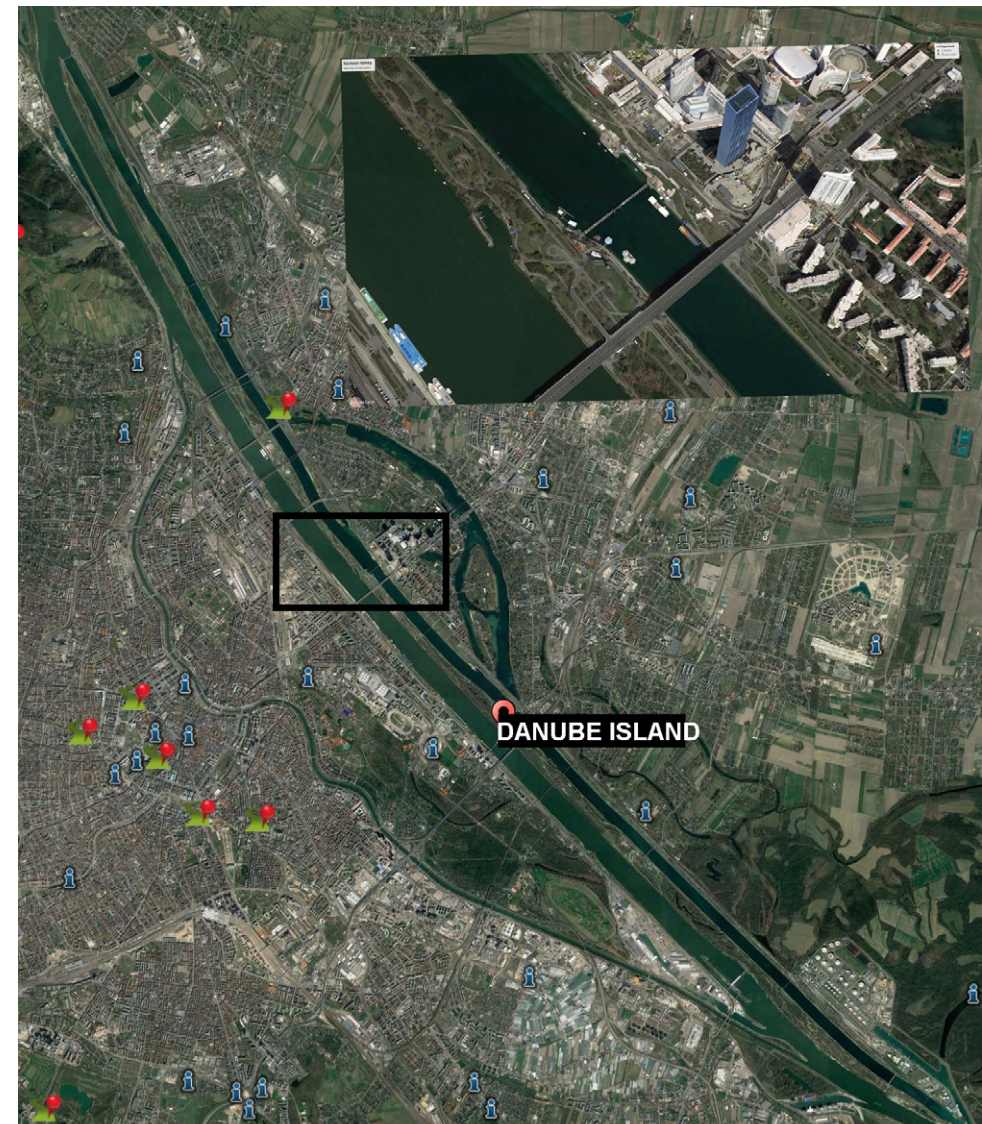
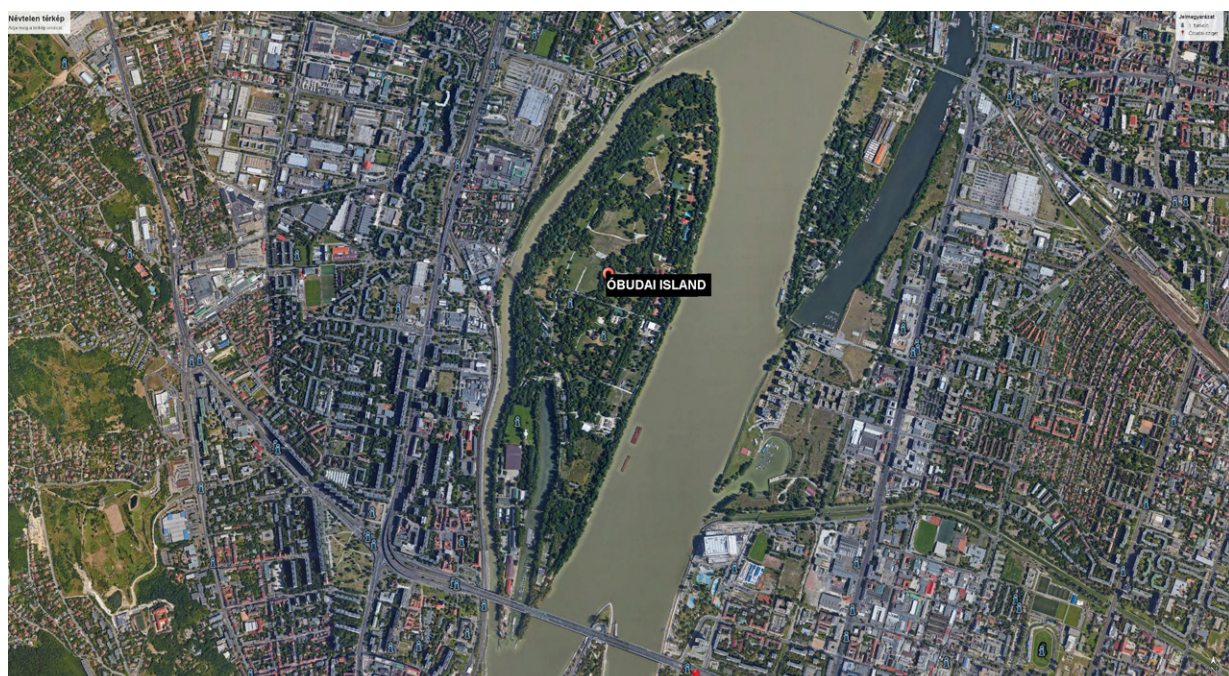


