



University Alliance for Sustainability  
Spring Campus, Berlin, 2016 April 11-15  
“Connecting Communities for Sustainability:  
Do Universities Matter?”

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# A Sustainable Campus in a Sustainable City: Leading Urban Transformation by Example

*Towards sustainable, liveable, smart, climate- neutral, resilient.....cities*

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- Sustainable Campus awareness background
- Current reported research on a Campus sustainability
- A Concept question: what is a sustainable city and Campus?
- How urban transformation can be lead by a University?
- Saint Petersburg State University urban Campus
- Ideas for the University in the City
- Policy & capacity building



Earlier than Brundtland (1987)!

Stockholm Declaration of 1972, which followed up from the first United Nations conference on environmental issues, mentions the need to promote environmental education



## Sustainable University

1. A Sustainable Campus (usually large space)
2. People – education, lifestyle

## Sustainable University

1. Internal operations (educational outputs & procurement)
2. External impact (on the urban physical and social environment)



Scopus:

Inclusive

Tobacco-free

Transport modes

Landscape planning

Wildlife

Cultural shape

Ecological shape (culture, landscape)

Low carbon

Digital

Offshore campus 😊



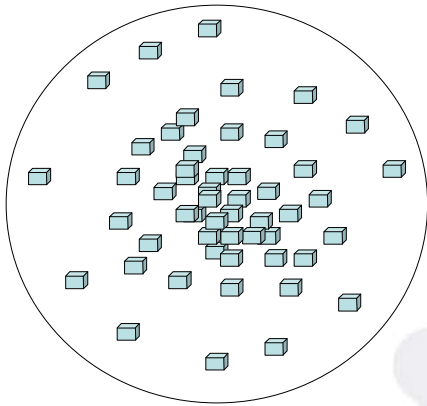
# Current reported research on a Campus sustainability

Sustainable campus indicators	Unweighted index formulae
CO <sub>2</sub> emissions within the institution over a year	Determine a minimum and a maximum CO <sub>2</sub> total amount. Any value which is greater than the maximum total amount will be given a mark of 0 while any value lower than the minimum total amount will be given a mark of 100. $100 - [(observed\ value - min\ value) / (max\ value - min\ value) \times 100]$ . Index: 46
Water consumption within the institution over a year	Same formula used for CO <sub>2</sub> emissions. Index: 52
Energy consumption within the institution over a year	Same formula used for CO <sub>2</sub> emissions and water consumption but energy consumption is expressed in terms of its TOE. Index: 43
Portion of renewable energy used	Total percentage. Index: 5
Paper consumption within the institution over a year	Same formula used for CO <sub>2</sub> emissions but show here the amount of kilos of paper used. Index: 60
Portion of environmentally-friendly products used	Total percentage. Index: 25
Amount of waste within the institution over a year	Same formula used for CO <sub>2</sub> emissions but show here the amount of waste in kilos. Index: 40
Portion of Staff members not using their vehicle to get to work	Total percentage. Index: 43
Portion of HEQ certified property	Total percentage. Index: 5
Portion of green open space	If we consider a campus as being made up of no more than 50% of green open space, then multiply this percentage by 2 to give it a score out of 100. Index: 30

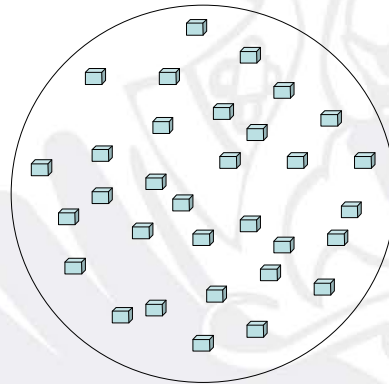


# A Concept question: what is a sustainable city and Campus?

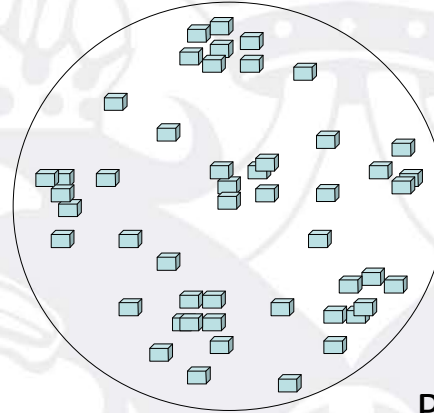
## Sustainable University - external impact - urban physical environment



