SPACE PLANNING METHODOLOGY

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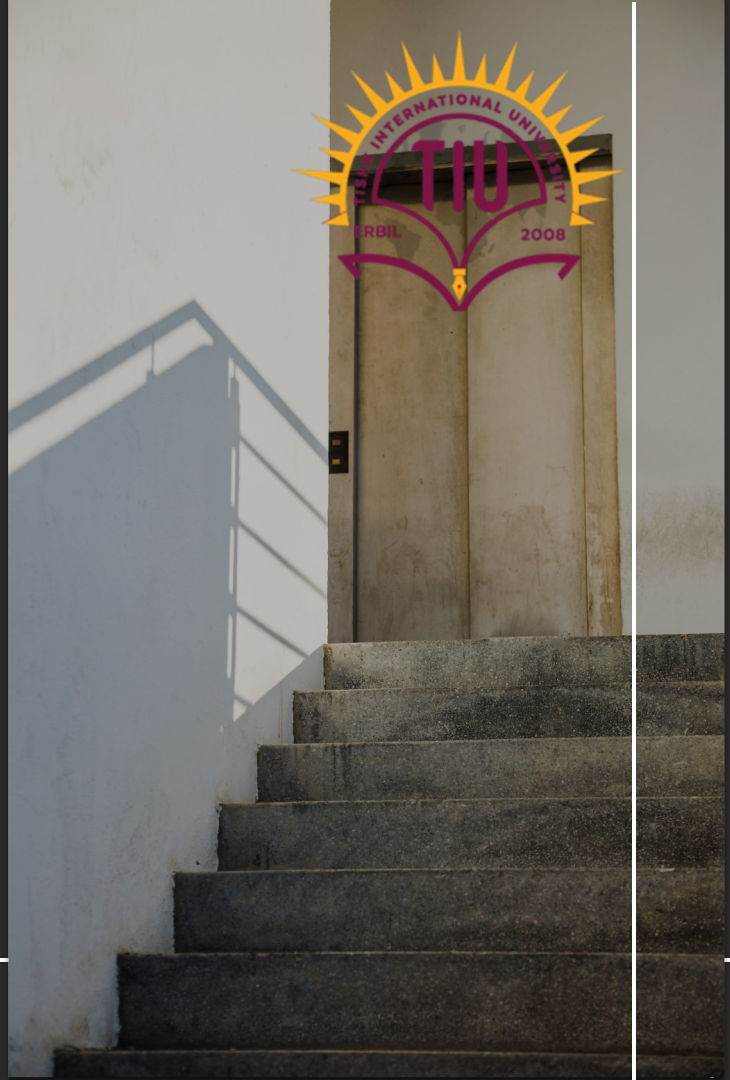
Space planning and the human experience
INDS 408
Fall semester



Objective:

