
# CHAPTER FIVE SPACE PROGRAM, STANDARDS, AND SITE SELECTION

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Portfolio Preparation & Graduation Thesis Study

First semester

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# Outline

- Objectives
- Outcomes
- Space program
- Calculating the number of visitors
- Standards
- Site selection
- Site Selection Criteria
- Conclusion
- Zoning
- Chapter Structure and Evaluation

# Objectives

- ✓ To introduce students to the fundamental components of project planning in interior design.
- ✓ To explain methods for calculating visitor numbers and applying design standards.
- ✓ To guide students in site selection and evaluation using clear criteria.
- ✓ To develop understanding of zoning and structuring a design chapter.

# Outcomes

- ✓ Students will be able to prepare a space program.
- ✓ Students will know how to estimate visitor numbers.
- ✓ Students will apply standards in their design proposals.
- ✓ Students will analyze and compare sites using selection criteria.
- ✓ Students will organize zoning plans and structure chapters effectively.

# 1. Space Program Introduction

## What is the space program?

- ✓ **A space program** is a comprehensive document that systematically defines all spaces required for your project, their sizes, relationships, and functional requirements. It serves as the foundation for your design decisions and ensures that your project meets user needs efficiently.

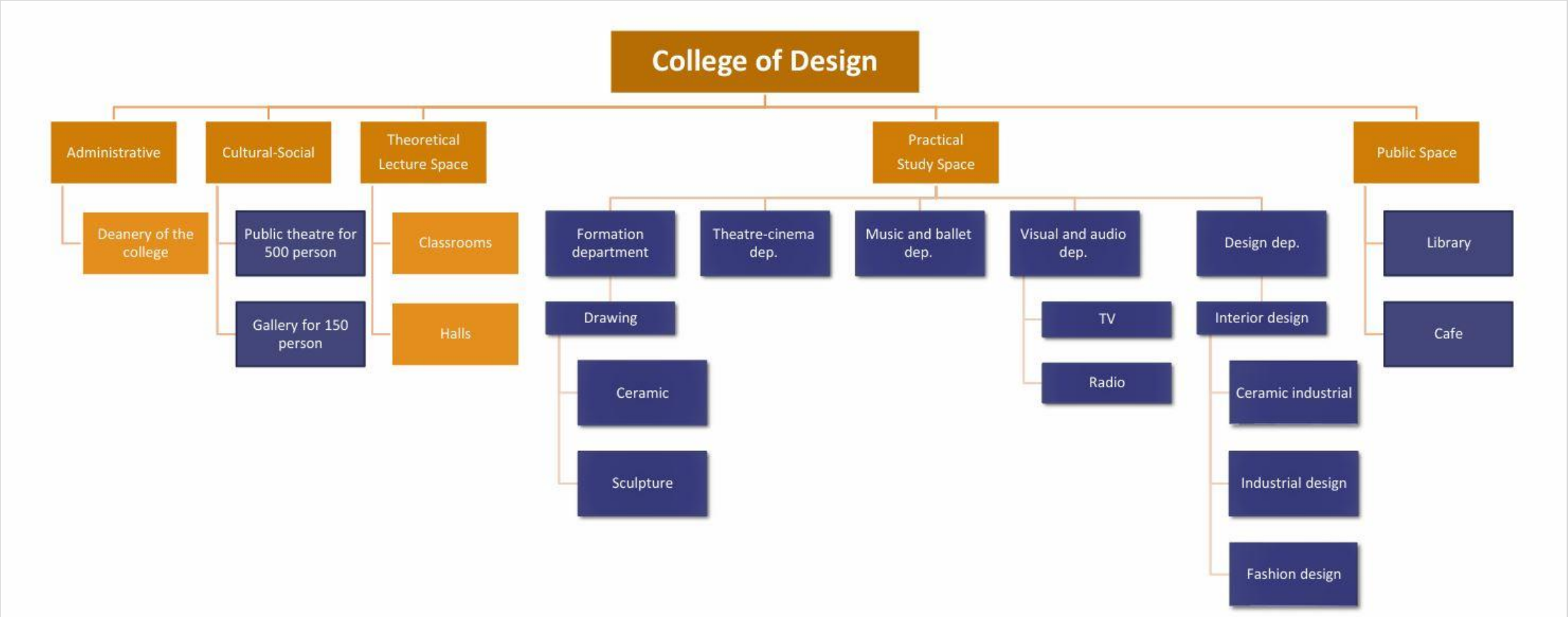
# 1. Space program

Based on your **literature review, questionnaire findings, and case study analysis**, the space program should reflect the needs of the users, cultural and functional requirements, and architectural best practices. It is usually divided into:

