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DOCTORAL PROGRAM IN ARCHITECTURAL, URBAN AND INTERIOR DESIGN

Chair:
Prof. Luca Basso Peressut

The PhD programme promotes studies and research projects concerning the architectural design at different scales – the urban and territorial space, the building, the interior space – enhanced by the analysis and interpretation of the contexts, the investigation of history, theory and critical explorations of architectural design, pursuing an open dialogue with the different disciplinary skills called to deal with the development of contemporary architecture. The aim of the PhD programme is the definition of theoretical and operational tools to foster the development of a critical approach to the understanding of the complexity of buildings and spaces, as well as to acknowledge the concise and strategic values of design in constructing connections between formal structures, utilitarian contents and functional requirements of architectural works and their contexts.

The PhD programme takes advantage of the rich research milieu of the Department of Architecture and Urban Studies (DAStU) and of the cooperation with two other PhD programmes held at DAStU ('Urban Planning, Design, Policies' and 'Preservation of the Architectural Heritage'). DAStU, as a structure of thematic and interdisciplinary research, works in the field of architectural and urban projects, spatial planning and territorial governance, urban policy, conservation and intervention on heritage and natural environment, historical and critical interpretation of architecture, city and territory. The Department carries out research and field work on transformation, care and government of historical and contemporary settlements and landscapes, based on principles of environmental, social and economic sustainability.

Aims of the course
The PhD programme in Architectural, Urban, and Interior Design aims at training researchers and professionals specifically qualified to meet the new problematic domain and formulate appropriate responses through development of the required theoretical, methodological and operational tools.
The Programme intends to train and prepare highly qualified researchers and professionals, who will work in academic institutions, research centers, public administrations, as well as in the private sector, in the different fields of architectural, urban and interior design.

Topics and research issues faced during the course
The research topics of PhD PAUI deal with several subject-related issues concerning:
1. Architecture of public spaces and urban design: methods and tools for the design of the ground surfaces in all their articulation; detailed definition of open space morphology and equipment; architecture of public buildings: typology, composition, structure and interiors;
2. Regeneration and reuse of urban fabrics: architectural design tools and methods for a sustainable approach to built environments;
3. Design of living spaces and social housing: analysis of dwelling models; historical and current transformation processes; future models and structures of individual and collective living places, with a special focus on the relationship between interior space and furniture;
4. Environmental control and individual well-being: design criteria and tools; simulation and monitoring of the microclimate and environmental comfort (energy aspects, lighting, ergonomics, etc.);
5. Museography and exhibition design: architectural design of museums; display and communication systems; museums, territory, landscape; virtual museum;
6. Landscape architecture: analysis and coordination of cultural, architectural and environmental resources for the enhancement of contemporary territorial man made transformations; study design and testing of the relationships between transport infrastructures and landscapes;
7. New scenarios: multi-scalar, multi-cultural and interdisciplinary nature of contemporary architectural, urban and interior design; innovative typological, spatial and formal models; hybridizations and "neo-places"; dynamics of space-society relationships; the role of cultural heritage in the age of globalisation, migrations and multiculturalism.
8. Theory, history, philosophy and critique of architectural, urban and interior design.

Qualifying elements of the curriculum
- Customised teaching methods aimed at developing each student's specific aptitudes in different areas and scales of design, as well as theoretical and critical historical research;
- Analysis of complex paradigms and development of split up methodologies of intervention with interdisciplinary integrations for design development, with theoretical, critical and historical research purposes;
- Creation of virtual and classic simulation tools for the control of all the fundamentals of architectural, urban and interior design;
-Strong self commitment in scientific research.

Study methods
The PhD programme pursues a line of research focused on the relation between theoretical and operational practice in architectural and urban design through the integration of:
-Research on architectural, urban and interior design paradigms (theory, history, philosophy, critique) where in-depth analysis of the contents of specific disciplines is dialectically juxtaposed with the necessary connections with parallel outlooks and skills, the integration of which appears necessary for development of the core problems;
-Applied design research, in which design is considered as the driver and the result of a research program to be pursued as the development of a problematic assumption, the result of a knowledge process aimed at interpreting the contextual reasons and identifying a critical path strongly related to theoretical statements and sample thematic reference structures.
- Seminar activities and individual stages/ internships particularly important for enhancing the students' curriculum;
- Individual research aided by tutors and supervisors with the contribution of the entire teaching staff.

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THE EVOLUTION OF MUSEUM EXHIBITION IN ARABIA
A QUALITATIVE STUDY OF THE EXHIBITION DESIGN AND IDENTITY IN SAUDI ARABIA

Abeer Alsobahi - Supervisor: Prof. Luca Basso Peressut

Museums in Saudi Arabia have traditionally been storage places for artefacts, art, and/or archeological items. Until now, no real philosophy or strategy has been put forward to guide their design development or identity representation, and there is not enough research done on that regard. Saudi Arabia has all the components to help museums flourish, including the rich history, a unique Arab culture isolated from colonialism, wealth and economic power, and young educated generation. According to the Central Department of Statistics and Information (2010), more than 50% of the population in Saudi Arabia is under the age of 18.

Therefore, the goal of this study was to investigate and shed light on the evolution of museum exhibition in Saudi Arabia in relation to design and identity. Investigating the development of museums in Saudi Arabia since its inception in the 1960s, passing by case studies from the current situation, and overview over the new future plans and projects, I was able to extract important interpretations and recommendations that would help and guide decision makers, designers, and whomever cares for the museum culture in Saudi Arabia to plan.

Key words:
Museum, identity, exhibition design, Saudi Arabia

ARCHITECTURAL, URBAN AND INTERIOR DESIGN

FROM THE MEDINA TO THE METROPOL
NEW INTEGRATIVE APPROACH FOR SUSTAINABLE REVITALIZATION OF THE HISTORIC CENTRE IN THE METROPOLITAN CITIES!

Hamza Benacer - Supervisor: Prof. Antonella Contin

The thesis 'From the medina to the metropole new perspectives on North Africa's urban identity' focuses on the preservation of urban identifiability from the unplanned urbanisation and global impacts that regional cities are increasingly exposed to.

In essence, this research is an investigation for an appropriate interpretation of regional architecture aiming not only on the renewal and the preservation of traditional achievement as a way to reinforce urban identity but also on the set of new means and alternatives to formulate a bridge of reconciliation between the traditional and modern pattern within the context of cultural permeability and uniqueness as a basis for a future urban identity particular to the North African cities.

