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EDITORIAL**Nota Pantzou**

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This new issue of e-dialogos gives once again an overview on problems and proposals in the heritage field. Just as earlier issues presented an inside perspective on the heritage difficulties in Egypt due to the Arab Spring, this time Rim Lababidi writes about the situation in Aleppo, Syria, and the deep destruction the city suffered during the war. She stresses the necessity “to deliver first aid emergency measures” to the historic city once the turmoil ceases. With this in mind, she proposes a first approach to face the reconstruction of the place based on its assets and overcoming its weaknesses.

Another profoundly transformed city, due this time to the evolution of technology, is Muharraq, in the Kingdom of Bahrain. In this case Ghassan Chemali explains the mechanisms of the transformation of the historic centre, highly influenced by the British protectorate era but also from the sudden arrival of new materials and techniques, due to the discovery of oil in 1932. The author interestingly analyses the architecture of the so called “transitional period”, finding architectural patterns similar to the traditional buildings, although the transformation is sometimes to such an extent that it is difficult to read them at first sight. The author raises interesting questions about how modernization and local technical culture can coexist by respecting local values.

As against the destruction and transformation of some areas and the evolution of others, architect

Pedro Murilo brings an old style approach to the timeless architectural Italian heritage. Like the Grand Tourists of the 18th and 19th century, the author spent two months travelling around Italy, drawing its magnificent monuments and understanding them through the lines of his illustrations. As many artists before, he learnt by tracing lines on his white paper. In a rapidly evolving world, he took a step back and took time to contemplate and immerse himself in the works of art.

That heritage arose from a moment when history was not running as fast as nowadays. The impact of the environmental changes and the rapid loss of intangible values and social context require the inclusion of sustainability strategies in cultural projects and the setting up of policies and guidelines. The text by Marta and Noemí Sas presents different initiatives, comprising the interest of combining cultural activities with sustainable actions. More specifically, the authors focus on those cultural projects which effectively took into account their possible impact on the environment. The interest in the relevance of cultural heritage and collective and individual memory for urban communities as well as their impact on the social fabric are also key points in the Pithari project run by Diadrasis. This project which was entirely designed by Diadrasis volunteers, conducted research based on a close collaboration with the local community of Exarcheia, a neighbourhood in the centre of Athens (Greece). The aim was to record landmarks, memories

and stories of an ever changing urban space and to trace and present them through an e-platform to the public, especially those which carry special values and meaning for this community.

Finally, issue number 6 ends with a personal reflection by paleoanthropologist Aida Gómez-Robles about the remarkable anthropological and archaeological site of Atapuerca, in Burgos (Spain). This place, reminiscent of the distant past, is where some of the oldest

“European” inhabitants, as human remains dating to about 800,000 years ago found in situ testify, started the path which led towards our days.

As always, we expect our readers will enjoy the varied texts and our authors’ ideas and insights, hoping that their contributions will expand the heritage knowledge and information.


31 June 2017

Nota Pantzou



Editor-in-chief

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Editor

PITHARI, FILLING A RESEARCH JAR WITH LANDMARKS AND EVERYDAY STORIES

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“Space is nothing without the people that inhabit it. Even the architectural composition of our neighborhoods is derived from human action, defining the space where the traces of peoples’ movements and thoughts, creativity and memories, interactions and feelings are woven into”. This is the opening phrase presenting our pilot project “Pithari” in the blog, as one of the most “romantic” projects we have run, in the historical district Exarcheia in Athens. We dare to call a project romantic because it was launched from a vision and a wish, without actually being the area of our expertise. Its vision and its aim were to identify the landmarks of a city district from /through?people’s stories and memories and to find the answer to the question: do people connect with the spots of the area that the heritage experts define as landmarks?

Let us, however, take some steps back to explore how a team like ours, working on heritage conservation, designed a project that studies/explores not just historical buildings and areas but also contemporary elements, stories and memories, and, in a way, people. As most of you that have followed our steps from the beginning may notice, we do “honour” our name! Diadrasis in Greek stands for interaction, and we keep growing and evolving with the collaborators that come to us at different moments, with their new ideas and professional points of view. Last year in /thanks

to the Tandem project “Whispers of a Common Past”, we interacted with the science of ethnography and were enchanted with the power of people’s stories and memories in preserving the intangible heritage of lost lands. Right after, at the conference in York¹, we discovered the Architect Krupa Rajanngam’s community based research projects in India “neighborhood diaries”². And to complete the picture, that same year we had /hosted? one intern of Urban Studies and two of Heritage Management, who were so enthusiastic to developing a project where people define the landmarks of our days; landmarks that, if preserved, they could become tomorrow’s heritage.

The idea being so clear, the next step was to find a district to try it in. Exarcheia, in the center for Athens, was the ideal candidate. It is not a large area, but it is full of history and still quite contradictory as often happens with areas of dispute. Widely known as the “riots cradle” of the city, it also has a very strong neighborhood character from the presence of old Athenians but newcomers too, and it is very much loved by students, change-makers and artists. Other than that, it is also the area of the National Archaeological Museum (Epigraphic and NTUA), where we could assess if and how such a big landmark is important for the users of the area. Choosing Exarcheia also helped us name the project. Until the end of the 19th century

¹ *Engaging Conservation: Communities, capacity building and conservation practice: Centre for Conservation Studies, University of York, 11-13/7/2014*

² <https://neighbourhooddiaries.wordpress.com/>



Fig. 1. Interview. Image by DIADRASIS.

Exarcheia was called “pitharadika” after the pottery workshops that could be found everywhere in this district. Pithari in Greek stands for the pottery jar in which people would store their everyday necessities; so in our project, Pithari became a “space for collecting memories” of a neighbourhood.

Once the objectives and the area were defined, we could finally design a methodology ad hoc. Once more, we did it “with a little help from our friends”. With the scientific guidance and supervision of Dr. Panagiota Pantzou, experienced in ethnographic research, the training by Elisavet Tapini on qualitative and quantitative analysis methodology, and the contribution from the MONUMENTA NGO and her coordinator Irini Gratsia that shared their experience, we could trace our own path in five distinctive steps:

- Study and Planning: studying existing literature, ongoing activities, organizations and associations



Fig. 3. Street market. Image by DIADRASIS.



Fig. 2. The ethnographer-owl. Image by DIADRASIS.

of the area; making the call and the training of the volunteers

- Comprehension: mapping with the locals the spots of interest through interviews and questionnaires.
- Elaboration: the team of experts analyzes the collected data and designs tools for dissemination
- Implementation: organizing an open event, calling people that contributed in the research to celebrate and discuss the results
- Dissemination: sharing the results and promoting their dissemination and use by the wider public

For us one of the biggest rewards of this project was the response to our call for volunteers. When publishing the call, we were very skeptical as to the response of the public. After all, we are just a small NGO and we were not even certain that anyone would be interested in the specific subject of our research. Surprisingly there were quite a few! We received 12



Fig. 4. The Phitari team. Image by DIADRASIS.



Fig. 5. Pithari logo. Image by DIADRASIS.

applications, 7 of which at the end formed the dream-team that conducted 100 interviews and helped us make another 100 online. I will never forget the fun at our fortnightly gathering, where we would share each one's progress in the research, any problems or simply stories. And that is another reason we love pithari: we have met and worked together with wonderful people from various fields. Marina, Dimitra, Maria, Katerina, Eva, Chrysa, Myrsini have filled our pithari with great enthusiasm and have made our project so vivid.

This project was yet another innovation for Diadrasis. It was the first to be designed and coordinated entirely by our interns. Maro Magoula, Theodora Tsitoura, Myrevi Nassiou, Lisa Wollmannstetter cooperated in an exemplary way, sharing tasks and responsibilities, turning the romantic idea into a solid research project. After a year of work, we had 19 landmarks of Exarcheia at hand along with so many stories as to make them live a hundred lives. You can discover them all in the Pithari blog, <https://pitharistories.wordpress.com/> created by the next generation of interns, Lydia Drollia and Eleftheria Karra. And for those that actually visit Athens, we are very happy to invite you to discover the results of this research in the mobile application Clio Muse³. Clio Muse team supported the idea of our project, offering us their platform to upload are stories. More interaction brings more outreach!

In conclusion, the community based research project "Pithari" searched for the heritage, culture and social landmarks of Exarcheia, adopting a "bottom up" research approach. Starting from the people's views and stories by which they identified cultural landmarks

and their role both in everyday life and in formulating contemporary history, we wanted to give the opportunity to people who live in Exarcheia to expose what they themselves think is important and valuable in their neighbourhood. By Bringing the research/ designing a project? for the people to the people, we supported the feelings of pride and participation of the locals encouraging them to promote their living heritage and culture. Linking faces and everyday stories to spots of a controversial district, has highlighted its other side, completely different to the prevailing stereotypes and misconceptions. Finally, giving voice to the people is a means of not only identifying spots, but also promoting local initiatives while supporting the safeguarding of these landmarks as local 'brands'/ iconic landmarks which are highlighting the unique character of each city district.

³ <https://cliomuseapp.com/>



Fig. 1. Aleppo. Image by Sultan Kitaz.

THE OLD CITY OF ALEPPO. SITUATION ANALYSIS*

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In the wake of the Syrian conflict that has been ongoing for over five years, key cultural sites in the country have been rampaged including the Old city of Aleppo. Despite the tremendous local and international efforts to observe and document the damage to Syrian heritage, little attention is given to the time gap between the conflict and post-conflict reconstruction periods, during which irreversible damage may be inflicted on the heritage. It is of utmost importance to deliver first aid emergency measures once Old Aleppo is accessible in order to stabilize and secure assets, but also to pave the way for an inclusive post-conflict reconstruction process that meets the needs of the affected community.

Keywords:

Syria – Aleppo – heritage – conflict – reconstruction

1. INTRODUCTION

In recent years, there has been an increase in the frequency and nature of threats to our cultural heritage. Climate change has played an instrumental role in this increase. Armed conflicts, however, have intensified hazards to human lives and their heritage to an unprecedented level. To counteract these events there has been an active movement in the field of cultural heritage to enact coordinated multi-agency mechanisms aiming at the protection of cultural heritage in times of emergencies and at the integration of a cultural sector in the humanitarian relief and recovery system established by the United Nations and other international bodies. Key among these activities is ICCROM's Disaster Risk Management Programme, which includes a training on First aid to Cultural Heritage in Times of Crisis (TANDON, 2013).

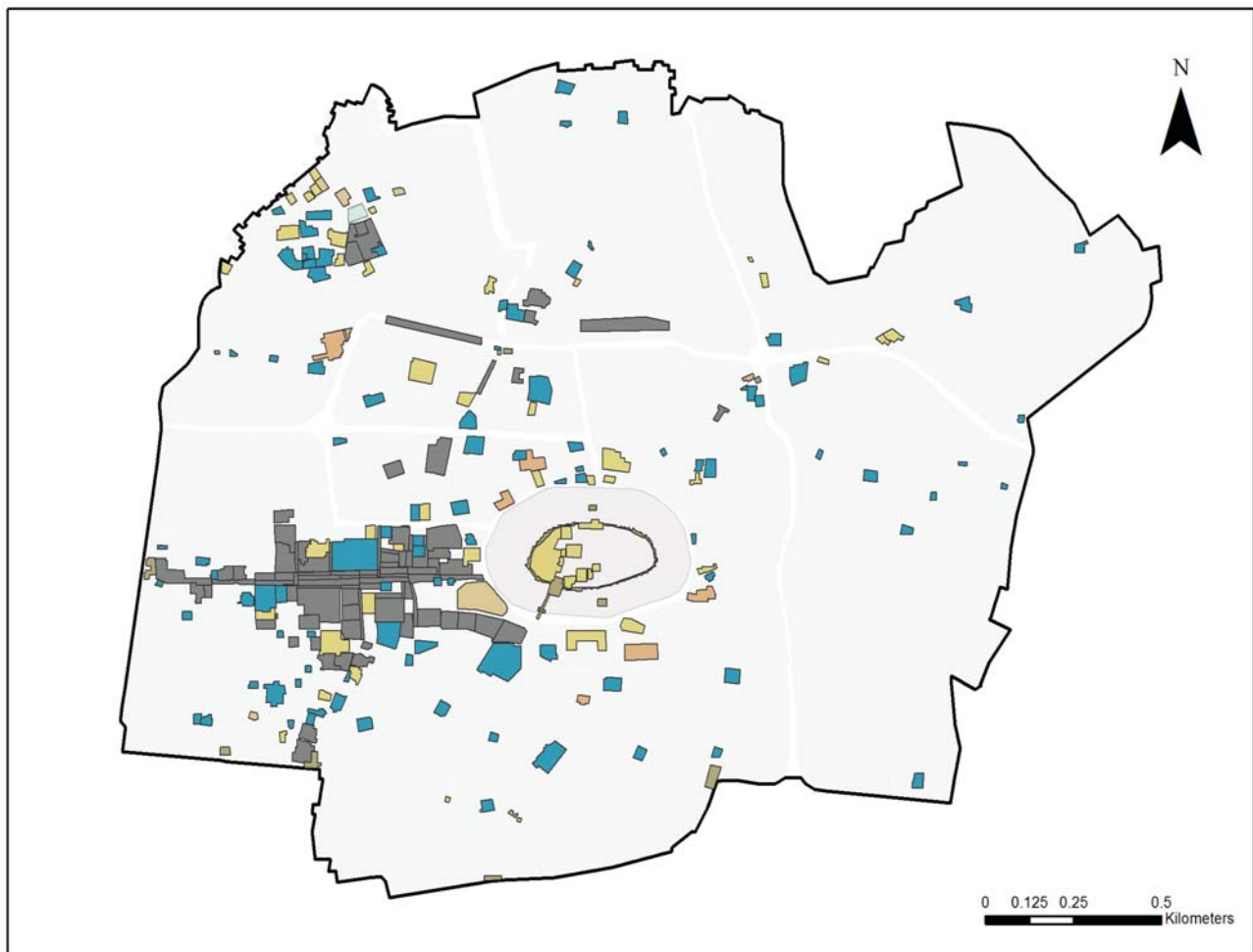
First aid to cultural heritage response is a process that aims to first mitigate damages to heritage after a crisis, then stabilize the situation and finally prevent further damage. It is an all-inclusive approach, designed so as to create channels of communication and collaboration among the different stakeholders, evolving in three phases: situation analysis, on-site survey, security and stabilization actions (TANDON, 2016). In partnership with several other agencies, such as the Smithsonian Institution, ICCROM has successfully applied First Aid

measures to cultural heritage damaged by natural disasters in countries like Nepal, Myanmar, the Philippines, et.al. But the high complexity of armed conflicts and their transitional phases from conflict to resilience have led international organizations to adopt risk-avoidance attitudes (KILA, 2013; LABABIDI and QASSAR, 2016).

In the wake of the Syrian conflict, which has caused a devastating humanitarian crisis and rampaged Syria's patrimony, several local and international initiatives have been launched to observe and document the damage to Syrian heritage (ECHO FACTSHEET, 2016). The greatest attention was concentrated on the historic urban center of Aleppo that spans a history of 7000 years (fig 2) and has been heavily damaged since the start of the conflict (fig 3). But here again, the agencies involved are mainly focusing on the post-conflict reconstruction process, overlooking the hazards of the transitional period.

This paper presents a situation analysis of the cultural crisis that has been escalating during the last four years in Aleppo. Situation analysis is a key tool in first aid response for collecting and organizing information in a systematic way which may eventually lead to a contextual and inclusive response. With this in mind, this paper provides a contextualized analysis for the primary and secondary hazards affecting Old Aleppo

* This article was finished in November 2016, just before the recapture of the Old City by the forces of the Syrian regime backed up by Russian forces.



Geographic Coordinate System: GCS_WGS_1984

Legend



Fig. 2. The old city of Aleppo by Rim Lababidi.

in light of the changing dynamics of the conflict and the different sides fueling into it. It also examines the strength, weakness, opportunities and threats (SWOT) of applying first aid measures to stabilize Old Aleppo.

