



## TRANSITION OF COMMERCIAL INTERIORS THROUGH SYSTEM DESIGN FOR ENHANCEMENT OF WORKABILITY & COMFORT

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### ABSTRACT

*There is a vast difference between residential & commercial interiors. Houses utilize comfortable stays inside, while commercial structures have very different needs to enhance workability & productivity of employees. There are so many other important factors like an interior environment, and the comfort level for the users which are always followed by the system design & ergonomics which can enhance functionality of furniture & workability of the workers. An interior designer can help a business to make money in various ways. The interior designer balances the functional needs of a commercial building in terms of physical space and its aesthetics using system design principles based on ergonomics and human anthropometry. All type of commercial spaces need some degree of flexibility in design for changing needs. This flexibility also can be achieved by proper system designs. Another aspect of system design is appropriate interior detailing. This paper focuses on the orientation of interior design process of commercial spaces based on the system designs of each & every interior element ; truly based on the anthropometry & ergonomics, purpose & keen use of particular furniture element, and the technologies and systems to work out the related task easily in less time span. With this design orientation one can have increased productivity than the conventional approaches.*

**Keywords:** Commercial interiors, interior environment, system design & ergonomics, functional needs, productivity

### INTRODUCTION

We know there is a vast difference between household & commercial buildings; same way there is lot of differentiation in residential & commercial interiors also. A commercial building is one used for some sort of business purpose, such as a store, warehouse, restaurant

Ar. SAMRUDDHI CHITNIS

1Page

or an office. Houses utilize comfortable stays inside, while commercial structures have very different needs to enhance workability & productivity of employees.

It has often been said that the key to a successful business is location. The location is one of the important aspect as well but there are so many other important factors like an interior environment, and the comfort level for the users which are always followed by the system design & ergonomics.

Environment is the overall conditions that surround us at a given point of time and space. It is the sum total of conditions in which an organism has to survive or maintain its life process. It influences the growth and development of living forms. That's why it directly affects on workability followed by human mindset, energy level and activity level of the personnel

### **Function of Commercial Interiors**

Interior designers need to design the interiors in such a way that it enhances the basic function or purpose of a structure. A house is a space for living, so residential designs need to enhance livability. Commercial structures have a different purpose: they help businesses to make money. An interior designer can help a business to make money in various ways. The interior designer balances the functional needs of a commercial building in terms of physical space and its aesthetics.

To develop good store layout, store designers must balance objectives that often conflict. i.e. the store layout should entice the customers to move around the whole store, to purchase more merchandise than they may have originally planned. If the layout or the store system is too complex, customers or salespersons may find it difficult- to locate the merchandise they are looking for and as a result they can decide not to patronize the store.

Office design is significant towards employee satisfaction, and the wide-ranging concept of office design also includes the workflow. The work is analyzed initially and then the work is identified based on by what means the task were completed and whole setup of the office were made up to ensure the smooth running of work in the office without hindrances. That's why the systems of any kind of furniture element into that , shall be made so as to make it fully functional, user friendly comfortable and surrounding friendly.

This paper focuses on the orientation of interior design process of commercial spaces based on the system designs of each & every interior element ; truly based on the anthropometry & ergonomics, purpose & keen use of particular furniture element, and the technologies and systems to work out the related task easily in less time span. With this design orientation one can have increased productivity than the conventional approaches.

## What is 'system design'?

In our everyday lives, we live in spaces that are busily engaged, modifying, and spirited. When designers create interior spatial designs for dynamic uses and experiences, they consider both the aesthetic qualities of a space and how people experience interactions and sensations within the spaces. To make the space worth functional & lively is the first motto of any interior designer. While designing interiors, users' experiences are subjective. These are experiences people have in the moment of living, both consciously and unconsciously, in interaction with the space and other elements along with the functional use of furniture items.

The another aspect of system design is appropriate interior detailing. Without good detailing; the best selection of materials, the most imaginative design will suffer by not adequately meeting the function for which it was intended, being unsafe, costing more money than it should, making construction difficult, wearing out over time and being a maintenance problem.

Properly designed details based on system and advanced techniques, can contribute to overall design intent of the project and provide functional use and long lasting serviceability while being beautiful at their own & finally make the client happy.

## Degree of changes in operations (flexibility):

All type of commercial spaces need some degree of flexibility in design for changing needs. E.g. displays in retail stores need to be changed season wise; or seating arrangement in playschool like spaces has to be changed according to various activities of children. So always it is better to have design flexibility as per demand of change. This can be achieved through some systems like modular furnitures. or it can be achieved through multifunctional interior items.

