THE LEGACY OF INTERNATIONAL BUILDING EXHIBITION EMSCHER PARK

A REVIEW PROJECT 20 YEARS LATER

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Thank you to everyone who has had faith in me and kept on supporting me, as always.

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List of Abbreviations

EC   European Commission
ECC   European Capital of Culture
EU   European Union
ELP   Emscher Landscape Park
IBA   International Building Exhibition (Internationale Bauausstellung)
IBAs   IBA projects
IGA   International Garden Show (Internationale Gartenausstellung)
NRW   North Rhine-Westphalia
RQ   Research Question
RVR   Regionalverband Ruhr

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Abstract

International Building Exhibition (IBA) is an innovative strategy dealing with urban challenges and creates experimental atmosphere to bring out the regional potentials. Especially, IBA Emscher Park (1988-1998) has been recognized as a classic case study to see how the Ruhr region has transformed the gloomy heavy-industrial image into a brand-new one with more sustainable concerns. The research makes a comprehensive review of the project after it's finished for 20 years and evaluates what's the pattern of legacies and any other additional values that the project has brought to the region. Besides, the research also discusses the maintenance mechanism of those legacies and provides some guidelines for further researches. According to the research, there are indeed plenty of tangible and intangible legacies that IBA has left such as ecologically revitalizing water system and landscape, socially empowering citizenship, politically consolidating regional cooperation, economically boosting regional competitiveness and so on, and the further influences are affected even nationally and internationally. However, several challenges both the Ruhr region and IBAs are facing, such as lack of strong visions and the standard of experimental implementation. At the end, the research points out several debates about the legacy topic and provides some recommendations about the regional development as well as future IBA implementation.

Panorama from Oberhausen Gasometer

1. INTRODUCTION

1 Introduction

1.1 Research Background

With the change of economic structure, lots of industries were closed down and gave rise to more abandoned vacant brownfields and derelict giant structures. Not to mention those irreversibly damaged nature polluted by industrial sewerage and waste. Ruhr region, the largest industrial region in Europe, was not an exception from this structural change[1]. After decades of mining and heavy industrial activities, the region was highly polluted and led to severe ecological and geological problems, especially the **river Emscher** which was used to discharge industrial sewerage. In order to repair the environmental disaster and sustain the local economic activities, the State of North Rhine-Westphalia (NRW) established the **International Building Exhibition (German: Internationale Bauausstellung, IBA)**. IBA is an innovative instrument to implement urban regeneration in Germany. It's literally a **strategic regional development plan** but under the cover of a building exhibition that usually runs 5-10 years.

Among all IBAs, IBA Emscher Park which was labeled as "**A workshop for the Future of Industrial Regions**" is recognized as the most successful one to transform a region. The project aimed to create future opportunities through a transition process. Besides, revitalizing ecological condition of the river Emscher and the Ruhr region is also essential while preserving local industrial heritages. IBA Emscher Park (1988-1998) involved 17 local municipalities[2] in around 800 km^2 area. Initially, **IBA GmbH**[3] categorized 6 flagship concepts that contained their own characteristics and priorities and they were further implemented and **co-created** by citizens, interest groups and various stakeholders. Finally, more than 100 projects[4] (See Appendix A) were implemented. The Emscher Landscape Park (ELP) not only transformed the industrial image by natural landscape, but also created a new

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[1] For instance, the Gross National Product (GNP) was falling from 12.2% (1957) to 8.2% (1987) and there were 440,000 jobs losing within the 25 years from 1962 to 1986, 325,000 were especially in the coal and steel industries (GEWOS,1989, P.44, Danielzyk et al., 2004). The unemployment rate is ranging from 13%-18%, which is the highest in Germany by then (Miccoli et al., 2014; Landry, 1999; Greenstein,and Sungu-Eryilmaz, 2004).

[2] Bergkamen, Bochum, Bottrop, Castrop-Rauxel, Dortmund, Duisburg, Essen, Gelsenkirchen, Gladbeck, Herne, Herten, Kamen, Lünen , Mülheim an der Ruhr, Oberhausen, Recklinghausen, Waltrop

[3] IBA GmbH played a crucial role in initiating, mediating and facilitating the massive project; nevertheless, the responsibility of most of the projects lies in the local municipalities, private companies, interest groups and citizens.

[4] 119 projects in total, but some are categorized in the same project series, so it's 91 in Appendix A.

network between places and inhabitants. In 2010, the city of Essen was named as the ECC, and the biggest old coal mine "Zeche Zollverein" became a UNESCO World Heritage Site. Nowadays, the industrial areas are changed into museums, cultural centers, dwelling units and working spaces. The post-industrial revitalization project successfully transferred the gloomy and dim cities' images into a brand-new page. The industrial past is no longer a blamable factor nowadays, but a shared memory and honorable landmark in Ruhr region.

This year is **the 20th years anniversary** of IBA Emscher Park since they officially finished the mega-project. Without a doubt, IBA Emscher Park had contributed to a great success in improving the region's competitiveness and quality of life. However, after 20 years, what kind of **legacy** has been left in this region? What kind of **impacts** and **values** caused by the IBA Emscher Park have been immersed into the daily routine of the Emscher region or even beyond the geographical scale? What lessons or advices that we can acquire from this special event practice? Those questions are hardly mentioned or discussed nowadays as time passes by. However, they are quite worthy to do further research on this significantly successful case so that we can obtain some valuable knowledge and experience to address future regeneration projects and provide suitable suggestions for future strategies or policies.
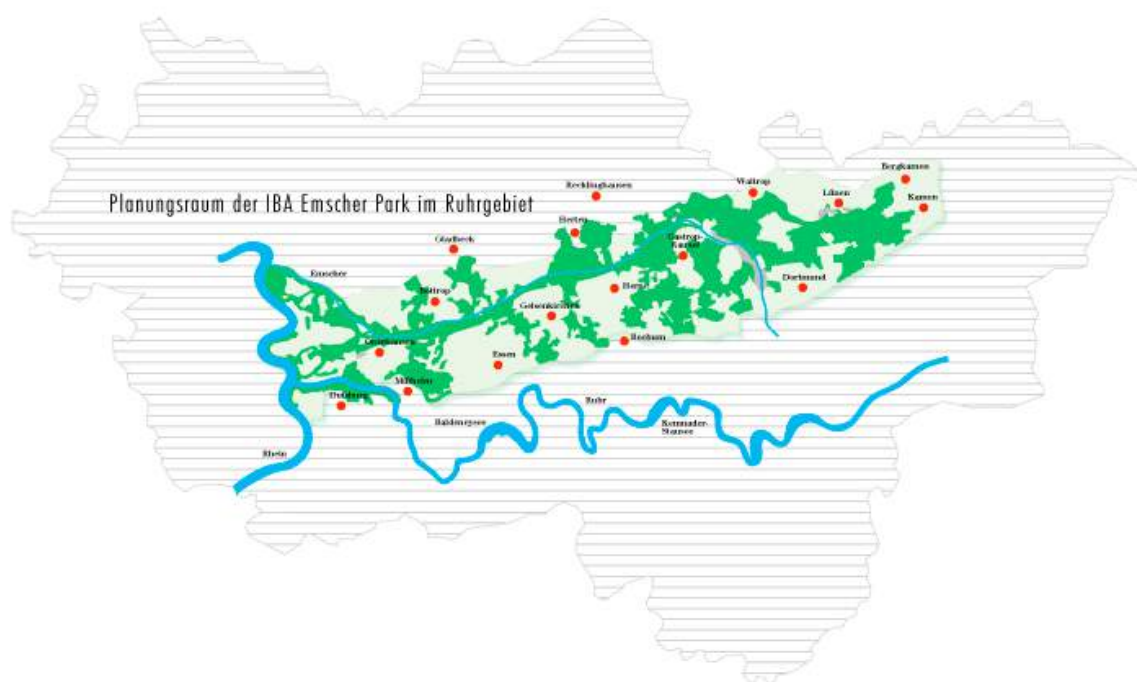
Figure 1. Planning Area of Emscher Park in Ruhr Region
Source: IBA. Available at: http://www.iba.nrw.de/iba/daten.htm [Accessed: 13 March 2018]

1.2 Research Aims, Objectives and Questions

The IBA Emscher Park has reached its 20th years anniversary this year, but not a lot of researches **evaluate comprehensively the legacy and impact of the innovative mega-regeneration project from a long-term scale.** Therefore, the research aim of this paper is to look into the legacy of IBA Emscher Park to understand what kind of legacy has been left and any lessons we can learn from this project. Especially, besides tangible legacy such as infrastructure and environmental revitalization, this research also focuses on **intangible legacy** and **social impacts** such as public-private partnership and the change of planning culture. More and more researches are dealing with the legacy that urban regeneration or mega-events have left; however, mostly they talk about tangible legacy rather than intangible legacy as the intangible one is quite hard to measure. Nonetheless, the intangible legacy is always the most valuable outcome and it's more apt to lead the site to a more resilient future.

The research is a reflection on the IBA legacy to see what achievement they've accomplished and what's the driving forces behind their achievement. Therefore, the research objectives first of all will define whether or not there is any legacy still exist and keep influencing the social circumstances. Then, the research will clarify what exact legacy it left and what's the maintenance mechanism. Finally, the research will evaluate the legacy's value, how it affects the original social pattern and how the society reacts according to the change. On the other hand, if the legacy or social impact haven't reach their expected value, the research will further discuss what's the factors that they cannot be implemented successfully and what's the potential threats and opportunities in between.

The research aims and objectives are followed by five research questions with two different streams. With the step-by-step approach, the real legacy of the IBA Emscher Park and its influence to the local context can be uncovered robustly. Here are the five research questions:

1. Is there any legacy that has been sustained from the IBA Emscher Park project and still keeps influencing the social context nowadays?
2. If some legacies are still existing, what are the patterns of legacy that local actors have perceived since the implementation of the IBA Emscher Park?

3. What are the social impacts and added values that the IBA Emscher Park project brings about in this region?

4. What's the mechanism of maintenance of the legacy between different actors and different circumstances in the region?

5. If some legacies are not existing anymore, what's the reasons that give rise the failure of the maintenance of the legacies? Are there any methods to eliminate the threats and lift up the opportunities?

1.3 Societal and Scientific Relevance

The research is mainly **dealing with the impacts of regional transformation and investigates if the additional values are attached from the legacy of IBA Emscher Park.** Traditionally, urban planners, architects and designers usually pay attention merely on constructing a developing project or any ongoing regeneration cases. Not to mention the tremendous attention toward the developing process of a mega-event due to limited time constraint and high pressures from different actors' expectations. Therefore, there is little consciousness about the possible legacy, its management and possible impacts from it. However, the legacy impacts caused by previous urban regeneration projects are much more enormous than we thought. Hence, the research takes the IBA Emscher Park as an example to investigate what kind of legacy is left and what are the impacts that the event brings about. By doing so, the societal relevance of the research is confirmed by not only raising the **awareness** of the regional influence from IBA but also **understanding more about the process of regional transformation**. At the same time, the scientific relevance can also be addressed by providing related **scientific theory** and **empirical knowledge** in terms of the preservation mechanism of legacy, added values of the development and the **real practices** and **experiences** from the IBA Emscher Park.

1.4 Structure of the Research

According to the Figure 2, the research will first provide an introduction, research objectives and research questions to give the general picture about the research. A greater detail about

the dimension of legacy and the type of urban regeneration will be provided in the literature review section, so that readers will have a clearer understanding about the research scope and the theoretical knowledge. The literature review then comes out with an explicit explanation on how the research frames the research questions in two directions and what's the following questions that should be addressed in each direction. In Chapter 3, the paper offers precise and comprehensive explanations about the chosen research methodology. Based on the research design and methodology, the paper will provide the data that author collected from the fieldwork and from analyzing secondhand content. Then, the paper will sum up the whole findings and provide several recommendations for further research and future implementation.
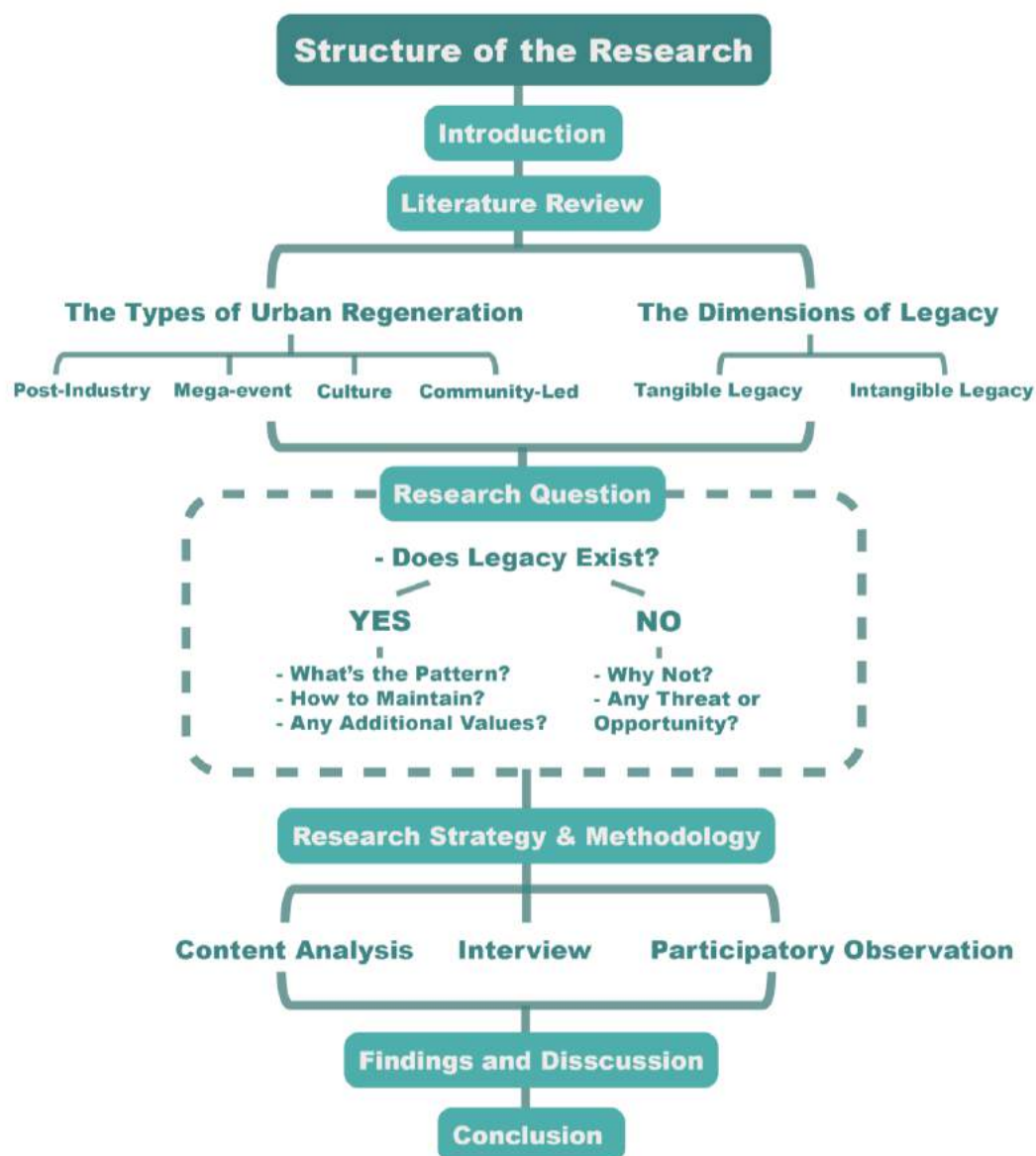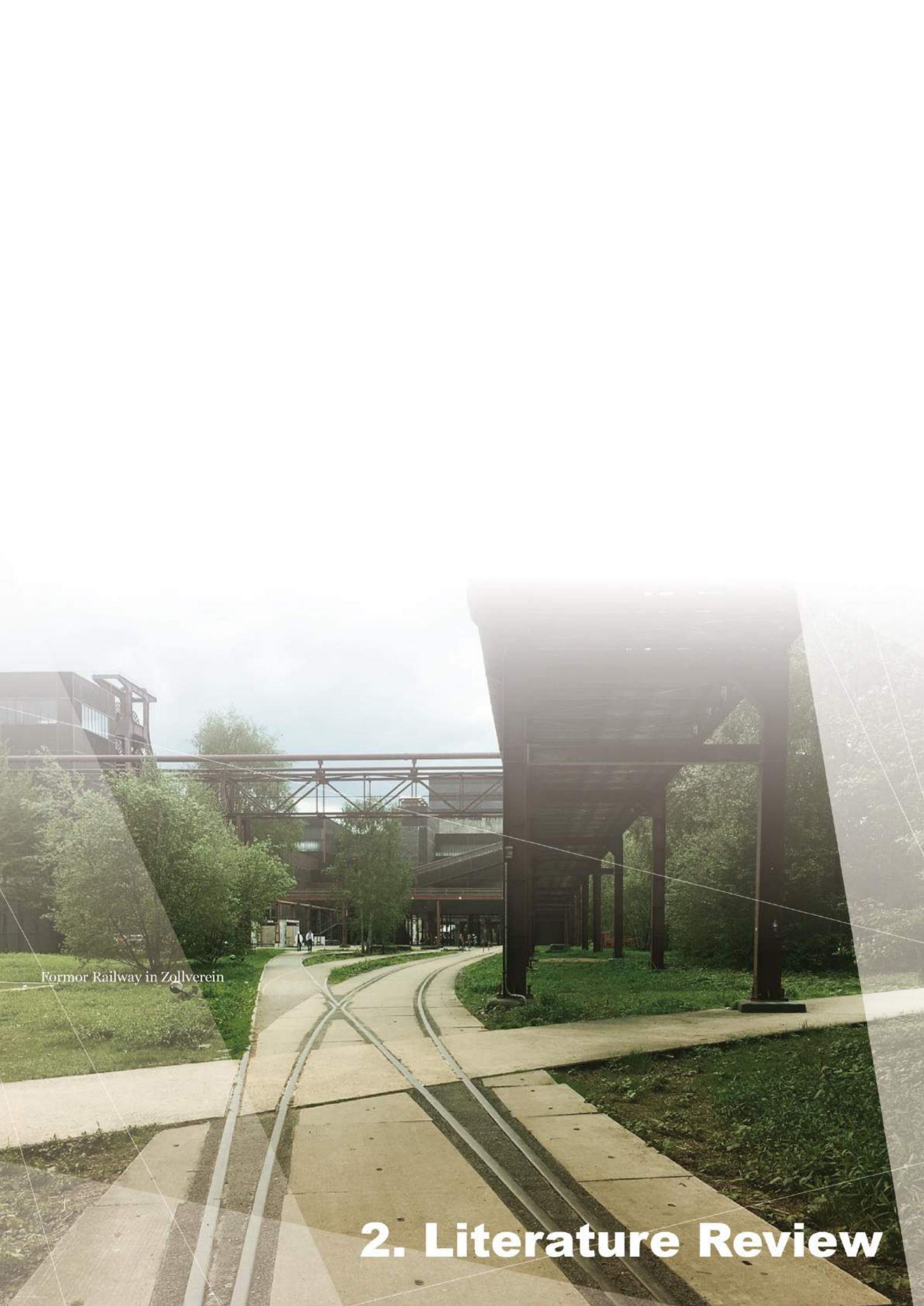

Figure 2. Structure of the Research

Formor Railway in Zollverein

2. Literature Review

2 Literature Review

2.1 Legacy Management

2.1.1 The Dimensions of Event's Legacy

Various scholars and policy-makers have continued to raise their interests toward the topic of legacy in mega events since 1980s, and planning for legacy is considered as much important as planning for the mega-event (Hiller, 1998; Preuss, 2007; Taylor & Edmondson, 2007; Leopkey and Parent, 2012; Ferrari & Guala, 2015). However, a clearer definition and measuring techniques still should be defined to conceptualize the term in order to fully understand the evolution of legacy and further investigate the governance of legacy (Preuss, 2007; Leopkey and Parent, 2012; Deng, *et. al.*, 2016). The concepts of legacy include a variety of aspects such as tangible and intangible legacy; positive and negative aspects, so it's not an easy task to explain "legacy" by simple sentences. Leopkey and Parent (2012) use Olympic Games as case studies to categorize several themes of legacy, and it clearly shows the diversity and various influence of legacy (see Table 1.). Similarly, Cornelissen (2011) also categorizes several legacy impacts as Figure 3. shows.

Table 1. Description of Legacy Themes in Olympic Games Identified in Bid Documents and Final Reports

Legacy themes	Examples (both tangible and intangible)
Cultural	Legacy elements related to cultural programming and opportunities
Economic	Includes financial legacies such as jobs, tourism, funding, hosting opportunities and marketing
Environmental	Environmental legacies are comprised of aspects such as environmentally friendly architecture and engineering, policy, and education
Image	Legacies associated with heightened international awareness and image enhancement of the host destination and region
Informational/ Educational	Informational and educational legacies are ones that embrace opportunities for gaining experience, knowledge, personal development, research and governance capacity/processes
Nostalgia	Takes into account personal experience and memories associated with the event
Olympic Movement	Embraces impacts important to the Olympic Family such as global harmony, and influence on youth
Political	Encompasses policy and policy development instruments
Psychological	Includes personal and community wide feelings of national pride, enthusiasm and emotions
Social issues	Legacies related to these issues consist of social progress, health, impact on the general population and special populations, new opportunities and civic engagement
Sport	Sport related legacies are sport development, sport facilities, increased participation and health improvement
Sustainability	Includes long term planning, environmentally friendly, and economically viable legacies
Urban	These legacies include rejuvenation of sport facilities, transportation, city services, planning, and recreation spaces

Source: Leopkey, B. & Parent, M.M., (2012). Olympic Games Legacy: From General Benefits to Sustainable Long-Term Legacy. The International Journal of the History of Sport, 29(6), pp.932.
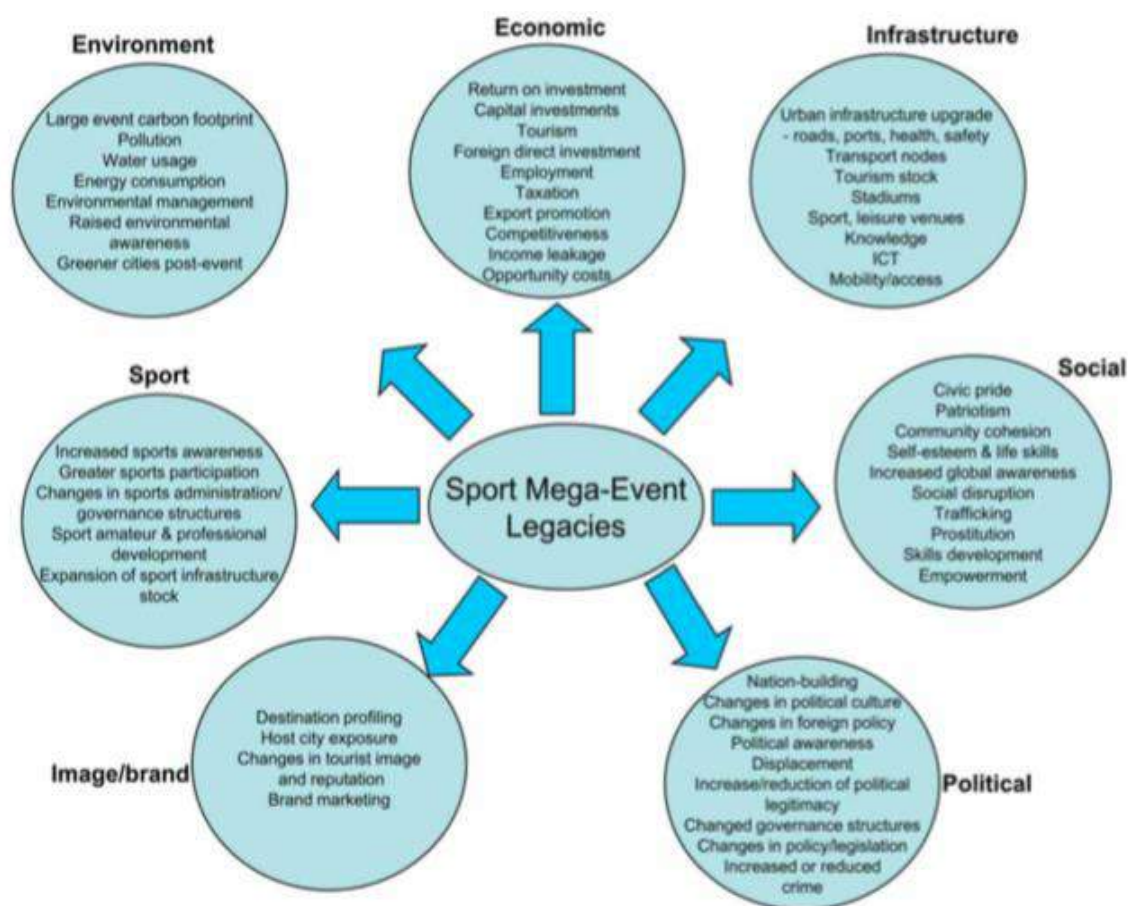
Figure 3. Sports Mega-Event Legacies
Source: Cornelissen, S., Bob, U. & Swart, K. (2011). Towards redefining the concept of legacy in relation to sport mega-events: Insights from the 2010 FIFA World Cup. Development Southern Africa, 28(3), pp.311.

