

Skeleton Beneath the Skin;

The Bones of Barns and Farmhouses

JT Wunderlich PhD



1877 Wunderlich Pennsylvania farmhouse and barn



- 1877 Pennsylvania farmhouse and barn
 - Built in 1877 (*when Frank Lloyd Wright was 10 years old*)



Post & Beam Mortise & Tenon



1877 Wunderlich Pennsylvania farmhouse and barn (Post & Beam, Mortise & Tenon construction)





















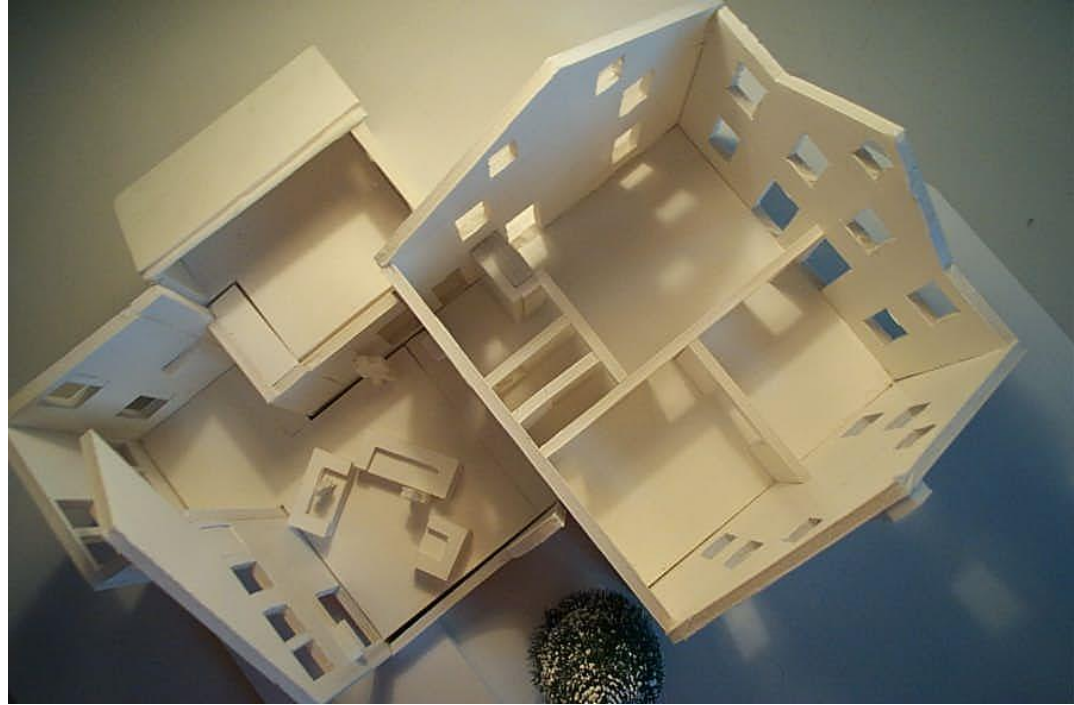


1877 Wunderlich Pennsylvania **farmhouse** and barn (Post & Beam, Mortise & Tenon construction)



selected design

DESIGN CHOICE 3

































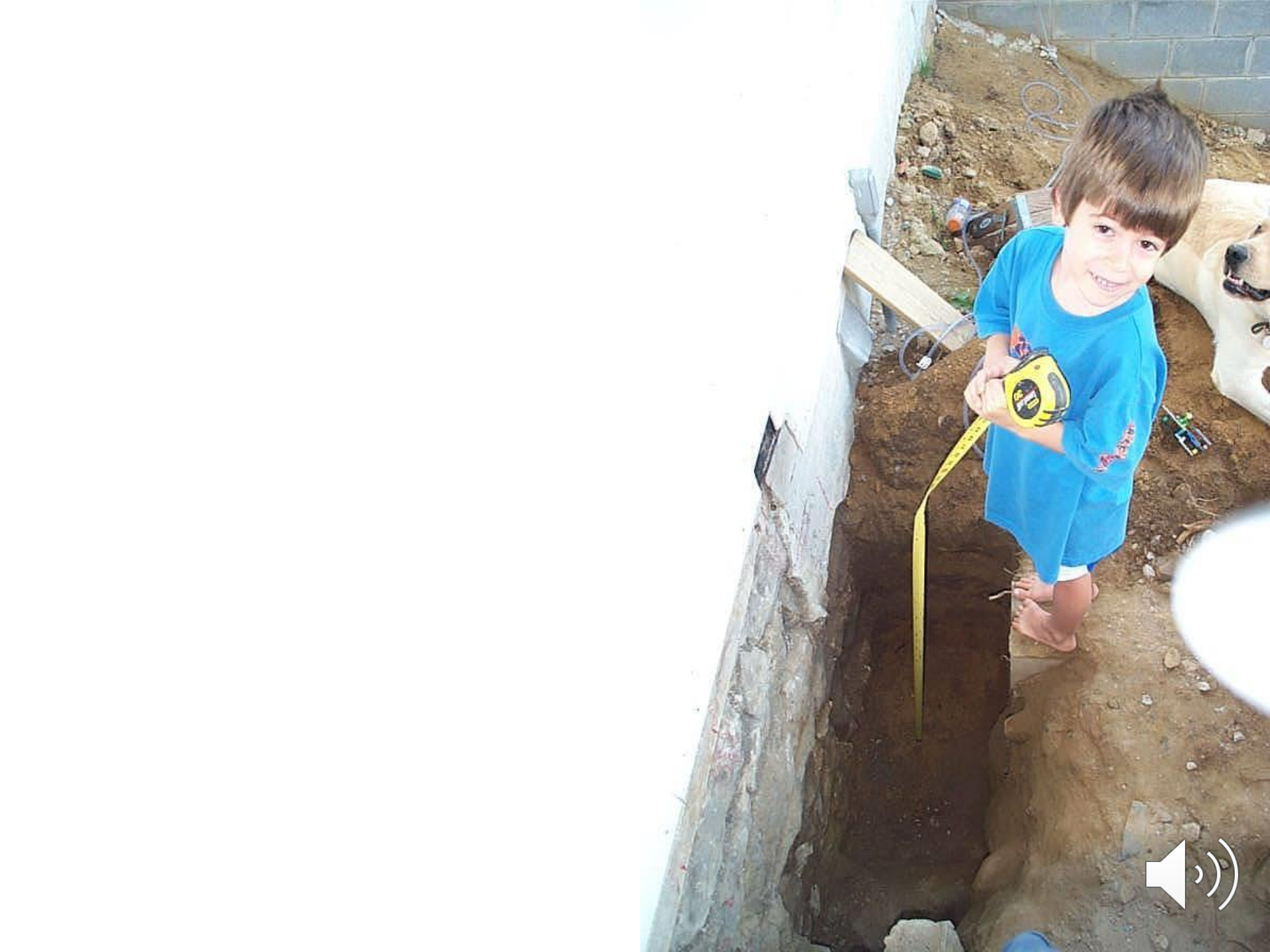
















