CyAD Investiga 2017

Division of Sciences and Arts for Design

Universidad Autónoma Metropolitana
Casa abierta al tiempo Azcapotzalco

Content

Presentation

The **CyAD Investiga catalog** is a document resulting from the collective work of the professors of the Division of Sciences and Arts for Design. It accounts for the multiple ways in which our academic entity serves the purpose of the institution in terms of research.

This document is based on the Operational Policies for the Promotion of Research Areas, which in its "Research Dynamics" chapter mandates "Establishing departmental and divisional strategies for information, communication and linking of the interests of researchers, in order to promote a collective and collegial work culture that overcomes the inertia of individual work. "

At the same time, in its chapter on External Linkage and financing, the Policies guide to: "Establish strategies for the dissemination, promotion, and recognition abroad of research projects", and:

"Edit catalogs, brochures, and other publications to make known through print and electronic media the lines of research, projects, and results, infrastructure and researchers that each Division has, highlighting especially the collective work."

From all the above, the interest and commitment of our school is to follow up and seek improvement of this type of initiatives and those that strengthen the figure of the research professor and the academic work whose benefits extend beyond the community are deduced.

Actions at the divisional level for the support and promotion of research in the present administration have been established in terms of a series of transversal axes to the activities of different spaces that are coordinated to carry them out.

- Give more visibility to the CyAD Division´s research
- Attend national problems with research proposals.

• Strengthen the professor´s research capabilities.

• Consolidate the Graduate Programs of the CyAD Division.

This catalog is an instrument consistent with the execution of most of these tasks, whose final purpose is to strengthen the research processes we carry out, always perfectible, but with sufficient academic solvency to be analyzed in a public way.

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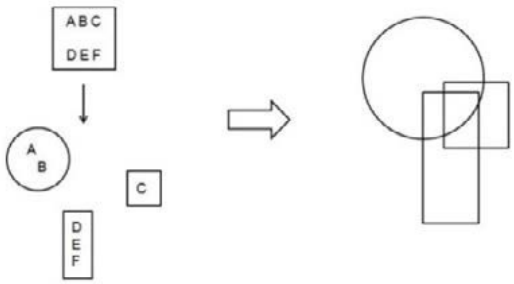
N-301

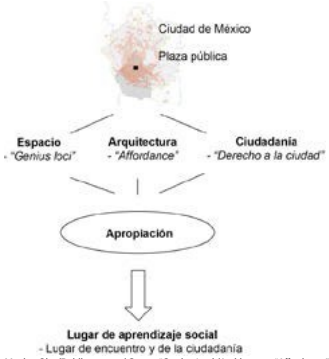
Transformation of the square into today's megalopolis

Introduction

For as long as there have been cities, there have been also central places and spots where people meet and "make city", i.e., they socialize and exchange among themselves economically, culturally, and affectionately. With the changes of urban form and urban structure, the public space, with its character and the use and the appropriation of squares, has been transformed as well. The public dimension is changing towards a system of collective spaces; nevertheless, the square remains as a focal point for the public life. In this place for the encounter and for the citizenship, appropriations promoted as a social learning process, investigating the case study Mexico City.



Interpretation of the hypothesis of the public square as a place for social competence learning / Christof Göbel



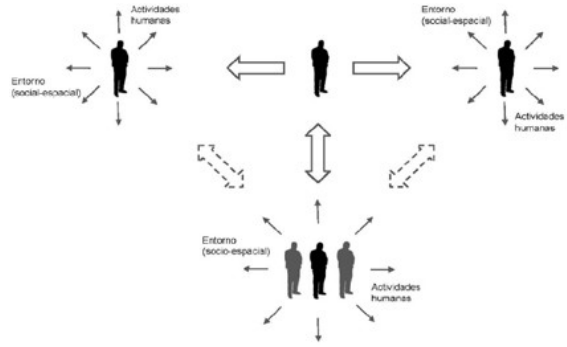
Mexico City /Public square / Space "Genius Loci /Architecture "Affordance"/ Citizenship "Right to the city" / Appropriation /Place for social learning / meeting point and place of citizenship

General Objective

- To analyze the development of the concept of public square in Mexico City nowadays.
- To recognize the public space as a place for social competence learning.

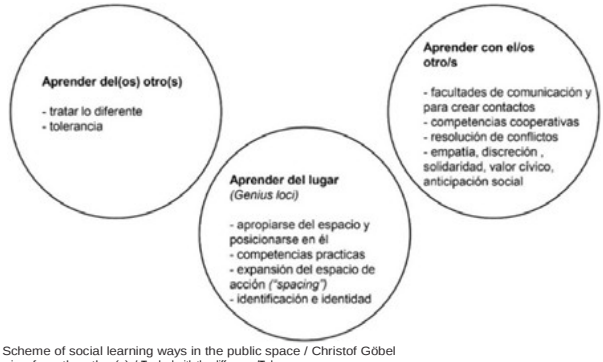
Specific Objectives

- To demonstrate the opportunities provided by the contemporary socio-spatial realities for the appropriation of the public square in Mexico City and its function as a place for civic learning.
- To know the characteristics of the public space, as the distancing from social interaction and interchange damages the cultural dimension of the city.
- To update the concept of appropriation from the perspective of Alekséi N. Leóntiev's theory by means of the new spatial paradigms.
- To systematically apply Henri Lefebvre's triad of space production (1974) to the study of the public square in Mexico City.
- To discuss what resources and tools are available to provide incentives for its appropriation.



Process of individual and/or collective appropriation and learning / Christof Göbel

Human activities/ Environment (social- spatial)



Scheme of social learning ways in the public space / Christof Göbel

Learning from the other(s) / To deal with the difference/Tolerance

Learning with the other(s)/abilities of communication to create contacts/cooperative competences/resolution of conflicts/empathy, discretion, solidarity, civic value, social anticipation

Learning from the place (Genius loci)/ to appropriate the space and to place oneself in it / practical competences/expansion of the space of action (spacing)/identification and identity

Area of International Architecture and Urbanism

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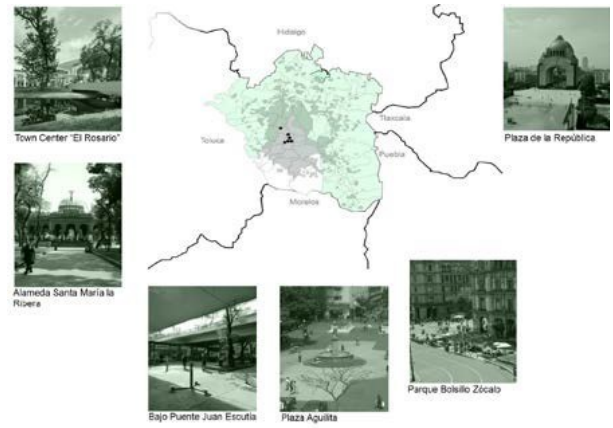
Goals

- Sensibilization on a central topic for urbanism, giving awareness on the socio-spatial characteristics of Mexico City, where the physical and social spaces are separated.
- Broadening of the sense of general formation and acknowledgment of the public space as a place for social learning as well as of the importance of civic culture and civic perspectives. .
- Individual elaboration of a scientific book

Advances

- Empirical studies on the square in Mexico City.
- Reconsideration of the role of public spaces as places for social learning, including concepts as space, architecture and citizenship.
- Field research analyzing squares with a "traditional" notion of centrality. "revitalized" squares and "new" squares.
- Conclusions.



Field research.Study cases/Christof Göbel

Plaza de la República. Public transport access/Christof GObel

"Game of steps". The actor as space designer/Christof Göbel

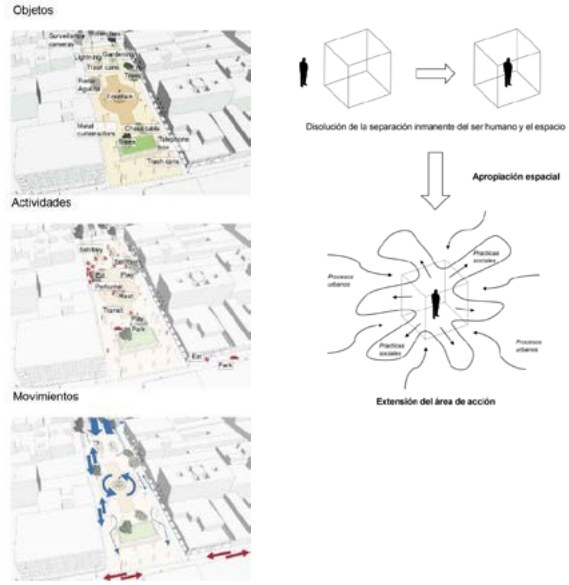
Products

- Collective books for the series "Cuadernos del Posgrado"(Postgraduate Journals): "Plazas públicas en la Ciudad de Mexico" (Public Squares in Mexico City) (2012), "Espacio publico. Aprendiendo en la Plaza Urbana" (Public Space. Learning in the Urpan Plaza" (2016).
- Collective books:"Diversas miradas: La plaza pública en la ciudad de hoy en día" (Diverse perspectives: the public square in the city of today) (2013).
- Final report: "Different Perspectives of the Public Square in the City of Today. Urban Public Squares in Mexico City as Places for Social Learning"(2017).
- Coordination of international events:"Diversas miradas: La plaza publica en la ciudad de hoy en día"(Diverse perspectives: the public square in the city of today)(2012), "La metamorfosis de la Merced. Reflexiones sobre patrimonio cultural y espacio publico disputado" (Metamorphosis of La Merced. Reflections on the cultural heritage and disputed public space) (2015).
- Lectures.
- Articles in specialized journals.
- Mentoring of graduate dissertations.

Obtained Results

Learning from and with others, as well as from the place itself, turns the public square in a place for learning civic competences, although this function is limited to Mexico City due to phenomena like fragmentation and segregation. We should consider places for multiple learning, establishing "spaces of possibilities" which generate opportunities for appropriation. The future lies in hybrid use spaces. Mexico City is a structural collage, whose parts should be linked through a net of public spaces, moving the square to the center of the community again.

Objects/ Activities / Movements / Dissolution of the immanent separation of the human being and space / Spatial appropriation / Urban processes/ Extension of the area of action



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N-349 Urban Fronts and Residual Spaces

Introduction

A current process that draws attention in many European and North American cities is the reconversion of old industrial areas and large transport infrastructures obsolete or in the process of abandonment and deterioration (central train terminals, airports, port areas, among others). In some cases, before their decline, they have been transformed towards a positive urban image, betting on culture and tourism; highlighting projects of museums, theaters, galleries and financial centers complemented by cultural equipment, housing and a commercial district.

Some projects have been set up as urban fronts or water fronts to explore alternative paths, creating multiple perspectives of the urban landscape and have provided cities with innovative amenities, new scenarios for art, active urban paths, thus contributing to the development of cultural tourism and the improvement of the quality of life through architecture and public space.

The physical and functional restructuring of the maritime fronts and the old port areas have become new vectors of growth, taking advantage of these strategic spaces for the organization of production

The water front is a new category in the picture of the elements that articulate and define the urban structure in a city characterized by the presence of water. That is to say, it leads us to consider these areas as absolutely strategic for the destination of the city, and among the factors that explain this fact as the opportunity to rescue the contact of the city with the sea, when recovering the port space once the economic functionality is lost, as well as the use of maritime heritage along with the improvement of its environmental qualities, which allows the generation of a new space of great value for the city.

General Objective

By means of the study of relevant cases, to delve into the processes inherent to the development and practices of urbanism linked to the topics of recycling and recovery of urban spaces in order to offer conceptual solutions to the problem of the residual spaces and urban fronts of the great metropoles.

Specific Objectives

- To identify and compile diverse experiences of cities and specific cases of recovery of urban fronts and residual spaces in the city, where good practices and relevant examples have allowed that this approach started being consolidated as a trend in the 21st century urbanism.

- To find convergences and divergences in approaches and concrete practices in recycling and recovery of urban spaces given in different parts of the world by means of comparative analysis among diverse cases.

Parliament Waterfront (Spree River, Berlin, Germany)/Sergio Padilla

Parliament Waterfront (Moldova River, Prague: Czech Republic) /Sergio Padilla

Waterfront Kapelle Uter (Spree River, Berlin, Germany) Sergio Padilla

Dvorakovo Waterfront (Moldova River, Prague: Czech Republic) Sergio Padilla

Dr. Elizabeth Espinosa Dorantes
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Goals

Information gathering and compilation with the topic of urban fronts and residual spaces in the city. Edition of gathered materials in different products, mainly digital and printed.

Advances

To date, a digital catalog has been made available, containing a theoretical approach and intervention proposals in different parts of the world. As well, printed material is available for the promotion of the research results; also, an analysis of the Science Island in Kuanas, Lithuania, was performed within the research seminar, focusing on the waterfront.

An exhibition of the 42 available infographics was also presented on the windows in Building L.

Participant researchers

 Maruja Redondo  Xristos Vassis

 Sergio Padilla

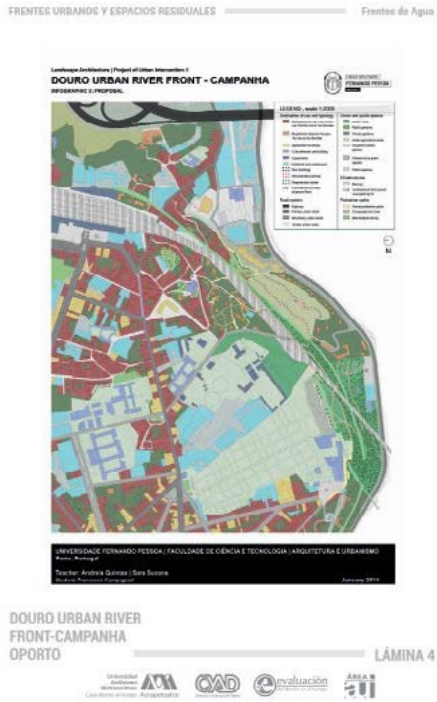
Products

a. Exhibition of 42 printed infographics, on the windows of Building L.
b. Presentation of the lecture "Sustainable Habitat", during the Sustainability Week CYAD.
c. Presentation of the lecture "Thinking the city in net", in the 12th Seminar of International Urbanism

Results obtained

Preliminary conclusions on the thematic lines, such as:

- Urban sustainability as a complex and systematic concept covering aspects related to environment, economy and social issues.
- Creation of public spaces to improve the inhabitants' life quality, as well as the promotion of cultural and educational activities in all the urban territory, to improve the access of the population.
- Generation of green lungs and open spaces to recover degraded environments.
- High quality public transport.



URBAN FRONTS AND RESIDUAL SPACES
Xristos Vassis

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N-352 Artistic Context and influence of the work of Mathias Goeritz in Mexico

Introduction

Mathias Goeritz left Europe, from Germany and Poland flying away from the horrors of World War II. When he arrived to Spain and visited the Caves of Altamira, finding these expressions of prehistoric people embeded in the cave walls, he was deeply impressed. When I visited the caves myself, I found that the great bison painted on an immense rock which covers the inner space of the cave is represented on a surface with the very texture of the rock. That was my impression, and I have not read that anybody else describes this work as I perceived it, and which, in the language of David Alfaro Siqueiros could correspond to a sculpto-painting, as he called the worls he created in which the volume used in his painting represented a simultaneous expression of sculpture and painting, and could not be defined as only one or the other (for example, the murals in the Government Building (Rectoría) of the UNAM, among other works).

Goeritz mentioned that it is not that the modern artist has no interest in beauty but that they possessed other sense of it, and so he expressed it.

For Mathias, spirituality in art was paramount, and he found that the plastic expressions of man in the prehistoric times had it. If we associate this statement with some hypothesis of cave art, we can find coincidences, as there is a relation between the painting in Altamira and magic, as the prehistoric man painted their expressions, of hand – positive and negative -bison and other animals, using the essential; thus the spine of these animals expressed the core of the representation. The animals where represented in movement and, in these hypothesis, the prehistoric men threw spears or spiky objects and stones to the images, as if they were hunting the animals, and they thought it would bring good results during the actual hunt. Therefore, there is a relation with what is considered magic in these studies, and it was not only an artistic representation, but with a purpose or goal which lead to survival and maintenance. Men, as in other periods in history, worked collectively, without affirming their ego. It is possible to say that these paintings might be intending to become a prayer.

It is also possible that Mathias Goertiz's admiration for these prehistoric works resided in this supernatural aspect, as he searched to return to these concept of art as a service, where the artist's ego is of lesser importance as it is nowadays.

General Objective

By means of the study of relevant cases, it is pretended to delve deeper in the relation art, urban space and architecture, analyzing their proposals, concepts and developed solutions, in order to identify the importance of developing integral projects which consider the inter-discipline among artistic expressions (art, sculpture, urban space, public space and architecture , among others).

Specific Objectives

- To identify the artistic expressions that defiend Mathias Goeritz's philosophy and determined his vision about inter-discipline among art, urban space and architecture.
- To document the works created with a multi-disciplinary character which imply the imporvement of the urban space and a relationship between art and public space.
- To highlight the importance of integrating the public work at a monumental scale to the urban fabric from the planning and urban design, for the work to be of advantage, and to be appropriated counting with a stage, to be enjoyed and not ignored by the inhabitants.

Promotional poster for Altamira Caves/ Mathias Goeritz

From the series "El cliente"/ Mathias Goeritz

From the series "Eros"/ Mathias Goeritz

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Goals

This research has been carried out through the use of bibliographic and journalistic material on the state of the art, as well as the study of the work and of artistic context of Mathias Goeritz, who influenced the design method of students and professionals of the world of design in very important and relevant ways, by interrelating art, architecture and urban space, thus creating an emotional architecture and sculpture. This material will be taken advantage of through different products, mainly through a book, articles and lectures, as well as through audio-visual material and it will be presented on academic and cultural broadcasting events and national and international seminars.

