

## TECHNOLOGY AND ARCHITECTURE

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### I. INTRODUCTION

The term Technology(ies) is considered as the study of techniques that characterise a certain state of civilisation or as the group of terms from an art or technique, the study of the technical procedures (utensils, materials, etc) in their relation with the development of a civilisation<sup>1</sup>. And technique derives from the Greek word *technikon* indicating that which belongs to *technè*. From the early Greek period this term is a synonym of *epestimè* which means to watch over something and to understand it<sup>2</sup>. In ancient times technique meant the set of proceedings in a profession or art, coded and transmissible to help obtain an effect which which was considered useful. But in modern philosophy, technique evokes a set of proceedings inferred from scientific knowledge that allow the latter's applicability. More specifically and in aesthetic terms it is a set of proceedings relating to a given art form or artist. Therefore, *technè* means to know oneself in the act of producing, to know as acknowledgement and knowledge, according to Greek experience, regarding the act of opening up, of making manifest what is given as present. It does not mean to fabricate, to manipulate or to work, but to place, to make, to rise, bringing it here, to the obvious, that which was formerly given as present. *Technè* is not the concept of making, but the concept of knowledge. As the beginning of knowledge, technique offers the possibility and the demand for a specific development of knowledge while at the same time related science emerges and develops<sup>3</sup>. Anything can be manifested, made accessible and available.

As to the methods relating to each science, epistemology can be applied by scientists, i.e. creators who focus on man in his different dimensions (historic, cultural, social and special...) and, with total freedom in relation to every assumption. This sets the foundations of thinking, a backdrop for truth, on the process of creating/building the work for the human being. A *backdrop* against which things are proposed, and also a backdrop on how things have been presented, must be presented and should be presented. But, inside this backdrop several questions remain unanswered about the essence of space and time, about the essence of movement and strength, about the essence of body and matter. Different causes produce different effects, but the same causes also produce different effects. They depend upon the foundation of the truth in which they are produced and which they integrate – *the context*. Everything depends on the way the human being is placed within the strategy of architectural composition. The importance assigned to him, not as a goal in itself, but as a process in the creation of the architectural work, as an integral part in defining the spatial matter. Everything depends on the position in and the foundation of the relationship between that which is manufactured and that which is natural in the world.

**It becomes pertinent to raise the following questions:** How has society humanised nature – architecture and art? What has been the architect's basic position regarding the world that he is changing (what are the properties of architectural creation for the human being)? Why have people become technological gods and moral devils, scientific super-heroes and aesthetic idiots unable to understand each other?

Specific questions about specific places seem to be given answers which reflect a lack of specific knowledge and a corresponding independent practice that is in opposition to the actual place. They reflect a way of functioning which is based on a lack of knowledge of the real needs which have lead to these questions being asked. They reveal a universalist attitude of abstraction towards problems without acknowledging the varying inherent character in things. They reflect an abstract, superficial and generic vision of things, with a differentiation drawn between what is constructed, what is natural and what is human. There is no inherent point of view to relate all things and provide answers. The solutions presented come from functioning models and methods that do not stem from existence or any specific knowledge of things, but from a partial vision which leads to partial answers to specific problems relating to place and space.

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<sup>1</sup> Mautner, Thomas, *The Penguin Dictionary of Philosophy*, Thomas Mauntner, 1996; Port. Trad.: *Dicionário de Filosofia*, Lexis 70.

<sup>2</sup> Durozoi, G., Roussel, A., *Dictionnaire de Philosophie*, Editions Nathan, Paris, 1987; Tradução Portuguesa: *Dicionário de Filosofia*, Porto Editora, 2000.

<sup>3</sup> Heidegger, Martin, *Langue de Tradition et Langue Technique*; Tradução Portuguesa: *Língua de Tradição e Língua de Técnica*, ed. Vega, 2.a Edição, 1999.

There is a generalised tendency for exaggeration or for neglect, not because civilisation develops inexorably in this way, but because it is based on a philosophy (*not a way of making*) grounded on (ethical, ontological, aesthetic and moral), points of view that are not true. The balance has been disturbed and its dynamic force has not yet been recovered in order to instigate creativity and freedom in such a way that humanity could bloom. The organic and creative, as the mechanical and automatic, exist in all manifestations of human life. Today there is a high level of dehumanisation in the way society feels, thinks and makes. Value is attributed merely to a part of the environment, to a process and function, only to one aspect of human personality. 'This part will never be able to replace the whole, regardless of how widened and stimulated it is'<sup>4</sup>. Constructing is a tectonic act which results from a junction of relationships between things, the natural, the constructed, the human being, a junction around which a building emerges as a presence in its own right. These are articulated junctions linked together in a constructive, spatial, functional and aesthetic articulation with manifested and ongoing (natural, constructed, human) existence, in opposition to a practice of mere creation of consumer objects, a practice that is not based on knowledge but rather on lending access to things and to reality. This is based on a superficial approach to things and represents a formalist concept of space and technology, instead of a technique as a way of connecting knowledge which is at the origin of space creation, the formal application of abstract technologies as a response to that which is specific.

**Baudrillard states:** Today the logic of merchandising has been generalised, and it regulates not only systems of work and material products, but the whole culture, sexuality, human relations as well as ghosts and individual pulsions. (...) Only the emission and reception of signs occur, removing the individual being from the inside of this combination and this calculation of symbols... the consumer individual never faces his own needs, in the same way that he never faces producer of his work; he never confronts his own image either: it is the image of the symbols he organises. There is no more transcendence, the goal, the objective: the characteristic of such a society is the lack of reflection and perspective on itself. Therefore, as there is no ontological separation, but a logical link between signifier and signified, there is no ontological separation either between the being and its double (the shadow, the soul, the ideal) divine or diabolical.<sup>5</sup>

The post-modern vision of architecture has served and been served by this development model, technique at the service of formal exaggeration. It is important to review this basic position, by questioning the vision of this technique, and by involving technique in the process of creating the work next to the human being, in a dialogue with the process of existence. It is pertinent to highlight the importance of technique as part of a methodological process of space research at the service of the place and the human being, and not as a set of abstract techniques to be applied in a form and space. Space and matter are as one. Space is a material reality and its identity includes matter, which is built using technique. Technique is a social function which defines matter from within space.

