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Bijlmermeer and Scampia: The potential of suburbs as centralities in sustainable and circular cities

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Abstract. In the sustainable paradigm of the circular economy, waste is a resource to be valued. Similarly, in the circular city, fringe areas and urban wastescapes are places full of potential. This study considers two modern suburbs in Amsterdam and Naples. The two cases aim to compare the characteristics, potential and problems of the two districts and the ongoing actions for sustainable or circular urban regeneration. The objective is to identify the potential of these two European suburbs in the wider process of development of fair and circular cities. Therefore, this paper aims to answer to the following research question: Based on the two case studies Bijlmermeer and Scampia, what is the potential for circular and socially sustainable urban transformation of the 1960s suburbs? Analysing the main changes that have taken place over the last ten years in these complex areas, the main drivers are identified with the historical value of modern architecture landmarks, the opportunities offered by big green public spaces in dense urbanized areas, the presence of active place-based communities and their position in nodal points of the metropolitan areas.

1. Introduction

Circular Economy (CE) is a recent and still contested concept (1). Many CE definitions have been developed over last years, and although there are a few explicit linkages with sustainability (2), it seems to be the most effective paradigm for sustainability (3). Many studies have highlighted existing links between CE and Sustainable Development Goals (SDGs) (4). The idea of circularity is mostly about closing supply chains, through the implementation of strategies for reduction, reducing, recovering and recycling, as much as possible, waste materials by optimizing resource management in metabolic systems. This is consistent with the SDG 12, that concerns precisely "responsible consumption and production".

In few years CE has gained momentum and its own conceptual autonomy, expanding the research field from industrial ecology to urban studies. Making cities sustainable, that correspond to the SDG 11, is explored in the idea of the circular city. A clear definition of what is a Circular City (CC) still under development (5), but it seems to mean more than a city where CE is implemented (6).

CC researches produced strategies for looping actions (7), indicators and monitoring (8,9), and adaptive reuse strategies of culture heritage buildings (10).

Several European cities are pursuing circular economy policies for the built environment, energy transition, sustainable mobility, industrial production, and local communities (11).

Because CE monitoring is mainly connected to urban metabolism study, urban studies included waste lands to be claimed and reused in the idea of *circularity*.



The research project REPAiR, *Resource Management in Peri-Urban Areas: Going beyond Urban Metabolism*, carried out a multidisciplinary research, aimed at developing tools and strategies to implement CE solutions in peri-urban areas (12). Amsterdam and Naples have been the pilot cases of the research, where urban metabolism and *wastescapes* have been co-explored through peri-urban living labs (13) with local stakeholders, in incremental processes of co-creation of innovative strategies (14). The Geodesign Decision Support Environments (15), based on the geodesign methodology (16) has been tested using a new open-source tool. Wastescapes have been analyzed in the REPAiR project as “patches of landscape related to waste-cycles both by functional relations and because they are ‘wasted-lands’: anomalous areas inconsistent with the peri-urban metabolism that become neglected spaces.” (12), and seen as strategic places to recover to activate circular strategies (17). From literature on drosscape (18) and operational infrastructures of waste (19) wastescapes were investigated in the research project as spatial areas subject to risk and various abandonment phenomena.

In this study, we consider a specific category of urban wastescapes, seen not only as spatial categories of degraded and abandoned places, but also as those places where a negative perception has led to a rejection and, therefore, to a condition of exclusion, segregation and, finally, rejection and discarding of a part of the city.

An urban wastescape is therefore a part of a dysfunctional urban ecosystem, i.e. a place where the built environment, society and socio-economic dynamics are determined synergistically.

Emblematic of exclusion and rejection, two 1960s suburbs, famous for their iconic and deeply problematic architecture, are studied here as urban wastescapes.

Considering the regenerative and circular potential of wastescapes, this study attempts to identify the characteristic traits and the role that such neighbourhoods can play in the context of the SDGs (20) and urban circularity goals.

Section 2 presents the methodology of the study. Section 3 compares the two case studies in their respective urban contexts, identifying some salient features of recent urban regeneration processes. Finally, the discussions and conclusions in Section 4 propose answers to the research questions based on the analysis carried out.

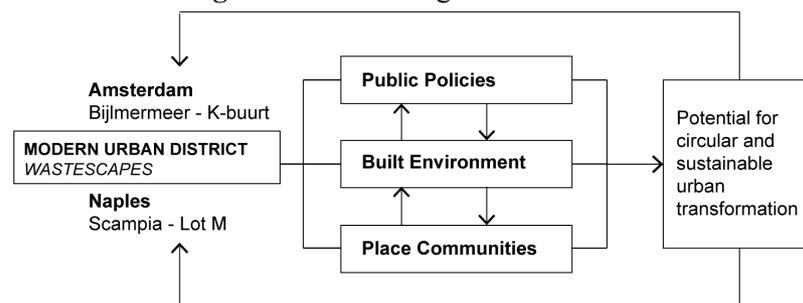
The causes of the failures of planners, designers and public policy have been widely addressed in the literature. In the present study, the potential already expressed and that which these neighbourhoods have to give rise to more sustainable and circular city models is highlighted.