Pennsylvania farmhouse and barn

1877 Post & Beam, Mortise & Tenon



Pennsylvania farmhouse and barn

1877 Post & Beam, Mortise & Tenon



















JOSEPH







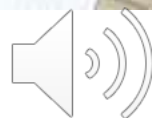
























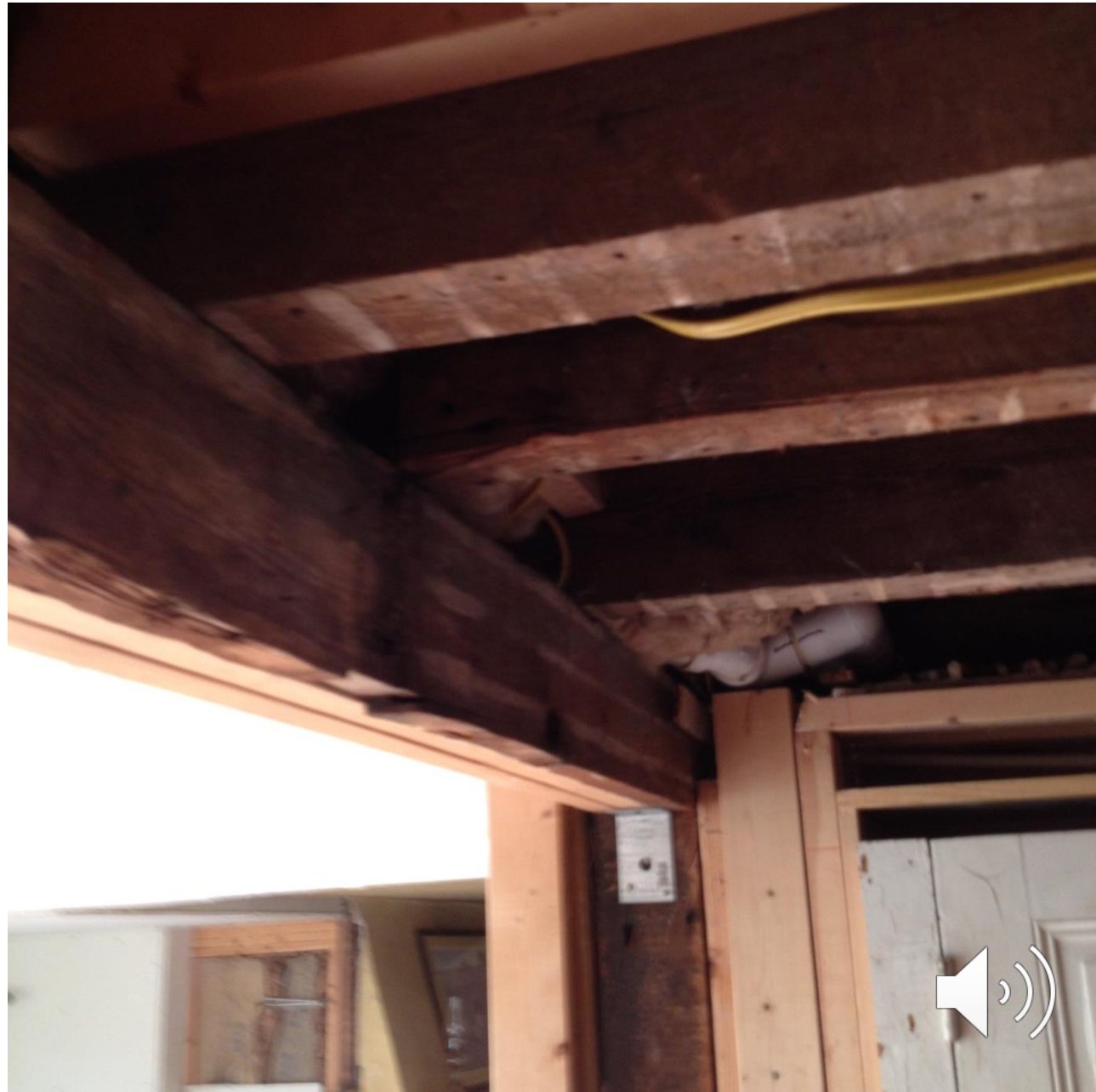


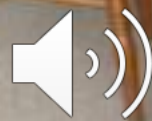




