

Tom Bodett, Woodworker
HatchSpace Community Woodshop and School
Brattleboro, Vermont

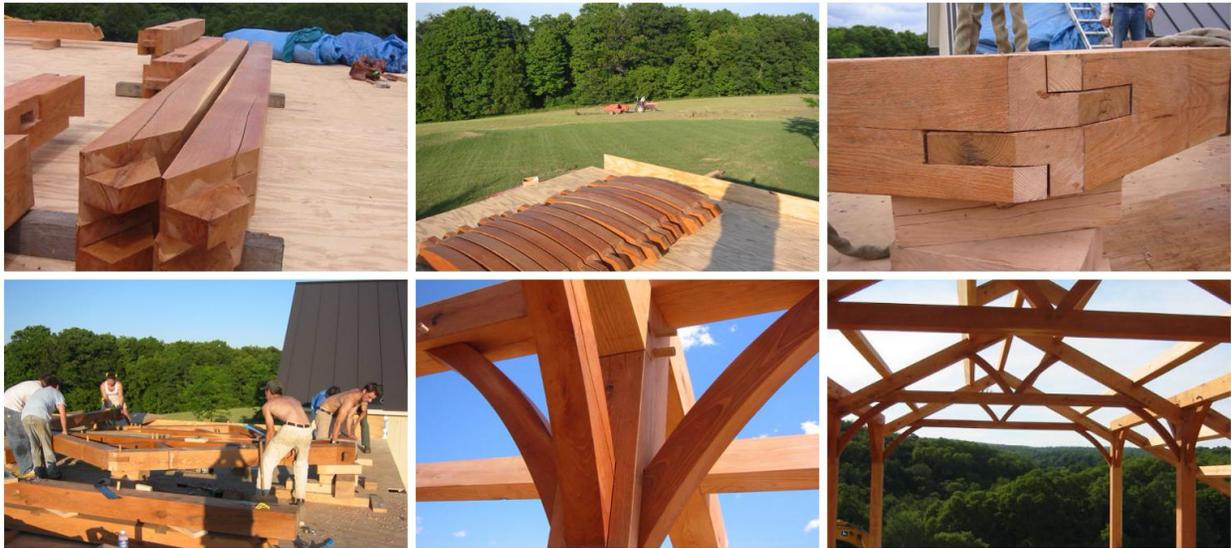


Why Wood?

-Locally Sourced and Sustainable

-Durable

-Beautiful



Expressive artistic medium



Good roommate

Comforting to the eye and pleasing to the touch

Infinitely variable

Easy to learn and difficult to master

Absorbing and rewarding

The Bodett problem

- Hand Tools to Tool Paths

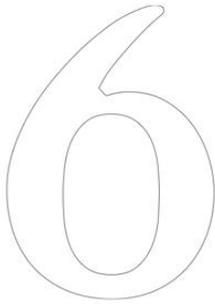


The best tool for the job is the one you know how to use.

I love using tools and I have always resisted turning my work over to a robot which then does the fun part while I stand and watch.

When time is not the driving factor, CNC machining does not have a lot to offer a craftsman.

When Time Is a Factor



When the machine is done, we are not

Getting from THAT



To THIS

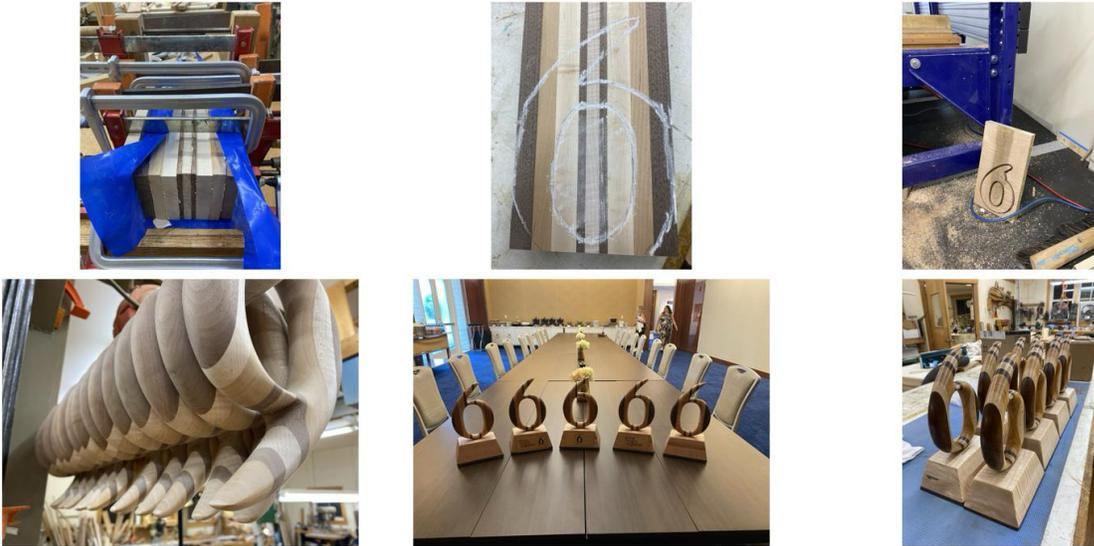


Tony will now tell you what goes into the machining process that produces pieces like you see in the left-hand photo. When I come back we'll talk about what comes after that.

