The process of urbanization has changed fundamentally in recent years. The new contemporary parameters, like informational technology, the neo-tertiary economic sector, and the globalisation process require a major revision of the urban theses with which we operate, and which are still a reflection of the old paradigms resulting from the Industrial Revolution, of mechanical technology and single-scale nation-state. In a full time post-fordist, digital, individual-oriented, urbanised and globalized world, however, the way in which cities develop has profoundly changed. It is currently not easy to translate the deep contemporary change, between “the old solid society and new liquid modernity” (Baumann, 2000), into a theoretical framework as well as into agency schemes. Fluctuations in population, in mobility, in the natural resources and energy, including fluctuations in the intensity of spatial configurations, are a consequence of the functional indefiniteness which occurs today in many cities. These are new parameters which turn the urban space into an open, dynamic, and comprehensive system much, which makes possible to identify various cities inside the same city. A new language and a new theoretical approach must be developed in order to understand present-day urbanization processes.

The major change in the contemporary urban phenomenon is probably to be found in two main overwhelming mutations: the predictable end of the absolute urbanization and the emergence of an actor's society. The classical process of urbanisation as a transfer of rural population into morphologically urban spaces is still in progress, with, for instance, dramatic translations of hundreds of million of people towards Chinese cities. In all the developed country and in some emerging areas, rural societies are quickly disappearing while peri-urban or exurban sprawl often encompasses old villages and an apparently untouched countryside. Urbanisation has therefore turned relative: it consists of the 'injection' of urbanity inside already urbanised areas, whatever the appearance of their landscape can be like. In brief, the individual-society relationship is more and more direct, skipping and weakening old communal links. The kind of society in which individuals deploy their strategic competences is an urban multi-layer society. We are living in almost totally urban societies in which ‘ordinary people’ have become the main actors.
USUM - Urban Systems and Urban Models is a research program part of the SCPA - Swiss Cooperation Programme in Architecture. The principal objective of the SCPA is to promote and establish the cooperation between the Swiss higher education architectural schools as regards research and teaching, the latter on an undergraduate as well as postgraduate level. Thus, it is in line with the main strategic objectives of the Swiss research and higher education policy, where the cooperation in the field of architecture is explicitly requested by the BFI message 2008-2011. The programme comprises the USI - University of Lugano, the two Federal Institutes of Technology in Zurich (ETH Zurich) and in Lausanne (EPF Lausanne), as well as the University of Applied Sciences of Southern Switzerland (SUPSI). The programme focuses on four main areas inside architecture research and education: urban studies, urban design, environment and landscape; theory and history of architecture; renovation and restoration, construction and building technologies.

More specifically, the partners of USUM are the Institutes of the Swiss high schools of Architecture focused on urban studies, which are i.CUP - institute for the Contemporary Urban Project / AAM-USI, Chôros Laboratory / SAR / ENAC / EPFL, ETH Studio Basel / ETHZ. The research is a study on contemporary city and urban space which focuses on two main topics: the renewal of the systemic approach to the city and the nature of urban/public space in the globalization era.

The research is therefore organized in 3 work packages interdependently cooperating and exchanging knowledge:

**WP1. Urban systems in the global urbanization era**
Metabolism studies as urban agenda  
- resp. Prof. Josep Acebillo (i.CUP/USI AAM)

**WP2. Patterns and pathways of global urbanization**
Comparative analysis on world urbanization processes on a large scale  
- resp. Prof. Dr. Christian Schmid (Faculty of Architecture ETHZ)

**WP3. Urban/public spaces in the global urbanization era**
Comparative analysis of world urban spaces on a medium scale  
- resp. Prof. Dr. Jacques Lévy (SAR Chôros, EPFL)
USUM Research Structure

SCPA - USUM
Urban Systems and Urban Models

Prof. Josep Acebillo, responsible WP1
Prof. Christian Schmid, responsible WP2
Prof. Jacques Lévy, responsible WP3
Marcello Martinoni, USUM coordinator - secretary

USUM - WP1
Urban systems in Global Urbanization
Metabolism studies as Global Urbanization agenda

Prof. Josep Acebillo
Enrico Sassi
Paola Caputo
Paolo Giordano
Alberto Vancheri
Prof. Gian Paolo Torricelli
Elena Molteni
Stanislava Boskovic Sigon
Simone Garlandini
Alessandro Martinelli

USUM - WP2
Patterns and Pathways of Global Urbanization

Prof. Christian Schmid
Pascal Kallenberger
Anne Schmidt
Monika Streule

USUM - WP3
Globalization and Urban and Public Space

Prof. Jacques Lévy
Prof. Gian Paolo Torricelli
Dr. Véronique Mauron
Monique Ruzicka-Rossier
Annelore Schneider, webmaster
Simone Garlandini
Paolo Dos Santos, Student assistant - web
Frédéric Gökçiyel, Student assistant - social sciences
At the Università della Svizzera Italiana will be held a scientific meeting about globalization of urbanity. This initiative belongs to the cooperative scientific project Urban Systems and Urban Models.

Monday 19th July. An international symposium introduces the program, in which USI President Pietro Martinoli, Paolo Beltraminelli deputy of Lugano Municipality and Christoph Frank, vice-director of the Accademia di Architettura, will give an official speech. Following, the conferences of the three scientific meetings' promoters: Prof. Acebillo with his guest Aleksandar Ivancic, Prof. Schmid with his guest Prof. Brenner, and Prof. Lévy.

Tuesday 20th July. The program focuses on the concept of “model” and global urban development’s pathways. Prof. Schmid from the Polytechnic of Zürich will show methods of analysis of the urbanization process, integrating observations about the potentiality of comparative urban studies. The notion of public space introduced by Prof. Lévy will be tackled from different points of view. A methodology of analysis will be offered and examples in a global context like China and developing countries will be given.

