

If for some experts we are
....at the end of the beginning of the crisis...
As architects what can we do?

We have to change our approach... and to trace the roadmap to 2050

The paradigm of sustainability in buildings

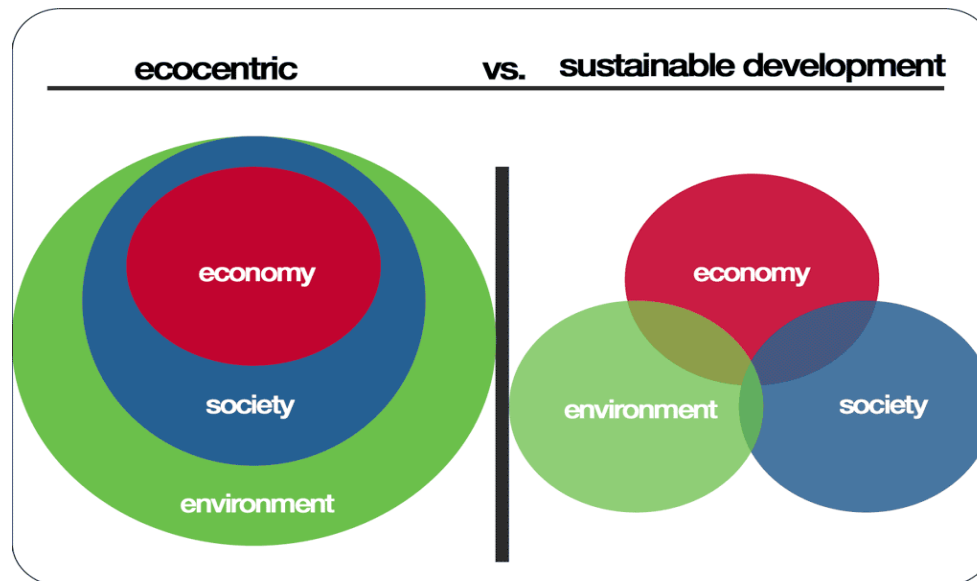
02 ottobre 2020 - Maria Carmela Frate



We could debate about many matters but it is difficult to summarize an articulated report in 15 minutes, so I have focused my attention on some topics.

Topic n.1

W.S.D. - DISAMBIGUATION OF THE TERM “SUSTAINABILITY”



w.s.d.

Sustainability / no greenwashing



buzzword????

BUZZWORD

eco-gadgets?????



Environmental system

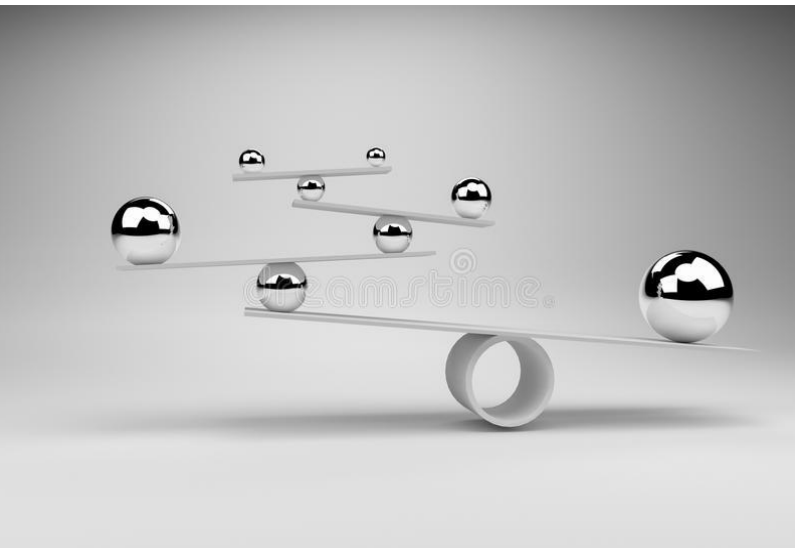


Lattice with a reticular geometry and hubs

Environmental stress



Fragile eco-system

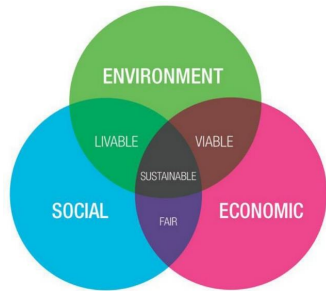


Balance/equilibrium



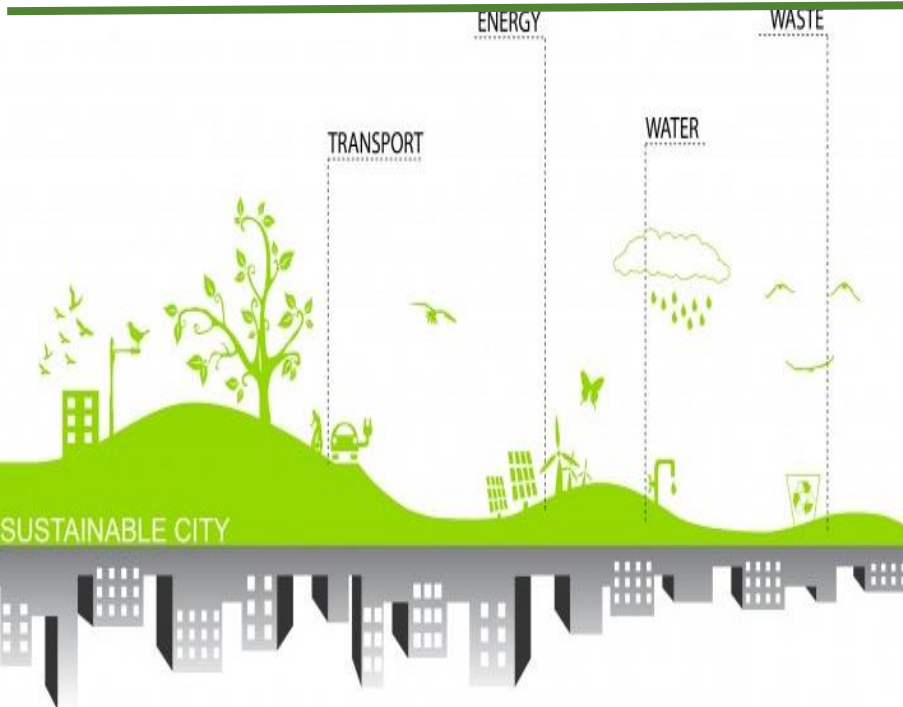
Adaptable eco-system⁴

.....insuring current needs without compromising future ones.



the first definition of “sustainable architecture” is by the European Commission, 2004

Architecture is sustainable if it carries out strategies able to recomposing the discrepancies between design and execution, minimizing the impact on the environment, also through technological innovations



not prescriptive but performing approach



- Not quatitative (no developement)
- But qualitative (but degrowth)⁵

Sustainability, from Latin «Sustineo»

Sustainability

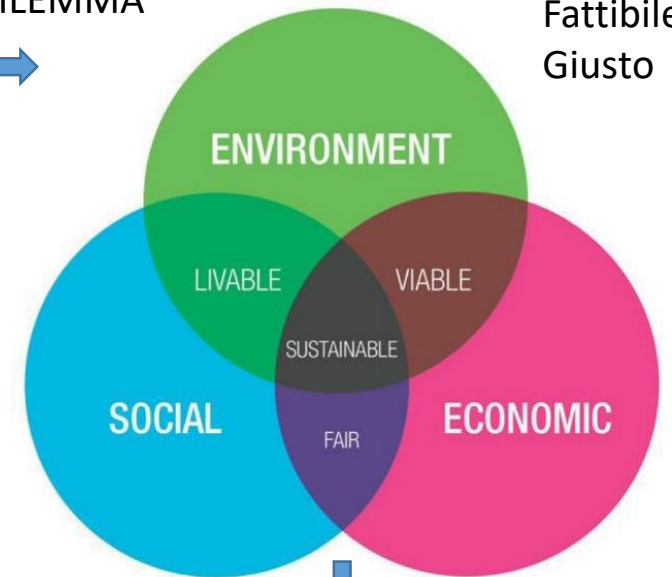
Brundtland Commission Report (1987)

The World Commission on Environment and Development suggested the following definition of Sustainable Development:

"Meeting the needs of the present without compromising the ability of future generations to meet their own needs."

