

# “Transformable space saving Furniture”

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## **Abstract**

We want to offer furniture that makes a difference in everyday life. Good design that combines style, comfort and functionality. Innovation is not just a name, but what we do. Innovations in small space living have never been as in-demand as they are now. These are common problem in now days. Space saving seating arrangements is one of the options to solve these problems. Today one can find a wide array of chairs reflecting the current understanding of ergonomic experts and designers as how to best support traditional tasks. But seating work is changing. Traditional jobs involving only one primary, forwards oriented task are giving way to new approaches to work and a wide variety of task postures and positions. This paper will help people to understand the importance of Ergonomics with anthropometric principles of multipurpose space saving seating arrangements in different places.

Keywords: Space Saving, Seating furniture.

## **Introduction**

Space -saving furniture design are ubiquitous in our daily lives and workplaces. Now the innovation is taking a step ahead. Before the innovation was just the creativity of design furniture and the structure. It was just designed for the sake of space saving. But now we are trying to design furniture adding some new concept which would save the time and will reduce the human efforts. This foldable chair highlights some of the most useful small living innovations. Here's a brilliant way to increase storage space in an incredibly in restaurants and office reception (like waiting hall) and also for outdoor purpose .Not only for the sake of domestic use, this foldable chair, will also help us in hospitals, colleges, and in the industries. In most metropolises in the world, people's average living area is getting smaller and smaller. Moreover, high population density leads many other problems such as high gap between rich and poor, high energy cost and house price. These are common problems in metropolis nowadays. Transformable space saving furniture is one of the options to solve these problems. This report will help people to understand the importance and the potential value of transformable space saving furniture in metropolises.

## **Purpose of study**

- Space-saving furniture designs are ubiquitous in our daily lives and workplaces. Effective space saving does not depend on down scaling, but on smart ways of collapsing a piece of furniture or making it more collapsible.
- Folding furniture serves various functions. These days the cost of living just seems to be increasing, making the need for space saving furniture even greater. A minimalistic approach is being adopted across the globe. This makes your stay comfortable even when guests visit.
- Designing a foldable chair for outdoor purpose and also it can be used in restaurants and office reception & colleges.(like waiting hall)

## **Research survey**

User study needs to be conducted in order to experience the user and its environment. This may help the designer to design an appropriate product which suits the environment. User study has been conducted around 5-7seating arrangements or chairs in order to find the user experience and various issues regarding chairs space occupied as well as some problems identified regarding ergonomically view. Observations from Market Study & User Survey.

- To understand the lifestyle, need and comfort
- Requirement of foldable as well as movable space saving seating arrangements
- Multipurpose, Modular, Flexible And Space -Saving
- Low Cost of product so used some waste material or recycle material.

**Detail of components**

- **Material selection details**

**Ply wood :-** Plywood is a material manufactured from thin layers or "plies" of wood veneer that are glued together with adjacent layers having their wood grain rotated up to 90 degrees to one another. It is an engineered wood from the family of manufactured boards which includes medium-density fiber board and



particle board.

**Joineries details**

**Box joint :-** A box joint, is a woodworking joint made by cutting a set of complementary, interlocking profiles in two pieces of wood, which are then joined at right angles, usually glued. The glued box joint has a high glued surface area resulting in a strong bond, on a similar principle to a finger joint



t.

**Hinge joint :-** A hinge is a mechanical bearing that connects two solid objects, typically allowing only a limited angle of rotation between them. In biology, many joints function as hinges like the elbow



joint.

**Software used**

- **Pct.**(Parametric Technology Corporation) **creo**

Creo is a family or suite of Computer-aided design (CAD) apps supporting product design for discrete manufacturers and is developed by PTC. The suite consists of apps, each delivering a distinct set of capabilities for a user role within product development. Creo Elements (formerly Pro/ENGINEER), PTC's parametric, integrated 3D CAD/CAM/CAE solution, is used by discrete manufacturers for mechanical engineering, design and manufacturing. Pro/ENGINEER was the industry's first rule-based constraint (sometimes called "parametric" or "vibrational") 3D CAD modeling system.

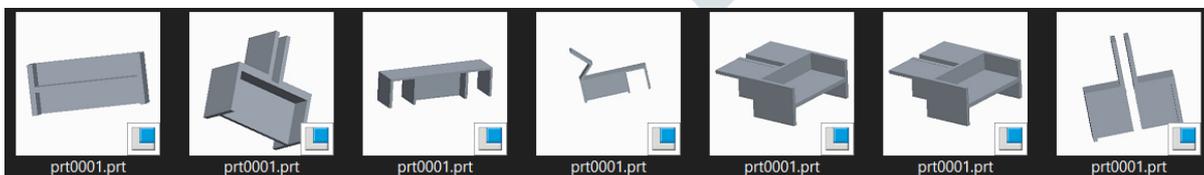


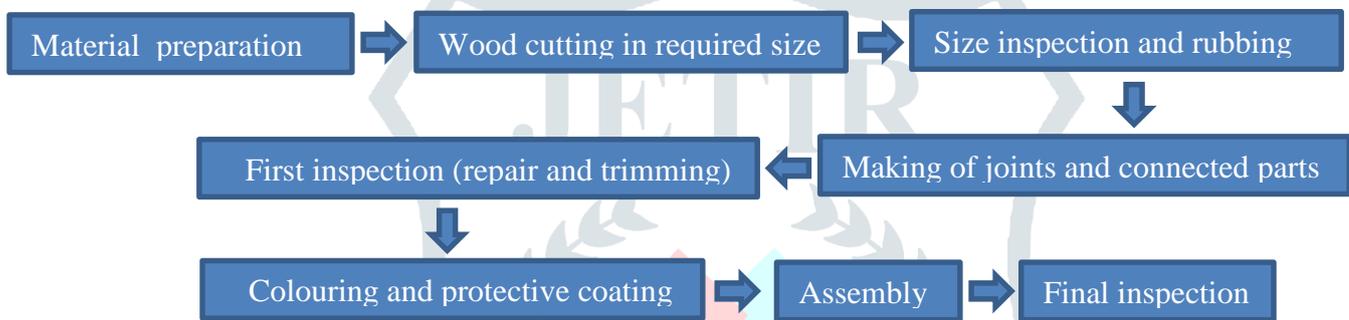
Figure 1: 3D Modelling in creo software

**3D Model & Rendered**



**Figure 2 : Process is shown use of furniture**

**Process used**



**Figure 3 : Final product**

**Result**

Space saving seating arrangements is an innovative product that has much opportunity for future development and a huge potential market in metro cities for small flats and homes. The designs of transformable or foldable space saving seating arrangements can be even more variables with

ergonomic & development with on which we focused for this paper. Such type of space saving seating arrangements can help to designers, architects & engineers to make more effective and efficient.

### **Conclusion**

This study has helped to develop the product designs skills. The product study, market study and the user study helped to understand the present modular dining table in the market and the main problems the users face during the product interaction with the user. Space saving seating arrangements is an innovative product that has much opportunity for future development and a huge potential market in metro cities for small flats and homes. The designs of transformable or foldable space saving seating arrangements.

### **References**

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