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Ministère de l'Enseignement supérieur et de la Recherche scientifique

Université Abderrahmane MIRA- Bejaia
Faculté de Technologie
Département d'Architecture

جامعة عبد الرحمان ميرة – بجاية
كلية التكنولوجيا
قسم الهندسة المعمارية

PROJECT THEORY 1 COURSE

2023/2024

Dr. Talantikite Soundouss Ismahane

Document structuration

Presentation of the Syllabus

<table>
<tr><th colspan="5">SYLLABUS</th></tr>
<tr><td>Palier</td><td colspan="3">Intitulé de la matière</td><td>College year</td></tr>
<tr><td>1st Year</td><td colspan="3">Project theory 1</td><td>2023/2024</td></tr>
<tr><td>Teaching place</td><td colspan="2">Teaching Unit</td><td>HHV (H)</td><td>Coefficient</td><td>Credit</td></tr>
<tr><td>Amphi 11– Campus El-Kseur</td><td colspan="2">Fundamental Teaching Unit</td><td>22h30</td><td>02</td><td>02</td></tr>
<tr><td rowspan="4">Responsible for the subject</td><td>Mrs</td><td colspan="2">Soundouss Ismahane TALANTIKITE</td><td colspan="2">Subject team members</td></tr>
<tr><td>Grade</td><td colspan="2">MAB</td><td colspan="2" rowspan="3"></td></tr>
<tr><td>Professional email</td><td colspan="2">Soundoussismahane.talantikite@univ-bejaia.dz</td></tr>
<tr><td>Tel (optional)</td><td colspan="2">0698886912</td></tr>
<tr><td>Description</td><td colspan="5">The project theory course for first-year architecture students holds paramount importance, as it serves as a fundamental foundation for developing their reasoning skills and providing them with essential theoretical, conceptual, and methodological tools for architectural project design.

This course aims primarily to initiate students into a profound reflection on the various aspects surrounding the realization of an architectural project. It enables them to explore and analyze existing architectural composition theories, key concepts, as well as different approaches and design methods. By acquiring these solid theoretical foundations, students are able to develop their own conceptual approach and create coherent and relevant architectural projects.</td></tr>
<tr><td>General objective of the teaching subject</td><td colspan="5">One of the essential objectives of this course is to lead students to understand the importance of theory in the practice of architecture. By exploring various architectural theories, students learn to decipher the fundamental principles underlying architectural design and composition, such as reading and understanding space, spatial organization, functionality, and aesthetics. With this theoretical knowledge, students are equipped to engage in studio work.</td></tr>
</table>

<table>
<tr><td>Learning Objectives</td><td colspan="5">➢ In terms of knowledge: understanding the tools, techniques, and technologies used for composition (design) in architecture.
- Familiarization with architectural language
- Introduction to reading and understanding architectural space
➢ In terms of skills: actively using representation methods such as technical drawings, models, renderings, and visualizations to communicate the design ideas of an architectural project
➢ In terms of attitudes and behavior: encouraging students to integrate these theoretical concepts into their own design projects and to develop their own architectural language</td></tr>
<tr><td>Prerequisites</td><td colspan="5">- General knowledge
- Basic knowledge of geometry</td></tr>
<tr><td>Indicative overview of the exemption program</td><td colspan="5">▪ Architect’s profession
▪ Various modes of representation and communication in architecture
▪ Architectural composition
- Laws of vision and coherence factors
- Laws of composition, essential concepts (harmony, balance, hierarchy, scale and proportions, etc.)
- Primary elements of form and properties of form (geometry, dimension, position, orientation, color, texture)
- Generation and transformation of form (dimensional, additive, subtractive)
- Modes of association (centralized, linear, radial, patterned, inclusion, nesting, juxtaposition, articulation)
- Limits and levels of variation
- Articulation and continuity
- Openings of spaces</td></tr>
<tr><td>Mandatory equipment</td><td colspan="5">Lecture course that does not require any specific materials for its proper execution.</td></tr>
<tr><td rowspan="2">Organization of the Subject</td><td>Cours
H</td><td>T.D
H</td><td>T.P
H</td><td>Internship
H</td><td>Study outing
U</td></tr>
<tr><td>1 H 30</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Rating system</td><td>Scheduled exam :
100% exam</td><td colspan="4">Continuous chechks :</td></tr>
</table>

Forward planning for semester 1	Stop : courses / workshops/ TD : 21/12/2023	
	Renderings: TD/ display workshops :	
	Exam period : 07 au 19/01/2024	
	Holiday dates : 21/12/2023	
	End of semester 1 : 20/01/2024	
Teaching schedule	**Date**	**Course title & TD & TP**
WEEK 01	Dimanche 24/09/2023	Introduction to the Architect's Profession: Architect & Architecture, Between Craft and Profession
WEEK 02	01/10/2023	Modes and Tools of Representation in Architecture
WEEK 03	08/10/2023	Modes of Communication for the Architect
WEEK 04	15/10/2023	Elements of Architectural Creation -1-
WEEK 05	22/10/2023	Elements of Architectural Creation -2-
WEEK 06	29/10/2023	Architectural Form
WEEK 07	05/11/2023	Form and Space in Architecture
WEEK 08	12/11/2023	Architectural Composition
WEEK 09	19/11/2023	Geometry and Composition in Architecture
WEEK 10	26/11/2023	Limits, Levels of Variation, and Continuity
WEEK 11	03/12/2023	Basic Concepts of Technical Drawing
WEEK 12	10/12/2023	Spatial Language in Architecture
WEEK 13	17/12/2023	Geometric Elements and Artistic Sensibility
WEEK 14	To be defined with the coordinator	Final Exam Preparation (Review of Key Concepts Covered in the Course)"
WEEK 15		
References from existing books in the	- BelmonT J., *Les 4 fondements de l'architecture*, Le Moniteur, 1987. Ching F-DK, *Architecture: form, space and order*, Hardcover, 1979. Cousin J., *L'espace vivant*, Le Moniteur, 1980.	

university library	Kerboul F., *Initiation à l'architecture,* ENAG, 1997. Van Meiss P., *De la forme au lieu, une introduction à l'étude de l'architecture*, EPUL. , 1973. Zevi B., *Apprendre à voir l'architecture*, Éditions de Minuit, 1973
Book References to Suggest for Future Acquisition	- Ching, F. D. K. (2014). Form, Space, and Order. John Wiley & Sons. ISBN: 978-1118745083. -Ramsey, Charles George, and Sleeper, Harold Reeve. (2016). Architectural Graphic Standards. John Wiley & Sons. ISBN: 111890950X. Ramsey, Charles George, and Sleeper, Harold Reeve. (2016). Architectural Graphic Standards. John Wiley & Sons. ISBN: 111890950X.
Advice for Students	- Note-taking methods - Successful attitudes and behaviors during class - Group work / Tutorials - Exam preparation
Observations	This proposal may be modified during the year following discussions among the department head, the unit teaching coordinator, and the studio coordination supervisor.

Nous, étudiants du palier licence 1 pour année universitaire 2023/2024, attestons que nous avons consulté le syllabus de la matière Project theory 2, et que nous avons été informés sur le contenu, le déroulement des enseignements et le mode d'évaluation.

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Course 01: Architect's Profession

Course structure

1. Definition of architecture
2. Vitruve's definition of architecture
3. Architects' definition of architecture
   -Mies van der Rohe
   -Piet Mondrian
   -Le Corbusier
   -Walter Gropius
   -Alvar Alto
4. Definition of the Architect's Profession
5. Architect's Areas of Intervention
6. Required skills to become an architect
   6.1. Technical skills
   6.2. Architectural Design and Drawing
   6.3. Project Management
   6.4. Knowledge of materials and construction techniques
   6.5. Cost management skills
   6.6. Creative skills
   6.7. Communication skills
   6.8. Active listening
   6.9. Marketing and communication
7. The necessary qualifications to become an architect

1. Definition of architecture

The term architecture, from the Latin “architectura” meaning “the art of building houses”, influenced by the Italian “architettura”, originates from the Greek “αρχιτεκτων” from “αρχι” (meaning “chief, principle”) and “τεκτων” (meaning “roofer”, “frame”, “construction”) which refers to the art of designing and constructing buildings, as well as cities.

- Architecture can be defined as the art of constructing buildings.
- Architecture encompasses all the characteristics that define the constructed object, such as the shape, symbolism, and usage properties.
- Architecture is a layout and style of a building like baroque architecture, Islamic architecture, modern architecture, organic architecture, formalist and functional, and high tech, etc.

2. Vitruve’s definition of architecture

“Architecture is a science that encompasses a wide variety of studies and knowledge; it knows and judges all the productions of other arts. it is the result of both practice and theory.

Practice is the very conception, continued and refined through exercise, which is realized by the act of giving to the material intended for any work the shape presented by a drawing.

Theory, on the other hand, consists of demonstrating and explaining the correctness, the appropriateness of the proportions of the worked objects”.Vitruvius, on architecture, book I.

The treatise "De Architectura" by Vitruvius outlines the three fundamental principles of architecture:

- **Firmness (Firmitas):** Refers to structural integrity and durability.
- **Commodity (Utilitas):** Refers to spatial functionality, or in other words, the ability of the building to achieve its intended purpose and fulfill the function for which it was constructed.
- **Delight (Venustas):** Means that the building is not only aesthetically pleasing and visually appealing but also elevates the spirits and stimulates the senses.

3. Architects' definition of architecture

-Mies van der Rohe

Mies van der rohe (Fig) stated that:

“Architecture is the will of the epoch translated into space, living, changing, new. » (Mies van der rohe, 1921: 58).

"I hope you will understand that architecture has nothing to do with the invention of forms." (L. Mies van der Rohe, 1950: p 319).

Figure 1: Mies van der Rohe 1886- 1969, source: open source

-Piet Mondrian

Piet mondrian (Fig) wrote:

"Architecture only has to concretely realize what painting shows in the new plastic arts in an arbitrary way. It is the architect and the engineer who, in the future, must create harmony between us and our environment." (Piet Mondrian, 1922: pp 41-47).

Figure 2: Piet Mondrian 1872-1944, source: open source

-Le Corbusier

Le corbusier (Fig) statedthat

- “Architecture is a relationship…”
- “Architecture encompasses the art of building houses, palaces, or temples, boats, cars, wagons, planes…”
- “Architecture is the skillful, correct, and magnificent play of volumes assembled in the light…” (Le Corbusier, 1923: p25).

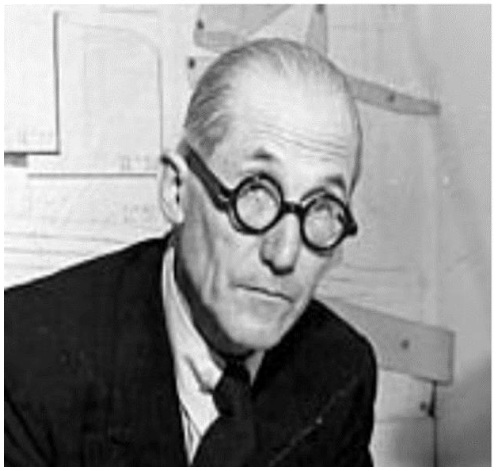

Figure 3: Le Corbusier 1887- 1965, source: open source

-Walter Gropius

For Walter gropius (Fig), the architecture of the future will have at its disposal a kind of interchangeable construction kit, machine-made, which will be freely available in the market and will be assembled into buildings of various shapes and sizes. (Walter gropius , 1946: P 120).

Figure 4: Walter Gropius 1883-1969, source: open source

-Alvar Alto

For Aalvar Alto (Fig) "the essence of architecture combines the pragmatism of formalism with functionalism to maintain the aesthetic and symbolic qualities of architectural work." (Aalvar Alto, 1970: P 69).

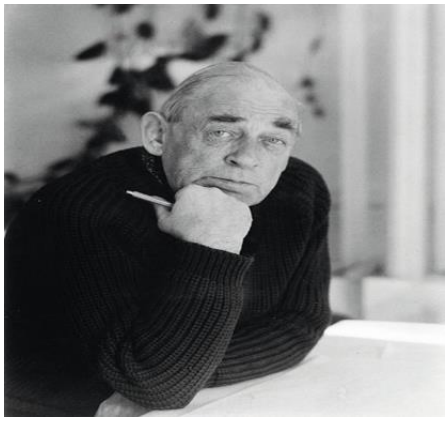

Figure 5: Alvar Alto 1898-1976, source: open source

4. Definition of the Architect's Profession

What is an architect?

An architect is an individual or a legal entity authorized to exclusively use the title of architect and to practice architecture within a defined territory.

According to the royal architectural institute of Canada[1]:

Architects can be seen as conductors who lead efforts to reconcile all the objectives of a construction project, using:

[1] https://chop.raic.ca/fr/home

- Their artistic imagination and creative vision to design spaces where ideas and techniques are represented by form, light, textures, materials, and colors, thus meeting our aesthetic, spiritual, and cultural needs.
- Their practical and technical knowledge to create safe, efficient, and sustainable spaces that address our economic needs.
- Their interpersonal communication skills, understanding of psychology, and ethical behavior to create spaces that meet the complex and sometimes divergent needs of clients, users, and the community.

5. Architect's Areas of Intervention

According to the International Union of Architects (UIA)[2], the practice of architecture involves the provision of professional services related to the planning of built and unbuilt spaces. It encompasses:

- the conception and realization,
- enlargement,
- conservation,
- restoration, or modification of spaces, buildings, or groups of buildings.

The responsibilities of an architect typically include, without any limitation:

- Preparation of preliminary studies, design of structures, creation of models and plans, development of technical specifications.
- Coordination of technical services prepared by other professionals, if necessary (consulting engineers, urban planners, landscape architects, and other specialists).
- Construction economics.
- Contract management.
- Construction monitoring (referred to as supervision or construction oversight in some countries).
- Urban planning and landscaping.
- Urban design.
- Project management

6. Required skills to become an architect

The tasks and responsibilities of an architect are diverse and varied; indeed, they must:

- Understand the client's needs.
- Develop technical plans and drawings in 2D and 3D.
- Manage a project.

[2] https://www.uia-architectes.org/en/

- Oversee construction.

Example of an architect as a project manager

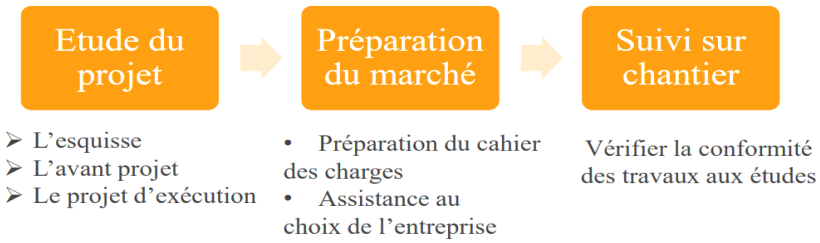

Figure 6: Example of the tasks of an architect as a project manager

To fulfill their role successfully, an architect must develop and master a wide range of skills:

- Technical Skills
- Architectural Design and Drawing
- Project Management
- Knowledge of Materials and Construction Techniques
- Cost Management Skills
- Creative Skills
- Communication Skills
- Active Listening
- Communication and marketing

6.1. Technical skills

to create precise and efficient plans (Fig), Architects must have a thorough understanding of

- mathematics,
- physics,
- computer science,
- Drawing
- design
- to ensure the safety and durability of their creations, architects have to master
- safety standards,
- construction materials,

- construction techniques.

