

## **Cognitive Cities: interdisciplinary approach reconsidering the process of (re)inventing urban habitat.**

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### **1 INTRODUCTION**

Due to a series of economical, ecological and social factors, as well as the change in climatic conditions and the distribution of resources, by which we are all affected, and as a result of ongoing globalization, 75% of the world's population will be living in cities and urban settlements within the next 25 years. New planning tools are needed and this paper will address an interdisciplinary approach reconsidering the process of (re)inventing urban habitat.

In the last twenty years the aim of solving single aspects like infrastructure and/or housing only minimally solved the problems on a one-by-one basis. Lately information & communication technology (ICT) and new financial models have been analysed and developed creating an even more complex vision for problem solving but again not really managing to do so. The introduction of sociological models has added yet another aspect to the discussion.

The focus of this paper is to redefine the idea of 'memoria', our memory and the historical memory of a place in the future knowledge-based society. This major topic must then be considered when analysing the shaping of future urban developments. The goal is to define a different approach capable of reconsidering the process of (re)inventing urban habitat.

When enlarging the spectrum of applicable values and measures that influence urban developments directly or indirectly why not use the concept of 'culture'? The aim is to introduce a new momentum of cultural urban design.

What we are looking at is the introduction and gathering of tangible and/or even measurable qualities that are essential for the 'planning' of coherent and thus successful urban re-development. Enlarging the approach to a wider and more complex view of cultural urban design would mean the introduction of new aspects as parameters for the process.

Two case studies will illustrate the complexity of the process of re-development of urban habitat as valuable elements for the evaluation and introduction of a cultural methodology. This leads towards an interdisciplinary approach, to shape the future of urban habitat. Both case studies are embedded in a clearly defined 'memoria' situation giving a series of indicators essential to the process.

The last part deals with the lessons learned from the case studies. The aim is to create a series of cultural tools and measures that need to be envisaged in creating the fertile soil for sustainable urban development, as envisaged in the European Union Territorial Agenda, a real place, leading to what I will call the Cognitive City, a place with also real emotional and human qualities, a place with dignity, integrity, determination and purpose, simply a place we could really be proud of and a place to be simply part of.

#### **1.1 Introducing a new Concept**

To redefine the idea of 'memoria', the patterns of human activity, our memory and the historical memory of a place for the future 'knowledge-based society', or the future of 'global cities' as Sassen defines in 'The city in a global digital age'. This topic must be considered when analysing the shaping of future urban developments; to define a different approach capable of reconsidering the process of (re)inventing urban habitat for example in some minor European cities.

It appears necessary to overcome the idea, as Brad Allenby quotes in 'The Autonomic City' referring to William Cronon, that the city is traditionally to be considered an ultimate human environment and therefore needs to be evil: 'The boundary between natural and unnatural shades almost imperceptibly into the boundary between nonhuman and human, with wilderness and the city seeming to lie at opposite poles -- the one pristine and un-fallen, the other corrupt and unredeemed.' (Cronon, 1991) Allenby follows, that 'this perception has transitioned into much of the sustainability literature, leading to a widespread impression that cities are clearly "unsustainable", an interesting conclusion given that cities are perhaps the most sustainable artefact that humans have developed.' (Allenby, 2006)

This paper is enlarging the spectrum of applicable values, measures and drivers that influence urban developments directly or indirectly: so why not introduce the concept of ‘culture’?

This enables to ‘understand the nature of cities as evolving "systems of systems"” and ‘at least some of the drivers of accelerating change in urban systems can be identified, a necessary step in forming a rational and ethical understanding of the "sustainability" of cities...’ (Allenby, 2006) The city becomes more complex not only from the density side of information and networks, but also from the ICT-side which supports this complexity, ‘not just an immensely more competent and functional city, but emergent behaviours and characteristics that are both unpredictable and potentially quite powerful and ones that occur without passing through human institutions or filters’, generating urban ‘culture’.

‘Culture (from the Latin cultura stemming from colere, meaning "to cultivate"), generally refers to patterns of human activity and the symbolic structures that give such activity significance.’(from Wikipedia)

What we are looking at is the introduction and gathering of tangible and/or measurable qualities that are essential for the ‘planning’ of coherent and thus ‘sustainable’ urban re-developments. Enlarging the approach to a wider and more complex view towards a concept of cultural urban design that introduce aspects like urban diversities, mobility, multiple cultures, innovative cities, migration, urban densities and multiple identities, qualities that will be tried to be identified in the course of the paper.