2. Methodology

The goal of the study is to identify the potential of modern urban districts that suffered (or are still suffering) the condition of urban wastescape. The methodology for comparison between Bijlmermeer and Scampia is based on the status quo of the two cases (Figure 1), considering three different key agents as drivers of transformation of the areas:

1. Public policies (PP) currently governing the sites,
2. The Built Environment (BE), considering architecture and public space,
3. Place Communities (PC) of residents, NGOs and active stakeholders.

Figure 1. Methodological framework.



The common hallmarks of Public Policies, Built Environment and Place Communities are part of a unique system whose influences make them change each other in the interaction (21,22). The cause-effect of interaction of these agents defined in time the identity of the places.

3. Similar modern neighbourhoods in different European cities: the case of Amsterdam and Naples

The cities of Amsterdam and Napoli are both core of large metropolitan areas. The Amsterdam Metropolitan Area (AMA) is composed by a partnership of 32 municipalities, in the provinces of Noord-Holland and Flevoland. The Metropolitan Area of Naples (MAN) is one of the 14 Italian metropolitan cities instituted in 2001, and regulated by the Italian Law 56/2014 (23).

Table 1. The Metropolitan Areas of Amsterdam and Naples

Indicator	Unit	AMA	MAN
Population	Inhabitants	2,500,000	3,000,000
Provinces	Name	North Holland and Flevoland	Province of Naples
Sub-zones	Number	7	5
Municipalities	Number	32	92
Area	km ²	2,580	1,171
Population	Million people	2,5	3
Density	Inh/km ²	960	2,621.06

The two cities are both ports, daily crossed by large flows of people, goods, information and money. While Amsterdam is the capital and the main commercial and financial center of the Netherlands, Amsterdam urban population is growing, and the city is dealing with that (24). At the same time, Amsterdam is working to become a sustainable city the goal is to achieve a be fully circular by 2050. Construction, biomass and food, and consumer are the key issues of innovative circular actions to lead this transition (25). The recent *Doughnut economy model* (26) expands the seven circularity objectives of the DISRUPT framework (27) by introducing the social inclusion dimension at each stage. Also, the new Doughnut economy model substitutes the idea of *growth* with the one of *thriving* (26), implying recognition of the city's unexpressed (or wasted) potential.

Naples is one of the main southern Italian cities, but suffers from high unemployment and other socio-economic difficulties (28) like the most of the South of Italy. The First Strategic Plan for the 92 Municipalities of the MAN, *ImmagiNA*, (23) focuses on socio-economic development and environmental sustainability goals, looking at the 92 Municipalities in a synergic approach, but without specific references to the transition to a circular economy model.

In these context, Bijlmermeer and Scampia are two suburbs of Amsterdam and Naples, famous wasted areas and no-go zones until a few years ago. The two neighbourhoods were designed almost at the same time, in the 1960s. Then, each one was realized and evolved differently, but both have been places of troubled and difficult events.

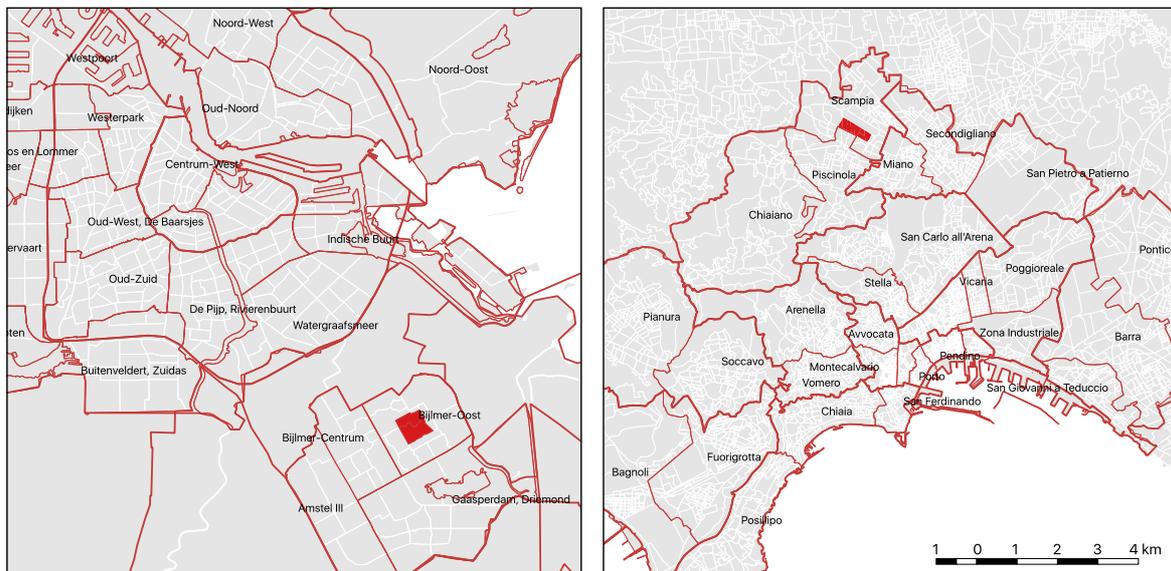
Since the 1990s, Bijlmermeer changed a lot, and today it is much a safer area and, also place of many vibrant and creative sports of the South-East district. The district is developing and transforming, and is doing so by implementing sustainable and CE solutions. In the Doughnut City model, tools and methods are defined as the *Doughnut Deals* have been conceived in Bijlmer (26).

