Cordoba. Biological and temporal diversity in an urban archaeological landscape - photo by Tessa Matteini, 2007.

Tessa Matteini

Biological and temporal diversity in archaeological landscapes

Archaeological parks and sites[1] though representing historical and cultural heritage of the communities and containing landscapes's memories and identities, are still little considered, nowadays, regarding biodiversity's topics.

As specialized works underline[2], archaeological sites, obviously rich in cultural diversity, are often characterized by peculiar environmental conditions that generally support biodiversity; nearly always archaeological sites are very suitable places to the settlement of rare or specifically local vegetal species which find in these areas favourable environment to their development.

1. Vegetal codes

Since the early XVII century the landscaping of archaeological sites, through preliminary studies, sketches and designs, almost always tended to normalize, reduce and trivialize the complexity of these places, both regarding environmental biodiversity and *temporal diversity*[3]; among the few exceptions works of Giacomo Boni and Raffaele De Vico in Rome, Pietro Porcinai in Selinunte, Dimitris Pikionis in Athens.

Aiming to keep a full control of sites and to simplify maintenance practices by the design process, designers not completely aware of the ecological relationships and links between vegetation and ruins (even if Boni already at the end of XIX century clearly realized these topics) leaned to give an abstract idea of the ruins, by costructing special vegetal codes.

In the Italian cultural context of early XX century, when the exhibition of 1931 in Florence (*Mostra del Giardino Italiano*) [4] reinvented a never existed "giardino all'italiana", and the autarchic vision of the Fascism imposed a mistaken imitation of the Empire, referring to an autochthonous "Roman" landscape, pine trees, green oaks ad cypresses became the only species considered suitable to build the vegetal framework of archaeological sites.

Describing the vegetal exedra in Piazza Venezia, Corrado Ricci in a letter to Mussolini of 17th October 1931 wrote: "Incorniciare anzi isolare il monumento da tutte le 'anomalie' vicine con un'immensa esedra arborea (...). Non altre forme architettoniche o sculture, vicino al monumento; non altri candori marmorei; ma le ombre e il verde dei cipressi e dei pini in quei meravigliosi aspetti che la natura immobile ha dato loro e che convengono ugualmente alle rovine, come agli edifici integri"[5].

These false identification between the eternity of ruins and the supposed perennity of evergreen species, considered as "immovable nature" (*nature immobili*) is the sign of a total misunderstanding of every ecological process, promoting on the other side, an essential isolation of historical monuments from the urban landscape, with all its vitality and contaminations, loosing in

these way the environmental richness and the cultural biodiversity of every archaeological site.

2. Vegetation in archaeological landscapes

As Giacomo Boni already realized, the comprehension of vegetal components in archaeological landscapes is hard to investigate, and many and various are design topics to treat. Massimo De Vico Fallani, in his works based on Boni's projects and writings, reconstructs the frame-work of his indications in a sort of methodological handbook: "Instructions for landscaping in historical monuments", where are defined six different kinds of possible relationships between vegetation and ruins (damaging, esthetical improving, hiding, protecting, functioning, and image integrating)[6].

In a contemporary review of these relationships, we could evaluate as primary in landscaping archaeological sites, the compatibility of species and vegetal associations which will be integrated in a particularly fragile and valuable context, in order to respect stratigraphical, environmental and cultural resources and to be suitable to the phytoclimatic, edaphic and historic features[7].

A special attention must be paid to the interactions between vegetation and archaeological structures, providing for possible conflicts and evaluating the dangerousness that some species[8] (particularly with their roots that can growth in mortars or between stones) could represent for historical elements existing in site.

Vegetal codes featuring the landscape designed by Pietro Porcinai in Cupa archaeological park in Perugia (1947) - photo by Tessa Matteini, 2008

But several are also the opportunities which a careful and aware project can develop in design of a new archaeological landscape: sometimes a specific use of species and associations could become a tool for didactic and popular communication organized for the site, contributing to evoke or suggest indications about the former look of places and their original functions, or about existing ecological processes. Furthermore, the reconstruction of a compatible and proper vegetal framework, to be integrated in greenways and ecological corridors already individuated, consents to carry out important environmental relationships.