**Utility, the value of useful – what is the useful today?** Technological and technocratic society has raised irrepressible wishes, creating new social hierarchies and imposing new needs. This new relationship has transformed unequivocally the social and cultural system and so a new way of facing the useful was born. In the logic of symbols and signs, objects stop being connected to any defined function or need, and start to respond to a different wish, of a social and cultural order. It is used as a utensil and as an element of comfort and prestige. To speak clearly, men of opulence are not surrounded, as they used to be, by other men, but by objects. The set of social relationships is not so much a bond with their peers, according to an ascending curve in a chart, as it is the reception and manipulation of goods and messages, from a complex household organisation with dozens of technical slaves, to urban furniture and all the material machinery of communications and other professional activities...<sup>6</sup> This scientific dimension or this interdependency between science and technology has been increasing, through the totality and intensity of its effects, through a universal expansion and through the speed of renovation. It has been imposing on society's vital rhythm a kind of acceleration that inevitably produces a rupture within that rhythm and in new adaptations demanded on people's functional habits and on the values that have so far governed their human sense.

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<sup>4</sup> Mumford, Lewis, *Art and Technics*, Columbia University Press, 1952, Tradução Portuguesa: *Arte e Técnica*, Edições 70, Arte e Comunicação, Lisboa, 2001.

<sup>5</sup> Baudrillard, Jean, *La Société de Consommation*, Editions Planète ; Tradução Portuguesa : *A Sociedade de Consumo*, Edições 70, Lisboa 1995.

<sup>6</sup> Baudrillard, Jean, *La Société de Consommation*, Editions Planète ; Tradução Portuguesa : *A Sociedade de Consumo*, Edições 70, Lisboa 1995, p. 82.

**Baudrillard states:** Of capital importance and revealed to us in a dramatic way is the fact that the alienated man does not merely appear as a diminished man, impoverished, but intact in his essence – showing himself still as a man turned inside out, transformed into his own enemy and rebelling against himself. It is a process that in another plan is described by Freud as repression». <sup>7</sup> Over recent years there has been a loss in development of inner life and the inner well being, and with it the loss of *animus* to face the meaning of life, with people finding themselves absorbed by the process of mechanisation, a paralysis on their personalities, resigned to mechanical needs, turned into passive subjects. In the meantime, this easy way of creating large and over-the-top works has been transforming the character of things, with a decreasing interest in knowing the essence of things, or in understanding the universal essence in everything. As Heidegger says, ‘the artwork is about the restitution of the universal essence of things.’ <sup>8</sup> Based on the knowledge of this essence, the creator puts into motion the truth and establishes his inhabiting. But how can this truth be put into the artwork?

This is accomplished through the way in which the artwork is made, i.e. it is this essential truth which dictates the way in which the artist establishes the articulated junction of everything as a way to build the work, and in Heidegger’s approach ‘art is the turning-into-artwork of truth. This is where man creates his inhabiting, a clearing.’ <sup>9</sup> This clearing will illuminate, i.e. from this knowledge of existence the creator can develop a way of building which takes into consideration the essence of things and he can understand that which is truly useful in every case (artwork vs place). This can indeed be the real, intense and deep artwork which will illuminate that creative duration in every place. It is from this clearing vision that the sense of desire is acquired (libido). This *animus* which is necessary for creating life, the ability to fantasize and dream freely the sense of life has been lost. People have allowed themselves to be subjugated by technological processes (the world of technique) and by this fabricated ideal of perfection, so seemingly perfect that it displaces people in this constructed world, unable to penetrate human personality, creating only an illusion of safety.

Materialism is the easy success of today’s consumer society. This is a one dimensional vision of humanity facing immediately practical and material needs. People are from life and the system they constituted is materialising. Real life may arguably no longer be considered a purpose. The progress of abstract science with its accuracy can lead to a positivist vision in which the exacerbation of the process is limited by the manipulation of life. Not even science may violate life. The contemporary creator is subjugated by the universal tendency which leads the contemporary man to model the world in proportion to its renewed power to produce. How can this model of ideation be rebalanced? The solution would be to elect as an ideation the autonomy of the human spirit, its creativity, its naturalness, its freedom and its natural will. An artwork becomes *entity-work* <sup>10</sup> through the act of creating, and it is this entity-work, as clearing, which man establishes as his (present and future) inhabiting and where he develops his free and creative spirit. Tomorrow’s world is not more predictable than future arts or sciences. However, no activity should ignore certain attitudes which rule the present era, raising consciousness is needed.

On purpose there is: with something, leave to end for something. The relationship of “to...for” must be indicated by the term remission. Let’s not then decouple the term what-for-to (womit) from the purpose – the hammer – that-for-what (wobei) – the hammering. But the purpose of a utensil can, for their part, subscribe be part of another purpose – the hammer serves to hammer nails, to build a shelter. At the end of the day, and the concern is always a “take into account” the purposes lead to a to-what (wozu) that is no longer a relative on-hand but a relative whom belongs to the world as their ontological Constitution: Dasein. <sup>11</sup> Architecture is the most direct way of causing this transformation owing to its technical dimension. In the architect society has found a man who extends his organic functions to his outer circle, owing to a permanent material structuring of his surroundings, through the use of tools and instruments which record the profile of his inventive adaptation to things. Since this adaptation is ‘inseparable from certain behaviours’ which define the social structuring of his environment, man’s emergence in nature can be doubly assessed: A – according his domination of the ‘the natural world’ – and so the technique appears in work, through the dialogue between hand and brain, as a ‘mediator in the material circulation between nature and man’; B – and (assessed) according to the changes in

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<sup>7</sup> Ibidem, p.103.