Wednesday 21st July. The innovative approach to urban metabolism will be put forward. Prof. Acebillo will show the need of analyzing urban systems in term of fluxes. The presentation of results from a recently concluded research will follow, comparing the metabolism of Lugano and Barcelona. As a conclusion a round table will be opened, concerning the Swiss urban system and the possible implications of the new research trends promoted by the Urban Systems and Urban Models project.
8.30    Registration

9.00    Opening speeches
Marcello Martinoni, USUM coordinator-secretary
Paolo Beltraminelli, Deputy of Dicastero del Territorio, Lugano Municipality
Piero Martinoli, USI President
Christoph Frank, USI-AAM Vice Director

International symposium on globalization of urbanity

10.00   Prof. Josep Acebillo
New global urban conditions

11.00   Aleksandar Ivancic
Energyscapes: on territory and energy

12.00   Lunch

14.00   Prof. Christian Schmid
Patterns and pathways of global urbanization: steps toward comparative analysis

15.00   Prof. Neil Brenner
The 'cityness' of the city: what is the appropriate unit of analysis for comparative urban studies?

16.00   Break

16.30   Prof. Jacques Lévy
Public space in a global perspective: criteria and cultural dimensions

17.30   Break

18.00   Final roundtable
Ways of investigation, means of interventions

19.00   Apéro-dinner
Josep Acebillo graduated in Architecture from the Polytechnic University of Catalonia, has taught in different Schools of Architecture and was visiting professor at the School of Architecture at Yale and the School of Design at Harvard University. He has drafted city planning projects and is director of the Barcelona Regional Metropolitan Agency for the urban and infrastructural development of the city. He has received significant international awards. At present he is Chief Architect delegated for Infrastructures and City Planning to the City of Barcelona.

New Global Urban Conditions. (abstract) Given its great complexity, we may approach contemporary society in different ways. Bearing in mind, however, that what interests us here is to underline the leading role and the consequences increasing urbanization has for the world we live in, we will focus on three aspects that decisively condition it: technology, economy and governability. Starting out from the evolution of these three disciplines, it is necessary to analyze the new urban paradigms in order to generate new theories of planning.

The interrelation of these three disciplines shapes the way we live and so it is obvious that if they vary a lot this will bring with it a revision of our territorial context. If this is so, we would have to assume that the evolution towards new technologies, the new postindustrial economy and the governability that proceeded from globalization ought to generate new urban models.

This circumstance clearly occurred in the nineteenth century, when agricultural activity declined in favor of the new industry, fostered in turn by the new technology (e.g. the steam engine as an emblematic industrial technology), and contemporarily the new map of national states was established in Europe and America. This had a decisive effect on the way of life of the inhabitants and as a result the bases of the new modern-industrial urbanism were generated.

The modern city abandoned the paradigms of the previous period and created new ones, anchored in industrial modernity. Cerdà, Le Corbusier, Hilberseimer and many other architects and planners are basically comprehensible from this perception.

This cause-and-effect relationship has not been reproduced in our contemporary era, however. Though profound, for the moment the territorial and urban changes we are undergoing have not been coherently produced with the new paradigms.
Aleksandar Ivancic, industrial engineer, he works for Barcelona Regional in the areas of infrastructure planning and energy systems. He has been Technical Director of the Barcelona Energy Agency and is presently Technical Director of Barcelona Strategic Urban Systems. He has worked as a consultant for a number of international organisms, for example the European Commission, Euro Heat&Power, the International Energy Agency, the Swedish Energy Agency and EcoDes. He presently teaches at the Barcelona Institute of Architecture.

Energyscapes: on territory and energy. (abstract) Energyscapes analyses the way in which the huge structures involved in the energy production sector relate to the world which surrounds us. Through an analysis of the systems, sequences and sources of energy production including dismantled and decommissioned structures as well as operational ones - it methodically elucidates the numerous facets the world of energy presents when it comes into contact with the territory surrounding us. It also addresses how energy production can integrate more harmoniously with the landscape, including ways of converting those artefacts that have become obsolete from the technical point of view but which could accommodate other uses.
Globalization of Urbanity
Urban Systems and Urban Models - Summer School 2010

Christian Schmid was born in Zurich in 1958 and studied geography and sociology at the University of Zurich. Since 1984, he has been active in the media as an organizer of cultural events and urban researcher. He has authored, coauthored, and coedited numerous publications on Zurich's urban development, on urban and regional planning in international comparison, and on theories of the city and of space. In 1991, he was cofounder of the International Network for Urban Research and Action (INURA). In 1993–94, he did research work at the Laboratoire de Géographie Urbaine, Université Paris X Nanterre, and from 1997–2001 he was an assistant lecturer at the Geographical Department of the University of Bern. In 1999, he became the scholarly director of the project Switzerland: An Urban Portrait at ETH Studio Basel. Since 2001, he has been a lecturer in Sociology at the Department of Architecture of the Swiss Federal Polytechnic (ETH Zurich). In 1999, he received his Ph.D. from the Friedrich Schiller University in Jena. Since 2007, Christian Schmid has also been a lecturer at ETH Studio Basel. Since 2009 professor at the ETH Zurich.

Patterns and pathways of global urbanization: steps toward comparative analysis. (abstract) The process of urbanization has changed fundamentally in recent years: Existing urban forms are dissolving, and polymorphous urban regions are taking shape. Extremely heterogeneous in structure, they include old city centers as well as once peripheral areas. In this process, new urban configurations are constantly evolving. The complex processes involved in restructuring urban regions have not yet received adequate theoretical attention. Current scholarly debate is still dominated by partial approaches that examine individual aspects or generalize isolated cases. Furthermore, it is crucial to analyze not only urban forms, but to focus on urbanization processes. A new language and new theoretical concepts must be developed in order to understanding today's urban worlds. As a result of global urbanization, urban areas are not becoming more homogeneous, as many scholars are postulating. On the contrary: differences between urban spaces are increasing. A great variety of urban cultures are developing, resulting in different models of urbanization. Even in the same country, profound differences in the models of urbanization can be found. It is decisive to understand their origins, their patterns and pathways of development, and their possible impacts, in order to detect and explore the specific urban potentials that they contain. This contribution aims at outlining some elements of a possible framework for the comparative analysis of urbanization processes. Following Henri Lefebvre’s theory of the production of space, we can distinguish three different aspects of the urbanization process: first, the production and transformation of the (built) environment; secondly, the production of knowledge, representations and regulations; and thirdly, the production of meaning and of symbolisms. A comparative analysis has to address the properties and specificities of all three aspects.
The ‘cityness’ of the city: what is the appropriate unit of analysis for comparative urban studies?