You are in the tool path



Woodworking skills come into play throughout the process



A CNC is a tool like any other.

It turns out the CNC does not do all the fun parts while I stand and watch. It does the boring parts. The fun parts are what's left.

Of course a CNC machine is also a computer and like any computer it will do whatever you tell it to, even if you didn't meant it.

As Tony is explaining, you can program a machine to understand and cut plastics, metal, stone and really anything that has stable characteristics and predictable reactions to various forces.

You can kind of program it to understand wood too, but first you have to understand it yourself.

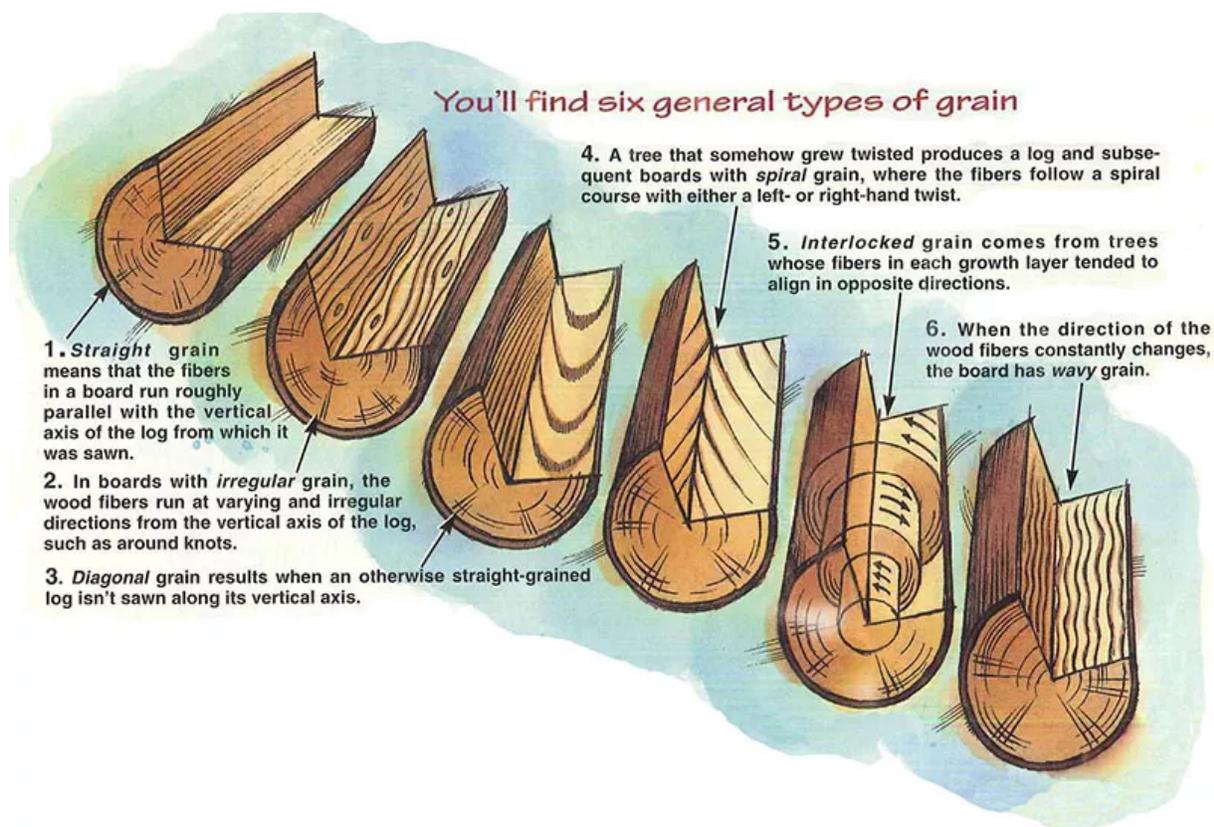


Like all of us. Wood is a product of genetics and upbringing.

Think of it as a stack of straws or dried noodles.

There is a link to a [video in the chat] where I give a demonstration to help understand this