Pennsylvania farmhouse and barn

1877 Post & Beam, Mortise & Tenon, then 21st Century Wunderlich “2x4” “Stick-Built” renovation

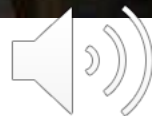














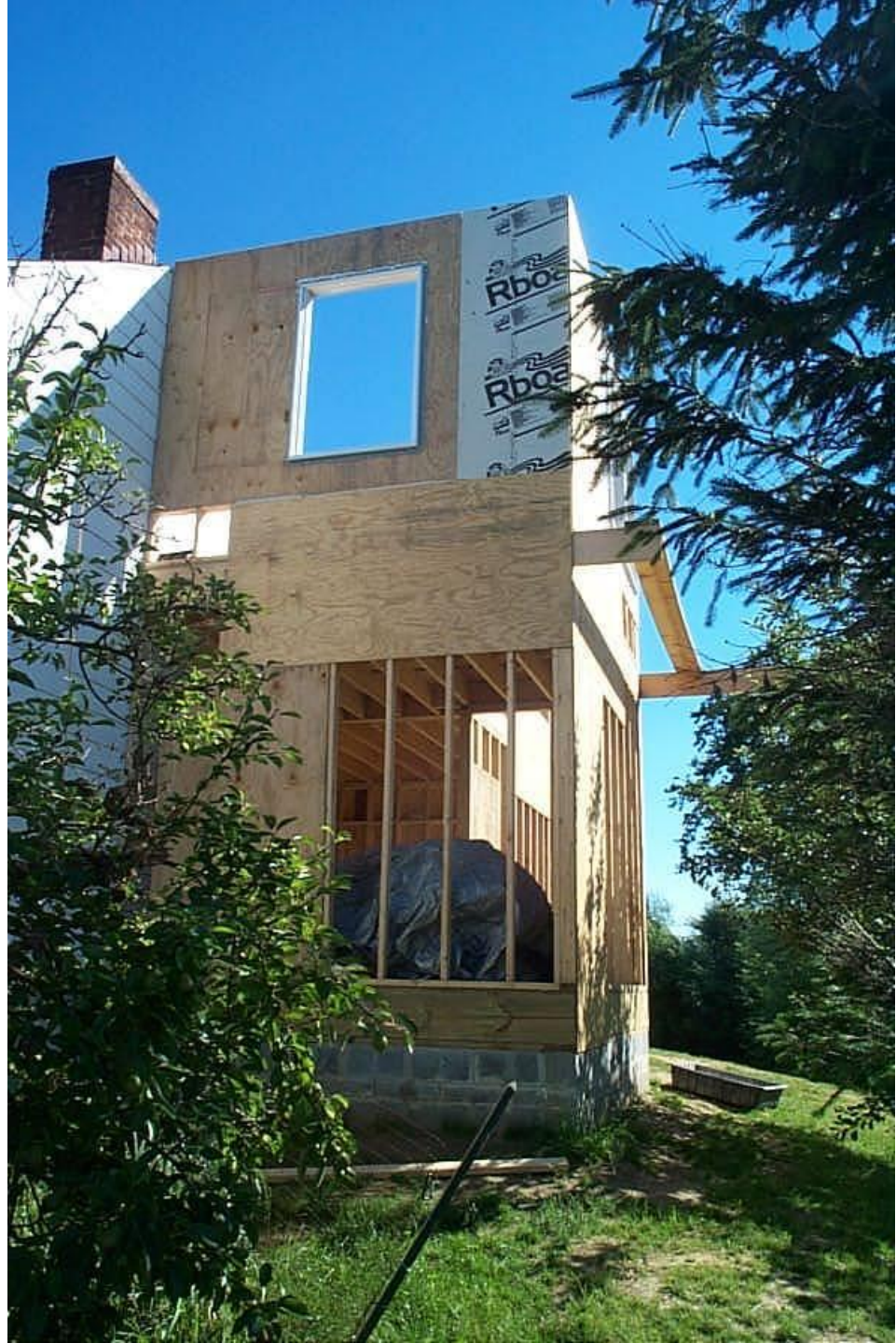




















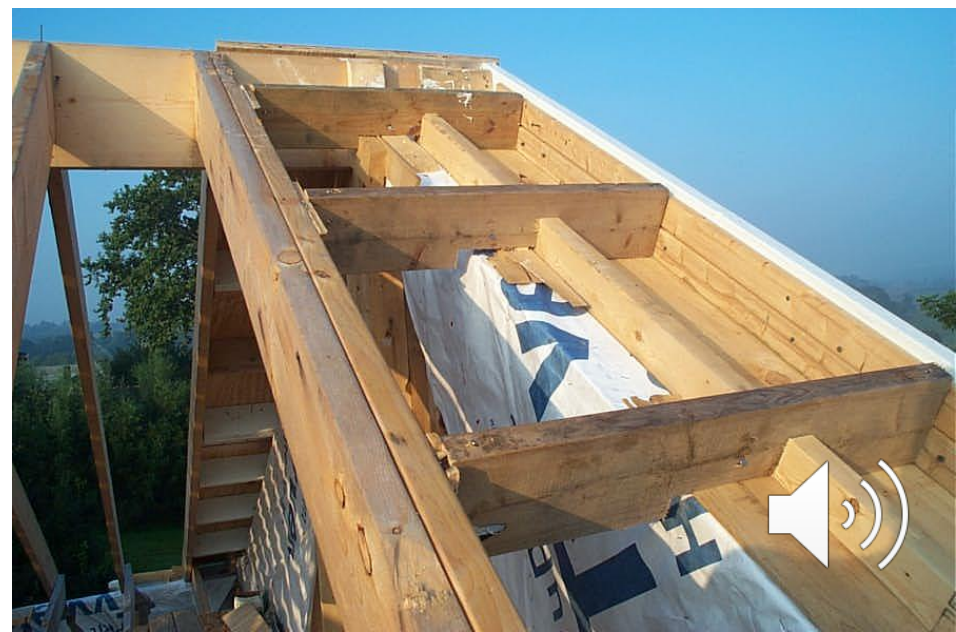
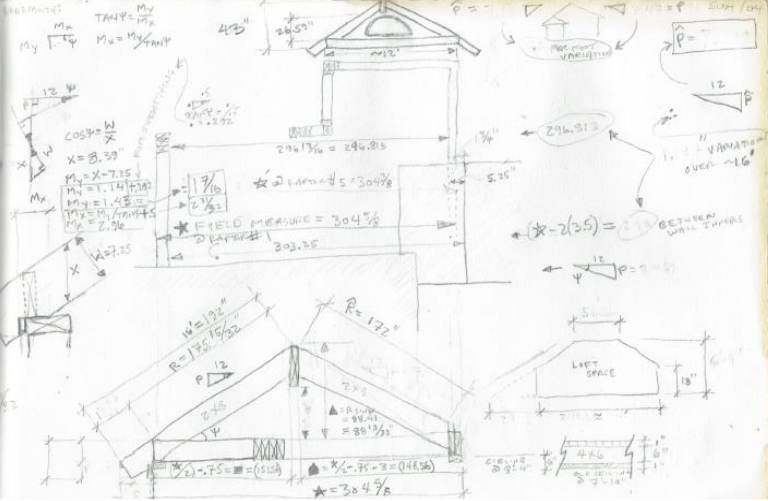