To define planning methodology

01

To know how to design the space program

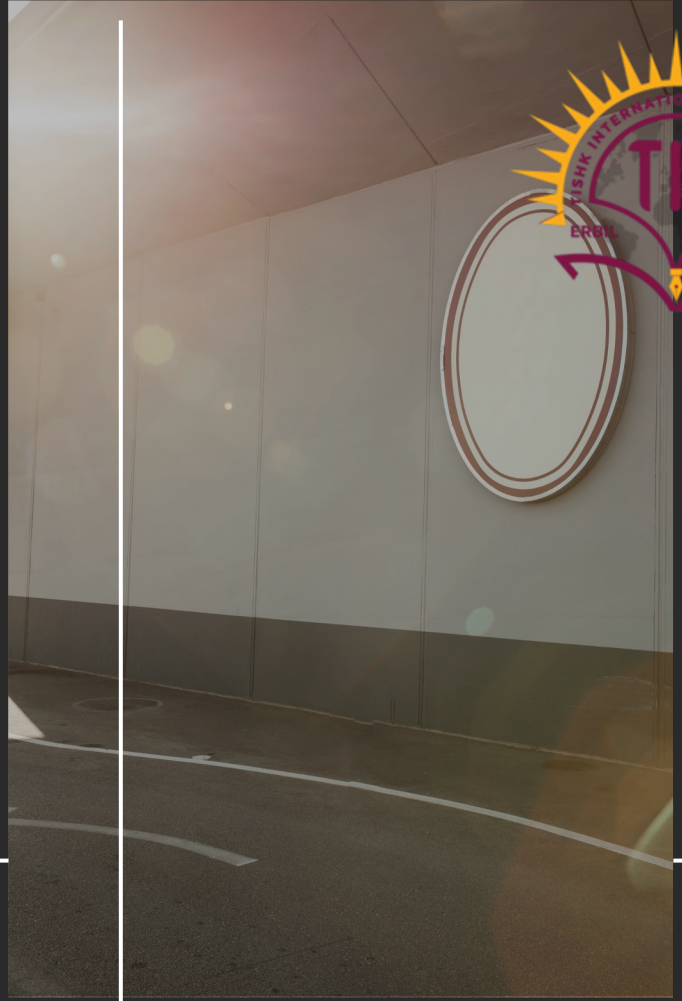
02

To understand the all means of planning diagram

03

Design methodology

Design methodology is a **structured approach** that defines the standard sequence of tasks, guiding the process from when a designer or space planner starts a project to its completion..



The design methodology process consists essentially of seven sequential steps. These are:

1. Programming
2. Schematic design
3. Design development
4. Construction documents
5. Bidding (tendering) of construction documents.
6. Execution/supervision of project.
7. Post-occupancy evaluation.

"Planning Methodology," is a phrase used to describe the phase of the space planning process that begins when the planning ***problem*** is presented to you (with or without a program) and ends when ***physical planning*** commences, usually with bubble diagrams or block plans.

In some professional circles, this is called the ***pre-design process*** meaning all the necessary steps of data gathering, research, analysis, and interpretation before actual planning.

Synthesis gap

The synthesis gap in space planning methodology refers to the ***challenge*** that can occur between the analysis phase (gathering data, understanding needs, and defining problems) and the synthesis phase (developing solutions and creating design proposals).

The fundamental process of developing a design program typically involves eight key steps.

these steps are :

1. Interview
   a. Executive level (organizational overview)
   b. Managerial level (departmental function)
   c. Operations level (process and equipment detail)
2. Observe (existing or similar facilities)
   a. Assisted observation
   b. Unobtrusive observation
   c. Inventory of existing furniture and equipment (when it is to be reused)
3. Establish architectural parameters
   a. Acquire complete base plan data (including mechanical and electrical services)
   b. Compile contextual data (architectural, historical, social)
   c. Research environmental and code constraints
   d. Complete basic site inventory (sun angles, breeze directions, and rainfall amounts)
4. Organize collected data (the first-phase program)
   a. Place data in sequential format most useful for planning
   b. Summarize confirmed quantitative factors (square footage, FF+E (furniture, fixtures and equipment) count, equipment sizes, etc.)
   c. Record first thoughts on conceptual planning approach
5. Research the unknowns
   a. Gather detailed information on process and equipment
   b. Gather case study information on similar facilities
   c. Integrate researched data with first-phase program
6. Analyze the data
   a. Discover planning affinities (working interrelationships, public/private zoning, special acoustic needs, etc.)
   b. Discover scheduling affinities (maximize use of space)
   c. Identify planning or architectural relationships (site, environmental, structural, mechanical, sustainability, and electrical conditions)

. Interpret and diagram the data (the complete program)
   a. Define the functional problems in planning terms
   b. Establish a basic conceptual approach (in terms of human/social image/esthetic, and sustainability goals)
   c. Prepare relationship or adjacency diagrams (for client and designer visualization)
. Summarize the data (the finished document)
   a. Finalize project concepts—*state the problem*
   b. Outline and tally basic budget issues
   c. Prepare a package for client approval to serve as the designer's manual for space planning

The Design program

Design programs are written documents that qualify and quantify the clients' or the users' needs for a given project.

In addition, most design programs are accompanied by relationship diagrams that often express physical planning relationships .