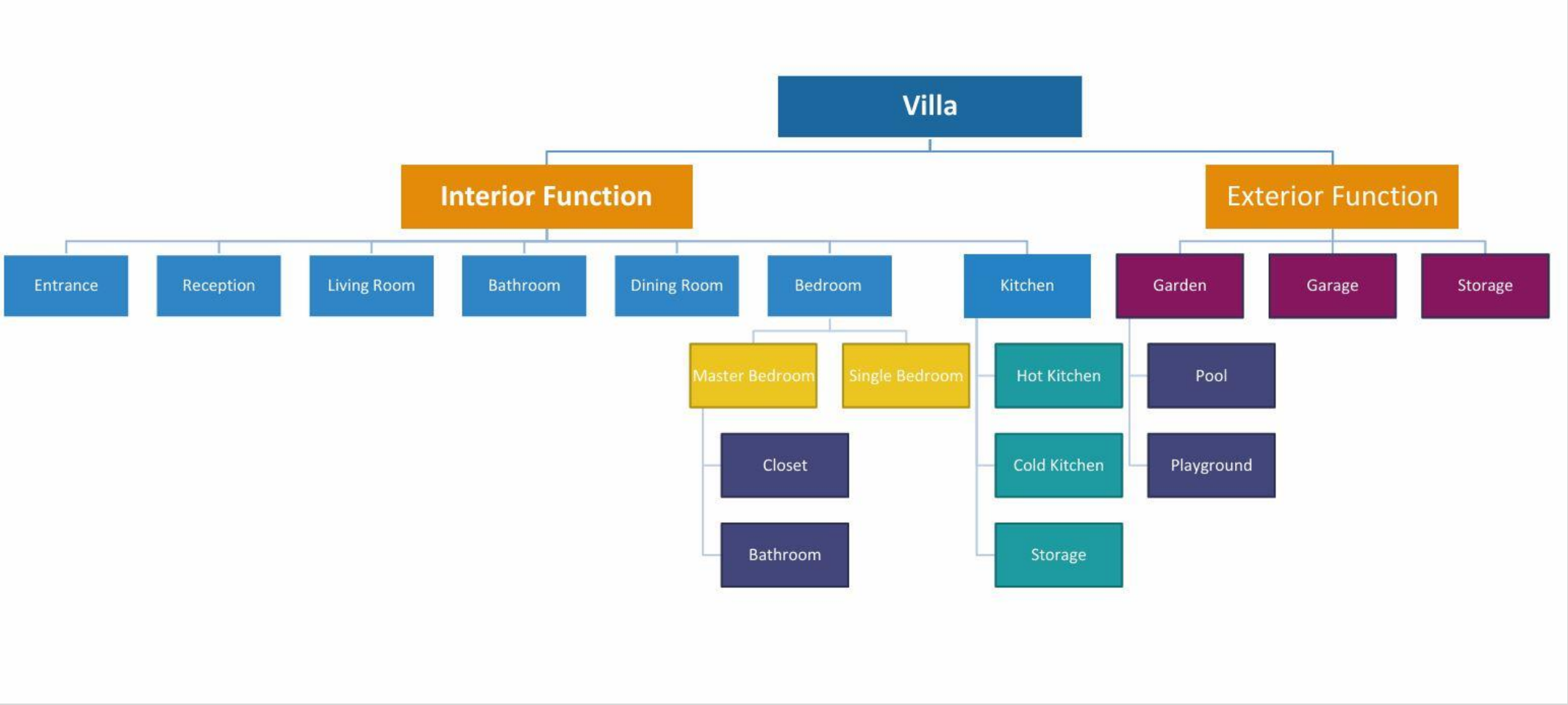
**1. Primary Components (Main Spaces):** Essential spaces that form the core functions of the building.

**2. Secondary Components (Support Spaces):** Spaces that support, enhance, or facilitate the primary functions.

# 1. Space Program
## Example

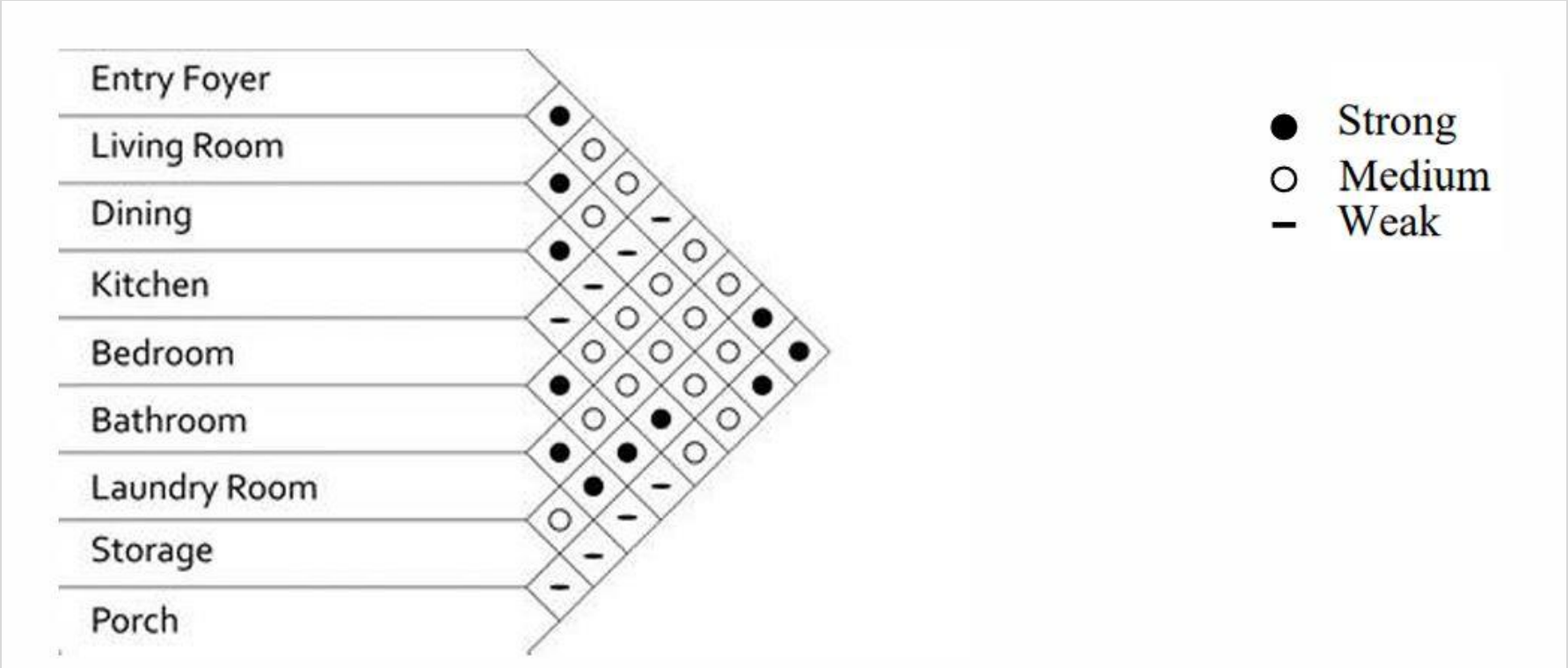


# 1. Space Program
## Example



# 1. Space Program matrix

Create a general matrix linking the main components of the project. For each primary component, develop a separate matrix detailing its respective subzones.



