cdf INTERNATIONAL CONGRESS BARCELONA JUN.2013

Strand 3: The Challenges Facing Art Nouveau Heritage (Looking Towards the Future)

Art Nouveau looks into the future: bionic interpretation of Art Nouveau in Aveiro Museum

1. Museographic Project *Museu Arte Nova* [Art Nouveau Museum], theoretical framework

Our goal was to understand how Art Nouveau may be useful for future generations. One hundred years later, at the turn of the twenty-first century, emerging artistic and design movements convey similar contents to those from the turn of the twentieth century, now focusing on bionics and the man/machine symbiosis.

1.1. organicist and technological views of nature

Art Nouveau uses new photography and cinema technologies to study animal motion, thus contributing to the 'physiology' based on the principle that *form follows function* (Louis Sullivan), at the origin of modernism's functionalist aesthetics. The motion photographer Muybridge and the physiologist Marey resorted to photographic sequences to study and chart animal and human body movements. Forerunners of scientific cinema, their studies established a relationship between the shape of the organs of locomotion and the effectiveness of their function. At that time, Santos-Dumont developed new aircraft models that were finally able to fly 'autonomously'.

Opposing the eighteenth-century taxonomic paradigm of Linnaeus botanical tradition, the turn of the twentieth century witnessed a renewed interest in understanding the life of species in their own functional environment, observations subsequently propelling the development of new technologies by using natural processes as model.

Since 1860, the Scottish botanist Christopher Dresser embraced the design of industrial artifacts, particularly ceramics, creating remarkable patterns for wallpapers and fabrics, with geometrized botanical motifs. In 1928 and 1932, the German instructor of sculpture Karl Blossfeldt published photo albums on plants, peculiarly emphasizing

pure geometric shapes in plant morphogenesis and growth. The perception of a geometry of nature fueled research for an Art Nouveau that although not naturalist sought in nature the roots of its artificial knowledge.

In 1917, the English scientist and zoologist D'Arcy Thompson published his landmark book on the development of the form of beings. Addressing morphogenesis, Thompson resorted to geometry and the golden ratio logarithmic spiral in order to understand the growth and development of shapes in living beings, instead of using 'scientific' statistics or other numerical models. The geometric understanding of the metamorphosis of life through biology would revolutionize Darwinian form & function ideas (more able to represent than to explain evolution), answering similar development problems in other areas of knowledge, such as economy. The first fractals studied by the Swedish mathematician Helge von Koch date from 1904; those days, the Thonet brothers, Czech furniture industrialists, developed lines of demountable furniture to be sold by catalog, whose design resulted from steam-bent birch wood, contributing to the process of democratization of consumption that would characterize modernity.

Art Nouveau is characterized by the rupture with the fin-de-siècle naturalistic academicism, enhancing the connection between *art and science*, subsequent to the emergence of a progressive urban bourgeoisie that unlike the naturalistic spirit of the time believed to be able to interfere and change the 'fate' prescribed by nature.

1.2. the culture of dignity of the natural, healthy body

Art Nouveau recovered human dignity, threatened by European industrial revolution dehumanization and mass production, by promoting the cult of the body and life, introducing the need for enjoyment and comfort. Art Nouveau boosts organic functionalism in the perception of the complexity of life and the human being. In architecture, the apartment as family housing, whose organization meets the functionalization of everyday household tasks, adopts the functional topology of modern space, patent for instance in Antonio Gaudi's Casa Milà and La Pedrera (The Quarry), which is nowadays common.

The sea promenade, the urban park with bandstand and lake or the viewpoint over the landscape were new urban facilities attending the social revolution. It concerned a social reeducation based on new leisure and health habits with major repercussion at the hygienic level, with the invention of toilet facilities, sterilizable spaces (the commercial distribution of sodium hypochlorite, 'bleach', also started at this time), built in white glazed ceramic elements that functionally assisted all personal hygiene practices, granting an antiseptic control of the body. Piped water networks as well as urban sanitation infrastructures are tangible outcomes of this new culture.