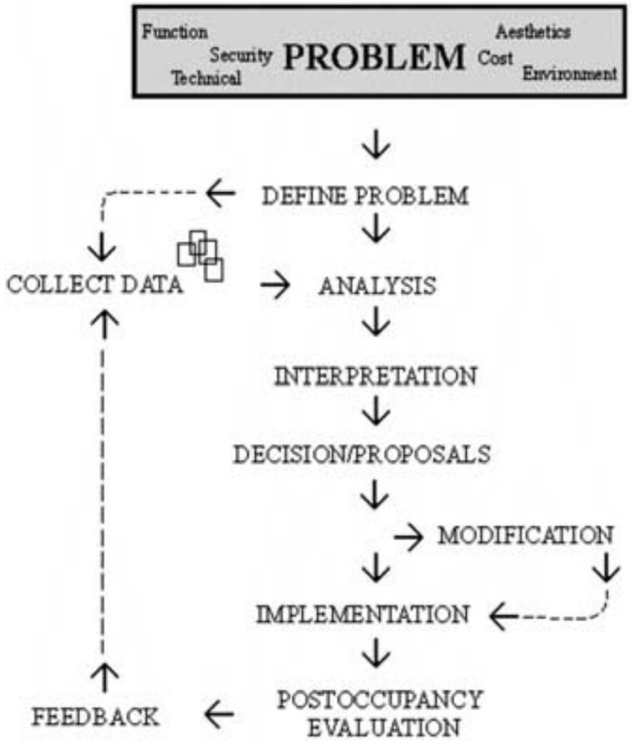


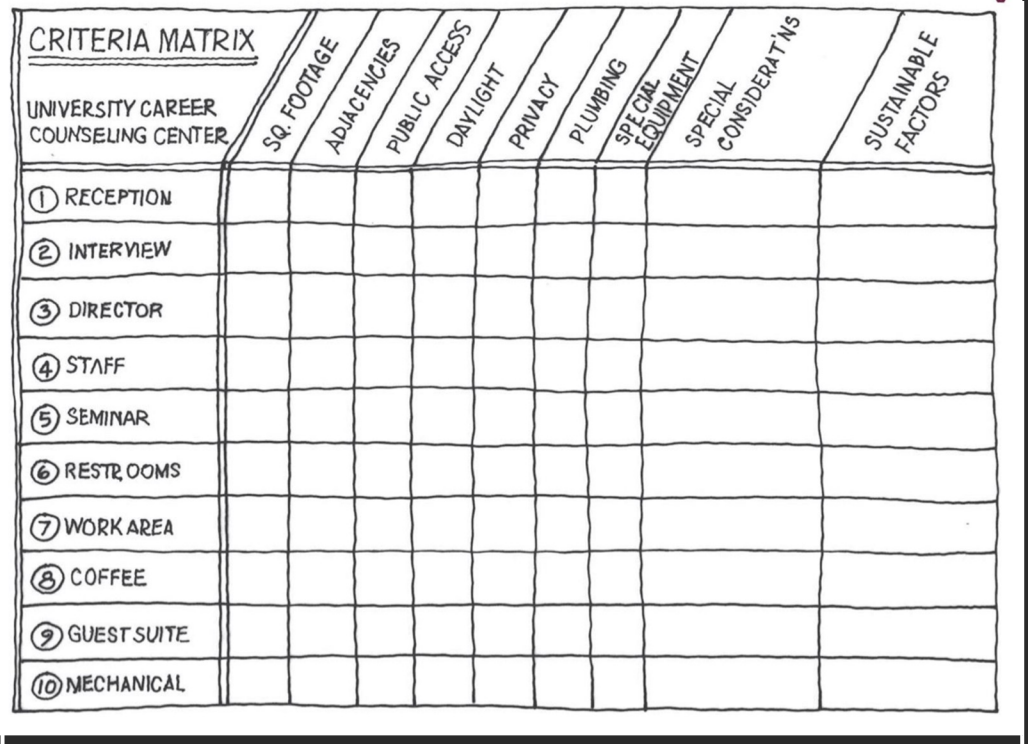
FIGURE 2.1a The design methodology process and data analysis.

One of the first tasks in the design methodology sequence is invariably programming.