On the other hand, Preuss (2007) provides a more comprehensive cube model to explain legacy (see Figure 4.). He mentions "*Irrespective of the time of production and space, legacy is all planned and unplanned, positive and negative, tangible and intangible structures created for and by a sport event that remain longer than the event itself.* (p.211)." According to Preuss (2007), the usage of the legacy cube for the evaluation of legacy can only be used for a specific time and space due to the complicated context and changeable climate. Besides, the judgement of its value is also problematic since it's difficult to measure the legacy is a positive or negative impact and it might be both at the same time. On the other hand, Kassens-Noor (2015) also provides another framework to explain mega-event legacy in more process-oriented way (see Figure 5.). This approach is more objective and straightforward as it focuses on the planning process and can easily be identified in certain timeframe. However, it's difficult to cover the intangible legacy in this model. Without a doubt, the meaning of "legacy" still lacks of consensus, and the range of event impacts and the measure of assessing the impacts are also under considerable debate (Cornelissen, et. al., 2011).
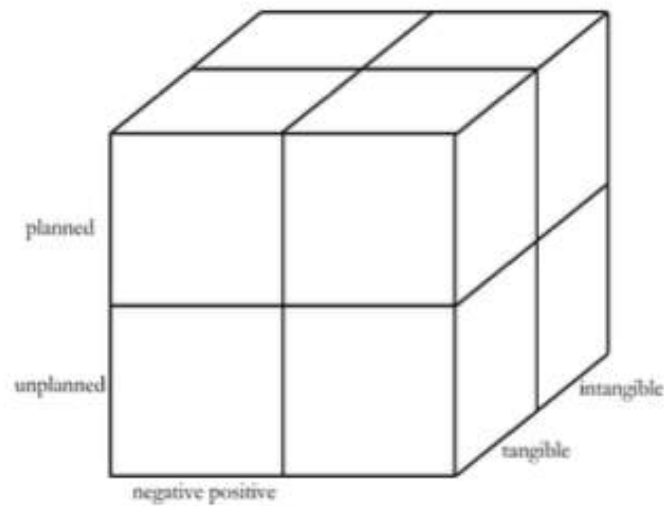
Figure 4. Legacy Cube
Source: Preuss, H. (2007). The Conceptualisation and Measurement of
Mega Sport Event Legacies. Journal of Sport & Tourism, 12(3-4), pp.211.
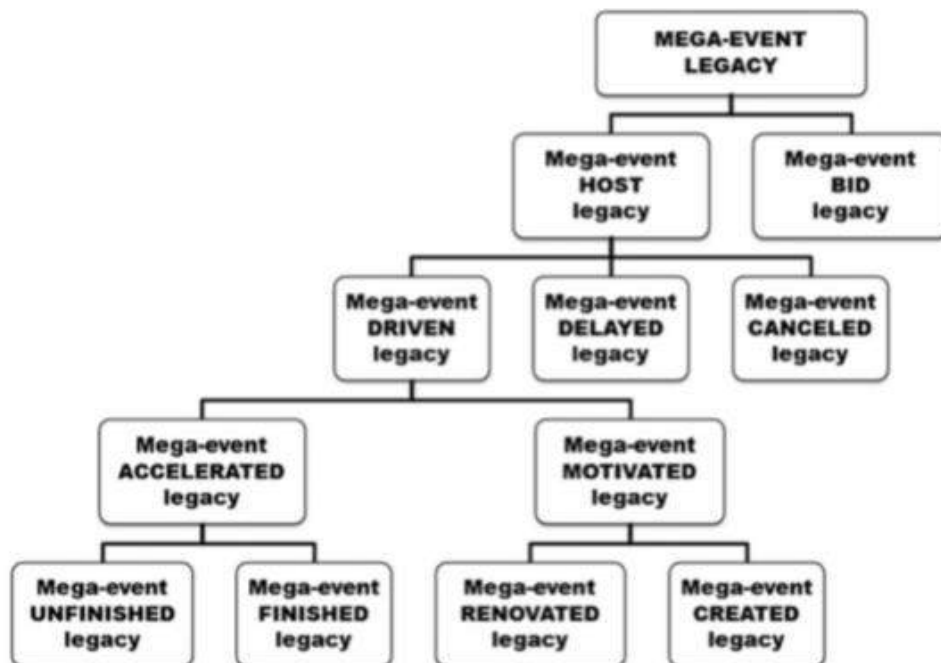
Figure 5. Mega-Event Legacy Framework
Source: Kassens-Noor, E., Wilson, M., Müller, S., Maharaj, B. & Huntoon, L. (2015). Towards a mega-event
legacy framework. Leisure Studies, 34(6), pp.668.)

While speaking of legacy, it's always the tangible legacy that comes to our minds, but intangible legacy is frequently neglected since it's hard to identify, measure and control (Cornelissen, et. al., 2011; Ferrari & Guala, 2015). However, the paramount outcomes of mega-events are more inclined to intangible legacy, such as the job creation, knowledge

generation, improvement of place image and reputation, strengthening social fabric of community and local identity (Ferrari & Guala, 2015).

Table 2. Hard and Soft Event-Structures

'Soft' Structures	'Hard' Structures
• Knowledge: e.g. organizational, security, technological • Networks: e.g. political, sport federations, security • Cultural goods: e.g. cultural identity, cultural ideas, common memory	• Primary structure: sport infrastructure, training sites • Secondary structure: villages for athletes, technical officials and media • Tertiary structure: security, power plants, telecommunication networks, cultural attractions

Source: Preuss, H. (2007). The Conceptualisation and Measurement of Mega Sport Event Legacies. Journal of Sport & Tourism, 12(3-4), pp.208.

2.1.2 The Challenges and Recommendations for Legacy Management

Legacy planning is also a challenge for local authorities. One of the main issues is that the organizing committees are usually temporary organizations and it's hard for them to carry out legacy planning or evaluation as it usually takes 15-20 years to implement and the organizers are probably dispersed already (Hiller, 1998; Leopkey and Parent, 2012; Matheson, 2010). Another "uncomfortable knowledge" is also mentioned by Stewart and Rayner (2015), which leads to the discrepancy between bid commitments and legacy delivery because of the boundaries and limitations in planning mega-events. Basically, it means the realization of legacy is hard to correspond to the original bid commitments, because of ambiguous bid proposals, limited time and resources, disagreement between various actors and unpredictable circumstances. Besides, the covering scope of legacy impact can be limited focusing on the hosting place, but also can be spread in a larger scale (Taylor & Edmondson, 2007; Ferrari & Guala, 2015).

Some suggestions and advice have been indicated to manage legacy in more sustainable way. Several scholars advise that hosting cities should adopt a long-term strategy and vision at the earlier stage, and make an evaluation to predict what will be left and what impacts will happen beforehand (Taylor & Edmondson, 2007; Ferrari & Guala, 2015; Deng, *et. al.*, 2016). Besides, it would be better to establish a specific organization or program and set up new governance form to manage the legacy of mega-event for public purposes (Ferrari & Guala, 2015; Christie and Gibb, 2015; Kassens-Noor, et. al., 2015). The maintenance of community engagement and political partnerships throughout the legacy planning process is also

important to ensure the further development will meet community's needs and aspirations (Matheson, 2010; Deng, *et. al.*, 2016). Leopkey and Parent (2012) also suggest that the responsibility of taking care of legacies should be shared between many stakeholders since the mega-event or the organizer is a short-term duty but the local stakeholders will remain in the long run. However, this shared responsibility should be further investigated to determine the accountability, the vision of legacy development; the constitution of legacy; the delivery of responsibility and the degree of participation of stakeholders in legacy planning process (Taylor & Edmondson, 2007; Matheson, 2010; Leopkey and Parent, 2012; Christie and Gibb, 2015; Deng, *et. al.*, 2016).

2.2 Urban Regeneration

IBA Emscher Park is a successful urban regeneration case that transferred industrial brownfield into multifunctional landscape. Besides post-industrial regeneration, IBA Emscher Park is characteristic of community-led regeneration, cultural-led regeneration and mega-event-led regeneration as well. Therefore, in this section, a more detailed elaboration will be provided for all of the characteristics.

2.2.1 Post - Industrial Regeneration

With the decline of labor-force production and industrialization, a plenty of brownfields and industries were facing the challenge of transformation. Post-industrial Regeneration was a very popular subject at the end of 20th century, and mostly referred to tourism attractions. According to Hospers (2002), there are three types of transformation have taken place. Firstly, several industrial relicts have been restored and transformed into museums to demonstrate the process of production and industrial occupations. The second group comprise a diverse of transport system, such as rail, water and roads systems to provide a nostalgic or novel transport experience. The third group is made up of socio-cultural attractions regarding to the regional particular industrial past, such as former workers' houses and former daily living situations.

IBA is a special approach to brownfield redevelopment. In Table 3., Greenstein and Sungu-Eryilmaz (2004) compare several features that show IBA is different from both traditional German and U.S. approach.

Table 3. IBA Versus Traditional German and U.S. Approaches to Brownfield Redevelopment

Features	IBA approach	Traditional German approach	Traditional U.S. approach
Spatial scope	Regional, local and site	Local and site, some site-focused only	Site only
Approach	Holistic. Occasionally in disagreement with local government and local stakeholders	Comprehensive	Project-Centered
Leadership	Public-sector led. IBA Agency cooperating with local governments and regional and local public development agencies to initiate the project, then handed over to local development agency	Public-sector led. City government usually with a local or regional public developer	Private-sector led. Private developer in accordance with local government (but not always)
Citizen involvement	Considerable. Form varies, however, with project character: high in housing, low in other projects	Formalized. Following established planning regulation procedures	Develops on project
Budget	Drawn from a plethora of public-sector budget lines (EU, national, state, local); some private investment	Drawn mainly from public-sector budget (EU, national, state, local); some private investment	Private investment and banks
Project idea and content search	IBA Agency brainstorming or project idea submitted by local interest group to IBA, followed by international/national competition among architects and landscape planners	Local government With local planners and architects; occasionally competitions or concepts of private investors	Feasibility study by architectural and business consultants
Planning control	Local government	Local government	Public sector

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Effectiveness of planning control	High-quality standards agreed upon by project stakeholders, then follow by routine control	Routine control following established regulations	Low
Implementation	Initial public investment of the state government, then highly incremental, responding to local interest and budget lines	Traditionally by local government with regional or local development agency and public pre-investment	Private investment, eventually with public support
Investment payback period	Long	Medium to long	Short to medium

Source: Greenstein, R. and Sungu-Eryilmaz, Y. (2004). Creative Brownfield Redevelopment: The Experience of the IBA Emscher Park Initiative in the Ruhr in Germany. In: Recycling the City: The Use and Reuse of Urban Land. Lincoln Institution of Land Policy: Cambridge, Massachusetts, pp. 215.

2.2.2 Community-Led Regeneration

Rather than traditional top-down approach, involving the community in planning and decision-making has been seen as an innovative approach as local resident cares about the place they live and also acquires practical first-hand knowledge about the site (Healey, 1998; Deakin & Allwinkle, 2007; Coaffee & Deas, 2008; Ozcevik, *et. al.*, 2010). Partnerships linkages have encouraged to extend beyond vertical governmental structure and empower local private business sectors, professional expertise and local communities in order to build up a more sustainable community (Deakin & Allwinkle, 2007; Coaffee and Deas, 2008). However, community development corporation in brownfield redevelopment is more difficult than general redevelopment as it requires expertise and techniques that local communities usually lack of (Greenstein and Sungu-Eryilmaz, 2004). Obstacles such as liability concerns, insufficient knowledge, time management, financial feasibility, inexperienced local authorities and uncertain outcomes are necessary to deal with while involving local communities and various stakeholders (Fitzgerald and Leigh, 2002; Ozcevik, *et. al.*, 2010). By fostering social capital with sufficient appreciation, trust, information flow, communicative skills as well as the institutional capacity to strengthen the legitimacy, we can eliminate the barriers and make a more well-developed public and private partnerships (Healey, 1998; Deakin & Allwinkle, 2007; Coaffee & Deas, 2008; Kort and Klijn, 2011). According to Greenstein and Sungu-Eryilmaz (2004), there are several roles that community-oriented nonprofits often play in brownfield redevelopment project, from least involvement to

greatest involvement would be: *outreach and education* to build knowledge and community awareness; *facilitator* to act as a coordinator or a liaison to advocate the project; *intermediary or predeveloper* to conduct some prerequisite to reduce the risks or polish the planning; *developer and codeveloper* to take the responsibility to redevelop the project.

Loures and Crawford (2008) use IBA Emscher Park as an example of the best practice approach to illustrate the importance of public participation in post-industrial landscape redevelopment. They claim that public participation as a user-centered approach not only determines the program definition but also designs a future vision altogether to meet the needs from the society. Besides, through citizens taking initiatives, they can raise the sense of belonging, sharing common history and creating identity. In this way, community-led regeneration benefits not only the project quality by enhancing the legitimacy of the whole process but also the society as it raises the awareness of social capital (Healey, 1998; Loures and Crawford, 2008).

2.2.3 Cultural-Led Regeneration

Culture has been labeled as a driving force for urban regeneration to enhance regional competitiveness for more than three decades (Garcia, 2004; Wilks-Heeg & North, 2004; Miles and Paddison, 2005). Due to the rising social problems such as demographic change, unemployment, delinquency and poverty, urban planners and policymakers have utilized cultural activities to stimulate renewal strategies and accelerate a better quality of life (Wilks-Heeg & North, 2004; Binns, 2005). The sphere of culture has been enlarged to social, economic, and political dimensions, and some researchers have suggested that cultural policy should be more integrated to other spatial planning aspects (Garcia, 2004; Miles and Paddison, 2005; Binns, 2005). For the purpose of making culture-led regeneration more smoothly, cities have to develop policies and broaden knowledge to recognize cultural influence and support cultural activities so that cities can embellish the regeneration like "a good story and a good storyteller." (Garcia, 2004; Wilks-Heeg & North, 2004).

Bottom-up initiative to achieve renewal is also an important strategy for culture-led regeneration, and it brings out a more sustainable regeneration by engaging more actors to create new future scenarios together (Garcia, 2004; Binns, 2005; Miccoli, *et. al,* 2014). Local

cultural elements are as a symbol of local identity, so it is necessary for culture-led regeneration to obtain support from local inhabitants, and vice versa. In fact, Glasgow was the first city of using the ECC to accelerate urban regeneration with grassroots supports and a diversity of cultural events, and it successfully gave rise to enhance local community development and regional revitalization (Garcia, 2004). Although art and culture maybe can improve "soft" social aspects such as establishing social capital and sense of community, it still has its limitation to address the "hard" aspects such as lack of infrastructure (Binns, 2005).

IBA Emscher Park, as a good example, it provides two key elements of regional modernization: preserving the rich industrial heritage and celebrating mutual cultural memories (Landry, 1999; Greenstein and Sungu-Eryilmaz, 2004). One of the reasons makes IBA Emscher Park different from other urban development is that the regeneration incorporates local arts, cultural events, historical landmarks and temporary projects as tools to revitalize the region's images and landscape (Shay, 2012). In this way, IBA Emscher Park not only improves the local economic development, attracts new businesses, but also engages various stakeholders and increases sense of identity (Shay, 2012).

2.2.4 Mega-Event-Led Regeneration

The definition of Mega-events is complicated and multi-dimensional; therefore, there is no single indicator or measure can clarify. According to Müller (2005), "*Mega-events are ambulatory occasions of a fixed duration that attract a large number of visitors, have a large mediated reach, come with large costs and have large impacts on the built environment and the population (p.638).*" The consolidated definition concerns the considerable number of visitors, mediated reach, cost and transformational impact. Such as Olympics, FIFA, EXPOs and international arts fairs, these prestige projects are pioneering, high profile, large-scale and self-contained events that are planned to boost local economic growth and let the host cities stand out on the world map (Loftman & Nevin, 1995; Chen & Spanns, 2009; Silvestre, 2009; Kassens-Noor, et. al., 2015).

In the past few decades, Mega-events have become an innovative tool for strategic spatial planning and been seen as a catalyst of urban regeneration (Chen & Spanns, 2009; Qu &

Spaans, 2009; Stewart and Rayner, 2015; Deng, *et. al.*, 2016). Mega-events can stimulate the urban development processes by restructuring the city images, constructing new infrastructure, renewing neighborhood and generating synergy among public/private sectors and citizens due to the time constraint (Chen & Spanns, 2009; Qu & Spaans, 2009; Silvestre, 2009; Ferrari & Guala, 2015). As a result, several cities that were looking for retaining their economic vitality and improving spatial quality would like to implement it and conciliate the difficult situation (Hiller, 1998; Silvestre, 2009)[5]. Given the influence of mega-events in transforming the cities, it's necessary to think carefully to leverage the best advantages and reduce the unnecessary cost while planning (Kassens-Noor, et. al., 2015).

Besides, it can be seen as a phenomenon of globalization (Chen & Spanns, 2009). Thanks to its spectacular and extraordinary characteristics, mega-events are recognized around the world and catch everyone's attention by gaining widespread media exposure at low cost (Andranovich, *et. al.*, 2001; Chen & Spanns, 2009). Therefore, the host cities can obtain their regional competitiveness by attracting investment and branding a better city's image (Andranovich, *et. al.*, 2001; Chen & Spanns, 2009; Ferrari & Guala, 2015). As a consequence, researchers and policy-makers start to investigate the impacts as it strongly influences the city's image, place branding, urban development planning and economic activities (Andranovich, *et. al.*, 2001; Qu & Spaans, 2009; Silvestre, 2009).

On the other hand, the host city still faces several challenges. First of all, the city has to find out the best approach to fit in their particular circumstances and planning complexity such as local demands, resources, purposes, political agendas and future visions (Chen & Spanns, 2009). In addition, addressing financial, spatial, societal and temporal issues with limited timeframe is also challenging the capability of the host city (Chen & Spanns, 2009; Silvestre, 2009). What's more, the authorities still have to carefully consider the long-term impacts beforehand to avoid wasting resources (Chen & Spanns, 2009; Stewart and Rayner, 2015). Hosting a mega-event is always under a certain time pressure and limited resources; therefore, how to transfer those challenges into opportunities is crucial to concern.

Although current researches on the impacts of mega-events are fragmented and constricted (Hiller, 1998; Silvestre, 2009), Silvestre (2009) provides an extensive analysis by illustrating

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[5] For example, the Sydney 2000 and Beijing 2008 Olympic Games are both successful cases that transform polluted land and improve the air and water pollution (Qu & Spaans, 2009).

seven points of impacts: "*openness, accountancy and community participation; land, housing and accommodation; employment, training and business development; recreation, leisure and accessibility; transport and the urban fabric; human rights and civil liberties; and taxes and social budget* (P.20)." Due to the diverse of concerning factors, Qu and Spaans (2009) list the Table 4. regarding the motives, urban development strategies and expected effects in governance, social, environmental and economic perspectives.

IBA Emscher Park without a doubt was a mega-event-led regeneration in terms of its huge impacts, the number of visitors and the attention from the locals and around the world. There are several advantages for IBA Emscher Park to hold the mega event successfully: historical landmark, massive territory, event suitability and the importance of the place to local inhabitants (Greenstein and Sungu-Eryilmaz, 2004).

Table 4. Evaluation Framework for Olympic Host Cities

Expected effects	Urban development strategies	Motives	
– City pride and boosterism – Community empowerment – Decreasing criminal rate – Increasing sport participation at community & city levels – Increase community visibility – Mixed social groups – Greener environment – International image building, place promotion & recognition – Better public space – Creating new tourist attraction – Infrastructure improvement – Creating mixed function area including new development – Improving tourism facility – Housing affordability – Property price increase – Metropolitan economic growth – City-wide employment growth – Revenues to the event organisers – Attracting manufacturing facilities & company headquarters – Increase in tourism during & after the event – Local merchants benefiting	Improving public management, including: – Special Olympic legislation to increase decision-making efficiency – Public-private partnership in event preparation and organising – Tax incentive to stimulate certain economic sectors – Tax incentives and grants to refurbish properties – Information system with high-tech support – Encourage the inflow of talents from outside – Community participation in small-scale neighbourhood upgrading programme – Education, job training – Upgrading of low-quality area – Using special housing policy to provide different housing types – Neighbourhood facilities for different income groups – Provision of high quality sports facilities – Infrastructure development – Removing pollution sources – Developing fast public transportation system – Introducing mix-function land use – Improving retail and service sector – Creating business network strategy – Real estate development – Focus on tourist planning	– Enhancing international prestige – Enhancing self-esteem & self confidence – Community empowerment – Providing housing for different income groups – Multi-cultural society & diversity – Improving health – Reducing poverty – Social security – Improving (physical) accessibility – Decreasing environmental pollution – Landscape beautification – Creating new landmark – Creating new urban centrality (reimaging) – Create high-quality public transportation system – Creating high-quality public space system – Tourism growth – Creating employment – Real estate growth (quantity + quality) – Short-term economic growth – Long-term economic growth – Foreign direct investment – Improving city competitiveness	Governance Social Spatial & Environmental Economic

Qu, L. & Spaans, M. (2009). The Mega-event As A Strategy In Spatial Planning: Starting From The Olympic City Of Barcelona. The 4th International Conference of the International Forum on Urbanism (IFoU), The New Urban Question – Urbanism beyond Neo-Liberalism. Amsterdam/Delft. pp.1294.