Ricardo Jorge was a Portuguese physician and researcher from the late nineteenth century who catalyzed the international hygienist movement in Portugal, with a striking influence on the State health policy. His work *Higiene Social Aplicada à Nação Portuguesa* [Social Hygiene Applied to the Portuguese Nation] (1884) was a benchmark in Portuguese public health approach. It didn't merely regard ending devastating epidemics such as the Spanish flu or tuberculosis, which caused the death of the painter Sousa Cardoso or the poet Cesário Verde, but also creating healthier social life conditions, promoting places for rest and recreation far from factories and cities, to recover the biorhythmic equilibrium. Beaches and natural thermal spas became prescribed for holiday periods, allowing purification through the sun, iodine, or mineral springs believed to have curative properties, rehabilitating a body subject to fatigue, urban stress or *neurasthenia* (chronic nervous exhaustion). The seasonal family travels to natural thermal spas demonstrate a new way of living, with greater dignity, pleasure, and respect for the body.

The idea of functionalization of the body that is patent in Art Nouveau makes the apology of the natural, healthy and athletic body, capable of a productive performance, measurable in sports competitions as the Olympic Games.

In 1903, the German architect Paul Schultze-Naumburg published one of the pioneering works concerning the ergonomics of clothing, exposing through technical drawings the errors in *Belle Époque* costumes, proposing anatomical principles for good design in women clothing and footwear.

In 1907, the Catalan artist Mariano Fortuny designed the Delphos gown, a paradigmatic piece of women's garment. It was an uncut dress, to glide over the body due to the elasticity of finely pleated silk, ensuring maximum freedom of movement and emphasizing the natural contours of the female body. Schultze-Naumburg and Fortuny created the conditions for uncorseting the women, showcasing the natural beauty that would gain new contours with modernism and the current obsession with an aestheticized body.

At that time, the notion of a healthy body included the assumption of a balanced body, revealing an empathic harmony with the natural environment. But nature is dynamic, in permanent rhythmic change, thus the body must also seek an own pace of vital expression. Dance revealed the abolition of neoclassical ballet ideals and romantic choreography as in *The Dying Swan*, instead displaying human customs and rites through the human body and dance as with *The Rite of Spring*. Art Nouveau replaced tulle ballet skirts and the old pointe shoes by barefoot dancing and silk scarves, perpetuating the movement of the body in the air, in eurhythmic flows. The body is regarded as something active, an organism animated by the rhythmic function of life; Beauty is regarded as the complex result of tensions underlying the curved concordance of forces drawn by nature's hidden geometry. Art Nouveau thus yields a new notion of beauty based on the useful, thus creating an aesthetic functionalism which laid the foundations of modernism.

1.3. recurrence of principles: Art Nouveau and Biodesign

Di Bartolo and Montanari (2004) investigated the relationships between design and complexity, discovering that materials constituting nature's products were remarkably functional vehicles, emphasizing the systems' bionic importance. Already in 1960 Jack Steele had defined bionics as the science of systems that develop functions copied from nature or represented by analogy. The design of composite materials and structures of materials is inspired by common examples from nature.

The British designer Ross Lovegrove presented a pebble at the Minimalanimal ceramics workshop as the model to execute his ceramic piece, instead of production drawings. In the comments regarding such model he stated that as a designer he could never compete with millions of years in Nature's evolution, reason why he would rather use it as reason for shape, instead of redesigning it. Lovegrove enunciated the biomimetic principle, exemplified by current Biodesign. In fact, the use of Nature in objects design enhances the empathy between man and thing, thus contributing towards a productive, integrated and organically functionalized society. As a result of the same principles, the Portuguese designer Paulo Parra also investigated the man/machine symbiosis (2008).
The combinatorial complexity of Nature embodies a universe of new possibilities for scientific and biological design, marked by the arguments for form construction and by the simplicity in projectual metaphors, reaffirming a new Art Nouveau, a hundred years later.

2. The Casa Major Pessoa

In Portuguese architecture as throughout Europe, Art Nouveau also appears as abolishing *Beaux-Arts* tradition of neoclassical and academic expression. It became a new model, connecting the artistic and crafting medievalism from William Morris *Arts & Crafts* to the school of decorative arts established by Henry Van de Velde in Germany (in Weimar, where Walter Gropius would set the Bauhaus in 1919) with the engineering of a French and English architecture of prefabricated steel modules, or the establishment of a new Viennese architectural matrix that the Portuguese architect Raul Lino studied in his youth. In reaction against the classicism and romanticism of the time, Rafael Bordalo Pinheiro would employ photographic positivism to represent nature in a more scientific manner.
It was in such context that Francisco Silva Rocha, in Aveiro, attempted to discard the romantic and historic heritage that was so appealing to his friend the architect Ernesto Korrodi (Swiss architect established in Portugal to head the technical education in

applied arts, which he directed from Leiria where he restored a castle), drawing in the new style, albeit timidly, doors, frames, and cornices.

