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Graphic styles for the representation of the landscape

Long before the landscaper existed as we understand it now, the study of landscape was already a great concern for society, tackled by cartographers and artists. The cartographers have tried to represent the terrestrial surface from an objective and quantifiable point of view, the advances in the technical means of measurement and representation have been rising to cartographic representations increasingly faithful to reality. From the point of view of art, the representation of landscape has undoubtedly been a constant in the pictorial representation. Subjective vision of natural and rural environment through great masters of painting has been a great source of information about the meaning that has been attributed to the landscape through the ages.

Current term of landscape includes aspects inherited from the past and adds the sociological and cultural component in its meaning. This new standpoint extends the content of landscape representation. In turn, the rapid introduction of new graphic technologies has significantly modified the representative possibilities of territory. Projects carried out by studies of landscape architecture today, show a wide variety of techniques to approach from the creativity and ingenuity, the complexity of the components of the landscape. In Department of Architectural Graphic Expression, through the supervision of different Final Degree Projects, we have analyzed the graphic representation techniques in the current international scenario. After analyzing the tools and graphic trends in different landscape architecture studies, the student opts for a graphic language that will serve as a reference to represent a project and reach their own conclusions on the adequacy of each language to the type of project.

Keywords:

Representation; graphic expression; landscape architecture.



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The landscape is a physical reality and at the same time, the representation that we make of it culturally; the external and visible appearance of a certain portion of the land and the individual and social perception that it generates. (Nogué, J. 2007).

Long before the figure of the landscape designer existed as we understand it now, the study of the landscape was already a great concern for society, tackled by cartographers and artists. Those first have tried to represent the earth's surface from an objective point of view, quantifying all that information for the benefit of the humankind, while artists have offered a subjective vision, linked to the sphere of emotions.

THE CARTOGRAPHIC ADVANCES IN THE REPRESENTATION OF THE LANDSCAPE

Cartographic sources have historically been relegated to a lower category in the study of the construction of the territory and landscape (Chías, 2012). However, the mapping techniques and methods used through history have certainly had an impact on the concept of territory and landscape of today.

On one hand, the evolution of cartography has been marked by technological development, and on the other, it has been marked by the exploration of the planet. Thus in the fifteenth century modern cartography arises with the invention of printing, improvement of the compass and advances in navigation.

In the nineteenth century, the need for national topographic maps became widespread. Official cartographic services emerged in all the countries of Europe usually associated with military institutions.

In the twentieth century, the development of photography, the expansion of air transport and advances in printing techniques, made it possible to refine and update the cartographic coverage of the planet. Besides, at the end of the century there is a great advance with the launch of observing satellites and for the first time the Earth's surface is photographed from the space. In that moment, regarding the evolution of graphic language, maps use invariant visual elements (tree figures for forest areas, red or black squares to built-up areas, blue or black lines to rivers or roads) and accompanied by textual descriptions. However, Jaques Bertin (1967) introduces a new point of view in the field of cartographic representation, introducing the term Graphical Semiology.His treatise Sémiologie graphique, analyses the set of rules that lead the construction of a system of signs or language, that allows the graphic translation of information. Thus, any trace visible in the plan can vary its meaning according to its size, value, grain, color, orientation and shape.

Nowadays the cartography has reached a high quantitative and qualitative level thanks to the development of computer techniques, geographic information systems, virtual networks and cartographic servers.

Therefore, the Earth's surface has come to be represented digitally. It has become a large database with detailed information that is associated with a geographic identifier.

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Fig. 1 - Map by Juan de la Cosa. 1500.



PICTORIAL REPRESENTATION

The current term for landscape includes the aspects inherited from the past and adds the sociological and cultural component in its meaning.

The present definition as proposed in the European Landscape Convention is "Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (Council of Europe, 2000). This new meaning requires then to map the intangible values, the perception or the sensations that each person experiences when being in contact or when evoking a landscape.

To analyze the evolution of landscape representation from this new perspective, it is necessary to recognize the great influence that pictorial representation has had on this subjective component on the generation of the collective image that people have of the landscape.