Fig. 5: Danube Island (Donau Insel) in Vienna with an enlarged image of the area next to Reichs Bridge (Reichsbrücke) (SOURCE: GOOGLE EARTH PRO, 2020)

Fig. 6: Óbuda (Shipyard) Island (Óbudai/Hajógyári-sziget) (SOURCE: GOOGLE EARTH PRO, 2020)



continued to evolve and comprises countless sports facilities, including playgrounds for small children and youths, skate parks, boat rental firms, dog zones, beach volleyball, wakeboard lift, water slide, 32 WCs – also a quite attractive group of bars and restaurants on the Danube Island and the northern waterfront, called “Copa Cagrana” in respect of the nearby housing areas name. (Fig. 8) Since 2013, even an artificial white-water course adhering to international standards for competitive athletes exists here; it is the first of its kind in Austria.

Recreational offerings are one aspect, but the region’s ecosystems must, of course, also be carefully attended to. A further competition (first prize: Alfons Oberhofer) yielded a project which was realized in 1984 (following a six-year planning phase) and is known as the Marchfeld Canal – an important contribution to the landscape design of the districts northeast of the Danube.

In 1991, the architect Albert Wimmer was commissioned to design and

implement the Freudenu Hydroelectric Power Plant southeast of the Danube Island; it is the tenth and final such plant on the Danube in Austria. The project includes several attendant landscape-ecological measures. In 2003, Andreas Chovanec & Fritz Schiemer reported on their study “Die Donauinsel in Wien als ökologischer Korridor? Untersuchung der Besiedlung neu geschaffener Uferstrukturen im Stauraum Freudenu – Hintergrund, Projekt design und zusammenfassende Darstellung” (Chovanec and Schiemer, 2003).

Óbuda Island, Budapest

Important Roman monuments can be found on Óbuda Island. The future Emperor Hadrian lived here as governor of Aquincum and Lower Pannonia in the 2nd century AD. It was the site of the Governor's Palace, a representative building with 80 rooms and a floor area of almost 9,000 m². After 409 AD, the close-by military camp was emptied and the island was abandoned. The area

around the former governor's palace has been under archaeological protection since 1973 (Vincze, 2019). (Fig 9)

In the middle Ages, the island was covered with forest. In 1786, it is mentioned as “Town-island” (Város sziget)¹ used as hunting ground. Around 1900 it was called Big Island. Later (and still today) it was also called Shipyard Island, in memory of the former shipyard.

In 1835, the First Danube Steamship Company established the Óbuda Shipyard on the initiative of Count István Széchenyi on the island. In order to meet the needs of the shipyard, the two former islands were connected and the narrow channel between them was turned into a bay. By the 1980s, the shipyard was in financial difficulties, due to the change of regime, and the more than 150-year-old jewel of Hungarian shipbuilding officially closed in 1999. Industrial activity on the island ceased. The shipyard occupied only 28 ha of the total area of the 108 ha island, at the southern section of the island. In the northern section, Óbuda

Collective Farm (Termelőszövetkezet) carried out agricultural activities, mainly sugar beet cultivation on approx. 80ha (Csemez and Lorberer, 1998).