2.3 Concluding Remark

Based on the previous researches about the conceptualization of legacy, the research categories several legacy themes that are associated with the investigation of the IBA project (see Figure 6.). The types of legacy mostly depend on the origins of event structure which can be separated in hard and soft event structure. Under each event structure, there are several topics that can be developed into various legacy themes. Obviously, the hard event structures are more likely to become tangible legacy themes and the soft event structures are prone to become the intangible ones. However, those legacy themes are sometimes mixed with other topics, such as economic and sustainability can both be tangible legacies and intangible legacies depending on the measuring techniques and what exact event we are talking about.
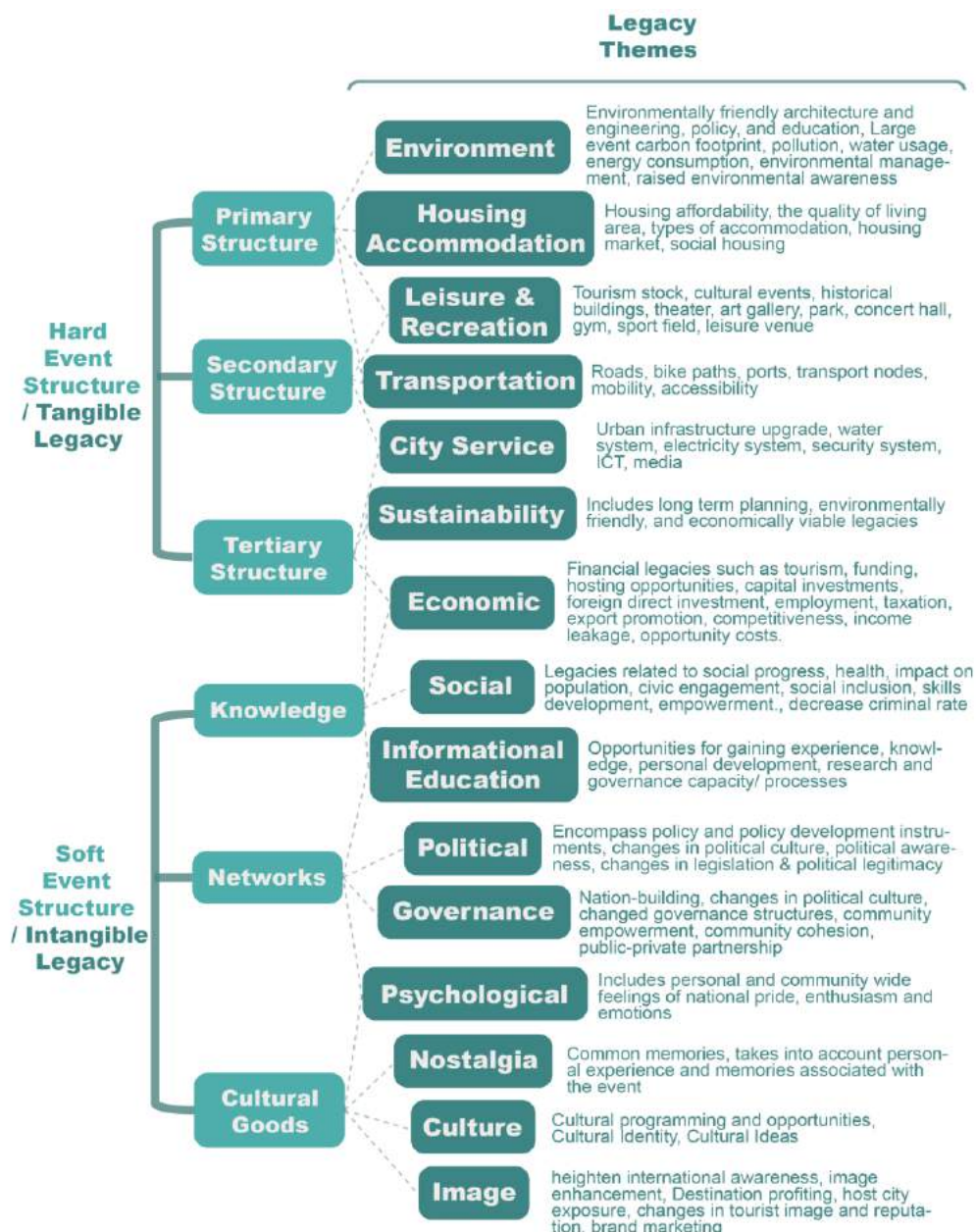
Figure 6. The Dimensions of Legacy in IBA Emscher Park

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Besides, the figure 6. is tailored for this research investigation in this specific time and local context. Unlike Preuss (2007), the figure doesn't take plan/unplanned and positive/negative into consideration as the former element are less related to the research topic and the latter one is variable depending on the event and respondents. Also, Kassens-Noor's (2015) process-oriented explanation of legacy is not suitable for the research as well since it merely talks about the evaluation of the legacy and the maintenance mechanism. Therefore, while investigating the legacy development, it's necessary to understand what's the essential elements to examine in each case to reduce the error or misleading in research project.

In addition, four main themes of urban regeneration in IBA Emscher Park are indeed linked with each other, and they're all playing important roles in the issue of IBA legacies. As the Figure 7. shows, the research conceptualizes the interrelations of the four types of urban regeneration in IBA Emscher Park as a tree model. From the basis, the post-industrial regeneration can be seen as a root or a foundation in the project because the fundamental concept of the project is to revitalize the industrial region and there are also plenty of industrial resources that are utilized in this project. What's more, the community-led regeneration can be recognized as the main force to support the project. The IBA project wouldn't be that successful without the help from local communities and stakeholders. Same as the tree wouldn't be strong and outstanding without the support of trunk. Thirdly, the cultural-led regeneration is the main driving force that differentiates the local project from one to another, and it also flourishes the outcomes of those projects as well as the region. The region is characterized by its unique culture and history, same as the tree is characterized by its flowers, fruits and leaves. Last but not least, the mega-event functions as a facilitator to create a special opportunity for the purpose of encouraging the region or decision-makers to change the situation as soon as possible. Without the stimulation of hosting the mega-event, the IBA project wouldn't have that much achievements. Same as the nutrition of the tree, without the exterior supplement, the tree cannot grow in a good condition and have a fruitful production.
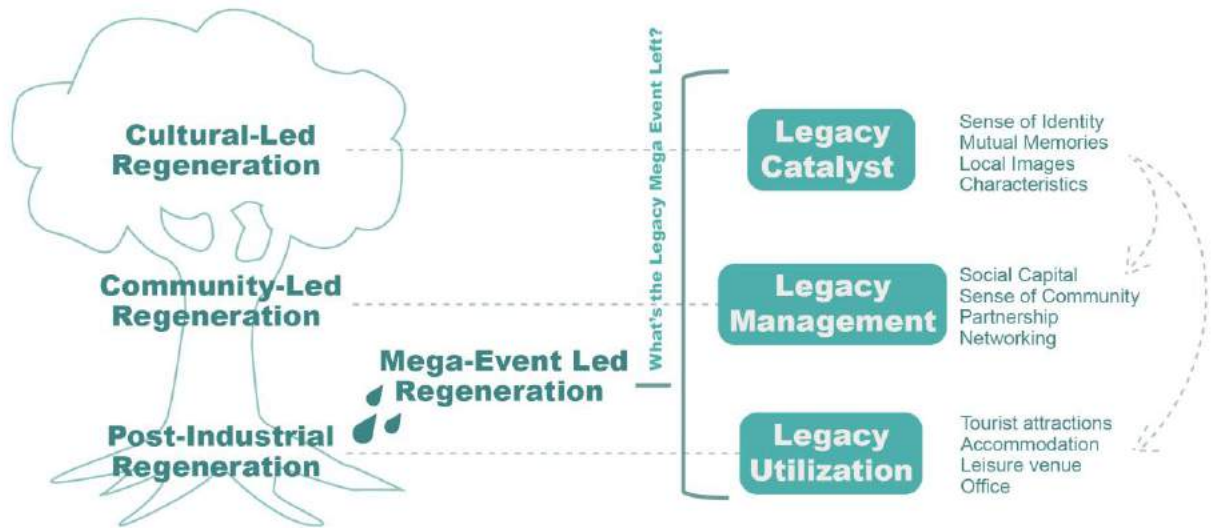
Figure 7. Conceptual Framework: Tree Model of the IBA Transformation

In addition to the tree model of the IBA transformation, those types of regeneration are also crucial elements speaking of the investigation of legacy in this project (See Figure 7.). The post-industrial revitalization is corresponding with the "legacy utilization" because plenty of the industrial fields and structures are transformed into different tourist attraction, accommodation, leisure venue and office. What's more, the community-led cooperation can still be seen as the main force to sustain legacy management since researchers suggest that having community engagement, new governance form and partnership between different local stakeholders are the best long-term solution to deal with the maintenance of legacy. Meanwhile, the local culture can function as the catalyst to boost both the community engagement and the legacy utilization thanks to the local identity and cultural images it builds up.

To sum up, first of all, the research is dealing with defining exact existing patterns of legacy that the IBA Emscher Park left based on the Figure 6. legacy themes. After that, the research is trying to figure out some additional values and legacy maintenance suggestions in accordance with the real practices of the project.

3. Research Strategy and Methodology

3 Research Strategy and Methodology

3.1 Research Design & Research Strategy

The research design is conducted through the framework of case study design, which features in the detailed and intensive investigation of a single case (Bryman, 2012). In this research, the case study is the International Building Exhibition Emscher Park in Ruhr region in Germany. The type of case study is a representative or typical case, so called exemplifying case, which epitomizes a broader category of cases and also examines key social processes (Bryman, 2016). As in the IBA Emscher Park project, the persistence of legacy can be included and further implemented in various cases. Also, the research can examine the uncertain social process of regional transformation.

The research strategy is using a qualitative research with inductive approach. Qualitative research emphasizes individuals' interpretation rather than quantification in the data collection, and it focuses on generation of theories by an inductive approach which is based on the implications of the observations and findings (Bryman, 2016). Same as this research, the main method to collect data is by interviewing experts who know the project pretty well, and then further interpret the theory according to the findings between and behind their words. The research focuses on the quality of data because not a lot of people are very familiar with the whole process of legacy maintenance and it might be a waste of time for both researcher and respondents. Also, by more qualitative approach, we can get more valuable data in more detail and we are more likely to understand the whole picture of legacy maintenance and the mechanism behind.

3.2 Epistemology & Ontology

An epistemological issue concerns the recognition and definition of acceptable knowledge (Bryman, 2012). In this research, empiricism is the main epistemology in perceiving data and knowledge. According to Bernard (2000), "*For empiricists, the only knowledge that human beings acquire is from sensory experience* (P.9)." Human beings are originally just empty boxes and it can only be filled with experiences through their life events. Therefore, by

accumulating experience, we start to generalize the real knowledge. The knowledge we achieve is all based on our life experience, so it might be incomplete and biased. Same as this research, since the real knowledge and convincing evidence can only be obtained from people who have experience in the project, it's clearly the empiricism that is leading the way of how we pursuit knowledge. The empiricism explains a method of knowing the reality; however, the researchers should still have to set a system of generative mechanism to produce and transform "knowledge" throughout the research (Bryman, 2012).

Social ontology considers whether social entities should be considered as objective or subjective entities, which the reality is independent of or build up from the social actors (Bryman, 2012). Constructionism is the ontology of this research since many concepts under this topic are continually being shaped and accomplished by different social actors. The knowledge or research subject is a set of reference, and it is always changed and formed by the social interaction and different process (Ibid.). Therefore, the research believes that social factors will influence the construction and interpretation of social entities and knowledge based on different ways of accumulating and cultivating knowledge.

3.3 Methodology

Case study includes both theory generation and theory testing, and it's crucial to concern how well the quality of the data can support the generated arguments (Bryman, 2012). Therefore, more detail about data collection and triangulation data will be provided in this chapter to ensure the high quality of data and the accuracy of the research. The research is using multiple research methods to obtain more thorough and accurate outcomes (Harrell, 2009). Meanwhile, the research will implement data triangulations to gain more reliable evidence. Through systematic asking concept-relating research questions (Strauss, 1994), the research process is conducted step by step, and each question is provided with different methods to resolve the questions accordingly (Driscoll, 2007).

3.3.1 Data Collection

In this project, the purpose is knowing what kind of valuable legacy IBA has left in this region and also further discussing about the mechanism of legacy management. Therefore,

firstly, we need to do content analysis, which refers to analyze documents and texts to quantify predetermined content in a systematic approach (Bryman, 2016). To do so, we can form and quantify our databases through multiple data sources such as documentary, public publication, media and so on (Harrell, 2009; Bryman, 2016). By coding certain subjects, keywords and themes, the research can find out its dispositions and some significant information to uncover the meaning of targeted phenomena or processes (Bryman, 2016).

Based on the results of content analysis, the project will conduct sequential mixed methods data collection strategy, which integrates the results from the earlier phase of data collection into the next data collection, such as finding key interviewees and tailoring interview questions (Driscoll, 2007). Face-to-face interview is the main research method to collect the primary data. By conducting in-depth semi-structured interviews, the research can explore deeper understanding and wider viewpoints of particularly interesting topics or other ambiguous secondary findings (Driscoll, 2007; Gill, 2008; Harrell, 2009). Semi-structured face-to-face interviewing is a suitable instrument to interview managers, bureaucrats, and elite members in communities so that researchers can control the time and occasion efficiently but not excessively control over the respondent (Bernard, 2000). It's an important concern in this research as the interviewees are all experts or managers in their fields. The flexibility of semi-constructed interviews allows interviewers and interviewees to easily build up mutual understanding among research topics and questions, and also discover and elaborate the key questions in more detail (Bernard, 2000; Gill, 2008). Face-to-face interviewing can also benefit from using several different data-collection techniques such as visual aids, and interviewer can probe for more detail adequately (Bernard, 2000). In contrast, face-to-face interview is costly both money and time, and takes lots of skills and efforts to administer an interview and sustain consistent positive and neutral attitude (Bernard, 2000). The research also prepares a German version questionnaire in case the interviewees are more familiar with the questions in German. All interviews are recorded and transcribed verbatim to provide evidence and avoid bias (Gill, 2008). Other concerns such as dress code, interview venue and recording equipment is also double-checked in case everything is decent and proper before the interviews.

Besides conducting several interviews with different actors, the research also goes to the field of IBA Emscher Park to do fieldworks. There are three different roles involving in the fieldwork (Bernard, 2000) and each contains different purposes and approaches. The first one

is "complete participant" which involves in a group without noticing as a researcher. This one is used while the author joins guided tours in Zollverein and also a self-organized bike tour around the region to see the current usage condition of the landscape parks, local facilities and so on. By the touristic approach, we can get some insights about what's going on now in the field and acquire general knowledge about the current field situation. The second one is "complete observer" as the researcher collects data from the "Polis Convention", a fair about urban development around the State of NRW, to see the duties and responsibilities of different planning institutions and the interrelationship between different public authorities and private stakeholders. The last one "participant observer" is a mix in between, and it will be conducted in the research most of the time to get more information about the physical and social layout of the site. For example, while joining the "Polis Convention", the researcher also asks certain key questions to some experts from key authorities. Language barrier is the main challenge for the research, but there are several approaches to eliminate the obstacles, such as gesture, google translation or graphic illustration. Other skills such as building explicit awareness, memorizing, descriptive and analytic notes taking and maintaining naiveté is also acquired before going to the fieldwork (Bernard, 2000).

Through secondary data analysis followed by qualitative interviews and participant observation, the research can not only acquire the comprehensive picture about what's the pattern of the IBA's legacy but also discover some additional information such as the potential threat and opportunities of these legacies.

Table 5. Overview of the Research

RQ	Philosophical Approach	Research Design & Strategy	Research Methods	Data Type
1. Is there any legacy that has been sustained from the IBA Emscher Park project and still keeps influencing the social context nowadays?			1. content analysis 2. Semistructured Interviews 3. Participant Observation	Qualitative
2. If some legacies are still existing, what are the patterns of legacy that local actors have perceived since the implementation of the IBA Emscher Park?	Empiricism Epistemology	Case Study Design	1. Content analysis 2. Semistructured Interviews 3. Participant Observation	Qualitative
3. What are the social impacts and added values that the IBA Emscher Park project brings about in this region?	Constructionism Ontology	Mixed Methods Strategy	1. Content Analysis 2. Semistructured Interviews 3. Participant Observation	Qualitative
4. What's the mechanism of maintenance of the legacy between different actors and different circumstances in the region?		Grounded Theory	1. Content Analysis 2. Semistructured Interviews	Qualitative
5. If some legacies are not existing anymore, what's the reasons that give rise the failure of the maintenance of the legacy? Is there any method to eliminate the threats and lift up the opportunities?			1. Semistructured Interviews 2. Participant Observation	Qualitative

3.3.1.1 Sampling

The sampling of content analysis is focusing on both the history of IBA Emscher Park as well as the review that the project has received within the 30 years. Also, some topics such as legacy, bottom-up initiatives, regional cooperation, maintenance, future vision and so on will be looked in more detail to find useful information for further research.

Expert interview is the leading method to collect more valuable data in this project and it emphasizes on collecting cultural data which requires experts that can offer empirical explanations or represent the intracultural variation in order to get more information about a social process (Bernard, 2000). The ideal units for sampling here are those institutions or actors which/who have involved in IBA-related projects. The table 6. clarifies the interviewee profiles, and the research have obtained permissions to reveal the interviewee's names since it's helpful for the reliability of the research.

Besides, there are three main approaches to conduct nonprobability sampling in the research: stratified sampling, snowball sampling and cluster sampling. Stratified random sampling refers to dividing a sampling frame into sub-frames by their key independent variables and then picking up samples from each group to ensure the data variance (Bernard, 2000). In this research, the key independent variables are different professions and the ways that those actors approach IBA projects. Therefore, by stratified random sampling, the research can ensure to get data from different subgroups and it's more likely to understand the whole mechanism of legacy management. In addition, snowball sampling is also a technique being used here as those participants are more liable to have a network in between. By doing so, the research can find out more experts and more suitable samples to collect valuable data. Cluster sampling is usually used to sample populations that live in the same geographic areas or they participate the same activities or institutions (Bernard, 2000). The advantage of cluster sampling is that IBA is a regional project, so those projects are scattered around the Ruhr region. Therefore, it's more time-saving to find out valuable samples while doing the fieldwork. The cluster sampling is mainly used for field observation since it illustrates the real condition of each place and it's handy to categorize different types of users. Besides, joining the "Polis Convention" is another approach of cluster sampling as it gathers different planning authorities altogether in the event, and it's convenient to collect data from those experts and administrators working in related institutions.

Table 6. Interviewee Profiles

	Name of Interviewee	Interviewee Profile	Place	Date
1	Univ. Dipl.-Ing. Christa Reicher	- Co-founder and manager of RHA REICHER HAASE ASSOZIIERTE - Head of the department of Urban Planning, Urban Design and Urban land use planning, Faculty of Spatial Planning, TU Dortmund - Member of the IBA Expert Advisory Council of the Federal Ministry - The Overall Coordinator of IBA Revisited Project	Aachen, Germany	April 25th, 2018, 5-6pm (1hr)
2	Dr.-Ing. Jan Hogen & Klaus Austermann	Dr.-Ing. Jan Hogen - Consultant in "brownfield development, urban renewal development, and climate protection" in "Urban Development and Heritage Management" in "Ministry of Homeland, Communal, Construction and Equality of the State of North Rhine-Westphalia" (Ministerium für Heimat, Kommunales, Bau und Gleichstellung des Landes Nordrhein-Westfalen, MHKBG NRW) Klaus Austermann - Head of "Intercommunal Urban Development Affairs of REGIONALEN NRW, Smaller Towns and Municipalities in Rural Areas" in "Ministry of Homeland, Communal, Construction and Equality of the State of North Rhine-Westphalia" (Ministerium für Heimat, Kommunales, Bau und Gleichstellung des Landes Nordrhein-Westfalen, MHKBG NRW)	Polis Convenstion, Hansaallee 321, 40549 Düsseldorf, Germany	April 26th, 2018, 3-4 pm (1hr)
3	Peter Köddermann	- Project manager of M: AI Museum of Architecture and Engineering NRW - Cooperator of IBA meet IBA with IBA Hamburg - Have been working in the project of IBA Emshcer Park	M: AI Museum of Architecture and Engineering NRW, Gelsenkirchen, Germany	April 27th, 2018, 10:00-11:30 pm (1.5 hr)

4	Frank Bothmann	• Team Leader of "Conception Emscher Landscape Park/ AG New Emscher Valley" in "Regionalverband Ruhr (RVR)"	RVR, Essen, Germany	April 27th, 2018, 10:00-11:30 pm (1.5 hr)
5	Michael Schwarze-Rodrian	• Director of the Department European and Regional Networks Ruhr and the EU Representative of the Regional Association Ruhr (RVR)	RVR, Essen, Germany	May 2nd, 2018, 15:00-17:30 pm (2.5 hr)
6	Prof. Dr. Christoph Zöpel	• Minister for Federal Matters in Nordrhein-Westfalen, 1978-1980. • Minister for Regional and Town Development, 1980-1985. • Minister for Town Development, Housing and Transport, 1985-1990. • DeputyChairman, Committee on Economic Community Issues.	Bochum, Germany	May 26th, 2018, 11:00am - 12:30 pm (1.5 hr)

3.3.2 Triangulation of Data

Triangulation aims to use multiple methods of investigation and sources of data in the social study to build greater confidence in findings (Bryman, 2016). This research conducts multiple triangulations: data sources triangulation, methodologic triangulation, and data-analysis triangulation (Thurmond, 2001). Data sources triangulation which means collecting data from different sources in terms of time, space and person (Thurmond, 2001), such as the interviews here is implemented with different identities of people. Methodologic triangulation is conducting multiple methods, and this project uses both within-method and between-method triangulations to ensure the internal consistency and external validity (Jick, 1979; Thurmond, 2001).

The research also uses data-analysis triangulation to analysis data by multiple methods so that we can understand the patterns of data and how the interpretation attributes to the explanation of theory (Thurmond, 2001; Bernard, 2000). There are two main approaches to conduct qualitative data analysis: thematic analysis and narrative analysis. The former one summarizes the data based on thematic coding, and the latter one explains the findings by narrative approach (Bryman, 2016). The benefits of triangulation can include improving the accuracy of the findings, enhancing confidence in research data, and creating inventive methods to integrate theories (Jick, 1979; Thurmond, 2001).

In addition, this project uses grounded theory to analysis data. Grounded theory is an analytic approach aiming to identify concepts and link the concepts into formal theories by constant data comparative analysis (Strauss, 1994; Starks, 2007; Bernard, 2000; Bryman ,2016). By theoretical sampling, constantly inductive coding, theoretical saturation, constant comparison, categorizing and identifying potential hypothesis, we can get grounded in the data and fulfill substantive theories (Bernard, 2000; Bryman, 2016). Among the process, coding is the most principal instrument in grounded theory and it entails constantly comparison between potential theoretical significance and the labels of collected data such as interview transcripts and field notes (Bryman, 2016). However, while analyzing data, we should be aware of the positionality to avoid the researcher's role in influencing the date creation, knowledge interpretation, and theory generation; also, the reflexivity to aware the social contexts and elements that shape our knowledge (Starks, 2007; Bryman, 2012).

3.4 Research Validity, Reliability & Limitations

Validity has been recognized as the most important quality criterion in any research, and it concerns the integrity, accuracy and trustworthiness of methods, data and findings (Bernard, 2000; Bryman, 2016). In this project, the validity concerns should be more focusing on the validity of instruments, data and findings, such as if the questionnaire is valid for the research question; if the interviewees are valid to provide valuable information; if the approaches of data-analysis are suitable to interpret convincing findings; if the findings are applicable to natural social settings; if the inferences from the research are warranted by the research findings and so on.
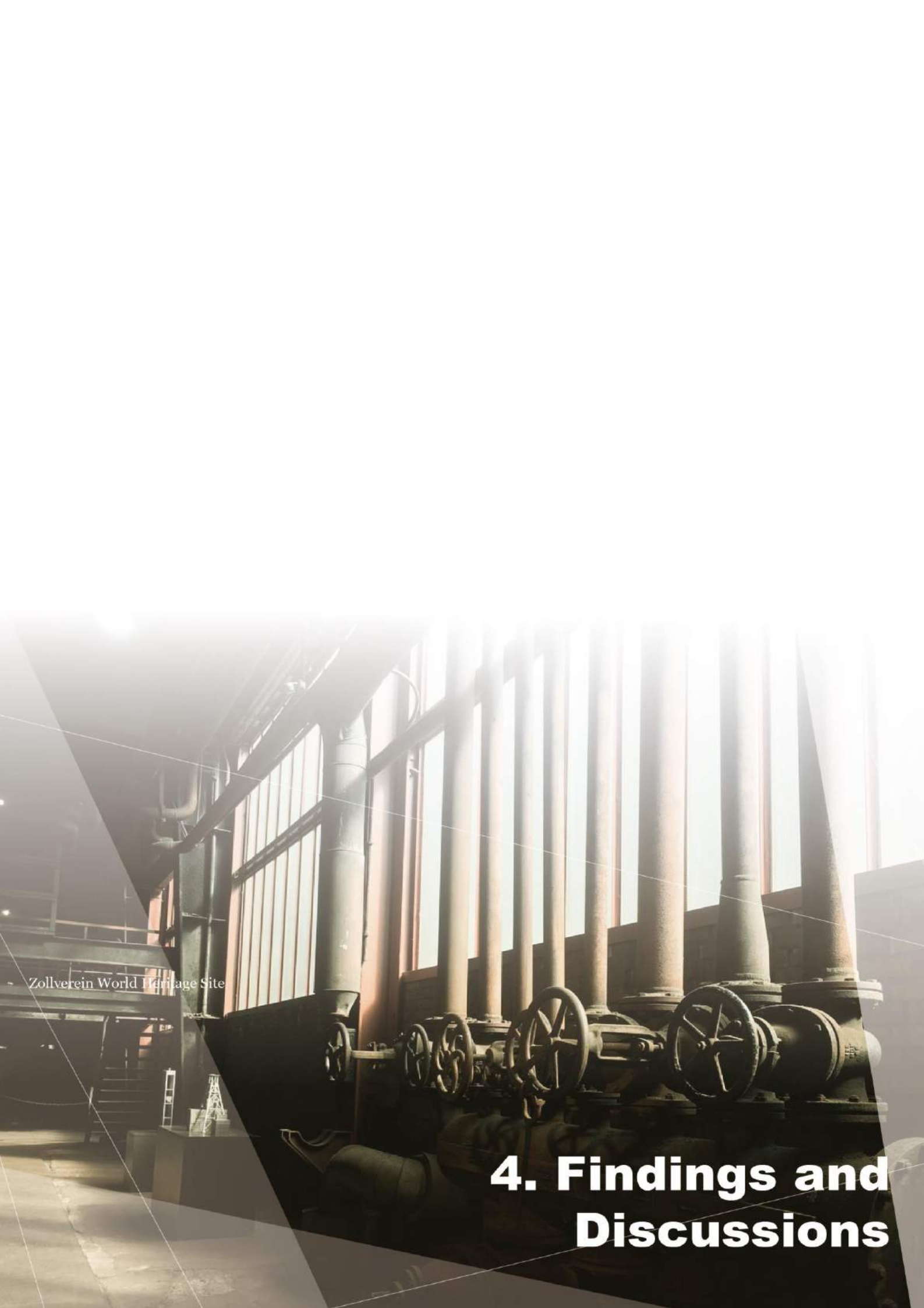
Reliability refers to whether the results of a study are repeatable by using the same instruments (Bernard, 2000; Bryman, 2016). Therefore, the concerns here are: if the questions are more reliable to retrieve same information than others; if the time and space for field observation is proper to collect the reliable data; if the approach of coding is more reliable to generate the same key themes to explain the theory; if the ways of data analysis are reliable to find out the same outcomes and so on. Besides, the research also concerns the precision of measurement and the accuracy of data. For example, the research thinks more carefully about the accuracy of information provided by interviewees as they might try to create good impressions, be subjective and biased, only know partial information, loss some memorial information and mislead the findings (Bernard, 2000).

