THE LABORATORY\_CITY: SUSTAINABLE RECYCLE AND KEY ENABLING TECHNOLOGIES

EDITED BY CONSUELO NAVA "For the younger generations of South"

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The volume contains research about the PRIN 2011 "Recycle Italy. New life cycles for architectures and infrastructures of the city and the landscape", with contributions of the research unit of the Università degli Studi "Mediterranea" di Reggio Calabria. In the "tactics", laboratory actions making by C. Nava with Pensando Meridiano association, in research of "third mission". Preparing materials presented in "tactics" and "metropolitan shots" by G. Mangano, A. Procopio, A.R. Palermiti, D. Emo, F. Ciccone, took place during the workshop "city making and rural making" direct training with the Reggio Calabria Province - Education Department (Oct 2015-2016 March).

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# RE-CYCLE

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# **O 1 THEO INTRO**

# RY DUCTION

TO\_cohesion of urban community + FROM\_Visual information and associative modes of perception+TROUGHT\_recycle and reclaim territory,architecture,building, materials





METROPOLI

Manifesto Re-forming UNIPA for the exhibition Recycle Italy at Maxxi

### RE\_CONSTRUCTED INTENTION

 $\begin{array}{l} \text{Consuelo Nava} \\ \rightarrow \text{UNIRC} \end{array}$ 

## The Laboratory\_City: sustainable recycle and reclaim throught key enabling technologies

The both theoretical and applied research, whose outcomes are shown in the text "The Laboratory City: sustainable recycling and reclaim" proposes a new interpretation of some issues/paradigms transversally affecting the topics pertaining to the city and its relations with technology, innovation, and the social and operational dimensions of its communities.

The theme of the laboratory city, perused by the research Recycle Italy provides a major opportunity to help reconstrue the intentions that link some views and contributions deriving from the transdisciplinarity of the most relevant theories and experiences regarding the topics of the transformation of the city, their present and their capacity of facing the environmental and social challenges from the standpoint of the preservation of the future through the activation of new life cycles.

A condition characterized on one hand by downturns and on the other hand by the radicalism of innovation for a future whose utopia, at the same time boundless and too much constrained, dares represent and resemiotize the contemporary reality in spite of many oppositive trends. [C. Nava, 2015]

In 1991 De Carlo writes on the relation between spatial planning project and architecture project: "Yet, it is not so much necessary to highlight the 'interdisciplinary myth', that caused a lot of misunderstanding in the Sixties, but rather to go beyond the boundaries of the conventional disciplines by venturing into the 'transdisciplinary' research and therefore to raise specific questions as well as to involve anyone who has a point of view on those questions, from which they will go on fathoming them crisscrossing their experience with the others'" [GDC, 1991, p. 4].

This proposition, more topical today than ever before, hypothesizes a "collective and plural" dimension of the city again, conceiving it as physical and relational space "of reciprocity" while admitting the failure of any subsidiarity attempt, and, despite the contemporary conditions of its configuration once again confer a significance totally stemming from the values of a new economic geography, the issue of the density ratio between the extension of the urban territory and the possible exchange among the communities inhabiting is still open for debate.

As in G. De Carlo's correct interpretation also this research line pursues the recognition of the signs of interaction between the "large" city, hyperconnected through the web and advanced technologies, and the "small" city setting of the daily activities of neighbourhood communities and a sustainable self-government in transition. With rather more tools and a guite different historical stratification GDC was conducting his research in this wake, simultaneously assessing "the geometry of the high amount" with the city-like buildings experimentation (Team X) and "the geography of difference" advocating spontaneous architecture that encourages democratization through the design of relational and social spaces; he himself identified some chances not only in the city of desires but also in the flexible city and in the landscape's, taking into consideration a "multiscalar" and "multiracial" (really anticipatory assumptions) landscape capable of retreating and spreading beyond every physical boundary shaped by an architecture entrusted to mould a new identity for a city used to rethinking itself all the time.

"Thus, it seems to me that architecture, to mirror a pluralistic and – let's say – democratic society, must be multiple and significant to everybody; in other words it should meet everybody's needs so that everybody can recognize themselves in it".[GDC, 1989, p. 20].