In the 1960s, mass housing construction began in Budapest and in the 1970s the Óbuda and Békásmegyer housing estates were built on the right bank of Danube. Óbuda Island was designated as the leisure centre of the housing estates in the 1971 Urban Development Plans (Radó, 1985). The landscaping of the area began, and May the 9th Park was completed by 1973, for the centenary of the birth of Budapest, when Pest, Buda and Óbuda became united.

MAY THE 9TH PARK² (FIG 10)

The zoning plan included land use, transport concept, landscaping, beach management and a study of utilities. Being a flood-prone area, the landscaping concept was to elevate the roads, by placing them on the top of the

¹ in the geographical encyclopaedia of János Mátyás Korabinszky
² Design: Mrs. Zoltánné Krizsán/BUVÁTI, Ms. Vera Csorba

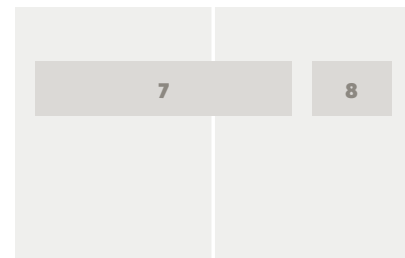
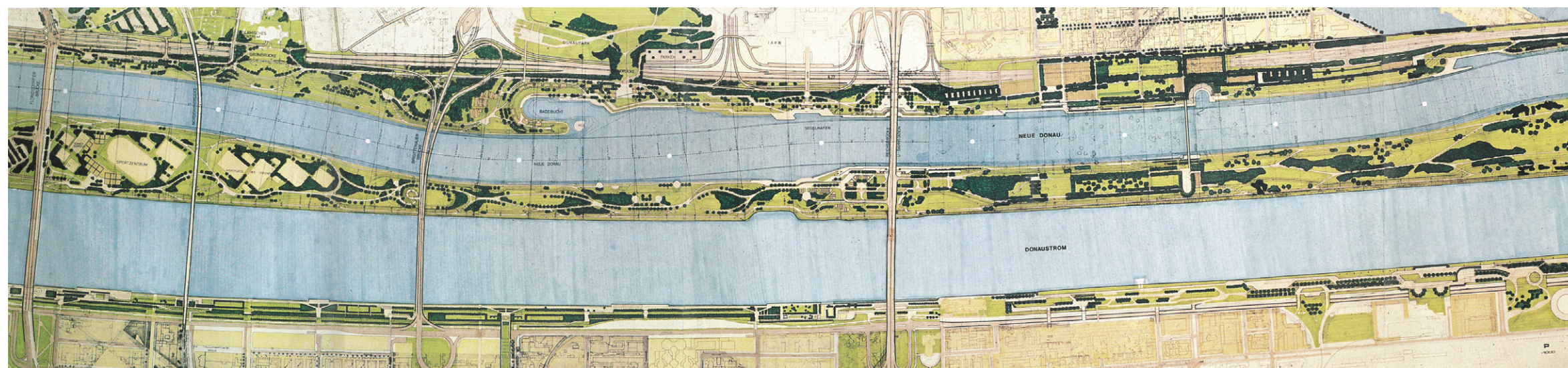


Fig. 7: The final project for landscape design of the Danube Island competition 1979 (FOTO: MARIA AUBÖCK)

Fig. 8: Foto of waterplayground on the Danube Island (FOTO: MA42/CHRISTIAN HOUDEK)



embankments, while the park inside of the island was below flood level.

Phase I, completed in 1973, covered the area around the "K" bridge leading to the island; it included 34 ha of landscaped area, 9,000 m² of parking and 600 m of road. Three playgrounds for different age groups were also completed, one of which is a water playground. A forest gym was installed in the existing wooded area.

Phase II, completed in 1980, included the construction of the sledge-hill, in which 18 000 m³ of debris was buried. The 'integration' of the mound into the landscape was an important consideration, avoiding a strange appearance of a berm on the flat island. Slides were placed on the steepest slopes of the hill and some of the less steep parts were used for sunbathing area. (Fig 11.) Three thatch-roofed rain shelters were also placed in the large, extensive park. Several sports fields have been laid out along the main path of the island.

The planning of Phase III started in 1976, which was concerning the area around the northern tip of the island. The soil of a former industrial pond lagoon here was unsuitable for establishing a park. After huge landfills, a beautiful topography was

created with smoothly graded waving terrain, providing a good overview of the entire park. An adventure playground has been placed near the island's summit, also with distinctive topographical features (Bakay, 2013).

The goal of the plantation was to create a three-level vegetation, with tree, shrub and grass level. After the shrub level has grown together, "it has closed", only the edges had to be cultivated.