The renaissance of Scampia is debated by public administration and stakeholders, but the district changed a lot over last twenty years. An important urban regeneration of the Scampia district is underway thanks to the Restart Scampia project (29), which has been funded by the Government as part of the 2016 national suburban plan (20).

In both cases architecture was blamed of being the origin of most issues, and the most significant actions for improvement started from redevelopment.

The K-buurt in Bijlmer and the lot M in Scampia (Fig.2) are the areas of the neighbourhood where still some original modern buildings are, and where the most of the debate about regeneration is focused.

Figure 2. In red the study areas areas in Bijlmer-Oost (Amsterdam) and Scampia (Naples).



The comparison between these two similar even far areas allow at understanding the main hallmarks and enablers of the current regeneration processes in these two modern neighbourhoods, representatives of the 1960s suburbs.

4. Bijlmer and Scampia: Contested wastescapes and resources for the metropolitan areas

In the 1960s, many suburbs of Europe's major cities were built in response to population growth. As many others in Europe and U.S., the districts of Bijlmermeer and Scampia were both born with similar assumptions: Megastructure design according the principles of the Modernist Utopia to cope with increasing housing demand. The modern architects dreamed of creating an egalitarian collective lifestyle for inhabitants, according CIAM's principles designing high-rise buildings, big public spaces with public green areas and collective facilities.

The result of modern planning and design systems of large housing estate (30), these parts of cities were not immediately absorbed by the existing fabric, and gave rise to phenomena of segregation and social exclusion, which led to scenarios of social and environmental degradation. Both districts had common problematic developments from the very beginning, albeit eventually they experienced different events.

Many incremental problems in time lead to their failure, i.e. the budget limitations that led to unfinished facilities, the architecture typology, the isolation due to the lack of connections with the city centers, the cutting-edge aesthetic that did not like to people, and the concept of modern architecture based on utopic ideas of a daily life far from what people wanted (31).

Same planning background in different cities caused segregation and ghettos, where different socio-cultural phenomena led residents to similar conditions and problems that transformed the districts in no-go zones.

Renewal of Bijlmer high-rise (32) carried out over time have involved the demolition and reconstruction of some of the buildings, the construction of new public spaces and the completion of street furniture, a social renewal that has led to a reduction in unemployment rates and better control over crime, with the aim of facilitating the economic development of the area.

Bijlmermeer today is a lively, multicultural neighbourhood and part of the city of Amsterdam's extensive circular economy programme. Participants in the decades of renewal policies were the Municipality of Amsterdam, the district, the Dutch public housing authority, private operators and groups of inhabitants.

The Neapolitan district of Scampia is now in a deep process of transformation, but has not yet reached levels of economic well-being for its inhabitants such as to redeem it from the stigma it carries. After the first ten years of overcrowding and squatting, since the 1990s, Scampia has been a symbol of drugs, criminality and marginalization. In fact, Scampia was the biggest drug dealing place in Europe until about ten years ago, and today the problem is still not completely solved. In the mid-1990s, the buildings were declared unfit for human habitation and were therefore abandoned and not maintained by the public administration. The inhabitants organised themselves to provide the essential services for living, but with great inconvenience. A strong criminal control of the areas decreased along last years, but further and complex investigations would be required to clarify the current influence of this *agent* in the urban transformation dynamics. In the last ten years, the district has been experiencing a phase of regeneration through the action of many local NGOs and socially active groups in the area. The Municipality of Naples realized public works to improve the district, infrastructures, green care and a demolition and redevelopment plan.

Beyond the temporal asymmetries in regeneration policies, the main big difference in the two areas is in the approach of public administration and the residents to the conservation or demolition of the buildings. Urban regeneration processes affected both the physical environment and the socio-economic conditions of the areas, and involved public administrations residents and users. While public administration played a key role in the macro-scale planning and in new developments, residents willingness create conditions for the bottom-up community actions, that aimed at improving the daily life of inhabitants. People involvement and strong connection with their neighbourhood, determined also the fate of some spaces and modern buildings conservation or demolition.

In the perspective of circularity, planning policies, built environment and social disfunctions shaped waste areas and wastescapes, as unresolved territories procuring ecosystem disservices (33) and risks for environment, economy and society. Multiple dimensions of wasted areas have a regenerative potential (34).