The cultural and tangible background of the practices related to urban and architectural recycling as response to the new economic and social scenarios and the urgent environmental needs regarding resource management, is now a laboratory city where the new smartness of the city and its communities informs the way advanced technologies and information are used, actions are carried out, and decisions are made in an "open" process. Therefore, the architecture and landscaping project should pursue a new beauty of the cities also by revitalizing abandoned places, recycling materials as well as the flows of data, energy, and services for a new sustainable and aware urban metabolism aimed at involving the communities and their actions, foreseeing a new current narration of the cities of the future. A more suitable use of artificial intelligence devices and advanced technologies for respectively collective intelligence and enabling technologies, is key.

"(...) In other words, as architects we do not do research on recycling because it is a good and right action.

We study that because today for an architect to recycle is to design. Also there is an inextricable bond linking urban materials recycling and smart systems. (...) The simultaneous action of three key factors – the economic and the environmental crisis, the revolution affecting the information technologies – is deeply changing our lifestyles and the way we imagine and shape our future. (...) Our problem is to give sense and new narrative to either existing empty or denied forms. And to transform these into charming and perfoming landscapes and architecture" [M. Ricci, 2015, pp.10-11]

### Five Questions for Five Paradigms

Thus, the contemporary debate, the present phenomena of city-making urbanism and humanism, and the studies we carried out within our research programme have raised five issues that can be meant as paradigms and really open exploration paths as long as they are borne up by theoretical reflections.

They must be set in relation with practical experiences pertaining to the topics identified, experiments of laboratory cities for urban innovation projects within which the three main aspects of sustainability (economic, social, and environmental) blend together again in time and space with a new cooperative attitude and rediscover new economies and geographies of inhabiting and exchange.

(sharing economy + sharing community).

In this scenario it is possible to outline the role of technology which makes "the city sensitive" (city sense) to that new and open landscape that definitely depends on the exchange of both the new virtual information and the one generated by the physical space transformed by the residents' needs. " (...) The superimposition of this new layer of information on the physical space will make it possibile to free up the space in ordere to enableanew concept of the shared city, bending the phisical world to the actual wishes of its occupants, responding directly to their demands, transforming itself according to theri needs. On the other hand, the gap between the current state of technological development and its direct application to the contemporary city gives scope for position a whole new scheme of appropriation of space, in order to transform it throught free data, our data, wich will reshape the static geometris that we now see from the windows of planes. And the planes themselves". (Lucas Cappelli, 2012, p.15)

Technology, therefore, is called to sustainably execute and manage the innovation of its devices thanks to 'recycling and reclaim' processes in complex and multiple scenarios as well as in a dimension of humanity measurable on the scale of any social time duration beyond the short, medium, and long term frames of sustainability.

" (...) This awareness of the multiplicity of social time duration, precondition of the plural intelligence, is the key for a society willing to com-

prehend innovation distinguishing the latter from the multiplication of novelties and consequently changing the perception that one is subjected to technology rather than in control of it." (L. De Biase, 2015, p. 191) In this light the technologies enabling the processes of transformation and new life of regions and cities will be able to fulfil an ecological function. The social time and the transformations influence the real contexts for which the project and the achievable goal set in the realm of these more adaptive technologies are figured out.

The five questions corresponding to the five paradigms that can be postulated, are the theoretical devices satisfying the above-mentioned needs by designing various contemporary scenarios that despite being mere challenges at first, must play a key role as factors of competitiveness sparkling all kinds of clever innovation. Our aim, therefore, is to comprehend:

[1] what the shape, the profile, and the layout of the city to preserve are and who has to accomplish this "plural" task;

**[2]** the role of the urban policies derived from the "technological innovation market" and the reaction of the communities to "an advanced intelligence";

**[3]** the Knowledge City scenarios between "sustainability transition" and "key enabling technologies";

**[4]** a new idea of the project "in wait" hinging on a new significance of the context as instantaneous device of resiliency;

**[5]** recycling and ecological restoration as prompt responses to the contemporary environmental and social crisis.

Along this conceptual path the final part of the section "reconstrued intentions" features the fotographic recounting of the five questions as theoretical starting points to outline peculiar strategies closely related to what we want to assume and discuss. It is key to understand that no issue is detached from the processes that originally determined them and that the reasons of the transformations of regions and cities, including the communities involved, are always influenced by cultural intentions that also later spur wide-ranging participation.