From the Renaissance to the Dutch landscapers of the seventeenth century, it takes place a process of emancipation of the landscape as a subgenre.

The natural environment goes from being a scenario that accompanies the action represented to being a protagonist by itself and becoming a main actor to the point of displacing any other topic. Landscape painting is established as a discipline in itself. This gives rise to numerous artists dedicated exclusively to the study of the landscape, especially in the Netherlands (van Goyen, van Riusdael, etc).

To achieve that discipline emancipation, the artist needs to collect data from their natural environment and to start drawing directly in nature.

The concern to know the environment of man, geography, atmospheric phenomena emerges and culminates in the illustration, with the great scientific-artistic journeys.

This evolution is the germ of an approach to nature from the artistic point of view that will lead to the great schools of landscape and impressionism (Barbizon, Fontainebleau, etc).These schools establish the aesthetic foundations of the modern concept of the landscape from the pictorial point of view.

Romantic landscape painters put an emphasis on the existentialist man's relationship with the environment.

The projection of the smallness of man in front of the great phenomena of nature leads to an emotional highway that connects the most sublime of both, making them members of the same grandeur. In this intense relationship between man and nature, we must highlight the strong emotional charge produced by, for example, Friedrich's paintings (1774-1840) (Fig. 2)

In the nineteenth century, artistic restlessness goes hand in hand with scientific knowledge. Naturalistic scientists like Humboldt employ innovative representation techniques to describe nature faithfully for further investigation and for the transmission of knowledge to society, combining detailed analysis and purely sensory and philosophical observations.

Humboldt believed in the importance of travel as first-hand observation of nature, but also emphasized the need to transmit sensations to the viewer (Garrido, 2016).

The landscape that Humboldt theorizes could be considered as the synthesis between art and science in favour of a profound knowledge of Nature. Particularly, this is reflected in his work Naturgemälde (Fig. 3)

In these analytical works of great scientific trips is shown a wide range of representations that combines objective and quantifiable environmental information (topographic profiles, mapping) with the subjective view of his observation (details of species, landscapes in color).

Just as the representation of landscape architecture currently, it is necessary to master these two aspects of representation in order to successfully communicate every aspect of the project.

Hence, in the teaching of landscape graphic expression, it is necessary to analyze the wide variety of techniques and styles in detail to address from the creativity and ingenuity the complexity of landscape components.



Fig. 2 -Wanderer above the Sea of Fog. Caspar David Friedrich, 1818.

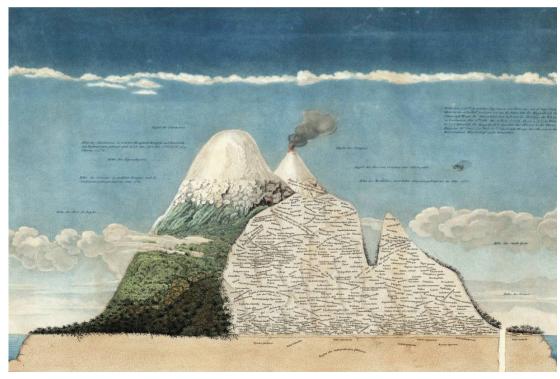
ANALYSIS OF GRAPHIC STYLES

The growing interest in landscape and territory in society has also caught on in the Schools of Architecture. Unlike other countries, in Spain the landscape architect will be instructed in a Postgraduate Master.

From the Department of Architectural Graphic Expression of Universitat Politécnica de Valencia, we have been encouraging students in the research in different strategies when representing the territory that surrounds us. Through the supervision of different Final Degree Projects we have analyzed the graphic representation of the landscape in the current international scenario, applying the conclusions of that analysis to specific cases studies in the city of Valencia.

After analyzing the tools and graphic tendencies in different landscape architecture studies, students must define their own graphic language that will serve to represent a case study. The development of this analysis and subsequent application will allow them to draw their own conclusions about the adequacy of each language to the type of project.