Hans Jonas, *Das Prinzip Verantwortung*, 1979

TRILEMMA

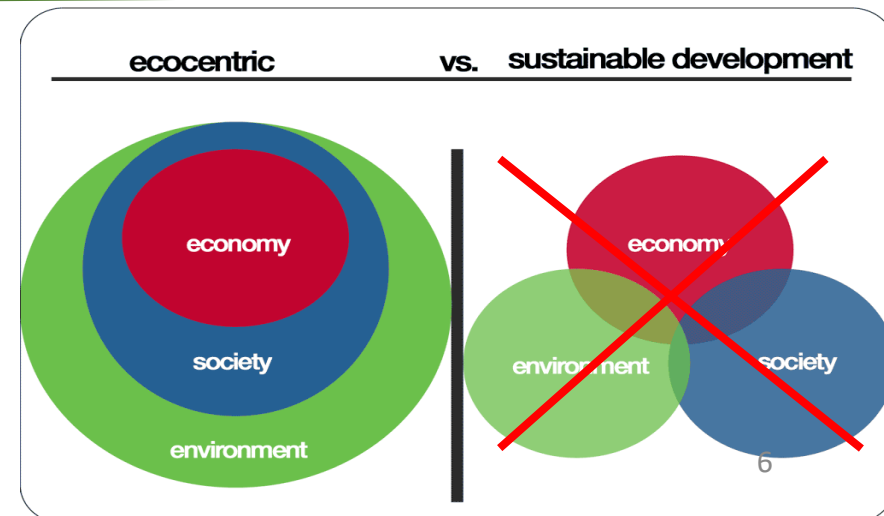
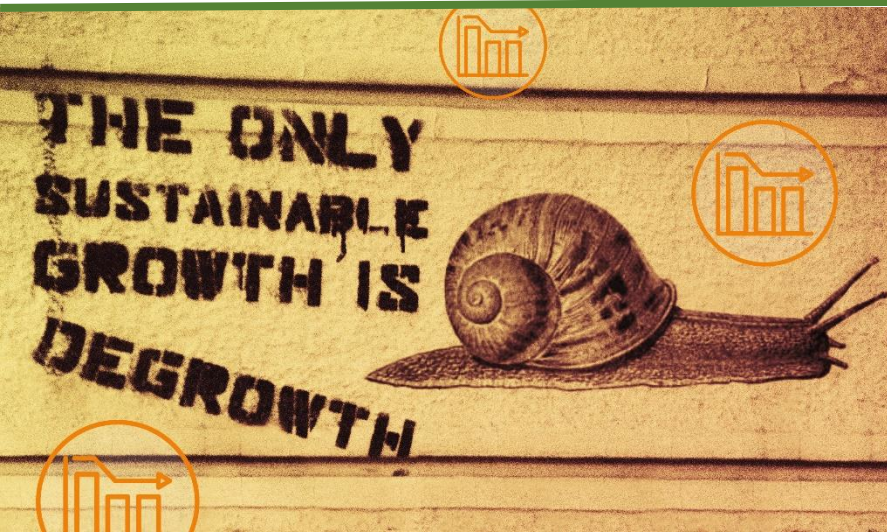


