Annex 7 - Engineering Design Notebook

What is a design notebook?

A design notebook is a way for an engineering team (or an individual designer or engineer) to maintain a history the project from start to finish. It is a place to record research, observations, ideas, drawings, comments, and questions during the design process. At the end of the project, someone reviewing the design notebook should be able to understand fully how the team got to its solution.

An engineer’s notebook is a book in which an engineer will formally document, in chronological order, all of his or her work that is associated with a specific design project.

What goes in a design notebook?

Your design notebook starts when you begin thinking about possible problems to solve. Write down everything you know about these problems and why you want to solve them. Then write down, draw, sketch, glue, or tape in every step of your process between this first step and your final solution. Here are examples of what you might find in a design notebook:

- Notes on background research
- Interviews with users or experts
- Photos of competing products
- Lists of design requirements
- Questions/issues you face
- Written ideas
- Sketches (preferably annotated)
- Work session summaries
- Research findings
- Collected data
- Rationale for design modifications

We will provide each team with an Engineering Design Notebook at the beginning of the project.

Standard Page Layout

- Bound quadrille-lined (grid) pages
- Individually labeled page #
- The date that each entry was made is clearly indicated.
- Mistakes are crossed off, initialed, with correction placed nearby. Never erase or remove anything
- All figures and calculations are clearly labeled.
- Inserted items are permanently attached (glue is preferred). Loose leaf items do not belong in the notebook.
- Location for designer's signature and date
• Locations for identifying contents as continued from and to another page
• Statement of the proprietary nature of the notebook

See example below:

5/13. I came up with a way to use the wheel and axle in my design. A weight falls into the bucket and causes the axle to spin. The wheel (what looks like a hand crank in this case) is attached to the axle and would also spin. Lifting something and transferring its energy to the next part of the system may be able to figure out how to use it in my system.

My instructor let me borrow a book to help me get some ideas for my system. I found a great idea for a screw and wedge mechanism on page 12.


5/18. It’s Sunday, and I came in at 10:00 AM to work on the project. I spent the morning modifying the wheel and axle design because I think it is going to cause too much friction between the side walls and the bracket that will hold it in place. I also went to the technology lab and found some diameter aluminum bar stock to make my wheel and axle.

2nd idea: modified wheel and axle to address potential friction issue

smaller inner ring
keeps ring from binding

less friction

3rd idea: modified wheel and axle to address potential friction issue

less friction on both sides

PROPRIETARY INFORMATION

RECEIVED TO AND DISCLOSED BY

DATE

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