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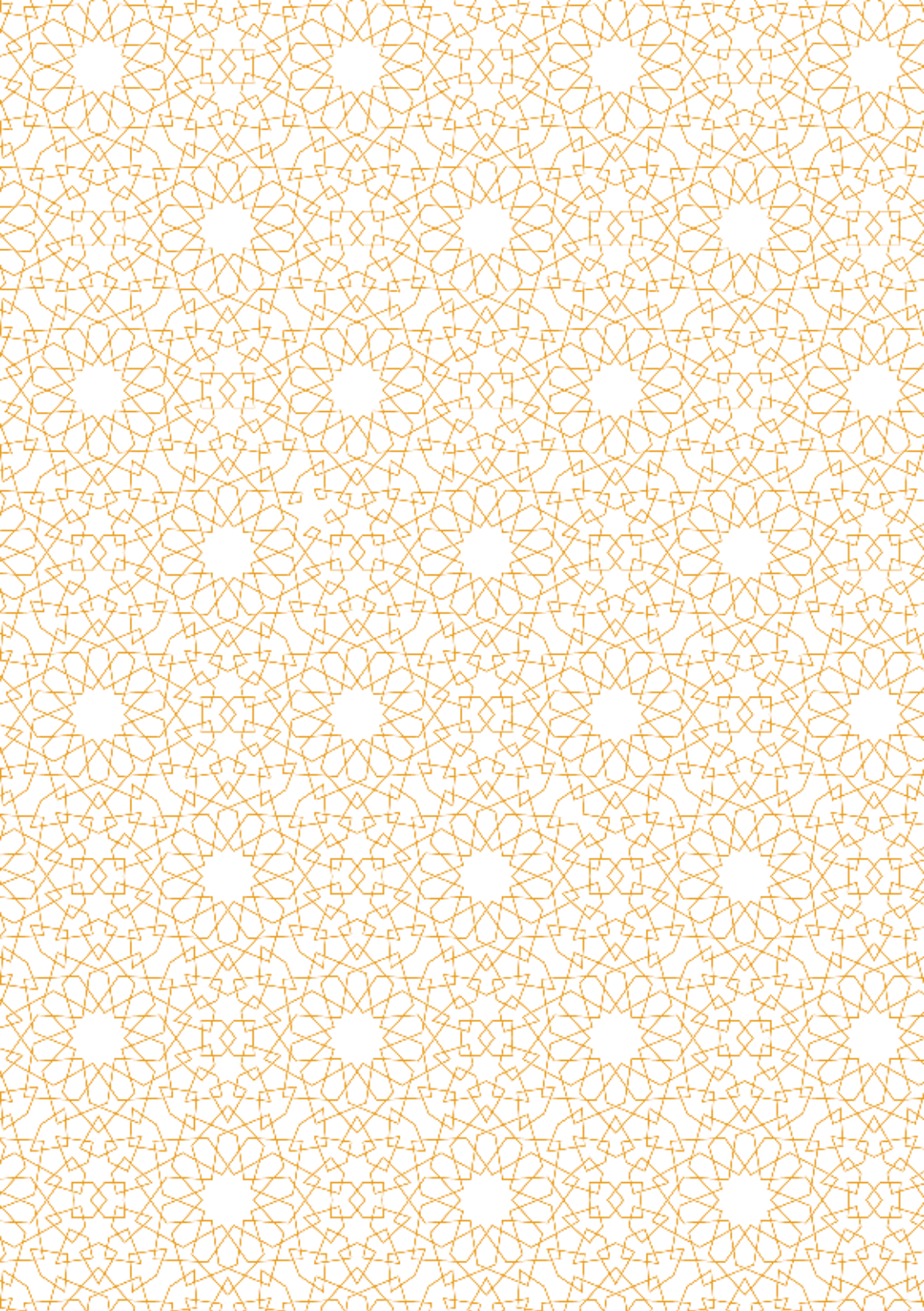


