

# Office Layout to Accommodate 5 Designers

---

*Produced and Presented by - Kyi Hla Win (0856777) & Kyaw Soe Hein (0856566)  
Devan (0765310)*



## Overview

A glimpse inside the offices of the downtown district of Singapore will show some dire lack of ergonomic principles. Singapore is a very small but largely economically-growing country, which means offices are

# Ergonomics Mini-Project

---

stacked compactly within the very little space provided. Office work and repeated jobs leave people exhausted.

A ride on MRT could explain all. In the morning among the crowds on train, people wear a tensed expression. Few of them would look happy. Some would accompany music from the little earphones. In the evenings, tired fellows come in rushing for a seat to rest on.

Maybe that indicates a need to apply Ergonomic Principles in their office.

On this project, our group is going to create a small, imaginary office that applies Ergonomics in every corner for 5 designers.

## Everyday Problems in Office

Some of the very common inconvenience in offices may be:

- Inadequate spacing between objects
- Uncomfortable working postures
- Poor lighting
- Bad ventilation
- Disturbing noises

Workers get inevitable consequences like back pain, eye strain, stiff fingers, and numb thighs and legs. Severe cases produce permanent physical disorders and disabilities.

In order to minimize these effects, Ergonomics Principles should be applied everywhere possible in the office.

# Ergonomics Mini-Project

---



## Ergonomics Principles

Ergonomics is the science of designing the job, equipment, and workplace to fit the worker. Proper ergonomic design is necessary to prevent repetitive strain injuries, which can develop over time and can lead to long-term disability.

Work places can be equipped with Ergonomics Principles, which brings about major improvements in

- Quality
- Efficiency
- Health
- Smooth Operation and Lower Cost

# Ergonomics Mini-Project

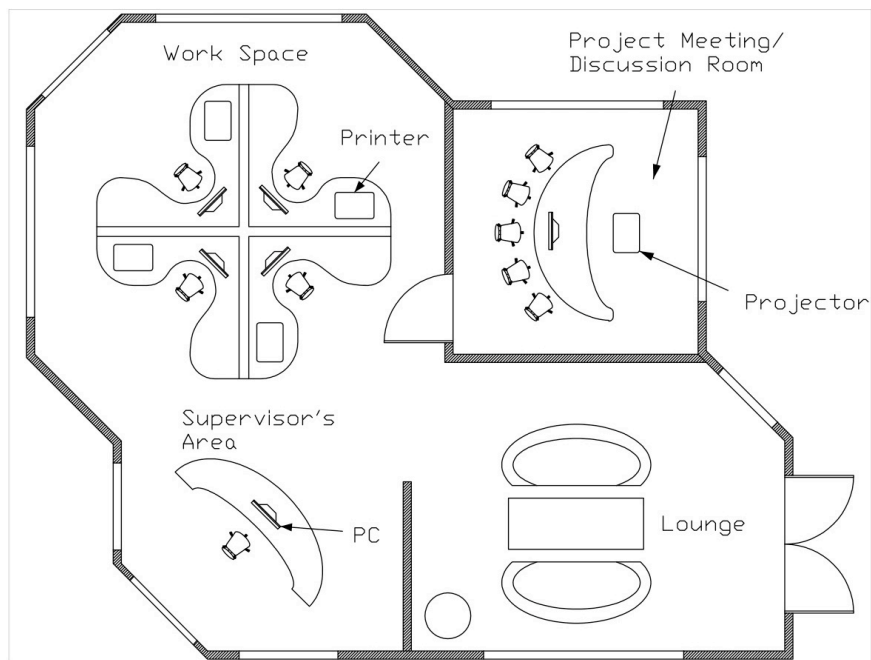
---

Also, there are five general aspects of Ergonomics.

- Safety
- Comfort
- Ease of Use
- Productivity/Performance
- Aesthetics

## Our Office Layout

Below is a graphical presentation of our design for the small office which accommodates 5 designers, with a leader and four subordinates.



# Ergonomics Mini-Project

---

Our simple office includes a comfortable and roomy lounge to accept and welcome clients, a separate area for the supervisor to reside, four spaces fully equipped for the four subordinates and lastly, a separate meeting room with a setup for projection and presentation.



## Anthropometry Data

- The computer desk should have an adjustable height around 65-70 cm in range and its area should be around 75 cm x 55 cm for the best usage.

## Ergonomics Mini-Project

---

- The monitor screen and the paper work are placed so that the angle between them towards the eye is not larger than 30 degrees. An angle larger than 30 degrees can cause neck strain.
- Most of the working tools and stationary, such as pens, erasers and staplers are kept 25 cm away from the person, i.e. within hand reach.
- Books, papers and other materials are 50 cm of arm reach.
- The desk surface is just below elbow height.



### Design of Seats

For designers who are occupied with computers and drawings most of the time should be offered the best design of seat to fit their job.

- Surface of the backrest is tilted backwards to make an angle of 95 degrees to the horizontal. It should also be adjustable to allow the person to stretch his back to relax.
- The texture of the seat is rough, yet comfortable, to prevent sliding.

# Ergonomics Mini-Project

---

- Workbench is just below elbow level for the ease of shoulders.
- The base of chair is equipped with smooth wheels and has 5 legs for stability.
- The base has special damp vibration resistance.

## Lighting

Poor lighting has a severe effect on one's eyesight. Low frequency lamps produce blinking light photons. The job of designing is, in fact, optimizing from vision and requires a long-term eye use. Therefore, the work space should be brightly illuminated without blinking.

Our hypothetical office uses high intensity fluorescent tubes with high frequency. Also, the office is surrounded by a number of large glass windows for natural sunlight to enter. All reflective materials are positioned properly so that the lighting setup is not disturbed (e.g. mirrors and LCD screen of computers).



# Ergonomics Mini-Project

---

## Ventilation and Heat

Poor ventilation and heat can cause fatigue, discomfort and stress. Especially in Singapore where it is hot 365 days a year, we have to consider much about heat issues.

To be precise, body heat should not exceed 38 degrees Celsius in any working environment. To satisfy with this condition, the office is supported with an air-conditioning system that increases airflow and reduces humidity. The system is set so that a temperature of 25 degrees Celsius is maintained inside the office.

## Noise

Although noise is not much of an issue in designers' office, a small amount of disturbance can go great lengths in altering the efficiency of one's design. Exposure to noise can cause

- Impaired alertness
- Disturbance
- Stress

Our office has sound-proof glass windows to prevent noise from the traffic from entering, and the walls are designed specially to absorb any extra noise that can be generated from within the office (e.g. from printers and machines).

## Outcomes

Our little office, applying Ergonomics in all areas of the room, is predicted to have fruitful outcomes within the parameters of safety, comfort, ease of use, productivity and aesthetics. Simple and small yet effective, the designers' residing place for 5 days a week will have them coming to work happily, working safely and efficiently, and going back home with smiles on their faces.

Ergonomics is the science of designing the workspace to fit the worker. Ergonomics is possibly also the science of making people work happily and effectively. Isn't that we are searching for anyway?



# Ergonomics Mini-Project

---



*Special thanks to our teacher Mr. Yap Chin Hooi for teaching us this module with extra kindness and efforts, and making it fun!*

---

## References and Programs Used

<http://en.wikipedia.org/wiki/Ergonomics>

<http://www.123sortit.com/BO/OD.html>

IE Textbook

Autodesk AutoCAD 2008

The Sims 3