# 2.Calculating the number of visitors

The number of visitors is a critical factor in the design process, as it allows the designer to determine the appropriate building scale and capacity, ensuring that the facility is neither oversized nor undersized for its intended use.

**There are several methods for calculating the number of visitors, for example, calculating the cultural museum visitor number:**

## Method 1

**Formula:** Annual Visitors = City Population × Attraction Factor
**Example:** Erbil (1.5M people) × 0.03 = 45,000 annual visitors ≈ 140 visitors/day

# 2. Calculating the number of visitors

**Method 2: Benchmark Comparison**

Compare with similar existing museums

Apply adjustment factors for location, size, and facilities

**Best for:** When you have data from comparable projects

**Method 3: Space-Based Calculation**

**Formula:** Max Visitors = Exhibition Area ÷ Space per Person ($4m^2$)

**Best for:** When you know your space dimensions

# 3. Standards

## What are the design standards?

Design standards are guidelines and requirements that ensure an interior design project is safe, functional, accessible, and suitable for its purpose, based on codes, laws, best practices, and user needs

# 3. Standards

## What Standards Must You Collect?

### 1. Space & Dimensions

- Floor area per person/function
- Ceiling height requirements
- Room minimum dimensions

- **3. Furniture**
- Standard furniture dimensions

| Space & Circulation Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Space name** | **Area Per person** | **Number of persons** | **Area for one zone** | **Number of zones** | **Total Area** | **Reference** | **Ceiling Hight** |
| **Entrance** | | | | | | | |
| **Lobby** | | | | | | | |
| **Circulation Percentage** | | | | | | | |
| **Total Area** | | | | | | | |

# 3. Standards

## What Standards Must You Collect?

- **3. Furniture**
- Standard furniture dimensions

| Space & Circulation Dimensions | | | |
|---|---|---|---|
| **Space name** | **Furniture needed** | **Figures** | **Reference** |
| **Lobby** | 1. | | |
| | 2. | | |
| | 3. | | |

# 3. Standards

## What Standards Must You Collect?

### 3. Lighting standards

In the lighting standards section, the required lighting capacity for each zone should be specified according to established standards. This provides clarity and simplifies the design process during project development

| Space Function | Illuminance (Lux) | Color Temperature (K) | Application | Reference |
|---|---|---|---|---|
| General Circulation | 150-200 lux | 3000-4000K | Corridors, lobbies, entrances | |
| | | | | |
| | | | | |

