THE URBAN CURE

Design with Local Landscape Dynamics

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Design with Local Landscape Dynamics

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fig. 1: *Canal in Västra Hamnen, Malmö*

ABSTRACT

The worlds cities are currently facing challenges related to climate change, resource loss, poverty, social inequality, and technological disruptions. Sustainable urban planning is crucial, especially with the increasing global population and urbanization. Cities are the vital organs that determine the growth and further development of a region. However, as we are growing out of the industrial era, Europe is experiencing urban shrinkage in many places - understanding the underlying forces behind this shrinkage is essential for revitalizing cities.

Landscape architects have expertise in urban development, but there is a lack of understanding about the term "landscape" in interdisciplinary collaboration. The objective is to discuss the relationship between landscape architecture and urban planning in revitalizing post-industrial cities in Europe. The importance of understanding past planning and development practices, current problems, and coping strategies is highlighted. The research aims to determine the role and potential of landscape architecture in urban planning to address urban shrinkage and contribute to sustainable development. The research is built upon four sub-questions: examining past planning and urban development, discussing problems arising from past urban development in Europe, exploring future-oriented urban planning guidelines, and identifying planning methods for the regeneration of post-industrial cities. The research design follows a comprehensive approach to addressing the challenges of shrinking cities and outlining the future role of landscape architecture.

The first part provides an overview of the historical development of European urban planning and the role of landscape architecture in shaping urban landscapes. It emphasizes the importance of understanding the natural and cultural context for sustainable planning. Part II discusses the challenges in shrinking cities, such as globalization, deindustrialization, and environmental changes, and highlights the need for a balance between human needs and the environment in urban development. The future of post-industrial cities is discussed in the third part, emphasizing the role of politics, society, and interdisciplinary approaches in addressing challenges and creating sustainable and resilient cities.

In the fourth part, a new method called `DLLD - Design with Local Landscape Dynamics` is proposed. It is a landscape architecture method for revitalizing shrinking cities, incorporating insights from past and future urban development. The method focuses on spatial perception and performance, allowing for interventions in the urban system. The role of landscape architecture in urban planning is discussed separately in the future outlook, highlighting its potential in mediating between different interests and currents in urban development. The "Design with Local Landscape Dynamics" method can play a central role in the regeneration of shrinking cities and become a fundamental field of knowledge for the future of urban development.

FOREWORD

Since I can remember, I have always found myself caught between the realms of nature and culture. This duality began in my childhood when I was immersed in a lifestyle that prioritized ecological sustainability while nurturing my cultural and artistic interests. As I grew older, this spectrum expanded as I chose to focus on mathematics and art in school, and indulged in leisure activities that allowed me to explore the laws of nature in conjunction with music.

This internal struggle continued as I faced the decision of choosing a career path, torn between studying medicine to work with people or pursuing environmental studies to be closer to nature. Finally, in 2006, after gaining experience in both fields, I made the decision to embark on a dual course of study in "Landscape Architecture and Environmental Planning" in Hanover. This opportunity allowed me to bring together my passion for understanding and improving the interaction between people and their environments.

Paradoxically, during my time at the University of Hanover, I often witnessed a supposed contradiction or competitiveness between the disciplines of environmental planning and landscape architecture. The environmental faction regarded themselves as an essential pillar, dismissing the artistic or artificial aspects of landscape architecture as insignificant. Conversely, the architects viewed the environmental planners as mere "plant and insect nerds," protecting the environment solely for its own sake and condemning humans as a disruptive force.

I found that this division and animosity weren`t helping anyone. If there is one thing that denies us access and therefore care for our identity-forming origin and the basis of life for all environmental organisms, then it is the separation between humans and nature. This insight has sparked my fascination with creatively merging natural and cultural dynamics, particularly in post-industrial urban settings, where the potential for an exciting and constructive approach is abundant.

Against this backdrop, my bachelor's thesis focused on the sustainable revitalization of Norra Sorgenfri, a post-industrial district in Malmö. In this project, I utilized local natural and old industrial elements to create a strong sense of identity through eco-social services.

After completing my Erasmus semester at the Swedish University of Agricultural Sciences (SLU), I decided to settle in Sweden and start a family and my own company. As a self-employed professional, I offered garden design and project planning, emphasizing the numerous benefits of natural design. However, it was interesting to note that due to the customers' preferences, the garden plans often ended in a classic design with predominantly non-native plant species.

In 2018, driven by a desire to make a more meaningful contribution to people and the environment, I took on a new role as project leader for the "Growing without Borders" umbrella project at Botildenborg in Malmö. This project, funded by the EU, aimed to promote social inclusion, well-being, and environmental education through urban agriculture. Through my involvement in this project, I gained extensive insights into the socio-cultural advantages – from the individual to the urban level – associated with activities such as working in the soil, engaging in shared outdoor activities, and cooking and eating together.

As a result of my experiences and the invitation to share my knowledge with SLU students, I decided to return to the Masters program in Landscape Architecture myself. This opportunity allowed me to further expand my understanding of sustainable urban design and strengthen my expertise in utilizing natural elements to create thriving and inclusive spaces.

Before embarking on my master's thesis, I decided

to gain some practical experience by interning as a landscape architect at a reputable consulting firm specializing in state planning projects. Not only did this provide me with valuable professional connections, but it also gave me a new perspective on the role of landscape architects in the field.

I began to notice a recurring pattern during my internship - the contribution of landscape architects seemed to be limited to simply adding or evaluating "greenery" to otherwise dull and monotonous structures. While this certainly had its benefits, I couldn't help but feel that there was something more to this profession than just making the environment aesthetically pleasing.

In instances where landscape architects were involved in the early planning stages, such as social impact studies, the focus often seemed to be solely on the recreational value of the landscape. This value was typically associated with attributes like biodiversity or culturally significant landscapes. While these were undoubtedly important aspects to consider when deciding on new developments, I found myself longing for a more comprehensive understanding of the underlying landscape.

To me, landscape goes beyond being a mere relaxation area with the right amount of wilderness. Besides ecological and social qualities, landscape holds the potential for economic growth, thanks to its unique, vibrant, and appealing qualities. A well-designed and thoughtfully integrated landscape can attract tourists, businesses, and investment, ultimately contributing to the overall prosperity and livability of an area.

In essence, landscape architects should be seen as catalysts for holistic and sustainable development, not just as decorators filling in the gaps between grey structures. They possess the expertise to envision and create landscapes that not only enhance the natural environment, but also support economic growth, social cohesion, and well-being.

By recognizing and embracing the broader significance of landscape, we can unlock its full potential and truly harness its power to transform our cities and communities. This means integrating landscape architecture into all stages of planning and decision-making processes, promoting collaboration between different disciplines, and prioritizing the long-term benefits that a well-designed landscape can bring.

Over the past few decades, European cities have experienced significant post-industrial transformations, resulting in urban shrinkage and decay in many areas. However, amidst these challenges, there lies an opportunity for us to reimagine and revitalize our cities. The role of landscape architecture in this process remains uncertain, but it is a question that must be explored to ensure the future well-being of city dwellers.

The aim of this work is to conduct an interdisciplinary dialogue on urban revitalization, with a particular focus on the possible contributions of landscape architecture. Delving deeper into this topic sheds light on how landscape architecture can play a crucial role in providing an "urban cure" for a shrinking city. It's about bringing people and the environment together in the post-industrial world - about urban healing through design with local landscape dynamics.

fig. 2: *Brownfield site in Norra Sorgenfri, Malmö*

TABLE OF CONTENTS

INTRO

PROLOG **I**
Abstract IV
Foreword V
Table of contents VIII
Table of figures X

GETTING INTO RESEARCH **1**
Urban shrinkage in post-industrial Europe 2
The perspective of landscape architecture 3
Research question + objective 4
Research design + method 6

RESULTS + DISCUSSION

Introduction to results + discussion 10

P I - PAST URBAN DEVELOPMENT IN EUROPE **12**
The cradle of the European city 16
City and country merge with the world 18
Reconstruction without the city 22
Summary + infographic 24

P II - PRESENT URBAN CHALLENGES **26**
The ecological aftermath of the past 30
The society between social inequalities 32
The economic side of deindustrialization 34
Summary + infographic 36

P III - FUTURE POST-INDUSTRIAL CITIES **38**
Political planning strategies + subsidies 42
Technical concepts + social movements 44
European city after pandemic + war 48
Summary + infographic 50

P IV - DESIGN WITH LOCAL LANDSCAPE DYNAMICS **52**
Landscape I 56
Landscape II 58
Landscape III 60
Summary + infographic 62

OUTRO

THE ROLE OF LANDSCAPE ARCHITECTURE **64**
Landscape as medium 68
Summary + infographic 70

TAKE AWAY FROM RESEARCH **72**
Conclusion 74

APPENDIX **76**
References 78
Secondary references 83
Image credits 83
Acknowledgements 87

fig. 3: *Vacancy and decay in the Göthe district, Bremerhaven*

TABLE OF FIGURES

FIGURES

fig. 1 *Canal in Västra Hamnen, Malmö* V
fig. 2 *Brownfield site in Norra Sorgenfri, Malmö* VII
fig. 3 *Vacancy and decay in the Göthe district, Bremerhaven* IX
fig. 4 *Vacancy and decay in the Ihme Center, Hanover* 4
fig. 5 *The vibrant capital of Greece* 14
fig. 6 *Academy garden in Athens 350 BC* 16
fig. 7 *Greek Agora in Athens 350 BC* 16
fig. 8 *La Cittá Ideale- Da Vinci`s ideal city* 17
fig. 9 *Baroque park of Versailles* 18
fig. 10 *Urban layout around "Arc de Triomphe"* 18
fig. 11 *Life in the slums of London* 19
fig. 12 *150 years old New York Central Park* 20
fig. 13 *"Garden City" outside of Copenhagen* 20
fig. 14 *Bielefeld allotments in the 1930s* 21
fig. 15 *Reichsautobahn Munich - Salzburg* 21
fig. 16 *Hitler Youth in Rothenburg in the 1930s* 21
fig. 17 *Dresden after the bombing in 1945* 22
fig. 18 *Dresden after reconstruction in 1985* 22
fig. 19 *Panel building in Gropiusstadt Berlin* 23
fig. 20 *Wealthy suburbs outside Malmö* 23
fig. 21 *Emporia shopping mall in Malmö* 23
fig. 22 *Demolition of old industries* 28
fig. 23 *Heat islands in cities* 30
fig. 24 *Heavy rain events overload sewage systems* 31
fig. 25 *Wild boar in run-down city park* 31
fig. 26 *Drugs, violence, poverty and pollution* 32
fig. 27 *Desolate playgrounds* 33
fig. 28 *Fast food and take away in Berlin* 33
fig. 29 *Agenda 2030* 40
fig. 30 *Landscape urbanism on New Yorker "Highline"* 45
fig. 31 *Tactical Urbanism on Milanos` Piazze Aperte* 46
fig. 32 *New Urbanism in Malmös` Västra Hamnen* 47
fig. 33 *Empty shopping streets due to Covid-19* 48
fig. 34 *Car-free Avenida Castellana in Madrid in 2020* 49
fig. 35 *Blast Furnace Park in Duisburg Nord* 54
fig. 36 *Prospect and refuge by the water* 57
fig. 37 *Previous life in larger communities* 58
fig. 38 *Old town pedestrian zone in Vienna* 60
fig. 39 *Green retrofitting of railroad space in Paris* 61
fig. 40 *The bridge park is based on superimposed functions, Linköping* 66

TABLE

tbl. 1 *Method for literature research* 7

INFOGRAPHICS

i.g. 1 *Urban development in nature-culture dualism* 25
i.g. 2 *Present urban challenges in public space* 37
i.g. 3 *Building a better future: Life and the New European Bauhaus* 43
i.g. 4 *Principles of sustainable urbanism* 44
i.g. 5 *Sustainable regeneration of the post-industrial city* 51
i.g. 6 *Design with Local Landscape Dynamics* 63
i.g. 7 *Landscape as medium in urban planning* 69
i.g. 8 *Urban revitalization through public space* 71

note The origin of the tables, figures, and infographics is listed by chapter under "image credits" in the appendix (p. 84)

INTRO

GETTING INTO RESEARCH

URBAN SHRINKAGE IN POST-INDUSTRIAL EUROPE

GETTING INTO RESEARCH

Cities have been epicentres of education, innovation, and prosperity since their inception. What connects all these places is their role as perpetrators and victims of ecological, social, and economic dynamics (Rottle & Yocom, 2011). Around the world, cities are being affected in one way or another by climate change, loss of natural resources and biodiversity (Beatley, 2016), refugees and displacement, poverty and socioeconomic inequalities (Baldwin & King, 2018), social and political fragmentation, cybersecurity threats and technological disruptions, and rising health problems (Nesmith *et al.*, 2020).

Eight billion people currently live on this planet (United Nations, 2022 – p. 3), while more than half of the world's population lives in cities. By 2050, UN-DESA expects a further increase to around 9.7 billion (United Nations, 2022 – p. 3), with at least 66% (Swilling, 2018 – p. 35) being urban dwellers. How we organize our cities today has long-term effects on many aspects of our lives and will determine the future of our living environments and societies. Therefore, sustainable urban planning is one of the most important and complex tasks of mankind (Beatley, 2016; Pérez & Perini, 2018).

Many urban challenges are similar in the global context but gain in complexity and individuality as the level of detail increases. The European Union (EU) is inhabited by almost 6 percent of the world's population, generating around 20 percent of the global GDP annually. It covers an area of over four million square kilometers and a total population of almost 450 million people (Eurostat, 2023). In 2019, almost 40 percent of Europeans lived in cities, 30 percent in the suburbs, and another 30 percent in the countryside (Eurostat, 2021).

However, less than 5 percent of urban growth or a progressive decline is forecast for almost half of the European countries by 2050 (Eurostat, 2021). Compared to Asia, many post-industrial cities in Europe are emptying themselves of their core - struggling with widespread vacancy, degraded environmental conditions, an aging society, and the reclaiming of taxpaying residents. And yet, European "[...] cities and metropolitan areas have been and will be an essential part of economic, political, social, and cultural vitality" (Carter, 2016 – G. Gardner p. 127).

60 percent of Europeans live in suburban or rural areas with fewer than 250,000 inhabitants (Eurostat, 2021). Many of these medium-sized cities have experienced an urban exodus to the countryside due to the shift in economic markets. This suburbanization continues to this day, shaping border- and faceless "intermediate cities" - which, to its vast extent, are likely to be just as resource-wasting as the booming industrial cities of the southeastern world (Lehmann, 2010).

The "polycentric urban form [...] is an important factor in understanding the challenges and opportunities for post-industrial urban renewal" on the European continent (Carter: 2016 – p. 127). In other words, to be able to revitalize the urban fabric today and make it more resilient in the future, we need knowledge about the underlying forces that led to the emptying of the city centres in Europe.

THE PERSPECTIVE OF LANDSCAPE ARCHITECTURE

GETTING INTO RESEARCH

The city, regardless of its condition, shape or size, can be understood as a complex, living organism, which maintenance and development requires a smooth cooperation between residents and politicians, researchers and planning professionals (Nesmith *et al.*, 2020 - p. 89; Rottle & Yocom, 2011). Landscape architects and their predecessors have been intertwined with urban development from the very beginning (Thompson, Ian, 2014 - p. 2). Their expertise and working field have expanded with the growing complexity of urbanisation ever since. Today, "ECLAS defines the tasks of landscape architecture as the planning, design, and management of landscapes to create, preserve, protect and enhance places to be functional, beautiful and sustainable and to meet diverse human and ecological needs" (Brink, 2017 - p. 4).

Landscape architecture, like architecture and urban planning, shapes the living environment and thus the quality of life of people. However, as the job title and ECLAS definition of landscape architecture above suggest, landscape architects deal with the element of landscape. The unclear understanding of the term "landscape", especially in the context of its apparent counterpart "city", has led to numerous scholarly discussions. Many of these discourses get lost in the infinite variety of possible interpretations of what "landscape" is. "Landscape ecologist Richard Forman describes the term landscape as `what one sees out the window of an aeroplane`" (Rottle & Yocom, 2011 - p. 63).

The idea of landscape as `everything out there` makes sense on the one hand, but leads to enormous difficulties in the practice of landscape architecture on the other hand. This vagueness is particularly relevant in the context of urban planning, where it affects the quality of interdisciplinary collaboration (Prominski, 2004). For this reason, the role and potential of landscape architecture in urban planning should be explored and clarified - not only for the profession itself, but for the success of future-oriented, holistic urban development.

MAIN RESEARCH QUESTION

How can landscape architecture contribute to the revitalisation of shrinking cities in the post-industrial Europe?

fig. 4: *Vacancy and decay in the Ihme Center, Hanover*

OBJECTIVES + RESEARCH QUESTION

GETTING INTO RESEARCH

How can shrinking post-industrial cities in Europe be revitalized? What do we learn from past planning and urban development in the western world? What problems have arisen due to past urban development in Europe? Which political guidelines, technical concepts, and social movements lead into the future? How can landscape architecture position itself in the planning process of urban renewal? And what would a holistic urban planning approach from landscape architecture look like?

These are essential questions when dealing with the broad topic of urban shrinkage in post-industrial Europe from the perspective of landscape architecture. The intention of this work is to deepen the understanding of European city development through time to path the way into a sustainable future. The focus lays on the public urban space, which reflects the current conditions in environment and society and thus the changing urban planning policies. This theoretical analysis aims to develop a method from within the landscape architecture profession to contribute to sustainable success in revitalizing shrinking post-industrial cities in Europe. After presenting the method, the potential role of landscape architecture in the context of urban planning will be discussed.

The main research question was therefore formulated as follows:

How can landscape architecture contribute to the revitalisation of shrinking cities in the post-industrial Europe?

RESEARCH DESIGN + METHOD

GETTING INTO RESEARCH

This qualitative study is based on literature research. For the sake of understanding, details such as search terms, subject areas and main sources for the respective sub-questions are presented in tabular form (see tbl. 1 - p. 7).

The main research question of this work is motivated on the one hand by the diverse challenges of shrinking post-industrial cities and their crucial role in Europe and on the other hand by the untapped potential of holistic landscape architecture in urban planning policy. Since this complex problem requires a comprehensive solution method, the research to answer the main question is guided by four sub-questions, which address the following main topics:

Research question I
What do we learn from past planning and urban development in the western world?

The aim of this question is to examine the emergence and growth of European cities under the influence of landscape architecture in the context of other urban planning strategies. The primary function of spatial planning and its reciprocal relationship to the environment and society is illustrated in a journey through time. In retrospect, this interaction is reflected in a dynamic pattern from which trends for future urban development can be derived. The processing of this question is therefore both an investigation of the past causes of the current urban challenges and at the same time a first course for the future of the European city from a landscape architectural point of view.

Research question II
What problems have arisen due to past urban development in Europe?

With a better understanding of past European urban development, this section examines the current challenges of post-industrial cities. For the sake of simplicity, this is done on the three levels of sustainability: ecology, society and economy. Particular attention is paid to the interrelationships between these three levels. The view of these dynamic processes is sharpened by the holistic approach of landscape architecture - a necessity for the increasingly changing and complex planning requirements. Thus, this analysis step not only provides information about the urban "actual state", but also about its "target state".

Research question III
Which political guidelines, technical concepts, and social movements lead into the future?

With the knowledge of the previous development and the current need for action in European cities, future-oriented tendencies are examined under this question. These tendencies result from accumulating urban planning-relevant contributions from today's politics, specialist planning, and society. This third research question aims to visualize a general mood in current urban planning, in which the future role of landscape architecture is outlined.

Research question IV
What planning method can landscape architecture offer for the regeneration of post-industrial cities in Europe?