These new qualities gain more importance ‘as we move into the twenty-first century, for cities have re-emerged as strategic places for a wide range of projects and dynamics’. (Sassen, 2006)

## 1.2 Issues within urban habitat

Economical, ecological and social factors, as well as the change in climatic conditions and the distribution of resources, addressing human rights, justice and dignity questions and as a result of ongoing globalization, by the year 2050 two thirds of the world’s population will be living in cities and urban settlements according to the United Nations. ‘Understanding the impacts of this growth on people and on the environment has become a necessity, as the links between architecture and society become both more complex and more fragile.’ (Burdett, 2006) This massive change in habitat and urban landscape translates into highly varied urban developments and research programs that range from shrinking cities and mega cities on the side, historical cities and new urban designs on the other. The use of some of the ever growing number of word-creations en vogue at the moment highlights the dilemma for conventional planning tools as they are.

But it needs not to be viewed as a dilemma. ‘The quintessential urban paradox comprising confrontation and promise, tension and release, social cohesion and exclusion, urban wealth and intense squalor, is a profoundly spatial equation with enormous democratic potential’. (Burdett, Kanai, 2006) Not always does urbanization go parallel with economic growth and infrastructural investments as in Asia, but also the demographic pressure and growth will continue creating an unbalance of social indicators like literacy and income through a concentration of young people as in major African cities.

‘There is a growing awareness that the urban agenda is a global agenda. The environmental impacts of cities are enormous, due both to their increasing demographic weight and to the amount of natural resources that they consume.’

Richard Burdett with Miguel Kanai; City-building in an age of global urban transformation, Cities, Architecture and Society, 2006

The aspects Burdett introduces are also described through the examples used for the Biennale exhibition, they do not imply at a one-to-one correlation between architecture and social cohesion, ‘they do raise awareness of the fragile yet significant link between the design of buildings and their impacts on society’ (Burdett, Kanai, 2006) indicating a human dimension that we will take into consideration.

Sassen introduces three important aspects for the formation of inter-city geographies: infrastructure for a new global political economy, new cultural spaces and new types of politics, each a precise indication for a new cultural urban approach. The use of the term ‘terrain vagues’ by Sassen underlines this approach to define space ‘where the practice of people can contribute to the making of public space, beyond the monumentalized public spaces of state and crown’, and concludes by saying that ‘micro-architectural interventions can build complexity into standardized spaces’(Sassen, 2006) which refers to the concept of ‘memoria’. (Collotti, 1997) Collotti points out that ‘memoria’ filters the original ‘form’, a metamorphose takes place, the new form is analogue to the original but never identical, it is always part of a creative

process. Collotti refers to Sabini's 'Memoria' when interpreting it as a complex net of associations in the playful handling of signs and meanings typical for a mnemonic process. (Sabini, 1993)

The approach of Sassen leaves a momentum of uncertainty, exactly this uncertainty needs to be envisaged, to really contrast with the technical artefacts of the dense sites of increasing interaction to 'become actors in the networks through which we move. These acute concentrations of embedded software, make the city less penetrable for the ordinary citizen.' (Sassen, 2006) 'The city is also potentially the site where all these systems can become visible, a potential further strengthened by the multiple globalities – from economic to cultural to subjective – that localize in cities.' (Sassen, 2006) In his considerations on various city-models, of cities functioning around the clock, Drewe critically states: 'These city concepts may inspire some designers, but to reassert the grounding powers of urbanism they, too, need to be translated into instruments. Moreover, the assumption of an emerging continuous city needs to be checked against known facts of time use and uncertainties concerning future developments.' (Drewe, 2005) Drewe looks at a paradigm challenge through ICT for spatial planning combined to the idea of introducing time in urban planning and design and thus '... people and their needs as external criteria of the quality of design which is not common practice for example in contemporary architecture...' (Drewe, 2005) The challenge that ICT which is fundamental for today's global economy (Sassen, 2002) is leading to the question of density and centrality in future urban planning. For the financial centers and main actors in the global economy, centrality has apparently become obsolete through ICT, and the cities will be addressing new forms of centrality. (Sassen 1994) Sassen points out four scenarios of this new geography in the global economy: 1) the City centers and/or the central shopping areas as main forms of centrality, 2) Nodes in metropolitan zones of intense economical activities (question: real new organisation of 'centre' or moments of suburban sprawl?), 3) Formation of transterritorial centres, generated by intense economic transactions, 4) New forms of centrality produced within the cyberspace (structures of economical power with complex correlation defining sites of coordination and centrality).