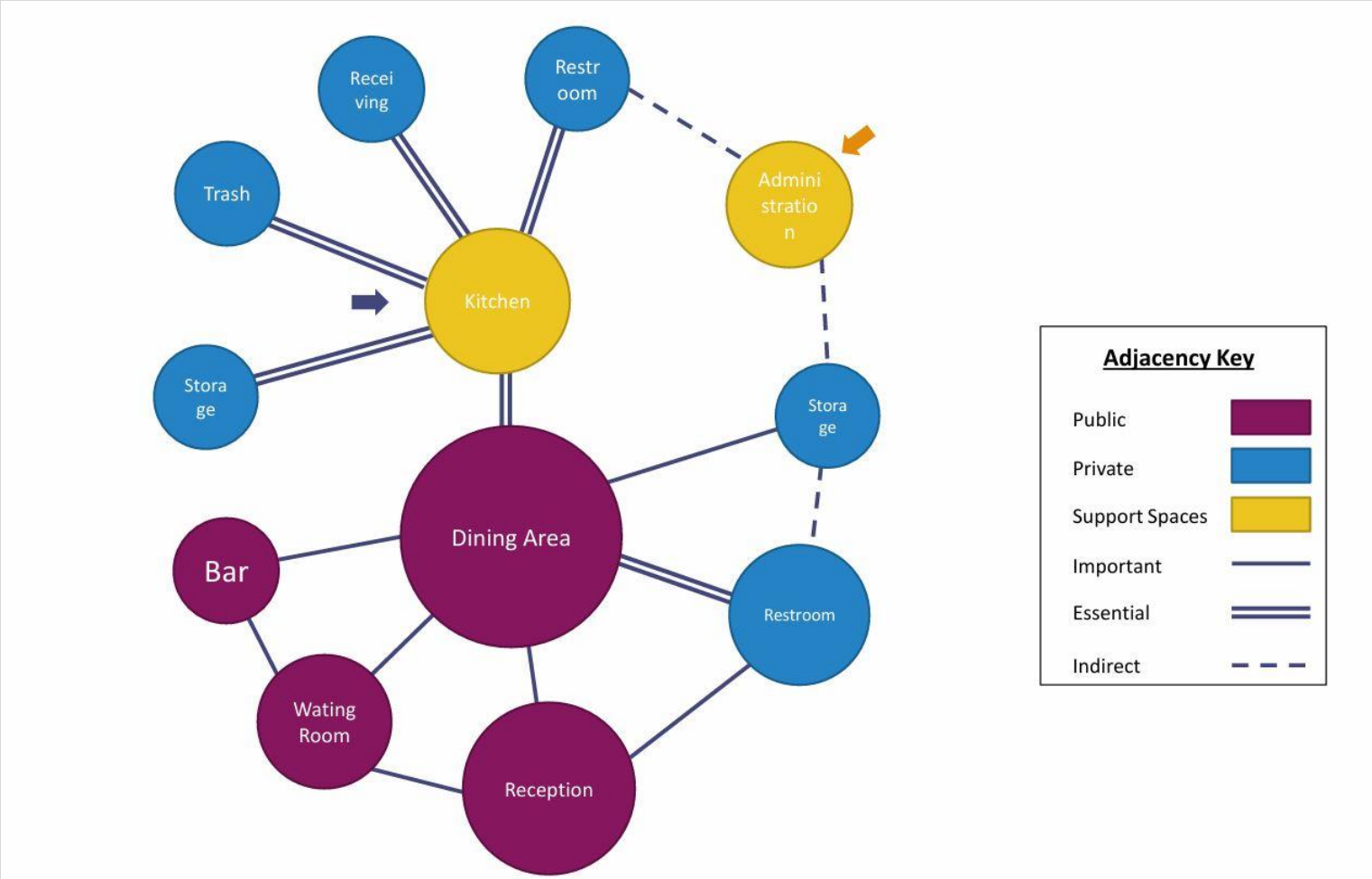
# 4. Relationship diagram

This diagram aims to start the initial space planning phase by showing the relative size of each function in comparison to the other functions, in addition to visually locating each function and its proximity to the others. The "Relationship Diagram" or "Bubble Diagram" is a very simple drawing that consists of roughly drawn bubbles (representing spaces) connected by solid lines, broken lines, or wavy lines etc., to specify the type of relationship between the spaces.

Create a general bubble diagram linking the main components of the project. For each primary component, develop a separate bubble diagram detailing its respective subzones