<sup>8</sup> Heidegger, Martin, *Holzwege*, Vittorio Klostermann, Frankfurt, 1977; Port. Trad.: *Caminhos de Floresta*, Fundação Calouste Gulbenkian, 2012, p. 32. 415

<sup>9</sup> Ibidem, p. 36.

<sup>10</sup> Ibidem.

<sup>11</sup> Franck, Didier, Heidegger et le Problème de L’Espace, Port. Trad. : Heidegger e o Problema do Espaço, Instituto Piaget, p. 60.

the human world itself, as in objectifying its technical activity it will objectify itself, according to different levels of social maturation. This is a proximity to the technical dimension of man, understood as a (material and psychological) *artificial means of acting* which man (as a bio- psycho-sociological structure) has invented, has used and has transmitted since pre-historical times.<sup>12</sup>

The new structures do not annul the ancient ones; they replace them, provide other means of access and originate new systems for the integration of sensations. Technique stimulates through the possibility of operating the biological and psychological modification of human behaviour and thus, by converting his abilities into powers for world domination – a world in which he intends, paradoxically, to produce, destroy, safeguard, organise, communicate and inform. To what degree will this rupture make man's own responsibility critical, since man's *logos* is compromised by his *technological* relationship with his works?

'Waving a universal mathematics perspective is unhelpful as experience cannot be sacrificed to the demands of a system'.<sup>13</sup> Architecture offers a more direct and adjusted approach to a new psychological and active experience of the external and internal world completely transformed by technique. 'When true innovation takes place in man's ability to transform matter, a corresponding level of innovation must also occur in his figurative thinking'.<sup>14</sup> And vice-versa. The most important fact is that architecture is tempered by creative evolution. The greatest science with the highest level of awareness. In this sense, the value of the useful acquires another dimension: the usefulness of comfort, of rooting, of the meaning of the Self, so that the 'I' can be himself and be able to monopolise the other. This gives the 'I' the dimension of space and time to feel, to think and to act. Through the possibility of desire (libido), this value gives the will of being, of possessing. Today, the useful is comfort and protection, but also a clearing which illuminates and shows the way into other ways of creating and this elevates the world and makes it emerge from the material space. Here, the technique, as intended – the dimension of matter – through experience, gives comfort and protection, roots people, gives them the notion and lends them the capacity of immanence.

We will introduce here the Quinta da Malagueira Project<sup>15</sup> by Siza Vieira which, in our opinion, was flawless in defining the technique, whether constructive or material. The definition of such technique(s) has been created within the methodological process of performing when defining space. It is the result of a dialogue between tradition and innovation, culture and nature, the past and the future. This is the framework which needs to be given to this Pure Science.

**As stated by Nuno Portas regarding Siza:** In the works documented, the best moments in each are inseparable from the strongly expressive modelling of plans or private pieces. Conversely, and this is in the border between the expressions, these pieces owe their meaning to the specific space in which they participate, expression that grasps the nature of the materials – concrete, masonry, wood or iron – to ensure a fusion of the whole<sup>16</sup>.

**How to apply usefulness to Quinta da Malagueira? :** Siza extrapolates the sense of the useful to that place and to those human beings. In this case, the sense of useful is unique, it arguably does not apply to any other project. The way in which Siza develops technical and constructive solutions is completely different, because the place was different and there were other people, so the method was also different. He understands the usefulness of the technique at the service of the place, the human being, the idea of the project. The usefulness enters into the discussion of the method, is part of the method. The method does not follow the technique. Siza investigates the usefulness of working techniques and materials available in the region that will be developed

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<sup>12</sup> Matos, Vítor, *A Dimensão Técnica do Homem*, separata da revista *O Tempo e o Modo*, N.o 34/35, Janeiro-Feveiro de 1996, Lisboa, 1996. Adapted.

<sup>13</sup> Bergson, Henri, *L' Evolution Créatrice*, Paris 1907; Trad. Portuguesa: *A Evolução Criadora*, Edições 70.

<sup>14</sup> Francastel, Pierre, *Arte e Técnica aux XIX<sup>e</sup> et XX<sup>e</sup> Siècles*, Paris, éd. de Minuit, 1968; trad. Portuguese: *Arte e Técnica nos séculos XIX e XX*, Edição «Livros do Brasil» Lisboa, Coleção Vida e Cultura, Lisboa, Janeiro de 2000, p. 153, Adapted.

<sup>15</sup> Quinta da Malagueira was part of SAAL, Serviço de Apoio Ambulatório Local (Local Ambulatory Support Service), was created in 1974 to provide support to populations lodged in precarious conditions. It arose as a decentralised service which started to build new houses and infrastructures and to offer better living conditions with help from various projects and technical support provided by brigades working in decaying neighbourhoods.

<sup>16</sup> Portas, Nuno, *Arquitetura(s) – História, e Crítica, Ensino e Profissão*, FAUP Publicações, 2005, p. 117.

and implemented by the inhabitants (this is self-construction) and adjusts the project. The project is interconnected and inter-dependent of the possibility of people building their houses with the means and materials from the region, and the whole technique is designed with this existential utility. The project reveals the technique and the usefulness in adapting to the comfort and the possibility of finding a solution that allows the development of houses in the future. It also reveals the technical as comfort and the way in which the process identifies with the human-being, present and future – the sense of ownership and acceptance of life. The Useful thought as a need to respond in that place and to those people, allowing the desired and required comfort, in particular, that life lived, and not the other way round, in which the solution of the project would be dependent on the global and abstract technology and people would adapt to the final work. Today, the teaching of architecture in general trains technicians who see the usefulness of the technique and apply the technique only in a technical sense which is abstract and global. It is necessary for the teaching of architecture to reverse the process with all the variety available today. It is necessary for there to be a reappraisal of how useful technique is (utilitas<sup>17</sup>) applied to new ways of thinking and creating and to the character of developing matter from within the space.