When laying out the representation of the landscape to our students, we establish a work methodology that goes through the study and research of how different teams of architects have represented their landscape projects graphically. In this stage, the teams to be analyzed are chosen first, either for their graphic innovation or for the



personal interests of each student. Once selected. the fields of analysis are determined in order to draw conclusions.

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The analysis is done by establishing common parameters and other variables that depend on the specific project. The strengths and weaknesses of each of these aspects are established in order to be able to face the landscape project with appropriate graphic strategies. The fields in which the graphic study is presented are divided into three large groups. The first of which are the idea drawings or preliminary sketches. The second group is the one formed by the drawings that define the planimetry of landscape projects, usually in two dimensions and in a dihedral system. Finally, the third group is composed of drawings or representations in three dimensions, renders, images and in some cases scale models.

Concept drawings.

The preliminary drawings of a project are those that refer to the site analysis, the first reflections and the initial ideas. The student must complete a typographical analysis of the techniques used and the graphic languages. In addition, as mentioned in the introduction, you must relate this analysis to the inheritance received from the pictorial representation. Any variation in the expression, which can be from drawings to hand, color pencil drawings or graphite, watercolors, markers or digital frameworks, can convert the drawing into a different message.

In the works of the Atelier le Balto team, we observe the use of hand drawings that generate the first project ideas or that are later combined with other techniques forming images of great

Fig. 3 - Alexander von Humboldt. Detalle del 'Naturgemälde". 1799-1804



graphic power. (Fig. 4).

The drawings are made on paper with a marker, then scanned and worked graphically to incorporate to the project. These sketches are made with great swiftness, in them color is applied to highlight the most interesting elements. In the most usual case, these perspectives and axonometries, are colored with different shades of green for vegetation, gray for shadows and ocher tones for pavements.

Another team that mainly develops its work in the field of intervention in the landscape is the Aranea Group, with a very unique and characteristic graphic image. The idea drawings are sketches made with ink (usually black pen or marker) or pencil that are often filled with watercolors or colored pencils. Francisco Leiva, architect who belongs to to the team, is the author of many drawings and images that have created their own and recognizable style in the field of landscape graphic representation.

It is also important to highlight the importance of color in sketches or preliminary ideas. We find teams of architects who usually make monochrome sketches, using in some cases a different color to support an intention, such as the RCR or Carme Pinós sketches. In other cases, a pastel color palette is used combining the colors with different intensity, as in the Aranea Group palette that clearly identify with the elements they represent. Among the teams that work the sketches with bright colors is the team of architects WEST 8. These sketches present a great luminosity with greens and very intense siennas.

Nowadays, we find teams that represent their ideas and intentions of projects with an aesthetic linked to visual communication and contemporary design. Ecosistema Urbano is a team of architects founded in 2000 by Belinda Tato and José Luis Vallejo. This team stands out for its great ability to represent their projects or analyze the characteristics of a certain place. The graphic aesthetic of their work is identified with the image of a video game, creating an own graphic design with great communication capacity. They use simple codes of basic colors identifying the problems and weaknesses with the red color and the strengths or solutions with the blue color.

Planimetry

The plans and sections are the most technical representation of the project, the one we inherit from cartographic and digital advances.

Generally, the representation of the landscape planimetry has been portrayed historically using

black and white lines, highlighting the different thicknesses and graphics of the vegetation. Currently, with the advances in computer graphics technologies, the plans that define the landscape projects in most cases present a graphic with color and textures that make the project also manage to transmit subjective aspects, which go beyond the representation technique.

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As an example of classic representation we are able to find the landscape designs of the studio of the architect Carme Pinós. The way of representing the planimetry recalls to a great extent the old way of technically representing the plans by hand, but these have been drawn on computer with CAD computer programs. We highlight the different ways of representing the trees, depending on whether they are exempt or formed tree stands. When the trees are individually placed elements, they are represented with thin lines, one or two overlapping, with lines that cross the circle that draws the tree's crown.

