



Abstracts

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New information and communication technologies (NICTs) and changing urban areas regarding sustainability

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New Information and Communication Technologies (NICTs) are transforming social, economic and cultural life. However, how such technologies will shape the growth of cities and regions do not yet fully understood. The impact of NICTs on urban areas is debated from academics and planners since 1980s. Digital Technologies have brought dramatic changes to the office environment. It is possible to work from remote locations, NICTs will eliminate the need for offices. Twenty years ago, 'access' in economic development terms meant roads, highways, concrete, and air and rail transportation. Today, access refers to information and data and fiber optics. Information and telecommunication technologies have a potential to displace trips. This does have clear environmental benefits, particularly when teleworking is substituting for a long commute. This paper aims to examine the impact of NICTs on cities and urban growth regarding sustainability. It critically reviews the relations between urban areas and the role of NICTs in contemporary cities. Potential research questions regarding the impact of technologies on organizations, location criteria of households and offices, rural and urban forms, transportation and environment are examined. From policy and planning perspectives, it is important to learn the effects of information technology in general, and telecommuting in particular, on urban development patterns. This paper points out that the effects of telecommuting on location decisions of households and offices. Finally, the important results of this paper are; urban sprawl and decentralization are aggravating, the location criteria of households and offices are changing, peak-hour travels are reducing, the use of automobile is declining and environment pollutions are decreasing. NICTs have dual effects. The use of these Technologies has had both centralizing and decentralizing effects on cities. They also has the potential for making major contributions toward sustainability of the earth's ecosystems.

Developers' influence on urban design in urban transformation projects. A case study

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The majority of Norwegian urban development takes place as brownfield- or waterfront developments: Urban transformation projects. Private development companies carry out the planning and implementation. This gives the developers great influence on the urban design of renewed urban environments for working, living and recreating. On the other hand, we know that quality public space and urban design is important for well being, social interaction and sustainability, and urban transformation projects create environments for a great number of people to use, both now and in the future. This paper presents results from a case study of the planning process in a transformation project in Trondheim, Norway. The study focused on how decisions related to urban design were made, what decisions were made, and how the developer influenced on these decisions.

The study found that the overall pattern for the development was established from an idea from the developer, and further developed in three parallel architect commissions. All the involved parts had agreed on one project which was described as far better than the other two. Most decisions were made in team work where architects, planners and representatives from other authorities participated. However, already before any drawings were made, the developers had decided on number of housing units, type of construction and solution for parking. In addition, many restrictions from the municipality were limiting the possibilities for the site. The idea for the urban design was clear, and quite detailed in the plan, and thoroughly described in illustration plans. It was to be a sustainable development, based on a green structure connecting the different functions in the area. The ambitions were high in the planning stage,

and proposals of high quality were developed. In later stages, the ambitions lowered, and weakened the urban design qualities.

Design for sustainable mobility in cities - Case of Rotterdam

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This paper examines the concept development and implementation of sustainable transport in cities. It traces efforts to define and operationalize the notion of sustainable transport in the urban context, noting that these efforts have tended to fall into two broad clusters of work: those that envision sustainable transportation as a policy pathway, and those that envision it as a policy end-point. The goal of sustainable transportation may be better served by a number of the organic innovations in transportation practice that are occurring in the field.

The authors identify emerging areas of innovation and application of industrial design in the areas of new mobility as Intelligent System Management, recreation and Liveability. Finally, the authors discuss the extent to which these innovations represent a more systems-oriented approach, and the institutional challenges inherent in these proposals.

Changing face of sustainable transportation

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Several definitions and notions exist in the transportation literature that explains sustainability and its surrounding myths. Over the years sustainable transport definition and meaning has changed in terms of interpretation and implementation. In this paper, several of these notions are examined using a combination of existing research, data analysis and certain theoretical constructs. Among the areas addressed are personal transport and urban development, the likelihood of tangible chain mobility options, the promise of hydrogen as an alternative fuel, the future demand for individual transport and the role of networks and service systems.

An examination of several of these notions and some others reveals that they clearly need to be researched in further detail and reveals changing facets of sustainable transportation.

Private housing: Individual expression versus collective identity

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In the Netherlands, as a reaction to the tradition of large-scale government planned housing, recently a political target is set to meet the demand of the individual housing consumer. In early 2000 the government decided to raise the amount of private initiatives in housing developments to one third of the total building task. The government stimulates individuals to own the land and to decide with which parties they will design and build their own homes. How is this target implemented in the Dutch planning tradition, in which the collective always has played a dominant role? In a recent publication of the Netherlands Institute for Spatial Research, the Dutch practice of private housing initiatives is being investigated. In this paper we will focus on the architectural appearance and its relationship to development processes, urban regulations and private commissioning.

When nature and landscape substitute the urban square - The everyday urban landscape in Trekroner

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Since the booming of low and dense housing projects in the eighties, little attention has been paid to planning of urban areas for ordinary families in Danish municipalities. Focus has been on areas affected by social problems, transformation of harbour areas and regeneration of historic inner cities. Meanwhile, the suburban areas have expanded almost unnoticed in the periphery of cities facing economic growth and prosperity.

Visions concerning how to form the everyday landscape are almost non-existent although suburbs occupy huge areas in the contemporary city. Yet competition among cities striving to attract young families seems to have put housing on the political agenda. Municipalities that can no longer offer local workplaces have to define a new role for themselves and urban planning has become a strategic parameter to attract young families seeking affordable housing in attractive settings.

Research question:

Can attractive urban areas be created if the well-known and appreciated urban activities are missing? Can nature substitute urban activities?

Approach:

The approach is a case study of Trekroner situated in the Copenhagen urban region. The case area is a fast growing urban area attracting young families. The paper gives an analysis of the urban programme and design focused on the potential of the landscape to achieve identity and a sense of place.

The underlying garden city concept can lead the thought to New Urbanism; therefore the paper includes a comparison to New Urbanism, whose design and planning strategies are very different from those found in the case.

The project attempts to gain new insight and reveal new images of the garden city and intends to acknowledge everyday practise, having constituted the suburb as the form of the contemporary city. The project can contribute to developing sustainable strategies and creating counter images to the mainly negative images of contemporary suburbanization.