This research has been developed by the author as part of her M.A. thesis, submitted in 2014 to the University College London. It is an introduction for a first aid to Old Aleppo which is being developed by the author. Selecting Old Aleppo as the focus of this paper stemmed from the rich cultural heritage of the city and the severity of the damage affecting it.

2. CONFLICT

In March 2011 a civil uprising sparked in Syria, demanding democratic reformations in the country, freedom of speech and a shared power. The violent response of the government, along with involvement of regional and international actors, turned the Syrian revolution into an armed conflict that spread throughout the country and reached Aleppo in July 2012. The hostilities divided Aleppo into a western part controlled by the regime and an eastern part controlled by the armed opposition, and marked Old Aleppo as a contested zone separating the two

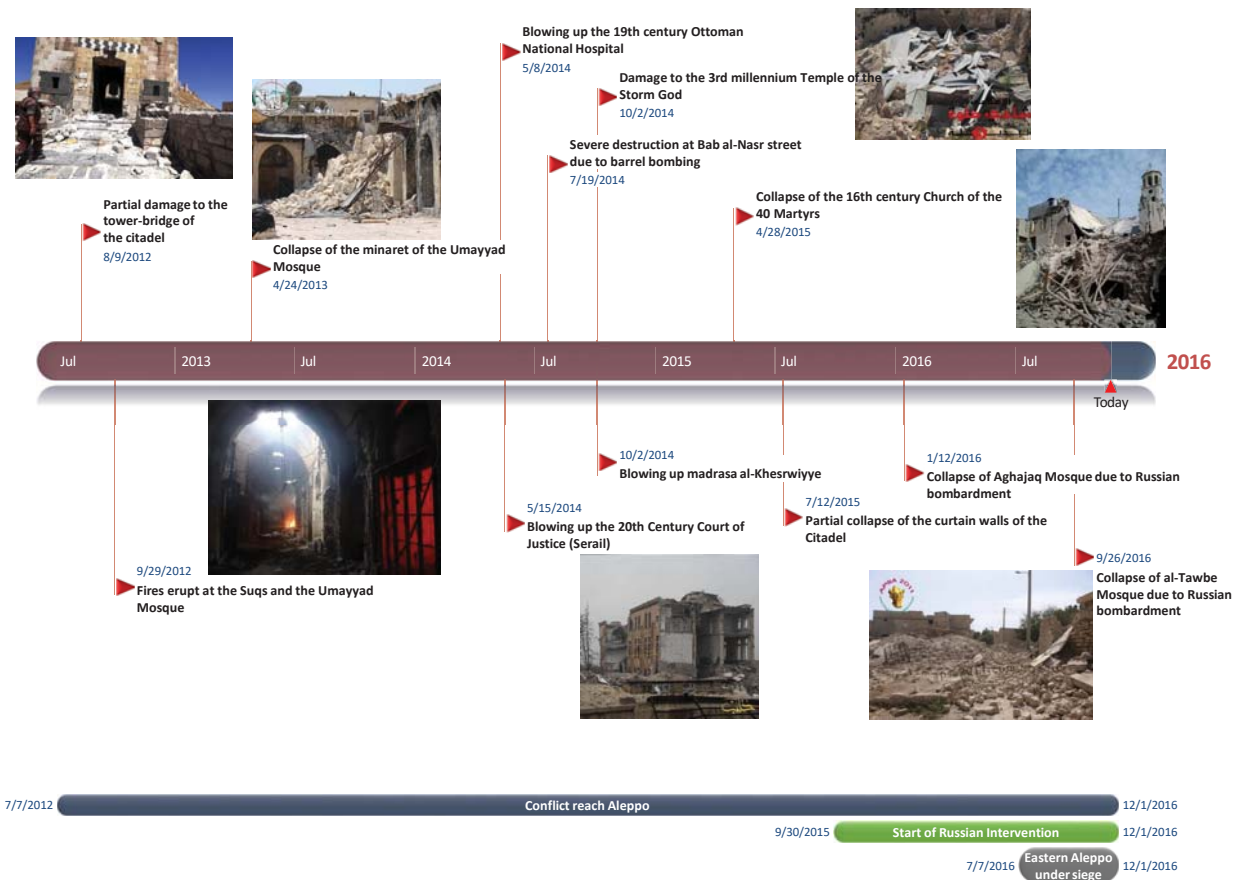


Fig. 3. Timeline of the conflict at Old Aleppo by Rim Lababidi

halves. Once the confrontations reached the ancient enclosure, both sides fought for the advantage of the 42m high Citadel which overlooks Old Aleppo. The Citadel was eventually captured by the regime with minor damages affecting its bridge-tower. The armed confrontations thence moved on to the perimeter of the citadel, which the regime successfully controlled. Accordingly, the major frontline within Old Aleppo was pushed further to the west, managing to include key assets like the Umayyad Mosque and the Suqs (fig 4).

Parallel to the severe damages to the western axes of Old Aleppo, both conflicting sides infiltrated into the remaining ancient enclosure and turned its ancient monuments into military bases for their operations. Minarets became bases for snipers and courtyards of houses and madrasas turned into missiles' launching facilities (fig 5), exposing Aleppo's historic structures to intentional targeting, as in the case of the 11th century minaret of the Umayyad mosque that was targeted and destroyed in April 24th, 2013. However,

the ethno-religious fueling of the Syrian conflict, especially by regional actors, lead to an ideological radicalism that also affected Aleppo's heritage, as will be discussed later.

3. PRIMARY AND SECONDARY HAZARDS

During the first two years of the conflict in Aleppo primary hazards to the integrity of heritage were weaponry, shelling and air campaign bombardments, which caused partial collapses in historic structures. But beginning with 2014 the nature of hazards intensified, as each side adopted highly destructive methods against its opponent. Barrel Bombs, which are unguided bombs of large amounts of explosives and of a far more destructive impact than that of artillery or other air strikes (HRW, 2014), were deployed by the regime against its opponents. At the same time the armed opposition embarked in digging explosive tunnels, some of which reaching up to 130m in length, in order to target barracks of the regime (SOQUR AL-

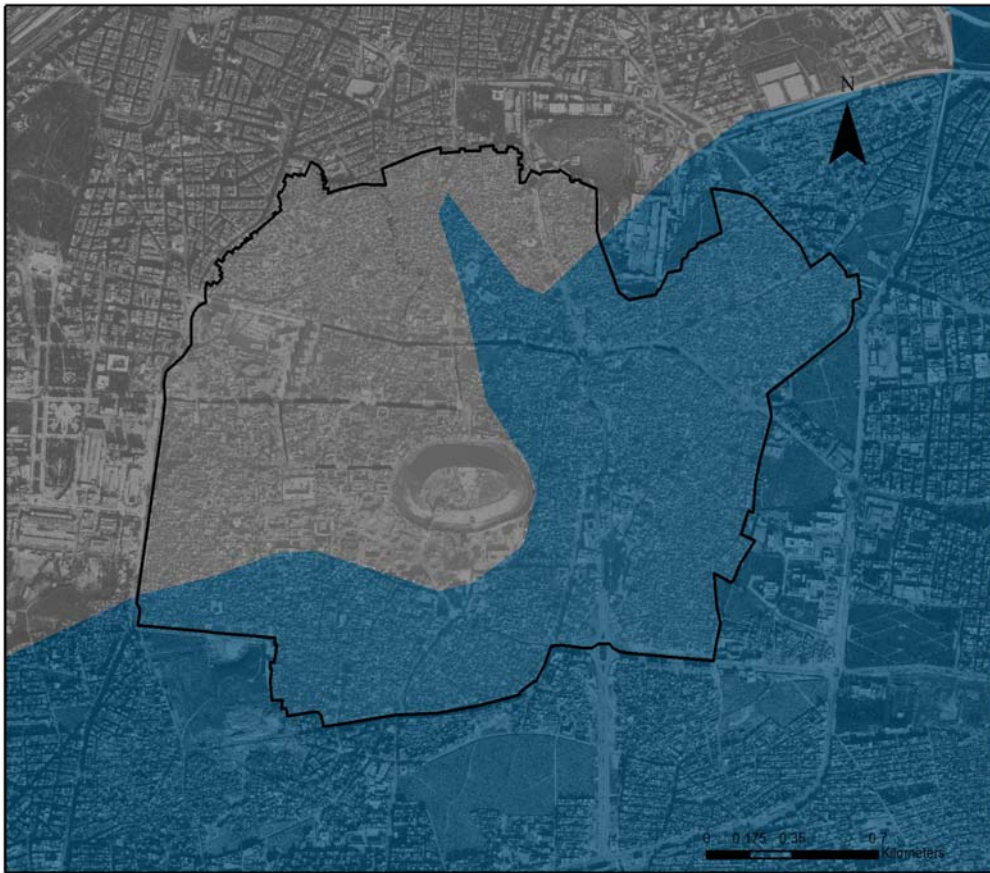


Fig. 4. Map illustrating distribution of power, based on (Tokmajyan, 2016, p. 3) © Rim Lababidi.

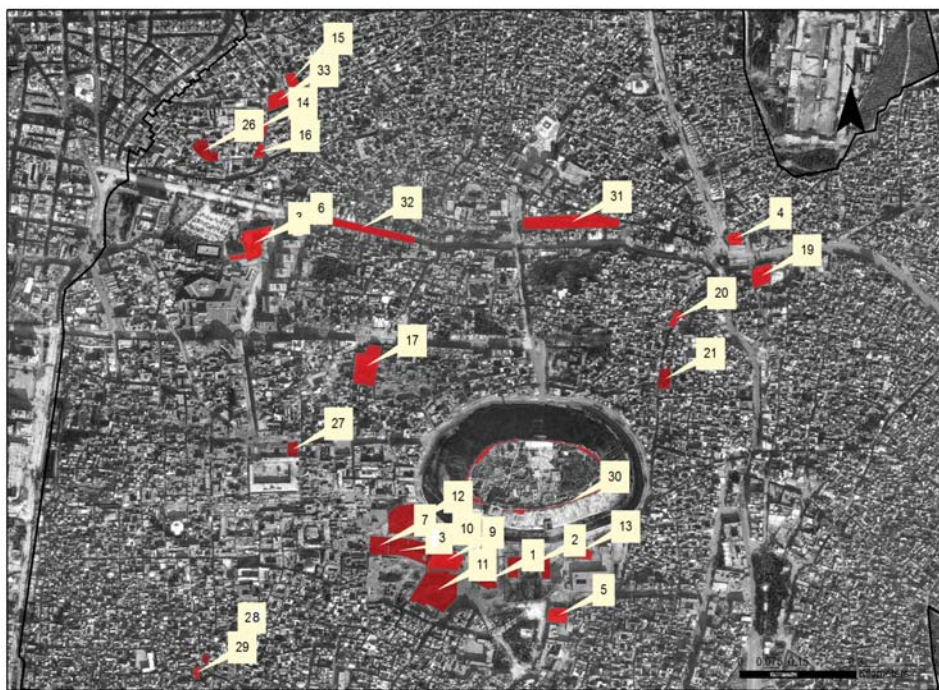
Geographic Coordinate System: GCS_WGS_1984

Legend

- Area under government control
- Area under opposition control



Fig. 5. Artillery based in a courtyard of a khan in old Aleppo by photo.halabnews.com.



Geographic Coordinate System: GCS_WGS_1984

Legend

Severe Destruction

1. Al-Sultaniyya Mosque
2. Court of Justice (Serial)
3. Khan Al-Jeirudi
4. AL-Hadadin Mosque
5. Al-Troush Mosque
6. Remains of Rajab Pashas House
7. Khan al-'Ebaji
8. Directorate of culture
9. Khan al-Shoune
10. Khan al-Nasser
11. Madrasa al-Khserwiyye
12. Ottoman National Hospital
13. Hamam Yalbugha
14. Ghazale House
15. Sharaf Mosque
16. Museum of Folklor Traditions
17. Khan Qort Beik
19. Banqusa Mosque
20. Qabiu al-Najjarin
21. Al-Sarawi Mosque
26. Church of the 40 Martyrs
27. Al-Waqfiyye Library
28. Hammam al-Malha
29. Al-Kakhtali Mosque
30. The curtain wall of the Citadel
31. Suq al-Nahasin
32. Bab al-Nasr Street

Fig. 6. Illustration of historic structures lost or heavily damaged due to barrel bombardments and explosive tunnels. In the background is a satellite image obtained from DigitalGlobe by Rim Lababidi.

SHAM, 2014). The impact of both methods, combined together, has turned a considerable number of structures into rubbles, e.g. the 17th century Church of the 40 Martyrs that embraced a highly significant memorial for the victims of the Armenian Genocide and al-Wakfiyya Library, with a collection of exceptionally significant historic Islamic manuscripts (fig 6).

The Russian intervention in Syria which started at the end of 2015, marked a new phase in the damage to Aleppo's heritage caused by air bombardment. Several structures, including the Mamluk al-Tobe Mosque and the Ottoman Aghajaq mosque were destroyed (fig 7). However, the residential structure of the old city suffered the most, which caused the death toll to spike. In an attempt to highlight how serious the situation is, a campaign was launched by activists on social media using the hashtags #SaveAleppo and #Save_Aleppo, which had a great impact on the international community. Today there is great fear for the safety of the people of Aleppo and their heritage, after the recent escalation in hostilities the city has been witnessing due to a siege that was enforced by the regime on eastern Aleppo in July 2016 (TOKMAJYAN, 2016a; TOKMAJYAN, 2016b).

As long as the conflicting parties continue to use Aleppo's cultural assets as bases for their forces, these assets will be vulnerable to prevailing threats of partial or complete collapse. Of particular emphasis are threats to the Citadel and its perimeter, as it is the main stronghold of the regime. Of equal concern are assets located on the frontline of the ancient enclosure. It is, however, difficult to identify the exact assets as conflicts are of changing dynamics, hence the coordinates of the frontline are constantly changing. In this hostile context, several other significant structures have endured collateral damage, either due to inaccurate targeting or due to the implications of proximate barrel bombs and explosive tunnels. Besides partial collapses, it is likely that the structural stability of assets located close to the blasts has been compromised. To illustrate the impact of explosive tunnels, it is worth mentioning here that people living 8km away from locations of such explosions had repeatedly reported sensing the vibrations.

Similarly, secondary hazards from the conflict have been severely damaging to Old Aleppo. One of the main secondary hazards are destructive fires, which usually erupt following gunshots and bombardment in areas of exposed electric cables. On 29th September



Fig. 7. Destruction of al-Tobe Mosque due to Russian bombing by Association for the Protection of Syrian Archaeology [apsa2011.com].