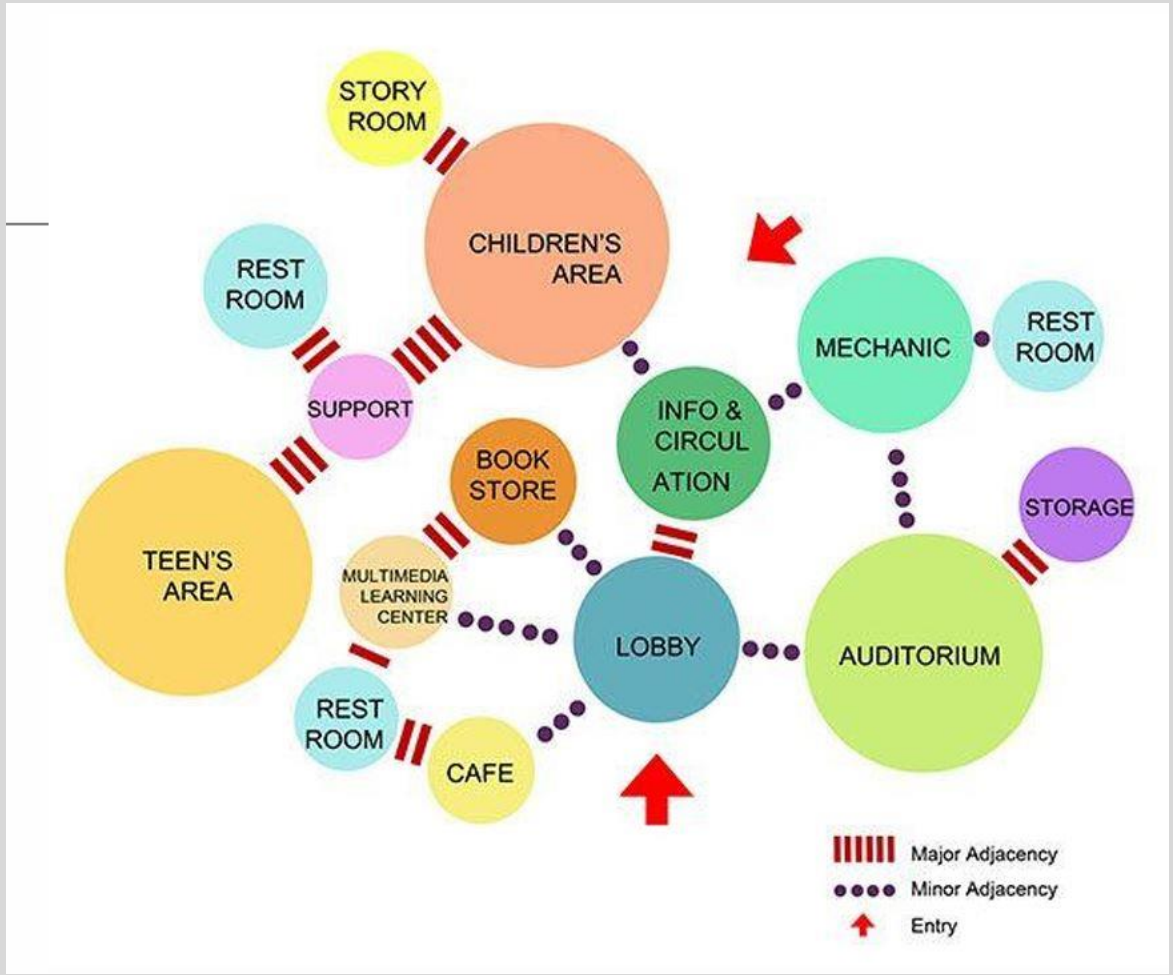
# 4. Relationship diagram

## Example



# 4. Relationship diagram

## Example



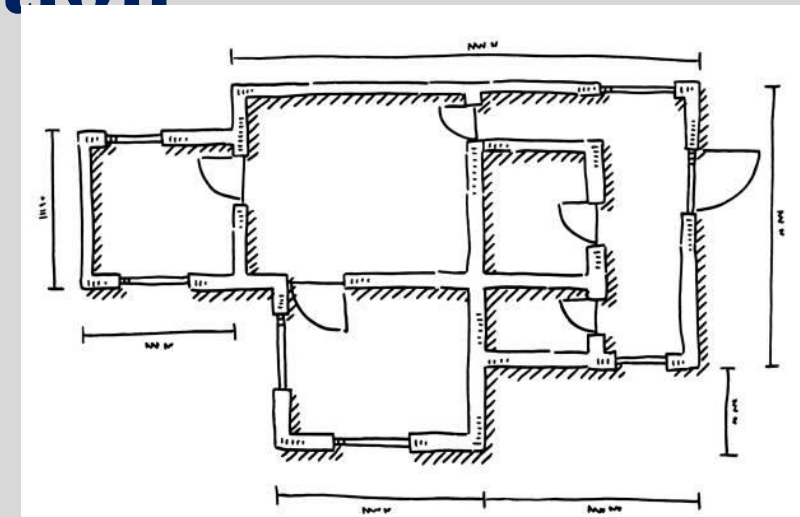
# 5. Site selection

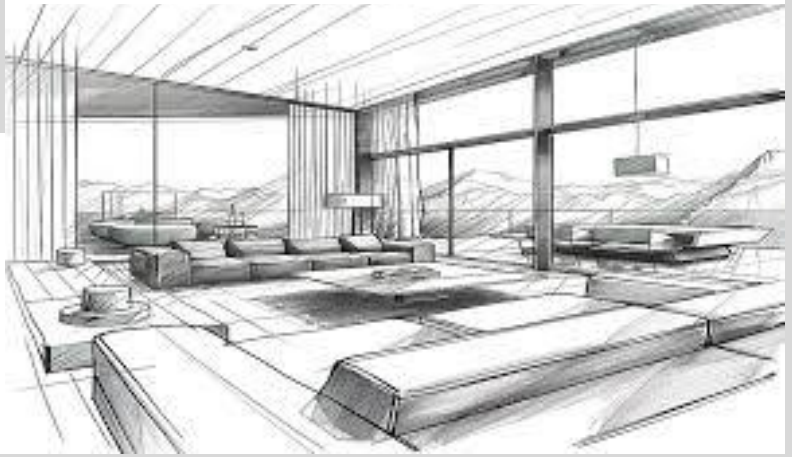
Site selection is the process of examining multiple options and assessing their relative advantages and disadvantages. Site selection comes after the needs assessment is completed. If you select a site before the needs assessment, you may compromise on key design aspects due to site limitations

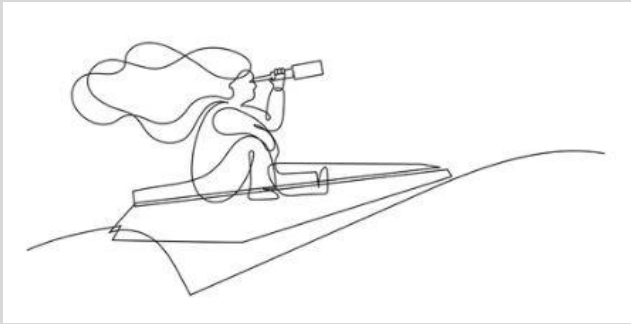
# 5. Site selection

## Sample Site Criteria and Evaluation Checklist

- ✓ **Location:** the location of the building near the main road.
- ✓ **Orientation** (Sun and Wind Analysis) The orientation of the site should be such that it receives natural light and air in plenty.
- ✓ **Existing Building Analysis:**
  - Plans Area ( the size of spaces)
  - Interior Space
  - Ability of Expansion

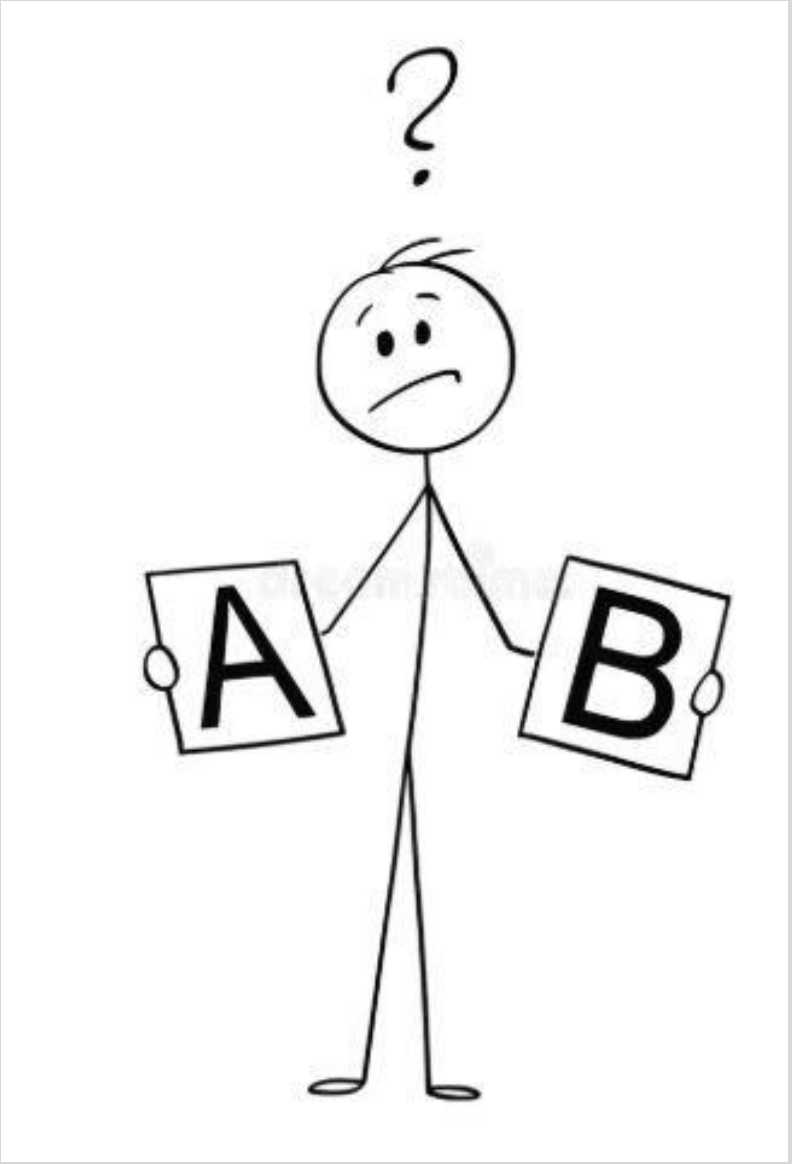






# 5. Site selection

For the thesis, each student is required to select two potential sites for analysis and evaluation, after which the most appropriate site should be chosen for further development. However, students who are working on an existing project are only required to analyze their own site, without the need to propose multiple options



# 5. Site Selection

6.1 Site A- Name
6.1.1 Location
6.1.2 Orientation (Sun and Wind Analysis)
6.1.3 Existing Building Analysis
6.2 Site B- Name
6.2.1 Location
6.2.2 Orientation (Sun and Wind Analysis)
6.2.3 Existing Building Analysis
6.3 Site Selection Criteria
6.4 Conclusion

# 5. Site Selection

## 5.3 Site A- The student center of the University of Mosul

The student center of the University of Mosul was built in 1978 on the left side of the city of Mosul. The building serves as an interactive service center for students, academic staff, and employees. The building consists of three floors, in addition to the outer spaces that surround it. The building contains service, entertainment, and health spaces, as clear in figure 5.1.


