

CONFERENCE AND MATCHMAKING THE FUTURE OF BUILDING - PROJECT VISITS IN VIENNA

Thursday, May, 18th 2017

TOUR 4 – GREEN INFRASTRUCTURE



www.gruenstattgrau.at

Investing into Green Infrastructure (GI) makes sound economic sense – a single area of land can offer multiple benefits, provided its ecosystems are in a healthy condition. Such healthy ecosystems, which are powered by the diversity of life within them, provide society with a stream of valuable, economically important goods and services such as clean water and air, carbon storage, pollination etc. They also play a central role in fighting climate change impacts by protecting us against floods and other environmental disasters. If these natural powerhouses are damaged, it is not just our biodiversity that suffers but society as a whole. Although ecosystems do constantly evolve, the recent pace of change in Europe has been unprecedented and has led to increased competition for space, especially in the more populated regions. The repercussions of such a fragmented and degraded landscape go well beyond the mere loss of biodiversity – nature will only deliver few and depleted benefits to people. In contrast, by focusing on nature-based solutions to improve our Green Infrastructure, we might be able to maintain healthy ecosystems, reconnect fragmented natural and semi-natural areas and restore damaged habitats, so they can provide us with more and better goods and services. Above all, GI offers us a smart, integrated way of managing our natural capital. All too often, the challenges we face today are approached in a highly segregated manner with little consideration for the complex interactions between major land use activities such as housing, agriculture, transportation and biodiversity. GI promotes dynamic forward-thinking solutions that enables us to tackle diverse and often competing land management issues in a spatially coherent manner, whilst at the same time enhancing the potential for multiple co-benefits and winwin solutions. GI investments finally create both high- and low-skilled jobs, such as in planning, engineering and building its elements as well as in restoring and maintaining urban and rural ecosystems.

© European Union

Tour 4 – Green Infrastructure will provide you with concepts and project of green infrastructure in Vienna.

09.00 DEPARTURE BY BUS

Austrian Federal Economic Chamber WKO | Wiedner Hauptstraße 63 | 1040 Vienna

09.35 – 10.35 RESIDENTIAL PARK | Süßenbrunner Straße 6-16, 1220 Vienna

The water circulation in the city is affected by soil sealing. The evaporation and seepage are very much reduced by rapid discharge into the channel. The lack of evaporation cooling exacerbates climate-induced summer overheating. Heavy rain events always lead to overloaded



channels and flooding. Rainwater management provides relief by using the natural water cycle as a model. Rainwater management combines water retention with evaporation and seepage. The integration of the systems into the open space makes the path of the rainwater visible. Rainwater management means green infrastructure instead of gray infrastructure!

In this project, rainwater is retained on site, evaporated and seepage. This counteracts the soil sealing and the urban warming (Urban Heat Islands) and relieves sewerage. The systems lying on the surface are easily visible and fulfil an environmental-forming function.

www.architekt-moosmann.com

10.35 – 11.10 TRANSFER BY BUS

11.10 – 11.40 MA 48 - PUBLIC BUILDING | Einsiedlergasse 2, 1050 Vienna



The building of the Department MA 48 of the local administration in Vienna was equipped with a green façade on the street side. A total of 2,850 meters of aluminium trays were installed on 850 m² façade. Approximately 17,000 plants, mainly perennials, grasses and herbs, were planted: evergreen loop flowers, bluegrass, catnip, springy peaks, common yarrow, pure thyme. Irrigation is carried out with over 3,500 meters of UV-protected dripping hoses. 12 individually controllable supply lines supply the plants with water. With the use of the vertical surfaces, the MA 48 will exploit the great potential for dust filtration and air improvement. The plant dressing offers a rain and wind protection as well as a positive influence on the sound and heat insulation.

