

Between Absolute and Fluid Space: the Representation of the Oasis

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Abstract

At the edge of the desert, near the wetlands, the palm grew in small wild spots that reproduced by the action of the wind, forming a favorable environment for human settlement.

The landscape of the oasis is a composition of natural elements whose combination transforms the place into artificial nature; the water, the knowledge of agricultural techniques together with hard daily work overwrite to the arid desert ground the traces of site configuration.

The oasis is a homogeneous system structured in the repetition of the elements of which it is composed and which generates a figurative unit given by the neatly arranged parts. A homogeneous plant mass that becomes a defined and balanced system.

The image of the oasis is built between the space of the desert, in which there is no presence of stratified signs but is configured as a natural absolute, and the fluid and symbolic space of vegetation that is defined as a figure in the surrounding background.

The representation begins by palm drawing, it is, in fact, the measure of the oasis and its representation contains sacredness and symbolism. It is also a point of union between the world of forms and the world of the spirit.

Keywords: survey, landscape representation, vision, image, desert.

Introduction

The Sahara desert, vast plain of sand, is the palimpsest of cultures, encounters, exchanges and contaminations. In the maps of the ancient geographers it was represented until the XIX century as a white spot, an emptiness, bordered to the South by tents and lions; in current maps and in satellite views it is recognizable as a large yellow oval, in any case an endless limit, a place without references.

The desert is a place of sand, of wind, of light between two predominant elements, the ground, infinite expanse of sand, and its parallel plane, the sky, "compared to which all the other skies seem timid attempts" [Bowles 1999, p. 12]. In the intermediate space, men live in a succession of opposites that mark time, establish the direction and orientation.

In the desert, nearby small depressions, created by the water outcrop, micro-systems, that trigger dynamics favorable to life, are generated. They are green spots called *n'akal* (palm) or *jazira* (island) which even before becoming an oasis were wild spots that reproduced under the action of wind and rain. It was the water provision, meeting and exchange points for the nomad caravans that crossed the desert and exchanged gold, skins and fabrics with the precious salt.

These islands of palms, indicated by travelers, pilgrims, geographers and soldiers as 'oases' were the origin of stable settlements in the desert. Herodotus in the V century BC, when crossing the Sahara from Egypt to the Gulf of Sirte, meets at a distance of ten days of walking, water springs

surrounded by palms (*oasis*), in large numbers at the edges of which lived the men; Strabo speaks of inhabited places surrounded by vast deserts and lands without water (*ayàs-eis*), like islands in the open sea; Sallustio, in the war against Juba, reports of Saharan nomads near palm groves.

Oasis is the term of Egyptian origin which means "fertile neighborhood", in Greek it is *oasis*. The Arabic terminology defines the oasis as opposition to the desert, *khla*, with a term that indicates a resource of water, *ouah* (*waha*). In the definition of western dictionaries, the oasis is in the desert, an inhabited place, cultivated, green and provided with water, with a sedentary population [Brunet, Ferras, Théry 1999].

The almost total lack of written sources in Arab culture has confirmed the importance of oral tradition. The chronicles of those who walk the desert, intellectuals, geographers and

religious pilgrims, are the main documents of the history of the Sahara, and of the whole Arab World in general, widely describing the oases, the kind of life and the organization of particularly fertile crops [Kassah 1996].

Among the dream descriptions of travelers and the reality of those who live there, the oasis is not a natural place, it exists because of the strong will of men who protect it from silting up and who watch over water distribution. Where the climate is particularly arid, scarce and irregular rainfall, excessive temperature and sunshine, water becomes an indisputable necessity, represents the main resource, constitutes a source of power for those who control it. Through a long process of adaptation to the hostile environment, the oases are the result of a delicate balance between man and his habitat.

Fig. 1. View of the city-oasis of Nefta from desert; view of Chott el Jerid and desert from medina (photo by the author).



Palma, palmas: short elougy of the palm

The date palm –*n'akal*, the female palm and *dokkâr*, the male one– sacred panreligious tree, is the oasis tree par excellence. In the Islamic tradition it is the tree that Adam brings from heaven to the earthly world and plant in Mecca. The palm tree makes a territory as sacred place, it is the symbol between the world of forms and the world of the spirit, symbol of the triumph of life over death.