In this final step, the results from the three previous research questions are mixed with the theory of landscape architecture and processed into an urban planning method. This method should be able to be applied in an interdisciplinary manner to revitalize shrinking cities, which finally answers the central research question of this work.

tbl. 1: *Method for literature research*

METHOD FOR LITERATURE RESEARCH

Secondary research questions	Working method + resources	Keywords
Research question I *What do we learn from past planning and urban development in the western world?*	Literature sources with a historical focus on the environment and humanism, building, landscape and urban architecture, as well as social and urban development in Europe and the USA	*Perception of the environment, concept of landscape, gardens and cities in temporal epochs, enlightenment, imperialism, industrialization, environmental movement, regionalism, war, reconstruction, modern urbanism*
Research question II *What problems have arisen due to past urban development in Europe?*	Technical articles and statistics on environmental, social and economic developments in European cities	*Landscape assets (climate, air, water, soil, flora and fauna), segregation, environmental injustice, food deserts, environment / natural capital, human / social capital, economic / political capital*
Research question III *Which political guidelines, technical concepts, and social movements lead into the future?*	Political publications from the UN and EU, specialist literature on current urbanism movements, populist and academic articles on the latest urban-cultural changes	*Agenda 2030, New Urban Agenda, EU Cohesion Policy, Europe 2020, New Urban Agenda for the EU, European Green Deal, Urbanism (Landscape, Ecological, Green, Tactical, New), Pandemic, Ukraine War*
Research question IV *What planning method can landscape architecture offer for the regeneration of post-industrial cities in Europe?*	Specialist literature and scientific articles on research and practice in landscape architecture, as well as on the theory of conception, perception and performance of the landscape	*Landscape architecture and landscape theory, landscape and ecological urbanism, environmental education, public health, eco-social services, social integration / cohesion and place attachment*

RESULTS + DISCUSSION

RESULTS + DISCUSSION

INTRODUCTION

The main part of this work is presented as results and discussion, since many of the sub-points are subject to technical or subject-related discourses. As already mentioned in the introduction, the question of the contribution of landscape architecture to urban planning is an investigation and compilation of urban development in Europe from the past to the future, at the same time as an analysis of the relationship between the departments involved in planning, as well as a self-reflection within the landscape architecture profession itself. Due to this complexity, the result of this work aims at a constructive and clarifying discussion, which should urgently be conducted in this phase of European urban development. The result and discussion is divided into four parts or sub-questions.

Following the main part, the weaknesses, strengths and future potentials for landscape architecture in urban planning should be compiled and announced.

In the introduction to the first part, the basic principles of settlement, landscape and planning as an adaptation of living conditions to ecological and social changes are explained. Architecture and landscape design represent physical expressions of human power over nature and culture, evolving together as a local landscape phenomenon. Towards the end of the first part, the way nature and culture polarized and related to each other over time is illustrated in the timeline of an ongoing nature-culture duality.

The first part begins in the past of European urban development in connection with the emergence of the landscape architect profession. To this end, the history of spatial planning and the merging of city and country with the world, which in turn changed the relationship between people and their environment, is explored. The concept of nature-culture duality contributes to a deeper understanding of the mechanisms that have led to problematic developments in post-industrial cities in Europe today.

The second part focuses on the development of the nature-culture dualism in the present, which has experienced a new turn since the 1970s due to the increasing environmental and social movements. Today we find a changed attitude towards nature and culture, which sees nature as both beautiful and healthy, but also as a life-giving and destructive force - just as culture is seen as both harmful and protective at the same time.

The change in relationship between the imaginary poles of nature and culture is confirmed by the results of the analysis of the current symptoms of post-industrial cities, as presented under the themes of environment, society and economy. The inseparable interactions between these three pillars of sustainability, which are particularly evident in the public space of shrinking cities, become clear. While this indicates the necessary reunion of nature and culture, it also highlights the holistic capacities of landscape architecture in the context of urban regeneration.

INTRODUCTION

In the third part, future perspectives are taken with regard to regenerative urban development after the post-industrial change. It begins with a brief introduction to the recent history of the environmental movement and provides information on key policies and agreements to promote sustainable development. The starting point of this section is the "Agenda 2030" and the "New Urban Agenda", which shape the political, planning and social orientation of the EU and its member states from the global level.

The European political currents and regulations are explained in first section. Building on this, various urban planning movements, some of which stem from different specialist areas, are presented and linked to those of landscape architecture. The last section moves from the top-down and specialist planning perspective to the bottom-up level, the residents. In this context, current influences such as the corona pandemic and the geoplotic unrest in Europe, that are affecting the urban life in public space are discussed.

In the fourth and last part of the result and discussion, an attempt is made to develop a holistic-dynamic and yet concrete urban planning method from the field of landscape architecture. This method brings together the lessons of the past, the conditions and needs of the present, and the potential and goals for the future, as they were presented in part I to III. These components are combined with basics of landscape theory, which unites urban structures. With this outlined method, the main research question about the contribution of landscape architecture to post-industrial urban renewal should be answered.

RESULTS + DISCUSSION PART I

PAST URBAN DEVELOPMENT IN EUROPE

P I

RESEARCH QUESTION I

What do we learn from past urban development in the western world?

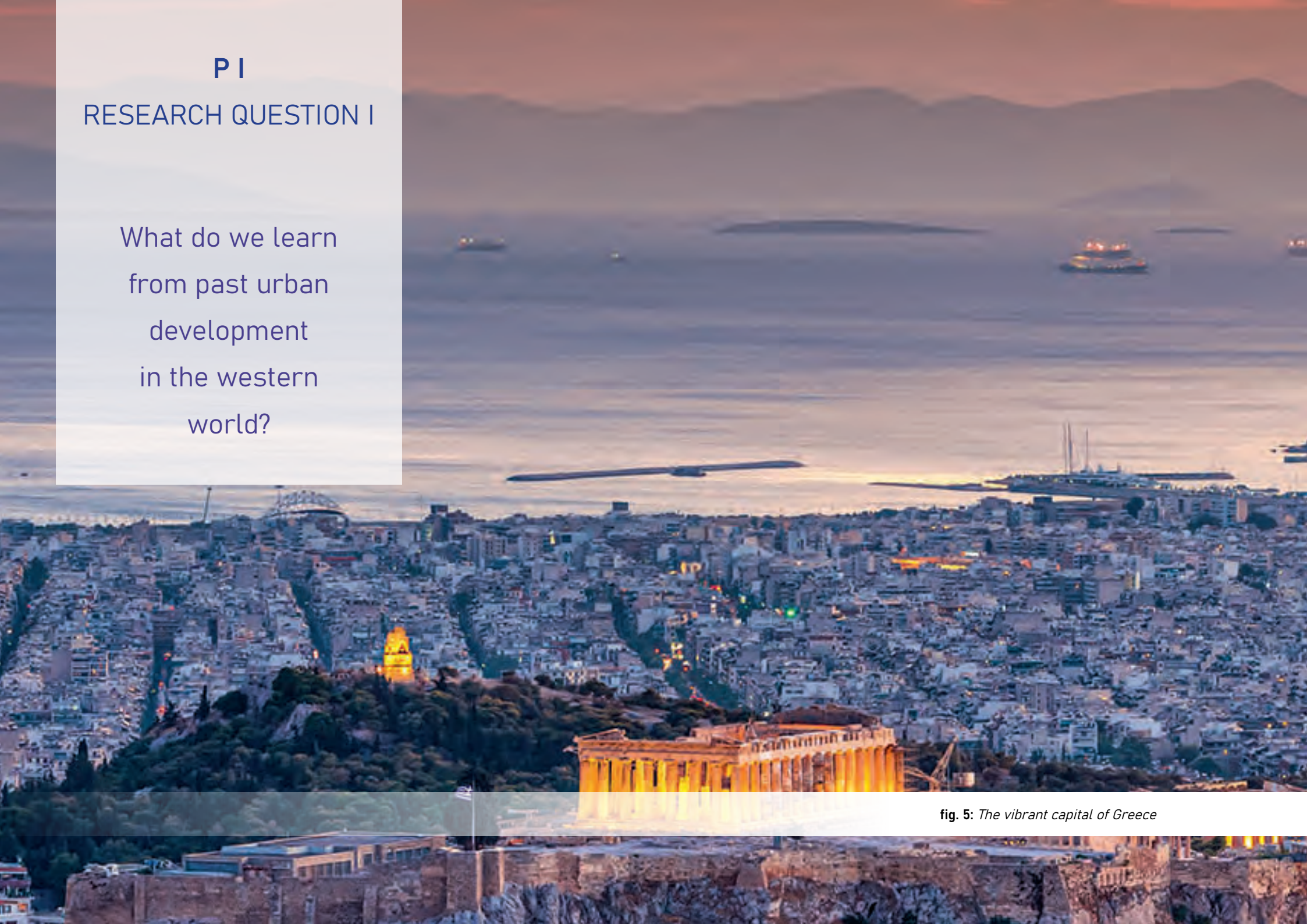


fig. 5: *The vibrant capital of Greece*

PAST URBAN DEVELOPMENT IN EUROPE

P I - INTRODUCTION

How can landscape architecture contribute to the revitalisation of shrinking cities in the post-industrial Europe? To approach this question, we need a deeper insight into the earlier mechanisms that caused the problematic developments in the post-industrial cities of Western Europe. Part I deals with the past of spatial planning and begins with the "Cradle of the European city". Continuing with the sections "City and country merge with the world" and "Reconstruction without city", we will follow the urban development from the past to the present.

In order to strengthen the understanding of these dynamics in advance, a brief introduction to the original principles of settlement, landscape, and planning follows.

It is thought, that at the beginning of human history, hunter-gatherers lived in harmony with their natural environment, in which they intuitively tried to cover their traces (Lowenthal, 1975 – p. 19; Nesmith *et al.*, 2020 - p. 32-331). "[...] their impact on plants and animals was less than the great herds of grazing animals" (Bott *et al.*, 2019 - p. 16). The body and mind, with their current impressions and accumulated experiences, serve as a frame of reference for environmental perception, interpretation, and evaluation (Ingold, 2011; Ratman & Drozdzewski, 2020; Tuan, 1974; Wylie, 2005). In this way, we learned to understand nature's laws and used them for ourselves - an "embodied" knowledge accumulated in communicative exchange with others (Tuan, 1974 - p. 217 ff.). However, one of the laws of nature is already a part of our DNA: The most adaptable survive, and the more differentiated the population, the higher the adaptability (Racevska, 2018).

Through physical and interpersonal experiences, we developed a concept of time and space (Tuan, 1974 – p. 216-217). This mental concept allows humans to adapt retroactively and proactively to changes to ensure their future well-being. It enabled us to settle down around 8000 BC with housings (architecture) and agriculture (landscaping), which symbolized the first step towards human emancipation from environmental dynamics (Cronon, 1995). We demarcated and claimed "our" land based on geographic landmarks. Nevertheless, it was not until much later that the political territory received the universal name "landscape" (Julliard, 1962; Prominski, 2004 - p. 52).

The resident folk developed their language, rituals, utensils, and practices from the natural conditions of "their" landscape. The landscape is thus the basis of social identity, locality, and interpersonal belonging (Julliard, 1962; Tuan, 1974; Ingold, 2011 – p. 155; Rose, 1992 – p. 2). The physical appearance of this landscape is constantly changing due to the dynamic interaction between natural and cultural processes (Thompson, 2014 - p. xiii). Thus, the landscape is a political space that we perceive as a natural and cultural phenomenon (Wylie, 2007 - p. 7).

Architecture and landscaping are physical expressions of human power over nature and culture (Talen, 2019) and thus manipulate the landscape phenomenon (Corner, 1999).

THE CRADLE OF THE EUROPEAN CITY

PAST URBAN DEVELOPMENT IN EUROPE

Around 1000 BC, numerous technical achievements, such as the fired Roman brick, led to more effective settlement construction, agriculture, and trade. With economic and social growth, villages started to develop into the ancient cities of Greece and Rome (Lehmann, 2010 - p. 72; Bott *et al.* 2019 - p. 16).

Antiquity (1,000 BC to 500 AD)

The newly gained prosperity enabled philosophical research on the entire cosmos and humans. Academies built flourishing gardens as research sites for philosophical studies, often reflecting the paradisiacal ideal of the early temple gardens. Landscape architecture is still associated with its forefathers, the paradise gardeners, because, to this day, the enticing mysticism and spirituality of these gardens is a quality feature of many outdoor designs (Kalusok, 2003 - p. 20 ff.).

The academies and academy gardens of antiquity (see fig. 6) produced numerous philosophers, such as Plato. Their findings, especially in human perception of the environment, significantly impacted urban planning at the time (Bott, *et. al.* 2019 - p. 23). Due to the humanistic research approach to the unity of nature and culture, it is unsurprising that the ancient city square, the Greek "Agora", was designed with the landscape as a model (see fig. 7). Open and freely visible places, where trade routes once crossed and political negotiations took place, became part of the urban context on which a free platform for democracy was created (Olwig, 2020 - lecture). To this day, the Greek Agora is a model for an open central location that gives room for political, business, and cultural exchange (Montgomery, 2013 - p. 17-18; Sanders, 2019 - p. 281 ff.).

The social growth in the Roman Empire triggered a need for more food and raw materials. The final fall of the Roman Empire started the "great migration of peoples" in Europe during the following century (Bott *et al.* 2019 - p. 17).

Middle Ages (500 to 1350 AD)

Around 500, the church began to take over all-encompassing power over land and people. Muncs planted vegetables, fruit, and medicinal herbs in the cloister gardens under the grace of God in order to distribute them to those in need (Kalusok, 2003 - p. 40 ff.). The Bible was considered the guide to innocent life in the haven of the walled settlements. The pre-existing nature was glorified as a demonic wilderness into which sinners were sent out for punishment (Cronon, 1995 – p. 3, Kaika, 2005). As a counterpoint, people created enclosed gardens, representing the paradisiacal image of Eden and, thus, the good, joyful life. To this day, this is a core aspect of landscape architecture practice (Kalusok, 2003 - p. 40 ff.).

fig. 6: *Academy garden in Athens 350 BC*

fig. 7: *Greek Agora in Athens 350 BC*

Due to the improved knowledge of shipbuilding and seafaring, port cities developed into important economic metropolises. This development led to European regions' most significant expansion and urbanization before industrialization, which lasted until the economic depression of the mid-14th century. The intensified cultural exchange gave traders and merchants new knowledge, wealth, and political power outside the monasteries.

Renaissance (1350 to 1600 AD)

With Gutenberg's invention of letter printing around 1440, this knowledge could be spread across the board, with which religious emancipation prevailed in the broad population. Once again, the city became a space of unlimited opportunities where former farm workers could experience cultural life, education, and personal prosperity instead of religious oppression. Young people are still drawn to larger cities to train and establish themselves professionally. On the other hand, older people seek accessibility to everyday and medical assistance. Both demographic groups enjoy a wide range of leisure activities.

As the age of ancient rebirth, the Renaissance took up the humanism and scientific knowledge of the Greek philosophers. The medieval pleasure gardens turned into botanical gardens where imported natural materials, plants, and animals were displayed and explored (Kalusok, 2003 - p. 54 ff.). The Padua Botanical Garden is the original of the botanical gardens in Europe and represents the birth of botanical science, scientific exchange, and understanding of the relationship between nature and culture (UNESCO, 2023).

The humanistically oriented research produced legends such as Leonardo da Vinci, Michelangelo, Brunelleschi, and Alberti, whose findings significantly influenced military and urban planning. In addition to developing cartography and perspective representation, nature became a model for aesthetic ideals like the golden section - as a result, landscape became a way of seeing (Corner, 1999; Cosgrove, 1985; Sörlin, 1999 – p. 106).

The spread of the Black Death and other folk ailments associated with urban sanitation prompted the English and French governments to draft legislation on urban waste management. These initiatives motivated Leonardo da Vinci to develop a concept for the "ideal city" (see fig. 8) to promote public health. He sketched urban structures with separate sewage, disposal, and transport systems in his collected writings. Open water channels crisscrossed the city's public space with open water channels, between which the development stimulated a mix of work, living, and leisure (Samaniego, 2019). Although his urban planning remained unrealized for cost reasons, Da Vinci was ahead of his time. His work marked the birth of urbanism and is once again relevant today (Melis, 2022).

fig. 8: *La Cittá Ideale - Da Vinci`s ideal city*

CITY AND COUNTRY MERGE WITH THE WORLD

PAST URBAN DEVELOPMENT IN EUROPE

Individualism and the wealth and political influence accumulated outside the church, led to the separation of religious and secular power (Kaika, 2005 – p. 11).

Baroque and Enlightenment (1600 to 1700)

The Enlightenment marked the final separation between the natural sciences and the humanities. The natural sciences later emerged as dominant since they deepened the understanding of the laws of nature and thus contributed to technical and economic progress. This change manifested itself in a new relationship to nature: "demonic wilderness" became the untapped potential of political influence - nature became "a prerequisite for development" (Kaika, 2005 – p. 9). Since the relationship between humans and nature changed fundamentally from now on, the Enlightenment marks the beginning of the Anthropocene, the "age of mankind" (Nesmith *et al.*, 2020 - p. 4; Bott *et al.,* 2019 - p. 34).

The new self-proclaimed rulers expressed their colonial grandeur with large-scale baroque landscaped gardens that, like their personal influence, flowed unboundedly into the surrounding countryside (see fig. 9). The design of the park was strongly related to the landscape. The garden complex opened from the doorstep with geometric, rational shapes, accompanied by strictly trimmed hedges, decadent planting, water features, and frescoes. Further, meadows and forests integrated into the park as hunting grounds, which many years later produced the first environmental protection and conservation measures in Europe (Kalusok, 2003 - p. 76 ff.). In this way, around 1600, the Białowieża Forest between today's Poland and Belariuz was created as the oldest nature reserve in Europe (Samojlik *et al.*, 2020).

The most monumental baroque park is that of the Palace of Versailles, whose design language in the urban planning layout was adopted from nearby Paris (see fig. 9 and fig. 10). "At the end of the 16th century, there was the idea of duplicating the city in a way as a garden vision" (Mohsen Mostafavi in Iihschannel, 2013).

During the Baroque period, landscape architects gained the ability to anchor a place in its spatial context. Since then, identity-forming elements of the landscape and visual axes to external landmarks for spatial orientation have been integrated into the design. Ornamental and/or urban layouts and maintenance-plans for arteficial plantings as well as near-natural biotopes are still tasks within this proffession.

Imperialism and Industrialization (1700 to 1800)

During absolutism and imperialism, rulers radically expanded their territorial possessions by claiming entire primitive folk and primeval landscapes (Cronon, 1995). Political rulers became "masters of nature and [...] of people" (Kaika: 2005 – p. 13).

fig. 9: *Baroque park of the Palace of Versailles*

fig. 10: *Urban layout around "Arc de Triomphe" in Paris*

The expansion of European colonies, maritime trade, and the explosive growth of cities marked the 17th and 18th centuries. This development was accompanied by accelerated technical progress, which enabled more efficient extraction of raw materials and factory production. During industrialization, all primeval landscapes, including the people, were converted from agricultural to industrial areas (Cronon, 1995; Nesmith *et al.,* 2020 - p. 108; Bott et al. 2019 - p. 17).

The advancing globalization now enabled the specialization of agricultural regions to supply international markets. To this end, farmers and members of ancient tribes were used as cheap manpower for rural raw material extraction and urban factory work. This working class mostly lived in poor sanitary conditions in run-down slums (see fig. 11). Mass protests against oppression and inhuman living conditions finally led to the emergence of democracy and human rights at the end of the 19th century (Cronon, 1995).