Benno Albrecht, Jacopo Galli

**RECONSTRUCT – SENSITIVE EMPLOYMENT CREATION
THROUGH BOTTOM-UP CELLULAR STRATEGY**

URBICIDE TASK FORCE

URBICIDE RURAL SYRIA RECONSTRUCTION OF VILLAGES



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**URBICIDE RURAL SYRIA
RECONSTRUCTION OF VILLAGES**

Urbicide Task Force, Università Iuav di Venezia

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a project by Urbicide Task Force

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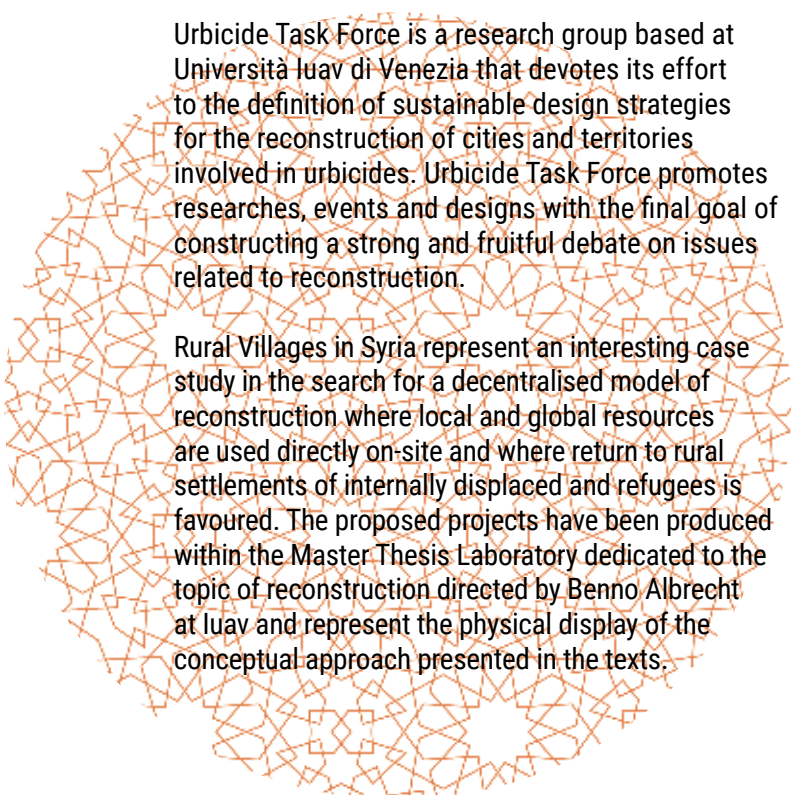
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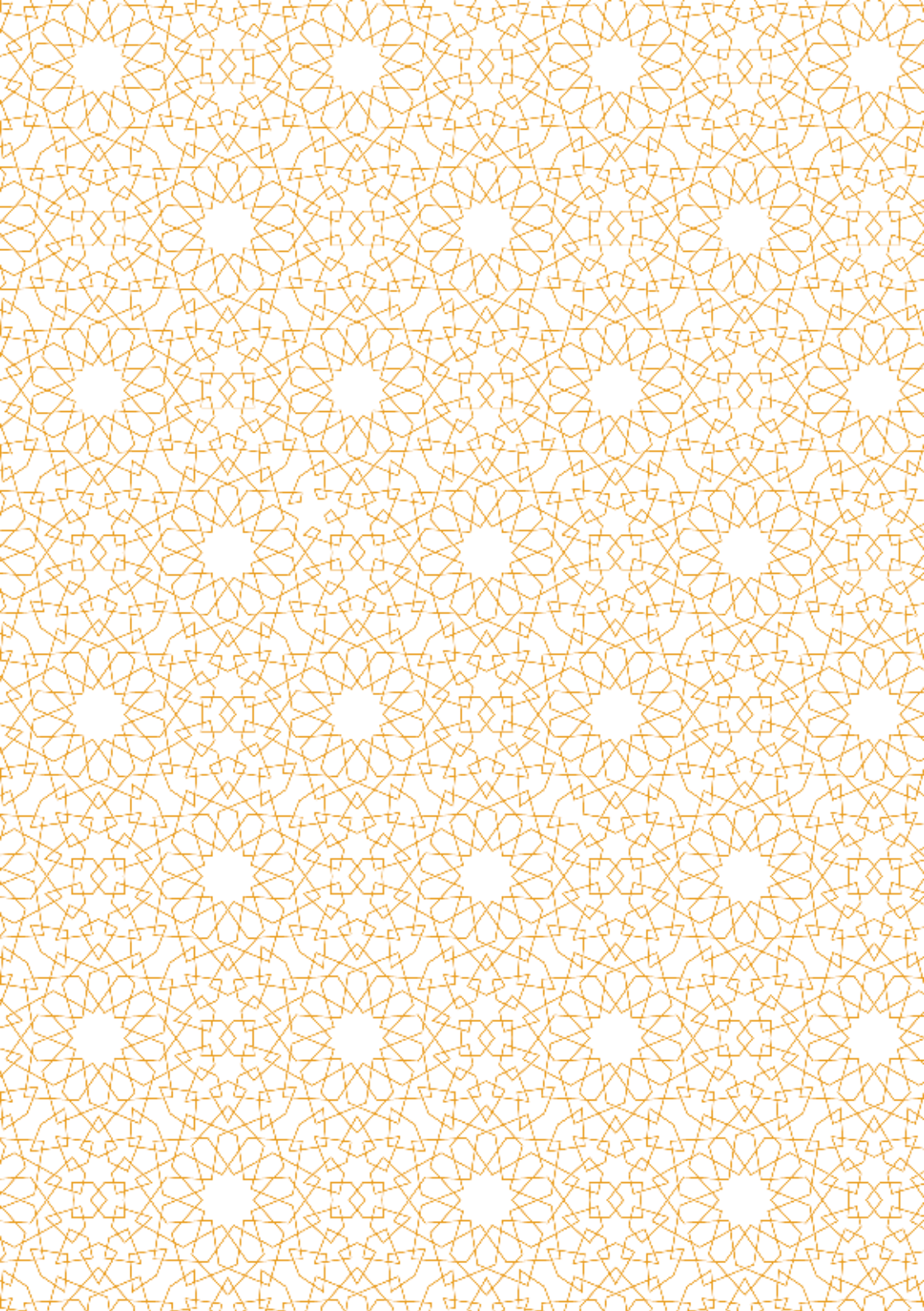