Besides their importance for the attractiveness and localization; cultural heritage is often considered a convenient base for the Identity formation, not only for the tourist industry or urban branding and marketing, but also as an important thematic framework for new urban developments. These opposing positions in addressing traditional architecture have left a clear mark and continue to have an impact on current developments decisions where sometimes the tension is

still overstated to create unique space experiences.

The example in the segregation between tradition and modernity in city of Algiers is not only clearly visible in spatial structure and visual form, but also in urban marketing activities, as well as in general strategic planning. *The polarizing approach does not seek compromises*, but focuses on the best features of the two poles, creating ambiguous identities, which are justified by different uses and target groups. However, these two forces in certain cases inevitably overlapping bringing questionable design. In any case, past and architectural heritage today has to serve as an important element for strategic future planning which has to play a crucial role in the reconciliation

between the two poles; but how?. We consider that the dependencies are certainly very complex, but one of the most important features of the cities is the changing and negotiating of compromises. In every major conflict, a suitable compromise is deliberately required through planning. Since cities tend to maintain their existing identity on the one hand, and on the other hand strive to enrich it with some additional elements, with global ideas playing an important role, the transformation will usually occur as a continuous process. The interplay of *conservation, transformation and modernization* of the building stock in the identity development of local cities will help in creating a continuous process of development, in this

case, the desired pieces of the past and the tradition are *chosen*, which are afterwards *renewed* and *supplemented* with some new functions and peculiarities attributed to the *present needs*. The connections between *existence, transformation and modernization* in the formation of identity require *contradictory constellations*, which, however, can be recognizable urban identities as a part of the continuous process of building local *urban identity*. Last but not least, in the case of Algiers the complex long-term planning and management; has to direct the urban changes in order to secure certain continuous development goals as an opportunity to clear planning errors from the past, where the remaining tradition and heritage has the potentiality not only as a starting point for identity formation, but also can be seen as a powerful generator for contemporary development. The significance of the present research on urban identity and change in the example of Medina of Algiers is presented in a broader and local context, since a comprehensive understanding of the global processes is necessary as well as its impact on the local level. The empirical study on the impact of colonization, globalization and change would contribute to the research work in order to develop efficient ways of preserving localization and identity in the contemporary world from a closer perspective. In this way a research gap in the literature on urban identity is addressed which is characterized by a lack of empirical studies that takes into
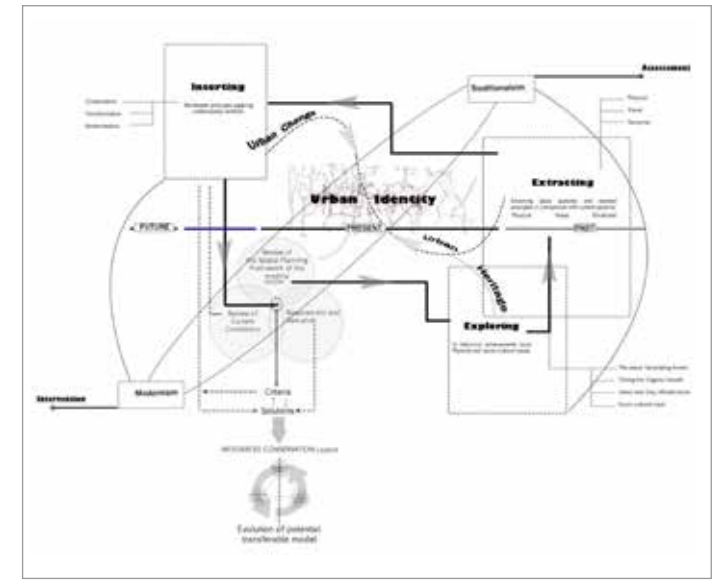

Fig. 1 - Traditional Pattern vs. urban grid

Fig. 2 - Developed methodology

account the effects of globalization and change in a in the context of individual case studies.
City analysis gave an insight into the previous, current situation and possible future scenarios. The most important result of the present research is probably the proof that the urban identity is of high significance, as the backbone

for any sustainable planning. Finally, the present research also seeks to open up a new perspective on these issues and serves as a possible inspiration for planners. Due to the fact that the subject itself is in the development process and relatively new, there are many other areas than possible fields for future research.
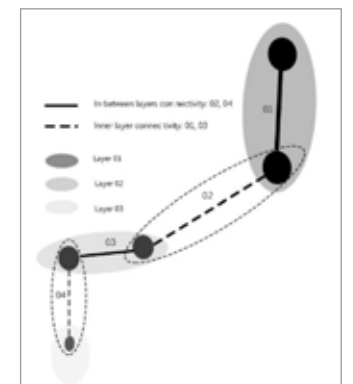

Fig. 3 - The Medina Pattern Identity -an urban space hierarchy well structured-

MUSEUMS OF NARRATION BETWEEN WORDS AND PROJECTS: COMMUNICATIVE MODELS FOR THE SPACES OF EXHIBITING TODAY

Marcella Camponogara - Relatore: Prof. Arch. Luca Basso Peressut

The research wants to analyze the new forms of museography which are related to the narrative museums through the study of the most influent offices that works in these thematic. The focus is about the museographical aspects to restrict the field of the research which has been conduced also through interviews with architects and other experts involved in museums configuration. The concept of sensitive environment in the museum project is considered as an actual ecosystem: a place in which there is an interrelation between the virtual component and the physical presence, between the specific content and the experience of each visitor. The actual situation makes possible to reintroduce a choral, participatory dimension which is related to the point of developing a ritualistic form. It becomes a place with which a community can identify. I look at the significant of a public function which the museum institution can rediscover and re-establish, and which stems from the need to place the relentless phenomenon of homogenization alongside the promotion of originality and diversity. The hypertext structure of the narration and the multitude of documentary fragments makes it possible to tell the story in non–linear style and without the need for a single point of view. The presentation of the event through the juxtaposition of original documents or oral accounts creates an accumulation of fragments which are superimposed upon an individual and systematic explanation. They can be seen as a moveable unit in an open structure, with the possibility of always being recombined. It is possible in this way to create different versions of interpretations of historical facts depending even upon the visitor's personal point of view or cultural background. In addition to displaying exhibits, the museum also has to consider the language used for displaying them. It is therefore necessary to be aware that each technical and narrative device is itself part of the exhibition. The design project creates a two-fold staging situation over which extreme care must be taken. The equipment is an integral part of the narrative aim of the exhibition. The application of technological apparatus, if used correctly, can become "content" or better one of the architectonical aspects that makes the exposition and not just an instrument, generating a significant Metalevel in a museum program. It becomes an experience in which you can feel, you can discover, modify these technological languages in a way which does not become an end in itself. The museum becomes a place to experience and share a story through a variety of stimuli, in which the experience its content not only perceptively but also physically, and to share those physical emotions with others. It becomes an organic and dynamic environment and not just a place for collecting and exhibiting: this is a distinguishing feature in the passage from an idea of a museum as a collection to that of a museum as narration. This situation makes possible to reintroduce a choral, participatory dimension which is related to the point of developing a ritualistic form. It becomes a place with which a community can identify. Thus web ring together a culture in danger of extinction it's one of rediscovery, emphasizing memory not as something petrified in time, but as a necessary and continual evolution. It develops a responsive value as soon as the shared collective memory tends paradoxically to be obscured by an exponential growth of the so–called virtual "memories" and by the way in which they are managed. Identity is dynamic. Today, when we think of a "museum" we therefore have the idea of a workshop, a living organism which is able to transform itself interactively through involvement and participation, and which is able to offer a continually evolving "vision" without yielding to simplistic solutions of immediate entertainment. It is a place where people can meet and return: a place whose experience is unique and original: to be experienced like a story, like being in a film. It might be said that we are moving away from museums as "collections" to museum as "narration" – a narration which is open, versatile, discontinuous, as dictated by the languages and the virtual culture of today. Multimedia language makes possible to tell a story in a smooth. Above all it is the language with which we communicate today, which captures our imagination and express itself in new forms of behavior. It has led to the inevitable influences which the media has exerted over us for years but, if inverted allows us potentially to reconnect with a shared feeling, a vehicle for dialog between different people from far and wide. Its language has a certain similarity with the oral tradition on which the characteristics of discursive thought were based: indeterminacy, repeatability, immediacy, simultaneousness, fragmentation and connectivity.