Greening of vertical outdoor walls of buildings in urban areas by using ecological engineering techniques

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Greening of vertical walls of buildings in urban areas has many advantages, but it is still not a fully accepted design and construct option. Vegetation on walls will increase the insulation capacity, can have aesthetic and ecological values and plays a role in cleansing the air. Different systems have been developed, like greening direct on the wall, greening systems before the wall and greening incorporated within the construction of the wall. Despite the range of possibilities there is still great hesitation in the building sector to increase the amount of outdoor wall greening. Probably mainly due to the possible disadvantages: extra maintenance, damaging wall structure, increase of insect and spiders and extra costs.

One of the solutions to overcome the negative approach may be a change in the approach when assessing the environmental impacts: not only to look at the negative impacts of building on a site, but to include positive values of so-called ecosystem services of green walls as well. Beside the positive effects of greening of walls the valuation should also include the greening of roofs and the surroundings as part of the ecological infrastructure on different levels of scale. The question will be dealt how to overcome the hesitation to implement green walls. An overview and comparison of different types for housing and industrial buildings and possibilities of multifunctionality will be shown:

- Combining green walls with green roofs as part of the ecological infrastructures in urban

areas.

- Combining indoor and outdoor plantings.
- Combining greening of walls with waste water treatment systems.

It will be shown how to make a program for large scale implementation of green walls of buildings in urban areas as an integrated approach in order to make greening of walls fully acceptable from the design concept till the maintenance phase.

Shanghai's new towns: Sustainable development or new colonialism?

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Since the economic reforms introduced in Shanghai in 1990, the city, and its city region ' the Yangtze River Delta ' have been undergoing rapid and aggressive transformation. The aim of all this redevelopment is to put Shanghai back onto the world city ranking, a position it lost when the Communists took over the country in 1949. In the forty years since 1949 Shanghai simply stagnated. The city was not even included in the first round of economic reforms instituted in China in 1978. There was no urban expansion, no industrial or economic development, no new infrastructure, there wasn't even an increase in the much-needed housing sector. Since the second round of economic reforms in April 1990, however, Shanghai has experienced an urban revolution. There has been massive investment in high-tech and ICT industries, not to mention infrastructure, as well as housing ' public and private. Part of this plan for regional redevelopment is the 'One City Nine Towns' strategy. Influenced by the British satellite towns of the 1960s, Shanghai has been building a series of satellite towns outside its central area. Each of the nine towns has its own identity or style: British, German, Italian, etc. (There's even a Dutch town at Gaoqiao). This paper questions the feasibility of building city identity on borrowed styles, the towns they're based on were built up slowly over centuries; these new ones, being built overnight as it were, are bound to lack some of the atmosphere of the originals. This paper will also question the domination of foreign architects in the planning process of these new towns: the Italian town of Pujiang by Gregotti Associati; the German town of Anting by Speer & Partner; etc., hence the 'new colonialism' of the title. And finally, it will question if this development is even sustainable?

Regeneration and sustainable development in Chinas urban transformation

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Many Chinese cities are struggling with the challenges of urban regeneration brought by restructuring of traditional economy and increasing competitions between cities for resources, investment and business. The closure of docks, warehouses and traditional industrial factories as well as the deteriorating position of traditional urban centres in the last two decades brought not only problems but also exceptional opportunities for the remaking of cities and new functions of old urban areas. However, this process usually requires urban managers to find innovative solutions that balance physical, economic and social need. In many cases these challenges outstripped the capacity of local urban managers to adapt and respond. By examining several urban regeneration projects in two Chinese cities and diverse strategies explored in these projects, this paper hopes to provide a better understanding how urban regeneration process is evolved in Chinese cities. This paper reassesses the goal of regeneration, the mechanism used in the regeneration process and the physical, economic and social consequences resulted from urban regeneration. Finally, to what extent sustainable development has been achieved in these projects is examined and how urban regeneration process can be best promoted in a sustainable way in the future are discussed.

Chinas rapid urbanization: Is compact Shanghai sustainable?

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Since the economic reform in the eighties, cities in China have undergone phenomenal changes. The sustainability impacts of these transformations are yet to be assessed. The purpose of this pioneering study is to investigate the sustainability of the urban form of Shanghai, the nation's economic leader.

The conceptual construct for this study is based on an analytical framework derived from an extensive review of the compact city literature. Shanghai already possesses, prima facie, the urban characteristics recommended by the compact city model, i.e. high density, mixed land uses and heavy reliance on public transport. However, does it meet the sustainability objectives and criteria underlying the urban city advocacy? More specifically, do the post-reform trends of Shanghai's spatial and related development strategies and processes move away or closer towards these newly advocated urban sustainability strategies? As argued in the literature, the compact urban form incurs both sustainability benefits and disbenefits, which vary across cities of different socio-cultural and economic polity. What then are the sustainability benefits and disbenefits of this large Chinese city? This research paper aims to seek answers for these questions.

Car ownership and urban sustainability: A policy dilemma

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Sustainability is now widely recognised as a tripartite ideal: social and economic sustainability must complement environmental concerns. However, an analysis of the social impacts of car-use exposes a policy dilemma, rooted in the tensions between environmental, economic and social objectives.

Both as object of desire and as a practical 'necessity', the car has come to symbolise progress in the world; it is hardly surprising that increased wealth correlates with increased levels of car ownership. However, the success and sustainability of urban regeneration could be undermined if increasing prosperity is coupled with increasing levels of vehicle ownership. Although the mobility that comes with private transport increases personal freedom and expands opportunities, the dominance of the car and the wider impacts of car ownership also give rise to a range of environmental externalities which predominantly impact upon already disadvantaged members of society. Additionally, widespread car ownership carries further implications for social sustainability. Traditionally, diversity has been seen as one of the virtues of our urban centres but the separation of urban functions since the advent of private transport has also meant the increasing separation and segregation of different social groups. Indeed, the nature of the car is such that, as 'private' transport, by definition it reduces opportunities for the kinds of casual social contact that have been theorised as central to neighbourhood and social cohesion.