In Mesopotamia under the palm trees, inside enclosures, water tanks and irrigation systems were built to create splendid productive and floral gardens. The Egyptians channeled the waters of the Nile into water basins to irrigate gardens in which ornamental plants and productive plants coexisted. As the technique of drained tunnels, for the transport of water, was assimilated by the sedentary populations, the process of cultivation of the oases advanced from East to West.

“Around the *Phoenix dactylifera* gravitates the whole existence of the oasis [...] In the desert an entire oasis can be realized starting from a single palm tree [...] The preparation of each plot always begins with the introduction of small palms that, with growing, will guarantee crop protection with their hair” [Laureano 1989, p. 202].

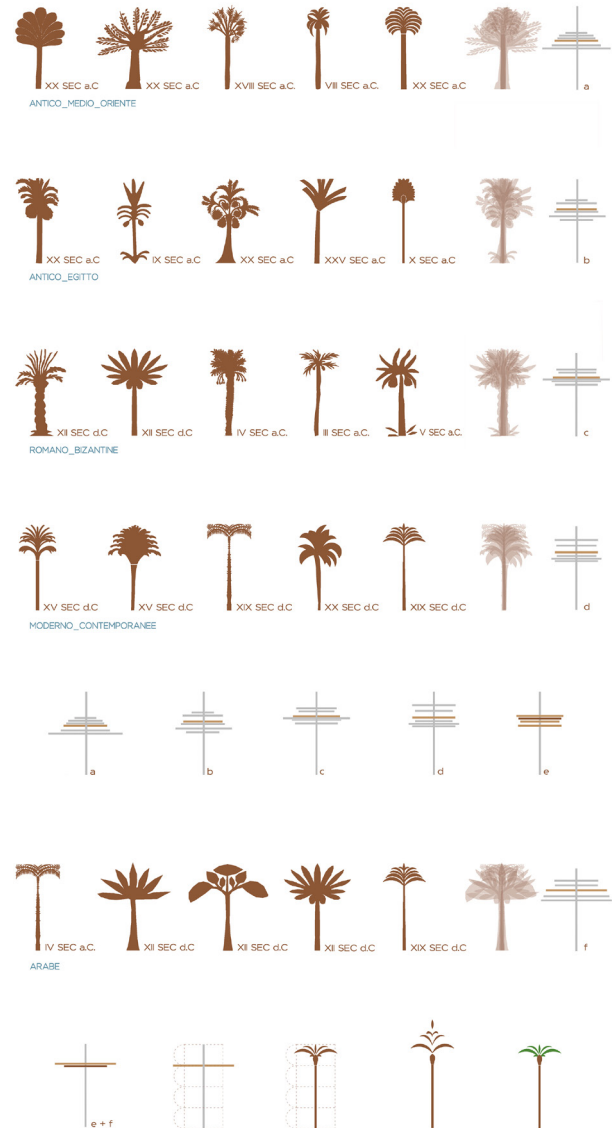
With its ring-like growth, the palm, marks the course of time and becomes a reference for agricultural years, moreover every part of the plant is used.

The representation of the oasis starts from the palm drawing (fig. 2). In fact, this is the measure of the oasis and its representation contains sacredness and symbolism in a code that finds its connection between the world of forms and the world of the spirit. It participate in the topology of the desert, becoming a connecting element between natural architecture and architected nature.

The palm drawing found in ancient graffiti or reproduced by Assyrians and Egyptians conveys its symbolic value through the force of the image. Tree of life, of reproduction, expression of harmony is an object of veneration. Its sacred character is expressed in the graphic repetition of ornamental motifs, in the dimension that dominates all the other figures and emphasizes the connection between the earthly world and the celestial world. Straight and stylized it often becomes the axis of representation, a metaphor of the *axis mundi*.

In the XVII and XVIII centuries, in scientific expeditions, in which botanists also take part, the palm is represented in its scientific aspect, dressed for the Enlightenment West, of a new symbol, it becomes the emblem of exoticism and

Fig. 2. The drawing of the palm: graphic transcription and synthesis of the sign (graphic elaboration by C. Romato).



represents the nature of a climate mild with the task of identifying the places [De Micheli, De Sanctis 2001, p. 131].

Taht saqf al n'akal: the space of the oasis

At the origin of the oasis "there is often a single palm planted in an excavation of the ground and surrounded by dry branches that protect it from the sands [...] the plant generates its own protection against the rays of the sun, concentrates the steam [...] construction of the soil from which it in turn feeds" [Laureano 2001, p. 28].