Vivibile
Fattibile
Giusto

No anthropocentric

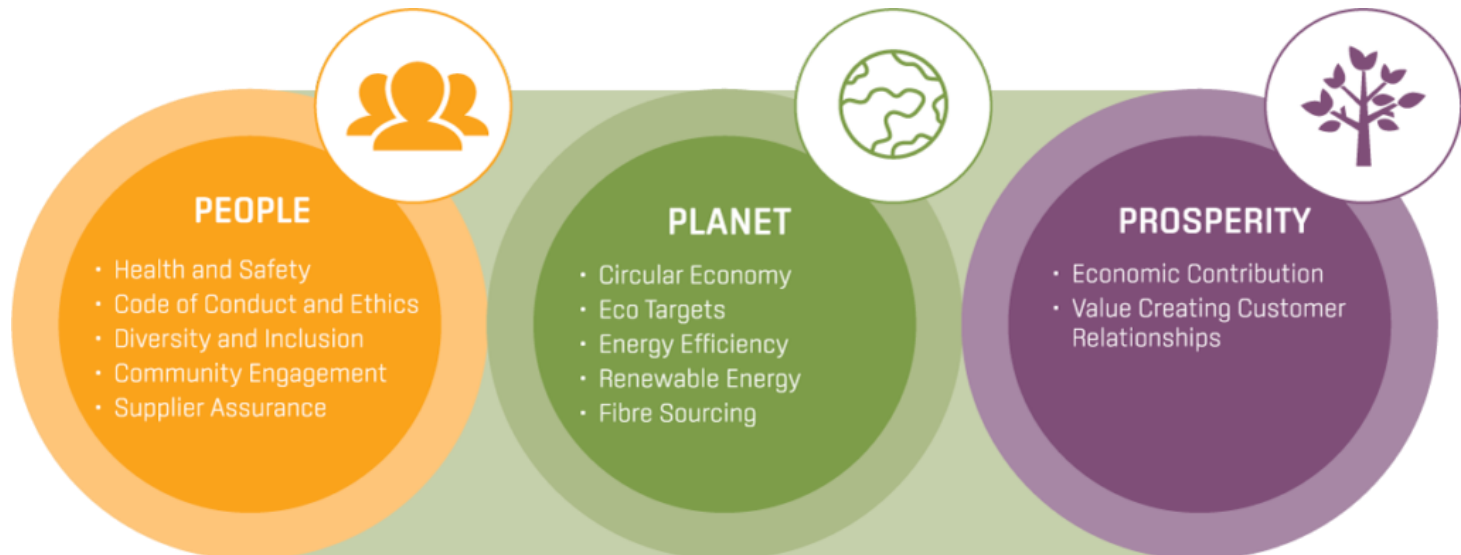


Anthropocentric



Topic n.2

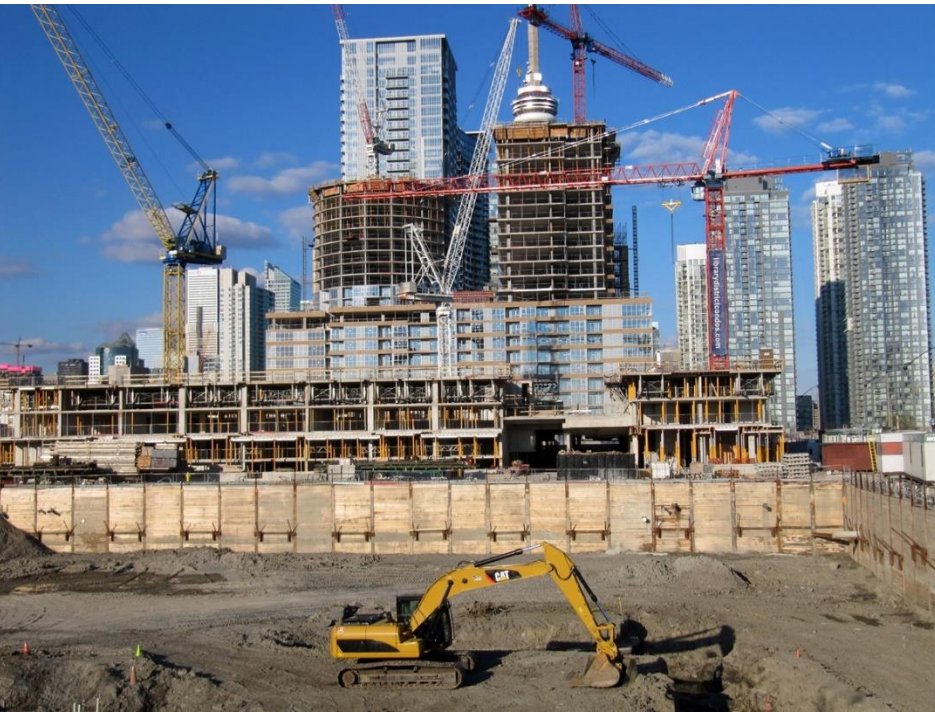
ECO-SUSTAINABLE STRATEGIES FOR ARCHITECTURE FROM LOW-TECH TO RE-USE AS A NEW LIFE



Use of fossil sources for buildings

In the last 50-70 years the worldwide has improved; this was possible because of **our faith in scientific and technological innovation** based on use of fossil sources, that are exhaustible and pollutant, with damaging effects. We must remember in particular the anxiety caused by the oil crisis of the 1970 that led to crisis our construction industry too.

construction industry



fossil sources



(for new buildings)

Low tech

Low tech/Less or No tech/Low cost
Eco-mimesis
Eco-village



High tech

More tech



Aalborg Committments 1994-2004

Aalborg Charter:

- ◆ Principles of Sustainable Development
- ◆ Commitment to Action (LA21)



1994

2004

Aalborg Commitments:

- ◆ Commitments to Action in 10 Action Areas
- ◆ Targets

5th Commitment - PLANNING AND DESIGN

1. Re-use and regenerate derelict or disadvantaged areas.
2. Avoid urban sprawl by achieving appropriate urban densities and prioritising brownfield site over greenfield site development.
3. Ensure the mixed use of buildings and developments with a good balance of jobs, housing and services, giving priority to residential use in city centres.
4. **Ensure appropriate conservation, renovation and use/re-use of our urban cultural heritage.**
5. Apply requirements for sustainable design and construction and promote high quality architecture and building technologies.

Reduce, reuse and recycle (materials and buildings)

This was the “motto” by Muck Petzet, curator of the German pavilion, during the 13th International Architecture Exhibition, at the Venice Biennale



**Reduce
Reuse
Recycle.**

**German
Pavilion/
13th
Architecture
Biennale
Venice
2012**

HATJE
CANTZ



We have to use pre-existing buildings,
also with new and compatible functions

Three of the eight R by Serge Latouche, 2008

The 3 R's

Reduce, Reuse, Recycle



the sustainability looks at the past!



Camera dello scirocco (Sicily, IT)

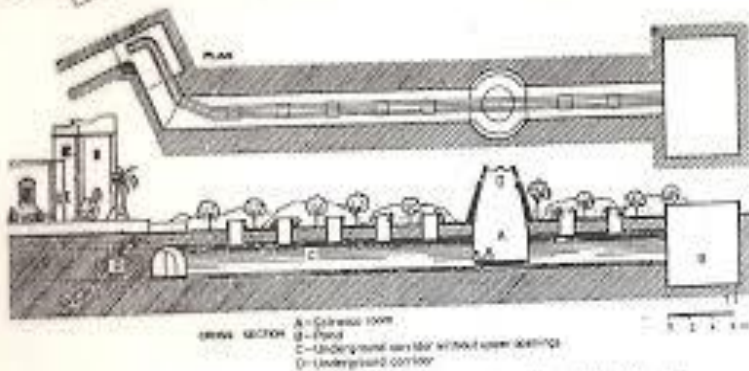
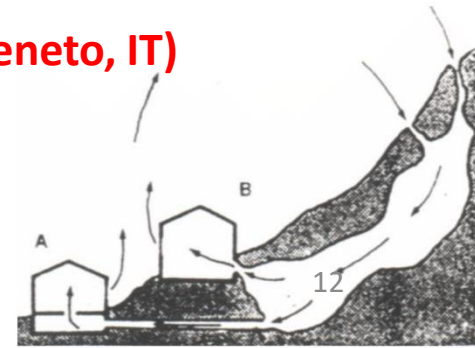
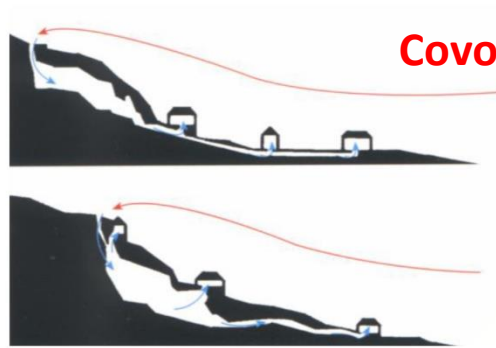


Fig. 4.16. Camera dello scirocco a Palermo: il caso della villa Ambrosi Nazzari.

Covoli (Veneto, IT)



Topic n.3

THE RE-USE OF EXISTING BUILDINGS AS AN ECO-SUSTAINABLE METHOD AND APPROACH



Economic value

Buildings have their own "real estate" value,
....even when they are private properties, they are a collective good.

Environmental value

Buildings have an "environmental" value, having already made use of environmental resources, both direct and indirect, and having already engaged parts of the environment with urban infrastructure.

Real estate



Embodied energy



Functional energy



morphological and functional value

The reuse of existing buildings introduces the concept of building / architecture quality and criteria for evaluating and classifying it (this activity is difficult).

Cultural heritage



MONUMENTAL

MODERN HERITAGE

Modern buildings



ORDINARY



Recent buildings and their deterioration – how **RE-USE** them?