It is a large park area, with extensive maintenance, where low construction costs and easy maintenance were key considerations in the design.

In 1999, a huge fire broke out in the park, when some of the playgrounds and the thatch-roofed shelters burnt down (Hlatky, 2001). The playgrounds were restored in 2004 but the stone-walls of the burned down shelters are still there as a memento of the fire.

TRAFFIC CONNECTION, CONNECTIVITY

Danube Island, Vienna

Due to traffic growth, several bridges that are more new had to be added since the 1980s, when the new Reichsbrücke was built. Since the new Danube

Island was in function, the bridges for train tracks and highway connection in the north and south work as a flyover for this site. Bus Stations and subway exits as well as bicycle and pedestrian bridges provide direct access. This direct connection with downtown Vienna offers great chances for "little holidays in between" - the title for a promotion poster for Danube Island in the 1990s.

Óbuda Island, Budapest

The connection between the shipyard on the island and Óbuda has been provided since the 1850s by bridges of various structures. In 1968, a reinforced concrete Shipyard Bridge was built in their place. The second bridge to the island, the emblematic 'K' Bridge, was built after the Second World War. Partially because the shipyard needed, new railroad tracks and the people of Óbuda also needed a bridge providing directly link between the northeastern side of the island and the mainland. The characteristic "K" bridge, made of bridge elements from WW2 was opened in 1957, made wider in 1973. (Fig.12)

The Óbuda Island administratively belongs to the third District (Óbuda-Békásmegyér). Near the southern tip of the island, Árpád Bridge passes over

it, but there is no exit. The island is accessible, from Óbuda via the Hajógyári Bridge and the K-bridge. A regular bus service runs on the latter from the end of April to mid-October, on weekends, terminating in the island. The island can also be reached in the summer by regular boat line. The harbour is located on the eastern side of the island, facing the Pest side.

The approach by public transportation and by car is still considered as a weak point. In each development, concept improvement of the connectivity of the island to the metropolitan traffic system is an important aspect.

URBAN POSITION

In recent years, urban growth on the North bank has put Danube Island more into the center of Vienna. Additional to the well-known Danube Park, the Vienna International Center and several high-rise business towers were built on the northern shore close to the waterfront and mark a lively living quarter today, which evolved northwest and additional housing complexes southeast of Reichsbrücke. Due to this mix, more visitors use the former quiet recreation zones