People need to relate to this language in order to rediscover familiar territory, to understand and express themselves, to give form to the "invisible" or to rediscover its value. Another point of focus in this ideal compass which helps us in an initial understanding of the argument is the definition of learning. Arising from the different ways of using new technology, the language of the digital true, computer archives and the expansion of the internet.

INTRA-STRUCTURES: URBAN DENSIFICATION SCENARIOS FOR THE MOBILITY IN TRANSITION. THE CASE OF RING-ROAD A20 IN ROTTERDAM

Gianluca Ferriero - Supervisor: Prof. Luca Molinari

Co-Supervisor: Dirk van den Heuvel (TU Delft)

Over the years, cities have been structured around the development of a system of networks, and especially through the last century transportations have been acquiring a predominant value as economic issue. Nowadays, our society is based on global systems and networks of infrastructure: it is a fundamental part of our everyday environment as the place of traveling, meeting, and having experiences. At different scales, infrastructures have a fundamental impact on the social conditions in which we live: strategical positioning of airports accommodates the travel between different continent in a few hours; high speed train allows to move from station to station quickly and securely; self-driving and electric cars have been setting noise and air pollution at the lowest level ever. In spatial terms, this change leads to a redefinition of the hierarchical structure of urban elements which architects and planners should consider as crucial.

More specifically, highways, ring roads, interstate roads, etc. are currently used beneath their capabilities, according to the recent trends. In fact, although not designed for that highways are mostly used for urban connections, most of the travels covers no longer than a 5 Km distance, turning the highways into roads with an urban attitude. The traffic congestions are going to increase since the number of electric and self-driving vehicles is progressively growing.

According to that, the present research aims to investigate the role of car infrastructure from a theoretical, and social point of view in order to explore new scenarios and spatial perspectives for architectural and urban design of today. As for architecture, landscape or urban design this is no different for infrastructure: all of these involve spatial designs beyond technological solutions. The highway, as a symbol of post-war mobility, nowadays is an important legacy that heavily affects the morphology of the territory and which, in response to functional needs, runs across different kinds of landscape, generating physical disconnection as well as social fragmentation. Recent mobility trends demonstrate how motorways are more and more used for covering short distances within urban areas, generating traffic congestion and noise pollution. As an urgent question to address it appears to be necessary to establish an approach that defines and categorizes the modes of intervention on infrastructures, taking into account both spatial and social value. Referring to such concepts of reuse and transformation, "Wasting away" by Kevin Lynch is here considered as an example of wide overview of the waste production processes both in the natural and anthropic realm, showing their qualities as resources. In particular, the concept of 'positive waste' where the theme of reuse is applied to the production of physical objects that in the urban debate that Lynch extends to the neglected spaces and unoccupied lands close to the motorways. A wide discussion which gives gives general guidelines in order to restore the liveability, and reintegrate the spaces in the city as part of a larger strategy. From these considerations, the following chapter takes aims to define possible scenarios in which the architecture, due to the new low-impact transport technologies, defines the conditions for the integration of infrastructures into the urban fabric, according to such themes of dwelling and public space.

During the post-war reconstruction, the introduction of the car into the urban environment radically changed the concept of movement. In this period, due to multinational corporations' stategy of keeping the oil price as lowest, the amount of cars reached the highest point ever. Consequently, urban planning policies had to adapt to this condition, pushing for the construction of large-scale roads capable of reaching long distances. What really changed the way of living the urban spaces was not only the needs of moving between home and work, rather the possibility to do it autonomously. The infrastructural transportation was based on individual functionalities, not considering any qualitative value of the space. This was a consequence of the the welfare state approach which led to to respond to the strong capacity of production, by sectorizing interventions and excluding any approach devoted to sharing and cooperation. After that, with the 1973 oil crisis, the demand for automobiles began to decline, resulting in an abnormal trend in the market curve, which in the 1980s, however, returned to high levels.

In the recent years, again, there is a strong counter-tendency which in a singular way outlines how the motorway is increasingly taking on the role of the urban road. The place of travaling across long distances is part of the city system; a portion of everyday life along which the main business and entertainment activities are located; a urban rather than external connection system that lives a strong phase of obsolescence rather than necessity.

Contemporary culture starts up towards a process of revaluation of the infrastructure system, highlighting the negative aspects and highlighting the formal and functional discontinuity that the urban fabric has undergone over the years, leaving the high-slope roads occupy, pushed only by a functionalist logic, several parts of the city

. To date, with the widespread use of new transport technologies, the mobility system begins to undergo radical transformation. The introduction of self-driving cars and electric cars greatly reduces the amount of noise and environmental pollution. The roads, and the motorways to a greater extent, tend to become more and more places of promiscuity. In contrast to the rigid functionalist division of the routes based on the type of motion, recent mobility technologies are the example of a possible coexistence between pedestrian and vehicle flows, deeply influencing the road idea. The introduction of intelligent mobility systems, which calculate travel times and adopt traffic information sharing systems, optimize travel modes by reducing the space needed for vehicles and consequently the environmental pollution of roads to large scrolling.