The cultivation of palm trees creates a built environment in which the foliage, which serve as a screen for solar radiation, constitutes a vegetal roof. Below the cultivation of the gardens is entrusted to the rigorous discipline of technical and symbolic procedures, in which the rigid structure, consolidated and repetitive, guarantees its existence.

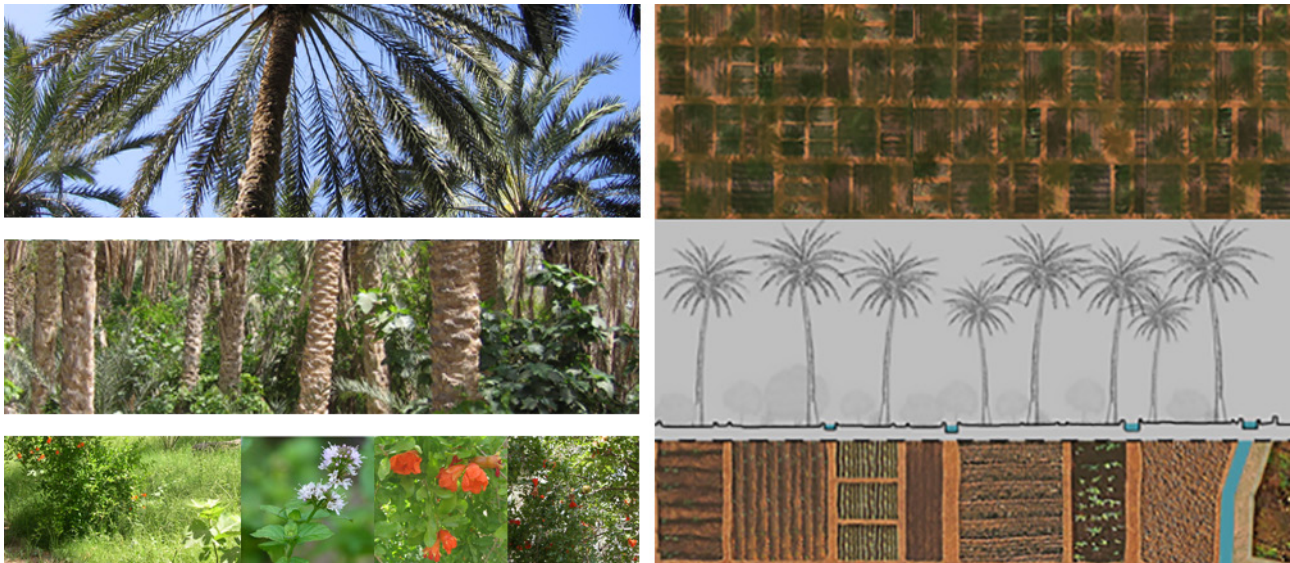
South of the meridian that connects Gafsa to the Gulf of Gabès, in a strip of about forty kilometers wide, from the Algerian border to the Mediterranean Sea, lies the Region of the Tunisian oases, a semi-arid area, a time point of inflection between nomadism and sedentarism.

Defined by Ibn Kaldoun the "palm region" was considered by the Romans the impassable *limes* beyond which to confine the nomadic populations. Nefta, along with Tozeur and Douz, is one of the main oasis towns on the edge of the Chott el Jerid, an extensive saline depression that guarantees the surfacing of the groundwater stratum.

The landscape of the oasis town of Nefta is characterized by compact units and horizontal continuity (fig. 1): the landscape of the palm, fluid, uniform with an intense green color; forms a plane parallel to the sky in which there are no significant emergencies; the compactness of the medina, which maintains the same color as the desert, is emphasized by the impetus of the mosques minarets and the white domes of the *marabouts*; flat, white and crystalline is the reflection of the salt lake that connects to the low sand dunes in a continuous sequence. In addition to the economic and commercial function, the oasis has the function of a thermal equalizer towards the town, since the humidity given off compensates for the aridity coming from the desert winds.

The physical unity of the oasis that contains the dual aspect of real and symbolic cosmos is added to the unity of cyclical time, agriculture and the seasons, and the linear time

Fig. 3. Categories of "nature" of the oasis.



of the flowing water; measured in a graduated scale. These are also associated with the ritual time in which the movement configures the universal direction.