## Applicability of system design:

**Systems design** is the process of defining the architecture, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development. Systems design is therefore the process of defining and developing system to satisfy specified requirements of the user. In the 1990s, standardization of hardware and software resulted in the ability to build modular systems.

classifications of system design – 1. Logical design

## 2. Physical design

1. Logical design : The logical design of a system pertains to an abstract representation of the data flows(bubble diagram/flow charts etc. , inputs and outputs of the system. This is often conducted via graphical or modelling of the actual system. At primary level sketch views can work well.

2. Physical design: The physical design relates to the actual input and output processes of the system. In physical design, the following requirements about the system are decided.

1. Input requirements,(client needs & the constraints of space & situations )
2. Output requirements,(the activities worked out using that particular product or furniture element )
3. Storage requirements, for the particular product(depending upon the type of activity)e.g. a reception table will be definitely differ from that of for any architectural design student.)
4. Processing requirements, (design flexibilities like movement , rotation , tilting or rearrangement of furniture items as per activity requirements)
5. System control (ability of remodeling to original state)

The another way for system design is Rapid application development (RAD) in which a system designer produces prototypes for an end-user. The end-user reviews the prototype, and offers feedback on its suitability. This process is repeated until the end-user is satisfied with the final system. Means an interior design can show some suggestive prototype models to client to find out his exact needs and can make changes up to his satisfaction level.

**System design is applicable in each & every aspect right from –**

- **furniture layout**
- **partition anatomies,**
- **actual furniture design**
- **use of anthropometry & ergonomics for better workability**
- **modular approach**
- **advanced mechanism using new technologies & latest hardware systems**
- **multifunctional aspect**
- **material selection & composition**
- **flexibility**

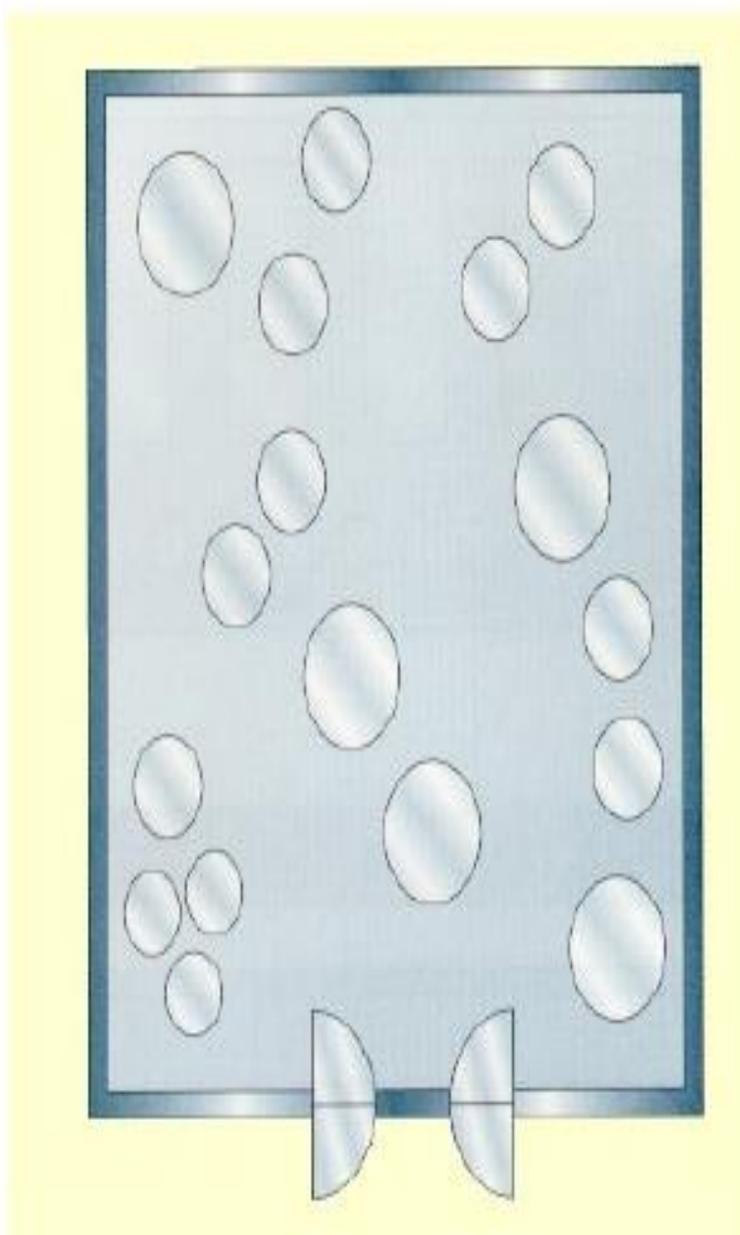
.....taking in mind the user experiences & the constraints.

