

# Urban Breezes

## **From Sustainable Cities to Sustainable People – Making Behavior Change towards Sustainability a Priority in Urban Planning Processes**

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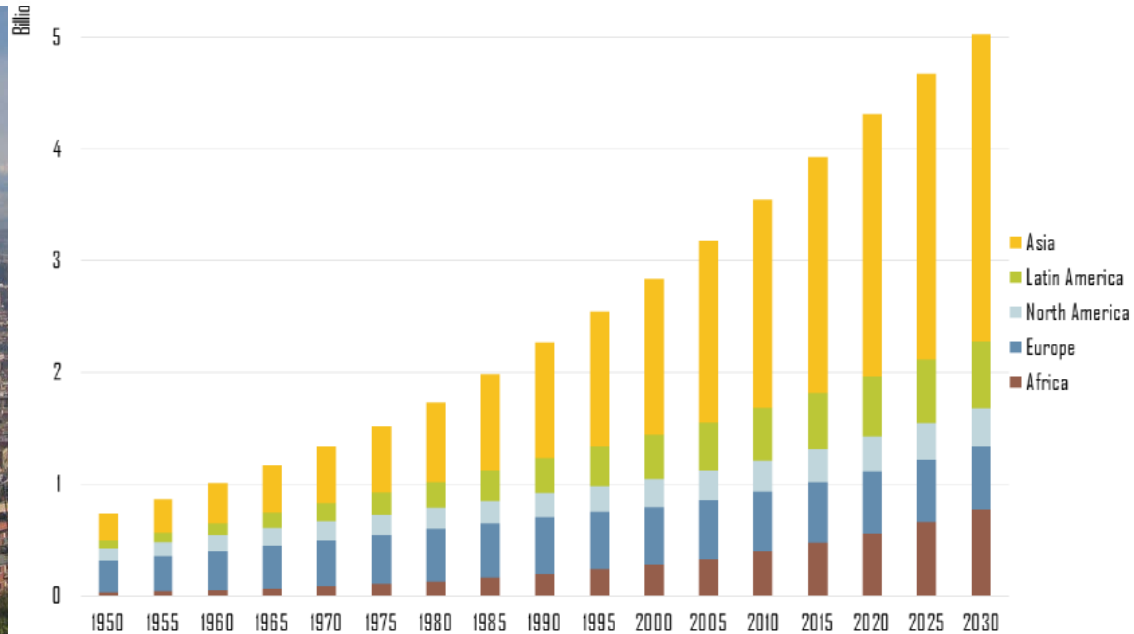
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**“largest wave of urban growth in history”** (United Nations)

- 50% of the world’s population now lives in towns and cities
  - by 2030 this number will go up to about 5 billion







**Cities are the main contributor to climate change,  
“consuming  $\frac{2}{3}$  of the world's energy  
and creating over 70% of global CO2 emissions” (C40)**





## Urban Planning towards Sustainability

Green Cities – Eco-Cities – Sustainable Cities – Resilient Cities – Smart Cities



But not every city is successful.....