Human Rights and Green "Beauty" (1800-1900)

Interestingly, the return of humanistic thinking was aimed not only at the health and rights of citizens but also at the "reunion" of man and nature (Rottle & Yocom, 2011). The complete loss of pristine nature and limited contact with agriculture led to a nostalgic romanticization of the original environment, which expresses its importance for human well-being (Lowenthal, 1975 – p. 4). As a result, the city became the dangerous wilderness and the natural or pastoral landscape the paradise instead (Lowenthal, 1975; Cronon, 1995; Kaika, 2005). The movements of Frontier and Sublime manifested the still dominant image of landscape as rural, peaceful, and picturesque scenery away from the stressful city life (Corner, 1999; Cronon, 1995). Due to the new nature-culture dualism, urban diseases and social ills should now be cured with the panacea "nature" (Kaika, 2005).

fig. 11: *Life in the slums of London in the 19th century*

This development initiated the opening of "Yellowstone National Park" as America's first nature reserve to preserve the frontier experience or the lifestyle of the cowboy in the Wild West. Decadent environmental tourism was born, which anchored "beautiful wilderness" in the minds of society as a distant paradise (example Amazon) (Cronon, 1995). In addition to the first environmental movements and the awareness of the relaxing effect of nature on people, botanical gardens, baroque parks with stately hunting grounds, and landscaped gardens were gradually made accessible to the wealthy public (Kalusok, 2003 - p. 96 ff.).

Frederick Law Olmsted replicated the idealized beauty of the pastoral landscape when he designed "New York Central Park" (see fig. 12 - p. 20). His mission was to increase public health and environmental quality in the center of the American metropolis - even if this was initially only granted to the upper class (Spirn, 1996).

He was the first to title his work "landscape architecture", with which Olmsted immortalized himself as the father of the profession. Since industrialization, landscape architects are still pigeonholed as park designers and green city beautifiers; as professionals that are related to the recreation of the beautiful life of the paradise gardens and landscapes of non-urban, rural scenery (Thompson, 2014 - p. xi).

Nevertheless, the successful results of Olmsted's work established landscape architecture as a valuable tool for politics and urban planning, which, through the design of public green spaces, increases not only the social but also the ecological and economic value of the surroundings (Brink *et. al.*, 2017; Rottle & Yocom, 2011).

CITY AND COUNTRY MERGE WITH THE WORLD

PAST URBAN DEVELOPMENT IN EUROPE

fig. 12: *150 years old New York Central Park*

fig. 13: *"Garden City" outside of Copenhagen*

These insights also prevailed in the new urban planning profession, which developed as a separate department due to the social grievances in urban areas and the human rights that came into force (Guerra, 2023).

Alternative, more divided city models should now benefit public health in all sections of the population (Bott *et al.*, 2019 - p. 23). For example, `poor gardens` were temporarily available to provide food and shelter for the economically weakest (Guerra, 2023 - p. 44). Tree plantings increasingly found their way into the city, whereas peaceful "garden cities" (concept by Ebenezer Howard 1898) grew on the outskirts (see fig. 13) (Livesey, 2011). Neo-Renaissance/Baroque became mainstream in architecture, which decorated new buildings with frescoes depicting nature motifs (Karge, 2008). The face of the city gradually reflected the technical achievements of bicycles, steam engines and cars. This way, the urban spirit of expanding industrial cities with new neighbourhoods, boulevards, arcades, streets, squares, parks, and gardens came into being between the 19th and 20th centuries as a stage for a pulsating cultural life (Gehl, 2009) - "combining urban comfort with village structures" (Bott *et. al.* 2019 - p. 23). But due to the spread of the automobile, the compact urban typology with strong city centers slowly transformed into car-dominated, decompact typologies (Lehmann, 2010 - p. 72).

Industrialization led to booming cities, which now tried to get a grip on their environmental and social health problems with improved sewage, waste disposal, and green space systems. The city's expansions into looser settlements gave the population light, air, and movement (Guerra, 2023). Due to globalization, these urban landscapes and parks have become increasingly interchangeable and have lost their site-specific identity. In addition, urban expansions were rarely planned with the landscape in mind.

These two factors prompted urban planners like Patrick Geddes to promote an approach that drives urban development from within the local landscape. His work manifested the understanding of a regional unit that strengthens cultural identity through its closeness to nature (Geddes, 1947).

National Socialism and Regionalism (1900 - 1950)

European expansion ended with World War I, which caused a deep socio-economic crisis around 1930. The social unrest led to the emergence of German National Socialism (Löwenthal, 1975 – p. 12). A new form of environmental and cultural protection emerged with the narcissistic "blood and soil" ideology, which propagated the reintroduction of local nature and agriculture for self-sufficiency (see fig. 14 - p. 21) (Kalusok 2003 - p. 15).

Across Europe, influences such as functional urban zoning (Garnier), functional city theory (Le Corbusier)

and the Bauhaus School (Gropius) increasingly impacted urban planning practices in the early 20th century - bringing modernism and rationalism into the city (Guerra, 2023; Lehmann, 2010 - p. 72). However, these trends were viewed extremely critically in retrospect because "the functionalists made no mention of the psychological and social aspects of the design of buildings or public spaces" (Gehl, 2011 - p. 45).

For german military reasons, new expressways, like the Reichsautobahn from Munich to Salzburg (see fig. 15) and railways connected all cities and regions. New cultural and sports facilities, such as The Hitler Youth in Rothenburg (see fig. 16), promoted physical fitness and a sense of community. Regional and urban planning has focused on protecting and developing the native landscape in all infrastructure. The original landscape, with its nature and culture, became a regional and national trademark of politics (Germundsson, 2005; Kalusok, 2003 – p. 152 ff.; Sörlin, 1999 – p. 103).

With the "General Plan East", the aesthetics and contents of the German natural and cultural landscape should also be introduced in Poland after the Second World War (Kalusok, 2003 - p. 152 ff.). This part of German history is an example of how "landscapes were used and abused for the purposes of power and control, for the conscious [...] constitution of belonging and identity, and for the production and formatting of citizens and their self-image as human beings" (Sörlin, 1999 – p. 103).

Elsewhere, Lewis Mumford and Benton MacKaye further developed the concept of Patrick Geddes. Mumford, a strong critic of urban sprawl, "was ahead of his time in arguing for an ecological regionalism and a shift in culture away from hyper-individualistic consumerism" (Talen, 2019 - p. 16). Building on this, Ian Mc Harg began to influence politics in the 1950s with his "city landscape idea". In 1971 he published his book "Design with Nature", which went down in planning history as the first ecologically well-thought-out approach to urban planning (Brink, et. al., 2017 - p. 40; McHarg, I.L. 1992; Rottle & Yocom, 2011 - p. 24).

fig. 14: *Bielefeld allotments in the 1930s*

fig. 15: *Reichsautobahn Munich - Salzburg*

fig. 16: *Hitler Youth in Rothenburg in the 1930s*

RECONSTRUCTION WITHOUT A CITY

PAST URBAN DEVELOPMENT IN EUROPE

In 1939, German National Socialism led to the devastating Second World War. Economically significant infrastructures became the target of bombing raids that reduced entire inner cities to rubble and ashes (see fig. 17). The socio-economic hardship caused by the war required the rapid rebuilding of industrial infrastructure (see fig. 18). The Marshall Plan, the USA's reconstruction program for the European economy after the Second World War, was a fundamental support (Carter, 2016 - p. 127 ff.). A new functional urban design concept, referred to as modern urbanism, divided urban districts "according to catchment areas and demand needed for facilities at different levels" (Bott *et al.*, 2019 - p. 24).

Capitalism and suburbanization (from 1950)

Following the guidelines of modern urbanism, city planners erected cheaply produced blocks of flats for factory workers on the city's outskirts (see fig. 18 and fig. 19 - p. 23). The old town quarters the war had spared were viewed as outdated buildings for which no resources could be mobilized for renovation or demolition. The war debris of the ports and inner cities became landfill masses in unused lakes and canals. Temporarily people used parks as agricultural land during and immediately after the war, which later became covered with inexpensive and easy-to-maintain lawns.

The sorrow about the lost city life in historic districts and lavish parks had to be literally buried to face the future rationally and productively. The process of rationalization had already become apparent in the past decades through industrial mechanization and increasingly complex politics in the course of globalization and the growing population. This development manifested itself in the implementation of bureaucracies in government and the construction of highly efficient architectures. However, the development seen as progressive replaced traditions, values, and emotions, thereby having a dehumanizing effect on society (Carter, 2016 - p. 127 ff.).

With its efficiency and simplicity, modern urbanism reflected the needs of the war generations and ultimately made the economic boom of the 1950s and 1960s possible with the help of the Marshall Plan. This happened through cost-saving construction techniques and, above all, through pursuing and promoting the capitalist model of society (Guerra, 2023). Living, working, and sparetime became increasingly separated spatially, which benefited the automotive industry as owning a car became necessary. Historic town squares turned into parking lots and streets into dangerous lanes. Public space began to become unfriendly to pedestrians and lost more and more of its social importance as capitalism progressed (Karsten, 2005; Sanders, 2019).

fig. 17: *Dresden after the bombing in 1945*

fig. 18: *Dresden after reconstruction around 1985*

fig. 19: *Panel building in Gropiusstadt Berlin*

fig. 20: *Wealthy suburbs outside of Malmö*

fig. 21: *Emporia shopping mall in Malmö*

Children who once played on the streets were given care outside the home since both parents had to generate income to maintain the new lifestyle (Karsten, 2005). These circumstances tempted urban planners and landscape architects to integrate and design schoolyards, playgrounds, and sports fields into urban structures across the board. Due to the increasing consumer behavior of communication and entertainment media such as the telephone, radio, or television, interpersonal interaction has nevertheless shifted into the house's interior (Karsten, 2005). In the urban space, car traffic continued to increase, and the communal presence and, thus, social control decreased, causing the city to be perceived as a strange environment (Gehl, 2011; Karsten, 2005; Sanders, 2019).

The constant accumulation of consumer goods awakened the desire for a larger home with a garden in a safer environment in the broad masses (Lehmann, 2010 - p. 79). This movement, stimulated by capitalism, perforated all city limits, where well-off people have lived in increasingly spacious houses with ever smaller families ever since (see fig. 20) (Karsten, 2005). Suburbanization led to the spatial division of the three-class society, as low-income earners stayed behind in neglected neighborhoods close to the city center. Cultural segregation followed as a result of immigration from other countries. Modern urbanism is therefore considered in urban studies as the initial cause for the emptying of cities (Brink *et. al.*, 2017; Carter, 2016 - p. 127 ff; Talen, 2019).

Deindustrialization + global warming (from 1975)

Suburbanization, which has been progressing to this day, was favored by the deindustrialization of the cities and the construction of numerous indoor shopping centers on the city's outskirts (see fig. 21). Other factors are the introduction of computers, the internet, smartphones, streaming services, and the possibility of working from home. However, this development leads to serious ecological, social, and economic consequences that future generations will have to bear. As it is omnipresent in the media, man-accelerated global warming calls for the future protection of nature and people (Rottle & Yocom, 2011).

SUMMARY + INFOGRAPHIC

PAST URBAN DEVELOPMENT IN EUROPE

What do we learn from past urban development in the western world?

"The nature-culture dichotomy captures the essence of human activity in appropiating and modifying nature" (Bott *et al.,* 2019 - p. 16). Building and landscaping is an act of power over the environment and society to ensure future human well-being. The political territory has been pronounced as a "landscape" whose natural features form the basis for local cultural identity and advancement.

From the first settlements to antiquity, a fascination with people and the cosmos developed. The philosophical research produced elementary knowledge for further cultural development, which we still use in a refined form today. The origins of the sciences and spatial planning were the Greek Academy Gardens, which is reflected in the design of the town square as "Agora".

"The Dark Middle Ages" separated man and environment by propagating nature as a demonic wilderness. The Renaissance of Antiquity reintroduced nature and man as a unit. The philosophical research in the spirit of humanism led to the formulation of an "ideal city" by Leonardo da Vinci. His concept depicts the urban qualities that city planners are striving for today.

The Enlightenment, a precursor to imperialism and industrialization, splintered religious and secular power as well as natural and cultural sciences. This separation reversed the nature-culture dualism: nature went from a threatening wilderness to a prerequisite for political power, while culture drifted from a haven to a threatening wilderness. Cities began to be planned along the lines of baroque gardens.

Imperialism and industrialization merged villages with cities, cities with landscapes and landscapes with the world. The ultimate loss of the natural environment and the rise of social tensions prompted landscape architects and urban planners to reintroduce nature into the city in an idealized form.

The global merging of cultural identities and economic crises after the First World War inforced regionalism and nationalism to preserve local nature and culture. The landscape became an expression of identity again and served as a politically used trademark to uniform the population.

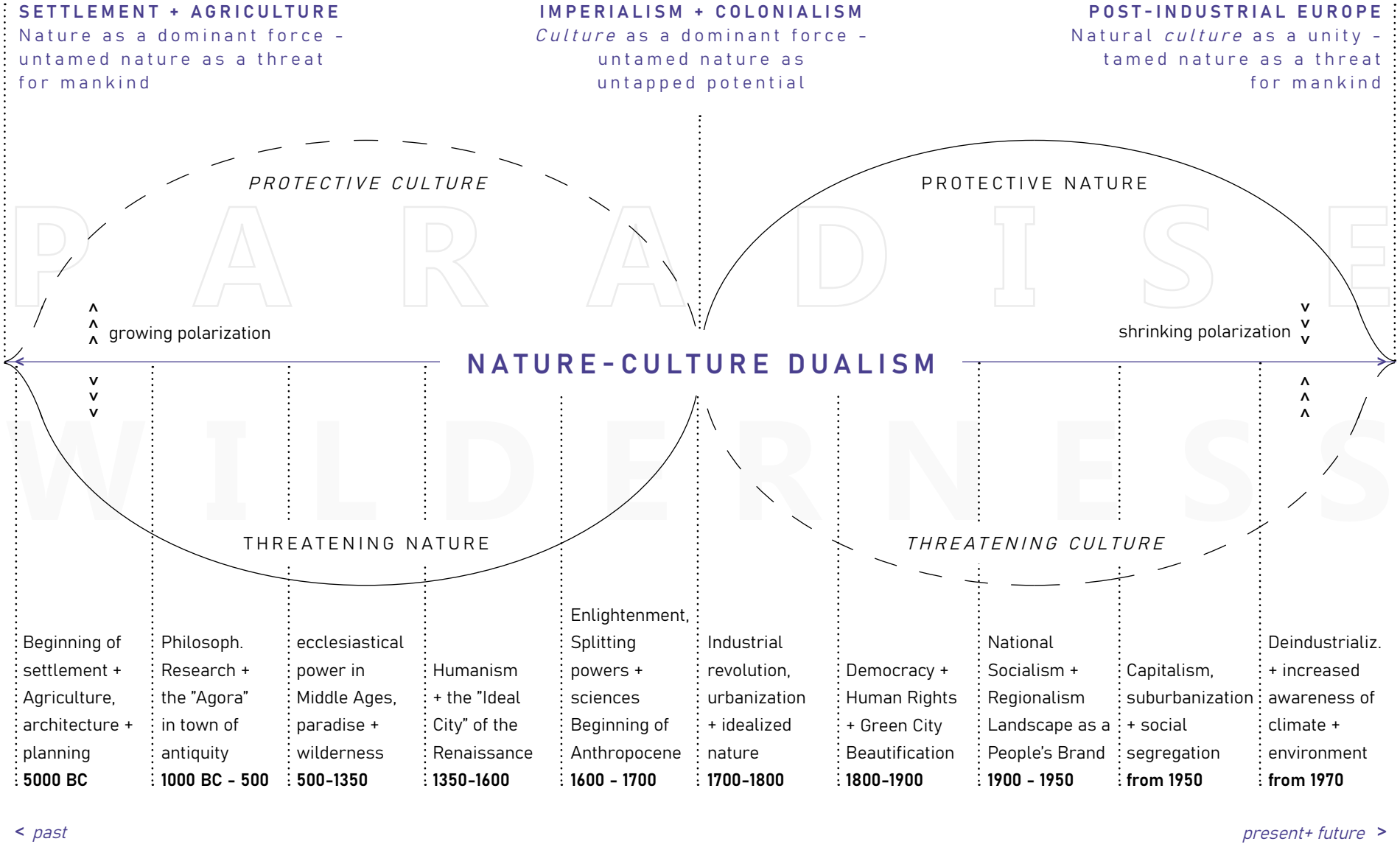
The rebuilding of cities after World War II followed the principles of modern urbanism, a movement that captured the spirit of emerging capitalism (Guerra, 2023). This urbanism led to the spatial separation of working, living, and relaxing, as well as between rich and poor, locals and non-locals. Parallel to ongoing suburbanization, globalization contributed to market shifts that led to the deindustrialization of western European cities. From now on, the shrinking process of medium-sized post-industrial cities in Europe took its course.

The infographic on the next page (see i.g. 1 - p. 25) summarizes the planning and urban developments reflected in the ongoing nature-culture dichotomy, as discriped in part I "Past urban development in Europe". The history makes it clear that an increased polarization between nature and culture produced ecological, social, and economic challenges regardless of orientation. From this perspective, the currently indicated merging of the two poles is a desirable development.

SUMMARY + INFOGRAPHIC

PAST URBAN DEVELOPMENT IN EUROPE

i.g. 1: *Urban development in nature-culture dualism*



RESULTS + DISCUSSION PART II

PRESENT URBAN CHALLENGES

P II

RESEARCH QUESTION II

What problems
have arisen
due to past
urban development
in Europe?

fig. 22: *Demolition of old industries*

PRESENT URBAN CHALLENGES

P II - INTRODUCTION

The previous chapter "Past urban development in Europe", defined landscape as a place- and society-bound unit. The recent experience of this environment is shaped by the dynamic interactions between nature and culture - a fleeting complex state that we summarize as a landscape phenomenon.

The ever-changing nature-culture duality describes the ambivalent relationship between human coexistence with the natural environment. The landscape phenomenon's perception and evaluation occur through ones body and mind. Thus, only half is shaped by external stimulation, while internal attitudes towards nature and culture color the other half. The judgment created on this basis decides whether the landscape meets our needs (Tuan, 1974).

Spatial planning manipulates the environment to enhance landscape performance for human well-being. Planning not only intervenes in the landscape phenomenon but is a product of the same thing (Prominski, 2004). The history of European cities has impressively demonstrated how the flowing nature-culture duality influenced spatial planning.

Simultaneously with the beginning of deindustrialization in the 1970s, there was increased environmental and social awareness. This development indicates a progressive convergence of the two variables, nature, and culture (Kaika, 2005).

While areas close to nature are still seen as "beautiful" and "healthy", tamed nature is increasingly becoming a threat in the public consciousness. "Nature" loses glorification in its variation and is instead perceived for what it is: life-giving and destructive power at the same time (Bott, et al., 2019 - p. 16).

The variable "culture" is also moving towards neutrality. Although the harmful coloring remains, for example, through the capitalist exploitation of the environment and society (Bott, et al. 2019 - p. 18), we increasingly see cultural actions as protection against and prevention of adverse developments in the "natural" environment.

As in the past, the mood of the current nature-culture duality underlies our perception and evaluation of the landscape. It is against this background that the scientific analysis of today's post-industrial cities' symptoms occurs.

The naming of these symptoms forms the basis for the future need for action on the part of building, landscape, and urban architecture. Therefore, the coming chapter, "Present urban challenges", forms an essential link between the past and future of European cities.

The analysis results on the current urban challenges were divided into the areas of ecology, sociology, and economy. Due to the complexity of the urban organism, these listings can be expanded at will. In the context of this landscape architectural research work, the focus is naturally on developing urban vitality in the public open space (Rottle & Yocom, 2011).

THE ECOLOGICAL AFTERMATH OF THE PAST

PRESENT URBAN CHALLENGES

Throughout history, environmental and human health awareness has swept through society in waves. Man's televised moon landing marked another point that initiated the re-establishment of an environmental movement. For the first time in human history, we were made aware of the limitations and vulnerability of our planet. Social protests, scientific research projects, and political legislation followed for the benefit of the environment - a process that continues to this day. Since then, knowledge has accumulated about the environmental effects of industrialization, globalization, urbanization, and subsequent suburbanization and deindustrialization (Beatley, 2016; Talen, 2019). These impairments are presented below based on the protected landscape assets of climate and air, water and soil, and flora and fauna.