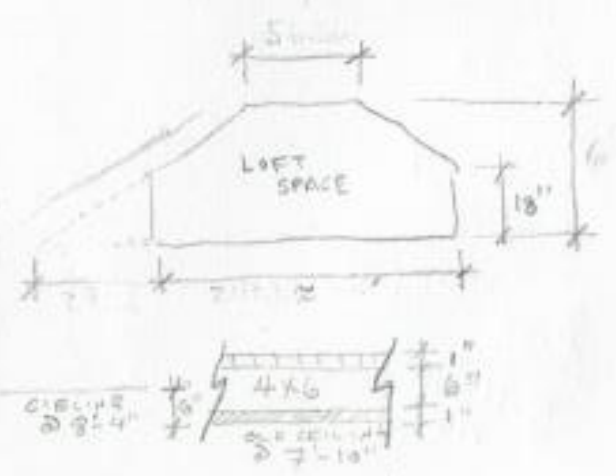
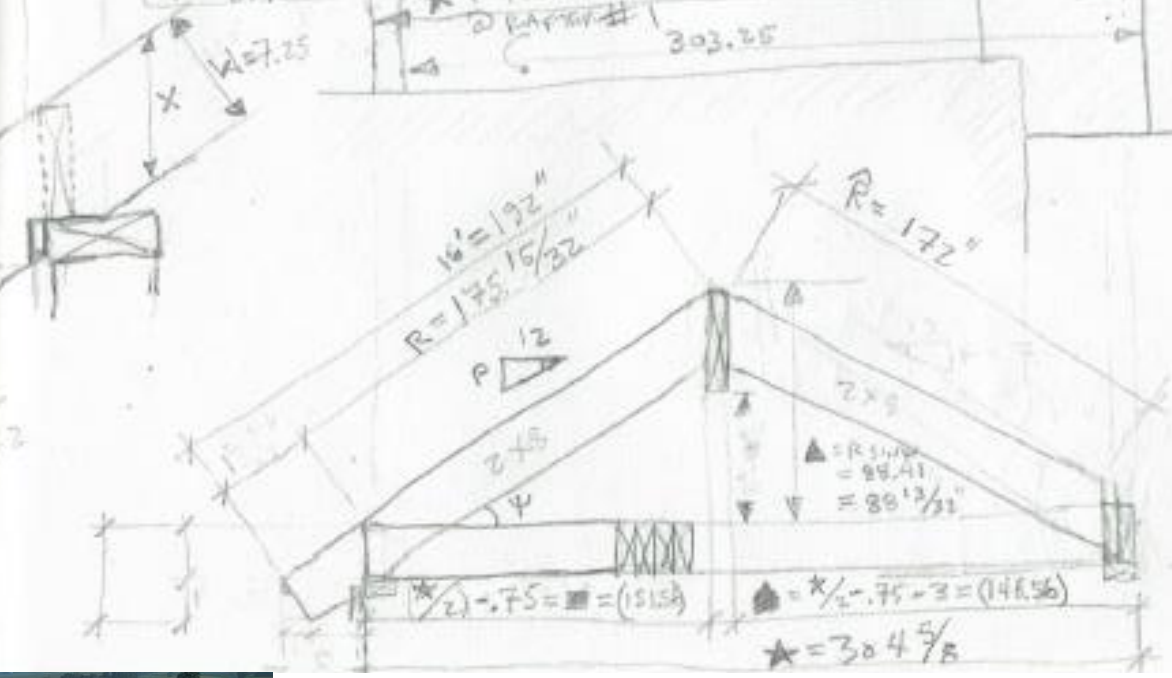