# Solar City Linz, Austria

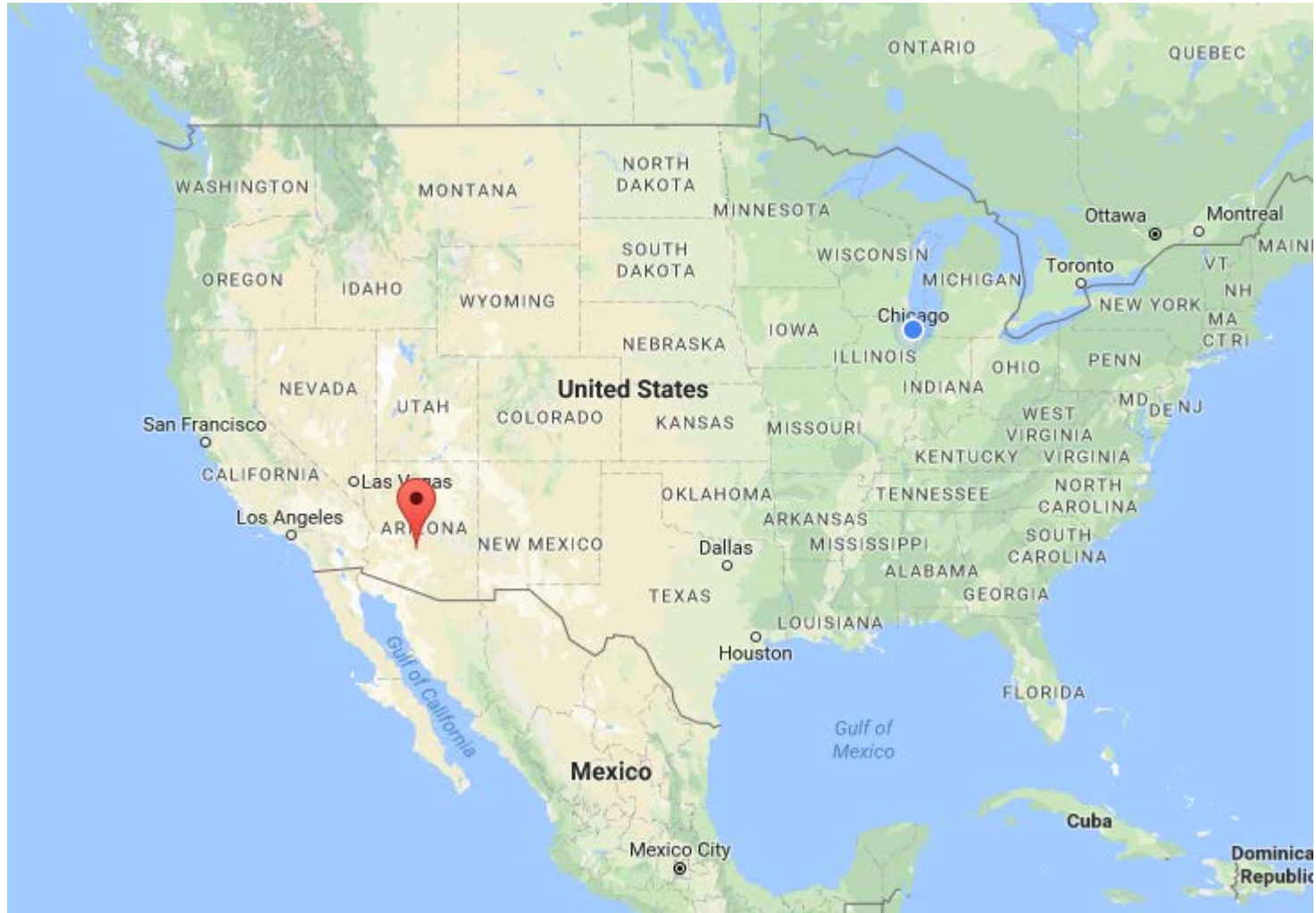




# Solar City Linz, Austria



# Phoenix, AZ





# Phoenix, AZ





# Phoenix, AZ





## PLAN versus REALITY

- Building public transit systems doesn't guarantee that people use them.
- Building resource-efficient buildings doesn't guarantee that the occupants use less energy.

**“To plan is human, to implement divine.”**

*(Janice E. Perlman, Eco-City World Summit 2011)*

- Why are some sustainability projects successful and others are not, even though they are following similar strategies and objectives?
- What is missing in current planning approaches?





# What can make a sustainability project work out successfully?

## **(1) Cities focus too much on the technical problem and its technical solution.**

- The most important “component” of a city and the factor that can make a city more sustainable are the people who live, work, and play in it.
- Only their decisions can make a sustainability project work out successfully.

*“Solutions for this challenge have to be found by combining technological and socio-behavioral strategies [...]” (Verdugo et al, 2003, p. 247)*

## **(2) Sustainability is not about technology, but about changing behavior of ordinary people who are living their ordinary lives.**

- We can't expect people to behave sustainably just to behave sustainably.
- Environmental knowledge does not correlate with environmental action.