Reinforced
concrete

Prefabbrication

Technologic
systems



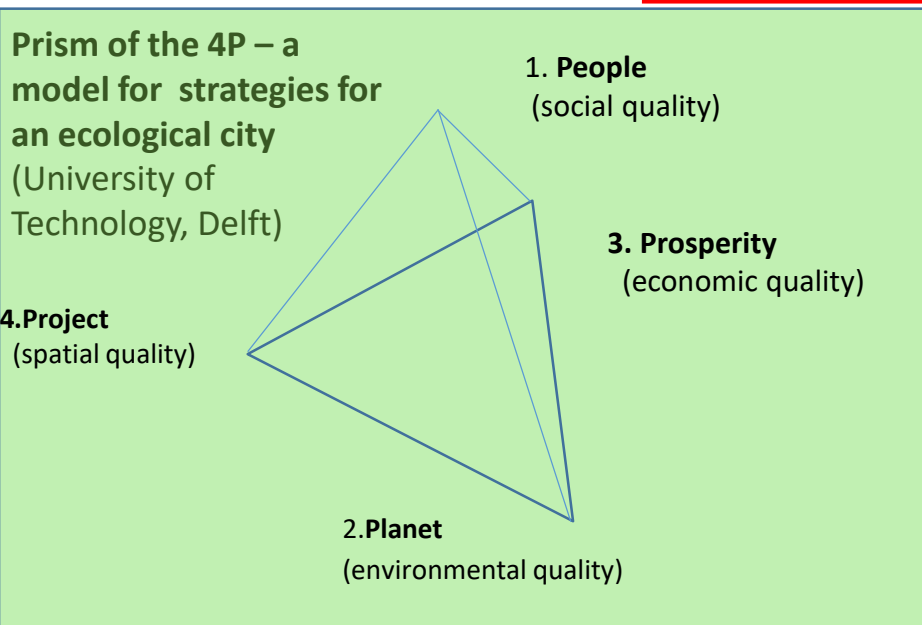
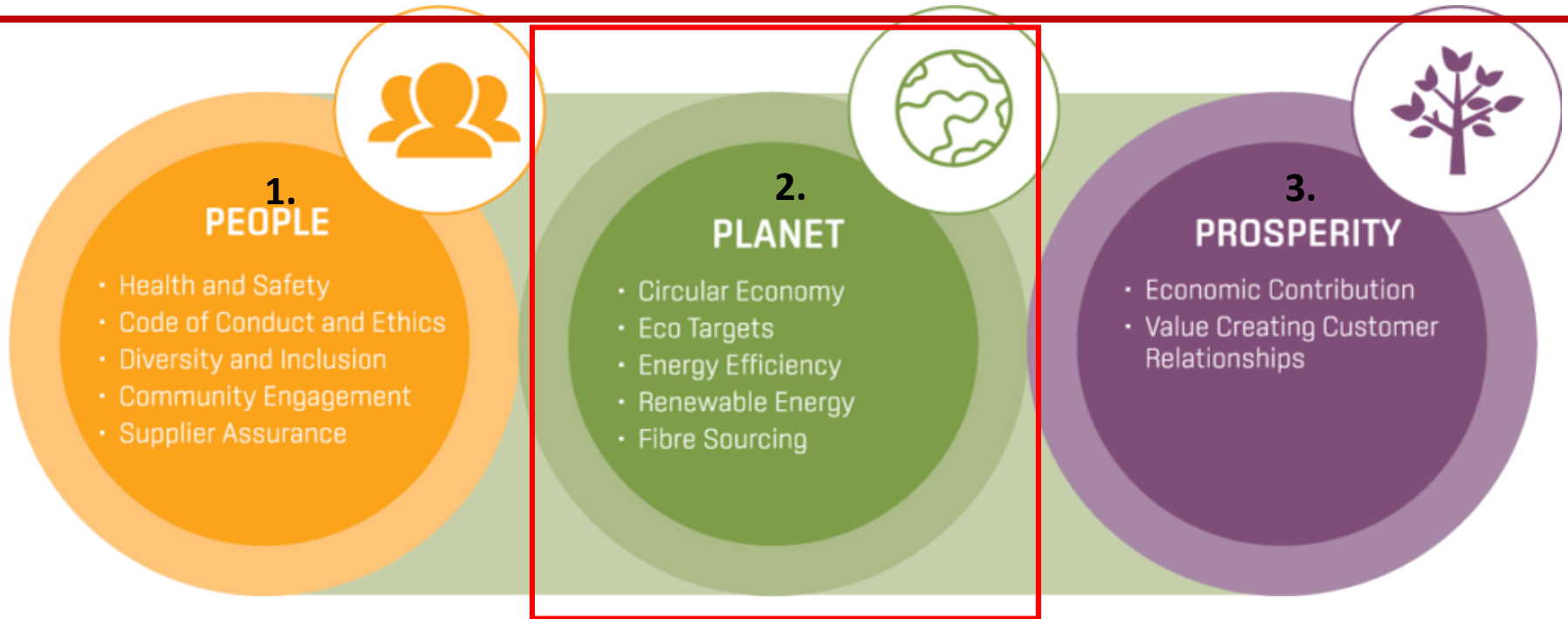
- **Environmental un-sustainability** resulting from its excessive use of energy
- **Functional and technological obsolescence**, that concerns performances
- **Physical deterioration**, that concern materials and appearance
- **External obsolescence**, that concerns economic value

**As
RE-USE
these buildings?**

Architectures of the Twentieth Century: morphology, technology and degradation



RE-USE – “offers another chance” to these buildings



1. using a bioclimatic approach,
2. making use of renewable resources,
3. reducing the use of exhaustible resources,
4. reducing CO2 emissions

- **Circular economy reusing materials, products and buildings.**

Topic n.4

REQUALIFY ORDINARY EXISTING BUILDINGS: RE-DESIGN THE EXISTING FOR ANTHOTER LIFE



Riqualify those «ordinary buildings»

...that aren't fundamental signs of the Architecture

To «offer another life» to these buildings

Also with «another morphology»

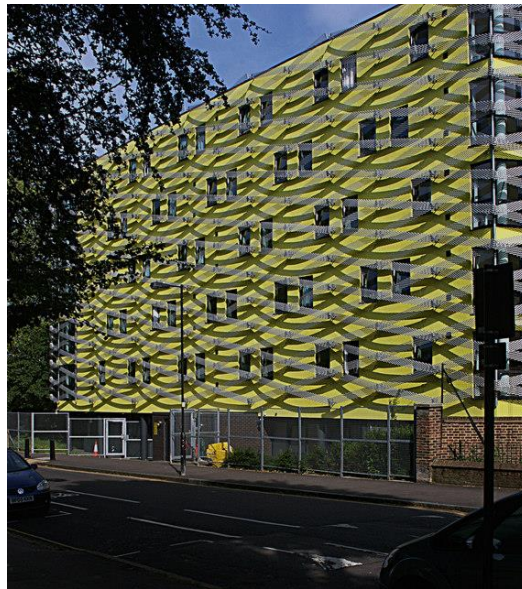
.....Metamorphosis.....

From caterpillar to butterfly...
(I hope so!)