2012 armed confrontations inside the Suqs caused destructive fires that quickly spread to the Umayyad Mosque due to abundant flammable material and wooden elements in both structures. Organized looting and illicit trafficking is another secondary hazard, unfailingly prevalent in times of war, due to inexistent security measures. Several looting incidents have been reported in key cultural assets at Old Aleppo, such as the 17th century Ghazale House and the Museum of Folklore Traditions, where objects on

display were looted in addition to dismantling and sacking the highly esthetic wooden panels covering the walls (GUIDETTI, and PERINI, 2015). Security gap also fosters extremist activities that impose specific ideologies in spite of collective communal opposition to these ideologies. Within a period of six months, from the middle of 2014 to the beginning of 2015, the previously known as al-Nasra Front, an al-Qaeda affiliated group, vandalized three historic mosques inside Old Aleppo. One of those mosques was the

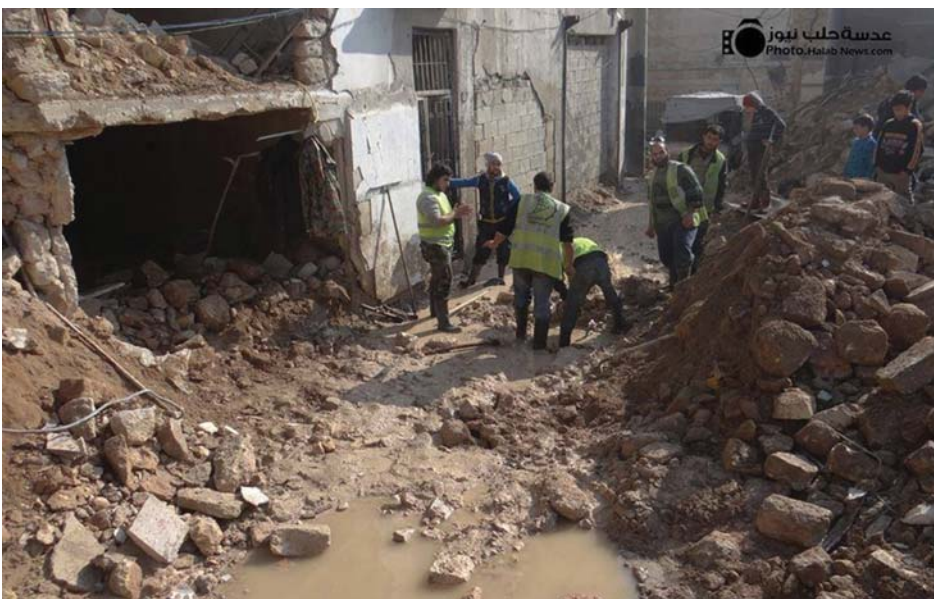


Fig. 8. Destruction of al-Tobe MosquLeaks in the Water Distribution System at Qarleq Neighborhood by Aleppo Today.



Fig. 9. Front loader swiping away debris of the 15th century *al-Sarawi Mosque* by photo. *halabnews.com*.

Madrasa al-Keltawiyya, where al-Nasra combatants exhumed the remnants of the body of a prominent Muslim scholar, Imam al-Nabhany, in order to prevent the people from worshipping the dead.

Lacking accessibility and required resources to deliver adequate maintenance work is another secondary hazard of the conflict. In several areas of Old Aleppo, like Bab al-Neirab and Qarleq, there have been reports of severe leaks in water distribution or sewer systems that sometimes continued for weeks without repair. This was due to either inaccessibility of these areas or to workers striking for not receiving their salaries for several months now (fig 8), this latter being standard procedure in areas controlled by the Interim

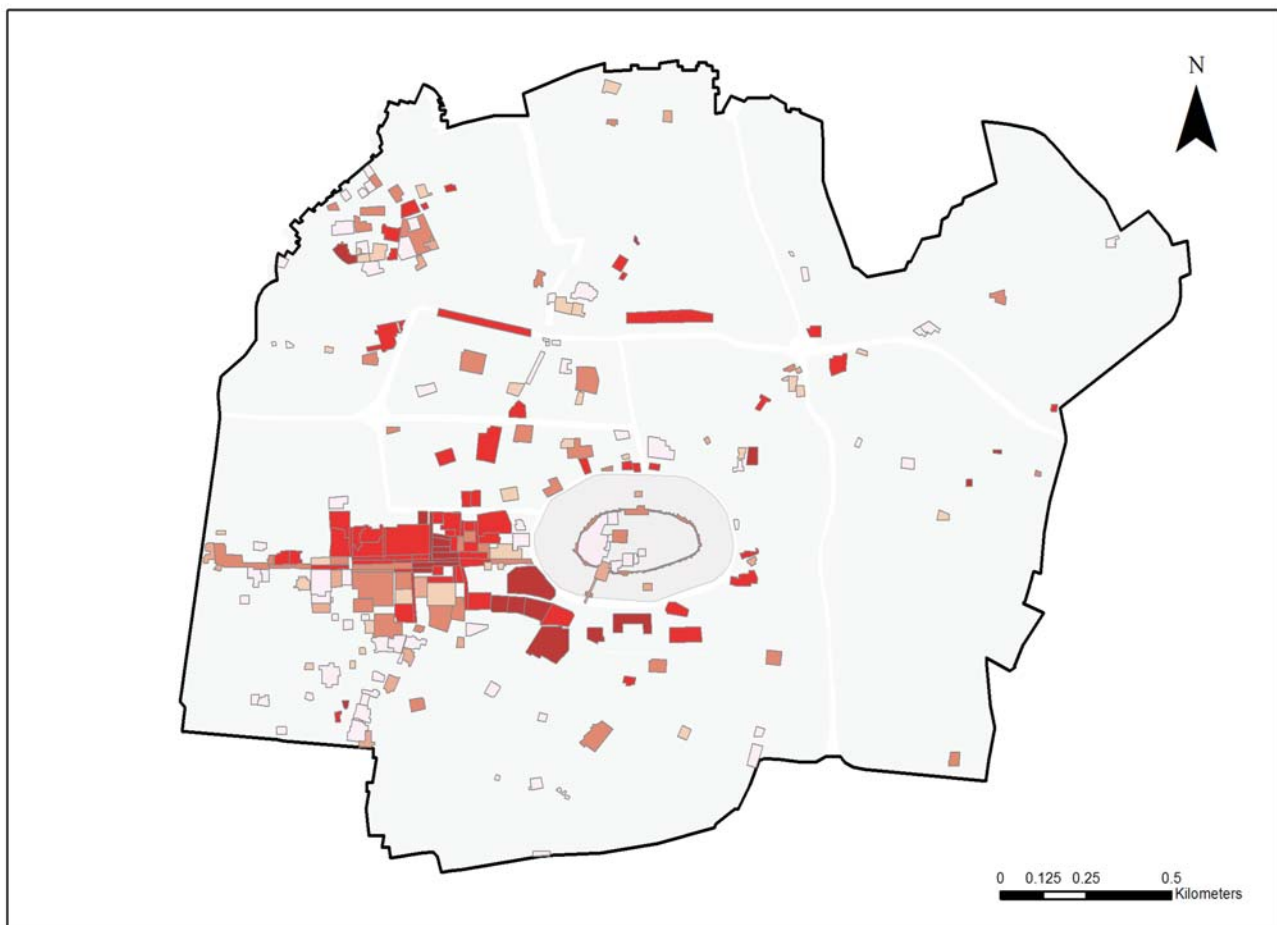
Government. Moreover, there has hardly been any proper response to securing damaged assets; it is mostly at random that people sweep away debris of affected properties using front loaders to bring routes and roads surrounding damaged structures back in order (fig 9).

On a smaller scale of secondary hazards comes graffiti, which has been heavily used in old Aleppo by both sides of the conflict as a tool for war propaganda to express specific political alignments and/or to deliver specific messages to opposing sides (fig 10).

The vulnerability of Old Aleppo's assets to secondary hazards is closely related to the prevailing primary



Fig. 10. The 15th century *al-Maqam Gate* painted with the symbol of the Syrian revolution in many locations by Aleppo Today.



Geographic Coordinate System: GCS_WGS_1984

Legend

 N/A	 Severe	 Minor
 Destruction	 Moderate	 Potential Damage

Fig. 11. Levels of damage to the old city of Aleppo by Rim Lababidi.

hazards of the conflict. Threats to the safety of heritage are equally intense in both rebel-held areas as well as those controlled by the regime, as long as they are inaccessible to professionals.

Considering the afore mentioned factors in light of the arid-continental climate of Aleppo, which is characterized by being hot and dry during summer and cold and wet in winter, the historic properties of Aleppo are exposed to accelerated cycles of deterioration that can in the long run be severely damaging. No less alarming is that Aleppo is located in a region tectonically prone to earthquakes and it has experienced three destructive earthquakes: in 642 AD, in 1138 AD and in 1822 AD (AL-NAASAN, 1982: 3, 12; GONNELLA, 2007: 105, 109). That makes the ancient enclosure highly vulnerable to earthquakes, especially in the present fragility of its structures (fig 11).

4. MAPPING THE ACTORS

Prior to the war, Old Aleppo was a vibrant and diverse hub that embraced 110.000 inhabitants of different ethno-religious backgrounds along with hosting an extremely vital commercial hub (UBERBAU, 2010: 24; AROUS, 2012: 114). Despite the economic vitality of the commercial part of the city, Old Aleppo's inhabitants suffered a lower average income with high ratio of illiteracy and unemployment, especially among women (KARAZOUN, 2006: 32–34; AROUS, 2012: 115). In the wider context of war, the cultural heritage of Aleppo features a new array of stakeholders who enjoy various levels of authorities and responsibilities and they relate differently to the heritage of the city. A consensus among the stakeholders in regard to the post-conflict response towards heritage will be challenging to achieve, as their assessments and decisions will be consequential to their self-interests.

Primary actors to the heritage of the city are those who directly relate to Old Aleppo and they can impact the post-conflict response. They include armies and armed combatants who could play a key role in securing cultural assets, contributing to regulating the response and assisting in physical labor, such as moving debris away. Obviously, local specialized agencies in the sector of cultural heritage, i.e., the Syrian Directorate-General of Antiquities and Museums (DGAM), the Syrian Ministry of Endowments which retains the ownership of a considerable number of Old Aleppo's assets, and the Antiquities Department of the Council of Free Aleppo, which is part of the Interim Government, are also primary actors. These agencies will be professionally and technically active in the response and they can provide data on Old Aleppo that they have acquired from previous projects. The local community living within the ancient enclosure or those who own properties in Old Aleppo equally relate to Old Aleppo and their visions about the future of the old city are indispensable. Their contribution may feed into the professional, technical, regulatory or physical sectors of the process. By the start of the post-conflict reconstruction, primary actors might include consultants, contractors, suppliers and workers who will be directly involved in Old Aleppo.

Secondary actors are those who connect to Old Aleppo but are not directly involved. This group includes the diverse local community of Aleppo residing out of Old Aleppo but relating differently to the old city. Their contribution will be similar to that of those who live inside the ancient enclosure, but adding the possibility of securing donors among them. Secondary parties also include local and international heritage professionals and agencies that have been involved in projects on Old Aleppo, such as the University of Aleppo, The Archaeological Society of Aleppo (Aladeyat), UNESCO, ICOMOS, etc. This group is fundamental for professional intervention, interns, building capacities and providing archives. Not to forget bodies and agencies, such as humanitarian actors who might be involved in the old city for different reasons other than heritage and whose work and interests might intersect with those of cultural agencies.

Third actors exist too, who might show interest in Old Aleppo for different reasons, such as neighboring countries and religious and ethnic groups who might claim rights over specific assets within Old Aleppo. At this stage of the post-conflict process it is difficult to assess their impact, but it is essential to map them and identify their interests at an early stage.

5. STRATEGY AND RESPONSE, SWOT ANALYSIS AS A CONCLUSION

According to the 2015/2016 annual report by Amnesty International, the Syrian population has lost access to protection and basic rights and has been exposed to unlawful killing, abduction, sieges and denial of humanitarian access (AMNESTY INTERNATIONAL, 2016). Despite existing ethno-religious tensions, political division continues to be the prevailing threat to the social cohesion of the country. Given the vital role of cultural heritage in disaster reduction and rebuilding resilience, it is our responsibility as cultural heritage specialists in such dark contexts, to complement the humanitarian work.

It is advised to deliver first aid emergency measures once Old Aleppo becomes accessible, in order to secure and stabilize assets and to pave the way for an inclusive post-conflict reconstruction process that meets the needs of the affected community. In order to achieve a sustainably developing plan it is a necessity to prioritize the Suqs and Caravansaries of Aleppo, which together embrace over 3000 shops and constitute an anchor for the economy of the city, if not the entire country. Key religious and public cultural assets like Mar Elias Church, the Umayyad Mosque and the Citadel of Aleppo are equally important as they can bring people together regardless of their political division and it can foster the reconciliation process.

Strengths

1. Heritage: strong cultural identity and comprehensive documentation of Aleppo's heritage by previous projects.
2. Demographics: young and diverse population.
3. Capacities: high professional and academic capacities among the Syrian community.
4. Funding & economics: prospective donors, a long history of commercial and industrial vitality that can support the redevelopment process.
5. Laws and regulations: Directorate of Old Aleppo, an already established municipality and an Old-Aleppo-specific law which regulate the urban and architectural interventions in the old city.

Weaknesses

1. Heritage: sheer extent of damage.
2. Demographics: local prejudices among the different groups of the community, especially political, and a sharp drop in the population.

3. Capacities: high percentage of the population has been abducted, killed or fled the city, shaken governmental institution.

4. Funding and economics: severe breakdown in the economic system of Syria.

5. Laws and regulations: deep hierarchal and corrupt system, lack of trust between the local community and the Syrian authorities, incomprehensive legal frame in terms of post-conflict response.

Opportunities

1. Heritage: immediate documentation, stabilization for damaged heritage, and securing cultural materials of high significance.

2. Demographics: creating channels of communication between refugees and the local community continuing to live in Aleppo and enforcing social cohesion.

3. Capacities: immediate training for the local community, governmental institutions and the army.

4. Funding and economics: enforcing sustainable-development plans.

5. Laws and regulations: adopting test strategies to create more flexible and transparent systems.

Threats

1. Heritage: delay in access, exacerbating damage, looting and illicit trafficking.

2. Demographics: cultural conflicts and divisions.

3. Capacities: threats to the safety of involved teams.

4. Funding and economics: favoring investors and those in power over the needs of the local community.

5. Laws and regulations: intertwining heritage with politics and providing access for specific international teams, regardless of their qualifications or the concerns of the local community.

Immediately after conflicts that shatter people's everyday lives and their heritage and traditions, people tend to have an urgency for a rapid restoration for these tangible and intangible assets of their lives. Nicolas Stanley-Price calls this urgency "the thread of continuity" (STANLEY-PRICE, 2007). The old city of Aleppo collectively resembles the thread of continuity for its inhabitants, hence, it is essential to adequately respond to the damage affecting it once it becomes accessible. A first aid response constitutes a first step in counteracting the horrendous impact of war and it can pave the way for an inclusive and sustainable recovery process.

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Fig. 1. Jalahma house. Image by the author.

THE TECHNICAL REVOLUTION IN BAHRAIN

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The so-called industrial revolution which took place in the 19th century had a large impact on the production processes in Europe and North America affecting the lifestyles of these societies to a great extent. It is however argued by many historians and researchers that there was no “revolution” per se but rather a mere acceleration of a process which has always been in constant evolution. This evolving “cloud” is referred to as the “technical complex”.

However, in non-western countries, the process of modernization happened in a much less organic way since industrialization resulted from a shock between a growing global technological complex and regional traditional complexes. A “technical revolution” did occur in countries like Bahrain, for example, where the contrast between new techniques and local techniques was enormous. Construction techniques offer physical evidence of this “point of impact”, through the hundreds of buildings and the specific urban fabric that resulted from the sudden transformations. Their observation reveal the necessity of a mature technical thinking prior to any significant innovation in a given society.

Keywords:

Bahrain – modernization – heritage – construction – traditional

1. INTRODUCTION: DEFINITION OF THE TECHNICAL COMPLEX AND ITS EVOLUTION

Contemporary societies are, more than ever, governed by their technical environment. Conventionally we consider that “modernity” replaced “tradition”, through the “industrial revolution”. But since the 70’s, many historians started to better define what the technical environment is about.

In “le cheval de César” (Caesar’s horse), Maurice Daumas (1991), one of the pioneers in the History of Techniques, introduces the term “technical complex”, where “complex” means: “a group or system of different things that are linked in a close or complicated way”¹. According to Daumas, there was no revolution. The technical complex, which was initiated in Pre-history with the invention of the first tool, is an ever growing “cloud” with different evolutionary cycles.