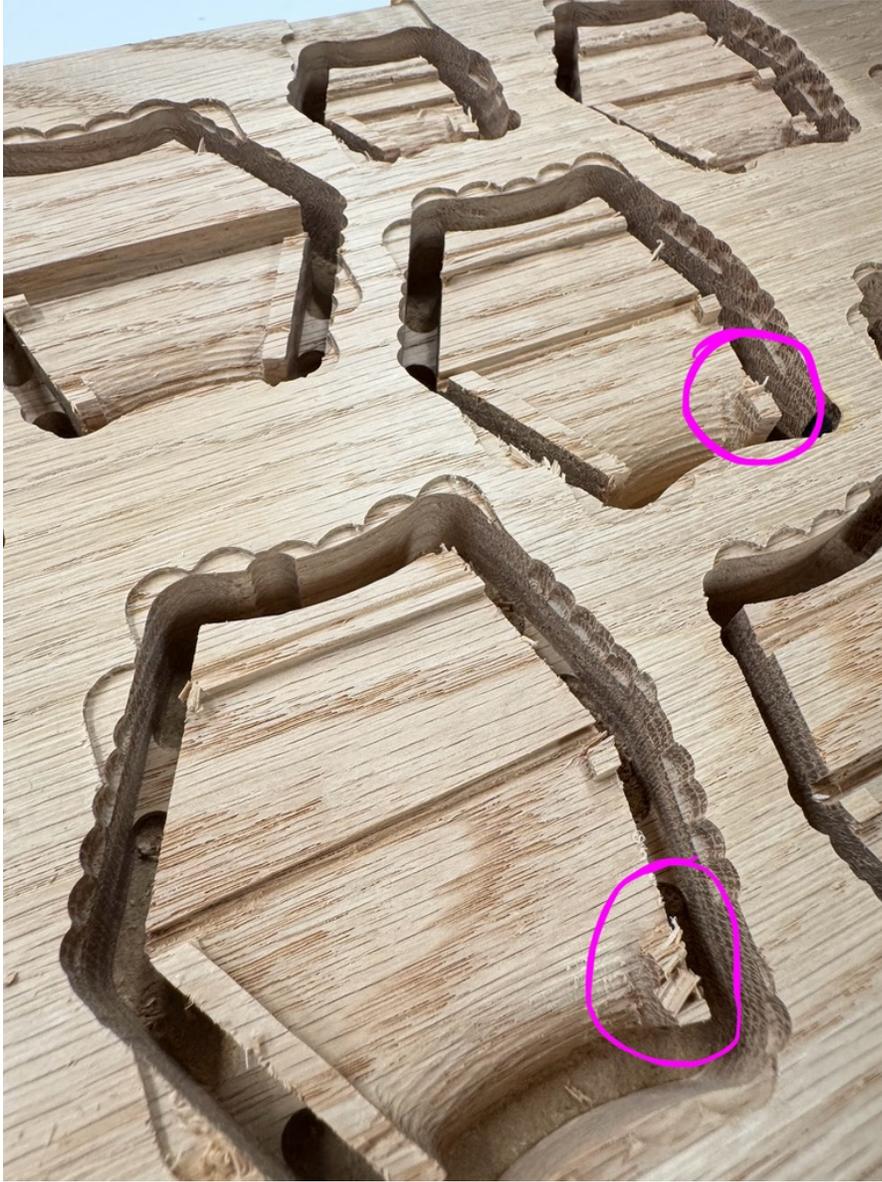
Grain is how wood talks to you

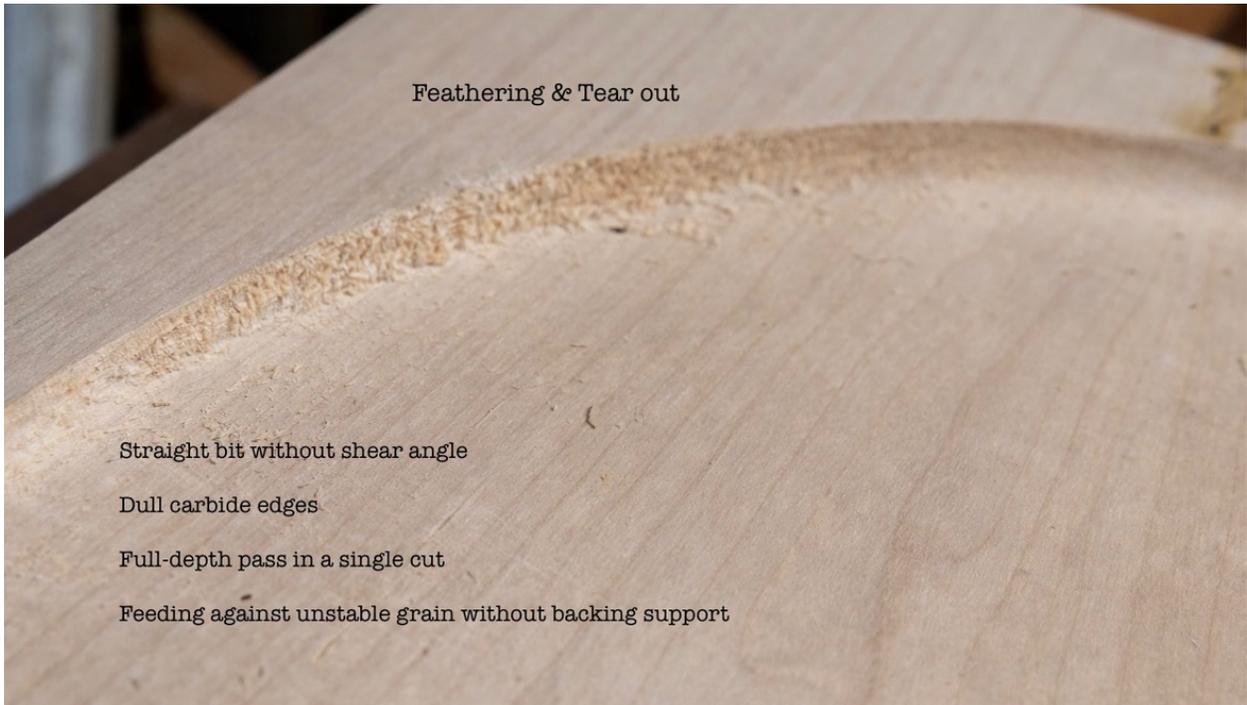


Clever Furniture Designs for the CNC have been around for awhile

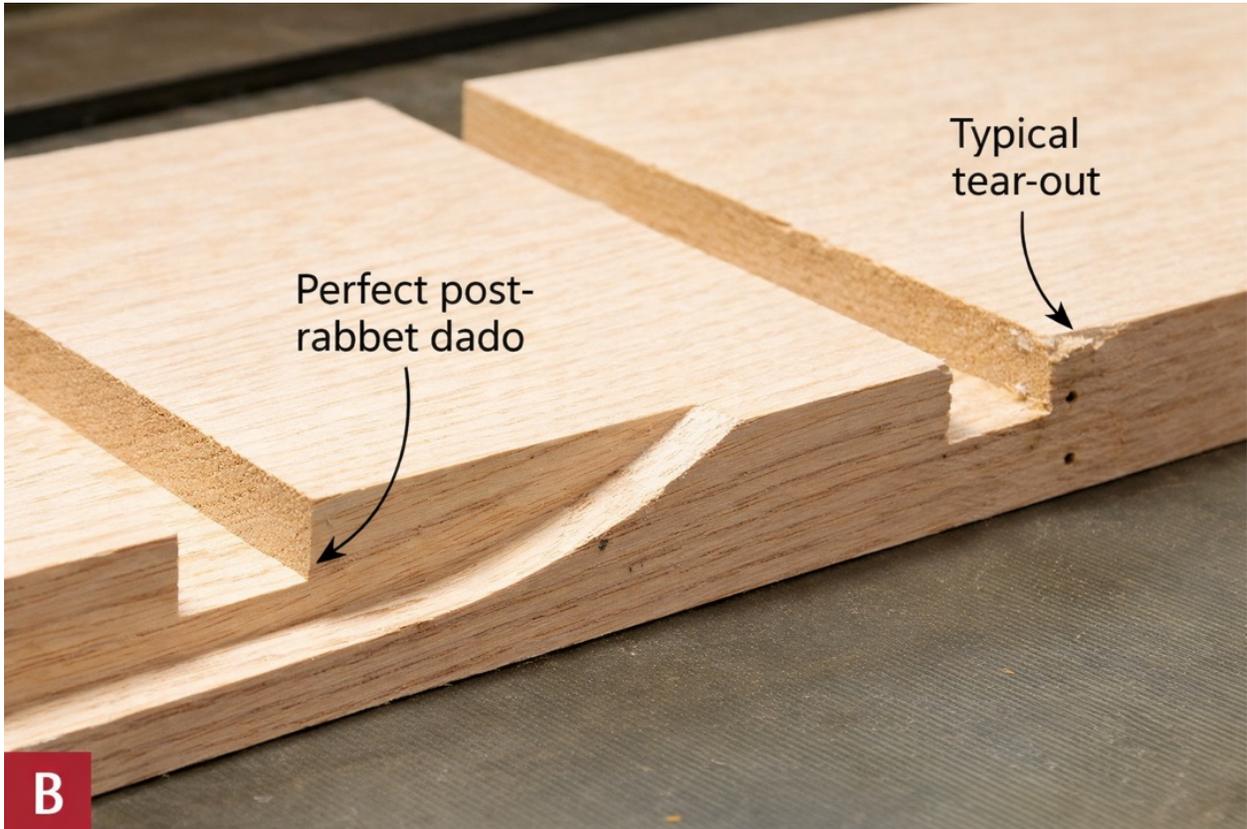


Wood is not Plug and Play