However, there is evidence that spatial factors such as urban density can break down the expected positive relationship between income and car ownership. In combination with the poverty-exclusion conceptual shift, this opens up the possibility of living a desirable 'included' lifestyle without the car. This paper presents empirical research using the British Household Panel Survey, investigating the relative roles of income and urban density as determinants of car ownership and social inclusion in the UK.

Sustainable development of the European port-city interface

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The re-development of port areas has long been an inspiring area type for urban planners, architects, politicians, developers, real estate investors and the like. It became a tool for giving cities a new economic impulse, and the exposure they need to engage in an ever more global urban competition. Nowadays, the waterfront development 'model' is still very popular ' especially with politicians ' even though an increasing amount of implementation questions have been arising from the fields concerned. Based on (mostly economic) successes of the waterfront model elsewhere, policy-makers aim to shoot first and ask questions later, usually wasting staggering amounts of public money in the process. In line with the scientific tradition, this paper aims to open up the waterfront model in order to explain the implementation problems apparent in many port-cities around the world. Based on a literature review and illustrated by the cases of Rotterdam and Hamburg, it will (again) become obvious that the management of waterfront development projects cannot be inferred from its location on the water's edge alone, and that every case should be assessed carefully before development organizations and strategies are deployed. However, based on an interdisciplinary approach, it will be argued that a new waterfront typology is possible for management purposes as long as some limitations are taken into account. The paper will elaborate the argument by zooming in-and-out on a particular type of waterfront development assignment that has currently emerged in the interface of Europe's largest and still evolving maritime ports and their cities. This type of waterfront development assignment reflects a high level of complexity, as well as a great importance to the sustainable development of the total port-city complex. Its unprecedented characteristics should invoke a learning effect and yield innovation in the management of waterfront development efforts.

New houses for new residential requirements

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The structure of our contemporary society has undergone deep changes during the last ten years; these changes heavily influence housing requirements.

The large number of extra-communitarians/immigrants, singles, young couples and elderly people who have a growing need for autonomy, have much different lodging needs than the old family structure. Their way of living cannot be considered as permanent, given the movements on the labour market.

The common factor is to represent a small family group which should have the possibility to easily find a small sized home, at a fair price, well connected to social and economical activities.

We consider three scales:

1. The structure of the city. A small family or a single, living in a large city, are closely tied to the power-centres activities usually located far away from their residential area, while they need to be closer to economic and social exchanges. Easy connections represent the basis for a good level of life.
2. The residential building. Residential buildings for afore said 'not-conventional' users, in order to optimize costs, should set up common equipments that could become meeting/social exchange places.
3. The lodging. Lodging must be very 'flexible' (modifiable, adaptable, clustered spaces). Since this could be used, for a period of time, by students, then by an elder single, then by a group of immigrants, and finally by a small family. The sharing requirements/separations of the spaces will considerably vary.

Good residential architecture will favour social relations: this is one of the easiest means to conquer a high level of democracy. M. Sorkin in one of his articles entitled 'Thoughts on

density' states that sociability depends on the 'quality of contacts'. These can be qualified as 'happy accidents' and take birth from the originality of experiences, participation of individuals in several activities and easy freedom of movements.

Cultural and spatial sustainability in quay squares

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The quays are the stops of the sea transportation network. The quay squares are the public areas that are formed in front of the quay buildings and they used for recreational and social utility. Those squares have relaxing and training effects on human psychology with regard to their shape, scale, texture, colour and illumination characteristics. Besides, they are the gathering places that strengthen the communication between people and they ensure free moving for the people against to rushing and complex traffic environment.

The Bosphorus in Istanbul connects the Asian and European sides. It has an international significance with regard to its geographical situation and sea transportation. The quay squares of the Bosphorus are located in the historical sites of Bosphorus and they ensure transportation in addition to the land and railway means by meeting some of the central transportation load of the city. Generally, bazaars of the quarter or town take place around such quays and also shops, government offices, coffee houses, mosques, barbers etc. The quay squares are the living places where the social life of Istanbul and the Bosphorus settlement are focused on.

The objective of this study is to investigate cultural and spatial sustainability of Bosphorus quay squares with their historical, geographical and natural features and provide the continuity of these places as a cultural heritage. For this purpose, the quay squares examined with respect to their recreational potentials in Istanbul by considering the transportation system and the current situations of each square individually evaluated. Besides, the physical, functional, social and recreational changes of these places from past to recent days examined with the literature studies made on the Bosphorus quay squares.

Urban road tunnels: Culture and metaphors of the contemporary city morphology

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The present paper focuses on the underground urban road semi-express systems as part of a paradigm for the contemporary city. Traditionally, tunnels are thought to be related to natural landscape obstacles such as hills and mountains. However, these traffic devices are significantly spread in the big cities in recent years, even in areas which are not characterized for an irregular topography. A simple glance at the subject could mislead us to the deduction that road tunnel boring in contemporary urban plans correspond to isolated and punctual initiatives. Nevertheless, a deeper investigation demonstrates that it addresses to a much wider set of goals that reflecting restructuring the urban space to new paradigms of city.

The research's theoretical support is based on an interdisciplinary approach frequently used in the cultural studies (Kostof 1991, 1992; Panerai et al. 1997, 1999, among others). The changes in our environment mean a great deal of emotional, psychological, physical and financial investment. Therefore, if the landscape is going through reorganizations it implies that significant transformations are taking place in the field of culture (Lewis, 1979). Some of these changes are concerned with the values of the network societies, which have broader effects the traditional ones in the area of technology and economics (Castells 1995; Ascher 1995).

Thus, I identify the motivations that determine the study object diffusion; I verify the technological improvements that turn its production into more efficient processes; and I establish a relationship between the two aspects above and the inclusion of tunnels in urban remodeling operations. Through computer aided modeling, I classify the most frequent road urban tunnel typologies concerning the relationship between these elements and recent

morphological changes in the current city. The research concludes that motivations and techniques, as well as urban design actions, comprehend different dimensions of the contemporary culture.