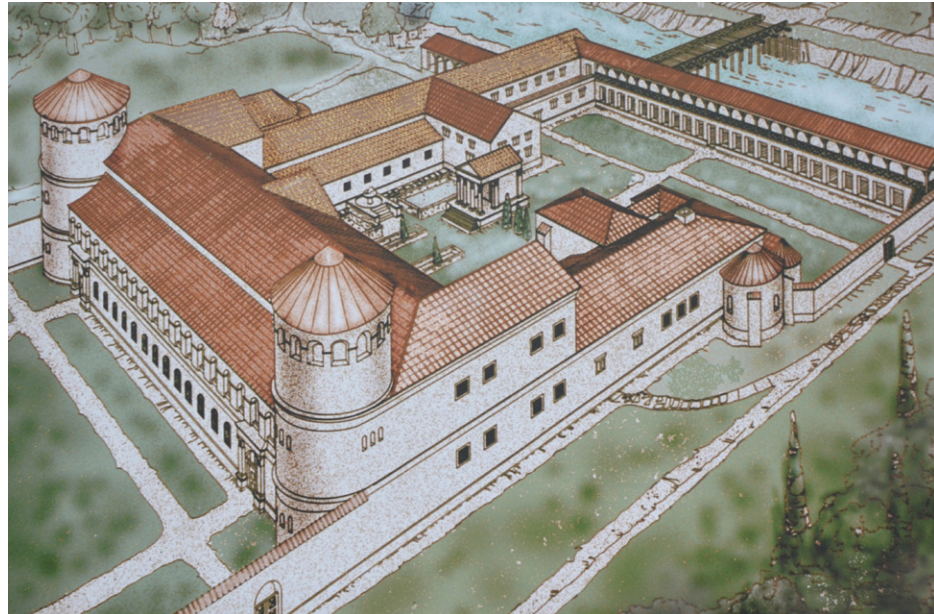
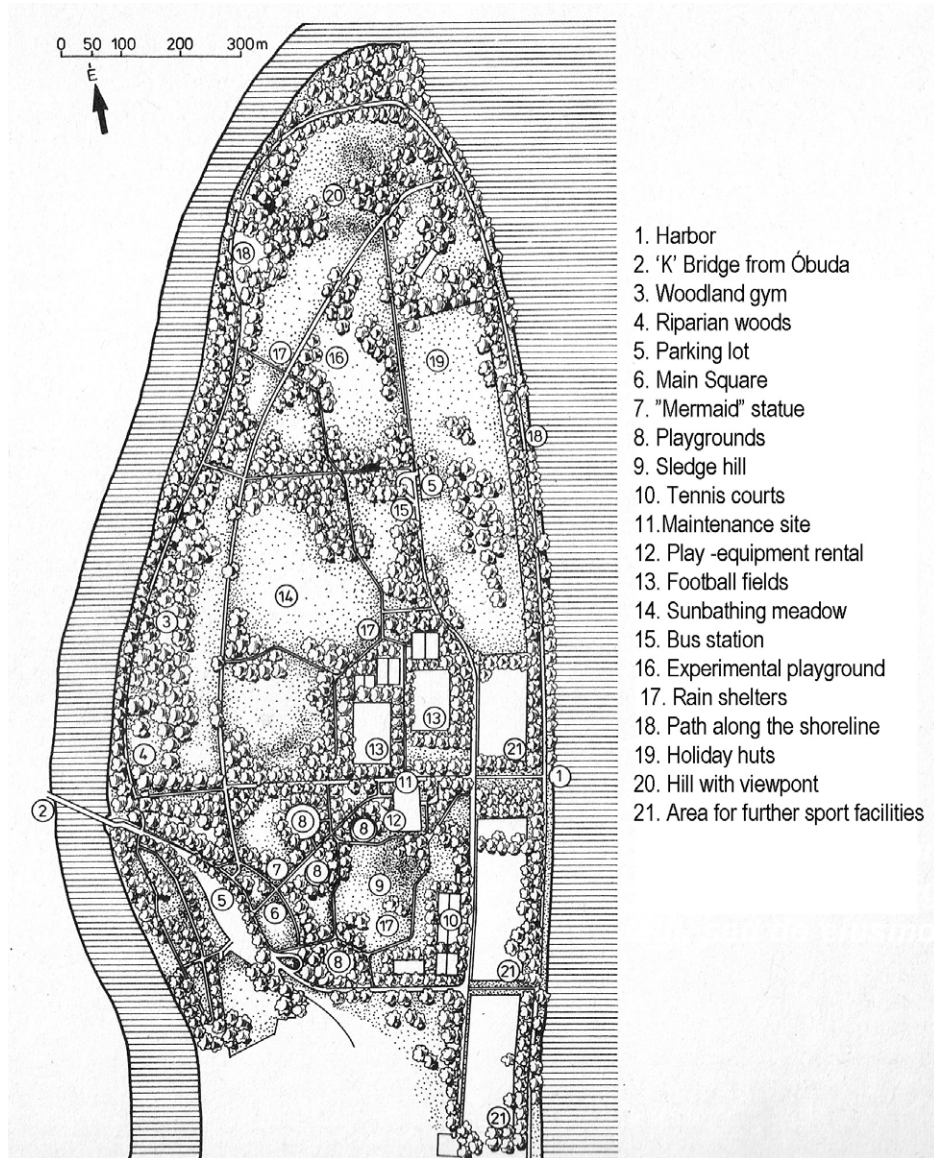


Fig. 9: Image of the former Governor's Palace from 2nd century AD still under the earth in Óbuda Island (SOURCE: WIKIMEDIA COMMONS)

Fig. 10: Northern part of Óbuda Island – May 9th Park Development Plan, in RADÓ, D.: Budapesti parkok és terek



1. Harbor
2. 'K' Bridge from Óbuda
3. Woodland gym
4. Riparian woods
5. Parking lot
6. Main Square
7. "Mermaid" statue
8. Playgrounds
9. Sledge hill
10. Tennis courts
11. Maintenance site
12. Play -equipment rental
13. Football fields
14. Sunbathing meadow
15. Bus station
16. Experimental playground
17. Rain shelters
18. Path along the shoreline
19. Holiday huts
20. Hill with viewpoint
21. Area for further sport facilities

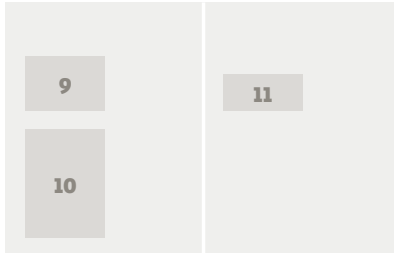


Fig. 11: May the 9th Park: hills in summer and wintertime (SOURCE: FORTEPAN AND ZÖLDKALAUZ)



of Danube Island, which come into danger to be focus of heavy overuse.

Óbuda Island, Budapest

It is considerably less known even among the people of Budapest than it's "little sister", Margaret Island, which is only slightly closer to the city centre. This is partly because Margaret Island is much easier to reach, mainly by public transportation or bicycle. The other reason is probably that, due to its intensive landscaping and a wide range of outdoor recreational facilities it offers, Margaret Island is a much more attractive leisure destination for the people of Budapest. At the same time, a more extensive Óbuda Island could play an important role in relieving the congestion on Margaret Island and could be an attractive alternative for those who prefer a more natural park environment.