But the financial sector is quite different from the cultural sector, 'both benefit from agglomeration, but the content of these benefits can vary sharply' (Sassen, 2006) as 'the new ICTs should have neutralized the advantages of centrality and density.' And Sassen continues, that 'the more these technologies [ICT] enable global geographic dispersal of corporate activities, the more they produce density and centrality at the other end.'

'In fact, the new ICTs have not quite eliminated centrality and density and hence the role of cities as economic and physical entities. Even as much economic activity has dispersed, the centres of a growing number of cities have expanded physically, at times simply spreading and at times in a multi-nodal fashion. The outcome is a new type of space of centrality in these cities: it has physically expanded over the last two decades and it can assume more varied formats, including physical and electronic formats. Centrality remains a key feature of today's global economy. But today there is no longer a simple, straightforward relation between centrality and such geographic entities as the downtown, or the central business district.'

Sasskia Sassen, Why cities matter, Cities, Architecture and Society, 2006

How to use these various fields of action, these problem zones, to resolve the open question of cultural urban design? 'In an age where shrinking resources are becoming increasingly evident, one needs to fundamentally reassess economic and cultural principles towards existing structures, spaces and products. How can one work with the pre-existing, and reinstate value in what has been declared obsolete? How can one re-engage with spaces and products that have been marginalised? Where can one discover hidden potential in existing typologies and brands that have long been overlooked?' (Entering the Evacuated Field, [www.zollverein-school.de](http://www.zollverein-school.de)) At the Shrinking Cities Symposium in Germany Hortensia Völckers and Philipp Oswald address the phenomenon of less chances, minor opportunities, political deficit, multiplicity and paradoxical planning in so called shrinking cities across the world by introducing the idea of 'reinforcing the local' to gap the problems envisaged. 'One essential point of departure for the new models for action that are required is empowerment of the local, a reinforcement of autonomous opportunities for action. For the development of cities, the emancipation of the local means regaining the power to shape a situation that had increasingly evaporated in the face of the dominance of centralized state regulation, the fragmentation of jurisdiction, and the rise in power of external influences.' (Oswald, 2006)

### 1.3 Idea for the introduction of a new momentum of cultural urban design – the Cognitive City

To introduce the concept, Allenby's phrase in 'The Autonomic City' perfectly links a series of considerations done up to now. 'As urban systems continue to become increasingly information dense within and among different levels, (see Sassen) it will be impossible to determine what the city "knows" (see Collotti) or how it will choose to react to changing conditions or threat. (see Cronon and Burdett) Understanding the nature of these "cognitive cities" is a profound challenge, (see Oswalt) but one that must be met if the discourse on the sustainability of cities is to have any meaningful content at all.' (Allenby, 2006)