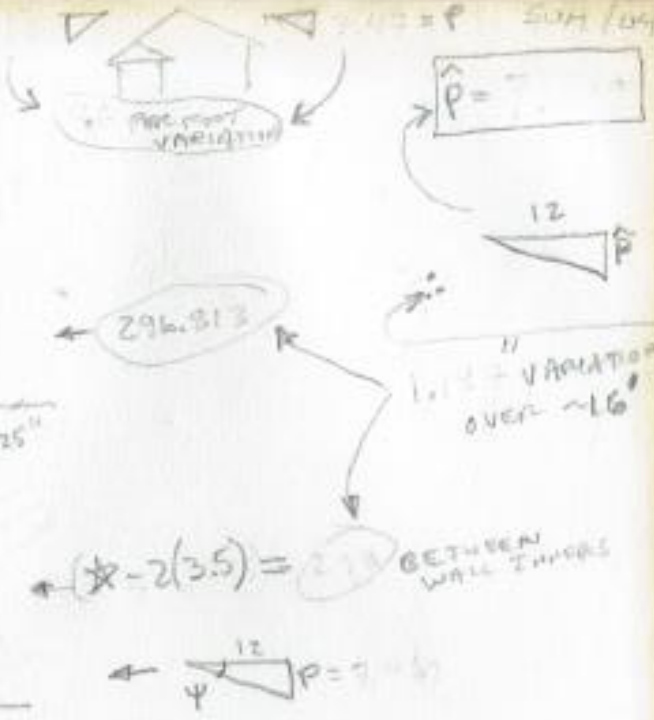
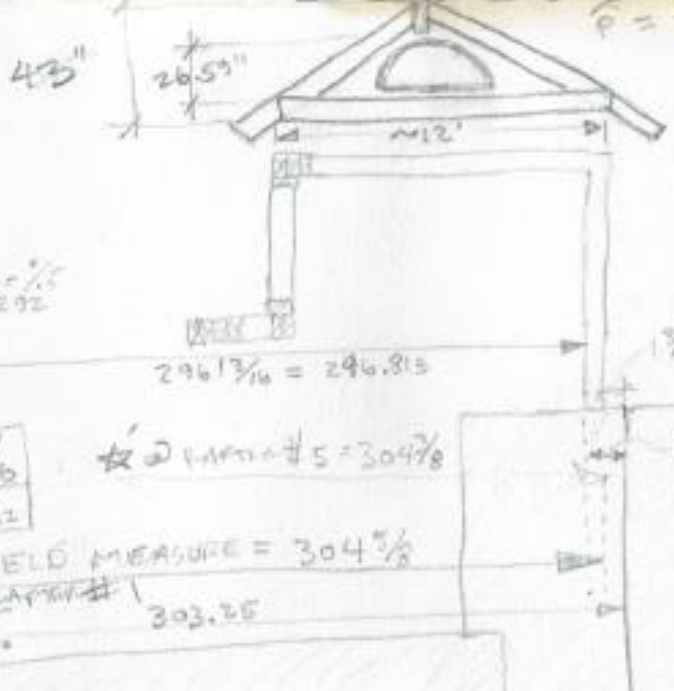