RECENT DEVELOPMENTS, PRESENT SITUATION

Danube Island, Vienna

In the meantime, the decades of wear and tear have left their mark on the Danube Island's restaurants and sports facilities.³ In recent years, barbecuing

has become an especially popular leisure activity in the day-to-day use of the island. In response, a student competition was held by the city to develop a multifunctional table-and-bench combination with integrated griller. In 2014, the prize-winning project "Danube wave" by Benjamin Kromoser and Martin Ritt of TU Vienna was realized. These barbecue sites are very popular: grill parties here span from Asia to the Mediterranean. (Fig. 13)

The renowned performing arts festival held each year on the Danube Island presents categories ranging from rock concerts to stand-up comedy and attracts millions of visitors each June.

The island's popular restaurant district, known as Copa Cagrana, has been renovated several times, and over time, new sports and leisure facilities have been introduced. A design competition for the northern bank of the Danube sought to identify innovative ideas for its future use. The first prize was awarded to the Innsbruck-based firm LAAC Architekten (www.laac.eu). The design team analysed the new challenges as they related to the leisure time activities of the nearby residents. Incorporated in the bridge is a rapid transit station; it provides direct access

³ The maintenance of Danube Island is run by the "Inselinfo" of the Dept for Water management MA 45inselinfo@ma45.wien.gv.at



to the Danube Island. Because the residents of the city tend to remain near the bridge and utilize the offerings in this zone, the demands placed on these spaces continue to grow. In fall, 2018, the first refurbished section of the Copa Cagrana was opened to the public. In 2020, the work was completed.

Óbuda Island, Budapest

The island hosts the annual Sziget Festival, which has helped the island to achieve international fame. The festival was started in 1993, is organized on the extensive green surfaces in in the northern part of the island. During popular concert in 2019 60 000 people gathered here, marking the absolute maximum loading capacity of the island.

The Hungarian Yacht Club operates in the island's harbour. The Wiking Marina Yacht Club occupies the southern tip of the island. On the north side of the former shipyard area is the Golf Tanya golf course, which also operates an open-air cinema.

Near the southern tip of the island, the former Roman governor's palace is still to be excavated and displayed.

Most of the island is now a recreation park with ornamental shrubs and flowers. It is a quiet place with

few visitors – except the 3 weeks of the Sziget Festival in the summer.

For nature lovers, the island's flora and fauna are also remarkable. The northern part of the area is one of the most important waterfowl migration stations in the area, but some species of birds such as kingfishers, red-winged blackbirds, shrikes and even mallards lay their eggs here.

RECENT DEVELOPMENT PLANS

Recent housing developments like "Danube Flats" and high-rise office Buildings like "Techgate" trigger more public interest as they profit from the excellent view to the river on the northern shore. Interest of commercial building investors is high for future developments: for this, the protection and upkeep of the green areas along Danube Island will need – because of this examples – top priority for the city government and the public.⁴

Óbuda Island Budapest

In 2006, the government sold the site of the closed shipyard (about 32 hectares) to an investment company. The so-called DREAM ISLAND ltd planned to build a 60,000 m² congress centre, a

⁴ Recently two new books were published that offer insight into the complex water management and the rich animal life of the Danube Island: ZUG, Universität für Bodenkultur Wien(Hg.)Wasser Stadt Wien. Eine Umweltgeschichte, Wien 2019 and Verena Popp-Hackner and Georg Popp, Donauinsel, Vienna 2021

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Fig. 12: Óbuda Island approach from the Buda side- the emblemic 'K' bridge (SOURCE: WIKIMEDIA COMMONS)

Fig. 13: The Danube Island grillstations were designed by students of TU Vienna 2014 (FOTO: WWW.WIEN.CV.AT)



30,000 m² casino, a museum, a theatre for 3,500 people, an opera house and cultural and entertainment facilities on the site of the former shipyard, often towering 25-30 m above the tree-tops. To improve urban links, the investment would have included a tunnel under the Danube and the renovation and extension of the existing bridges.

The project never got off the ground and in 2013, the government bought back the land, so the southern part of the island was returned to state ownership.⁵ At the request of the government, a plan was again drawn up for the use of the southern part of the Shipyard Island, prepared by the Hungarian Kayak-Kenu Federation (MKKSZ) in cooperation with a renowned urban design firm.⁶ The development concept, entitled "Jövő Sziget" (Future Island), not only proposes the use of the newly reacquired land, but also plans the future of the entire 108-hectare Óbuda Island as a recreational, educational and Sports Park.