Advances

The project, in the present day, is in edition and formation stage and next to its publication.

Products

- Book Publication.
- Organization of seminars on the specific objectives that are appointed in the present infographics.
- Audio-visual and photographic material of Mathias Goeritz's work.

Obtained Results

- Scientific book of forthcoming publication.
- Slideshow and audiovisual material that supports the course: Tendencies of the Architecture and the Sculpture of the 20th and 21st centuries, Architecture and City and Projected Cities.

Attamira/Mathias Goeritz

Ceiling at Altamira Cave

Bison of Altamira

Detail of Hands in Altamira Caves

Sources of Information

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N-370

Port Cities in Latin America. Urbanistic Evolution and future challenges

Introduction

A process that greatly contributed to the economic and urban growth of many of the coastal cities in Latin America was the development of the function of the port as the axis of cultural, social, political and economic life. In the 16th century, one of the policies adopted by the monarchy to strengthen its dominion over the new world was the establishment of ports that consolidated the Hispanic presence in America, constituting a system of great complexity.

Even though the port infrastructure was incipient during the first decades, for 1525 the port network of America counted with seven sites in the Caribbean islands, where Havana was the main port of the Antilles. The creation of ports prompted cities to become key points of the economy, facilitating their link with the new conquered territories, leading them to economic emergence and transformations both in their internal urban structure and in the process of urbanization and colonial transformation, due to the new dynamics adopted.

This study will explore the ways in which these cities have been transformed into their structure, and the way in which the function of the port has been adapted to new development models that are the product of global dynamics.

Main view of the pier /Sergio Padilla

General Objective

Through case analysis, it is intended to go delve into the processes of port cities' transformation from factors linked to the port that motivated these changes, from the discipline point of view of urbanism, on a first stage of cities like Havana, Cartagena de Indias and Veracruz, and from the 21st century, adding successful cases of port transformation in the international scene.

Specific Objectives

1. To explore the topic of Port Cities in such a way that it becomes a tool that allows the exchange of information, methodological approaches and human resources formation through inter and multi-disciplinary research projects in the field of research of the Division of Sciences and Arts for Design.
2. To elaborate urban organization models and formation and consolidation processes through comparative analysis of cities.
3. To identify and compile diverse experiences of coastal cities interventions and mainly in places around the globe where good practices and relevant examples of the relation Port-City have contributed to the generation of new paradigms for the planning of this city typology.

Muelle de Luz/arquitecturacuba.com

Muelle de Luz 1905, La Habana/habanaradio.cu2

Dra.Maruja Redondo Gómez
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Goals

• Compilation and integration of materials.
• Integration of a data base and cartography for every study case.
• Elaboration of explicative models of the process of metropolitan urban expansion and structure for every study case.
• First conclusions of the analysis regarding the structural transformations and their integration to the new global dynamics

Advances

Research advances were made regarding:

• Elaboration of a theoretical framework.
• Selection of the study cases: Veracruz (Mexico), Cartagena de Indias (Colombia), Havana (Cuba) for a first period of study and Buenos Aires (Argentina), Havana (Cuba) and Santander (Spain) in the 21st century.
• On-site information collection on the Port-City relationship in the new century.

Entertainment spaces which are part nowadays of the old port / Maruja Redondo

Urbanistic Recovery of the sidewalk around the old pier / Sergio Padilla

Products

• Works presented at specialized events: Colloquia and research seminars.
• Article published in digital magazine RETE, Venice, Italy.
• Data files and cartography of study cases.
• Bibliographical essays on the subject.

Obtained Results

Cartographic material of the following case studies has been integrated: Havana (Cuba); Santander (Spain) and conclusions have been drawn regarding:

• Identification of the transformations of the urban structure.
• Factors of territorial transformation, highlighting those that define their economic and social importance and those of the economic competitiveness of the metropolis.

Fortaleza de la punta, at the access to the inner bay / MarujaRedondo

Main road along the old port / Sergio Padilla

Public spaces. Port Avenue / Maruja Redondo

Art gallery at old port
Sergio Padilla

Touristic Pier / Maruja Redondo /

Sources of information

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Mexican Migrations and Transformations in the Urban Image in North American Cities.

Introduction

The migration of Mexicans to the United States constitute a complex phenomenon that has more than one century of existence as, historically, Mexican migrants have had the need to express their cultural roots and identities through their national values to contrast with the American Anglosaxon idiosyncrasy that support racial, social, economic and political differences among the different races and cultures that conform the country. The most worrying aspect of migration is the physical safety of undocumented migrants, who are forced to risk themselves traveling to the US due to the lack of stable and well-paid jobs in Mexico. This growing population in working age find a motivation in the expressed need of the United States for cheap labor hand in the three economic sectors

As a result, some government agencies do not take the immigrant population into account to define their demographic characteristics. However, a methodology designed in the University of Notre Dame has proven to be useful to determine the number and characteristics of this sector or the population, such as race, sex and age. This methodology basically subtracts the number of legal aliens from the total of immigrant population, and takes the residue as a trustworthy data source for the undocumented immigrant population.

In the previous decade, the number of undocumented migrants who entered the United States averaged 700,000 to 800,000 per year. In contrast, in the same interval, legal migrants hardly reached the same figures. The Mexican population living in the United States, whether they are legal or not, continues to grow dramatically.

Nowadays, Mexicans represent about 63% of the Hispanic population in the United States (31.8 million, Census 2010), a high historic figure, but not without precedent, since the Polish, German and Irish immigrants reached a higher average of immigration in the mid and final 19th century.

General Objective

To show in the study examples and relevant cases that delve deeper in the relationship of art with urban space and its architectural elements, describing its phenomena, concepts and results in order to identify the importance and impact between artistic expressions (art, sculpture, public space) and urban-architectural space.

Specific Objectives

· To identify the artistic expressions that defines the sense of identity in the appropriate spatial elements for Mexican migrants in their various locations.

· To catalogue the works developed with socio-cultural and artistic characteristics that show the impact on the urban space and its relationship between art and architectural spaces, those that give them an identity as minority groups before other cultural ethnic groups.

· To emphasize the importance of integrating the cultural artistic contributions of the Mexican-American to the fabric of the city in urban design so that the work is known, disseminated and not ignored among its citizens

The “Mural de la Hermandad” in Tijuana/ Archive image

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Goals

The research intends to be developed in two years, through the collection of graphic, visual information, with the compilation and elaboration of reports that address the theme regarding the phenomenon of the Mexican immigrant in an artistic context in the United States, which influences the way of expression, interrelating through art, urban space and architecture. The final product will be edited in different formats, mainly printed and will be presented formally in diverse events.

Advances

To date, a digital catalogue is already available, which contains a series of photographs of the various artistic manifestations, mainly in murals, walls and fences. As well, texts for the diffusion of research results are available.

Border wall / Archive image

Border wall / Archive image

The "Mural de la Hermandad" in Tijuana/ Archive image

Trump's Wall / Archive image

Products

a) Slideshows

b) Lectures given: "Characteristics of Mexican Migration in the United States", "Hispanics of today in the United States", "A story of Migrants", in CYAD and CSH of UAM Azcapotzalco

c) Presentation of the lecture: "A story of Migrants: The Mexicans in Chicago". In the School of Architecture and Postgraduate Department at UNAM

Obtained Results

Preliminary conclusions regarding the thematic line such as:

- Lectures and presentation of results.
- Exhibitions.
- Elaboration of Infographics.

Border wall / Archive image

Border wall / Archive image

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The Virgin of Guadalupe and her bills. For an example of graphic and urban image in the late 19th century

N-408

Introduction

During the archive research of project No. 130, “Manuel Gutierrez Villegas en la Guerrero. 1847-1917”, an unpublished file belonging to this personality was found, which reveals the expenditures made for the enlargement of the building then known as Colegiata de Guadalupe (1887-1895), Former Basilica of Guadalupe, today the Expiatory Temple of Cristo Rey.

This file contains, among other documents, the original invoices of the businesses that provided materials and services to the religious institution during the enlargement works, showing the graphic design of these tax forms, which rarely appear in historical research.

This finding aroused a special interest in proposing the formal and historical analysis of these forms, limited to this historical event, with the purpose of contributing to the field of design research on unexplored fields with an impact on teaching and contributing to the history of Disciplines of the CyAD Division.

General Objective

To provide an interdisciplinary vision of the link and formal influence between the graphic and architectural design, based on the graphic analysis of some invoices related to the expansion works of the Former Basilica of Guadalupe at the end of the 19th century, including the urban image of the businesses that provided them.

19th century litographic workshop. Recovered on August 12, 2016 http://terranoca.blogspot.mx/2014/04/ periodistas-y casas-de-imprenta-de.html

Specific objectives

To determine the formal influence between graphic design and the urban-architecture design during the period and the study of physical space.

- To show the graphic particularities of the invoice design and the tax stamp used to legalize the document.
- To analyze the urban-architecture environment, based on the location of the businesses that provided the services and the supply of the materials used in the expansion works of the former Basilica of Guadalupe.
- To assess the influence of prevailing styles in design and their impact on the graphics of invoices.

Goals

· To generate teaching material that helps in the teaching-learning process of the UEAs taught in the CyAD Division, linked to the history of the design.

· To show the advances of the research, starting from the publication of at least two articles in specialized bodies in the history of the design.

· To disclose the information in forums or specialized events, considering a minimum of two per year.

Manuel Gutierrez Villegas, Personal Archive owned by Olga Margarita Gutierrez Trapero. Manuel Gutierrez (1849-1917). He studied the Bachelor’s Degree as a Construction Master at San Carlos Academy(1865-1869). He completed his professional practice at the transformation works of the Temple of San Agustin, at the National Library (1868), among others, with the well-known architects and engineers Vicente Heredia, Eleuterio Mendez and Ventura Alcerraga. He made, together with Architect Juan Agea, the expansion works of the Colegiata de Guadalupe.

Expansion works of the Colegiata de Guadalupe. At the bottom, the main people in charge of the work can be seen, among them, Achitect Juan Agea and Manuel Gutierrez, OMGT, Personal Archive owned by OMGT, scanning 04/05/2017.


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Advances and Results obtained

General progress 2016-2017:

1) Photographic capture of the invoices to be analyzed, contained in the document “Contaduría y Obras”, Mr. Manuel Gutierrez Villegas, Colegiata de Obras; in the Historical Archive of the Basilica of Guadalupe:

2) Bibliographic review (state of art and historical context)

3) Realization presentation for the Institutional Colloquium of History and Design, Printing in History, Design and Architecture.

4)Presentation of the paper in the Institutional Colloquium of History and Design, The printing in history, architecture, design and art.

In this space, the background to the historical context where this case of study is located was presented, highlighting the trajectory and participation of Manuel Gutierrez Villegas in the enlargement works of the Old Basilica of Guadalupe, the impact of the image on the Nineteenth-century Mexican society as a graphic resource used in the editorial and commercial activity for the dissemination of information and ideas, as well as the origins of the stamp and its relationship in the tax exercise as a graphic identity element used in the fiscal documents.

5)Article for memories of the Colloquium of the Area: The printing press in history, architecture, design and art, in the process of being ruled.

Photo of the original invoicel, OMGT, AHBG, 06/04/2016

Conclusions

The investigations and activities so far concluded, have allowed to know the development of the printing press in the 19th century and its boom within the period of the Porfiriato, coinciding in part with the enlargement works of the building then known as Colegiata de Guadalupe, which is evidence of the importance of this case of study when discovering the graphic image as a carrier of the ideals and the construction of the nationalism of the Mexican society, a fact generally attributed to the post-revolutionary stage, already in the 20th century.

The expansion and development of typography and image brought with them an authentic revolution in knowledge and communication, increasing production times, the multiplication and circulation of printed matter, the freedom of opinion and, thus, the dissemination and the exchange of ideas, strongly agreeing on the ways of learning and thinking the world and, of course, to market all kinds of articles.

Therefore, this research proves that the graphic design has been a common activity in the field since immemorial times, confronting the stipulations of various authors, regarding the location of its origins in the 20th century.

Photo of the original invoicel, OMGT,AHBG,30/03/2016

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N-415

Visualization of socio-scholar information by means of structural equations. Data and signs.

Introduction

Due to the social and economic relevance of education in most countries, Mexico has been in need of knowing the quality of educational services offered at the basic level. As a result, several evaluation instruments have been implemented, which provide a broader picture of the conditions of the education system; But for the present investigation; The focus will be specifically on the evaluation instrument, PLANEA (National Plan for the Evaluation of Learning), which is the guiding principle of this study.

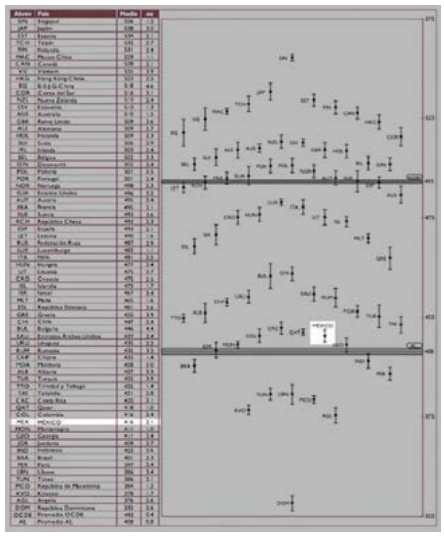

Figure 1. Performance media in a global scale for Sciences per country PISA 2015, INEE (Elaboration with PISA 2015 database)

General Objective

To design a model of visualization of information through structural equations with alternative filters for revising the effect of the sociocultural context on elementary students in Mexico.

Specific Objectives

· To determine the alternative filters and include them on a evaluation proposal for revising the sociocultural context of basic education children in Mexico.

· To determine the federal evaluation where alternative filters could be included.

· To determine the processes in which the structural equations are viable for research data projection.

	PISA	EXCALE	ENLACE
Ámbito	Internacional	Nacional	Nacional
Diseño y aplicación	Organización para la Cooperación y el Desarrollo Económico, OCDE	Instituto Nacional para la Evaluación de la Educación, INEE	Secretaría de Educación Pública, SEP
Periodicidad	Cada 3 años	Se basa en un programa cuatrianual	Cada año
Cobertura	Muestral	Muestral	Censal
Aplicación	Matricial, no permite obtener resultados individuales	Matricial, no permite obtener resultados individuales	Uniforme, permite obtener resultados individuales
Población Evaluada	Jóvenes de 15 años de edad	Se aplica rotando cada año grados (3º a 6º de primaria y 1º a 3º de secundaria) y asignaturas (español, matemáticas y ciencias).	De 3º a 6º de primaria, 1º a 3º de secundaria, y último grado de Educación Media Superior
Objetivo	Mide las habilidades para la vida en matemáticas, lectura y ciencias, independientemente de si fueron adquiridas o no en el trayecto escolar.	Mide el logro académico a nivel sistémico.	Permite un diagnóstico del trabajo escolar por cada alumno evaluado en las materias instrumentales básicas.
Resultados	Genera resultados por entidad federativa y modalidad educativa, para ello, México solicita una sobremuestra.	Genera resultados por entidad federativa y modalidad educativa.	Genera resultados nacionales por alumno y escuela. Aporta elementos que contribuyan a establecer programas de tutorías focalizadas e implementar programas de formación y actualización de maestros. Entre otras acciones.

Figure 2. Comparative table of education quality assessment tests. Recovered on April 20, 2016. http://enlace.sep.gob.mx/ba/pf01.html

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Goals

With the information generated, the following products will be prepared:
1) Publication of papers in specialized events.
2) Publication of articles in specialized magazines.
3) Statistical analysis supported by specialists.
4) Interface design supported by specialists.

Advances:

Precision of leading methodology from the definition of the variable "alimentary habits" as a substantive element of academic performance and achievement.

Is it possible to consider the development and analysis of alternative variables and filters, corresponding to a specific environment, complementary to the PLANEA test that address the contextual aspect from different angles, considering topics such as alimentary habits?

The variable "eating habits" is justified within the current protocol, on this page, in addition to the description and proposal of the filters of each of said variables, which will be analyzed statistically.

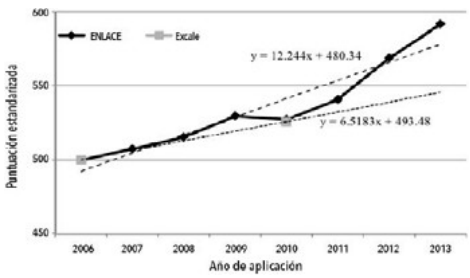

Figure 2. Tendency of the ENLACE and EXCALE results: Mathematics 3rd grade of elementary school. (Backhoff and Cintreras, 2014). Source: Magazine Nexos en línea. Recovered on April 20, 2016 from http://www.nexos.com.mx/?p=22749

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Researchers participating

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Obtained Results

A research of an exploratory nature is proposed as a methodology, since, although there are numerous studies on the basic education in Mexico, its management and quality, it is difficult to find a study that contemplates the visualization and contextual analysis of variables about socio-school behaviors and their influence on school learning and the academic achievement of students at the elementary level. In addition, this information through questionnaires applied to students, will give a general overview of these factors in different schools with different socio-economic and cultural strata.

It is also considered a non-experimental, cross-sectional research, since through the development, observation and analysis of contextual questionnaires applied in a given period of time, to different groups of the same degree of study, in schools of different socioeconomic strata, it is possible to obtain real information about certain students, their families and those factors (Eating habits and XXXX) that influence positively or negatively in their learning.

