



Arab Academy for Science, Technology and Maritime Transport
College of Engineering and Technology
Department of Architecture and Environmental Design

AE 1111 | Architecture Design (1A) | Lecture 7 Diagrams



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Lecture 8

1. Types of Relations

- Site Analysis Concept

2. The Matrix Diagram

- Definition

3. The Bubble Diagram

- Definition

4. Steps of Drawing A Bubble Diagram

- Different Steps
- Matrix VS Bubble Diagram

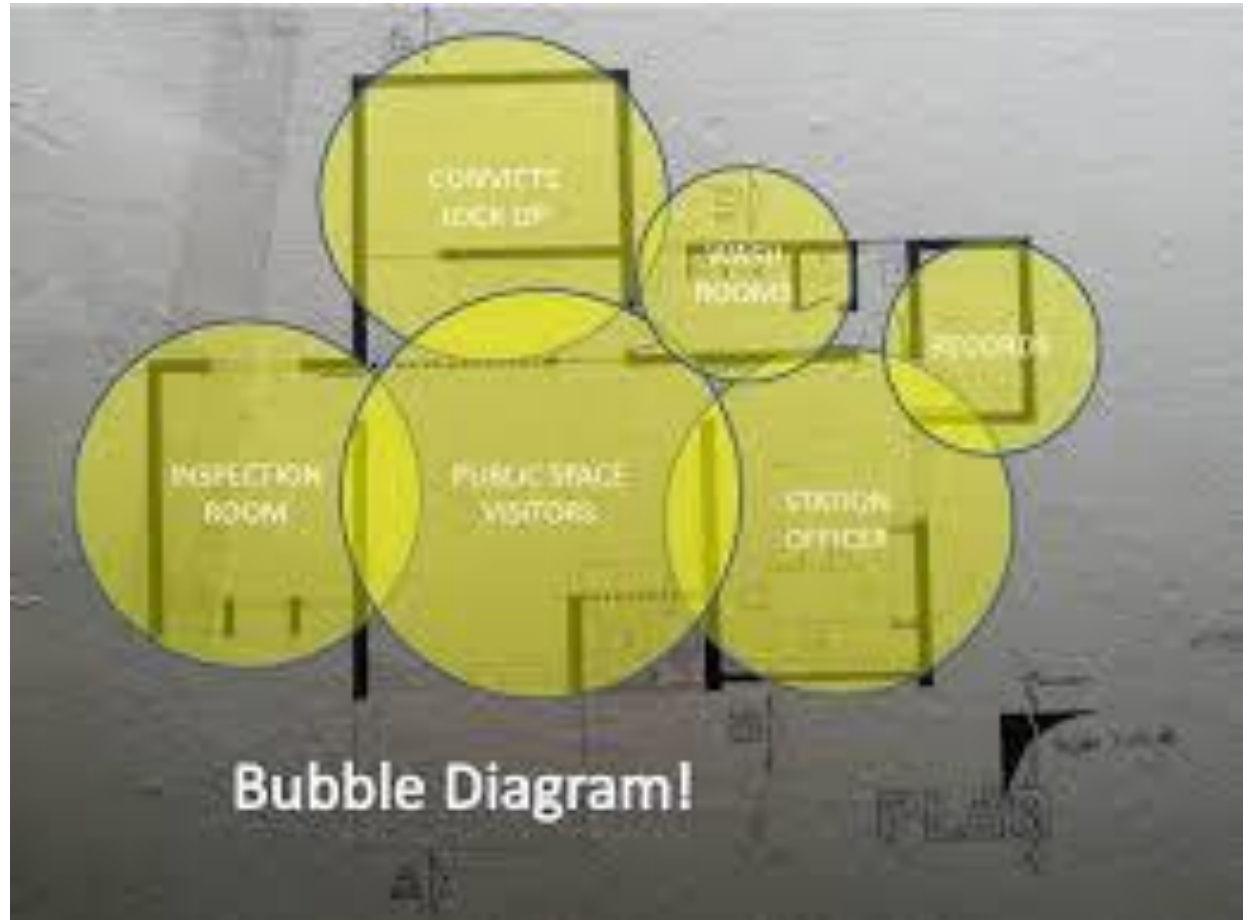
5. From Bubble Diagram to Arch. Plan

- Introduction
- From Bubble Diagram to Zoning Diagram

6. Example

7. Classwork #4

8. Homework #7



Diagrams

1



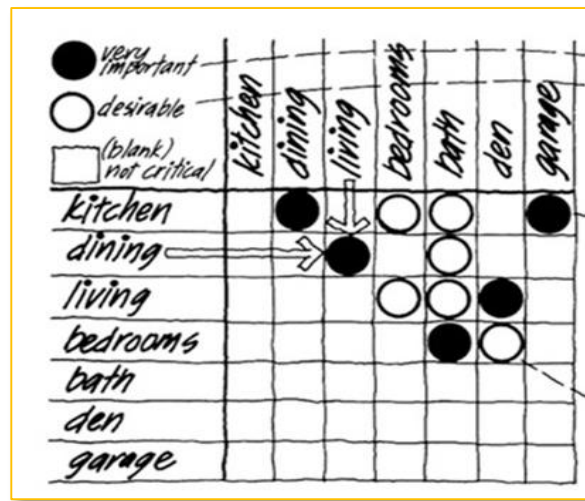
TYPES OF RELATIONS

INTRODUCTION

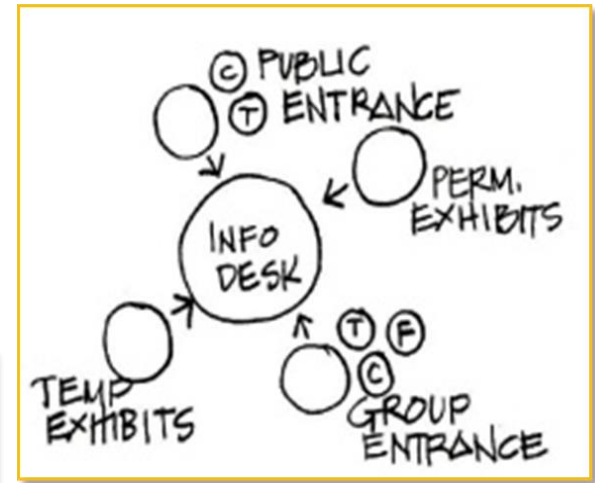
Understanding relationship is a very basic and important part of architectural programming.

➤ Types of relationships:

- Relationship Matrices
- Relationship Diagrams



Relationship Matrices



Relationship Diagrams

2

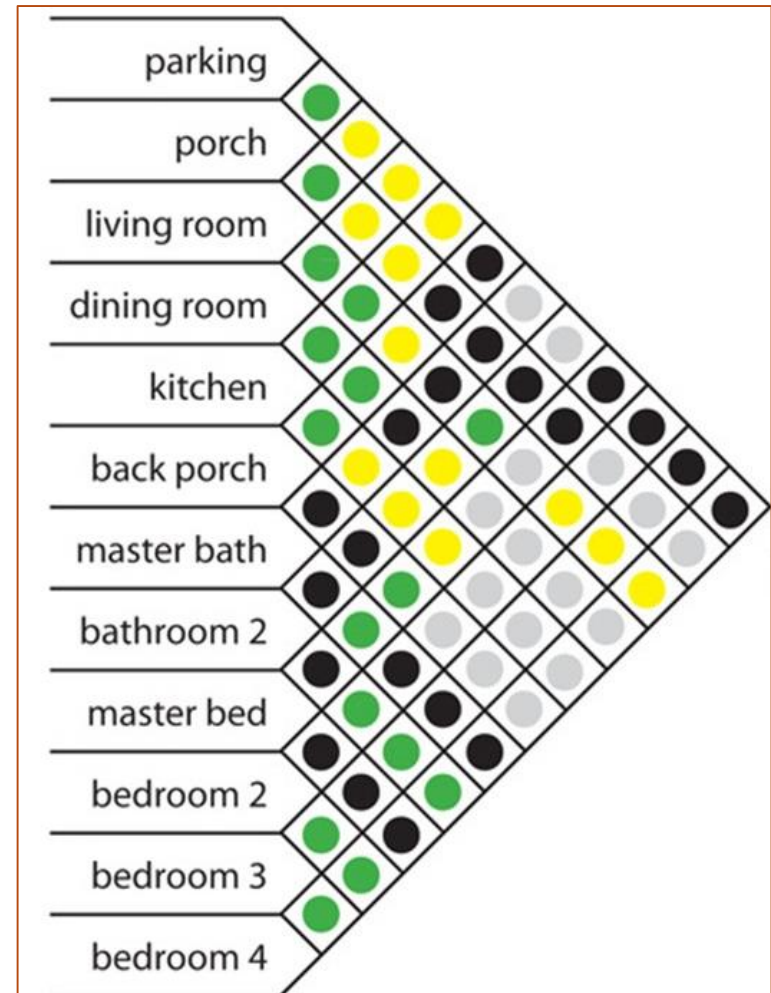


THE MATRIX DIAGRAM

DEFINITION

The matrix

- Is a simple two dimensional grid which is used to determine the relative importance of the proximity of building spaces to one another in the facility.



3



THE BUBBLE DIAGRAM

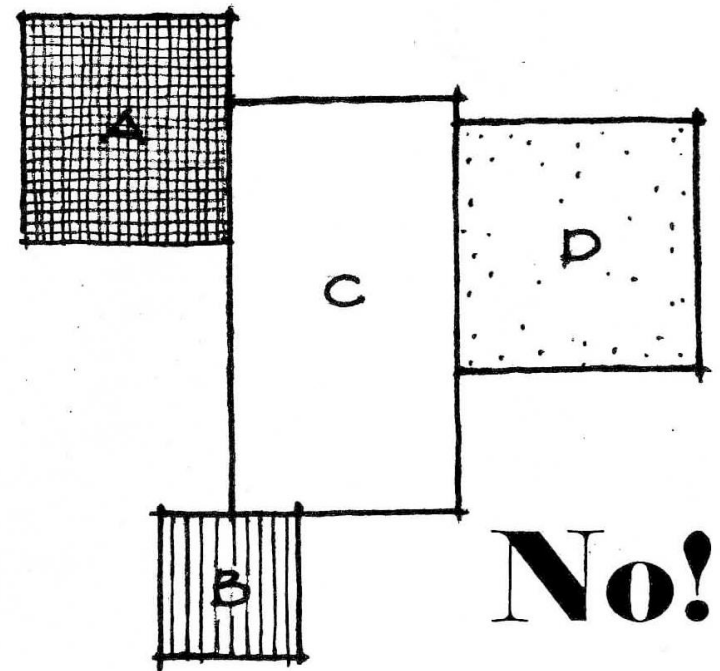
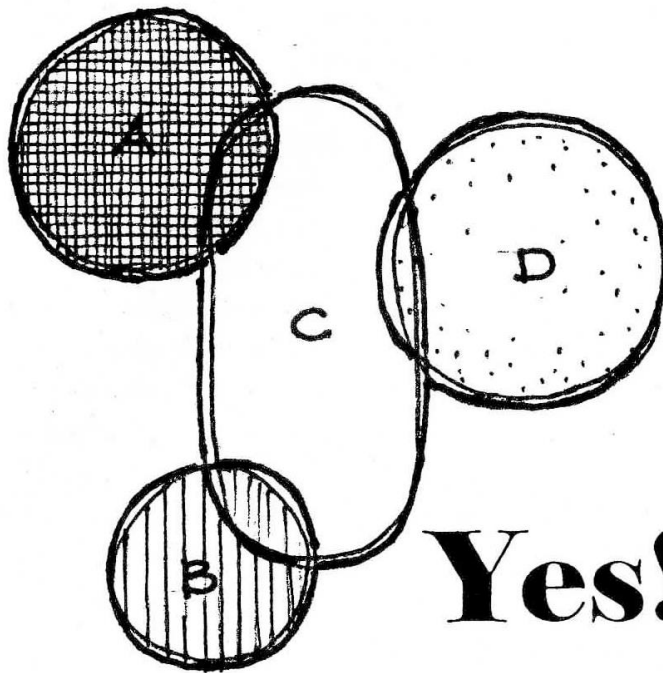
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STEPS OF DRAWING A BUBBLE DIAGRAM

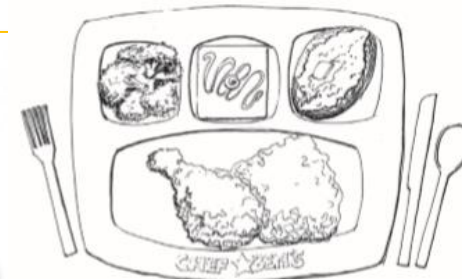
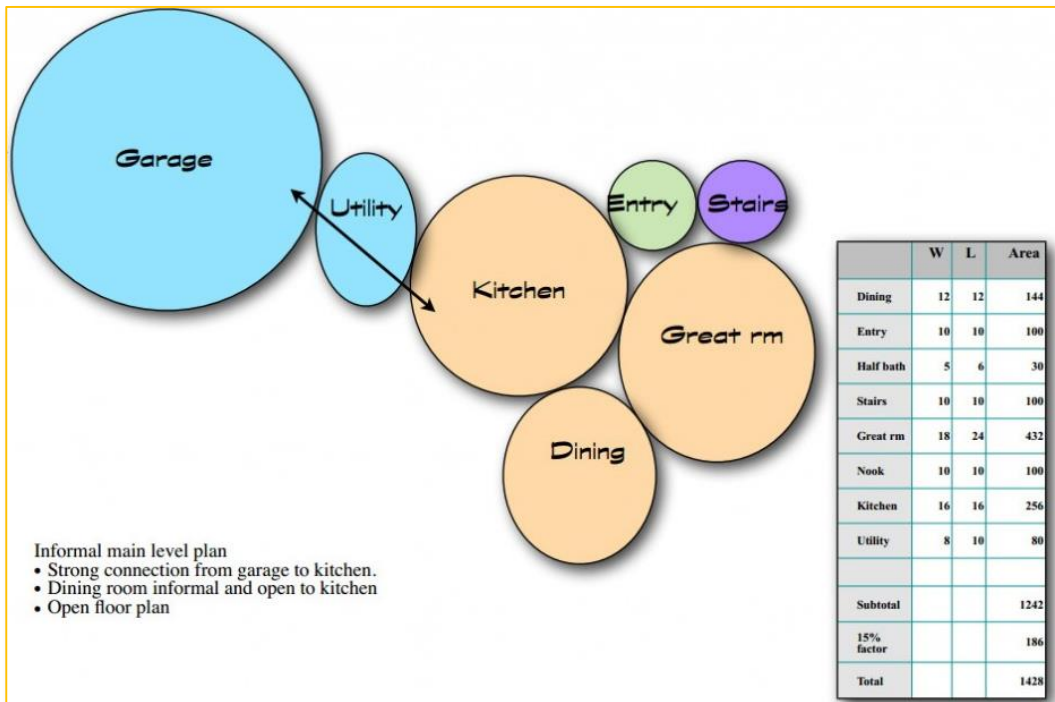
DIFFERENT STEPS