Bijlmermeer and Scampia were born from a strong idea of city and residential architecture typology that immediately defined an image of a new urban landscape. These iconic landmarks have polarised the debate, and even if they did not work, their strong identity was blamed for producing all the social issues of the neighbourhoods, obviously caused by many different immaterial agents. Although a neighbourhood is defined by relationships between spaces and inhabitants, the synergy with the rest of the city and the socio-economic conditions of the employment opportunities offered to the inhabitants make a difference. In both Bijlmer and Scampia, areas where the original architecture has been completely modified have taken on a new urban identity (Fig.3).

Figure 3. On the left the perimeter of North and South Bijlmermuseum with the six original modern buildings. On the right the perimeter of lot L of the Vele di Scampia. In 2020 the Green Sail was demolished. (Source: Authors' elaboration on GoogleMaps top views)



The K-buurt neighbourhood in Bijlmer and Lot M in Scampia have today the last significant bastions of the original conception and also of the problems that resulted. In these areas, regeneration processes are still more or less open. The value and potential of these architectures and places is being debated by researchers, writers, architects and residents. Today it seems evident that one of the strongest agent of change is the ability of public administration to interact with residents and place communities.

4.1 K-buurt in Bijlmer: the Bijlmermuseum

Massive investment in redevelopment in Bijlmer started after the disaster of 1992, when El Al cargo plane crashed into Kruitberg and Groeneveen buildings. In the point of the tragedy today the Growing Monument commemorate the 43 victims.

Of the 31 original honeycomb buildings, only seven remain today, including six in the area of the Bijlmermuseum in the K-buurt: Gooioord, Groeneveen, Grubbehoeve, Kikkenstein, Kruitberg, and Kleiburg (Fig. 3). Other elements of the original project by Siegfried Nassuth the elevated road currently serving the metro line, some garages and the public park. Currently, there is no redevelopment or big transformation of space taking place in the area. The history of the K-buurt tells the story of the transition from a wastescape to a recognised cityscape and protected, the Bijlmermuseum since 2016. The last decade has marked several interesting moments in the history of the last original Bijlmermeer fragment. The Bijlmer-Spinoza Festival of the artist Thomas Hirshhorn took place in the middle of K-buurt in 2009, conceived for and with inhabitants in the public space (35) joining of a work of visual art with a series of activities like philosophy conferences, open reading zones and theatre and creative activities for children. The same year, the Grubbehoeve renovation of was awarded with South-East Architecture Prize. Also on 2009, Roshdale had decided to demolish Kleiburg, a vacant building whose renovation was estimated to be too expensive. But the last remaining original honeycomb flat building was defended by residents' groups, the Bijlmer pioneers. Rochdale then let the building for the symbolic price of €1 to the DeFlat Consortium, thus also saving the demolition costs. Using the Do It Yourself formula [36] Consortium DeFlat found the solution to restore the building at an affordable price and managed to sell all the flats. In 2017, NL Architects and XVW Architectuur's restoration project of Kleiburg won the Mies van der Rohe Award. It was the first time for a collective housing project. Revamping social housing also led to the prize in 2019 for the transformation of 530 dwellings is a renovation of three 1960s housing blocks in Bordeaux. The architects of the XVW and NLarchitects studios, through some minimal solutions to improve the functioning of the building and

the relationship with the public space on the ground floor, have revived the last modern building with an essential renovation operation. Thanks to Dutch legislation, however, it was not mandatory to meet many of the sustainability performance requirements that are imposed on new buildings today.

This made it possible to bear the expense of the renovation and save the building, but the environmental impact of the building would need to be investigated in order to assess its environmental sustainability over time. The new residents who own Kleiburg have formed neighbourhood ties and take care of an urban garden in the neighbouring public space. A chapel, the Kleiklooster, has also been established in the building, from which a brewery Brouwerij Kleiburg, with a community place and restaurant in Bullewijk, has also sprung up.

The multicultural Communities of Place are a strong component of the K-buurt identity. While Kleiburg was being completed, the cultural-historical significance of the area was recognised with the Bijlmermuseum, a protected cityscape where both public space, the trees, and the original buildings and remained infrastructure constitute an urban environment to which many are attached.

The Heart von de K-buurt group and Bijlmer pioneers opposed demolitions of the Kempering en Klusflat garages. As well as for the Bijlmermuseum *the value of the garage as a cultural heritage* was recognised by people. Originally, elevated roads such as Karspeldreef were connected directly to garages, which in turn led to buildings. Over time, however, the garages became unsafe places where people slept, gambled and engaged in illicit activities. Since the radical redevelopments of the 1990s, many streets have been redeveloped and many buildings and garages have been demolished. Garages have been risky and characteristic places in Bijlmer.