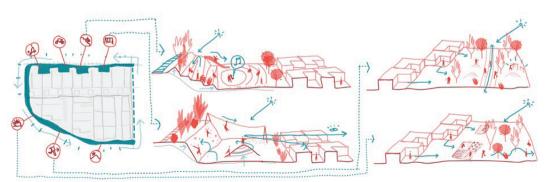
In the case of representing vegetation mass, they are drawn in different ways depending on the scale and detail of the plan. It usually represents a linear irregular geometry, which draws the outline of the tree grouping, in some cases pointing out the trunks by means of points or small circles. The

Fig. 4 - Sketch for the Botanical Garden of Montreal. Atelier Le Balto. 2014



http://disegnarecon.univaq.it

Fig. 5 - Sketch. Tranformation Alberstlund Sur. Copenhague, Dinamarca. Ecosistema Urbano. 2012.



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representation of pavements and other elements that make up the space is done with simple and thin lines, leaving a uniform and light graphism. An opposite example to the previous one, where the plans present a graphism supported by the use of color, are the plans that define the Aranea Group's projects. Depending on the scale of definition and what specific aspect you want to highlight in your project, you can find everything from simple and monochromatic drawings (black and white) to representations that define all the elements with a large amount of information and rigor in terms of

level of realism in projects. (fig.6) In the case of Saline Jonich Natural and Anthropic Park in Palermo, the planimetry that defines it at territorial scale is represented by simple lines and monochrome lines, using some shading in gray tones of different intensity to locate the buildings and a single color for highlight some concrete element.

Another team which their graphic works stands out for their expressiveness and communicative capacity is the Atelier le Balto studio. This team seeks that the planimetry that defines their projects transmit emotions beyond representation through drawings. Therefore, we see in their plans that they are treated more as images than as descriptive plans in the dihedral system. The images present a great complexity due to the amount of information they contain using color and visually appealing graphics. The plans and cross sections they are completely texturized with Photoshop, using computer graphics techniques that mix drawing with texture and collage. (Fig. 7) The West 8 team works on the same line to represent the planimetry of their landscape projects. The plans are drawings made in computer support (Autocad or similar program) that are subsequently developed through a postproduction process with Photoshop or image editing programs. In this post-production process, efforts are focused on ensuring that the idea that defines the project is correctly explained. The drawing of the sections incorporates more information, and the representation incorporates depth to add more realism.

The result of this post-production process achieves plans with a great luminosity, with intense and bright green colors, which define the project and which blend with the nearest environment, blurring the lines. We can highlight the great

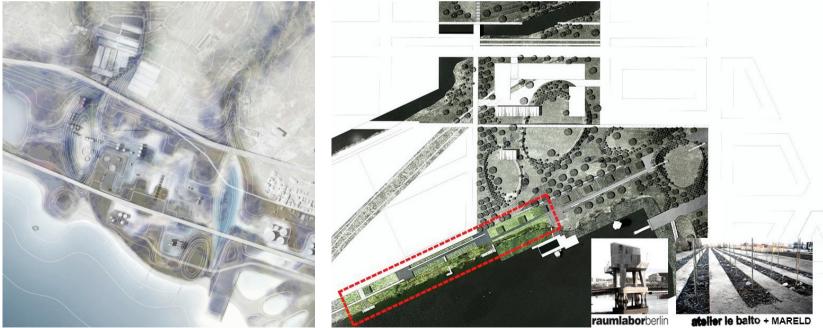


Fig. 6 - Parco Naturale Antrópico Saline Joniche. Palermo, Italy. Grupo Aranea. 2012

Fig. 7 - Jubilee Park. Gothenburg. Atelier Le Balto. 2017



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utility of this technique to represent projects that deal with large urban spaces.