*“Each individual [...] is self-interested, that is, behaves mainly so as to advance his or her own interest.” (Gardner/Stern, 2002, p.23)*

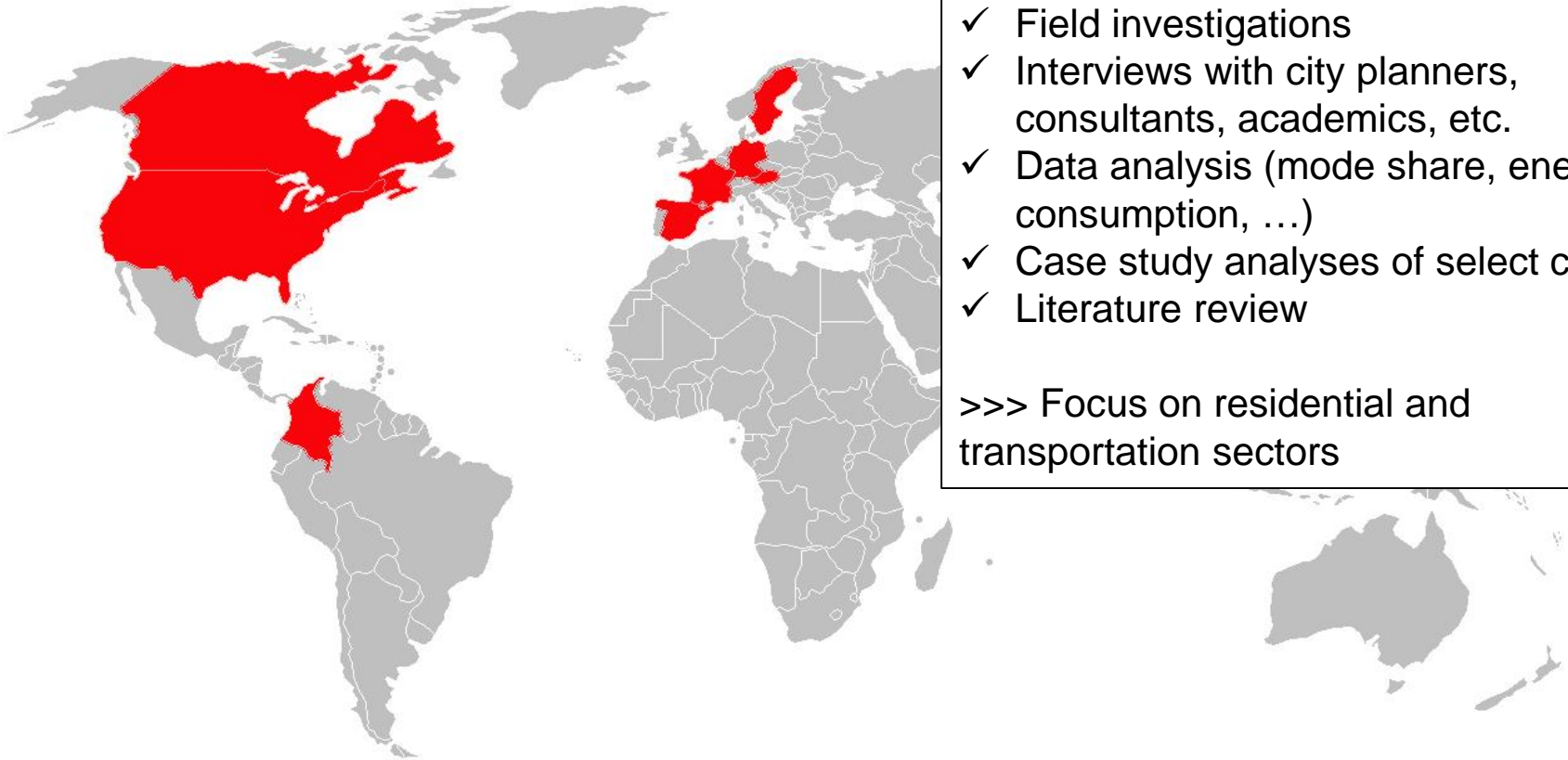
# What can make a sustainability project work out successfully?

## **(3) Urban planning should be about creating an environment that allows and motivates sustainable behavior.**

- Urban planning is not just about buildings and infrastructure, but about how people live.
- Decisions are shaped by the environment people live in.
- The urban planner's task is to create an environment (a city) that allows people to make sustainable decisions in their self-interest.