1. The spaces in a bubble diagram should be drawn as freehand bubbles, not as exact forms



DIFFERENT STEPS

2. The size of each bubble should represent the proportion of the spaces within that building not the exact size of it.



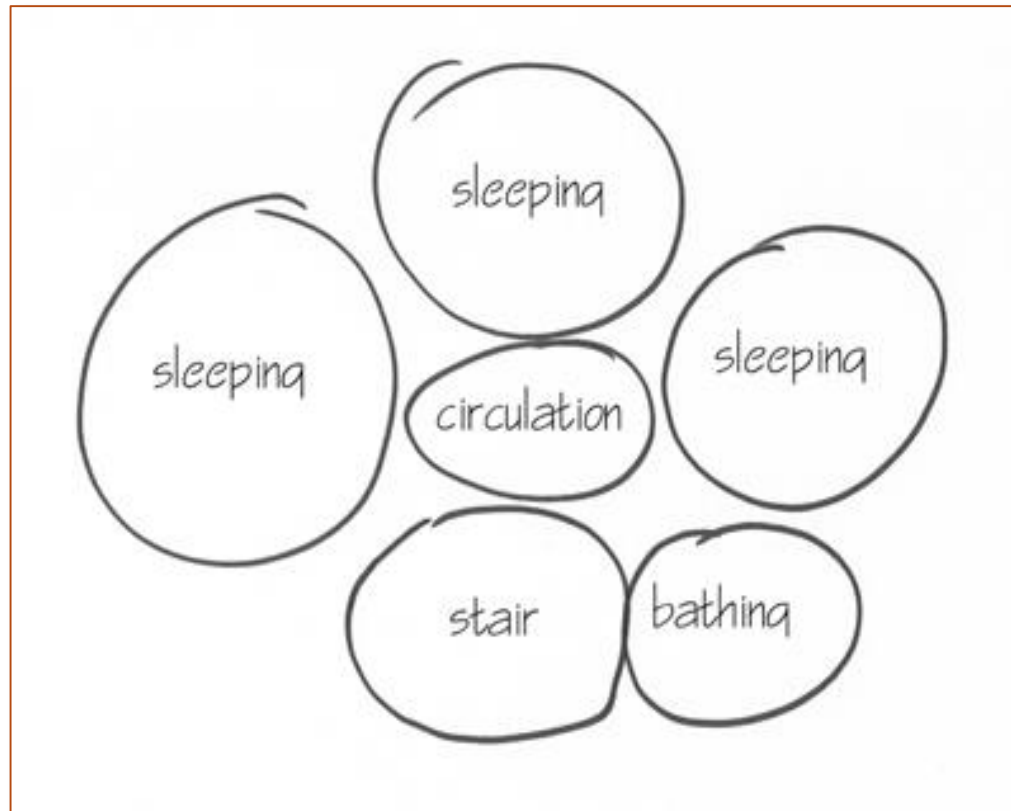
A "floor plan" of a frozen dinner



A bubble diagram of a frozen dinner

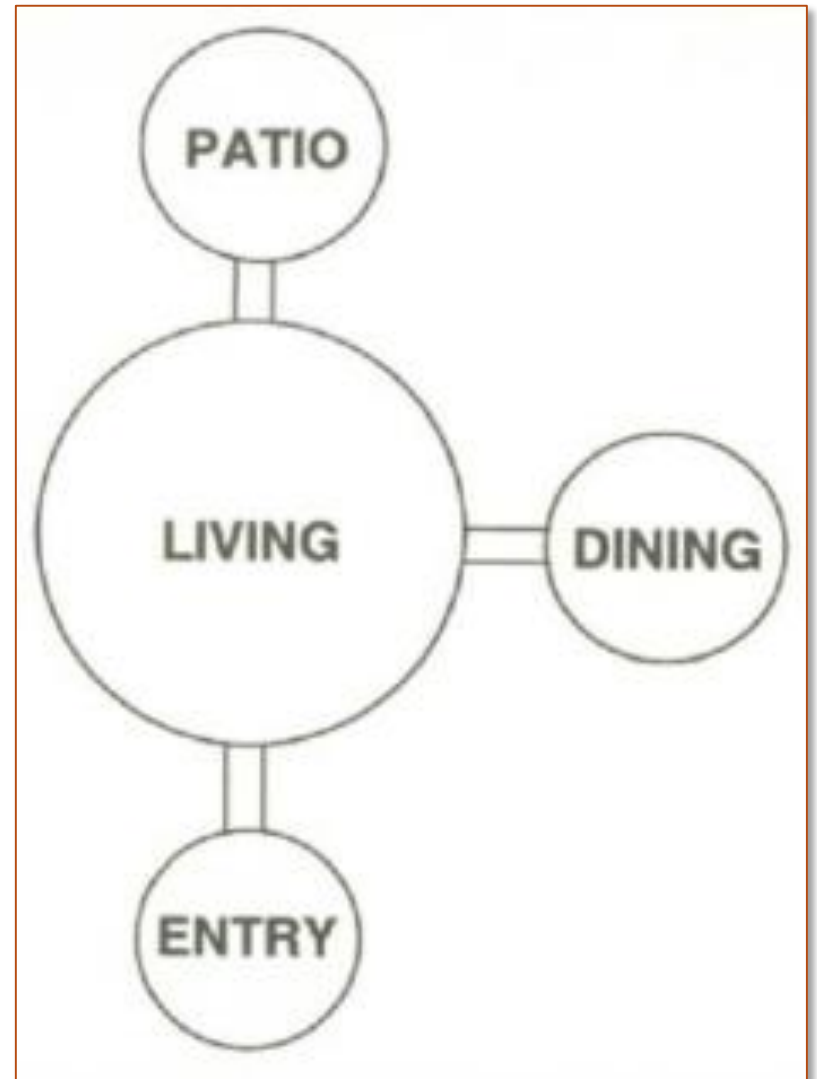
DIFFERENT STEPS

3. Small circles or bubbles each of which contains the name of one of the identified space.