*abstract* Since its origins in the early 20th century, urban social science has long mobilized comparative methods to analyze basic questions about urban life and urbanization processes. For the most part, however, comparative urbanists have taken their unit of analysis—“the city”—for granted as a discrete, coherent and relatively delineated site, place or scale. Although critically minded urbanists have, since the early 1970s, seriously problematized the production of “the urban” under capitalism, even critical approaches to comparative urban political economy have tended to focus empirically on those geopolitical entities we have come to term “cities,” and to demarcate their research foci with reference to their official names—“New York,” “Zurich”, “Mumbai,” and so forth. Against the background of contemporary processes of planetary urbanization (Lefebvre 1970; Schmid 2006), this paper offers a critique and alternative to this pervasive naturalization of cityness within comparative urban studies.

The argument unfolds in three steps. First, I reconstruct the epistemologies of comparison that have prevailed within successive waves of urban social science since the 1950s. While recent work on globalized urbanization has tendentially destabilized the unreflexive approaches to cityness that have long prevailed, even the most sophisticated research in this tradition continues to operate with an empiricist, and increasingly untenable, definition of its unit of analysis. In a second section, I criticize such positions by arguing that the “city” and the “urban” are ideological effects of underlying processes of (capitalist) urbanization and uneven spatial development. They are not “real” or “empirical” objects but structural projections that are produced through place-making, territorialization and scaling strategies during the geohistory of modern capitalism. Consequently, rather than taking the city for granted as an appropriate unit for comparative investigation, its production and continual transformation need to be critically interrogated in the context of ongoing efforts to produce a “structured coherence” for capitalist development within particular historical-geographical contexts (Harvey 1985). In a third section, I confront the question: can, and should, comparative urban studies be pursued, and if so, how can an appropriate “unit” of analysis be chosen for such research? I answer these questions in the affirmative, and I outline the basic elements for a reinvigorated approach to comparative urbanism. The urban ideology is not an illusion, but a systemic product of worldwide spatial strategies and geopolitical practices that have rendered “cities”—however they are understood—formally equivalent organizational loci and discursive-imaginative reference points within modern capitalism, the interstate system and everyday life. The need for comparison—the “comparative imperative” (Brenner and Goswami 2010) flows directly from this state of affairs. Drawing on the work of historical sociologist Philip McMichael (1990), I argue for an “incorporated” approach to comparative urban studies in which the units of analysis are themselves understood to be co-constituted and continually reconstituted in and through system-wide processes of sociospatial transformation. In this view, the operation of comparison is not simply an analytical procedure, but a “real abstraction” of ongoing historical-geographical developments and ideological strategies. It is indeed possible, therefore, to delineate a “unit” of analysis in comparative urban studies, provided that the grounds of comparison (Cheah 1995) are reconceptualized in fundamentally historical, processual terms, with the “cityness” of the city understood as a multiscale, strategically contested and continually evolving condition of modern geopolitical relations rather than as a territorially delineated object or site.
Globalization of Urbanity
Urban Systems and Urban Models - Summer School 2010

Jacques Lévy (1952-) is a geographer and an urbanist, full professor at the Swiss Federal Institute of Technology, Lausanne (EPFL). He is the director of the Chôros Laboratory and co-director of the Collège des Humanités. He has been invited professor in various universities: UCLA NYU, USP (São Paulo), L'Orientale (Naples), Macquarie (Sydney), and the Reclus Chair in Mexico City. He has been a fellow of the Wissenschaftskolleg zu Berlin. He has been invited as a keynote speaker in many congresses and conferences throughout the World. His major concerns are social theory of space, urbanity, globalisation, cartography, spatial development, and the epistemology of social sciences.
He has completed numerous research projects, including theoretical reflections, field studies on metropolises worldwide, and practical urban and territorial projects.

Public space in a global perspective criteria and cultural dimensions. (abstract) Public space is a relatively new concept in social sciences and urbanism. It is underlain by its apparent obviousness, but its definition is actually far from trivial. As a notion spontaneously linked to urban realm, public space appears already complex, because of its multi-scale rationale: it is a small place inside a big referential space. If we explore its societal significance, we realize that it implies a sophisticated discussion in political science, namely about civility and public goods. In spite of the difficulty to delimit its perimeter and its range, public space can be considered as a crucial concept every time we are addressing either traditional issues in urban planning (dwelling, mobility) or more general debates on urbanity models. Public space could be seen as an efficient indicator for a “state of urbanity”, not only at the scale of a determined urban unit, but at any scale of human aggregation, up to the World.
Patterns and pathways of global urbanization

9.00 Christian Schmid
Tracing global urbanization

10.00 Pascal Kallenberger & Monika Streule
Comparing urban development: Kolkata and Mexico City

11.00 Debate

12.00 Lunch

Globalization and urban / public space

13.30 Jacques Lévy
Definitions and thesis on globalization and urban / public space

14.30 Véronique Mauron
Tools of the globalization and urban / public space research

15.00 Gian Paolo Torricelli
Public space and power

15.30 Beatrice Ferrari
Public space in Beijing

16.00 Break

Comparing urbanization
Chairman: Gian Paolo Torricelli

16.30 Jorge Peña Diaz
Havana: slow motion urbanism

17.00 Bruno Salerno
Buenos Aires and the production of “Espacio Villero”

17.30 Rolf Jenni
Hong Kong: state - entreprenarial - urbanism

18.00 Debate
Globalization of Urbanity
Urban Systems and Urban Models - Summer School 2010

Christian Schmid (see page 11)

Tracing global urbanization. (abstract) Starting from Henri Lefebvre’s famous thesis of the complete urbanization of society, this contribution explores the main elements of contemporary urbanization on a global scale. The problem faced today is that cities no longer constitute units that can be delimited; they are highly dynamic, multifaceted, and complex. A dual approach is required in order to grasp these factors: On the one hand, a “horizontal”, synchronical analysis is needed that starts from the current situation of the territory, determines the expansion and interweaving of urban regions, and reveals variations in the processes of urbanization. On the other, urban development has to be understood and conceived as a historical production process. This requires a historical, “vertical”, diachronical analysis.