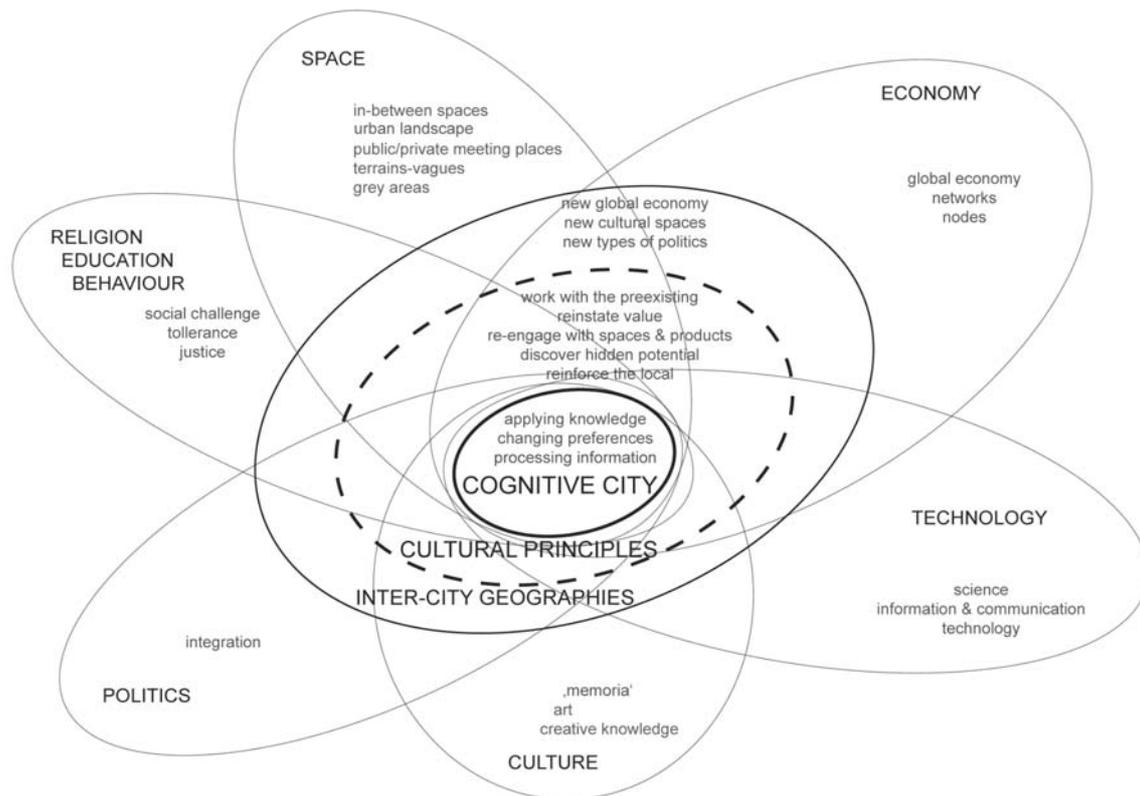
'The term cognition (Latin: cognoscere, "to know") is used in several loosely related ways to refer to a faculty for the human-like processing of information, applying knowledge and changing preferences. The concept of cognition is closely related to such abstract concepts as mind, reasoning, perception, intelligence, learning, and many others that describe numerous capabilities of human mind and expected properties of artificial or synthetic intelligence. Cognition is an abstract property of advanced living organisms; therefore, it is studied as a direct property of a brain or of an abstract mind on sub symbolic and symbolic levels.' Cognition can therefore be interpreted as the principle condition for the knowledge-based society.

As we are talking of architecture, what happens, not to the spatial qualities, but within those spaces? 'Cognitive space uses the analogy of location in two, three or higher dimensional space to describe and categorize the thoughts, memories and ideas. The dimensions of this cognitive space depend on information, training and finally on a person's awareness. All this depends globally from the cultural setting'. So the conclusion is that cognitive space enables cognition, and cognition enables knowledge; knowledge at an individual and collective level. But how can we apply this idea? Let's "borrow" the term cognitive architecture from ICTs, where 'the term 'architecture' implies an approach that attempts to model not only behaviour, but also structural properties of the modelled system.' This enables a profound paradigm change, by enlarging the spectrum of applicable values and measures that influence urban developments directly or indirectly, started by Drewe by introducing 'time' to urban planning. (see Drewe 2005)

Cognitive architecture is used in the two fundamental tools of the ICTs: 'Adaptive Control of Thought--Rational (ACT-R) developed at Carnegie Mellon University under John R. Anderson and symbolic cognitive architecture (SOAR) developed under Allen Newell and John Laird at Carnegie Mellon University and the University of Michigan'. In this paper it will be used as the idea of the "cognitive city" being a planning approach for cultural urban design.

Cultural Setting is the motivation for F. Collotti's and G. Pirazzoli's projects of small interventions on the sites of a series of Trentine Fortresses considering the memory of the place as the trigger for the overall project. A process that Collotti defines as 'fare sistema' (creating a system) based on a cognitive approach to involve all stake holders by processing information, applying knowledge and changing preferences. It is an Italian phenomenon to use 'memoria' to develop new approaches. The concept at the Cittadellarte Fondazione Pistoletto, 'Art as the engine of social change', where 'Art is the most sensitive and complete expression of human thought and consequently the landmark of every cultural, economic and social activity. The responsibility of art is to create the principles of a new classical harmony that through aesthetics and ethics balances all elements of society. Artists should therefore take on the responsibility of establishing ties among all human activities, from economics to politics, science to religion, education to behaviour, and to reconnect all the threads that make up the fabric of society. The idea of creative engagement where we take responsibility not just for ourselves, but for our broader environment and for our planet and its future [and the] University of Ideas, UNIDEE is a workshop where the arts are integrated with humanistic, scientific and social disciplines such as economics, politics, education and religion.' (UNIDEE, <http://unidee.cittadellarte.it>)

'Art is the most sensitive and comprehensive expression of thought and the time has come for the artist to assume responsibility for establishing communication between every other human activity, from economics to politics, from science to religion, from education to behaviour, in brief all areas of the social fabric.' (Michelangelo Pistoletto, Progetto Arte manifesto, 1994)



Graph 1: Graphical description of the idea – Cognitive City, Tusnovics, 2007

The diagram explains the concept of the cognitive city and shows how, “to plan is not enough!” for or “problem”. We need an approach that re-links to cultural urban design. How can we use these new aspects as a new planning tool?