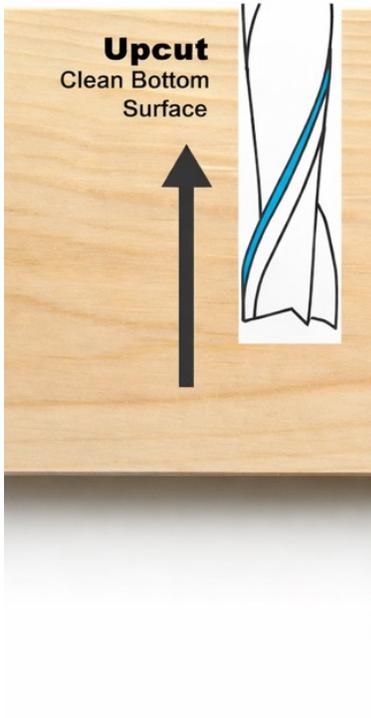




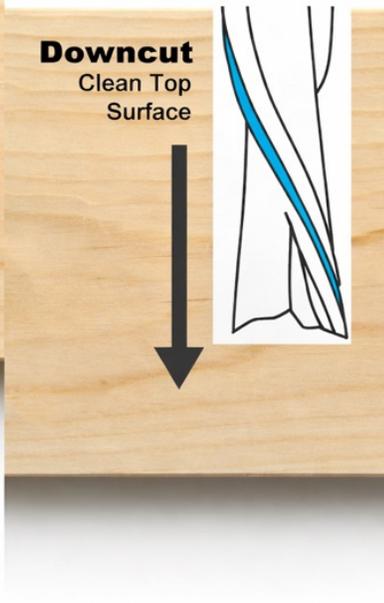




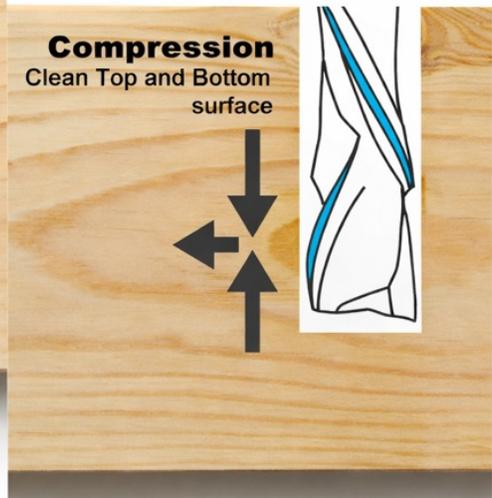
UP-CUT



DOWN-CUT



COMPRESSION



Wood catches on fire a lot too.



What we cover in the video:

MATERIALS:

What is closest to you and easiest to get?

