City Afoot - What the State-of-the-Art Walkable City Looks Like

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Fig. 1: Pedestrianzone Kärtnerstraße 2021
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Fig. 2: Mariahilferstraße around 1913
(ÖNB Bildarchiv)

Relevance of Walking

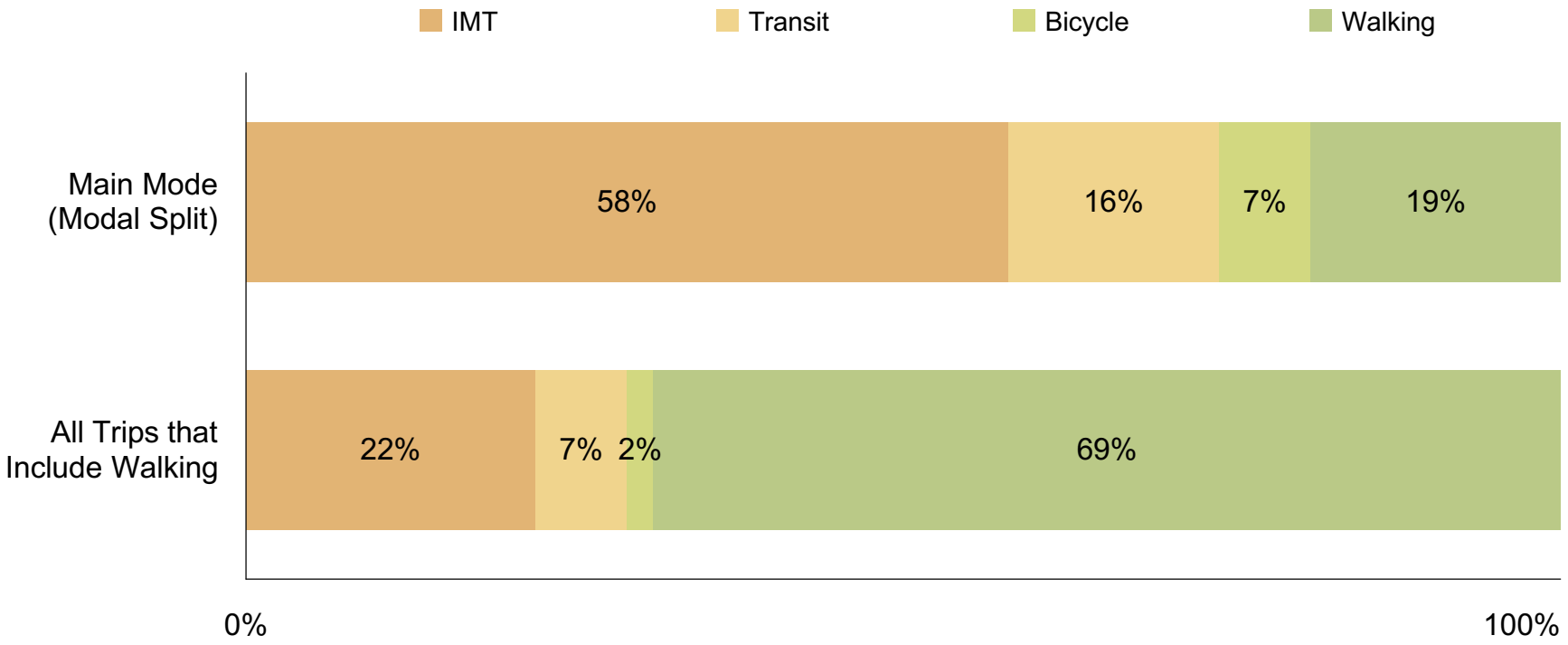

Fig. 3: Walking as a mode of transport in percentage of total travel (Based on VCÖ 2016)

Questions

What would a new state-of-the-art walkable city look like today?

- Can currently valid research results be applied at all in a practical design process?
- Which problems arise during the implementation in this context?

Walkability and the Built Environment

Factors of the built environment that influence walkability:

Walkability and the Built Environment

Factors of the built environment that influence walkability:

- Density
  - Population density, employment density, building density, network density

Walkability and the Built Environment

Factors of the built environment that influence walkability:

- Density
- Diversity
  - Diversity of Uses: Living, working, supply, leisure and education and traffic
  - Especially on the ground floor and in public space

Walkability and the Built Environment

Factors of the built environment that influence walkability:

- Density
- Diversity
- Design
  - Functional Design - Permeability: Intersection density, street connectivity, sidewalk continuity, block size
  - Qualitative Design - Attractive Environment: Visual, auditory and haptic perception of public space and ground floor
  - Quality of Stay - Places to stand and sit, soundscape, thermal comfort, social life

Walkability and the Built Environment

Factors of the built environment that influence walkability:

- Density
- Diversity
- Design
- Distance to Transit
  - Dense network with frequent service for longer distances - decreases dependency on IMT

Walkability and the Built Environment

Factors of the built environment that influence walkability:

- Density
- Diversity
- Design
- Distance to Transit
- Destination Accessibility
  - Local and regional accessibility

Walkability and the Built Environment

Factors of the built environment that influence walkability:

- Density
- Diversity
- Design
- Distance to Transit
- Destination Accessibility
- Demand Management
  - Induced traffic and true cost pricing

Walkability and the Built Environment

Factors of the built environment that influence walkability:

- Density
- Diversity
- Design
- Distance to Transit
- Destination Accessibility
- Demand Management
- Demographics

Research Area

Fig. 4: Wien Westbahnhof (wien.gv.at)

Diversity - Zoning

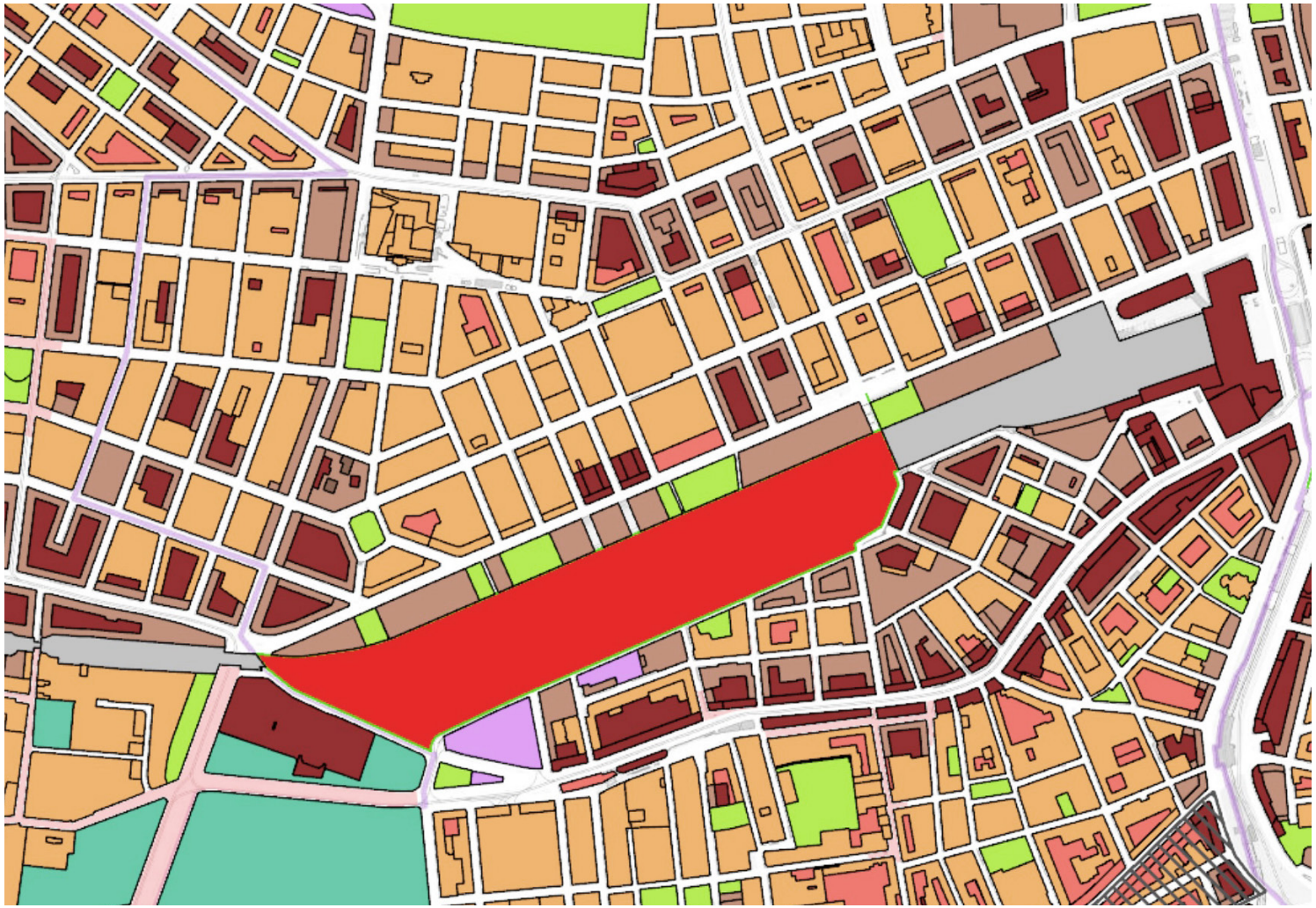

Fig. 5: Generalized Zoning (wien.gv.at)

Diversity -
Ground Floor Uses

Fig. 6: Actual Uses
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Design - Facades

Fig. 7: Facades
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Demand Management

Fig. 9: Typical secondary street north of the Westbahnhof

Fig. 8: Typical secondary street south of the Westbahnhof

Research by Design

Fig. 10: Site Plan, the Block size provides frequent route choice, park provides cooling