## II. APPLIED SCIENCES

Matter is not indifferent as a stimulator of sensibility. It has *quália* that stimulate sensibility. The author's choices regarding matter are fundamental, because they are a group of sensitive qualities that comprehend the *natural values of matter* and embody the author's values, the values of technique expertise and sensitive values. The complete object goes straight to people's sensibility and corresponds to the beginning of aesthetic emotion. It is a material structure (the way matter reveals the artist's thoughts) and a conceptual structure. Matter is a phenomenon which allows an approach to works as products defining and explaining nature and specific existing conditions. It is sensitive to experience and to the production of pleasure and empathy – *einführung*, a phenomenological matter. It produces distortions (human time, corresponding to people's temporal living and to an anticipated time). 'Technique relates to innovation and art relates to the value of living and the value of life'<sup>18</sup>. It is important, in this case, to interweave them into the method, to work with the other. A new (technological) formalisation in the seduction of the human. Construction and technical creation of man find their parallel in organic activities presented by another living being. A new dynamics in the process controlling the process itself, transforming technology into poetry. This is the poetics of technology and the mastery of the whole process. The sensual value of the object and the feeling and sensations generated by architecture allowing sensations that have not yet been awakened. This is technology seducing the human.

Going back to our example, the building technique used in the house at Quinta da Malagueira was thought of along these lines, namely the way in which this technique helped find constructive solutions and the most economical way to respond to the local people. This use of technique as affectivity, of aesthetic emotion, of inner joy, of the quest for immanence is incompatible with the material techniques that nauseate life, through which technique has killed mystique, in that body immeasurably magnified in which the soul no longer has a place. Here technique serves art and architecture in divine sense of the human, ecstasies through the authentic work. Technique is a specific and anthropological notion used in constructing the spatial and material reality; it is a specific tectonic act in the poetical construction of that which is real. As stated by Frampton:

Despite our highly secularized techno-scientific age, these polarities still largely constitute the experiential limits of our lives. It is arguable that the practice of architecture is impoverished to the extent that we fail to recognize these transcultural values and the way in which they are latent in all structural form. Indeed, these forms may serve to remind us, after Heidegger, that inanimate objects may also evoke 'being', and that through this analogy to our own corpus, the body of a building may be perceived as though it were literally a physique.<sup>19</sup>

An inversion of values is suggested, taking the technique to another dimension: the issue should not be in respect of technology, as it is an issue of architecture's materiality – the art of constructing according to the matter. Therefore and inverting the principles once again: it should not be from technology to architecture, but from architecture to technology – the truth of architecture. Taking into account that technique is the way of doing and technology is a set of rules that comes from technique and not from architecture, the natural truth of architecture will be arrived at, and so will the aesthetics of technique: What is the aesthetic importance of technology? What is the importance of the aesthetics of the matter? Every matter / material has a means of appropriation of the body and each force (the notion of geophilosophy is present again). The spatial matter

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<sup>17</sup> The Vitruvius Triade (utilitas, firmitas, venustas).

<sup>18</sup> Damásio, António, *O sentimento de Si*, Europa América, 2000.

<sup>19</sup> Frampton, Kenneth, *Rappel à L'ordre. The case for the tectonic*, Design 60, n. 3-4, 1990, p. 19-25.

needs to set in relation to the pragmatic participative forces of its users and forces that come from outside, from the place that will occupy and be occupied by this matter, leading to an eternal force, a matter proper, to construct and be constructed in time and space. Proposing this inversion does not imply the use of technique as a pre-conceived idea, but as a way of making, of thinking, of feeling and of being. Taking Quinta da Malagueira once again as an example, the method for developing the project idea (tectonics) has emerged from the investigative and public participation process. Its spatiality and material reality have in turn come from this method, without any separation, fused into one single notion, i.e. a constructed reality. The latter contains all existing reality (which in some way has been the engine behind the process): technology linked to construction was conditioned by local materials and by the local workforce, since in many instances the actual residents have built their own houses, and also the disposition of the houses around a patio for solar protection. All of this has been a chain reaction linked to the method used, the narrative detail, which has led to the ultimate solution.

This is a transcendental existence, a way of life, not a personal thing; it is the inventiveness of a possibility of life, an ethical and an aesthetic approach, as well as an ontological and moral one. This is work as a nomad, it is human truth as a product of judgment. The product is matter, something which closes, identifies and qualifies the architectonic space which confers a sensitive and human quality to it. This matter is the product of a creative process and unique research that results in this monad, where there is no separation between space and matter. Just a life, a single density and a single work. This perspective of technique as matter allows the understanding of the sense of human experience and sensations as connected to the meaning of things, by the personalisation of the world and by the dynamic role performed by human nature and its transformation.

There is a double experience in the relation of the matter with the human and the place – the sensory experience of matter and body. The truth in the relationship with the place and with the inhabitant. The individual inhabits his house, his workplace, but also his city. The impersonal should not be repressed. The technical and the rational should, on the contrary, be integrated into that development in some other perspective of human life and of the service to human creation. And the contact is the *spatial matter*. Instead, it is about introducing the *material dimension* into an alternative perspective. This is not a technical (and commonly used) issue alone, but also a dimension which occurs during the research process – mental strategies – or even prior to it. Bringing technique to the same level of its meaning, prior to the *merely technological* issue, requires the relationship between matter and sensory experience, between matter and the human who *inhabits* and the landscape he will integrate and inhabit – the issue of thickness and density of *relationship with matter*.