System of layouts:

Ar. SAMRUDDHI CHITNIS

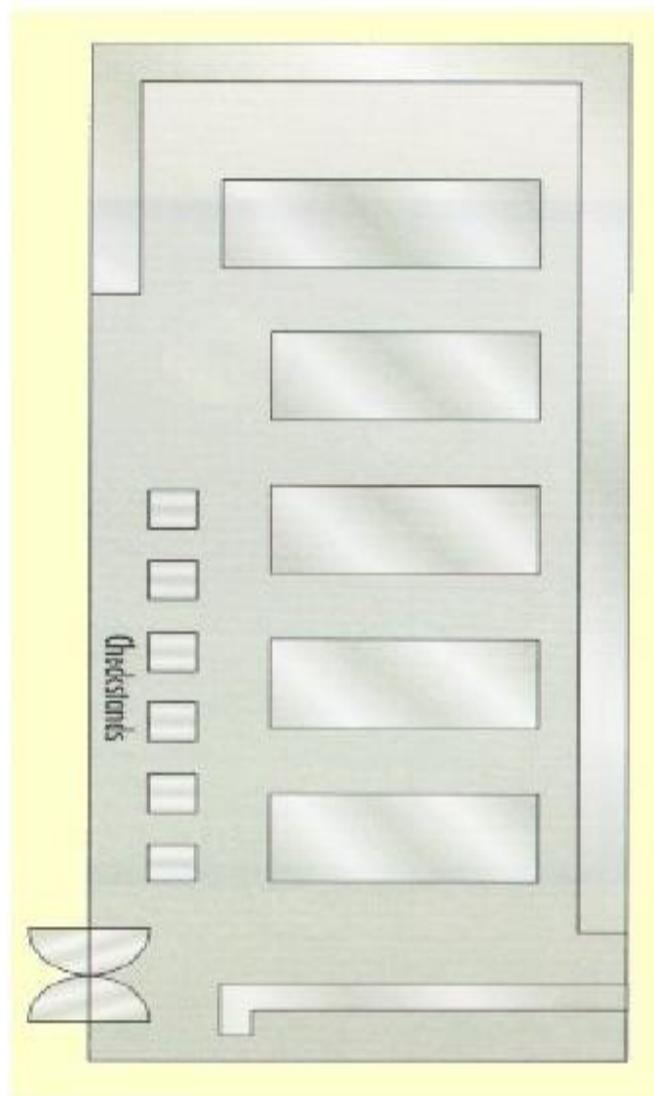
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**Free flow-** useful in small stores....sometimes create ambiguity because of undisciplined nature.... Confusing for large spaces...wastage of space....scope of creativity.



Ar. SAMRUDDHI CHITNIS

5P a g e

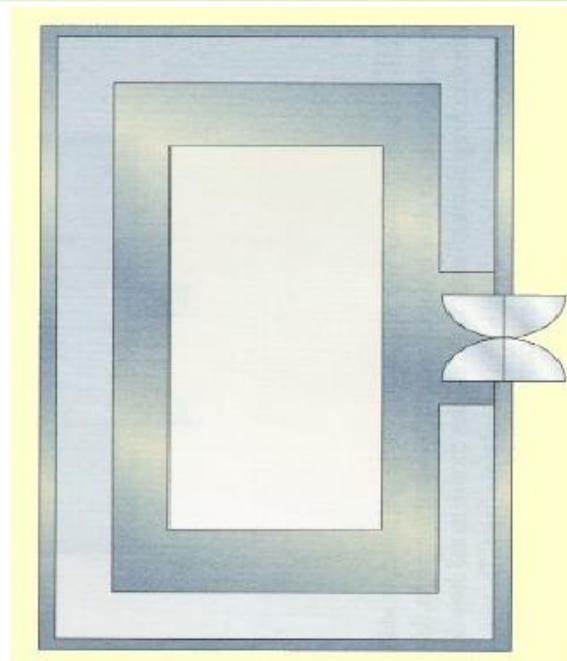
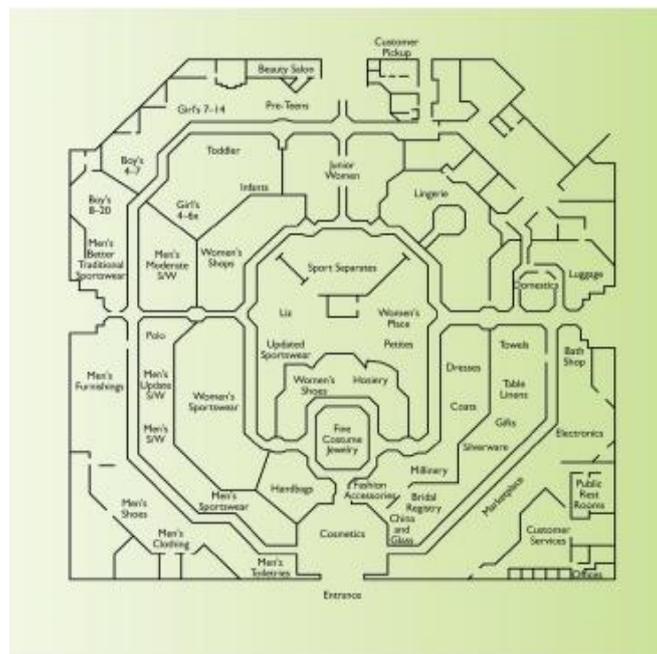