He further loosely identifies these cycles as follows: the primitive complex, the traditional complex, the classical complex and the technological complex. The classical complex is identified by Daumas as the one born out of massive industrialisation and the

use of mechanics (mid 18th to early 20th century), before the discovery of electricity and the invention of electronics, which lead to the technological complex. He also notes that, while pre-technological complexes are mostly characterized by an “additive effect”, meaning that a technical object is improved, evolved and rarely replaced by a totally new one, the transition to the technological complex is mostly about “replacement”: e.g. the car has completely replaced the chariot, concrete is overwhelmingly used over other building techniques, etc...

Arguably, the classical complex is a moment in the evolutionary process where the technical environment was still rooted in Nature, with the human scale, and could still be apprehended empirically though being quite advanced. While increasing our comfort and improving our lifestyle, the inventions of the 20th century took us further away from natural processes; chemically created materials, such as plastics, being a perfect example. In her book “l’Allégorie du Patrimoine, Françoise Choay² (1999) advances the idea that the modern city is affecting our ability to express our inner “builder” competence, which she compares to the competence of language. In her opinion,

¹ As defined by the Oxford dictionaries, <https://en.oxforddictionaries.com/definition/complex>.

² Françoise Choay (born 29 March 1925, Paris) is a French architectural and urban historian and theorist. Since 1973 she has been a professor at the University of Paris. She has also been a visiting professor at numerous universities in the United States, Belgium and Italy. Choay was awarded the Grand Prix national du Livre d’architecture in 1981 and 2007.

³ Anne-Françoise Garçon is a historian, researcher and a professor of History of Techniques at Université Paris 1, la Sorbonne. She received her Doctorate from the EHESS.

this is the reason for modern society's yearning for "heritage". Dr. Anne-Françoise Garçon³ further on recognizes the existence of "technical culture" by stating: "Technical cultures and habitus, just like the techniques themselves, take form and evolve through time"⁴.

Whereas in western countries societies have at least benefited from a slow and somehow continuous evolution of techniques, which allowed for a progressive inception of new technical cultures, this is not the case with most non-western countries. During the 18th and 19th centuries AD, worldwide colonization led to the expansion of the classical "cloud", which eventually collided with regional complexes, these being either still primitive or traditional. By early 20th century, some extreme cases gradually occurred, as Technology, spreading at a global level, came closer to regional/traditional complexes which, for one reason or another, had not yet been influenced by the classical complex.

The case of the Kingdom of Bahrain in the Persian Gulf is quite relevant, as there is a bleak contrast between the country's long history of a stagnating technical complex and the speed at which it "developed" in early 20th century.

2. BAHRAIN: A BRIEF DESCRIPTION

A small archipelago of a less than 800 km² area, is situated off the western coast of the Persian Gulf. Bahrain's main island, also known as Bahrain, is generally flat and arid, with mild winters and humid and hot summers (up to 50° Celsius). However it benefits from strong winds coming from the North and its winter nights may reach 5° Celsius, with an average low of 14° Celsius.

Bahrain's history stretches over nearly 5000 years, since it was identified as the capital of the Dilmun civilization, which was contemporary to the Sumerian. By the end of the 3rd millennium BC Bahrain/Dilmun was a major exporter of pearls and a trading entrepot, benefiting from its strategic position on trade routes along the Indian Ocean. The archipelago also had an abundance of sweet water sources and oyster beds, rich with high-quality pearls in its Northern waters. It had a relatively shallow sea front which made it hard

to invade. Bahrain was therefore ideal for sedentary settlements and the development of economic activities such as trade, pearling, intensive agriculture, fishing and boat building.

However, the country's' small size and isolation prevented it from being politically stable, with several regional powers such as the Achaemenids and the Greeks successively annexing the islands. In the 16th century it became a Portuguese colony, before falling again to Persia, then to Hormuz/Oman and finally becoming a British Protectorate in 1820, when it was subjugated to the East India Company. Throughout this history, the economic and technical background remained more or less the same.

In 1931 oil was discovered in Bahrain and the first oil extraction well on the Arabian side of the Persian Gulf, was installed in the middle of the main island by the Standard Oil Company of California. This triggered a complete transformation of the local economic system which led to a dazzling urban and infrastructural growth, especially around the two main cities, Manama and Muharraq. Bahrain obtained its independence from the United Kingdom in 1971, first becoming a sovereign emirate and later a kingdom. By then it had completely "modernized" and integrated the global technological complex. The four decades between the 1920's and 1960's can roughly be identified as the "point of impact" or "transition" between the local traditional complex and the global technological one.

2. THE TRADITIONAL TECHNICAL COMPLEX IN BAHRAIN

Although agriculture and transit trade had always been thriving activities in Bahrain, the backbone of its economy, historically, was pearling, an activity which employed most of the population and highly influenced the socio-cultural system. In early 20th century the pearling economy reached a peak of prosperity due to the intensification of trade relations with India and Europe, before witnessing a series of slumps and virtually disappearing in the early 60's.

Pearling was central to the traditional complex since many other professions and specialties were developed or adapted as a support. Boat building for example, was a locally developed craft using mostly teak wood imported from India and locally made elements like metal nails and cotton sails.

⁴ "Les cultures et habitus techniques, tout comme la pensée opératoire, se construisent et évoluent dans le temps." From: *L'imaginaire et la pensée technique*, by Anne-Françoise Garçon.

“The tradition of boat building has been passed on from generation to generation as a well-honored and respected profession” (Rudolff, 2010: 119).

Of the many ‘dhow⁵ construction yards which used to exist along the coasts of Manama and Muharraq, only one remains nowadays, thanks to special orders by the ruling family.

Pearling also relied on the cultivation of dates: Dates form part of the staple diet in Bahrain and are much used for the provisioning of the pearling fleet.” (Belgrave, 1937: 36).

It is interesting to note that many techniques were “passive”, in the sense that they did not require an extensive human intervention, since physical effort is extenuating in the hot and humid weather of Bahrain. Two major examples are date syrup⁶ making techniques and weir fishing techniques⁷.

The pearl fishing techniques themselves barely changed over the centuries. Their description by Ibn Battuta in 1325 AD could still apply in the early days of the 20th century AD⁸ (Mahfouz, 2011).

The decline of the pearling economy came about in the early years of the “transition”, due to the worldwide financial crisis and the Japanese cultured pearls⁹ flooding the markets, a direct effect of the expanding global technological complex. It is quite interesting that, when the influence of international trade diminished during World War II, most locally resourced activities re-flourished momentarily¹⁰.

In the annual report for the year 1363 HA (1944 AD), Charles Belgrave (1944: 11), the British counselor to the Emir of Bahrain at the time, explains that “there was still a demand for pearls and people engaged in

the trade did well in the last two or three seasons” implying that the economy could have survived in spite of the devaluation of the pearl market. It seems that what brought the pearling economy to an end is the availability of other jobs, however temporary they were. Belgrave further on in the 1926-1937 administrative report (1937: 55) mentions: “At present, about five thousand divers are working in the oil field; they are making a great deal more money than they would normally make from diving (...) but this employment is not permanent and, when present construction works at the oil field s will be finished, there will be a sudden increase in unemployment (...)”.

This preference for the “easy way out” typically represents the transition period. While it was impossible to perpetuate traditional activities, the lack of technical culture in the “classical” sense prevented the proper inception of technical thinking and its development locally. However, the imported technical object became a necessity, imposing its own logic on everyday life.

The architecture of the transition period is a physical testimony to the modernization process, where one can trace the increased use of industrial products in the traditional construction system. But we first need to understand what traditional architecture was about in Bahrain.

3. THE TRADITIONAL CONSTRUCTION TECHNIQUE IN BAHRAIN

3.1. TRADITIONAL HOUSE LAYOUT

In the years preceding the transition period Bahrain witnessed an unprecedented urban development,

⁵ Dhow is a lateen-rigged ship with one or two masts, used chiefly in the Arabian region.

⁶ Date syrup is produced by storing date bags over a special draining floor system called Madbasa.

⁷ Fishing traps were made of nets and pikes installed in the shallow waters in the form of a giant arrow. The system relies on the extensive tide movements to trap the fish. It is still being used today along the Bahraini coastline, although new fishing traps are prohibited due to them causing over-fishing.

⁸ “Before diving the diver puts on his face a sort of tortoise-shell mask and a tortoiseshell clip on his nose, then he ties a rope round his waist and dives. The divers differ in their endurance under water, some of them being able to stay under for an hour or two hours or less. When he reaches the bottom of the sea he finds the shells there stuck in the sand between small stones. He pulls them out by hand or cuts them loose with a knife then puts them in a leather bag attached around his neck. When he starts being short on breath he pulls the rope, and the man holding the rope on the shore feels the movement and pulls him up into the boat. The bag is taken from him and the shells are opened. Inside them are found pieces of flesh which are cut out with a knife, and when they come into contact with the air solidify and turn into pearls (...)” (Mahfouz quoting Ibn Battuta, 2011, translated by the author).

⁹ Belgrave on the end of pearling: “the decrease in the number of the men diving was not because the Nakhudas could not offer employment for divers, (...) there was still a demand for pearls and people engaged in the trade did well during the last two or three seasons” (p. 11 administrative report for the year 1926-1937).

¹⁰ Belgrave describes the state of the weaving and tin ware as prosperous during WW2 (p.63 administrative report for the year 1926-1937).



Fig. 2. View of Muharraq from the 1950's (estimate). Most houses were built around a courtyard. Image by Tarek Wali, private skies.

due to the thriving economy and political stability under the British Protectorate as well as the intensified exchange with other coastal cities of the Persian Gulf, mainly Bushehr. Large courtyard houses were sprawling across Manama and Muharraq in an incremental development with no prior planning. The basic unit/cell was a fenced plot with one or two rooms built on one side; then, as the family grew, expansions ensued and new rooms were constructed around the periphery of the plot ending up with the formation of a courtyard. Expansions were sometimes vertical but to a lesser extent since rarely were rooms added in the first floor and mostly in the corners of the plot,

giving the house a fort-like appearance. As privacy for the house was of utmost importance, little attention was given to the design of the ground level façade on the street, which had small windows; the focus of decorations and visible woodwork was mainly in the upper rooms and inner courtyard.

3.2. TRADITIONAL MATERIALS

The main construction material was coral stone. Known locally as sea stone or hadjar al bahr, coral stone is a crystallized carbonate of lime, highly porous

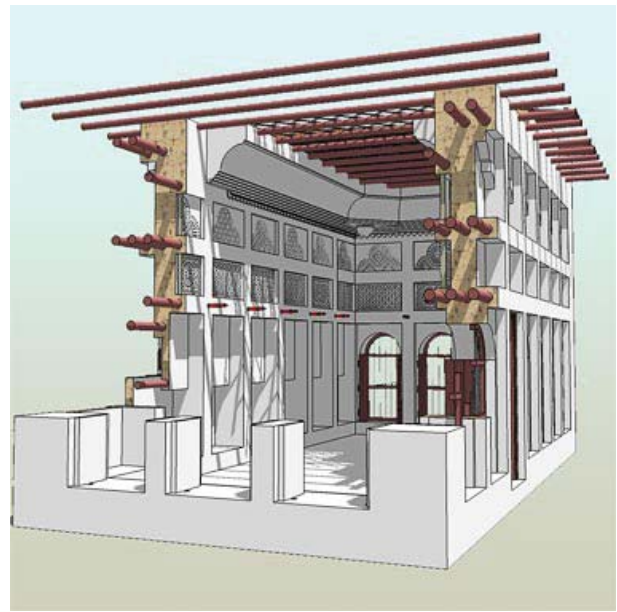
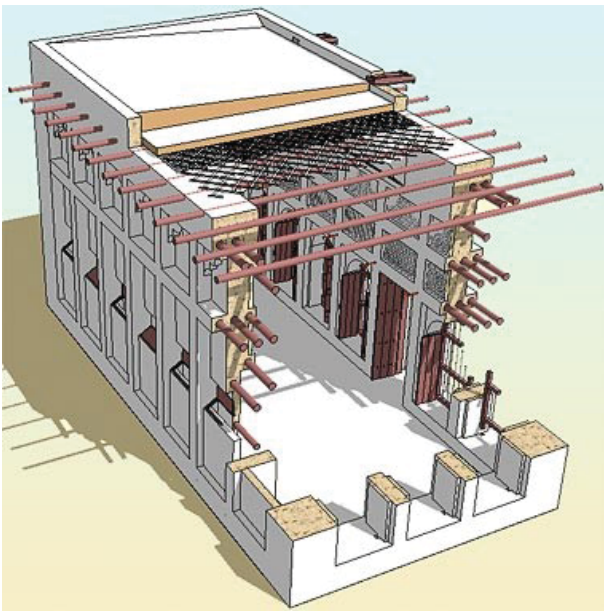


Fig. 3. Sketch of the traditional construction system showing a typical elaborately designed room. Image by <http://catnaps.org/islamic/gulfarch3.html>.

and salty. It was extracted from the shallow waters surrounding the islands and declined in several types of architectural elements: from the basic unit of an opus incertum wall to small gravel used for infill, to partition panels. Crushed coral stone may have also been used in mortar and plaster mixes which primarily contained gypsum. Coral stone in the form of thin 5 to 7 cm panels was called farsh or furoosh in plural, a regular bedrock stratum, quarried by driving wedges in strata and then levering with a claw bar. Besides coral stone, beams and tie beams were made out of either local palm tree trunks, cut in quarters, or mangrove poles (Danshal) imported from the Malabar Coast and East Africa. Other roof elements made of bamboo were also imported. Plaster and mortar were made out of lime, gypsum and other additives. Lime was produced locally by calcinating limestone from a quarry in the Aali area, gypsum was imported from Qatar and Arabia. Gypsum was also widely used for decorative panels, cornices etc...

Although most of these materials were not available on the small archipelago, the construction technique in Bahrain was nevertheless part of a regional complex, including India and Persia, which took shape centuries ago.

3.3. TRADITIONAL CONSTRUCTION SYSTEM

The traditional construction system was common to most cities of the Persian Gulf, and it developed as a response to the harsh local climate, optimizing the

physical properties of the available materials. Ground floor rooms would have a double layer of opus incertum walls with a 15-20cm gap in between, filled with loose rubble and mortar, the total wall thickness reaching 50 to 70 cm. The porosity of coral stone was adequate for insulation from the cold winter nights and the hot summer days. For the same purpose, ground floor rooms would have very few, small windows. As coral stone has a low thermal capacity and the external gypsum plaster layer is of high reflectivity, the wall's heat absorption during the day was minimized.

Due, however, to the intense humidity, closed, hermetic rooms were inadequate for the hot summer nights. Thus the upper floor roofs and rooms were designed in a different way. Series of structural columns were built over the thick walls of the ground floor, with 70 to 90 cm gaps in between, which were treated in a variety of ways so as to maximize ventilation and lessen heat absorption. One way was to in-lay one layer of thin farsh panel in between the columns, since farsh lost its accumulated heat faster during the night. This created a series of niches on the external facade. A double layer of farsh panels ensured a better insulation thanks to the air gap in between. Another way was to create a wind catcher, locally known as badger, by laying two displaced farsh panels (rf. Illustration). Since wind speed increases when wind is funneled from a wider to a smaller aperture, badger creates a gentle breeze which is brought through to the sitting or sleeping levels. Badger were either installed in room walls or in roof parapets, as house occupants used to sleep on the roof during summer



Fig. 4. Sh. Salman House, a typical traditional house from the early stage. Image by Bahrain Authority for Culture and Antiquities.

nights. Badgeer were also made in the form of towers built on top of the most important rooms. They are very well described by Dr. John Yarwood¹¹, a British

architect and author who thoroughly researched the remaining traditional architecture of Muharraq in the 1980's.