Also, there are several limitations from the starting research design to the ending research outcomes. One of the main barriers for research design is the uncertainty of variables and it's prone to error if we couldn't measure it or define it accurately (Bernard, 2000). However, the limitation of controlling variables is hard to eradicate. For example, we never know the distance of the interval between ordinal variables (e.g. strongly agree/ agree/ disagree/ strongly disagree) in each participant's perspective. Besides, some multidimensional and dependent variables are really difficult to measure such as attitudes toward one single event and preferences, and the indicators to measure the variables are sometimes hard to define precisely (Bernard, 2000). For example, the intangible legacy in this project is a typical case that includes multidimensional and dependent variables. However, the research still needs to find out the best instruments and concrete indicators to eliminate the limitations. While

conducting the research, the main limitation is the language barrier. As the author is a non-German speaker, it's inclined to confront several barriers such as couldn't analyze German documents or policies, less approachable while doing interview or fieldwork, misunderstanding in translation and insufficient background knowledge about German culture. However, there are still some remedies to improve the situation thanks to the technology nowadays, such as online translate and dictionary. The research limitations are various and inevitable. Therefore, only through more comprehensive research design, sufficient knowledge and accurate instruments can the research eliminate the barriers.

3.5 Research Ethics

According to Diener (1978), there are four main ethical principles in social research should be thought about: if the research is *harmful to participants*; a *lack of informed consent*; an *invasion of privacy*; and if *deception* is involved. Some ethical concerns in this project regarding to collecting and analyzing data. Firstly, it's necessary to obtain informed consent from participants or related subjects. Therefore, researchers should provide the information about the research and ask for permission to participants. Most importantly in the research, as the main method is expert interview, so the research prefers to reveal the name and interviewee's profiles. Therefore, the consent form is signed before the interview by both interviewee and interviewer to make sure the interviewee agrees on revealing their name and recording the interview. Also, if there is no permission from the participants, the research will make sure the confidentiality of personal information and anonymity of participants to eliminate the harm and respect the participants. However, to provide neutral evidence about the attitude and the utilization of IBA legacies, a set of covert participant observation is needed. Although covert methods against the principles of informed consent and even invade the privacy of the participants, it's accepted if it's impossible to use other methods to acquire essential data (Bryman, 2012). Finally, researcher should maintain the neutral stance when analyzing data and interpret data accordingly and accurately so that we can eliminate the deception, bias and knowledge flaw (Starks, 2007; Bryman, 2012). For example, this project reports IBA Emscher Park based on the reality, and the report should not have any suspicion of embedding advertisement or defamation. In conclusion, researcher should have a sense of responsibility and ethics to conduct an unprejudiced and unimpeachable research.

Zollverein World Heritage Site

4. Findings and Discussions

4 Findings and Discussions

4.1 Mapping the Patterns of Legacy

The research analyzes the patterns of legacy through two categories as legacy theory mentioned: the tangible legacy (4.1.1.) and intangible legacy (4.1.2.). In 4.1.1., the research uses the six IBA flagship topics to explain tangible legacy since it's more logical and accessible to understand the exact impacts of those projects. As the figure 8. shows, it's clearly understandable that all the legacy or impacts from the six flagship topics can be categorized mostly in tangible legacy section. On the other hand, the intangible legacies are usually hard to analyze individually based on each project and they should be recognized in a more comprehensive scale. Hence, in 4.1.2., the research sums up the main intangible legacy themes based on the data collecting from secondhand resources and firsthand fieldworks. The following quotations from interviewees represent the overview condition of those projects nowadays:

Christa: "*First of all, I would say that no one project failed. That means every project is kind of important successful strategy for the region.*"

Frank: *"It's very positive in general. I admire it very much … it was very powerful vision, which was implemented, the vision and the implementation process, and together with good leadership."*

Michael: "*So these mentioned 100 projects were followed by comparable projects, continued and are still maintained.*"

IBA Flagship Themes

Legacy Themes	Emscher Landscape Park	Ecological Reconstruction of the Emscher System	Working in the Park	Urban Development and Social Impulses for Urban District Development	Housing in the Settlement, New Construction and Renovation	Industrial Cultural and Tourism	IBA Overview
Environment	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15	16, 17, 18, 19, 20, 21, 22	23, 24, 26, 28, 29, 30, 31, 32, 34, 39, 41, 42	44, 49, 53, 54, 56	59, 64, 66, 67, 69	78, 87, 88, 90, 91	v
Housing Accommodation			28, 35, 39	44, 48, 52, 56	57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70		v
Leisure & Recreation	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15		23, 24, 26, 28, 29, 30, 32, 35, 36, 39, 42	44, 45, 47, 50, 52, 53, 55, 56		78, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91	v
Transportation	07, 10, 14, 15			54, 55, 56		88, 89	v
City Service	01, 02, 07, 09, 10, 11, 13, 14, 15	16, 17, 18, 19, 20, 21, 22	24, 25, 27, 28, 33, 34, 35, 36, 37, 38, 41	43, 46, 48, 49, 51, 52, 53, 54, 55, 56			v
Sustainability	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15	16, 17, 18, 19, 20, 21, 22	23, 24, 26, 27, 28, 29, 30, 32, 33, 34, 35, 37, 38, 39, 41	44, 47, 49, 51, 53, 54, 56	66, 67, 69	81, 82, 86, 87, 88,	v
Economic	01, 04, 09, 11, 13,		23, 25, 26, 28, 29, 31, 32, 33, 35, 37, 38, 40, 41, 42	43, 45, 52, 54, 56		81, 82, 83, 84, 85, 86, 89	v
Social	01, 02, 05, 06, 08, 09, 11, 12, 13,		24, 25, 27, 28, 33, 34, 35, 37, 38	43, 44, 45, 46, 48, 49, 52, 52, 54, 56	57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70	79	v
Informational Education			25, 27, 30, 33, 34, 35, 37, 38, 40, 41	43, 49, 50, 56		81, 82, 83, 86	v
Political	03, 04, 05, 07, 08, 10, 14, 15					88, 89	v
Governance	02, 03, 04, 05, 06, 07, 08, 10, 14, 15					81, 82, 88, 89	v
Psychological						81, 82, 85, 88	v
Nostalgia						81, 82, 85, 88	v
Culture				56		81, 82, 83, 85, 86, 88, 90, 91	v
Image							v

Legacy Themes axis labels (left side):

Hard Event Structure / Tangible Legacy — Primary Struc., Secondary Struc., Tertiary Struc.

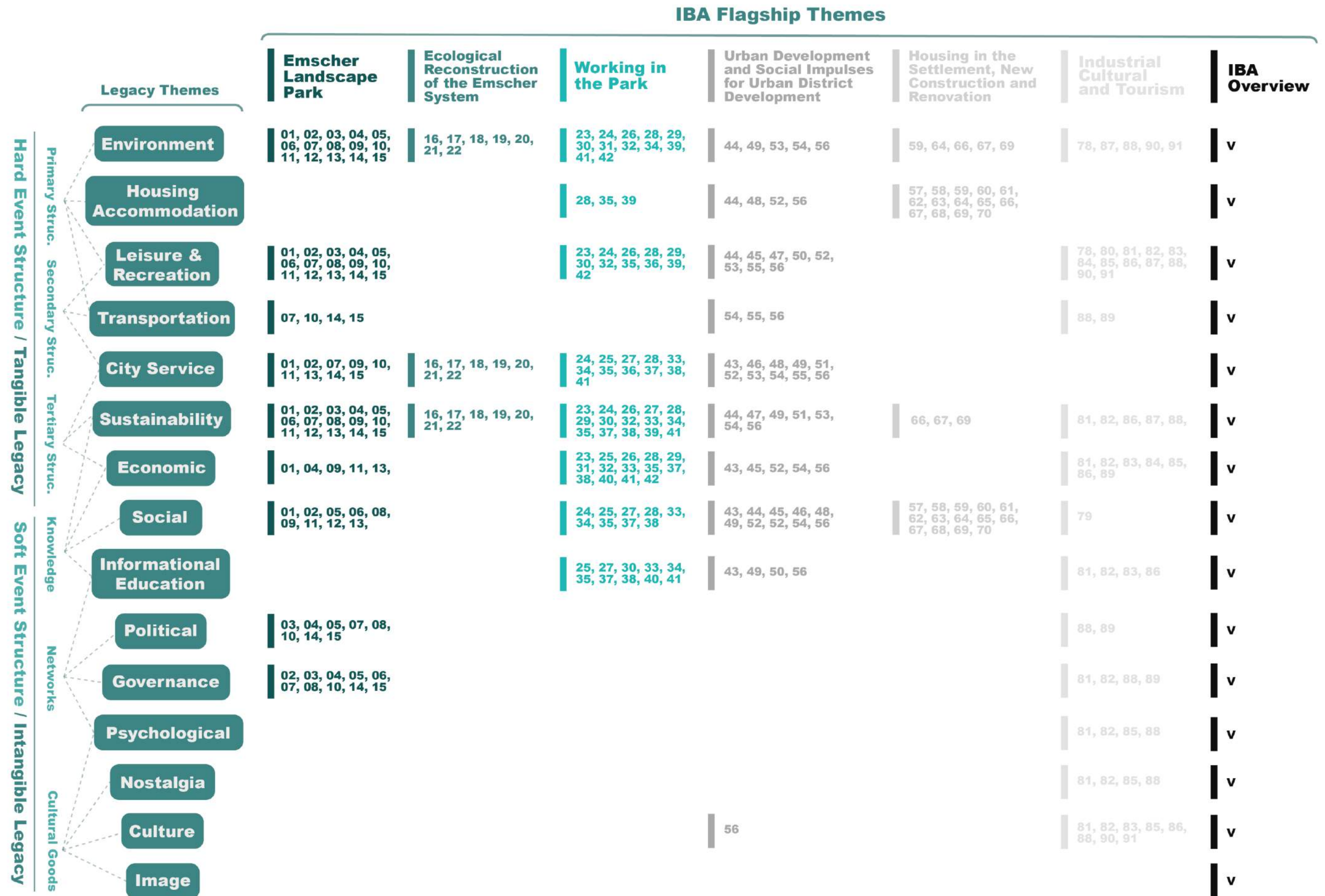Soft Event Structure / Intangible Legacy — Knowledge, Networks, Cultural Goods

Figure 8. Mapping the Legacy of IBA

*The numbers are referred to the project's numbers in Appendix A.

4.1.1 Tangible Legacy

Christoph: *"There was an unplanned industrial agglomeration without any consideration about ecological aspects… the Emscher landscape park was the main idea of that -- to contribute to a European city, taking care of ecological or… with green, landscape and also preventing this industrial heritage…"*

Michael: *"The idea of IBA was "let's work on the weak elements of the chain." This is a hard core industrial region, 150 years, heavy industries dominated by steel coal and energy companies, and so he (Karl Ganser) said: we do not have to care for traffic and we do not have to care about energy. But what is weak, weak is the landscape, weak is all these abundant infrastructure…"*

According to Christoph and Michael, the fundamental idea of IBA Emscher Park was to deal with unplanned industrial agglomeration and to improve those regional weaknesses in order to transform the Ruhr region into a sustainable European city. In IBA Emscher Park, there were six focused topics and all of them were designed to confront the regional challenges and bring out the potential regional competitiveness.

I.   Emscher Landscape Park (ELP)

Emscher Landscape Park is located in the center of the most industrialized area, and it's also the largest regional park in Europe with overall 445-million-euro investment on the 450 km^2 area (Bothmann, 2017). It's also brought a new understanding of the industrial brownfield into new landscape potentials. As Frank explained, as a leading institution dealing with open space development, RVR was one of the creators of the IBA Emscher park. RVR was established under the initial document from Mr. Robert Smith about "how to structure the booming settlement development of the region by means of open space development", since the settlement of the Ruhr region was developing unstructured and unplanned during the industrialized age. Therefore, a landscape park in the center of the most industrialized area had been seen as a vision and a starting point of the IBA landscape park.

The ELP not only provides a better living condition to local citizens who did not have a chance to appreciate green landscape during the previous hundreds of years, but also contributes to improving the region by taking care of the ecological, economic and social aspects of challenges. Mostly, the landscape is very much recognized and used by the local inhabitants, and they are all satisfied with the green infrastructure.

Peter: *"For me, the most important IBA from that time, today and to the future, would be the Emscher landscape park and its park system around the region… not only be a perspective for new infrastructure of this region, no more cars, no more streets and so on, it brings the qualities to the region here, the region needs in the future. Thinking of the inhabitants of this region, it's very positive to get back the things they couldn't have for the past 200 years."*

Christoph: *"The IBA Emscher Park, it is an important landscape. It's the most interesting landscape in an economic-violated agglomeration with millions of people... the ELP is an example of the integration of areas for leisure into the urban structure... that is the basic idea of ELP."*

Frank: *"We (RVR) know that people very much recognize the landscape change, it's clear because it's open to public, open to everyone, and they very much recognize this and say it's very good. It's one part of the new reception of the region."*

In addition, during the fieldwork, the author rode a bike around the region and the landscape parks. To the author surprise, all the cities or regions are connected perfectly by the green open space and also the bike path system. The interlinked greenbelts and open area not merely provide more leisure activities to the residents but also connect the neighbor cities with their green infrastructure and the mutual cultural heritage within the region. It's a unique opportunity to develop tourism industry since it compensates the inconvenience of local public transport and also it provides more accessible and safer ways to explore the region.

II.   Ecological Reconstruction of the Emscher River System

The River Emscher flows from east to west in the northern part of Ruhr area for 70 kilometers and was the open sewer for Emscher region. It was a stink, dirty and dangerous sewerage before the IBA started. To eliminate the water pollution, the whole Emscher System around 550 km of waterways has been invested 5.5 billion euros to revitalized ecologically, and the construction will be done by 2020. Nowadays, although the revitalization is still ongoing, at least the water system is not stinky anymore and it can be seen around the landscape parks where local residents are willing to approach.

Christoph: *"Most important was the IBA started the process of revitalization of the river Emscher, and its tributaries… a transformation of the north parts of the Ruhr area into an attractive urban landscape, urban cultural landscape."*

Jan: *"One of the projects, in my opinion, has the largest impact will be the River Emscher. Emscher is a river which is dealing with the waste water, and now they are building underground waste water system, so the river can be given back to nature… this is the one of the projects which the communities have to work together, because they all need to have wastewater system, and when it's finish, it can bring the Ruhr back to the natural landscape."*

Besides the ecological and social influence caused by the revitalization, Christoph also emphasized that it's important to have healthy water system while conducting the urban development. The city needs water as part of the city not only for the recreation but also for the urban resilience in terms of microclimate, storm water management and so on. Nowadays, the city of Dortmund is interpreting the original idea from IBA of having a healthy water system and implementing it by transforming a brownfield into an artificial lake called Phoenix inside the city, thanks to a mayor who was working with Christoph Zopel before and was inspired by the idea of sustainable water system. That is to say, the impact of renovating water system project is not just between the region of river Emscher but also all across the Ruhr region.

III.   Working in the Park

In the scope of IBA Emscher Park, about 550 hectares of former industrial sites are using for modern commerce, service and science parks with both public and private investment. According to Michael, the concept of working in the park was to reuse the abundant brownfield and industrial sites. While transforming the brownfield, 50% of the site should be used as public park, housing, culture and so on in order to provide integrated site for the purpose of meeting social needs. Nowadays, it's clear to observe that there are lots of former industrial structures or fields are now used as residential, commercial and leisure area, such as Zeche Holland is now both commercial and residential area in combine with some green open space and Zeche Helene is now used as a fitness center[6].

Michael: *"Working in the park was a concept, abundant brownfield, used as industry before, is reused for jobs... So, by converting an old used economic side, came to be a purely used production side and public site etc... this series of **integrated solutions** is our standard and we continue this and in a lot of situations."*

IV.   Urban Development and Social Impulses for Urban District Development

This project focuses on urban future development, landscape quality, training the long-term unemployed and supporting new technology. Some initiatives have developed in IBA Emscher Park to decrease unemployment rate by recruiting the young long-term unemployed to refurbish old mining halls, parks and bike paths. Also, the IBA develops new working fields by supporting SME and local citizen projects in various activities.

Michael: *"The greatest legacy in the physical legacy is a new understanding of urban development, and a new understanding of industrial heritage, a new understanding of urban landscape and industrial nature ... To understand our industrial heritage as our original roots, a platform for any kind of future development, without your own roots, you are not very good to start with."*

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[6] For more transforming projects in this topic, please look at the Appendix A.

Peter: *"... a process of shrinking can be positive… the old coal mine and steel factories are interesting architecture, where we can find new functions. It's very new at that time… For example, the landscape park in Duisburg, the idea from Peter Latz... the idea was we left it here what is now here, and that was new… to link the history with a new function, that was very important."*

According to Michael and Peter, IBA contributed to a new understanding of urban development. The main idea is to appreciate the regional history and to provide those cultural heritage a new definition. Although it's a brand-new approach for urban planning 2 decades ago, it brings out lots of positives influences in terms of enhancing regional identity, sense of belongings and educational meaning.

V.   Housing in the Settlement, New Construction and Renovation

The main idea of the housing theme is to solve current housing problem. There are 25 housing projects in the IBA Emscher Park and around 2,500 new and 3,000 refurbished housing units were established within the projects by recycling vacant sites, generating new urban planning ideas, and developing residential parks. New constructions are featured by higher ecological, social, urban development and design standards, thanks to the various national and international competitions and the involvement of architects and planners in all development stages. Around 75% of new construction is funded by public sectors in order to provide affordable housing for special needs such as single parents, the handicapped, senior citizens and children.

According to Christa who also participated in two of the housing competitions before, she mentioned there was a need of new structure of social housing. Finally, the condition of social housing has been improved due to public participation, which brought out the real problems or essential issues that those residents were facing at that time. Additionally, the process of public engagement also brought about some educational meanings:

Christa: *"So we have a lot of people who need a new flat, and we ask they if they want to enter the process of public participation. It was a really amazing project because we involved young people, children, elderly people… at the end, one of these persons studied planning*

and architecture and now is the head of the planning department in Gelsenkirchen, and she was not educated before… She was inspired by the process and now is an important person in the planning authority."

VI.   Industrial Culture and Tourism

Another focused project is to "preserve the industrial monuments" as it represents the history of the region. Those gigantic mines, blast furnaces and winding towers are filled with new definitions: art galleries, concert hall, housing, and workplaces and so on. According to Christa, preserving the former industrial structures and fields is a strategy not only for regional development but also for sustainability reasons.

Christa: *"Sustainability was a new topic at that time, now for us is common, but at that time it did not exist as a word, but it was a beginning of the sustainability thinking... there were a lot of building were kept and reused with new functions…"*

There are lots of industrial sites transformed at that period, and they all contribute to the increase of tourism. For example, as author's favorite site, the Oberhausen Gasometer successfully transferred the massive former gas holder into an innovative exhibition site. The preserved geometric industrial structure gives novel experience while looking at the art exhibition, and the high-rise hollow structure gives lots of possibilities for artists and exhibitors to create unique artwork or atmosphere in the spacious building. Most importantly, the top of the gasometer is an observatory where there is a panorama view to overlook the Oberhausen region. There are still a large number of interesting cases in IBA projects that transferred the industrial area successfully, such as Zollverein and Industrial culture trail. Another example is provided by Frank:

Frank: *"So during the industrial period, there were a lot of private railway companies working in the region. They transported steels, they transported coals to everywhere. Due to the structural change, many of these were abandoned, they were not needed anymore. RVR has bought part of, many of these tracks, and transform it into cycle paths, that's why we have a big map of cycle tracks on former rail tracks … It's a unique landscape experience in the region."*

4.1.2 Intangible Legacy

Besides the tangible legacies caused by the six flagship topics, there were numerous intangible legacies that IBA has brought about.

I. Economic

Although during the 90s, the Ruhr region was facing the tremendous structural change and there was a need of reconstructing the local economic condition. However, the fundamental concept of IBA was not aiming to solve the economic problem, as Christoph said:

Christoph: *"... the IBA Emscher Park was not a program of the economy, ... because there will be a structural change of the economy, we need **attractive cities**. That was the idea."*

Peter: *"So it's (the IBA) indirect, if you want. It's a step in between. And that's the problem, because everybody said: now, we need works, we don't need green. And the IBA said: Ok, but if you don't have green in the future, it's not interesting for the companies to bring their companies to the new place, because the green will be a central criterion to look for a new place for a new company."*

According to Christoph and Peter, IBA was an indirect strategy to deal with structural change. Since It's difficult to restructure economy in the short time, IBA aims to provide an attractive city for students, investors and local residents so that the economic situation might be better in the future. Jan also mentioned the economic situation is one of the main regional problems since the decline of industrialization:

Jan: *"But the problem is that industries which went down, people working in these industries were not always capable to work in other industries, because it's education things and it deals with skills… There are programs which bring these people to re-education and to get new skills... But we have to be honest, we can't bring everybody in these new jobs… Perhaps, the time will solve… it takes time."*

According to multiple interviewees, the region has already provided some remedies such as higher education and employment counseling, it still needs more time to eliminate the problems caused by structural change. Just like Frank uttered: "... *within the process of structural change, the IBA was only one part of it.*"

Additionally, IBA also provides several economic values or impacts within the region. One of the biggest impacts is that it brings a large number of tourists each year to the region:

Christoph: "*The Ruhr has been permanently increasing influx of tourists... It has now ranked the second after the cathedral of Cologne in NRW.***"**

Michael: *"So if you ask is there a legacy of IBA I would say yes, five million people are touring around the 400 kilometers, and 20 single sites are touring year by year on our own roads...*So that's a physical legacy.*"*

Besides the tourism value, the region also gets more opportunities to host mega-events such as ECC and IGA, so that the Ruhr area has left their name on the world map and shown people all around the world the precious culture and resources they have here. Also, thanks to the place-marketing, more and more companies and employees are willing to settle their companies or career here, and it contributes to more capital investments and physical investments. Thanks to the IBA as a starting point, the region can enhance their competitiveness and attractiveness and become a sustainable European city at the end.

II.   Social

Another main reason why IBA reached a high level of success is that they thought of public involvement as a key requirement while implementing projects. It's more likely to succeed by involving all actors in decision-making process to generate consensus and future vision altogether. Although the IBA was initially a top-down project, the massive involvement of communities and citizen empowerment also played a distinctive role in achieving the project. That's the main social impact that the IBA have caused. As Michael and Jan stated:

Michael: *"It was no miracle. It was just connecting, bringing together (all citizens and experts), special skills, special interests… and it happened here."*

Jan: *"I think it's very important to get involved in the people at the bottom. You have to ask for their interests, and you can't develop such region against the local population… you have to deal with their traditions, their traditions as coal mining for example, or as sewage water… You won't have any effects if you don't deal with their traditions."*

Because of the empowerment of local civil groups, they are encouraged to take the responsibility and cherish the ownership they obtain. By working with local authorities, different stakeholders and community groups, IBA ensured the local population had a chance to express their ideas and get update about all the regeneration progress.