It is usual to bring the categories of nature that make up the oasis into three levels (figs. 3, 8). Under the curtain of pinnate leaves, there is a level of fruit trees, pomegranates, oranges, figs, olive trees, almond trees, apricot trees; further down in well-delimited lots with narrow ditches of running water; a level of bushes, vegetables, wheat, legumes, henna and forage for animals, but also roses and fragrant flowers. The water channels divide the fields into defined units and divide the soil into quadrangular plantation enclosures. Elementary artifacts for sheltering tools and rest set up hierarchical and organized spaces so as not to invade the cultivated space; the fence and the entrance gate, in palm leaves or in pressed bricks mark the limit of ownership.

Drawing the shapes of the oasis the structure relationships between all the elements that participate in the composition of the space emerge; in particular, the relationships that are established between the forms of nature and the elementary forms of the anthropic transformations organized for the production of an essential system of sustenance.

The construction of the image of the oasis

Man thinks "at the same time by words and images" in literary descriptions the images are constructed by "accumulation" with the figure, instead, a "totality" is communicated [Friedman 2011, p. 12]. In the construction of the image of the oasis the description of those who have experienced the space has often anticipated figurative reproduction in solemn verbal expressions. Narration becomes imagination of a place and perception is independent of placement in space, but absolutely able to select elements and construct synthetic schemes for graphic transcription. Among the many there are three short narratives whose authors belong to different cultures.

Cesare Brandi describes the oasis of Zanzur in the journey to Sabratha, in Libya: "An oasis, it was the first I saw, I understood what it is. There are palm trees, thick enough like a pine forest, all about the same height, and underneath there is nothing, or barely, between the trees, almost wild olive trees. Then, from time to time, wells, and water" [Brandi 1990, p. 18].

André Gide walks among the gardens of the Biskra oasis in Algeria: "beyond the walls palm trees rise [...] it was a place

full of shadow and light, quiet, which seemed to be sheltered from the weather [...] the murmur of flowing water, quenches the plants and escapes from tree to tree [...] the water distributed with prudence and parsimony, satisfies the thirst of the plants, then is immediately withdrawn [...] to the feet of each palm is dug a narrow pit that collects water to quench the tree an ingenious system of locks regulates the water [...] those gardens were all the same; and yet each was different from the other" [Gide 1999, p. 34, 35].

Isabelle Eberhardt, stays in the oasis Zenaga city-oasis, today, on the border between Morocco and Algeria: "the palm grove of Zenaga made its immense wave flow, swayed, the Djorf came crashing [...] the compact tops of the dates palms took on the colors of light blue velvet in which silvery reflections glided [...] As I descended the wall of date palms rose, rustling and gradually hiding the light of the horizon. Below, under the blue shade of the palm grove a *segua* flowed over the moss. The gardens displayed the luxury of their bluish greens. Of their golden greens [...] and very close they opened delicious paths, full of shade and coolness. Under the arched palms of the fig trees they leaned towards the light [...] to which the reddish leaves of the vineyard were mixed next to those of the pomegranates and peach trees [...] a delicious penumbra implements the lines and colors in that labyrinth of streets without dwellings" [Eberhardt 1998, p. 133, 134].

Literary descriptions and travel impressions load the landscape of objectuality and make it recognized as a figure, it is in this sense that they were paradigmatic for the graphic representation of the oasis. Returning the narrative reality to a figurative reality was one of the main phases of the search for a method of representation conceived as a tool for knowledge and analysis of space.

Representation of the oasis

The image of the oasis is built between the space of the desert, in which there is no presence of stratified signs but is configured as a natural absolute, and the fluid and symbolic space of vegetation that is defined as a figure in comparison to the surrounding .

From this, two modes of perception derive. Seen from the desert, the oasis of Nefta is a cohesive and structured unit that defines an area opposed to the medina, a compact city of land, and to the Chott el Jerid, a white expanse of salt. It is the limit of a boundless horizon.

From the inside we can see visual fields defined by twisting frames, circumscribed observation points, contiguous environments of scenes in which the elements are repeated in their hierarchical and orderly disposition.