Figure 4. The Bijlmermuseum today: On the right the public space and the original infrastructure, on the left part of Groeneven building. (Photos: C. Mazarella)



In June 2016, the municipality of Amsterdam had requested the redevelopment of the Kempering Garage. But last year the garage was demolished. To accompany the farewell of architecture, residents organised "The Last Nine Days of Garage Kempering" 600 candles in the garage every day between Ascension and Whitsuntide. Six hundred candles, one for each month that Kempering was allowed to stand in the Bijlmer.

Every building and modern architecture in the neighbourhood foundation is felt by the residents as a monument, so the garage also carries a history that the inhabitants would not want to erase. The International seminario *Negotiating Heritage in Emotion Networks: the Kempering Case* opened a

debate on the value of the garage as a symbol of collective memory. During the seminar, a large group of people visited the place, and Murat Isik¹ made a literary intervention.

Cultural heritage value as part of the *City of the Future*, as the Bijlmer was once called, where a leading role was claimed by high roads connected to the garages.

Today, the Bijlmermuseum is a liveable and safer area, (Fig.4) but despite major improvements in the area, public policies in the South-Eastern district, and in particular in K-buurt, still need policies that aim at improving youth development opportunities increasing security, making the living environment more sustainable, improving the position of vulnerable residents, reducing poverty, promoting participation and democratisation (36). This process is taking place on the basis of public recognition of the historical and cultural value of the area.

4.2 *The Lot M in Scampia: the Sails*

The modern iconic landmarks of the Scampia neighbourhood in Naples are the so called Sails (Vele) (Fig.5). These buildings have been dwelled in from the start of the 1980s and squatted while still unfinished after the 1980 earthquake, over-densified and lacking in services. These tent-like buildings, nicknamed Sails for their formal analogy, were built in an area north of Naples, that was originally agricultural. Still unfinished, by the early 1980s they had become a social condenser for displaced persons and people in difficulty, an isolated ghetto disconnected from the centre, where over time criminal activities and drug dealing found fertile ground in the absence of other job opportunities.

The Sails occupy only one of the twenty-one lots that make up Scampia, a record-breaking neighbourhood in Naples: the greenest and most feared in Naples.

The buildings designed by Franz di Salvo in the 1960s were not built as in the original project.

Neither people nor architecture fared well in housing units, such as Corviale in Rome (37), Forte Quezzi in Genoa, Unité d'Habitaciòn in Marseilles.

Although in an advanced state of degradation and a drug dealing place, the facades and interior walls of the Sails in Scampia are populated with street art, bearing messages, signs and drawings by foreign artists and inhabitants.

The Sails have often attracted those who do not live there. They have been observed, filmed and photographed by journalists and artists from all over Europe, as a recognisable dramatic icon of every conceivable problem in Italy's suburbs. In recent months they have returned to the centre of media attention.

Originally, there were seven buildings: four in the lot M and three in lot L. The four Sails built in the lot M are called: A, B, C, and D. Currently, they are also called by colours respectively: Green, Blue, Yellow and Red. Three Sails were built in the lot L: F, G and H (the E was never realized).

All the three Sails were demolished in lot L between 1999 and 2003, have been replaced by four-storey social housing, where hundreds of families have been moved. They found decent housing, but not excellent public space and the city has been architecturally impoverished. In this lot a new building circular plant has been realized to be a new University venue, designed by Gregotti, that should be opened in 2021.

The conditions around the whole neighbourhood, however, have changed profoundly in twenty years. Last architectural change is the demolition of the Green Sail began on February and was completed on July 2020. It has been celebrated by many and not appreciated by other residents of Scampia.

In the generic suburbs of northern Naples, the Sails have an architecturally strong image, they are a territorial landmark. Whether they are liked or not, they have become icons of the urban landscape and part of the local history and memories (38).

Having created their fame, today the last remnants of the stigma persist.

The social stigma has gradually overlapped with the formal one. *Comitato Vele*, the historic committee set up to demand the right to live in decent conditions, from 1989 struggle for better housing conditions

¹ He is the author of "Wees Onzichtbaar", the story of a Turkish boy in the Bijlmer that won the Libris award for literature in 2018.

for people of the Sails. Their main objective is the demolition of the buildings as a solution for obtain new houses to all the families who have been living in precarious conditions for decades.

The uninhabitable conditions have been blamed almost exclusively on architectural and structural configurations, the presence of toxic insulation materials, and general decay, but they cannot be examined without considering the social history of the place, the pressure due to very high density, the extreme lack of maintenance, the absence of services, and the strong criminal control.

The problem are not just the buildings. Without man, who uses them, things are dead bodies. In fact, men make and unmake places, judgements and prejudices.

In 2020, the first Dutch tourists guided by a *Local in Naples* tour came out to visit these buildings, going beyond the usual tourist circuits sold to visitors. Anyway the residents remain divided between those who want nothing more than demolition and those who feel an emotional bond with this urban landscape, due to collective history or personal memory. First group is organized with Comitato Vele, the most important association of inhabitants. Comitato Vele is collaborating with the Municipality of Naples in the Lot M redevelopment in the RESTART Scampia project. RESTART Scampia is implementing the urban regeneration strategy that aims to convert this area from an urban edge to a new centre of the metropolitan area. With respect to the Sails, the strategy includes the demolition of three of the four remaining Sails in Lot M and the construction of new houses. The Municipality's strategy is that only the Blue Sail will remain, as a symbol, memory and monument, following the renovation work, asbestos abatement and replacement of the famous concrete walkways with steel ones.