Michael: *"… joining the IBA was learning something… it was a strategic idea we have to bring in possibilities for a better planning and living development etc. and we have to connect the people, the planning, the responsible people, the mayors with these new ideas. So, the learning was not an extra. The learning was intended."*

Therefore, speaking of the social legacy, the IBA contributes to not only a large amount of civil engagement and empowerment, but also the social learning process between different sectors and citizens. Furthermore, with the chance of involving in public projects, IBA enhances certain levels of social inclusion as those local citizens with all backgrounds can participate in decision-making, no matter kids, the elderly, or single family.

III.   Informational / Education

Jan: *"So the whole region started to transform to other industries and they **learned** to deal with the structural transformation."*

One of the strategies they provided to deal with structural change is transforming the heavy industry to knowledge-based industry. As Christoph and Jan mentioned, the first university in the region was built in the 1960s and it's significant for the regional development. Since then,

it's become the fourth largest town with university students in Germany, and there are more and more knowledge-based and service-based industries in Ruhr area.

Jan: *"Much impulses came from the universities... Before that, there was no knowledge production in this whole area, because everybody worked for the coal mines... Bringing education to the people, we are able to build up new knowledge-based industries, much more high-technology industries, medicine technology for example is a great thing in Bochum."*

Christoph: *"... no universities to many universities. Secondly, then there was a process that people will work in the service sector and not in the production sector..."*

Although those higher education institutions might not be direct legacies of IBA, the project still provides several educational or informational meaning to the region. For example, by preserving those cultural heritages and providing touristic infrastructure, the local residents and tourists can understand more about the history of the region and their local cultures. In addition, through the process of participating IBA, some people have learned and even developed their personal skills or interests in planning field, such as the cases provided by Christa[7] and Christoph[8]. Hence, the educational legacies have been left not only through the reutilization of existing cultural heritage but also through the process of involvement.

IV.   Political

There are two main political legacies that is left after the IBA project. Firstly, the planning culture has been changed from looking into a comprehensive master-plan to project-based planning and implementation. Due to the change of planning culture, the IBA conducted a complicated network of political authorities, economic stakeholders, regional associations and local communities. Thanks to the reconstruction of those regional institutions and local stakeholders, the IBA led a way to solve the fragmented polynuclear political structure which is lack of common regional visions and hardly to collaborate together in Ruhr region (Knapp et al.,2004). There are more explanation of the change of planning culture in 4.2.1. Secondly, thanks to the achievement of regional cooperation during the IBA period, the ministry

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[7] It's mentioned in 4.1.1 - V. Housing in the Settlement, New Construction and Renovation.

[8] It's mentioned in 4.1.1 - II. Ecological Reconstruction of the Emscher River System.

decided to set up a new policy instrument called "Regionalen" in NRW in order to persist the good impact caused by the IBA. It will also be clarified in 4.2.2. Therefore, the political legacies are tremendous and influential thanks to the high level of success of IBA.

V.   Governance

Besides the legacies in the political field, the governance legacy can also be seen in the partnership between public and private sectors as well as the empowerment of local communities. Originally, planning is always a top-down process and it's usually implemented by local public authorities. However, during the IBA process, the public authorities invited local residents and even foreigners to think about the regional future by providing workshops and international competitions. The governance structure of regional planning has been changed because of the shift of planning duty from public sectors to private stakeholders and local communities, and even within different cities, as Christoph mentioned below. What's more, it has strengthened the public-private partnership around the region.

Christoph: *"So one important thing for the IBA Emscher park was to find a way of cooperation, to these 120 projects ... I think it was necessary because of this historical-based development, it was needed that the cities cooperated and that was the precondition."*

VI.   Psychological

Speaking of psychological legacy of IBA Emscher Park, it mainly contributes to the transformation of regional identity, enthusiasm and emotions of local residents toward cultural resources and regional history. As Michael mentioned, the regional identity has been changed enormously from "looking down upon the industrial history" to "being proud of it".

Michael: *"So, people are proud of Industrial heritage (now). Thirty years ago, industrial heritage was not invented as a phrase ... they were bombing and throwing away all these old buildings ... So, the identity in the region has been supported enormously by the IBA."*

Meanwhile, Christoph also viewed the industrial heritage as key driving force to emphasize its characters as well as bring out the regional pride and confidence.

Christoph: *"There is no region in Europe with such a large amount of industrial heritage… I would say it's contributing to the identities, the Ruhr area will become a large European city based on industrial heritage…"*

VII.   Nostalgia

Similar as psychological legacy, nostalgia legacy is more refer to regional common memories and takes the personal experience and memories into consideration. Just like coal miners for example, they share the common memories working together and now they have seen the tremendous change within the past few decades. As Peter explained, he made several tours for old coal miners to IBA sites, where they used to work, and it was interesting to see the attitude of coal miners and the understanding of former industrial sites were changing gradually.

Peter: *"(I) tell them how important it is that the rabbits bring in a new kind of green on their coal places there; an artist created a stone sculpture on a place where in former time, the coal were separated from other things. They said to me: 'dear, that's stupid, that's our place we had, as an industrial place.' … it was interesting to see how people came back to see the places they were working and to understand as a new place."*

VIII.   Culture

Klaus: *"... dealing with cultural heritage of the region… using it for a new start of the future, with the brownfield and steel mine etc."*

Without a doubt, the cultural legacies of IBA is enormous because preserving cultural heritage was one of the fundamental concepts of IBA. Nowadays, the industrial history and its cultural heritage has been given brand-new definitions, and new cultural identity has been installed inside every resident's mind. The locals are proud of their culture and history.

Peter: *"Only UNESCO for example, today the city is UNESCO cultural heritage, but 30 years ago, people never think about it, no."*

Frank: *"The application for the European Capital of Culture was very direct legacy of the IBA, because it has so much starting constructions of the whole area."*

The preservation of cultural heritage contributes to not only enhance the local cultural identities but also influence other aspects such as regional pride and sense of belonging.

IX.   Image

Although the regional character has been changed from heavy industry to sustainable European city, the change of regional image is still limited. As Michael explained, the image of the region is viewed from the outside, only through the real visit and experience can those outsiders change their prejudice or stereotype of the region.

Michael: *"So, the image stays much longer than the reality. The reality changes much quicker... the cannon balls from the first world war, the tanks from the second world war, were made in the Ruhr. So, they know us historically as weapon smith in the past… it's dirty, it's dusty, it's busy, it's work… It lasts longer to change the image than to get a new identity by yourself."*

However, on the other hand, the Ruhr region has tried to hold several events such as the ECC and IGA to raise the national and international awareness of the region and also do place-branding with their abundant cultural heritages and natural resources. By improving its reputation, more tourists and investments are more likely to come and change their impressions toward the region.

4.2 Thematic Analysis of Additional Impacts

4.2.1 Changing Planning Culture

Christoph: *"perspective incrementalism, that is a main idea of Karl Ganser… He had a general concept and then now we need 120 projects to implement it, and not a master plan."*

Christa: "*Now there is a completely new process of planning with projects and not with plan. So, the shift from plan to projects, it is really important.*"

Peter: "*For example, the IBA worked for every building they built, they made competitions. That was not normal at that time for this region. So, to think about over competitions to come to result, it's a new form of process.*"

Michael: "*Planning quality has been changed, planning quality has been risen, planning quality has been understood not as an expert thing but as a standard that we should follow.*"

Karl Ganser initiated the new planning strategy called "Perspective Incrementalism", Christa explained that it's an acupuncture intervention with project and not with master plan. Also, the IBA Emscher Park project was the first one dealing with the new planning philosophy, and now it nearly changed the whole planning framework in Germany, even all across the world. The above mentioned can be confirmed by an architect working in IBA Parkstad[9]. He said IBA is a new way of working. In the past, it's always having master plan first in a more top-down approach. However, IBA promotes project-based approach to plan and to develop. Nevertheless, he also mentioned this new approach is harder to implement as each municipality and authority which worked individually before has to integrate and collaborate with different sectors. Therefore, to implement the new strategy which focuses on a project rather than a master plan, professor Christa mentioned that it's necessary to reform the municipalities and the constellation of responsibilities. Therefore, the reform of authorities is also a significant legacy left by the IBA Emscher Park, so different departments or

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[9] IBA Parkstad (2013-2020) is located in the eastern mining region (Oostelijke Mijnstreek) in the Netherlands, and it consists eight local municipalities (Brunssum, Heerlen, Kerkrade, Landgraaf, Onderbanken, Simpelveld, Schinveld and Voerendaal) for the purpose of solving social problems such as unemployment, aging society and the youngers moving away. (Source: IBA Parkstad. (2018). Archief Projecten - IBA Parkstad. [online] Available at: https://www.iba-parkstad.nl/projecten/ [Accessed 29 May 2018].)

stakeholders can have a better channel of cooperation. Because the new interdisciplinary planning approach followed by public participation and stakeholders' involvement, the traditional top-down planning strategy was changing into a new phase. Michael also stated that the new planning culture involves the influence of market conditions, competition and so on in order to generate better ideas to utilize public funding, so the IBA projects can maintain certain quality and conform IBA qualification.

To cooperate with different sectors and stakeholders, the IBA Emscher Park Planning Company Ltd. (IBA GmbH)[10] was founded to act as initiator and mediator in the whole project, and it had become the major reason for the great success of the project with the new strategy of negotiation, cooperation and consensus building (Shaw, 2002; Knapp, *et al.*, 2004; Danielzyk and Wood, 2004; Wale, 2006).

4.2.2 Regionalen - A Regional Cooperation Structural Policy

There are plenty of projects in IBA Emscher Park dealing with problems in a bigger regional scale, such as the revitalization of river Emscher and ELP. Therefore, the local municipalities have to collaborate with neighbor municipalities. Both Klaus and Jan from the ministry consider the massive scale of regional cooperation as a main positive effect caused by IBA Emscher park. The ministry of NRW even created a new instrument of structural policy "Regionalen (Region)" to persist the legacy of regional cooperation.

According to the ministry's website, the Regionalen is the inheritance of IBA Emscher Park, and the participating cities, communities and districts have to develop strategies and projects in pursuit of offering a more diverse, appealing and sustainable region. Each Regionalen will be implemented for several years, and the outcomes will be presented to the public afterward. The Figure 9. illustrates several Regionalen projects that have done or is going to be implemented around the NRW from 2000 to 2025.

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[10] There are two departments in the company: The Steering Committee which admitted projects, organized meetings and competitions, and supported the approved projects with local authorities; The Board of Trustees which co-ordinated projects with both public and private partnerships and shared academic experience and scientific expertise based on 18 members from specialist disciplines as academic knowledge and evidence-based policy advice are prominent in this project (Wale, 2006; Leary and McCarthy, 2014). Instead of involving in all implementing projects, the IBA Emscher Park GmbH functioned more like a consulting agency that guided each actor to achieve shared objectives (Miccoli, et al., 2014).
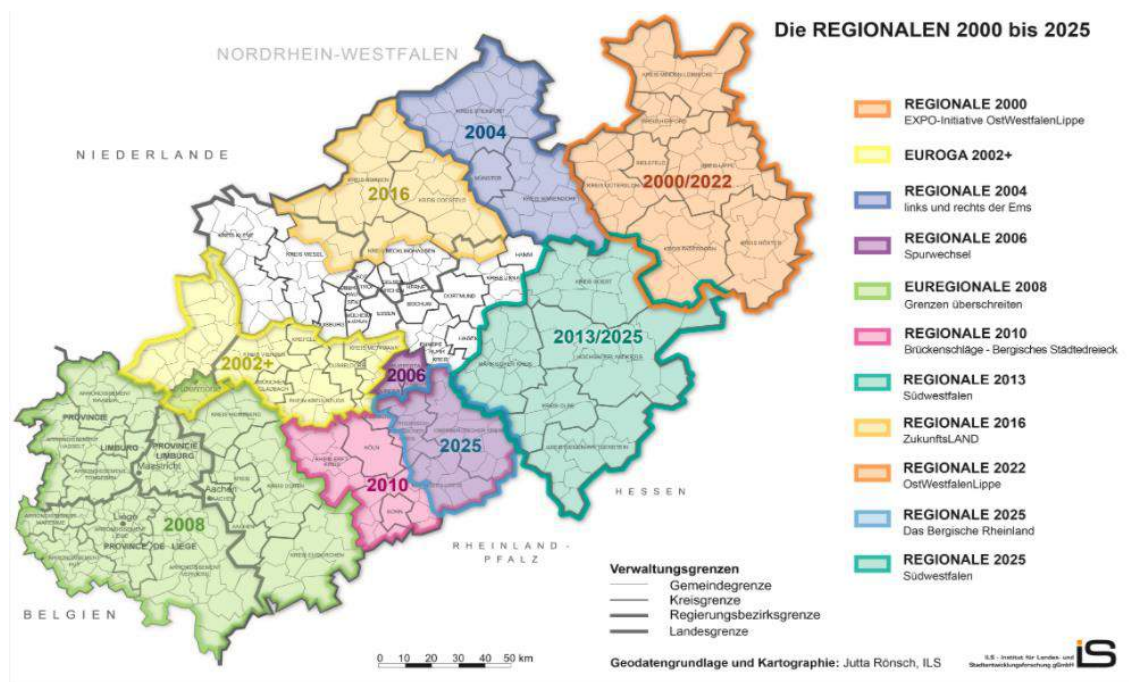
Figure 9. The Regionalen Map from 2000 to 2025
Sources: Mhkbg.nrw. (2018). MHKBG NRW - Regionale Zusammenarbeit. [online] Available at:
https://www.mhkbg.nrw/stadtentwicklung/regionale_zusammenarbeit/index.php [Accessed 28 May 2018].

Klaus: "*What's based on the IBA was the "REGIONALEN", … that's a structural program for regions in NRW, it starts because of the IBA Emscher Park, and it's using the experience of IBA Emscher Park… it's dealing with structural problems and regional corporations in different ways, for example nature, infrastructure, transport, community etc.*"

Jan: "*Perhaps you can say that the IBA Emscher Park was pilot, a huge impact on the region and now the experiences made in the IBA area were brought to other areas in NRW… I think working together in regional scale is the most important impact.*"

As Klaus mentioned, the IBA Emscher Park contributes to very positive experiences of regional cooperation, and these experiences are very important for the policy of urban development in NRW. Also, the IBA set up new strategy to deal with urban problems, such as the cooperation between the administration of municipalities, considering the inputs from different enterprises and different institutions, and fixing up bottom-up processes and so on, and these strategies and experiences are further transformed into the new policy instrument "Regionalen." Besides, Jan explained the "Regionalen" as a ministry-based policy, and it's a funding program combining with the policy in order to help regional agencies to work together with several communities, like what IBA Emscher Park did before.

Apparently, through the knowledge gained from the previous experience, the local neighbor authorities were satisfied with the outcome of regional cooperation, and even the ministry of NRW would expand the promising regional strategy to other nearby regions.

4.2.3 Further Regional Development

After the implementation of IBA Emscher Park, the Ruhr region have held several significant regional events, such as the ECC and IGA. According to some interviewees, the IBA Emscher Park is a crucial starting point for the region to have such opportunities to present and to transform their images. The figure 10. which is made by Christa is showing the chain of the transformation process in Ruhr area and the interrelation in between different events.
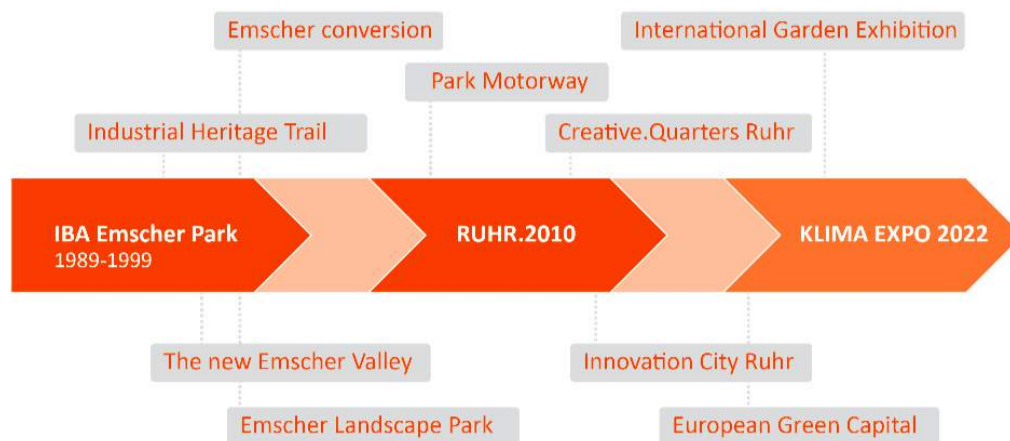
Figure 10. Chain of Effects in Ruhr Area
Source: Reicher C. (2018). Urban Transformation of the Ruhr and the Influence on Urbanity. Deindustrialization: The Structural Transformation of Nord-Ovest and the Ruhr in Comparative Perspective. Conference German Historical Institute, Rome. P.67.

Christa: "*All these formats we have now, Ruhr 2010, KLIMA expo, international garden exhibition… all these did not exist if we didn't have the IBA. So, you can see it's really a lot of influence and impacts.*"

Peter: "*It (ECC) would never happen when there was no IBA before. No… nobody in the city of Essen thought about UNESCO heritage in Zollverein in the 90s, nobody. But then, they had it, and they took it to the next step.*"

Frank: "*The application for the ECC was very direct legacy of IBA, because the building exhibition has so much starting constructions of the whole area.*"

As Peter explained: "*The legacy of IBA for me was to build a new definition of this region… it's a new positive definition of the same thing that we had before.*" The Ruhr region was well-known for its heavy industrial history. Through the process of IBA, the Zollverein coal mining factory had been transformed into a UNESCO cultural heritage, slag heaps have been changed into regional landscape park, and old gasometer had been preserved as a novel occasion for exhibition etc. What's more, these new meanings and definitions give rise to plenty of opportunities for the Ruhr region to broaden the dimensions of urban transformation and also reach a new level of sustainable development. Just like Peter mentioned: "*Without the ELP, they wouldn't have enough place to be a part of competition for an IGA. So, in that way, many of the projects are still working, many of the projects are central part of the image of the region, and many of the projects also make this region attractive, also after 20 years from IBA.*"

Besides the physical transformation, the change of local attitudes toward industrial heritage has also been a great leap since IBA started. As Peter recalled, while he was in the working team to apply for UNESCO for Zollverein, the majority of citizens were thinking about breaking it down. Nowadays, people all around the region are so proud of the landmark, and this supportive strength is also the crucial element for Ruhr region to do further development. Thanks to landscape improvement and support from the locals, the region can keep holding significant events and sustain the development of regional competitiveness.

4.2.4 Exemplary Case Study

The IBA Emscher Park has become a recognized case study dealing with structural change and bringing out the new identity for a region. Both Christoph and Klaus agreed that there are more and more experts, researchers and tourists from around Germany and even abroad coming to the Emscher region to obtain some knowledge from the successful case study. Klaus also mentioned, the integrated policy approach from the IBA project to solve diverse individual urban problems, from housing, economy, to tourism and infrastructure etc., is also worthy to learn after.

Klaus: "*The most visitors from other countries coming to NRW, want to know something about IBA Emscher Park. It's one of the most important thing in the last 30-40 years.*"

Besides the political strategies and policies, IBA Emscher Park is also viewed as a classic case study for further IBA project development. The research made an informal interview with an architect who is working on the IBA Parkstad now. He mentioned IBA projects such as IBA Emscher Park and IBA Hamburg are both good case studies for IBA Parkstad, and those experts and architects working in IBA Parkstad have actually done some fieldwork in both area to see how each region implemented IBA differently. The architect also uttered, without these classic IBA case studies, there is no IBA Parkstad. Furthermore, same as IBA Emscher Park, the IBA Parkstad is also dealing with former mining region, they both have industrial culture in the past. Therefore, as more IBA projects will be implemented all around the world, the IBA Emscher Park undoubtedly plays an important role in providing some precious experiences and knowledge for future IBAs.

Furthermore, ELP is also a classic case study for the EU Strategy on Green Infrastructure. According to the EC Green Infrastructure website[11], developing green infrastructure is the key approach in pursuit of the EU 2020 Biodiversity Strategy. EC have adopted EU-wide strategies to preserve and enhance healthy green infrastructure in order to conserve healthy ecosystems, connect natural areas and sustain natural habitats for all species.

Michael: "... *the whole economy should incorporate the nature-based solutions, the ecosystem services, the potential and power that nature includes for production, for society, for life, for health etc. So, it's a strategic approach and green infrastructure fits wonderfully to the things that we have done the last 30 years.*"

As Michael stated, the green infrastructure strategies have been professionally managed and systematically organized in Ruhr area, such as low emission mobility specialized on bicycle networks, climate protection, a renewal river system and supporting energy sufficiency and so on. Michael said: *"We have ideas how green infrastructure can follow grey infrastructure."* All the flagship projects are introduced and studied by other European cities. However, Michael also expected to have better qualities on their basic green infrastructure in the future. Taking bike path as an example, although the bike paths are quite well-developed all around the landscape park, the quality of service can still be improved, such as clearer signs, more repair and loan stores and more connection with public transport system and so on.

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[11] For more information about green infrastructure:
http://ec.europa.eu/environment/nature/ecosystems/strategy/index_en.htm

4.3 Key Stakeholders Interview Analysis of the Maintenance Mechanism

In 2001, there was a congress with all actors in Ruhr area and experts all around the world discussing the legacy of ELP and further maintenance. Those participants all made individual presentations based on their viewpoints, and they all came into the same conclusion:

Michael: "*The park is not ready in ten years, no... it should be a long-term thing… The IBA is gone but everybody wants to make the project continue.*"

Therefore, the State of NRW has decided that it's necessary to set up some follow-up measures to maintain further development of ELP. As Michael explained, the strategic park concept is combining modern housing, novel industries and economic development with high-developed landscapes, and that's a standard task based on laws and should be followed by the whole region.

Frank: "*RVR was dedicated to take over all the legacies. This was mentioned in the law, the tasks and duties … the contract was made between the state NRW and our organization RVR.*"

Regionalverband Ruhr (RVR), as a regional planning authorities which is responsible for the open space development in Ruhr area, it has been taking care of some remaining projects, such as the ELP and the industrial trail. As Frank said: "*IBA legacies were organized... in our organization, which is called "Conceptual planning for ELP". This is the direct legacy of IBA Emscher Park.*" Frank also mentioned, their main tasks are working on funding stream, maintenance works of the park and developing new landscape projects. Frank explained, RVR, as the intermediate level, not only has a partnership with the State of NRW in order to plan the practical projects at state level, but also involves different municipalities for further implementation at regional level. Recently, RVR established a new organization dealing with regional business development called "Business Metropole Ruhr GmbH (BMR)". In that sense, the conceptual planning for ELP aims to enhance the regional competitiveness and look for future development but at the same time maintain high quality of landscape. Besides, there is a 10 years contract between RVR and the State of NRW to provide structural funds and ensure the high-quality maintenance because high-quality maintenance of landscape and heritage buildings is generally quite expensive. As Frank stated, the contract has been prolonged last year, and it covers 50% of the maintenance cost and the other 50% is

responsible by the respective owners of the site. In addition, RVR also established a cultural program within the park called "Under Open Sky" in 2010 in order to invite citizens to come and co-create the future vision of the landscape and regional green belt development, and those are the main concepts that RVR is working on nowadays. However, there is an anonymous interviewee that is afraid the RVR is too conservative for the moment and hopes it will be more flexible in the future[12].

In terms of the general IBA Emscher Park legacies, both Christa and Peter agreed that there is no strategy or institution to continue the whole IBA knowledge and experience:

Christa: *"It's important to have a certain strategy of continuation afterwards, but there are no institutions... offices or something to experience these knowledges… a lot of this knowledge gets lost, or it's transferred to other new planning strategies…"*

Peter: *"There was not really a following institution after the IBA, so that's lost. But I think that's normal in every IBA that there is no following mechanism… The region had no time to think about what happen after 10 years … to take it for the next process… loss a little bit."*

Peter mentioned that many of the projects were still in progress when IBA finished; however, there was no linking system to think about the whole process and no agency to take care of the legacies and create the next step of the progress. Most of the agencies or authorities only knew partial ideas about each IBA project and no one can think the region in a comprehensive picture. Due to lack of specific strategy or organization to deal with IBA follow-up legacies, Christa was hoping: "*It would be interesting to have some money to start an institution to transfer the knowledge to different institutions.*"

Christoph: *"I think there is not a new institution, but a new understanding of knowing things… you can say it's new, or you can say it's more efficient and more intelligent way to organize a task and projects."*

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[12] The anonymous interviewee argued: "*RVR is a good player, but they store more than they create something. They look for the security of realized things, but they don't look about new ideas which bring the new things … the Essen institution is not fast enough, you don't have the speed you need today to think about things.*"

In general, the maintenance mechanism of IBA legacies is preserved individually and separately according to each project's property, just like RVR is focusing on the ELP and the industrial heritage route. Therefore, as Christoph stated, perhaps the essence of IBA maintenance mechanism is the new understanding of knowing things in different institutions, and they all take the responsibility to carry out their own duties efficiently and intelligently.