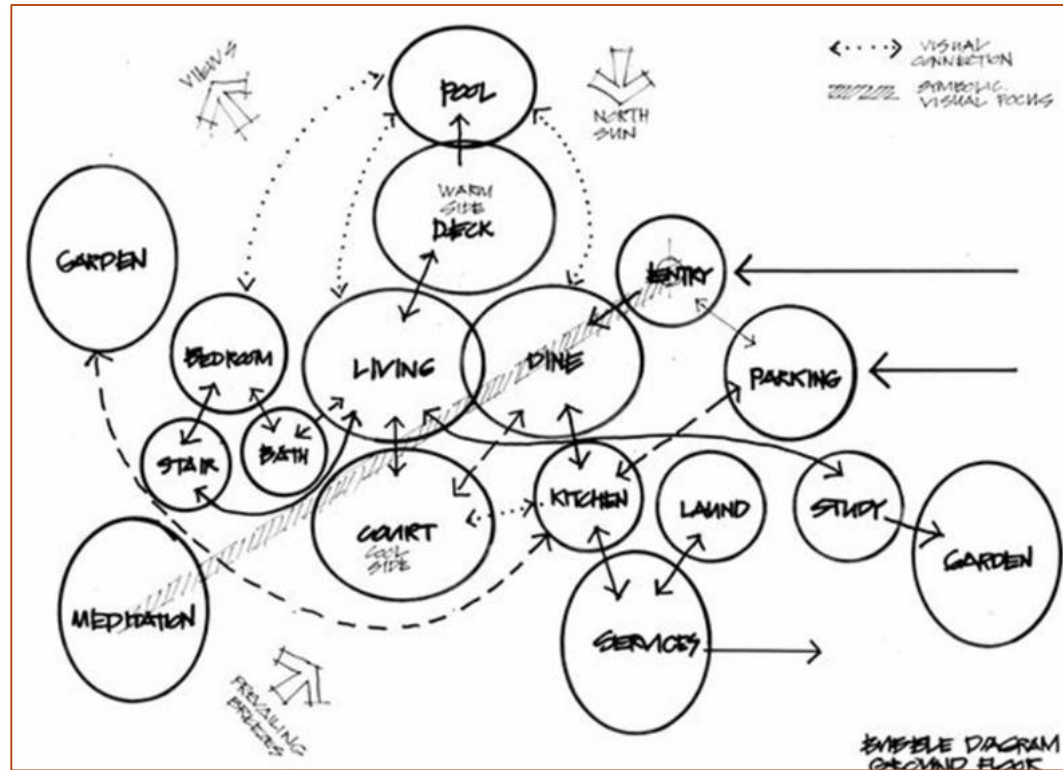
DIFFERENT STEPS

4. The bubble representing the space under consideration is drawn first then other spaces relating to it are indicated in additional bubbles placed near the first bubble.

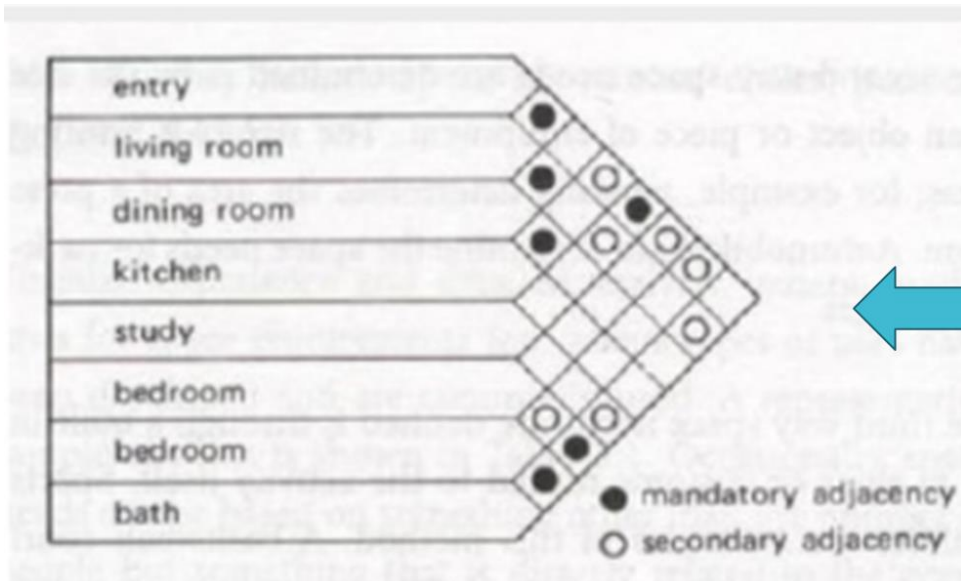


DIFFERENT STEPS

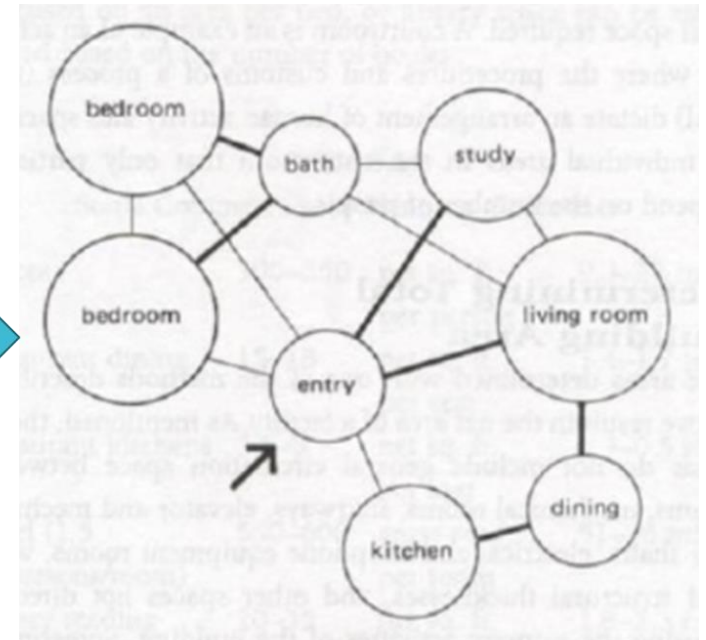
5. Heavy, medium and light weight lines can be used as a code to indicate strong, moderate and weak relationships.