6.2.

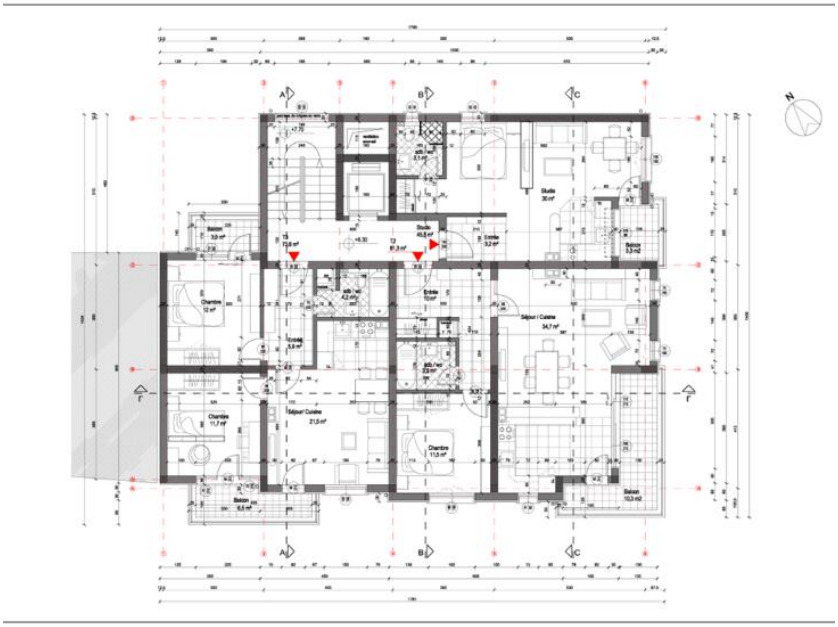

Figure 7: Example of blue print of the first floor of a house, source: open source

6.3. Architectural Design and Drawing

The architect must be able to translate the client's needs and wishes into:

- detailed plans
- technical drawings.
- This involves proficiency in computer-aided design (CAD) software such as:
- AutoCAD,
- SketchUp,
- Revit,

as well as a solid knowledge of construction standards and regulations.

Figure 8: Example of the result of the use of architectural design and drawing source: open source

6.4. Project Management

The architect must be capable of managing the entire project (Fig), from planning to execution, ensuring that the project meets deadlines, budgets, and client requirements.

This requires skills in:

- project management,
- negotiation,
- coordination

with other stakeholders such as engineers, contractors, and regulatory authorities.

Figure 9: project management, source: open source

6.5. Knowledge of materials and construction techniques

The architect must have a deep understanding of:

- various construction materials,
- their properties,
- their limitations.
- the latest construction techniques and emerging trends in the industry
- to be able to design buildings that are sustainable, energy-efficient, and environmentally friendly.
- This skill may also include:
- knowledge of traditional and vernacular construction techniques
- restoration of historic buildings.

6.6. Cost management skills

Architects must be capable of designing buildings that adhere to clients' budget (Fig) constraints and minimize construction and long-term maintenance costs.

The architect must also be able to:

- Estimate a budget
- Establish a fee structure
- Analyze a quote
- Adhere to a specification sheet
- Meet deadlines They may need to manage external stakeholders and, in such cases, coordinate them.

These skills are also required during professional practice

Figure 10: cost managment skills, source: open source

6.7. Creative skills

Creative skills are part of the artistic and creative domain and are the key to successful design. To determine what will best suit the client, it is essential to be knowledgeable about styles and trends. Different architectural styles, such as modern style or Art Deco, contemporary style... As for trends

This requires:

- curiosity,
- staying informed,
- and remaining open to the world.

Creativity can be learned, developed, and nurtured. It's not about copying a style or ambiance but drawing inspiration from them. We will learn to do this together.

6.8. Communication skills

Architect must be able to communicate effectively with a wide range of stakeholders, including:

- clients,
- contractors,
- engineers,
- urban planners,
- local governments.

Architect must be capable of:

- understanding their client's needs and preferences
- being able to communicate their own ideas and recommendations clearly and persuasively.
- convey complex technical information in an understandable manner for non-specialists,
- effectively communicate their ideas using drawings, plans, and models.
- collaborate with other building professionals to ensure the accurate execution of their vision.

6.9. Active listening

Active listening allows the architect to understand and list the desires, needs, and preferences of their client, which then enables them to put all these wishes on paper and establish a project.

Architects must be sociable and diplomatic when negotiating quotes, for example, or presenting to the client. It will be essential to know how to get their proposals accepted, especially if the budget does not allow much freedom in terms of resources and materials.

6.10. Marketing and communication

Communication is essential for getting oneself known, showcasing one's work, and maintaining a network of relationships. Nowadays, the internet is the best means of communication. Word of mouth also works well because a successful project is the best form of advertising. A portfolio is indispensable as it compiles and reflects the quality of the architect's work.

The commercial aspect is necessary when presenting projects or negotiating successfully. Indeed, architects are required to negotiate rates with suppliers and quotes with external stakeholders to adapt to their client's budget.

7. The necessary qualifications to become an architect

In order to practice as an architect, it is necessary to be:

- Graduated in architecture,
- Covered by professional insurance.
- Registered with the Architects' Order of the country (Fig).

Figure 11: Logo of National order of architects, source: National order of architects web site

Course 02: Representation and Communication Modes

Course structure

1. Why Are Modes of Representation and Communication Important for Architects?
2. Representation Methods:
   2.1. Freehand Drawing: Sketches, Drafts, Perspectives
   2.2. Instrumental Drawing: technical drawing, codified drawing
   2.3. Computer-Aided Design or Digital Modeling:CAD (Computer-Aided Design) Software, BIM (Building Information Modeling
   2.4. Physical Models: Wood, Cardboard, Plaster
   2.5. Architectural photography

Introduction

Modes of representation and communication encompass a variety of tools, including:

- Two-dimensional drawings,
- Three-dimensional models,
- Plans,
- Diagrams,
- Oral presentations,
- Written documents.

It falls upon architects to select the most appropriate modes based on their target audience and specific communication objectives.

1. Why Are Modes of Representation and Communication Important for Architects?

- Modes of representation and communication are of paramount importance for architects because they serve as vital tools in effectively conveying their concepts and designs to all stakeholders in an architectural project.
- Architects must, therefore, be capable of communicating their intentions and plans for a given project in a clear and precise manner.

2. Representation Methods:

2.1. Freehand Drawing: Sketches, Drafts, Perspectives

Freehand drawing (Fig) is a drawing technique where the artist draws freely without using tools or measuring aids such as a ruler or compass. This means that the drawing is done freehand, without the use of physical support to steady the hand or create precise straight lines or angles.

Freehand drawing can be used to create quick sketches, composition studies, preliminary sketches, illustrations, or even architectural plans.

This technique is often associated with spontaneity and expressiveness, allowing for the rapid capture of the essence of a subject or idea and the conveyance of a certain emotion or atmosphere.

Figure 12: Freehand Drawing: Sketches, Drafts, Perspectives, source: open source

2.2. Instrumental DRAWING: technical drawing, codified drawing

Instrumental drawing is a drawing technique in architecture that involves the use of measurement and drafting tools such as:

- rulers,
- compasses,
- squares,
- protractors,
- templates.

This technique allows architects to create precise and detailed drawings to communicate plans, elevations, sections, details, and other aspects of architectural design.

Figure 13: Workshop room (Bejaia department of architecture). Source: Daiche Motie 2023

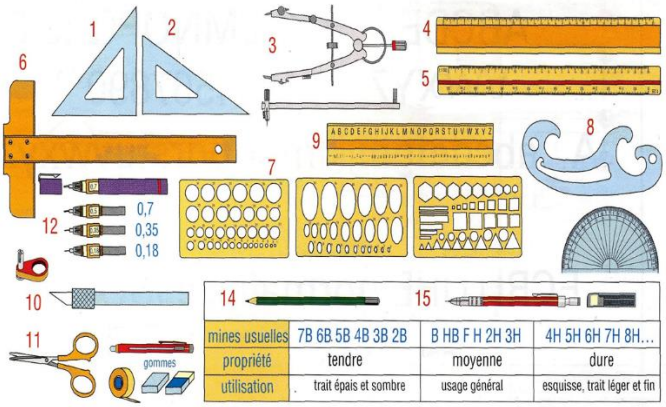

Figure 14: Instrumental drawings in architecture, source: open source

Instrumental drawings (Fig)are often done on specially designed drawing paper for architectural work. Drawing tools such as rulers and compasses are used to create precise straight lines and circles, while squares and protractors are used to measure angles and dimensions. Templates can also be used to trace standardized geometric shapes.

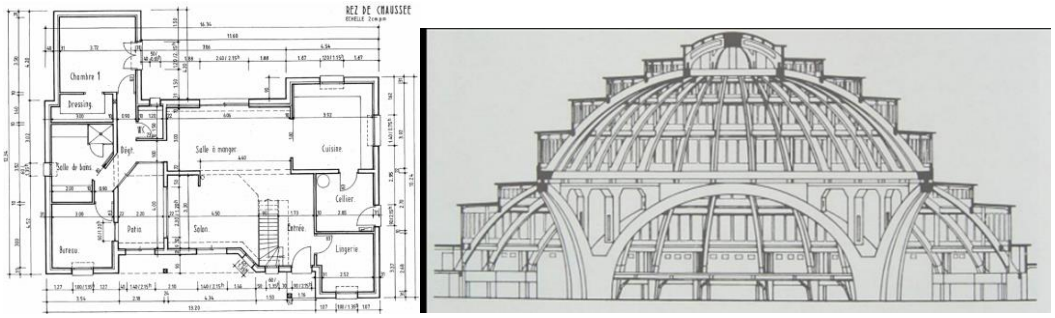

Figure 15: Blue print technical drawing

2.3. Computer-Aided Design or Digital Modeling:CAD (Computer-Aided Design) Software, BIM (Building Information Modeling

Computer-Aided Design (CAD) or digital modeling in architecture (Fig) is a method of design and representation that uses computer software to create two-dimensional (2D) drawings and three-dimensional (3D) models. This technique allows architects to work more efficiently, precisely, and rapidly by using digital tools to generate drawings and models that can be easily and quickly modified.

CAD enables architects to create 2D drawings, such as plans, elevations, sections, and details, as well as 3D models that provide a more realistic visualization of buildings and spaces. CAD software also allows for simulations and calculations to evaluate aspects like energy performance, circulation flows, ventilation, natural lighting, and other architectural design considerations.


PFE M2

CO - ENCADREMENT DE PFE DE MASTER (MÉMOIRE ET PROJET)

Etudiante : Imen Chettab

Projet: tourisme de luxe

Problématique:

Jijel, ville touristique du littoral algérien est connue par son paysage attractif et par sa nature vierge. Elle Reçoit plus de 9 millions touristes chaque saison estivale et souffre d'un manque d'équipements d'accueil et d'un tourisme de masse qui évolue dans un contexte très concurrentiel avec une très grande concentration des touristes sur le littoral. Ce qui entraine des déséquilibres, des problèmes de pollutions, de mauvaise gestion des déchets avec des activités illicites.

Comment s'imposer à ce tourisme chaotique en le remplaçant par un tourisme de qualité ? et donc durable ?

Figure 16: Computer-Aided Design or Digital Modeling. Source: my students projects 2020

Figure 17: Instrumental Drawing / Computer-Aided Design / Freehand Drawing, source: open source

2.4. Physical Models: Wood, Cardboard, Plaster

Physical models (Figs)in architecture are three-dimensional (3D) representations of buildings, structures, or urban sites on a small scale. They are constructed using materials such as wood, cardboard, plaster, resin, or any other easily malleable material.

Physical models are used in architecture to represent the design of a building or site, allowing for visualization of:

- proportions,
- dimensions,
- volumes,
- textures,
- colors. They can be created at various scales, depending on the project's requirements.

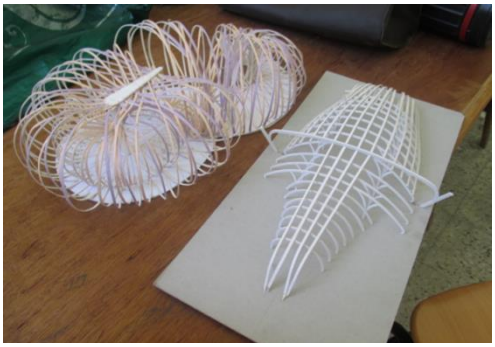

Figure 18: Physical Models, source personnel model 2015.

Models can be employed in all phases of design, from the initial concept to the final project presentation.

Physical models are often crafted based on design plans and elevations, either by hand or with the assistance of digital modeling software.

Model details may be painted, glued, or sculpted to represent design elements like windows, doors, balconies, roofs, and more.

Scale:

Figure 19: diffirent scales of Physical Models

2.5. Architectural photography

Architectural photography (Figs) is a visual representation technique that involves capturing images of buildings, structures, and urban spaces through a photographic lens. Architectural photography enables architects and photographers to document, present, and communicate architectural design in its context.

Figure 20: Falling Water by Franck LLoyd Wright

Figure 21: Galaxy Soho by Zaha Hadid, Beijing

Architectural photography can include images of buildings in their immediate environment

Architectural photography can show panoramic views of urban landscapes, construction details, interiors, textures, materials, and colors

Figure 22: Library Project By Mario Botta

Photographs can be taken at different times of day or night, depending on natural or artificial lighting, to create a specific atmosphere or highlight particular architectural details.

Architectural photography serves various purposes in architecture. It is used to:

- Document construction projects,
- Present projects to clients and project partners,
- Communicate with local authorities and regulatory agencies,
- Promote projects to the general public,
- For architectural history purposes.
- Publications such as architecture books, specialized magazines, exhibitions, and websites.

Course 03: Communication Modes for an architect

Course structure

Introduction

1. Communication Modes
   - Oral Presentation
   - Project Defense
   - Speeches
   - Conferences
   - Pitches
2. Portfolio: technical drawing, codified drawing
3. Visual Presentation: Slideshows, Videos, Animations, Posters, Boards, PowerPoint
   - Slideshow
   - Video'
   - Animation
   - Poster
4. Professional Writing :Reports, Notes, Theses
   - Reports
   - Notes
   - Meeting Minutes
   - Technical Theses
5. Social Media: Online Communication, Self-Marketing
   - LinkedIn
   - Twitter
   - Pinterest
   - Instagram
6. Representation and Communication Choices
   - Advantages and limits of communication and presentations modes Factors Influencing
   - Choices: Deadlines, Budget, Resources, Introduction
   - Target audience
   - Communication objectives
   - Project type
7. Advantages and limits of communication and presentations modes

Introduction

Architectural projects often involve multiple individuals, including an architect, a client, an engineer, and others (Farel, 1995). In such cases, these stakeholders collaborate on the execution of an architectural project, and to facilitate this, they need to communicate with each other. Communication enables them to coordinate on how to realize the project. It allows them to consider the actions to be taken within the scope of an architectural project and thus strengthen their roles as participants in a design process.