4.4 Reflection on the Legacy Topic: Having Legacies or Not?

While conducting the legacy topic, there is one question that pops up frequently: "do we need to preserve all legacies of IBA Emscher Park?" IBA is a temporary project, but what kind of legacies we want to preserve for goods and how we are going to maintain the IBA afterward, these are questions that all IBAs are/were facing.

To some extent, there is no legacy of IBA or it's preferable that there is no legacy of IBA. As Michael explained: "*So the IBA was constructed under several conditions. The first was: we will disappear… The second thing was IBA has no formal power…*" Therefore, in his viewpoints, some legacies were gone as soon as IBA finished and the allocation of decision-making still stayed the same as usual. The fundamental idea of IBA demonstrates the importance of utilizing unique local opportunities, assets and territorial capitals so that local actors can develop more context-sensitive and innovative local resolutions. So, he said: "*Sometimes it's good that there is no legacy left.*" Meanwhile, Peter also shared the same comment: "*So something is good when there is no legacy.*" In this way, the region can reduce the risk to keep following the out-of-fashion methods and also create their new strategies to meet the current societal challenges.

Peter: "*There are some legacies we don't use this time, because situation changed… So, it needs another thing to think another form.*"

Peter also took the regional cooperation as an example. He mentioned that the connecting process between the state, cities, regional institutions and all local actors should be in different formats. There was no company involving in any IBA project, even the big coal

mine companies were not a partner of the IBA. However, the collaborative alliance cannot work without those major local stakeholders nowadays[13].

In a nutshell, the IBA Emscher Park is a context-specific policy intervention strategy and it's only suitable for the Emscher region at that particular time. Therefore, the transferability of the "IBA legacy" is questionable and limited to other regeneration projects (Shaw, 2002; Leary and McCarthy, 2014). Also, Michael used opera as a metaphor to explain:

Michael: "...*this opera was under very special conditions, and when these special conditions are no more there, then you cannot make a good opera show, and you shouldn't do so... So, very important thing is that you cannot copy IBA"*

4.5 IBA dilemma: The Rules of Laboratory

One of the main characters of IBA is the experimental attitude and the courage to face unforeseen outcomes. According to IBA Memorandum, one of the IBA principles is that:

"*IBAs require the courage to take risks. They are experiments with open outcomes and generate new ideas sometimes also through the means of provocation, which can seem contradictory. Contentious issues and productive controversies are important aspects of planning culture. All stakeholders – especially administration and politics as well as the public – must be made aware of this from the outset to enable initiatives to step outside the realms of standard practice and to generate widespread interest in the projects.[14]*"

As one of the members who worked in IBA Emscher Park project before, Peter also mentioned the key character:

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[13] In the interview, Peter is looking for a new way of regional connection, and he also indicated a possible solution: "I think it's three days ago, our governor said they want to bring a new Ruhr Congress to think about the new step of the Ruhr region. We had one in the 70s, in 80s and the IBA in the 90s, and now this. Maybe that would be a chance to think about in the new way... When you think about the 53 local authorities, you have to think about it's better to come together in many things, than to separate their own things in every single cities. So, as an example, when you plan a green park here, it's better to think altogether about it, not at this part, this part and this part ... So that would be a chance in the Ruhr Congress, the new one. They can bring a new quality of thinking in the region in a new way. I think that's the only chance for the region to think as a region."

[14] For more information about IBA Memorandum: Open-iba.de. (2018). IBA Memorandum. [online] Available at: https://www.open-iba.de/en/memorandum/ [Accessed 31 May 2018].

Peter: "*It was a laboratory with experiments, and the character of experiment is, they can bring the good results, or bad results... to say: ok we do this three (projects) and we look what it can happen.*"

However, this innovative and experimental strategy is now facing a challenge. Owing to more and more regulations and rules, the working process of IBA projects now has changed into more complicated and difficult situation. As one of the members of IBA advisory board in the federal ministry in Berlin, Christa stated:

Christa: "*… now we have our memorandum, (talking about) what's important for IBA, what are the main aspects, how it is organized, what is important to be successful…* all (IBAs) are forced to make an intermediary presentation and end presentation… they set the strategy to organize these events…"

It seems like a thorough and well-organized working process to supervise all IBA progress and provide useful advices and ideas. Besides, it's nearly fit in with some literatures about legacy management which says the necessity to do the evaluation before the event taking place in case of any unnecessary development. However, in contrast, with more strict regulations and predictable project outcomes, the new IBA working format is against the original experimental character of IBA to some extent. Just like Peter explained, with those rules, IBA projects fail to traditional planning instruments and it's not unique anymore since every region can do so.

Peter: "*The IBA Emscher Park has no qualities and no standards, but it happened. So, if you want to have experiment, it's better to have no rules, because then it comes to experiment, so in that way, maybe it's not so good to bring the guideline, the standards, and all the things talking what you have to do…*"

Peter also used the application for funding as an example and explained how difficult it is nowadays to get the financial support for innovative experiment [15] . Although it's understandable that the public authorities would prefer to know the following utilization and

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[15] He said: *"The process of taking money changed a lot during the last few years. Today, before you get money, you need to know what kind of results will be in 10 years. They ask for it. They ask how many people will work there? They ask what kind of building…? … it's so difficult today that mainly giving money as a new instrument for new ideas will go down, because the idea is not adapted to the systems of taking money."*

outcome before providing the money, it leads to less creative experimental circumstances because it's really hard to measure the innovative transformation. What's more, as one of the organizers of IBA meet IBA, which is an IBA networking event for all IBA actors, Peter shared his findings from the meeting with other experts:

Peter: "*One result from all these actors or IBAs was, that everybody says "you need more experiment than to get protective and secure place where you can work." … it needs to have the opportunities to do things that nobody thinks about it.*"

Michael: "*I'm very convinced for that, you need freedom, you need the possibility to do things differently… freedom for developing new solutions, new methods…*"

Back to IBA Emscher Park, even though there was no well-organized evaluation and standard to follow, the project still created its miracle and has influenced the region for decades. This finding also draws questions that "do we need to provide regulations for IBA projects or other developing projects" and "do we need to do any evaluation for the legacy management before the project starts?" It's a dilemma situation, and more discussion is provided in Chapter 5.

4.6 Missing Legacies of IBA Emscher Park

Frank indicated that there are two significant elements that are missing now: leadership and strong vision. He mentioned that IBA was a top-down approach and combining with a very strong leadership and visions. However, after IBA finished, the strong leadership was fading out and there were no strong visions afterward.

Frank: "*Leadership is necessary when you want to make a transformation which is happening in this long-term period. You need strong vision, you need to express your strong ideas.*"

Karl Ganser, who was the director of IBA Emscher Park, was mentioned several times during fieldworks. He is a legendary figure during the whole transformation process.

Frank: *"It (The leadership) was the director of the organization, Karl Ganser, was the leader, he was very communicative, very strong person, top-down, organized, and he had the vision, and leadership, he was able to take the leadership. And this is something we are very much missing here, there is a lack of leadership."*

Michael: *"He (Karl Ganser) was at the same time a politician, developing scientists, and a big communicator. And during the IBA, these three skills, he could combine them in all meetings in all situation. So that was absolutely fascinating to listen to his analytic wordings…"*

Karl Ganser had been the director of Urban Affairs of the State of NRW for 10 years long. Therefore, he had clear picture and vision about what were the best strategies for Ruhr region, and he could identify those suitable projects to develop at that time. Michael took opera as an example again, and he said: *"One of our special lessons learnt is how much it depends on the profile of the conductor… So, Karl Ganser was a brilliant conductor. If you have the single skills alone, it doesn't sound together, it's missing… So, the conductor or the coach, the monitor is necessary to create such a big thing."* With the lead of Karl Ganser and his team, the IBA is inclined to bring out the potential in each city, site and actor. Just like Michael mentioned: *"The IBA was a central managed method to provoke decentral qualities to mobilize the indigene potentials of the Ruhr region and in these cities."*

Secondly, as mentioned before, the region is lacking of strong vision. As coal mining in Germany will be finalized at the end of this year, this final step of structural change is ongoing. However, there is no further measures to deal with the transformation in terms of economy, landscape, new possibilities and further spatial development, as Frank said:

Frank: *"But currently, there is no vision from our organization, or in the region, how can we deal with this. On the regional perspectives, each municipality is developing its own ideas for some areas, but there is no vision how the whole region shall develop."*

Currently, RVR is planning a regional mega event IGA in 2027. As Frank explained, it's a strategic approach in order to develop new funding opportunities for the investment of further public space development and spatial transformation, because the region is lacking funding

stream to transform the open space[16]. Besides, the IGA can also enhance the political consensus, stimulate cooperative process and contribute to international marketing of the region (Bothmann, 2017). For example, the city of Bochum will invent a new inner-city greenbelt, make the greenbelt connect to northern city area, and transform partly industrial area. However, due to the change of the State government, there is no follow-up decision of making the IGA. The region is still looking for a strong vision and more sustainable development.

4.7 Future Visions or Recommendations

Speaking of future visions and recommendations, different institutions presents various ideas and comments as a result of their own principal targets and mindsets.

Frank expects the park can be "more productive" and also provide a better place for tourists, besides the maintenance of green governance[17]. Frank uttered the park was not built for the tourists originally. With the growth of touristic population, the support of touristic development has become one of the main targets in RVR. There is in need of more touristic infrastructure, more parking place, travel information, leisure sites and so on. Another vision for the ELP is to "make the park productive" with local citizens, which is suggested by experts and local actors.

Frank: "*Focus more on the people, working together with the people and find some solutions that people can work, live, and use the park productively.*"

At the ministry level, Jan said that brownfield development is like a coin with double sides. There are both advantages and disadvantages for the Ruhr region to develop brownfield.

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[16] Frank mentioned that there was a programmatic financing instrument called "ecology program Emscher depot (Ökologie Progamm Emsche Lippe, ÖPEL)" provided by the State of NRW dedicated to the landscape transformation in the region. However, due to the political decision, the financial instrument is no longer existing and it's harder for RVR to conduct landscape transformation since landscape maintenance and development is quite expensive and it takes times to finish. The programmatic financing instrument is also one of the missing legacy, saying by Frank.

[17] According to Bothmann (2017), the concept and aim of green government in the future is: continuous and clear structured open space system; protection and development of regional open space; raise and support the quality of life in the region; integration of open space development plans from local levels and strategic spatial development concepts and spatial analysis based on GIS techniques

Jan: *"It's an opportunity. We have lots of brownfields… We want to develop brownfield instead of going to landscape... On the one hand, it's quite difficult to develop..."*

As the above mentioned before, the region is lacking of strong vision and there are still so many regional challenges need to deal with. Just like Peter indicated, even though there are plenty of universities in the region, there is little chance for the students to stay since there is no enough working place and attractive job offers. Therefore, he wishes the region can provide more possibilities and think about the future in more creative way.

Peter: *"So it's so important to think about the new picture of the region. You can't look for companies, you can't look for creativities, when you don't have the space where you can be creative."*

In terms of the vision toward the future IBA projects, he said: "*Extraordinary is a thing that don't go in a normal way. So, I need more extraordinary thinking. That can only be a vision.*" Same as the dilemma mentioned in chapter 4.5, how to strike a balance between the administrative regulations and experimental circumstances is the main challenge for IBA projects.

In general, as a main coordinator and also a former minister in urban planning, Christoph is satisfied with the general outcome of the project and said: "*You cannot expect more.*" However, he's still expecting the region to "*learn what is the European city*" by encouraging the local industry to integrate into service sector and allocate the local industry in more suitable way.

Christoph: *"I would say there are two main tasks, one, generally to be aware of what will be the structure of the city in which 80 percent of people are working in the service sector. And secondly you have to take care of also for the urban structure, for the general living conditions, especially also the education conditions for the children of the lower class, of these disadvantaged people, that are remaining problems."*

Emscher Landscape Park

5. Conclusions and Recommendations

5 Conclusion

5.1 Conclusive Discussion

- **Reflection on Research Questions**

It's undoubted that a diverse of legacies has been left in the region and even influenced across the world. Besides the six flagship project series are still keep implementing, the intangible legacies are also influencing local citizens tremendously, such as regional identity and governance structure. What's more, the research found out several significant social impacts and added values caused by IBA Emscher Park and those impacts are still having impacts in different scales, such as the change of planning culture into "perspective incrementalism" in Germany and the Netherlands and the "Regionalen" policy instrument in the NRW. Most importantly, the project is just a starting point to remedy the structural change and bring out the regional possibilities. The Ruhr region aims to transform itself into a sustainable European region with well-developed green infrastructure, well-organized service sector and more competitive capacities.

In terms of maintenance mechanism, although there is no follow-up direct organization to take over all the IBA projects and knowledge, the 120 projects are still implemented by site owner, municipalities, private stakeholders, and the regional intermediary institution RVR.

Interestingly, according to the research, some of the interviewees responded that it's better not to have any legacies because some strategies are only suitable at specific time and location. Therefore, without certain legacies, the region has new chances to think about the best solution for the local context. Besides, two of the things that has been missed the most after the IBA project is strong vision and leadership. The response also points out two main challenges of the region nowadays, and many interviewees wish the local authorities can think about more ambitious regional visions and provide stronger leadership in the region.

- **Abundant Legacies but Only in Specific Fields**

Initially, IBA Emscher Park set up six main themes which focused on the urgent problems that the region must solve at that time, so it's basically a selected process of transformation. Therefore, the legacies we can observe today mainly focus on the topics that IBA chose before, such as landscape, housing and water system. However, it's hardly to see any direct legacy or impact in the non-chosen fields, such as transportation and energy. Some of the interviewees mentioned that it's kind of pity that the IBA could not take care of all aspects thoroughly and they would like to see what will happen if those opt-out topics also join the innovation process. Nonetheless, it's understandable that it's difficult for IBA to take care of everything because it only has limited time, money, resources and power to implement all projects. Therefore, due to the outstanding outcome of the IBA, the research assumes that the result would not be much better and might even go worst if IBA separated its attention on other topics. It's a clever decision to choose the six main themes and put all efforts on those problems that are needed to be solved urgently.

Nowadays, for example, the Ruhr regions is doing their best to improve the condition of transport which IBA paid little attention on. Therefore, this kind of further development or compensation might also be seen as an indirect legacy or impact caused by IBA. However, due to the research scope and time limit, we don't consider those indirect impacts here.

- **Debates about the IBA Project**

According to several researchers[18], the most serious criticism that IBA Emscher Park has is whether it is an adequate response to regional structural change. The project targets environmental revitalization and cultural preservation at the first place; however, many critics say it's "circuses before bread (Shaw, 2002)." Local residents complained what they needed is to create job opportunities to sustain their livelihood instead of additional leisure or sustainable values. However, as one of the directors Christoph mentioned, the structural change is inevitable and it's predictable that unemployment rate will continue to increase in the Ruhr area. What we need to do now is to provide a more attractive and sustainable region

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[18] Danielzyk and Wood (1993), Shaw (2002) Greenstein, and Sungu-Eryilmaz (2004).

so that the economic, social and ecological conditions will be improved in the long run. In this sense, instead of investing time and money on something that would be in vain at the end, the IBA invested their resources to create a better blueprint for the future. Thanks to the project, the region has got a better environmental quality and regional identity, and those improvements are more likely to attract more students, employers, tourists and investments to come. Although the structural change problem cannot be solved by IBA and it's still difficult to make the local economy go back to the golden age, at least the condition is getting more livable and competitive. Also, according to Frank and Jan, the important elixir to the structural change problem is lying at the state level. Because the whole nation is flourishing and the national economy is in a good condition, it helps a lot to eliminate the disadvantages caused by structural change. In a nutshell, although the IBA is not a direct strategy to confront structural change at that moment, it leads to several positive impacts and opportunities in the long run.

- **How the Ruhr Region Implemented Different Types of Urban Regenerations**

From the literature review, there are four types of urban regenerations that the project was involving and they all have certain roles to deal with legacy (see figure 7.). There are abundant former industrial heritages in Ruhr region, and without a doubt, the region has taken good advantage of the heritages by reusing it as residential area, working place and touristic spot. In addition, by preserving the cultural heritage and mutual history, it helps a lot for local residents to enhance their sense of belonging and identity. Besides, the community-led regeneration is one main reason contributing to the high level of success of the project. By holding plenty of competitions and workshops, the IBA ensured local communities and private stakeholders can share their points of view and take the responsibility of each project. Additionally, within the IBA period, the information flow between different actors by printed booklets, media and meeting also played a crucial role to ensure the effectiveness of public engagement. Although the research fails to find any useful data to understand the mechanism of follow-up community-led maintenance in each IBA project, at least it's confirmed that the local communities are now satisfied with the results as users, local residents and tourists. Interestingly, the research finds out that the Ruhr region is fond of using mega-event as an instrument for urban planning. From IBA Emscher Park, ECC to International Garden Show, the Ruhr region has viewed the mega-event strategy as a useful instrument to renovate the

region and seek for more funding stream. According to previous literature review, the effect of mega-event is helpful for place-branding and consolidating the regional visions. Apparently, the Ruhr region has experienced those positive influences caused by mega-event and recognized it as an effective instrument for regional transformation.

- **Integrated Approach of Urban Planning**

The research finds out there is a trend of integrated approach in planning field in Ruhr region and even all across the world. In IBA Emscher Park, several projects such as working in the park encourage to utilize the space in more diverse and integrated approaches. Besides, the strategic productive park concept provided by RVR is also promoting to combine modern housing accommodation, innovative industries and economic development while preserving high-developed landscapes. The ELP is also a remarkable case that landscape parks not only connect neighbor cities physically but also strengthen regional networks virtually. In addition, the EU Green Infrastructure strategy also recommends to use nature-based solutions to benefit not only environment but also economic and social conditions. Undoubtedly, the integrated approach of urban planning brings out multiple benefits. It utilizes the space in more efficient way, and the advantages of integrated approaches can benefit a majority of population with diverse backgrounds and needs. Therefore, the integrated approach of urban planning is a matter of sustainable development and it's an interesting and beneficial topic that urban planners should all think about.

5.2 Research Limitations and Recommendations

- **The Challenges of Legacy Management**

Although there are several recommendations mentioning in 2.1.2 regarding legacy management, it's not always suitable for all kinds of cases, especially in IBAs. For example, it's understandable that hosting cities should provide a long-term strategy and vision in the beginning of the event and they can implement the project accordingly. However, in the IBA project, as some of the interviewees stated, it's more difficult to create an experimental

atmosphere with a bunch of rules and evaluations. The meaning of experiment is lost if we implement our projects with well-prepared strategies and rules. For example, the IBA Emscher Park project was only doing feasibility study but it didn't have the evaluation about what exactly will happen afterward. Therefore, it created a liberal experimental atmosphere that all actors can use their imagination and capability to make things better with the help of sufficient financial and administrative supports. That's a successful case study for innovation. Besides, speaking of legacy evaluation, it's questionable that how many percent of evaluation is accurate and what kind of legacy is predictable. It might sometimes just a waste of time and money to make the evaluation and even constrict the possibilities of further development. In addition, instead of setting up new organization and governance form like several researchers mentioned before, based on the research, sometimes it's better to obtain new ways of understanding and new approaches of dealing with things. Hence, the structure of administration and legitimacy can stay the same without further reorganization and adaptation.

The finding of legacy management is also the limitation of the research, because these legacies are left by a special temporary IBA project, which focuses more on experimental spirit and liberal atmosphere. It's like a comparison between Realism and Idealism. Unlike traditional planning strategy which is more realistic and practical, the IBA focuses more on the potential and possibility of the region and tries their best to enlarge the regional values at the short period of time. Therefore, from the beginning of the cause and expectation of legacy until the end of the outcome and management of legacy, everything is totally different than traditional planning project. Therefore, the finding of legacy management of the research is only suitable for the temporary innovative project, and it's too partial and limited to cover the whole picture of legacy management in different projects. That is to say, it's also another field of further study to look at different projects and what's the different maintenance mechanism of event's legacy in each project.

- **IBA Legacies or It's all Coincidence?**

IBA Emscher Park is a product born under the period of structural change. As the coal mining production will be closed by the end of this year, the structural change and regional transformation is still happening nowadays. A few skeptical researchers disagree that there

are major influences of IBA on the regional transformation. Through some discussions via emails with a researcher, the main argument is that the region would be adapted and transformed to a new phase no matter whether there is an IBA or not. Because the change of economic structure is inevitable and predictable, the local authorities and other actors would figure out suitable strategies and adaptation to fit into the current trend. In their opinions, IBA Emscher Park just happened coincidentally at the specific period in the Ruhr region. Therefore, it is doubtful that IBA should take the whole credit of all transformations and impulses. Besides those comments against the IBA legacies from other researchers, there are also several evidences from the research in support of the argument to some extent. For example, the earliest university built in the region is around 1960, so the awareness of industrial transformation has started few decades before the IBA. Besides, RVR started around 1920, so the concept of a regional green open space has been developed for a long time before the IBA. The previous Ruhr Congress was held in 60s, 70s and so on, so the local authorities have been aware of the necessity of regional cooperation since a few decades ago. Based on several evidences, it's intelligible that IBA might not be the only meritorious hero in transforming the region, but it's convinced that the IBA is one of the driving forces to stimulate the transforming process and facilitate the achievement of those regional ambitions.

Due to limited resource and time, the research cannot get enough information and argument to prove the hypothesis the above mentioned, and it's the research limitation that the findings of the research can only support the original research questions. There is no enough extensive statement or critical argument being provided to support or against the research theory. The omission leads to the biased and prejudice of the research outcomes. Therefore, in terms of the recommendations of future research, it's preferable that the researchers can scope the topic or research hypothesis in a broader scale, and think carefully about all the potential situations and possibilities. While doing the research, the researchers can also use snowballing sampling to investigate experts or other researchers who have been studying similar topic for a long period of time to ensure the research is covering the topic comprehensively and prudently in case there is nothing being neglected.

5.3 Critical Reflection on Work Process

Several limitations had been faced while conducting the research. First of all, the research fails to contact the key interviewee: Karl Ganser. The research had tried to send a letter and call the interviewee several times. However, due to limited time, the research didn't get any useful response for data collection. Secondly, since it's a project happening 20-30 years ago, a lot of main figures are already retired or passed away, and also some data resources doesn't exist or cannot recall anymore. Therefore, some of the valuable data has been missing from the research and it's impossible to make up. The research is also hard to collect data from private companies and local communities as they don't feel comfortable to provide a more comprehensive explanation of legacies and the process of legacy persistence. Besides, due to limited time and resources, the research cannot include a wider scope and picture of the findings, just like the section 5.2 mentions. Although the research is trying to provide a more thorough methodology and comprehensive data collection, there are still some limitations that the research cannot help but confronting.

5.4 Areas of Further Research

There are several potential topics bringing out from the research in terms of the region and IBAs. It's been said that the urban transformation in Ruhr area is still a long-term changing process of socio-economic restructuring and regeneration[19]. The IBA is just a starting point to lay the foundations for future development and investment to come. Therefore, to build a more attractive region and enhance the competitiveness, there are several current problems needed to be investigated. First of all, there is no comprehensive ambition or vision of the whole region. What the region needs to do now is to gather different sectors and actors

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[19] The IBA Emscher Park has implemented more than 426 projects: 123 were completed in 1999; 55 had been implemented in 2000-2005; and 248 is still working on with the new "Masterplan Emscher Landscape Park 2010" (Miccoli, *et al.*, 2014). ELP will be finished by 2020, and it has not only enlarged the landscape park from 300 km2 to 457 km2 but also connected the inner cities with the green belts it created (Gruehn, 2013; Miccoli, *et al.*, 2014). Besides the "Emscher Landscape Park" and "Changing the Emscher System" are still ongoing to ensure the ecological regeneration is complete by 2020 (Schwarze-Rodian, 2013), since 2007, the "Concept Ruhr" has approved as a new fundament for a comprehensive regional urban regeneration in the next decade (Seltmann, 2007). There are five themes includes 274 projects with 6 billion investment (Seltmann, 2007): "*Ruhrlines: the east-west development axes*", "*Ruhrcities: the quality of city centres and city districts*", "*Ruhrexcellence: the development of high quality industrial and estate locations*", "*Ruhrinvest: framework conditions for private investment in development areas*" and "*Ruhrevents: high quality events to enhance the regions profile.*" With those follow-up projects, the Emscher and the Ruhr region wish to maintain the reputation of the greenest development in whole Europe and look forward of the next golden age to come.

together again to think about the future of the region altogether. IBA was carrying out a strong vision and motivation, but nowadays, the region is less motivated and ambitious than before. The regional problems have never been solved and they are all facing other new challenges such as aging society and multicultural society. Therefore, there is a need of doing researches about what kind of visions or future development is necessarily needed by the region nowadays and what kind of strategies or methods can implement to achieve the goals. One of the strategies might focus on the governance structure, because the region lacks of powerful leadership to lead the region and there is no comprehensive and well-organized governance structure to deal with regional affairs. In this way, Ruhr region can find out better treatment for those regional problems, and the further development of the region can be more comprehensive and well-organized.