Plywood

MDF

Softwoods

Hardwoods

Exotics

GRAIN DIRECTION

TOOLS.

Planes

Chisels

Sanding Blocks

Cabinet Scrapers

When the machine is done the fun begins

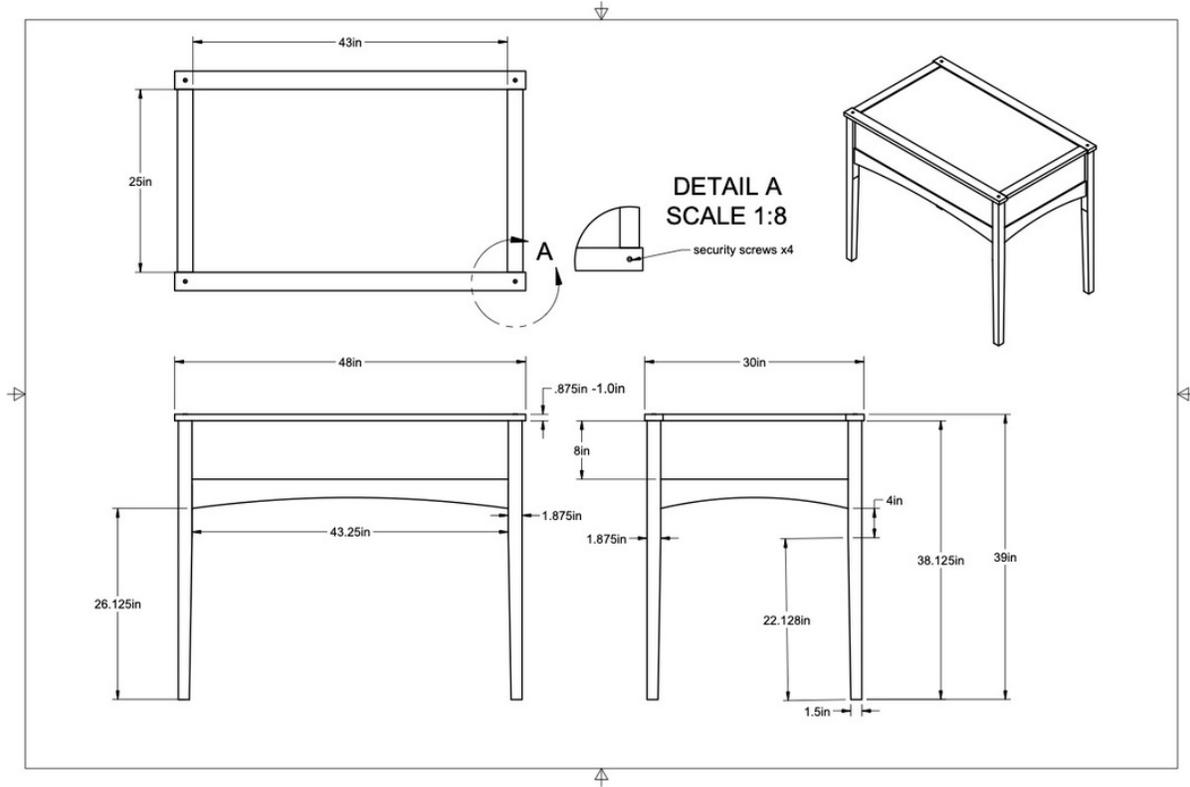


Tony will now provide an overview of the CNC and CAM topic.