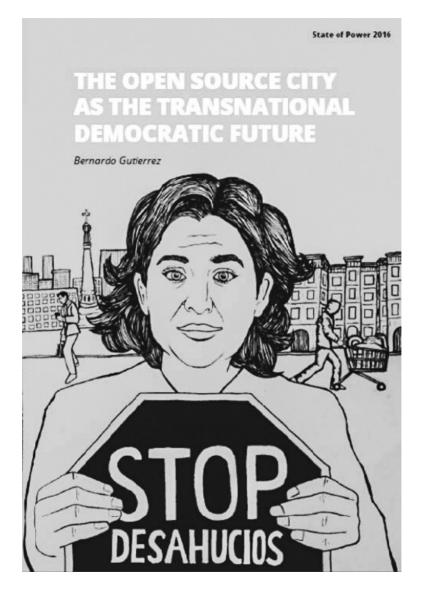
[1]\_ P. P. Pasolini in "the form of cities" [source: web]

# ICONOGRAPHIC SECTION: 5QUESTIONS VS5PARADIGMS

### BACKGROUNDS

[1] What the shape, the profile , and the layout of the city to preserve are and who has to accomplish this "plural" task

Pierpaolo Pasolini, in the documentary video "The shape of the city" (1974), with his camera tries to frame the perfect shot of the city of Orte, in search of the profile, the layout, the perfect and absolute form unaltered by others elements alien to its stratification as historic settlement on the promontory. While recounting this unperturbed research to his collaborator he takes a chance to recall some Nepalese and Persian cities belonging to other worlds where the perfect form has always had to interact with the human historical events, despite some of its peculiar characte**ristics** were affected. And these characteristics, in PPP's view are those ones most threatened by the **cities homologated** by consumerism, that saw the destruction of the **different peculiar realities** and were deprived of their history; a reality grounded into that differentiated human nature that Italy generated and even the regimes failed to demolish. In PPP's opinion the perfect form of the city, therefore, is recognizable only if it is compared to its "natural background": "the problem of the form of the city and the preservation of its nature represent one single problem". Nevertheless, the plural task definitely is to protect whatever "is not codified, that nobody protects, that is not officially acknowledged, that is creation of the people of a city" that by the way is "the most extraneous form of artworks and authors' works". In other words "the unknown and popular past" must be preserved since it recounts and resists as PPP says while walking and identifying some uneven old cobblestones of Orte as text of unwritten stories.



[2]\_ The cover of the section "The open source city as the transnational democratic future" [source: web, text "state of Power" - Illustr. by the designer Evan Clayburg] [2] The role of the urban policies derived form the "technological innovation market" and the reaction of communities to "an advanced intelligence".

One of the paragraphs of the survey "State of Power 2016" focuses on the case of Barcelona' s mayoress Ada Colau and is entitled "The open source city as the transnational democratic future" by Bernardo Gutierrez. The case is ascribable to the new surge of experimentation involving some Spanish cities in the attempt to testing new forms of **participatory ParEcon of democracy and solidarity.** Before her election, Colau was a founder member and spokeswoman of the Plataforma de Afectados por la Hipoteca (PAH) (Platform for people affected by mortgages) established to defend people evicted owing to the plunge in Spanish real estate market in turn caused by 2008 financial downturn.

The text mentions the experimentation performer in Spain, Brazil, Instanbul, and in other cities that specifically opted for a **transnational municipalism**, based on the conceptions underlying the **"open source city"** such as the availability of the resources for the **active participation of citizens and the maximum accessibility to technological tools**, a **new form of regenerative democracy** and the definition of a **new geopolitics of shared resources beyond neoliberalism**. It is figured out that thanks to the participation of populations urban policies can envisage decisions and guidelines not even imaginable.





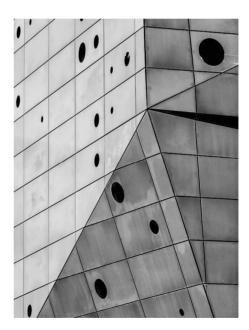
[3] \_ Roskilde Waste Incineration Plant-Control Room in Denmark by Erick van Egeraat [source: web] **[3]** the Knowledge City scenarios between "sustainability transition" and "key enabling technologies".

In the new form of **"knowledge city"**, in some respects a product of the city of innovation, the boundary between the cultural paradigm and the technological one is marked by the extent to which technologies, conceived as knowledge processes resources, are more or less radical.