Figure 5.1 The location of the student center at Mosul University ( Google map, n.d.)

# 5. Site Selection

## 5.3.1 Location

The building is located in the heart of the University of Mosul, next to the central library, as shown in Figure 5.2, and it is also close to several main entrances to the campus, which gives it a special feature as the point of convergence of pedestrian traffic routes from several directions.

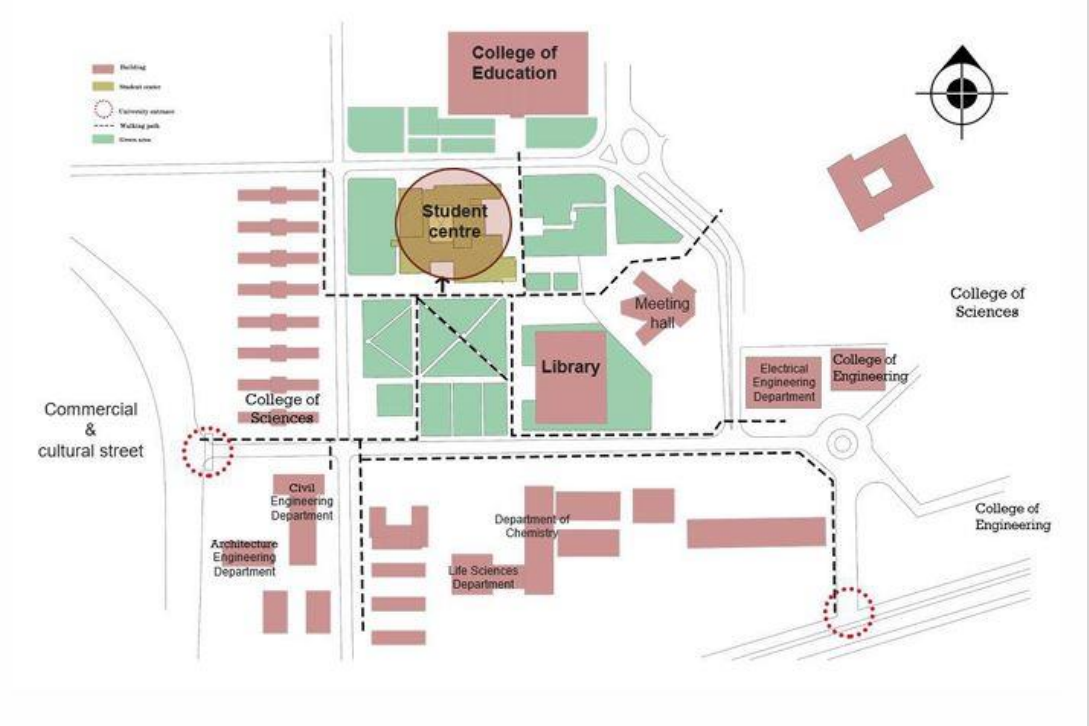



Figure 5.2 The location analysis of the student center at Mosul University

# 5. Site Selection

## 5.3.2 Orientation (Sun and Wind Analysis)

The prevailing wind is north-westerly as shown in Figure 5.3, which will affect the design of some spaces. The summer sun rises in the north-east and sets in the north-west, whilst the winter sun rises in the south-east and sets in the south-west

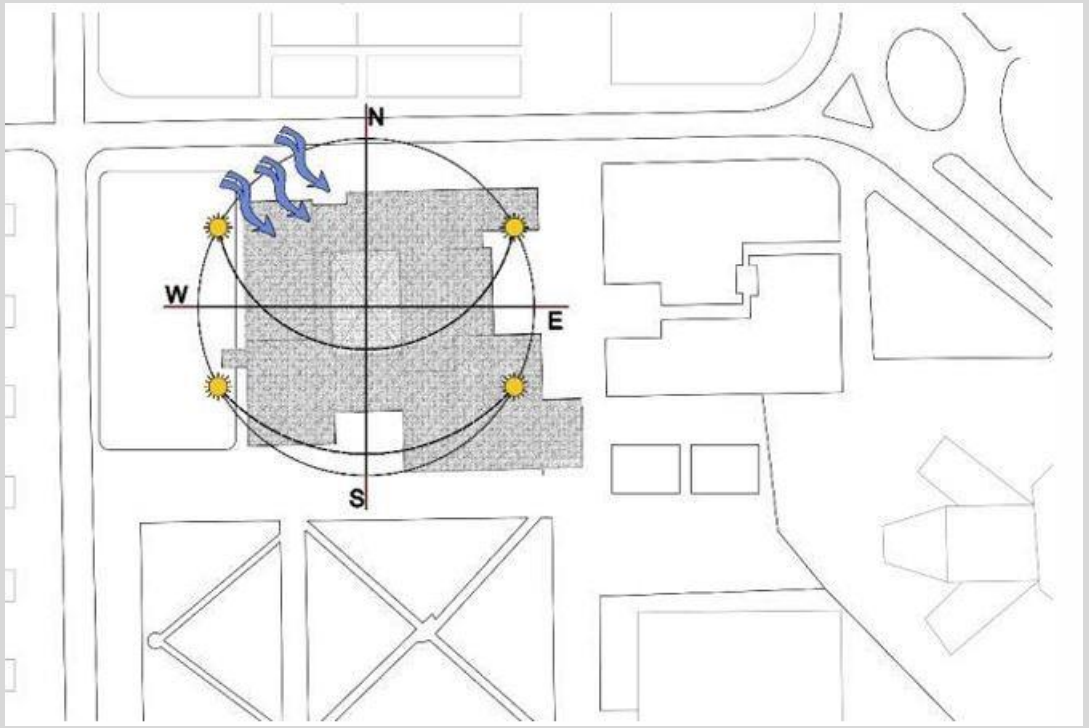



Figure 5.3 Sun and wind analysis of the Musol student center (Muhammed, 2020)