Speaking of IBAs, as previous argument mentioned, how to measure the proportion of experiment and reality is another crucial issue to discuss. It would be another interesting topic to address as more and more IBA projects are implemented and the concepts of IBA have been studied all across the world. As recommendations from the research, it would be interesting to see various viewpoints from the advisory board at federal level and the implementing actors at local level. The research just provides a glimpse of the IBA criticism, and there are still a lot of resources and information can be investigated in order to make the full picture of working mechanism of IBA. Most importantly, the future research will be very helpful to modify the current obstacles and provide better treatments for future IBAs. In this way, the future IBAs can not only keep the fundamental experimental spirit of IBA but also execute their projects in more flexible and well-prepared approaches. In conclusion, there are still a lot of good research topics can be addressed and there are only two main guidelines provided here, which are more urgent and significant in the near future.

Halde Rheinelbe - Sculpture Park in Gelsenkirchen

Reference / Appendix

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Appendices

Appendix A: List of IBA projects

German	English
Rubrik "Emscher Landschaftspark" 01. Bergkamen: Ökologiestation "Schulze Heil" 02. Bergkamen: Gesunde Landschaft, gesunde 03. Nahrung im Seseke Landschaftspark Bochum/Essen/Gelsenkirchen: Landschaftspark Mechtenberg 04. Bottrop/Oberhausen: Volksgolfplatz Jakobi 05. Castrop-Rauxel/Herne: Landschaft Bladenhorst 06. Duisburg: Landschaftspark Duisburg-Nord 07. Duisburg/Oberhausen: Grüner Pfad 08. Essen/Gelsenkirchen: Restflächen in der Industrielandschaft 09. Gelsenkirchen: Nordsternpark/BUGA 1997 10. Herten: Industrieallee Herten-Süd 11. Lünen: Seepark Lünen (Landesgartenschau 1996) 12. Oberhausen: Gehölzgarten Ripshorst 13. Oberhausen: Garten Osterfeld (Landesgartenschau 1999) 14. Ruhrgebiet:Emscher Park Radweg 15. Ruhrgebiet: Emscher Park Wanderweg	**Category "Emscher Landscape Park"** 01. Bergkamen: ecology station "Schulze Heil" 02. Bergkamen: Healthy landscape, healthy food in the Seseke Landscape Park 03. Bochum / Essen / Gelsenkirchen: landscape park Mechtenberg 04. Bottrop / Oberhausen: Volksgolfplatz Jakobi 05. Castrop-Rauxel / Herne: Landscape Bladenhorst 06. Duisburg: Landscape Park Duisburg-Nord 07. Duisburg / Oberhausen: Green Path 08. Essen / Gelsenkirchen: Remaining areas in the industrial landscape 09. Gelsenkirchen: Nordsternpark / BUGA 1997 10. Herten: Industrieallee Herten-South 11. Lünen: Seepark Lünen (Landesgartenschau 1996) 12. Oberhausen: Woods Ripshorst 13. Oberhausen: Garden Osterfeld (Landesgartenschau 1999) 14. Ruhr area: Emscher Park cycle path 15. Ruhr area: Emscher Park hiking trail
Rubrik "Ökologischer Umbau des Emscher-Systems" 16. Bottrop: Kläranlage Bottrop 17. Bochum/Herne: Dorneburger Mühlenbach 18. Bottrop/Essen/Gladbeck: Boye-System 19. Castrop-Rauxel: Deininghauser Bach 20. Castrop-Rauxel: Landwehrbach 21. Gelsenkirchen: Lanferbach 22. Recklinghausen: Hellbach	**Category "Ecological reconstruction of the Emscher system"** 16. Bottrop: sewage treatment plant Bottrop 17. Bochum / Herne: Dorneburger Mühlenbach 18. Bottrop / Essen / Gladbeck: Boye system 19. Castrop-Rauxel: Deininghauser Bach 20. Castrop-Rauxel: Landwehrbach 21. Gelsenkirchen: Lanferbach 22. Recklinghausen: Hellbach
Rubrik "Arbeiten im Park" 23. Bochum: Gewerbe- und Wohnpark Zeche	**Category "Working in the park"** 23. Bochum: Commercial and residential

Holland 24. Bochum: Stadtpark West 25. Bottrop: Gründerzentrum und Gewerbestandort Arenberg 26. Castrop-Rauxel: Dienstleistungs- und Gewerbepark Erin 27. Dortmund: Neue Evinger Mitte 28. Duisburg: Dienstleistungspark Innenhafen 29. Essen: Handwerkerpark Zollverein 3/7/10 30. Gelsenkirchen: Wissenschaftspark Rheinelbe 31. Gelsenkirchen: Nordsternpark 32. Gladbeck: Gewerbefläche Brauck 33. Gladbeck: Innovationszentrum Wiesenbusch 34. Hamm: Öko-Zentrum NRW 35. Herne: Stadtteilzentrum und Fortbildungsakademie Mont-Cenis Sodingen 36. Herne: Photovoltaik im Stadtteilzentrum Sodingen 37. Herne: Innovationszentrum Herne 38. Herten: Zukunftszentrum Herten 39. Kamen: Wohn- und Gewerbepark Monopol 40. Lünen: Technologiezentrum Lüntec 41. Oberhausen: Technologiezentrum Umweltschutz 42. Waltrop: Gewerbepark Zeche Waltrop	park Zeche Holland 24. Bochum: City Park West 25. Bottrop: Business incubator and business location Arenberg 26. Castrop-Rauxel: service and business park Erin 27. Dortmund: New Evinger middle 28. Duisburg: Service Park Inner Harbor 29. Essen: Handwerkerpark Zollverein 3/7/10 30. Gelsenkirchen: Science Park Rheinelbe 31. Gelsenkirchen: Nordsternpark 32. Gladbeck: commercial area Brauck 33. Gladbeck: Innovation Center Wiesenbusch 34. Hamm: Eco-Center NRW 35. Herne: district center and advanced training academy Mont-Cenis Sodingen 36. Herne: Photovoltaics in the district center Sodingen 37. Herne: Innovation Center Herne 38. Herten: Future Center 39. Kamen: residential and commercial park monopoly 40. Lünen: Technology Center Lüntec 41. Oberhausen: Technology Center Environmental Protection 42. Waltrop: Gewerbepark Waltrop colliery
Rubrik "Städtebauliche und soziale Impulse für die Stadtteilentwicklung" 43. Bergkamen: Stadtmitte 44. Bottrop: Gesundheitspark und -haus Quellenbusch 45. Duisburg: Hafenstadtteil Ruhrort 46. Duisburg: Stadtteil mit besonderem Erneuerungsbedarf - Duisburg-Marxloh 47. Essen: Sport- und Gesundheitszentrum Zeche Helene 48. Gelsenkirchen: Stadtteil mit besonderem Erneuerungsbedarf - 49. GE-Bismarck/Schalke-Nord Gelsenkirchen: Ökologische und multikulturelle Gesamtschule GE-Bismarck 50. Herne: Westfälisches Museum für	**Category "Urban development and social impulses for urban district development"** 43. Bergkamen: town center 44. Bottrop: Health Park and house Quellenbusch 45. Duisburg: port district Ruhrort 46. Duisburg: district with a special need for renovation - Duisburg-Marxloh 47. Essen: sports and health center coal mine Helene 48. Gelsenkirchen: Neighborhood with special need for renovation - GE-Bismarck / Schalke-Nord 49. Gelsenkirchen: Ecological and multicultural comprehensive school GE-

Archäologie 51. Oberhausen: FRIEDA - Qualifizierungs- und Beschäftigungs-Gesellschaft für Frauen 52. Recklinghausen: Stadtteil Recklinghausen-Süd 53. Recklinghausen: Stadtteilpark Recklinghausen II 54. Ruhrgebiet: Erneuerung der Bahnhofsbereiche der Köln-Mindener Eisenbahn 55. Ruhrgebiet: Fahrrad-Stationen im Emscherraum 56. Nimm die Initiative Projektserie	Bismarck 50. Herne: Westphalian Museum of Archeology 51. Oberhausen: FRIEDA - Qualification and Employment Society for Women 52. Recklinghausen: District Recklinghausen South 53. Recklinghausen: District Park Recklinghausen II 54. Ruhrgebiet: Renewal of the station areas of the Cologne-Minden railway 55. Ruhr area: bicycle stations in the Emscher area 56. take the initiative project series
Rubrik "Wohnen in der Siedlung - Neubau und Erneuerung" 57. Bergkamen: Frauen planen und bauen 58. Bochum: Wohnen auf Zeche Holland 59. Bottrop: Neuer Stadtteil Prosper III 60. Bottrop: Siedlung Welheim 61. Dortmund: CEAG-Siedlung 62. Dortmund: Siedlung Fürst Hardenberg 63. Gelsenkirchen: Wohnen auf dem Küppersbusch-Gelände 64. Gelsenkirchen: Siedlung Schüngelberg 65. Herne: Siedlung Teutoburgia mit Korte-Düppe-Siedlung 66. Herten: Wohnungsbau am Backumer Tal 67. Kamen: Gartenstadt Seseke-Aue 68. Recklinghausen: "Alternatives Wohnen" 69. Recklinghausen: Siedlung "Im Ziegelgrund" 70. Projektfamilie "Einfach und selber bauen" 71. Bergkamen: Hubert-Biernat-Straße 72. Duisburg: Taunusstraße 73. Gelsenkirchen: Laarstraße 74. Gladbeck: Siedlung "Rosenhügel" 75. Herten: Kinderfreundliche Siedlung Feldstraße 76. Lünen: Am Calversbach 77. Recklinghausen: An der Sandkuhle	**Category "Housing in the settlement - new construction and renovation"** 57. Bergkamen: women plan and build 58. Bochum: Living on colliery Holland 59. Bottrop: New district Prosper III 60. Bottrop: settlement Welheim 61. Dortmund: CEAG settlement 62. Dortmund: Settlement of Prince Hardenberg 63. Gelsenkirchen: living on the Küppersbusch site 64. Gelsenkirchen: Settlement Schüngelberg 65. Herne: Settlement Teutoburgia with Korte Düppe settlement 66. Herten: Housing construction on the Backumer valley 67. Kamen: Garden City Seseke-Aue 68.Recklinghausen: "Alternative living" 69. Recklinghausen: Settlement "Im Ziegelgrund" 70. Project Family "Simple and build yourself" 71. Bergkamen: Hubert-Biernat street 72. Duisburg: Taunusstrasse 73. Gelsenkirchen: Laarstraße 74. Gladbeck: settlement "Rosenhügel" 75. Herten: Child-friendly settlement Feldstraße 76. Lünen: At the Calversbach 77. Recklinghausen: At the Sandkuhle

Rubrik "Industriekultur und Tourismus"	Category "Industrial Culture and Tourism"
78. Bottrop: Haldenereignis Emscherblick	78. Bottrop: dump event Emscherblick
79. Dortmund: Wohlfahrtsgebäude am Nollendorfplatz	79. Dortmund: welfare building on Nollendorfplatz
80. Duisburg: Hallenbad Ruhrort - Museum der Deutschen Binnenschiffahrt	80. Duisburg: Indoor Ruhrort Ruhr - Museum of German Inland Navigation
81. Essen: Zeche Zollverein Schacht XII	81. Essen: Zeche Zollverein shaft XII
82. Essen: Kokerei Zollverein	82. Essen: coking plant Zollverein
83. Gelsenkirchen: Galerie für Architektur und Arbeit GAAG	83. Gelsenkirchen: Gallery for Architecture and Work GAAG
84. Herne: Hülsmann-Brauerei	84. Herne: Hülsmann brewery
85. Oberhausen: Gasometer Oberhausen	85. Oberhausen: Gasometer Oberhausen
86. Recklinghausen: VEW-Umspannungswerk	86. Recklinghausen: VEW transformer station
87. Waltrop: Schleusenpark Waltrop	87. Waltrop: lock park Waltrop
88. Ruhrgebiet: Route der Industriekultur	88. Ruhrgebiet: Route of Industrial Heritage
89. Ruhrgebiet: Emscher Park Eisenbahn	89. Ruhr area: Emscher Park railway
90. Schurenbach Slag Heap (Essen)	90. Schurenbach Slag Heap (Essen)
91. Schwerin Slag Heap (Castrop-Rauxel)	91. Schwerin Slag Heap (Castrop-Rauxel)

Source: ART - Cultural. Available at: http://www.iba-emscherpark.de/index.html [Accessed: 13 March 2018]. Reicher, C. (2008). International Building Exhibition Emscher Park: The projects 10 years later. Essen: Klartext-Verl.

Appendix B: IBA - Emscher Park chronology

Date	Event
Sep. 1987	Town Planning Minister Dr. Christoph Zöpel visited the International Building Exhibition in Berlin with a group of experts and IBA Emscher Park was inspired by IBA Berlin.
May 1988	Announcement of the International Building Exhibition Emscher Park by the Prime Minister before the national press conference
Nov. 1988	Cabinet decision on the program of the International Building Exhibition Emscher Park and announcement of the memorandum I
Dec. 1988	The International Building Exhibition Emscher Park GmbH, as a company of the country located in Gelsenkirchen, was founded to be in charge of the building exhibition
May 1989	Open project calls to local authorities, companies and initiatives in the region, with more than 400 project ideas submitted
1990 to 1994	Focus on planning the selected projects with more than 60 competitions or competitive procedures
1994/1995	Mid-term assessment presentation of the planning and the projects
1996	Complementary thematic accents for the work of the IBA Emscher Park in the 2nd period until 1999 - formulated in the Memorandum II
1996	The International Building Exhibition Emscher Park as a German contribution to the Architecture Biennale in Venice
1995 to 1999	Focus on the realization of the individual projects
1998/1999	Several commissions deal with organizational and thematic regulations for the time after the International Building Exhibition Emscher Park 1999
Summer 1999	Final presentation: Finale'99

Source: ART - Cultural. Available at: http://www.iba-emscherpark.de/index.html [Accessed: 13 March 2018].

The research separates the five research questions into seven main questions. The following information illustrates the correspondence in between. The research also provides the questionnaire in German in case the interviewee is more familiar with German language.

1. **What kind of legacy that's left due to IBA Emscher Park you've observed during the last 20-30 years? Can you give me some examples?**
→ Research Question 1 & 2: RQ 1 is a yes-no-question, and RQ 2 is to further support the answer of RQ 1. Therefore, if the interviewee can answer this question, then both RQ 1 and 2 can be addressed. This Question can also use the legacy themes (see Figure 6.) to category and to probe the interviewee if they don't pop up with other dimensions.

2. **What IBA project actually brings to the region? (in terms of social, economic, environmental aspect?) Or what direct or indirect impacts (to you or to the industry or to the region) that you've seen since then?**
→Research Question 3: This question talks more about the further impact the IBA Emscher Park have brought to the region directly and indirectly. Besides those tangible and intangible legacies, the RQ1 mentioned, this question takes a step further to see if there is any additional meaning or values of IBA in the region.

3. **Do you still see yourself working on the IBA Emscher Park-related project now? Or anything you are working now you consider it as part of the legacy of IBA project?**
→ Research Question 1,2,3 and 4. This question is assuming maybe what the interviewee is doing now is still corresponding to the legacy of IBA or he/ she is keep addressing IBA tasks after 20 years. Also, the question is related to the maintenance of the legacy of IBA because if the interviewee is still working on IBA-related project(s), then it's also a phenomenon of maintenance. If the interviewee answers yes, then the research can further ask about what is the job about and how you maintain the legacy of IBA.

4. **What kind of mechanism or strategy to preserve those legacies? Any important actors, instruments, policy or organization that you think it plays an important role in the maintenance?**
→ Research Question 4: Similar to the previous question. But instead of subjectively thinking of their own tasks, the question stimulates the interviewee to think more objectively. Thinking about other organizations, institutions, instruments etc. to provide a wider picture of the maintenance mechanism.

5. **Is there any legacy that should have been preserved but does not exist anymore? Why it's not existing anymore? (Anything you think that should be improved to preserve those elements?)**
→ Research Question 4 and 5: Firstly, this question can provide more information to RQ 4 because maybe there are some maintenance mechanism is not working properly. Therefore, the question can offer a more comprehensive understanding regarding the legacy maintenance. In addition, the question can look into if there is any threat, weakness, or opportunities to preserve those legacies, and the interviewer can further

probe the interviewee to explain and provide more detail if he/she has observed something worthy to mention.

6. **Do you have any recommendation or advice about the vision of legacy development or how we maintain the legacy?**
   → Research Question 5: The question can provide a future vision of the legacy development, and maybe further explain what kind of threat they are facing, what's the weakness the region has, and what kind of opportunity the region can seize to preserve the legacy as well as providing better guideline of future regional development. Based on the different backgrounds of each interviewee, the answer of the question could be various yet more thorough.

7. **When looking back at the IBA project, what do you think about it in general?**
   → The question just provides a general idea about the interviewee's viewpoints toward the project, and see if there is any interesting answer popping up to provide more information of the RQs or any aspects that the research hasn't thought about.

German Version of the Questionnaire:

1. Welche Art von Vermächtnis haben Sie in den letzten 20-30 Jahren durch den IBA Emscher Park hinterlassen? Kannst du mir ein paar Beispiele geben?

2. Welches IBA-Projekt bringt tatsächlich die Region? (in Bezug auf soziale, wirtschaftliche, Umweltaspekte?) Oder welche direkten oder indirekten Auswirkungen (auf Sie oder die Branche oder auf die Region), die Sie seitdem gesehen haben?

3. Sehen Sie sich jetzt noch im IBA Emscher Park-Projekt? Oder irgendetwas, an dem Sie gerade arbeiten, betrachten Sie als Teil des Vermächtnisses des IBA-Projekts?

4. Welche Art von Mechanismus oder Strategie zur Erhaltung dieser Vermächtnisse? Gibt es wichtige Akteure, Instrumente, Richtlinien oder Organisationen, von denen Sie glauben, dass sie eine wichtige Rolle bei der Wartung spielen?

5. Gibt es ein Vermächtnis, das hätte erhalten werden sollen, aber nicht mehr existiert? Warum ist es nicht mehr vorhanden? (Alles, was Sie denken, sollte verbessert werden, um diese Elemente zu erhalten?)

6. Haben Sie eine Empfehlung oder einen Ratschlag bezüglich der Vision der Legacy-Entwicklung oder wie wir das Vermächtnis beibehalten?

7. Wenn Sie auf das IBA-Projekt zurückblicken, was halten Sie davon im Allgemeinen?

Appendix D: Coding Scheme

	Coding Category	Description	Examples from Transcription
Tangible Legacy Themes	Emscher Landscape Park	Anything talking about ELP, such as what kind of event they have, how it started, how it's maintained etc.	"Ok. For me, the most important IBA from that time, today and to the future, would be the Emscher landscape park and its park system around the region. That's the main thing. It would not only be a perspective for new infrastructure of this region, no more cars, no more streets and so on, it brings the qualities to the region here, the region needs in the future." "Emscher landscape park was a strong vision, and practical approach… how to deal with the enormous big brownfield area, the enormous change, the coal mining, the seel, the factory etc that no one need anymore, and it was impossible to reuse all these brownfield to new industrial area. So it was an excellent idea from our point of view, from open space development, to reinvent, to restructure and rebuild the landscape in the area which was most industrialized area." "nd from the report, we know that people very very much recognize the landscape change, it's clear because it's open to public, open to everyone, and they very much recognize this, they recognize it and say it's very good. It's one part of the new reception of the region. The change was very much recognized by the people. "
	Ecological Reconstruction of the Emscher System	Anything about the water revitalization project, such as how it works, which institutions should take the responsibility of it etc.	"One of the projects, in my opinion, has the largest impact will be the River Emscher. Emscher is a river which is dealing with the waste water, and now they are building underground waste water system, so the river can be given back to nature." "It started with the question: how to deal with the waste water? Because of the problem of dealing with the wastewater, the communities started to work together, because they had to solve it altogether. Placing the wastewater toward the river Emscher and to the Rhine, this was the way they did it one hundred years ago. But now we don't want our wastewater to the Rhine…" "There was an unplanned industrial agglomeration without any consideration about ecological aspects and more or less you can say you develop an agglomeration without becoming a European city and yet you understand that is not completely abstract, a city without water then it's not a city." "Maybe that is news for the river Emscher, for the hundred years of taking care only for cleaning water and avoiding … more or less protecting it, protecting wastewater against people, sometimes cleaning water and taking care against the potential flood, that now has in mind we are responsible for the new Emscher, more or less."
	Working in the Park	Anything about "working in the park" project, such as how it works, and how it arranges etc.	"The fourth theme was working in the park and this is continued in this century. Working in the park was a concept, abundant brownfield, used as industry before, is reused for jobs with maximum 50 per cent of the space, 50 percent minimum, 50 per cent of the space should be public park, housing, culture, or something else. So, by converting an old model used economic side, came to be a purely used production side and public site etc... So, this series of integrated solutions is our standard and we

			continue this and in a lot of situations. For example, a group of 20 sites on coal mines. it's only coal mine sites. This is in the last year, so far after an international building exhibition. So what are we doing in the coal mine in Essen in the next two years, and you have made a contract with all those cities who still have coal mine sites, coal mine will be closed this year. So this is the contracting directors, mayors etc. for this thing, and we describe the future, and we are talking about altogether 20 single sites, and that 20 sites itself, and there's 1000 hectares in 17 cities, this 1000 hectares are all developed with this idea of working in the park. So, the IBA project is being converted in this case for a group of sites, and so… if you think about how is this with the other fields, it has completed different hands right. Yeah. it's different players, different interests etc. But all the fields of the IBA are continued by other projects and other stakeholders."
Tangible Legacy Themes	Urban Development and Social Impulses for Urban District Development	Anything about "urban development and social impulses" project, such as reconstruction projects in neighborhoods, employment center etc.	"But the IBA Emscher Park was not a program of the economy, maybe Karl Ganser and maybe we knew, there is a structural change, but because there will be a structural change of the economy, we need attractive cities." "There are programs which bring these people to re-education and to get new skills, on the one hand. But we have to be honest, we can't bring everybody in these new jobs… Perhaps, the time will solve…" "The greatest legacy in the physical legacy is a new understanding of urban development, and a new understanding of industrial heritage, a new understanding of urban landscape and industrial nature. So, if you ask what are the inventions the things that came because there was an IBA was to focus more on the neighbourhood development on a human scale by urban development. To understand our industrial heritage as our original roots, a platform for any kind of future development without your own roots, you are not very good to start with."
	Housing in the Settlement, New Construction and Renovation	Anything about "housing", such as the construction work, how it works, who it belongs to etc.	"Yep, so it was a housing company, and they said: so, we have a lot of people who need a new flat, and we ask they if they want to enter the process of public participation. It was a really amazing project because we involved young people, children, elder people. The idea was there is a small house which is a community house within this project, and at the end, one of this person studied planning and architecture and now is the head of the planning department in Gelsenkirchen, and she was not educated before." "Yep, there was a need on new organization of houses, flexible rooms, not a classical standard in social housing. So, the structure of social housing is changed because of international building exhibition. Also, the ways to fund the housing. So, the ministry who was involved the whole process and they changed the structure of funding social housing afterwards. "
	Industrial Culture and Tourism	Anything about "industrial culture heritage and tourism", such as how they utilize those heritages, how they stimulate tourism etc.	"And dealing with the cultural heritage of the region, not only negotiating the cultural heritage but also using it for a new start of the future, with the brownfield and steel mine etc." "So, the topic of dealing with industrial culture, it is related to international building exhibition. And also, a new kind of dealing with landscape." "Because all the projects that IBA brings in, the UNESCO World Heritage of Zollverein, nobody in the city of Essen thought about UNESCO heritage in Zollverein in the 90s, nobody. But then, they had it, and they took it to the next step.

