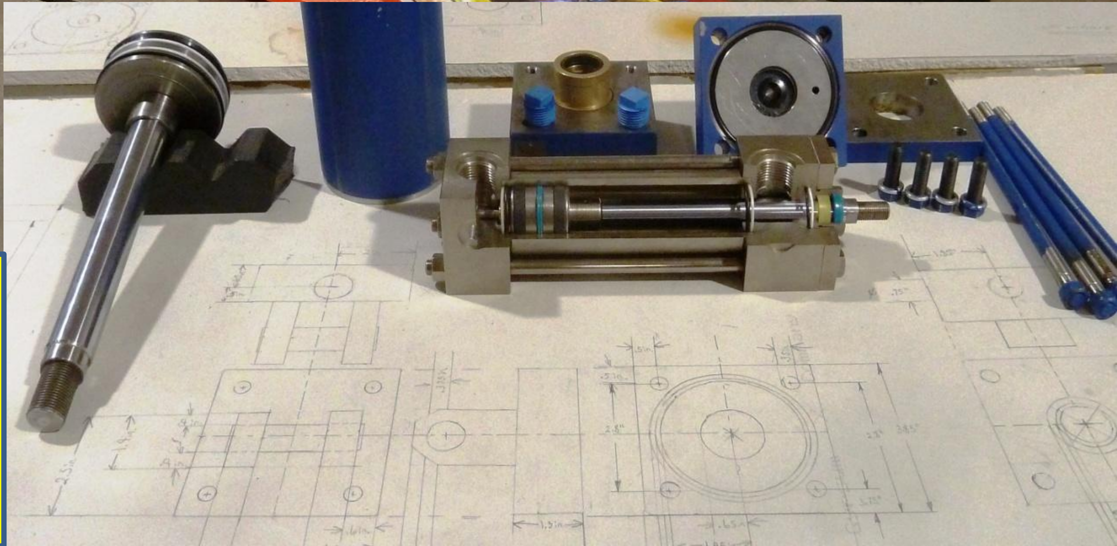
News from Manufacturing Workshop



While students disassemble and design the parts of a hydraulic cylinder they ask questions and find/get answers. The next step is design in AutoCAD.

Project hydraulic cylinder, what's in it, what can we learn from?
Questions and answers during a student brain storming session:

What for do we need hydraulic cylinders? How are the cylinder tube, piston, rod and the other parts manufactured? Beginning with the material: where is the material, metal, steel coming from? How is the raw material made for the cylinder tube and all the other parts? What machines are used to make/machine the parts? How can we make such a super fine surface at the cylinder inside and at the rod outside diameter? Why is at the cylinder and rod so a superfine surface necessary? How can we measure the surface roughness/finishing? How do we specify/mention all this super fine information in a drawing/blueprint? What measurement tools are used to measure all this different geometries and sizes? Why is there a bearing/bushing made out of brass or bronze? Why are used parts made from rubber and plastic? How do we use physics in a hydraulic cylinder? What oil pressure is used for hydraulic cylinders? What creates the oil pressure in a hydraulic cylinder? How is the oil pressure measured? How is the cylinder size and force calculated? How does the cylinder diameter affect the force of a hydraulic cylinder? How are the piston and rod manufactured? Why is the rod surface so fine and how is it made? Why are spring rings used?

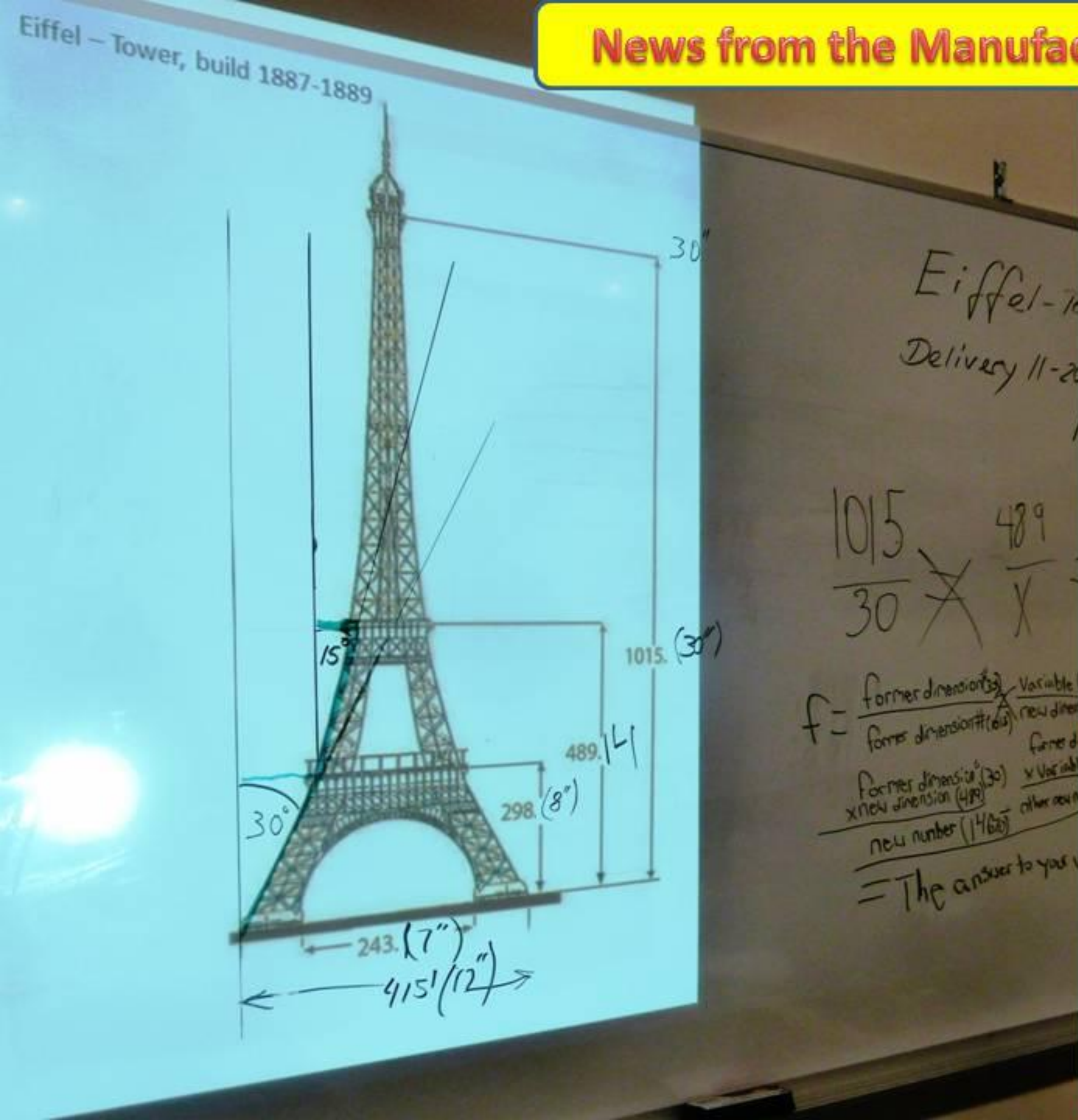
Measurements with caliper and micrometer where used to make the drawing/blueprint.