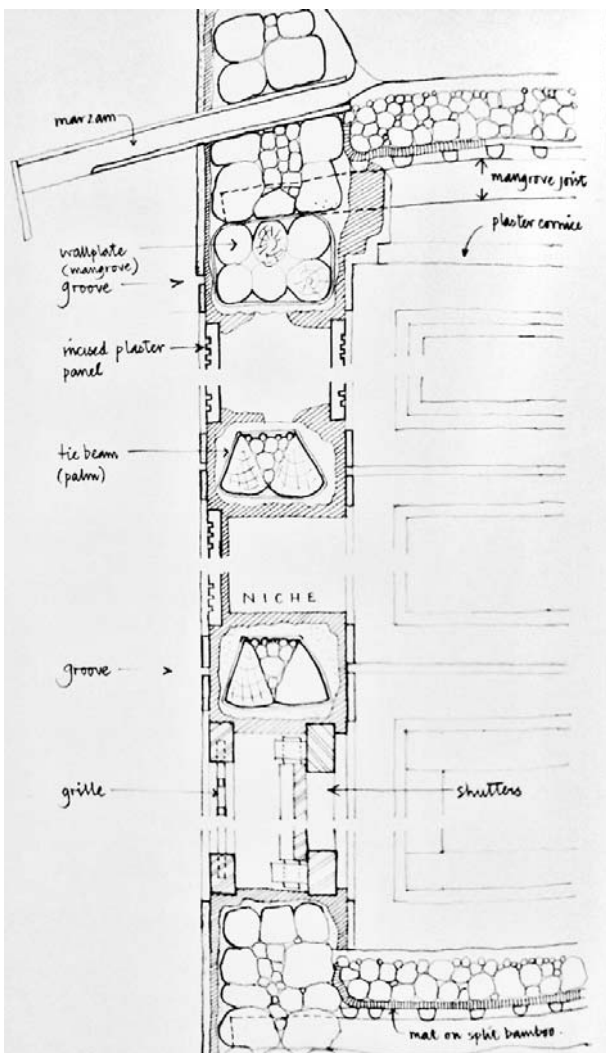


Fig. 5. Sketch of the traditional construction system. Image by John Yarwood (Yarwood, 2006).

¹¹ Wind towers are wind catchers in the form of a tower with wide openings on one or several of its sides. Wind towers in Bahrain were opened on all sides funnelling the air, wherever it came from, inside a specific room.

Fig. 6. Sh. Salman House, a typical traditional house from the early stage. Image by Bahrain Authority for Culture and Antiquities.



The space inbetween columns (70 to 90cm) would also be filled with wooden windows, equipped with shutters and stained glass to reduce glare and preserve privacy while allowing ventilation. As the ceilings were high, these windows would be narrow and tall. The shape and dimensions of the rooms themselves were adequate for cross ventilation, as the room's width never exceeded 3.5 to 4 meters. The typical first floor summer room of a large mansion would be equipped with a series of decorated windows on each of its four sides.

4. THE TRANSITION

In early 20th century, Bahrain became the focus of the British Agency in the Persian Gulf and consequently new construction elements and materials were being introduced in the country. In the administrative report of the years 1926-1937, Belgrave (1937: 54) describes the new constructions as being safer, with better foundations, and he remarks: “(...) cement and steel beams are universally used. A few years ago the use of steel beams was considered, locally, extremely dangerous.”

The new construction methods were increasingly used to develop the country's infrastructure, building new facilities for the newly created public institutions and services such as schools, hospitals, post office etc... All this was taking place around the city centers which were quickly surrounded by large roads and reclaimed lands, thus losing their historical link with the sea. The core of those cities, was however changing at a much slower pace. The inception of modern techniques

there was happening gradually and this is where the “transition” can be better observed.

4.1. INDUSTRIAL ELEMENTS AS STRUCTURAL SUPPORTS

It seems that at first industrial elements are used as a replacement for traditional elements in punctual alterations and/or additions to existing structures. The main concern is to resolve structural issues, provide wider spans, eliminate dividing walls etc... In Muharraq, many cases can be observed where steel I-beams were introduced instead of mangrove pole beams, especially in utilitarian buildings like commercial storage spaces and shops.

4.2. INDUSTRIAL ELEMENTS AS ALTERNATIVES

Longer lasting industrial products, cheaper in some cases and easier to install in others, were often used as alternatives to traditional ones when repairing parts of a house, consolidating a wall etc... As cement plaster appeared, many builders used it on external walls instead of lime plaster when renovating their facades, as an “upgrade”. Portland cement was then used as mortar for coral stone in partial repairs or partial reconstructions and as screed to straighten floors and roofs. Cement was also used to build specific elements such as Madbasa¹² for example or as replacement for gypsum in some decorative elements, as is the case in the Siyadi Majlis building¹³. Decaying mangrove poles were often replaced by square beams. Thin, 10 cm block work was sometimes used to replace the furosh (thin coral stone panels) in parapets and wall

¹² Madbasa is a date syrup production system where date bags are stored over channeled flooring allowing the syrup which sprawls from the dates under the effect of the heat to seep slowly through the channels and into a jar which is periodically collected.

¹³ Siyadi majlis is one of the most prominent heritage houses in Muharraq today. It was inscribed on the World Heritage List in 2012 as a Property Component of the Pearling Testimony Site.



Fig. 7. Steel beam system replacing the traditional danshal beams to enable wider openings. Image by Bahrain Authority for Culture and Antiquities.

niches, and at times the whole parapet was built with block work.

4.3. A NEW CONSTRUCTION SYSTEM

While the city's materiality was slowly changing, probably around the late 40's new constructions appeared, revolutionizing the existing construction system, taking fully into account the use of industrial elements and materials. By now the new elements were often dictating the proportions and dimensions of the building's layout. They are seen as a replacement

of the traditional ones and no longer only as punctual "aids". There is more planning involved, more straight angles and more consistent dimensions, due to the abundant use of cement mortar and plaster. The walls and columns are finer, there are squarer shaped rooms since their dimensions are no longer dependent of the length of danshal beams.

The structural system is that of block masonry walls and beams/lintels made of reinforced concrete or square wooden beams. In most cases, block work simply replaces coral stone, meaning there is no vertical reinforcement and the whole wall is considered as

Fig. 8. Steel beam replacing a dividing wall in order to join two storage spaces together, in the Muharraq Suq. Image by Bahrain Authority for Culture and Antiquities.





Fig. 9. Shading element on a shop's façade clearly showing the traditional ceiling system. Image by Bahrain Authority for Culture and Antiquities.

load bearing. Furthermore, walls are sometimes built with a double layer of block work just like coral stone walls, with rotated blocks tying both sides together. In some cases though, coral stone is still used to build the wall but with Portland cement as mortar. Square wooden beams, being more reliable in their shape and dimensions than mangrove poles, are also easier to

use for ceiling construction and plywood boards make a good replacement for the bamboo matt and stripes which had been used above the mangrove.

At this point it becomes clear that the tendency for replacement rather than improvement is taking over, just as Daumas had described it in the transition



Fig. 10. Basic traditional structural system used for warehouses. Image by Bahrain Authority for Culture and Antiquities.



Fig. 11. The new construction system using square wooden beams and ply-wood. Image by Bahrain Authority for Culture and Antiquities.

between the classical complex and the technological one.

4.4. APPEARANCE OF A DESIGN TYPOLOGY

With the construction technique liberated from the constraints of traditional materials, architectural style was affected accordingly, and since exchange with Persia and India was intensified under the British colonial banner, new designs were largely influenced by the colonial style, if not directly dictated by British representatives. One major example of this is the Bab al Bahrain building, designed by Charles Belgrave as a gateway to Manama in 1949 and practically crystallizing the Bahraini Capital as a “little Mumbai”, since the monument was a clear reference to India Gate. A lot of new contractors were Indian or Persian; Belgrave mentions an “Indian contractor” as early as 1926 (Belgrave, 1937).

The distinctive change in the old urban centers concerns façade treatment. Privacy and climate seems to be less of a concern, faster and safer construction

becoming the norm. In Muharraq and Manama a house typology occurs, where facades have large square windows on the ground floor and long shading cornices. The composition is now mostly horizontal rather than vertical, which is typical to the South Indian bungalow type. The windows themselves are made of steel, and have muntins, the most common window size being 120x120 cm. This greatly contrasts with the narrow/tall windows of the traditional architecture. Staircases appear as distinctive architectural features for the first time and their design has hints of the international style. This is when the influence of big contractors standardizing house construction becomes clear many houses actually bearing the “seal” of the contracting company.

However, despite these changes, the basic domestic unit was in most cases still centered around a courtyard, but the house was much more open on the public street. These new houses had conflicting characteristics of courtyard type and bungalow type constructions.



Fig. 12. Square beams extending to create a shading elements on the façade in a similar way to the traditional danshal beams. Image by Bahrain Authority for Culture and Antiquities.

4.5. REVERTING BACK TO TRADITIONAL FORMS AND SHAPES

Probably soon after the spread of these new typologies, there seems to have been attempts to reunite with tradition. Traditional architecture so far being one entity, was progressively seen as a “style”, meaning an architectural language which is in its appearance similar to the traditional architecture but without its essence. Some façades were designed with rhythms of windows and niches, but since the construction system was completely different, the original capacity

of these elements to adapt to the local climate was only partially achieved, if not at all.

Nevertheless, there seems to be a need to reconnect with a familiar “image”/“shape”, one that forms the identity of the historic town. This is also clear in the design of some elements such as metal doors, which bear different kinds of decorative shapes and modular concrete blocks which make decorative patterns similar to those in traditional decorated gypsum panels. As time goes by reference to traditional architecture in modern architecture keeps becoming



Fig. 13. A typical house of the transitional period. Image by Bahrain Authority for Culture and Antiquities.



Fig. 14. A staircase volume. Image by Bahrain Authority for Culture and Antiquities.



Fig. 15. A typical steel window. Image by Bahrain Authority for Culture and Antiquities.

more and more related to mere shapes and less to function.

4.6. THE INCOMPATIBILITY OF NEW TECHNIQUES

While universal solutions are easy to apply and cheaper than what is custom made, modern materials usually proved to be highly incompatible with the local environment in Bahrain, where seawater is one of the most saline waters in the world (39000 to 42000ppm). In coastal areas of Bahrain, this seawater salinity is very high and since earlier foundations were not waterproofed, saline water is absorbed by the building walls. In the traditional construction system porous materials allowed the rising dampness to evaporate quickly, leading to little change in the humidity level inside the walls and foundations. When modern materials such as cement were used as plaster and mortar in buildings, or for street paving, evaporation was blocked and the variation in humidity levels inside the walls considerably weakened the structure and its

foundations. In addition, salt accumulated behind the cement plaster, causing major flaking issues.

Furthermore, Portland cement is heavier than lime, adding much weight onto the coral stone masonry and ceilings, and its higher thermal capacity stores much heat which is diffused back during the night. Considering that August evening temperatures reach 30 degrees Celsius, this can create major discomfort. High temperatures and humidity also cause steel in reinforced concrete to expand and crack the concrete, not to mention the rusting I-beams.

With time, the techniques were certainly more or less adapted to these conditions in newly built structures, but not always conclusively. In a 2007 conference on concrete structures in the Gulf, a team of experts from Kuwait describes the cement concrete situation as follows: “Typically, one of the reasons speculated for such poor performance of concrete has been the use of international building codes of concrete practice such as ACI-3181, AS 36002, EuroCode3 and likewise. These codes catered more to their own countries of



Fig. 16. The contractor's signature. Image by Bahrain Authority for Culture and Antiquities.



Fig. 17. Series of niches and badgeer made of block work, the niches are only 5 cm deep. Image by Bahrain Authority for Culture and Antiquities.

origin. But when they are followed for the Gulf, their provisions fail to account for the harsh environmental conditions” (Al-Khaiat, 2007: 2).

5. CONCLUSION

While development was inevitable in Bahrain, the Gulf and elsewhere, the way it occurred is questionable. The global technological complex seems to have imposed its own sets of values which were completely incompatible with local realities, which were set aside and marginalized. Although the mix of techniques during the transition period was improper, it was still a period where the community was developing its own solutions, a short lived classical period. If changes were slower, if external factors had not created so

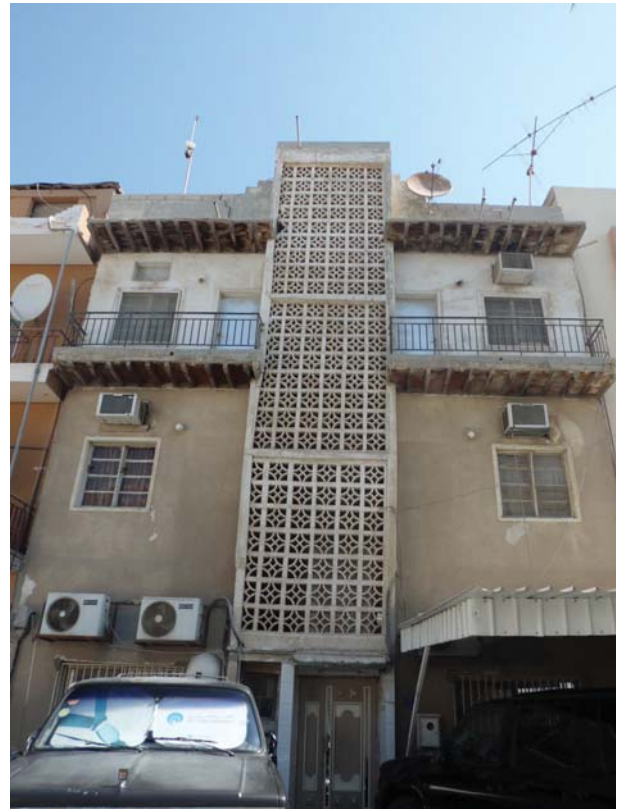
much pressure for modernization, these new methods and materials might have possibly been integrated in the local technical culture.

Technical culture could be seen as the counterpoint to the purely scientific and programmatic aspect of technology. A sort of humanization of the endless possibilities offered by techniques. Today in the Persian Gulf, the intellectual and practical human capacity of defining and building places and cities is lost to an overwhelming dependency on technologies which provide comfort. Involving communities in deciding on the type of city they want to live in could be a first step in lessening this dependency. Conserving traditional urban patterns and spaces which were a direct produce of the human capacity of “building” can also help offer an alternative to living in



Fig. 18. A rare example of a wooden window with iron bars (traditional) mimicking the steel windows of the transitional style. Image by Bahrain Authority for Culture and Antiquities.

Fig. 19. Block work mimicking the traditional decorative screens in a staircase. Image by Bahrain Authority for Culture and Antiquities.



high-rises, which are majorly a produce of technology. Conservation in general could be seen as a part of this effort which sublimates its mere role of “memory keeper”. But other complimentary disciplines might need to be developed in that same framework. On the long term, a certain dialectic, as opposed to the global

technological rhetoric, needs to take place between society and technology, rational planning and human competence.