Exploratory research is characterized by being more flexible in its methodology compared to descriptive or explanatory studies, and is broader and more dispersed than these other two types (which seek to observe as many manifestations of the phenomenon studied as possible). (Hernandez et al., 2003)

The "Non-experimental" research does not constitute any situation but rather observes existing situations "(Hernandez et al., 2003)

The purpose of the non-experimental, trans-ectional and timeless design is to explore a community, a context, a situation, a variable or a set of variables at a specific moment. (Hernandez et al., 2003)

N-409

Graphic design as a tool for strengthening identity of Tezontepec de Aldama,Hidalgo.

Introduction

The participation in the Municipality of Tezontepec began because of the concern of some inhabitants for the conservation of a forest of ahuehuetes located on the banks of the Tula river. Ahuehuetes are trees that are damaged for different reasons, such as their use as toilets or solid waste containers, to obtain firewood to use as fuel, among others. Fortunately, the inhabitants realized that this situation was not an isolated problem, but a set of different factors.

For this reason, it was decided to carry out a strategy based on the realization of graphic materials, a project in which the first phase consisted in exploring the influence of the graphic identity in the care of the surroundings.

General Objetive

Design elements that make up part of the graphic identities of the region, communities or key entities within the municipality of Tezontepec and determine the possible social benefit, from these.

Specific objectives

- Detect, rescue, and disseminate traditional visual culture, native to the region.
- Promote through the tools of graphic design and visual communication, the cultural features existing in the area, such as gastronomy, religion, vernacular architecture, traditional clothing and traditions among many others.
- Make a monographic publication of the municipality of Tezontepec de Aldama.

Ahuehuetes at the banks of the Tula river / Varona 2016

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Social service students collaborating

Mariel Reyes Díaz

Yessica Terron Martinez

Goals

To meet the stipulated objectives, the following goals were set:

- To establish links with the authorities to carry out activities.

- To make tours to the communities of the municipal of Tezontepec de Aldama.

- To search documents that account for the history of the municipality.

- To visit the natural sites of the area.

- To make a photo file that shows the situation of the region.

Advances

The advances reached 100%, by having completed the total of the activities that had been planned for the municipality, thus leaving the practical part of the project covered. Such activities were:

-Relationships were established with the municipal authorities, and with key people in the city.

-A series of photographs is available that allow to visually understand and reflect on the existing conditions in the municipality.

-There have been interviews with the official chronicler of the municipality to know its history.

-The search for cultural features of the region was carried out.

Only the observation and reflection is pending, referring to the interaction of the inhabitants with the finished products.

Obtained Results

As for today, it has been observed that the inhabitants respond favourably, appropriating the graphics that make up their identity and, therefore, forming part of a group. Little by little, an integration of the naturals with their own place, their cultural and environmental context is being given.

In addition to aforesaid, we have participated in the organization of environmental workshops. We expect that the set of activities carried out, will favor the care of the natural and cultural environments in a near future.

Graphic Proposals

Use of proposals / Juana Angeles Lozano, 2017.

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N-416

Design in sustainability applied to projects favoring environemental preservation

Introduction:

The issue of sustainability has migrated from the environmental sciences to all areas of knowledge. The design disciplines have been seen as areas of knowledge that do not have a real contribution to the care of the environment.

Within our institution, it is constantly heard the necessity and suggestion for projects to be focused on sustainability; however, when these are done, they are isolated efforts, as often there is not a real knowledge of the subject in question.

This situation is even more relevant with the requirement of adding the topic of sustainability in design projects to the new curriculum.

The issue is not only applying the concept of sustainability in the care of the environment in interaction with diverse materials, but also finding a balance among society, economy, social welfare and environment.

General Objective

To determine the different types of design that participate in the development of sustainable projects, with a view to obtaining results that support the preservation of the environment and, therefore, an improvement in the quality of life of users.

Specific Objectives

1. To identify theoretical referents belonging to different fields of knowledge which are able to support the disciplines of design in the elaboration of sustainable products.

2. To perform and approximation to the real situation and knowledge of both students and scholars of the CyAD division on the topic of sustainability.

3. To apply the generated knowledge in the development of proposals led to support the different UEA's for their application in projects dealing with sustainability.

Goals

1. Diffusion of the theoretical referents through class notes, digital presentations, lectures in forums with related topics.

2. Approach of the pertinent methodology and with possible application in the different UEA's so that the students can use it

in the elaboration of sustainable design projects.

3. Identification of ideal physical spaces in which the different types of design intervene in the elaboration of proposals that give possible solution to problems in favor of the preservation of the environment.


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Advances

- Bibliographic research related to social, sustainable, conscious and participating design.
- Research and analysis of projects that are found on the category of sustainable integral design, that is to say, that they contemplate the aforementioned designs.

Products

- Research reports including the topic of the project will be elaborated.
- A dissemination article will be written to be submitted for publication to the magazine “Tiempo de Diseño.”
- Course notes and teaching material such as slideshows for the subjects of Design of Graphic Messages V, Theory and Applied Methodology II, Design of Graphic Messages VII and Theory and Applied Methodology IV.
- Exhibition CyAD Researches: presenting infographics showing the progress made in the research project.

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N-403

Didactic resources for innovative teaching of design supported in the study of design thinking, emotional design and neuromarketing

Introduction

The present research project rises from the need to update and strengthen the theoretical and methodological foundations that give sustenance to design in the workshops of the Bachelor's Degree in Graphic Communication Design, as well as in the Graduate Course of Information Visualization. With the development of these theoretical-methodological alternatives, innovation can be fostered, exploring new approaches to investigate and analyze procedures of our discipline with international cutting-edge tendencies.

General Objective

To develop learning contents for their application in the design workshops, as well as in the Graduate program in Information Visualization through the upgrade of the theoretical-methodological framework used on the Graphic Communication Design Degree with the analysis of design thinking, emotional design and neuromarketing.

Specific Objectives

To document the topics of interest that are applicable to the research and the case study, which focuses on the analysis of design thinking, emotional design and neuromarketing and its possible application in projects of design and visualization of information.

To generate and expand the knowledge about design thinking, the emotional dialogue and neuromarketing to contribute to the students' learning of the graphic design of both the Bachelor and Postgraduate programs, as they have another theoretical methodological support for the creation of their projects.

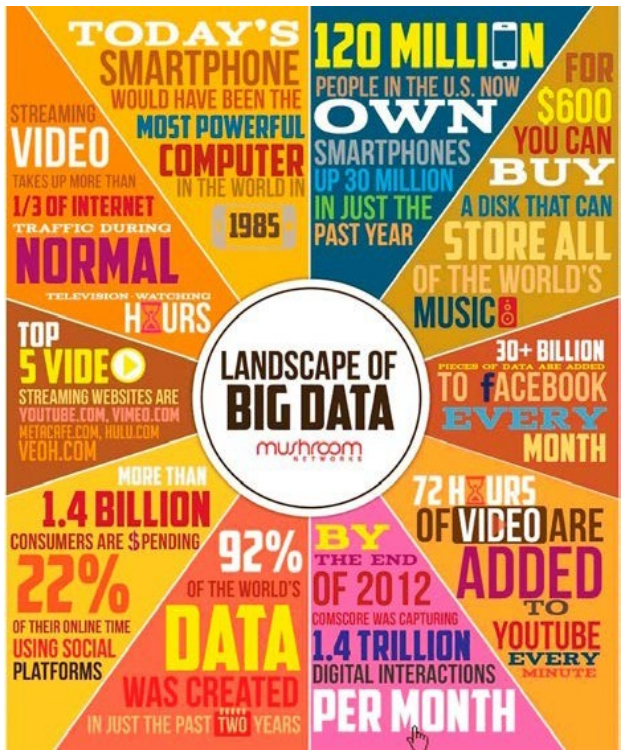
Goals

To carry out documentary research on the analysis of design thinking, of emotional design and neuromarketing and its possible application in projects of design and visualization of information.

To Contribute to the generation of knowledge about these particular issues.

To participate in the diffusion/ promotion of the obtained results to the university community, internal and external, and to all those interested in the subject, through lectures in specialized forums and research articles.

90% of all the data of the world has been generated in the last two years, as it can be appreciated in the following image. However, some companies have been forced to recognize that they are ignorant about us humans and what really motivate us, even though the *Big Data* is composed of data, which favors analysis. According to Lindstrom (2016), even with this statistics, the *Big Data* is rather incompetent to answer questions as: What desires lie in the gap between perception and reality, between reality and fantasy, and between the conscious and unconscious fantasies of people? What are the unbalances within culture? What is too little and what is too much? What desires are being fed?



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Advances

So far, as it was proposed, documentary research on the analysis of design thinking, emotional design and neuromarketing has been carried out, contributing to the generation of knowledge on these issues in particular.

The diffusion/ promotion of the results obtained to the university community, internal and external, and with those interested in the subject, has already begun; through lectures in specialized forums and research articles, as well as the development of learning contents for its application in the Design Workshops as well as the Graduate Program in Information Visualization.

Products

Research reports.
Didactic resources .
Lectures in specialized forums
Research articles

Obtained Results

Formulation of the research protocol.
Collection and decoding of data to support the theoretical and methodological foundation of the project.
Confirmation of the state of the art.

Companies are investing significant amounts of resources to drive researches about the emotions and human behaviour that guide decision making. Specific areas of research as the neurosciences have been collaborating with marketing, and from there a variant known as Neuromarketing has risen, that is also revolutionizing the markets with its findings. However, the field of research is broad, complex, the theoretical positions varied and, logically, the results are heterogeneous. These limitations impede consensus about the specific role that emotions play and how to satisfy the deepest and sometimes unknown needs of people. What is certain is that it would be convenient for designers to appeal to the emotional aspect of the users to identify and understand the motivations behind their behaviour and this, in turn, will have repercussions in the design of products focused on providing more satisfactory experiences.

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Design factors of the current benches for parks and gardens in Mexico City that facilitate social interaction by users and the perception of landscape

N-376

Introduction

The following research is done with the purpose to give conceptual elements, from the design area of knowledge, whose objectivity allows the designer to make scientifically grounded decisions for the dimensional and spatial conformation of the benches which are meant to be used in parks and gardens in Mexico City, so that, on one hand they facilitate the conditions for social interaction, specifically conversation among the people using them, and on the other hand that they allow the user to make the contemplation of the park´s or garden´s panorama easier and more appealing while being seated on the benches.

Objectives

The objectives set from the beginning of the research are: to detect and determine the factors of the dimensional and spatial design that facilitate conversations between the users by remaining seated in the current benches in parks and gardens in Mexico City. Another one is verifying if the disposition of the factors of the design of the current benches in public areas in Mexico City facilitate the contemplation of the landscape.

In this case the factors identified for the analysis are: the location of the benches in the park and the orientation of each bench that enables the user to see different visual panoramas that can produce pleasure to look at.

Straight benches in Av. Juarez in Mexico City.

Long straight bench at the main entrance of "Parque Tezozomoc"

Semicircular bench at Alameda Central in Mexico City

Prototype of a circular bench for social interest studies.

Benches with angles greater than 45° for a study of social interactions at different heights

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Goals

1. Analysis of the location. Park, 2. Theoretical Framework. Elaboration of the reference construct that adds to the objective explanation of the behavior of the design as a phenomenon for social interaction, 3. Documental Research. Historical, formal and sociocultural aspects, 4. Analysis of the users' activities in the park, 5. Analysis of the current park benches, 6. Elaboration of explanations and reasoning of the design factors of the park benches, 7. Defining or describing the design factors of the current park benches,
8. Trial for the design factors that facilitate the contemplation of the landscape and/or conversation, 9. Results and final conclusions of the project.

Progress

The benches can be made of different materials and many forms, as long as the requirements to satisfy the users´ expectations as well as its integration to the context and the environment are taken into account. Because they are installed in outdoor spaces, where the property is limited to the time they will stay there, their resistance against mistreatment and vandalism must be outstanding; the resistance against the environmental conditions is a factor that must be seriously considered during the design process - resistance to humidity, UV rays, dust, low and high temperatures and corrosivity must be taken into account, so that the benches have good performance. Another aspect that should be considered is the integration to the context, which can be historical, social, cultural, economic, and political, so that it does not interfere with the ideology of the social group that will use it.

Products

Both landscape and design are important in the cultural conformation of social groups, communities and even individuals, as both form an integral part in culture, are culture themselves, and generate culture. That is why, when perceiving a rural or urban region, particular traits can be identified regarding the way of life, signs of habits, customs and traditions of the communities. The plains, the mountains, the valleys, the color of the sky, the type of vegetation, the type of soil, the weather, or, on the other hand, the architectural constructions, the tracing of streets, the conformation and function of the constructed spaces and the future spaces, as well as the general furniture of the place, are marks of a collective interest of the principles and values of the social groups, the way they are and how they act normally, of their own history but also their wishes, their desires, of their emotions and their personal and collective ambitions as human beings.

Obtained Results

The design of the benches for public places, in theory, must incorporate appealing details, avant-garde purposes and aesthetic contemporary concepts in materials like concrete, smelting stainless steel and iron with wire structures or carbon steel, even though, in many cases, the support bodies favor stone makings, construction partition and/or rammed soil; the finishing touches can be electroplated or baked highly resistant paints, even though there are currently plastic materials highly resistant to wear, like polypropylene of ultra-high density or some thermostable plastics, also resistant and appealing granite, stones, mosaics or stones can be considered for the superficial finishing touches.

Prototype of the resting benches in parks and gardens in Mexico City and landscape contemplation.

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N-383

Silversmith Crafts and Design in Taxco, Guerrero: The jewel as discourse

Introduction

Cultural heritage as identity, regarding the intangible, is used in some cases as part of the design of Mexican products and impacts on the economic development of a country and is part of the "creative economy."

The value of design as implicit intangible value in the development of silver has created a new prospective vision in the management of silver with original designs, taking care of its conceptualization. Ornamentation throughout the use of objects made of diverse materials in jewelry constitutes a fundamental aspect, not only in the attire of men and women, but also in the design of utilitarian objects.

General Objective

- To make a research regarding the impact of the design in the development of ornamental and/or compact production in Taxco, Gro.
- To identify the value of wearing jewels and their meaning from their value.

Specific Objectives

- To differentiate the tasks of the silversmith, craftsman and designer in the production of silver products and their importance in the development of jewelry.
- To identify the factors that have boosted jewelry production throughout history and their importance in different areas.

Goals

To make a documented historical memory based on the direct experiences with the craftsmen of Taxco, Guerrero.

- To develop products based on design proposals that support handcraft work.

Progress

For many centuries, Mexico has been a great producer of gold and silver for the world, currently being the biggest exporter in the world. According to the " Instituto Mundial de la Plata" (Silver Institute, 2016), in 2014 and 2015, its biggest silver production in its history was registered. Given its resistance, conductivity, light sensitivity, capacity to resist extreme temperatures, malleability and ductility properties, silver is used in jewelry, industry, decoration and production of coins and medals.

The ancient communities had a particular interest in mining, as it is described in codex from before the arrival of the Spaniards. After that, there are letters from Hernan Cortes and Bernal Diaz del Castillo describing in astonishment the objects carved with copper, silver and gold.

"The Mesoamerican men had the symbolic concept of using stones with a magical character" and could differentiate them by their color, size, weight, resistance, hardness, bright and form (Langenscheidt, 1997, p. 7). The accumulated experience through hundreds of years of observation of the qualities of those materials allowed them to develop procedures to obtain and use them according to their needs and their technological progress. Apart from clearly useful artifacts, they fabricated other objects with ritual purposes; in fact, some materials like jade, turquoise, gold and silver among others were considered symbolic on their own. (Caso, 2011).

At certain historical moments, jewelry played two roles: by its ornamental condition and by its function; on the other hand, It is catalogued within the minor arts as immaterial in the development of design conceptualization, in processes and techniques.

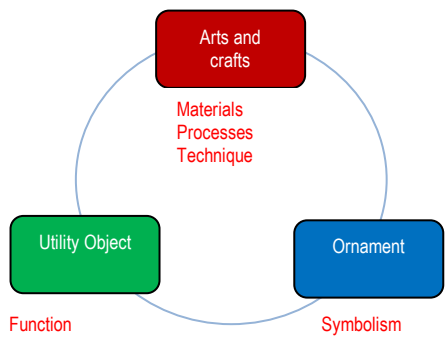

Figure 1. Role of jewelry.

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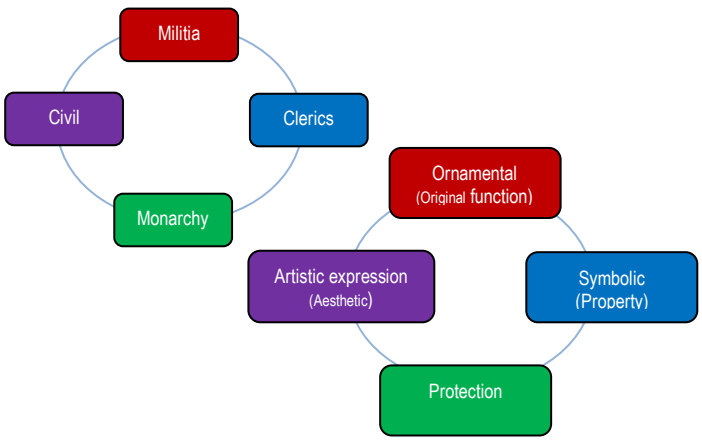
Objects made out of gold and silver have been a sign of social importance. One of the usages of jewelry is as an indicator, in a concrete society, of power and signal differences for those who wear them.



Figures 2 and 3. The function of jewelry.