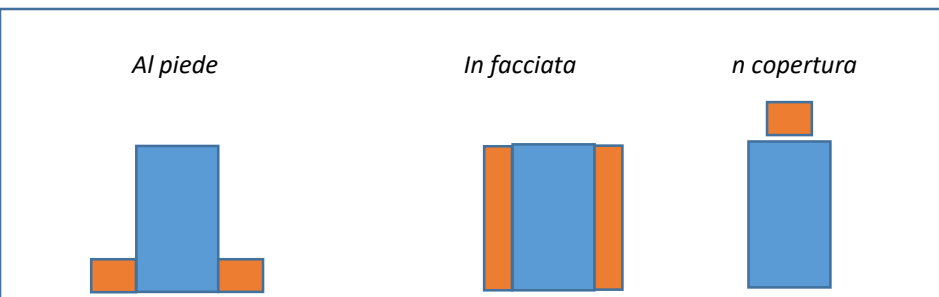
RE-CLADDING O OVER-CLADDING

- Re-place action, for obsolete single element of facades
- Wrap it, like a second skin



Add in/on: adding new volumes

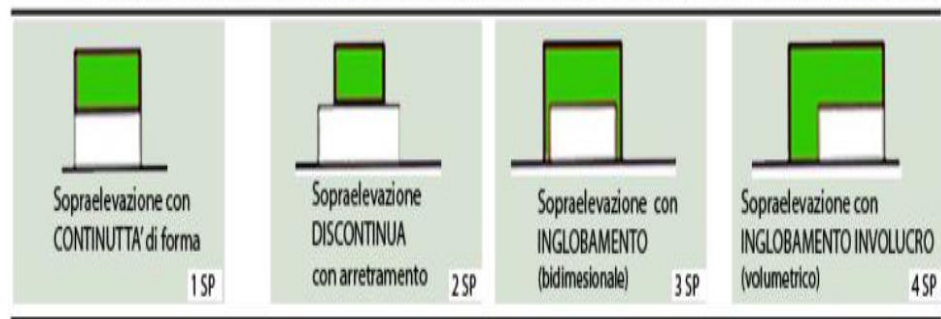
also as climatic greenhouse,



Classificazione dell'addizione di Jacopo Gaspari, 2005

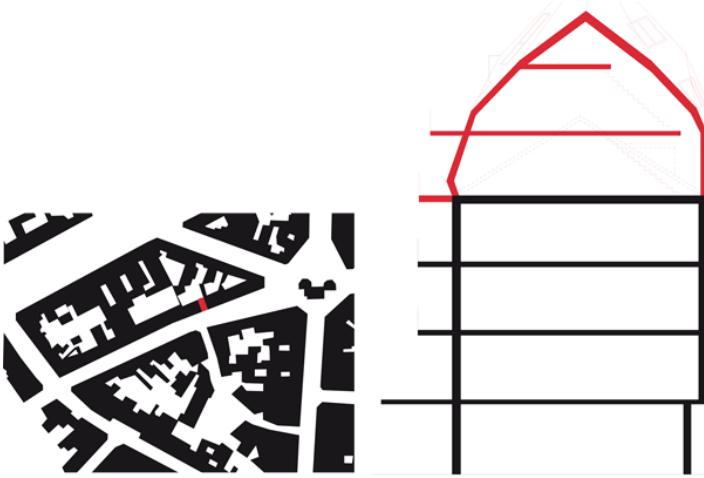


Classificazione degli ampliamenti/sopraelevazioni in copertura, dal progetto SuREFIT, 2007-2008



Tassonomie nella trasformazione del costruito, Ettore Zambelli 2004

or parasite architecture



Architects: b&k+brandlhuber&co + marc frohn – Arno Brandlhuber, Markus Emde, Martin Kraushaar - Köln,
Over the Top Ort, effetto figurativo “ibridazione” http://www.convertiblecity.de/projekte_en.html



*Rooftop Remodeling Falkestrasse
Coop Himmelb(l)au,*



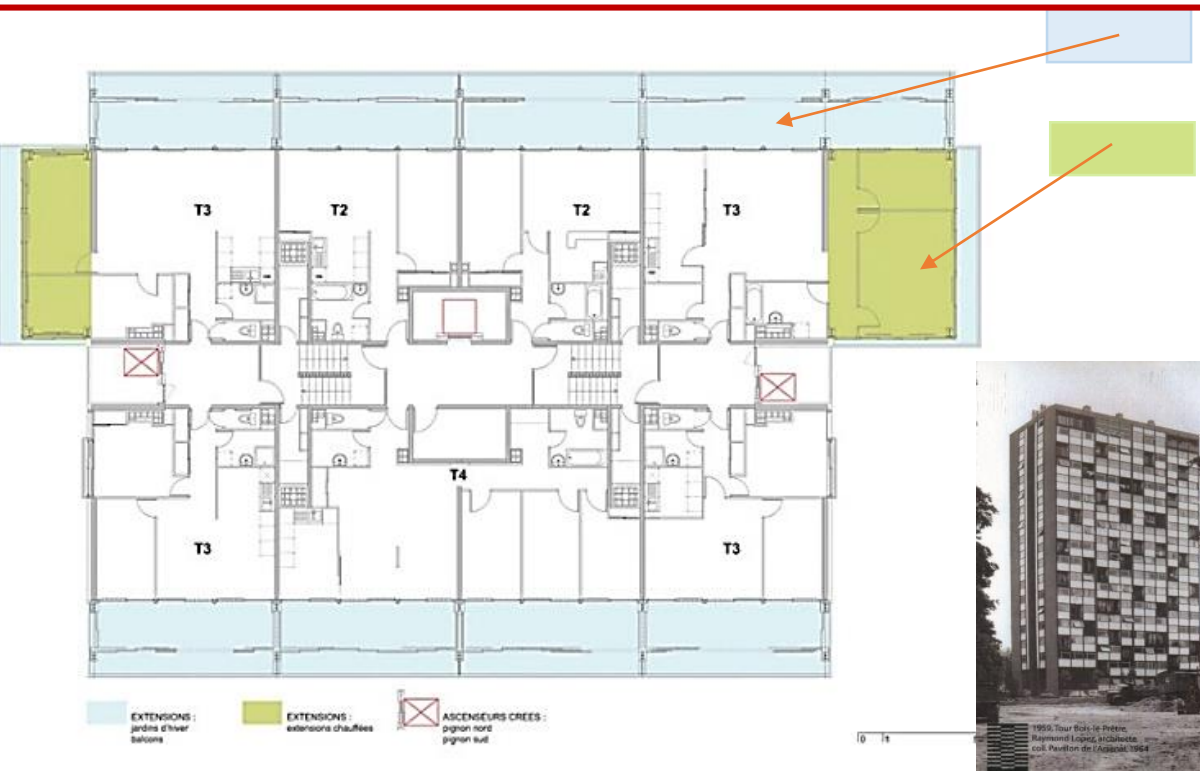
*Hector Zamora, intervento di
riqualificazione del museo Carrillo Gil,
Paracaidista, Città del Messico;
effetto figurativo: spazi microgravitazionali*



*Studio Albori, Biennale di Venezia 2008; Ecom
Addomesticato*

2010-2011 - Paris, riqualificazione del Grand Ensemble Tour Bois le Prêtre - Frédéric

Druot, Lacaton & Vassal, <http://www.lacatonvassal.com/>



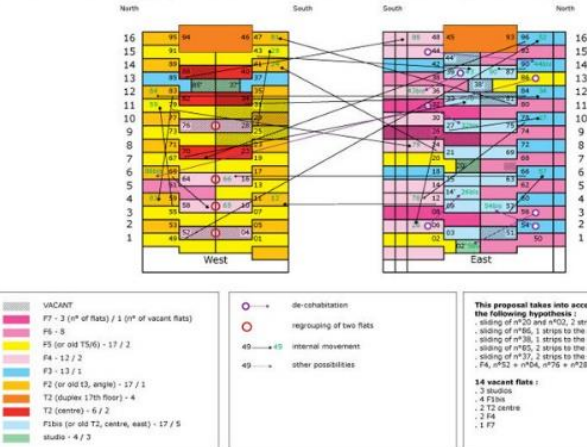
Volume expansion (bedroom)

Climatic greenhouse (living)