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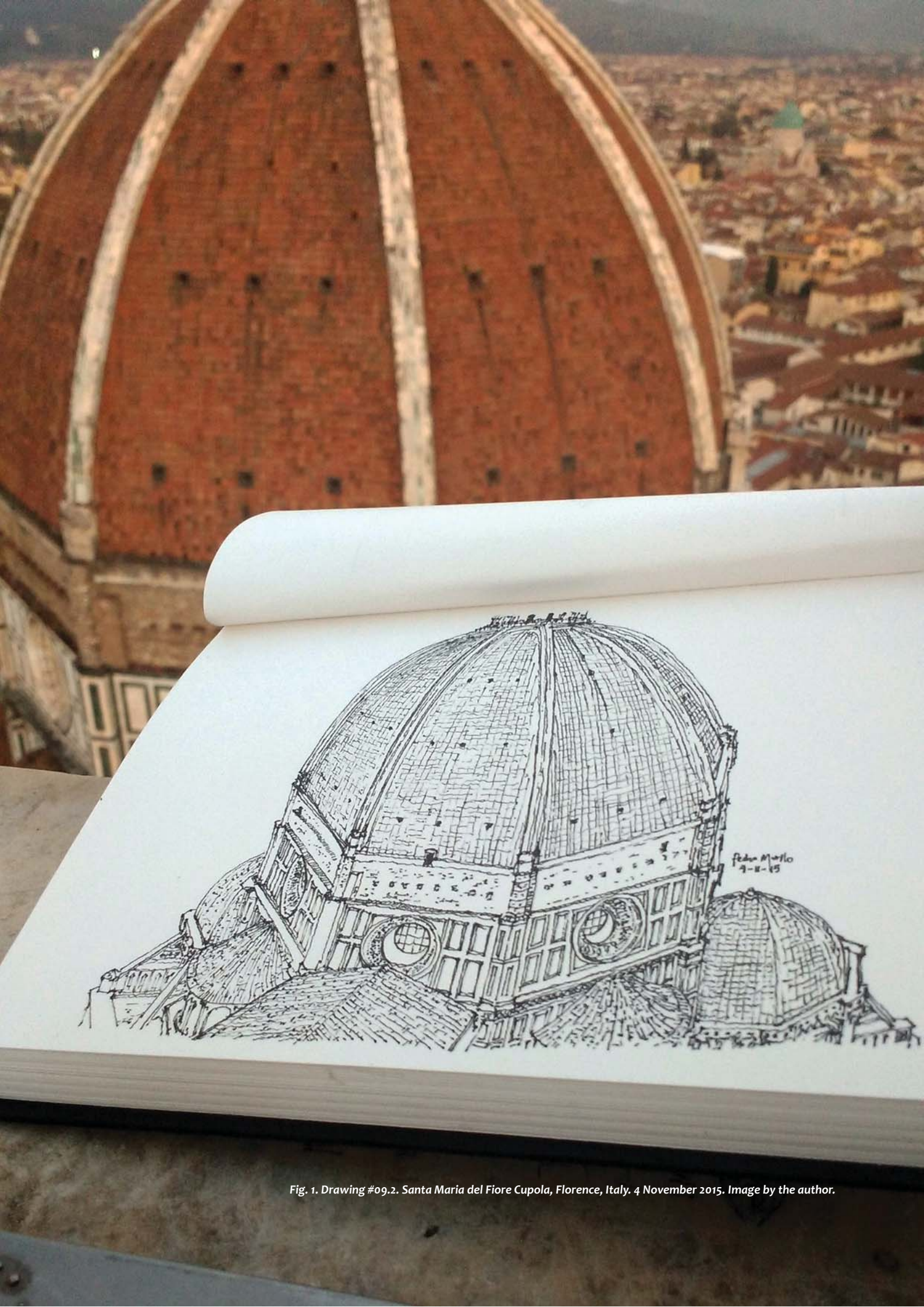


Fig. 1. Drawing #09.2. Santa Maria del Fiore Cupola, Florence, Italy. 4 November 2015. Image by the author.

HOW TO BE A (GRAND) TOURIST: A 90 DAYS DRAWING EXPERIENCE

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For an architect, travelling has always been an informal but significant source of education. From the end of the 17th to the middle of the 19th century, the “Grand Tour” was one of the most vital experiences to expect after one’s education in art or architecture. However, despite the benefits of popularization, travelling has been impoverished by tourism as an industry, transforming tourists into in a serious problem to contemporary conservation. From the perspective of a visitor, the author of this article describes a 90 days’ drawing experience to enhance the observation of monuments. While outlining his own formation, the author supports the necessity of a way for travelling to be redefined as a significant research experience, especially for young architects or students, so as to reconnect to our “grand” ancestors.

Keywords:

drawing – architecture – travel – Europe – monuments

As a PhD Candidate, I have spent significant time over the past 2 years attending classes, reading, taking notes, writing papers and helping my research group to develop their projects. However, being an Architect myself, I always struggle in the academic life. After spending years in college learning on a daily basis how to express and to create by using drawing and representation methods, I realized that trying to accomplish a well written paper is a double task; it is not only the research itself but also the different way of thinking that needs to be learned quickly.

From my experience, an architect should be innovative and somewhat unconventional. But that is quite rare nowadays. Still, let us face the fact that most of us get our diplomas without having a clue on how to apply those concepts and, in some sense, how to succeed. Actually this is why architects tend to rely too much on informal education methods such as group studies, office internships and, the most delightful one: travelling.

Before formal architectural education, travelling was how I started to draw. In the 80’s, when Brazil was not at its best, my parents somehow always managed their budget to take my brother and myself from São Paulo to some distant place by car, for several days. I was always very stimulated by these trips and, no matter what the destination was, I constantly felt a great

excitement, such that I never got from anything else. For example, before I was even ten years old I could see the modern architecture of Brasilia, the beautiful landscapes of Rio de Janeiro and the Italian immigrant vineyard culture of Rio Grande do Sul. Needless to say how these blurred memories make me feel very privileged: I could always see how big and different every journey was, an impossible treat for a child to fully acknowledge. So, since very little, the need to fully record the “on the road” experience always made me eager to grab a pencil and try to reconstruct what I was seeing, making some maps for my teachers and my friends, realizing that the famous “My Holidays” essay could surely be written in a different language.

As time went by, most architects that I studied with and professors from the architectural history and conservation field – soon to become my academic pursuit – they all agreed on the importance of travelling for the sake of developing new concepts and researching different ways to solve common problems. But that was all. Because when asked, no one could explain how to turn a trip into a true benefit for architectural education. “It is up to you to find references for creation”, said one project design teacher to a confused me.

A tip came up when I was in Portugal for an interchange program at the Oporto Faculty of Architecture, namely



Fig. 2. Drawings #28.2, #30.2, #33.1, and #33.4. Luxor, Aswan and Cairo, Egypt. 23-29 November 2015. Images by the author.

the sketch notebook assignment for the “History of Portuguese Architecture” course, coordinated by professor Alexandre Alves Costa in the 4th academic year. The exercise consisted in spending our summer vacation taking a trip inside Portugal documenting its architecture by hand, preferably in those villages with vernacular key elements that could be characterized as a reflection of materials’ availability and popular geniusness.

Around 2000, architecture was believed to be driven out of many known analogical instruments of production, due to the computer-aided-design (CAD) revolution. Digital cameras too had a significant impact on students and young professionals on a daily basis, as an easy way to record images, use them in projects and develop new forms of expression. Within

this context and in spite of the fact that the Faculty was already aware of this, a drawing exercise in a history class gained a new task: a way to reclaim a traditional method to understand reality, because that is what drawing does after all. When you stand before something and draw it, your mind is forced to perceive according to your references and experiences. To a trained conservation professional for instance, form, texture, color and alterations offer insights on what happened to a monument; and this can benefit investigation in other fields too. Even though this information can nowadays be collected with a high-resolution photography or a 3D Scan – always something will be missed because there is no way whatsoever for comprehension to be achieved by a machine. So, an in situ do-it-yourself on paper “reconstruction” (a representation) forces



Fig. 3. Drawings #36.1 and #68.1. Santa Croce and Medici Chapels, Florence Italy. 1st December 2015 and 2nd January 2016. Image by the author.

you to decodify the subject in single elements, to go back and forth, to look at your object from different angles, not to mention the tools for this expression (a pen, a pencil, a piece of chalk, watercolors, etc.); all these lead the way for you to organize your own thoughts. This is definitely so different from just taking a picture or dealing with a CAD drawing at the office. It expresses learning and expands time.

In fact, while at the discipline we were motivated to recognize and produce a series of historical landscapes, not just for the exercise itself – and for the sake of Portuguese monuments preservation –, but also for triggering the students' inquisitiveness, the ability to see the world and learn from it (Costa, 2007). The combination of this experience with my childhood memories helped me comprehend that an architect's notebook was not just a collection of the expression of one's ideas – notes collected on a random day that its owner could use for a project in the office – but also a way to embody history, or, rephrasing what my former teacher at São Paulo might have wanted to say, built architecture solutions given by the past.

Going back in history we find that travelling for this purpose is not something new. From the end of the 17th to the middle of the 19th century the "Grand Tour" was one of the most important experiences to expect after one's education in art or architecture. Restricted at first to aristocrats and later to rich merchants and art enthusiasts well-established in European cities, it served as a rite of passage for many artists whose objective was to get in touch with old landscapes, ruins and what was believed to be exotic cultures.

Actually it was also an escape from the transformations brought about by the Industrial Revolution, making the "Grand Tour" part of a wider European phenomenon. The new technological possibilities presented by the acceleration of production were the reason for an economic shift which affected art and modern science too.

At first the notion of time changed, affecting the relationship with other cultures of the past. Beauty for example couldn't be universal anymore because it began to be interpreted as the construction of precepts by some given civilization. Within a nationalist

context, this issue definitely defied the notion of a "timeless art" and the pursuit of perfection. On the other hand, dealing with that new notion also meant dealing with the desire for a "proof" of historical beauty in the European culture. This is when the notion of historical monument appeared (Choay, 1996) along with the emergence of archaeology as a science which could, by approaching the pieces of stone and statues left behind by ancient civilizations, resignify the authenticity of many texts against false historical assumptions.

So time, as a relative and not an absolute asset represented in archaeological findings, became a collectible quality on stratified objects. As a result, the fulfillment of an artist no longer relied on referring to a roman poet at an English garden but on acknowledging him at the place where his poetry was written. That is why, for example, landscape paintings or engravings known as vedute became very popular, as well as the cult for monuments and the artistic ability to combine them in a "picturesque" composition.

Centuries therefore before the revivalism of urban sketching in social medias, the "taste for the place" is what modern tourism inherited from the "Grand Tour" experiences. And it is quite plausible until today. We should, however, not forget that at the time it was also a difficult activity, thus making it even more interesting. To arrive in Italy, the most common destination of many famous artists, architects and art historians like Beckford, Pratt, Goethe, Winckelmann and sometime later Ruskin and Viollet-Le-Duc, one should travel through inhospitable places, facing plenty of practical difficulties.

Tourism in our days is not like that anymore. You can plan everything online, get to your destination within hours by plane or even visit them previously in platforms like Google Earth, Street View or Art Project. There is no true challenge anymore. But still, prepare yourself to see people collecting thousands of images in their cell-phones, even in yours! That doesn't mean you may not have some entertainment too. In the digital age, aesthetics changed, visualization in art changed, but, as Benjamin (1999) stated, our desire for images has only grown. Today, merit goes to popularization, yet along came the negative aspects of massification. Travelling is now a product within



Fig. 4. Drawings #52.2 and #49.2. Piazza Carrara and Lungarno Pacinotti, Pisa, Italy. 14 and 17 December 2015. Image by the author.

an industry that may be impoverishing the travel experience itself. If one realizes this early enough, it becomes easy to find a balance.

So, when my University endorsed a 90 days research trip to Europe to collect data for my Ph.D., I saw a big opportunity. I did not think twice before accepting the challenge of such an experience and benefit not just academically but also personally.

The idea was very simple.

The trip was planned according to institutional availabilities from October 27, 2015 to January, 24 2016, 12 weeks in total. The first and last weeks were to be spent in Turin, according to an interchange agreement with the Polytechnic University, including brief stop-overs in Amsterdam for the flights to and from São Paulo. Most of the data for my thesis were on institutions in Florence and in Pisa, so this is where I spent most of the time. However, visits were made to Siena, Bologna and Rome. A conference in Egypt on the last week of November added an extension to the adventure as well as a Christmas break trip to Berlin and Potsdam to spend it with friends.

With this itinerary in mind, I started a visual journal with one simple rule: between all the work to be done

at the universities, the professors to be in touch with or the libraries to visit, I should definitely manage to draw at least one page a day in a A5 notebook, converted into my personal collection of “engravings” – some of which illustrate this article. In fact, the subject didn’t matter; it was important to document something which could be appealing to the eye and visually summarize what happened on that particular day. That was a self-given task, which for me only drawing could perform, due to my formal and informal education over the years.

With these operational guidelines in mind, looking at a landscape, a monument or even groceries for about 20 minutes to one hour, followed by the simple act of trying to represent it, enabled me to not just focus observation on form, color, structure and materiality – all of them needed for a good drawing – but also to find a way to enhance significance.

Special mention should be made to the tools: just a pen was really needed. Besides having a light-weight companion (or several because they kept getting lost every time!), I was very keen to develop one specific trait of my drawing style, mostly acquired from experiences in archaeological works and professional surveying of monuments: the ability to comprehend proportions directly, that is, on how the



Fig. 5. A fake “Goethe” in Potsdam, Germany. 25 December 2015. Image by Erika Werner.

surface of given objects or scenes appeared to me as single pieces of information. The idea was to try and render images just with black ink but also without any support from other typical drawing features such as grids or lines of force. The fulfillment of drawing was accomplished after a photograph was taken opposite the documented subject, establishing the site connection and validating the observation experience.

With these simple principles in mind, day after day the results were published in social medias like Instagram¹ and they will be part of a Tumblr website called “Posologia”², where the full collection of 120 drawings may be found with some descriptions and observations about the experience (yes, I could not help it; one day was not enough!).

I was truly so very happy to see how successful the drawings gradually became, with people asking me to make copies, sometimes even frame them, or even write an article about them. I modestly admit not to have expected it. I certainly noticed the improvement when comparing some of the first ones to those made after one or two months of practice. Prato green marbles after war reconstructions, the dull moments in the libraries, all of them gained a whole new significance for me. But what fascinated me most, as a young professor, was the urge to do something different; what I saw here was the possibility to reconnect to what was “grand” in tourism, in other words research.

I first got this feeling when a very nice Chinese guy, on the top of Giotto’s Campanile in Florence, started

¹ Instagram account: @pmugf. Available at <<http://www.instagram.com/pmugf>>. Despite some reasoned criticism one might have about the growth of the application and its indiscriminated use for personal publicity and marketing, Instagram for me is still a very useful tool to create a personal visual notebook of travel experiences and talk to friends interested on them. For these drawings specifically, check pictures dating back November 2015 to January 2016.

² “Posologia”, a term often used in pharmacy as a combination of greek words ποσόν “quantity” and λόγος “reason”, is a project available at <<http://posologiaproject.tumblr.com>>.

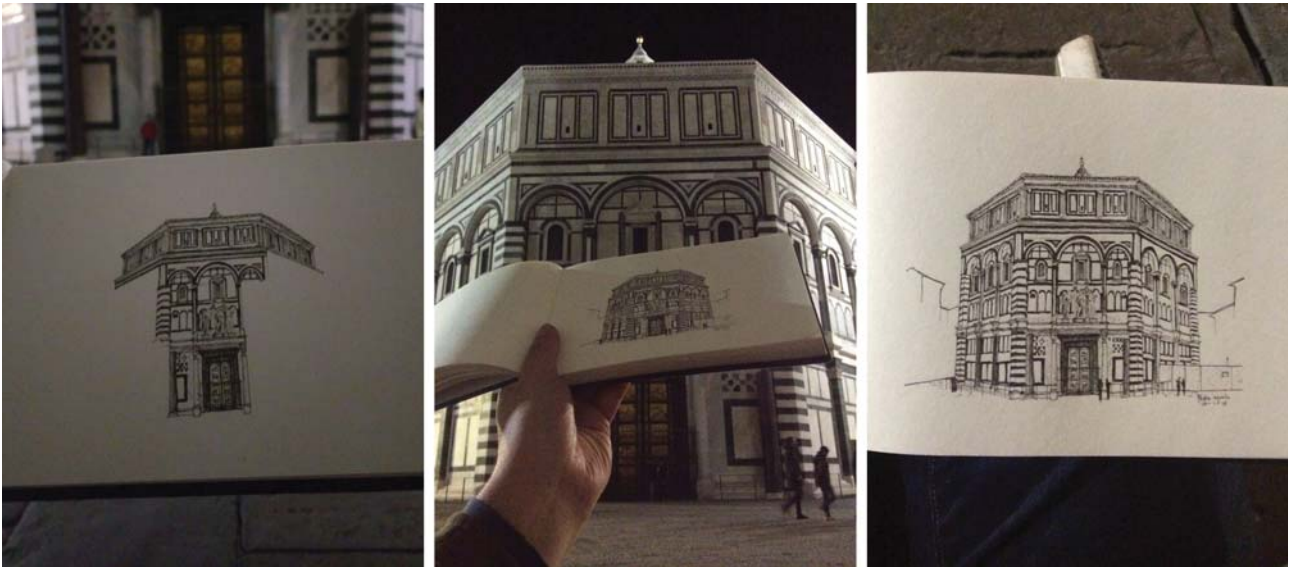


Fig. 6. Drawing #82.1: Prospettiva. Florence, Italy. 16 January 2015. Images by the author.

to take photos of me working on the drawing which is the coverpage for this text. At first, I was a little disturbed, especially because, well, in a way, I felt just like him. But later on I realized that we had lots of differences of approach, which made me more part of the scenery than he was. But it is in Egypt, when I saw the eagerness for tourism consumption due to the political crisis the country was experiencing, with serious consequences for the conservation of Egyptian monuments, that I could finally formulate the question lingering at the back of my mind: what's the meaning of travelling if you do not help yourself find new ways to connect?

