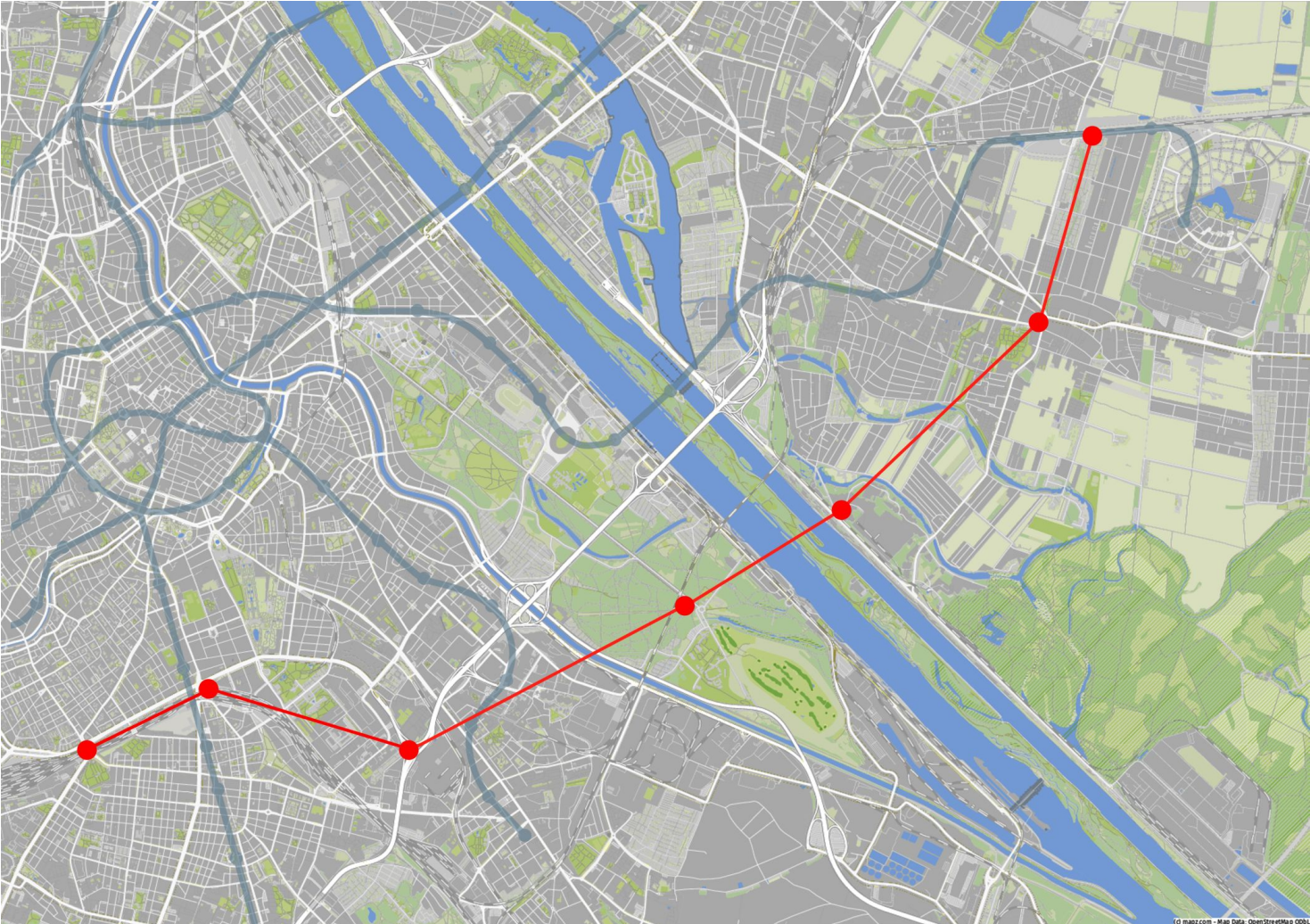
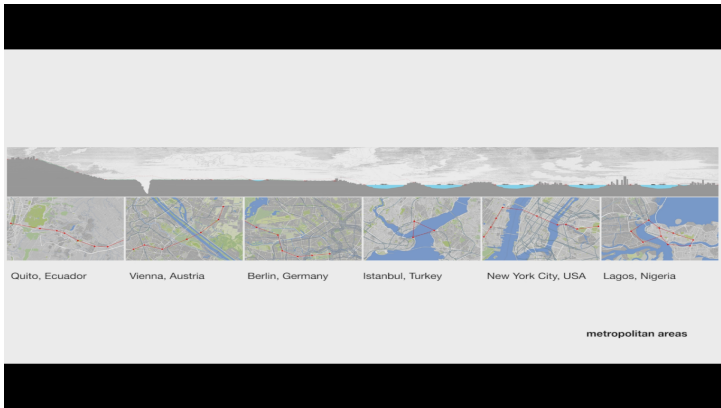
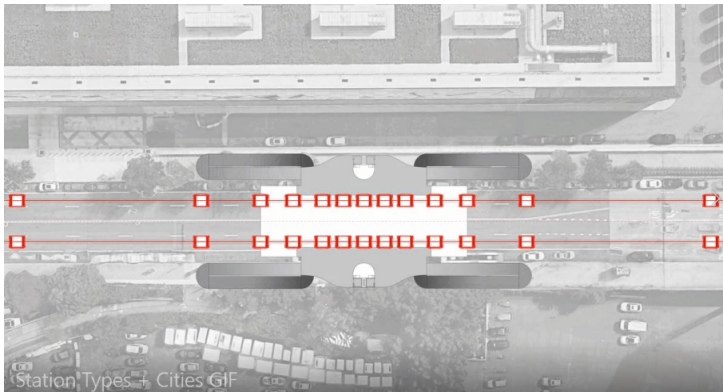
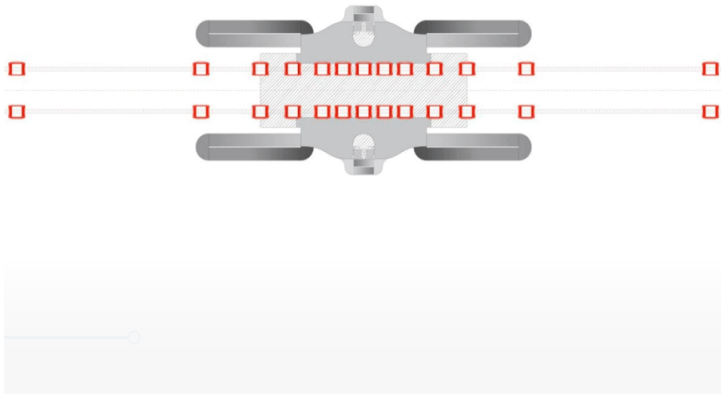