Before



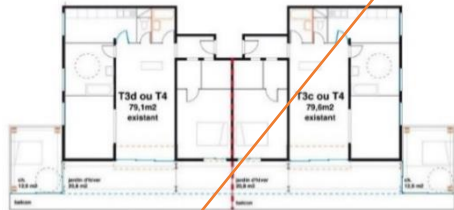
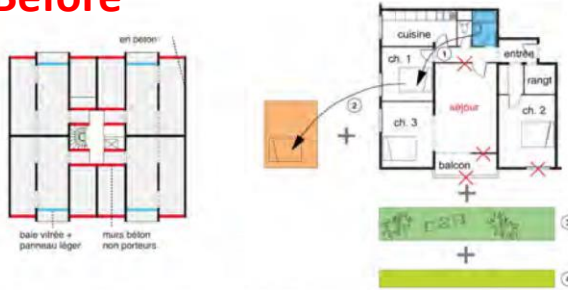
PROPOSAL
Placement of the dwellings by the inhabitants and of the new kinds of dwelling in the building



After



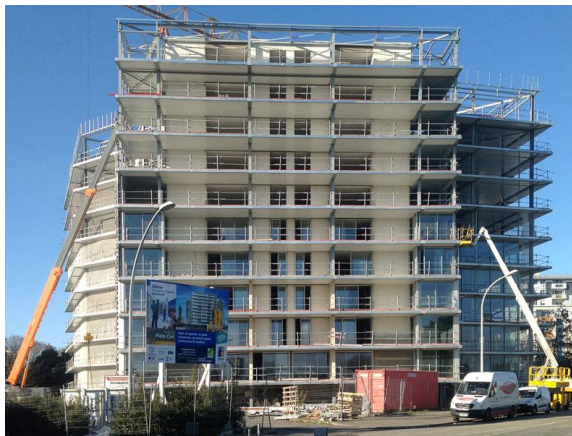
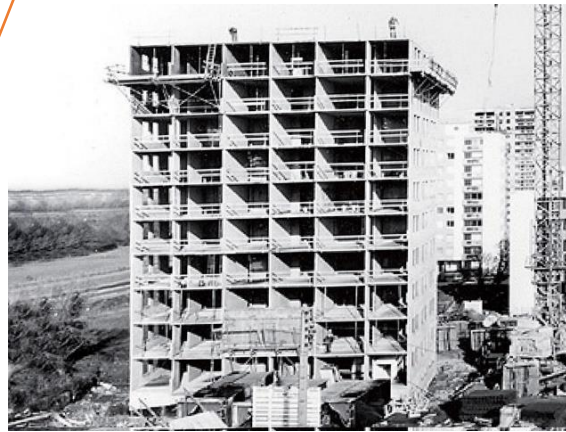
Before



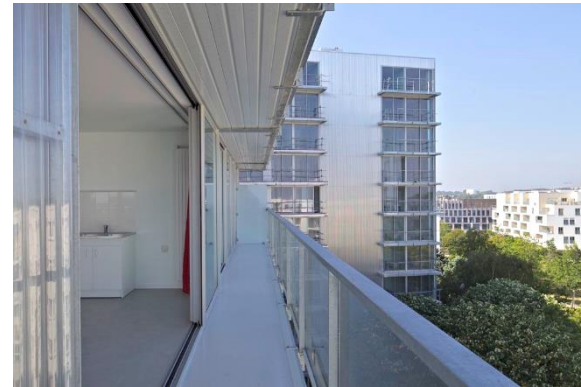
After

Volume expansion

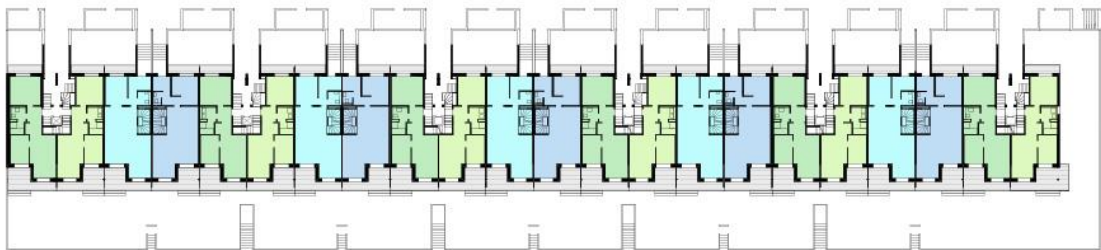
During



After



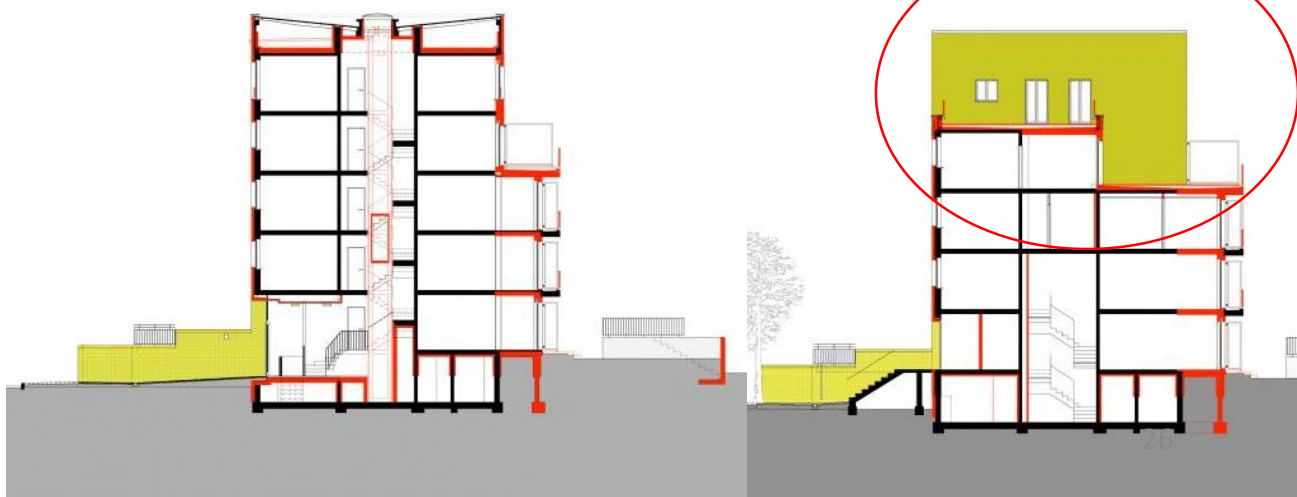
Before



After



Prospetto, prima dei lavori e planimetria dopo i lavori (fonte <http://www.sfa.de/>)





Before



After



5. Topic

RESTORE MODERN BUILDINGS AS HISTORICAL TRACES



1. A birds hunting roccolo on a Trasimeno islan lake

8 Roccolo

Percorso Didattico Naturalistico del Pertüs

specie un tempo cacciate



peppola



fringuello

La **PEPPOLA** (*Fringilla monticola*) è simile al fringuello, da cui si differenzia per il disegno un maschio in fase invernale. Nella stagione riproduttiva (nel disegno un maschio in fase invernale). Nidifica nei boschi di conifere e betulle del nord Europa; durante l'inverno, dopo aver attraversato le Alpi, forma con i fringuello grandi stormi che svernano in diverse zone dell'area mediterranea alla ricerca di cibo.