Ecological continuity of landscape, especially in an urban context, finds in archaeological areas, precious knots to build a coherent system: the attention in landscape and botanical design become fundamental, with a special regard to improve and regenerate biodiversity.

For example in Rome the Municipality has chosen the restoring of the open spaces framework, linked to archaeological topics and featuring the fabric of the city, as one of the main strategies for improving and developing environmental quality[9].

A correct vegetation planning can also contribute to the conservation of archaeological structures, trough the reduction of solar radiation, wind, rainfall and pollutants which often constitute important damaging factors[10].

Often, surface vegetation and crops can be important bio-indicators for the aerial reading of buried structures; in other cases, the presence of calciophilous plants as *Ficus carica*, *Ulmus minor* o *Rubus ulmifolius* can indicate localisation and distribution of underground architectures[11].

Maintenance criteria must be already considered in design phases, choosing species whose developing processes have been still investigated and could be easy managed.

In many cases the unchecked removal of vegetation, also if considered as 'weed', can accelerate deterioration processes of architectures, triggering courses hard to handle.

At the end of the XIX century, Giacomo Boni, wrote: "L'estirpamento dell'erba, fatto come si continua a farlo oggigiorno, priva gli antichi ruderi dell'aspetto pittoresco, unico compenso dato alla natura ai guasti avvenuti, li riduce a nudi ed aridi scheletri, e li espone a tutte le vicissitudini che sono comuni ai luoghi privi di copertura: l'acqua vi filtra o vi ristagna, il gelo li gonfia o li disgrega, si distaccano pezzo a pezzo i reticoli o i mattoni della cortina, e in capo ad alcuni anni gli antichi muri si riducono a informi disgustosi moncherini. Più volte ho avuto l'occasione di richiamare l'attenzione di codesto onorevole Ministero sulla efficace protezione che veniva offerta agli antichi ruderi da uno strato di terra vegetale coperta di zolle erbose, le quali impediscono la filtrazione d'acqua, il gelo e l'allignamento di piante nocive".[12]

Beyond considerations about ruin's sublimity and 'picturesque' conferred by vegetation, the method's suggestions of Giacomo Boni on vegetal shelters are still efficacious: in many cases the uncontrolled eradication of weeds could favour decay acceleration, while a controlled coexistence consents to protect wall crests and other parts difficult to maintain.

In archaeological sites is often carried out the specific use of herbaceous and

woody vegetation, to integrate the comprehension of environments and stratigraphies, or to help visual reconstruction of vanished structures. Didactic aims of historical evocation must yet be combined with practical matters: roots apparatus, which characterize the chosen species, must be particularly reduced and compatible with the underground structures, allowing to consider as reversible all the carried out planting interventions, because, in case of further archaeological surveys, it could be necessary to remove the vegetal covering without damaging buried stratigraphies.

3. Temporal diversity

Regarding to the biodiversity concept in a different semantic dimension, we could speak about "temporal diversity": like environmental biodiversity, generally tending to increase complexity and endurance of an ecological system, temporal diversity can contribute to promote cultural complexity of a landscape, which can be always defined as a combination of various temporalities[13].

In a contemporary vision, temporal dimension of a landscape has been investigated with a special attention by Bernard Lassus, who defines the "*mille-feuille*" landscape, a stratification of superimposed chronological layers, to be excavated and interpreted with tools of "poetic archaeology"[14], a peculiar design mood, which combines science and poetry, to compare with past's signs. Particularly in an urban landscape the combination of different temporalities features the framework of open spaces, contributing to its historical depth and narrating identities through collective and individual memories.

Andreina Ricci, writing about urban archaeological sites, quotes two categories: *external time* (quantitative) which works as *absolute time*, and *internal time* (qualitative) [15], signifying the special complexity and temporal diversity of a place: " la molteplicità di quei tempi differenti che i resti materiali, intrecciati tra di loro, descrivono, richiamano, testimoniano." [16]

Therefore, one of the most important purposes of landscape design is to fully understand all potentialities and temporal diversities of an archaeological site, to identify and to protect exactly as those of biodiversity.