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Urbicide Task Force is a research group based at Università Iuav di Venezia that devotes its effort to the definition of sustainable design strategies for the reconstruction of cities and territories involved in urbicides. Urbicide Task Force promotes researches, events and designs with the final goal of constructing a strong and fruitful debate on issues related to reconstruction.

Rural Villages in Syria represent an interesting case study in the search for a decentralised model of reconstruction where local and global resources are used directly on-site and where return to rural settlements of internally displaced and refugees is favoured. The proposed projects have been produced within the Master Thesis Laboratory dedicated to the topic of reconstruction directed by Benno Albrecht at Iuav and represent the physical display of the conceptual approach presented in the texts.



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A circular reconstruction

Emilio Antonioli

The last twenty years have seen a progressive transition of the European construction sector towards “sustainable” processes, characterized by a greater attention to the environment and by a reduction in the resources consumption. The linear logics of production based on the production-use-disposal principle are slowly¹ changed into circular economies based on the product life cycle’s management, on the reuse and recycling of end life products, up to more complex concepts of production, based on biomimesis and imitation of natural processes according to the Blue Economy² theories proposed by Gunter Pauli.

The transition towards a circular economy has been possible first thanks to the progressive awareness of the main actors in the building process - companies and producers but also designers and end users - encouraged by the constant political debate³ and the regulatory updating⁴ in terms of efficiency, sustainability and eco-compatibility of buildings.