Il **FRINGUELLO** (*Fringilla coelebs*) è un uccello granivoro piuttosto comune, dal piumaggio variopinto, diverso nei due sessi, ma con doppia banda bianca alare distintiva. Nidifica in boschi e siepi, il suo volo ondulato è caratteristico. Le popolazioni che nidificano nel centro e nord Europa durante l'inverno si muovono in grandi stormi all'interno in tutta l'area mediterranea.

fasi della caccia nel roccolo



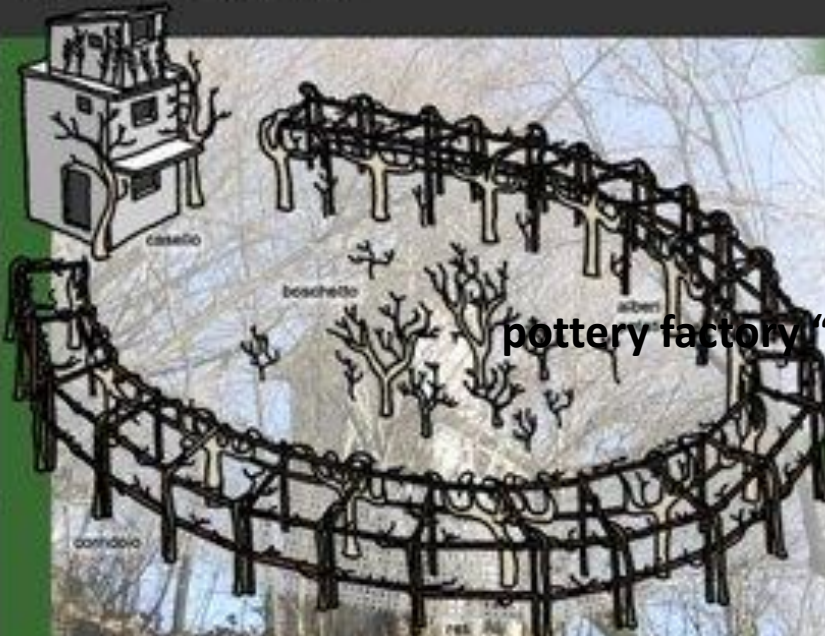
1. Lo stormo si avvicina alla zona del roccolo. Nel corridoio sono state tese le reti tra i rami degli alberi e la struttura in legno. I richiami sono nelle gabbie all'esterno, mentre il roccolatore è appostato all'interno del casello, da dove manovra gli zimbelli.



2. Attratti dai richiami e dagli zimbelli, gli uccelli si avvicinano e si posano sugli alberi del boschetto centrale per mangiarne i frutti.



3. Il roccolatore lancia lo spauracchio sopra il boschetto centrale. Gli uccelli, spaventati, si rifugiano tra i rami degli alberi che compongono il fondo del roccolo, rimanendo impigliati nelle reti.



pottery factory "Rubboli"

Il **ROCCOLO** è una complessa struttura composta da un casello su tre piani, in legno, pietra e muratura, posto all'estremità di una radura a forma di ferro di cavallo, solitamente adibita a parco, delimitata dalla successione di piante con portamento arboreo ed arbustivo, disposte in modo da ottenere una galleria nella quale si provocano le reti di cattura. Gli alberi venivano potati e i rami piegati fino a formare particolarissime architetture; in genere si utilizzavano faggi e carpini bianchi, piantati anche nel mezzo del roccolo insieme ad essenzie fruttifere apposite agli uccelli, in modo da formare un piccolo boschetto centrale.