The "Future Island" plan is in line with the MKKSZ National Concept for Water Tourism and Sports Development and the "Budapest 2030" - Long-Term Urban Development Concept. The document divides the 108-hectare Óbuda Island into two large structural units: the more

densely built-up, more urbanised, more intensively used southern part, and a 'more extensive use' northern part with parkland, groves and woodland. The 37-hectare southern area – which roughly coincides with the 32 hectares bought back 2013 – is further divided into three functionally distinct parts: an archaeological park organised around Roman monuments, museums dedicated to reform-era of Budapest and area where the history of the shipyard, and water management is to be displayed, as well as restaurants, entertainment venues and offices (Neuberger, 2014).

The most prominent feature of the plan is the development for the inner bay and the southeastern tip of the island, which envisages a "new sports and recreation quarter" on the 12.2-hectare site. (Fig. 14) A pedestrian bridge would be built over the inner bay as a continuation of the Óbuda access bridge, providing access to the main square of the island. This would be the site of the indoor sports facilities - swimming pool, wellness centre and event space, a mini conference centre and hotels.

The 71-hectare northern part of the island, which will remain the site of the Sziget Festival, would be less different from its current character,

⁵ The northern part belongs to the 3rd District
⁶ TEAM-PANNON ltd.



Fig. 14: Image of the development proposal by TEAM-PANNON in 2014 (SOURCE: BAND 3, SUPPORTING CORROBATORY WORKSET, FOR REVIEW PROCEDURE OF 314/2012.(XI.8.) DECREE)

Fig. 15: Óbudai Island draft study by BFVT, 2016 (SOURCE: BAND 3, SUPPORTING CORROBATORY WORKSET, FOR REVIEW PROCEDURE OF 314/2012.(XI.8.) DECREE)



according to the draft study made by BFVT (Budapest Capital Urban Planning Office) in 2016. (Fig. 15) The playgrounds would be retained but renewed, with a sledding hill and a slide park, while in the wooded, coastal zones a new adventure park and training areas will be placed for extreme sports. The core area of May the 9th Park would remain as an event space.

Another novelty in the draft is that a 5.5-hectare free beach will be placed at the northern tip of the island, supposing that in a few years bathing conditions could be created on the island's tip.

The regenerated island would also be accessible from a new Árpád Bridge access ramp, replacing the current bridge to the southern part of the Island with a new cycle-pedestrian bridge from Óbuda's Main Square. Another pedestrian-cycle land link is also envisaged at the northern tip of the island.

In 2016, the government and the capital's municipality at the time took another major step towards the

preservation of the site, nominating Óbuda Island to become a World Heritage Site. The necessary application was submitted to UNESCO in 2018. According to the justification this architectural ensemble, which was preserved largely undeveloped, is important element of the Roman Empire's administrative and frontier defence system. It has the potential for exploration and display that is not possible elsewhere along the Empire's northern borders. This beautifully evolving situation was changed by the government in spring 2019 with a decision to withdraw the nomination of Óbuda Island for protection. The loss of World Heritage status does not mean that the archaeological protection that has been in place since 1973 will be nullified, but the situation is a cause for serious concern.

There have been many ideas for the development of this unique natural and archaeological heritage site, which is also home to the Sziget Festival, but so far, the Danube has

always saved the island from development. The area is a flood plain, which is occasionally flooded. The government decided in 2017 to create the Katalin Kovács National Kayak-Kenu Sports Academy on the southern tip of Óbuda Island, but not much happened until 2019. Then the cabinet decided to build a flood protection system on the island, which would make the entire area of Óbuda Island, free from flood and seepage water.

As part of the project, seepage barriers would be built up to the upper impermeable soil layer. According to the climate risk impact assessment, this would adversely affect the water balance on the island. It also identifies the risks of the project as the opposition of the population using the area for recreational purposes and the likelihood of protests and actions against the project by local environmental activists.

In particular, the area affected by the flood protection features is almost entirely covered with trees, including

trees of significant value. There is concern that one of the last urban remnants of natural woodland, home and breeding ground for protected plant and animal species, would be permanently altered. 1,000 trees, nearly 3 hectares of floodplain forest and a range of rare species could pay the price for the construction, which will further reduce the Danube's habitat and increase the flood risk in the northernmost part of Budapest. In May 2020, an environmental impact study was made to evaluate the effect of the different flood barrier methods.

The properties on the island are typically in municipal hands, with the majority owned by the capital city and a smaller proportion by the district. State-owned land in the southern part of the island includes Hadrian's Palace and the site of the planned sports academy. As it stands today, the opposition-led municipality of Budapest and the third District Municipality have not given permission for tree felling necessary for the

construction of the flood-barrier system. In July 2020, the government drew back all its development plans regarding flood control on the island thanks to the widespread protest on behalf of the professional and civic organizations besides of the local municipality (Bihari, 2020).