In a historical time of modification of the tools of representation and seduction towards techniques of reproduction and manipulation of images, mediation choices were necessary between exaggerated realistic representations, given by primitive rendering software, digital collage techniques, mediation of images photographic and graphic abstraction processes of the sign, in order to render the vision systems of the vegetal landscape graphically unitary.

The knowledge of the oasis starts from the homogeneous system that is structured in the repetition of the elements of which it is composed and which generates a figurative unit given by clearly structured parts. The strict order is lead by the hierarchy of the compositive laws of the productive space, by the configuration of the irrigation channels, by the variation of the shaded areas, by the religious reasons that regulate the daily actions of the Muslim fellah. The representation of the Oasian space implies, among other things, the decoding of the allegories that derive from the symbolic narration of the elements: the fence encloses the private area and isolates it from the impure

world; the water that flows in the canals is a symbol of life; every species of tree evokes its symbolic meaning, in Genesis and in the Koran, of an element that belongs to the real world and to the religious world; the palm connects the earth to the sky and is the symbol of union between the terrestrial world and the divine world.

In the representation three main figures appear; they merge into a single homogeneous system and which in turn become paradigmatic of the representation of wider extensions.

The water traces overwritten on the ground delimited the fields and draw a network of equivalent quadrilaterals, depending on the lift of the water. Soil is subdivided into a geometric grid that acts as a control and measurement scheme for the organization of space (fig 4a). Geometry is not the result of a theoretical concept but imposes itself as a perennial necessity of agricultural activity, as an indispensable tool for the survival of the oasis. The fruit trees, placed inside the fields, without an apparent order, materialize the symbolic space of Eden and the directional space towards the global religious center (fig. 4b). The shelters, made of palm leaves and set up with benches and carpets, are the resting and prayer points, they are often placed near the entrance so as not to occupy the fertile space. The palms are arranged at the edges of the

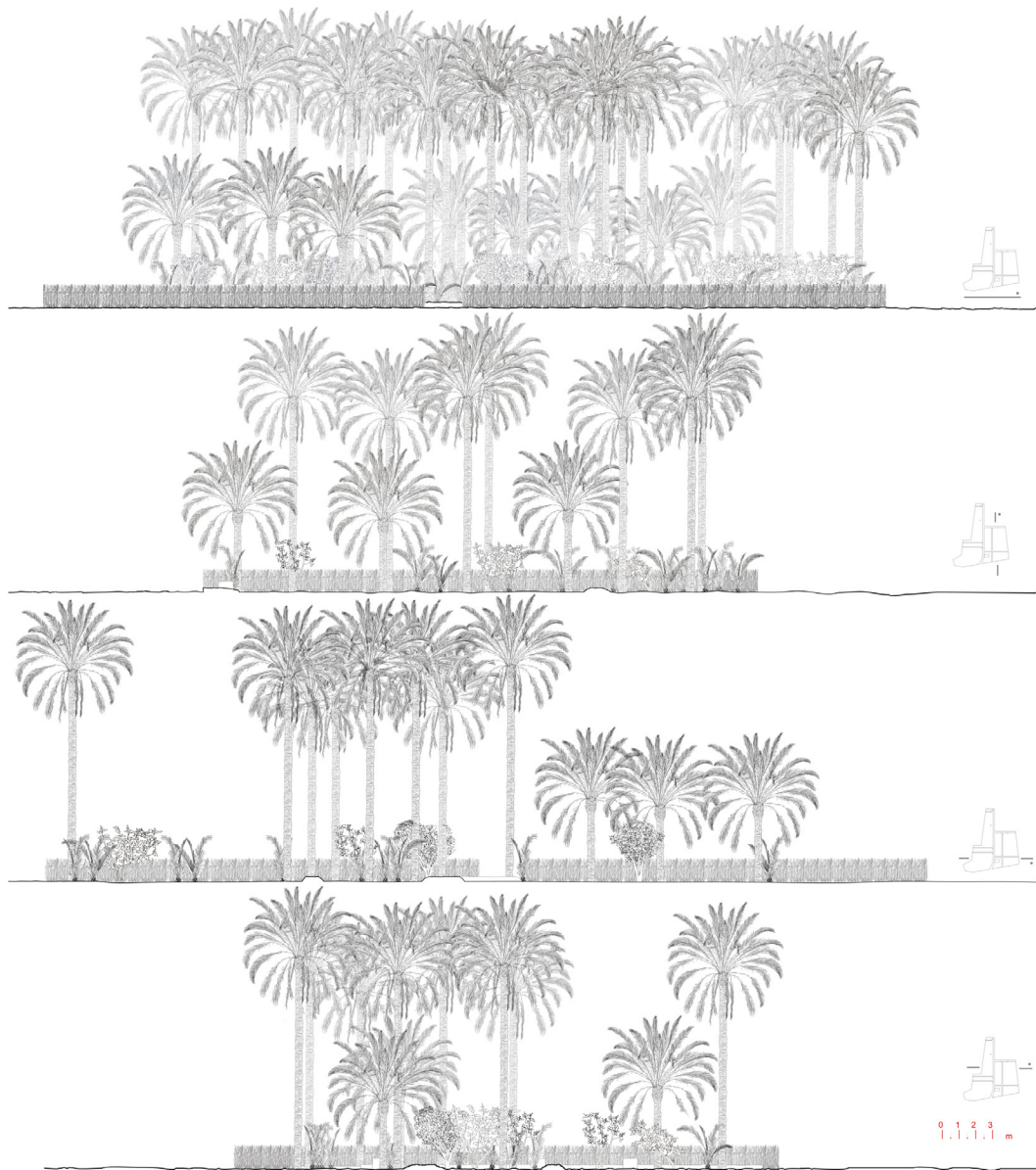
Fig. 4. Plan of a compartment of the oasis of Nefta: a) ground level, b) fruit trees level, c) palm trees level; (graphic elaboration by M. Comisso, D. D'Agostino, A. Malfitano).