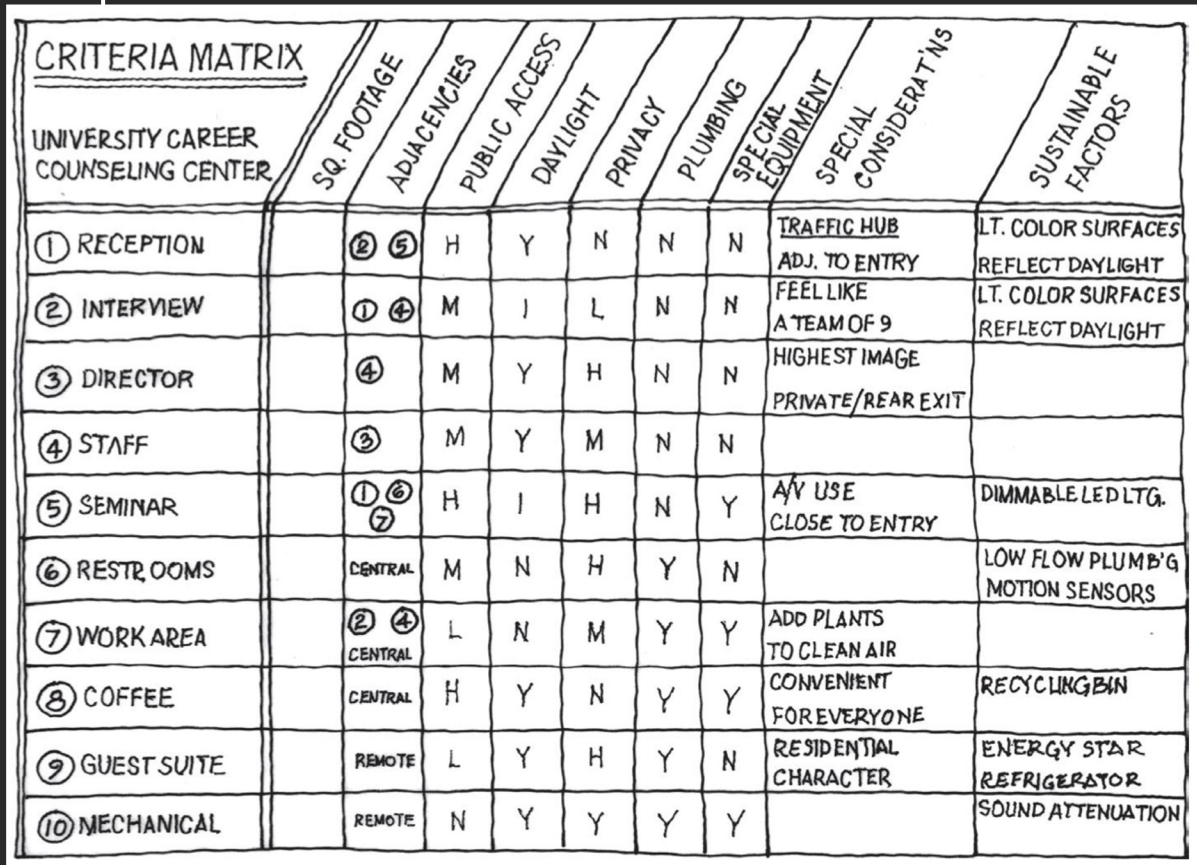
Criteria matrix

The matrix format is a widely used technique for visually organizing information of a variety of factors; this format is sometimes referred to as a “chart” or “table.”

In its most basic form, the matrix is a rectangular grid of notation spaces with names of rooms or spaces (or functions) listed in the column to the left and columns for verbal and/ or numerical indications of program requirements in the succeeding columns to the right.



Notation columns for the most critical space planning factors: (1) square footage needs, (2) adjacency requirements, (3) public access, (4) daylight and/or view, (5) privacy needs, (6) plumbing access, (7) special equipment, (8) sustainability factors, and (9) special considerations.