The horizontal analysis is dedicated to the patterns of urbanization as they currently present themselves. While increasingly exact data and detailed methods are available today to analyze the structure of a city, experience has shown that, in most cases, precise mapping of spatial phenomena can only create the appearance of exactness. Urbanization is a complex process that is constantly changing shape. Therefore, no given representation can deliver more than just a snapshot. Furthermore, urban reality comprises very diverse attributes that are superimposed as stratified layers. Accordingly, many different lines of demarcation can be drawn, depending on the observer’s perspective and heuristic interest.

On the base of the horizontal analysis, a vertical, historical analysis of the pathways of urbanization should follow. It descends into the past to identify the defining moments that have inscribed themselves into the terrain and the collective memory. Subsequently, the analysis must ascend again in order to attempt to reconstruct the decisive lines of development and to elaborate a timeline oriented along the respective dominant constellations of power and the most important fields of conflict. In particular, it is crucial to identify the constants and the discontinuities in the development. This analysis does not simply aim at reconstructing the history of a city, but wants to detect the ways in which history remains present in the contemporary situation and influences the future trajectory.
Globalization of Urbancy
Urban Systems and Urban Models - Summer School 2010

Pascal Kallenberger, born 1981 in Zurich, studied urban geography, national economics, and planning at the University of Zurich, ETH Zurich, and the University of Sheffield. Currently, he is doing his PhD at the ETH Zurich and is working with Prof. Dr. Christian Schmid as a research assistant on the Urban Systems and Urban Models (USUM) project. He is a member of the International Network for Urban Research and Action (INURA). He is particularly interested in urban and planning theory, the history of ideas, and environmental planning.

Monika Streule, born 1977 in Zurich, studied cultural anthropology, sociology and international relations at the University of Zurich. She lived and worked in Mexico-City (2005/06) for research on an ongoing project of restructuring the Mexican historic center and the social impacts of such global processes of urban transformation. Concepts such as space, power and identity are crucial in her research. Currently, she is working with Prof. Dr. Christian Schmid as a research assistant on the Urban Systems and Urban Models (USUM) project on patterns and pathways of global urbanization processes. Particularly she is interested in urban anthropology, urban social movements, qualitative social research, and an acteur centered approach. She works on questions about the constitution of urban spaces and everyday practices of appropriation of public spaces.

Comparing urban development: Kolkata and Mexico City. (abstract) In this presentation Pascal Kallenberger and Monika Streule will introduce the first results of the ongoing research project on urbanization processes in Mexico City and Kolkata. After a short introduction into the urban development of both presented cases, the main focus will be on the patterns and pathways of urbanization in these cities. The aim is to present the current findings and the applied method of analysis in these two specific cities in order to discuss further possible steps towards a comparative approach. The presentation will start with the discussion of the urban patterns (horizontal analysis) of Mexico City and Kolkata and the mapping work done so far. In a second step the historic path dependency and the urban development will be explained (vertical analysis). It will be argued that to understand urbanization process both perspectives are crucial. In a more detailed analysis, two case studies will be presented: Ciudad Nezahualcóyotl in Mexico City, and Howrah in Kolkata, both representing very particular urban configurations with a very strong informal component.
Jacques Lévy (see page 13)

Definitions and thesis on globalization and urban / public space. (abstract) We choose to define public space as follows: public space is:
- The city’s space bearing a free access, with configurations and limits proper to it.
- A public environment – a relational space outlined by the interactions occurring amidst it. Public space is the individual being confronted to society.
- A portion of societal space within which any actor taking part expects to experience an equivalent amount of diversity to that encountered within that portion’s referential space.
- A concentration of urbanity – public space makes the city appear.

Our definition transcends the traditional dualism encountered within the confrontation of the Public Space and Public Realm notions – Open Space being the physical extension of a non built architectural space, that can both be measured and outlined on various maps; and Public Realm being the sector pertaining to the city’s various types of inhabitants. Public space is often a space that has been designed to enable a public access. But it is above all a relational space – a place concentrating meeting and exchange possibilities, and that can genuinely be accessed and utilised by everybody. If the latter characteristic lacks, one cannot consider one is observing an effective public space, but solely a virtual public space. On the other hand, it is possible to come across a public space that has not been designed but that effectively exists and is of a satisfactory use to those who come upon it. Basing our reflection on such a definition, we suggest twelve theses concerning public space. These theories are to be submitted to discussion, are to become the object of contradictory debates between researchers of the various USUM WPs.
Tools of globalization and urban / public space research. (abstract) The research is the observation and the analysis of expressions of public space visible today in cities of the World. It focuses on the actors, practices, functions, objects, shapes that constitute the public space. This asks the universality of public space.

The presentation will give a definition of the public space. This definition highlights four aspects:
- The public space bearing a free access, with configurations and limits proper to it.
- A public environment – a relational space outlined by the interactions occurring amidst it. Public space is the individual being confronted to society.
- A portion of societal space within which any actor taking part expects to experience an equivalent amount of diversity to that encountered within that portion’s referential space.
- A concentration of urbanity – public space makes the city appear.

To make a comparative analysis of public spaces in cities around the world, we have developed several tools. These tools are both scientific objects and media that give visibility to the research.