These technical considerations also involve, and above all, a reflection from the point of view of the project, investigating how the relationship between city and motorway can be improved in terms of quality of life and spatial opportunities.

This and other aspects are dealt with through well-defined design proposals designed to provide reflection ideas for a city project that takes account of the infrastructural traces on the territory, considering opportunities for the re-appropriation of spaces of sociality, the tether of sharing and participation in life public. Due to its widespread diffusion in the area, the infrastructure offers potentially a high degree of accessibility, favoring the creation of new concentrations and significantly influencing both the economic and spatial value of the different areas. Transit between goods and people generates a coexistence that arouses polymorphic and multifaceted complexities. Public transport infrastructures are a privileged area in conceiving the new shape of the collective space and in favoring urban rituals. In the end, a set of applicability criteria is proposed which, working on the various scales, tends to the configuration of the "urban room" previously treated as a representative image of the social road. A rationale for the different fabric conditions, where the coexistence of different elements is a source of imagination for spurious and hybrid scenarios where urban life can find new forms of manifestation.

METROPOLITAN FRAMEWORKS OF CIVIC ROBUSTNESS
MAPPING AND DESIGNING FOR EAST AFRICAN URBANISM

Alessandro Frigerio - Supervisor: Prof. Antonella Contin

East Africa has a key-role in the frame of the extreme urbanization of Global South as it will be the fastest urbanizing region in the coming decades. The scale and the speed of this urbanization phenomenon, as described in a vast academic literature and in the reports published by international multilateral organizations, is unprecedented, as well as the unfortunately proportioned scarcity in terms of resources and the threats posed by climate change and socio-political fragility. Most of East African urban growth happens out of traditional planning terms, combining inadequate infrastructure, informal sprawling, polarized development, unsafety, and inequality. Current planning models are not successful in dealing with present challenges. For the few megacities and for a great number of rapidly growing secondary cities the task of remediating to past missteps and setting the basis for a sustainable development is crucial. Aware of the urgency to undertake actions in this direction, the most important multilateral organizations regularly update the international agenda with related suggestions and expected goals, setting the framework for all the initiatives of international cooperation. From these efforts, a

new urban narrative is emerging for Sub-Saharan African cities, envisioned as inclusive, low-carbon and just metropolitan systems.

This research investigates the role of urban spatial disciplines in this framework, with particular regard to the emerging of inter-disciplinary approaches under the umbrella of socio-ecological complexity models. How is it possible to shape rapid urbanization, driving it in a sustainable way, in this context of informality, scarcity, misgovernment and climate change? From an overview on East-African urban history, one of the main reasons of ineffective and inappropriate urban design and planning turns out to be the

lack of data and maps regarding real territorial and cultural spatial values. Only recently, the diffusion of information and communication technologies helped in revealing the real consistency of the East African city and its cultural patterns, opening new paths. Moving from this, it is crucial elaborating alternative approaches to appropriate mapping, moved by the urgency to stress the existing qualities of the analyzed contexts, in opposition to a diffused attitude to consider available land in developing areas as a tabula rasa.

With this purpose, the complexity of East African urbanism has been investigated from within, aiming at directly experiencing the dynamics of international

Fig. 1 - Guidelines of the framework of civic robustness for Mkokotoni Mkuajuni Zanzibar case study. Cover and sample pages.

cooperation for development to understand the role of architects and planners in translating global expectations and local values into design tools. Four design oriented case-studies have been chosen in the framework of the research activities that the author carried on together with the Measure and Scale of the Contemporary City Lab (MSLab) at the Polytechnic University of Milan, in cooperation with other important academic and multilateral institutions at the global level. The selected case-studies are all framed in a real context, responding to an authentic need or explicit request, they are built on factual interactions with stakeholders belonging to different categories in the international cooperation network, they all allowed the possibility to get data both from partnering actors and/or direct field work. The focus is on crucial metropolitan issues in Dar es Salaam and Mkokotoni-Zanzibar (Tanzania), Mocimboa de Praia (Mozambique) and Malindi (Kenya). They present different urban contexts (one real metropolis and three emerging intermediate cities), at various stages of extreme urbanization, with distinctive informal patterns, and peculiar environmental issues. In all the projects, the attempt has been trying to address needs and requests of the main client, was it public or private, by questioning the concept of public good, acting and designing the public realm, as strategic framework with an inter-scalar perspective and with an attention to local cultural socio-ecological patterns. Through the

design experiences, the research focus embraced the intent of improving the clarity of mapping efforts and to suggest alternative ways to make mapping tools effective to visualize, acknowledge, design, implement, and monitor sustainable urban development by focusing on the robust spatial structure of metropolitan systems. Gathering and selection of relevant data and elaboration of appropriate mapping emerge as crucial tasks, with the relation between UN Sustainable Development Goals (SDGs) and urban projects thus investigated and fixed in a set of three values building civic robustness: protection, accessibility and urbanity. Mapping morphological structures together with their performativity through metadata linking to the SDGs could allow to elaborate planning and design strategies as well as patterns for an effective implementability of the New Urban Agenda. Thus mapping turns in a strategic operation to match local values, global goals and morphological decisions on the physical space. Therefore, it is intended as a design process and the concept of *framework of civic robustness* is proposed. It refers to a synthetic layout plan built by the interlace of morphologically grounded socio-ecological patterns and intended as an inter-scalar platform of negotiation and co-production of the robust structure sustaining urban growth, blending top-down and bottom-up approaches and the interaction of multiple stakeholders. Specific guidelines and scenarios to communicate the framework of civic robustness,

a toolkit to implement it and a digital interactive version of the tool to boost its inclusive potential are presented as practical apparatus of the framework. Further research paths are suggested by the findings. Regarding the role of spatial disciplines in making a difference in these contexts an expanded notion of urban design emerges, combining metropolitanization and critical engagement, with an increasing relevance of metropolitan architecture as inter-scalar spatial device. Discussing the implementability of urban projects, alternative processes should be investigated, in the direction of inclusive patterns of negotiated coproduction. Moreover, institutional capacity is a precondition to sustain and making them effective. Capacity development programs are extremely relevant and need to be performed by innovative tools.