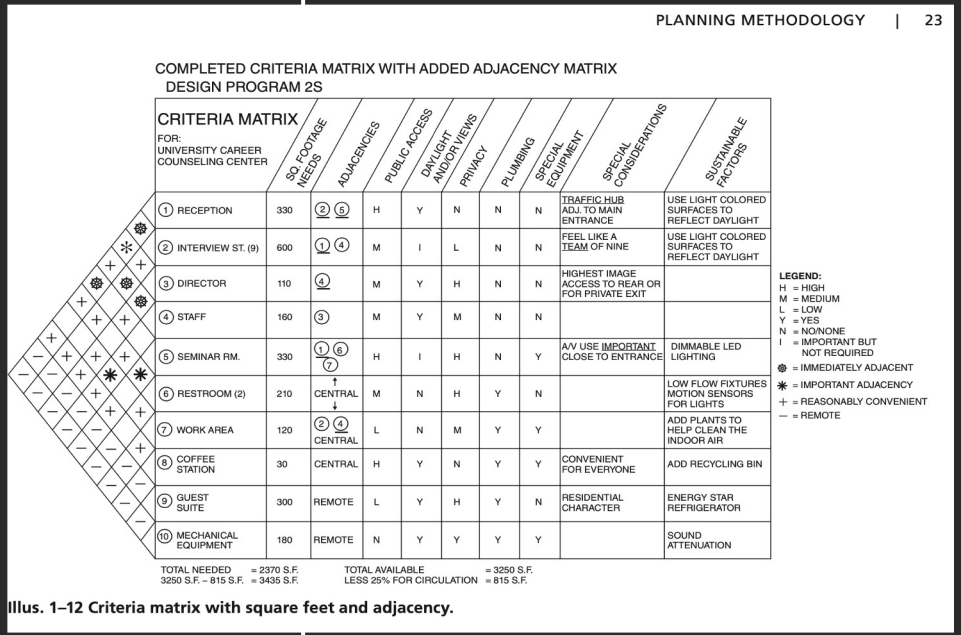


CRITERIA MATRIX

UNIVERSITY CAREER COUNSELING CENTER

	SQ. FOOTAGE	ADJACENCIES	PUBLIC ACCESS	DAYLIGHT	PRIVACY	PLUMBING	SPECIAL EQUIPMENT	SPECIAL CONSIDERAT'NS	SUSTAINABLE FACTORS
(1) RECEPTION		(2) (5)	H	Y	N	N	N	TRAFFIC HUB ADJ. TO ENTRY	LT. COLOR SURFACES REFLECT DAYLIGHT
(2) INTERVIEW		(1) (4)	M	I	L	N	N	FEEL LIKE A TEAM OF 9	LT. COLOR SURFACES REFLECT DAYLIGHT
(3) DIRECTOR		(4)	M	Y	H	N	N	HIGHEST IMAGE PRIVATE/REAR EXIT	
(4) STAFF		(3)	M	Y	M	N	N		
(5) SEMINAR		(1) (6) (7)	H	I	H	N	Y	A/V USE CLOSE TO ENTRY	DIMMABLE LED LTG.
(6) RESTROOMS		CENTRAL	M	N	H	Y	N		LOW FLOW PLUMB'G MOTION SENSORS
(7) WORK AREA		(2) (4) CENTRAL	L	N	M	Y	Y	ADD PLANTS TO CLEAN AIR	
(8) COFFEE		CENTRAL	H	Y	N	Y	Y	CONVENIENT FOR EVERYONE	RECYCLING BIN
(9) GUEST SUITE		REMOTE	L	Y	H	Y	N	RESIDENTIAL CHARACTER	ENERGY STAR REFRIGERATOR
(10) MECHANICAL		REMOTE	N	Y	Y	Y	Y		SOUND ATTENUATION

LEGEND:
H = HIGH
M = MEDIUM
L = LOW
Y = YES
N = NO/NONE
I = IMPORTANT BUT NOT REQUIRED



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COMPLETED CRITERIA MATRIX WITH ADDED ADJACENCY MATRIX
DESIGN PROGRAM 2S