– On the previous page: Sahl, S. Bortolato, M. Maniero.

On the next page: Sahl, S. Bortolato, M. Maniero.

1 – For a picture of the evolution of the concept of circular economy, see the text by Emanuela Bompan and Ilaria Nicoletta Brambilla (edited by), “Che cosa è l’economia circolare”, Edizioni Ambiente, Milano, 2017.

2 – Gunter Pauli, “Blue Economy. 10 anni. 100 innovazioni. 100 milioni di posti di lavoro”, Edizioni Ambiente, Milano, 2010.

3 – At European level, the debate on these issues has been active since the 1970s and finds in the circular economy package presented on December 2nd 2015 by the Juncker Commission with the title “The missing link: a European action plan for the economy circular” a turning point towards the sustainability of produc-





tion processes. It is also significant that this date coincides with COP-21 in which the Paris Climate Agreement was signed to contain global warming, linking the issue of circular and sustainable production to climate change.

4 – As an example we can mention the European Directives 2005/32 / EC EuP-Energy-using Products and 2009/125 / CE ErP-Energy-related Products aimed at reducing the energy impact of the products they consume or whose use is related to an energy consumption.

5 – Longo Danila, “Decostruzione e riuso. Procedure e tecniche di valorizzazione dei residui edilizi in Italia”, Alinea, Firenze, 2007.

6 – Baker-Brown Duncan, “The Re-use Atlas. A designer’s guide towards a circular economy”, Riba Publishing, London, 2017.

7 – We are referring for example to WASP, a company from Massa Lombarda that produces 3D printers or to Rice-House, a start-up in Biella that has activated a chain of recovery of rice waste to make building products.

8 – Devarajan Shanta, Mottaghi Lili, “The Economics of Post-Conflict Reconstruction in Middle East and North Africa.” Middle East and North Africa Economic Monitor (April), World Bank, Washington, DC, 2017.

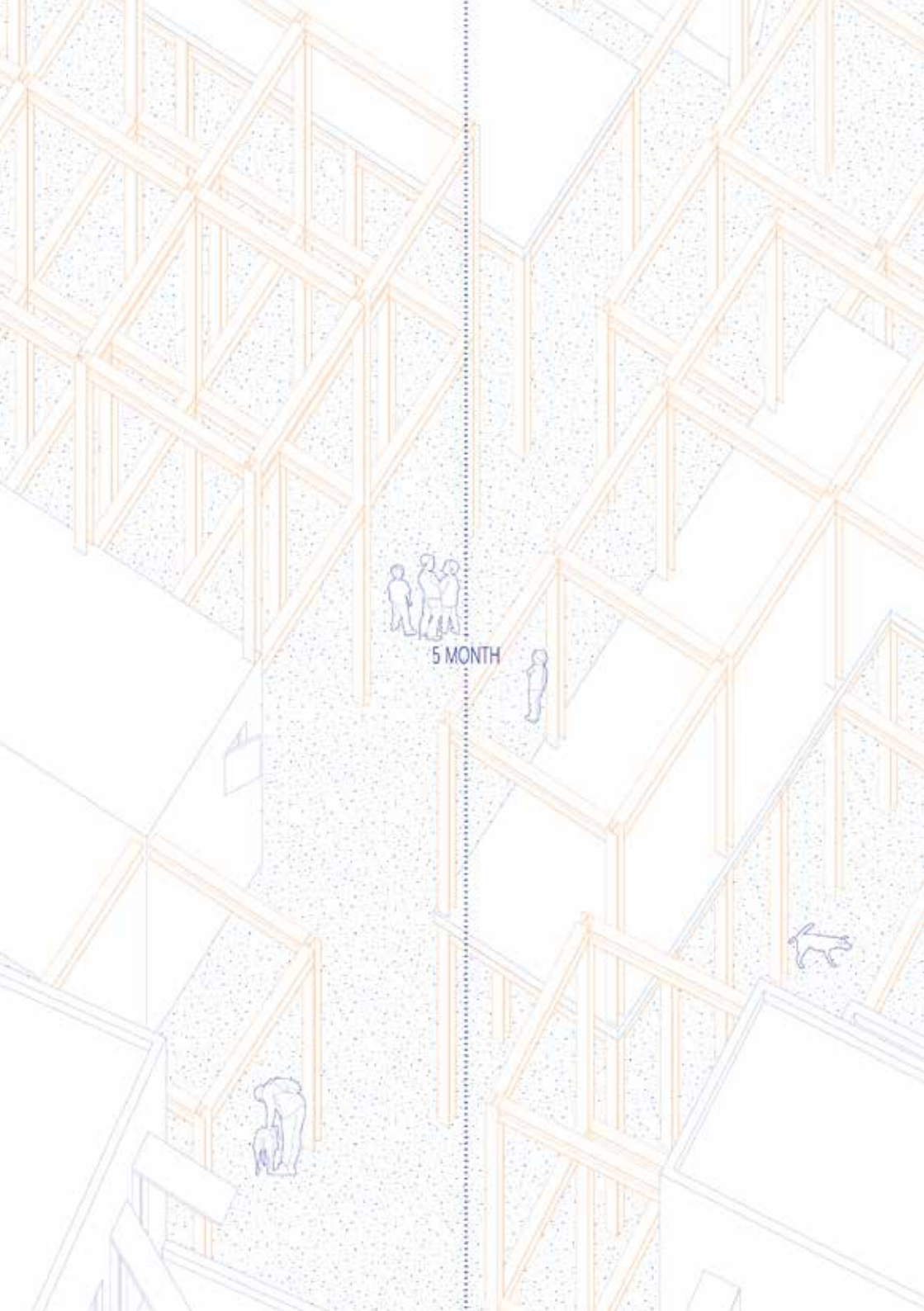
– On the next page: Sheran, L. Brancaloni.