## 2 THE CASE STUDIES AS FIELD EXPERIMENT

The two case studies serve to verify the idea of the approach of the envisaged process in planning. The applied methodology follows four steps: 1) individuation of parameters for the analysis, (parameters) 2) the case presentation, 3) data collection and confrontation with the cognitive city idea, 4) evaluation of the case study data (lessons learned).

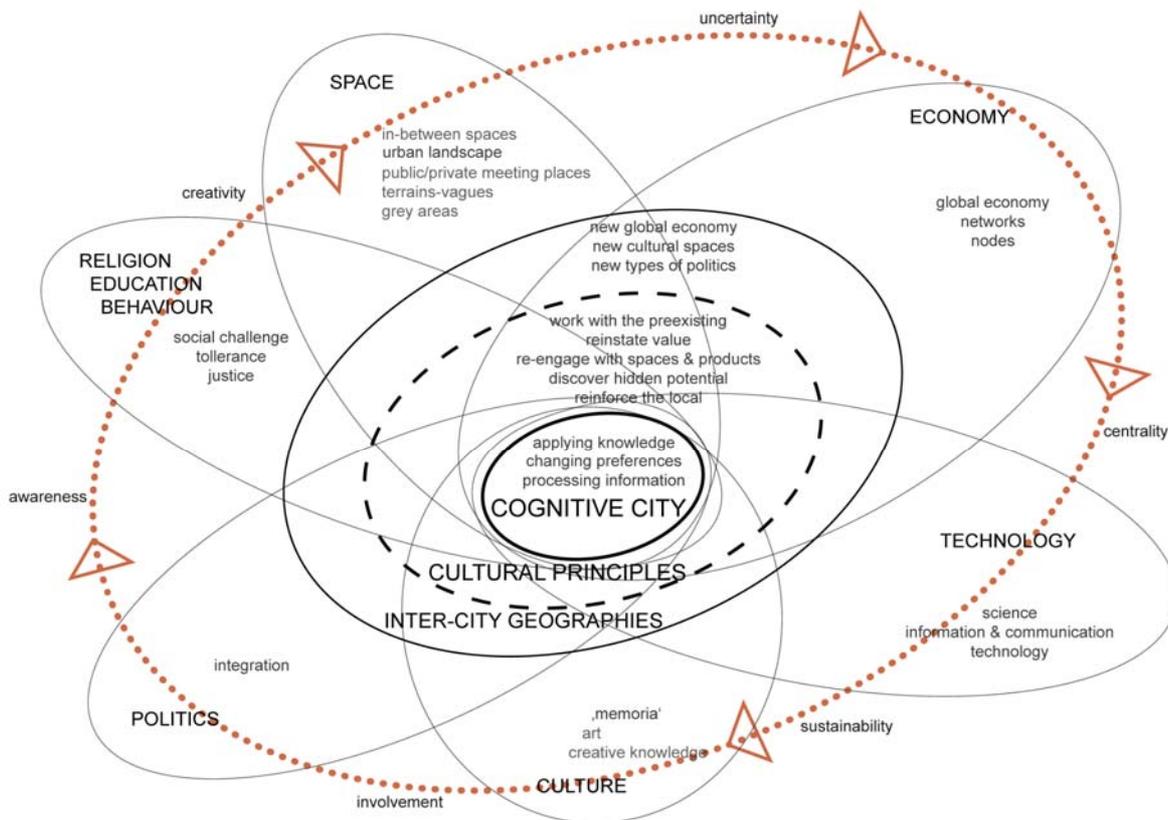
### 2.1 Parameters for the case study analysis

The chosen parameters are the result of an interdisciplinary analysis of today’s planning approach, the individuation of issues in these processes and the introduction of the cognitive city as the idea for a new momentum of cultural urban design. (see graph 1) The result is a series of parameters to apply to the interdisciplinary considerations on the planning process for urban habitat.