1. Communication Modes

- **Oral Presentation**: Speeches, Conferences, Pitches, Project Defense

Oral presentation (Fig) is a key skill for architects who often need to effectively communicate their ideas to various audiences.

Figure 23: Oral Presentation, open source

- **Project Defense**

Architects often need to defend their projects in front of juries or review committees. These project defenses provide architects with the opportunity to present their design, explain their choices, and answer questions from critics.

- **Speeches**

Architects may be invited to deliver a speech at events such as conferences, award ceremonies, or opening ceremonies. These speeches can cover topics such as architectural history, current trends in the field, or the latest architectural projects.

- **Conferences**

Conferences are a popular way for architects to present their projects and ideas to a wider audience. Architects may be invited to give presentations at universities, art centers, museums, galleries, or specialized architecture events.

- **Pitches**

Pitches are short and dynamic presentations aimed at selling an idea, concept, or project. Architects may need to pitch to persuade potential clients to hire their services or to participate in architectural competitions.

2. Portfolio: technical drawing, codified drawing

A visual portfolio (Fig) is a collection of visual documents presenting an architectural or design project. It may include: Drawings, Plans, Models, Photographs, 3D visualizations, Sections, Technical details, etc ,,,

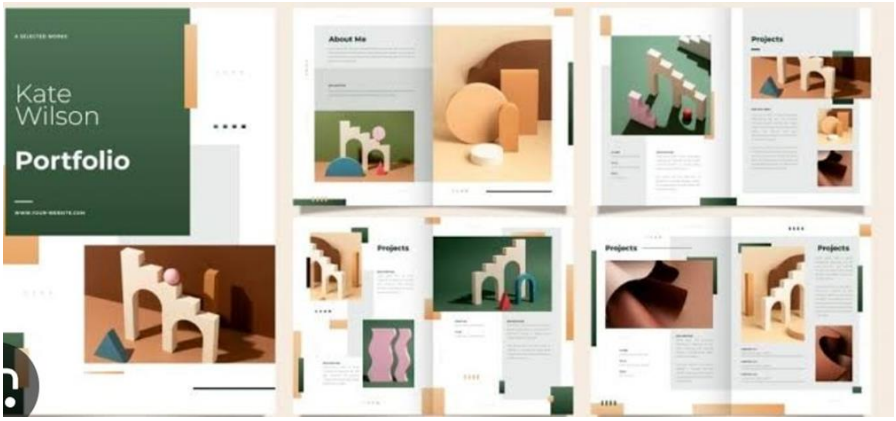

Figure 24: Example of a Portfolio

3. Visual Presentation: Slideshows, Videos, Animations, Posters, Boards, PowerPoint

Visual presentation (Fig) is a key skill for architects and designers who often need to communicate complex information in a clear and concise manner.

Figure 25: Visual presentation

- **Slideshow**

Slideshows are a popular way for architects to visually present their projects. Slideshows may include images, diagrams, plans, 3D visualizations, videos, or animations and are typically presented using presentation software like PowerPoint or Keynote.

- **Video**

Videos are another popular medium for architects to present their projects in an immersive and dynamic way. Videos can include camera shots, animations, voiceovers, and music to tell a visual story. Videos can be used for live presentations, websites, social media, and architectural competitions.

- **Animation**

Animations are an effective way for architects to present complex concepts or design processes clearly and interactively. Animations may include 3D objects, camera movements, lighting, and color effects to make projects more lively and engaging.

- **Poster**

A poster in an architecture presentation is a visual and textual display used to convey important information about an architectural project or concept. It is typically designed to be both informative and aesthetically appealing, providing a clear, concise overview of the project's key aspects.

4. Professional Writing: Reports, Notes, Theses

Professional writing (Fig) is an integral part of an architect's work, as they often need to communicate technical information, plans, and drawings to various stakeholders.

Figure 26: Professional Writing

- **Reports**

Reports are detailed documents that describe an architectural project, its context, constraints, objectives, and solutions. Reports may include plans, sections, elevations, diagrams, images, and analyses to explain design choices and technical solutions. Reports can be used for presentations to clients, local authorities, partners, and collaborators.

- **Notes**

Notes are shorter documents used to communicate technical information, instructions, and remarks about an ongoing project. Notes may include drawings, diagrams, annotations, and recommendations to guide the work of collaborators and ensure project quality and consistency.

- **Meeting Minutes**

Meeting minutes are documents that describe the discussions, decisions, and actions taken during project meetings. Meeting minutes can be used to ensure communication and coordination among various project stakeholders and to track the project's progress over time.

- **Technical Theses**

Technical theses are documents that describe the technical solutions adopted for an architectural project. Technical theses may include drawings, plans, tables, charts, and analyses to explain design choices and technical solutions. Technical theses are often used to obtain approvals, funding, or regulatory approvals.

5. Social Media: Online Communication, Self-Marketing

Social media (Fig) has become an important tool for architects to communicate with a broader audience and promote their work. Social media platforms offer ways to share images, videos, articles, and information about architectural projects, ideas, trends, and events.

Social media can also be used to promote one's personal brand in architecture, find potential clients, and expand online visibility. By using relevant hashtags, clear captions, and high-quality images, architects can create a strong and consistent online presence that reflects their work and personality.

Figure 27: Social Media

- **LinkedIn**

LinkedIn is a professional social network that allows users to create professional profiles, connect with colleagues, partners, and clients, and share information about their work. Architects can use LinkedIn to promote their expertise, achievements, and experience, and to connect with potential employers or clients.

- **Twitter**

Twitter is a micro-blogging platform that enables users to share short messages (tweets) with links, images, and videos. Architects can use Twitter to share news, opinions, articles, events, and to follow industry trends.

- **Pinterest**

Pinterest is an image-sharing platform that allows users to create inspiration boards on various topics, including architecture. Architects can use Pinterest to pin images of projects they admire, materials, furniture, trends, and more, as well as share their own project images.

- **Instagram**

Instagram is a photo and video-sharing platform that has become very popular in the field of architecture. Architects can use Instagram to share images of their projects, drawings, models, technical details, sketches, and inspirations.

6. Representation and Communication Choices

There are many criteria that help us to select the right tool for any situation to communicate and represent our idea or project (Fig), these are the most important ones:

- Advantages and limits of communication and presentations modes Factors Influencing
- Choices: Deadlines, Budget, Resources, Introduction
- Target audience

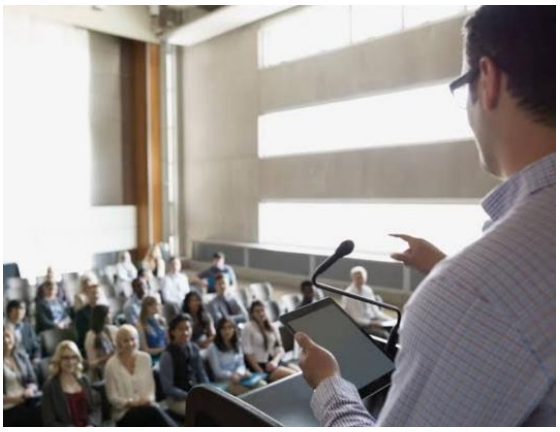

Figure 28: Representation and Communication

The audience may vary depending on the project and could include: Potential clients, Investors, Government agencies, Community members, Local residents. Depending on the audience, the architect will need to adapt their language, tools, and presentation to ensure they are understood and engage their audience effectively.

- **Communication objectives**

The architect should have clear communication objectives. For example, they may want to: convince a client to hire them for a project, persuade investors to fund a construction, inform a local community about the benefits of a project. Communication objectives influence the choice of media and content to be used.

- **Project type**

The type of project also has an impact on the representation and communication methods to be adopted. A residential project will not be presented in the same way as a commercial or institutional project. Similarly, a renovation project will not be communicated in the same way as a new construction project.

7. Advantages and limits of communication and presentations modes

7.1. Plans, drawing and models

Advantages

These tools allow for a concrete visualization of the project in two or three dimensions. They are useful for showing space arrangements, dimensions, materials, etc. Plans and drawings can also be easily modified and updated based on project developments.

Limitations

These tools can be challenging for non-experts to understand. Additionally, they do not always provide a complete sense of the project's final appearance, especially for elements that are not easily representable in 2D or in physical models, such as natural light or acoustics.

7.2. Computer generated images

Advantages

Computer-generated images (CGI) allow for the simulation of realistic views of the project, using precise textures, colors, and lighting. They are useful for showcasing the final appearance of the project and provide a better understanding of its visual impact in its environment.

Limitations

These images can be costly to produce and may sometimes present an overly optimistic or idealized image of the project. Additionally, they do not always provide a sense of the project's spatial aspects or its integration into the surrounding environment.

7.3. Videos

Advantages

Videos allow for dynamic presentations of the project, showcasing various stages of its realization. They can also incorporate interviews or testimonials to enhance the project's credibility. Videos are easily shareable online, making it possible to reach a broader audience.

Limitations

These videos can be costly to produce and often require a professional production team. Additionally, they can be challenging to follow for individuals who are not accustomed to watching videos or architectural projects

7.4. Oral presentations

Advantages

Oral presentations enable direct communication with an audience and the opportunity to respond to their questions in real-time. They also serve to convey the architect's emotions and passion for the project more effectively. They are valuable for persuading an audience of the project's significance.

Limitations

Oral presentations require clear articulation and proficiency in the language of communication. They can also be constrained by the allotted time and may not always allow for a detailed presentation of the project.

7.5. Written documents

Advantages

Written documents allow for a detailed presentation of the project, explaining architectural choices, costs, timelines, etc. They are useful for convincing an audience interested in the technical aspects of the project. They can be easily shared online or in print.

Limitations

Written documents can be difficult for non-experts to understand.

Chapter 02: Elements of Architectural Creation

Course 01: Architectural surfaces treatment
Course 02: Architectural styles
Course 03: Architecture in its environment

Course 01: Architectural surfaces treatment

Course structure

1. Architectural surfaces treatment:
   1.1. Form
   1.2. Color
   1.3. Materials
   1.4. Texture
   1.5. Technology
2. Surface Treatment and Function
3. Volume Treatment
4. The Atmosphere: Light ambiance, sound ambiance, olfactory ambiance, textures
   4.1. lighting ambiance or lighting atmosphere:
      - Natural Lighting
      - Artificial Lighting
   4.2. sound ambiance or acoustic ambiance
   4.3. Olfactory ambiance or scented ambiance

1. Architectural surfaces treatment:

Treating architectural surfaces, such as facades and floors, is a complex and nuanced aspect of architectural design. Architects utilize various elements to create visually appealing and functional surfaces.

1.1. Form

The form of a surface relates to its shape and configuration. Architects consider how the form interacts with the overall building design.

For example, a facade with curved elements may provide a more dynamic and inviting appearance, while a linear and rectilinear form can convey a sense of order and stability (Fig).

Figure 29: use of different formes in the treatment of the facade

1.2. Color

Color plays a pivotal role in creating visual interest and setting the mood of a space. Architects select colors carefully to achieve specific objectives.

A bright and vibrant color palette may be used to create an energetic and lively atmosphere, while muted and neutral tones can evoke a sense of calm and sophistication (Fig).

Figure 30: Use of colors in the treatment of dirrerent facades

1.3. Material

Material selection is critical in surface treatment. Architects choose materials based on their durability, aesthetics, and appropriateness for the intended use (Fig).

For example, a sleek, reflective glass facade can convey modernity and transparency, while natural stone can impart a sense of timelessness and luxury.

Figure 31: Use of different materials on design

1.4. Texture

Texture adds depth and tactility to surfaces. It can be visual or tactile (Fig).

A rough, textured facade might create a sense of authenticity and connection with nature, while a smooth, polished surface can be associated with sophistication and cleanliness.

Figure 32: Example of the use of textures on different architectural projects

1.5. Technology

Technological advancements have greatly influenced how we treat surfaces. Innovations in materials and construction methods allow for dynamic, interactive surfaces.

LED screens on facades, for instance, enable buildings to display changing visuals, interact with the environment, and convey information (Fig).

Figure 33: The use of technologie on buildings

2. Surface Treatment and Function

Architects integrate these elements to not only create aesthetically pleasing surfaces but also to achieve functional and experiential goals.

The treatment of surfaces is an opportunity for architects to enhance a building's identity, support its purpose, and connect it to its context.

It's a multidimensional design aspect that requires a deep understanding of materials, technology, human perception, and the language of architecture

3. Volume Treatment

Volumetric compositions, play of volumes, Connection and Recognition Spaces The architect works and creates volumes just like a sculptor (Figs)

- Volumetric compositions,
- Play of volumes,
- Connection and Recognition Spaces

Figure 34: architcetral project showing an interesting play of columes in conception

Fluid Volumetric Composition Inspired by Nature

Figure 35: Fluid Volumetric Composition Inspired by Nature

_ Volumetric Composition Inspired by Basic Geometric Shapes-Regular Shape

Figure 36: Volumetric Composition Inspired by Basic Geometric Shapes-Regular Shape

4. The Atmosphere: Light ambiance, sound ambiance, olfactory ambiance, textures

"Ambiance" refers to the atmosphere, emotional state, or tone present in a specific place, situation, or environment.

It encompasses the sensations, emotions, impressions, and perceptions experienced by individuals in response to their surroundings.

Ambiance can be influenced by various factors such as decoration, lighting, music, social interactions, weather, the nature of the place, and more.

Ambiance can be warm, joyful, festive, gloomy, tense, relaxed, romantic, eerie, and so on. It plays an essential role in how people perceive and interact with their environment, whether it's in a restaurant, a party, a movie, a book, a workplace, or any other place or situation.

Ambiance can also be deliberately created or modified to influence the emotions and behaviors of individuals, as seen in marketing, interior design, visual art, music, and other areas where emotional impact is significant (Fig).

The perception of ambiance is experienced through our five senses.

Figure 37: Human five senses

4.1. lighting ambiance or lighting atmosphere:

A lighting ambiance refers to the overall lighting and visual effect created in a particular environment to establish a specific atmosphere. It encompasses how light is used to influence mood, emotion, and the perception of a place or situation. Lighting ambiance can vary significantly based on its purpose and context.

Think of it as the art of painting with light. Just as an artist uses colors, strokes, and shading to evoke different emotions in a painting, architects use light to create specific atmospheres within their designs. This is achieved through a combination of natural and artificial lighting sources, fixtures, and controls.

- Natural Lighting:

Natural lighting refers to the illumination provided by sunlight during the day. It's a dynamic and ever-changing light source. Understanding how to harness natural light is essential for creating sustainable and pleasant spaces.