When I come back we'll talk about joinery and fastenings.

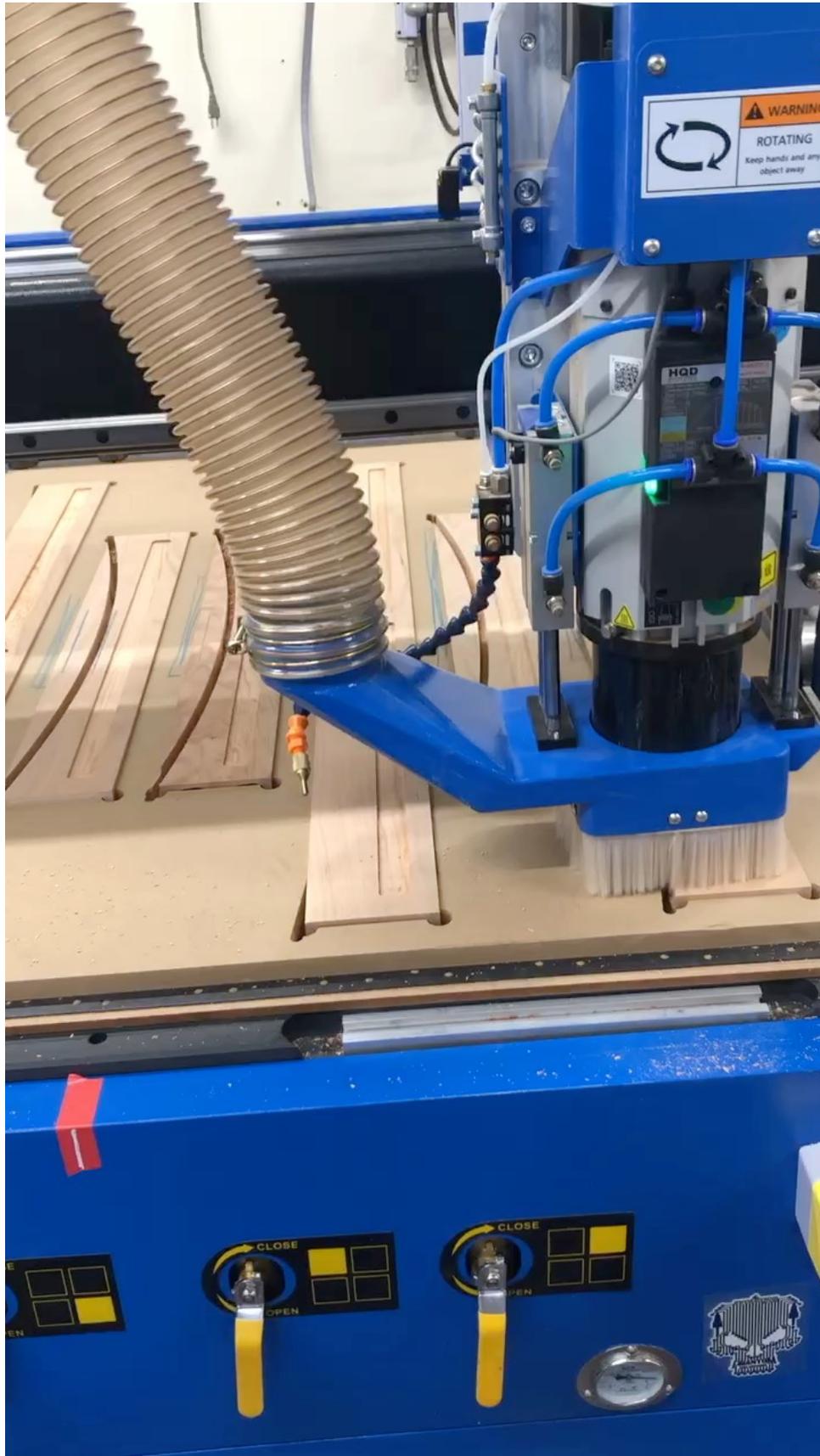
PUTTING IT ALL TOGETHER

HatchSpace's CAM Project



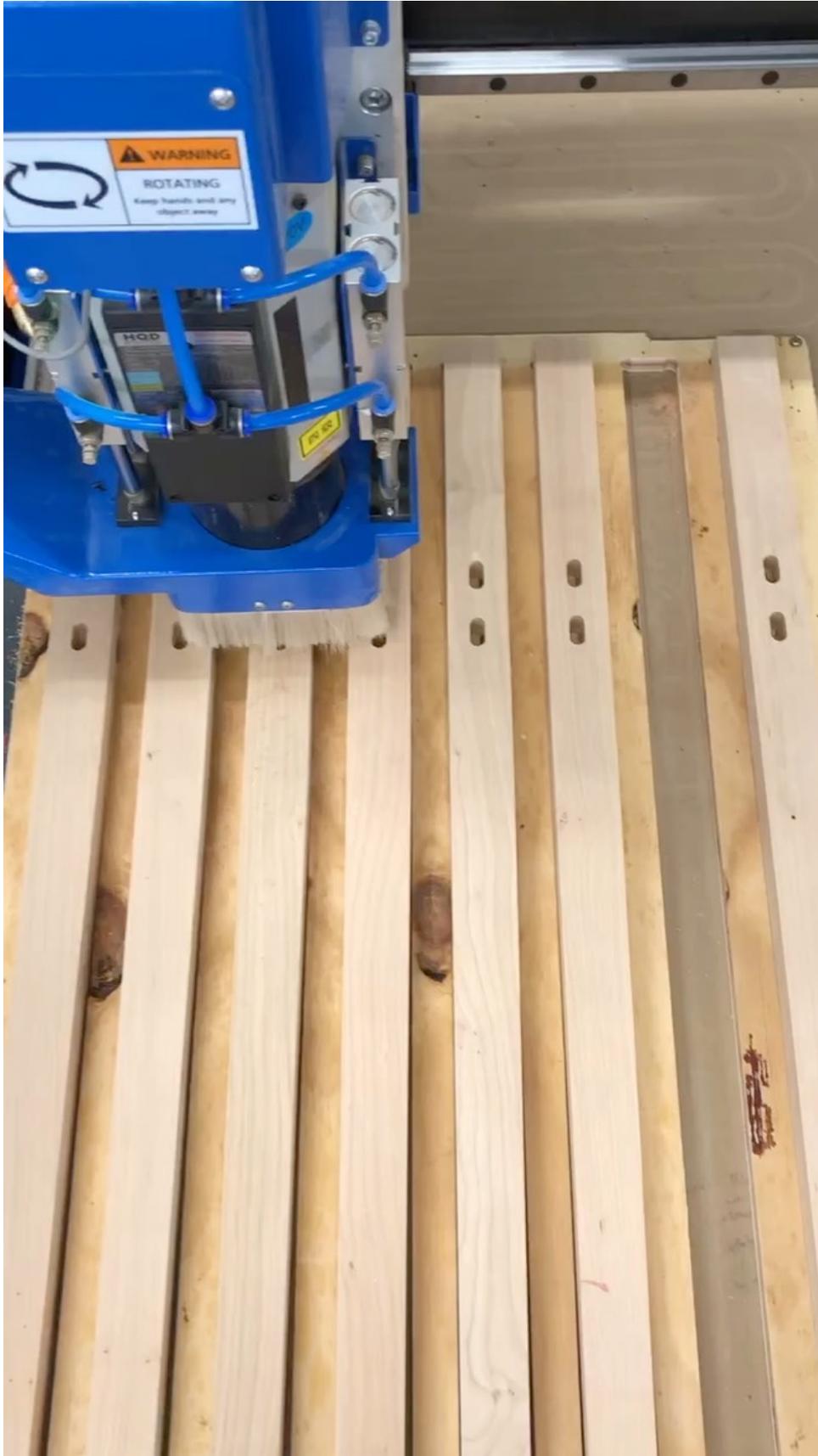


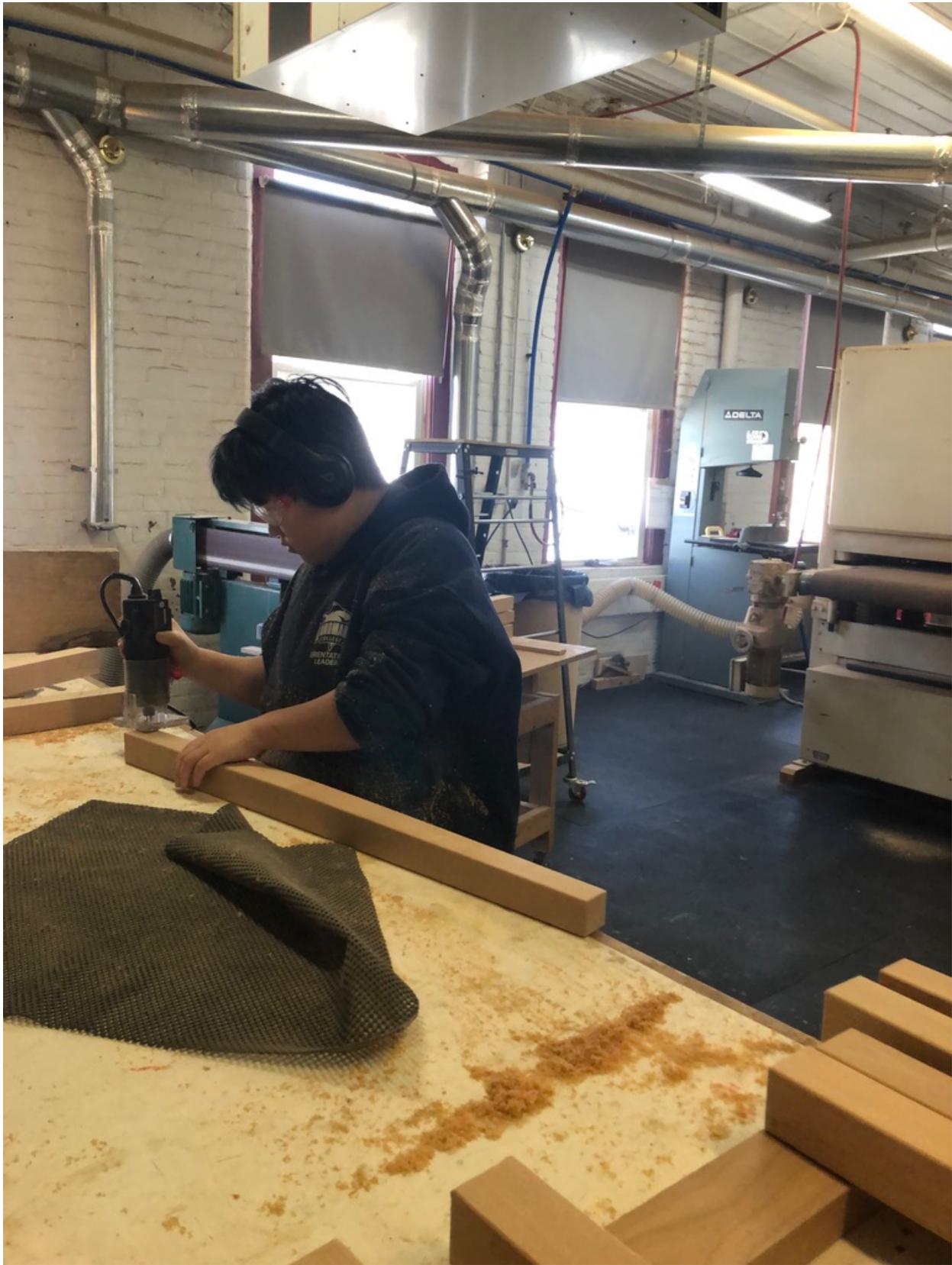
















JOINTS

Mortise and Tenon



Doweling



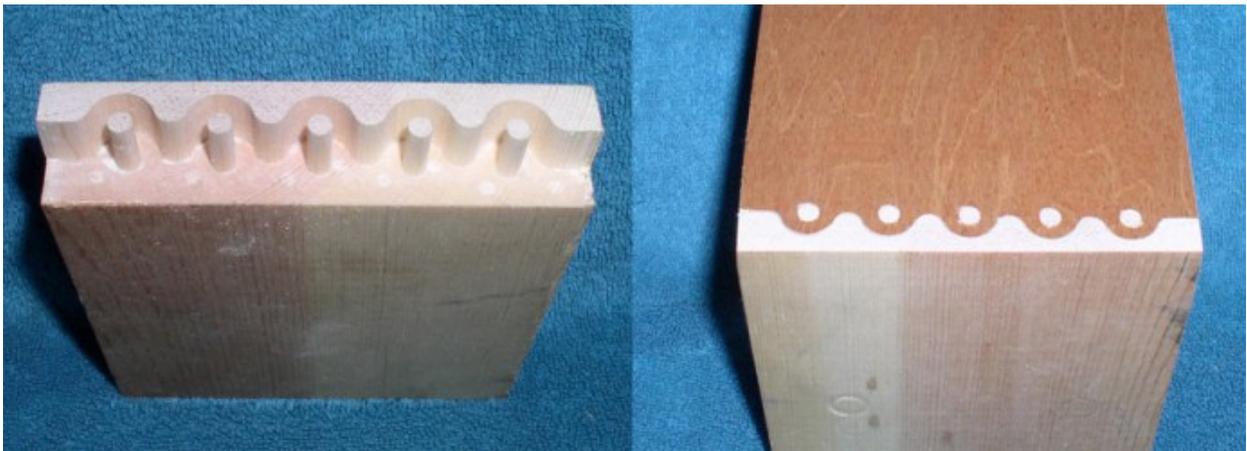
Floating or Loose Tenons



Dovetail



Knapp Joint



[Japanese Joinery](https://www.designboom.com/technology/free-interactive-software-easily-complex-japanese-wooden-joints-furniture-04-13-2021/) -- <https://www.designboom.com/technology/free-interactive-software-easily-complex-japanese-wooden-joints-furniture-04-13-2021/>

FASTENINGS

Glue





PVA- Polyvinyl Acetate



Epoxy – Resin mixed with Hardener. Polymerize or Cure.
Best for gap filling.

Screws

Self tapping

BoltWorld
lets bring things together.....



Classic



Structural and Cabinet Screws



Knockdown Bolt and Plug



Once your project is put together, Put your hands on it and decide how and where to leave a little piece of your heart.

Tony will summarize selection of speeds and feeds and workholding methods.