Major social, political and economical challenges are present in cities today, ‘often in both their most acute and their most promising forms: the sharpest juxtapositions, like the rich and the poor, but also struggles for housing; anti-immigrant politics, but also multiple forms of integration and mixing; the most powerful and globalized economics, but also a proliferation of informal economics; the most powerful real estate developers, but also the largest group of builders in the world today: people making shanty dwellings.’ (Sassen, 2006) To respond to these challenges it has become an evident question whether cities could not ‘become platforms for new types of global governance?’ This indicates for the parameters to resolve complex questions that will open to new fields of development of future research questions.

Some of these questions have already been listed by Burdet, by indicating cities as future centres of tolerance and justice for people, they should reduce the impact on the global environment by embracing dense and compact development, their physical form should foster a landscape of greater complexity and integration between people and spaces, they should harness the potential of public transport not only to use energy more efficiently but also to provide access to economic and social progress, they should inspire their citizens with

beautiful and accessible architecture and public spaces and good design and governance of cities should exercise that fundamental right of the polis to create a fair and democratic environment for the over four billion inhabitants who will inhabit the urban landscapes of the 21st century.’ (Burdett, 2006)



Graph 2: Parameters and application – Cognitive City, Tusnovics, 2007

For the interdisciplinary approach towards the cognitive city we have used a classification that enables a creative cultural approach to urban design. The cognitive city is a ‘place’ that:

- enables involvement,
- generates awareness,
- uses creativity,
- deals with uncertainty,
- looks at centrality and
- implies sustainability for future urban habitat questions.

These parameters serve when linking topics like space, economy, technology, culture, politics as well as religion, education and behaviour and considering also the intrinsic ‘problems’ within and between these topics.

Florida argues that ‘‘place’’ is the key economic and social organizing unit of our time. Places provide the ecosystems that harness human creativity and turn it into economic value. The task before us is to build new forms of social cohesion appropriate to the new Creative Age and from there, to pursue a collective vision of a better and more prosperous future for all.’ (Florida, 2002)

## 2.1 Case studies and data collection

The two case studies are confronted with the goal of relating to the cognitive city, to analyse the approach as a new system and to determine points of interest. It is not the aim to define a general or universal method but to analyse and confront the complex planning process of re-vitalisation projects with the cognitive city idea. Both case studies are real projects in real urban settings and both have not been realised yet.

It is not the universal rules we are trying to define, but through the collection of data and the analysis within the context of the parameters, allowing for valuable results for the approach of similar projects under similar conditions.

### 2.1.1 Case 2: Entwicklungsideen Pernerinsel – Hallein

The project ‘Entwicklungsideen Pernerinsel – Hallein’ developed by H. Pöschl (ICCM, Salzburg, 2006) is a research project situated in the medieval town of Hallein some 20 km south of Salzburg. The project comprises the old city centre on the Salzach River and the Perner Island which hosted the salt works. Hallein spreads over an area of 27 km<sup>2</sup> with 18.900 inhabitants and is the second largest city of the Salzburg Region. With the 1989 closure of the salt works on the Perner Island, and the consequential economical decline of the city, a series of initiatives to reactivate the city of Hallein have been launched.



The city of Hallein, [http://www.hallein.gv.at/de\\_galerie\\_hallein-ansichten\\_2\\_5.html](http://www.hallein.gv.at/de_galerie_hallein-ansichten_2_5.html)

This project, elaborated by the ICCM, envisages a ‘renaissance’ of Hallein by introducing content to the industrial architecture of the salt works and links the island to the city using the notions of creative industries to involve the entire city in this process. The focus is to transform the urban structure of the Perner Island and the historical centre by re-inventing the content and use of the urban landscape.

### 2.1.2 Hallein data collection and analysis

‘Entwicklungsideen Pernerinsel – Hallein’ is based on three levels of action and involvement: a) creative city Hallein as frame for motivation and enthusiasm, b) generating of a creative ambience, c) Perner Island as the shaping key-project.