MATRIX DIAGRAM VS BUBBLE DIAGRAM



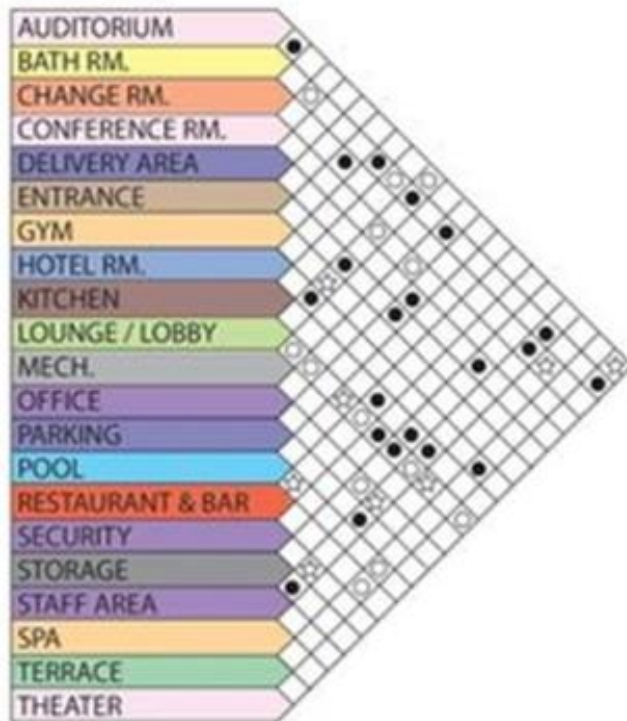
Matrix Diagram



Bubble Diagram

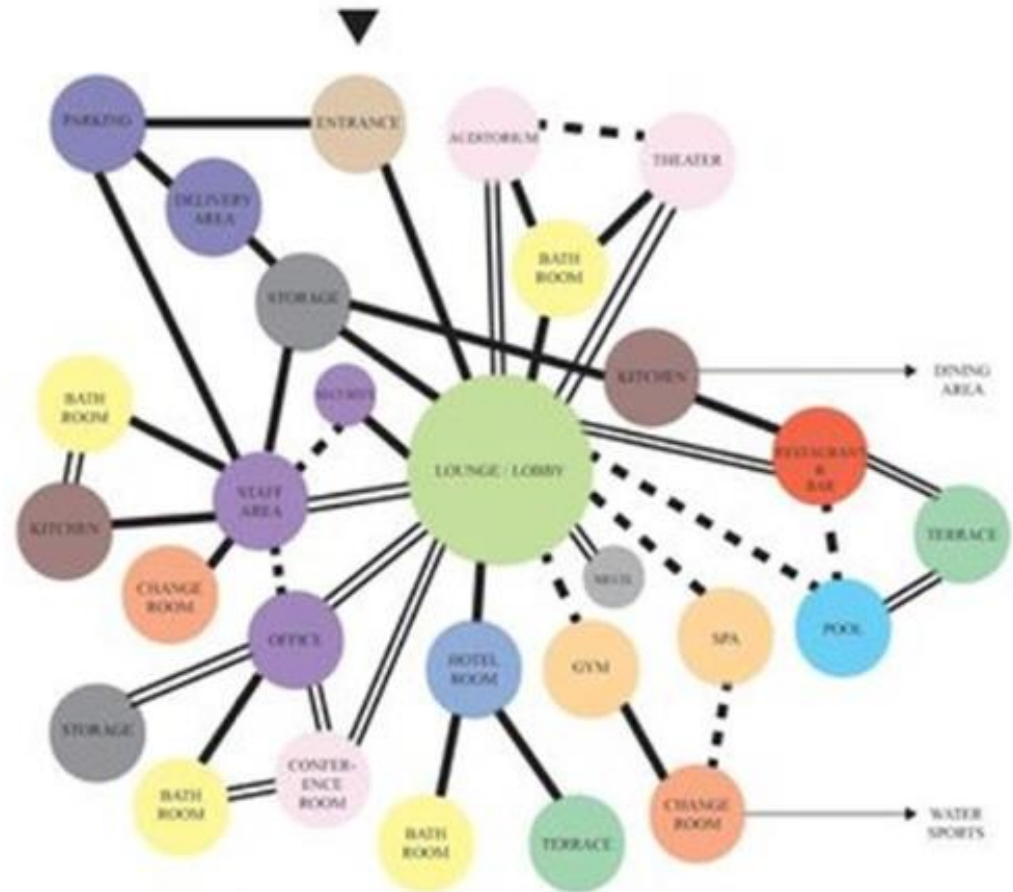
MATRIX DIAGRAM VS BUBBLE DIAGRAM

ADJACENCY MATRIX (HOTEL)



- MUST
- SHOULD
- ☆ WOULD BE NICE

BUBBLE DIAGRAM (HOTEL)



- MUST
- == SHOULD
- - - WOULD BE NICE

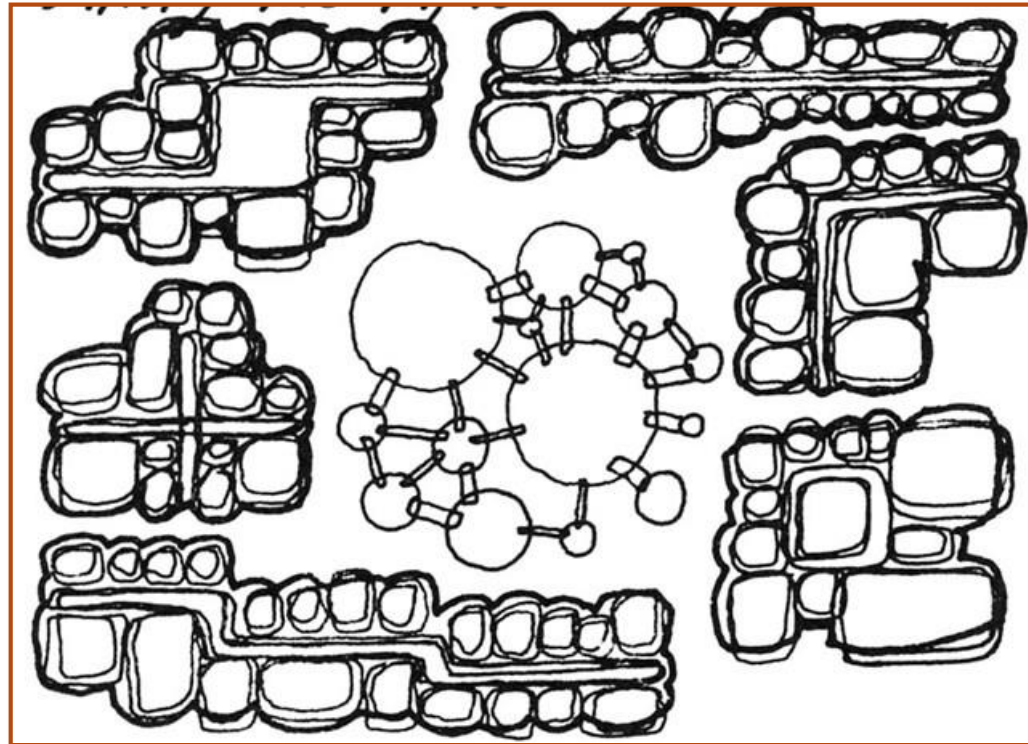
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FROM BUBBLE DIAGRAM TO ARCH. PLAN

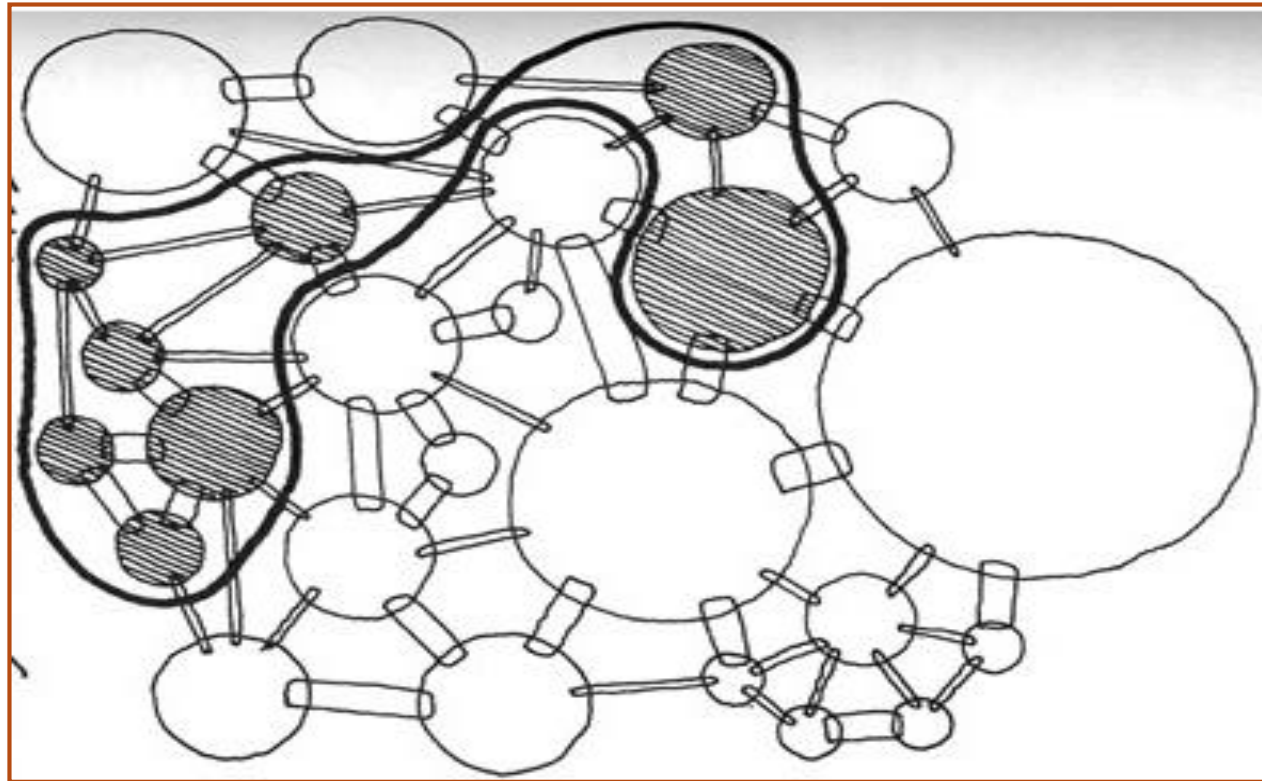
INTRODUCTION

We should not try to convert the bubble diagram directly into a building plan without exploring all the other design ideas that satisfy the adjacency requirements