A residential impact study concerning the external effects of soil contamination on the housing market in the Netherlands

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According to the Netherlands Environmental Assessment Agency (Milieu en Natuur Planbureau MNP), 30 to 40% of the Dutch live or work on or nearby serious contaminated soil. Over fifty percent of the people become very concerned when they hear they are living on contaminated soil. Apparently, this concern relates not only to the potential effects on their own and their children's health, but also on the value of their property. This response suggests a possible relationship between soil contamination and the housing market.

Does a home which is built on contaminated soil retain its value? And will people still want to buy it? These are the main questions that owner-occupiers ask themselves when contaminated soil is discovered on their housing estate. However, though home-owners see depreciation and non-saleability as the worst consequences of soil contamination, clean-up operations take no account of these factors. The financial as well as the health and environmental implications of soil contamination have been acknowledged since soil clean-up began in the Netherlands in 1980 with the Lekkerkerk Affair, but they have 'as far as we know' never been scientifically researched. There are scarcely any theories in the Netherlands that deal with polluted real estate, and no empirical analyses. What usually happens is that residents, real estate agents and valuers assume that a home will depreciate in value as soon as contaminated soil is discovered and will not appreciate again until the problem has been solved, while the homes are unmarketable in the meantime.

Ground for concern explores whether there is justification (or not) to support this vision of 'contaminated real estate' and ascertain the effects of soil contamination on the housing market.

Energy transformation in urban areas

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There is an urgent worldwide need for energy transformation, the change towards sustainable energy sources. Not only the major problem of global warming demands a different attitude towards traditional energy sources, but the reduction of oil- and gas reserves and political issues also increase the urgency of becoming less dependent on natural oil and gas sources (think of Russia and Iraq). Many initiatives already started to realise this transformation.

However, energy transformation is a very complex process. Especially in the built environment. An important conclusion of a Dutch research in 2000, focussed on experiences in several European countries, was that the following factors are having a determining influence on the diffusion of environmental innovations in housing: quality of the innovation, organization of the demonstration projects, organization of the information transfer and influences of government. The results suggested a determining influence of external factors too. However, the number of case studies to support the incontrovertibility of these factors was insufficient.

The subject of this Dutch research was housing. Are the conclusions of this research useful for projects in urban areas too? In the Netherlands several big cities recently started projects focussed on energy transformation in urban areas. In November 2006 representatives of six big cities in the US and Europe, also active in this field, visited these projects and exchanged their experiences with those of four Dutch cities. This paper relates the experiences of these big cities to the results of the Dutch research to find an answer on this question.

An urban form for a sustainable city, in arid areas

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One of the principal reflexions concerning the sustainable urban development is that of the urban form or, in another term, the morphology of the cities. It is quite obvious that whatever their form, cities continue to be defined above all by their urban density. Between the dense city and the model of the burst city, the urban density influences the use and the space management, energy and resources, on social co-education and the cost of the infrastructures and services, like on the urban climate. This question arouses a great interest between various disciplines.

This research task is a contribution to the debate on the urban forms most favourable to a sustainable urban development, in a particular context, that of the arid areas. It is made of two shutters. First rests on a theoretical analysis of the impact of the various urban forms, on durability in urban environment, by focusing thereafter the study on the influence of urban morphology on the climate of the city. The second shutter has the results of an experimental study, examining the effect of the level of the urban density and the compactness of the framework built on the climate of a city belonging to the arid areas with hot and dry climate: the city of 'Biskra'. This experimentation consists of a data acquisition by series of measurement. The examined climatic factors are: the temperature of the air, the radiant temperature, relative humidity and air velocity. This research leads to a draft of the principal features of an urban morphology, which will be able to contribute to carry out a sustainable city, in the arid areas.

Dangers and potentials of urban development - The case of Pazin

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During the last decade, Croatia has made considerable progress in spatial, tourism and economic development, as evident particularly in intensive urban growth. In many cases, rapid development has led to unsuitable transformations and interventions in the environment. The goal of this paper is to show that well-devised and carefully planned development scenarios can protect a city or parts of it from undesired forms of transformation and, furthermore, that spatial potentials of an area need to be re-studied and taken as the starting points for sustainable urban development.

The paper deals with the relationship between spatial and historic particularities and the transformations of the Istrian peninsula. Even though protection of natural resources has been integrated into the planning documentation, the authors argue that further attention needs to be paid to the sensitivity of the area, its environmental attributes and cultural heritage. This area stands out due to its numerous preserved urban entities and uniqueness of the overall landscape and therefore the form of their future development ought to be further studied. One possible way of such urban development is shown on the example of area Lakota and stream Drazej running through it, in the town of Pazin, chosen as a depository for waste materials from the nearby industrial plant. Pazin is the administrative center of the county, lying in the geometrical center of the Istrian peninsula. Its area abounds in specific karst forms whose uniqueness calls for an extra sensitive approach in the planning process. The authors critically re-examine urbanists and environmentalists' points of view and suggest a different development scenario for the area based on re-cultivation of nature and its attributes. Their suggested use of the area starts from ecological approach and appreciation of environmental attributes, respecting the need to fit the area into the urban tissue of Pazin.

Guidelines for subtropical design: A tool for the sustainable built environment in South East Queensland

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The historic South East Queensland Regional Plan 2005-2026 (Plan) is a statutory response to managing growth in one of Australia's fastest-growing regions. It seeks to maintain a prosperous liveable community and a sustainable environment. The vision includes the statement 'development is sustainable, well designed, and the subtropical character of the region is recognised and reinforced'. The explicit inclusion of the subtropical aspect with sustainability in the regional planning agenda, ensures recognition of appropriate design for climate as a highly relevant planning issue that cannot be ignored.

The Plan identifies thirteen principles to guide subtropical planning. These principles demonstrate that recognition of the region's subtropical character is not just an issue which relates to building design, or even to the design of neighbourhoods but permeates all aspects of the SEQ environment and affects all aspects of human settlement within that environment. It identifies the link between local climate and lifestyle, and the need to reduce demand for energy.

In light of the Plan, the Centre for Subtropical Design at QUT is developing guidelines as a tool for subtropical design using a scientific approach. The tool proposes 'implementation strategies' and for each of the Plan's thirteen subtropical principles. It is to be used by developers, planners, and local authorities for adopting and assessing subtropical design in new as well as in existing urban plans.

