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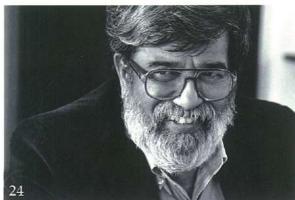
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# FURNITURE FROM WAS STE



Learning to create objects of beauty and functionality from scrap was an exercise undertaken by students of the M. Arch. (Environmental Architecture) Program at Rachana Sansad, Mumbai. Preparing scaled models and working with the material provided architects an opportunity to think laterally

TEXT & PHOTOS COURTESY: Roshni Udyavar Yehuda

Designing furniture from waste materials is not an unfamiliar concept. Many have laid their hands on it. Yet, it is still a style statement, far less a reality. What if furniture could be designed from waste generated from a furniture factory? Indeed, such a project was conceived and undertaken by the Rachana Sansad's Institute of Environmental Architecture, which conducts a two years Masters Program in Environmental Architecture, since 2006.

The Institute, which has a long-standing

collaboration with Godrej Interio on various design and research projects, took the initiative of conducting visits to the Godrej Interio factories in Shirval, Pune and Vikhroli. A whole range of waste products from particle boards to metal strips and packaging waste were identified and given to students as raw materials with which they were asked to design furniture. For Godrej Interio, it was an opportunity to close the loop and see what best could be designed from waste.



Over a period of three months, the project was undertaken as part of a curriculum subject, 'Sustainable Building Materials' by Prof. Tamar Akov, a visiting faculty at the Institute, who took the first semester Masters students of Environmental Architecture through a design exercise, which culminated in one furniture design from waste for every student.

Prof. Akov, an industrial designer specialising in sustainable design, has an MA in Industrial Design from Bezalel Academy of Art and Design in Jerusalem, Israel. Having taught Sustainable Design, Packaging and User Centered Design at various design colleges in Israel, she has worked as a designer in Tel Aviv, Atlanta and Washington DC. Her furniture pieces and designs have been featured and sold at galleries and exhibitions in Washington DC, New York, London, and Tel Aviv.

The design was based on a sustainable thinking process: identifying waste materials, their physical and visual properties and the potential they present. Through looking at specific users, identifying a need, and choosing a particular piece of furniture, the students were asked to developed an original design that required minimum manipulation and material – a "function follows (waste) material" action.

Modularity, self-assembly, versatility,



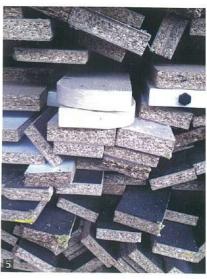


upcycling and other sustainable properties were encouraged.

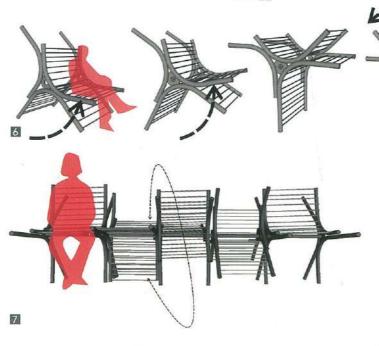
"We learnt not to scrap the 'scrap'. The exercise gave us an insight into the amount of waste 'created' during the process of furniture manufacturing, and challenged us to give the 'discarded material' a new life," says Ar. Sunanda Satwah. Another student, Ar. Ranjani Parasuraman observed "The process of learning was educative in terms of understanding a specific material in detail. The experience of designing with constraints was also fun."

"Inspiring and completely challenging our ability to design and thinking towards sustainability. The use of scrap in itself was a challenge, the joinery details and the workability, all in all a thorough design workshop that sensitised us to materials and its nature." said another student, Ar. Lakshmi Harikumar.