Hallein has great potential as a creative city, therefore the city can be seen as place for entertainment and social components, which requires a new bill of laws to enable the necessary creative ambience. The project addresses a series of informal social relations for local innovation as result of collective learning processes. The ‘creative milieu’ is based on material components like infrastructure, immaterial components like know-how as well as institutional components which have the decisional powers. The ‘creative milieu’ is seen as the unification of local milieu with the innovations network. The stakeholders are the city of Hallein, cultural components within the city and the universities. The focus goes towards a creativity terminal on the Perner Island as central focalisation of all existing activities (cultural and social) accompanied with new ideas for a cultural centre on the island within the salt works.

a) The project does not reconsider the inter-city geography, it is based on existing structures and it does not consider all aspects of action. It does involve politics but it does not use technology and economy or space or demographic aspects. b) The project can not be considered part of a global economical system. It seems evident that a strong focus is put on existing and local aspects within the city, but no focus on the other principles. c) The parameters seem not primarily to have guided the process. Most aspects are hardly touched or addressed, like a series of fundamental stakeholders, that appear not involved or considered and other basic aspects for the cognitive city, like the economy and technology seem to be missing.

### 2.1.3 Case 1: Porto Vecchio di Trieste PO\_VE\_TS

The PO\_VE\_TS (Porto Vecchio di Trieste) research project is about the old Austrian harbour of the former empire in the heart of the city of Trieste. The old harbour, in disuse since the 80es, is a coastal strip of land on the Adriatic Sea, covering an area of approximately 700.000 m<sup>2</sup> and some 1.000.000 m<sup>3</sup> of built structures sealed off from the city by the railroad system.



The old harbour of Trieste, [http://www.porto.trieste.it/custom/sez\\_archivio1.php?id=33](http://www.porto.trieste.it/custom/sez_archivio1.php?id=33)

The built structure (some 35 warehouses and support structures of high architectonic and historical value) have become appetible to the various players of the harbour authorities but also to the various political powers like the municipality of Trieste, the Province of Trieste and the region Friuli Venezia-Giulia.

The research project, funded by the European Community through the ENAIP of Trieste, elaborated by E. Porro, reflects the necessities of all involved players and confronts the ideas of the various stake holders by confronting the communication within the entire project. The main focus of all projects is the transformation of this urban habitat and the re-invention of the city by integrating this segregated surface into the existing urban fabric.

### 2.1.4 Porto Vecchio di Trieste POVETS data collection and analysis

PO\_VE\_TS was set up on five layers of communication: a) Collection of the projects by various possible players, b) analysis of the existing built structure, c) collection of similar interventions in other European cities, d) other interventions and project ideas involving the harbour area promoted in Trieste and e) the META project reflecting the possible/non possible actions on that surface.

(1) Autorità Portuale di Trieste with Studio Boeri: Based on a concept of open planning for the process and for structural questions. The base-steps are the individuation of activities for the area, then the structural proceeding within existing buildings for re-qualification by restructuring/substitution/subtraction. The project considers the entire area as a homogeneous zone with maritime focus like the ferry-boat harbour for passenger traffic, exhibition space for maritime themes, directional centre and innovation centre for maritime activities and an access and traffic concept with clear diversification for local and through-traffic. A marketing concept combined with political backing and an economic concept for the area was presented. a) What changes have been adopted for the inter-city geography? This project has a positive record for all aspects. The economical dimension is not clear as to what extent it will enable the process of change. The project very much lives of the aspect of inter-city relations and therefore it appears more than necessary to deepen the interrelations of each side. b) How are the cultural principles applied? Reinforcing the local is an aspect that is not evident in the process even though the cultural dimension is present in the entire project. c) Are the 'parameters' visible in the planning process? To a large extent this is more than evident, even though sustainability and awareness are parameters not considered.

(2) Associazione Spedizionieri del Porto di Trieste ASPT – ASTRA: The Project identifies the elements of need, like infill of certain areas, and demolitions and the elements of use like the container surface and the ferryboat area. The project reflects the exact needs of who operates within the harbour, and does not seek to relink the area to the rest of the city. a) The project ignores in great part the rest of the existing city, only

other parts of the harbour-structures are set into relation. b) Aspects of a cultural value are completely ignored, and the relations of the interventions envisaged to one another have no clear focus. c) The idea of creating a cognitive-city is not the aim of this project, that

(3) Trieste Futura with Manuel de Sola e Morales: The three basic ideas are new spaces for harbour use, minor investment that can be self financed and the entire area divided in separated areas according to functions as tourism, exhibition, and cultural, commercial, artisan. Operational aspects are development of new functions for the harbour, new functions for the city and reduction of traffic and parking problems in the centre by shifting into the PO\_VE\_TS area.. The Morales project had special elements of major importance like the Trade Centre/hotels/ offices/shops. a) The approach of this project is based on changing the inter-city geography by opening the area to new economical and political actors. b) The idea is a soft intervention, which does not define any new or strong parameters. It does not really support change, the parameters are used as hidden continuity. c) At a first glance, certain aspects are covered. Missing parameters are the question of centrality, uncertainty as well as awareness and sustainability.

