

July 6, 2009

IDEA Center and Institute

Dear JT,

It was nice to meet with the IDEA group, Thursday, 7/2 – thank you for including me.

Since our meeting I have read the IDEA Center concept written by Gary Wnek. The scope of the center, described by Gary, is much broader then discussed at the meeting. (my thoughts are at the end of this document)

Per your request I have created a 'basic' list of tooling, equipment, and accessories to get the center started, along with facility issues to be addressed.

| Item # | Description | Qty | Approx. Each | Approx. Total |
|---------------|--------------------------------|------------|---------------------|----------------------|
| 1 | Vertical Mill | 1 | \$10,000.00 | \$10,000.00 |
| 2 | Vertical Mill Accessories | 1 | \$3,000.00 | \$3,000.00 |
| 3 | Toolroom Lathe 13x40 | 1 | \$9,000.00 | \$9,000.00 |
| 4 | Toolroom Lathe Accessories | 1 | \$2,000.00 | \$2,000.00 |
| 5 | Drill Press 20" | 1 | \$2,500.00 | \$2,500.00 |
| 6 | Contour Bandsaw 20" | 1 | \$6,000.00 | \$6,000.00 |
| 7 | Vertical Bandsaw | 1 | \$2,000.00 | \$2,000.00 |
| 8 | Surface Grinder | 1 | \$7,000.00 | \$7,000.00 |
| 9 | Pedestal Grinder | 2 | \$200.00 | \$400.00 |
| 10 | Disc Sander | 1 | \$500.00 | \$500.00 |
| 11 | Belt Sander | 1 | \$500.00 | \$500.00 |
| 12 | MIG Welder | 1 | \$2,000.00 | \$2,000.00 |
| 13 | TIG Welder | 1 | \$2,000.00 | \$2,000.00 |
| 14 | Welding Equip and Accessories | 1 | \$1,000.00 | \$1,000.00 |
| 15 | Welding Table 5'x5' | 1 | \$3,000.00 | \$3,000.00 |
| 16 | General Hand and Meas. Tools | 1 | \$4,000.00 | \$4,000.00 |
| 17 | General Shop Supp Accessories | 1 | \$5,000.00 | \$5,000.00 |
| 18 | Fire Proof Cabinet 3'x6' | 2 | \$1,000.00 | \$2,000.00 |
| 19 | Sheet Metal Shear 52' | 1 | \$2,000.00 | \$2,000.00 |
| 20 | Sheet Metal Brake 52' | 1 | \$1,500.00 | \$1,500.00 |
| 21 | Work Bench Tables 5'x5' | 6 | \$500.00 | \$3,000.00 |
| 22 | Bench Vises for Wood and Metal | 12 | \$150.00 | \$1,800.00 |
| 23 | 8'x9' Project Cages with Door | 8 | \$2,000.00 | \$16,000.00 |
| 24 | Safety Equipment | 1 | \$750.00 | \$750.00 |

\$86,950.00

Please note - Item 23, Project Cages for:

- BSAE (Baja)
- FSAE (Formula)
- DBF (Design, Build, and Fly)
- CSE (EE, BME, Civ-E, etc)
- CIA Ind Design
- Industrial/ Research Partners
- High School Pre-Engineering Programs

The cages are to hold basic tools and accessories. General tooling and accessories will be available within the IDEA facility, but each group will be responsible for their own particular/special items, etc. The group will be responsible for the costs associated with 'tooling their cage'.

Facility Costs

- Resurface floor.
- Lighting
- Entrance to IDEA Center.
- Clearing out existing equipment.
- Ventilation for painting, welding, and composites.
- 3-phase wiring
- Compressed air lines

My Thoughts

The entire concept of the IDEA Center is /or can be very complex and quite involved.

Where and how do you start?

I would like to create a team.

Phase I

Sign on a recent ME graduate of CWRU. Pay for his Master's degree, pay him a stipend to work with me/us on the IDEA project. After he graduates with the MS, hire him/her full-time as the CSE Mech Engr/designer to oversee project designs. (assuming this person works out) Also, during his/her MS tenure, this person's job description will be created and fine-tuned.

Phase II (in conjunction with Phase I)

Create a management team through Gary Wnek and the Weatherhead students. Use the IDEA project as a real world – in the moment case study. The team, working with us, (me, JT, Gary, Clare, Jeremy, Larry Sears, etc) will develop the mission statement, protocols for access, determine funding requirements and sources, establish contacts with outside individuals/parties interested in using the facility.

Phase III

After Phase I and II are in place, hire a toolmaker/journeyman machinist. (and someone with a desire to teach)

This person could possibly be interested in pursuing his ME degree and/or have children interested in the CWRU tuition break. This person will assist in setting up the equipment and assisting me with the training, education, and safety requirements for the IDEA Center. Also, this person needs to have flexible hours to give student access outside of their class times. (after 5:00 and Saturday)

Phase IV

The entire project team will work together to develop the job description for a 'Director' position or decide, possibly, this position is not needed. I believe the IDEA structure should be 'flat'. Everyone's input for the project is needed to be effective. (check your ego at the door) Maybe the Director position should be 'Business Manager'??

The team described will be the synergy to get the project started in the right direction. I see this project as a living organism and the initial direction taken will mature and grow as we all collectively find the answers to the question: "Where and how do you start?"

- Jim Drake