The plans of the projects of the RCR team present a more technical graphics, used in plans as well as elevations and sections. This graphic aspect stands out for being simple and transmitting information in a clear manner, as in the sections of the "Park of Pedra Tosca" or the "Bodegas Bell lloc". However, the team also completes the planimetry with post-production work. In its projects, the plans of territorial insertion are the result of an intense process of editing in which outlines the great amount of information, the use of color and depth stand out, giving great appeal to their plans. (Fig. 8)

Images

There is no doubt that the advance of computer techniques has meant a revolution in the graphic representation of projects. In the case of perspective images, advanced modeling techniques, unlimited libraries of material textures and increasingly powerful computers that allow digital perspectives almost identical to reality. Despite the technological advances, the influence of pictorial and photographic techniques on the representation of the landscape, the compositions of the perspectives "representations of space, as an observer would look in a certain direction and from a specific point of view, is unquestionable. "(Ching, 2016), they follow the principles that the great landscapers of the past have already applied. The images in three dimensions are heirs of the strategies followed with the most realistic planimetry. In most cases, the line finally disappears to give way to the three-dimensional images colored with textures and surrounded by the careful landscape.

When we analyze the graphic representation of these images, we observe that two large groups appear. We can distinguish between clearly realistic images, which allow the viewer to move to the reality of the project, and views or images with less real aesthetics and more intention, which intend to convey the aim of the project rather than the reality of it.



Within the first group, we find the representations of the Ecosistema Urbano team. This team's work has evolved towards images of a high degree of realism. A series of common characteristics appear in their images, such as the realistic use of the heavens and environments through photographs, including the insertion of the human figure through transparency photography. In order to explain the possibilities of their projects, they usually include views at different times of the day or in different stations. (Fig. 9)

In the landscape projects by the RCR team, their images recreate their own atmosphere. The views have a great capacity to transmit the mimesis that exists between the projected design and the associated landscape. The technique used to achieve these results is similar to the graphic technique used to represent the planimetry of the

Fig. 8 - Pedra Tosca Park. Olot, Gerona. RCR arquitectes. 2004

Fig. 9 - Proposal for the revitalization of the Voronezh coast. Voronezh, Russia. Ecosistema Urbano. 2014.



26.7

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26.8

project. First of all, a drawing software that allows the creation of the base form in three dimensions is used and then edited by applying textures and effects.

The chromatic range they use is also characteristic in their views. This chromatic range corresponds to the one they also use for the technical representation of the project.

The images are usually presented by brown or dark tones that make materiality recognizable; people appear with a certain degree of transparency in most cases; while the vegetation adopts its characteristic colors along with the natural landscape in most cases. These decisions allow to communicate the intention that the landscape is the most important element of your architecture. (Morant, 2015)

By representing the project with greater chromatic intensity than the environment in which it is inserted, that is drawn with a less saturated intensity, it manages to create a characteristic fog effect in all its projects. Through this graphic strategy you can recreate the essence of the place by the combination of colors, shadows and flashes of materials and elements such as furniture or people are included, without hindering the understanding of the drawing.

Among the teams that represent the views with a less degree of realism, the projects of Atelier de Balto stand out. The images used by the studio is mainly based on the collage technique, where often, as in the representation of the planimetry of their projects, they include sketch lines, silhouettes, etc.

The study of Carme Pinós also uses the technique of collage in the representation of views and images. In the views of her projects she combines real images that can be photographs with simple graphic elements such as people silhouettes or trees. In the project for the "Seaside promenade. Santa Pola" (2002), the images are a clear example of the graphic technique that combines through the collage photographs with linear elements of the project. (Fig. 10) Fig. 9 - Seaside promenade. Santa Pola, Alicante. Carme Pinós. 2002



After the analysis phase, the students prepare a summary tables of the graphic analysis.

In these tables they summarize the results in a way that can be contrasted between all the teams analysed, based on common parameters, such as the way of representing drawings in two dimensions, perspectives and models, and others that will be adjusted depending on the singularities of each technique.

From these tables it is defined the strengths and weaknesses of each technique, which will allow the decision on which is the most appropriate at a given time depending on factors that can mark the type of representation. (Fig. 11, 12, 13, 14,15).

The analyzed equipment have been:

RCR arquitectes, studio integrated by Rafael Aranda, Carme Pigem and Ramón Vilalta, with its headquarters in Olot, a town located in the interior of Girona. Their projects interact with nature and the environment.