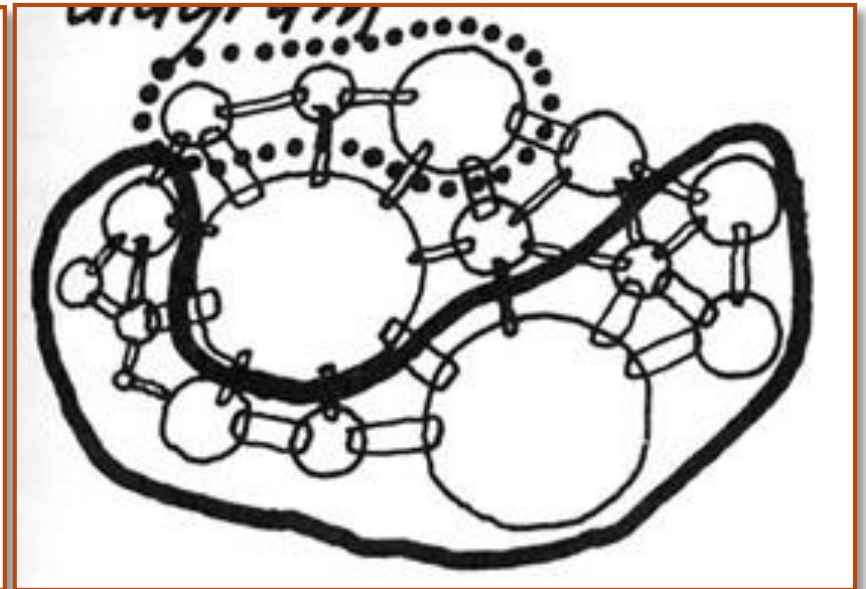
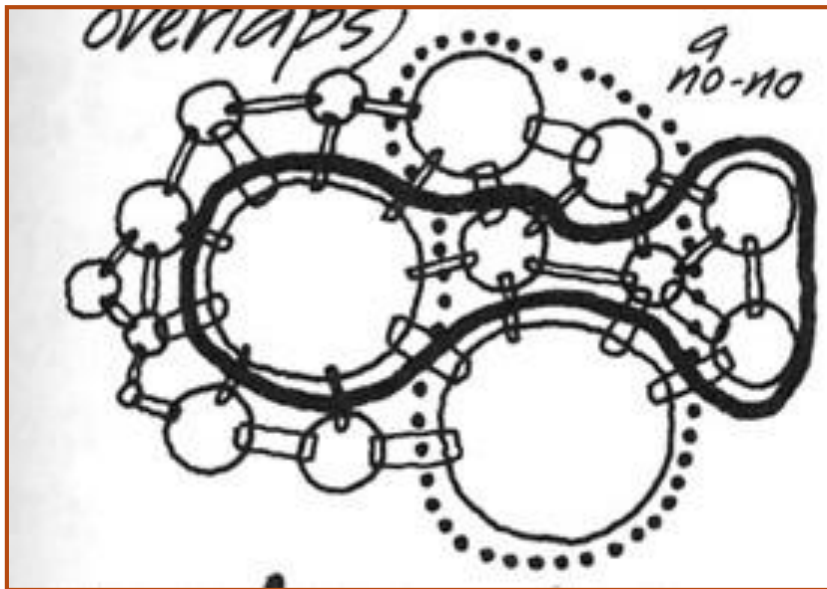
FROM BUBBLE DIAGRAM TO ZONING DIAGRAM

The zoning lines surround and enclose all the spaces enrich belong to the same subclass and exclude the spaces that don't belong to the same subclass.



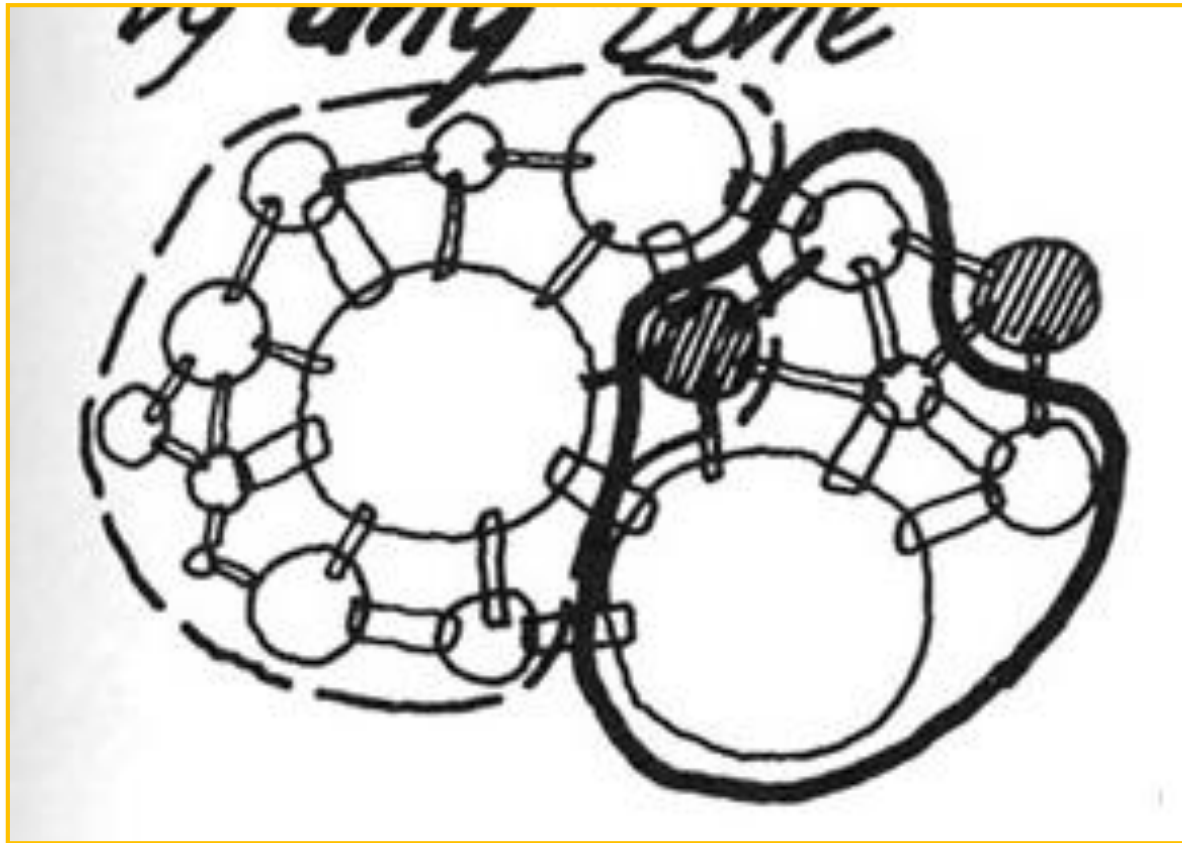
FROM BUBBLE DIAGRAM TO ZONING DIAGRAM

The zoning lines should not cross or touch each other (except at overlaps).