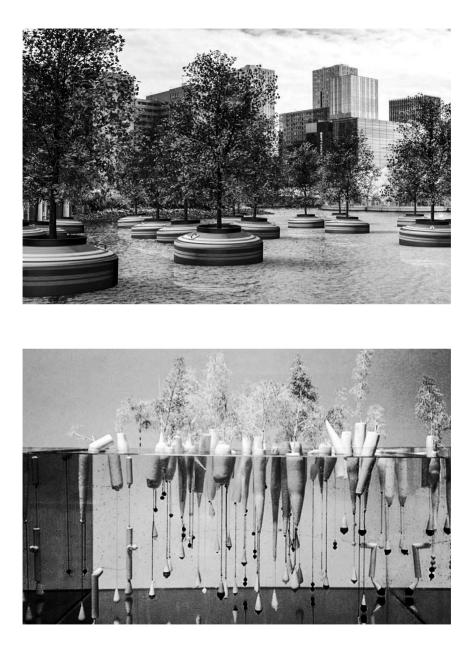
The formula of **"transition"**, as each system's and community's capacity of self-governing their sustainability and including **efficient re-generative systems** (power, water, waste, etc.) into cycles of management directly supervised by their users, in fact represents an attempt to attribute a new meaning to what EU refers to as "key enabling technologies", the abovementioned **"enabling technologies"**. From EU's standpoint the latter ones are *"knowledge-intensive technologies associated with intensive R&D*, rapid innovation cycles, significant investment costs and highly-qualified labour"[...]. These factors are of systemic relevance as they increase value in the production chain and are capable of driving innovation in processes, products and services across all sectors of the economy and human endeavour. [...] (source: Research Italy).

In this mediation between all the advances technologies must contribute to the **innovation market** and what **communities have to use**, in terms of devices enabling the improvement of their lives, the role of the project meant as **"design driven innovation"** becomes strategic. (cf. R. Verganti, p. 58, 2009). This scenario draws so much on **radical technology performances (push)** rather than on **incremental technology performances (market pull)**, that the relationships themselves between devices and users are modified as far as the image itself of the devices geared to convey a more iconic and convincing message transfigured rather by the **quality of the effectiveness of its innovation** than by its efficiency, is modified.

In this light the project for the waste incinerator complex in Roskilde (Denmark), sketched out by Erick van Egeraat, 2008-2014, that can dispose of waste collected in 9 neighbouring communes and in many places abroad, converting them into power and thermal energy for the whole Roskilde region, can be a relevant example. The intention of the competition and the client was to confer architectural significance to an otherwise purely industrial plant, characterized by a silhouette very different from common incinerators, in spite of its primary functionality. The work was awarded a Leed Gold. The complex works and is lighted up also thanks to what it burns, rising above the city as an iconic monument of contemporary architecture.



[3] \_ Detail\_ Roskilde Waste Incineration Plant-Control Room in Denmark by Erick van Egeraat [source: web]



[4] \_Bobbing Forest in Rijnhaven, Rotterdam [source: web]

**[4]** A new idea of the project "in wait" hinging on a new significance of the context as instantaneous device of resilience.

A new philosophy seems to underlie the project "in wait", based on which the word "contextual" can match the adjective "contemporary". In fact, as Alberto Bertagna writes and reports, "a substitution" could be hoped for (PPC + 24, p. 95, 2010) : "(...) thus it is patent that the word "**project**" **must mean "process**", conceived as series of actions, whose linearity is no more overexploited , that is not "adapted successively" but rather "critically redesigned in the light of a new selection (...)".

The process of **resiliency itself as variable shared by short- and longterm landscape, ecological urbanism, and sustainability,** in this light is part of a transfiguration of the project beyond its time by foreseeing its effects and "contemporarily" developing cities and regions whose adaptation to new scenarios is the precondition of a project that is anytime contemporary.

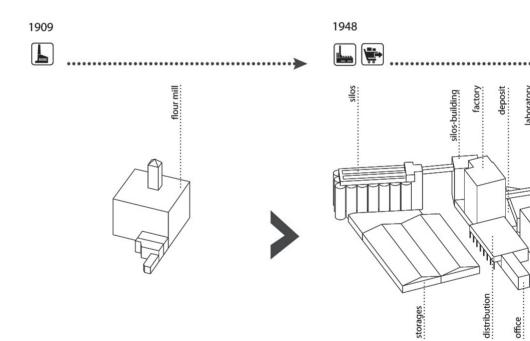
All the **devices used become instantaneously effective**, while their capacity of foreseeing phenomena and provide effective responses project themselves in a possible and open future.