The building that houses the headquarters of the Aveiro Art Nouveau Museum, commonly known as the Casa Major Pessoa, was designed by Francisco Silva Rocha in 1904 (possibly with Ernesto Korrodi) and restored in 2008 by the architect Mário Sarabando Dias (senior official in Aveiro municipal government). The building displays the financial wellbeing, freedom and aesthetic statement that were typical in a Portuguese trader from Lisbon, later established in Aveiro. The cosmopolitan Major Pessoa travelled between Aveiro, S. Tomé and Príncipe (Atlantic equatorial former Portuguese colony), Brussels, and Paris, in the cocoa trade, carrying new cultural influences and new artistic tastes mirrored in the building.

According to Mário Sarabando, the 1908 building was built in two stages, contrasting a discreet, economical interior and an exterior monumental exuberance. Bringing together art forms from stonework, woodworks, decorative ceramics and wrought iron, the building was purchased by the municipality without furnishing.

As in other European examples, the district of Aveiro (encompassing Ovar, Estarreja, Ílhavo and Aveiro) gathers the largest national concentration of architectural examples of the Art Nouveau movement, probably due to the rise of a bourgeoisie dealing in commercial and industrial activities related to the fisheries (cod fishing, ceramics and port's activities). The headquarters building of the Aveiro Art Nouveau Museum aims to interpret and disseminate the urban expression of Art Nouveau in Aveiro city, appropriating architectural objects and integrating them in an urban excursion, instead of focusing on objects preservation. The permanent exhibition, curated by Francisco Providência and Paulo Providência in 2008, seeks to contextualize the postulates from Art Nouveau Movement and to understand their recurrence a century later, through bionics and Biodesign.

3. The Aveiro Art Nouveau Museum

3.1. museographic program

The museographic program was the result of the analysis of the building's spatial constraints, seeking to fulfill the expectations of the demanded functional program.

The museographic intervention adopted a strategy of maximum neutrality, given the statement nature of the architectural restoration, recovering the vitreous and colorful coating materials, the strongly chromatic walls and frames, as well as the complex metalwork and stonework. All added equipment (furniture, luminaires, and display and interaction devices) assume a neutral light gray coloring, reinforcing the chromatic impression from preexisting environments, thus avoiding contamination of the old building by new equipment. The new use does not intended to mimic the historic house museum gender, although the ensemble of new forms occupying it is united by color and texture (varying between an *Art Nouveau* and a *bionic* form), in an effort to allow the visitor a unique synesthetic experience.

Fig.1 Dynamic panel contextualizing Portuguese Art Nouveau painting in the international scene, with videography monitors. ©Francisco Providência, 2013

The museographic intervention focuses on functional objects that condense rhetorical statement and performance in technical devices, seldom digital. Part of the planning effort fulfills a communication role often hidden in concealed screens.

The museum is functionally organized in three distinct areas:

1st floor

Visitors' reception and communication of the Aveiro Art Nouveau network along the interpretation room (map-table pinpointing objects across the city). Entrance hall and museum store (merchandising), music room (with player piano and music by E. Satie) in the passage to the tea room, and outside bar (beer garden).

2nd floor

Art Nouveau interpretation along three spaces: room 1, audiovisual communication for group sessions; on the hallway, didactics and Art Nouveau interpretation through

dynamic video display, contextualizing Portuguese Art Nouveau painting in the world; interactive table to interpret Art Nouveau architecture in Aveiro – authors, photography, location of works; room 2, interpretive exhibition of the Art Nouveau international movement (repercussions in Aveiro and in Portugal), with commented display of objects.

3rd floor

Dissemination and promotion of Art Nouveau through temporary exhibition rooms (presently with an exhibition on Aveiro Art Nouveau architecture), adjoining a small archive room for researchers who wish to develop studies on Art Nouveau or its downstream accomplishments through Biodesign.

Fig.2 Several applications in Casa Major Pessoa museographic intervention. ©Francisco Providência, 2013

3.2 artifacts on display at the Museum

The lack of an own collection of artistic objects besides architecture has allowed the construction of a narrative that is more international than regional, as well as a refocus on Art Nouveau phenomenology. As a result, it was decided to replace the conventional museum catalog by a glossary index of correlated inputs to offer the visitor further clarification and a holistic understanding of the movement through objects, authors, ideas and sites.