At the same time, the strong innovative drive that has characterized the last decades, with the launch of new materials, new products and construction technologies and above all new systems for the use in production processes⁵ of resources that were previously considered as “waste”, has strengthened the concrete possibilities of this transformation.

In the European context, characterized by a base of small and medium-sized enterprises, this economy transition has been realized through the creation of new realities, start-ups and innovative companies that work in sectors such as design, fashion, chemistry and biology. They have experimentation as their primary objective, investing in sustainability, automation and technology⁶. Also the building construction sector has grown in this new business model with companies active in sectors such as architectural additive printing or capable of combining traditional building systems (wooden houses, traditional plasters, etc.) with new “waste” materials like processing residues deriving from agricultural or industrial production⁷.

In the MENA region the socio-political instability, the continuous episodes of violence and the low oil prices have instead caused a substantial stagnation of the Region economy which, despite the prospect of growth due to reconstruction, in the years between 2013 and 2017 saw an average growth of the economic system of only 2,4%⁸.

Indeed, local production systems in MENA region are not very efficient: “The domestic building materials industry is under-producing [...] public and private sector manufacturers suffer from aging infrastructures, lack of spare parts, inadequate sup-



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ply of electricity and post-war looting”⁹. The lack of a consolidated production system has slowed down not only the normal production processes but also the innovative drive that sees, especially in the “green” sector, a strong gap compared to what is happening in Europe.

To this must be added the need of reactivation of the labor market, in order to give an income to thousands of people who have lost their work due to war and migration, relying on “cascade” processes described by Pauli in which the reactivation of a supply chain brings material and occupational repercussions even in related sectors¹⁰.

In such a complex scenario, the activation of circular, efficient and sustainable processes appears difficult but is, instead, more useful and necessary in order to maximize the effectiveness of the use of the few available resources, starting from the scarcer one: the water.