Climate and air

Climate is the generic term for the long-term interaction of temperature, wind, humidity, and radiation. Above all, manufactured global warming is the flagship of the environmental debate - which, however, does not end with this topic (Nesmith *et al.*, 2020 - p. 5). The primary source of climate-damaging emissions is the burning of fossil raw materials promoted by capitalism and industrial mass production, as well as motorized transportation, which has intensified with globalization and suburbanization. Expanded urban development and the growing number of living square meters per inhabitant also increase the "climate footprint" as more highly processed materials are used, and growing building structures are supplied with energy, heat, and cooling. Furthermore, it is necessary to provide the almost nine trillion people on earth with food - the overproduction of agriculture is therefore also considered a significant source of emissions (Nesmith *et al.*, 2020; Bott *et al.*, 2019).

The local effects of urban construction on climate and air can be summarized as follows: The soil has been cleared, drained, compacted, and sealed - its bioclimatic ability to balance is severely restricted here. The same led to the loss of the vegetation layer, the air-purifying and cooling effect of which also fails (Bott *et al.*, 2019; Pérez & Perini, 2018).

Water surfaces were minimized for space reasons, which means there is no humidity and thus no air-cooling effect. The exchange of cold and fresh air was disturbed and partly prevented by the dense development. Depending on the composition of the built-up surfaces, these even have a heat-storing and heat-emitting effect. The heavily frequented automobile use of traffic areas and industrial companies permanently reduces the air quality for the living beings on site. Urbanization is one of the causes of global warming and simultaneously suffers from the development of heat islands and extreme weather events (see fig. 23 and fig. 24 - p. 31) (Nesmith *et al.*, 2020; Bott *et al.*, 2019; Talen, 2019).

fig. 23: *Heat islands in cities*

Water and soil

Water and soil form the basis for the emergence, nourishment, and growth of all life - they are a supporting ecosystem and surface resource simultaneously. In general we are facing issues of "water scarcity: lack of availability, contamination, and uneven distribution" (Nesmith *et al.,* 2020 - p. 14 ff), as well as coastal and weather related threats.

Building on "Climate and Air": many urban impairments to water and soil have already been mentioned here, which limit the climate-balancing function of these protected assets. The specific development of urban water and soil balance is explained below.

fig. 24: *Heavy rain events overload sewage systems*

Since the beginning of human settlement, it has been necessary to clear, drain and fill up areas in order to build over them or use them for agricultural purposes. Due to the subsequent industrialization, these measures were intensified with the compaction and sealing of the soil, as well as massive bank protection and excessive water withdrawal for the industry. The soils here lost their habitat function for soil organisms and vegetation. The reduced humus and oxygen content, combined with the separately drained precipitation, reduces the filter and storage function of the soil for water and nutrients (Nesmith *et al.*, 2020; Bott *et al.,* 2019 - p. 96 ff.; Pérez & Perini, 2018).

Due to old industries, more and more pollutants from the air and water were introduced into the soil, which led to groundwater contamination. Globalization called for more extensive fishing and cargo ships, so rivers and coastlines had to be deepened and straightened. However, these measures also increased the water volume and flow rate and thus the risk of storm surges in regions close to the water (Nesmith *et al.*, 2020).

Flora and fauna

The flora and fauna habitats provide living space and food for all organisms, including humans, and thus also act as land and energy resources. Unfortunately, "a defining characteristic of the Anthropocene age is mass extintion [...] through pollution, habitat loss, overharvesting, and climate change" (Nesmith *et al.*, 2020 - p. 6).

Urban biotopes are primarily anthropogenically heavily influenced or newly created habitats. Due to the diverse types of use, they have specific properties and location factors that clearly distinguish them from the biotopes in the open landscape. The causes are settlement-specific changes in abiotic site factors such as air/climate, soil, and water.

The city's ecosystem is characterized by more fragmented, specialized, and differentiated plant communities. In addition to old tree populations and pioneer plants, the gene pool is increasingly mixed with culturally introduced useful plants (archaeophytes) and exotic ornamental plants (neophytes). Urban plants are exposed to constant changes and stressors; they have the necessary stress tolerance and adaptability and are partially specialized in urban contexts (urbanophile species). For this reason, the cities have higher biological diversity compared to agriculturally used areas, which is particularly noticeable on fallow land (see fig. 25) (Beatley, 2016; Bott *et al.*, 2019 – p. 83; Pérez & Perini, 2018).

fig. 25: *Wild boar in run-down city park*

SOCIETY BETWEEN SOCIAL INEQUALITIES

PRESENT URBAN CHALLENGES

Given the social consequences of capitalistically driven suburbanization, starting with the upstream affluent enclaves behind the city limits makes sense. For many people, this seemingly carefree lifestyle is the ultimate goal in life. There is evidence of the increased quality of life among suburbanites - which in many ways is connected to the proximity to "Nature" (Lehmann, 2010 - p. 77).

With direct access to green, stress-free recreation areas in the adjacent rural area, residents get more light, air, and exercise. Outdoors are, therefore, known to impact both physical and mental health positively. The children also spend more time outdoors and in sports clubs, which increases their ability to concentrate and learn and improves their academic performance (Beatley, 2016). Families in the suburbs tend to eat more consciously and healthily, partly favored by the exclusive local food selection. The structural expansion has also established sufficiently good medical care (Pérez & Perini, 2018).

The question now arises as to whether the quality of life can be explained by the housing conditions or by the personal resources of the financially robust and educated class. In other words, is it the people around or the people's surroundings ... (Baldwin & King, 2018).

Segregation of social groups

Suburbanization has led to class segregation in the cities. While the financially strong fled the "urban wilderness," the uneducated and poor in income stayed behind in the city centers of shrinking cities. Social hotspots developed in these weakened neighborhoods as people moved more between regions and nations, followed by further segregation between natives and non-natives (Bott *et al.*, 2019).

The increasing spatial separation made socio-cultural integration more difficult for newcomers. As a result, they suffered from long-term unemployment, isolation, and associated physical and psychological problems. However, due to deindustrialization and financial crises (see economic consequences), these problems also became part of everyday life for local citizens, which can lead to right-wing extremist movements among the uneducated classes (Baldwin & King, 2018).

Low-income people live in cheaply produced post-war working-class blocks or neglected historic districts. The segregation creates a social stigma that manifests itself in the self-image of the neighborhood. The collectively felt worthlessness is reflected in many places in outdated, desolate open space structures (Gehl, 2011).

Neglect on the part of the municipalities can lead to the avoidance of entire districts, which experience increased

fig. 26: *Drugs, violence, poverty and pollution*

crime and vandalism due to the "broken window effect" and pent-up frustration. The public space is increasingly perceived as a hostile living environment, which results in higher numbers of emigrants from these districts (Gehl, 2009 - p. 97 ff.). As the vacancy rate increases, attractiveness and real estate value decrease (see fig. 26). This process leads to a downward socio-economic spiral, making public and private investments for structural improvement even more difficult (Baldwin & King, 2018).

Environmental injustice

Is it the people around or the people's surroundings? Statistically speaking, the residents of structurally

weak districts have less access to quality green spaces, playgrounds, and sports fields than in the suburbs (see fig. 27) (Raynor, 2020). "Environmental injustice is inevitably intersected by racial, gender, and socioeconomic forces" (Nesmith *et al.*, 2020 - p. 39). The so-called "environmental injustice" is a model that explains deteriorating human health with the lack of "green" local recreation opportunities (Lee, 1996). On the one hand, this is due to the relaxing effect of flora and fauna on the mind and body, which is described by the term "Biophilia" (Beatley, 2016; Pérez & Perini, 2018). On the other hand, unattractive open spaces prevent the accumulation of positive experiences and collective memories with the neighboring environment, which weakens the individual's physical and social place attachment (Gehl, 2011; Pérez & Perini, 2018).

A low level of identification with the physical space and the residents in the neighborhood reduces the sense of responsibility for the environment and cohesion among people (Baldwin & King, 2018; Raynor, 2020). Unappealing and poorly functioning green and open spaces deteriorate public health, safety (Beatley, 2016) and local and social belonging and intensify indifference to nature and culture in the neighborhood (socio-economic downward spiral) (Raynor, 2020).

The preceding industrialization and suburbanization is accelerating global warming, and disadvantaged neighborhoods are particularly exposed to its effects.

fig. 27: *Desolate playgrounds*

The high degree of sealed and sparsely vegetated areas favors the formation of heat islands and temporary flooding. The extreme weather events that are increasingly occurring according to forecasts therefore also threaten the health of local residents (Beatley, 2016; Nesmith *et al.*, 2020.; Raynor, 2020).

Food justice and public health

"Food justice sits at the intersecting issues of policy, health, social justice, economic development, and the natural environment" (Nesmith *et al.*, 2020 - p. 21). Low-income neighborhoods attract discounters and fast-food chains (see fig. 28). The so-called "food deserts" in the shrinking districts lead to an undersupply of healthy and nutritious food and thus reduce local public health (Raynor, 2020 - p. 111). In addition, the lack of exercise causes social suffering due to unattractive and unsafe surroundings, as well as a more sedentary lifestyle (Gehl, 2009 - p. 111; Beatley, 2016; Pérez & Perini, 2018).

These factors put public health at risk, which in turn influences all sustainable aspects of urban planning policy. Just to name a few: Sedentary lifestyle due to technological advantages, transportations modes, unavailable, unsafe and or low quality surroundings lead to expanding healthcosts. Site pollution from fast food packaging materials can intensify as "waste management culture" and/or placeattachment varies, which lowers the sense of responsibility for the place.

fig. 28: *Fast food and take away in Berlin*

ECONOMIC CONSEQUENCES OF PREVIOUS URBAN DEVELOPMENT

PRESENT URBAN CHALLENGES

The economic challenges of shrinking cities resulted from dynamic developments such as globalization and capitalism, suburbanization and segregation, and demographic change in European society. In the two previous sections, it became clear that environmental and cultural conditions influence each other. The ecological and social consequences already indicated an interlocking with the economic factors of a city. Sustainability describes the resilience of the environment, society, and economy. Refraining from discarding any of these pillars renders the entire urban system unstable and unsustainable. Urban development in the 20th century was primarily shaped by capitalism. Therefore, the economic consequences of this action within today's post-industrial cities are explained using the three pillars of sustainability.

Environmental and natural capital

Natural capital is the most basic form of capital as it underpins the economy, society, and human well-being (Beatley, 2016). Natural or environmental capital encompasses all resources that provide some form of benefit to society. These resources, such as food, air, and water, are vital for basic survival but can also include more abstract assets like aesthetically pleasing landscapes and scenic views. It represents the total value of both renewable and non-renewable resources. The sprawl in the urban environment puts a double strain on the municipalities' coffers: on the one hand, through the construction and maintenance costs themselves and, on the other, through expensive compensatory measures to compensate for the environmental degradation.

The suburbanized areas could have remained near-natural ecosystems, agricultural supply areas, and forests for producing renewable buildings and fuel materials. The loss of these areas weakens the politically independent self-sufficiency and, thus, the economic resilience of a region.

The reduction of aesthetic and restful landscape scenes in front of and within the city reduces the quality of life and, thus, the demand for living space on site (Beatley, 2016). As indicated under the social consequences, this leads to a deterioration in public health, which places a financial burden on the labor market and health insurances. Furthermore, an unappealing environment can cause local real estate values to stagnate or even fall. The sales figures for the local tourism industry are also suffering (Pérez & Perini, 2018).

The speed of human environmental manipulation, such as global warming, leaves little room for ecosystems to adapt to the changes on time. In addition, urbanization has contributed to the fragmentation, reduction, and elimination of essential biotopes. With the deindustrialization of European cities, which was burgeoning at the same time as the environmental movement, the economic situation became problematic due to costly restorations for the subsequent use of contaminated industrial areas.

Urban development has shaken the ecological balance and the natural climate balance. This threatens the natural environment and human civilization as contamination and extreme weather events endanger food supplies, infrastructure, and housing (Nesmith *et al.*, 2020 - p. 27 ff.).

"Controlled nature is now cast as a potential source of crisis, a potential impediment to further development" (Kaika, 2005 – p. 6). Protecting our habitats, mitigating global warming, and adapting to it are natural components of human survival strategies - since "the well-being of the planet is one and the same with human-well-being" (Nesmith et al., 2020 - p. 31). They involve enormous financial efforts that could have been avoided through adequate planning. The mismanagement of environmental capital, therefore, has serious economic consequences .

Human and social capital

"Human survival is linked to our collective nature over individualism" (Nesmith *et al.*, 2020 - p. 7). In this context, human capital and social capital are two types of resources. The main difference between these two is: Human capital refers to skills, knowledge, and

experiences that different people possess. Social capital describes the resources we gain from a social network (Baldwin & King, 2018).

Human capital can be defined as "the skills, knowledge, and experience possessed by an individual or population considered in relation to their value or cost to an organization or country" (Oxford dictionary). The deindustrialization of European cities led to a redistribution in the local labor market. Depending on the city's attractiveness, the choice of alternative professional fields, and further training opportunities, the market shift caused a high fluctuation among the city's residents. In shrinking post-industrial cities, mostly less educated citizens remained. If a municipality has yet to invest in research and education, recreation and health care, tourism, or the service industry over the past three to four decades, it is at risk of losing the human capital of its city (Baldwin & King, 2018).

The main reason for the change in urban population is net migration. The increase in life expectancy, the decline in fertility, and new demographic norms such as later marriages and more frequent divorces have also shaped the development of the urban population. In addition to alternative economic models, municipalities need child and family-friendly city policies that attract and establish working young adults.

Social capital refers to "the behavioural norms, trust, and reciprocity that help people to form social networks for the purpose of collective cooperation and mutual benefits" (Baldwin & King, 2018 - p. xx). As described under the social consequences, population groups' spatial and social segregation prevents individual social and professional integration in a city. Knowledge and innovative ideas accumulate in the communicative exchange between people (Baldwin & King, 2018 - p. 146). New immigrants, regardless of their ethnic origin, hold the potential for new economic impetus while at the same time offsetting the effect of the aging society.

Economic and political capital

The management of a municipality is based on four sources of income, which can be listed as follows according to their economic importance: taxes, municipal financial equalization (national allocations), earned income and other income, and finally, fees and contributions (McKinsey & Company, 2019). In addition to current income, borrowing is the fifth means of financing.

The primary sources of tax financing are trade, income, and property taxes. In many cities, emigration to rural areas leads to the administrative loss of well-educated and well-earning taxpayers. Depending on the political division of land, the employment and income gap between suburbs and city centers weakens the financial budgets of shrinking cities. Demographic change also reduces income tax and instead increases social spending. The most important influencing factors include an aging society, increasing unemployment, and lost work due to illness. In addition to the loss of income and property tax, local authorities see declining trade tax revenue due to deindustrialization. Depending on city policy, this waste continues as residents and business outlets move away (Bott *et al.*, 2019 - p. 153 ff.).

The economic capital of a municipality shrank due to past lousy planning and investments, resulting in losing room for maneuver and, ultimately, political capital.

SUMMARY + INFOGRAPHIC

PRESENT URBAN CHALLENGES

What problems have arisen due to past urban development in Europe?

Urban development in the second half of the 20th century was shaped by factors such as globalization and deindustrialization, capitalism and individualization, suburbanization, and class society, as well as demographic change and accelerated population fluctuation due to (e-)migration. Modern urbanism is currently considered the root of all evil in urban planning (Carter, 2016). While capitalism brought new technical progress, new wealth, and a more comfortable and extended life, the limitations in the sustainability of the planning philosophy of the time are now evident (Guerra, 2023).

For the sake of simplicity, this chapter has presented the ecological, social, and economic consequences separately. However, it became clear from the results that the categorized effects influence each other in public spaces. Thus, environmental and social impairments have a measurable impact on a city's total capital. The section "Economic consequences of previous urban development" clarified that a city's profitability is also based on the three pillars of sustainability. The argument with various measurable capital units might be most effective in an economically oriented planning policy.

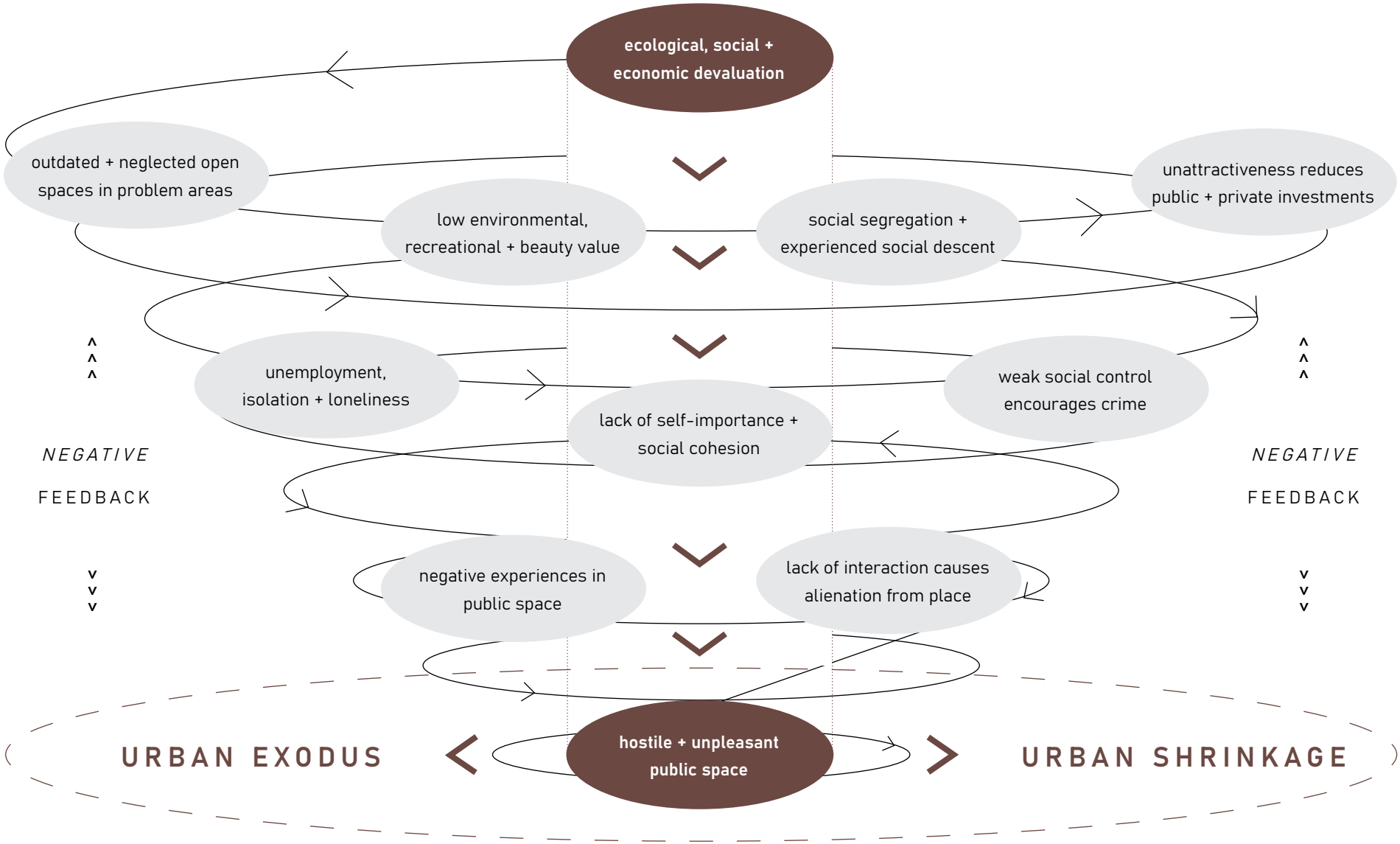
A city's greatest asset is its environmental or natural capital since the entire cultural system is built on this, just like in the landscape. The further development of society stands and falls with the ecological balance (Bott, *et al.*, 2019 – p. 13; Rottle & Yocom, 2011). The anthropogenically accelerated global warming is the most far-reaching consequence of industrialization, globalization, and suburbanization. This development is aggravated by environmental devaluations such as the fragmentation of biotic habitats and the limitation of microclimatic balancing functions through sealing and drainage. These and other human actions lead to the degradation of environmental capital: the supply of food and materials and social infrastructure such as housing and transport routes are at stake due to the increase in extreme weather conditions.