(4) The communication materials of the existing projects on the old harbour (until the presentation of the PO\_VE\_TS research, as many more projects have been done since) that was collected is the base for a comparative analysis. This analysis represents clearly projects that belong to urban planning tout-court. Projects that consider only part of the area (besides the Boeri project) that often do not consider the old harbour as a whole and the space-complexity is related to only from its functionality, or to get the feed-back on the political-economical level for investment, as well as the necessity to issue legislative instruments as a master-plan. The graphical transposition of the design process used in the MÈTA-project PO\_VE\_TS reflects a work in progress approach more than a definitive final urban project: 1) the net/grid necessary as support to the relations of all actors and stake holders involved; 2) the levels/stratifications of various dimensions and heights as communication and interaction platforms wrapping and protecting the existing warehouses; 3) the bridges/axis linking the harbour area with the city in order to mend the communication; 4) the snake/crossing line that unwinds through the entire surface generating movement and dynamics; 5) the dome shaped tenso-structure/structure protecting the area with its precious spaces and for its uniqueness. a) Between simulation and urban project, occupying the voids (drawn levels) the existing warehouses gain a metaphysical dimension of emergence from the past in an upside down scenery, that very well describes the inter-city geographies. b) All applied references and projection topics for the urban transformation at the MÈTA-project level are based on cultural principles. c) This is only a starting point to a cognitive transformation, by applying the possible parameters to the graphical MÈTA-process.

### 3 LESSONS LEARNED

Interesting enough that neither of the analyzed projects is in the phase of being implemented. Only single aspects are being adopted, often more for the necessity to have some kind of action than because they are following a real plan.

By adopting the cognitive city, a series of questions will have to be addressed like: What changes have been adopted for the inter-city geography?; How are the cultural principles applied?; Are the 'parameters' visible in the planning process?

A space to future research is opened by the cognitive city idea and a first step is done. One of the major aspects is a clear view of the complexity involved. The cognitive city idea enables a broader view, that makes certain absences evident during the process and obviously asks for a more open and cultural approach towards urban habitat questions.

### 4 CONCLUSIONS FOR THE 'COGNITIVE CITY': CHALLENGES AND POTENTIALS

A series of challenges and potentials are found within the interdisciplinary approach reconsidering the process of re-inventing urban habitat to generate a cognitive city. The case studies, the general sources of information and the analysis based on graph 1 leads to a series of conclusions:

The need for new political systems form new claims by informal political actors that will materialize and assumes concrete forms.' In order to profoundly change the approach we need to reconsider the relations of these cities to the typical urban topographic representations and measures we are using today. 'Could it be that precisely what urban topography misses [today] is a new type of inter-city potential? At a time when

growing numbers of people, economic opportunities, social problems and political options concentrate in cities, we need to explore how urban governments can work internationally to further global governance.’ (Sassen, 2006) An important task for urban habitat is the need of social structure of creativity, a supportive social milieu, open to creativity – artistic and cultural as well as technological and economic. ‘The social and cultural milieu provides a mechanism for attracting new and different kinds of people and facilitating the rapid transmission of knowledge and ideas’ (Florida, 2002) on the brink of the knowledge-base society. Urban habitat will have to deal with its empty and unused spaces, often characterized more by memory (see Collotti) than current meaning. These spaces are part of the interiority of a city, even if outside of utility-driven logics and spatial frames. ‘These terrains vagues allow many residents to connect to the rapidly-transforming cities in which they live and subjectively to bypass the massive infrastructure dominating more and more spaces in their cities. Keeping some of the openness might make more sense in terms of factoring future options at a time when utility logics change so quickly and often violently, excess of high-rise office buildings being one of the great examples.’ (Sassen, 2006)

Lynch’s discussion on urban theory for the make of a ‘good city’ focalizes in the development of a general normative theory by identifying a set of performance dimensions, leaving space for individual priorities. He defines five criteria, plus two "meta-criteria": vitality, sense, fit, access, control, plus efficiency and justice. Lynch defines his general normative theory as a work in progress, (Lynch, 1981) which indicates the complexity for the definition of an overall valued approach for urban planning. The cognitive city is to be considered as work in progress, with a series of options within the process, that will need further research, to enable a new tool for a planning of new and requalified urban habitat.

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