Water scarcity characterises all the States of the MENA region and influences their economic development¹¹, threatening the potential growth linked to the building sector. The MENA region recorded two important building expansion phases, respectively in the 1960s and 1980s. Both phases have seen an increase in construction in urban areas, where the most widely technology used was the reinforced concrete system, which has a strong impact on water consumption. At the same time “with this urbanization, the urban-rural gap is widening, so the gap between capital cities and secondary cities [...] Rural areas in most Arab countries are lagging behind the urban areas. They are characterized by high levels of poverty, high fertility rates and population growth [...] they lack basic infrastructure (roads, irrigation, etc.) often due to the high cost of its provision and maintenance”¹².

9 – Iraq National Housing Policy, Ministry of Construction and Housing (MOCH), 2010.

10 – Gunter Pauli, *Blue Economy*, op. cit.

11 – Over 60% of the MENA region’s population lives in areas with high or very high surface water stress. World Bank, *Beyond Scarcity: Water Security in the Middle East and North Africa*. MENA Development Report, Washington, DC, World Bank, 2018.

12 – Malkawi Fuad K., “The New Arab Metropolis: A New Research Agenda”, in Elsheshtawy Yasser (editor), “The Evolving Arab City. Tradition, Modernity & Urban Development”, Routledge, London and New York, 2008, pp. 29-30.

– On the previous pages: Al Jalaa, M. Brusutti, M. Guerra. On the next pages: Al Sahharah, S. Busetto.





A circular reconstruction

This led to a strong development of “mass” construction solutions based on concrete and other imported materials, limiting the spread of traditional construction solutions based on local materials.

Nowadays, rethinking post-war reconstruction also means reducing the use of reinforced concrete. For these reasons the reconstruction process can find in the technological innovation, and above all in the activation of circular processes, an effective method to reduce the consumption of water and resources, reactivating at the same time the local economy. On the one hand, if water can be used more effectively in agricultural production, a primary sector for the MENA area recovery, on the other hand, from the agricultural sector can emerge resources that are usable in building production processes based on the recycle of agricultural residues, or on local resources such as raw earth and rubble resulting from the disposal of cities destroyed by conflicts. In this scenario, the reconstruction of cities and villages in the MENA region is based on a reduction in imports of materials from extra-territorial contexts to exploit resources already available and traditional techniques that, using local labor, can also lead to a socio-economic reactivation of the area.

However, this process requires a considerable effort. The reconstruction of entire cities cannot simply be answered in the revival of traditional technologies and in the use of poor and locally sourced materials, but it will necessarily have to face the need for mass production in a short time. For this reason the contribution that the research can offer concerns precisely the transfer of technology and knowledge from contexts such as the European one, where innovation has become an

– On the next page:
Western Gherban,
Lorenzo Abate.

Mattino spogliato
spogliato anti 51 m²
spogliato anti-pigiama di 14 m²



Vestizione laterale
spogliato anti 69 m²
spogliato anti-pigiama di 27 m²



Vestizione doppia
spogliato anti 104 m²
spogliato anti-pigiama di 14 m²





engine of development, to areas such as the MENA one in which it can be the answer for a conscious and sustainable reconstruction.

Building with waste, using waste products of other productions, as well as the use of natural and recyclable materials, is a practice that must therefore be combined with the activation of local production centers, such as laboratories and small craft hubs, settable where needed. At the same time, the availability of manpower and the lack of water resources lead us to consider dry construction technologies as preferable, using small components, such as blocks, bricks and panels, easy to assemble and light to handle, specifying functional layers and materials to the needs of each project. This makes it possible to imagine the construction site as a flexible and light structure, without heavy machines, where traditional construction works alongside the most advanced technologies¹³: a real “building production laboratory” located directly on site where working tools such as numerical control machines, robotic arms and drones work alongside local labor, to transform local resources, but also rubble from existing buildings, into new construction products.

13 – On these themes, see what is described by Zambelli Ettore, Vanoncini Pier Antonio and Imperadori Marco in “Costruzione stratificata a secco. Tecnologie edilizie innovative e metodi per la gestione del progetto”, Maggioli, Rimini, 1998.