The use of materials that come from nature, like volcanic rocks, coral, wood, resins and many others, contribute with conceptual contents for jewelry creation.
For centuries, stones have been fascinating for the human race, which is why their demand produced the need of diverse imitations from hard carved glass or from polished faceted steel.
The jewels' brightness, quality related to the property of polished metals to reflect light, of the carved gems had a mayor meaning in the 17th century, as wearing diamonds was fashionable.

Products

As a result of the bibliographic review, another research aspect is proposed, based on artistic styles, specifically Art Noveau that cover a lot of characteristics among the ones that stand out, the use of the female figure and the emphasis on color, especially through enamel techniques that include basse-taille, champleve, cloisonne and plique- a-jour.
The motifs include orchids, lilies, pansies, birds, snakes, dragonflies, mythological creatures and female silhouettes.
The enamel was the most important technique during this time, while sinuous organic forms were the most recognizable feature used, combined with the use of gems and/or glass.

From this, the following queries are stated regarding the use of new materials and techniques:

Does the influence of the Industrial Revolution force a reevaluation in jewelry conceptualization, whose main motor is design?
Is styling related to technological innovations?

Variables: basic design elements, new materials, processes, techniques.

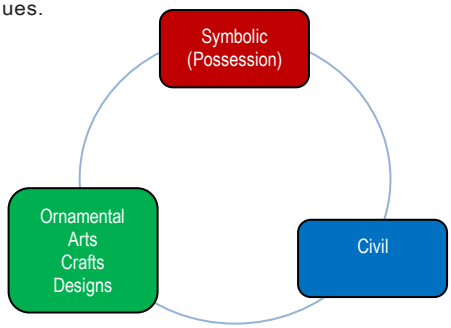


Figure 4. European Modernism. Art Noveau

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Architecture as a support for religion
Religious Believes in three moments of history

N-347

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Introduction

Religion has always had to rely on and manifest itself through music, paintings, sculptures and architecture; in a way that it has been the commitment of religious artists to use their capacities to support and sometimes even demonstrate thoseideological beliefs.

General Objective

To make a historical and updated diagnostic on religious dogmas, myths and rites and the manifestation in architecture throughout history, we chose examples from some of the most important religions in the world, from the ones which believe their gods are zoomorph to the ones that believe their gods look like humans.

Specific Objectives

a) To make a historical analysis on architectonic constructions from a religious point of view, that have contributed to the socio-historic development of populations.

1 y 2. Buddhist set in Bangkok, Thailand. Photo: Eduardo Langagne
3. Inside view of the Temple of the Valley, next to the Temple of the Sphinx. Photo: The Complete Pyramids. Pag 125
4. The cut in the north part of the Miscerinos pyramid was dynamited by Vyse to investigate the inside. Now forbidden techniques. Photo The Complete Pyramids pag. 137

Main Researchers

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Mtra. Guillermina López

Mtra. Irma López Arredondo

Goals

To find a common architectonic language for all religions. So, it will be necessary to study the conceptual differences of the ideologies of the diverse gods throughout the architecture works that support them.

To find the differences between the diverse religious creeds and the architectonic designs used to represent them, using architecture as an instrument for diffusion and support of those different creeds, using the structural forms to transmit their messages.

Progress

The workplan which consists in dividing it in 3 consecutive trimesters since the project was authorized and has not changed. Each trimester contains the progress of three examples, distant in geography and in time. The third and last report has already been submitted including the chapters:

"Architecture in Ancient India, Thailand and China"
"Architecture in Ancient Egypt (3rd part)"
"Islamic Architecture in Mexico"

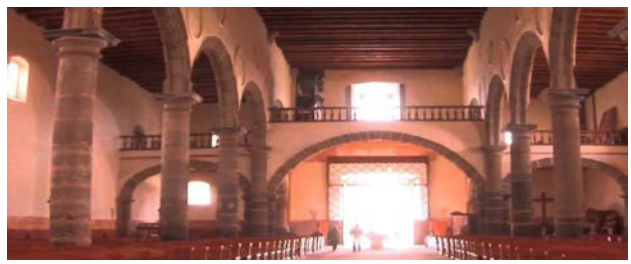
Products

a) Three research reports that were submitted at the end of each stage, as planned in the calendar.
b) 15-0: Delivery of second report.
c) 16-0: third and final report.
d) Apart from that, we are preparing specialized articles and slideshows.
e) A seminar will be held at the end of the investigation with the participation of guests specialized in the subject.
f) Publishing the memoirs of this project.

Obtained Results

Support to the student community in getting to know the development of cities and communities, as these are the type of buildings that rule the urban trace.

Support to the specific community, as at the end of the research, a specialized seminar regarding the subject will be held, inviting specialists, which will include master conferences and the publishing of the research. Professional development, since we invited professors and experts in the subject to participate in the development of this project.



5. Nuestra señora de la Asuncion Churches, Tlaxcala. Photo Ortiz Bobadilla Ines, Mudejar Architecture in Mexico, UAM, Mexico, 2013, pag 102
6. Mudejar covering in the church choir of the Nuestra señora de la Asuncion Church , Tlaxcala. Photo de: https:// farm8. staticflickr.com/7 613/ 16 763893376_ a22c47ed38 _c.jpg 30.09.2016
7. Churches in San Pablo de Zacatlian, The cover could have been a pair and knuckles armour, Puebla. Photo de: https://i.ytimg.com/vi/FmHsWjuHwc4/maxresdefault.jpg 7.10.2016

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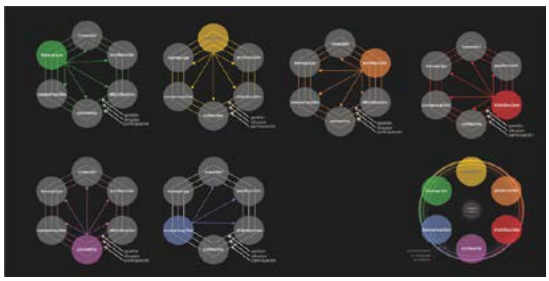
Personal and social practices regarding electronic books

N-369

Introduction

To verify the conceptual framework, the model of cultural process was applied to two case studies, chosen as samples of maximum variation. Perplex City (Mind Candy, 2006) is a "native digital" work of transmedia narrative, it required the participation of the readers and its publication lasted 2 years. Wattpad (WP Technology Inc., 2006) has been a free community for writing, reading and dialoguing for the last 10 years. It contains "digitized" works - the electronic support is only a form of transfer.



Objective

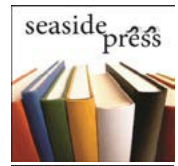
To demonstrate that the DCG is crucial for the integration of the different potentialities that the virtual space gives to the community cultural circle of aesthetic reading.

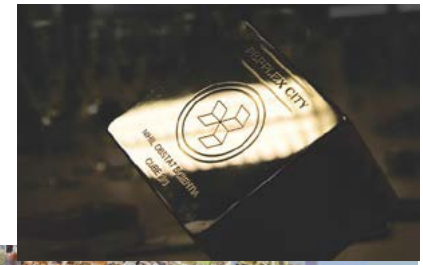
Main Question

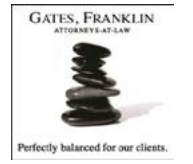
Which is the function that a graphic communication designer must exert within the community cultural context of aesthetic reading in the virtual space?

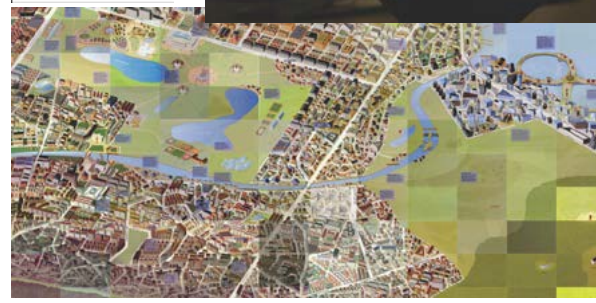
Contribution to design

Thanks to deep analysis done in the study cases, both in results' synthesis as well as in the a reflection that brings them together, specific points of consideration have been obtained for the DCG works, which represent valuable initial conclusions on how they start answering the main question.









Pictures
Diagram: Analisis del proceso cultural de Perplex City (PXC). Source: own creation.
Caratula de PXC (Ilustraci6n Bagaty, 2006); fictional campaigns published in Sentinel de PXC newspaper ; classified ad for the release; written book by the participants; clue cards; the treasure to find : *The Receda Cube;* mapa de PXC (Tate, 2006).

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Goals

- Emblematic moments in the history of the book and reading in both physical and electronic stages
- Conceptualizations: Book and e-book; reading types; electronic reading in virtual space; the phases in the cultural process; types of circuits.
- Methodology of the research and its justification
- The universe of aesthetic reading in the virtual space
- Focus on the design of cultural processes for itself
- Evaluation of the answer to the question, validation of the hypothesis and fulfilment of the objective

Products of the research

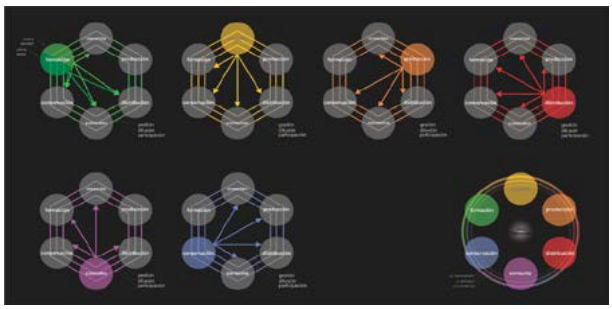
- PHD's thesis on Information´s Design and Visualization Presentation
- Article
- Socializing the results in a divisional exposition and its corresponding publish in a Research Catalogue of UAM-A

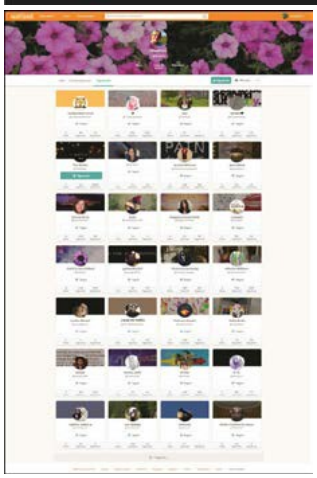
Progress

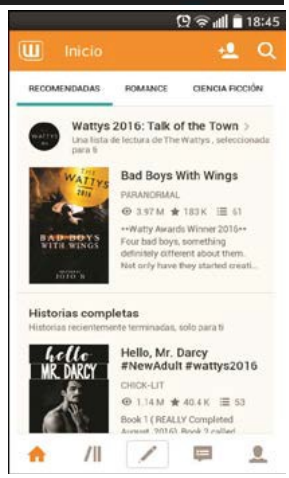
Background Chapters , Methodologic theoretical framework, Study cases, Focus for design
3 internal presentations, 2 nationals, 1 international V 2 progress reports , 4 research reports
2 book chapters, 2 indexed articles
6 infographics of Doctorates in design, 3 for CYAD "Investiga"

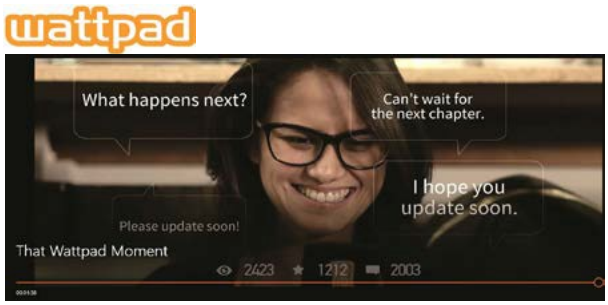
Partial Results

The study cases' results are spread; three possible types of interrelations have been discovered. The seemingly different characteristics that motivated the chosen examples revealed that, even though they are different, they also show similarities; the synthesized observations are complementary. It is noticeable that the DCG´s work has been expanded and made more complex. It is important for its participation to be regular in the process of cultural development, taking into account the different aspects that involve its role as a complex system. The responsibility that it has is greater because its reach is greater as well as its influence.









Pictures
Diagram: Analisis del proceso cultural de Wattpad (WTP). Source: own creation
Screenshots: video *The Wattpad Moment;* authors collection followed by a participant on mobile reading; category view Illustrated poetry; recommended lectures. All in Wattpad , recovered el 20/10/2016.

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N-ET

Laboratory of Collaborative Design Learning

Introduction

The Massive Open Online Courses (MOOG), is an online learning mode that appeared in Canada for the first time in 2008. Since then, the number of courses under this modality has increased, gaining acceptance among society. In the field of design education, the application of MOOG does not seem to have been sufficiently explored, at least for the purpose of this project, we have not been able to identify some work that indicates the number of courses offered and their effect on design

General Objective

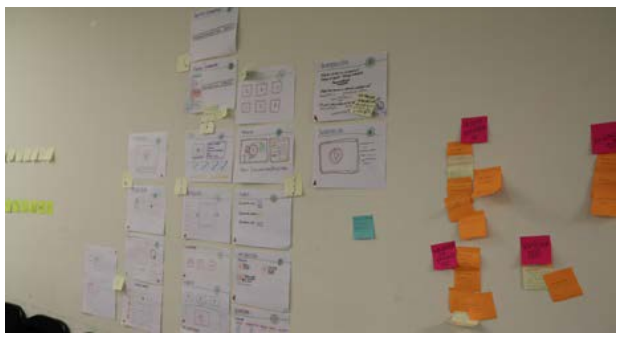
To introduce the students to the concept of collaboration practices orientated to the design of products and services.

Specific Objectives

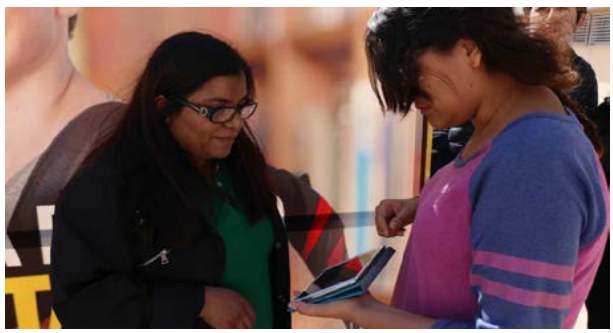
-To Develop open innovation competitions that favor collaboration design.

-To codesign new concepts of products and services.

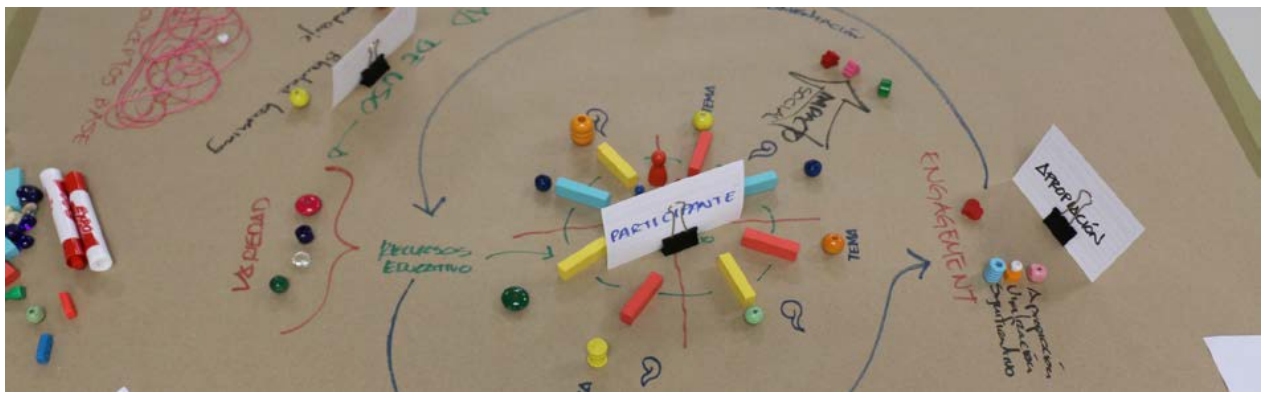
-To apply collaboration strategies and support the participation in innovation processes.



Prototypes.



Interviews with users.



Conceptualization.

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Goals

IN THE SHORT TERM

- Defining the structure of the MOOG.
- Planning the development and exploitation of the MOOG.
- Producing contents for the MOOG.

IN THE MIDDLE TERM

- Publishing contents in the MOOG.
- Making tests with the MOOG.
- Applying the MOOG as a support tool in many courses in three universities involved.

Progress

-Capacitation courses in Instructional Design.
- MOOG's conceptual design.
-Triangulation of collective experiences among the three universities involved.
-Net meetings at Colima (January 2017) and Tijuana (May 2017).

Products

Conceptual design of MOOG.

Obtained Results

Forming of human resources in collaboration by means of workshops.
Scholarships for students.
This project counts with external funding from the "CODAES" net.

Collective Workshop.

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Recreation and Environment Group

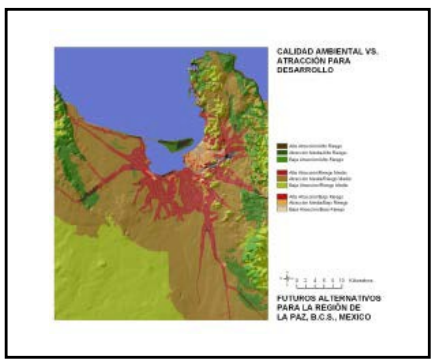
N-137

Alternative futures for sustainable development. GeoDesign applied in Mexico

Introduction

GeoDesign is a participative methodological strategy that has been developed by Dr. Carl Steinitz and his research team in the last fifty years. Since 2005, a group of scholars from Harvard University and the UAM Azcapotzalco have been working jointly to apply GeoDesign concepts in regional, urban, landscape, architectonic scales of both objects and messages in Mexican communities: Tepotzotlan, Azcapotzalco and La Paz. To achieve this, we have used different tools and approaches: from handmade drawings to advanced computer aided Geo Referenced Programs.