CRITERIA MATRIX
FOR:
UNIVERSITY CAREER
COUNSELING CENTER

	SQ. FOOTAGE NEEDS	ADJACENCIES	PUBLIC ACCESS	DAYLIGHT AND/OR VIEWS	PRIVACY	PLUMBING	SPECIAL EQUIPMENT	SPECIAL CONSIDERATIONS	SUSTAINABLE FACTORS
① RECEPTION	330	② ⑤	H	Y	N	N	N	TRAFFIC HUB ADJ. TO MAIN ENTRANCE	USE LIGHT COLORED SURFACES TO REFLECT DAYLIGHT
② INTERVIEW ST. (9)	600	① ④	M	I	L	N	N	FEEL LIKE A TEAM OF NINE	USE LIGHT COLORED SURFACES TO REFLECT DAYLIGHT
③ DIRECTOR	110	④	M	Y	H	N	N	HIGHEST IMAGE ACCESS TO REAR OR FOR PRIVATE EXIT	
④ STAFF	160	③	M	Y	M	N	N		
⑤ SEMINAR RM.	330	① ⑥ ⑦	H	I	H	N	Y	A/V USE IMPORTANT CLOSE TO ENTRANCE	DIMMABLE LED LIGHTING
⑥ RESTROOM (2)	210	CENTRAL	M	N	H	Y	N		LOW FLOW FIXTURES MOTION SENSORS FOR LIGHTS
⑦ WORK AREA	120	② ④ CENTRAL	L	N	M	Y	Y		ADD PLANTS TO HELP CLEAN THE INDOOR AIR
⑧ COFFEE STATION	30	CENTRAL	H	Y	N	Y	Y	CONVENIENT FOR EVERYONE	ADD RECYCLING BIN
⑨ GUEST SUITE	300	REMOTE	L	Y	H	Y	N	RESIDENTIAL CHARACTER	ENERGY STAR REFRIGERATOR
⑩ MECHANICAL EQUIPMENT	180	REMOTE	N	Y	Y	Y	Y		SOUND ATTENUATION

LEGEND:
H = HIGH
M = MEDIUM
L = LOW
Y = YES
N = NO/NONE
I = IMPORTANT BUT NOT REQUIRED
❁ = IMMEDIATELY ADJACENT
✱ = IMPORTANT ADJACENCY
+ = REASONABLY CONVENIENT
— = REMOTE

TOTAL NEEDED = 2370 S.F.
3250 S.F. – 815 S.F. = 3435 S.F.

TOTAL AVAILABLE = 3250 S.F.
LESS 25% FOR CIRCULATION = 815 S.F.

Illus. 1–12 Criteria matrix with square feet and adjacency.

Matrix criteria components:

1. Spaces/Functions: The matrix includes all relevant spaces that need to be organized.

2. Criteria for Adjacency: This could include factors such as the need for collaboration, noise levels, accessibility, and workflow efficiency.