SPRAWLIFICATION: A NEW METHOD TO ANALYZE PERIURBAN SPACE

Arian Heidari Afshari - Supervisor: Ilaria Pamela Simonetta Valente

External supervisor: Richard J. Ingersoll, Associate Professor, Syracuse University Florence

This research presents a critical reading of sprawl. It is a project of description and analysis, rather than a proposal for design. Sprawl as we know it, is very difficult to describe. It is neither city, nor landscape; neither urban, nor rural. It is very hard to conceive of as a whole or to recognize by its elements or units. Sprawl, although it began with American consumer society, is by now a global phenomenon, consuming massive amounts of valuable land. It cannot be compared to any example of historical types of urbanism. We only have marginal access to sprawl, and can never really perceive it as a whole. We are forced to see it from inside automobiles or on screens with Google Earth and GPS. My thesis attempts to enhance the awareness of what we are not seeing. We see sprawl superficially because it is too big for our urban eyes. It carries no collective memory, nor immediate way to imagine it. Theorists tend to dismiss it as chaotic or generic. And it is usually considered in comparison to the central city and thus loaded with prejudices. It is easy to say what sprawl is not rather than what it is. Yet, it is very hard to ignore, because we all live in sprawl or have some relation to it. Sprawl is part of our daily life

and it will be much more so in the future, yet we don't have critical tools to observe, understand, and explain it. There is no common ground to start with. My research explores ways to reconsider the missing common ground.

I have searched for a new way to understand and hypothesize new meanings for a deeper awareness of the process in which sprawl materializes. First, I use the term *Sprawlification* to replace "urbanization." *Sprawlification* is a process like urbanization, but does not focus on bringing order to everything. It doesn't resemble the development and growth of built-up environments, but rather reveals sprawl as it is, a phenomenon on its own. Using *sprawlification* distances us from conventional comparisons with the city and the urban realm. It helps us to use new terminologies outside of our current disciplinary syntax (architecture, urbanism, or planning).

I have introduced an unconventional method to describe *sprawlification*. I call it *Grounding* because it rejects the three-dimensional analyses of objects in space, which ignore the typology or morphology of planned built-up areas or voids. Grounding does not suffer from a fixation with scale because

fundamentally it is based on a deeper exploration of the preconditions of *sprawlification* rather than the distribution of mass objects. The method focuses on the primary foundation of any development: the ground, the pre-existing system on which all the decisions and actions of *sprawlification* occur. In this way I am able to map the traces of the preconditions of sprawl in any context, detailing their transformation in time, exposing the reality of their in-between spaces. The Grounding method not only reveals through graphics the shapes and forms of these in-betweens but provides new names that resonate with the land they describe, a new taxonomy. Therefore, we are always aware of the true nature of in-between spaces.

To test the grounding method, I have produced a case study of *sprawlification*. I have analyzed the land area connected to or activated by a new ring road, the "Sardar Patel," 15 km from the center of Ahmedabad, in Gujarat, India. The choice of Ahmedabad had two advantages: first, it is not part of the Western tradition; second it has grown with great rapidity in a little more than 10 years, since 2000. From this case study we can learn much

about 21st-century *sprawlification* and demonstrate that the grounding method, despite being de-contextual in spirit, produces results that are necessarily site specific. The results also privilege what might be called *ethical space*; that is, those areas generally considered abandoned or vestigial that are actually intensely utilized by, most often, the underclasses associated with urban expansion in the so-called Indian context. This Indian context is, upon closer examination, universal. Its usual discussion in urban planning circles as specific to India only works if one examines the nuances versus the structural and topological nature of sprawl. The thesis consists of two volumes: the first defines and expands upon the theory of *sprawlification* and the conceptualization of the grounding method; the second presents the reading and mapping project of Ahmedabad sprawl. I have modelled its *sprawlification*

with seven scenarios in between 2000 and 2015. The way the scenarios are made and imagined is hybrid compared to conventional modeling methods. I have used a type of graphics capable of revealing the modes of *sprawlification*, and I have applied the grounding method to each scenario and the samples from the real sites. The result is a set of new maps of in-betweens, the aesthetic of which reveals relationships and possibilities that usually go unnoticed. These leftover spaces are presented as *lived* spaces. This is shown most emphatically in the photo-essay that comprises Volume Three of the study. The true nature of *sprawlification* can be perceived through its relative composition of dense versus porous in-betweens. These unconventional maps help reveal the hidden logic of sprawl, highlighting the areas of opportunities for any future

modification and reuse while also protecting vitally important social functions that go mostly unnoticed or are declared unwanted by urban planners.

The new terminologies and methods of research on *sprawlification* offer an effective and valuable way to gain a deeper understanding of a geography that we do not yet know how to see, showing it in a brighter, more positive, light. The visuals associated with the study arguably allow us to *feel* what we often cannot *see*. Instead of considering sprawl as a system of consumer objects, grounding presents the possibility that in-betweens promise to be the democratic niches of the future. The maps remind us of our relationship with the preconditions, reconnecting us to the ground.
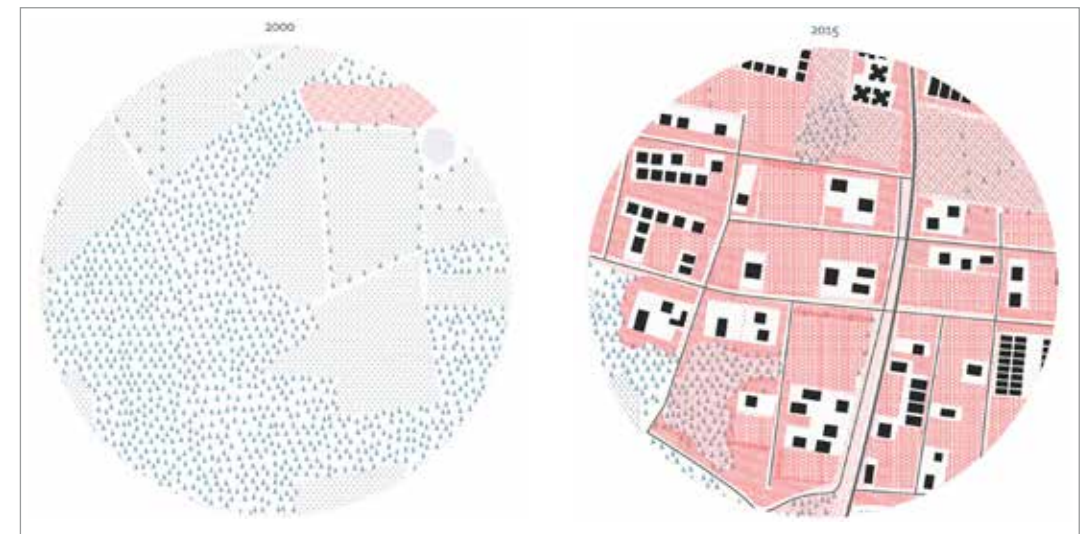
Fig. 1 - Sample of comparative mapping and analysis of the sprawl context between 2000-2015

METAPHORS OF PERFORMATIVE-ORIENTED ARCHITECTURES: EXHIBITIONS, INSTALLATIONS, INTERVENTIONS

Ayman Kassem - Supervisor: prof. Pier Luigi Salvadeo

The terms 'Performative' and 'Performance' are more and more emerging in the spatial design discourses, from exhibition, to interiors, arriving to urban scale architecture. But these notions are characterized by a semantic width and multiple applicative possibilities; therefore they are still not clearly defined yet. Between the different interpretations and uses of 'performance' and 'performativity' in the architectural discourse, this thesis will focus on 6 main dimensions of a particular importance:

The first refers to the concepts of the scenic potential and the theatrical qualities in architecture.