Orientation:

When designing a building, consider its orientation in relation to the sun's path. South-facing windows, for instance, allow for ample sunlight throughout the day.

Daylighting

This is the practice of strategically placing windows, skylights, and other openings to optimize the entry of natural light. It reduces the need for artificial lighting and creates a connection between the interior and the exterior.

Figure 38: Louvre museum of Abu Dhabi, 2007 By Jean Nouvel. Penetration of natural lightning

- Artificial Lighting:

Artificial lighting involves the use of man-made light sources, such as electric bulbs, LEDs, and fixtures. It is especially important for nighttime and interior environments. Architects have the creative task of selecting and arranging artificial lighting to achieve various goals

Functionality

In spaces like offices or kitchens, we use task lighting to provide ample light for work or food preparation.

Ambiance

As we discussed earlier, lighting ambiance is essential. For example, in a restaurant, carefully chosen fixtures can create a cozy and inviting atmosphere.

Highlighting Architectural Features

Lighting can be used to draw attention to specific architectural elements or artworks, adding drama and visual interest to a space.

Figure 39: TeamLab Border less museum Japan. https://www.teamlab.art/fr/e/tokyo/

4.2. sound ambiance or acoustic ambiance:

Sound ambiance refers to the overall auditory environment or atmosphere in a specific location or situation. It encompasses the sounds, noises, and acoustic characteristics that influence the mood, perception, and experience of individuals within a given space.

Sound ambiance can vary widely based on its context and purpose (Fig). Understanding and managing sound ambiance is essential in architecture and interior design, as it can significantly impact the functionality and emotional response within a space. Proper acoustic design and the use of sound-absorbing materials or soundscaping techniques can be employed to shape and optimize sound ambiance to achieve the desired atmosphere and experience.

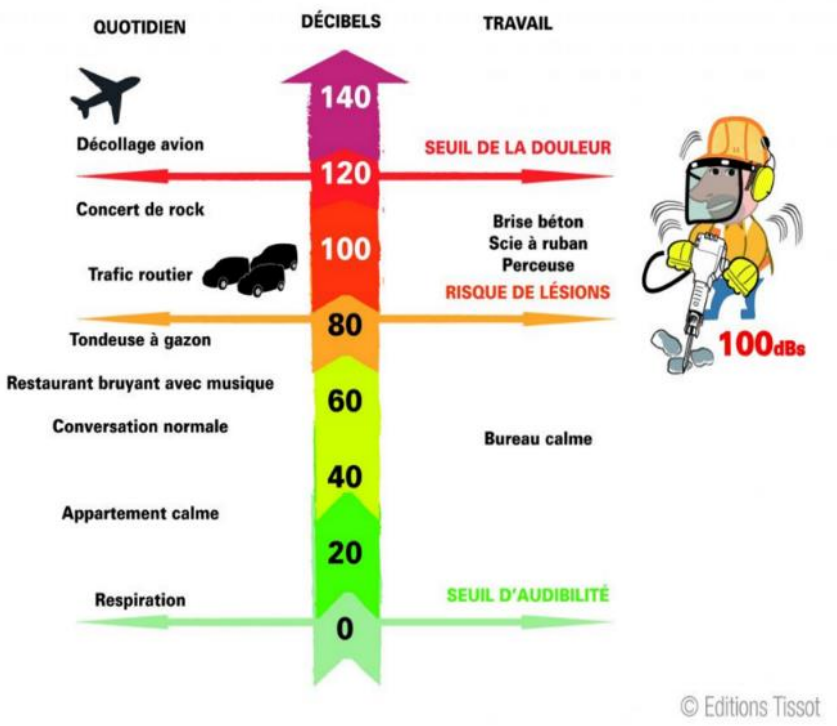

Figure 40: different level of sound and noises source: Editions Tissot

- **Relaxing Sound Ambiance:**

In a spa or meditation room, soothing sounds like flowing water, soft music, or nature sounds may be used to create a relaxing and calming atmosphere.

- **Urban Sound Ambiance:**

In a bustling city center, the sound ambiance may include traffic noise, conversations, and other urban sounds that reflect the energy and vibrancy of the area.

- **Theatrical Sound Ambiance:**

In a theater or cinema (Fig), the use of surround sound systems and carefully designed acoustics can enhance the audience's immersion in the performance or film.

Figure 41: Theatrical sound ambiance

4.3. Olfactory ambiance or scented ambiance:

The olfactory ambiance refers to the environment created using specific perfumes or smells (Fig) to influence the atmosphere and emotions in a given space. This involves the diffusion of perfumes, essential oils, or other fragrances to create a particular sensory experience.

Figure 42: olfactory atmosphere diffuser

Course 02: Architectural styles

Course Structure

Introduction

1. Architectural style according to the function
    1.1. Religious architecture
    1.2. Residential architecture
    1.3. Commercial architecture
    1.4. Industrial architecture
    1.5. Institutional architecture
    1.6. Military architecture
2. Architecture style according to the era
    2.1. The location
3. Architecture style according the architect

- Andrea Palladio
- Frank Lloyd wright
- Le Corbusier
- Antoni Gaudí
    - Ludwig Mies van der Rohe
- I,m, pei
    - Zaha Hadid
- Renzo piano
    - Norman foster

Conclusion

Introduction

Architecture is a vast and diverse field that reflects the evolution of society, culture, technology, and the individual creativity of architects. There are various styles of architecture, each with its unique characteristics, influenced by different architectural movements, styles, trends, functions, and even the personality of the architect.

Architectural movements such as Modernism, Postmodernism, Deconstructivism, and others have significantly influenced the styles of architecture. For instance, Modernism emphasized function and simplicity, leading to styles like the International Style with its clean lines and open spaces.

Trends also play a crucial role in shaping architectural styles. They often reflect societal shifts and technological advancements. For example, the trend towards sustainability has led to the rise of green architecture, focusing on energy efficiency and environmentally friendly design.

The function of a building is another critical factor in determining its architectural style. A residential building will have a different style compared to a commercial or institutional building. The function dictates the layout, materials, and design elements used, contributing to the overall architectural style.

Lastly, the architect's personality and creative vision significantly influence the architectural style. Architects like Frank Lloyd Wright, Zaha Hadid, and Le Corbusier, to name a few, have created distinctive styles that reflect their unique design philosophies.

1. Architectural style according to the function

«"Form follows function." – Sullivan Functionalism / Constructivism Rules:

- The form should reflect the function or, more precisely, express it.
- Use of simple volumes.

1.1. Religious architecture:

Buildings of worship (Fig), such as churches, temples, mosques, synagogues, and cathedrals, fall within this architectural classification.

Figure 43: Religious architecture: Mosque and a churche

1.2. Residential architecture

This architecture is centered around the design of houses, apartments, and residential buildings (Fig).

Figure 44:.Residential architecture

1.3. Commercial architecture

Commercial architecture (Fig) focuses on the design of buildings intended for commercial purposes, such as stores, restaurants, offices, shopping malls, and hotels.

Figure 45:Commercial architecture

1.4. Industrial architecture

This category encompasses the design of industrial buildings (Fig) such as factories, warehouses, manufacturing facilities, and distribution centers.

Figure 46:Industrial architecture

1.5. Institutional architecture

Institutional architecture (Fig) pertains to the design of buildings intended for institutions, such as schools, universities, hospitals, prisons, and government structures

Figure 47:Institutional architecture

1.6. Military architecture

Military architecture (Fig) encompasses the design of facilities aimed at fortifying positions to ensure national security. It involves the creation of various structures, including barracks, training camps, and so on. In the past, military architecture also encompassed the design of powder magazines and the construction of fortifications.

Figure 48:Military architecture

2. Architecture style according to the era

Over the centuries, architecture has undergone continuous evolution, from ancient architecture characterized by majestic temples and amphitheaters to medieval architecture marked by imposing castles and cathedrals. The Renaissance brought a return to classical principles from Greece and Rome, while 20th-century modern architecture introduced radical innovations in the use of materials and architectural forms.

2.1. The location

Furthermore, architecture is closely tied to cultural contexts. Architectural styles vary significantly from one region of the world to another, reflecting the beliefs, values, and traditions specific to each society. For example, traditional Asian architecture is characterized by its sloping roofs, zen gardens, and the use of wood and stone, while Arabic architecture is known for its geometric patterns and inner courtyards. Being one of the largest countries around the world algeria has multiple types of architecture, from North (Fig) to South, and from Est to West.

North Algeria :

Figure 49: Examples of Algerian North architecture: Casbah of Algiers/ Kabyle village

3. Architecture style according the architect

Becoming a famous architect typically involves a combination of talent, hard work, opportunities, and recognition from both the public and peers.

There are numerous renowned architects throughout the history of architecture. In the following slides, there's a selection of some of the most celebrated architects, although this list is by no means exhaustive.

- Some famous architects

- Andrea Palladio (1508-1580) .
- Frank Lloyd Wright (1867-1959)
- Le Corbusier (1887-1965)
- Antoni Gaudí (1852-1926)
- Mies van der Rohe (1886-1969)
- I. M. Pei (1917-2019)
- Zaha Hadid (1950-2016)
- Renzo Piano (1937)
- Norman Foster (1935)

- Andrea Palladio

Andrea Palladio (Fig) was an Italian architect of the Renaissance, known all over the world. His real name was Andrea di Pietro della Gondola. He has received the qualification of citizen and official architect of the Serenissima and he designed villas, palaces, basilicas and monuments especially in Veneto. UNESCO recognised 24 villas and 23 palaces in Vicenza, place where he was formed and lived most of his life, as World Heritage Site (Fig).

Figure 50: Villadesigned by Andrea Palladio

- **Frank Lloyd wright**

Frank Lloyd Wright (Fig) was an American architect who designed some of the most iconic buildings in the world. He was a pioneer of organic architecture.

Frank Lloyd Wright was a great originator and a highly productive architect. He designed some 800 buildings, of which 380 were actually built. UNESCO designated eight of them—including Fallingwater, the Guggenheim Museum, and Unity Temple—as World Heritage sites in 2019 (Fig).

Figure 51: Guggenheim Museum by Frank Lloyd wright

- **Le Corbusier**

Charles-Édouard Jeanneret-Gris, known as Le Corbusier (Fig), was a Swiss-born architect, urban planner, decorator, painter, sculptor, and author who became a naturalized French citizen.

Le Corbusier is renowned as a pioneer of modern architecture, credited with introducing a groundbreaking innovation by replacing external load-bearing walls with reinforced concrete pillars located inside buildings (Fig).

Figure 52CITÉ RADIEUSE LE CORBUSIER (Marseille)

- **Antoni Gaudí**

When Catalan architect Antoni Gaudí (25 June 1852 – 10 June 1926) (Fig) graduated from the Barcelona Architecture School in 1878, the director of the school Elies Rogent reportedly declared: "Gentlemen, we are here today either in the presence of a genius or a madman!" [Jeremy Roe, "Antoni Gaudí" (Parkstone International, 2012) p.18]

Figure 53: Antoni Gaudí 1852-1926

Having studied geometry in his youth, Gaudí followed advances in engineering and his work regularly features catenary curves, hyperbolic paraboloids, hyperboloids and helicoids, shapes which he used to create efficient (but more importantly dynamic and organic) structures (Fig).

Figure 54Sagrada Familia by Antoni Gaudi

- **Ludwig Mies van der Rohe**

Ludwig Mies van der Rohe (Fig)was a pioneering architect whose works – alongside Le Corbusier's and Walter Gropius' – defined a separate strain of modern architecture known as International Style (Fig). He was a true modernist pioneer and an iconic figure of 20th-century architecture and design. Sustained by his famous trenchant statements like 'less is more' and 'God is in the details' .

Figure 55: Ludwig Mies van der Rohe 1886-1969

Figure 56Ludwig Mies van der Rohe, Farnsworth House near Plano, Illinois, 1951. CC BY 4.0

- **I,m, pei**

Over the course of a long international career, he designed notable buildings that included museums, cultural and research centers, civic buildings, and office towers. A dedicated modernist, he received the architecture world's highest honors for his large body of work. (Fig)

Figure 57: I,m, pei 1917- 2019

Figure 58Glass pyramid entrance pavilion of the Louvre museum in Paris, by pei

- **Zaha Hadid**

Born in Baghdad, Iraq in 1950, Zaha Hadid (Fig) was the first woman to win a Pritzker Architecture Prize AND the first woman to win a Royal Gold Medal in her own right. Her work experiments with new spatial concepts and encompasses all fields of design, ranging from urban spaces to products and furniture.

she often brings a deconstructivist, curved (Fig) and parametric approach to her designs.

Figure 59: Zaha Hadid 1950- 2016

- Its curved, light and resolutely modern constructions are now present all over the world. Proof of her genius and influence, she is the first woman to win the Pritzker Prize, the Nobel Prize for architecture. And she did the same by winning the Royal Gold Medal for Architecture, the RIBA, the Top Award in Great Britain

Figure 60Heydar Aliyev Cultural Centre, Baku (2012), Azerbaijan By Zaha Hadid

- **Renzo piano**

Renzo Piano, (born September 14, 1937, Genoa, Italy) (Fig), Italian architect best known for his high-tech public spaces, particularly his design (with Richard Rogers) for the Centre Georges Pompidou in Paris.

Piano believed that architecture served to promote community and shared values and he wanted the architecture of the Pompidou to be one that overtly expressed the value of the art it held for the public (Fig).

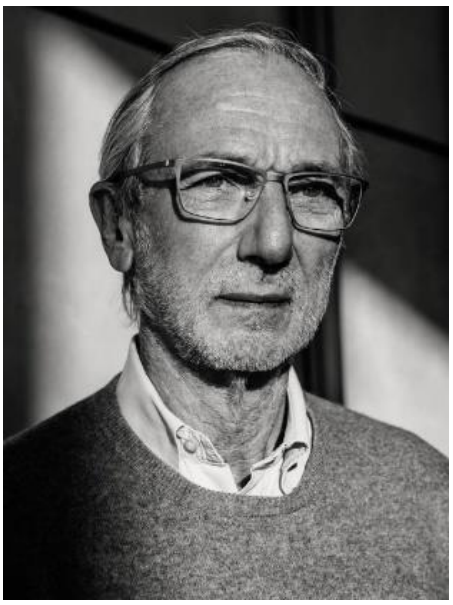

Figure 61: Renzo Piano 1937- 2013

Figure 62: Centre Pompidou, Paris by Renzo Piano

- **Norman foster**

Norman Foster (Fig) is a renowned British architect and designer, recognized for his influential and innovative contributions to modern architecture. He is known for his commitment to sustainable design principles, and his work often features a harmonious blend of aesthetics, functionality, and cutting-edge technology (Fig).