Fig. 5. Section of a compartment of the oasis of Nefta (graphic elaboration by M. Comisso, D. D'Agostino, A. Malfitano).



Fig. 6. Section of a compartment of the oasis of Nefta (graphic elaboration by M. R. Caniglia, M. T. Capone, M. Covello, C. Lacapria).



fields, at the useful distance so that the foliage does not overlap but are tangent to each other by filtering the sun's rays (fig. 4c).

The recording of the measurements and the transcription in figurative codes in which, the sign is the main referent, has highlighted the geometric organization and the spatial relationships of the palm garden. The subdivision into compartments for the survey made it possible to facilitate the measurement operations and to highlight the formal and symbolic characters of each cultivated garden.

The representation of the section depicts horizontal bands divided into themes: the strip of soil and cereals, the strip of fruit trees, the fence and the huts, and the strip of palm leaves (figs. 5, 6). Each strip seems to be independent of each other, each element, each tree drawn seems to take on a main configuration. It is in the spelling of the sign, in the homogeneity, in the thickening and thinning of the line that the space generated by these absolute forms is configured. The thick line of land follows the modeling of the soil in the succession of canals, paths, and the field of the trees. The ground level is also that of small cereal shrubs, henna and roses that cover the fields and color them in seasonal alternations.

In the second strip, the fence of palm leaves becomes background or front curtain and indicates from time to time the limit between internal (*al-harâm*) and external (*al halâl*), the accessible and the inaccessible, the sacred and the profane .

Inside the fence and under the palm roof there are the fruit trees, which preserve the canonical structure of their species in which the stem, the branches and leaves outline the general profile of the silhouette [Maestri 2009, p. 113]. The fruit trees drawn, stable in their configuration, return in a proportional schema of between height and width, the formal balance between its different parts. The linear traits define the radial branching around the stem and a texture of more or less dense signs and textures makes up the sparse or thick zonal masses of the foliage. "The particular shape of a trunk, a latent geometry found in many leaves, even the choice of point of view become secondary facts [...] what has value is to capture that special sensation, that poetic effect" [Maestri 2009, p. 63] in which the system of signs is able to translate the image of reality. The tree (fig. 7) is drawn starting from a process of interpretation and selection of the salient aspects manifested in its bearing, in this way the choice of position has become the primary condition capable of highlighting, in the graphic

Fig. 7. The drawing of the trees.