In addition to the ecological and economic impairments, the mismanagement of environmental capital also harms the city's social development. In structurally weak districts, environmental injustice is noticeable in deteriorating public health and the devaluation of public space (Baldwin & King, 2018). This process is accompanied by social reactions such as resignation, crime, and vandalism - as well as business reactions such as the spread of cheap markets and fast-food chains. The neglect of public space leads to an eco-social negative spiral, as shown in the infographic "Present urban challenges in public space" on the next page.

The graphic (see i.g. 2 - p. 37) illustrates the ecological, social, and economic devaluations in the public realm of a district. It is clear here that the consequences of this mismanagement constantly build on one another and accelerate the shrinking process of a neighborhood. This answers the question of people or the environment: although people generate urban vitality, it can only be guaranteed by an environment that is appealing to people (Gehl, 2009; Gehl, 2011; Baldwin & King, 2018; Bott *et al.,* 2019; Rottle & Yocom, 2011; Carter, 2016; Pérez & Perini, 2018). The low quality of life in public spaces in shrinking cities shows that urban "design is under-valued as a driver of system change" (Birkeland, 2020 - p. XIII).

i.g. 2*: Present urban challenges in public space*

PAST URBAN DEVELOPMENT IN EUROPE



RESULTS + DISCUSSION PART III

FUTURE POST-INDUSTRIAL CITIES

P III

RESEARCH QUESTION III

Which political guidelines, technical concepts and social movements lead into the future?

fig. 29: *Agenda 2030*

FUTURE POST-INDUSTRIAL CITIES

P III - INTRODUCTION

In 1962, Rachel Carson's New York bestseller `Silent Spring` (Carson, 2009) paved the way towards change, as it generated widespread concern for the environment, public health, and the interconnections between pollution and living organisms. Since "air pollution was commonly accepted as the smell of prosperity" (Earth Day Network, 2023) planning policy still paid little attention to the environment. However, the world changed when Apollo returned from the moon in 1969: "The images [...] beamed down from space captivated all of humanity, while capturing the fragility of our planet, these images helped to inspire a generation to act in defense of the environment" (Brand, 2018).

Nine months later, on April 22, 1970, American Senator Gaylord Nelson organized a student demonstration against the severe effects of 150 years of industrial development. His political influence generated widespread media attention, putting the burgeoning environmental movements in the public spotlight. Since then, people have gathered on "Earth Day" to sensitize politicians to the consequences of environmental pollution on the well-being of people and ecosystems. Born in 1970, the modern environmental movement has helped shape numerous government departments, legislatures, and planning strategies worldwide (Bott *et al.* 2019 - p. 19).

In 1972, the first United Nations (UN) Environmental Conference took place in Stockholm, which propagated the establishment of the United Nations Environmental Program (UNEP) and the formulation of 26 environmentally friendly and humane development principles with the Stockholm Declaration (United Nations, 1972). In the following years, the environmental idea was increasingly considered together with social and economic factors and finally anchored in the political landscape with the Brundtland Report, also known as "Our Common Future" (Brundtland, 1987). Five years later, Rio de Janeiro hosted the "Earth Summit," where all participating countries signed "Agenda 21." Another significant achievement of this UN Convention was an agreement on the Climate Change Convention, which in turn led to the "Kyoto Protocol" (1997) (Bott *et al.* 2019 - p. 19) and the "Paris Agreement" (2015) (Nesmith *et al.*, 2020).

These and other political developments established the understanding of environmental protection, which aims at fair living conditions for the world's entire population. Just as the definition of landscape describes, it is not only about nature but also about people - environmental protection is thus closely linked to humanism. Against this background, 16 development goals (MDGs) were summarized in the millennium declaration at the millennium summit in 2000, which took equal account of ecological, social, and economic aspects (Bott *et al.* 2019 - p. 19). The UN declaration expired in 2015 and was followed in the same year by the "Agenda 2030 ", which is still valid today (Birkeland, 2020 - p. 94).

With the "Agenda 2030", the UN General Assembly defined 17 Sustainable Development Goals (SDGs), which are recommended to all UN member states worldwide (Birkeland, 2020 - p. 94). SDG 11 "Sustainable Cities and Communities", stands out as a goal for city planners. Since the SDGs are interconnected, working on one of these goals affects the entire system.(United Nations, 2015).

For this reason, in cooperation with various organizations, the United Nations Human Settlements Program (UN-Habitat) has summarized urban areas' diverse challenges and development opportunities in its "New Urban Agenda" (Birkeland, 2020 - p. 95; Talen, 2019 - p. 139 ff.). With this agenda, UN-Habitat seeks to "provide clear definitions and practical applications to make the global framework more accessible and user-friendly for policymakers and urban practitioners, both within governments and across the broad spectrum of urban stakeholders..." (UN-Habitat. 2020 - p. ix).

The first section, 'Political urban planning strategies + subsidies', deals with further implementing and integrating these global goals within the EU. Based on this, three approaches are presented in the section "Technical concepts + social movements", each of which can contribute to urban revitalization differently. A sketch of the future for "The western European city after pandemic + war" follows. Finally, the Part III is summarized with an infographic.

POLITICAL CITY PLANNING STRATEGIES + SUBSIDIES

FUTURE POST-INDUSTRIAL CITIES

The European Union (EU) consists of 27 countries, an area of over four million square kilometers, and a total population of almost 450 million people. It is therefore inhabited by almost 6 percent of the world's population and generates around 20 percent of the global GDP yearly (Eurostat, 2023). Today, over 70 percent of EU citizens live in cities, which together generate most of Europe's GDP and act as centers of knowledge, research, and innovation (Carter, 2016).

The effects of globalization, deindustrialization, and suburbanization in the EU were already being felt in the last third of the 20th century. "Failing economies, population and job losses, environmental degradation, protests, and political unrest have all become common symptoms of Europe's post-industrial urban malaise" (Carter: 2016 – G. Gardner p. 127). Internationalization through the merger of states to form the European Union has caused problems in numerous post-industrial cities on the continent and should now help find solutions.

"European cities are associated with strong national and EU political initiatives. This layering of policies and the resources that come with it have greatly influenced Europe's post-industrial regeneration" (Carter, 2016 - p. 128). Cities are seen as both a source and a solution to today's economic, environmental, and social challenges. Therefore, urban development is of cross-border importance in all European politics.

European politics is run by diverse bodies whose strategies, programs, and initiatives are as complex as Europe. What all these political movements have in common, however, is an ecologically, socially, and economically inclusive approach that aims to bring governments together, Promote industries, societies, and individuals. In other words, European politics reflects the top-down approach of the UN while at the same time cultivating a bottom-up approach with the citizens themselves (Raynor, 2020).

Cohesion policy

With the progressive redistribution of the product markets towards Asia and the simultaneous increase in member states in the EU, the European Commission developed a cohesion policy to compensate for imbalances between regions and countries. This policy aims to promote a more balanced, sustainable `territorial development` to strengthen economic, social, and regional cohesion within the European Union (ERDF, 2021).

Between 2021 and 2027, the European Cohesion Policy will focus on five objectives around a (1) smarter, (2) greener, (3) more connected and (4) more social Europe and a new horizontal objective (5). In particular, the fifth objective reflects the growing bottom-up approach, which seeks to support integrated territorial development strategies to bring European policies closer to citizens (ERDF, 2021). In order to implement these strategies in a way close to society, territorial instruments such as Integrated Territorial Investment (ITI) (URBACT, 2019) or Community-Led Local Development (CLLD) (European commission, 2022) are used.

For 2021-2027, 350 billion euros have been allocated to cohesion policy. The available Cohesion Policy subsidies are divided into eight funds, including the four European Structural Investment Funds (ESI). These funds constitute the primary investment vehicle for development activities in Europe (European Commission, 2023). These development actions, which pursue one or more Cohesion Policy objectives, are subdivided into thousands of umbrella programs, which host hundreds of sub-initiatives and projects. The European cohesion policy, therefore, represents the living and complex organism of the EU.

Europe 2020 to Europe 2030

In response to the economic recession of 2008, the European Commission launched a funding program that includes all areas of development within the EU. The "Europe 2020" strategy published in 2010 supported innovative, sustainable, and integrative growth and thus took into account the 16 MDGs of the UN's "Agenda 21". "Quantitative action targets included more employment, more investment in research and education, stronger sustainability indicators, improved educational

outcomes, and reduced social exclusion and poverty" (Carter: 2016 – G. Gardner, p. 133).

The term of this strategy ended in 2020, so work is currently being done on the formulation of "Europe 2030" to represent the 17 SDGs of the 2030 Agenda at the European level.

New Urban Agenda for the EU

The Urban Agenda for the EU was launched in May 2016, just a few months before UN-Habitat's New Urban Agenda. It illustrates a working model for cooperation between various governmental and non-governmental institutions to stimulate growth and innovation, as well as social justice and quality of life in Europe's cities. In summary, the Urban Agenda for the EU cultivates improved regulation, funding, and knowledge sharing around urban resilience development issues (Urban Agenda for the EU, 2023).

For this purpose, the agenda was linked to the European Cohesion Policy and its financial aid through the European Urban Initiative (EUI, 2023). The Urban Agenda for Europe reflects Goal 11 of Agenda 2030 (UN) and the New Urban Agenda (UN-Habitat) for European urban development. In addition, numerous initiatives and programs have been integrated to promote the exchange of knowledge and experience (see examples in references under URBACT, 2023 and IUC, 2023).

European Green Deal + The New European Bauhaus

The European "Green Deal" is currently the EU's flagship project - a summary of political initiatives with an ambitious goal: A climate-neutral Europe by 2050! The European Green Deal focuses primarily on combating climate change, industrial-related environmental degradation, and European social inequalities (European commission, 2023-09). The Green Deal provides two knowledge-sharing initiatives - the European Climate Pact (European Union, 2023) and the New European Bauhaus (NEB) (see i.g. 3). "The New European Bauhaus Initiative calls on us all to collectively envision and build a sustainable and inclusive future that is beautiful for our eyes, mind, and soul" (European Union, 2023-09).

i.g. 3: *Building a better future: Life and the New European Bauhaus*

TECHNICAL CONCEPTS + SOCIAL MOVEMENTS

FUTURE POST-INDUSTRIAL CITIES

The shrinking cities of post-industrial Europe face many challenges, as explained in part II. Politicians with various strategies, programs, and financing packages support coping with negative consequences. Despite this political support, only some cities have been able to carry out a sustainable revitalization successfully. In addition to local politics, this concerns the municipalities' need for more staff and skills (Carter, 2016). To counteract this, the EU actively promotes the exchange of experience between science and practice, nations and regions, urban planning, and residents.

The modern environmental movement since the 1970s has increased understanding of the synergy effects between ecological, social, and economic developments. For this reason, urban politics today demands holistic solutions that can only be developed in close interdisciplinary cooperation. Urban planning concepts moved away from the ideology of modern urbanism and expanded into a wide range of goals and methods (Bott *et al.*, 2019; Talen, 2019 - p. 154).

The following section provides a brief overview of the current professional and societal movements concerned with the regeneration of shrinking cities. The urbanism concepts presented here come from various disciplines and are divided into environmental, social, and economic approaches in an extremely simplified manner. These movements can be summarized as "Sustainable Urbanism" as they strive for urban resilience on all three pillars of sustainability as a common goal. The graphic "Principles of Sustainable Urbanism" (see i.g. 4) summarizes the most elementary aspects that recur in all the movements presented here - the presentation concentrates on those principles that have a direct impact on the character of public space in the urban fabric.

i.g. 4: *Principles of sustainable urbanism*

Landscape + Ecological Urbanism

The cultural identity of a city developed out of the local landscape conditions. As industrialization progressed, society steadily distanced itself from the natural environment and thus lost its relationship with what it was meant to protect. This loss of contact caused the nostalgic romanticization of landscape as sacred scenery, which resulted in establishment of environmental protection areas and urban parks (Cronon, W. 1995). Cities continued to be built in the most unthinkable places, relying on the omnipotence of engineering only through environmental damage, which went hand in hand with the loss of development and human life and knowledge of geographically adapted urban planning accumulated (Rottle & Yocom, 2011).

At the intersection of natural-cultural identity, scenic recreational values, and environmentally conscious urban planning, the following profiles contributed to positive development: "The Garden City of Tomorrow" (Howard, 1985); "Cities in Evolution" (Geddes, 1971); "The City in History: Its Origins, Its Transformations, and Its Prospects" (Mumford, 1961); "The Death and Life of Great American Cities" (Jacobs, 2016); "Silent Spring" (Carson, 2009); "Design with Climate" (Olgyay, 2015); "Design with Nature" (McHarg, 1992); "Architecture of the Well-tempered Environment" (Banham, 2022); and "Los Angeles: the Architecture of Four Ecologies" (Banham, 2009).

The modern environmental movement changed the perspective from humans to the environment. Over the past 50 years, industrial-related environmental degradation and global warming have entered the public consciousness (Beatley, 2016). These abuses became apparent when post-industrial change released contaminated building land and bodies of water. Out of the need to regenerate the fallow land ecologically, upgrade it socially, and contribute to environmental education and a sustainable lifestyle, the movement of landscape urbanism emerged in the 90s.

Charles Waldheim, Mohsen Mostafavi, James Corner, Alex Wall, Adriaan Geuze, and many others were inspired by their predecessors and initiated the landscape-based urbanism movement. With their work, environmental planning and landscape architecture should finally be integrated into urban planning (Rottle & Yocom, 2011). As Charles Waldheim states in his book "Landscape as Urbanism": "Landscape has recently emerged as a model and medium for the city" (Waldheim, 2016 - p. 2), some theorists are arguing that landscape architects are the urbanists of our time. In other words, "the term Landscape Urbanism [...] is used to emphasize that landscape architecture [...] should be the basic structure and defining characteristic of urbanism" (Talen, 2019 - p. 64 ff.) (practical example: see fig. 30).

Because of this initial movement's perceived limitations and inadequacies, its scope broadened and is now preferably referred to as "ecological urbanism". Many of the supporters already mentioned have followed this development. Mohsen Mostafavi and Gareth Doherty include other planning disciplines in their collaborative work "Ecological Urbanism": As climate change, sustainable architecture, and green technologies gain importance, the city's sustainability issues remain less advanced. However, design offers a solution by merging ecology with urbanism, ensuring harmony with the environment (Mostafavi & Doherty - 2010).

Landscape or ecological urbanism has focused on the environmentally and socially friendly regeneration of shrinking cities in the post-industrialization phase. The two mentioned works, "Landscape as Urbanism"

fig. 30: *Landscape urbanism on New Yorker "Highline"*

TECHNICAL CONCEPTS + SOCIAL MOVEMENTS

FUTURE POST-INDUSTRIAL CITIES

(Waldheim, 2016) and "Ecological Urbanism" (Mostafavi & Doherty, 2010), each describe this movement's principles and planning examples. Since cities must meet multiple requirements in the smallest spaces, numerous hybrid or partial solutions can be assigned to this urbanism movement. These fragments are, for example, near-natural high-performance plantings, water systems cleaned by plants, or rainwater parks (Pérez & Perini, 2018). Biophilic, nature- and process-based or ecological design principles created these and many other urban green structures (Rottle & Yocom, 2011). Due to its multifaceted nature, this urbanism movement is strongly linked to all other urban planning concepts.

Tactical + Agricultural Urbanism

This type of urbanism is a spectrum of urban planning movements combining two keywords: temporary and bottom-up. These movements also find their forerunners in industrial urbanization. The losers of this progress, such as factory workers, the unemployed, and the sick, lived in slums on the city's outskirts. They spent their lives in cramped buildings with poor sanitary conditions and no light and air. In order to improve the food supply and the quality of life for these residents, temporary gardens for the poor were designated on the city limits, which later became colony gardens (Nesmith *et al.*, 2020 - p. 21) The two main engines of these movements are the significant effect through minimal effort and permanent upgrading through urban pilot projects.

These movements formed and differentiated themselves mainly through three parallel developments in the last 50 years. The increasing individualization and democratization moved the citizens to make their voices heard through protests and to seize their living environment through "grassroot movements". At the same time, the changing conditions and needs in the globalized cities accelerated. Urban planning, which is statically permanently oriented, often needs more room for maneuvering to adapt to this change promptly. Shrinking cities, in particular, experiencing a loss of economic and political capital, need more resources for a long-lasting and flexible transformation. These three simultaneous processes gave birth to the Tactical Urbanism movements of the 2000s (Talen, 2019 - p. 20 ff.).

As mentioned, this is an umbrella term for guerrilla urbanism, pop-up urbanism, city repair, DIY Urbanism, planning-by-doing, urban acupuncture, urban prototyping, and agricultural urbanism combined. Tactical urbanism aims to promptly compensate for social segregation and performance-need differences in public space. These are often citizen-led initiatives that inspire communities to undertake quality, lasting improvement (Raynor, 2020). However, some of these installations are also managed by the municipality and, compared to classic urban planning, focus on civic participation and cost-effective measures (Talen, 2019 - p. 25; Raynor, 2020).

Examples of this type of intervention include (see fig. 31): Removal of superfluous structures (fences, walls, flooring), urban farming + guerrilla gardening (flowers + herb planting, vegetable + fruit growing, beehives), improvised makeovers (floor painting, graffiti, street art), pop-up structures (bike lines, seating, playgrounds, retail + cafés), or temporary interim uses (summer streets, ice rinks, skate rinks) (Raynor, 2020).

The initiatives that arose from tactical urbanism could sustainably upgrade streets and districts and inspire innovative designs. Research has proven its positive

fig. 31: *Tactical Urbanism on Milanos`Piazze Aperte*

effects on quality of life, sense of place and community, and educational and innovative power (Baldwin & King, 2018 ; Talen, 2019). Urban farming also improves environmental quality, environmental awareness, food supply, and public health, as further described in the book "Second Nature Urban Agriculture" (Viljoen & Bohn, 2014).

New + Green Urbanism

New Urbanism emerged from the critique of Modern Urbanism, which led to the decentralization of European cities. Post-war urban planning was dominated by disdain for outdated historical structures and the glorification of burgeoning capitalism. It was an urban planning movement that viewed "the city as a machine, with its parts seperated by function" (Gehl, 2009 - p. X). New urbanism is looking for solutions to re-densify and mix the cities functions to counteract this period's ecological, social, and economic consequences. To this end, it is based on the model of the village context (15-minute city), "compact city" or the "ideal city" of the Renaissance (Talen, 2019).

The main principles include dense development with mixed uses in living, working, and living. This urban architecture leads to numerous positive side effects: public space is designed on a human scale, all-day use increases social control, and thus the feeling of security (Baldwin & King, 2018), proximity, and accessibility reduces the need for car traffic, which means that "active" traffic can be given priority and much more. Here, behavioral studies of people in public spaces, traffic flow analyses, and microclimate and rainwater management investigations are particularly relevant (example Västra Hamnen in Malmö - see fig. 32) (Bott *et al.*, 2019; Talen, 2019).

The new urbanism is increasingly concerned with building construction technology and architecture, which should be designed as varied and individually as possible. Other aspects are passive houses and the use of materials and supply structures with a low climate footprint throughout their life cycle. Recycling materials and buildings is also a current topic in this movement (Talen, 2019).

With the establishment of the word "Climate Change" in the 2000s, an even more ambitious movement manifested: "Green Urbanism". One of the pioneers is Steffen Lehman. In his work "The Principles of Green Urbanism - Transforming the City for Sustainability" (Lehmann, 2010), he established a triple-zero framework: zero fossil fuel consumption, zero waste, and zero emissions. Green urbanism strives to reduce the consumption of energy, water, and materials throughout the entire lifespan of a city or neighborhood (Lehmann, 2010).