**Free flowing layout**

**grid layout**

**Grid layout –**

useful in large stores like supermarket or drug store....easy to locate products...cost effective & easily accessible for customers...no requirement of sales persons...but Recirculation can happen while shopping activity because of maze like pattern and shopping time can be prolonged.....limitations to creativity & aesthetics....can not expose shopper to greater extent.



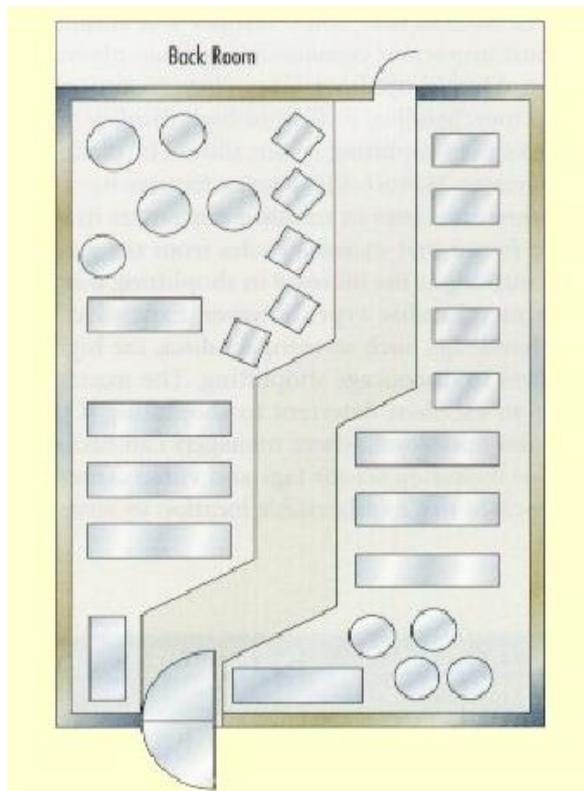
**Loop layout**

**race track**

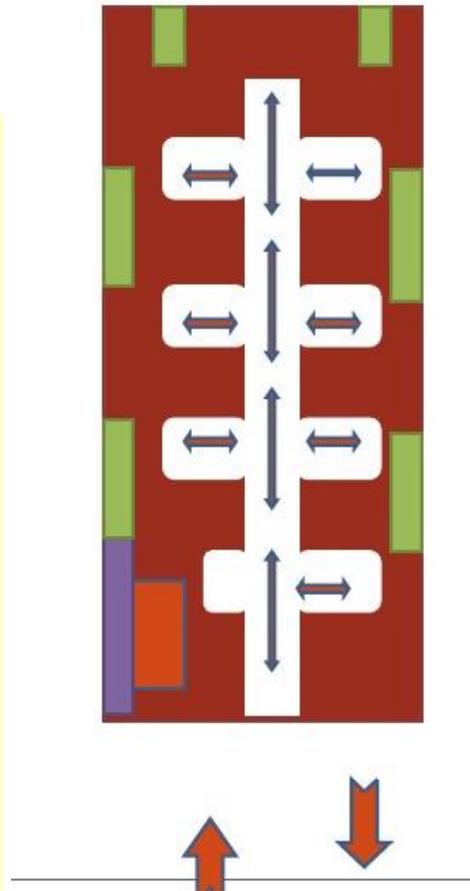
**Loop layout**-exposes shoppers to greater possible amount of products.... encourages browsing and cross shopping.... can increase the sell.... ...the loop starts at the front and returns the customer again at the same place....safe and productive from the view of seller to increase the sale. ....but sometimes boring & time consuming for buyers.