The second deals with the concepts of the openness, the flexibility, and the reversibility of spaces.

The third dimension includes the social considerations, such as the participatory and the contextual considerations in the design process.

The forth relates to the 'event-character' of spatial interventions, and the relation between the event and architecture.

The fifth expresses the concept of the 'transformative power of the performative', which indicates to the capacity of architecture to activate and animate processes and spaces.

The sixth question relates to the notions of open-ended process, the strategic design, and the mental performativity of the designer.

Before architecture, other disciplines had theorized about 'performance' and 'performative', such as in the philosophy of linguistics, Performance studies, Social sciences, the speech act theory, the Phenomenological non-representational theory, and in the dramaturgical studies. Therefore, we suggest that many of their elaborated questions, and theoretical concepts could be imported into architecture. And therefore from these unusual relationships a series of interrogations arise:

Is it possible to shape an architectural theory based on the idea of the performativity of the spatial project? Is the semantic width of these two terms an obstacle or an advantage towards a generalization of their relation with architecture? Is it necessary to shape an architectural theory of the performative? Is it more realistic to define a general performative approach to design? Or is it more interesting to invest in the educational and psycho-pedagogical discourse?

Answering these questions, the thesis embeds two parallel investigations: The first is terminological and theoretical around the terms 'Performance' and 'Performativity', while the second is spatial and architectural. Therefore, the applicability of these two terms unfolds from the ability to describe: 1) spatial and architectural qualities 2) practice and design approaches, 3) arriving to the ability to describe mental skills. And therefore the performative qualities that these notions describe are also reflected within the linguistic and the terminological nature of the two terms themselves: "Performance' and "performative" are theoretically and semantically performative!

Furthermore, and to understand better the meaning of the 2 terms in relation with the spatial design, the theme of the inclusivity, the openness, and the flexibility are indispensable for the architectural practice in a complex contemporaneity. And from this point the mental performativity is suggested as an inclusive mental skill, required from today's architects and designers, to be able to deal with a performative and complex contemporaneity, and to be able to handle different scales and types of projects. The mental performativity comes here as a skill distinctive from the classical notion of creativity, since it is more inclusive, and somehow means the ability to play different roles, to manage systems and to direct processes. And in this psycho-pedagogical part of the thesis it should be asked how to develop pedagogical models that encourage such skills.

Exhibitions, pavilions and installations are all concerned with changing the performance of the existing space, and they are able to illustrate what a 'performative-oriented architecture' could be or mean. They are spatial projects that embed big amounts of information, qualities, and a variety of disciplines and expertise. The expression 'metaphors of performative-oriented architectures', chosen for the title of this research, is inspired by a title of an essay by the Italian architect and thinker Andrea Branzi, "L'Allestimento come metafora di una nuova modernità", (exhibitions as a metaphor of a new modernity), (Lotus, n.115, December, 2002), in which Branzi invites architecture to learn from the practices of exhibitions and installations (the sub-categories of architecture). Therefore it is in these sub-disciplines of architecture that we can 'rehearse' a general 'performative understanding' of the spatial project: studying and designing spaces basing on performative criteria and performance perspectives.

The repertoire of the performative is large, it includes the concepts of: flexibility, reversibility, strategic design, openness, unpredictable, the unfinished and the un-designed as part of the design, the social considerations, etc. So the aim and the challenge are to try to develop and rehearse a performative analytical tool for the architectural project.

In brief, the thesis has a triple task: 1) A terminological investigation about the notions of 'performance' and 'performative' in architecture, displaying the various uses. 2) To illustrate these notions, and detect them through the fields of exhibition design, spatial interventions, and installations. 3) The third task is an open-ended task, which consists on investigating the concepts of 'performance' and 'performative' in a theoretical and psycho-pedagogical discourse.

Therefore, in the thesis, the discourse of 'performativity' starts as an architectural one, and later on it arrives to become a psycho-pedagogical one:

Architectural performativity means the requested capacity of space to perform a diversity of roles, while the mental performativity of the designer means the mental ability of the designer to perform a variety of roles.

UNDERGROWTH URBANISM USER-GENERATED PRACTICES IN THE CONTEMPORARY CITY
TOWARDS A METHODOLOGY OF ANALYSIS AND INTERVENTION IN THE INFORMAL CITY

Valentina Mion - Supervisors: Prof. Laura Montedoro, Prof. Jose María Ezquiaga Domínguez

The thesis project aims to define a methodology of analysis and intervention within the informal contexts present in contemporary cities. The proposal is based on a preliminary analysis phase, *Annex 1*, in which a study was carried out of the existing dynamics and the effects generated by the urban transformation processes. Through the analysis of the nature and size of spontaneous dynamics within the city, it has been attempted to demonstrate how these are essential to functioning of the same, although not having a direct connection with conventional channels. The urban evolution of the South American context has been selected as the main research area.

In *Part one* of *Annex 1*, it is proposed to build a comprehensive reference framework. After an introduction on the informal city useful to give it a possible definition, we proceed to the real building of the background that consists of three parts: theoretical, historical, and geographical. Subsequently, a summary profile of the Latin American context. Furthermore, an overview is created of the current state of the art in the process of informal city development, including: the most significant main trends, participants and spontaneous practices (*user-generated practices*), implemented by their inhabitants. The *Second part*, focuses instead on the construction of the point of view. In a reasoning that proceeds for similarities and contrasts, the most important texts about the informal city published in the last twenty years are examined, from which we try to extrapolate recurring and invariant tendencies to be used as the basis for the creation of a conscious vision. To conclude, a reflection on the importance of direct experience, highlighting the fundamental reasons for the field study for understanding the informality.