Carme Pinós, catalan architect who works both architecture and landscape, and her projects are recognizable by the abstract formal language used.

Atelier le Balto, a studio based in Berlin, whose members are trained in landscaping, architecture, urban planning and sociology between Germany and France. Their projects focus on the use and reuse of urban spaces and atmospheres.

Aranea Group, a multidisciplinary team founded in 1998 by Marta García and Francisco Leiva, agronomist with a Master's degree in landscaping and architect, respectively. The architecture that the studio proposes always tries to dialogue and improve the landscape found.

West8, an urban design and landscape architecture studio founded in 1987 by Adriaan Geuze and currently has offices in Rotterdam and New York. They mainly work the design of large scales of the territory throughout Europe, Asia and America. Ecosistema Urbano, a team founded in 2000 by Belinda Tato and Jose Luis Vallejo, architects and urban designers who understand urban design as a way to improve life in cities and their internal relationships

CONCLUSIONS

The development in the representation of the landscape follows a parallel path of the evolution of the concept that man has of the landscape. Although in the beginning the technical and artistic aspects of the territory were inscribed in different disciplines, time has been converging both spheres to intermingle inseparably.

Currently, the landscape architect must master the technical and artistic language to communicate the project completely.

In the graphic analysis of current landscape studies we find the inheritance of the previous ways of representation and the use of new computer technologies.

The graphic languages used are very varied, some are ruled by neutral canons to represent the project in coded form and others choose to create a personalized graphic identity that differentiates their presentations from the rest.

In this sense, the students have tended to select those teams that present a characteristic and defined style. In this way, the choice of the RCR arquitectes team is justified as an indisputable reference when we talk about graphic expression. Another team with a strong graphic and singular charge is the Aranea Group, with the watercolors of Francisco Leiva as a hallmark when it comes to representing their projects. He defines his drawings as the way to relate to the world: "I am interested about the drawing part that I cannot control. More precisely the contrast between the thoughtful strokes and the own mishaps of the wáter and ink relations..."

The same can be said of the other selected teams, since all have their own characteristics in the graphics of their projects, as described above.

From the completed analysis that is done, it is worth mentioning that although the computer tool is present in the current way of working in landscape studies, it has not displaced the use of hand drawing in most recognized studies.

The subjectivity of the handmade trace is combined with the precision and rigor of the new technologies of representation of the territory, enriching both and forming a whole that allows us to represent the complexity of our environment.

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ESTUDIO	GRUPO ARANEA						
REPRESENTACIÓN	Dibujos	Planime	stria			Infografias	Maquetas
PROYECTO/S	Ed. mixto Talwan	Soline J	oniche	Valle trenzado		Saline Joniche	Valle trenzado
AÑO/S	2014	2012		2009		2012	2009
TÉCNICA/S	Acuarela	Dibuja te	écnico	Dibujo técnico-r	ealista	Im explicativa-real	Mano
PROGRAMA/S	Mano alzada	Autocad		Autocad + Photo	shap	Photoshop	
GRADO REALISMO		Técnica		Elevado		Elevado	Volumetria
GAMA CROMÁTICA	Tonos pastel	Blancos	negra	Realista, transp	srencia	Realista	Monocromática
ÁRBOLES	51	SL simp	les	51, realista		Si, realista	SI
PERSONAS	SI, siluetas	No		No		Sí, siluetas	Si Jesc. detalle,
FONDO	No	Papel		Fotografia aèrea		Fotografia	Enterno
USO SOMBRAS	SI	No		ST		SI	
MATERIALIDAD	No	No		No		No	No
OTROS	Uso sobre fotos					"La renderia"	
ESTUDIO	CARME PINUS						
REPRESENTACIÓN	Dibujos		Planimetría Info		grafías	Maquetas	
PROYECTO/S	Parque Torreblanca		Pasarela Saint Dizien Pla		Plaz	a Gardunya	JVC Guadalajari
AÑO/S	2000-2010		2015		2015	1	1999-2002
TÉCNICA/5	lcanas		Dibujo ti	écnico	Coll	age	Mano
PROGRAMA/S	Mano alzada		Autoced		Pho	tashop	
GRADO REALISMO	Concentual		Técnica			centual / Realista	Volumetria