The first draft of the guideline was developed through a literature review and stakeholder workshops. The researchers sought detailed comment on the draft from key planners in local authorities to verify its relevance for assessing subtropical design in different plans. A refined version of the tool was then sent to stakeholders in the planning community for re-evaluation. The outcome of this research will be an applicable tool for planners and developers for achieving a sustainable subtropical built environment.

Towards the sustainable city: 'Green urbanism'

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This paper reflects upon a wide range of strategies focused on increasing sustainability of urban design beyond and within the scope of individual buildings. What are the conditions of the 'Sustainable City'? By examining the case study of the Australian city of Newcastle, the paper provides a context for a general debate about the urban design of a sustainable city centre, and discusses how urban design is affected (and can be expected to be even more affected in future) by the new paradigms of ecology. The author suggests a fast re-urbanisation of the city centre, which faces increasingly vacant shops and decline.

In this context, the author presents the vision for the revitalisation of Newcastle's city centre. It is an in-progress research and demonstration project, dealing with cross-cutting issues in architecture and urban design and addresses the question: How to best cohesively integrate all aspects of energy systems, transport systems, waste and water management, climatisation, etc., into contemporary urban design and the environmental performance of eco-buildings?

Can sustainable regionalism make a difference in managing growth in urban areas?

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Urban areas are interconnected networks of functional places within metropolitan regions. Rapid population and economic growth in metropolitan areas worldwide over the past four

decades has exacerbated urban sprawl, fragmentation of landscapes, environmental degradation, dislocation of viable neighborhoods, social and economic inequities, and homogeneity of regional cultural values. These effects of metropolitan growth continue to intensify, despite an impressive array of spatial forms and structures that have been proposed to mitigate the effects. This paper advances sustainable regionalism as a way to guide growth in urban areas.

Sustainable regionalism seeks to create, revitalize, and restore urban areas in metropolitan regions through the physical design and planning of neighborhoods, villages, and cities within a region from a regionally-based sustainable perspective. It is a fusion of ideas from the sustainable development paradigm and from Geddes-Mackaye-Mumford-McHarg notion of 'natural regionalism,' but adapted to contemporary social, cultural, political, and environmental forces shaping metropolitan areas.

This paper defines the key principles that frame the sustainable regionalism paradigm. It uses illustrative examples to explore the relevance and applicability of the principles in managing urban growth. These key themes embedded in the principles include an ethical framework lodged in fitness, conservation, and sustainability of social, economic, and ecological systems; a regional perspective to guide thinking and action; physical design of compact neighborhoods, cities, and regions; connectivity between neighborhoods, villages, and cities via regional networks; re-creating a regional sense of place); as well as collaboration and visualization. The paper concludes by examining how sustainable regionalism is similar and differs from related spatial ideas, specifically new urbanism and smart growth. The prospects and limitations of sustainable regionalism as a spatial idea for shaping the future of urban areas are examined as well.

Relationship between identity and sustainability in the case of Kyrenia, Northern Cyprus
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Historic urban quarters are the centers of the social, economic and cultural life of the towns. Considering the characteristics of historic urban quarters which have a strong identity, the most significant determinants of the urban identity are natural, physical and social elements. The historic urban quarters has to be recognized as an important element of sustainable development. Sustaining the existing historic environment should not be the only thought, but using it as a tool for influencing change that can bring with it real social, economic and environmental benefits. Therefore, sustaining the city and/or urban identity involves sustaining communities and the traditional skills, local materials, cultural practices etc as much as places. Due to these definitions, it can be said that, there is direct relationship between urban identity and sustainability in terms of improving quality of life in three dimensions.

Due to the rapid developments in the world, the new developing areas in or around historic environments do not follow characteristics of the traditional urban pattern. They are totally different in their urban character; in terms of architectural details, building material, heights, urban images and landscape elements. Consequently, the new developing areas do not follow local identity of the historic environment.

In this study Kyrenia is selected as a case study area in order to define these differences between old and new parts of the city. In the first part, theoretical review will be introduced. In the second part, the study aims to analyze the city identity and images in the historic urban quarter and define changes in the identity. Then, images in the new developing areas will be presented in the third part. Based on the analyses, the study will then suggest some objectives for improving quality of life and to enhancing urban identity and sustainability in the new developing areas.

Socio-economic forces behind sprawl and compactness in Beijing

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As a big city with problem of lacking land resource, Beijing was struggling to accommodate the fast increasing population and urban functions since late 1990s. Within the metropolitan area of Beijing (16807.8 km² in Total), only 38% of the land is available for urban use and agriculture, while the population grew rapidly from 13.67 million to 15.38 million during the '10th Five-Year Plan' period (2001-2005). Under the pressure of rapid growth, the city on the one hand was forced to sprawl horizontally, transforming itself into large agglomeration; on the other, intensification of the central urban area brought by real estate development was happening simultaneously, improving the compactness and forming new centralities.

Extensively losing farm land in the periphery and socio-spatial segregation in central urban area are main environmental and social problems being criticized and considered correlated to sprawl and intensification. However, this paper will not simply criticize the problems, but try to analyze the socio-economic forces behind these two urban development processes, in order to understand the unique growth mechanism of Beijing under the current globalization background, try to find out how the city is being used and changed by the people. Focusing on the demographic changes on permanent and floating population, as well as involvement of these two groups in the urban life, the methodology of this research is comparing the geographic distribution and morphology of various residential communities, related to working opportunities, housing market and housing policies. With such comprehensive analysis, the problems of socio-spatial segregation happening in intensified central urban area and low efficiency of land use pattern accompanying urban sprawl in periphery may both be led to the root of urban spatial structure and housing policy, where comments may be given for making planning interventions.

N.Y., Japan - On cultural specificity of sustainable urbanism

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This paper focuses at Nezu and Yanaka areas of Tokyo. Those largely residential parts of the Japanese capital city were its only precincts lucky enough to survive both the catastrophic post-earthquake conflagration in 1923 and fires which followed savage American bombing in 1945. As such, N.Y. - Nezu and Yanaka - provide the most valuable 'vertical' connection with the past, living experience of environments of the Edo period, places with patina which pre-dates the drama of the Japanese encounter with the West. In terms of urban design and architecture, N.Y. exemplify a number of spatial qualities which can be seen as peculiar, or even unique to the Japanese city, such as smallness, low-rise high-density, ephemerality of the materials, decidedly local and culture-specific use etc.