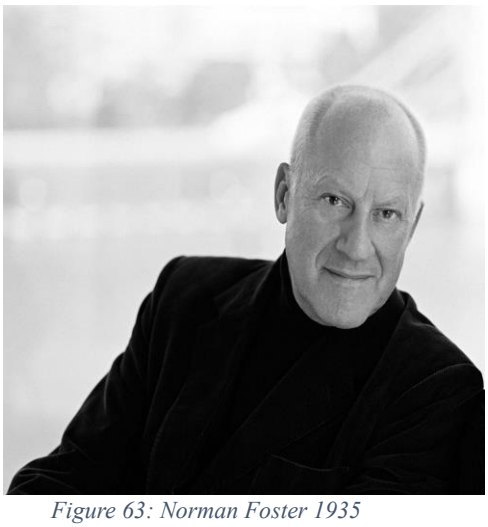

Figure 63: Norman Foster 1935

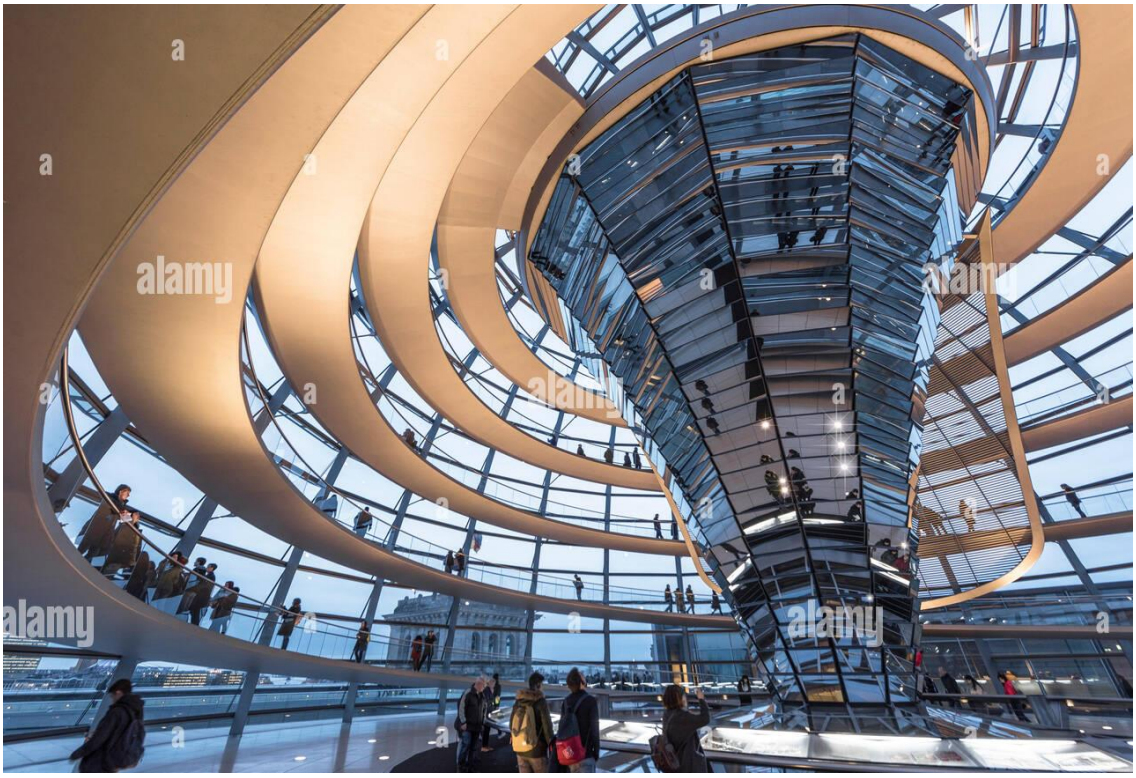

Figure 64: Reichstag (rénovation)Localisation : Berlin by Norman Foster

Conclusion

In short, architecture is much more than just a technical discipline. It is a form of cultural expression that embodies the evolution of humanity through the ages, while remaining at the heart of creating the built environment that shapes our daily lives. It is both a reflection and a driver of social, aesthetic and technological progress, and continues to evolve to meet the changing needs of our ever-changing world.

Course 03: Architecture in its environment

Course Structure

1. Architecture in its environment
2. Climate and it's impact on architecture
   2.1. Hot and dry climate
   2.2. Cold and rainy (humid) climate
   2.3. Hot and humid climate
3. Culture and its impact on architecture
   3.1. A touch of nationalism
4. Society shapes architecture
5. The use of technology in architecture
6. Human needs

1. Architecture in its environment

Architecture is not just about creating aesthetically pleasing structures; it's also about designing buildings that are in harmony with their environment. This includes the local climate and the culture that this climate engenders.

Climate plays a significant role in architectural design. The local weather conditions - be it the harsh sun of the desert, the heavy rains of the tropics, or the cold winters of the polar regions - all influence the design of buildings. Architects must consider factors such as sunlight, wind direction, humidity, and temperature variations when designing. For instance, in hot and arid climates, buildings are often designed with thick walls and small windows to keep the interiors cool. In contrast, in colder climates, buildings might feature large windows to let in sunlight for natural heating and tight insulation to prevent heat loss.

Culture, often shaped over time by the local climate, also influences architecture. The way people live, their customs, traditions, and even their social interactions, can dictate the design of buildings and spaces. For instance, in some cultures, communal living is prevalent, so homes are designed with large courtyards and communal spaces. In others, privacy might be paramount, leading to designs with private courtyards or inward-facing windows.

Moreover, materials used in construction often depend on what's locally available, and this too can be influenced by the climate. For example, in forested areas, wood might be the primary building material, while in desert areas, stone or mud-brick might be more common.

2. Climate and it's impact on architecture

There are mainly three types of climates, namely:

1. The hot and dry climate.
2. The cold and rainy (wet) climate.
3. The hot and humid climate.

The way of building in each region depends on its climate. Architecture can also become a filter that serves to modify the climate.

Human beings have been able to adapt to different types of climate on the basis of technology and the use of local building materials.

2.1. Hot and dry climate

In hot and dry regions, thick walls with narrow openings and light, reflective colors protect against heat during the day. At night, this heat stored in these thick walls is released to the outside (Fig).

Figure 65: Example of architecture of hot and dry climat. Ksar of Ghardaia,Algeria

2.2. Cold and rainy (humid) climate

In cold and rainy regions, thick brick or wood walls with dark colors protect against the cold and store indoor heat (Fig).

As the sky is often cloudy, large openings are necessary. Sloped roofs prevent rain and snow from accumulating (Fig).

Figure 66: Example of architecture in cold and rainy (humid) climate, in North Europe

2.3. Hot and humid climate

In tropical areas where it is hot and humid, the function of walls is similar to screens that allow air to pass through but prevent heat from doing so. Verandahs and low-pitched roofs create shaded areas within the building (Fig).

During rainy seasons, these roofs prevent rain from accumulating. The buildings are raised above the ground to protect against insects, reptiles and floods (Fig).

Figure 67: Example of architecture in hot and rainy climate, the equador

3. Culture and its impact on architecture

Every architecture has a meaning. Religion, ideology and spirituality have always influenced architecture. Throughout history, human groups have created spiritual environments and rituals based on religion, magic or tribal loyalty. Unlike dwellings, religious monuments were often large, built in well-chosen places and with specific and durable materials

3.1. A touch of nationalism

And as long as we are whitewashing the houses, a little nationalism does not hurt in times of dictatorship. So, the windows were painted blue to recall the colors of the Greek flag which symbolize purity and the sea. It was a good thing, in the Cyclades these colors harmonized with the environment, the surrounding sea (Fig).

Figure 68: Example of Architcture in Greece, Santorini.

Since white is a colour that repels the sun's rays, lime also contributed to the coolness of the interiors of houses.

Finally, the initial choice made for reasons of hygiene and national pride, gave an aesthetic character that has become a specific brand image of the Cyclades.

The architects of the modern movement of the 30s (Le Corbusier, etc.), and later tourists, saw in this uniformity of colors, a hymn to the Mediterranean ideal of simplicity and abstraction.

4. Society shapes architecture

The development of the company's structure had always influenced the

architecture. Class and wealth defined the monumentality and quality of any construction.

It is important to note that architecture is a major tool for social change.

5. The use of technology in architecture

Building technology is conditioned by the environment. Materials as well as construction techniques define the shapes of buildings.

Dwellings were built of wood in forest regions and of stone in mountainous, desert or open regions.

In the Arctic, dwellings were built of ice. Nowadays, architectural forms, impossible to build in the past, have been able to see the light of day thanks to technological development both in terms of software and in terms of materials and construction techniques

6. Human needs

Human beings are born with a rather small list of basic survival needs, namely: eating, sleeping, protecting themselves from the climate, etc. However, with human development, this list has expanded to cover other needs. An example of this is the list of Manfred Max-Neef (1932-2019) (Fig).

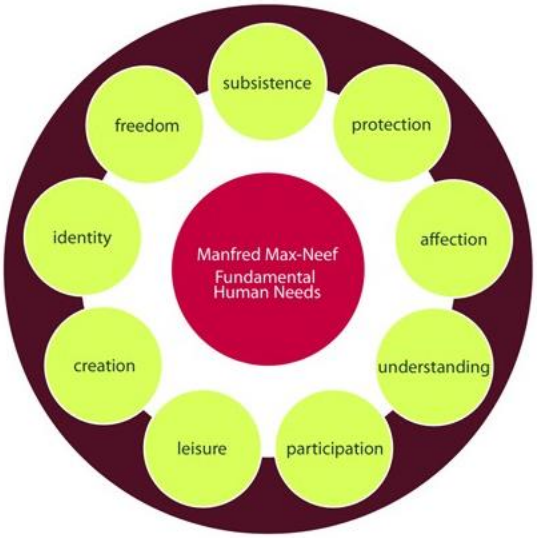

Figure 69: Model of human needs of Manfred Max-Neef (1932-2019), source: https://www.rhyslindmark.com/personal-wednesday-categorizing-needs/

Chapter 03: Introduction to Architectural Design

Course 01: primary elements of composition
Course 02: laws of composition

Course 01: primary elements of composition

Course structure

Introduction

1. What is composition?
2. Laws of vision
   - 2.1. Repetition and resemblance
   - 2.2. Proximity:
   - 2.3. Fence or common fund:
   - 2.4. Homogeneity and texture
   - 2.5. Alignment and Sets (Rhythm)
   - 2.6. Gradation / Homothety
   - 2.7. Contrast
   - 2.8. Interaction of coherence factors
3. The primary elements
   - 3.1. The point
   - 3.2. The line
   - 3.3. Surface elements

Introduction

While built architecture is widely analysed and commented on, the work of imagination and elaboration that is architectural design has long been perceived as intuitive and empirical and remains a kind of "black box" reputed to be impenetrable.

Architectural design can be thought of as a process that integrates various parameters such as

- Site data
- The function
- The structure
- aesthetics

These elements represent the foundations of architecture

By using **geometry**, the architect gives shape to an **idea**, his **design is** carried by a choice.

This complex design operation cannot be reduced to an addition of data, it is based on reflection and then on a **spirit of synthesis** and **creativity** which is based on an **in-depth analysis of** an idea or architectural part that must be argued.

We can therefore say that this design process is a ordering of data, a formatting, it is **composition.**

4. What is composition?

A concept inherited from classical architecture; the word composition comes from the verb to compose (from the Latin companere which means "to put with").

Gromort defines it as follows: "To compose is to group elements together to make a homogeneous and complete whole, in such a way that no part can be sufficient on its own but that all are subordinated to a common element of interest, the centre and Purpose of the composition".

From this quotation we can deduce in the composition it is not a question of adding homelands to each other but of organizing them according to an idea to make a complete, coherent and homogeneous whole. Composition can be said to be a grammar of forms that sets rules of play and combination, that gives meaning to each part of the architecture.

➔ To achieve this result, composition must be supported by principles or laws taught to us by **Our predecessors**, these principles are also derived from certain laws that man has learned **from nature**, they are made up of observations and hypotheses about the most permanent components of architecture.

5. Laws of vision

➔ The clarity of forms is one of the objectives in architectural compositions, this clarity is based on certain laws of a physiological nature related to the Mechanism of Sight,

➔ Others come from the psychology of perception and more particularly from the theory of form (Gestalt theory)

➔ Our perception of space is closely linked to the mechanism of vision (perception is also influenced by our memory, culture, etc.).

The laws of vision show that the eye tends to group the elements of the visual field in families or together in order to facilitate their reading.

So, we'll see how phenomena such as resemblance, proximity, orientation, and others influence how coherent we feel about a given environment.

- The eye chooses and combines the elements by looking for the most recapitulative and simplest form to which it tries to integrate the parts united by factors of formal coherence.

5.1. Repetition and resemblance

The eye tends to group together what is of the same type (Fig). Even when the elements taken two by two are quite different, we find that structural resemblance dominates these differences.

Repetition is an extremely simple compositional principle that tends to give a sense of coherence.

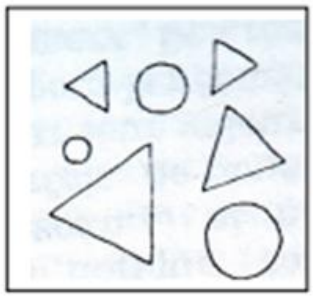

Figure 70: Triangle Group, Circle Group, and Triangle Group and Circles, source: Ching F-DK,1979.

When the elements are heterogeneous, a grouping effect can be obtained thanks to common partial characteristics (e.g. the proportions of the windows, their position in the wall and their relationship to the solids or the unity of the materials).

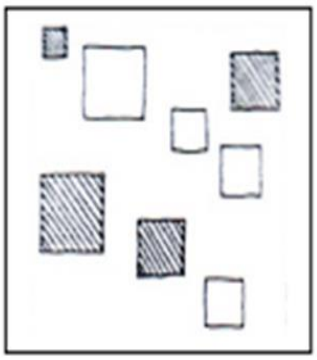

Figure 71: group of hatched squares, group of whites squares, source: Ching F-DK,1979.

The common scale or comparative dimension of the elements to be brought together is also an effective factor in grouping by similarity (Fig).

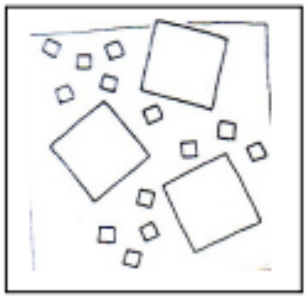

Figure 72: Group of large elements, and group of small elements, source: Ching F-DK,1979.

5.2. Proximity:

The eye tends to group the elements that are close to each other and to distinguish them from those that are far away (fig.). This principle of grouping is very active and makes it possible to bring together what is different through small intervals that establish a relationship between the elements.

The law of resemblance in competition with the law of proximity.

- Proximity requires: three spots on the left and three on the right.
- The resemblance requires: three hatched, framed spots, small at the top and three solid spots, large at the bottom

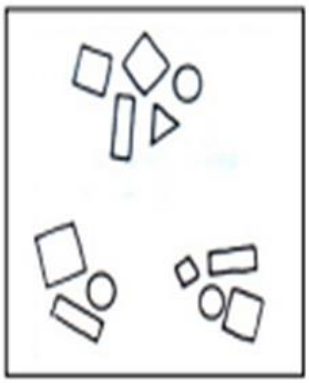

Figure 73: dissimilarity is thwarted by proximity, source: Ching F-DK,1979.