1. Grid. Construction of an observation checklist to describe qualitatively and schematically a public space. This matrix collects the parameters needed for the production of public space.
2. Encyclopedia of public space : e-publicspace.net. Creating an interactive encyclopedia in the form of a website which brings together many different documents (texts, images, sounds) dealing with public space in the world.
Public Space and Power: Can the African City Learn from the Latin American Urban Experience?
Comparisons between Bamako (Mali), Buenos Aires (Argentina) and Bogotá (Colombia). (abstract)

Today the sub-Saharan African cities are composed for two thirds of from informal urbanization sectors, practically slums without infrastructures, neither public equipments, where 165 million inhabitants would live, it estimates the UN agency Habitat. According to the same source, the inhabitants of the cities of Africa in total, would increase from 350 million in 2005 to 1.2 billions in 2050. African and especially sub-Saharan cities - in the next decades - will be the fast growing cities of the world. Urban public space represents a very important stake, where “spontaneous” urbanizations will continue to represent a great part of the constructing space for housing. In this context of hard population increase, that signify high increasing land rarity and lack of available land for equipments and public spaces. In the globalization era, what can eventually learn the sub-Saharan city from the recent Latin American urban experience? The intention is to confront and to comment some case-studies, reported to the production of the city space. The experience made in Bamako, among other things, concern two situations that imply the urban public space as stake of power and at the same time two problematic situations for the future development of the city:

a) the gradually public space atrophy (disappearing of squares, game fields, parks) in the poor residential areas, because of great increasing of competition between the families for the urban ground, linked to the corruption phenomena in the municipalities;

b) the totally lack of massive public transport infrastructures and networks, to be able to effectively connecting the various areas of the city.

We put here in evidence two some possible good practices that allow to widen the public space in terms of quality of living in a slum context, and urban public mobility. In the first case the production of urban space will be discussed about informal production of city space, the “Villa de Retiro” case in Buenos Aires city centre (see also the presentation of Bruno Salerno). In the second case we will short discuss the development of the massive urban public transport system in Bogotá, than potentially could adapt itself to the mobility of the African city.
Beatrice Ferrari. I hold a Master’s degree in Geography and Anthropology from the University of Neuchâtel and a Certificate of Chinese language from the Beijing University of Language and Culture. I am currently a PhD candidate at Chôros Lab, at the Federal Institute of Technology in Lausanne, where I also teach urban planning and urban culture in China. The research topics I am interested in include the transformations of built environment, the production of cosmopolitan spaces and the relationship between urbanization and globalization processes, with a particular focus on China. The objective of my PhD research project is to better understand how innovative people in Beijing are practicing the city and contributing to its insertion in worldwide networks.

Public space in Beijing. (abstract) Au cours de cette présentation, nous allons explorer les typologies et les usages de l’espace public à Pékin. L’idée même d’espace public n’est entrée que très récemment dans les préoccupations des urbanistes; pourtant, les habitants n’ont pas attendu pour s’approprier des différents espaces urbains et en tracer les frontières mouvantes, entre le privé et le public. De même, les promoteurs immobiliers intègrent et développent de plus en plus souvent cette idée dans leurs projets commerciaux. Parler de l’espace public nous permettra ainsi d’aborder les changements sociaux et urbains qui caractérisent Pékin.
**Globalization of Urbaneity**

Urban Systems and Urban Models - Summer School 2010

**Jorge Peña Díaz** is currently the Dean of the Faculty of Architecture and is the former Head of the Centre for Urban Studies of Havana. He has developed his career from the Faculty of Architecture of Havana linked to the scientific research and to the professional practice as an architect. Main issues on his scientific career – developed within the Centre for Urban Studies of Havana – refer to urban analysis, Urbanism, Landscape Architecture and Planning and sustainable strategies and environment oriented projects. Prof. Peña has also developed projects related to the use of CAD systems as supporting tools for urban planning and design. In collaboration with partners from other fields has participated in artistic exhibition projects linked to his research and practice activities. An important part of his career is connected to its academic activities as a Design Studio leader at the Faculty of Architecture. Prof. Peña has joined teaching activities and research projects with colleagues from several foreign Universities such as the University of Brighton, the TU-Dortmund and the Technical University of Managua, the ETH-Zurich and the EPFL.

**Havana: Slow Motion Urbanism. (abstract)** The paper presents the exceptional case of Havana. This situation appears when contrasting the urbanisation process taking place there during the last half century against the background of accelerated contemporary global urbanization. The process of global scale urbanization _along with the overflowing of urban landscapes and the emergence of megacities_ seems to be bypassing Havana. The current urban situation is depicted and three main driving forces of the process are presented: the blockade, the impact of the economic crisis of the last two decades, and the local urban policies.

Buenos Aires and the production of “Espacio Villero”. (abstract) Traditionally, the production of the space of informal settlements in Buenos Aires has been related to individual and time-deferred practices. Since the last decades, though, land seizure has become important in the production of the villas. For our case of study, some traces of territoriality have been found to be involved in this mechanism. The case of study is the Villa de Retiro, and one manzana -city block-, the number 106, produced from an illegal land seizure in which participated as organizer the social movement Barrios de Pie. The analysis of this movement’s organizational logic and the way it operates in the villa could allow as to link it’s territoriality to concepts of barrio and public space. These categories appear as necessary elements that may be useful when considering last decade production of villas in Buenos Aires.
Rolf Jenni is born in 1972 in Biel, Switzerland, Rolf Jenni completed his education at the technical high school in architecture in 1994, followed by studies in Architecture at the University of Applied Sciences in Biel from 1993 till 1997. From 2004 till 2006 he expanded his education with a postgraduate study in architecture and Urbanism at the Berlage-Institute in Rotterdam. Jenni has taught in design studios at the ETH Zurich and the University of Applied Science FHNW in Basel as an teaching assistant and is engaged in the ETH STUDIO BASEL.Contemporary City Institute since 2007, as researcher and teaching assistant. He has lectured and was a guest critic at various universities, including the ETH Zurich, TU Delft, the Berlage-Institute and TU Munich. In addition to teaching and academia, Rolf Jenni has collaborated with various architectural firms in Switzerland and Holland since 1997. In 2007 he established, together with Tom Weiss, Raumbureau – a praxis for architecture and urbanism in Zurich.