The starting position of this paper is that environmental sustainability and cultural sustainability can never be separated, that built spaces which truly respond to the environmental condition always belong to culture of the place in and for which they were created. That position brings forward the proposition that Nezu and Yanaka in Tokyo (and similar living historic environments worldwide) contain messages of critical importance for sustainable urban development. The paper questions some of the current Japanese planning practices, which efficiently annihilate such potential, and puts forward some propositions for a more sensitive approach to urban sustainability, one that would attempt to go beyond efficient engineering, towards the nexus between cultural belonging and ecological responsibility.

Governing the compact city: Emerging issues in higher density Australian cities

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The current urban planning orthodoxy towards ever more dense cities raises a range of significant economic, environmental and social challenges. While the environmental and economic outcomes of compact city policies have been subject to debate for some years, the social implications are less well articulated. Despite the sociological basis of the original anti-sprawl critique dating from Jane Jacobs' seminal work in the 1960s, relatively little research has been conducted to explore the new forms of social relationships surrounding the management and ownership of higher density housing and how this links to the social sustainability outcomes of compact city policies.

In Sydney, Australia's largest metropolitan region, some 25% of the population now live in multi-unit housing of some form. The proportion is predicted to grow to 45% in 30 years. This represents a new layer of local governance that is radically changing inter-neighbour relationships to one based increasingly around negotiations over the rights and responsibilities of communally owned domestic property assets.

This paper considers the emerging social conflicts surrounding the development of this higher density housing sector and the issues of how the current regulatory framework deals with an increasingly diverse group of stakeholders and interests.

The paper argues that if the push towards more compact city outcomes is to be successful in Australian cities such as Sydney, then a number of emerging challenges to existing legislative and management structures that govern property relationships in the multi-unit sector will need to be addressed. These are outlined, together with a description of the complex governance and management arrangements of multi-unit properties. We use theories of urban governance to examine these relationships and argue that the current legislative and contract driven framework that governs the sector may not be able to deliver socially sustainable outcomes in Australia's increasingly compact cities without significant reform.

Organizing technical improvement of building roofs with vegetation, large scale design and construction process of Eco-Engineering in Rotterdam

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Techniques to grow vegetation on building-roofs, have been known for more than 30 years. Especially in cities the area covered with vegetation is expanding rapidly. The effects of roof vegetation are profitable for the owner and the inhabitants of the building on one side, and for the city on the other hand. The profits for the owner and inhabitant of the building are:

1. The building will heat up slower in summer;
2. The building might cool down slower in winter;
3. Some neighbors might find the view on a flowering green meadow;
4. The life span of the roof covering is extended.

If the covered area is large enough, three advantages can be expected for the city:

1. In case of heavy rainfall, the pressure on the city sewer and on the city open-water-buffering capacity will decrease;
2. The city-air might get cleaner because the roof vegetation supposedly filters dust and even would clean the air from Nitrogen-Oxides (NOx);
3. The average summer air-temperature in the city center would decrease because of the cooling effect of large area of green covered roofs.

In the paper you will find a typology of optimal techniques that are commonly used for green covered roofs. In a comparison of the organization of large scale support for green covered roofs in several European cities and in the Canadian city of Toronto, the effects of green covered roofs are analyzed. Success and fail-factors in the organization of such large scale

enterprises are analyzed. This leads to a typology of organizing green roofs design and construction processes in the City of Rotterdam. The conclusions of the research, described in this paper, were used to organize a large scale subsidies program in Rotterdam for the years 2008-2018.

Characteristics of vacant office buildings: A Delphi-approach

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Vacancy in office buildings not only threatens the life-span of the specific building, but can also lead to dilapidation and deterioration of whole urban areas. This is especially the case in areas with a spatial clustering of vacant offices. To be able to address the problem of office building vacancy, we need to identify the causes of vacancy.

A certain rate of office building vacancy, the normal vacancy rate is assumed to range between 3-6%, is needed for an efficient operating office space market. The office space market is sensitive to fluctuation, during low conjuncture, the vacancy will rise. In the Netherlands the overall vacancy rate has risen since 2001 to about 15%, or 6 million m². A part of the vacant buildings can be typified as structurally vacant, meaning vacancy of the same space for three consecutive years, and without a perspective of future tenancy. About 1 million m² is defined as prospectless by real estate brokers, these buildings are considered obsolete; they don't have the location- or building- qualities that office holding organisations currently require.

This research focuses on the causes' of structural vacancy in office buildings that relate to the characteristics of vacant office buildings and their locations. Which office building- and location- characteristics are probable to cause the building to perform subordinate to other buildings?

Based on former research, characteristics are identified which are included in the study.

Henceforward, a Delphi panel approach is employed to rank the building and location characteristics according to their influence on the vacancy rate.

From office park to urban life

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Conversion of vacant office buildings into housing can be a way to deal with the problem of structural vacancy in office buildings. Structural vacancy is defined as vacancy of the same m² over a period of three or more years and with no perspective of new lease. However, more than 70% of the office buildings with a high vacancy rate are located on office parks or industrial parks, and their location characteristics in most cases render these buildings unsuitable for housing. Continuing the existing situation is a short-time solution, the costs of exploiting these buildings will ascend the incomes. Redevelopment of offices is a possible solution, either through demolishing and rebuilding, or through renovation. Still, this solution demands new investment and does not guarantee profit in an insecure and conjuncture driven market. Is a functional transformation of these buildings still an option? Can urban renewal be initiated through the conversion of vacant office buildings into housing? In this contribution we will discuss location, financial, functional, and architectonic and sustainability issues, theoretically and based on literature.