# 5. Site Selection

## 5.3.3 Existing Building Analysis

The ground floor, as shown in Figure 5.4, consists of recreational, cultural and service spaces for students, academic staff and employees. It has a main entrance that occupies a special position on the building's front side. The designer adopted the idea of a transparent entrance to support the connection between the interior and exterior without considering the environmental aspects of hot and cold weather. The main lobby of the building is the distributor space to other spaces such as the restaurant, coffee shop, courtyard, exhibition and book fair. In addition, there are secondary entrances to the restaurant, bank and ceramic workshop

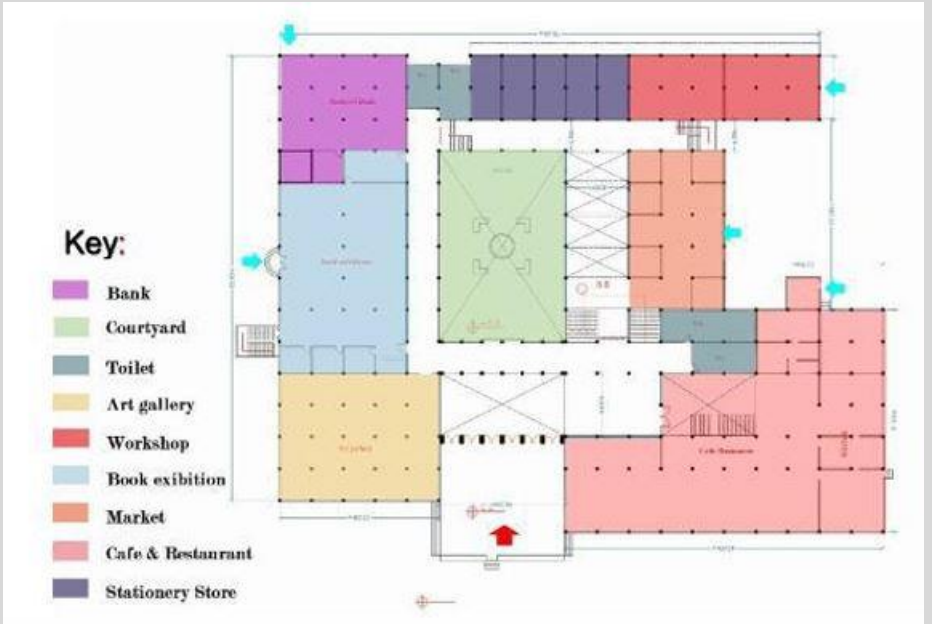



Figure 5.4 The location analysis of the student center at Mosul University ( Researcher)

# 5. Site Selection

The second floor consists of only half a floor and includes the administrative department as well as a special space for students. The corridor overlooks the first floor and the middle space. The designer used a structure of columns and beams that are clearly visible to the user. As clear in figure 5.5.

Figure 5.5 The front side of the student center at Mosul University ( Researcher)

# 6. Site selection criteria

| Criteria | Weight | Ratings for Sites | |
|---|---|---|---|
| | | Site A | Site B |
| Location (On or near main road) | | | |
| Nature light | | | |
| Noise | | | |
| Circulation | | | |
| Allows for future expansion | | | |
| Enough buildable area to meet space needs | | | |
| Materials | | | |
| Structure | | | |
| Total | | | |

# 7. Conclusion

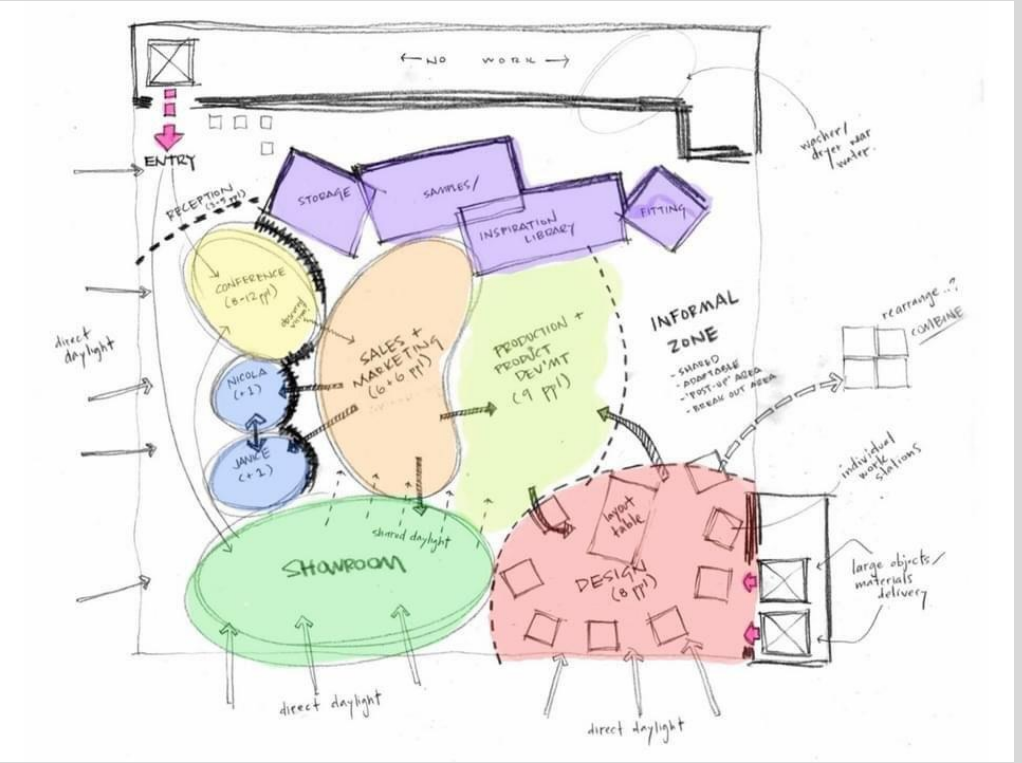
Write which site and plan are the best choice for your project and why?