State-Entrepreneurial-Urbanism. (abstract) Hong Kong had developed gradually, and in only fifty years, from a colonial city characteristic for its spontaneous and informal urban growth to a highly controlled and formalised urbanisation model, simultaneously and continuously involving neo-liberal strategies. This coupling of liberalism and control might seem, on first glance, contradictory, since capitalist liberalism is very often associated with a ‘laissez-faire’ attitude; but in the case of Hong Kong, “control and laissez-faire” eventually became the economically successful strategy for the post-colonial government. This lecture tries to sketch out an understanding of the specific characteristics of the entrepreneurial governing model, striving for a maximization of efficiency and perfection, while trying to explore its complex mechanisms and the roles of its various actors. An investigation into the public transport and infrastructure system of HK, which functions as a concordance between the HKSAR Government and the ostensible private transportation company to generate profit through real-estate developments, will reveal the complex mechanisms at play. As a main aim, this lecture will try to construct an argument, that the direct relationship between infrastructure and property development conducted by the government and in concordance with the Mass Transit Railway Corporation MTRC and private developers eventually led to a new and highly profitable urban typology, the infrastructure node. This node-network-system and its typology may serve the government today as the ultimate instrument to generate high land value through accessibility and high density of vertically organised programs. The typological architectural features that the steadily developed economic and urban model imply, are analyzed through the project for Lohas Parka version of the latest station- or node-type currently under construction which can be regarded as the ultimate embodiment of this typology and urban development.
Urban systems and global urbanization: new urban metabolism

9.00 Josep Acebillo
*The metabolic analysis of urban systems*

10.00 Paola Caputo
*Energy and urban systems*

10.30 Enrico Sassi & Marc Montlleo
i.CUP - Data/indicators - Lugano
BCN Regional - Data/indicators - Barcelona

11.30 Paolo Giordano & Alberto Vancheri
*Indicators for urban metabolism efficiency*

12.00 Lunch

Re-evaluating Urban Models

13.30 Stanislava Boskovic Sigon
*Potentiality of the "Soviet City"*

14.00 Alessandro Martinelli
*Urban metabolism & Urban project*

14.30 Debate

15.30 Break

USUM’s learning for Swiss urban system
Kick off meeting

16.00 Josep Acebillo
*The most convenient urban size: About the Swiss scale*

16.30 Christian Schmid
*Patterns and pathways of urbanization in Switzerland*

17.00 Jacques Lévy
*Public space in Swiss urban context*

17.30 Josep Lluis Mateo
*Conclusion*
The metabolic analysis of urban systems. (abstract) Along with the passage from the industrial system to a neotertiary economy and with the globalization of decisional processes, the irruption of new technologies forces us to envision an Urban Turn able to structure a new Urban Complexity.

Three directions can be foreseen to shape this new Urban Complexity:

- a new concept of Urban Intensity, emphasizing the interaction between urban density, urban granulometry and functional hibridity;
- a revised notion of Urbanity, reinterpreting the symbiosis involving urban identity and the growing socio-cultural diversity;
- a new Urban Metabolism able to sustainably processes the energy and matter flows which the city interchanges with the environment.

This publication precisely addresses the last issue of the previous series, because in the light of the growing urbanization of the planet, visible in the fact that by the middle of this century some 70% percent of the population will live in cities, we have to seriously consider how many of the causes generating the huge environmental crises of today –e.g. climate change– have their rationale in the metabolic inefficiency of our cities. Starting from the concept of urban metabolism, we intend to analyze the conditions of urban metabolic efficiency while overcoming any form of simplistic and metaphorical analogy: a greater metabolic efficiency will contribute to the energy rationalization of urban system and to a greater urban competitiveness.

In order to achieve such a goal, we will investigate old arguments but adopting new perspectives and a new hope, i.e. the influence which disruptive technologies have in respect of the new urban mobility and therefore in respect of the energy question. Urban metabolic analysis demonstrates efficiency that small and medium-sized cities can have in the new neo-tertiary context, and could be used as a test to previously evaluate the functional and ecological consequences of future urban transformations.
Paola Caputo is an environmental engineer who took her Ph.D. in Energy Sciences in 2001. Since 2002 she has been a researcher at the Built Environment Science and Technology Dept. of the Politecnico di Milano. Since 1998 she has been collaborating with the Academy of Architecture in Mendrisio, where she coordinated the integrated Swiss Virtual Campus – Ecology in Architectural Design (SVC-EAD) e-learning project and the Urban Integrated Solar Systems project (UiSol). From 1998 to 2001 she worked as a consultant for the Ambiente Italia Research Institute. From 2006 to 2009 she collaborated with SUPSI in Lugano, and she has also worked with engineering and architectural firms on design processes. She has been member of international committees, such as Annex 49 ECBCS Low Exergy Systems for High-Performance Buildings and Communities. She has contributed to many national and international academic publications.

Energy and urban systems. (abstract) The wide and long-lasting debate related to the global environmental emergencies, population dynamics, energy demands trend and resources depletion was recently stressed again also in the framework of the EU 20-20-20 energy package and following targets for each EU Country member.

The importance of the role of built environment and of the energy urban systems has been underlined again, stressing the need of an energy revolution in order to change the present systems and trends towards more environmentally conscious, sustainable and renewable based urban areas.

Urban districts and communities represent an optimal scale for promising energy strategy implementation aimed to a more efficient use of energy and fossil fuels consumption reduction, i.e. promoting local renewable energies use, distributed generation, micro-cogeneration and multi generation. However, a part some particularly lucky cases, there are still some barriers to down in the infrastructural, economic, regulatory and political-administrative fields. To that end, one important gap to be filled is to provide reliable models and applications in order to guide energy systems decisions limiting the risk of dangerous errors and unpredictable negative effects.

To that end, a suitable analysis of urban systems and an innovative survey and development of urban models, aimed to deeply understand how urban metabolism can be improved, could be very appropriate and useful.

Main aims of USUM project are the definition of a useful notion of urban metabolism, the implementation of a methodology for assessing it, the application to the case studies of Lugano and Barcelona and the definition of guide lines for improving urban metabolism of cities with different characteristics and living conditions. Core of USUM-WP1 is the analysis of the most significant energy and mass flows characterizing urban metabolism and their formal representation through a metabolic network. Data related to urban metabolism are collected and elaborated in order to evaluate suitable indicators to be connected in a model able to represent a vision of urban metabolism and of the relative potential improvements, enlarging the evaluation to the most suitable aspects of the quality of living versus resources depletion and environmental problems.