The real development of research opens with the *Chapter 1* In which the analysis of the main case study is provided, the *favela* of *Paraisópolis* in *São Paulo*. To understand the reasons for this selection, it may be useful to focus attention on a number of factors that make this case unique in its genre, and at the same time representative of a widespread reality. Through the case study analysis, it was possible to identify a number of invariants and variables, convergence points and divergence of actions, as well as possible common principles and phenomena to be used for comparative analysis.

In *Chapter 2*, the heart of the research, a synthesis *matrix* is created that highlights the interpretative process of the main study case, both in reference to data collected through documents and bibliography and to direct experience. The matrix allows for comparing many different cases based on a selection of constant parameters. The proposed model consists of four diagrams: two profiles related to the city in which the settlement is located and the settlement itself, a structural matrix of the invariants, and a second matrix related to the practices to be applied to a series of current interventions within the context analyzed (the variables). At a later stage, the same pattern is tested on different contexts for a reasoned comparison. The secondary case studies are the neighborhoods of *Comas* in *Lima*, the *Managua's Traditional Center* in *Nicaragua*, the area of *Moravia* in *Medellín*, the *Cañada Real Galiana* of *Madrid*, and the *slum* of *Dharavi* in *Mumbai* (*Annex 2*).

Upon conclusion, a section explains how to read the matrix and how to use the results obtained to gain useful insights into the current processes in the informal city as well as possible future trends.

Chapter 3, includes conclusions that emerged from the previous two chapters. A retrospective definition of the concept of *UNDERGROWTH URBANISM* is given, clarifying its nature, its phases, and its objectives. Through this process, a number of priorities and the most sensitive generative energy interventions, within the contexts analyzed, are identified.

Chapter 4, opens with a reflection on practices such as, *top-down and bottom-up*, and their characteristics. It questions the most effective intervention methodology and ascertains the need to develop complex methodologies for the informal city. It then defines the very meaning of the matrix. Carrying out a comparative case analysis and invariant research that highlights a set of recurrent parameters useful in defining priorities and modes of intervention. The aim is to identify a series of sensitive points selected based on practices. To conclude, reflections on the *informal city value* highlights a series of economic and problem-related dynamics existing in and around these contexts.

Particular attention is given to the lack of economic desirability, of the latter, in the formal market, and the consequent lack of interest in changing the condition.

Acknowledgment is also given to how often the present generative energy creates a surplus value that is lost due to this exclusion from the market. The *minimum threshold* is potentially defined to allow to change said condition. In the final *Annex*, the concept of *surplus* is addressed in-depth, and therefore, the issue of capital gains management in *Latin America*. The current trend is to have the right legislation that allows these values to be tied to city improvement operations. In this regard, a possible management model is proposed to allow some of the funds to be linked to *micro-operations* of urban regeneration in informal environments managed by professionals in collaboration with residents.

Fig. 1 - Aerial view of São Paulo, Brazil.

Fig. 2 - Structural Matrix of Paraisópolis (São Paulo, Brazil).

Fig. 3 - Paraisópolis Favela (São Paulo, Brazil).

THE CONSCIOUS PROJECT OR LOMBARD HIGHWAYS AS ENGINE OF A RENEWED TERRITORIAL STRUCTURE

Masoumeh Mirsafa - Supervisor: Dr. Alessandro Rogora

The increasing demands of the growing population, technological advances in urban water infrastructure, sanitation concerns and maintenance difficulties of the traditional water systems were the main driving forces to exacerbate the development of modern urban water networks in Iranian cities. The current urban water infrastructure of Iranian cities dates back to almost 70 years ago, albeit is successful in meeting the primary goal of safe delivery and distribution of water and collection and management of waste- and stormwater; it fails to achieve the otherwise social, aesthetic and environmental objectives of a responsive urban water management system.

The present paradigm of urban water management in Iran is based on economic targets, and it is neither sustainable to meet the water demands of the current and next generations, nor resilient enough to accommodate the future uncertainties of climatic change and the growing risk of extreme meteorological events. Such deficiencies along with the newly available technologies are the main driving forces which call for a paradigm shift in water management infrastructure of Iranian cities. One may bring the example of the importance of rainwater in the old and current

Iranian cities. In traditional rain/stormwater management practices, rain was an asset to be harvested and reused for various purposes. While the rain/stormwater harvesting and storing infrastructure were also acting as social nodes to bring people together and create lively public spaces, the new systems are composed of a set of underground pipes without any representation on the ground. Additionally, the current infrastructure is only functional under normal conditions while they are highly vulnerable in extreme weather events. Therefore, the urban water management of Iranian cities should change to embrace and include all various capacities of design with water to create urban environments, which are aesthetically pleasant, environmentally and socially sustainable and also resilient to the adverse impacts of climate change. To achieve these objectives, the new paradigm of urban water management of Iranian cities must change to seek the harmony and balance among various environmental, social, economic and aesthetic objectives. Such water management system will respond to the water demands of the community, become a place-making feature in the urban environment, enhance

the visual quality of the city and finally, respect the environment and minimize the environmental impact, and finally it will provide greater resilience to the climate change.

The study employs a) Integrated Urban Water Management (IUWM) System, which prioritizes the reduction of water demand ahead of the development of new resources, b) Inverse Infrastructure which promotes the decentralization of infrastructure, and c) Placemaking which aims to combine the design of public spaces with urban water infrastructure to shape the theoretical framework of the research. Following Water Sensitive Urban Design techniques, the research discusses how use of water in design of public spaces can solve the problem of urban runoff while promoting climate-responsive urban design and providing comfortable and pleasant outdoor urban spaces. Some recently developed practices of IUWM systems including Low Impact Development (LID), Green Infrastructure (GI), Sustainable Urban Drainage Systems (SUDS), Water Sensitive Urban Design (WSUD), and Sponge City model (SPC) are intensely studied and analyzed to provide the backbone of an Iranian model of integrated urban water infrastructure.

The climate variations of different parts of Iran emphasize the need to have various urban water management systems and strategies, which adapt to every local climate and fit into any given context. Therefore, the research employs a case study approach to deeply investigate and analyze whether and how such techniques can fit into Iranian cities of Caspian climate zone. The research tends to introduce the right mix of "traditional" Iranian water management practices and "new" techniques as a key to move towards the sustainability of water resources. Some results of a case study conducted in Lahijan, a small Iranian city, provide examples of the proposed strategies. The climatic features of the region, geographic and physical conditions of the urban context, cultural characteristics of the community, technical difficulties as well as the financial and legal challenges of the region are studied to design the sustainable urban water infrastructure and water sensitive model of development for Caspian cities.