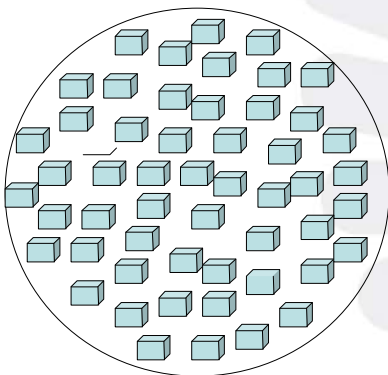
Monocentric



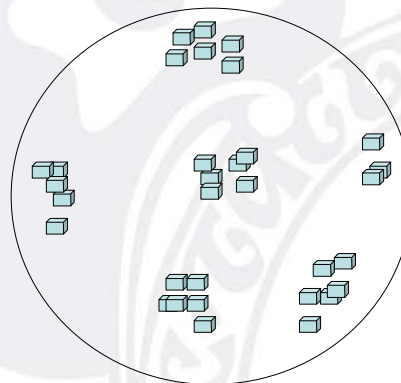
Sprawling



Polycentric



Compact



Combination  
of activity  
centers



## How urban transformation can be lead by a University?

- Transport modes
- Physical Landscape (design, culture, ecology, energy)
- Lifestyle (procurement, consumption)







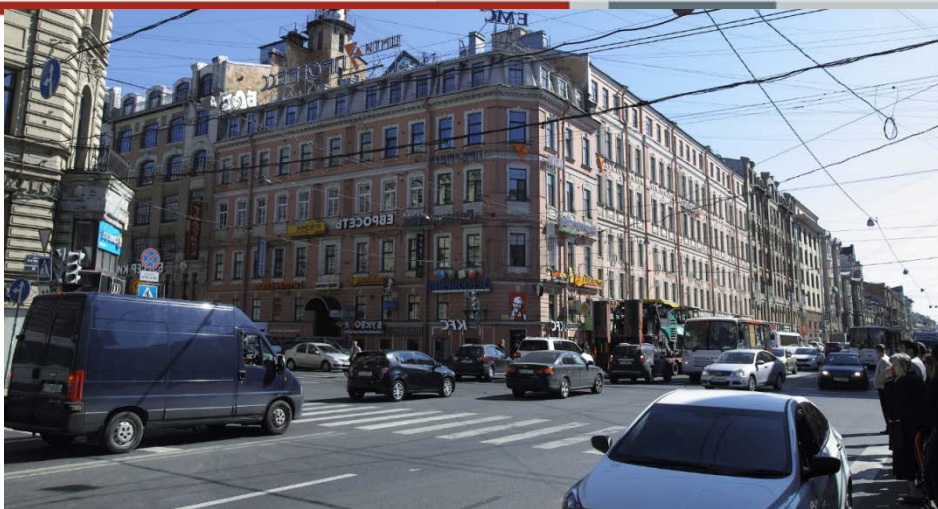


Diverse and spread Campus

- Green roofs?
- Motor transport? Parking?



# Saint Petersburg State University urban Campus



Transport challenges



Russia's hot topic

– the right of way (fences through public spaces)

Saint Petersburg State University urban Campus challenges

-Visibility beyond cultural heritage (are Innovations somewhere around?)

-Urban mobility: leading by example? (a difficult question)



- University staff master planning (leasing) officer
- Policy towards the city
- University as a tool for the city Administration to mainstream sustainability agenda (opportunity for financing?)



# Thank you for your attention!

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Key papers:

Carlos J.L. Balsas (2003) Sustainable transportation planning on college campuses. *Transport Policy* 10 (2003) 35–49

Eric Olszak (2012) Composite indicators for a sustainable campus—Design rationale and methodology: The case of the Catholic Institute of Lille. *Ecological Indicators* 23 (2012) 573–577

Beena Patel & Pankaj Patel (2012) Sustainable campus of Claris lifesciences through green initiatives. *Renewable and Sustainable Energy Reviews* 16 (2012) 4901–4907

Yorke, D.M., 1987. Indicators of institutional achievement: some theoretical and empirical considerations. *High. Educ.* 16 (1), 3–20.

Author's Publications:

Bobylev, N (2016) *Underground Space as an Urban Indicator: Measuring Use of Subsurface*. *Tunnelling and Underground Space Technology*, Elsevier. Volume xx, Issues xx,

Bobylev N, Hunt DVL, Jefferson I, Rogers CDF, (2013) *Sustainable Infrastructure for Resilient Urban Environments*. Published by Research Publishing. pp. 906 – 917.

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