Alternative futures, Tepotzotlan.Cover, 2010



Alternative futures
La Paz:
Environmental quality, 2017

General objective

The fundamental objective of GeoDesign is the development of Project Processes with the goal of transforming a geographical area in a sustainable way throughout time. Its method is based on the needed collaboration between designers, technicians and scientists who apply their knowledge to a concentration area through the territory sciences worked in different scales. These groups have naturally different ways of thinking and different approaches to problem solving, and because of this, they rarely work together. Because of this, GeoDesign is a methodology that builds tools for the development and evaluation of different ideas and their reasoned negotiation to come to a condensed proposal

Specific objectives

GeoDesign comes from the idea that space problems related to sustainability cannot be solved by a single individual due to the fact that sustainability requires multi and interdisciplinary approaches, applied at the same time. For this reason, the solutions for these problems can only be a product of an organized and collective work. It is also based on the idea that the magnitude and complexity of the problems regarding sustainability are above the knowledge and reach of a single individual, discipline or method, and these problems require an organization through collaborative design. “None of us knows everything. We need to find people that know what we do not know and figure out ways in which we can work together” (Steinitz,C. 2016).

Alternative futures, Azcapotzalco
Local residents, 2014

Future alternatives, Azcapotzalco
residential sector, 2014

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 Carl Stenitz (Harvard)
 Tess Canfield (Harvard)
 Gloria Castorena
 Israel Tovar
 Víctor Fuentes

Advances and results

Alternative futures for Tepotzotlán

This project was carried out during 2004-2005, with the participation of 30 students and seven Harvard and UAM Azcapotzalco scholars, focusing on territory from the Municipality of Tepotzotlan in Estado de México. The project culminated with a presentation in the Cambridge Graduate School, in Cambridge, Massachusetts and an important exhibition in the Museum Museo Nacional del Virreinato (MUNAVI) in Tepotzotlan, where it received more that 15,000 visitors and the publication of a book edited by the UAM in 2010.

Alternative futures for Azcapotzalco

In the year 2014 a weeklong workshop, focused primarily in an area close to UAM-Azcapotzalco was held. The work was developed manually, using sketches with acetate over the aerial photographs of the area, to prove that costly and sophisticated software is not necessary to make an effective analysis of GeoDesign. What is essential is the correct identification of the groups involved and the fact that the sum of their talents, skills and specialized information is given to the project in the shape of the best ideas.

Alternative futures for La Paz, BCS

In April 2017, it was possible to open a two-day long workshop once again. On this occasion, a new online free-ware, developed by Dr. Steinitz and his team in Ireland, which facilitates the management of the variables and the evaluation of the alternatives, was used, allowing the creation of timelines for the actions and fluxes of required and produced resources, with which the management of the scenarios becomes easier and more objective. The city of La Paz in Baja California was used as a case study, about which we previously had Geo Referenced information. The two-day intensive work experience, proved that it is possible to develop the basic stage and the first alternative and arrive to agreed conclusions with a big number of participants.

Alternative futures for Tepotzotlan exhibition, Room 3 MUNAVI, 2005

Products

Project “Pueblo Mágico de Tepotzotlan”, Basic concepts (2005-2017). Tourism Ministry.

Figueroa, A. Castorena, G. (2005) *Alternative Futures for Latin American Cities: a case of Study in Tepotzotlan, Mexico.* Proceedings of the 2005 World Sustainable Builging Conference, Tokyo. Pp. 3981-3988. Figueroa, A. Stenitz, C. Castorena, G. (2005) *Didactics for Ecological and Sustainable Design*, Memories from the XXIX National Energy Week, Tuxtla Gutierrez, Mexico.

Figueroa, A. (2008) *Some Experiences from Projects in Mexico with sustainability at urban and architectonic scales criterion*. Memories from Buenos Aires’ Sustainable Forum. Buenos Aires, Argentina.

Steinitz, C. Figueroa, A. Castorena, G. (2010). *Book Alternative Futures for Tepotzotlan*. Ed. UAM, Mexico City, Mexico.

Figueroa, Aníbal. (2013). *Concepts of bioclimatic architecture and Sustainable Urbanism in Mexico. City and Sustainable Territory Congress*. University of Viscaya in the Americas and Manzanillo, City Council.

Figueroa, A. (2016) *Alternative Futures for the Spaces declared National Patrimony in the Camino Real de Tierra Adentro: Case Tepotzotlan.* INAH, Museo Nacional del Virreinato, Tepotzotlan, Edo. De México.

Conclusions

The UAM has consolidated a long academic relationship with the University of Harvard, based on the collaborative work around Sustainable Development. This relationship has yielded results both in applied projects with regional transcendence and in the training of teacher-researchers focused on GeoDesign applied to complex problems. GeoDesign allows us to develop sustainable alternatives in futuristic scenarios in short, medium and long term for specific problems and locations.

Workshop: Alternative futures for Azcapotzalco, UAM Azcapotzalco, 2014

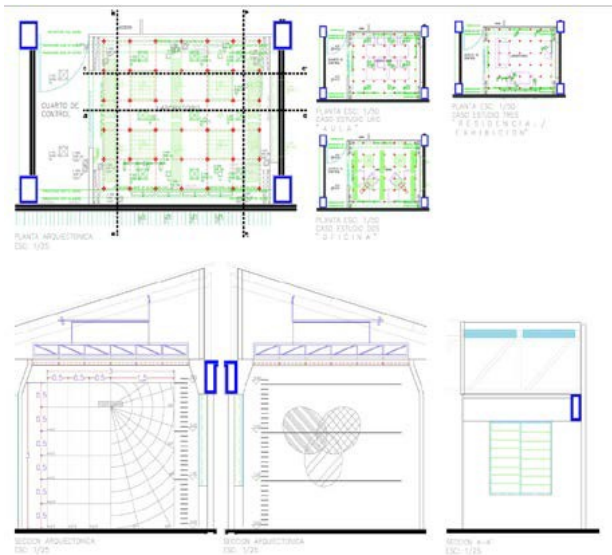
Workshop GeoDesign, UAM Azcapotzalco, 2017

N-374

Analysis and characterization of quality illumination factors and energetic efficiency in the Artificial Lightning Laboratory from the Universidad Autónoma Metropolitana - Azcapotzalco

Introduction

The Universidad Autónoma Metropolitana - Azcapotzalco - Azcapotzalco in its bioclimatic architecture Laboratory has an Artificial Lighting Laboratory (LIA). This laboratory is a tool for teaching and researching for the lighting design of architectural spaces, in which professors and enthusiasts of light could study the factors and parameters involved with designing lighting systems for different environments, with the aim of disseminating the design criteria for artificial lighting among teachers doing units of lighting conditioning systems and graduate students of bioclimatic architecture.



Executive lighting project in LIA, Artificial Lighting Laboratory, tool for teaching and themes related to comfort in lighted environments in domestic, productive and educational contexts analysis.

General objective

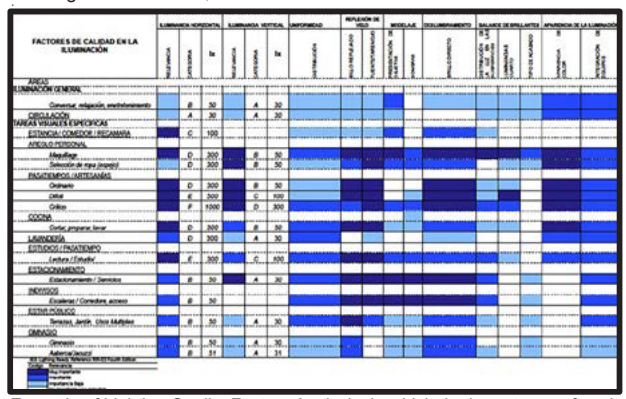
The ample and sufficient development of the artificial lighting knowledge for the development of:

1. Teaching contents related to lighting design
2. Practices related to the development of abilities in lighting design
3. Topics of experimentation in the matter of comfort, energy use and lighting control

Specific objectives

To Analyze and document the technical and efficiency characteristics in the Laboratory to suggest experimentation topics in artificial lighting in architectonic spaces.

• Through the documentation both of the design methodology and the running of LIA, a useful teaching manual and a memory of the characteristics of maintenance for the development and correct maintenance of LIA will be produced, both for Graduate and Undergraduate levels,



Example of Lighting Quality Factors Analysis, in which the importance of each factor is defined for every visual task.

Goals

The research has covered the next indicators:

Documental information about the design of lights for offices, evaluating the main aspects relative to the illumination quality in agreement with the rules, normative criterion and design of specialized institutions in the subject of lighting design: CIE (Commission internationale de l'éclairage), IES (Illuminating, Engineering Society), IALD (Inter- national Association of Lighting Designers) with the production of the next documents:

• Comfort and energetic efficiency analysis report in the Artificial Lighting Laboratory (LIA) of UAM A, with the collaboration of two graduate students in bioclimatic design,

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Dr. Víctor A. Fuentes Freixanet

M.A. Gloria M. Castorena E.

who have been registered as participants in the project, used as reference:

- M. En Arq. Erick Plesent Solís
- Arq. Yadira Benítez Hernandez.

Advances

Registration of participants as part of the desirable academic follow-up, for consideration in the Graduate project regarding to Bioclimatic Design, a fundamental factor for the academic research.

The grant of an extension from the Divisional Council for the continuation of the research project.

Incorporation of the graduate students that will take part in the project, with which the collaboration with registered projects and general lines of knowledge application will be accounted.

Products

Interior lighting quality factor analysis for a fluorescent lighting system, register of horizontal luminosity and the work plane.
Master's degree thesis. Erick Plesent Solís.
Article ANES 2017

Results

The project approved in ordinary session number 495 Project Registry # N-374.

To date, the next actions that will show results at the end of trimester 18-I have been carried out:

1. Documentation process and collection of information from the Artificial Lighting Laboratory
2. Analysis of the existent light sources.

LIA, general Illumination System of AULA, system characterized in the investigation project of student: Arq. Yadira Benitez Hernandez

LIA, general Illumination System of OFIC INAS, characterized in the investigation project of student: Arq. Erick Plesent Solis.

Sources of information
A. S. H. R. A. E. Handbook, Fundamentals, American Society of Heatinf Air Conditioning Engieenerings Inc. Atlanta, US, 2001
I. E. S. N. A. The IESNA Lighting Handbook, Ninth Edition, the Iluminating Engineering Society of North America, New York, 2000
I. E. S. N. A. The IESNA Lighting Handbook, Ninth Edition, the Iluminating Engineering Society of North America, New York, 2000
ANEX 1 NOM-007-ENER-2004
ANEX 2 NOM-025-STPS-2008

N-375

High efficiency and comfort luminary design for UAM-A offices

Introduction

Knowing the importance of lighting design, the Universidad Autónoma Metropolitana Azcapotzalco has been teaching Learning Units about the luminous comfort of architectural spaces and has adequate and sufficient profiles for the development of specific projects in the design of Architectural lighting, industrial and electromechanical design with contributions to the design of light environment.

Lighting is a challenge in terms of the rational use of energy for all institutions with facilities with high energy demand for space conditioning, and the UAM-A, has taken such challenge of designing a lighting system with high technical level in the field of design, to reduce the economic and energetic impact required for illuminating its facilities and to assure a suitable luminous environment in the primordial functions of our institution.

Render image from the analysis made in dialux from the illumination system. Access to the Energy Department from CBI Division

General objective

In this case, we will only talk about luminous environments.

1. To create luminous environments in spaces like the ones found in UAM A, applying design solutions that will allow us to establish the characteristics of the ideal light sources and the appropriate equipment for each use:

A. Laboratories
B. Workshops
C. Classrooms
D. Offices

Specific objectives

The analysis of type cases has been given randomly, due to the intervention of the light-design team that responds to the needs of different areas that will be improved or newly created, for example:

1. Energy Department of the Engineering and Basic Sciences Division at UAM A
2. Workshop of Bioclimatic Architecture UAM A
3. UAM A's CyAD Management Offices
4. Building "L" from CyAD Division in UAM A

The three case studies have allowed us to establish a difference in design criteria in terms of luminous atmosphere, visual requirements of task and response to and before de light design. The applicable normativity is part of the reference, but in this case, we will find that the information of each of the case studies is relevant as long as it contributes to the improvement of the work, study, space appreciation, aesthetic judgment and socialization conditions needed to fulfill the basic mission of each space.

Render image from the analysis made in dialux from the illumination system. Office from the Energy Department from CBI Division

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M TRA • G LORIA M ARIA (ASTORENA E SP I NOSA
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D R . A NIB AL F IGUEROA (ASTRE.JO N ,
D R . V ICTO R F UENTES F REIXANET
D R. J oseR OBERTO G ARCIA C HAVE Z ,
D R . M ANUEL P ORTILLO R □DR(GU EZ
M TRO . E DWIN I SRAEL T OVAR J IM
ENEZ M TR□ . H E CTO R V ALER 01 M ADR I
GAL M TR □ . L u is Y □SHIAKI A N □□ A s H UARA

Goals

The research goal is to cover the next indicators:

Documentary film about luminary design for offices, classrooms, workshops, laboratories, evaluating the main aspects relative to the illumination quality in agreement with the rules, normative criterion and design of specialized institutions in the subject of lighting design; CIE (Commission internationale de l'eclairage), IES (Illuminating, Engineering Society), IALD (International Association of Lighting Designers) and NOM-064-SCFI-2000, “referring to the electric products —Luminaries for exteriors and interiors— Security specifications and test methods”.

• Executive projects through the development of luminary prototype models, including the electric sections, lighting and industrial design.

• Comfort and energetic efficiency factors analysis reports in the Artificial Lighting Laboratory (LIA) in UAM A

• Documental team illumination project with the technical, constructive aspects, enough for its industrial production.

Advances

The grant of an extension from the Divisional Council for the continuation of the research project.

Incorporation of the graduate students that will take part in the project, with the collaboration of registered projects and general lines of knowledge application.

Characterization and design of illumination systems for offices, classrooms, and workshops of our University, three case studies that allow us to analyze each case in a particular way.

-Bioclimatic Architecture Laboratory, common work area, finished project.

-CBI’s Energy Department remodeling, in process.

-Characterization and proposal for illumination design for the remodeling of CyAD Management Offices, the project was not conducted in accord to the criterion dictated by this investigation.

-Analysis of the Quality factor of lightning in Laboratories, circulations and several spaces of Building “L” of our institution.

Products

-Terminal Project of student Eduardo Razo from the Degree in Industrial Design, who designed a LED modular luminary, advised by two of the members of the investigation project.

-Characterization of UAM A’s “L”’ Building’s interior lightning, with the social service project.

Illumination project from the next spaces:

-Work area of the Bioclimatic Architecture Workshop at UAM A

- CBI’s Energy Department’s Executive Illumination Project.

Render image from the analysis made in dialux from the Bioclimatic Architecture laboratory illumination system.

Image of the light installation in the Bioclimatic Architecture laboratory. Example of surrounding illumination of high uniformity.

Sources of information
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I. E. S. N. A. The IESNA Lighting Handbook, Ninth Edition, the Iluminating Engineering Society of North America, New York, 2000
I. E. S. N. A. The IESNA Lighting Handbook, Ninth Edition, the Iluminating Engineering Society of North America, New York, 2000

N-342

Green Building Systems: low-priced residential edification proposals in marginalized locations.

Introduction

Green buildings have minimal impact on the environment. They provide significant savings in water and electricity, and a high degree of thermal comfort at affordable costs. They are relatively easy to build, and appropriate for groups living in high or severe marginal conditions.

In Mexico, there are 1, 251 municipalities with 17 million people in such conditions. This research will provide building alternatives to improve the quality of life of this important population segment.

General Objective

To give the technical bases for green building systems to the social development of rural communities in marginalized conditions, beginning with low cost edification proposals, with natural materials - ecological, comfortable - sticking to bioclimatic design principles.

Specific Objectives

To research the locations with the biggest marginalization index in Mexico.

To research ecological construction practices in the world and their occurrence in social wellbeing.

To elaborate teaching material for construction techniques using soil, bamboo, and straw as a base.

To research the typological housing characteristics, according to the regions with a bigger marginalization index, and to select and identify green building alternatives to improve the quality of life.

Table of particular residences that have access to water from the public net

Federal Entity	Municipality	Total Population	Total of particular residences	Total of particular residences that have access to water from the public net	Percentage of particular residences that have access to water from the public net	Average of occupants in particular residences
OAXACA	Santa María Chilchotla	20,584	4,482	195	4%	4.2
GUERRERO	Copalillo	14,456	2,851	292	10%	5.1
GUERRERO	Xalpatláhuac	12,240	2,384	258	11%	5.1
OAXACA	San José Tenango	18,478	4,434	482	11%	4.2
OAXACA	Eloxochitlán de Flores Magón	4,263	1,061	131	12%	4.0
CHIHUAHUA	Batopilas	14,362	3,017	393	13%	4.8
OAXACA	Coatecas Altas	4,712	1,037	211	20%	4.6
OAXACA	Santiago Amoltepec	12,313	2,419	538	22%	5.1
SAN LUIS POTOSÍ	Santa Catarina	11,835	2,431	559	23%	4.9
GUERRERO	Coahuayula de José Mariá Izazaga	13,025	3,121	743	24%	4.2
		126,268	27,237	3,802		

3

1. Municipalities with lesser disposition of Public Net Water. Photo: Alfonso Rivas Cruces

2. To guarantee earthquake resistance of the adobe wall, it is necessary to place a horizontal cane truss every three rows in the whole structure. One brace with vertical reinforcements, by means of mooring with galvanized n° 18 wire. Photo: Alfonso Rivas Cruces

3 and 4. The cob is a very malleable material, up to a point where we can shape it as we like. If we want to use it in the formation of little areas, it is necessary that we reinforce the mixture of cob and long vegetable fibers and work the shape with the clay giving the straw only one direction, so that balls or sausages of cob are formed, after which they can be added to the wall in the desired position. Photo: Alfonso Rivas Cruces

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Dr. Eduardo Langagne 0.