While the Sails are coming down and the built environment of the lot M is changing, what is happening in the human geography of the neighbourhood? A silent cultural renaissance is underway in Scampia. From the outside, it can be said that it is favoured by some major investments such as the new underground station, the Federico II Faculty of Medicine and "RESTART Scampia" project. Those who walk and live in the streets of the neighbourhood can find the vibration taking place in the activities of many NGOs, groups, activists and free citizens, who work for and with the community. Some socio-cultural reference points: *Comitato Vele* and *Cantiere 167*, the *Compare* Association that manages the *Mammot Territorial Centre*, *GRIDAS* - Gruppo Risveglio Dal Sonno (group wakening from sleep), *BandaBaleno - Murga Di Napoli*, *Dream Team - Donne in Rete*, *Centro Hurtado*, *CentroInsieme Onlus* with the project "Vela: Rendere Consapevoli" (Sail: making people aware) and *L'albero delle storie* (The tree of the stories) association, *L'uomo e il legno* (The man and the wood), *I pollici verdi* (The Green Thumbs), *Chi rom e chi no*, and many more.

Figure 5. The Sails today: On the left a view from North-East from the Ciro Esposito park (photo: S. Torrone), on the right the view on the Yellow Sail from the Red Sail (photo: C. Mazzarella).



Despite of many bottom-up initiatives and general improvements along time, what the inhabitants of Scampia and Naples lack most today is a labour. Even today, many young people who do not want to fall into the networks of the underworld or who seek independence from their families are forced to emigrate.

5. Discussion and conclusions

As defined by the donut economy model, EC and CC are not only about efficiency in the management of goods and materials, but also about welfare and social equity.

While the city of Amsterdam has set itself concrete objectives of thriving through CE models, the City of Naples does not yet have a plan aimed at implementing circular policies.

Starting from the concept of wastescape, developed in the h2020 REPAiR project, two urban wastescapes from Amsterdam and Naples have been considered. Bijlmermeer and Scampia have grown and deeply transformed over time; in this paper we have compared the two modern areas, that have suffered the condition of becoming wastescapes, in which there is still evidence of the original contested modern architecture. The so called *honeycomb* buildings of Bijlmer and the Sails of Scampia represent two cases in which modern architecture, born out of a utopia of egalitarianism and collective life, has come up against extraordinary needs and complex socio-cultural conditions. contributed to the failure of the districts. These neighbourhoods are recognised and characterised by the architectural landmarks of modern high-rise buildings, and have been stigmatised and excluded from the urban systems. The causes that led to the condition of abandonment and wastescape are found in the original rigid top-down planning approach, that did not consider the preferences and the needs of future inhabitants, the design choices that created some dysfunctional hallmarks of the modern built environment, and the unfinished condition of the areas, that made them the last choice and transformed the modernist utopia in a nightmare. Successive situations of socio-cultural exclusion due to the previous causes tuned these places in dangerous ghettos.

The policies implemented by the administrations of the two cities coped first with the physical evident problems of the built environment: Connections were set through infrastructure, demolition and reconstruction of many buildings, creation of public facilities points, and location of commercial areas. The socio-cultural actions implemented from the bottom up by NGOs and groups of citizens proved the importance of place-based communities in self-organization. Ties born of common daily difficulties created strong resilient communities, albeit with a different approach and link to modern architecture.

The main different elements in the two cases are the following. In Naples there has been a strong criminal control and the state of abandonment of the buildings was out of control since 1995. Since then, the ordinary maintenance has been self-managed by self-organised squatters and inhabitants. Most of resident are waiting for new social housing and for the demolition of the buildings, seen as icon of degradation and segregation mainly after the *Gomorra* effect.

On the one hand the historical area of Bijlmermeer has become a museum area. The cultural and historical value of the K-buurt with the Bijlmermuseum has been recognised by the Municipality in 2016. In this context, the case of Kleiburg shows also the value of a successful real estate operation of adaptive reuse and recognition of the cityscape from the conservation of modern buildings in the context.

While inhabitants of Naples asked for demolition of the buildings from the very beginning, the Bijlmer pioneer struggled for their conservation.

Currently the Sails are going through a phase of transformation, but the process seem to be slow and people still live in fragile conditions. Restart Scampia project and the strategic and planning actions put in place for the urban regeneration of the area are demolishing three of the four last buildings, and it is realizing new public and cultural functions for the social mix of the district.