Fig. 11: Pedestrian Network provides optimal connectivity considering topography and train connection

Public Transit

Fig. 12: Isodistance map for low ranking public transport (200m & 400m), Status quo

Fig. 13: Isodinstance map for low ranking public transport (200m & 400m), Design

Streets

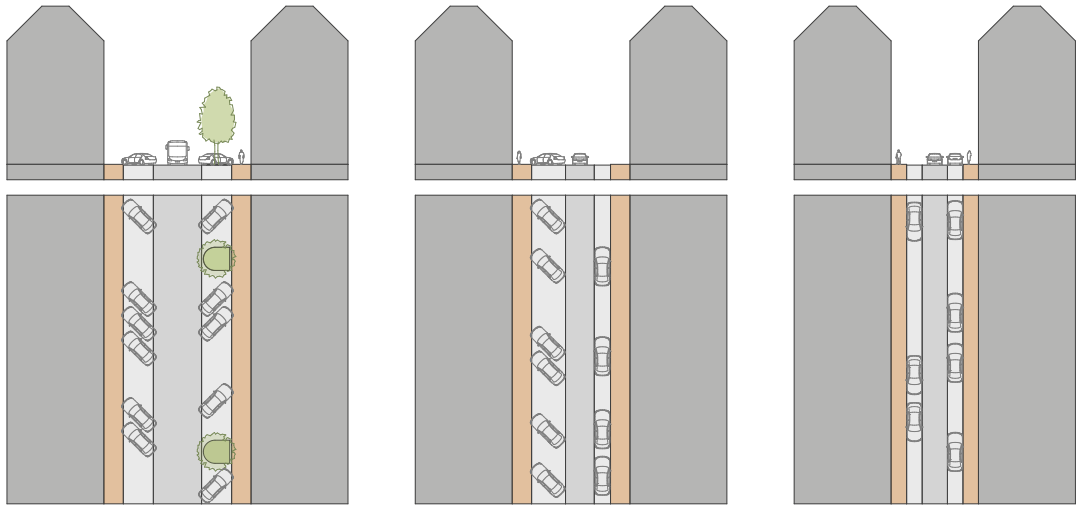

Fig. 14: Status quo street section - more than 50% of the space is designated to IMT

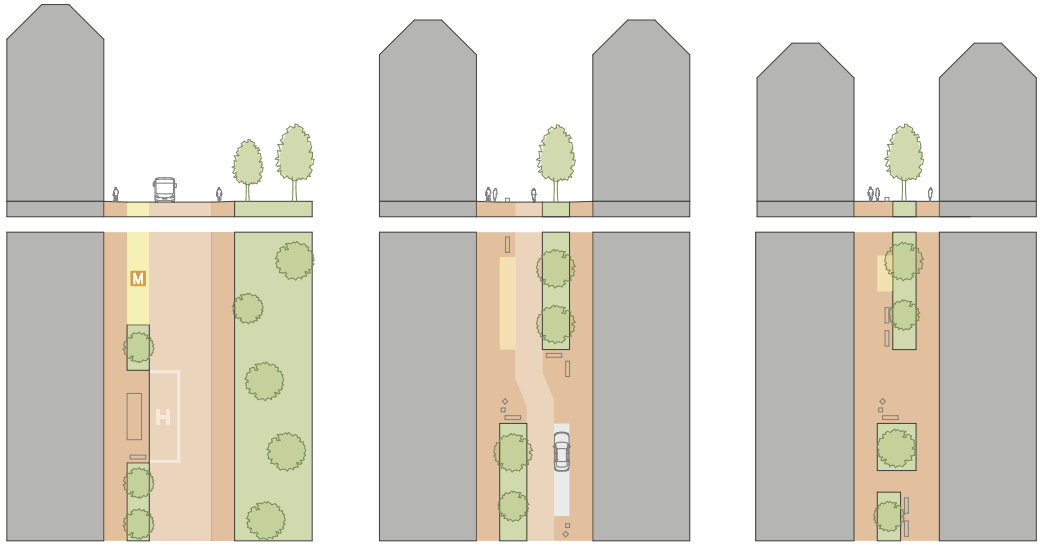

Fig. 15: Design street section, shared space that offer seating, trees, bicycle parking

Comparison to Historic Structures

Compared to historic 19th century structures, the designed structure offers:

- Wider streets
- Semipublic courtyards with connection to streets
- Less sealed surfaces
- Green spaces and street trees

Learnings and Conclusion

Factors of the Built Environment that influence Walkability:

- Structures must be functional, comfortable and offer high quality of stay
- Theoretical knowledge can indeed be applied in a practical design process
- Walkability can only be effectively established when it is considered at all planning steps
- Mentioned needs of pedestrians do not always correspond with the legal situation in Vienna
- Appropriate tools for pedestrian friendly development not always available

Thank You!

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Fig. 16: Johannagasse, Vienna