Students are helping each other and working as a team.


EHS


Cutting

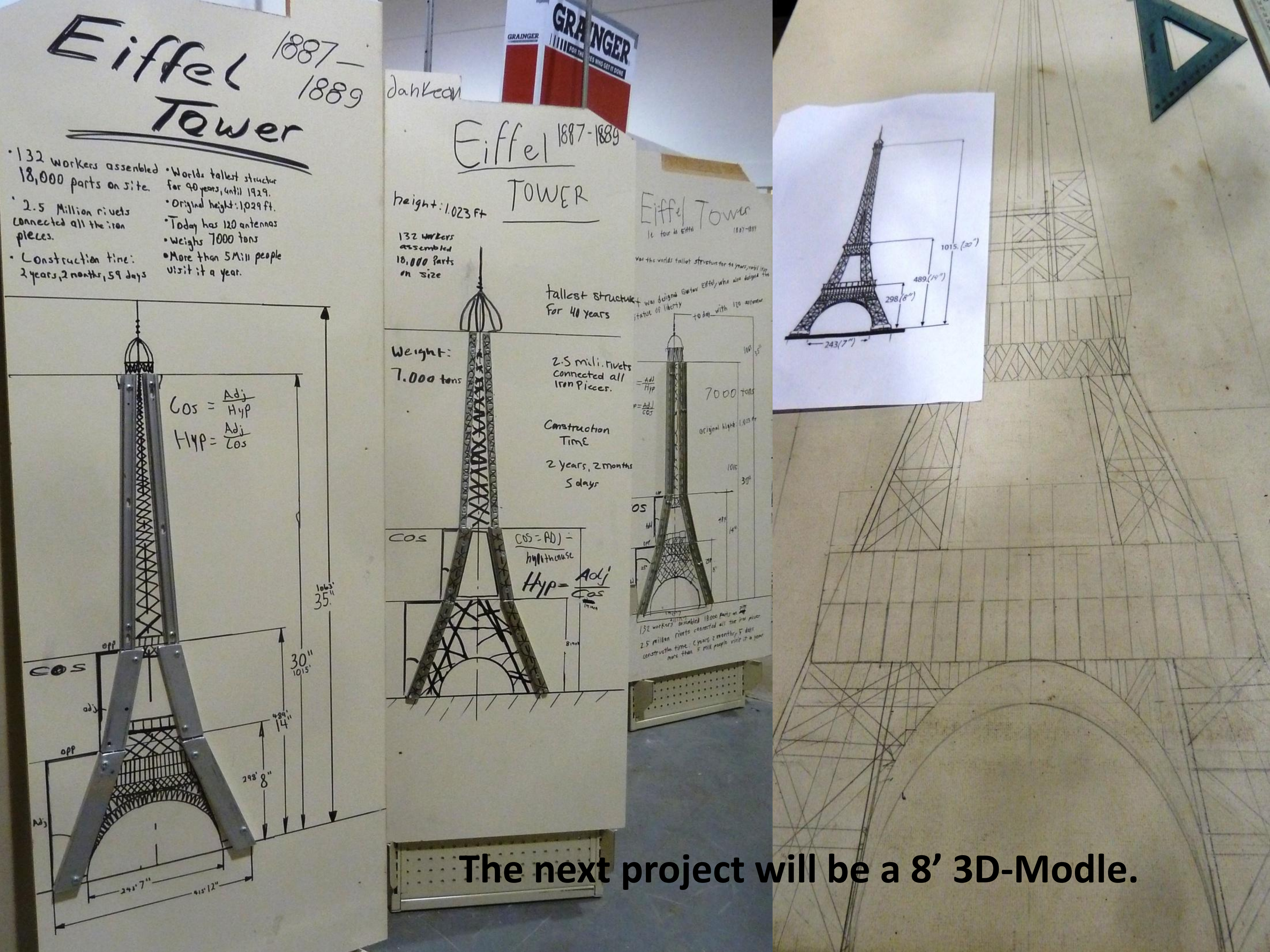
News from the Manufacturing Workshop



Eiffel-Tower-Project:

The students have to apply calculations to a reduced scale and sinus, cosines and tangent to manufacture the parts for their small Eiffel-Tower.

The next step is to design the project in AutoCAD.



The next project will be a 8’ 3D-Modle.