It was completed in 2009. Since then, a monitoring program on the vertical wall has been running. This research provides information about impacts on building physics and microclimatic performance of the façade, water consumption, transpiration and the overall development of the vegetation layers over time.

www.green4cities.com

11.40 – 12.00 TRANSFER BY BUS

12.00 – 13.00 BOUTIQUEHOTEL STADTHALLE | Hackengasse 20, 1150 Vienna



An old building with an inner courtyard situation, converted into a zero-energy house, was extended on the courtyard side by a one-storey building complex with a green roof. On the roof of the extension, 145 m² of intensive roof greening and 140 m² of extensive greening were created. These roof surfaces are used as water restoration areas and serve to cool the hotel's outdoor space. The facades of the old building and the

extension are additionally equipped with ground-bound greenery. A rainwater cistern with a capacity of 10,000 l was also built during the conversion. 200 m² of rainwater can be collected annually with the help of a 200 m² floor area of the old building. This is used for irrigation of the green area as well as for the hotel's own toilet facilities. In 2013, the street side facade of the boutique hotel was extended by a 200 m² wall-bound greenery. Water is transpired by the intense, flat plant growth, a cooling effect of the immediate ambient air can be observed. Several rainwater management structures were combined here to a sustainable overall concept as far as possible.

www.biotope-city.net | Photo: © DI Heinrich Trimmel

13.00 – 14.15 LUNCH AT RESTAURANT KENT | Märzstraße 39, 1150 Vienna

14.15 – 14.30 TRANSFER BY BUS

14.30 – 15.30 SCHOOL BUILDING “GrünPlusSchule” | Kandlgasse 39, 1070 Vienna



In a project carried out by Vienna University of Technology at a school in the Kandlgasse, in Vienna's 7th district, ultra-efficient systems involving various kinds of plants and substrate in conjunction with photovoltaic modules (PV) are being tested. The project team

analyses how greenery influences the building's temperature and humidity, the potential for saving energy, indoor air quality and humidity, noise reduction, water retention and urban heat-island effects. Planting the building with greenery is expected to improve its microclimate, lower concentrations of carbon dioxide and particulates, absorb noise and boost the efficiency of the PV modules (inter alia).

In 2015 the school was equipped with various arrangements of plants, substrates etc., indoors and outdoors. Combining PV modules with plants on a building is a novel approach. On hot summer days the modules are cooled by evaporation from the plants, making the modules more efficient. The plants are shielded by the modules, so they grow well. Numerous sensors record the most significant data inside and outside the building; these data are used to compare the performance of structures with and without greenery and the effect of the plants is assessed quantitatively.

www.energy-innovation-austria.at | <http://nachhaltigkeit.big.at>

15.30 – 15.45 TRANSFER BY BUS

15.45 – 16.45 MA 31 | Grabnergasse 4-6, 1060 Vienna



The vertical structure of the building is from the 1960s and was taken especially into consideration. The rhythm of the reliefs of pilasters, parapets and window levels remain largely intact and are strengthened by steel supports and trellises. Staggered planters over two window axis produce a new pattern in conjunction with the existing vertical structure. Depending on your location and viewing angle, the visibility of the original plaster facade changes. From vis à vis you will see more of the rhythm of the 60's façade but by changing the angle of view, especially from a distance,

condenses the added garden structure to a dense green wall, obscuring the underlying plaster façade. The calculation provided by the civil engineer indicated that it was not possible to add any load to the existing structure of the façade. However, it was possible to build the new carrying structure on its own foundation directly in front of the building. On the hollow rectangular supporting columns, planters were directly attached, which helped to stiffen and strengthen the supporting structure, as well as provide a large container for plants and provide shade from above. The large planting area also makes it possible for vines and other climbing plants to grow larger on the trellises from floor to floors and heights beyond. These vegetated trellises produce lateral shade during the vegetation period of spring and summer. The addition of evergreen vines produces lateral shade even in winter, although to a lesser extent. The division of the trellises are so formulated that they create the best support for the plants as well as a visually appealing facade. The planters are offset with fixed sunblinds and result in a changing constellation with an extensive overall pattern beginning at the Facade above the ground floor. The plants, planters and sunblinds provide optimum shading and at the same time allow an open view from the inside of the building out.

www.rataplan.at

16.45 – 17.00 TRANSFER BY BUS

17.00 END OF THE TOUR AT WKO | Wiedner Hauptstraße 63, 1040 Vienna