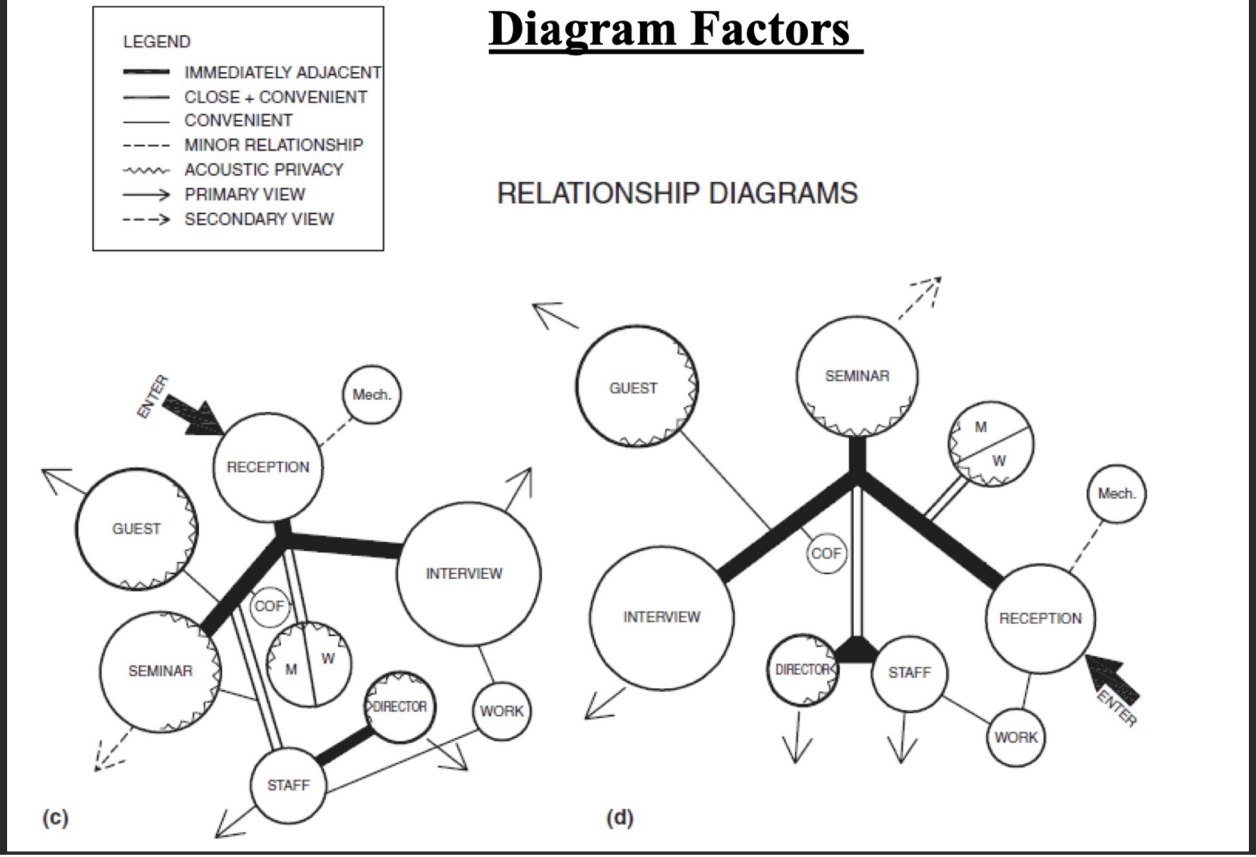
3. Scoring/Ranking: Each intersection in the matrix can be scored or ranked based on how well the criteria are met for the adjacency between different spaces. Higher scores indicate stronger relationships or preferences for those spaces to be located near each other.

4. Analysis: By reviewing the scores, planners can identify optimal arrangements for spaces.

How to start??

- With the criteria matrix just completed and the required rooms and spaces fresh in your mind, draw a circle for each required space so that its position on the paper represents a correct or appropriate relationship to the other spaces.
- Use connecting lines between the circles to indicate travel or circulation patterns between spaces; those connections should be coded by using heavy or multiple lines for important or heavily traveled connections and lighter connecting lines between spaces where circulation adjacency is less important or less traveled.as well using colors.
- It is a good idea to have the circles approximately proportional in size; ideally, a circle representing a 300-square-foot conference room should be about three times the area of the circle representing a 100-square-foot office.