casello

galleria o sboccata

filare di faggi potati

cima sopra la rete

RILIEVO FOTOGRAFICO



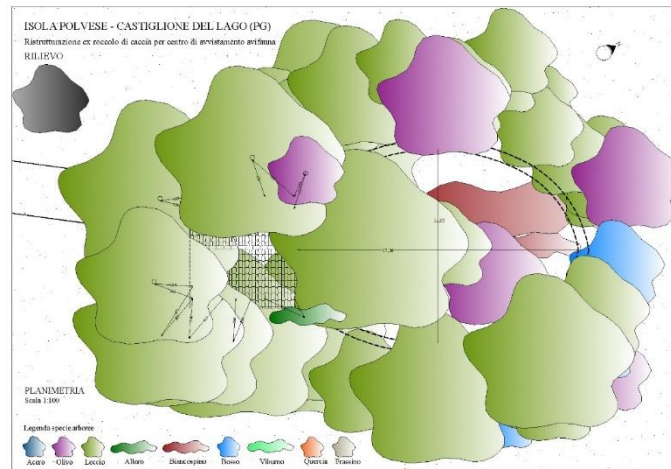
1. Prospetto verso gli ingressi



2. Prospetto principale rivolto verso l'esedra



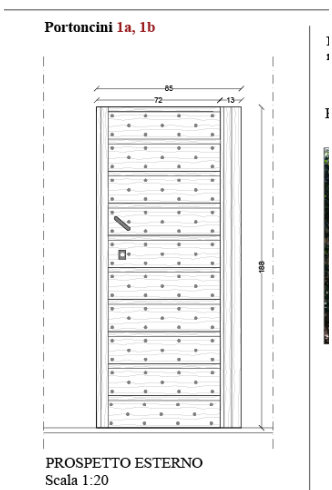
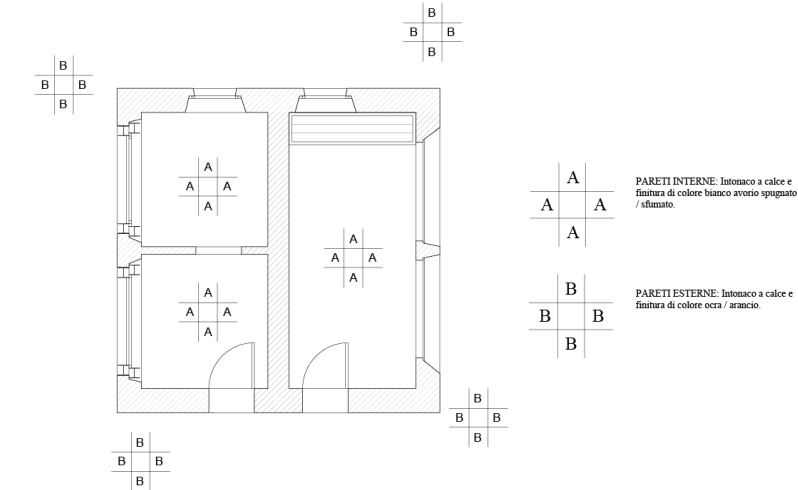
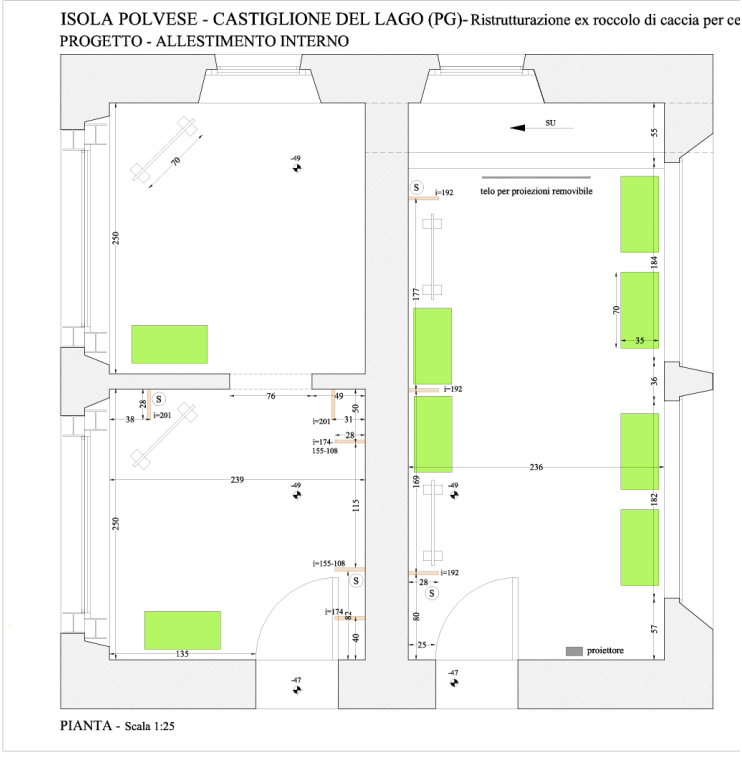
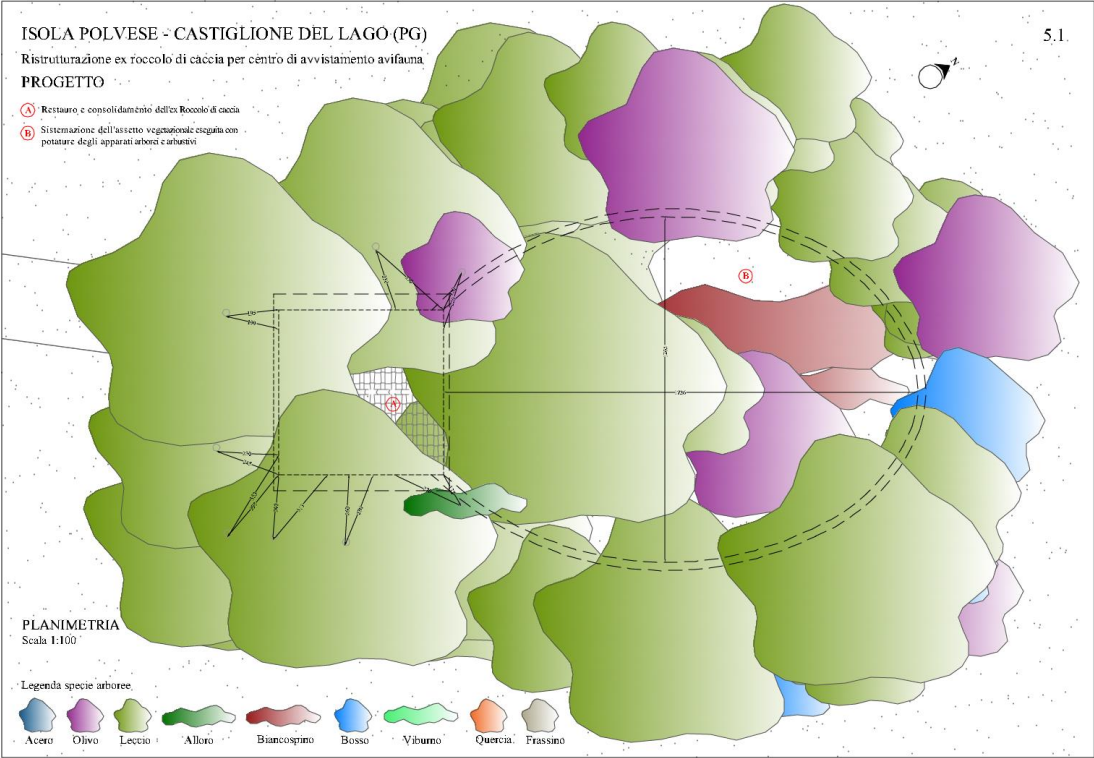
3. Prospetto laterale e prospetto posteriore opposto all'esedra



4.a 4.b Prospetto laterale e prospetto posteriore, opposto all'esedra



PROGETTO ARCHITETTONICO





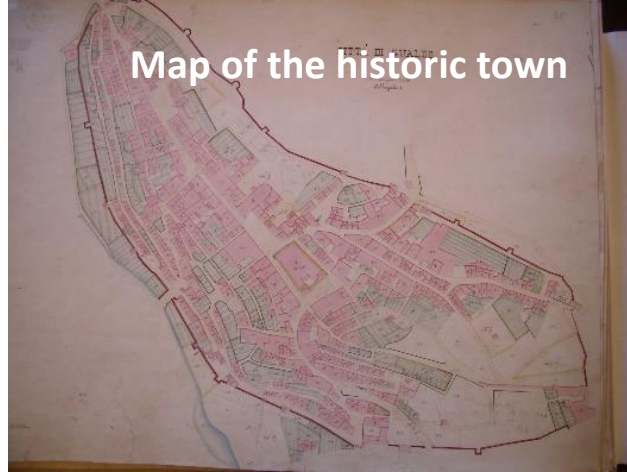
Work in

progress





Outside



Map of the historic town



Plaster molds



Inside



2. The pottery factory "Rubboli"



Muffole







30/5

anatomia di una lettera

ore 10:30—Sale della Città, Rocca Fies

curatori
Massimiliano Prescutti
Sindaco del Comune di Quindici
Maurizio Lottardi Rubboli
Consiglieri del Museo Opificio Rubboli
Maria Carmela Tadei
Associazione Culturale Rubboli
Nives Maria Tosi Cacciari
Presidente Regionale del FN Umbria

moderatore
Marinella Caputo
Curatrice del Museo Opificio Rubboli
Miko Neovius
Curatore, autore teatrale

interventi
Luca Pisanò
Architettura, status di cronaca
Emilia Ince
Disegno di architettura moderna
Loris Vito Maria Noddi
Scenografia

ore 12:30—Museo Opificio Rubboli

Bruno Cocchioli
artista
Chiara Sisti, Marinella Caputo
presentazione dell'opera Gioielleria Immacolata
nella Sala delle Muffole

ore 15:00—Sale della Città, Rocca Fies

Marinella Caputo, Lettura di una lettera
Integrazione di Denis Rubboli

interventi
Alan Calver Smith
Gerieta
Maria Luciana Buscignoli
Scenografia, scenografia
Giovanni Pionti
Avvocato
Rosella De Lencastre
Architettura, scenografia
Luigi Cacciari
Disegno di architettura e tecnica d'investigazione

Chiusura del convegno

Si riparte
comitato scientifico
comitato organizzativo

MUSEO RUBBOLI
#ZERO

30-31 maggio—1 giugno 2015

31/5

*il segreto dell'iride:
cottura a muffola*

ore 11:00—Museo Opificio Rubboli

Famiglia Rubboli, Cotture a legno con fumo
di ginepro e mandorle ceramiche negli antichi
fori a muffola, come descritto da Cipriano
Piccolino

Associazione Culturale Rubboli
Polo Museale Città di Quindici, Terni
Viale guidato al Museo Opificio Rubboli

1/6

ore 17:00—Museo Opificio Rubboli

Acquas del ferro e lavaggio delle mazzette a fuoco
disegnate da Giovanni Piccolino
Associazione Culturale Rubboli, Polo Museale Città di Quindici, Terni
Viale guidato al Museo Opificio Rubboli



the interventions are eco-sustainable because

- **first of all, as reuse the buildings and all those resources used to build them;**
- **moreover, as reuse and recycle materials and technics.**

Restoration criteria: **De-restoration, Minimal intervention, Compatibility, Reversibility, Distinguishability.**

THE END