In order to generate a sustainable post-industrial city transformation into eco-cities, Lehmann developed 15 principles for the conceptual model of green urbanism, which, similar to the 17 sustainable development goals of the 2030 Agenda, interlock and influence each other (Lehmann, 2010 - chapter 2).

fig. 32: *New Urbanism in Malmös`Västra Hamnen*

Along with the theories of other planners such as Timothy Beatley or Peter Newman comes the Green urbanism movement closest to the "European Green Deal".

THE EUROPEAN CITY, AFTER THE PANDEMIC + POLITICAL UNREST

FUTURE POST-INDUSTRIAL CITIES

The extent to which a city used its potential to rebuild urban resilience to external stress factors was soon tested. We are still facing the aftermatch of the Covid-19 pandemic, the subsequent global recession, and the Russia-Ukraine war with the resulting refugee and energy crisis in Europe. All four issues are complex and long-term effects have yet to be explored. Since today's urban planning cannot ignore these current events, this report attempts to outline the essential, already foreseeable effects on inner cities.

In 2020, the SAS virus found its way from China to Europe. Politicians gradually imposed regional curfews to protect public health. Social life lost vitality in the professional and private context and moved into the virtual world. The public space of urban centers became a danger zone, which citizens only went to with masks to stock up on supplies (Brokow-Loga, 2023). As a result, consumer behavior also shifted to the online market (Talen, 2019 - p. 159 ff.). While people were working at home at their desks, receiving information, making contacts, playing games, and streaming, citizens used large green spaces for physical and mental relaxation. The trends that had emerged over the past twenty years became crystal clear with the pandemic: the inner city as a place for work, shopping, entertainment, and social interaction had become obsolete (Gehl, 2010 - p. 26). Consequently, many city dwellers asked themselves whether life in the country was not cheaper and more attractive (Nesmith *et a*l., 2020 - p. 105 ff.).

Despite government subsidies, temporary retail, gastronomy, and cultural facilities closures led to numerous insolvency proceedings. Structurally weak small and medium-sized towns, which had previously failed in urban renewal, are now faced with empty shopping streets and cultural miles (see fig. 33). The global market mirrored these fluctuations with the Covid-19 recession. As progressive business leaders relocate or downsize their office space, politicians and urban planners wonder what the city of tomorrow should offer (Madden, 2021).

"With the disruption of life caused by the coronaviros pandemic, we have had the opportunity to view possibilities for a world with reduced human impact" (Nesmith *et al.*, 2020 - p. 135). While the pandemic left society and the economy in a long-lasting shock, significant developments occurred in the ecological environment. When all modes of transport (cars, buses, trains, planes) were used sparingly or stopped, air quality in cities worldwide improved. The link between the environment and human health was once again becoming clear: A quarter of the global burden of disease could be prevented by an ecologically healthy environment (WHO, 2006). A BCG survey found that many people had become more environmentally conscious due to the pandemic. "More than two-thirds of respondents believe that stimulus plans should prioritize environmental concerns" (BCG, 2020).

fig. 33: *Empty shopping streets due to Covid-19*

Unfortunately, the challenges for Europe were not to end, as Russian President Vladimir Putin aimed to `demilitarize and denazify Ukraine` with a so-called `military special operation` to ensure `Ukraine's neutral status` (Lipkan & Artymyshyn, 2022). When negotiations with the Russian leader seemed fruitless, both sides resorted to sanctions. As a result, oil and gas prices rose, as did all living expenses, including food prices. Coupled with generally higher spending and the risk of rising loan rents due to the recession (ECB, 2022), some homeowners are forced to rethink.

Against many expectations, "the transition to an information and knowledge society does not lead to decentralisation and dispersal, or to cities generally

losing significance [...] Conversly, there is much to suggest that genuine urban locational advantages are currently experiencing a new, economically justified appreciation and significance" (Bott *et al.*, 2019 - p. 61). Demand for city apartments will likely increase, and residents will be less dependent on cars. What also speaks for the cities is the demographic shift towards an aging population, with parents of "empty nests" moving from the affluent enclaves to a more urban environment. At the same time, politics must concentrate on further developing alternative energy supply (European commission, 2023-09). From an ecological point of view, society is moving in the right direction.

The war in Ukraine is again presenting European cities with social and economic challenges. "Since 24 February 2022, over 20 million people have left Ukraine to seek refuge in other countries. 8 million are currently hosted in neighbouring European Union (EU) countries – of which 5 million have applied for temporary protection" (WHO, 2023). Regardless of the length of stay, these popular mass movements include numerous relief measures and integration projects on the part of the regions and municipalities.

Also worrying is that countless people have lost their jobs due to the pandemic and are under financial pressure for various reasons. A look back at European history from precisely a century ago can reinforce these concerns. The development of right-wing extremist movements could affect smaller cities with a lower level of education and a higher level of socio-political resignation. Hopefully, the increased social behavior during the pandemic will counteract these concerns - despite lockdowns and home quarantines.

During the pandemic, some cities closed their streets to make room for social distancing (see fig. 34). Routes that were once used by cars have been equipped with restaurant seating, temporary cycle paths and playground equipment. The passers-by reconquered the public space - met in small groups to "walk and talk", play games or go jogging. Working from home resulted in increased levels of achievement for many, while others lost their spark in solitude. Most people still spend more time with their family and closest friends than before the pandemic.

If the pandemic has made one thing clear, as humans, we could only overcome crises through compassion and solidarity: we wore masks to protect ourselves and others. We ran errands for people who could not leave their homes. We sang the shanty song "The Wellerman" together with TikTok. We shared the same concerns and hopes with people around the world. This global sense of belonging and increased solidarity will hopefully prevent history from repeating itself. Building a social unity in diversity is essential for future adaptility, because "there is power in communities comming together to learn and transform" (Nesmith *et al.*, 2020 - p. 34). For this reason, the city should be the place of Interaction, communication and co-determination - the space of communal democracy (Brokow-Loga, 2023 - p. 9).

As we resented the disruption of supply chains, our society's illusion began to crumble: Capitalism is not the necessities of society, but it is their people and their environment (Rottle & Yocom, 2011). There is an urgent need to rethink and transform cities to respond to COVID-19 and potential pandemics and better recover by building more resilient, inclusive, and sustainable cities. "Cities will have to change in order to fulfill their responsibility for the environment and society" (Baldwin & King, 2018).

fig. 34: *Car-free Avenida Castellana in Madrid in 2020*

SUMMARY + INFOGRAPHIC

FUTURE POST-INDUSTRIAL CITIES

Which political guidelines, technical concepts and social movements lead into the future?

How can Europe's post-industrial cities be regenerated? Part III covered the answers to this question from the side of politics and society, as well as planning science and practice. The core of urbanism arises from the merging of these four instances at the urban level. As illustrated in this chapter, this profession is an interdisciplinary field that explores and aligns overall urban performance with top-down (politics) and bottom-up (society) demands.

At the beginning of this work, spatial planning was defined as a human adaptation and survival strategy and thus as a physical act of power over the environment and society. "[...] self-awareness and self-criticism as we exercise our own ability to transform the world" (Cronon, 1995 – p. 30) is crucial during this process. From the original relationship between man and nature, it became clear that the adaptation of the landscape should be carried out, taking into account the geographical conditions and the laws of nature. The motivation for this lies in the benevolence of the ecological balance and the preservation of the resident's physical and mental quality of life. In order to promote the healthy continuation of local society, human experiences should be initiated with environmental dynamics, a sense of space and community, and cultural exchange. The history of the European city has shown the consequences of disregarding these basic principles.

In the last 50 years, a process of becoming aware of the lasting consequences of industrialization, globalization, capitalism, and suburbanization has occurred. A return to environmental and humanistic values is evident in all instances. This insight is grounded in understanding the interactions between environmental and natural, human and social, and economic and political capital described in part II. Numerous movements have been presented here, whose common intersection area reinforces the impression.

The recurring rhetoric in politics and society, as well as planning science and practice, indicates the pursuit of a common goal: the city of the future is "green", "just", "sustainable," and "resilient". The fluid boundaries between the political guidelines and the specialist disciplines are a possible explanation for the disorientation experienced among the municipally employed planners.

Against this background, the attempt was made in part III to differentiate the current movements in order to then bring them together in this summary. The infographic (see i.g. 5 – p. 51) illustrates the interactions of the respective main approaches of politics, urban planning, and society in the city's public space. What is striking here is that none of these strategies has a monopoly right but functions as a necessary part of the whole. This also applies to society, which expresses its desires and needs exacerbated by the pandemic and financial and energy crises.

The city is a continuum – a living organism and part of the landscape. It reveals itself as a changeable phenomenon that influences politics and society and, in turn, is retrospectively changed by them. (Prominski, 2004) In simply put: "We shape cities, and they shape us" (Gehl 2009 – p. IX). As the current planning trends illustrate, "landscape is not a neutral term, but an ideologically charged `way of seeing`" (Brink *et. al.*, 2017 – p. 38) – it is "both idea and artifact" (Corner, 1999 – p. 1).

i.g. 5: *Sustainable regeneration of the post-industrial city*

RESULTS + DISCUSSION PART IV

DLLD - DESIGN WITH LOCAL LANDSCAPE DINAMICS

PART IV

RESEARCH QUESTION IV

What planning method can landscape architecture offer for the regeneration of post-industrial cities in Europe?

fig. 35: *Blast Furnace Park in Duisburg Nord*

DESIGN WITH LOCAL LANDSCAPE DYNAMICS

P IV - INTRODUCTION

"The urban, as the site of complex relations [...], requires an equally complex range of perspectives and responses that can address both current conditions and future possibilities" (Mostafavi & Doherty, 2010 - p. 13). We have to develop a specific approach for every unique location and every situation, whereby the principles to special features are adapted (Lehmann, 2010).

This section tries to comply with this requirement on the part of landscape architecture to meet the need for complex analysis and action options in urban planning. The following proposed method is built upon the results presented in part I, II and III. The last two chapters, about the present and future, align the function and applicability according to European cities' current challenges and development goals.

On the other hand, the proposed method should make it easier to consolidate the role of landscape architecture in urban renewal. For this purpose, Van den Brink recommends: "In order to develop the connections between research on the one hand and teaching and practice on the other hand and to define landscape architecture as a discipline that is based on its own knowledge, it is important to have a common theory and knowledge framework to build in research practice" (Brink, *et. al.*, 2017 - p. 4). Against this background, the content components of this method are based on the theory of landscape concept, perception, and performance (Rottle & Yocom, 2011).

The aim is to "examine landscape as the medium through which to concieve the renovation of the postindustrial city" (Waldheim, 2016 - p. 25). For this reason, the method developed here follows an evolutionary, procedural approach. A particular focus is on traditional characteristics and identities, the current functions and dynamics, and the future demands of the local landscape. To this end, it is proposed to stratify the area into three development stages in local analysis and planning: Landscape I, II and III. The aim of this subdivision is to create a holistic picture of the ecological, social and economic developments of the place, which is based on the four dimensions of nature, culture, space and time (Cronon, 1995; Rottle & Yocom, 2011).

These three main steps are based on understanding the landscape concept, perception and performance. The conception of landscapes I, II and III initially serves the general understanding of the main topics of this landscape study. The respective perception describes in generalized form the effect of the landscape level on the user. This description needs to be simplified because people experience and evaluate their environment differently. The perception of the environment is highly individual, since it depends, among other things, on personal horizons of experience, social character, physical condition, the mood of the day and the situation. The third aspect, landscape performance, deals with the current and expected service of the respective landscape in relation to ecology, society and economy.

By exploring the three landscape levels, urban planners can gain a fundamental understanding of the dominant natural-cultural phenomenon on site, based on which they can sustainably regenerate shrinking cities. Due to the holistic approach, this method is particularly suitable for the early phase of large-scale planning - from there it influences the detailed designs. It is a `research for design` method, "in the sense that the research outcomes inform the design process" (Brink, *et. al.*, 2017 - p. 56).

The steps of the location analysis presented here are based on the basic idea of developing an urban space from its landscape. The landscape is understood as a natural-cultural phenomenon in space and time whose positive development must be initiated. Due to this process-oriented planning approach for public space, this method was abbreviated as "DLLD" - "Design with Local Landscape Dynamics".

LANDSCAPE I

DESIGN WITH LOCAL LANDSCAPE DYNAMICS

"Human beings need contact with nature and the natural environment" (Beatley, 2016 - p. 3). Landscape I refers to the natural basic conditions of the place, which prevail as natural cultural heritage and as current environmental characteristics. The analysis of this original landscape level and the integration of its elements and processes in the urban context seems at first glance to be most closely connected with the ecological aspects of sustainability but goes far beyond that (Rottle & Yocom, 2011; Pérez & Perini, 2018). Just like the principles of landscape and ecological urbanism, natural and social scientific findings from the field of historical ecology are reflected here (Beatley, 2016).

From a landscape architectural point of view, this is the only way to integrate the complex meanings and functions of environmental and natural capital into urban planning (Beatley, 2016). As described in Part II, it is the core capital of human civilization, consisting of both measurable resources and less tangible elements such as aesthetic landscape scenery. Both the consideration of the past original landscape and that of the current environmental conditions fulfil ecological and social and thus economic needs (Nesmith *et al.*, 2020).

At first, Landscape I refers to a pristine environment without any human influence. It is, therefore, a fossil landscape condition that can no longer be restored since humans became sedentary (Cronon, 1995; Birkeland, 2020 - p. 120; Rottle & Yocom, 2011; Prominski, 2004 - p. 57). Yet it is an important state when studying the effects of human activity on the environment, as well as when attempting to protect or redevelop areas that have been negatively impacted by human actions.

The integration of near-natural, native landscape elements increases the services of the local ecosystem, which range from climatic compensation to the preservation of biological diversity (Beatley, 2016; Bott, *et al.*, 2019; Pérez & Perini, 2018). The city can adapt to climate change and prevent further global warming by creatively weaving local landscape images into the urban fabric and connecting them to the near natural surroundings (Beatley, 2016; Birkeland, 2020). In this way, protected landscape assets such as biodiversity are protected and supported and thus also the essential foundations for the supply of food, energy, and materials (Beatley, 2016). As is well known, this is about local action with a global impact (Rottle & Yocom, 2011; Pérez & Perini, 2018).

"While we often think of [natural elements] as geography and the source of our most basic physical needs for survival, they are also critical to our social and emotional well-being and are a basis for our identity and cultural beliefs" (Nesmith *et al.*, 2020 - p. 13). From a cultural perspective this "original" state of landscape is relevant as society evolved based on local geographic conditions and thus lives on as an inherent local cultural identity (Germundsson, 2005; Lowenthal, 1975; Kaika, 2005; Julliard, 1962). The city is part of the nature-culture phenomenon, which means that the local urban brand evolves with its landscape. This refers to the principles of regionalism, where landscape characteristics are recognized and used for the maintenance of a local collective identity (Lowenthal, 1975; Sörlin, 1999; Julliard 1962). The integration of near-natural structures with native plantings reinforces the spatial and temporal roots of the city and, thus, its unique identity in a supra-regional context. These types of measures bring with them complex benefits that influence each other, making them more important from different perspectives (Beatley, 2016).

"[...] the attention paid to landscape and site is gaining increased currency today" (Cronon: 1995 - p. 13). The unique natural heritage appears particularly relevant in the globalized world, in which copy-paste structures from individual buildings to entire districts are used without spatial anchoring in urban planning. Likewise, the connection to the development over time, in particular the seasonal change, became less tangible for the residents through large-scale "grey" structures, indoor worlds and 24/7 accessible consumer goods and food. Modern urbanism and increasing globalization have uprooted city life in space and time while leading to parallel socio-economic segregations. The antecedent conditions and needs that led to the emergence of the regionalism in the first half of the 21st century could be repeated in the face of current developments (see Part

III). The integration of locally typical "natural elements" can anchor the urban fabric spatially and temporally and thus provide root space for future cultural developments (Lowenthal, 1975).

A city with a strong identity will appear more attractive beyond its borders. In addition, integrating natural elements increases the city's prestige, as it signals a progressive, environmentally friendly, and citizen-friendly urban policy. The place attachment and the people's environmental awareness are established through the experience of natural-cultural origins and natural dynamics (Baldwin & King, 2018; Beatley, 2016; Nesmith, *et al.*, 2020). This brings a long chain reaction of interconnected positive developments, which could be sketched as followed:

A positive, strong, long-established city identity ensures orientation. Orientability mixed with the right amount of natural dynamics creates attractiveness (Dunnett & Hitchmough, 2004). Attractiveness ensures a higher frequency of users in the community and thereby economic growth (Beatley, 2016). A higher attendance frequency ensures the collective and individual connection to a place and a community. A strong bond increases a sense of responsibility for the community site, which translates into socially and environmentally friendly behaviours. This in turn increases social exchange and the motivation to innovate, which in turn makes the place appear established and yet sustainably progressive. This further increases the quality of life and the attractiveness of the city's image without neglecting or losing the natural and cultural heritage (Baldwin & King, 2018; Beatley, 2016; Lowenthal, 1975 – p. 9-10; Rottle & Yocom, 2011).

The last point brings us from the collective to the individual perception of natural elements. It has been proven for some time by various studies that natural structures in the sense of biophilia have a calming, healing effect on people and thus make a place ecologically and socially valuable (Beatley, 2016; Rottle & Yocom, 2011 - p. 48; Pérez & Perini, 2018).

Even the hunters and gatherers used their bodies to orient themselves in their surroundings, which is why public space design should be on a human scale (Gehl, 2009 - p. 33 ff.). Specific spatial preferences have survived in modern man from primeval times: people are attracted to bodies of water (Beatley, 2016) and follow their need for prospect and refuge (Kaplan & Kaplan, 1989) (see fig. 36). Water, flora, and fauna can be integrated in various forms of biophilic designs for eco-positive retrofitting of urban structures (Birkeland, 2020 - p. 111 ff.) – ranging from ground, to wall, to roof installations; as well as intentionally abandoned pieces of nature of their own dynamic. As a result, near-natural areas, even though their development was artificially initiated, are perceived, and evaluated as attractive and unique (Beatley, 2016; Pérez & Perini, 2018).

fig. 36: *Prospect and refuge by the water*

Landscape I represents the natural heritage of the place. A legacy that continues across generations and comprises nature-bound identity (mother nature) and ecosystem services (natural laws). The primary layer of Landscape I focuses on the interconnectedness of nature and people and on the need to create sustainable, vibrant outdoor spaces that serve the needs of people while protecting wildlife and natural resources (Beatley, 2016; Pérez & Perini, 2018). By including the first landscape level, the city is anchored in time and space while remaining flexible and resilient to future changes.

LANDSCAPE II

DESIGN WITH LOCAL LANDSCAPE DYNAMICS

"Landscape itself [...] is the richest historical record we possess" (Hoskins, 1955 - p. 14). Landscape II is reflecting the cultural structures that have evolved from the local natural environment (Brink, 2017). As mentioned, these developments are part of a reciprocal process between environmental and social dynamics. While Landscape I is about the original landscape at the time of settlement and the still prevailing laws of nature - Landscape II deals with the rural agricultural landscape and the changing relationship between people and the environment (nature-culture-dualism). But what do village structures have to do with rehabilitating shrinking cities? Before addressing this question and the applicability of the second step in the DLLD method, two misunderstandings that easily arose should be cleared up:

The first possible misunderstanding concerns the original articulation of geopolitical units as "landscape" - whereby the term "landscape II" chosen here can be misleading for humans' first appropriated space. The choice of the term "Landscape II" is based on the understanding of landscape as a natural-cultural phenomenon that reflects the site-specific relationship between man and nature - a relationship also existed before sedentarization, although the human traces were less clear (Bott *et al.*, 2019 - p. 16).