Intangible Legacy Themes	Economic	Economic aspects, such as tourism, funding, hosting opportunities, capital investments, foreign direct investment, employment, taxation, competitiveness, income leakage, opportunity consts etc. should be taken into consideration in this theme.	"Yes, it was a need to organize the structural change because since 1958, the crisis was… an ongoing process, and the unemployment rate was increasing and high, so there was a need to reorganize the region." "For example, this is interesting, because you see, the international building exhibition strategy is linked to different fields, to tourism, to culture, to industrial heritage, to landscape, and to economy. And when you look for example on jobs and on economic impacts, you can see, this is called the unique selling point of a region, and it's now an industrial heritage, and a lot of people were working in this field." "On the other hand, all these brownfield developments, bringing new jobs to the region. A lot of people get works in other industrial parts. So, the whole region started to transform to other industries and they learned to deal with the structural transformation. I think it would be hard when the last coal mine come up, because it's still somehow an identity point of the region." "If you look at how many people traveling from all over the world come to North-Rhein Westphalia visiting the Ruhr area and looking on the experience of IBA Emscher Park, you can say that it was the main point of urban development in North-Rhein Westphalia."
	Social	Social aspects, such as social progress, health, impact on population, civic engagement, social inclusion, skills development, empowerment, decrease criminal rate etc., should be taken into consideration	"But sometimes there can be a new kind of public debate, it can be new kind of public involvement as the Emscher is organized for example, few people are writing articles about the Emscher, they made projects in the school as the influence about the importance of water. So, they are cooperating with schools in the Emscher, you can say it's new, or you can say it's more efficient and more intelligent way to organize a task and projects." "the culture of cooperation, the north Ruhr area, every municipality go try to deal with the problems for themselves, and they cooperation with different region to deal with the problem. That's one of the main point." "I also think so. And I just talked about the renewal of the Emscher river, this is the one of the projects which the communities have to work together, because they all need to have wastewater system, and when it's finish, it can bring the Ruhr back to the natural landscape."
	Informational/ Education	Anything with educational meaning or addition information, such as opportunities for gaining experience, knowledge, personal development, research etc. should take into consideration.	"… and at the end, one of this person studied planning and architecture and now is the head of the planning department in Gelsenkirchen, and she was not educated before. She was inspired by the process and now is an important person in the planning authority." "The most visitors from other countries coming to North-Rhein Westphalia, want to know something about IBA Emscher Park. It's one of the most important thing in the last 30-40 years." "Self-evident is a person who in the beginning of this project, is still working. It's still a concrete case, when you have the main idea to organize this IBA Emscher Park, the ministry, and now it's the mayor of Dortmund."
	Political	Political aspects such as encompass policy and policy development instruments, changes in	"It started with the question: how to deal with the waste water? Because of the problem of dealing with the wastewater, the communities started to work together, because they had to solve it altogether." "Perhaps you can say that the IBA Emscher Park was pilot, a huge impact on the region and now the experiences made in the IBA area were brought to other areas in North-Rhine Westphalia. And in the

		political culture, political awareness, changes in legislation and political legitimacy etc. should take into consideration here.	past years, several regions could participate and could work together on regional scale… I think working together in regional scale is the most important impact." "Yep, and this means at the end, there was a need of reform within municipalities. If you work for example on a project and not on a big plan, you need a complete different constellation of responsibilities, so people from different departments were forced to work together. So when we are talking about the legacy, there was a huge reform of structure of municipalities. They were forced to change the structure, because the architect has to work together with the person who is responsible for the landscape and the environment. So this kind of cooperation was completely new."
Intangible Legacy Themes	Governance	Governance aspects such as changing governance structures, community empowerment, community cohesion, public-private partnership etc. should take into consideration here.	"It's a former… put out very positive experience, for example bottom-up process or regional cooperation, that was a very important experience for the policy of urban development in North-Rhein Westphalia. If you look at the interest from the outside, from other countries, there is no other thing that IBA Emscher Park … which generated this big interest from other countries." "the culture of cooperation, the north Ruhr area, every municipality go try to deal with the problems for themselves, and they cooperation with different region to deal with the problem. That's one of the main point." "I think a good public institution on all levels, that can be a state in general, that can be a community … I think it has to be intelligent, and has to be capable to organize in which way for a concrete project."
	Psychological	Psychological aspects include personal and community wide feelings of national pride, enthusiasm and emotions should be concerned here.	"when it was such a success, then everybody wanted to be the inventor, or the part of it. People are proud of it." "The identity has been very much linked to the roots, to the spatial question, to the cultural questions etc. So, people are proud of Industrial heritage. Thirty years ago, industrial heritage was not invented as a phrase and was a special thing for historical, for building experts. Yes, they knew, that is art, art nouveau. Yes. This machine is art nouveau. Yes, but nobody else was thinking that this is relevant and they were bombing and throwing away all these old buildings, because it's an old coal mine… So, the identity in the region has been supported enormously by the IBA." "So I would say there is one remaining difference: It is no region in Europe with such a large amount of industrial heritage … I would say it's contributing to the identities, the Ruhr area will become a large European city based on industrial heritage…"
	Nostalgia	Nostalgia includes common memories, takes into account personal experience and memories associated with the event.	"I made a lot of tours to the IBA project with groups and… Not with touristic groups, of course, because there were no tourists at that moment… and for example, with old coal miners, and when you're going with a group of coal miners to a place… into the place of Zollverein, and you tell them how important it is that the rabbits bring in a new kind of green on their coal places there. An artist created a stone sculpture on a place where in former time, where the coal were separated from other things. They said to me: "dear, that's stupid, that's our place we had, as an industrial place" Because our identity was not… it was not the regional identity we had. We had the identity over the companies we worked for." "So in

Intangible Legacy Themes			that place, it was interesting to see how people came back to see the places they were working and to understand as a new place. That was a big thing. and to come over the place because many of them were closed by the companies... to come back and to see something new can happen."
	Culture	Such as cultural programs and opportunities, cultural identity and cultural ideas should be taken into consideration here.	"For example, the landscape park in Duisburg, the idea from Peter Latz, the landscape architect who made it, the idea was we left it here what is now here, and that was new, every other plan in other way." "So, in the region, the identity has been very much linked to the roots, to the spatial question, to the cultural questions etc. So, people are proud of Industrial heritage. Thirty years ago, industrial heritage was not invented as a phrase and was a special thing for historical, for building experts." "I still like the places within IBA Emscher Park. Every year they have concerts and landscape park in Duisburg, it's not a steel industrial place and now it's a concert place in summer… I like this festival a lot. And I like the rivers and the land projects, the landmark on the hills and so on. I like it a lot." "So to create a new picture if you want. And you can say it's interesting thing to think about industrial history, only when you do this thing, you can talk about architecture quality of industrial buildings."
	Image	Such as heighten international awareness, image enhancement, destination profiting, host city exposure, changes in tourist image and reputation, brand marketing etc. can be concerned in this field.	"The image of a region is something completely different. An image of the region is the view from the outside, and that depends on how much and how many times somebody from the outside has been here or has ever been here. So, the image stays much longer than the reality. The reality changes much quicker. The identity in the region changes much greater than the image from the outset. Very important. If there is a pre justice so the image of the Ruhr internationally is good, because we are these structural changer who are able to mobilize and to manage the change in mind and people etc.. So, all foreigners know us because of the story of change or historically as a weapon smith, coop person, the cannon balls from the first world war, the cannon balls, the tanks from the second world war, was made in the Ruhr. So they know us historically as weapon smith in the past." "So, identity a great jump, image, a small jump." "Yep yep, it takes time. It lasts longer to change the image then to get a new identity by yourself." "So sometimes you can say it sometimes also scientist remaining since history then is difficult and long process how to change reality and the image, maybe the reality already has more changed than the image."

		Examples from Transcription
Analysis Themes	Changing Planning Culture	"Then we have new kind of planning culture, that means in former time, before the international building exhibition, we worked with plans, with big master plans, and now there was a complete new process of planning with projects and not with plans. So the shift from plans to projects, it is really important" "Yeah, I would say the international building exhibition is the first time with this kind of new planning strategies, and then a lot of regions adapted it. But it's the first time that planning authorities try to implement this new kind of strategies." "But it's the first one to try to deal with the philosophy and the framework with planning without course and using this kind of implementalizm in planning strategy. And other IBAs before did not use it. So it's the first time and it was a really new strategy." "Yep, and this means at the end, there was a need of reform within municipalities. If you work for example on a project and not on a big plan, you need a complete different constellation of responsibilities, so people from different departments were forced to work together. So when we are talking about the legacy, there was a huge reform of structure of municipalities. They were forced to change the structure, because the architect has to work together with the person who is responsible for the landscape and the environment. So this kind of cooperation was completely new."
	Regionalen – Regional Cooperation Policy	"Yes, it' based on IBA Emscher Park. IBA Emscher Park was the birth of this kind of regional cooperation in 1980s. What's based on the IBA was the "REGIONALEN", do you know…. that's a structural program for regions in North-Rhine Westphalia, it starts because of the IBA Emscher Park, and it's using the experience of IBA Emscher Park, we started this program in the year 2000, and the regions in North-Rhine Westphalia participate this program. You can find it on the website of ministry, and different regions start "regionalen", and it's dealing with structural problems and regional corporations in different ways, e.g. nature, infrastructure, transport, community etc." "Yes, yes, that's a very important point from the IBA Emscher Park and on the "Regionalen", not only the administration of municipalities are cooperating, they take the input of enterprises and of the people and of different institutions and they fix up a bottom-up processes dealing with the problem… for example, if they develop a housing project, they started its bottom-up processes."
	Further Regional Development	"That will happen in the Emscher landscape park. Without the Emscher landscape park, they wouldn't have enough place to be a part of competition to a national garden show. So, in that way, many of the projects are still working, many of the projects are central part of the image of the region, and many of the projects also make this region attractive, also after 20 years from IBA. Only UNESCO for example, today the city is UNESCO cultural heritage, but 30 years ago, people never think about it, no." "One of the very important follow up of the IBA, was the European Capital of Culture, which was in 2010, in Essen and the region… The application for the European Capital of Culture was very direct legacy of the international building exhibition, because the building exhibition has so much starting constructions of the whole area."
	Exemplary Case Study	"Yes, it's a classic case study if you want to know how this area dealt with the structural transformation, from steel working places to new economy and to knowledge-based industries, and combine with some cultural projects, bring new identities to the region. And the new identity just grows by this project and a combination with bottom-up processes. So without these bottom-up processes, it wouldn't have these effects. I would say." "(Green Infrastructure) Yes. This is from 2014 and it is about the enhancement of the nature of capital of Europe. And it's the idea … that the whole

Analysis Themes		society, the whole economy should incorporate the nature based solutions, the ecosystem services, the potential and power that nature includes for production, for society, for life, for health etc. So it's a strategic approach and green infrastructure fits wonderfully to the things that we have done the last 30 years. So when we were reading these documents, we were thinking oh that's us!" "We have ideas how green infrastructure can follow grey infrastructure" "So green infrastructure if you ask me is a direct follow-up of these landscape orientated things. You can have that if you want."
	Maintenance Mechanism	"I have the opportunity here, in our organization, which is called "Conceptional planning for Emscher landscape park". This is the direct legacy of the IBA Emscher Park. So, we are working on one legacy project." "In 2004, some years after the end of IBA, the results of the discussion of the legacy of the IBA, were implemented in this new law, that means the duties and the tasks of Emscher landscape park and the industrial heritage route, it's our duty." "Within this contract, it's very much in detail describing what we should do in our responsibility of Emscher landscape park and the industrial heritage." "The contract is only for the money for the maintenance, for the high-level maintenance of landscape park projects. In case we want to build or invest new landscape projects, new slag heaps need to transform into a new landscape park or a new cycle path and so on, so for this, we have to seek our own money, our own budget, how to apply the funding streams." "They all give individual presentations saying the park is not ready in ten years, no, it's only that way and it should be a long-term thing etc."
	Legacy Existence/ Missing Legacy	"And this is something we are very much missing here, there is a lack of leadership. But this is a national issue… Germany is lacking leadership… yep in many cases, leadership is lacking… in my sense is very important." ""this opera was under very special conditions, and when these special conditions are no more there, then you cannot make a good opera show, and you shouldn't do so. So, if you don't have the capacity, if you don't have the conditions, then you should not try to make an opera, yeah? … So, very important thing is that you cannot copy IBA" "But currently, there is no vision from our organization, or in the region, how can we deal with this. On the regional perspectives, each municipality is developing its own ideas for some areas, but there is no vision how the whole region shall develop."
	IBA Dilemma	"... the IBA was not only a program, it was a laboratory to think in a new way ... it was a laboratory with experiments, and the character of experiment is, they can bring the good results, or bad results…. not every IBA projects got good results until the last 20 years. But to think about this kind of planning projects and process is important for every city ... to say: ok we do this three (projects) and we look what it can happen." "One result from all these actors or IBAs was, that everybody says "you need more experiment than to get protective and secure place where you can work." It needs to have critical things, it needs to have the opportunities to do things that nobody thinks about it. That's important … if the people and the atmosphere are good, you maybe will have a good IBA. Not every IBA can be a good IBA."
	Future Visions or Recommendations	"I understand, of course, the international garden show will be a one year event, but to build or reconstruct landscape within this whole area, we have detective and develop as a part of the municipalities, it will create new or better open space infrastructure. Of course, it will be maintained. It will renew open spaces and create new open spaces. Therefore, at the end, it will have sustainable effects." ""That means, in terms of ecologic, economic but also social productive… work together or invite people to work into the park, and let them to build and to live in the park. … now please focus more on the people, working together with the people and find some solutions that people can work, live, and use the park productively.""

Appendix F: Declaration Form

CANDIDATE'S ID NUMBER	(Student ID) = 01675783 / (passport) 305456877
CANDIDATE'S SURNAME	Please circle appropriate value Mr / Miss / (Ms) / Mrs / Rev / Dr / Other please specify ......Jeng.....
CANDIDATE'S FULL FORENAMES	Yu Rung

DECLARATION

This work has not previously been accepted in substance for any degree and is not concurrently submitted in candidature for any degree.

Signed ......Yu Rung Jeng...... (candidate)   Date 12.6.2018

STATEMENT 1

This dissertation is being submitted in partial fulfillment of the requirements for the degree of
..........M.Sc............... (insert MA, MSc, MBA, MScD, LLM etc, as appropriate)

Signed ......Yu Rung Jeng...... (candidate)   Date 12.6.2018

STATEMENT 2

This dissertation is the result of my own independent work/investigation, except where otherwise stated. Other sources are acknowledged by footnotes giving explicit references. A Bibliography is appended.

Signed ......Yu Rung Jeng...... (candidate)   Date 12.6.2018

STATEMENT 3 – TO BE COMPLETED WHERE THE SECOND COPY OF THE DISSERTATION IS SUBMITTED IN AN APPROVED ELECTRONIC FORMAT

I confirm that the electronic copy is identical to the bound copy of the dissertation

Signed ......Yu Rung Jeng...... (candidate)   Date 12.6.2018

STATEMENT 4

I hereby give consent for my dissertation, if accepted, to be available for photocopying and for inter-library loan, and for the title and summary to be made available to outside organisations.

Signed ......Yu Rung Jeng...... (candidate)   Date 12.6.2018

STATEMENT 5 - BAR ON ACCESS APPROVED

I hereby give consent for my dissertation, if accepted, to be available for photocopying and for inter-library loans **after expiry of a bar on access approved by the Graduate Development Committee.**

Signed ......Yu Rung Jeng...... (candidate)   Date 12.6.2018

Appendix G: Ethical Approval Form

GUIDANCE NOTE: SUBMISSION OF ETHICAL APPROVAL FORMS (TAUGHT STUDENT)

A/ For the majority of cases for Taught Student projects the SREC expects that **supervisors/module leaders will have discussed with students the ethical implications of their particular research project well in advance of the project being undertaken**

B/ Where the module leader / dissertation supervisor is satisfied there are no potential issues that need to be brought to the SREC's attention for further discussion/clarification, **the only action required is for the form to be fully discussed agreed and signed WELL IN ADVANCE OF ANY FIELDWORK/INTERVIEWS ETC TAKING PLACE**

C/ The signed form should then be kept by the student to be appended to their final dissertation and submitted with it in the usual way

*D/ **ONLY** those taught student forms for ethical approval **WHICH WARRANT FURTHER COMMITTEE DISCUSSION** should be submitted to the secretary of the School Ethics Committee (SREC) in both of the following 2 ways 2 weeks before the SREC is due to meet (a Schedule of meetings is available on the shared drive):*

- a HARD COPY version sent to the SREC Secretary (Ruth Leo) BEARING RELEVANT STAFF AND/OR STUDENT SIGNATURES

- a version sent to the SREC Secretary BY EMAIL AS A WORD ATTACHMENT (to LeoR@cf.ac.uk)

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*PLEASE NOTE THAT **HANDWRITTEN FORMS ARE NOT***

__ACCEPTABLE__ BY THE COMMITTEE AND WILL BE RETURNED TO

YOU FOR ELECTRONIC COMPLETION

CARDIFF SCHOOL OF PLANNING AND GEOGRAPHY

Ethical Approval Form

Student Projects (Undergraduate & Taught Masters)

This form must be completed and submitted to Evelyn Osborne **email: OsborneE1@cardiff.ac.uk / Tel Ext: 76131 / Room 2.54 Glamorgan Building**).

*In the case of dissertations it is the responsibility of the student to submit the form, duly signed by their supervisor, and secure ethical approval **prior to any fieldwork commencing**.*

A copy of the signed form should be included by all students with their final dissertation.

Title of Project: The Legacy of IBA Emscher Park

Name of Student(s): Yu Rung Jeng

Name of Supervisor/Module Leader: Oleg Golubchikov/ Peter Ache

Degree Programme and Level: PLANET Europe master programme

Date: 23/04/2018

Recruitment Procedures:	Yes	No	N/A

		Yes	No	N/A
1	Does your project include children under 16 years of age?		V	
2	Have you read the Child Protection Procedures below?	V		
3	Does your project include people with learning or communication difficulties?		V	
4	Does your project include people in custody?		V	
5	Is your project likely to include people involved in illegal activities?		V	
6	Does your project involve people belonging to a vulnerable group, other than those listed above?		V	
7	Does your project include people who are, or are likely to become your clients or clients of the department in which you work?		V	
8	Does your project include people for whom English / Welsh is not their first language?	V		

* Cardiff University's Child Protection Procedures:

http://www.cardiff.ac.uk/govrn/cocom/resources/2010%20November%20Safeguarding%20Children%20&%20VA's.doc

If you have answered 'yes' to any of the above questions your supervisor will need to explain how you will deal with these ethical issues.

Data Protection:		Yes	No	N/A
9	Will you tell participants that their participation is voluntary?	V		
10	Will you obtain written consent for participation? If "No" please explain how you will be getting informed consent.	V		
11	If the research is observational, will you ask participants for their consent to being observed?	V		
12	Will you tell participants that they may withdraw from the research at any time and for any reasons?	V		

| 13 | Will you give potential participants a significant period of time to consider participation? | V | | |

If you have answered 'no' to any of the above questions your supervisor will need to explain how you will deal with these ethical issues.

Possible Harm to Participants:	Yes	No	N/A
14	Is there any realistic risk of any participants experiencing either physical or psychological distress or discomfort?		V	
15	Is there any realistic risk of any participants experiencing a detriment to their interests as a result of participation?		V	

If you have answered 'yes' to any of the above questions your supervisor will need to explain how you will deal with these ethical issues.

Data Protection:	Yes	No	N/A
16	Will any non-anonymised and/or personalised data be generated and/or stored?	V		
17	Will you have access to documents containing sensitive[20] data about living individuals?		V	
	If "Yes" will you gain the consent of the individuals concerned?			

If there are any other potential ethical issues that you think the Committee should consider please explain them to your supervisor. It is your obligation to

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[20] Sensitive data are *inter alia* data that relates to racial or ethnic origin, political opinions, religious beliefs, trade union membership, physical or mental health, sexual life, actual and alleged offences.

bring to the attention of the Committee any ethical issues not covered on this form.

Health and Safety:	**Yes**
Does the research meet the requirements of the University's Health & Safety policies? http://www.cf.ac.uk/osheu/index.html	<u>**V**</u>

	Prevent Duty:	**Yes**	**No**	**N/A**
20	**Has due regard been given to the "Prevent Duty" in particular to prevent anyone being drawn into terrorism** https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/445916/Prevent_Duty_Guidance_For_Higher_Education__England__Wales_.pdf http://www.cardiff.ac.uk/public-information/policies-and-procedures/freedom-of-speech			**V**

Any changes to the nature of the project that result in the project being significantly different to that originally approved by the committee must be communicated to the Ethics Committee immediately.

Supervisor's declaration

1/ As the supervisor/module leaders, I confirm that any ethical issues arising from this student project were discussed in advance with participating students (please indicate how here)

2/ As the supervisor/module leader *(please delete as necessary)* for this student project, I confirm that I believe that all research ethical issues have been dealt with in accordance with University policy and the research ethics guidelines of the relevant professional organisation.

Date 24/04/18   Name Oleg Golubchikov Signature *O.Golubchikov*

If any of the shaded boxes have been ticked the supervisor/module leader must explain below how the potential ethical issue will be handled:

8. In this project, both interviewer and interviewees are not native English and Welsh speaker. Therefore, the research will provide both English and German (as the case study is in Germany) questionnaire in case interviewees can understand the content. Also, the researcher will use google translate, dictionary, and translator in case the research won't miss any useful information and make sure the understanding between interviewer and interviewees is at the same page.

16. The research will provide interview consent form to each interviewee before conducting an interview to ask about if they would like to put their name anonymous or they don't mind revealing their name and personal information in the research paper. The research will inform the interviewees beforehand if any personal data or opinion will be put in public.

Interview Consent Form

Thank you for reading the information sheet about the interview. If you are happy to participate then please complete and sign the form below.

1. I understand that my participation is **voluntary** and that I am **free to withdraw** at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am **free to decline.**

2. I understand that my name will be (revealed) in the report and linked with the research materials, and will **be identified** in the report or reports that result from the research. / I wish my responses will be **kept strictly confidential**. My name will not be linked with the research materials and will **not** be identified or identifiable in the report or reports that result from the research.

3. I agree for this interview to be **tape-recorded**. I understand that the audio recording made of this interview will be used only for analysis and that extracts from the interview, may be used in any conference presentation, report or journal article developed as a result of the research. I understand that no other use will be made of the recording without my written permission, and that no one outside the research team will be allowed access to the original recording.

4. I agree that my **data will be kept for future research purposes** such as publications related to this study after the completion of the study.

I agree to take part in this interview.

Prof. Christa Reicher	25.04.18	
Name of participant	Date	Signature
YuRung Jeng	25.04.18	YuRung Jeng
Principal Investigator	Date	Signature

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I agree to take part in this interview.

Jan Hogen	_26/4/18_	_(Verbally Agreed)_
Name of participant	Date	Signature

Yu Rung Jeng	_26/4/18_	_Y. R. J_
Principal Investigator	Date	Signature

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| Klaus Austermann | 26 /4 /18 | (Verbally Agreed) |
| Name of participant | Date | Signature |

| Yu Rung Jeng | 26 /4 /18 | Y. R. J |
| Principal Investigator | Date | Signature |

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I agree to take part in this interview.

PETER RÖDDERMANN   27.4.2018

Name of participant   Date   Signature

YuRung Jeng   27.4.18   Y.R.J

Principal Investigator   Date   Signature

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I agree to take part in this interview.

Frank Bothmann   27/4/18   _Bothmann (signature)_
Name of participant   Date   Signature

Yu Rung Jeng   1/u/18   Y. R. J
Principal Investigator   Date   Signature

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I agree to take part in this interview.

Schiase-Nort	7/05.	_signature_
Name of participant	Date	Signature
Yu Rung Jeng	2/5	Y.R.J
Principal Investigator	Date	Signature

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I agree to take part in this interview.

Christoph Zöpel   _26.5.18_
Name of participant   Date   Signature

Yu Rung Jeng   _26.5.18_
Principal Investigator   Date   Signature

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