CONCLUSION

The current stalemate on the Óbuda Island cannot be maintained for long and it is foreseeable that some development will be initiated on the island in the near future. The example of the Vienna's Danube Island, with its strengths and weaknesses, can be a guiding example for the direction and volume of development.

Lessons we can learn from Danube Island development in Vienna: Óbuda Island needs a professional green zoning plan and a team of advisors for continuous and consequent development of recreation areas. In Vienna, much knowledge of this „maintenance programming” can be learnt from recent decades. The good cooperation of several departments- f.i.in charge of woodland, bicycle trails, garbage control, water features, sport areas and playground maintenance as well as lawyers for contracts for potential restaurant and bar owners were well organized.

Preserving biodiversity and maintaining natural habitats is an important development objective. Prior to the

construction of a flood-barrier system of the island, it would be important to carry out a reliable ecological impact assessment to clarify how the planned flood protection will change the current flora and fauna.

Joint development of the island and the nearby mainland shoreline: In the case of the Danube Island, the development of the island and the Kaisermühle shoreline on the opposite side of the New Danube Canal was a joint development, and was part of the Danube Island planning competition site.

The scale of the development and the amount and intensity of built-up is a very sensitive issue and should be examined very carefully before a decision is taken.

According to the development plans (2014 by TEAM PANNON and 2016 by BFVT) referred to in this article, the proposed development directions are similar to the Vienna example. It would be very positive if, in addition to the environmental impact assessments, mandatory for development plans, the capital/district could carry out "regular" environmental monitoring after each phase of development to ensure that the natural flora and fauna of great value have not been harmed. Otherwise, it may be advisable to reconsider the plans and possibly reduce the scale of the development in order to protect wildlife. ©

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TERMÉSZETES, VAGY FÉLIG TERMÉSZETES DUNA-SZIGETEK A NAGYVÁROSOK SZORÍTÁSÁBAN

A cikkben a bécsi Duna-szigetet (Donau Insel) hasonlítjuk össze a budapesti Óbudai (Hajógyári)-szigettel. Bár keletkezésük körülményei igen eltérőek, hiszen a bécsi Duna-sziget egy 1970-es években kialakított mesterséges sziget, míg az Óbudai-sziget egy természetes folyami zátonysziget, az 1970-es években történt rekreációs fejlesztésük, illetve a 2000-es évek óta a szigetre nehezedő egyre nagyobb városfejlesztési nyomás mindkét esetben meghatározó. Minthogy fejlesztések tekintetében a Duna-sziget az Óbudai-sziget előtt jár, fontos lehet megismerni az ott megvalósult vagy tervezett fejlesztési elképzeléseket és levonni azok tanulságait. Ezek a tapasztalatok nemcsak a budapesti Óbudai-sziget, hanem más városi környezetben található dunai szigetek fejlesztésekor is irányadók lehetnek.

Az utóbbi évtizedekben a Duna-sziget, illetve az Óbudai-sziget közelmúltbéli történetét vizsgálva azt a következtést vontuk le, hogy az Óbudai-sziget elkerülhetetlenül komoly fejlesztések előtt áll, mely bizonyos szintű tervezett új árvízvédelmi megoldások tesznek majd lehetővé. A Duna-szigeti fejlesztések tanulsága, hogy az árvízvédelem műszaki megoldásával kapcsolatos

döntést ökológiai hatástanulmány kell, hogy megelőzze a valószínűsíthető ökológiai változások felmérése érdekében. Fontos az átfogó, egész szigetre kiterjedő rendezési, fejlesztési terv készítése.

A bécsi példa tanulsága, hogy megfontolandó a sziget fejlesztésébe a szomszédos parti sávot is bevonni, mely Bécs esetében a Kaisermühle városrész nyugati, Duna csatorna felőli része... Budapest esetében az óbudai partot jelenti.

A fejlesztések léptéke és volumene, a tervezett beépítések intenzitása nagyon kényes kérdés, és fontos, hogy ezeket a döntéseket gondos és teljesen elfogulatlan vizsgálatok előzzék meg.

A bécsi példa alapján az Óbudai-szigetre is egy zöld övezeti térkép elkészítése javasolható. Bécs esetében bevált gyakorlat, hogy egy állandó tanácsadó testület dolgozik folyamatosan a zöldfelületek konzekvens fejlesztése érdekében. Nagyon tanulságosnak bizonyult ez az utóbbi évtizedekben futó „fenntartási program”, melyben több hivatal (erdészet, hulladékszállítás, zöldfelületek, kerékpárutak és játszótérek fenntartói) vesz részt. Ennek, valamint a vendéglátóipari egységek bérleti szerződéseit előkészítő ügyvédek jó munkájának köszönhető a mai kialakult megnyugtató helyzet a bécsi Duna-szigeten. ©