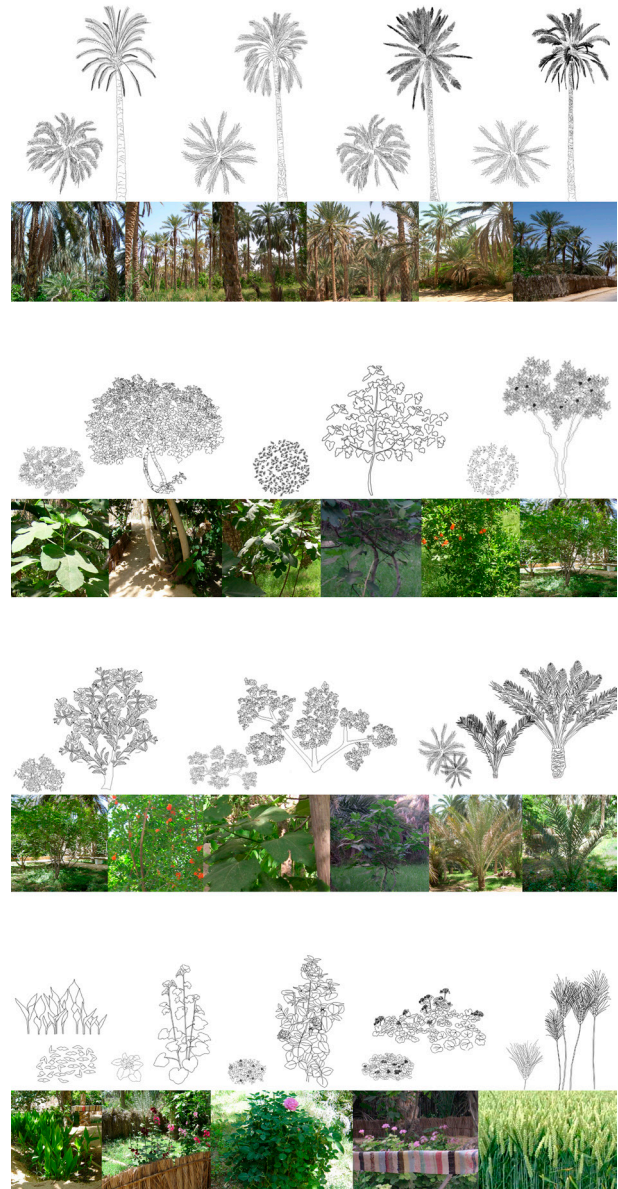


Fig. 8. Three-dimensional processing: homogeneous levels deconstruction: (graphic elaboration by M. R. Caniglia, M. T. Capone, M. Covello, C. Lacapria).



synthesis, the characters of the tree and the characters of space configuration.

In the third band, the tall palms turn the foliage towards the prevailing winds; each palm has been represented with the gait that highlights the sinuous movement of the stem and of the foliage stimulated by the wind.

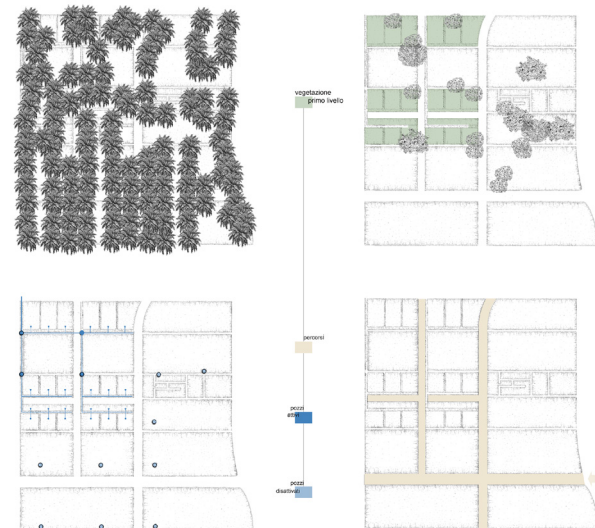
The figurative value of the oasis is thus realized in the drawing of each individual tree and in particular the palm that is its archetype, the fundamental form of the figurative structure of space.

Knowledge of the oasis takes place from interior; that is to say, within the boundaries of the fluid, delimited, defined, fenced space. The representation of this interior materializes in the transcription of information whose data has been discretized in space analysis models.

The first phase of knowledge, perception, tends to assimilate a homogeneous but complex continuum, a vegetal mass that becomes a single defined and balanced system. It is a phase of description, in which the graphic transcription is the result of the syncretism of modes and codes of representation.

In the second phase, of interpretation and analysis, a deconstruction of the space is carried out and the complex system is broken down into simpler units, in which to investigate the signs and grasp the identity of the parts.