So, the message is: drop your cameras. Do not rely too much on the peep hole. If you are an architecture

student on an Erasmus trip, the responsibility doubles: there are years of history to be responsible for. As Goethe (1885, p. 213) once wrote (and there's no parody intended this time), "On these travels I have learnt one thing at least: how to travel well". The secret is to believe in experience with purpose. Methods exist, but it remains only with you to make things happen.

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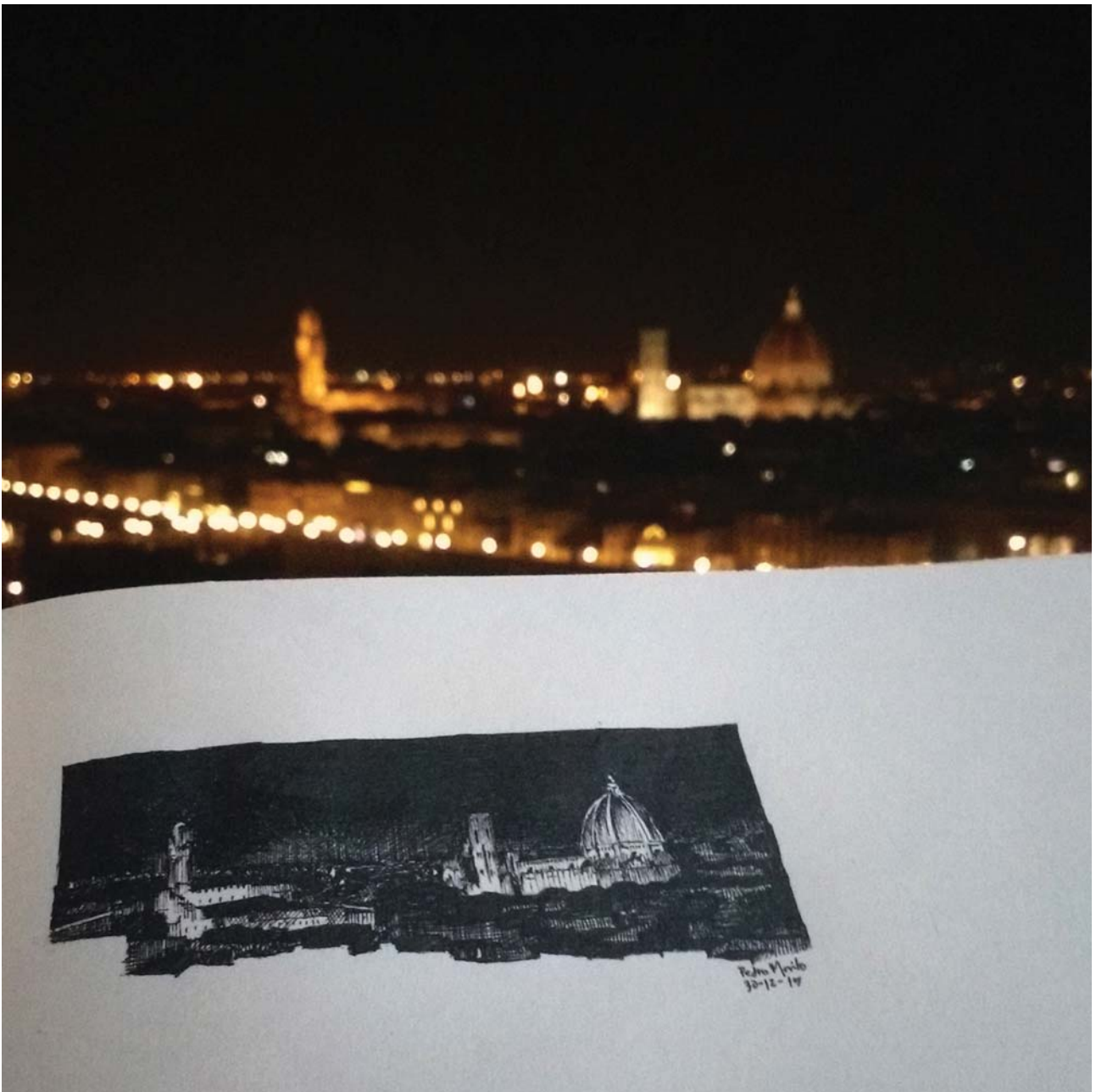


Fig. 7. Drawing #65,1: Retrospettiva. Florence, Italy. 30 December 2015. Images by the author.

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Fig. 1. "The big bambu" sculpture, MACRO, Rome. Image by Mike and Doug Starn.

BEYOND SUSTAINABILITY: INCORPORATING ENVIRONMENTAL CRITERIA IN PLANIFICATION, IMPLEMENTATION AND EVALUATION OF CULTURAL PROJECTS

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This article reflects on the concept of cultural sustainability, paying special attention to the environmental impact of cultural projects and how cultural managers are slowly beginning to include immaterial values and social context linked to tangible cultural heritage.

The essential role of culture for sustainable development has been more and more recognized at an international level and its global vision as a driver of sustainability is slowly being adopted in artistic practices which involve a high level connection with community.

From local to global, from community projects to profit-making cultural businesses: all stages and all types of projects are beginning to incorporate this emerging vision. Furthermore, green certifications appear and projects deeply rooted in their territories and which explicitly recognize their ties with the land and the environment, become role models.

New proposals often have such an integral vision that are hard to classify as artistic, social, or local revitalization projects. Yet, despite this fact, all of them convey some common aspects which have a great difference with previous practices, such as the notions of sustainability and environmental values, or the community and environment surrounding the project as key factors.

Despite these positive developments, there is still a lot of work to be done.

Keywords:

cultural sustainability – environment – immaterial value – community – green certification – local – territory – Integral vision – social – regulation – quality standard – Interdisciplinary

1. CULTURAL SUSTAINABILITY?

The availability of a large number of literature on cultural sustainability and the role of culture for sustainable development reveals both the relevance of such concepts and the complexity of defining them¹. But beyond these complex discussions, in this article we will reflect on the concept of cultural sustainability giving special attention to one of its aspects: the environmental impact of cultural projects and how cultural managers are slowly beginning to incorporate its practices.

Although sustainability does not yet hold a primary role in cultural management, in most countries there is a growing number of examples of cultural practices

which consider environmental issues a priority. We are fortunately witnessing how the ecologic impact is increasingly being taken into account at all stages of work as well as how specific measures are implemented on a diversity of cultural projects.

Some organizations have already incorporated the figure of the Sustainability Manager and, most importantly, in some countries spontaneous professional networks are emerging as a consequence of the genuine growing concern over this subject. Besides, local governments have already been working towards the development of more sustainable cultural policies for some time now, as the Agenda 21 for culture² [<http://www.agenda21culture.net/>] (2004) reveals.

¹ We would not even think of adding to the ever growing debate of defining these terms, but we shall make it clear from the start that we will be using the term 'cultural sustainability' based on the meanings of the 'Conclusions from the COST Action IS1007 Investigating Cultural Sustainability' (2015). It takes as main starting-point the definition of 'Sustainable Development' from the 'Brundtland's report' ('World Commission on Environment and Development', 1987): "development that meets the needs of the present without compromising the ability of future generations to meet their own needs", but it also introduces an interesting hint by suggesting that 'Sustainability', in contrast, might be less associated with further development (related also -but not only- to economic growth) and more linked to social equity, environmental and justice goals.

² 'The Agenda 21 for culture' claims to be the first worldwide document promoting policies and actions by cities and local governments for cultural development. It was approved in 2004 by cities and local governments from all over the world to consolidate their commitment to human rights, cultural diversity, sustainability, participatory democracy and creating conditions for peace. It is the founding document of the world organization of United Cities and Local Governments (UCLG).



Fig. 2. "The big bambu" sculpture, MACRO, Rome. Image by Mike and Doug Starn.

All these activities indicate, regardless of the length or the impact of each, the growing importance of the subject. From museographical low-impact approaches, to socially responsible private initiative, music festivals, heritage preservation, sustainable cultural routes or recycled art events, this trend keeps growing. Thus, elements such as the CO₂ generated by an event, the involvement of local communities or the use of biodegradable material are progressively taken into consideration not only in project planning but in its development and final evaluation too. These aspects, traditionally considered 'politically correct', are gradually becoming truly crucial, not only for the obvious positive perception that an increasingly aware audience especially sensitive to those subjects might have, but for its multiple benefits for people and environment.

With regards to public policy and international recognition of culture in sustainable development, Hawkes, in *The Fourth Pillar of Sustainability* (2001),

was the first scholar to place culture in the same level with economy, society and environment, as having equal dimensions of public policy. Furthermore, the essential role of culture for sustainable development has been more and more recognized at an international level. The resolution of the Rio+20 summit *The future we want* [<https://sustainabledevelopment.un.org/futurewewant.html>] (2012) mentions culture in a number of paragraphs, recognizes the relationship between people, their ecosystems and their cultural heritage, and claims the links between culture and biodiversity. Besides, the UNESCO Hangzhou Declaration Placing culture at the heart of sustainable development policies (2013) represents a major step towards the acknowledgement of culture as a key factor in global sustainability, as it is the first time that the international development agenda clearly refers to the role of culture as a driver and enabler of the economic, social and environmental dimensions of sustainable development³. This recognition integrates culture in the majority of goals from a

³ UNESCO. 2013. *The Hangzhou Declaration. Placing Culture at the Heart of Sustainable Development Policies*. Hangzhou.

cross-cutting approach, including those referring to the environment, sustainable consumption and production patterns, sustainable cities or food security, inter alia.

Through this article, we will briefly expose how culture and environment are inextricably interlinked to other dimensions of public policy related to sustainable development and how culture professionals are becoming gradually committed in their practices to respond to these emerging demands. We will also overview the huge challenges that culture faces in the adoption of this perspective.

2. A COMPREHENSIVE APPROACH FOR AN UNATTAINABLE SECTOR

Culture is an extraordinary, broad and diverse ecosystem and, in such a complex field, it is not an easy task to tackle the very wide-ranging diversity of projects that, from heritage to creative industries, forms the cultural sector. It is consequently impossible to establish universal environmental standards for such a diversity of cultural projects, especially when the issues we deal with are often also constrained by other aspects, linked to social and economic circumstances.

With this in mind, throughout the article we will briefly mention some examples and initiatives which will illustrate the gradual introduction of sustainability criteria in different types of cultural projects. We will also identify key factors when implementing cultural schemes from a sustainable perspective, concluding with a brief overview of the multiple challenges that incorporating environmental criteria involve.

From a heritage point of view, the notion of conservation has also progressively broadened its meaning to include immaterial values and social contexts linked to tangible cultural heritage⁴. The conservation of 'living historical areas' has long been approached taking into account their human dimension, and certainly not only from strictly

museum-oriented perspectives. Thus, although challenges and complexity increase, maintaining this new dimension of conservation gains efficiency and sustainability. This approach is also present -and probably most obvious- in cultural trails creation projects, naturally focused on historical, cultural and natural assets⁵. The emphasis in publications such as Culture Routes Guide (2016) illustrates the importance of this point in a broad spectrum of project typologies and reveals the direct effect that it has on the planned results. In other words, in any cultural project, engaging local communities has an immediate effect on the project results and sustainability. Furthermore, in those communities with deep ties to the area where such projects are being developed (especially but not exclusively rural areas) they have a major and direct significant impact, not only in the expected cultural output but also in their environment conservation.

Back to the museologic perspective, examples worth mentioning are 'Operation Green Museums' [<https://sustainabilityofheritage.wordpress.com/>] (2012, UK) or 'Museo, go green' [<https://museogogreen.com/>] (2012, Spain) both of them unfortunately not working any more, but they still provide interesting resources on museums, sustainability and innovative community engagement practices (the latter containing a significative collection of good practices and reflections).

3. SUSTAINABILITY 'PIONEERS'

The earliest references to sustainability, applied to several cultural manifestations, are in the late sixties and early seventies, probably due to the global raising awareness of the times, concerning ecological and social problems⁶. The emergence of ecomuseums and the scepticism about the art system at the time, led to the current global vision of culture as an instigator of sustainability with a high community connection, which is now being adopted in artistic practices.

Nowadays more and more projects are tackling these issues⁷, but there are certain types of projects that do

⁴ Especially regarding urban conservation in historic towns: "The concept of heritage has evolved. It's no longer just about beautiful buildings, but also about what people value and treasure" (Jacques Dalibard, International Council of Monuments and Sites (ICOMOS) Canada) in 'Sources' [<http://unesdoc.unesco.org/images/0011/001144/114490e.pdf>].

⁵ UNESCO ratified the Cultural Routes Charter in 2008. They have had a steady growth in recent years, due to the increase of sustainable tourism projects.

⁶ Associated to the end of the Cold War, sustainable art concept appears as a critical position towards some key practitioners in the land art movement of the 1960s.

⁷ Although there are differentiated approaches to environmental sustainability between developed and developing economies, this is a global phenomenon. The report *The arts and environmental sustainability: an international overview* (Moore, S and Tickell, A. , 2014) gives an idea of the sustainability concept implementation worldwide.

Fig. 3. Dugnad exercise, TANDEM cultural manager exchange programme, 2013, Berlin, Germany. Image by the authors.



not need to implement this idea because they were devised to this end from the very beginning. Those many unknown local projects have a lot to say in this new context. For years, local small-scale cultural projects have been developed, taking into account their environment ecologically, socially and culturally because it was its nature to do so. For this same reason they often did not emphasize environmental issues initially; they were naturally integrated.

Those pioneer projects followed cultural sustainability rules 'only' by applying common-sense on their immediate context. They were being environmentally responsible not merely -but also- as a result of working in connection to the places and communities where they were located, most commonly rural areas. The survival of the project itself was linked to this inherent sustainability, making it a conscious choice. In most cases, ecomuseums, cultural routes or artistic residencies located in rural settings, for instance, took

care of these aspects and articulated their projects in accordance to them naturally⁸. One of these examples is the *Centre d'Art i Natura de Farrera* [<http://www.farreracan.cat/>]. Established in the nineties in the Catalan Pyrenees, it is a recognized work residence project for artists and researchers. And certainly, National Parks conservation and interpretation projects rooted in the theories set by Freeman Tilden⁹, would be an obvious but essential example of this case, often including a cultural heritage dimension in its developments.

From another perspective, within a sector where environmental actions were harder to find until much later, Julie's Bicycle is a leading example. Now a reference organization, it was created in 2009 within the musical industry but rapidly expanded to a theater scene as well. Now they work side by side with the English Arts Council to implement sustainable standards for creative industries across the country.

⁸ ... and quite often with great difficulties due to the lack of investment and support from the administrations, mostly in quite remote areas. The isolation of some of these projects was partially offset by the creation of networks that were later strengthened thanks to the Internet. Sharing common local challenges, exchanging knowledge and increasing their visibility through the net is now a must and for many of them crucial for their -still often compromised- survival.

