

HIGH QUALITY WOOD...

HIGHER QUALITY

DESIGN!

**OPTIMIZED WITH EXACT
MEASUREMENTS FOR THE
UTMOST IN**

• **STABILITY**

• **MANUEVERABILITY**

• **COMFORT**

Tulane



University

The Miracle Station was
designed and constructed
by the good people from
Team

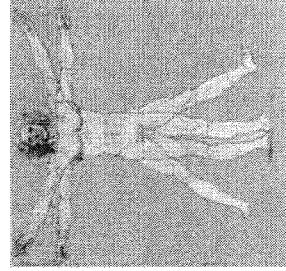


TRIPLE CROWN

Jenae Guinn Adam Herder Brett Weiner



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Team Design Show

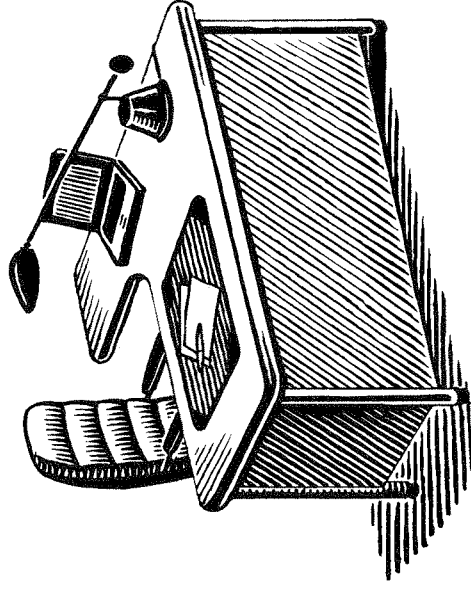
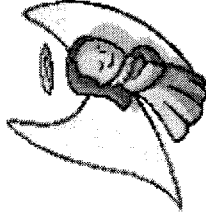
Saturday February 24, 2007

Department of Biomedical Engineering

More than a desk...
More than a workstation...

It's the

MIRACLE STATION



WHAT IS IT?

The Miracle Station is a custom desk for our client who uses a wheelchair. The Miracle Station will allow our client to work from home and optimize space in his house by granting easy access to files, computer, and a fax machine as though he were in an office.

The Miracle Station includes:

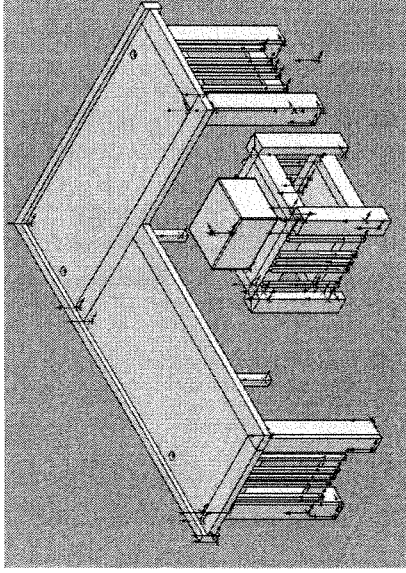
DESK WITH DIMENSIONS

28 inches from the floor
24 inches deep
L-shaped design 75.5" and 51.5" long

CPU STAND WITH DIMENSIONS:

18 inches in height (excluding casters)
Top and Bottom Shelf 16" x 17.25"

All dimensions precisely optimized for our client and his home.



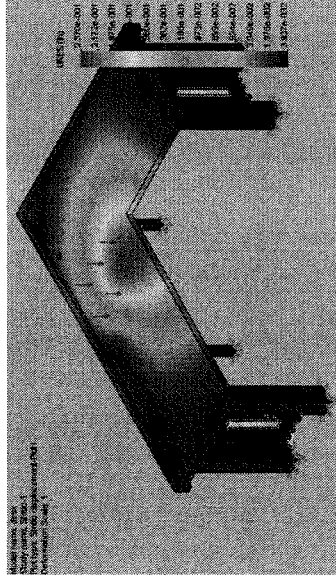
CUSTOMIZABLE FEATURES

- Adjustable and Moveable Computer Tower
- Pencil "Splash" Guard
- Mission Style Design
- Colonial Stain
- Appalachian White Oak
- Pre-Drilled for Easy Electrical Outlet and Internet Jack Access

SAFETY FEATURES

Along with our client's aesthetic wishes, his safety was taken into consideration at several steps of the design process by modeling the workstation in SolidWorks using the COSMOSWorks add-in:

- The sturdiness of the working surface was analyzed in a static analysis by simulating a 200-pound person standing on top of the desk at the weakest point. Red indicates point of highest deflection (0.24 in)



- The durability of the supporting legs was analyzed in a buckling analysis to ensure an adequate foundation.

A factor of safety of 5 was introduced by experimentally determining the modulus of elasticity for the birch plywood and then using a number one-fifth of that value.