Fig. 9. Configuration of the productive space for thematic areas (graphic elaboration by G. Cannizzaro, G. Tebala).



The deconstruction operation allows to separate the elements into homogeneous categories and to implement reading levels that lead to the interpretation and verification of the configuration of the vegetal space.

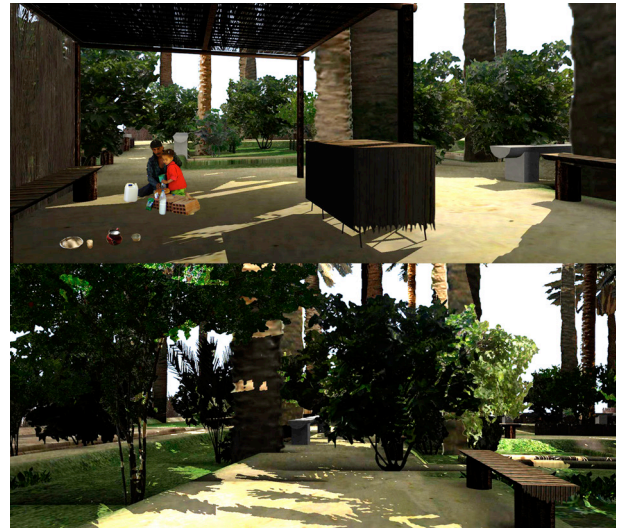
The decostruction into layers, in which similar thematic units are grouped, combines the knowledge phase with the conceptual status capable of adding semantic value to the construction of the image (fig.8). Categorizing the homogeneous configuration of the oasis by themes by producing synthetic and selective schemes of the three levels of vegetation, the boundary between them and the spatial relationships they produce. Not least they show the stratifications of landscape in which the anthropic categories are opposed to the absolute natural of the desert.

The possibility of manipulating digital images together with the ancient system of photomontage has brought an evolution in the representation of the landscape in which the transposition of place and scale prefigures scenarios in which the tree regains its formal configuration and stimulates the imaginary towards real ambience. The techniques of photomontage and render overcome, in a certain sense, the disciplinary barriers and enter into the field other disciplines of vision, including the narration of places, in a process in which the temporal variation is highlighted (figs. 10, 11).

Fig. 10. Three-dimensional processing with the render technique (graphic elaboration by M. Comisso, D. D'Agostino, A. Malfitano).



Fig. 11. Three-dimensional processing with the photomontage technique (graphic elaboration by grafica di M. R. Caniglia, M. T. Capone, M. Covello, C. Lacapria).



The renders tend to cancel the distance between reality and its figuration and the three-dimensional space is reported on the flat surface in a dialectical context that replicates or simulates the real space above all, in the material and metric connotation [di Luggo, Zerlenga, Pascariello 2016]. In the dissolution of the classical models of observation, perception is no longer given by solicitations dependent on the real space but by superimposition of visual levels, textures that filter reality and highlight, from time to time, different aspects.

Conclusion

The landscape of the oasis is a composition of natural elements, soil, water, vegetation whose combination transforms the place into artificial nature. The eternal debate between natural architecture and architected nature. The landscape is strongly characterized by the anthropic intervention in which water, knowledge of agricultural techniques and work overwrite the arid desert soil with signs capable of characterizing the formal aspect of the place and compiling the plot of memory.

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The oasis is therefore the product of man's transformative efforts, the union between two landscapes "whose being material and aesthetic is the result of a production process in which those that were previously simple things of nature become aesthetic objects" [Gregotti 1990, p. 2].

It is really on the aesthetic perception of immersion in an interior space, which limits the visual field in relationship to the boundless external panorama, that the image of the oasis is constructed. We move from a wide perspective to a vision through fragments in which the relationship with the space full of elements refers minde to the vast surrounding landscape.

Outside "from the paths of the palm grove there is always a last wall, a last hedge and then, suddenly nothing but the space in front of you, where you have to dive, which you can no longer refuse, even if turning away, we will see again, very close in the shadow outlined by date palms, blue and laughing shapes: so we will not turn" [Monod 2002, p. 17].

*The survey of the Nefta oasis was carried out between 2008 and 2010 with the students of the Course of Survey and Representation of the Territory and the Environment (Final Synthesis Workshop of the Mediterranean City) conducted by prof. Massimo Giovannini with Marinella Arena and Paola Raffa.

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