GRADO REALISMO	Conceptual	Técnico	Conceptual / Realista	Volumetria
GAMA CROMÁTICA	Blanco y negro	Tonos de grises	Realista	Madera-metal
ÁRBOLES	No	S1, propios	Sī, realistas	Si, simples
PERSONAS	No	No	Sí, siluetas y reales	No
FONDO	No	No	Entorno, sin cielo	Entorno
USO SOMBRAS	No	No	Si	
MATERIALIDAD	No	No	Si	No
OTROS	Trazas provecto	Grafismo propio		Diferentes escalas

ESTUDIO RCR ARQUITECTES

REPRESENTACIÓN	Dibujos Planimetría			Infografias	Maquetas	
PROYECTO/S	Piedra Tosca	Piedra Tosca	Museo Soulages	Museo Soulages	Teatro La Lira	
AÑO/S	2004	2004	2008	2008	2004	
TÉCNICA/S	Acuarelas	Dibujo técnico	Dibuja técnico-realista	Im. fotorrealista	Mano	
PROGRAMA/S	Mano alzada	Autocad	Autocad y Photoshop	Photoshop		
GRADO REALISMO	Conceptual	Técnico	Elevado	Elevado	Volumetria	
GAMA CROMÁTICA	Tonos pastel	Blanco y negro	Realista, con transparencia	Realista	Conceptual	
ÁRBOLES	Si	Si, circulos	Si, realista	Sī, realistas	SI	
PERSONAS	No	No	No	Si, realistas	Si	
FONDO	No		Transparencia	Fotografia	No	
USO SOMBRAS	Diferentes tonos	No	Si	Si		
MATERIALIDAD	No	No	SI	57	Imita la real	
OTROS	Esencia provecto	Construcción	Explican provectos	Atmósfera prov		

ESTUDIO ATELIER LE BALTO

REPRESENTACIÓN	Dibujos	Planimetria	Infografias	Maquetas		
PROYECTO/S	Terrazas Chartres	Zana verde Bann	Fieldwork-Fieldwalk			
AÑO/S	2014	2015	2014			
TÉCNICA/S	Bocetos	Dibujo técnico-artístico	Collage			
PROGRAMA/S	Mano alzada	Autocad + Photoshop	Photoshop			
GRADO REALISMO		Medio	Conceptual / Realista			
GAMA CROMÁTICA	Bollgrato, eléctricos	Realista, monocromático	Realista			
ÁRBOLES	Sī, siluetas	Si, reinterpretados	Si, realistas y bocetos			
PERSONAS	Sī, siluetas	Si, siluetas	Si, realistas y siluetas			
FONDO	Color [azul]	Si	Fotografias			
USO SOMBRAS	SI, simples	Sí	SI			
MATERIALIDAD	Diferencia colores	Intuible	Si			
OTROS		Combinación con bocetos	Axonometrías			

ESTUDIO CARME PINÓS

REPRESENTACIÓN	Dibujos	Planimetria	Infografias	Maquetas
PROYECTO/S	Parque Torreblanca	Pasarela Saint Dizier	Plaza Gardurya	JMC Guadalajara
AÑO/S	2000-2010	2015	2015	1999-2002
TÉCNICA/S	lconos	Dibujo técnico	College	Mano
PROGRAMA/S	Mano alzada	Autocad	Photoshop	
GRADO REALISMO	Conceptual	Técnico	Conceptual / Realista	Volumetría
GAMA CROMÁTICA	Blanco y negro	Tonos de grises	Realista	Madera-metal
ÁRBOLES	No	SI, propios	SI, realistas	Sí, simples
PERSONAS	No	No	Si, siluetas y reales	No
FONDO	No	No	Entorna, sin cielo	Entorno
USO SOMBRAS	No	No	Si	
MATERIALIDAD	No	No	SI	No
OTROC	-			

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