The objects displayed in the permanent exhibition of the Aveiro Art Nouveau (room 2, 2nd floor) were donated, purchased or replicated in order to illustrate the museological narrative.

The exhibition is structured according to the following topics:

1. origin of the international Art Nouveau movement (modern style) since William Morris' Arts & Crafts, and the need to enhance human dignity *vis-a-vis* the Industrial Revolution.

2. the notion of complementarity of the opposites, *Apollonian vs. Dionysian* (Friedrich Nietzsche) in human mentality pendulum variation, and *Empathy vs. Abstraction*

(Wilhelm Worringer) in the expression of their (artistic) works, and the solution of the moral dichotomy of good and evil.

3. physiologist photographers, the mechanical understanding of the body and the notion of functional beauty. The emergence of kinetic machines as a means to replicate the experience of life (cinema and the cardiograph). The congruent and complex curved lines of organic forms as expression of life.

4. household objects with vegetal and floral adornments invoking nature, source of life (Christopher Dresser).

5. the role of photography in the representation of individual experience (Carlos Relvas) and social experience (touristic stereographs); the representation of an enjoyment-oriented society.

6. the critique of formalism in *Belle Époque* clothing (Paul Schultze-Naumburg) and the apology of ergonomic comfort through new beauty standards and rationales in clothing such as presented by the Delphos dress (Mariano Fortuny).

Fig.3 Interpretative exhibition I. ©Francisco Providência, 2013

[In the foreground: the Delphos dress designed by Fortuny, and in the mid-ground the counterpart theories by Schultze-Naumburg, criticizing Belle Époque corsets.]

7. eurhythmic dancing showcases the naked body, barefoot, wrapped only in fluttering silk fabrics, extending gesture and movement in space (Isadora Duncan).

8. the social revolution of a working population increasingly converging to cities caused sanitary issues that provoked the emergence of Hygienism, patent not only in public health policies but also in the creation of thermal baths spa resorts and beach resorts (Ricardo Jorge).

Fig. 4 Interpretative exhibition II. ©Francisco Providência, 2013

[On the social role of Hygienism, hydrotherapy, and the new urban organization constrained by railway public transport, metaphor for the circulatory system.]

9. city growth escalated by rules increasingly dependent on population flows and public transit, thereafter designed through railways, generating an organic network of arteries, interconnecting as blood vessels.

10. a hundred years later, a new biomimetic attention is reflected in the most varied objects of use, not only in functional extensions of the body (full-foot fins, clothing, footwear), but also in functional every-day-use objects, fostering an organic functionalist mentality (Ross Lovegrove).

4. Conclusion

If any, a conclusion to be drawn from this reflection must be founded in the example of a museum made from scratch with objects almost devoid of exchange value, here called upon mostly as lexicon in the discourse leading to modernity, rather than for their rarity or commercial demand.

Faced with the absence of other collection than architecture, and the assignment of the role of Art Nouveau interpretation center in Aveiro, the museum was housed in its headquarters building (Casa Major Pessoa), aiming to raise the visitors' curiosity concerning the approach placing Art Nouveau and Biodesign in the same position regarding biology, producing a wide range of changes in society, people, aesthetics and culture, and particularly in economy.

An interpretive center should also motivate knowledge regarding what is markedly divergent, which in the case of Art Nouveau concerns the attitude towards the environment. The observation of nature, promoting a functional adaptation to the environment, produced a more empathetic than critical model of knowledge, more natural than supernatural, using all technological means available and assuming the complexity of reality in the organic form. The pure and simple forms modernism would adopt post-Art Nouveau manifest through minimal simplicity the fear and mistrust regarding the transcendent complexity of reality, from which man protects himself using elementary rational forms, as advocated by Worringer,

Countless new practical design solutions are reflected in industrial production through less resistant forms, originating machines and objects that resemble animals, that behave as self-animated, or simply adopting forms imprinted in tires textures or footwear design, glue compositions, textile patterns, the design of foot fins or sports equipment,

coating materials for architecture, the selection of chromatic combinations, roadways design, buildings design, cities design – altogether, the design of mankind's adaptation to the environment (at the turn of the twenty-first century) expresses the same principle developed a hundred years earlier in Art Nouveau: good forms result from the functional adaptation to the environment. Thus, advocating a human model more compliant to reality, instead of a model based on *poiesis* (poetry) and *poietes* (poet, or maker).

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