'Metamorphocity' Pearl River Delta: A multidimensional spatial system and its local driving forces

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Informal factors and processes in centralistic governmental systems as in China have their own structure and specificity, as they are outside of an apparently completely 'from above' controlled process. Within the framework of a DFG (Deutsche Forschungsgemeinschaft) priority programme, an interdisciplinary work group at RWTH Aachen University, Christian-Albrechts-Universität Kiel and Guangdong University of Technology composed of urban geography, hydrogeology and landscape architecture, provides new approaches for investigating these structures and the steering mechanisms of mega urban development. In order to reduce the complex processes related to the development of highly dynamic mega urban areas flows of the resource 'water' are taken as an example and, secondly, the large urban agglomeration is subdivided into smaller units. With regard to 'closed' settlement structures in China resulting from social patterns and political planning 'also in the PRD' different urban units can be identified very well. These units exhibit both in its building and open space structure and in its social composition and economic functions a relatively high homogeneity. In-depth analyses of agency structures and mechanisms as well as of informal socioeconomic, morphological and ecological processes become feasible.

With these 'urban cells' it seems to be possible to understand mega-cities in China and their complexity by means of characteristic reference areas. The different 'urban cell' types with their ecological, socio-economic and spatial characteristics and especially their dynamics can be described as 'basis structure' for the overall system 'mega urban PRD'. The interaction of these units and their influence on the dynamic urban development and streams of resources are of particular interest.

The analysis of the informal influences on formal structures and the appropriate reciprocity between different 'urban cells' and their surrounding urban spaces respectively is intended to provide further knowledge about the actual dynamics and adapted governance systems in the overall mega urban area.

Sustainable urban development in lower Austria

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The fall of the city centres has been in the recent past that problem, which caused largest concerns for the regional planners and local politicians in Austria.

In the past 20 years the development of the Austrian small and medium-sized towns was characterized by the fact that the medium-size economy (Trade and production-SME) shifted their activities and/or locations to the edge of the cities, into the 'Greens'; at any case outside of the grown settlement areas.

This had several causes. Above all those that the city administrations didn't react upon the rapidly rising mobility of the consumers; the traffic infrastructure kept low, acceptable passenger car parking offers were just as little as attractive public transport facilities or shuttle services.

The consequences were apparent and bitter: closed or desolate shops within the city centres, prospered trade zones and shopping malls far from the traditional centres.

But 20 years ago also a challenging program ('Lower Austrian village renewal program' - 'Dorf- und Stadterneuerung Niederoesterreich') has been started: With large efforts including mobilization of creative marketing experts and regional planners and provision of public funding it was possible to take countermeasures and to have a revival of the local and town centres.

Specific promotion actions complete the efforts.

Successes came gradually:

- Many outstanding ideas have been really well accepted and

- ~ Pure shopping areas and shopping malls become a little bit boring faraway all culture offers. They lost their original drive and in this point the new 'revitalization concepts' hooked in which based also on concepts of sustainable development.

Besides of this 'village renewal program' some studies have been elaborated within the 'Lower Austrian housing research program'. In the congress contribution not only experiences of the village renewal program will be presented but also results from housing research studies related to this matter.

Sustainable Cities Programme (SCP) – BUS implementation

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The Sustainable Cities Programme (SCP) is a joint UN-HABITAT/UNEP facility established in the early 1990s to build capacities in urban environmental planning and management. The programme targets urban local authorities and their partners. It is founded on broad-based stakeholder participatory approaches. Currently the SCP and its sister programme Localising Agenda 21 (LA21) operate in over 30 countries worldwide. The UN-Habitat Sustainable Cities Programme has a component on Basic Urban Services, i.e. sanitation and water services. The International Water and Sanitation Center (IRC) has and continues to take the lead on this Basic Urban Services (BUS) from the period 2003 until 2007. The emphasis has and continues to be on demonstration and scaling-up processes in several cities in different countries (specifically Burkina Faso, Egypt, and Sri Lanka), the anchoring of strategies, methods and approaches in local institutions for future capacity building, and the documenting, sharing and using of these different experiences and lessons learned. The objective of the paper will be to give an overview of the developments that have taken place in each of the BUS countries that IRC has worked in with a refer to results and remaining challenges in the overall SCP process. It will also be to focus the development of the source book with all the partners working with IRC, entitled: the basic urban services handbook of the sustainable cities programme (with a second edition coming out before the end of the year).

Sustainability of India's mega-cities: Between environmental and social challenges of the housing sector

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In recent years India's GDP growth (around 8% in 2005) has been far above the growth rates of Europe Countries or the USA. The prosperity of the economy is also visible in the increase of FDI investment, which reached 2005/2006 more than 5 billion US dollar. Despite of these favourable developments in GDP growth and FDI it has to be questioned how these trends are transformed into a sustainable development of India's mega cities. In this paper sustainability of cities is defined as the transformation of growth developments into environmental and social achievements (especially waste management and water availability) of the existing Mega Cities. Deficits in both terms, environmental and social issues are especially visible in the residential housing sector in India. Therefore this paper evaluates the impact of regional environmental measures to improve the situation of residential housing in the Mega Cities: New Delhi, Hyderabad and Mumbai. In methodological terms this paper focuses on comparative statistics and the evaluation of the impact of Austrian firms of the environmental sector doing FDI in India.

Transforming inner city business parks into new city districts - Municipal strategies for introducing housing

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The separation of functions has been criticized as deteriorating the quality of urban life. After World War II many industrial estates have been developed where industry could develop without disturbing housing and its environment. Over the past decades these areas have become enclosed by the city and a shift from industry to business can be noticed. Now, compact city policies stimulate municipalities to look for different functions for these industrial estates that have become inner city business parks. Nevertheless, some of the industrial enterprises are still present, causing nuisance for adjacent city parts and forming obstacles for redevelopment.

Stimulated by the above mentioned policies, municipalities are looking for strategies and instruments to redevelop these sites, gifted with spatial qualities like the nearness of green spaces and waterfronts but also a well situatedness and well connectedness by roads, trains and ships. Therefore Dutch municipalities are slowly in a process of introducing housing on obsolete inner city business parks that have a lack of occupancy at a time that there are still industrial functions left behind that do not have a positive contribution to housing conditions. Projecting housing programmes on these sites are meant to make them come to life again, but introducing housing on business parks may also lead to environmental problems, such as noise, danger of activities and traffic.

Based on the case studies of Binckhorst and Plaspoelpolder (The Hague region) and Buiksloterham (Amsterdam), this paper is exploring and reviewing the compact city policy and focuses on strategies used by municipalities for the redevelopment of inner city business parks.