**Race track**- simplest layout .....less possibility of cross shopping

**Spine layout-** variation of grid, based on single main aisle running from front to back either in office or store. Heavily used by medium sized stores or offices.



**spine layout**



**Herringbone layouts**

**Herringbone layouts:** these are used for narrow office or store spaces, where two way highway is bisecting the store or office at its length with side roads leading to walls.

**Partition anatomies:**

We can have various anatomies of partitions depending upon use of their inside and outside surrounding spaces. We can treat the circulation passages or the inside & outside surroundings w.r.t.to their functionality keeping its aesthetical value.

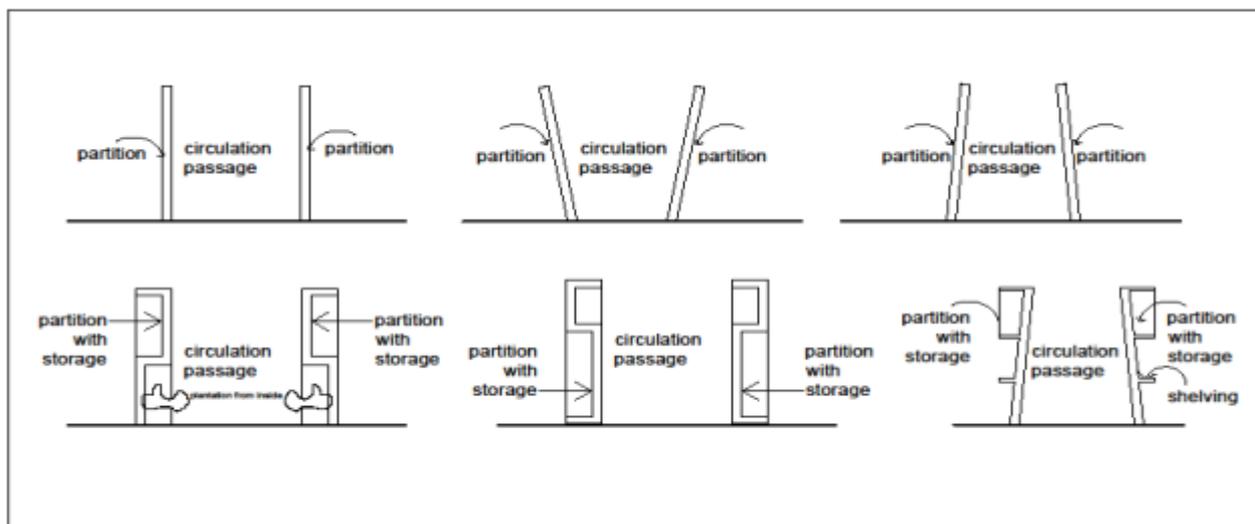
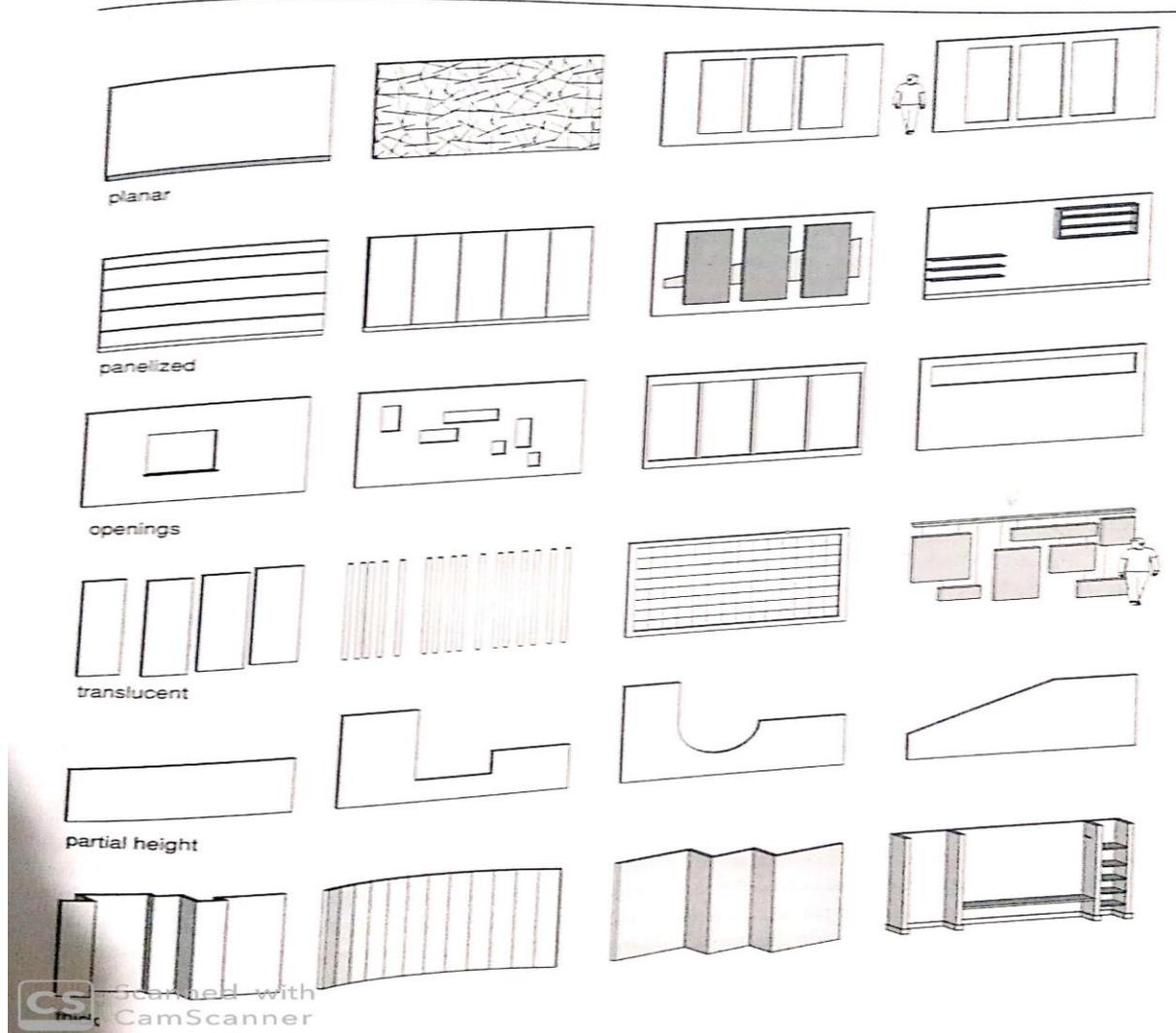
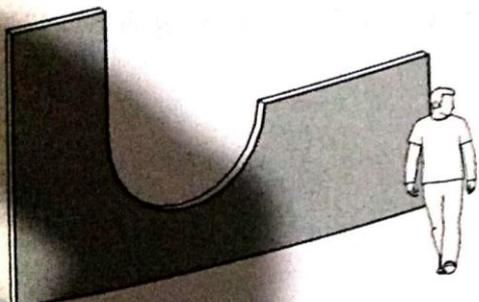
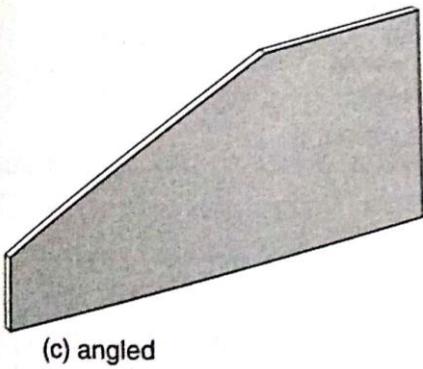
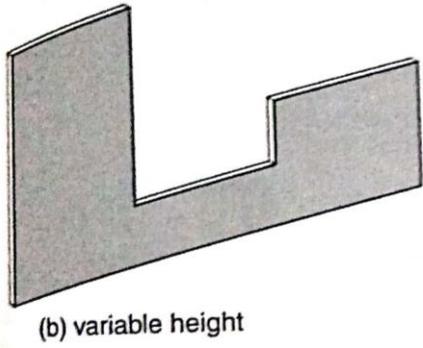
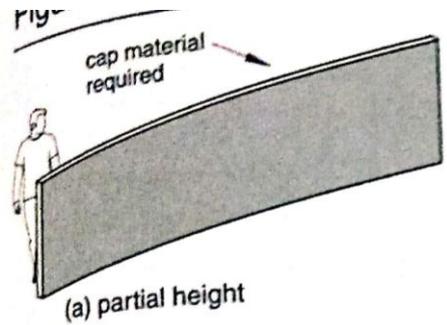