The act of construction is a junction of architectural elements around a living poetics with a narrative around which it is possible to inhabit. This is not an abstract or aleatory junction, but one which is built from existence and to give meaning to existence. It is a tectonic junction (space, matter) with a spatially specific ontological experimentation in mind. It is a creative invention stemming from the place in order to inhabit the place. As Paul Valéry states, ‘art is intrinsically a constructive form’<sup>20</sup>. Departing from this statement, and transposing it to the specific context of architecture, it can be stated that matter, space and shape are built in a reciprocal truth, from sensing, thinking and acting. This *constructive form*, to which space and matter correspond, is something so *naturally true*, so *naively created*, that it appears even before existing. It is a pre-feeling that evolves into a feeling, translated and stated by an aesthetic category (a way of feeling and communicating life through value), which leads to a thought, a development, an investigation and to an action, a methodological realisation of a process and material construction.

This feeling is built from this useful overview of the technique, intertwined with the spirit of place, natural and built, and with its people, its history, its present and its future. Based on these premises, something is felt and something is revealed, the density of matter begins to be felt by its creator and begins to be revealed by the space that starts to be created. This is an idea that will appear on the environment that will be created, lived, where the material density that accompanies this environment and its technique produce this density. In the case of Quinta da Malagueira, the idea of home around a courtyard was emerging in order to offer protection from the climate; to create an environment of transition between the inside and the outside; to create warmth and privacy; to allow for the evolution of houses, among other things, which in conjunction with the relationship between history and the place, was giving rise to an idea of matter, thickness and technique. This was being felt.

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<sup>20</sup> Valéry, Paul, *Eupalinos ou L’Architecte*, 1921; Tradução portuguesa: *Eupalino ou o Arquitecto*, Fenda, Lisboa, 2009, p26.

**As Siza says in his interview:** So what moved the vernacular model of the courtyard house, which is not the only one in Alentejo, but it is too, is the one that is favourable to the budgetary restrictions and the creation of comfort, that is, the courtyard introduces a kind of transition; the climate in Alentejo is harsh, it can be very hot and very cold as it has large thermal variations, so that it is an area of transition and where they have planted trees, or what was recommended was vine, pergola. (...) The white wash, also has clearly something to do with Évora's climate [and] with its colour (...). But apart from that it is also a defence against the heat (...), aspects of economy and comfort. It also has to do with the size of the openings; there are holes in the wall and no large glass walls; it has to do with economy (...) with insulation, protection, and therefore affinities with the vernacular architecture appear, which in my opinion it has more to do with these constructive things than just joining vernacular architecture *tout court*, even though that also exists, with the data involved as well as the connection with this city, which was one of the objectives of the plan, was not to be made a dormitory but one thing in continuity with the city, because it was very close, and because there was an illegal neighbourhood, between the wall and the rest, and has to do with all this and more still, as you know nothing in architecture is because of this, it is for this, and for that and for another.<sup>21</sup>

This feeling, thinking and acting are built from research on Sense, Time, Place and Technologies. The result from this process is a true *monad*. It is the harmony resulting from a combination of all these elements, with no beginning or ending, perceivable through their *spatial-matter*. Contemporary architecture is so complex and technicist that it loses its true material nature. Current technology is a contingency of scientific evolution, but not a technique. It has become separated. In Vitruvius or Alberti's time, technique was to a degree the way of doing rather than contemporaneous technique. This once again brings into discussion the issue of strategies and creativity and the way of doing. Architectural creation cannot be regarded as mere technology or technical ingenuity. This would reduce art, and in this case architecture, to something trivial and lifeless. The capacity to create each work from a unique process represents a new human dimension – the capacity to go beyond the simple reaction to signs, to create beyond oneself and to create beyond and from human experience. Artistic creation, as Mumford states, 'causes inner transformations, it allows the internalising of the outer world and the exteriorising of the inner world'<sup>22</sup>. It perpetuates and evokes the essential experience of life and develops human society.

Taking into account Quinta da Malagueira, in addition to the housing, one of the referentials introduced was the aqueduct, a symbolic element which marks this housing development. But adding to the historical semantics which links it to the city, the aqueduct has a technical functionality: it conducts water and power and it offers a directional line connecting the various housing structures, connecting the inhabitants and creating the rhythm of the living/livable space. On the other hand, the technology used in the construction of this conduit represents a concern for the human dimension: the choice of plain materials, i.e. untreated concrete blocks, as they require no finishing treatment thus allowing their true identity to show through; they served the purpose and so beauty was achieved at minimum cost – the dialectics of the beautiful with the useful. The material / spatial truth.



Figure 148: Siza Vieira, Quinta da Malagueira Social Housing, View of the aqueduct. Source: <http://media.archinform.net/m/70033064.jpg> The concrete blocks are a simple material with a strong truthful presence, and provided an inexpensive solution for the aqueduct which has various axes in the configuration space that will be built. They have, for example, gelled together the housing structures which surround the aqueduct, allowing for an element with a very strong presence to give unity and continuity to the development,

<sup>21</sup> Extract from the interview with Álvaro Siza Vieira by António Oliveira in 2008. 425

<sup>22</sup> Mumford, Lewis, *Art and Technics*, Columbia University Press, 1952, Tradução Portuguesa: *Arte e Técnica*, Edições 70, Arte e Comunicação, Lisboa, 2001, p. 19.

with a well-defined rhythm. At the same level as the pavement, the aqueduct sets the pace through the presence of a portico which develops – it sets the pace for the entire development.