In both cases, the regeneration processes were mainly oriented towards creating conditions of liveability, through architectural regeneration and the implementation of public services. The concept

of sustainability has not been directly taken into account. So far, the idea of circular economy and circular city is present at a strategic level in the urban agenda of Amsterdam, but not in that of the Metropolitan City of Naples, nor specifically in the RESTART Scampia project. Some circular economy practices have been implemented by inhabitants through bottom-up urban regeneration projects, such as the urban garden of the inhabitants of Kleiburg or the recovery of Corto Maltese Park in Scampia by Pollici Verdi.

In a multidimensional and multi-scalar perspective, both neighbourhoods have great potential in the transition to the circular city:

1. the historical value of modern architecture, that is a landmarks, created identity, but it is a contested heritage due to the symbolic (positive and negative) value it assumed over time. It also need to be adapted to be more sustainable, flexible and liveable;
2. the opportunities offered by wide green public spaces in dense urban areas, provide ecosystem services and the space to implement nature-based solutions for circularity;
3. the presence of active place-based communities, committed in improving public and private space quality of their neighbourhoods, and interested in taking part in urban transformation decision-making processes. Co-governance of circularity at community scale is a big challenge of social circular economy;
4. their location in nodal points of metropolitan areas.

Thus, the relevance of urban regeneration in neighbourhoods like these -characterised by historical buildings of the modern movement- can be seen in the preservation of memory and the integration of new multiple place-based communities into neighbourhood decision-making processes to regenerate the built environment creating new labour. In this sense, actions to implement the CE and the CCs cannot be abstract and it is not possible to use the same strategies in different urban contexts. Each place must take into account local specificities.

These specificities are the identity of the areas and the meaning local communities gave them over the time.

If on a regional scale the CE has a great economic and environmental impact in urban metabolism of waste flows, on a local scale urban wastescapes regeneration can also assume a strong socio-cultural value.

References

1. Korhonen J, Nuur C, Feldmann A, Birkie SE. Circular economy as an essentially contested concept. *J Clean Prod* [Internet]. 2018;175:544–52. Available from: <https://doi.org/10.1016/j.jclepro.2017.12.111>
2. Kirzherr J, Reike D, Hekkert M. Conceptualizing the circular economy: An analysis of 114 definitions. *Resour Conserv Recycl.* 2017;127(September):221–32.
3. Geissdoerfer M, Savaget P, Bocken NMP, Hultink EJ. The Circular Economy – A new sustainability paradigm? *J Clean Prod* [Internet]. 2017 Feb;143:757–68. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0959652616321023>
4. Dantas TET, de-Souza ED, Destro IR, Hammes G, Rodriguez CMT, Soares SR. How the combination of Circular Economy and Industry 4.0 can contribute towards achieving the Sustainable Development Goals. *Sustain Prod Consum.* 2021;26:213–27.
5. Paiho S, Mäki E, Wessberg N, Paavola M, Tuominen P, Antikainen M, et al. Towards circular cities—Conceptualizing core aspects. *Sustain Cities Soc.* 2020;59(March).
6. Marin J, De Meulder B. Interpreting circularity. *Circular city representations concealing transition drivers.* *Sustain.* 2018;10(5).
7. Williams J. Circular cities: Challenges to implementing looping actions. *Sustain.* 2019;11(2):423.
8. Fusco Girard L, Nocca F. Moving towards the circular economy/city model: Which tools for operationalizing this model? *Sustain.* 2019;11(22):1–48.