Diagram Factors

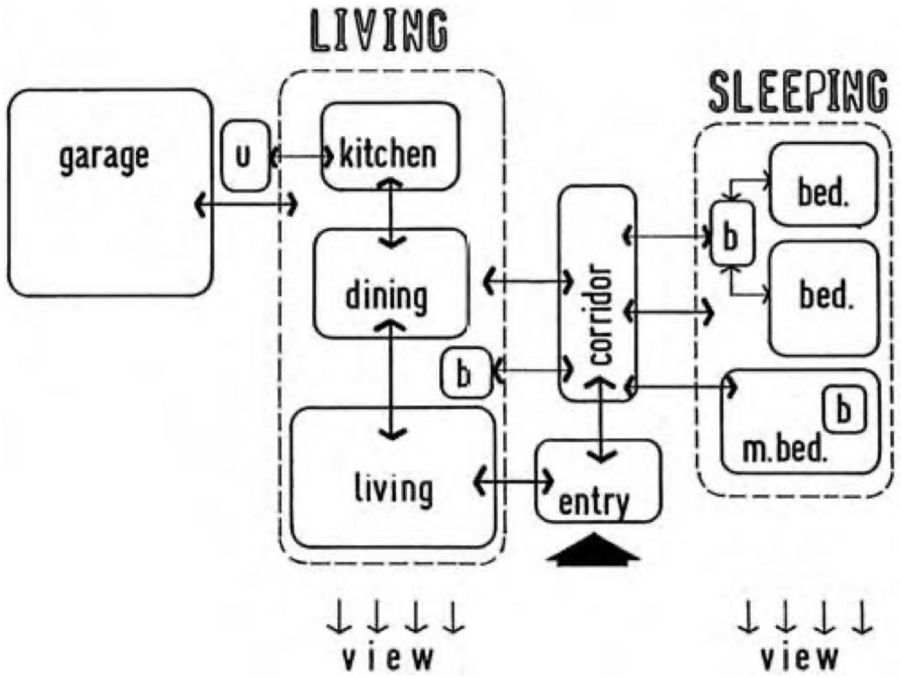


➢ Block Planning

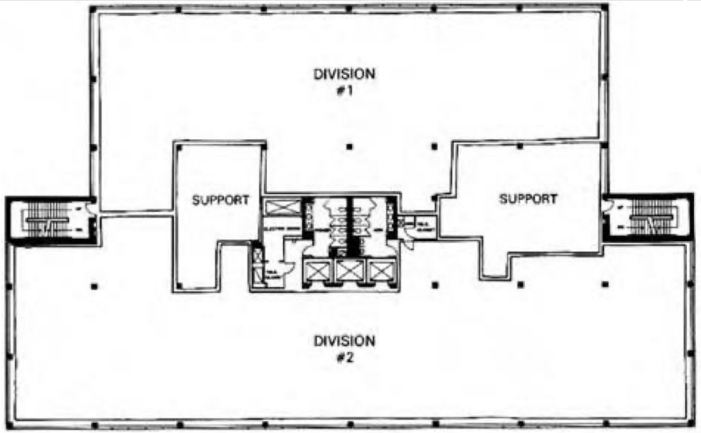
- Its use is particularly widespread in large-scale retail and store planning. The process of development and the results are similar to those in bubble diagramming.
- **The primary advantage of block planning over bubble diagramming** is that the result is more like a conventional floor plan, and some planners feel more comfortable working with its more geometric quality.
- **Its primary disadvantage in relation to bubble diagramming** is that it lacks some of the free-flowing spontaneity and intuitiveness inherent in the bubble diagramming process; it also has a tendency to ignore curvilinear and other nonrectangular solutions.

➢ Bubble and Blocking/Stacking Diagrams

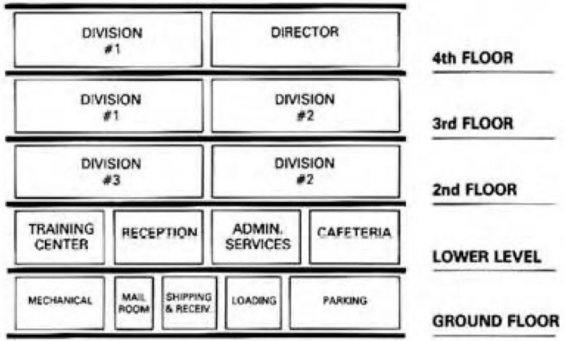
The tools required are simple. Obviously, you need a base floor plan of the building. In addition, you need lots of tracing paper, an architectural scale, and soft or flowing media with which to draw. Most typically, rolls of inexpensive yellow tracing paper (sometimes called “trace,” “yellow trace,” or “bumwad”) are used, although any reasonably transparent tracing paper, yellow or white, can be used. Almost any drawing medium can be used, but markers or colored wax pencils are among the best, since they flow on the paper easily and make a bold mark without effort.



- The schematic space plan takes the bubble and blocking/stacking diagrams to the next level of detail and sophistication.
- When the area assignment is complete, the space planner proceeds to develop a space layout that reflects the program's stated requirements and objectives. Functional elements are located within the space in a format consistent with the program's goals and objectives while retaining the desired adjacencies and functions.



A. Blocking Plan




THANKS
Does anyone have any questions?

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