**As Siza explains in his interview:** Oh the viaduct, the viaduct, well, about my saying that there is a parallel between cars and pedestrians, one of the reasons for the viaduct is that I knew from the start that there would be no money for equipment/facilities, and therefore it was a vocation, it was a mass of suburbs, you know, and therefore I gave so much emphasis on pathways, in this case a covered route, but in general on the pathways, based on pathways that already existed before my intervention, and which was a very solid indication, as how people commuted to and from the city, and moved within, but an indication that it would have to be transformed to suit the new body built, but many paths alongside were walking paths and that was a very great support, because whenever I made a mistake in transformation, the error was immediately in sight, because people simply did not follow that way, it got corrected, so that there is a very great concern to respond to the natural route, which is the relations route with the outside, but also with the interior, but there is another reason as I knew that I would have no money, and to avoid the landscape of suburbs, I thought of a very strong element, I could introduce a different scale and thus end up with emptiness, and that is why I proposed to make the duct high.<sup>23</sup>



Figure 149: Siza Vieira, Quinta da Malagueira Social Housing, View of the aqueduct. Source: [http://www.ducciomalagamba.com/images\\_proyec/455/thumbnails/006\(2607\)-455\\_425x425.jpg](http://www.ducciomalagamba.com/images_proyec/455/thumbnails/006(2607)-455_425x425.jpg).

In Siza's case, the quest for this dialectics, for this material truth, is revealed through the reciprocity between thought and drawing. Drawing is the unconscious research and science; it reveals that which is not revealed to the author, who does not reveal it either or what he explains in another time. It is research, it is a way of thinking, investigating and doing. It is a way of inventing and living the constructed world. Drawing brings order to the world of architecture. Drawing invents space, a space. Space is not only what is seen, what is visible. Space also comprises the invisible. And drawing – an art of space rather than a strictly visual art – ventures into the space.<sup>24</sup> Experimental realisation of investigation, research, synthesis and interpretation allow a new understanding of inventing and living the constructed world. The reappropriation of the *inhabiting* is architectural creation through the deepening and specialisation of the methodological capacity of acting in the face of architectonic, social, cultural, environmental and urban phenomena. Also the capacity to learn the relationships between, on one side, man and architectural creations and on the other the architectural creation and their environment, as well as the need to relate architectural creations and spaces to each other according to the human needs and presence.

Theoretical, historical and valuing knowledge focussing on the artistic and architectural creation as well as the *urbanologica praxis*<sup>25</sup>. Searching his preoccupation with knowing man's biological and functional aspects, it is in their physical dimension and correlation with the dimension of spaces where man has developed his various activities (canon). It is important to master the methodologies of analysis and understanding of territorial

<sup>23</sup> Extract from the interview with Álvaro Siza Vieira by António Oliveira in 2008.

<sup>24</sup> Siza Vieira, Álvaro, *Imaginar Evidência*, Edições 70, 2009, p. 39.

<sup>25</sup> The idea of urban space which obeys a sensory logic, defined by the very nature of urban space through poetical and human needs.



phenomenology, their natural functioning and their functioning with man's intervention, likewise with mastering operating techniques of intervention and creation. The space of ingenuity and cognition. This creative presence occurs in Ecological, Urban, Architectural, Landscape, Human and Social systems. Architecture, in its visible presence, with its materiality, lends a face to things first and afterwards lends man his own view. The work, with its thingness, provides support to our habitual behaviour towards the work.<sup>26</sup>By opening a world, all things acquire their delay and haste, their distance and proximity, their amplitude and narrowness, their depth and consistency and also their gravity. So, as a spatial-material reality, the work has its own density, a matter which is *natural and truthful* to the work. As produced gravity and rising itself, the work opens up a *world* and lends it a permanence which dominates through its material density – *techné*.



Figure 150: Siza Vieira, Quinta da Malagueira Social Housing, View of the aqueduct. Source: [http://www.ducciomalagamba.com/images\\_proyec/455/thumbnails/007\(2592\)-455\\_425x425.jpg](http://www.ducciomalagamba.com/images_proyec/455/thumbnails/007(2592)-455_425x425.jpg).

On the other hand, architecture will be able to find new methods, new techniques, new materials for spatial organisation. Technique and technology are not at stake here as the issue is the way it is used. Technology may enter the processes of architectural composition but always as an auxiliary element and to serve ethical, aesthetic, moral and ontological principles. Always with an awareness that the space has sensitivity and the materials have spirit. There may be new methods of analysing that which is real (quantum methods of analysis or, in their intervention, composition diagrams between rhythms, intelligibility, fluidity), as instruments for research and for capturing new and varied data from existence, a way to enrich the process and to ensure the solution is widened, multifaceted, specific and in tune with the local rhythm. Architecture may come across materials which align with world transformation – the material structure. New energies and new materials may bring through their properties new material characteristics with lower costs and fewer means, and in turn new ways of doing and different ways of humanising spatial matter. Ethical and aesthetic parameters introduced by social and ecological remediation prevent the neutrality of technique. The being and technology. A solution could be in using quantum mechanics, the world of fractals, biotechnology and new technologies which could lead to the invention of new materials and new forms of energy. This would enable architecture to create new materials such as ceramic tiles as well as intelligent and ultra thin fabrics which could offer new sensory experiences. They could also offer *new materialities* such as more flexible materials through the use of disruptive technologies, or alternatively allow the obtainment of energy from differences in temperature. In this case, the essential question is not related to Siza as such, but the process and its intended purpose. There may be several influences, as the architect may be open to new techniques, but the motivation must be the same, the human being and the human being's place. The techniques serving a poetical vision of space are intertwined with the human being and with the place. Architecture must never lose the notion of man's natural dimension which *poetically, man inhabits*, and in which reality is created by imagination – the *ontologisation of the imaginary*. Here imagination is in the creation of the human being. The Latin motto 'ars sine scientia nihil est'

<sup>26</sup> Heidegger, Martin, *Der Ursprung des Kunstwerkes*, 1936; Port. Trad.: *A Origem da Obra de Arte*, Edições 70, 2010.