⁹ Tilden inspired the principles and theories of heritage interpretation in his book *Interpreting our Heritage* (1957) together with his following books.

This effort to achieve common reference systems, networking and training has led the trend to its current scenario.

Recognizing and learning from these experiences should be a great asset for new projects with a sustainable approach. These generally carry a most open intention towards sustainability and master better specific terminology and communication tools, but they might lack the necessary experience.

4. THE NEW APPROACHES: COOPERATION

In recent years, as a consequence of aspects such as society's greater environmental awareness, the growth of the commons notion or the increasing involvement of civil societies, social and environmental aspects had regained centrality when designing cultural projects. Incorporating ethical and environmental criteria now becomes essential not only for people but, as mentioned above, it is also being more and more fostered by public administrations. These aspects are, therefore, considered of general interest for society as a whole (and often represent potential savings too).

This shift in perspective leads to the comprehensive incorporation of good practices and new proposals like awareness-raising campaigns, km 0 caterings in cultural events, creation of recycle-centered initiatives or the appearance of new 'green' grants towards this global commitment. Some recent examples are the #OneLess campaign¹⁰ [<http://happymuseumproject.org/can-museums-help-reduce-plastic-waste/>] (2016) to reduce plastic waste, adopted by some London museums, or the CCCB Cultural Innovation International Prize [<http://www.cccb.org/en/framework/file/climate-change/224133>] (2014) to innovative cultural projects which, in the last edition (2016-17), raised awareness about climate change through empowerment and active society involvement in environmental responsibility. At the same time, the number of calls on sustainable artistic projects continues to grow.

The ecological print, for instance, is adopted in well-known cultural mobility programs¹¹. Other initiatives also emerge, even in the so-called 'creative industries', more focused on business, such as the audiovisual. We have for instance *Ecoprod* [<http://www.ecoprod.com/en/>], a group of six big French audiovisual industry companies, who since 2009 develop and provide professional resources to reduce the environmental footprint of their business. But not all is about big players in the socially responsible audiovisual sector. A lot of small organizations such as *Band Films* [<http://bandfilms.co.uk/>], a small production company based in Bristol, is providing an eco-friendly option for filmmakers.

Professional networks are also emerging as a result of these concerns. *The Happy Museum Project*¹² [<http://happymuseumproject.org/about/>] (2011, UK) or 'IMAGINE 2020 – Art and Climate Change network'¹³ [<http://www.imagine2020.eu/about-us/>] (2015, EU) are two interesting examples of this phenomenon, who provide good practices, tools and training for art and culture professionals. In Spain networks like *Arte Sostenible* [<http://www.artesostenible.org/>] (Barcelona, 2008), a non-profit association of culture art professionals set an early example, still going on.

Collaborative work becomes central and mapping initiatives becomes a usual resource for organising this collective work. The 2010 *MMM's Sustainable Ability map* (www.sustainableability.com currently inactive) was an interesting experience that mapped best practices and initiatives in response to climate change across the cultural sector in the UK¹⁴.

Collective actions make complete sense in a context where community-based proposals and collaborative dynamics are crucial, as mentioned above. From the UK, comes yet another example, *Transition Town Tooting* [<http://transitiontowntooting.blogspot.com.es/>], a collective creative response to peak oil and climate change at grass roots level, looking at

¹⁰ #OneLess, is a local campaign that aims to reduce single-use plastic water bottles in London.

¹¹ See 'Green Mobility – A guide to environmentally sustainable mobility for performing arts' [<http://on-the-move.org/files/Green-Mobility-Guide.pdf>].

¹² *The Happy Museum Project provides a leadership framework for museums to develop a holistic approach to wellbeing and sustainability. The project re-imagines the museum's purpose as a steward of people, place and planet, supporting institutional and community resilience in the face of global financial and environmental challenges.*

¹³ *The IMAGINE2020 network consists of 10 EU based arts organisations which bring together performing arts venues and festivals across Europe. It is funded by Creative Europe, with a focus on raising awareness in the cultural field and in a broader civil society context around the issues of the socio-ecological crisis.*

¹⁴ *Although no longer on-line, the following document explaining the project is still available: <http://www.emergence-uk.org/wp-content/uploads/Sustainable-Ability.pdf> (2010).*



Fig. 4. Roman aqueduct and pelicans nesting, Selcuk Municipality, Turkey. Image by the authors.

resilience building and practical activism. From local to global, from community projects to profit-making cultural businesses, all stages and all types of projects are beginning to incorporate this emerging vision.

Professional networks multiply while environmental festivals based on this system have become a reality. *Cape Farewell* [<http://www.capefarewell.com/about.html>] project (2001, UK/USA) is another example of extensive collaborative network-based artistic organizations. It works internationally, bringing together artists, economists and climate scientists to deliver measurable engaging initiatives for change and communicating them in an inspiring way. The festival *ArtCop21* [<http://www.artcop21.com/>] (2015,

Paris), with an extensive global programme of over 550 major events across Paris and in 54 total countries worldwide, is another example of the global approach of these actions and the extent of the engagement of civil society to put pressure on public administrations.

At the same time, international green certifications appear (i.e. ISO 20121 for sustainable events) and environmental assessments are increasingly common in cultural contexts¹⁵, while art-activists¹⁶ or local artistic residences are growing in importance. Projects and centers deeply rooted in their territory¹⁷ and which explicitly recognize their bonds with the land and the environment, become role models, and new proposals often have such an integral vision that it becomes

¹⁵ Julie's Bicycle [<http://www.juliesbicycle.com/>], is one of the benchmarks for success also in this context.

¹⁶ The works of Isaac Cordal [<http://cementeclipses.com/>] (i.e. 'Waiting for Climate Change' series, 2013) and Ellie Harrison based in Glasgow (Radical Renewable Art + Activism Fund [<http://www.rraafund.org/>], 2015) are specially interesting.

¹⁷ Addend [http://addend.comissariat.cat/?page_id=216] (2014) is a contemporary art center based in a rural area of southern Catalonia, that aims to establish a dialogue with its immediate natural and human environment through visual contemporary arts, taking into account an eco-friendly approach from its construction to the artistic projects developed.



Fig. 5. Ancient marbles and nature, Sounion, Greece. Image by the authors.

hard to classify as artistic, social, or local dynamisation projects¹⁸. In this regard, the above mentioned vision of culture as a pillar of local policy-making, is being increasingly adopted by local governments¹⁹.

There are, indeed, countless initiatives of all kinds, but the truth is that most of these cultural projects are small, often led by non-profit organizations with a limited scope of action²⁰. Even when we focus on 'cultural industry' we usually talk about micro-businesses and free-lancers²¹. They still face significant problems to ensure continuity and they

are confronted with huge complex challenges that require multidisciplinary approaches.

But despite this great diversity and speaking very generally, all the examples brought here convey some common aspects that make a big difference with previous practices and are key factors in any sustainable project:

- Values as a major focus: despite having one or two main goals, the notions of sustainability and environmental values are central or very important for these projects, whether based on rural or urban areas.

¹⁸ The Xisqueta project [<http://www.xisqueta.cat/en/sostenibilitat/>] is a perfect example of that: a local revitalization project undertaken by Xisqueta Obrador, a non-profit organization (High Pyrenees) established in 2009 in order to pay a fair price for the wool sheep Xisqueta to a number of shepherds and shepherdesses who still grow this breed.

¹⁹ In 2002 a working group of United Cities and Local Governments (UCLG), the largest international top body for local government, was formed to prioritize action around the role of culture in local development.

²⁰ See 'Priority Sector Report: Creative and Cultural Industries' [http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_type=254&lang=en&item_id=5654] (The European Cluster Observatory, 2014).

²¹ *Creating growth. Measuring cultural and creative markets in the EU. (EY, 2014)/ Cultural maps. The first global map of cultural and creative industries. (EY, 2015).*



Fig. 6. Ancient Vravra, Archaeological site and Natura 2000 European network of protected areas, Eastern Attica, Greece. Image by the authors.

- Transparency: they are aware of the ‘audience’ values and, most importantly, always communicate choices and processes that are aligned with them
- Local actors: the community and environment surrounding the project become key assets.
- Global actors: sectorial networks are central
- Communication: the use of the Internet to spread and replicate practices is crucial and carefully considered in the whole process (planning, implementation, evaluation).

5. A LONG WAY TO GO

Despite these positive developments, much remains to be done and we are still far from a broad

standardization of sustainability in cultural practices for all fields. The international demand for an open inclusion of culture as a specific goal or as a transversal aspect on the 2030 *Agenda for Sustainable Development* [<https://sustainabledevelopment.un.org/sdgs>] of the United Nations²² did not succeed. However, it set the scene for a continued collaboration among several international networks, and a number of working documents remain and are ready to be used when working out cultural sustainability in the future²³. Other public policies and international declarations, as the Culture21: actions²⁴, are ready to be used in the implementation of long-term local cultural policies.

Cultural managers need to insist on incorporating sustainable measures in their projects, but at the same time international ‘green’ standards for

²² The Special Summit on Sustainable Development, held in September 2015 at the UN, approved the final outcome document ‘Transforming Our World’, which set out the 17 Sustainable Development Goals (SDGs) and 169 targets that make up the 2030 Agenda. For several years in the run-up towards the adoption of the new SDGs, several global networks campaigned, under the banner ‘The Future We Want Includes Culture’ [<http://culture2015goal.net/>], for culture to be explicitly included in the final document.

²³ The UCLG Committee on Culture, is planning the publication *Culture in the Sustainable Development Goals: A Guide for Local Action* for late 2017. It is based on the work of the UCLG Committee on Culture, as well as on contributions made by several other organisations.

²⁴ The document *Culture 21: Actions* was approved on 18-20 March 2015 in Bilbao, within the framework of the first Culture Summit of UCLG.

cultural organisations should be supportive and widespread and a comprehensive vision of project planning should be adopted. Thus, regardless of any cultural project's form, making a significant change cannot rely only on each cultural practitioner's own responsibility. It is therefore of great importance to regulate, and elaborate guidelines and to establish quality standards. And better regulation is not just about making proposals but also about implementing

them later on. So, as in sustainable cultural projects, a balanced global-local scheme supporting sustainable policies is essential here as well for the success of these huge challenges.

In conclusion, cultural managers, artists, specialists, curators, art practitioners, researchers, cultural organizations, festivals and public institutions but also private stakeholders, law-makers and politicians, we



Fig. 7. Vroukounta, Walking to the "Panyiri of Ai Yianni" celebration, Karpathos, Greece. Image by <http://www.arpatheavillas.com>.



Fig. 8. Vroukounta, Walking to the “Panyiri of Ai Yianni’ celebration, Karpathos, Greece. Image by <http://www.arpatheavillas.com>.

must all rise to this challenge and take responsibility. An interdisciplinary approach based on building networks and values is now the most important tool to deal with this new context. We are going through a

new phase with huge challenges and goals to achieve in our profession, and we should therefore be able to create new opportunities and take responsibilities in making this indispensable difference.

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Fig. 1. Gran Dolina site in the Atapuerca Mountains. The image shows stratigraphic levels where numerous fossil and archaeological remains have been found. Image by Jordi Mestre, Fundación Atapuerca

MY FAVOURITE PREHISTORIC SITE

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Most prehistoric sites, especially those pertaining to human fossil species, bear no resemblance to the archaeological sites of more recent historic periods. The splendour of Pompeii and Herculaneum, the enigmatic beauty of Chichen Itza, or the astonishing majesty of the Acropolis will not be felt here. Prehistoric sites are often camouflaged against the surrounding nature, some of them as part of cave systems that are at times serendipitously discovered by fortunate archaeologists. To the eye of the visitor expecting to meet one of the few wonders of the prehistoric world, these sites may look rather inanimate and anticlimactic.

For scientists, however, prehistoric sites are full of treasures, as for thousands, even millions of years they have been discreetly preserving secrets that may tell us who we are. A modern archaeologist who finds remains left behind by humans who lived and died long ago has a rare opportunity to travel in time, to look through a unique window into our remote past. In spite of their apparent dullness, this makes prehistoric sites almost magic places where we can connect with our ancestors, where we can fully grasp our grandeur as a species and our insignificance as individuals.

Choosing a single favourite site is not an easy task. Sites come in all sizes, colours and shapes, and their significance differs widely. Some people will be inclined to choose one of the sites that have yielded early human-made stone tools, which represent the

first tangible evidence of our humanness. Others will prefer sites preserving evidence of the use of fire, which indicates that humans were capable of controlling and dominating natural forces. And others will pick one showing magnificent pieces of rock art, which reveal an aesthetic sensitivity so similar to our own. The competition is certainly tough, so I would rather let it rely on the personal and subjective factors that make us consider certain places special.

For me, such a place is located in Northern Spain, deep in the Atapuerca mountains. Most of my PhD research focused on the analysis of the human groups that lived in this region hundreds of thousands of years ago, so the sentimental link is pretty obvious. These well-known sites include a number of localities that have been inhabited by different human groups, beginning more than one million years ago up to until recent historical times. They all left behind bones, tools and other material remains that provide clues on the way they lived and interacted with the environment. It is difficult to understand what has made this place so appealing to different human species over such a long period of time. Although this place is nowadays cold—both literally and figuratively—different human groups must have found these mountains a welcoming and resourceful environment where they were able to survive. Luckily enough, their remains have been preserved over time and they now tell us stories of our evolutionary past.



Fig. 2. How will future generations see us? Image by NASA (<http://www.nasa.gov/>).

The Atapuerca archaeological sites were included in UNESCO's world heritage list in 2000, which triggered an important architectural and economic change of the region because of a strong development of cultural tourism. A few other paleoanthropological sites across the world share this UNESCO distinction, namely those that have yielded a similar wealth of fossil and archaeological remains. The conservation of the cultural heritage of past human species is indeed of utmost importance. It is absolutely irreplaceable, as it is the result of the activity of species that are extinct and that, as far as we can infer, had different ways from our own to process information and to interact with the environment.

Inferring the ways in which these groups led their lives is particularly difficult because the evidence they left is scarce and fragmentary. Part of this evidence includes their own skeletal remains, which provide information on different aspects of early human life. For example, microscopic and macroscopic marks on teeth provide information on dietary habits of the past, whereas bone anatomy can be indicative of the diseases that individuals suffered from and their patterns of activity. Additional evidence includes objects that belonged to humans of the remote past, such as tools they manufactured and remains of the animals they hunted. These objects allow us to formulate questions about human-environment interactions (why did they

eat some animals and not others?), or about their cognitive capacities (how did they make their tools? how did young knappers learn tool-making abilities?). Many sites are located in areas that these humans used for shelter and other daily activities, so their very structure indicates the needs and the preferences of these groups, just as modern homes give information on our cultural and social context, and on our own personal preferences.

Thinking about the lives of our ancestors always makes me wonder how future generations will see us. Not those of the next century or the next millennium, as they will have plenty of information to draw from. I am considering people who will be living in 6 million years' time, which is the amount of time that has passed since the human lineage separated from that of the chimpanzee; or in 60 million years' time, which is approximately the evolutionary age of the broader primate group we belong to. Historical, social and technological changes have been so astonishing during the last few centuries that thinking along these extended time-scales leaves us with a profound existential vertigo. Six million years is approximately 30,000 times the modern industrial period. If we assume that the level of technological and scientific development will keep the same pace—which is a rather conservative estimate—implications are mind-blowing. How will humans evolve? How will future

humans shape their own evolution? Will they colonize other planets, thus finding new opportunities for diversification and speciation? Will they find other forms of life? This may sound like science fiction, but it is certain that prehistoric cave painters never foresaw the world we live in today. It is indeed most likely that future societies will change and evolve in ways we cannot anticipate, in response to challenges—both environmental and intellectual—we cannot even imagine. It is our responsibility to preserve our

cultural and natural heritage and to make sure that future generations may have the same opportunities to understand us and all those who came before.

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