This model has been developed taking into account important researches in which, despite the enormous complexity and diversity of human behaviour and extraordinary geographic variability, as a metaphor, cities were modelled as organisms belonging to the same urban system governed by defined laws.
Globalization of Urbanity
Urban Systems and Urban Models - Summer School 2010

Enrico Sassi is an architect and teacher. He is a graduate of the Faculty of Architecture of the IUAV in Venice (1993). He has collaborated with several architectural firms in Switzerland and Portugal. He has been i.CUP coordinator and lecturer in Urban Design at Accademia di Architettura, Mendrisio since 2004-2005. He was head of the "Planning and information" module of the Executive Master of Advanced Studies in Architecture program (AY 2004-2005). He taught "Architecture and Tourism " in the Master of International Tourism program at the Faculty of Economics and Communication Sciences of the University of Lugano (2004-05). Since 1998 he has been editor of the journal of architecture and urbanism Archi, the official organ of SIA, OTIA and ATEA. He edited the book Guida alla storia del territorio by Leonardo Benevolo.

Marc Montlleó Balsebre started in 1997 as a junior consultant at Taller d'Enginyeria Ambiental. Since 1999, worked for the public agency Barcelona Regional, Metropolitan Agency for Urban Development and Infrastructures, in projects related to environmental and regional planning. At present, Director of Environmental Projects. Assisting for Barcelona Regional professor Richard T.T Forman with the Greater Barcelona Land Mosaic. Participated in the Municipal Board of Sustainability of the Barcelona City Council and assisted, representing the city council, the commission that follows the Air Quality Plan for the Barcelona Area.

City metabolism case studies: Barcelona and Lugano. (abstract) USUM research has got the aim to elaborate analytical methodologies suitable for the contemporary urban urban reality. In order to achieve such a goal, three Working Packages have been established and while two of them focus on the global urbanization and its effects on the public space, the one which interim results are presented in this publication mainly focuses on the urban system through the studies of what is called the Urban Metabolism. The notion of Urban Metabolism means the biological system way of looking at the resource input and waste output of settlements, a basic metabolism concept that can be extended to include the dynamic of settlements, the economical strength and the livability of the settlement.

Stated this objective, then we have established to study two specific cities: Barcelona and Lugano. Extremely different in term of dimensions and populations, these cities have been chosen because of their paradigmatic representativeness and specific data availability: if Lugano represents an emblematic case of a small size Swiss city - which has been recently studied by i.CUP - Barcelona manifests an emblematic case of European big metropolitan system - which metropolitan development agency BCN Regional, of which Josep Acebillo is chief executive officer, has been pivotal in supplying data. For a research as such, access to data constitutes a fundamental issue: even if data apparently always exists, often they are not available or not structured in a proper form, a condition which proves how Urban Metabolism, even if extremely contemporary in respect of the contemporary debate on the sustainability of urbanization processes, is still scarcely developed within the operative culture of territorial governance. In the specifics of this two cases, the majority of the data for the research have been appositely calculated or extracted with procedures which are illustrated within the following pages. In the specifics then, starting with a vast number of available data, it has been advanced the proposal to analytically define and calculate what we consider the most crucial aspects of the Urban Metabolism: CO₂ (annual CO₂ Emissions, total and per capita); E (annual Energy consumption, total and per capita).

The comparative method, requested by the development of the notion of Urban Metabolism within the USUM framework and applied to urban realities of different sizes, highlights a specific question of analytical methodology: the city can be an seen as an unitary system which expresses itself through an overall evaluation or like an assemblage which expresses itself as the addition of its individuals; in other words the city can be conceptualized through absolute parameters (for which the scale is determinant) or through relativized parameters (for which the scale stops to be meaningful). The analysis that we present in this volume questions the limit between these two conceptualizations: the Urban Metabolism of cities with different sizes can be described and analyzed in order to highlight the specificities of every urban system and appropriately permit their comparison.
**Indicators for urban metabolism efficiency.** *(abstract)* The present work is a first step towards a definition of a useful notion of urban metabolism and the implementation of a methodology for modeling and assessing it. More specifically, we will introduce a method for the analysis of the most significant energy and mass flows characterizing urban metabolism based on a hierarchical organization and computation of the relevant variables. The hierarchical organization of the metabolic (and metabolic-related) variables mirrors the functioning of the urban system as a network of several subsystems: transport subsystem, built environment subsystem, social economical and cultural subsystem. From the mathematical point of view this hierarchical organization of knowledge and structures will be modeled through a hierarchical fuzzy inference system. This computational machinery will produce a measure of the overall efficiency of an urban system, meant as the capability of the system to be productive (in a broad sense including economical production as well as quality of life) with the lowest possible environmental impact. A first explorative application of this method has been accomplished using data about the cities of Lugano and Barcelona.
Globalization of Urbanity
Urban Systems and Urban Models - Summer School 2010

Stanislava Boskovic Sigon is born in Bar, Montenegro, in 1977. Graduated in architecture at the Moscow Institute of Architecture (MArchI) in Russia, with prof. arch. Vyacheslav Glazichev. Obtained a Master in advanced studies in territorial architecture at the Academia di Architettura di Mendrisio in Switzerland, with prof. arch. Aurelio Galfetti. Since 2006 works as assistant of prof. arch. Josep Acebillo for the chair of Culture of Territory at Academia di Architettura di Mendrisio. She worked as Assistant at the Faculty of Architecture of the Politecnico di Milano - Bovisa in Italy and in the Architectural Department of the University of Montenegro in Podgorica. She has cooperated with different architectural studios in Moscow, Milan and Lugano. Since 2002 she collaborates with different architectural reviews in Moscow, Belgrade and Podgorica. She has coordinated and participated to different architectural seminars and festivals in Kazan, Moscow and San Petersburg. Since 2007 participates to the main international Economical forums of Russia in Sochi and Krasnoyarsk. In 2007 she has founded the architectural office AuS – Architecture & Urban Systems in Mendrisio, Switzerland together with Josep Acebillo and Lidor Gilad.