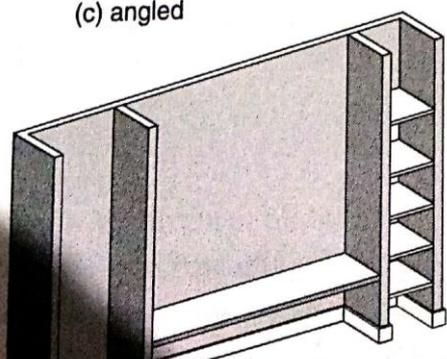
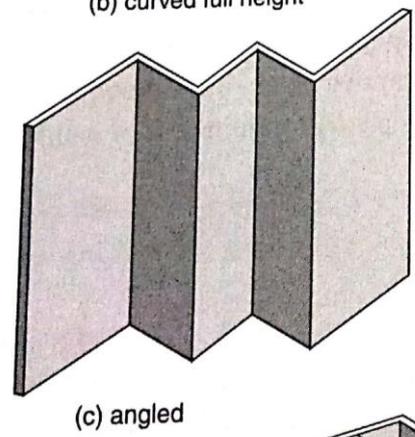
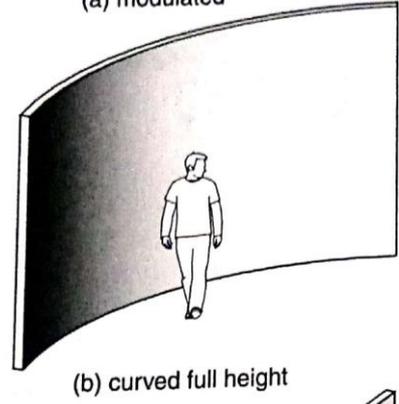
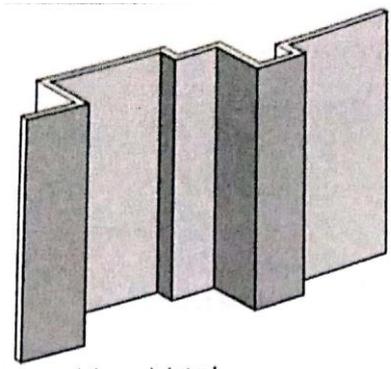
Figure 5-1 Vertical barrier concepts