In many cases nevertheless, the fear of facing complexity generated by archaeological buried substrata, and concrete problems linked to maintenance difficulties in handling vegetation and managing social dynamics, lead to such a choices able to delete potentialities of temporal diversity, supporting a reassuring but depriving chronological uniformity. Particularly among sites of urban archaeology, we can find many "removed landscapes", pushed away from our daily perception, closed or buried areas, beside or over which we walk unconsciously.

4. Towards the recover of archaeological landscapes

Basing on cultural strategies promoted by European Landscape Convention (Florence, 2000), which invites us to recover everyday landscapes, we can underline as much important the retrieve and the perceptive rediscovery of extraordinary archaeological landscapes, featured by an high concentration of complexity, biodiversity, and temporal diversity. Through the centuries we

lost indeed intimacy and affection for these peculiar landscapes, as well as a specific ability to manage, with design processes and social dynamics, identities of these places.

Andreina Ricci highlighted how in Rome, in the second half of XX century, the unanimous condemnation of political interpretation of archaeological heritage given by the Fascism and the legitimate fear to propose a "public use of history"[17], discouraged every attempt to 'translate' and communicate the historical value of monuments, often neglected and left to a destiny of a not only physical inaccessibility[18].

This ideological resistance to every "communicative giving in"[19] has created between the archaeological heritage and the community an almost insurmountable barrier, which Ricci proposes to face through a coordinated work of recover and rediscovery, based on *translation* and *narration* of places' historical depth.

The "daily nature" of the urban ruins, which, through the centuries have inhabited, as reassuring and domestic presences, the life milieu of Roman citizens and *Grand tour* travellers (as we can see, looking at the urban everyday scenes represented in painting, engravings and etchings, peculiarly from XVII to XIX century), today is completely lost.

Tivoli, Villa Adriana. *Laurus nobilis* used for integrating the image of a disappeared columnade - photo by T. Matteini, 2007

We could find the painful echo of this disappeareance, in Pasolini's 'temporal disease', recognizable in some verses composed facing a mutilated ruin, lost in Roman sunny suburban landscapes, near INA Casa social housing: "*Lì ridotto il rudere è senza amore,/ Uso e liturgia, ora profondamente estinti, vivono nel suo stile -e nel sole-/ per chi ne comprenda presenza e poesia.*"[20]

Then, what can be research prospects to focus for the future? Basing on considerations since here proposed, it seems necessary to build new cultural, social, scientific and technological tools, to face landscaping in archaeological places in full awareness and to succeed in transforming our design moods on these sites, so rich in environmental and cultural biodiversity; in this way, perhaps, we can try to recover the temporal complexity inherent in every urban environment, and to reintegrate it, finally, in our cities landscapes.

notes

[1] About *archaeological site*, Daniele Manacorda, *Il sito archeologico: fra ricerca e valorizzazione*, Carocci, Roma 2007, pagg. 8-12;,about *Sites and parks,* Andrea Zifferero in Riccardo Francovich, Daniele Manacorda (edited by), *Dizionario di archeologia*, Laterza, Roma-Bari 2006, pagg. 276-279 ; on the same topics, Luigi Marino, (edited by), *Dizionario di restauro archeologico*, Alinea, Firenze 2003, pagg. 158-159.

[2] Simona Ceschin, Giulia Caneva, Alma Kumbaric, *Biodiversità ed emergenze floristiche nelle aree archeologiche romane*, in Webbia 61 (1): 133-144, 2006.

[3] Tessa Matteini, *Paesaggi del tempo. Documenti archeologici e rovine artificiali nel disegno di giardini e paesaggi*, Alinea, Firenze 2009.

[4] *Il giardino inesistente* in Tessa Matteini "Giardini scomparsi. Note per un itinerario toscano", in Guido Ferrara, Giulio Gino Rizzo, Mariella Zoppi (edited by), *Paesaggio, didattica, ricerche, progetti (1997-2007)*, Firenze University Press, Firenze 2007.

[5] "Lettera al Capo del Governo" in "La Tribuna" del 17 ottobre 1931. Quoted in Massimo De Vico Fallani, *Raffaele De Vico ed i giardini di Roma*, Firenze 1985, pag. 110.

[6] Massimo De Vico Fallani, op.cit. (1988), pag.104.