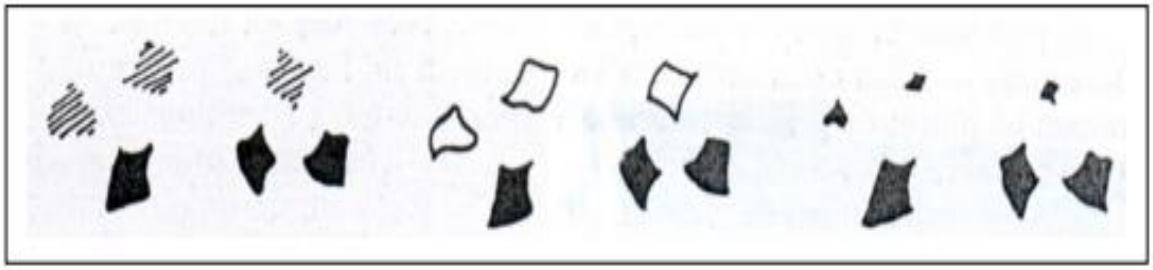

Figure 74: there are not six spots but 2X3 spots, source: Ching F-DK,1979.

5.3. Fence or common fund:

A fence, a common background or even a carpet delimit a field. What is included in the field is different from what is outside (fig.), even if the interior elements are heterogeneous.

It is a very effective means of identification that we use very frequently.

In addition, the elements indicating the fence also form a separate subgroup (fig.).

Conversely, the lack of clear boundaries prevents us from forming a clear image.

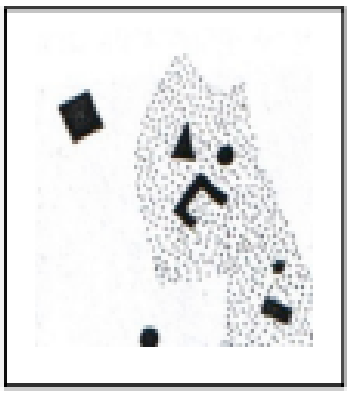

Figure 75: group of figures on the "carpet" and group of figures, source: Ching F-DK,1979.

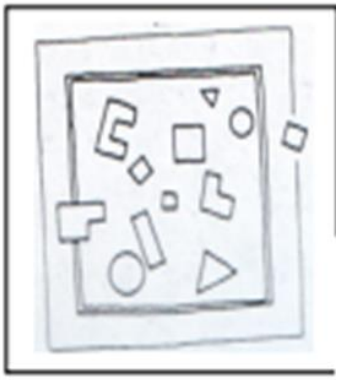

Figure 76: group of figures on the "carpet" and group of figures, source: Ching F-DK,1979.

Group of figures inside the enclosure and group of figures outside the enclosure

The eye also tends to group elements that have a mixed position: vertical, horizontal, parallel elements... (figs.77).

Heterogeneous figures form a grouping by the position that the elements take in relation to a street, a square or a building (fig.78).

Symmetry is a special case of this principle; it can even contribute to bringing together fundamentally different elements. They acquire mutual belonging through their center,

a relationship to the axis that can be materialized or that can remain virtual. Thus, even the opposition between plant beings and construction can be reduced by this device.

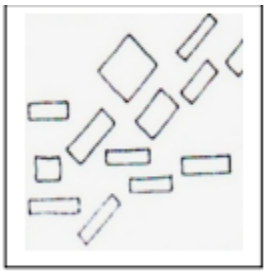

Figure 77:Group of vertical, horizontal, parallel elements, source: Ching F-DK,1979.

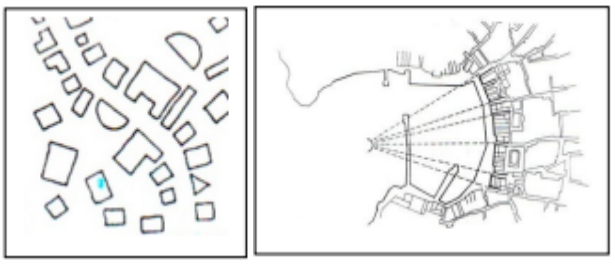

Figure 78: Heterogeneous figures that the elements take in relation to a street, a square or a building, source: Ching F-DK,1979.

5.4. Homogeneity and texture

The eye perceives a texture when the parts of a surface are sufficiently close, similar and numerous, the parts are no longer perceived individually but it is the whole texture that is perceived.

The most basic texture is created by the proximity, repetition, similarity and sometimes by the orientation of the elements that compose it. (Fig.79)

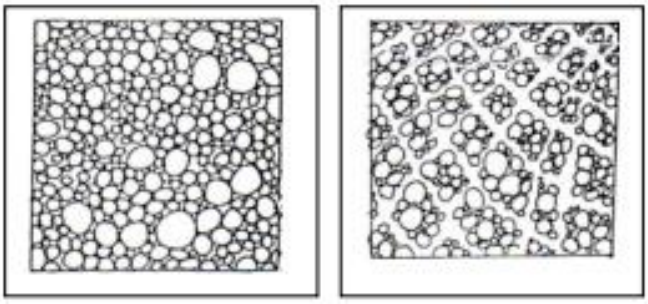

Figure 79: texture is created by the proximity, repetition, similarity and the orientation of the elements that compose it, source: Ching F-DK,1979.

5.5. Alignment and Sets (Rhythm)

There is a particular texture configuration where order is achieved by repeating aligned elements (Fig.80). All parts are of similar or equivalent importance but with preferential direction.

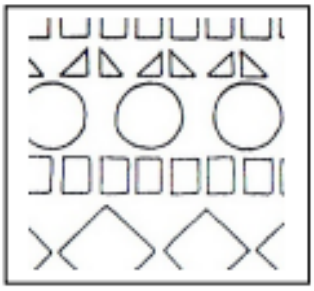

Figure 80: Elements are repeated and aligned

5.6. Gradation / Homothety

In a repeating structure such as texture or series, intervals can gradually change shape, size, or orientation.

Gradation is found everywhere in our environment (fig.81), a large part of the elements of nature are structured in this way, in architecture it can be used in the form of progression, there is a beginning and an end or a goal which then takes a dominant position, we then end up with the hierarchy which will be defined in the next courses.

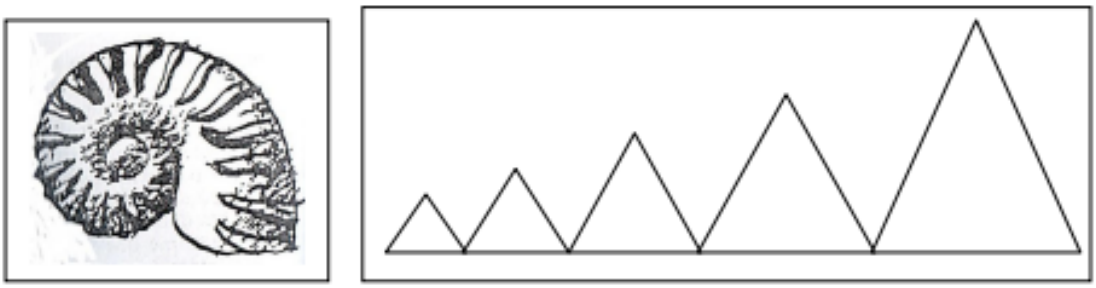

Figure 81: Progressive gradation, source: Ching F-DK,1979.

5.7. Contrast

Contrast serves to give an immediate and unambiguous idea to two formal systems.

This principle leads to a mutual enhancement, the interdependence of the elements is achieved by a tension resulting from their contrary nature. This opposition can present itself in various ways: Large/small; wide narrow; horizontal/vertical; Positive/negative; Full/empty; concave/convex; curve/ straight; light/dark (Fig. 82); natural/artificial; smooth/rough; vegetable/mineral....

Figure 82: Light and dark contrast

5.8. Interaction of coherence factors:

In a formal organization, the factors of coherence mentioned above come into play simultaneously because the reality is complex and pure situations are sometimes rare.

We therefore use several factors at the same time to organize our environment, depending on the choices we make, we end up with sets that can be grasped at a glance or, on the contrary, more difficult to understand, requiring an effort.

The observer must make a greater effort to understand the form when the connection between its parts is unclear. The architect's role is then to introduce the structures that make it possible to group the elements together by strengthening their relationships

6. The primary elements

How do I generate a shape?

Any shape can be born from primary elements such as the point, the line, the surface (surface or plane elements) and the volume (Fig. 83).

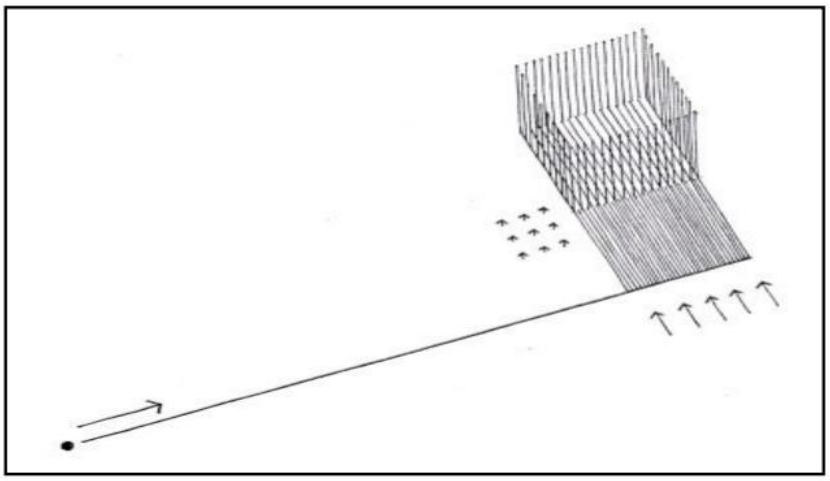

Figure 83: Shape génération from a dot, source: Ching F-DK,1979.

The dot indicates a position in space (Fig. 84)

The extension of points forms a line characterized by its

•Length

•Direction

•Position

Line extension forms a surface characterized by

• Length and width

•Shape

•Surface

• Orientation

• Position

By extension, **flat surfaces become volume,** which will have the following characteristics:

• Length, width, depth

•Shape

•Surface

• Orientation

• Position.

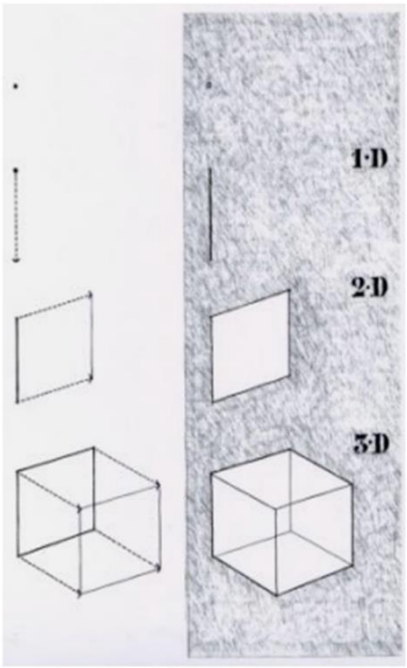

Figure 84: Characteristics of a dot, in the three dimensions, source: Ching F-DK,1979.

6.1. The point

Conceptually, a point has no dimensions, it is static and marks centrality. The point can be the vertical projection of a column, an obelisk, or a tower (Fig. 85).

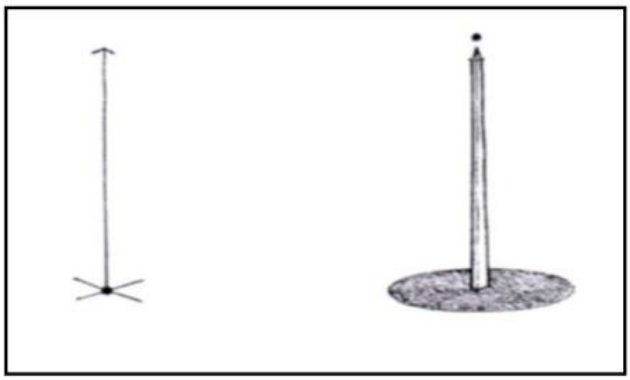

Figure 85: different representations of a dot in different dimensions, source: Ching F-DK,1979.

As the first elements of the formal vocabulary, the dot can serve as a (Fig.86):

- Limits of a line
- Intersection of two lines
- Meeting Lines at the Corners of a Surface

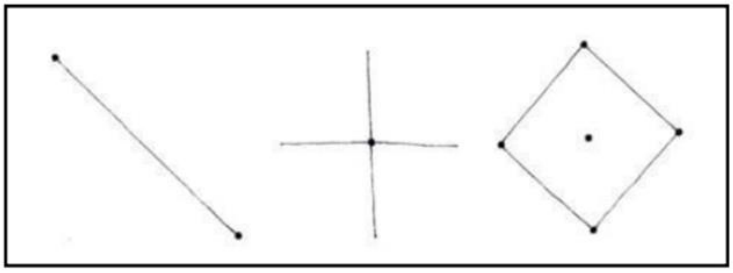

Figure 86: different uses of a dot, source: Ching F-DK,1979.

The center of a surface or volume (Fig.87):

- Cylinder
- Sphere
- Circle
- Two points form a segment or may suggest an axis of symmetry

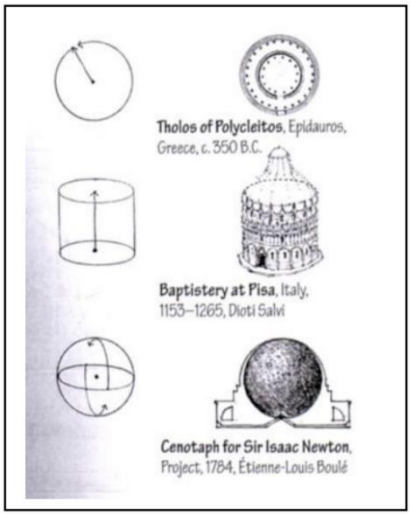

Figure 87: different uses of a dot in horizontal, vertical and 3 dimensions, source: Ching F-DK,1979.

6.2. The line

If the point is static, the line describes a path, a direction, and is characterized by movement and opportunities for growth (Fig. 88).

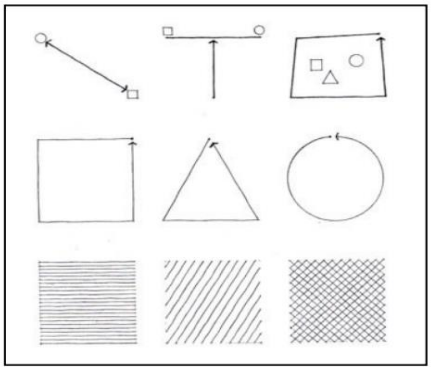

Figure 88: The uses of a line, source: Ching F-DK,1979.

A line is used to

- Linking, joining, supporting, or delineating elements
- Describe boundaries and shape flat surfaces
- Articulating flat surfaces

- In architecture, the line is represented by vertical linear elements and horizontal ones (Fig. 89).