(art is nothing without science), could therefore be inverted into 'scientia sine ars nihil est' (science is nothing without art). However, a new ethical and moral attitude would be needed in the domain and use of technology as a technical issue through the way of doing (feel, think, act). A social and ecological crisis introduces ethical and aesthetic parameters which prevent technical neutrality.

**As Heidegger states:** The artwork is about restitution of the universal essence of things, of every thing. Matter and form represent man because they come into the being through their own making. It is important to know from where things come so that we can express and bring into full view the character of being a thing to things, the character of being a tool to tools and the character of being artwork to the artwork.<sup>27</sup>

This mastering may in turn lead to a transformation in the mastering of technique, as a rereading of the technological process, by readapting technology and technological processes to human life rather than adapting human life to technological processes. An adaptation to human personality, 'a human pattern, a human rhythm and a human purpose should transform the activities and processes of technique'<sup>28</sup>, a humanised technique, personalised and located topologically in a commitment and in a symbiosis resulting from the research process which leads to a human *idea* of architecture – the variable canon. This process is motivated by the incorporation of the human, the localisation of the human and in the personalisation of the human, in the sense of the immanence by the lived.

Technique as an instrument of human relation . The existing place is a habitable place, a plastic place, but also a place of hidden potentialities, waiting for a revealing look that comes from those elements, concealed but detectable. Technique without alienating the subject and against the separation of the human being, on the contrary, with the widening of the being with sentiment and as a thinker.



Figure 151: Siza Vieira, Quinta da Malagueira Social Housing, View of the aqueduct. Source: [http://www.ducciomalagamba.com/images\\_proyec/455/thumbnails/013\(2754\)-455\\_425x425.jpg](http://www.ducciomalagamba.com/images_proyec/455/thumbnails/013(2754)-455_425x425.jpg)

The dichotomy between space, structure, and building prevent the construction of the complete object. In this object there is no place for this separation. There is no separation between matter and space, only the space that is characterised by matter, a true *monad*. Technology reread in a new dimension, not merely as a shape of resolution of technical needs, but in the composition of space, of the *monad*. Siza has the ability to build spatial materials, to using space according to a material hierarchy which corresponds to precise functions: In the Quinta da Malagueira Social Housing, the cement blocks for the aqueduct, the red bricks for the processing stations, the white stucco houses, the marble for some of the public places. Siza executes these relationships between space, function, material, technology, place, economic and social conditions, rendered in a spatial reality to be lived, with a true identity.

**As Siza explains:** The construction of the infrastructure was very important, as it made it possible to configure the space from the beginning, and give a certain identity to the place and people. These aqueducts had to be

<sup>27</sup> Heidegger, Martin, *Holzwege*, Vittorio Klostermann, Frankfurt, 1977; Port. Trad.: *Caminhos de Floresta*, Fundação Calouste Gulbenkian, 2012, p. 36.

<sup>28</sup> Mumford, Lewis, *Art and Technics*, Columbia University Press, 1952, Tradução Portuguesa: *Arte e Técnica*, Edições 70, Arte e Comunicação, Lisboa, 2001, p.18.

cheap, or at least not as expensive as the normal infrastructures. A material was needed that could remain rough, visible. (...) Also I thought the contrast between the houses and infrastructures: an aesthetic option that evokes the contrast between stone and the white plastering of the old city.<sup>29</sup> But is it important to return to the issue discussed previously about architectural creation and economical means? Would it be possible to create architecture and build using the plainest and most economical material and means? Would it be possible to create architecture without it being used as a means of advertising individuals who wish to become famous? Architecture can be improved with more economical resources with the ultimate aim of providing the human being with a better living experience and with more spatial quality. A plain architectural work, expressing true architecture, can be created for the human being and for a *place* and belong to a specific context.

**On this issue Siza says:** Housing is a constant presence in the city and it is always social. The difficulties resulted from the insufficient amount of financing, which was a great obstacle towards reaching an acceptable material quality. So, the notion began to be spread around that these cheap constructions must be terrible, in the same way that popular construction was always linked to something inconsistent and lacking in quality. Today we have resigned to this. I recall that, among the many controversies of this project, one impressed me in particular: the houses had not been approved because they were popular construction, as if there was a 'lower category' for this type of project. It is the same as linking economical limitations to lack of quality: and therefore with fewer resources, the result must be terrible.<sup>30</sup>

And he also states, I believe it is necessary primarily to study the economic and technical reasons, and the contextual reasons in which we intervened. In addition to the limitations in financing I've mentioned above, the local construction conditions in Alentejo were determining: farming areas, mostly uninhabited, where work was mostly seasonal until recently. In this region, the response from local production moved at a very slow pace, and it was dependant on artisanal techniques and materials, with the single exception of public buildings which were very few<sup>31</sup>.

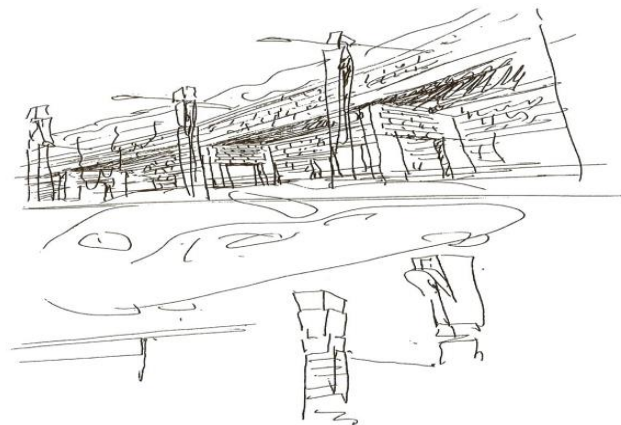


Figure 152: Siza Vieira, Study of the aqueduct, 1977.