Potentiality of the “Soviet City”. (abstract) Since infrastructure constitute a key device linking the metabolic processes of consumption and production, Russia, after the giant boom in the production of infrastructure, after the creation of new Soviet state, shows up, even just for quantitative dimension, as an important case study to investigate, evaluate and engage with for a transposition of the metabolic paradigm in territorial studies at a projectual level.

Contemporary Russia is on the way of a very dynamic and rapid development. Notwithstanding its economy depends on the export of energy resources and raw materials evidently, Russian government has started an ambitious program of settling new technologies and an innovation-based economy. This modernization, that affects positively both the social and the economical sphere, has also a strong impact on the territory and urban transformation of recent years. In the light of this, it seems particularly interesting an overview on the creation of Soviet cities in order to avoid eventual problems and to underline all positive features of that impressive urban process happening in the beginning of Soviet Age.

Since the disappearance of central planning the Soviet city has found itself in radically different operating environments that, unlike the situation observed at the time of the Soviet Union, must now answer to the novel relationships between the new theory of globalization, neotertiary economy, and new technologies. If on one hand the centralized state system is questioning the efficiency of whole Russian territory, on the other hand the amazing extension of industrial and infrastructural resources stands as a possible basis for grafting new technologies into the territory and consequently to stimulate its metabolic change.

In all this process of creating an environment for innovation besides the Government intentions, in present-day Russia an important role is played by the growing “business community”, educational and scientific institutions, advancing a new balance between public and private interests. In my opinion, this environment under transformation today permits large scale projects, not only in Moscow but all over Russia, to be based on the existing urban legacy of the Soviet city and on new processes of innovation.
Alessandro Martinelli graduated in 2006 from the Academy of Architecture in Mendrisio. His thesis project, supervised by Prof. Mario Botta, won the Boni Award in 2006. In 2001-02, he worked with Stefano Boeri / Boeristudio in Milan and since 2002 he has collaborated with Emmestudio in Bergamo. In 2003 he founded AsMA, an independent organization for research and communication in the field of contemporary architecture. Since 2006 he has worked with the i.CUP under the direction of Prof. Josep Acebillo at the Academy of Architecture in Mendrisio. From 2007 to 2009 he attended the Berlage Institute in Rotterdam, participating in a project coordinated by Prof. Winy Maas involving the candidacy of the Randstadt for the 2028 Summer Olympics and later exhibiting at the Netherlands Architecture Institute in Rotterdam (2008). Today he works as an assistant tutor at the Berlage Institute for an annual research project on the relationship between spatial segregation and mass consumption in the form of tourism, while also working as an independent architect in Italy.

**Urban metabolism & Urban project.** Beyond the quantitative dimension, which is already in itself significant, the aspect that is most astonishing with respect to the current hypertrophic process of urbanization is the progressive interrelation that is fusing the world’s urban spaces into what, with a certain degree of generalization regarding globalization processes, can be imagined as an enormous and progressively complex city swallowing the Earth. A growing complexity must be actually accepted as the ineluctable condition that goes along with any further human population development: the more numerous we are and the more we interconnect, the more the city will be complex.

Nevertheless, if the experience of complexity, which pertains to a necessary evaluation of the limit of our autonomy, defines the system condition that marks us, its emergence at the center of the urban question essentially confirms that the city ultimately “is” the system in which human beings take part. More precisely, if we cannot deny being biological organisms which need to continuously transform material and immaterial resources in order to maintain their life, we have to acknowledge how this system called the city must be first of all a biological one - that is a system where resources are negotiated through a continuous process of exchange, transformation and reuse in which metabolic operations that dismantle and reconstitute these resources play a key role. Therefore, if the city is now the human biological system par excellence, I advance the idea that the urban space is now more than ever an environmental and cognitive device which mediates the complexity of that system, or rather the device which facilitates the metabolism connecting every one of us and the environment at large from which we receive resources to be consumed, as well as towards which we deliver the resources we produce.

A more adequate coordination among production and consumption being a necessary objective in the light of the ecologic and economic crisis in which we are embroiled today, I finally advance the necessity to study, document and once again engage the urban project in the sense of a practice which faces the device constituted by the urban space - and therefore the urban metabolism - from the most appropriate perspective, and that is the autonomy from where human beings advance their own projects and around which the very limit of complexity revolves.
Josep Acebillo (see page 9)

Christian Schmid (see page 11)

Jacques Lévy (see page 13)

Josep Lluís Mateo. Since qualifying as an architect in 1974 (ETSAB) and gaining his doctorate (cum laude) from the Universitat Politècnica de Catalunya (Polytechnic University of Catalonia) in 1994, Josep Lluís Mateo has always combined professional and academic activity. Since 2008, he has been the President of the Board of Directors of the BLArch (Barcelona Institute of Architecture) and, since 2002, Professor of Architecture and Projects at the ETH-Eidgenössische Technische Hochschule (Swiss Federal Institute of Technology, Zurich). He has been a lecturer at numerous universities, and lectured and taught at the world’s foremost institutions, including Princeton, Columbia University in New York, the Harvard Graduate School of Design, ABK Stuttgart, UP8 Paris, OAF Oslo and ITESM Mexico. He has also been Visiting Scholar at the Jean P. Getty Center (Los Angeles, USA).

With each of his projects, Josep Lluís Mateo seeks to connect the practice of construction (with particular emphasis on all the pragmatic aspects of the profession) with research and development in both intellectual and programmatic terms. He works in the area that brings together the sphere of ideas with the physical world of reality.

Outstanding works marking his career include the head office of the Bundesbank in Chemnitz (1996, Germany), the construction of 30 housing units in Borneo (2000, Holland) and his intervention in the Barcelona Forum 2004 with the CCIB, Barcelona International Convention Centre, the 5-star AC hotel and the CZF office block. Josep Lluís Mateo developed the new branch image and layout for Banco Sabadell (2004), remodelled the bank’s historical head office (2006) and designed the entrance and main branch of its emblematic office block in Barcelona (2007-2010). His more recent work includes the design of Largo da Devesa square in Castelo Branco (2006, Portugal), Sant Jordi Hall of Residence (2006, Barcelona) and the office building for WTC Almeda Park in Cornellà (2006, Barcelona).
The symposium will take place at:

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