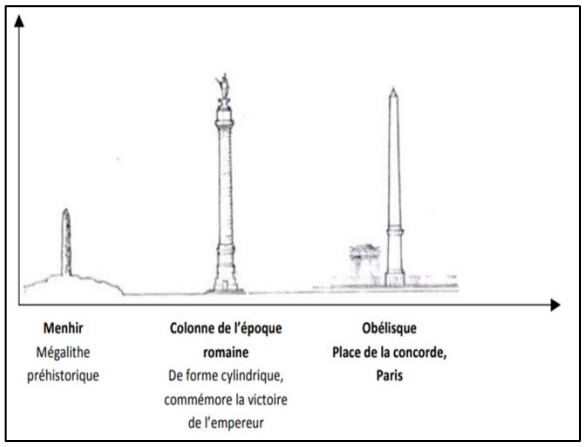

Figure 89: examples of the use of the line in architecture, source: Ching F-DK,1979.

- Vertical linear elements include columns, obelisks or towers that have been used in all civilizations to mark an important event by establishing a particular point in space.

- Vertical linear elements can also delimit an invisible space. The four minarets of the Sultan Selim Mosque (Turkey, 16th century) define a plan above the dome giving it more lightness (Fig. 90).

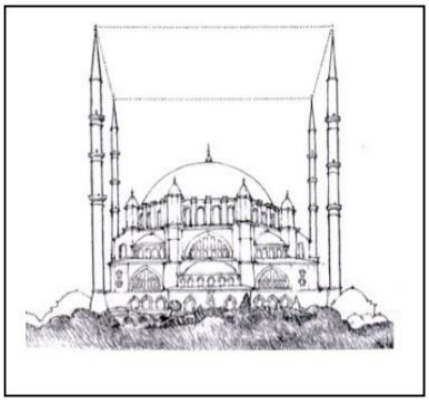

Figure 90: vertical linear elements in the Sultan Selim mosque, source: Ching F-DK,1979.

6.3. Surface elements

In addition to their dimensional characteristics, polygon elements have contour-defined shape properties (distorted in perspective) as well as color and texture properties (Fig. 91).

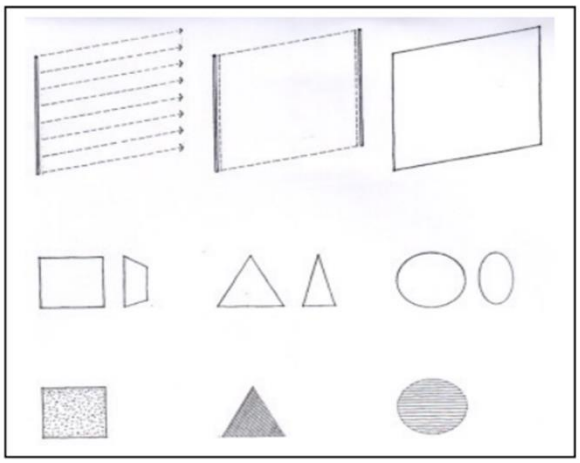

Figure 91: Surface elements, source: Ching F-DK,1979.

- In architecture, surface elements are manipulated to draw three types of plans:
- The cover that protects you from the weather
- The wall that closes the space and delimits it
- The base, which is the ground support of the space
- These surface elements can be straight, curved, horizontal, vertical or inclined

Course 02: Laws of composition

Course structure

Introduction

1. Properties of Form
2. Generation and Transformation of Form
   - 2.1. Dimensional Transformation
   - 2.2. Subtractive Transformation
   - 2.3. Additive Transformation
3. Modes of Association and Organization
   - 3.1. Centralized Organization
   - 3.2. Linear Organization
   - 3.3. Radial Organization
4. Addition of Elements in a Composition
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5. Principles of Composition: Essential Concepts
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   - 5.2. Balance
     - 5.2.1. Balance and Symmetry
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   - 5.3. Hierarchy
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     - 5.3.2. Hierarchy by Shape
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   - 5.4. Unity and Variety
   - 5.5. Dominance and Emphasis
     - 5.5.1. Dominance
     - 5.5.2. Emphasis

Introduction

By "form," we refer to the external and internal appearance or configuration that allows a building to be recognized. This form, generated by the architect, possesses certain geometric, dimensional, color and texture, positional, orientational, and visual inertia properties.

1. Properties of Form

As shown in figure (Fig. 92) the form has several proprieties:

- **Geometry**: The geometric shape (square, circle, triangle, etc.) is the primary aspect that allows the object to be identified.
- **Dimension**: The three dimensions of length, width, and height determine the proportions of the form.
- **Color**: A phenomenon related to light and perception, this attribute distinguishes a form from its environment.
- **Texture**: The visual and tactile quality of a surface, determining the degree of light absorption.
- **Position**: This refers to the location of the form in relation to its environment or the angle of view.
- **Orientation**: The direction of the form relative to its support (or ground) or to the observer.
- **Visual Inertia**: The degree of concentration and stability of the form, depending on its geometry, orientation, and center of gravity.

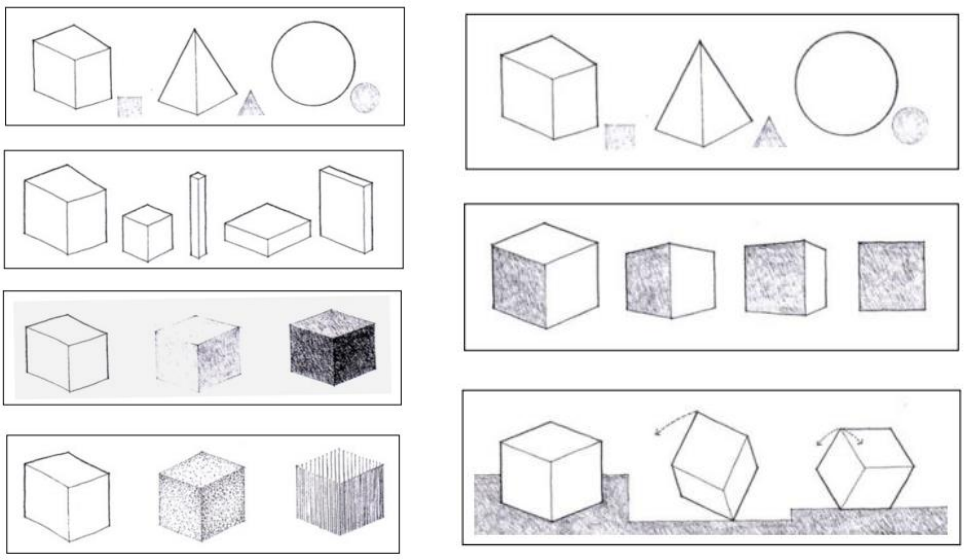


Figure 92: Forms Proprieties, source: Ching F-DK 1979

2. Generation and Transformation of Form

Pure forms such as the square, circle, and triangle, as well as the solids derived from them, are combined with one another through manipulation of their dimensions and by operations of addition and subtraction.

2.1. Dimensional Transformation: Addition

A form undergoes transformation through modification of its dimensions while maintaining its identity as part of a primary form (Fig. 93).

Through dimensional alteration, a form such as a circle becomes an ellipse, and a square becomes a rectangle. The cone is truncated by reducing the height to the apex.

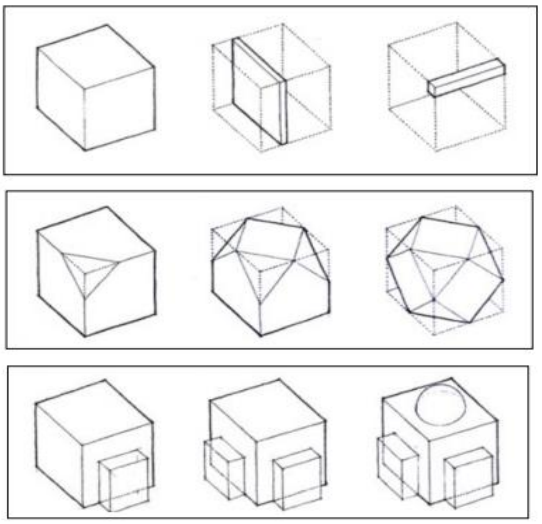


Figure 93: Dimensional Transformation: Addition, source: Ching F-DK,1979.

2.2. Subtractive Transformation

A part of the form is subtracted (removed) to obtain a new form (Fig. 94). When forms are not entirely variable, they can still be identified because they retain their identity even if they are not entirely perceived. Primary shapes and solids adhere to this principle of subtraction; their form retains its identity if portions are removed without compromising their boundaries, limits, and overall profile.

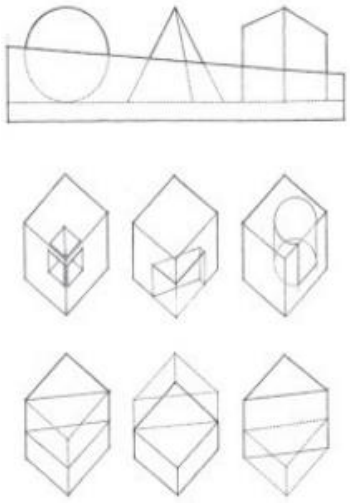


Figure 94: Dimensional Transformation: Soustraction, source: Ching F-DK,1979.

2.3. Additive Transformation: juxtaposition

A form can be transformed by the addition of elements to a base volume or shape. This addition follows a concept, whether for functional, structural, or aesthetic reasons.

- **Composition of Nine Squares: Study of the Bauhaus**

The "Composition of Nine Squares" (Fig. 95) is a study often associated with the Bauhaus movement, which explores the principles of geometric abstraction and spatial organization. This composition typically involves arranging nine squares in various configurations to investigate the relationships between forms, space, and function. The exercise emphasizes the Bauhaus ideals of simplicity, clarity, and the integration of art and technology.

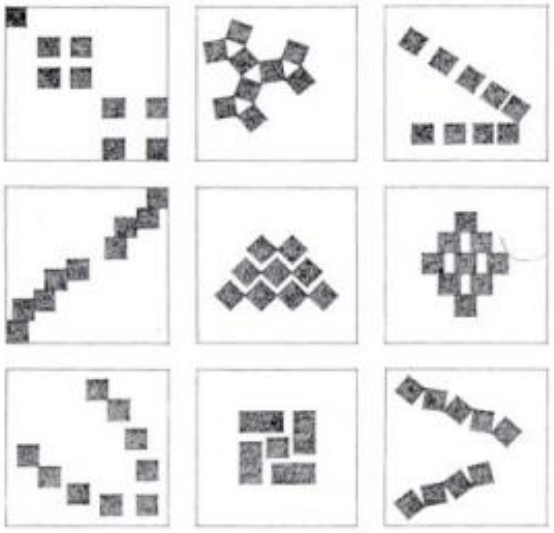


Figure 95: - Composition of Nine Squares: Study of the Bauhaus, source: Ching F-DK,1979.

3. Modes of Association and Organization

Modes of association refer to the various spatial organizations that allow for the arrangement of primary elements to create a composition.

3.1. Centralized Organization

This mode of association is a stable and concentrated composition consisting of elements grouped around a central space (Fig. 96). The secondary spaces in this organization can be equivalent to each other in function, form, or dimension, creating a regular and symmetrical geometric configuration along one or more axes. It can also be asymmetrical.

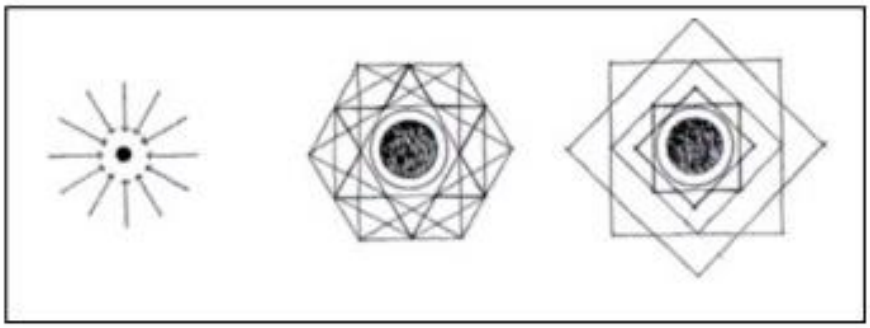


Figure 96: Centralized Organization, source: Ching F-DK,1979.

In other cases, these spaces may differ in shape or dimensions to address functional requirements, relative importance, or to distinguish themselves from their environment.

In this mode of association, since the spaces are not oriented, the building entrance can be specified by articulating one of the secondary elements with an access door (Fig. 97).

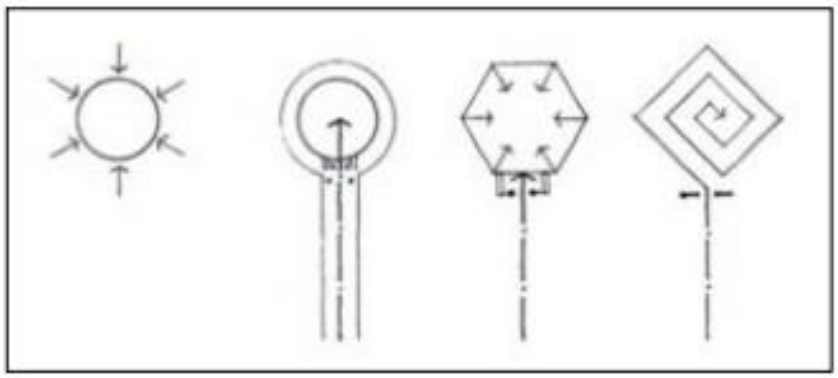


Figure 97: Centralized Organization, source: Ching F-DK,1979.

3.2. Linear Organization

A linear organization is primarily composed of the repetition of a series of similar spaces in terms of function, form, or dimension (Fig. 98). It can also consist of a single linear element along which different spaces are arranged.

Spaces of greater functional or symbolic importance may occupy a particular position within this composition: at the center, at the edges, recessed, or as a linking element.

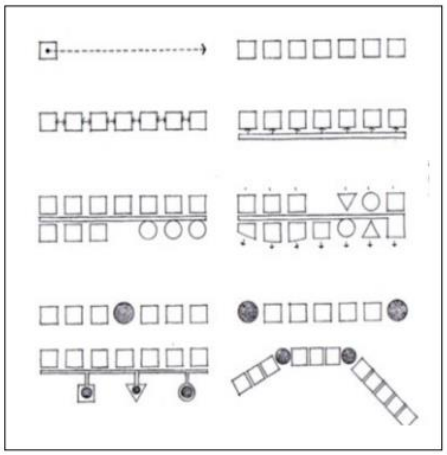


Figure 98: Linear Organization, source: Ching F-DK,1979.

The linear nature of this organization expresses direction, movement, extension, and growth. To limit this growth, the linear organization can be constrained by a dominant space, the use of a different type of building, or the topography of the site (Fig.99).

This organization can be flexible and adapts to the specific characteristics of the site (Fig. 99).