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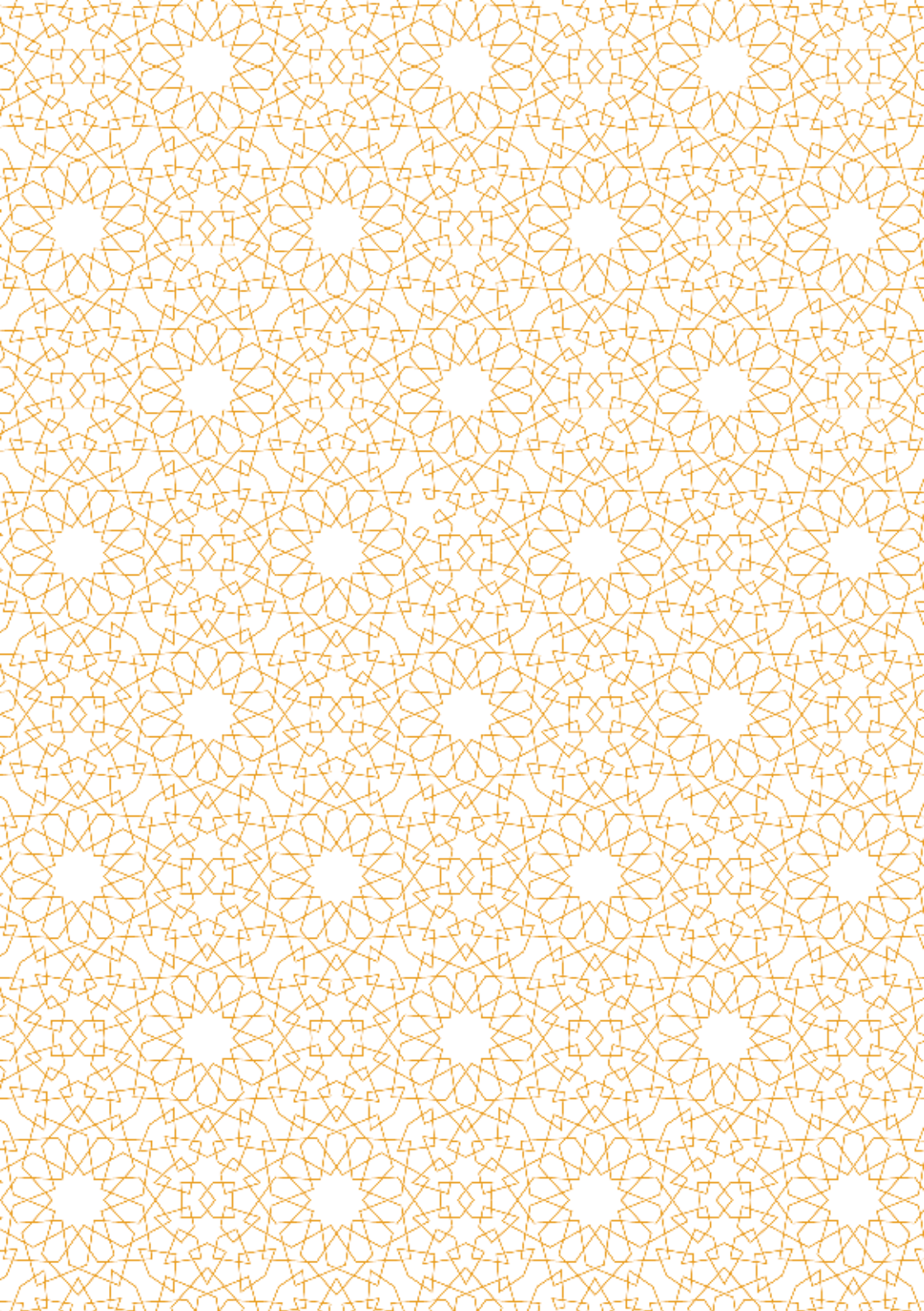


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