Nevertheless, the concept of Landscape II revolves around the cultural site and community relatedness due to the settlement construction and the associated teamwork in processing the environment. These are complex mechanisms of action that can be useful in the regeneration of shrinking, mostly segregated, environmentally unfriendly and qualitatively undersupplied urban areas (Raynor, 2020). Working with Landscape II primarily affects the social level, the human and social capital of a city, which, however, as described in Part II, is closely linked to ecological and economic factors.

It begins with early sedentarization: the early farmers did heavy physical labor on their land, so it is believed that they could not view their surroundings with aesthetic eyes - at the same time religious gardens emerged, depicting the beauty and comfort of the Garden of Eden (Prominski, 2004). Recent research has shown that working in the fresh air and sunlight speeds up physical and mental healing processes (Beatley, 2016). Direct access to fresh food and the appreciation of it also contributes to a more sustainable lifestyle. This accumulates an extensive knowledge, familiarity and connection to the place, which promotes a more responsible approach to the environment (Baldwin & King, 2018).

Since early agricultural work took place in groups across generations, it can be assumed that people had a strong bond with the community. Everyone knew their purpose in society and could influence the design

fig. 37: *Previous life in larger communities*

of their environment through their contribution. Due to the analog way of working, the day's successes were immediately noticeable, which should have increased general satisfaction from today's perspective (Kaplan & Kaplan, 1989). After work, the harvest was processed, prepared, and eaten together - a process of great importance from a social and health point of view (see fig. 37) (Raynor, 2020).

Today we live and work in more complex ways, often without the sense of accomplishment at the end of the day. Emancipated from the dynamics of the environment, we live comfortably in high-tech "bubbles" that isolate us from our surroundings and those around us. In the collective "loneliness" we share an urban living

environment over whose appearance and functions we no longer have any direct influence. With dwindling physical contact with the environment and society, the appreciation and sense of responsibility for them also decreases. Potential human and social capital declines due to reduced physical contact and collaboration between population groups – while the lack of connection to the environment threatens to neglect environmental and natural capital. This in turn reduces the resilience of cities, ultimately putting economic and political capital at risk (Baldwin & King, 2018).

Landscape II describes an anthropogenic landscape whose properties have been adapted to local human needs. Land and water were constantly being cleared, drained, fertilized, straightened and filled in to maximize the supply of raw materials and food. During the transformation of cultural landscapes that continues to this day, some of their remains have been reinterpreted as natural landscapes. This conceptual shift began in the 18th century with imperialism, industrialization, and urbanization. The environmental authorities write abandoned areas, such as heathland, quarries or quarry ponds, which were created through earlier raw material extraction and food production, as protected areas because of their newly created biodiversity, uniqueness and beauty (Dunnett & Hitchmough, 2004).

To this day, rural areas are often experienced by city dwellers as idyllic scenery and thus as the epitome of a relaxing landscape (Prominski, 2004). Long-established cultural landscapes that have been overtaken by modern agriculture for a long time, as well as the protected areas mentioned in the last paragraph, are regarded as identity-forming natural and cultural heritage of a region and are often used to expand the tourist market (Julliard, 1962; Cronon, 1995). In addition, they take on indispensable ecosystem functions from the point of view of environmental protection. Similar to what was already explained in section landscape I, it is of great importance that the historical cultural landscape structures are integrated into urban planning from an ecological, social and economic point of view.

This point leads to the second possible misunderstanding of the term "Landscape II". It stems from the later interpretation of the term "landscape", which arose through the complete appropriation of original natural areas and peoples. This is the nostalgically romanticized image of landscape as a rural idyll with divine beauty, which is the opposite of the city (Cronon, 1995; Prominski, 2004). As with Landscape I, this is neither about the integration of idealized, in this case pastoral landscapes and village structures - nor about a return to old circumstances. Instead, the aim is to adapt the function and aesthetics to current and future needs and gradually interweave them with the urban fabric (Lowenthal, 1975).

With the help of landscape and ecological urbanism, local pastoral landscape elements in the form of, for example, dry stone walls, footbridges, thatched roofs, meadows and ditches can be integrated into the design (Dunnett. & Hitchmough, 2004; Beatley, 2016). The resumption of agricultural and gardening practices, as well as the reintegration of citizens in the design process and the maintenance of public space is particularly popular in the department of participatory and DIY urbanism (Bott *et al.*, 2019 - 65). Through civic projects with urban farming and gorillia gardening, public spaces and unused wasteland are being revived and further developed (Raynor, 2020). These grassroot facilities can then be woven into a small-scale and compacted structure by the new and green urbanism (Rottle & Yocom, 2011 - p. 96 ff.). The mixed use in the smallest space, which is the aim of this urban planning field, is differentiated in this way, while at the same time the self-sufficient, village character is resumed in the form of a "15-minute", "smart", "compact" city.

The various functional and visual elements of Landscape II can be supportive in the regeneration of shrinking urban districts from an early stage: they counteract segregation, vandalism and pollution and instead fill the public space with natural-cultural uniqueness, eco-social vitality and sustainable dynamic resilience (Nesmith *et al.*, 2020 - p. 21; Raynor, 2020).

LANDSCAPE III

DESIGN WITH LOCAL LANDSCAPE DYNAMICS

"[...] landscape is an ongoing medium of exchange, a medium that is embedded and evolved within the imaginative and meterial practices of different societies at different times. Over time, landscapes accure layers with every new representation, and these inevitably thicken and enrich the range of interpretations and possibilities" (Corner, 1999 - p. 5) .

Landscape III refers to the cultural-industrial heritage that developed during European urbanization and industrialization and has significantly shaped the specific morphology and character of a city. Just as in Landscape I and II, this layer of landscape is not just about the past, but also about the temporally independent qualities of urban life. Above all, this includes the variety and density of offers in the areas of business and trade, education and research, health and care, as well as living and leisure time.

These urban structures emerged as evolutionary successors to Landscapes I and II, and contain therefore many overlapping principles. The concept of Landscape III illuminates the city as an evolutionary stage that is characterized by a high degree of complexity, efficiency, and environmental independence (Kaika, 2005 – p. 4). However, the latter involved an illusion of human resilience at the expense of natural and environmental capital. The city is therefore a symbol and expression of the nature-culture duality - the role of perpetrator and victim for threatening environmental changes. Urban planning policy holds the mandate for the development of these relationships. The creative reuse of old industrial architecture thus fulfils two functions: on the one hand, the repeated spatial and temporal anchoring for orientation and identity formation, and on the other hand, a symbolic link to an important social lesson for the future.

According to perception theory, the city is experienced and evaluated very differently from person to person (Bott *et al.,* 2019 – p. 79; Tuan, 1974). In a positive sense, urban density can be experienced as comfortable, progressive, and inspiring. On the negative side, it can come across as nasty, threatening, and lonely. The spatial proximity of a variety of cultures and services is still the main motivator for immigrating to the city, but in shrinking cities it is overshadowed by recurring negative experiences. These negative associations include neglect and pollution, vandalism and crime, social segregation, and reduced quality of life, among others. These undesirable developments often happen within historic districts that have been neglected during modernization, as well as fallow industrial areas - both of which represent the actual potential of sustainable urban development that is true to the unique identity of the city.

In these places, grassroots movements can be initiated and accompanied with participatory or DIY urban planning. These can be "green" project forms already mentioned under Landscape II or also enriching structures for subcultural activities such as various street or performing arts and sports. These movements contribute to the creative transformation, retrofitting and revitalization of shrinking urban areas while preserving and enriching industrial identity. Although these are mostly small-scale, often medium-term measures, they coincide with the long term goals of new and green urbanism: the mixed-use in the smallest of spaces for resource-saving, varied urban development that promotes high user frequency and thus social identification, control and safety (Baldwin & King, 2018).

The desired goal of revitalizing public space leads back in a certain way nostalgically to the urban quality before

fig. 38: *Old town pedestrian zone in Graben Vienna*

the spread of the automobile, which not only cleared the streets of pedestrians and cyclists, but also polluted the climate. Car-free, lively streets and town squares are once again regarded as a quality feature of a sustainable city, which, in addition to the social benefits already mentioned, also supports the sales figures of the adjacent businesses (see fig. 38 - p. 60) (Gehl, 2009). "People come where people are" (Gehl, 2011 - p. 25) - thus the diversity of use, authenticity and attractiveness of public space is an important survival factor for post-industrial cities (Baldwin & King, 2018; Bott *et al.,* 2019).

Another development closely related to industrialization and urbanization is the widespread integration of public parks, playgrounds and sports facilities. There are now countless variations in the shape and function of these open spaces, which can overlap in type and use with the participatory temporary uses already mentioned. Together with the streets and city squares, these mostly green-blue structures form the mirror of urban life - the space for democratic exchange, community and individual development (see fig. 39) (Baldwin & King, 2018; Gehl, 2011; Sanders, 2019).

This public space referred to here, which represents the modern interpretation of the Greek Agora, is the heart of an urban community (Sanders, 2019 - p. 281 ff.). It is (ideally) a place of living unity in diversity. Diversity in the form of individuality and cultural mix enables the development of human and social capital in a city,

fig. 39: *Green retrofitting of railroad space in Paris*

which in turn allows the innovation and resilience of a region to grow in interpersonal exchange (Baldwin & King, 2018). In return, this increases the political and economic capital and thus the freedom of movement of urban planning policy. The public space has and will always be vital to a progressive urban life (Gehl, 2011) and should therefore be a priority in the process of revitalizing a shrinking city or district – even though or especially because of the fact, that we are building our lives into the digital space.

The last point leads us to a current discussion about the future of the city, as outlined under the point "The western European city after pandemic + political unrest". Physical business and office landscapes are becoming less important, which means that the frequency of users of public space threatens to decrease (Gehl, 2010 - p. 26). What once defined the urban, industrial and cosmopolitan spirit of a city must now be rethought and mixed with other uses. In order not to lose more residents to the suburban areas outside the city centres, the public space should be geared more towards leisure, recreation, and socialization (Gehl, 2011), in addition to the differentiation of service structures and jobs (Sanders, 2019). However, rapid change is also taking place at this level, which the urban planning policy of a shrinking city in Europe must deal with (Raynor, 2020).

The analysis and application of Landscape III recognizes and recycles the urban-industrial heritage while multiplying and condensing the environmental, social and economic dimensions (Lehmann, 2010). This interplay between the three pillars of sustainability, industrial city heritage and high-tech innovations, people and environment, as well as time and space, enables a shrinking city (Bott *et al.*, 2019; Raynor, 2020).

SUMMARY + INFOGRAPHIC

DESIGN WITH LOCAL LANDSCAPE DYNAMICS

What planning method can landscape architecture offer for the regeneration of post-industrial cities in Europe?

The graphic "Design with Local Landscape Dynamics" (see i.g. 6 - p. 63) explains the possibilities and limitations of the DLLD method - a research method for design. Since this method was developed based on European urban development's past, present, and future, it makes sense to explain its potential application based on the topics addressed in part I to III.

The DLLD method makes it possible to localize and correct past wrong decisions. The identity of a place can be clearly defined by reflecting on the evolution of the landscape, which includes natural and cultural aspects. As mentioned, spatial authenticity plays an increasing role in today's globalized and volatile world. In addition, forgotten urban planning models and techniques are revealed during the working process, which can be reinterpreted and reintegrated for the future.

Dealing with the local history of Landscape I, II, and III deepens the understanding of the causes and effects of current urban challenges. With a holistic approach, it is possible to decode the symbiotic interactions between the three pillars of sustainability. The knowledge gained in this way enables planners to reverse these processes or influence them through selective interventions in the urban system. With the understanding of the landscape cultivated here, with the city as a landscape phenomenon, a complex way of seeing, thinking, and acting is to be established. In interdisciplinary cooperation with local politicians and residents, the area's ecological, social, and economic values can be increased simultaneously without having to compensate for any of these factors.

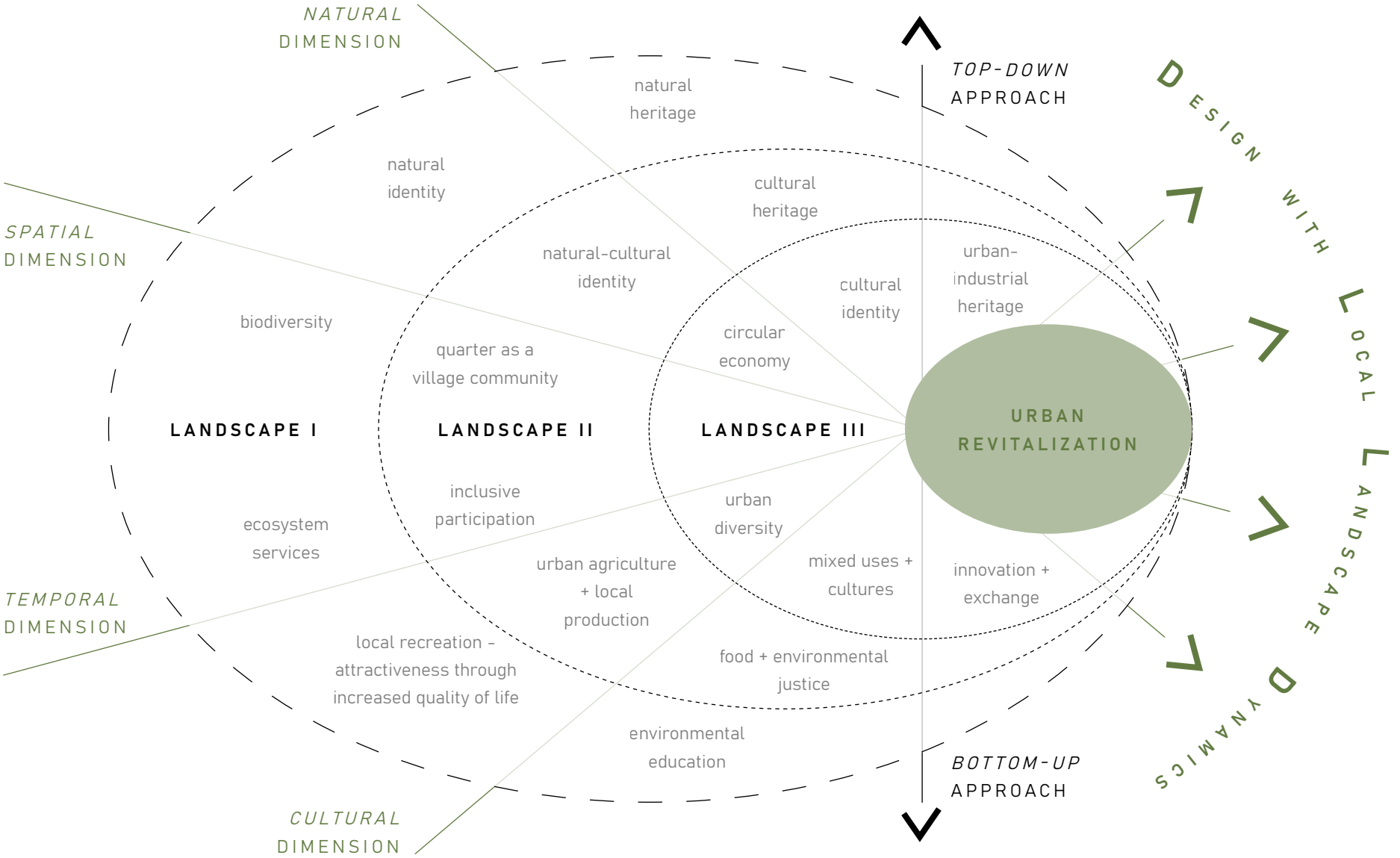
As described, politics pursues three primary goals for the future of Europe: environmental upgrading and climate-neutral action, social justice and integration, and sustainable management with the help of innovative solutions (Baldwin & King, 2018). In order to achieve this, the EU promotes the exchange of experience between state and private organizations, science and practice, as well as the individual citizens of society. The DLLD method reflects the "top-down" and "bottom-up" approach.

The holistic, process-oriented method cultivates a technically integrative breeding ground for urban revitalization. To put it simply, the elements from the landscape I form the working material for the supporters of ecological or landscape urbanism. Planners who identify with Tactical Urbanism can preferably work with the analysis results from Landscape II. In the subsequent Landscape III, the urban-industrial characteristics of a city are included, in whose upgrading and reuse New Urbanists are particularly interested. However, what unites the function of all landscape levels and associated urban planning movements in the unifying DLLD method is that "the place - the land - speaks before the design act" (Meyer, 2002 [1997]).

Through the four-dimensional view of an urban organism, which is in constant flux between natural and cultural, spatial and temporal processes, the DLLD method includes the local past, present and future, considering politics, specialist planning, and society. The snapshot of a city created this way enables a complex understanding of its challenges and potentials. The DLLD method is therefore particularly suitable for the early planning phase in the urban revitalization process.

DESIGN WITH LOCAL LANDSCAPE DYNAMICS

i.g. 6: *Design with Local Landscape Dynamics*



OUTRO

FUTURE ROLE OF LANDSCAPE ARCHITECTURE

QUESTION ABOUT THE FUTURE

How can landscape architecture position itself in the planning process of urban renewal?

fig. 40: *The bridge park is based on superimposed functions, Linköping*

FUTURE ROLE OF LANDSCAPE ARCHITECTURE

INTRODUCTION

The city is seen as a complex organism that requires cooperation between residents, politicians, researchers, and planning professionals (Nesmith, *et al.*, 2020 - p. 8-9; Bott *et al.*, 2019). Landscape architects play a crucial role in urban development, with their tasks defined as the planning, design, and management of landscapes to create functional, beautiful, and sustainable places (Brink, 2017 - p. 4). However, there is a lack of clarity regarding the identity of this profession, which can lead to difficulties in practicing landscape architecture and interdisciplinary collaboration in urban planning. It is important to explore and define the role and potential of landscape architecture in urban planning for the success of holistic urban development.

From the beginning, like any other spatial planning discipline, landscape architecture is part of human life strategy to adapt to environmental and social dynamics (Thompson, 2014 - p. 2). Planning is an expression of human power over nature and culture. It happens with the human body as a reference framework, like environmental perception. The concept of time and space and the interpersonal exchange enabled us to think, learn and plan for the future (Ingold, 2011; Ratman & Drozdzewski, 2020; Tuan, 1974; Wylie, 2005). The roots of landscape architecture go back to landscaping during the first agricultural developments. Due to the aesthetic component, however, the first gardens are considered the actual origin of this profession (Thompson, 2014).

Since ancient times, gardens have been spaces of beautiful life and philosophical research on people and the environment. Scientific knowledge and practice were created in these gardens, contributing significantly to urban development. In the 16th century, stately gardens and parks opened into the surrounding landscape, which became included in the spatial design. The design principles used in this were adopted into urban formation, while the conservation measures shaped the practice of the newly burgeoning environmental protection. The classic garden architecture thus received a professional extension into urban and environmental development. With the New York Central Park's design, Frederick Law Olmsted finally established the title "Landscape Architecture" for this discipline. Garden design was finally promoted to the planning of public areas (Brink *et. al*, 2017; Thompson, 2014).

The city residents' life changes caused by capitalism demanded the participation of landscape architects in increasingly differentiated public interior designs such as schoolyards, playgrounds, and sports fields. In the previous three decades, landscape architects experienced growing participation in old and new infrastructure developments. In the meantime, the field of performance of landscape architects comprises any conceivable type of open spaces and matters: from urban to ruderal, from futuristic to cultural-historical, and from environmental compensation to environmental protection (Brink, *et. al,* 2017). Since this area can hardly be covered by academic training, the Swedish University of Agriculture, in collaboration with the Swedish Architects' Landscape Academy, has initiated an in-depth analysis of the current and future area of work of landscape architects (Sveriges Arkitekter, 2021).

The discussion question "How can landscape architecture position itself in the planning process of urban renewal?" deals with the lack of orientation in this profession and its application area. Landscape architecture has been in an identity crisis for a long time. On the one hand, it has developed into a borderless, indefinable form, and on the other hand, it is often used as a subsequent "green filler" in planning practice (Prominski, 2004 - p. 13). This discussion aims to sketch a future perspective on the role of landscape architecture in urban renewal, by addressing the problems and potentials of this profession that were indicated throughout this work. Finally, it will be highlighted how the developed method "Design with Local Landscape Dynamics" increases this potential.