M. A. Jose Luis Garcia Tavera

Designing and constructing housing prototypes according to green building techniques, in 3 geographic study regions with a major marginalization index.

Goals

To determine the areas with a greater marginalization index.
To identify the bioclimatic characteristics from the regions where they are located.
To develop the teaching material for the constructive systems, the soil, bamboo and straw techniques, as well as the elaboration of prototypes designed for the selected regions.

Advances

Climatic data captures from the 10 municipalities with high marginalization level and bigger shortage of the supply of hydric resources, provided by the municipal net.
Elaboration of the 3D Earthship model. Review of the constructive procedures with soil, bamboo and recycled materials.

Products

A description of the bamboo, COB, adobe, super adobe, and an analysis of the Earthship house, built with walls of recycled materials with tires as a base.
The climatic analysis of 10 municipalities with a high level of marginalization, where the disposition of water coming from the public ne, in private residences is lower than 25%, has also been done.

Results

Elaboration of constructive procedures for Eco techniques with soil, bamboo and recycled materials.
Climatic analysis of 10 municipalities with a high level of marginalization, where the disposition of water coming from the public ne, in private residences is lower than 25%.
Elaboration of plans, 3D models and climate analysis tables.

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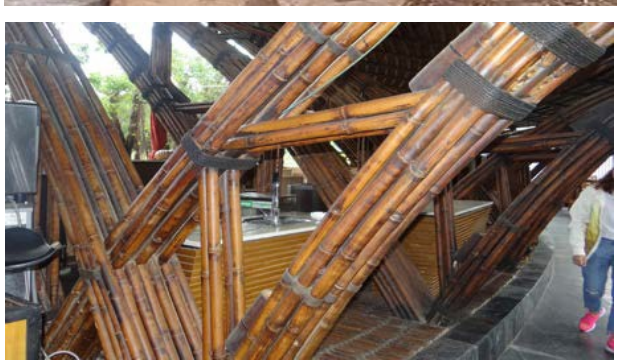

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5. The “Club House” deck is made entirely of bamboo, Vietnam. Photo: Eduado Langagne
6. The bamboo stalks are malleable to the point of folding them up to 45 degrees, receiving them with other pieces that make a fan that will later be completed with bamboo stalks crossed to hold the overhangs that the design required. Vietnam. Photo: Eduado Langagne
7. The bamboo cluster as a compression element, Vietnam. Photo: Eduado Langagne

Sources of information

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Terres, Guillermo (2015) "Caracterización Térmica de Sistemas Constructivos Basados en Bambú y su Aplicación en el Altiplano Mexicano" Master’s degree thesis in Bioclimatic Architecture. Universidad Autónoma Metropolitana Azcapotzalco.

N-390

Design of a static measuring system in sitting position

Introduction

It is of the utmost importance to maintain and improve the infrastructure of laboratories and workshops, which is why, in addition to the constant maintenance of the Laboratory of Ergonomics, it is sometimes necessary to acquire new instruments or, as it is the case, to develop ones of our own.

One of the main concerns has always been the anthropometric measurement equipment. Over time, goniometry, dynamometry and anthropometry equipment have been acquired. Since then, an anthropometric chair has been sought to accommodate and measure the user in the sitting anatomical posture and, according to the methodology, to obtain accurate and faster data.

With this measurement instrument, the Laboratory of Ergonomics will be able to offer a better service to both undergraduate and graduate students, through its multiple applications and possibilities for obtaining data.

General objective

To design and develop the anthropometric measuring system in sitting positions, to strengthen the infrastructure in the Ergonomics Laboratory, as well as teaching and research.

Specific objectives

To increase the specialty level of the Ergonomics Laboratory from the anthropometric perspective.

To create a recognized project about the functionality, precision, versatility and utility aspects for anthropometric studies.

To carry out faster, more comfortable and more efficient information collections, both for the study subject and for the person responsible of the project.

To offer another solution to the anthropometric needs, that some research projects belonging either to professors or to students might need.

Obtaining measurements in the sitting position

Obtaining measurements in the sitting position

Obtaining measurements in the sitting position

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Goals

- Functional analysis and structural tridimensional model
- Making of the theoretical conceptual framework.
- Design requirements
- Design proposals generation
- Evaluating the alternatives
- Making of renders and plans
- Prototypes (tests through models)
- Functional evaluation
- Project's descriptive memory

Advances

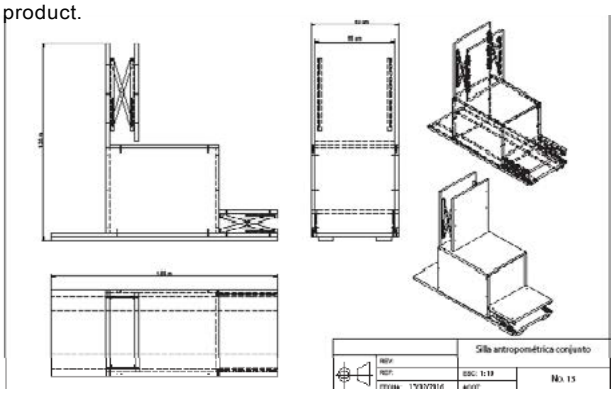
Taking precise anthropometric measures allows us to make percentile calculations, and enforce the data for product design, promoting this way of ergonomic criterion application.

The state of the art of analogue instruments has been investigated and a list of design requirements for generating a new design proposal has been made.

The evaluation of each alternative must place emphasis on the structural resistance design and of the tools available at the laboratory.

We will also pay special attention on the adjustment system mechanisms and in the possibility of measuring mobility areas,

It is important to signal out that this project is not about repeating or copying a commercial product, as there are just a few laboratories that have similar equipment, and that everyone has been responsible for the design of each product.



General prototype plans

Obtained results

Considering the minimum and maximum anthropometric chart percentiles, a scale model was made, which made way for the later construction of the functional model.

This first functional model, built at a 1:1 scale, got an assessment from the author of many specialized books on themes related to anthropometrics and ergonomic analysis that have already been put into work, Dr. Lilia Roselia Prado León, in the workshop titled "Use of Analysis Software and Ergonomic Measuring Tools".

Prototype render

Sources of information

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- Panero, J. & Zelnik, M. (2016). *The human dimensions in interior spaces. Anthropometric Standars.* 1st Edition, 17th printing. Barcelona, Spain: Editorial House Gustavo Gili.
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N-413

Designing of materials for social integration of children and young people

Introduction

This project promotes the social integration of children and young people with and without disabilities, who in many cases are a vulnerable part of the population, to provide social benefits and fulfilling one of the University's objectives, which seeks to attend and give solution to national projects through research, and through the design of ludic and educational materials.

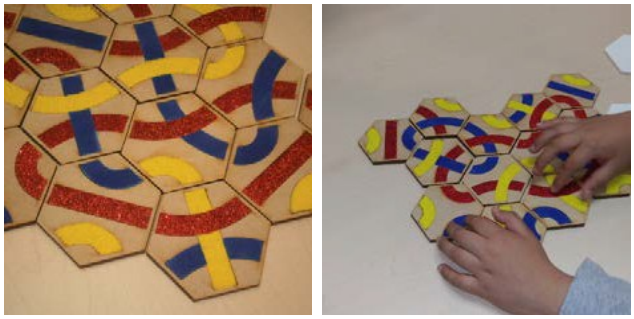
At the same time, it promotes equality and the destruction of barriers between this sector and regular people, where both require support materials for social coexistence and their interaction are required.

General objective

To foster the integration of both children and young people into society through ludic and educational materials

Specific objectives

- To promote the integration of both children and young people into society through ludic and educational materials or through technical aid.
- To foster the integration and coexistence of children and/or young people through workshops
- To develop, materialize and evaluate the design proposals that support social integration,
- To verify the functionality of the developed materials and determine if they satisfy the needs originally stated.



Images of the Tantrix prototype for blind and visually impaired children

Images of objects made in workshops.

Images of the tactile guide prototype for cane use training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Magdalena Vallejo Cabrera Karen Garc

Goals
- To put together the theoretical and referential frameworks
- To count with the design requirements for the presentation of alternatives
- To put together proposals for the design of ludic material
- To develop the proposal's models or prototypes
- To verify the proposals' functionality
- To incorporate documentation (descriptive memory, construction memory, planimetry, etc) for their possible production
- To participate in Librofest 2017.

Advances
- There was progress with the theoretical framework integration.
- Two material proposals were developed.
- The material for the workshops given at Librofest 2017 were developed.

Products
- Models and Prototypes.
- Project documentation: Reports, descriptive and prototype construction memories, of prototypes, technical worksheets, and use manuals.
- Catalogue.
- Audiovisual presentations
- Infographics .

Obtained results
- 3 workshops at Librofest 2017.
- 60 hexaflexagons in MDF for workshop.
- 80 MDF figures for the jewelry workshop
- 2 prototypes.
- 2 descriptive prototype memories.

Images of the workshops given at Librofest 2017.

Sources of information
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N-402

The Game of Sustainability.
Ludic experimentation from the perspective of art in the environmental education

Introduction

The project titled *The Game of Sustainability* was thought of as a board game for five players, where the natural and financial resources work together to reduce the emissions and avoid global warming.

This is a proposal that criticizes the sustainability policy that is sometimes presented as a guarantee of respect towards the environment, as well as other policies that go against environmental preservation because they support the economic development ideal.

It is the synthesis of a research that is in process right now, which has been presented several times in public to contribute to awareness and environmental education in a critical sense.

General objective

To create a game strategy that allows, through ludic and artistic participation, the discernment of which natural and/or artificial factors are implied in how we conceive sustainable use and enjoyment of the environment on behalf of the user.

Specific objectives

To Define which economic, politic and social aspects have an impact on environmental issues

To question the predominant and thoroughly managed concept of sustainability in the light of the contradictions it presents.

From an alternative artistic creation concept, to develop a reading and environmental knowledge appropriation strategy.

To develop an environmental education system through actions or game and participation activities.

Some students' opinions from CBI/Environmental Eng. Division: To me, the game seemed really interesting, I think that the scores can change, due to the benefits that the sun, water and soil offer, are essential to the organisms' life. I would play the game again. MGR

Some students' opinions from CSH/Economy Division: The game is coming close to reality, because economy will always grow at a higher rate and be of more importance to the government and big corporations than the environment. Because of this, I believe that the game is a good way to reflect on how we must care more for natural resources, because the raw materials that help them develop come from there. VPF

Some students' opinions from CYAD: The game is both entertaining and interesting, but it should be more agile, so that nature can win. TM

For starters, the game was entertaining. But, at first, understanding the rules is complicated, but they get clearer as you play. It was a little tedious, because you could not win more points than the "Capital". But in the end, it was understood that the others cannot win more than the Capital. *JCMA*

While we were playing I was a little bit confused, because the points belonging to each element were a little "inequitative" (sic) on the importance of sustainability. At the end of the game, the teacher [MGAJ] was able to explain it because he told us that reality is like this, the Capital will only dare to play when it has resources [just like] every member of society, we only play to sustain the planet in a healthy way [sustainable], and in reality we only stop to play, instead of doing something in a concrete way. SGJ

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M. Arq. Alfonso Rivas Cruces

M. A. Alma Olivia León Valle

Goals

1. To create three probable game systems that include number of players, chance, relation means and individual dynamics
2. To design 5 iconographic game elements
3. To designing and make the game board
4. Basic game and participation rules
5. Public exhibition with game and player action.
6. To take part in conferences or specialized events
7. To publish an article that presents the project's thesis

Advances

We have managed to center the environmental problematic, by contrasting the commercial agreements that governments subscribe and the compromises that year after year are ratified by the United Nations to take down the greenhouse gases emission indexes. Establishing the existence of a contradiction worthy of being made evident through designing a game.

JUGADORES V	ELEMENTOS O RECURSOS						
	TIERRA (10)	SOL (10)	AGUA (10)	FLORA Y FAUNA (20)	CAPITAL (50)	CRISIS / EMERGENCIA AMBIENTAL o BONOS	<INDICA LA CARA DE PIRINOLA
TIERRA (10)	20	10	10	20	50	SE RESTAN LOS PUNTOS DE LA RONDA A TODOS LOS ELEMENTOS o SE BONIFICAN EN LA POLITICA "ACCIONES..."	LOS PUNTOS SE APLICAN EN SU PROPIO CONTADOR
SOL (10)	10	20	10	20	50		
AGUA (10)	10	10	20	20	50		
FLORA Y FAUNA (20)	10	10	10	40	50		
CAPITAL (50)	10	10	10	20	100	GENERA SUS PUNTOS EXCLUSIVAMENTE	
	CONTABILIDAD COMUN ¿??						

Point distribution

Products

When this project ends, we will obtain a system that allows discerning the types of relationships through natural elements and economic politics, through games.

An article that summarizes the main project thesis.

A public active presentation to exchange reflections and that gives feedback to the project to allows us to improve its performance in terms of our objectives.

Results obtained so far

A system that offers certain expectations about controlled triumph. It provokes reflection regarding score equity; conscience regarding the importance of the relationship between natural and economic resources has been motivated.

Application of at least four contexts of the gaming dynamics, for example: "2nd Sustainable Development International Forum"; with students from the three Divisions found at UAM Azcapotzalco, (see included images), National Environment Education Congress for sustainability and the acceptance of our presentation for the 9nd World Environmental Education Congress.

Value tokens for the natural elements and politics in question.

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N-382

Vexillological semiotics of color. The meanings of color in national identity signs.

Introduction

This project intends to study the use of color on national identity signs, specifically in flags, to analyze their symbolic characteristics in order to offer a rich mapping of color-meaning association through variables like geography, culture and time.

General objective

To analyze the semiologic use of color in primary national identity signs, of all the sovereign states in the world.

Specific objectives

1 . To describe and catalogue the colors that are employed officially in primary national identity signs.
2. To analyze the meanings assigned to the colors, derived from different variables, like geographical location, historical moment of adoption, and cultural interpretations that mediate the meanings.
3. To produce a publication where color in national identity signs is described, as well as the analysis results, as means of scientific diffusion and circulation of the analyzed subject.

Figures 1 and 2. Flags from all sovereign states in America, original version and current state, indicating the years of emergence and last made modification.

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Dr. Bibiana Solorzano P.

Goals

- To define a list of the *de facto* sovereign states, *that currently have primary national identity signs*
- To collect the information that describes the specific characteristics of the national flag from every enlisted state.
- To obtain a graphic representation of each flag.
- To classify and quantify the color characteristics of the colors applied to the graphic signs and establish possible correlations.
- To interpret the obtained results and offer a series of conclusions highlighting their importance.

Advances

So far, the work has allowed us to meet the first 4 goals, for which we already have a graphic and conceptual description; we also have every state's flag color quantification up to a 100%, and we are working on the variable analysis.

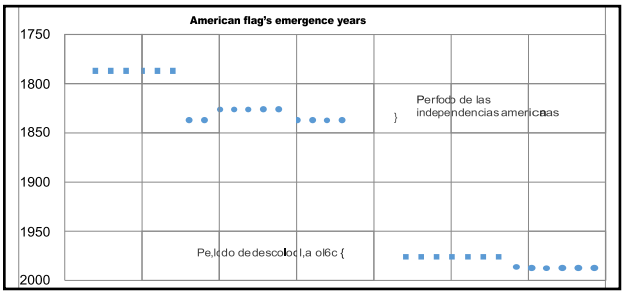

Figure 3. American flags emergence years' graph.
We can clearly observe the independence and decolonization periods.

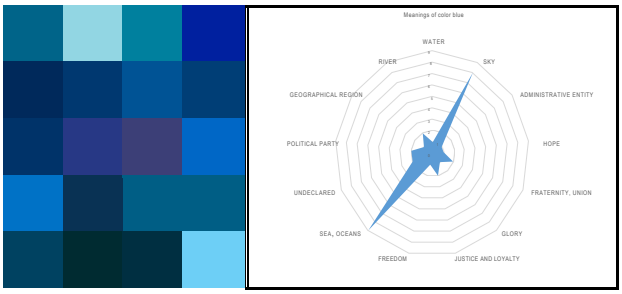

Figure 5. A map of the color blue as found on the different American flags, frequency and meaning distribution.

Products

- Elaboration of two investigation articles.
- Making of two presentations.
- Making of a book as a diffusion medium for the results obtained through this investigation.

Obtained results

Up until now, we have obtained the next results:

- Elaboration of evolution trees for the flags, first by continent, and then by country, which allow us to appreciate the changes suffered through time, and establish bonds between flags, as well as the contrast between the emergence of the graphic concept and the flag's current states (the American case is presented as an example in forms 1 and 2).
- Elaboration of a research article.
- Making of a presentation
- 50% of advance in the book edition.

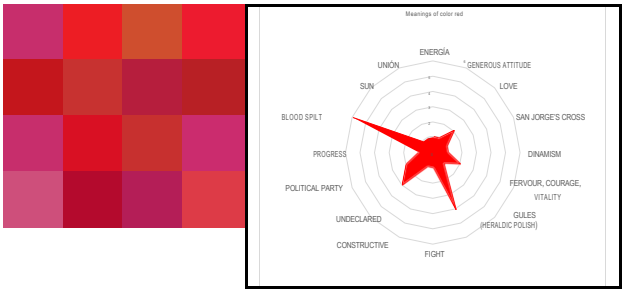

Figure 4. A map of the color red as found on the different American flags, frequency and meaning distribution.