# 8. Project zoning on the site

After completing the data collection and site preparation stages, students are required to move to the **zoning process**. The following steps must be followed:

**1. Preparation of Collected Data**

•Use the previously gathered information, such as **site dimensions, building sizes, functional requirements, and design standards.**



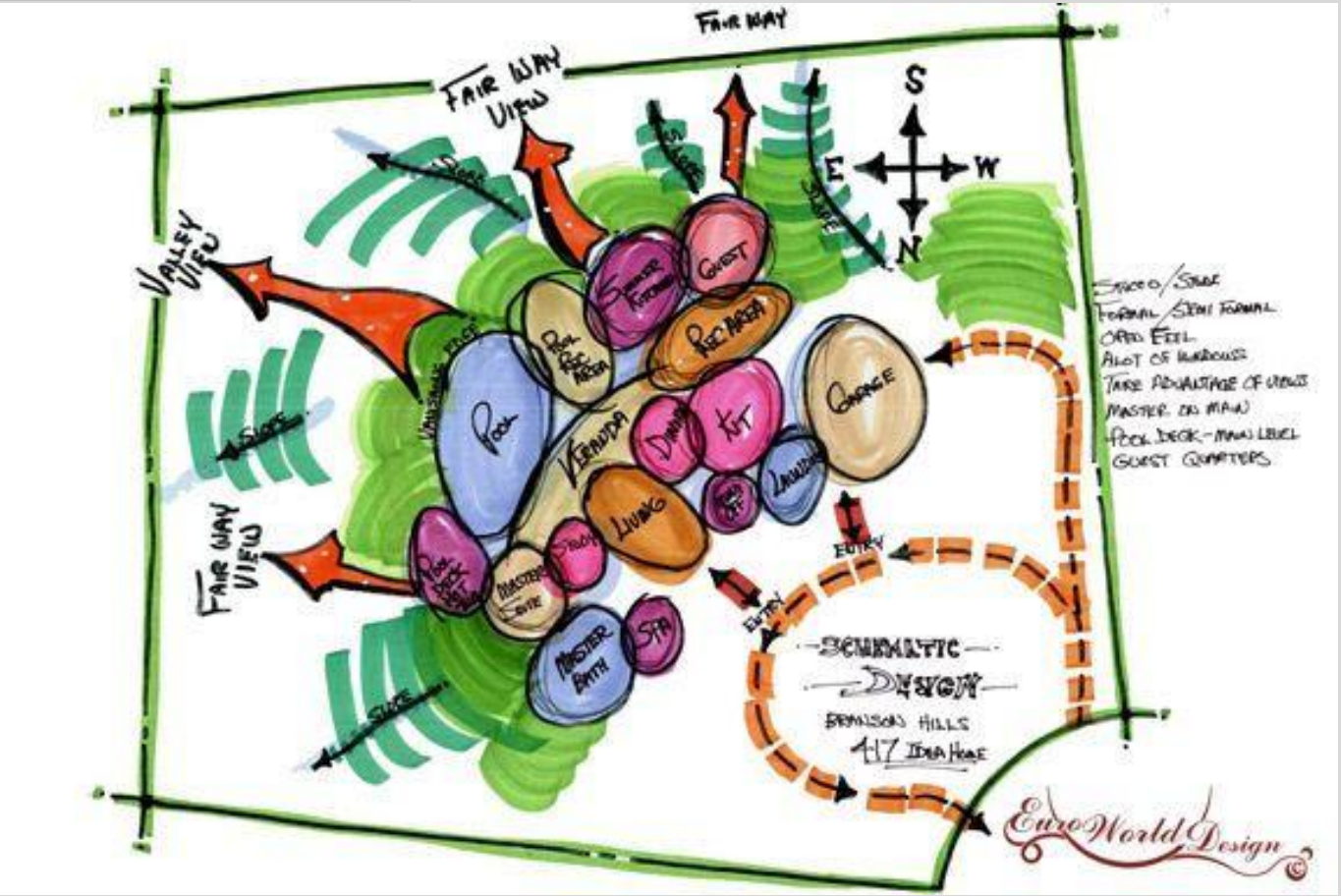
# 8. Project zoning on the site

**2. Site Zoning Development**

•Identify and clearly mark the **main entrances** to the site and the building.

•Draw the site outline **to scale**, ensuring accuracy.

•Represent other parts of the project and zones using sketching techniques.



# Chapter structure and evaluation

5.1 Chapter Introduction 2.5%
5.2 Space Program diagram 10%
5.3 Space Program Matrix 2.5%
5.4 Number of visitors 5%
5.5 standards
5.5.1 Space and dimensions 10%
5.5.2 Furniture 10%
5.5.3  Lighting 10%
5.6 Relationship Diagram 5%
5.7 Site Selection
5.7.1 Site A 10%
5.7.2 Site B 10%
5.7.3 Site Selection Criteria 10%
5.8 Conclusions 2.5%
5.9 Zoning 10%
5.10 Chapter Summary 2.5%

**Note: For each section that includes a diagram, table, or sketch, a descriptive paragraph should first be written. The paragraph must reference the figure number, followed by the insertion of the diagram, table, or sketch.**

# Do you have any Questions?