- Cylinder waste used for rolling metal sheets
- 2. Reject laminate sheets
- 3. Waste Cushions
- 4. Metal Pipes
- 5. Particle board waste



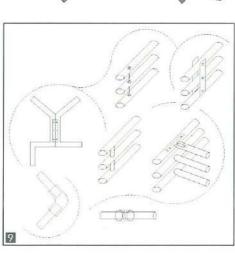
- **6-7.** Arrangement of irregularly sized stainless steel pipes to achieve the dynamic seating
- 8. Modules that could be re-arranged to form a shelf/a storage/a room divider
- 9. Joinery details
- **10.** Triangle legos from metal sheet waste used to form a writing table
- Triangle legos design process
- **12.** Multi-purpose furniture for children 2.5 to 6 years old
- 13. View of Kaleido's maquette (a coffee table)

# The Cartwheel Seating

Designed by Lakshmi Harikumar, this is a piece of outdoor furniture, a dynamic seating that would allow one to choose the side they want to face and sit. The idea was more of a 'form followed function'. The faulty handles were used with no further changes, a combination of these handles to create a furniture, sustainable and user friendly.

## Shelf

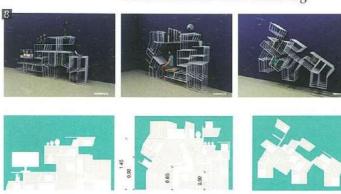
Kashmira Devlekar's 'Shelf' is designed using furniture manufacturing waste materials – metal pipes, cushions, particle board. The goal of designing this product was to create a module which can be multiplied and used as per individual's need. This module can be stacked one above the other and screwed or bolted together with desired combinations to make a unit .e.g.

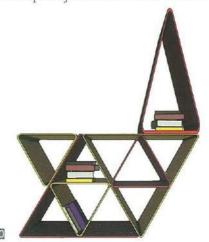


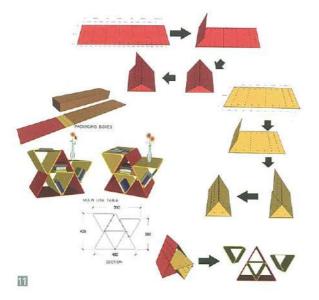
bookshelf with seating arrangement, TV unit, multi-storage unit, wall mounted bookshelf etc. It also acts as a room divider. Thus with its flexibility in use and eco-friendly sourcing, this piece of furniture is bound to appeal to young and green consumers.

#### **Triangle Legos**

Aliasgar Poonawala made the Triangle Legos, a piece of furniture made out of the metal sheet waste. The furniture is conceptualised through modules of triangles varying in size and colour. This arrangement can be used in multiple ways like a chair, table and partition as per user-preference. The triangles can be completely dismantled and the user



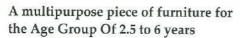








would be provided with a guideline to assemble it with various permutations and combinations. The modular nature, thus enables ease of assembling and transporting the furniture item.



This design by Ranjani Parasuraman aims to provide a multipurpose, adventurous, useful and attractive piece of furniture for kids in the age group of 2.5 to 6 years. The product is made out of a cylinder waste, which is a waste from Godrej furniture factory, used for rolling metal sheets along with the particle board waste (available in different colours). It serves the purpose of a tablechair, scribbling board and storage. It enables playfulness by allowing a child to climb on the particle boards arranged in the form of series of steps.

#### Nawazish Kirmani's design

The weak edge of particle board is sealed with resin which also binds multiple pieces of waste particle board to create the desired form. The base of the table is





Kaleleido Center
Table is the outcome of a process ariented a p p r o a c h.

The cut out waste of particle board from a

ne cul out waste of particle board from a reputed furmiture manufacturer in India is converted into a colourful collage like center table in a very basic and simple way.

The weak edge of particle board is enclosed by Real which also binds multiple pieces of various sizes together to form the lop surface while the base is done through simple steel pipe bending process.



made by pipe bending which is low on cost and energy consumption.

Roshni Udyavar Yehuda is the Head of Rachna Sansad's Institute of Environmental Architecture.

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