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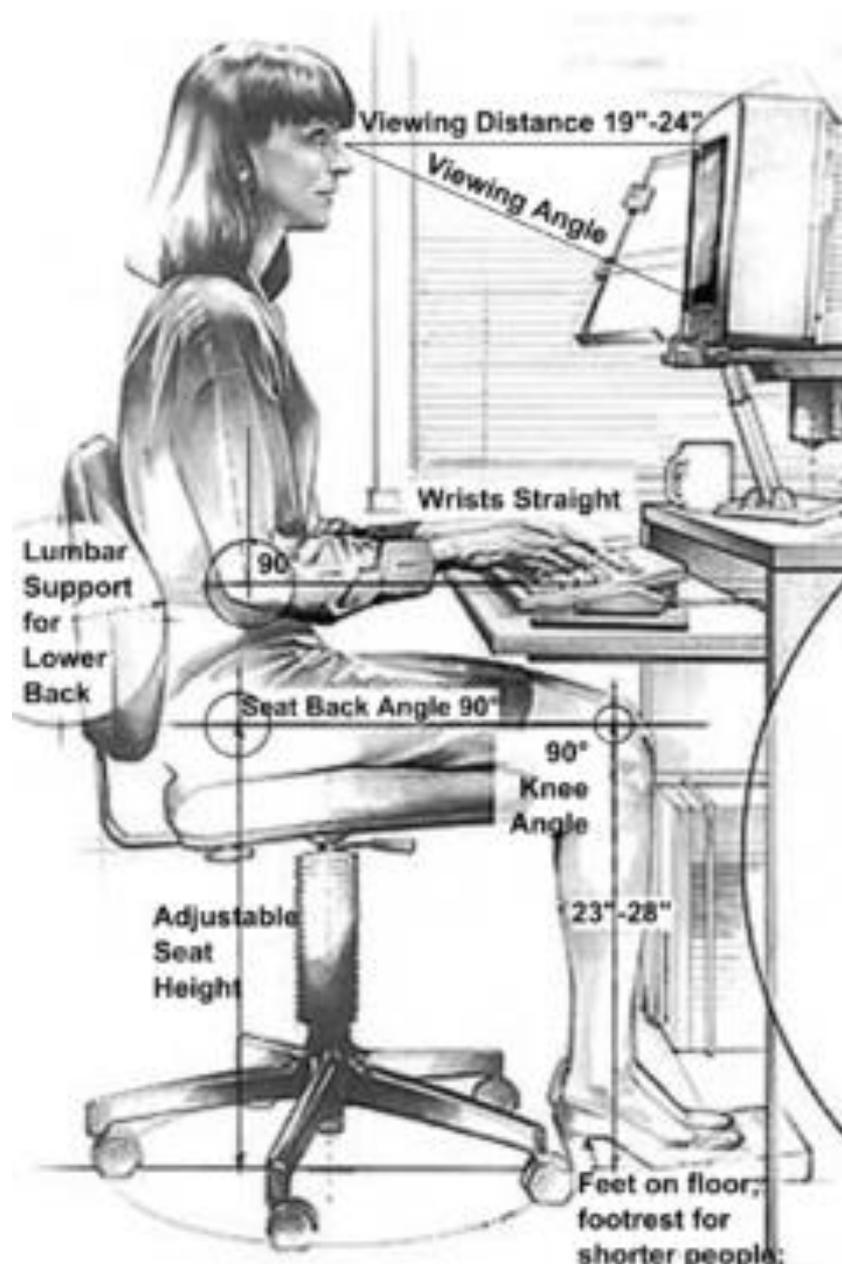
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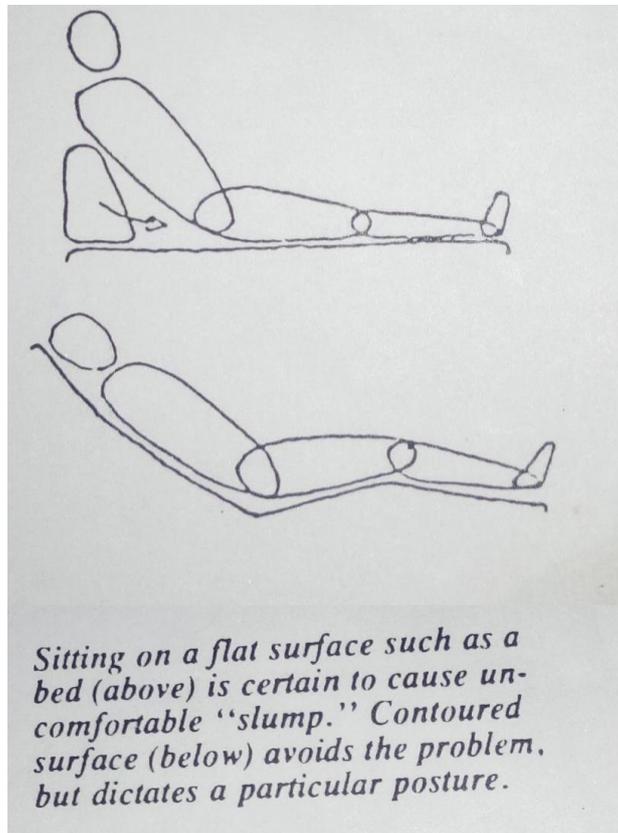
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**Actual furniture design:** actual furniture design is to be worked out primarily on the basis of its functionality & work output. Also it should be comfortable enough to enhance patience & workability of employees .so that it should be based on anthropometric data and ergonomically worked out dimensions and standards. These days we are getting ergonomically safe designed products in the market , which can be used to achieve better comfort levels.

**Ergonomic Mantra :** Ergonomics is the study of workplace, making it suitable for people working it . it helps to understand the appropriateness , reach, clearance, adjustability , personal space, appropriate & easy use, taking in mind other constraints and surroundings.



Ergonomically safe keyboard



### Modular & multifunctional approach :

**Modular design**, or modularity design, is an approach that subdivides a system into smaller parts called modules, which can be independently created, modified, replaced or exchanged between different systems.



The tables in this playschool can be rearranged in various ways for various types of activities.

Through such things functional interiors can be worked out which can definitely enhance workability of employees.

## REFERENCES

1. Ergonomic awareness & employee performance : an Exploratory study Author : Segun Olabode Atinuke Regina Adesanya Akeem Bakare
2. The impact of Ergonomics on productivity of people : ARSEAM, dr. Nidhi Deouskar
- 3) 3.Flexible & modular Furniture design for changing living environments Conference Paper Garip -Istanbul Technical university Orlando Zeneyl Guzelci-university of Porto Nilufer Saglar Oney Politecnico de Torino
- 4) Furniture Design & Product Development Principles considering end-of- life options & design for environment strategies Open access thesis by Mesut Uysal-Purdue university.
5. Commercial bldgs. Interior interaction design based on virtual reality technology Author : Tinting Lei, Guangtian Zou- professor -school of Architecture -China

Ar. SAMRUDDHI CHITNIS

13P a g e