*“[...] the environment can be manipulated. [...] man's genetic endowment can be changed only very slowly, but changes in the environment of the individual have quick and dramatic effects.” (Skinner, 1971, p. 18f.)*





### **Methodology:**

- ✓ Field investigations
- ✓ Interviews with city planners, consultants, academics, etc.
- ✓ Data analysis (mode share, energy consumption, ...)
- ✓ Case study analyses of select cities
- ✓ Literature review

>>> Focus on residential and transportation sectors

# What can make a sustainability project work out successfully?



## The 5 Factors of Behavior Change

The Five A's	Definition	Examples
<b>Availability</b>	Sustainable options must be available. The availability of unsustainable options has to be limited.	Walkable distance (500m) to at least one bus or train station from any point in the city; limited parking throughout the city; etc.
<b>Accessibility</b>	Sustainable options must be physically and legally accessible. The accessibility of unsustainable options must be limited.	Public transit accessibility of any point in the city; growth boundaries regulated by law to minimize sprawl & optimize transit use; etc.
<b>Attractiveness</b>	Sustainable options must be attractive in terms of beauty, comfort, safety, and quality. Unsustainable options must be less attractive than sustainable options.	Bus/train frequencies <5 min. during the day; lighting in stations and pedestrian areas for safety; pedestrian areas and shared streets; traffic lights in favor of busses; etc.
<b>Affordability</b>	Sustainable options must be affordable and less expensive than unsustainable options.	Road pricing in cities and on highways; attractive transit passes; free transit or incorporation of price in property tax; etc.
<b>Awareness</b>	People must be aware of the availability, the accessibility, the attractiveness, and the affordability of sustainable options as well as the benefits of choosing them over the unsustainable options.	Create awareness of benefits of sustainable options by obvious design (e.g. visible subway stations), laws and regulations, information and education (e.g. car-free day).



# The 5 A Planning Approach towards Sustainability

- ✓ Sustainable options have to be **available, accessible, affordable, and attractive**.
- ✓ Unsustainable options should not be / be less available, accessible, affordable, and attractive.
- ✓ People have to be **aware** of the advantages and benefits of choosing the sustainable option over the unsustainable one.
- ✓ The five A's have to be integrated into a planning process as **motivators for sustainable behavior** and **discouragement from unsustainable behavior**.
- ✓ **All five A's** have to be applied.
- ✓ **The interrelations between the five A's** are important as well!

# Availability



# Accessibility





# Attractiveness - safety



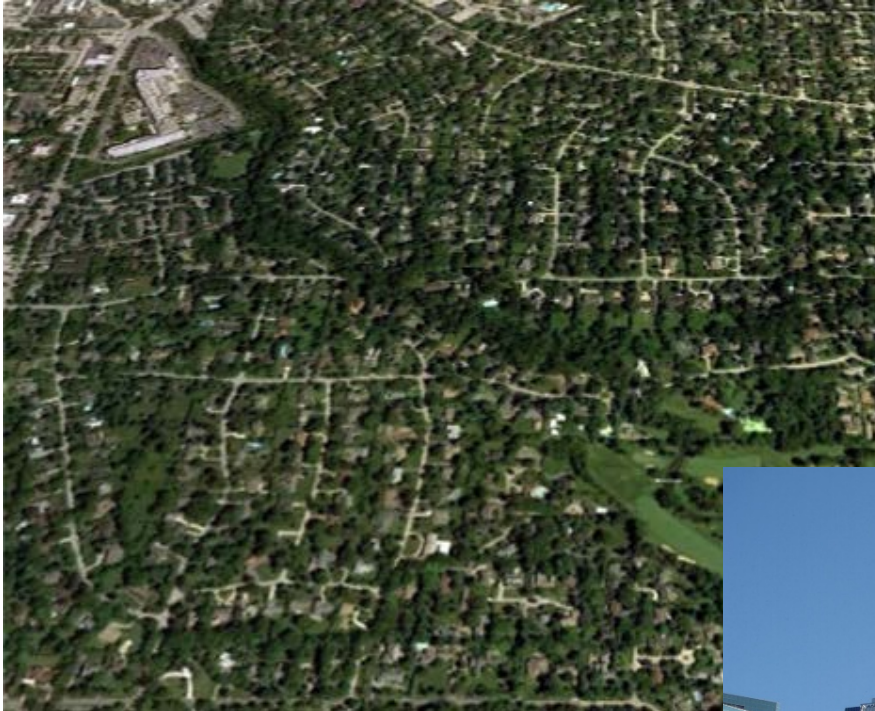


# Attractiveness - beauty





# Affordability





# Affordability and Awareness



# Awareness and Availability



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**Thank you!**

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