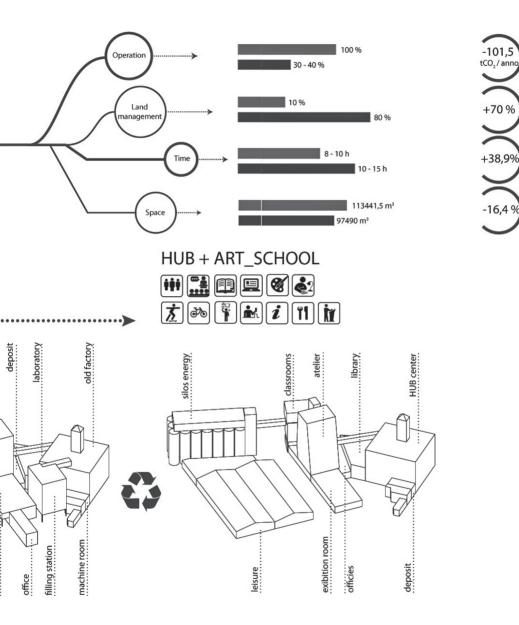
Therefore the devices themselves modify their own background by identifying new places, positions, relationships, and relations, as well as simulating in advance **scenarios resistant** to mutable and extraordinary situations.

Recently Rotterdam, that is working on its **climate adaptation plan**, much before it was officially appointed to do that, drawing up the project of the Delta Cities (flood-prone cities), is designing strategies that envisage **pre-figurative urban-planning steps** targeted at tackling new relevant issues. The city, by now used to coping with the matters relating to its waterplan, is performing experimentation on possible scenarios by means of innovative devices drawing visions from other cultural experiences as is the case for Rijnhaven "bobbing forest" whose completion deadline is March 2016. It was inspired by one of the works of the art designer Jorge Bakker and involves the installation of 20 trees onto sea buoys and a new design for its basin. An example of landscape renovation on a waterbody.

# $RECYCLE_Of_USe = LOW ENERGY_LOW M^3$







[5] \_Degree theses project in Holland, Fabio Leone [source: research repository] **[5]** Recycling and ecological restoration as prompt responses to the contemporary environmental and social crisis.

The more the project puts forward the elimination of "something", the more the word "**reclaim**" is used in place of "**recycling**". If while revitalizing materials, flows, and landscapes, it is pursued the goal of providing **ecology of regions and cities**, including both anthropic and natural aspects, with the most suitable formal and tangible tools enabling it to cope with all physical and ecosystemic damage as well as with inefficiency and **loss of function/quality** affecting places in terms of life quality, recycling is consistent with its most radical choice.

"(...) What is heralded is a radical transformation, apart from economic recovery chances, shaping a new world that maybe already exists, where the project does not imply only a mere addition that is an increase in volumetric dimensions any longer, but is back in tune with the precise strategy from which it stems.

The problem is to decide what must be saved, in what investments can be made, and from what ruin to restart can be possible: in other words it is key to know what can be discarded and scrapped (...) (S.Marini, p. 17, 2013).

As a matter of fact it must be said that the processes of "urban, architectural, and regional recycling" can stimulate new low-cost life cycles for new materials and flows (by taking advantage of previous cycles) without actually resulting in any positive effects as far as life standards and performance over time are concerned. "Reclaim" processes always include **recycling-driven regeneration**, parallel with the effectiveness cycles of the use and operation models and depending also on **the models of management and reuse of the new available resources that are reproduced.** One need only think of the cycles of water, waste, and all the kinds of energy produced through processes of accumulation, transformation, regeneration, etc. The models of these regenerated and regenerative cycles determine new spatial planning and operation patterns as well as new circumstances for the management pursuing their efficiency.

**A new metabolism, more specifically ecological**, is unveiled with its capacity of igniting long networking processes also beyond the visible boundaries of recycling plants.

