



Transforming public spaces towards user-friendly, climate resilient and energy producing spaces - the BARTLETT

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Urban areas are severely affected by climate change, as the associated increase in temperature and precipitation intensity are further exacerbated by the prevailing morphology of densely built areas and the prevalence of sealed surfaces. Especially heat has been recognised as an increasing risk and therefore, appropriate adaptation measures such as nature-based solutions (NbS) have been studied extensively.

Space is scarce and valuable in cities and the usability of urban spaces has gained a growing attention in the last years – not only in the sense of climate adaptation but also for climate protection, as the energy transition calls for the implementation of renewable energy sources, where public spaces offer great potential for PV-suitable areas. In addition, an increasing number of people living in cities demand more living space and put even more pressure on available public spaces.

These three aspects form the basis of the presented study, where a highly frequented public space, the Volkertplatz in Vienna is chosen to be transformed into a climate-resilient, user-friendly and energy-generating space. To achieve this, the following steps are necessary: (i) analysis of the current and future local climate conditions, (ii) incorporating and understanding the needs of the local users, (iii) design of the BARTLETT (Blue-green energy-generating canopied seating and communication facility) and (iv) implementation of an appropriate process of involvement of the local authorities.

The analyses show that the current design of the space prevents the infiltration of rainwater, intensifies the prevailing heat load in summer and mainly meets the needs of male users. Therefore, the transformed space needs to reduce the identified barriers in order to improve the quality of the Volkertplatz. A key element is the BARTLETT, a construction that improves the local microclimate, collects rainwater for irrigation of the plants and produces energy through the installed PV collectors. Furthermore, the design enhances the usability of the square by different groups, providing both open and more hidden spaces. To ensure the acceptance of local citizens,

their needs have been identified, their behaviour observed, and their opinions incorporated through workshops. As important as the local support, is the timely involvement of relevant political stakeholders, which is ensured by the project partners and collected in a handbook to allow transferability to other public spaces.