Figure 6. A map of the color green as found on the different American flags, frequency and meaning distribution.

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N-328

Social sensitization processes in the face of environmental noise in Mexico City

Introduction

Nowadays the harmful effects that noise has on health are known, since they have been described by the World Health Organization (WHO) (W HO, s / f). The noise can have a wide variety of consequences, from loss of concentration, stress, headaches, insomnia, to disorders such as tinnitus (ringing in the ear) or different degrees of hearing loss in the most severe cases. The consequences increase every day because the population is increasingly exposed to environmental noise, as people are constantly surrounded by different sound sources producing noise, such as: vehicular traffic, buildings, agglomerations, places where they carry out leisure and recreation activities among others, together with the inevitable technological advance. The WHO (WHO, 2015 a) points out that around 1100 million adolescents and young people between 12 and 35 years old are very likely to suffer hearing loss.

In the face of this problem, various international organizations have developed and carried out campaigns or initiatives that aim to create awareness among the population. An example as the best-known campaign is the Annual International Noise Awareness Day, which is celebrated on the last Wednesday of April every year. Governments, societies, companies, and educational centers have joined this campaign.

General objective

To carry out an analysis of the impact of environmental noise on the population problem to generate awareness and sensitization instruments based on design proposals.

* Photographs - "Let´s make noise against noise" event to celebrate International Fight against Noise Day.(LADAc photographs)*

Goals

- To inquire on the impact of environmental noise on the population of Mexico City, noting the main factors such as noise sources, sensitive environments and vulnerable groups.
- To establish study parameters to classify the different types of affectations that environmental noise can cause in the population.
- To generate instruments from design that promote awareness and sensitization of the impact of environmental noise on the population.
- To apply the design instruments in specific population groups and measure their efficiency and viability.

Specific objectives

- To define the study areas by identifying the main factors of the impact of noise to determine the corresponding indicators in specific population groups and contexts and elaborate design objects that have an impact in the sensitization and awareness of the population. Observe their efficiency and viability.
- To limit the convenient study areas through an urban analysis identifying the main factors and their correlation with the noise map of Mexico City.
- To determine the indicators of the types of affectations through the application of surveys in certain groups of the population and contexts.
- To develop experimental models from the design that have an impact on the awareness and sensitization of the population regarding environmental noise.
- To form work teams for the application of design objects in the selected groups and establish indicators of their efficiency and viability.

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 Fausto E. Rodríguez Manzo

 Dulce Ponce Patrón

 Veónica Arroyo Pedroza

 Laura A. Lancón Rivera

 Gerardo Sánchez Ruíz

 Silvia García Martínez

 Rafael Villeda Ayala

 Roberto García Madrid

Advances

Conducting the "Let's make noise against noise" event to commemorate the International Fight against Noise Day (last Wednesday of April), held at the Vasconcelos Library, with the objective of informing and sensitizing the population about the problem of noise and its consequences. Different dynamic activities were carried out, such as workshops, talks with specialists, games, videos and surveys. Also, information was provided in brochures to the population.

- The Sonorous Lottery game is being developed and edited for registration

- Graphics and Poster of the Sonorous Lottery game - Doris Anguiano Saucedo and Camila Fortanet Garcia (design), Professor Verónica Arroyo Pedroza and Laboratory of Analysis and Acoustic Design {advice).*

Review

In the event, 76 children aged 8-10 years were received from the Juan Tellez primary school.
During the event, the following recreational activities were carried out: Sonorous Lottery; Boom!; What is it? What did he say?; The monsters of Noise; Walk to the Garden of Sounds and Opinion Staff. In these activities the children played, expressed their opinions and learned to identify differences between sound and noise, together with the consequences that noise pollution brings and how it affects the population as well as themselves.

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Information sources

Photographs - "Let´s make noise against noise" event to celebrate International Fight against Noise Day.
(LADAc photographs)

Poster - Doris Anguiano Saucedo and Camila Fortanet Garcia (design), Professor Verónica Arroyo Pedroza and Laboratory of Analysis and Acoustic Design {advice).*

N-263

Implementation of a virtual course as an alternative to traditional learning environments. Case: TLU Computer tools for design.

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Mtra. María Teresa Bernal

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Introduction

The Virtual Learning Environments (VLE), as an alternative to traditional educational processes, represents an effective, efficient and satisfactory way to achieve learning objectives.
This research considers that the development of a VLE must take into account methodological approaches that allow it to create, through the appropriate use of technological means, environments that encourage learning, as well as construction and socialization of knowledge.

General objective

To implement a Virtual Learning Environment based on the VLE Creation Model for the teaching of the TLU "Digital Media I", which allows to achieve the learning objectives effectively, efficiently and satisfactorily.

Specific objectives

To determine the advantages of using ICT in learning processes.
To apply the VLE creation model in the development of a virtual classroom for the TLU Digital Media I.
To apply the previously identified elements that determine the creation and evaluation of a VLE.
To implement criteria to evaluate the usability of virtual courses.

*Virtual Classroom for the TLU Digital Media I. Prof. Rocio Lopez

Goals

To oerform a documentary research using both new technologies and existing networks and databases.
To create a VLE by applying the Model for the creation of VLE.
To perform the evaluation of the learning process carried out in the VLE to determine the usability of the same.

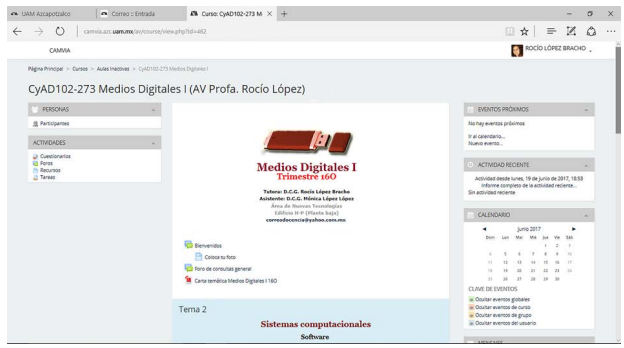
Products

Participation in the Academia Journal Celaya 2016, with the presentation: "Design of a virtual course for the CyAD Division (UAM-A)". November 2016.
"Design of a virtual course for the CyAD Division (UAM-A)". Memories of the Academia Journal Celaya 2016. Accepted. Publication: November 2016.

Advances

Definition of the experimental design.
Definition of the validation instrument.
Obtaining data for the validation of the experiment.
Obtained Results
Review of tools and activities for the chosen topic.
Application of the topic to the students of the TLU Digital Media I during the 160th trimester, through the use of a virtual classroom in CAMVIA (Virtual Campus of the UAM-AZC).
Design of the measuring instrument.
Application of validation instruments.

*Didactic guide for the development and implementation of the subject in the Virtual Classroom



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N-384

The electronic textbook as a didactic resource in face-to- face, online and hybrid teaching

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Introduction

Throughout the history of school education, the printed textbook has been the main mean of disseminating knowledge as well as the main teaching resource with which students and Professors generally count as support for the teaching-learning process. However, it is indisputable that little by little it has ceased to be, there are now countless books in digital format, its presence is noticed in different electronic devices with the capacity to store a large amount of information available to the user. Electronic books or e-books, a group in which electronic textbooks can be included, offer great versatility to the user thanks to their multiple computer tools of different types and multimedia nature. For Diaz and collaborators (1996: 104), "... electronic books can be defined as information systems capable of making a series of conceptually organized pages in the same way as those of a paper book, with which you can also interact, available to their users." From this point of view, the electronic book is a great resource to enrich students' analysis, integration and information assessment skills in the process of knowledge construction, since it allows the integration of a wide variety of teaching strategies and activity formats.

General objective

• To propose the design and contents of an electronic textbook to support the teaching-learning process of the Teaching Learning Unit (TLU) of Typographical Signs in face-to-face, online and hybrid educational models.

Specific objectives

• To provide students and teachers interested in typography with a didactic resource that allows them not only to consult information but also to carry out formative activities.

• To provide university teachers with a didactic resource to address problems in the teaching of typography.

• To offer the theoretical-methodological elements to strengthen the teaching-learning process in the training of graphic communication design professionals.

Information sources

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Goals

Electronic textbook "Typographic signs as design elements in the construction of graphic messages", for which the following goals are established:

• To define the theoretical and reference framework that will sustain the proposal of the electronic textbook.

• To define the topics that the book will contemplate.

• To define objectives, contents, learning activities and evaluation of the topics.

• To develop three topics from proposed list.

Advances

Based on the methodology and schedule of activities established for the present investigation, it is concluded that up to now the degree of progress is 50% and is represented by the following activities that correspond to the First Phase of the research project: Problematization, Diagnosis and Change proposal (Image 1).

Products

• Dummy of the design and management of 8 theoretical topics that support the realization of the projects.

• TO VISUALIZE THE PROTOTIPE PLEASE DIRECT TO THIS URL https://indd.adobe.com/view/57604dcd-54f3-4bfd-ad9e-f00187fc488d

Obtained Results

Development and management of contents and didactic activities of 4 projects: Typographic composition, Monogram, Typographic Texture and Personality of the letter, as well as the design of integrating sheets and presentation of projects and activities.

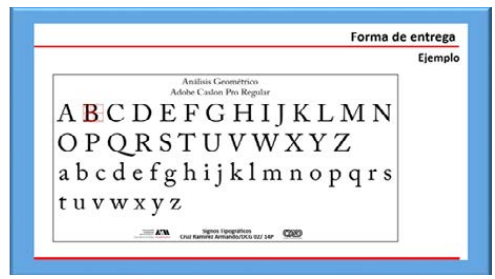

*Image 1: Phase I of the investigation process and activity breakdown. *

Artistic Drawing and Ericksonian Hypnosis

N-411

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DCG. Mauricio Gay González

Introduction

My experience as a creator in the practice of artistic drawing has led me to venture into scientific disciplines, such as in this case Ericksonian hypnosis. From reading the book; "Concerto for Four Brains in Psychotherapy" by Dr. Teresa Robles, I could conceive relationships between Drawing (as a creation and its teaching) with the kind of knowledge that this type of hypnosis gives us. This treatise tells us that hypnosis does not necessarily have to be understood in a classical way where a person loses control and the therapist investigates the patient's subconscious, but that, through the imagination in total control, the subject generates images and metaphors that allow him to access his life and his resources. And this is where I found the crossing of the drawing and this psychological discipline, since as a draftsman I have known that the articulated language (logic, reason and speech) is insufficient to represent reality. And it is precisely the image that allows us to understand art and life more broadly.

General objective

Analysis and learning of the ERICKSONIAN HYPNOSIS-PSYCHOTHERAPY.

To relate the disciplines of Drawing and Ericksonian Hypnosis in a theoretical and practical way, for their application in the creation of drawing and it's teaching.

Specific objectives

To deal with common topics of Drawing and Ericksonian Hypnosis, such as:

a) Common epistemology between these two disciplines: access through the image and the metaphor to the reality, be it visible or unconsciously.

b) The body as a territory of knowledge.

c) Dissociation of the cerebral and the corporal through involuntary movements.

d) Creation of images and metaphors based on the laws of nature.

Information sources

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Goals

1. Courses in Ericksonian Psychotherapy with official recognition of the SEP, RVOE 2007/1020 7-12-2007 and RENIECYT of the CONACYT with registration No. A-PS05131 / 2005. In line of research: Application of Ericksonian Techniques to the teaching-learning process.
2. Application of the results in drawing TLUs in the Division of CyAD, of the UAM-A.
3. Publication of articles indexed in international journals.
4. Conferences in Mexican educational institutions.

Advances

1. I have taken six courses in Ericksonian Psychotherapy at CENTRO ERICKSONIANO DE MEXICO, A.C. With official recognition of the SEP and RENIECYT of CONACYT. In the research line: Application of Ericksonian Techniques to the teaching-learning process.
2. Review and analysis of bibliography, since it was used for the publication of an article in an international event.

Products

1. International article published at the FORMA 2017 International Design Meeting in Havana, Cuba. Title: “Drawing methods through history.” In which I already used the teachings from the mentioned courses.
2. Next Exhibition of the plastic work: "Pure energy, without concepts" in the International Meeting, ILUSTRADISENO 2017, TRANSDIVERSIDADES. Mexico-Spain. Thursday, June 29, 2017, Galería del Tiempo UAM Azcapotzalco.

N-353

Multimedia product supporting descriptive geometry. Basic topics such as point and line, within the teaching-learning process in the Design degrees.

Introduction

Investigation project #N-353: “Multimedia product supporting descriptive geometry. Basic topics such as point and line, within the teaching-learning process in the Design degrees." is part of the Research Program "The Geometric Form in the Elements of Design", approved in the ordinary session 425 of the Thirty Sixth Divided Council of CYAD on February 1, 2011, and belongs to the Research Group “Design Forms, Expression and Technology Group.”

Descriptive Geometry, the science of space and form, is an important cognitive tool that with its good use and understanding will give students the possibility to develop the spatial visualization mental ability, as well as the possibility of improving the understanding and manipulation of the space. Given the above, it is intended to achieve, as a contribution of this project, to meet the demands and needs of innovative and practical material that will facilitate the student's adequate understanding and involvement in the topics of this discipline.

General objective

Generate a multimedia design product that serves as a tool that contributes to the process of visualization in the teaching-learning of basic topics of Descriptive Geometry, such as Point and Line; for students of the Division of Sciences and Arts for Design at the Autonomous Metropolitan University, Azcapotzalco Unit.

Specific objectives

• To achieve that, with the use of this multimedia design product, the design students improve their skills of visualization, understanding and graphic representation of the space divided into quadrants, according to the basic concepts of descriptive geometry.

• Getting students to understand the relationship of the concept of "mounts" with that of "isometric".

• To encourage students' ability to understand and visualize the Point in space and its projections, as well as to represent it graphically.

• To foster students' ability to understand and visualize the Line in space and its projections, as well as to represent it graphically.

• To support the development of students' ability to understand the concept of "orthogonal projection."

• To achieve the ability to understand, visualize and assimilate the concept of "true form and magnitude" (TFM).

• To improve students' ability to visualize and graphically show the views or projections of an object according to the European system.

Goals

• To ensure that the material contributes to the teaching-learning process of Descriptive Geometry in its stage of understanding the issues raised, as well as in the spatial visualization of the different design objects.

• To give support so that the teaching-learning process of the Descriptive Geometry becomes more agile, both for the teacher and for the student.

• To present the product of this project to be useful both in classroom and virtual classrooms.

• To collect digital material to assemble and prepare a virtual classroom.

• To disseminate the results obtained, as well as the participation in national and international Congresses, to the university community, both internal and external.

Advances

The advance is 100% since the Research Project has been completed and the result is a multimedia product that contributes to the teaching-learning process of Descriptive Geometry, in basic subjects such as Point and Line. This product was already applied and used with the students of the UAM-A.

In the Ordinary Session 528 of the Forty-second Divisional Council, held on May 30, 2017, the application for the Termination of the Investigation Project # N-253, titled: “Multimedia product supporting descriptive geometry. Basic topics such as point and line, within the teaching-learning process in the Design degree." and ascribed to the Research Group “Design Forms, Expression and Technology Group” was approved.

Obtained Results

• The 1st Stage of research and analysis of the theoretical framework was covered at 100%
• The 2nd Stage of development of the research method was covered at 100%
• The 3rd Stage of the development of the multimedia product was covered at 100%. The results of this stage are the videos presented in .avi and .mov file format, where the following topics were addressed and developed:

- Space division in quadrants
- Relationship between the Foursquare Triedro and the mound, both in the European and in the American System
- The point in space and its projections
- The line in space and its projections. Working and visualizing different positions of the line in space.

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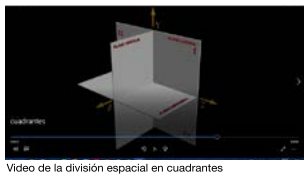
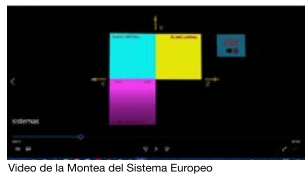
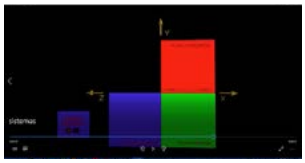

Video de la división espacial en cuadrantes

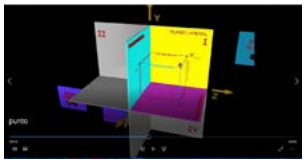

Video de la Montea del Sistema Europeo

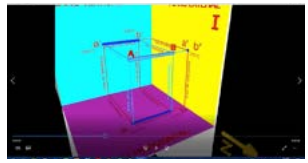

Video donde se aprecia el Sistema europeo

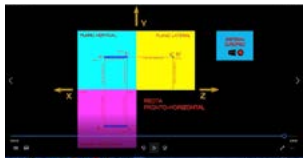

Video donde se aprecia el Sistema Americano

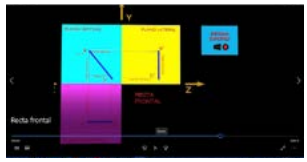

Video de la Montea del Sistema Europeo

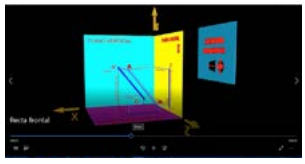

El Punto y sus proyecciones, Montea del Sistema Europeo

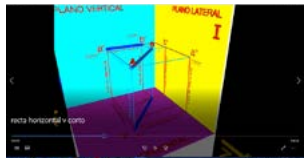

El Punto y sus proyecciones, cuadrante I Sistema Europeo

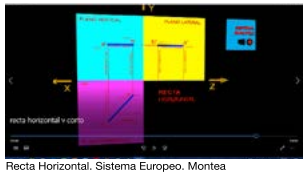

Video de la Recta y sus proyecciones en Sistema Europeo

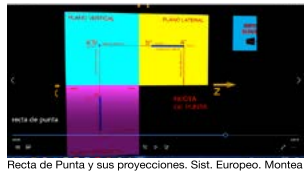

Video de Recta fronto horizontal, en Sistema Europeo.