Urban public transport



Gallery



Research abstract for cable car implementation


1.

As architects, we have been dealing with urban planning in various cities for some decades. In the course of our ongoing independent urban planning research and practical planning, we have repeatedly encountered the following problem: due to the rapid spatial expansion of cities, they have become penetrated with impediments resulting from the inherent topography and historically grown technical facilities. In addition, the expansion of local public transport, due to the preferred and space-consuming automobiles (cars) since the 1950s, was delayed and partially moved underground (subway). As a result, the inner-city free traffic areas are largely occupied and congested by cars. Local public transport can only be later used by the displacement of valuable surfaces. (Even flying cars wouldn't change that, because they too have to be parked.)

We describe "special situations" in the urban context as breaks or barriers in an otherwise homogeneous, overgrown urban landscape, which separates over time and pushes "scarring" into the urban fabric, such as: abrupt differences in heights, partitioning bodies of water, green areas worthy of protection, concentrated industrial plants or large-scale traffic facilities.

Due to the impossibility of a connection with usual means of transport for reasons such as: too great of a height difference (topographical) for buses or trains, the slow speed of boats on bodies of water, paved surface areas in green corridors, no excess space on existing industrial or traffic facilities. Therefore, other development parameters must be found and advanced here.

2.

The in-situ spatial obstacles that arose in this way hinder smooth public transport (road, subway, bus, tram) which, due to the above-described breaks and barriers in the now greatly enlarged metropolitan area of  the city, is reaching its limits in terms of traffic. Therefore, they now require specific new solutions.

In the course of our work, we have had large experience with the design, implementation and construction of cable car systems and can confidently state that a suitably sophisticated cable car system can be part of the solution for this missing link in the city's network.

The possibility of using ropeways in the above situations is justified by the fact that, with the appropriate system, the properties of this technical device can be ideally used: easily and effectively overcome differences in height; achieve an energy saving effect, for example by the gondola going up, which hangs on the same rope as the gondola going down; with ropes in the air overcome obstacles such as bodies of water or valleys of up to 1.2 km with support-free spans; reduce footprint

because structural interventions are only required at certain points along the route and because stations can be raised above traffic areas; mitigate common public transport disadvantages because the system works silently and is emission-free on route; necessary changes of direction in the course of the route take place at stations.

Thanks to synergies with mobility within an urban structure and thus a strengthening of connected districts, the cable car is inexpensive and efficient compared to other public transport. Due to the relatively small amount of civil engineering work required, a ropeway can be built much more quickly and is relatively easy to operate and maintain (see approx. comparison table). The gondola runs autonomously, staff is only required at the stations.

An important factor in setting up a new public transport system that should not be underestimated, in setting up an absolute, inclusive accessibility that goes beyond safety requirements. These considerations are also possible with ropeway systems, especially in the station area, even without technical aids - in contrast to e.g. subway.

3.

On a scientific level, the strategic recommendation for action to the respective urban planning bodies is to take into account the suitability of using a cable car in the respective urban public transport network, with consideration to the above mentioned parameters. In order to showcase the benefits of an additional offer for mobility in a city, with regard to optimized energy consumption, the least possible paved surfaces and space consumption and almost silent and safe passenger transport, we have used examples from our many years of research and some urban situations known to professionals to illustrate the properties and potential of this transport system for public transport, prototypically and to hereby present these dispositions for discussion.

Georg Driendl 2.11.22

Info

Category
Communication, Master
Planning, Infrastructure/Traffic,
Cable Car

Commissioner
d*a

Period
2017-

Type
self-initiative

Status
ongoing

Team
Metroferico Quito:

InOneRide:
<https://www.metroferico.com/>

Doppelmayr:
<https://www.doppelmayr.com/>

Baucon:
<https://www.baucon.at/en/>

Mühlbach:

iPM - Marcus Pescollderungg:
<https://www.ipm.bz/en/home.html>

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