Source: Rodrigues, António Jacinto, *Álvaro Siza/Obra e Método*, Civilização editora, Porto, 1992, page 116.

<sup>29</sup> Machabert, Dominique, Beaudouin, Laurent, *Álvaro – Une Question de Mesure*, Groupe Moniteur, Département de Architecture, Paris; Tradução Portuguesa: *Álvaro Siza – Uma Questão de Medida*, Caleidoscópio, p. 79.

<sup>30</sup> Siza, Álvaro, *Imaginar a Evidência*, Edições 70, p. 107.

<sup>31</sup> Ibidem, p. 125



Figure 153: Siza Vieira, Quinta da Malagueira Social Housing, View of the aqueduct. Source: <http://www.flickr.com/photos/10234308@N05/2796117748>.



Figure 154: Siza Vieira, Quinta da Malagueira Social Housing. Source: Photograph by the author.

Last but not least, it is relevant to introduce alternative perspectives to technology and technique, the *ecological* perspective. Today's architecture sees nature as a platform on which to base its matter, its preponderance and from which to extract energy. Since the industrial era, technique has been used as a way of dominating and conquering the natural environment, of creating and imposing its own way of existing. A different way of creating and existing is required, a break-up – a relearning – with this perspective and the mastering of this technological process, with this capture, dominating and exposing the natural, with this transformation completely calculable and objective. There is a concern with the means and not with the end. It is vital to understand the relationship between things, and to think of existence and creation as a world with open relationships. This reinforces the need for a new way of thinking and creating architecture as an open ended process, open to capturing and understanding existence; a process which is transformed and adapts to real problems and which changes according to new data as it appears and is understood; a process which involves the material and spatial reality organised and constructed from the singularities in each situation and which defines the characteristics of this new spatial-material reality – by inventing and knowing. It involves a concern with the means alone as a way of solving a problem from a technical point of view and functioning, and not as a *material end* with a sense of feeling. To establish some other hierarchy with nature and landscape, in which the

material / spatial object *inhabits* and is *inhabited* by nature in a non-dominating relationship without objective possession. In the same density and thickness in a mutual occupation and *coexisting-housing*, in which thickness and density create themselves as a common feeling and thinking, belonging to both, defining themselves on their own identity, in the same state of motion or in the same state of rest.

Siza states that the idea in the place. When I first visited the twenty seven hectare site for the project, I had noticed several presences. First of all, the clandestine quarter of Santa Maria, whose steepness of the land conceals the road to Lisbon and some other municipal routes. In between there is a watercourse. Several traces witness several pre-existences: an Arab bath, close to a watercourse, a cork-tree and a tank in a higher position. (...) From this place, we can see the beautiful profile of the city of Évora, a city made of granite and marble (which is a rare feature): and the cathedral, the Roman church and the neoclassical theatre rise. I have started to study the great vitality of the Santa Maria quarter, stimulated by the presence of small commercial activities. These very clear traces would also help to explain behaviours and the topography and indicated the possibility of transformations and relationships. It soon became clear that the connection between the two clandestine quarters was one of the fundamental issues in the project. Then, to favour the invisible movements between the fields and the Lisbon road, I have decided to also trace the north and south axes, which extend beyond the Lisbon road via a pedestrian path. This crisscross constitutes the structure for the intervention and the debate over the house was started with it.<sup>32</sup>

However, a new ethical and moral attitude in the field and new use of technology will be needed. At the risk of being inconsistent, technological innovation can allow the desirable control of the process. Architects cannot be held hostages of technology in order to build good architecture. They should depend on their capacity to investigate and to think of man in his relationship with the constructed and the natural space. They should depend on their capacity to create and in their poetical autonomy, regardless of any available technology. They should also depend on their freedom to investigate and to think of new ways to create architecture and of constructing the place. Architects cannot become dependent on technological processes in order to develop methodologies for architectural creation. Man should master the process completely with total freedom to intervene and to include all possible and necessary information in the processes of architectural creation. On the other hand, an exclusively spatial suggestion is not a renewed one and does not bring any contribution into the integration of problems. Space cannot be taken as an element which is isolated from the other factors in architecture: a space is constructed with a certain set of means, this is why technological factors are also fundamental and cannot be separated.

In Quinta da Malagueira, Siza develops a methodology for an architectural solution which could be built by locals in that place, in addition to all the needs and capacities previously mentioned. It is a way of thinking the project, of thinking an idea for that place in its aesthetic autonomy from a poetics of perception. As stated by

**Nuno Portas** : Technique alone makes it possible to know the world – societies and cultures – its expectations and its motion, linking them closely to history of art, of architecture and of technique, and through philosophy and anthropology, among other disciplines, it makes it possible to localise and critique the methods it applies in order to meet man's needs in the experimental sciences, the social sciences or even in artistic concepts.<sup>33</sup>

Technological importance is currently evident in the introduction of values and in the visible organisation of the present and future reality. Architecture should offer a vision which reflects the creative attitude, a way of doing which is built with existence in which the approach to finding a solution is not achieved in one go neither is it independent from means of resolution. Instead it is achieved through ongoing and mutually adjusting activity between every knowledge situation, derived from existence, the objectives and the available operators. The creative attitude will consist in the ability to recognise the moving structure of problems by continuously aligning the means to the end, the inherent meaning of things between space and matter, between matter and technique, and not to depart from unequivocal truths. The architect should resist symbolic discursive capabilities of material constructions and aim to define them by offering alternative means of thinking and using.

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<sup>32</sup> Siza, Álvaro, *Imaginar a Evidencia*, Edições 70, p. 113, 115. 438

<sup>33</sup> Portas, Nuno, *Arquitetura(s) – História, e Crítica, Ensino e Profissão*, FAUP Publicações, 2005, p. 361.