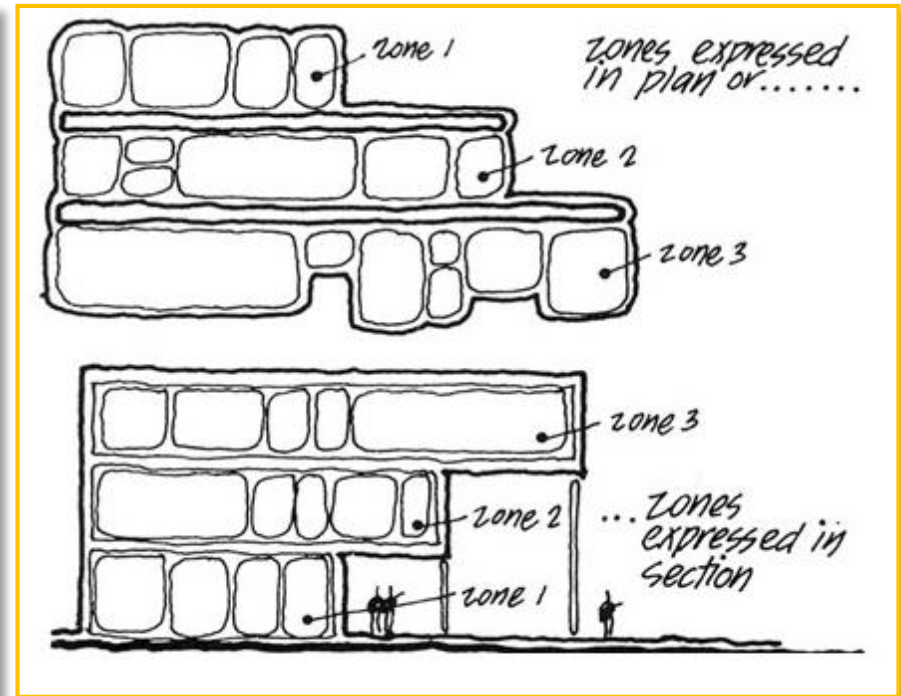
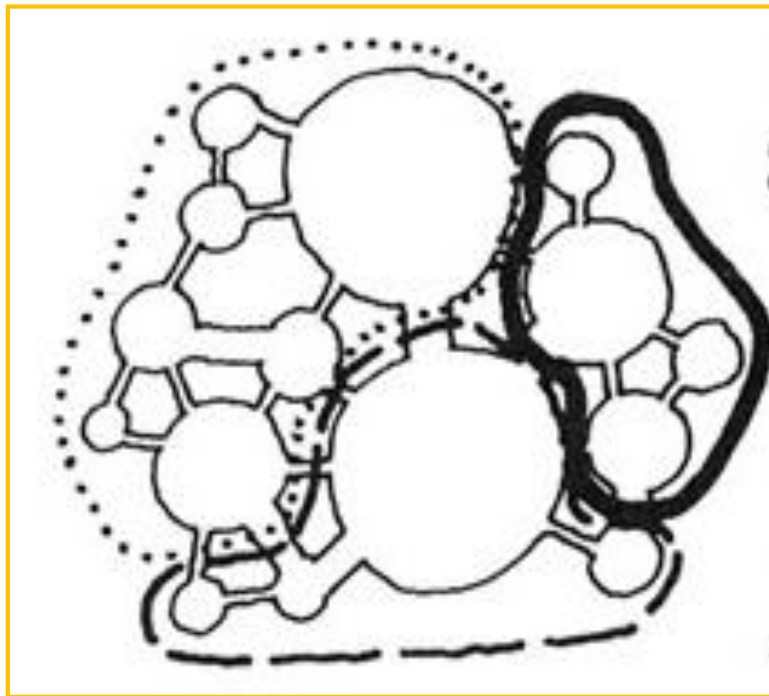
FROM BUBBLE DIAGRAM TO ZONING DIAGRAM

The zoning lines should be the heaviest lines in the diagram.