9. Cerreta M, Muccio E, Poli G, Regalbuto S, Romano F. A Multidimensional Evaluation for Regenerative Strategies: Towards a Circular City-Port Model Implementation. In 2021. p. 1067–77. Available from: http://link.springer.com/10.1007/978-3-030-48279-4_100
10. Foster G. Circular economy strategies for adaptive reuse of cultural heritage buildings to reduce environmental impacts. *Resour Conserv Recycl* [Internet]. 2020;152(October 2019):104507. Available from: <https://doi.org/10.1016/j.resconrec.2019.104507>
11. Gravagnuolo A, Angrisano M, Girard LF. Circular economy strategies in eight historic port cities: Criteria and indicators towards a circular city assessment framework. *Sustain*. 2019;11(13):1–24.
12. Russo M, Amenta L, Attademo A, Cerreta M, Formato E, Remoy H, et al. D 5.1: PULLs Handbook [Internet]. 2017. Available from: <http://h2020repair.eu/project-results/project-reports/>
13. Amenta L, Attademo A, Remøy H, Berruti G, Cerreta M, Formato E, et al. Managing the transition towards circular metabolism: Living labs as a co-creation approach. *Urban Plan*. 2019;4(3):5–18.
14. Garzilli F, Mazzarella C, Vittiglio V. Integrated Approaches for Peri- Urban Wastespaces : Eco-Innovative Strategies of the REPAiR Project in the Naples Case Study. *Int J Urban Plan Smart Cities*. 2020;1(2):43–58.
15. Arciniegas G, Šilerytė R, Dąbrowski M, Wandl A, Dukai B, Bohnet M, et al. A Geodesign Decision Support Environment for Integrating Management of Resource Flows in Spatial Planning. *Urban Plan*. 2019;4(3):32.
16. Steinitz C. A Framework for Geodesign: Changing Geography by Design. Vol. 7, *Journal of Landscape Architecture*. Redlands, California: esri press, redlands california; 2012.
17. Amenta Li, van Timmeren A. Beyond wastespaces: Towards circular landscapes. addressing the spatial dimension of circularity through the regeneration of wastespaces. *Sustain*. 2018;10(12).
18. Berger A. *Drosscape, Wasting land in urban America*. Princeton. New York, USA; 2006.
19. Brenner N. *Implosions / Explosions Towards a Study of Planetary Urbanization " I'LL Begin With the Following Hypothesis: Society Has Been Completely Urbanized. "*. Berlin: Jovis; 2014.
20. Ministri P del C dei. Bando per la presentazione di progetti per la predisposizione del Programma straordinario di interventi di riqualificazione urbana e sicurezza delle periferie delle Città metropolitane e dei Comuni capoluogo. DPCM 25/5; 2016.
21. Hillier B. *Space Is the Machine. A configurational theory of architecture*. Space Synt. London; 2007. 1–109 p.
22. Heynen H. Space as Receptor, Instrument or Stage: Notes on the Interaction Between Spatial and Social Constellations. *Int Plan Stud*. 2013;18(3–4):342–57.
23. Del Prete G, Pascarella R, Pasquini S, Vanella V. *ImmagiNA Napoli Metropoli 20/22*. Napoli; 2020.
24. The Platform for Accelerating the Circular Economy (PACE). *Circularity Gap Report* [Internet]. 2019. Available from: <https://www.circularity-gap.world/>
25. Gemeente Amsterdam. *Amsterdam Circular 2020-2025 Strategy*. 2020;1–30. Available from: <https://www.amsterdam.nl/bestuur-organisatie/volg-beleid/ambities/gezonde-duurzame-stad/amsterdam-circulair-2020-2025/>
26. D.E.A.L., Biomimicry 3.8, Circle Economy, C40 Cities. *The Amsterdam City Doughnut. A tool for transformative action*. Amsterdam; 2020.
27. Circle Economy. *DISRUPT framework* [Internet]. Available from: <https://www.circle-economy.com/resources/the-disrupt-framework>
28. Punziano G (a cura di), Terracciano A, Lanzi M, Martone V, Gargiulo E, Sacco E, et al. *Società, economia e spazio a Napoli. Esplorazioni e riflessioni (Society, Economy and Space in Naples. Explorations and Reflections)*. SSRN Electronic Journal. L'Aquila; 2016. Report

- No.: 28.
29. De Magistris L, Piscopo M, Villani D, Borriello C, Pulli G, Santoro M, et al. RESTART SCAMPRIA. Comune di Napoli. 2016.
 30. Wassenberg F. Large social housing estates: From stigma to demolition? *J Hous Built Environ.* 2004;19(3):223–32.
 31. Mentzel M. THE BIRTH OF BIJLMERMEER (1965): THE ORIGIN AND EXPLANATION OF HIGH-RISE DECISION MAKING. *Netherlands J Hous Environ Res.* 1990;5(4):359–75.
 32. Wassenberg F. The integrated renewal of Amsterdam’s Bijlmermeer high-rise. *Informationen zur Raumentwicklung, H 3/4, 2006*, pp 191-201. 2010;191–202.
 33. Cerreta M, Mazzarella C, Spiezia M, Tramontano MR. Regenerativescapes: Incremental Evaluation for the Regeneration of Unresolved Territories in East Naples. *Sustainability.* 2020;12(17):6975.
 34. Marini S. Returning to wasting away. 4th Int Conf Int Forum Urban [Internet]. 2009;249–58. Available from: [http://newurbanquestion.ifou.org/proceedings/3 The Urbanized Society/full papers/B013_Marini_Sara_RETURNING TO WASTING AWAY.pdf](http://newurbanquestion.ifou.org/proceedings/3%20The%20Urbanized%20Society/full%20papers/B013_Marini_Sara_RETURNING%20TO%20WASTING%20AWAY.pdf)
 35. Hirschhorn T. An Electronic Conversation between Thomas Hirschhorn and Jacques Rancière: Presupposition of the Equality of Intelligences and Love of the Infinitude of Thought. *Theory, Cult Soc.* 2014;31(7–8):101–10.
 36. Gemeente Amsterdam. Gebiedsagenda’s Zuidoost 2019-2022. 2019.
 37. Molinari L, Ingrosso C. The Corviale in Rome and the Vele in Naples: Can a ‘monster’ become an urban opportunity? In: Tostoes A, Ferreira Z, editors. *Proceedings of the 14th International Docomomo Conference - Adaptive Reuse: The Modern Movement Towards the Future.* Docomomo; 2016. p. 824–9.
 38. Cerullo D. *Diario di un buono a nulla. Scampia, dove la parola diventa riscatto.* Società Editrice Fiorentina; 2016.