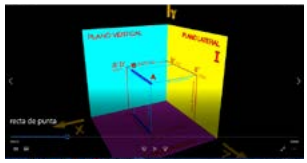

Video de Recta frontal, en Sistema Europeo. Montea

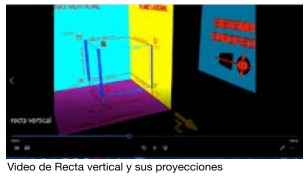

Video de Recta frontal y sus proyecciones.


Video de Recta Horizontal, Sistema Europeo


Recta Horizontal. Sistema Europeo. Montea


Recta de Punta y sus proyecciones. Sist. Europeo. Montea

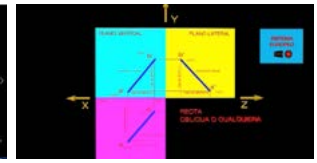

Video de Recta de Punta, Sistema Europeo.

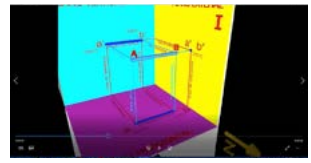

Video de Recta vertical y sus proyecciones

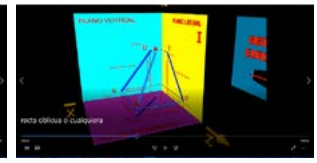
*Video of the spatial division in quadrants.
*Video of the Mount of the European System.
*Video where the European System is appreciated.
*Video where the American System is appreciated
*Video of the Mount of the European System
*The Point and its projections. Mount of the European System.
*The Point and its projections, quadrant I.
*Video of the Line and its projections in the European System.
*Front Line video and its projections.
*Video of Horizontal Line, European System.
*Horizontal Line European system Mount
*Line of Point and its projections. European system Mount
*Line Point Video, European System.
*Vertical Line video and its projections.
*The Point and its projections, Mount. European system
*Video of oblique line and its projections. Mount
*Video of the Line and its projections. European system
*Video of oblique line and its projections.

Information Sources


El Punto y proyecciones, en Sistema Europeo. Montea


Video de Recta oblicua y sus proyecciones. Montea


Video de la Recta y sus proyecciones, en Sistema Europeo.


Video de Recta oblicua y sus proyecciones.

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Mobile Ceramic Wall

N-324

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Mtro. Jorge Alberto Jacobo Martínez

Mtra. Adriana Acero Gutiérrez

Mtra. María de los Milagros Fuentes Villasante

Introduction

This is an experimental project where we will have to investigate, design, shape, locate and manufacture a mobile space with ceramic and glass materials as an experimental laboratory to record movements, dimensions, textures and colors in order to create a sensory wall that is part of the environment of our university and that can serve as a stage for exhibitions, presentations and Congresses, among others.

General objective

To experiment in a moving wall with ceramic and vitreous materials to detect the behavior of the sound produced by the wind and the experimentation of the use of materials, without the need to use technology for its operation.

Ceramic wall construction process

Goals

To develop a mobile wall from modules with different enamelings and pastings of textures that project visual and tactile sensations; all in order to experience and observe the reactions provoked in the viewer.

Advances

Different alternatives of the wall were made, both in the structure and in the type of modules, using some methodologies such as brainstorming, 6-row technique and relationship matrix, among others, to define which of the proposals was the most appropriate. The conclusion reached was to make modules in the form of cubes with a size of 20 x 20 x 20 cm. A high temperature paste was selected to manufacture them. There were also 4 molds in ceramic plaster with different techniques, which were filled with slip or liquid ceramic paste, in the same way that the ceramic pieces are manufactured in an industrial production. In a first stage the result was negative since to make the cubes it was required that the wall of each face had a thickness of at least 5 mm; these first pieces (made in molds) collapsed and, therefore, with this technique it was not possible to obtain a good result; Next, they experimented with many other techniques to manufacture them, such as: plastic paste plates that were glued to integrate the cubes; these were allowed to dry until the cube was in a state of leather and could be modeled by rectifying and calming it. It is worth mentioning that each cube has a theme to which a meaning was assigned.

120 cubes were manufactured using the technique of ceramic plates: dehydrating the paste, kneading the pellet and cutting each face with swabbing. Each cube required a month to dry, in this stage you can have variants in the result since you can burst the pieces if they were not well kneaded, as well as detach the faces if they were not well glued. Different formulas of enamels for high temperature were experimented performing the corresponding tests in the UAM kilns in the division of CyAD with a temperature of 1200 ° C; again, good results were not obtained as this is frequent in ceramics and enamels; everything is done based on experimentation. This was how tests were carried out to verify that both the paste and the glazes complied with the required burning and vitrification characteristics, finding both the optimal enamel and the application techniques, which were: the immersion for the transparent enamel and the brush for the color details.
So far some cubes are missing for vitrifying and work is being done on the realization of the structure where these cubes will be assembled; With respect to it, several corrections were made in the design since, due to the weight of the cubes, the way of fastening and the stowage, some modifications were required.

Products

Pastes sampler. Enamels sampler.
Introduction to ceramics course for professors using pastes, enamels and techniques previously experimented for the Ceramic Wall.
Course to experiment with enamels for glass and ceramic pieces.

Results

Research of formulas for pasta and enamel. Cubes manufacturing research. Construction and completion of the Ceramic Wall and its structure using recycled material for the exhibition of the 120 cu

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N-363

Sustainable Housing

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Dr. Luis Alfonso Peniche Camacho

D.I Guillermo de Jesus Martínez Perez

Introduction

The housing supply in our country presents a cumulative deficit, being the population of social-economic level of social interest and lower middle class the most affected, as well as those who claim the most for their solution. This implies that the national construction sector will have to take advantage of the latest technological advances to adapt and optimize its programs, as well as to offer options in terms of habitability, economy and sustainability.

General objective

- To facilitate the demonstration of construction systems, in this case "CEMPANEL".
- To promote the experimentation of structural alternatives applied to professional architectural projects.

Specific objectives

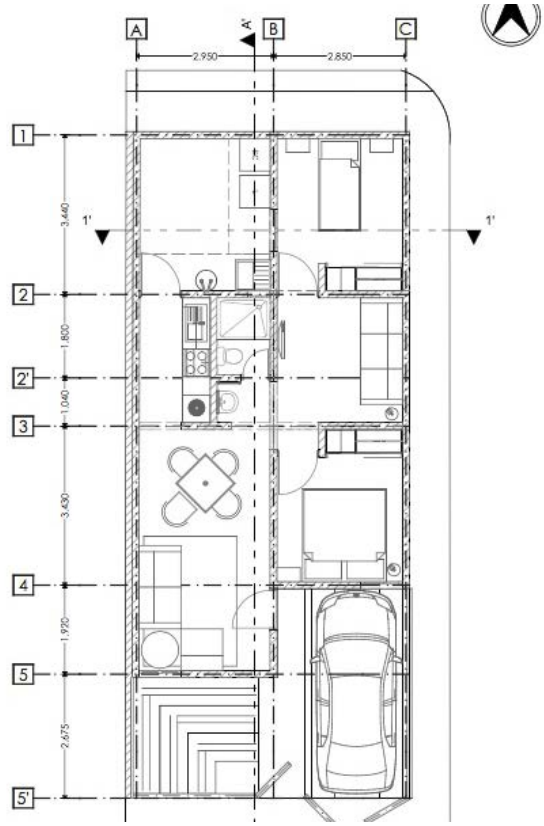
- To demonstrate the construction system with "CEMPANEL".
- Development of the integral executive project of the house with "CEMPANEL", as are the structural projects of facilities and costs.
- Realization of prototype or three-dimensional model, at a scale that allows us to see the construction process.

Goals

- Realization of the integral executive project
- Visualization of the 3D prototype through architectural perspectives
- Model Elaboration
- Construction of the 1:1 prototype to offer to the industrial market of public and / or private nature.
- Digital publication of the construction system process

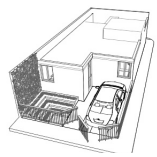
Advances

Architectural project
Display
3D prototype



Architectural plant

Perspective



Outer view

Home exterior rendering

Products

- Architectural proposal
- Prototype cutting
- 3D visualization

N-366

SD 63 Slab connection - column subject to bidirectional lateral loads
SD 65 Load testing device for structural elements and systems
SD 66 Test device for foundations

Introduction

The Laboratory of Structural Models promotes a better understanding of the behavior of buildings and other structures in the degrees of Architecture, Civil Engineering and Industrial Design. The strategy used relates the exposure of the theoretical aspects of the structures and their mathematical formulations (traditionally presented via blackboard) with the demonstration of the effects of loads on physical models specifically designed to record deformations.

SD 63 Slab connection - column subjected to bidirectional lateral loads

The device was made to show how the slabs are deformed when moments of imbalance are applied to the column to which they are attached. A part of the moment is transmitted through flexion in the slab, but another part is transmitted through sharp efforts around the column.

General objective

To link the work of the Structures Teaching Laboratory of the CBI Division by translating the tests with full-scale specimens into non-destructible models on a reduced scale in the CyAD Structural Models Laboratory.

Specific objectives

1. To show how the loads from the flat slab system are transferred to the columns.
2. To show the deformed configuration of the column - flat slab connection subjected to earthquake loads.

Goals

To use the SD 63 Model to argue the utility of the full scale experiment before CENAPRED.

Results

1. Correcting functionality of the model with flexible materials and mechanisms.
2. Testing 1:1 scale in the Laboratories of the Disaster Prevention Center. (CENAPRED).

SD 65 Load testing device for structural elements and systems

It is a testing framework for structural elements and systems that allows studying the behavior before actions such as bending, cutting, axial load and its combinations in specimens such as beams, columns and reinforced concrete frames, reinforcements and other structural configurations.

General objective

To facilitate the teaching-learning process of basic concepts of the units of Teaching-Learning of Static, Resistance of Materials, Analysis and Structural Design.

SD 63 Slab connection - column subjected to bidirectional lateral loads

SD 63 device a) in rest state and b) flexed by horizontal load

Test instrumentation at CENAPRED Laboratory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Dr. Eduardo Arellano Méndez


Mtro. Jesús A. Hernández Cadena


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Specific objectives

To develop a structural didactic prototype that allows registering measurable actions and responses for didactic and comparative purposes. Demonstrating mathematical expressions of formulas in test tubes with characteristics similar to those of the building.

SD 66 Test device for foundations with base insulation

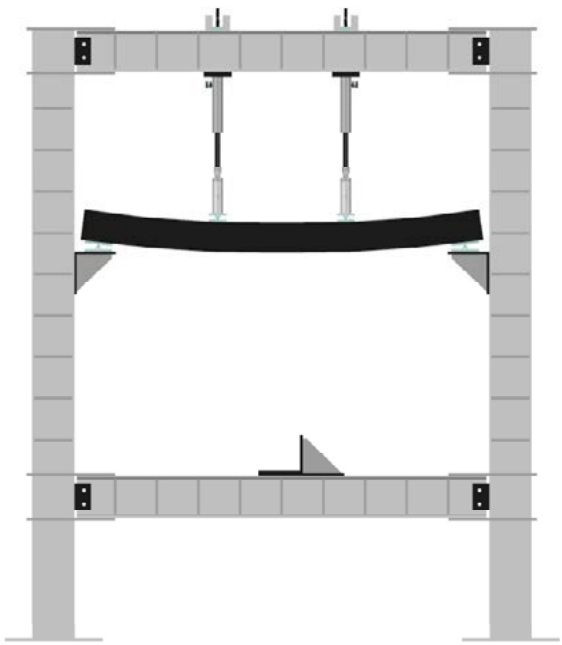
In seismic zones buildings are subject to deformations caused by lateral thrust in a seismic event. The concept is to incorporate damping mechanisms between the superstructure and the foundation; the SD 66 device shows a couple of alternatives of this type of systems and their efficiency, in comparison to traditional foundation buildings.

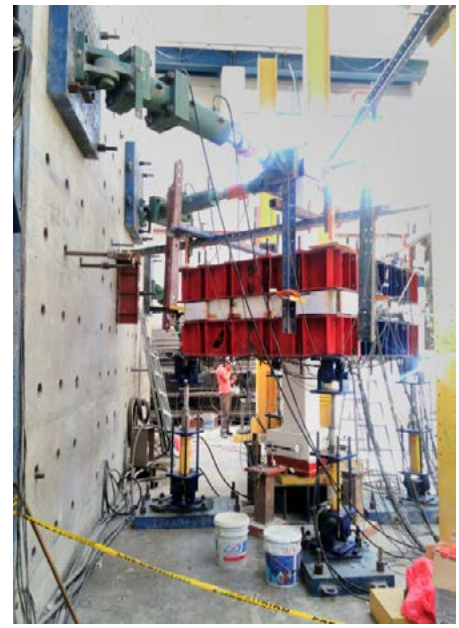
On a unidirectional oscillatory table of controlled speed and displacement, 3 structures made with flexible material were placed to accuse the deformations. Two of them have two different types of base insulation, while the other one is directly linked to the base of the oscillating table. The deformation of the last one is notoriously greater than that of the others when the table is set in motion, which demonstrates the effectiveness of the damping system when base insulation is available.

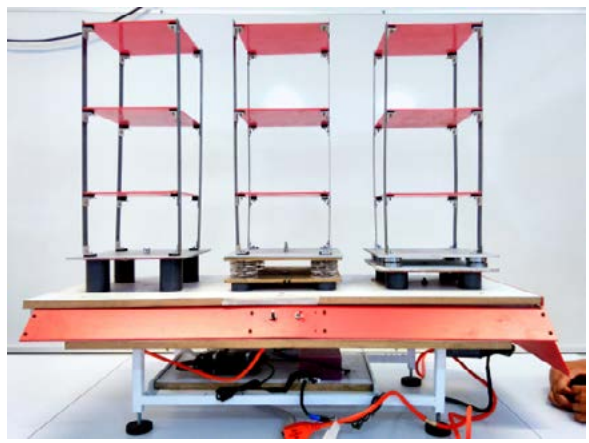
SD 66 Test device for foundations with base insulation

SD 65 Load testing device for structural elements and systems

Information sources







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N-ET

Multipurpose cover for the development of diverse activities

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Mtra. Susana García Lory


Mtro. Ernesto Noriega Estrada

Introduction

The enormous advantages that lightweight structures offer due to their own weight, such as the possibility of building large clearings without intermediate supports, the speed of assembly, their cost and good structural behavior in an earthquake, make them an important option for the development of architectural projects today. Since the 80s, the Light Covers Laboratory is a pioneer in this field and the results achieved by its members have been presented at various national and international conferences. Being avant-garde knowledge, it has meant first places and honorable mentions in various competitions for the students of the architecture career.

General objective

The objective of the Light Covers Laboratory is the study, analysis and proposal of light structures through physical principles, geometric forms and natural forms for the construction of models, prototypes and systems of union, with the support of electronic means that give solution to real problems in our country.
In order to support the functions of the Metropolitan Autonomous University within the units themselves and outside of them, it is proposed to design and build a prototype modular light cover that is easy to transport and assemble for the development of various socio-cultural activities in the interior of the Autonomous Metropolitan University.

Specific objectives

1. To develop a prototype of an integral modular roof that can be resistant, lightweight, recoverable and easily transportable.
2. To design of joint systems that solve the shape of the deck.
3. Geometric design of light covers by computer.
4. Construction of experimental physical models for the analysis of structural shape and behavior.

1. The objective is to build a multipurpose deck for the development of various activities. It must be easy to assemble, store and transport, be made of resistant materials and have a low cost.
2. It is intended that at the end of the research we can have a finished "prototype" type structure that meets the objectives set forth in this research.
3. To disseminate the results through publications and web pages with the objective of presenting the results to the institution.

*Tentative location of the new structure in the UAM-A
UAM-A´s Survey
Projects Development in the Light Structures Laboratory
Analysis of the environment where the structure would be located
UAM-A´s Survey*

Goals

Advances

The first system developed for the UAM Modular Carp was the hyperbolic paraboloid (a membrane that is tractioned and takes the form of a double curvature) with a square plant of 10m x 10m that allows it to be modular.
A joint system was developed based on the construction system and the use of appropriate materials.

Products

Experimental physical models. Studio models.
Development of digital models.

Obtained Results

First proposal of a modular system for the deck.

*Preliminary physical models of the modular tent.

Preliminary digital models of the base form.

Preliminary digital models of the modular tent.

First proposal of union nodes from 3 / s steel plates with bevels to stiffen and receive the connection pipes of the base and the cover. Development of conceptual models.*

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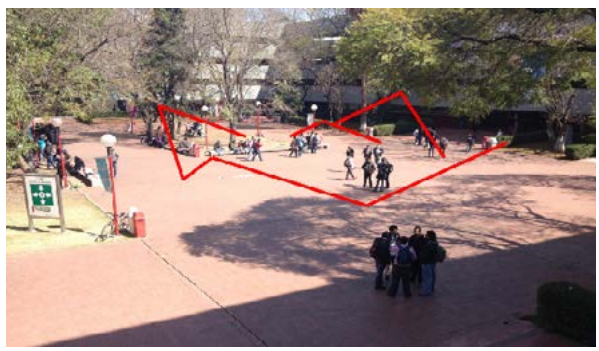

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