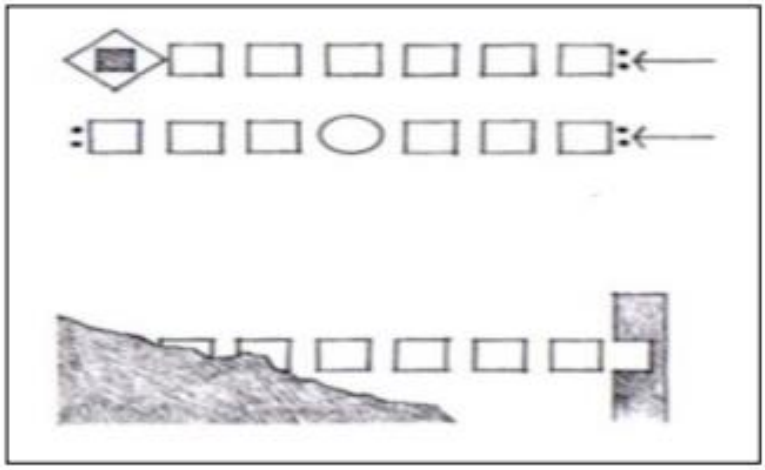
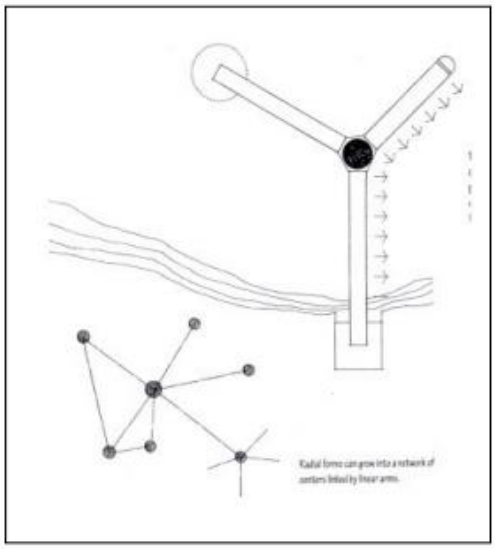


Figure 99: Linear organization

3.3. Radial Organization

This mode of association combines the principles of centrality and linearity. It consists of a dominant central space from which linear elements radiate outward (Fig. 100). Unlike the centralized organization, which is introverted, the radial organization is extroverted and can extend and integrate with specific elements or the characteristics of the site.



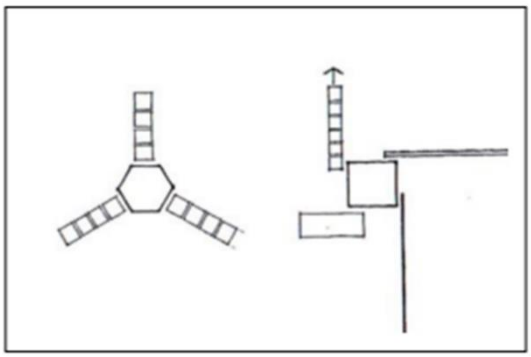


Figure 100: Radial Organization, source: Ching F-DK,1979.

The arms of this composition can vary to meet functional requirements or contextual needs. These arms create a rotation around a central element, which can be a simple geometric figure such as a square or another shape.

4. Addition of Elements in a Composition

The addition of elements within a composition occurs according to various modalities concerning the positioning of spaces relative to each other. These relationships can include: space within a space; interlocking spaces; juxtaposition; articulation;

4.1. Inclusion (space within a space)

One space can envelop another space through its larger volume (Fig. 101). To facilitate the reading and perception of this spatial configuration, the containing space must be sufficiently large; otherwise, it would lose its property as an envelope. The contained space can have the same shape as the containing space but oriented differently to create a dynamic effect in the residual spaces. Alternatively, the contained space can take a different form than the containing space to enhance its image as an autonomous volume.

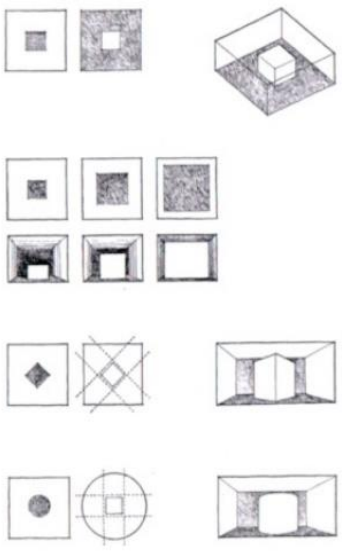


Figure 101: Space within space, source: Ching F-DK,1979.

4.2. Interlocking spaces

An interlocking relationship results from the overlapping of parts belonging to two spaces, creating a common element between them (Fig.102). When two volumes interlock, each space maintains its identity and definition. The resulting configuration can be interpreted in various ways:

- The interlocking space can be shared by both volumes.
- The interlocking space can be an integral part of one of the two volumes, while the second volume undergoes subtraction.
- Both volumes may experience subtraction, with the interlocking space developing its own autonomy while connecting the two volumes.

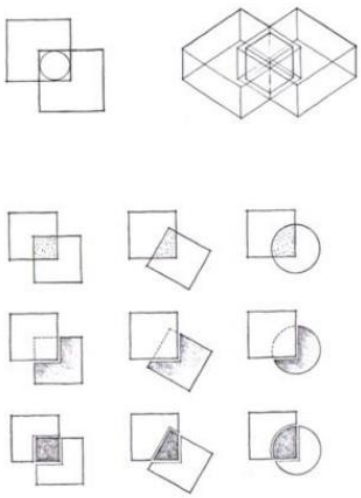


Figure 102: Different forms of interlocking spaces

4.3. Juxtaposition

Juxtaposition is one of the most common spatial relationships (Fig. 103). It allows each space to retain its identity and address functional or symbolic requirements in its own way. The degree of visual and spatial continuity created between two adjacent spaces depends on the nature of the separating space, which can be:

- A visual and physical boundary that allows passage between the two adjacent spaces, reinforcing their individuality.

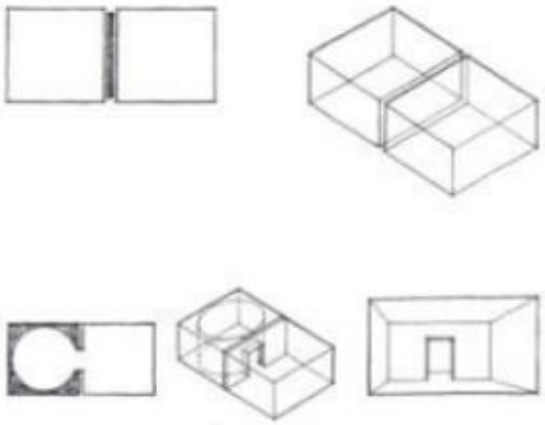


Figure 103: Different forms of juxtaposition, source: Ching F-DK,1979.

4.4. Articulation

Two spaces separated by a distance can be connected by a third intermediary element. This intermediary space or "articulation" can differ in shape and orientation from the two spaces it connects, highlighting its role as a linking element. The nature of this link will influence the visual and spatial relationship between the two spaces (Fig. 104).

- The two spaces and the articulation can be equivalent in size and shape, composing a linear sequence.
- The articulation can itself take a linear form to connect distant spaces or spaces that do not share a directional relationship.
- The articulation may become a dominant space if it is large, thus becoming a key organizational element in the composition.
- The shape of the articulation can be determined by the orientation of the spaces it connects.

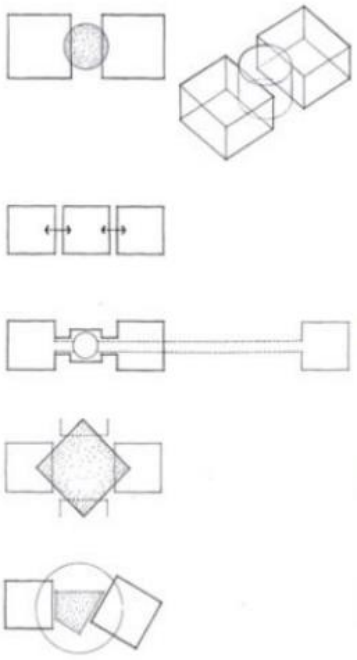


Figure 104: Different forms of articulation, source: Ching F-DK,1979.

5. Principles of Composition: Essential Concepts

There are multiple principals of composition, in this section we will study what's below:

- Harmony
- Balance

  - Balance and Symmetry
  - Balance and Asymmetry
- Hierarchy
  - Hierarchy by Size
  - Hierarchy by Shape
  - Hierarchy by Position
- Unity and Variety
- Dominance and Emphasis

5.1. Harmony

- Harmony is the well-regulated agreement between the parts of a whole, ensuring that their arrangement contributes to a unified purpose or effect.
- Harmony is the ultimate goal of every architectural act.

5.2. Balance

5.2.1. Balance and Symmetry:

- Traditionally, balance has been subordinated to the principle of symmetry, which divides the composition into two equal parts.
- Symmetry arranges elements on either side of an axis, akin to a mirror reflection (Fig. 105).

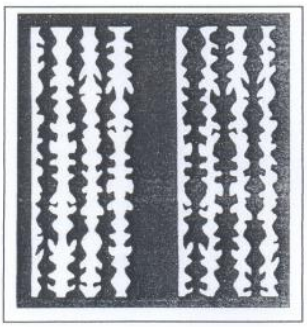


Figure 105: Example of balance and symmetry, source: Ching F-DK,1979.

5.2.2. Asymmetrical Balance:

- This is one of the major achievements of 20th-century architecture, demonstrating that balance can be achieved without relying on symmetry (Fig. 106).
- Asymmetrical balance involves concepts of verticality, horizontality, and the laws of gravity (lever arms).
- Lever Arms and Balance

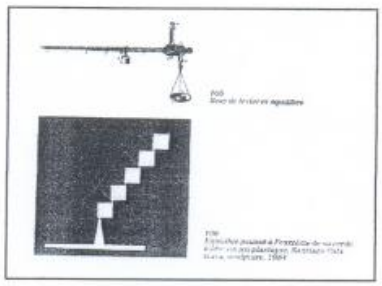


Figure 106: Example of asymmetrical balance, source: Ching F-DK,1979.

5.3. Hierarchy

It refers to the relative importance of an element within a system. It involves the significance of one component in relation to others within the composition.

To create hierarchy, one can use variations in relative dimensions, as well as the arrangement and uniqueness of forms within a context, such as centrality, axiality, or geometric opposition.

A hierarchy involves primary and secondary elements, establishing a relationship of dependence between them. One or more elements dominate the others, and attention is focused on these dominant elements.

5.3.1. Hierarchy by Size

- The form of a space can dominates an architectural composition due to its larger size (Fig. 107).
- In some cases, dominance can also be achieved by the smaller size of an element relative to others.

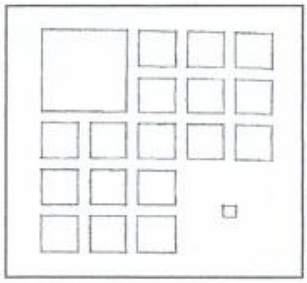


Figure 107: Hierarchy by size, source: Ching F-DK,1979.

5.3.2. Hierarchy by Shape

- A space can visually dominate a composition through a contrast in shape, differences in orientation, or the introduction of irregularity. This difference may also be associated with variations in function (Fig. 108).

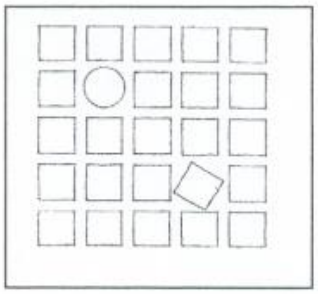


Figure 108: Hierarchy by shape, source: Ching F-DK,1979.

5.3.3. Hierarchy by Position

- A particular position can give a space a dominant character within the composition (Fig. 109). The dominant element can be:
    - The boundary of a linear organization.
    - The center of a centralized or radial organization.
    - Positioned above, below, or in the foreground relative to other elements in the composition.

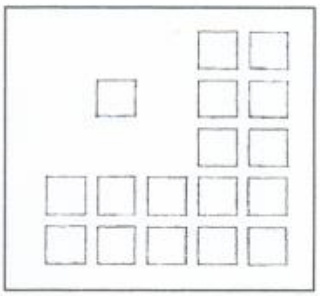


Figure 109: Hierarchy by position

5.4. Unity and Variety

These principles stem from the natural laws of vision; the human eye tends to group elements into families or sets to facilitate readability (Fig. 110).

- **Unity**: This refers to the quality of being one or unified. It can be achieved through the repetition of similar types of elements.
- **Variety**: This involves differences among the elements that make up a group.

Note: Unity without variety can lead to monotony, while variety without unity can lack coherence.

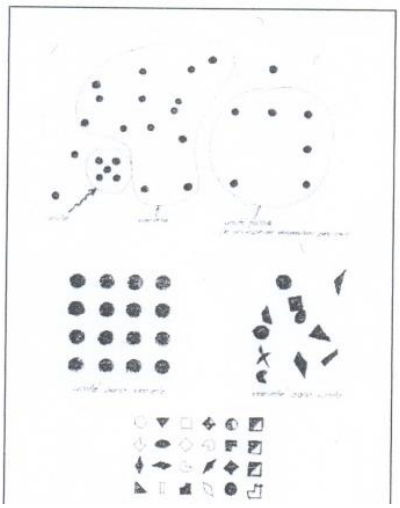


Figure 110: Unity in variety and variety in unity source: Ching F-DK,1979.

5.5. Dominance and Emphasis

5.5.1. Dominance

This principle involves ensuring that one element stands out as the most important or significant within a composition. Dominance is achieved through variations in size, shape, color, position, or other distinguishing features. A dominant element captures the viewer's attention and often serves as a focal point. (Fig. 111)

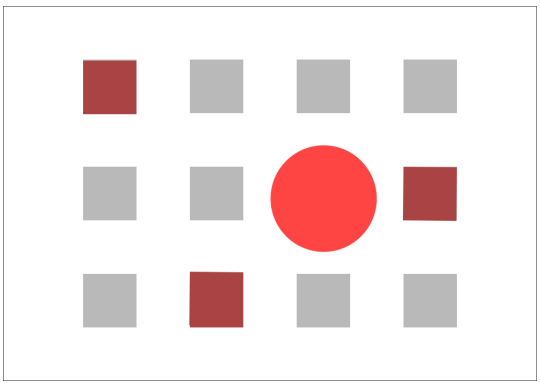


Figure 111: Domiannce, focal point and hierarchy, source: Ching F-DK,1979.

5.5.2. Emphasis

Emphasis refers to the deliberate highlighting of certain elements within a composition to draw attention to them. Emphasis can be created through contrast, placement, isolation, or by using distinctive textures, colors, or forms.

Key Points:

- Dominant elements provide a clear visual hierarchy, guiding the viewer's eye through the composition.
- Emphasis ensures that important features or areas are highlighted, enhancing the overall readability and impact of the design.

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