The studies reveal that contrary to the traditional water practices which were following the idea of 'city as urban water catchment', the current water supply system of Lahijan is highly dependent on external sources of water while

it neglects the readily available sources of water including rain and stormwater. The analysis of the urban water state of the traditional city introduces stormwater management practices as an integrated part in design of Lahijan's public spaces for centuries, and that the urban spaces through various storage, conveyance, infiltration, and evaporation capacities were playing a role in constructing the landscape of the porous city of Lahijan. While the current infrastructure lacks the architecture and social significance of such traditional practices, and they are rather invisible and out of sight.

The research concludes that after the long period of absence of water in urban settings, water must become a key component in design of the public spaces, which its real values are celebrated and its many benefits are revealed. Accordingly, urban spaces of the future water sensitive city would become an integrated part of a distributed on-site stormwater management. Connecting stormwater management with place-making would contribute to the higher living standards of people in cities, and it would also address the problems of water scarcity, flooding and pollution. Water sensitive urban surfaces

provide the possibilities to collect rainwater and reintroduce it as a new source of non-potable water to urban water system; to hold excess amount of water in case of heavy rain and discharge it slowly; to increase the groundwater recharge potentials and decrease the discharged wastewater to public sewers, and ultimately, the water sensitive public spaces help communities to achieve the sustainability of their local water resources and the resiliency of their urban environment.

Keywords

water sensitive city, urban water management, sustainable development, sustainable infrastructure, public space, Lahijan, Caspian climate zone, Iran

MUSEUM INSIDE THE TERRITORY.
THE *MUSEO DIFFUSO* AS A TOOL FOR CULTURAL INFRASTRUCTURE OF PLACES. THE LYBIAN COASTAL ROAD CASE STUDY

Alessanro Raffa - Supervisor: Prof. Luca Basso Peressut

Today more and more the emphasis placed on territorial heritage brings museography to extend its field of action beyond the boundaries of the traditional museum building, dealing with contextes and scales once unusal; also challenging objectives, methods and tools. The thesis, moving from the current "museumification" phenomenon of entire cities and territories, explores the relationship between museum and territory within the contemporary age. Instead of refusing anachronistically the contemporary museum pervasivness, the research intend to find, collect and compare interdisciplinary theoretical positions and experiences concerning this relationship in order to find possible routes coherent with the museolial evolutions of this institution. Particularly, the objective of this research is to understand if – and how - the architectural-museographic discipline and its project can go beyond a diffused museumification condition, interpreting the museum in the territory as a responsible tool "in the service of human beings and the progress of society". The research assume a *museographic approach* towards the territorial heritage, based on the idea of *museo diffuso.* Since its first

definition by the architect and professor of our university Fredi Drugman, the *museo diffuso* has been interpreted as an intentional organization network of heritages which aimed at understanding, interpreting, presenting and designing with the historical evidences inside the territories. A no-hierararchical network made of spaces to cross and places to stay, in which the traces of the past are not admired with a nostalgic gaze; on the contrary, they are seen as a linving material, to be reshaped through the design process in order answer to present needs taking them off from an abandonment condition to offer the to the future. Here the *museo diffuso* is interpreted as a design-oriented strategic tool which deals with heritages as museological objects which are narrated

together and exhibited inside the museum space; but, at the same time, answering to present needs which belong to the territory and the community within. As the title reveal, the thesis id organized in three part: the first one contains the construction of the problem, the theoretical background, and the evolution of the relationship between museum and territory. The second part instead deepen, from a museographical point of view, the different shapes of museum inside the territory, with particular emphasis on the ecomuseum and the *museo diffuso* as a key concept. Here the *museo diffuso* is interpreted as a strategic device for a cultural infrastructur-action of the territory, where a responsible transformation within the project is based on an accuate listening of past traces

Fig. 1 - The Libyan coastal road. This 1882 km infrastructure, built during the fascist regime, is interpreted as the backbone of a strategic network of sites able to support possible development scenarios. (elaboration of the author)

and could, in this way, divert the museum vector, traditionally oriented to the past, towards the present and the future. In order to approach the third part of the research, a selection of international case studies was made. All of them, analyzed from an architectural and museographic perspective, share the presence of a linear infrastructure, which had been re-thought as a cultural infrastructure, giving new meanings and also reshaping the crossed territories. Interpreting the *museo diffuo* as a strategical tool for cultural infrastructure of places, in the third part, the research focuses on a specific infrastructure, the Libyan coastal road, along which is spread an impressive and unique heritage, recently under debate as one of the main development asset for tomorrow's Libya. The construction of the *strada litoranea* (1936-1937), the first modern infrastructure of Libya, has coincided with an impressive territorial refoundation process that occurred during the fascist regime period an lasted until the outbreak of the II World War. This process represented a turning point in the transformation of the landscape and its signs are still visible to those who take the road today. From a colonial and regime perspective, the

drawing of this infrastructure aimed at ensuring the military control of an unstable territory, but also at supporting cultural turism and mostly an agricoltural development. Most of the remains of this historical period spread along the *litoranea* are today abandoned or underused, but recently are becoming more and more of interest for future development plans for the region. This work tries to bring light to this kind of heritage, focusing on the *strada litoranea* that has been recognized as the backbone for a pontenial cultural network of places that could work for future sustainable development scenarios. In particular, the agricultural system and its remains along the *strada litoranea* are investigated. Between 1936 and 1939, around 3.100 colonial house, 600.000 mc of warehouses, barns and stables were built; 2.787 water supply points, 504 km of pipelines and many other interventions were made to obtain around 150.000 ha of cultivated land. The farmlands were organized in 25 new agricoltural settlements which, with their directional center, contributed to the construction/invention of a peculiar modern landscape along the Libyan coastal road: spatial planning and architectural projects were from one side

consequence of the colonial discourse, on the other they express the need – very present in the debate towards an Italian Colonial Modern architecture – of rooting to the local context. The thesis from one side highlights the relevance of this colonial heritage – whose role is currently under debate – and, on the other, gives a new interpretation starting from the *strada litoranea*; also present the strategical potential conntected with this modern and diffused heritage through layered morphological maps and architectural drawings, documenting, for the first time, exhaustively this peculiar heritage. A kind of 'operational atlas' which intend to be design-oriented, in order to inform future transformation of the territories crossed by the *strada litoranea*. Through the specific environment of Libya coastal road and its surrounding territory, the dissertation, focusing on the agricultural infrastructure abandoned heritages, tries to develop an operative methodology where museography is seen as a discipline which can look strategically to territories with a trans-scalar human based approach – re-orienting contemporary 'museumification' to a museum responsible action.