LANDSCAPE AS MEDIUM

FUTURE ROLE OF LANDSCAPE ARCHITECTURE

Why is landscape architecture in an identity crisis? In order to approach this question, we start with the outer context: the dwelling reputation of the landscape architect as a garden and park designer. This view is linked to the problematic professional title, with which Olmsted himself was unsatisfied (Thompson, 2014). The title literally indicates that landscape architects "architect the landscape". The problem is the general understanding of "landscape" and "architecture" (Prominski, 2004). Today, "Landscape" is extensively described as a recreational, rural idyll outside the city (Corner, 1999; Cronon, 1995). "Architecture" includes the planning and constructing of statically structures after completion.

As described in part I, the landscape stands for picturesque scenery and political territory, whose dynamic development is reflected in the natural-cultural landscape phenomenon. The landscape thus describes primarily local and cultural identity (Brink et. al. 2017), which continues to develop from the past into the future. "The form and function of landscapes are dynamic, continuously evolving and adapting to changing conditions over time" (Rottle & Yocom, 2011 - p. 64). In fact, however, it is even more complicated, since "landscape [...] is something mental as well as something physical" (Brink *et. al.*, 2017 - p. 38). With the landscape phenomenon and the perception of it as "working material", no architecture can be operated in the broader sense. Instead of the status quo targets, initiating positive processes for the sustainable development of public spaces should be desirable. The professional title needs to revise this understanding of landscape architecture, which carries old stencils such as garden and park designers. This explains the causes of the identity crisis from the external environment, which are reinforced by internal professional blurring (Prominski, 2004).

Returning to the academic gardens of antiquity and the Renaissance is ideal in this context. Spatial planners and designers were holistic thinkers from the start. In general, still summarized under the title "philosophers", they based their planning actions on merged environmental and mental research findings. Today, the planning disciplines differ significantly and fragment with the growing variety of urban planning challenges (Brink, et. al, 2017). New academies, professional titles, planning movements, theories, methods, and concepts are established annually. Each professional group tries to differentiate itself from neighboring fields of science in order to assert its right to exist in the academic market. In order to mobilize research funds, the sheer need to close knowledge gaps should be sufficient. Why do we need a strong demarcation between planning disciplines?

Although professional segregation increases the specialized knowledge in the entire planning system, it also leads to disorientation for clients and planners. Ultimately, the production of special knowledge builds on the conflicting mixing of theories and methods. This applies to landscape architecture as well as to other professional fields.Too often, interdisciplinary research practice is viewed as an academic weakness - a view that overflows from science into planning practice. As a disciplinary field, Landscape architecture combines natural sciences, humanities and arts (Corner, 1999) and creates functional and aesthetic open spaces in which ecological, social, and economic development goals are pursued. Place-bound and open-ended landscape architecture (Brink *et. al*, 2017 - p. 11) has no place in a rationalized, time-determined world where scientific repetition legitimizes the result (Brink *et. al.* 2017; Prominski, 2004).

Therefore, the internal academy also questions the validity of landscape architecture since it needs to be more spongy, unpredictable, and space-bound (Brink *et. al,* 2017). The condemnation is based on a rigid two-dimensional system of science that reflects simplistic human reasoning rather than the real world. As a planning object, the city is a highly individual, complex organism, which is part of the natural-cultural landscape phenomenon (Prominski, 2004). In order to adequately accompany the sustainable development of these habitats, they need seamless and frequent cooperation. "Landscape [and thus also urban structures] is a transdisciplinary concept" (Brink et. al., 2017 - p. 38).

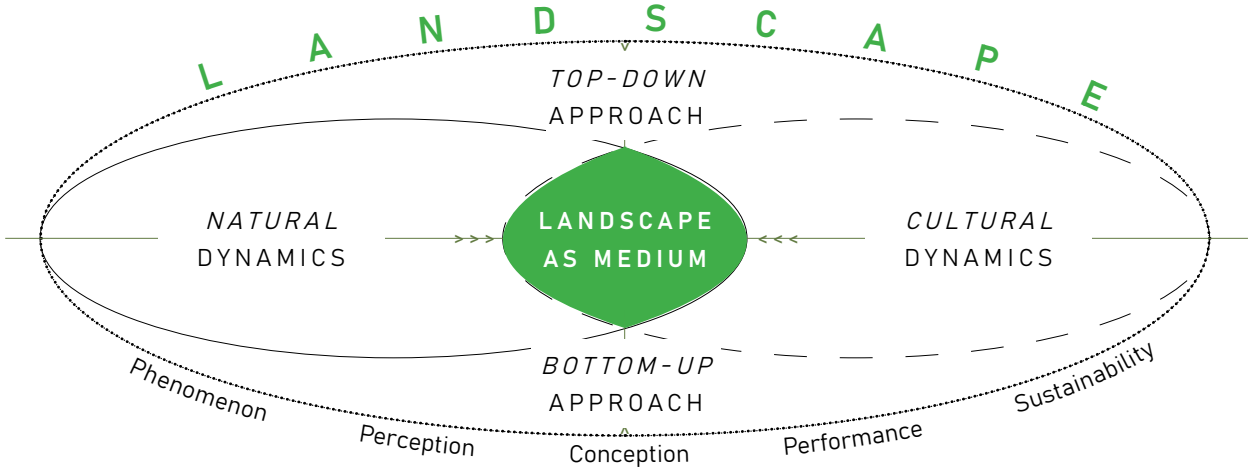
The snapshot of a city organism shows a fluid state that emerges from natural (biotic environmental dynamics) and cultural (social and economic dynamics) symbioses. Two other dimensions influence this symbiotic state's character - the spatial (macro and micro level) and the temporal (past, present, and future). Thus, the urban landscape cannot be viewed as a static, expandable area, but must be understood as a "model for processes" during revitalization (Allen, 2001).

The city is perceived by its residents and visitors through the body (physical and cognitive) on a human scale. The user then evaluates the site's quality by comparing his or her needs with the given performance. Since landscape is both a phenomenon and a way of seeing (we shape it and it shapes us), "landscape has emerged as model and medium for the contemporary city" (Waldheim, 2016 - p. vii).

To the suffering of classical science, urban mechanisms cannot be mapped in linear processes and therefore remain unpredictable (Bott, *et al.*, 2019). In fact, this uncertainty is even part of the recipe for success in making cities resilient. According to resilient theory, resilience is achieved by urban systems that are "complex, self-organized, unpredictable, and responsive to spatial and temporal changes" (Rottle & Yocom, 2011 - p. 72). Due to the medial and holistic approach in landscape architecture, this proffession can offer the tools to grasp the urban organism in four dimensions (nature, culture, space, and time) (Prominski, 2004). The aim of landscape architecture should therefore be to develop verifiable and applicable analysis and planning methods that sharpen the view of the city's evolutionary relationships. This way, landscape architecture can position itself as an innovative science essential to urban planning. With "Landscape as Urbanism", Charles Waldheim made an essential contribution - he "proposes a general theory for thinking the city through the medium landscape" (Waldheim, 2016 - p. vii).

As holistic proffessionals, landscape architects are suitable mediators between different planning disciplines (see i.g. 7). Due to the dual natural and humanities orientation (Brink, 2017 - p. 4), it can convey crossdisciplinary horizontally while combining top-down and bottom-up strategies vertically simultaneously. Before this background, landscape architecture should convert, manifest and practice its supposedly academic weakness into its core strength.

Numerous planners are optimistic about the further development of this profession: Landscape architecture will be the most important planning discipline of the future (Thompson, 2014 - p. 3; Prominski, 2004 - p. 13). It is "an active instrument in the shaping of modern culture" (Corner, 1999 - p. 1). This assumption is reflected in the complex urban planning requirements already explained and in the here mentioned options from the landscape architecture.



i.g. 7: *Landscape as medium in urban planning*

SUMMARY + INFOGRAPHIC

THE FUTURE ROLE OF LANDSCAPE ARCHITECTURE

How can landscape architecture position itself in the planning process of urban renewal?

From the beginning, landscape architects and their professional ancestors were involved in people's sedentarization and later urban planning. The inspirational influence on public space design in urban contexts began with gardeners as the great-grandfathers of the profession. From the design and construction of parks to later playgrounds and sports fields, landscape architects increasingly gained influence in urban planning.

Today, the competencies range from environmental protection and planning, as well as rural and urban development, to the design of listed or private green plants. Landscape architecture has differentiated itself into a specialist field whose formlessness brings with it potential for development but also obstacles.

In urban planning practice, landscape architects are preferably used in the last processing steps of a project for green beautification. Landscape architects are slow to gain access to the early stages of urban restructuring. In order to accelerate and consolidate this development, the external and internal weaknesses of this profession were discussed.

From the external perspective, the traditional view of landscape architecture as solely focused on garden and park design is outdated and limiting. The profession needs to redefine itself and move away from a narrow understanding of landscape and architecture. By doing so, landscape architecture could transform its weaknesses into strengths to take on a media function in urban development. Landscape architects can manage mediation between horizontal and vertical movements and interests because of their diverse scientific and practical orientations.

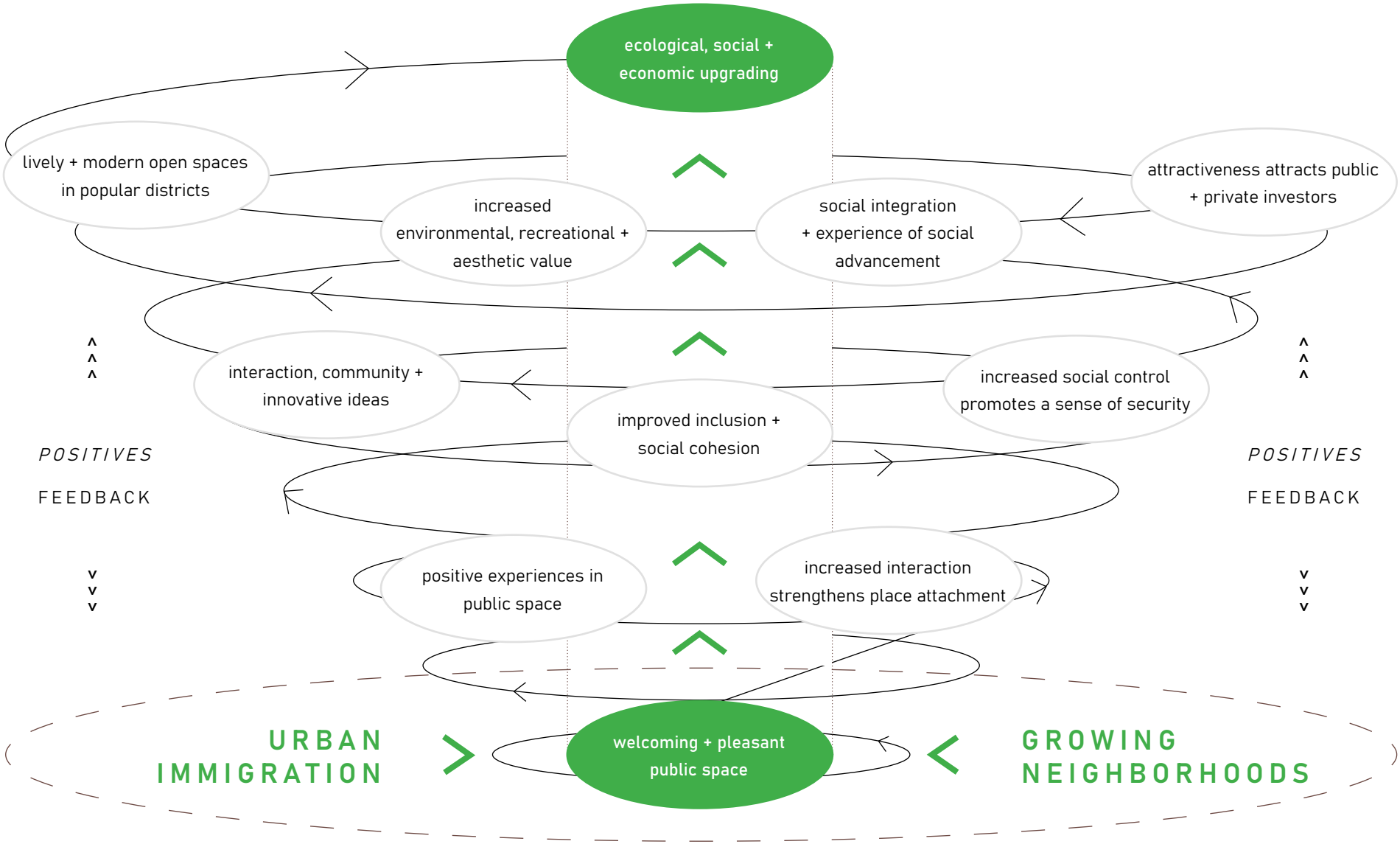
The "Design with Local Landscape Dynamics" method was developed here under the heading "Landscape as a Medium". The DLLD method proposed a holistic, process-oriented way of working, enabling the urban organism to be recorded and processed in all its dimensions. This method is particularly suitable for the early development process of urban revitalization and therefore includes different urbanism movements. With the city dwellers in focus, it follows a bottom-up approach, while always considering the political goals of the top-down.

Since this method was developed in landscape architecture, it focuses on the textures, functions, and dynamics of a city's public space. With the help of the DLLD method, the negative spiral as illustrated in the infographic "Present urban challenges in public space" (see. i.g. 2 - p. 37) can be reversed. The possible impacts of the DLLD method are shown in the positive spiral "Urban revitalization through public space" (see i.g. 8 - p. 71). Ecological, social, and economic resilience will be restored, giving the city an "urban cure".

With the help of the DLLD method, landscape architecture can be used as a holistic medium for interdisciplinary collaboration to regenerate shrinking cities. The profession could thus overcome outdated prejudices and grow into one of the most fundamental fields of knowledge for the future of urban development.

FUTURE OUTLOOK FOR LANDSCAPE ARCHITECTURE

i.g. 8: *Urban revitalization through public space*



CONCLUSION

THE URBAN CURE -

DESIGN WITH LOCAL LANDSCAPE DYNAMICS

CONCLUSION

How can landscape architecture contribute to the revitalisation of shrinking cities in the post-industrial Europe?

The departure point of this thesis was the recognition that cities are facing numerous challenges related to climate change, resource loss, poverty, social inequality, and technological disruptions. With the global population expected to reach 9.7 billion by 2050, and a majority living in urban areas, sustainable urban planning becomes crucial. The focus of this work was on the European Union, which has significant population and economic influence on the global scale. However, many European cities are experiencing urban shrinkage, with declining populations and vacant spaces. Understanding the underlying forces behind this urban shrinkage was seen as essential for revitalizing the urban fabric and making cities more resilient.

Since urban agglomerations are complex living organisms, their maintenance and (re-) development require cooperation between residents, politicians, researchers, and planning professionals. Landscape architects have been involved in urban development since the beginning and their expertise has grown with the increasing complexity of urbanization. The tasks of landscape architecture include planning, designing, and managing landscapes to meet various human and ecological needs. However, there is a lack of understanding about the term "landscape" which can cause difficulties in the practice of landscape architecture and interdisciplinary collaboration in urban planning. The role and potential of landscape architecture in urban planning should have been explored and clarified for the success of future-oriented urban development.

The objective of this research was to discuss the intricate relationship between landscape architecture and urban planning in the context of revitalizing shrinking post-industrial cities in Europe. The importance of understanding past planning and development practices, as well as the problems that have arisen as a result, including the current coping strategies were emphasised. How landscape architecture can position itself in the planning process and what a holistic urban planning approach from landscape architecture would look like where guiding questions throughout the research. The main research question was then formulated as how landscape architecture can contribute to revitalizing shrinking cities in post-industrial Europe. Consequently, the text aimed to develop a method from within the landscape architecture profession to address the challenges of urban shrinkage and contribute to sustainable urban development.

Guided by the intention to explore the potential of landscape architecture in addressing the challenges faced by post-industrial cities in Europe, the research was built up by four sub-questions: The examination of past planning and urban development in the western world, the problems arising from past urban development in Europe, the political guidelines, technical concepts, and social movements that can lead to future-oriented urban planning, and the planning methods that landscape architecture can offer for the regeneration of post-industrial cities. The research design with these four parts followed the aim to provide a comprehensive solution to the complex challenges of shrinking cities and to outline the future role of landscape architecture in urban planning policy. Finally, the filling in of the content and the discussion took place through the method of literature research.

The first part of the results provided an overview of the historical development of European urban planning and the role of landscape architecture within this context. It highlighted the influence of different eras, such as antiquity, the renaissance, the enlightenment, and

imperialism and industrialization, on the shaping of urban landscapes. During the journey through the history of European cities, a nature-culture dualism emerged that polarized nature and culture with changing evaluation and intensity. Although the ancestors of landscape architecture indirectly provided a source of inspiration for urban planning from the start, it only entered urban planning with the first environmental and human rights movement in connection with industrialization. Lastly, it was indicated how modern urbanism contributed to the challenges faced by post-industrial cities in Europe today. In recent decades, there has been a shift towards a more integrated and interconnected view of the relationship between nature and culture, recognizing their mutual influence and interdependence. The outcome from the first part emphasized the importance of understanding the historical natural and cultural context in order to develop sustainable and holistic urban planning strategies.

Part II highlighted the current challenges in shrinking cities, such as globalization, deindustrialization, capitalism, suburbanization, demographic and environmental changes. The consequences of previous urban development in terms of ecological, social, and economic factors were discussed. The chapter argued that modern urbanism, with its focus on capitalism and individualization, has led to environmental and social degradation. It emphasizes the importance of environmental capital for a city's overall well-being and development and highlights the negative impacts of mismanaging it. The chapter concludes by stating that a balance between the needs of people and the environment is essential for sustainable urban development.

The future of Europe's post-industrial cities is discussed in this chapter, focusing on the challenges they face and the potential for regeneration. The chapter explores the role of politics, society, and planning science in addressing these challenges and emphasizes the importance of a holistic and interdisciplinary approach. It highlights the need for urbanism to consider both top-down political decision-making and bottom-up societal demands. The chapter also reflects on the historical relationship between human beings and the environment and the importance of ecological balance and quality of life in urban planning. The text concludes by suggesting that the future of post-industrial cities lies in the convergence of different strategies and approaches, resulting in green, just, sustainable, and resilient cities.

Within the fourth and final part of this work a new method called DLLD - Design with Local Landscape Dynamics was proposed. It is a landscape architecture method for the revitalization of shrinking cities that builds on the insights from past, present, and future European urban development while incorporating important components of landscape and perception theory. The DLLD method makes it possible to localize and correct past wrong decisions and define the identity of a place by reflecting on the evolution of its landscape. It also uncovers forgotten urban planning models and techniques that can be reintegrated for the future. The method deepens the understanding of the causes and effects of current urban challenges and allows for selective interventions in the urban system. The DLLD method places spatial perception and performance at the centre and cultivates a breeding ground for urban revitalization. It is suitable for early planning processes and enables a complex understanding of a city's challenges and potentials.

Following the results, the role of landscape architecture in urban planning was discussed separately, giving an outlook on future potential. It became clear that the traditional understanding of landscape architecture in garden and park design is related to the misconception of the terms "landscape" and "architecture". Landscape architects today have a wide range of scientific and practical knowledge that enables them to mediate between different interests and currents in urban development. The DLLD-method, developed from landscape architecture, focuses on the textures, functions and dynamics of a city's public space. Using this method, landscape architecture can play a central role in the regeneration of shrinking cities and become a fundamental field of knowledge for the future of urban development.

APPENDIX

THE URBAN CURE -

DESIGN WITH LOCAL LANDSCAPE DYNAMICS

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P IV - DESIGN WITH LOCAL LANDSCAPE DYNAMICS

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