Urban and regional typologies in relation to self-sufficiency aiming strategies

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A topic of interest in sustainable urban planning and regeneration is the lack of integration of the 'essential' or 'critical flows' (water, energy, waste/wastewater).

In The Netherlands the shortage of space within urban planning leads to a rising demand for multiple use of ground and the intensification, or 'densification', of existing city districts and neighbourhoods. This process of densification can be considered positive for urban areas with lower densities, for it can generate more urban quality and can improve the environmental efficiency of the public services. However, existing city-parts, invisible infrastructures and social structures are being aggravated due to this intensification. Apart from that less public open spaces remain within these compact cities in the making. This is also due to cut back on maintenance cost and disposal of existing dispersed and fragmented parts of 'lost' mono-functional areas. Summarized one can say that the ecological and spatial conditions in and around cities are under pressure: transportation distances grow, protection and qualities diminish, and (infra)structures get more complex, less robust and less visible. There is however a possibility to revalue the liveability and ecological quality of open space in and around cities. The use of decentralized systems at district or local scale could introduce new urban functions to mono-functional and diminishing (green) areas and options for self-sufficiency.

This paper will focus on another background concerning urban planning based on 'Decentralized Concentration' as it is referred at: The need for interconnection of essential urban infrastructures and 'red/green functions' based on another network philosophy and use, to achieve real (lasting) sustainable urban development. It focuses on network geometry and related backgrounds for design, integration and implementation of sustainable solutions concerning the essential flows at the scale of an urban district, a cluster of houses and individual houses.

Sustainable urban decentralization: Case EVA Lanxmeer, Culemborg, the Netherlands **Arjan van Timmeren**¹ // a.vanTimmeren@bk.tudelft.nl, **D.S. Sidler**², **M. Kaptein**³

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This paper focuses on the spatial, technical and social integration of a 'combined waste (wastewater) / energy system' for an urban neighborhood (the deep green district 'Lanxmeer' in Culemborg, The Netherlands) integrated in a semi-public building. The district consists of approximately 250 houses, several offices and a 'City farm'. The design of the district and the building is based on permaculture, Reggio Emilia and organic design principles. An innovative mixture of 'red and green' development is presented (urban agriculture), together with a concept of integrated decentralized technologies for wastewater and organic waste treatment with energy, carbon and nutrients recovery.

The concept is called 'Sustainable Implant' (S.I.). Principally, the concept is based on a small scale biogas installation (with treatment of black water and organic waste / garden & park waste), Combined Heat Power (CHP) and accompanying closed greenhouse, designed as a four storey high double skin façade of the semi-public building, called the 'EVA Centre', with integrated wastewater treatment for parts of the wastewater flows based on the Living Machine concept. These compact 'hanging gardens', as they are called, are situated in a non-ventilated space with heat (and water) recovery, heat/cold storage in an underlying aquifer and with injection of the surplus CO₂ of the biogas plant. The S.I. will be realized as a part of the EVA Centre and has an interconnecting role between both residential district and EVA Centre, inhabitants and visitors. Especially the social context concerning the people living in this urban neighborhood, the role of the S.I. and the Cityfarm(er) will be explained. Besides, the system layout and dimensioning backgrounds, maintenance, conservation and administration of the integrated whole, and the possible consequences for the district and its inhabitants are explained.

Stormwater management in historic town centres

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Many cities in the Netherlands and abroad are developing plans to reopen and restore historic urban waterways. At the local level such decisions are based specifically on the following arguments:

- Historic waterways are an important element in the distinctive cultural and historical positioning of old town centres, which are often promoted as a 'trademark' for the town or city.
- Reopening filled-in canals and harbours will help to meet the need for more stormwater storage capacity.

The historic identity of a town or city is embodied in the individual buildings and the structure of the urban fabric. Water also plays an important role in shaping the character of this urban structure. At a time when the attractiveness of the town centre is considered more important than accessibility, and restoring historic authenticity enjoys growing public support, this gives historic waterways and other water bodies new meaning. They can become important structuring elements that shape the identity and attractiveness of a town or city centre, and historic central areas in particular, which in turn makes restoring historic waterways significant for the local economy.

A further reason for reopening old waterways in historic town centres is the need for more water storage capacity. Higher precipitation levels expected as a consequence of climate change will exceed the capacity of existing urban water management and drainage systems.

This paper examines the problems arising from the need to introduce more surface water in historic town and city centres, focusing on solving these problems by reopening old canals, rivers and harbours. This option is illustrated by explanations of the plans for restoring historic waterways in the Dutch cities.

Urban regeneration and sustainability: Challenges for established small businesses

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Urban regeneration and sustainability are increasingly brought together in policy and academic discourses concerning the reshaping of inner-city districts of major UK and European cities. In the urban renaissance agenda sustainable development tends to concern mainly aspects of built environment (such as connectivity, density, mixed use) and social domains (for instance mixed income and tenure). But concerns with the economic dimension, particularly ambitions for a balance between retaining existing and creating space for new businesses are less explicit. A specific gap is the fate of the established small business fabric, how it is maintained or nurtured amidst substantial redevelopment activities, and its role in the regeneration process itself: supporting existing and new residential, commercial and industrial communities and their activities. This paper aims to begin to fill this gap through a critical exploration of this economic dimension of sustainability in large-scale urban regeneration. The case of Eastside district 'a redevelopment initiative branded as exemplar of sustainable urban development in Birmingham' is used to illustrate the role of small businesses, in particular food retailers, in the day-to-day life of districts undergoing regeneration. The paper explores the companies' role amid a public sector driven and private developer led regeneration process, focusing on their struggles to adapt to the area's intended transition from industrial centre to creative and service firms, and residential uses. It also explores implications retailers have for the area's sense of place, distinctiveness and social networks. The paper then reflects critically upon policy practice and governance issues, focusing on benefits from retaining established businesses in redevelopment areas and considering ways in which stakeholders could support them to adapt to changes throughout the process. The paper concludes arguing that planning and policy makers should accord greater attention to the role of small businesses to foster urban districts that are truly sustainable.