### The text structure and the open action of the laboratory-city

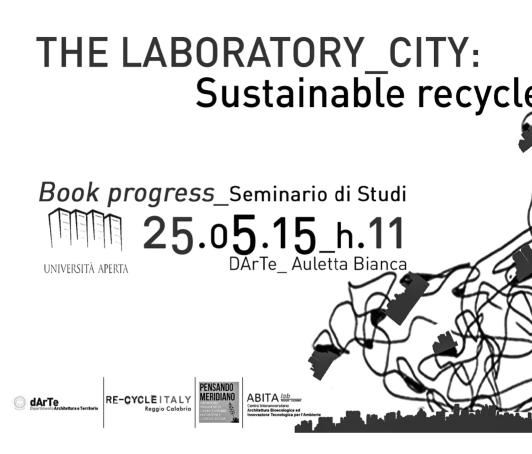
The text treats some experimental and theoretical topics pertaining to the five paradigms' reasons thanks to some authors' contributions on city making strategies and tactics enriched by the recounting of the challenges involved by the reorganization of Reggio Calabria as a metropolitan city. Hypotethical approaches whose validity will be able to be confirmed on a transdisciplinary basis dealing with the laboratory-city topics related to urban space and landscape interpreted in the light of a new sustainability of recycling and ecological restoration. The experiences treated actually propose actions while showing a perfect balance between "new landscaping-urban planning-spatial planning" and the usability of the "technologies enabling" the on-going processes. The proposals put forward can both induce phenomena of resiliency of the natural and anthropic systems, and make the communities' involvement fruitful strategically nurturing their desire and right to take part in city making.

The section 'Strategies' features the contributions by Consuelo Nava and Giamila Quattrone with some hints to experiences of theoretical research focused on the theme of the laboratory city. The section 'Tactics' treats the experience of city making, through experimentation of social and urban innovation, and enabling technologies gained by the editor of the text with the Pensando Meridiano Association.

The section 'Challenges' tells of the experiences lived on the themes of Reggio Calabria metropolitan city and narrated by the members of the 'Recycle Italy' operators in Reggio Calabria Venera Leto and Rita Simone, Giuliana Quattrone, Cristina Sciarrone, Elisabetta Nucera and Antonia Di Lauro, and Adriano Paolella, coordinated by Vincenzo Gioffré, whose contribution opens the section.

Besides, the writings by Mosé Ricci, Manuel Gausa, Maurizio Carta, Franco Rossi, Sara Marini, and Chiara Rizzi in the preface and the afterword provide the keys to the right and deep interpretation of the text.

The young photographers and urban makers Danilo Emo, Alessia Palermiti, and Federica Ciccone were tasked with realizing the section 'Metropolitan snapshots'.



Manifesto Seminary of Studies on "the Laboratory\_City" themes intermediated discussion on the drafting the recycle notebook edited by C.Nava

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# and reclaim

cle

con :

### Mosè Ricci & Sara Marini

h. 11.15 – 14.00 (Auletta Bianca DArTe) Introduce e Conclude\_Alberto De Capua prorettore Unirc e vicedirettore DArTe Relazione introduttiva\_Consuelo Nava curatrice del quaderno PRIN Recycle Italy Relazioni tematiche Mosé Ricci (Recycle Italy UdR UniGe) & Sara Marini (resp.naz.le Laboratori Recycle Italy, IUAV) Interventi programmati\_Vincenzo Gioffré e Rita Simone (Recycle Italy UdR Reggio Calabria) Confronto sulle relazioni con interventi degli studenti e dei docenti presenti

> h. 15.00 – 17.00 (in città) Laboratori Urbani e Cantieri Recycle\_ Associazione Pensando Meridiano

h. 17.30 – 19.30 (Sede dell'ordine degli Architetti PPC di Reggio Calabria) Incontro con gli Autori *"Nuovi Paradigmi per Future Utopia"* conversazioni con Mosé Ricci e Sara Marini

Marini Sara, "Post Produzioni o del problema della scelta" in Marini S., Santangelo V., Recycland, Aracne ed, collana Recycle Italy, P.16-17, Roma, 2013

Nava Consuelo, "Future 1/1.The Laboratory-City: Recycle and Repair, in S.Marini "future\_ utopia"; Carte Blanche serie, Bruno ed, Venezia, 2015

Ricci Mosé, "R.E.D.S"., in AAVV, Monograph. Esearch 02, pp.10-11., ListLab, Trento, 2015

Verganti Roberto, "Tre strategie di innovazione" in Design Drive Innovation, p.58-59, Rizzoli ed., Milano, 2009

\*Translation text IT-EN by Giovanna D'Angelo, International Office in University of Reggio Calabria.