[7] Giulia Caneva, *A botanical approach to the planning of archaeological parks in Italy*, in Nicholas Stanley Price (a cura di), *Conservation and management of archaeological sites,* James and James, London 1997, volume 3, pagg. 127-134.

[8] Maria Adele Signorini, "L'indice di pericolosità: un contributo del botanico al controllo della vegetazione infestante nelle aree monumentali" in "Informatore botanico italiano", 28 (1), 1996, pagg. 7-14.

[9] Mirella Di Giovine "La rete ecologica del territorio romano nel nuovo piano regolatore", in AA.VV., "Le città sostenibili. Storia, natura, ambiente, un percorso di ricerca", Franco Angeli, Milano 2003.

[10] Giulia Caneva, op.cit., pag. 133.

[11] Giulia Caneva, op.cit., pag. 128.

[12] From the letter of 4th january 1896, wrote by Boni to the "Ministero dell'Istruzione Pubblica". Quoted in Massimo De Vico Fallani, op.cit. (1988), pag. 45.

[13] Marc Augé, *Rovine e macerie. Il senso del tempo.* Bollati Boringhieri, Torino 2004, pagg. 101-104.

[14] Bernard Lassus, *The landscape entity* in Bernard Lassus, *The Landscape approach*, University of Pennsyilvania Press, Philadelphia 1998, pag. 144.

[15] Basing on works of Ernst Bloch, Kristof Pomian and Ilya Prigogine. Andreina Ricci, *Attorno alla nuda pietra, Archeologia e città tra identità e progetto*, Donzelli, Roma 2006, pagg. 127-134.

[16] Andreina Ricci, op.cit., pagg. 130.

[17] Defined by Habermas. On this topic, Andreina Ricci,op.cit., pag. 23-32.

[18] Andreina Ricci, op.cit., pagg. 78-81.

[19] Ibidem.

[20] Pier Paolo Pasolini, *Poesie in forma di rosa*, Garzanti, Milano 2006, pag. 23.

References

Massimo De Vico Fallani, *I parchi archeologici di Roma. Aggiunta a Giacomo Boni: la vicenda della "flora monumentale" nei documenti dell'Archivio Centrale dello Stato*, NES, Roma 1988.

Maria Adele Signorini, "L'indice di pericolosità: un contributo del botanico al controllo della vegetazione infestante nelle aree monumentali" in "Informatore botanico italiano", 28 (1), 1996, pagg. 7-14.

Giulia Caneva, *A botanical approach to the planning of archaeological parks in Italy*, in Nicholas Stanley Price (a cura di), *Conservation and management of archaeological sites,* James and James London 1997, volume 3, pagg. 127-134.

Bernard Lassus, *The Landscape approach*, University of Pennsylvania Press, Philadelphia 1998.

Luigi Marino, (a cura di), *Dizionario di restauro archeologico*, Alinea, Firenze 2003.

Marc Augé, *Rovine e macerie. Il senso del tempo.* Bollati Boringhieri, Torino 2004.

Giulia Caneva, (a cura di) *La biologia vegetale per i beni culturali*. Vol. II *Conoscenza e valorizza-*

zione, Nardini Editore, Firenze 2005.

Andreina Ricci, *Attorno alla nuda pietra, Archeologia e città tra identità e progetto*, Donzelli, Roma 2006.

Simona Ceschin, Giulia Caneva, Alma Kumbaric, *Biodiversità ed emergenze floristiche nelle aree archeologiche romane*, in Webbia 61 (1): 133-144, 2006.

Massimo Venturi Ferriolo, *Paesaggi rivelati. Passeggiare con Bernard Lassus*, Guerini e associati, Milano 2006.

Daniele Manacorda, *Il sito archeologico: fra ricerca e valorizzazione*, Carocci, Roma 2007.

Valerio Romani, *Il paesaggio. Percorsi di studio*, Franco Angeli, Milano 2008.

Michael Jakob, *Paesaggio e tempo*, Meltemi editore, Roma 2009.

Tessa Matteini, *Paesaggi del tempo. Documenti archeologici e rovine artificiali nel disegno di giardini e paesaggi*, Alinea, Firenze 2009.

Roma, Palatino. *Ailanthus altissima* damaging the ruins - photo by Tessa Matteini, 2010