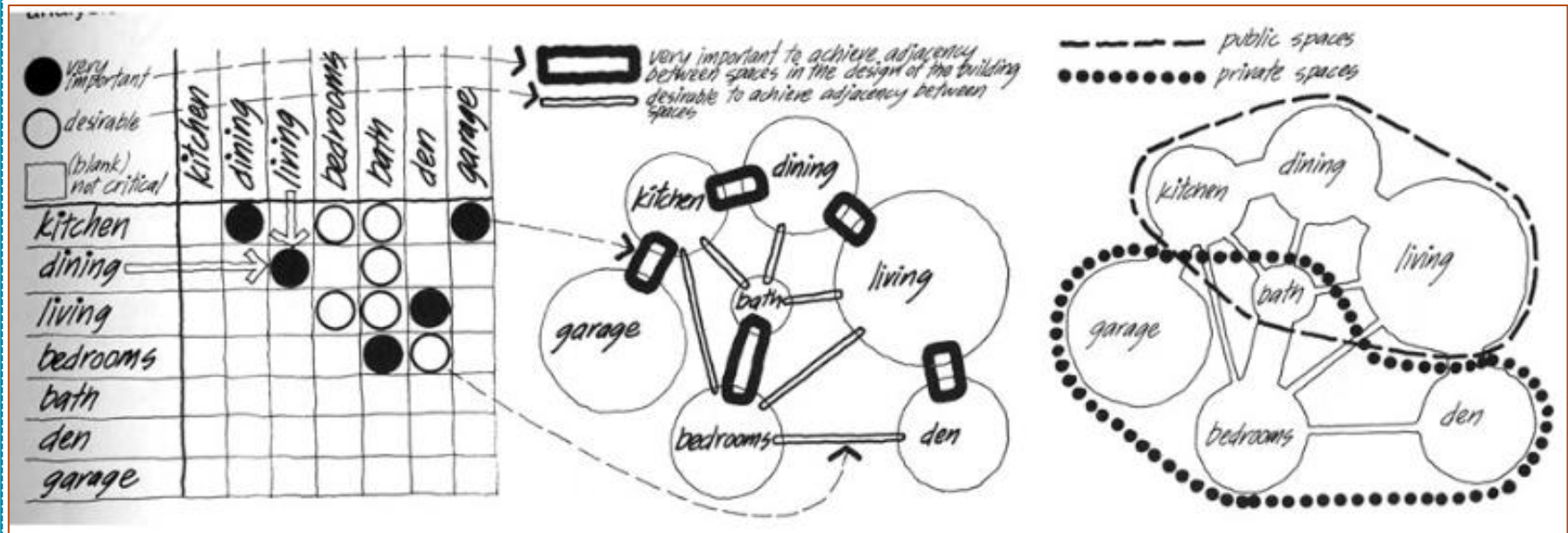


FROM BUBBLE DIAGRAM TO ZONING DIAGRAM

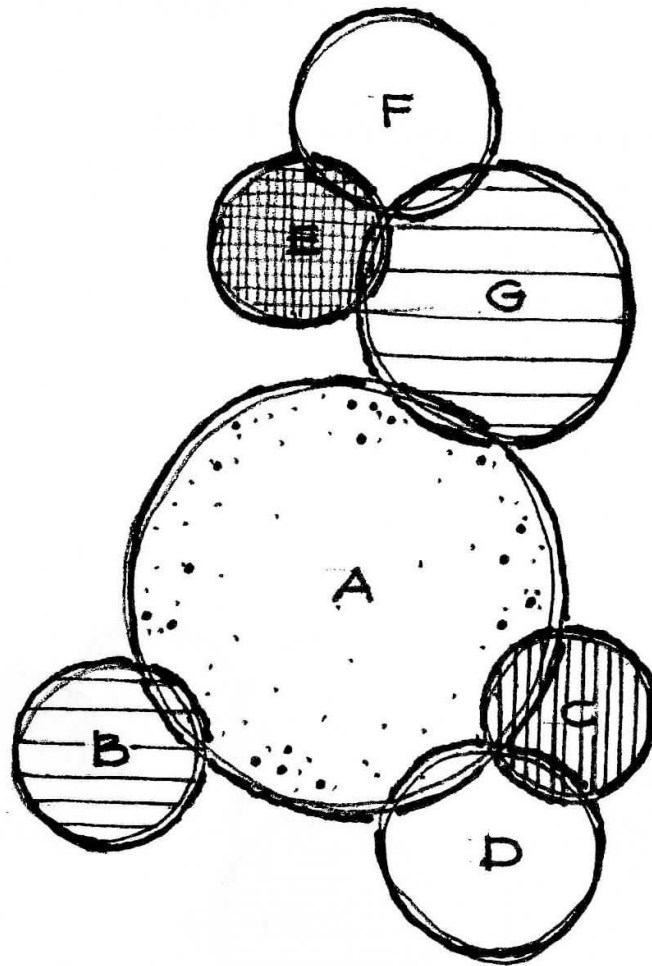
The number of spatial groupings in a zoning diagram may indicate the number of zones to be expressed in the building



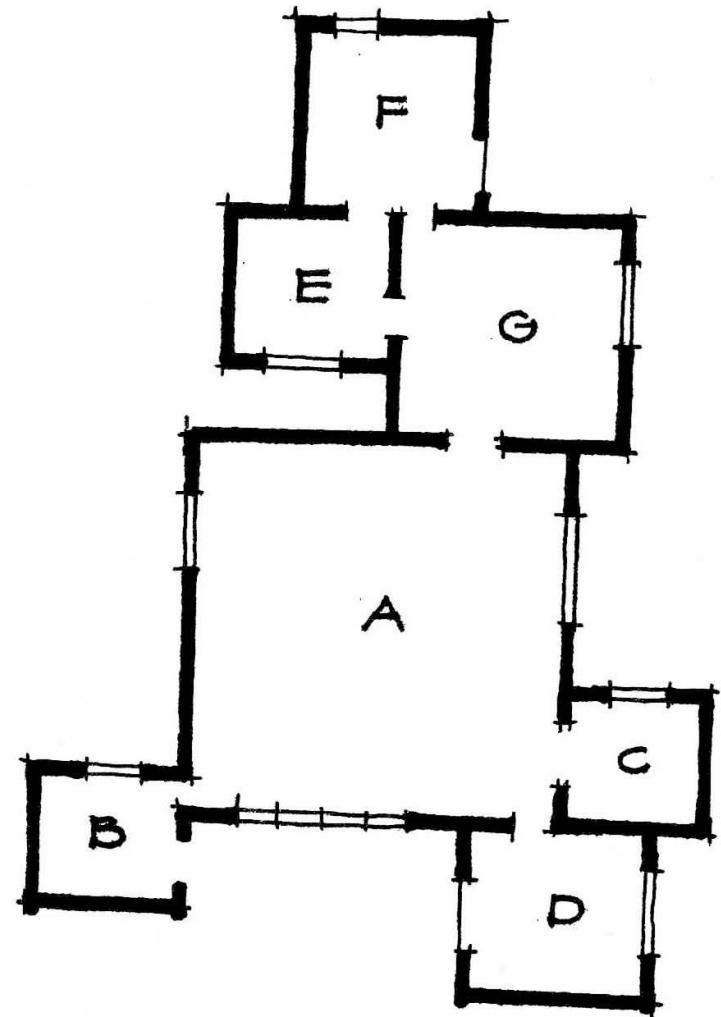
FROM BUBBLE DIAGRAM TO ZONING DIAGRAM



FROM BUBBLE DIAGRAM TO ZONING DIAGRAM



FUNCTIONAL DIAGRAM



FLOOR PLAN

6



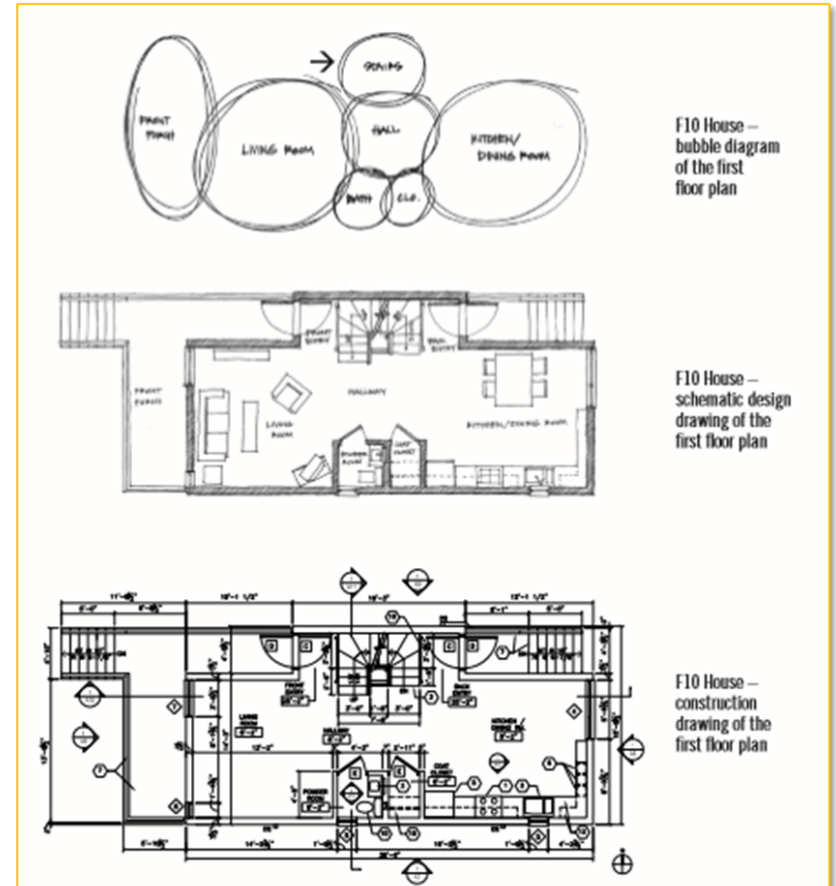
EXAMPLES

EXAMPLES

In zoning principle, space divides itself into zones that group similar kinds of activities accordingly to the degree of privacy or sociable interaction.

Designer normally starts the design accordingly to three activities:

1. Social (living, dining and balcony)
2. Private (bedroom)
3. work (Kitchen) activities.



REFERENCES

The references to multiple sources are text & figures
(sketches, drawings, pictures, photos,..etc.)

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CLASSWORK #4

CLASSWORK #4

Sketch bubble diagrams for the attached plans through the following steps:

1. Think about how the different spaces are related to each other's.
2. Using the entire sheet of blank paper, sketch a bubble diagram of one floor of the attached plans.
3. Label each bubble with the name of the room or space. If more than one activity happens in a single space, make a note of that.
4. Analyze each example and state the strength and weak point in it.
5. Choose the best example (one of the attached plans).

CLASSWORK #4



CLASSWORK #4



CLASSWORK #4



CLASSWORK #4



8



HOMEWORK #7

HOMEWORK #7

على كل طالب عمل مايلي:

1. عمل bubble diagram الخاص بموقع المشروع بناءا على ما تم شرحه بالمحاضرة.

2. رسم المسقط الافقي للمشروع الثاني (مسكن للشباب) بمقياس رسم 1/50

ANY QUESTIONS???

THANK YOU...