$\tan \psi = \frac{M_y}{M_x}$
 $M_x = \frac{M_y}{\tan \psi}$











































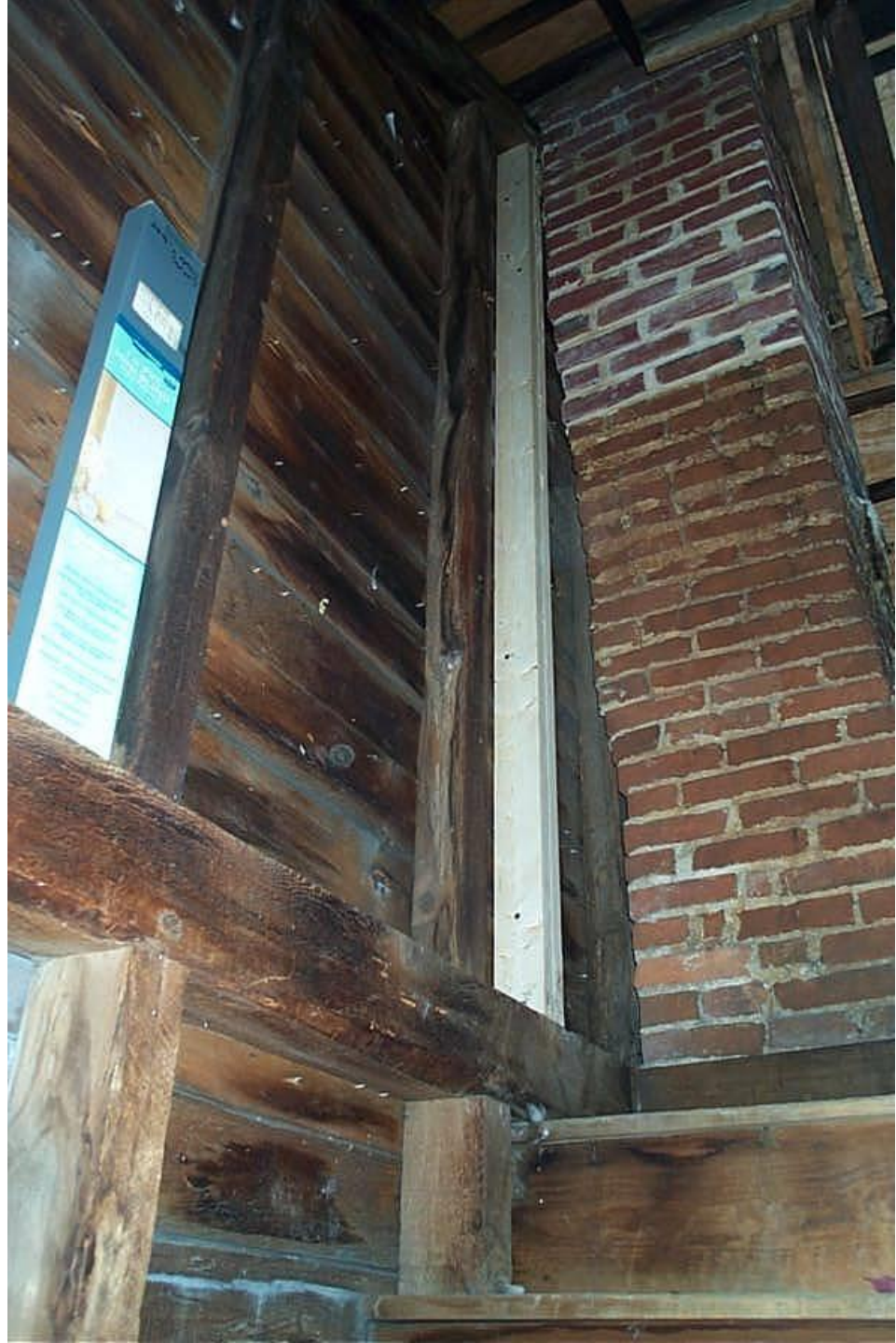






















We repurpose materials !













JT Wunderlich 2002-present

Southeastern Pennsylvania

2000sf remodel +1500sf new

- 4000 man hours
- Only contracts were shingles and concrete mix truck



Present Day Timber Frame Barns



Simpler Design



More Complex Designs

<https://www.vermonttimberworks.com/our-work/heavytimber-construction/timberframe/>



Present Day Timber Frame (Homes and Barns)



Very Complex Designs (e.g., Japanese) <http://www.grotontimberworks.com/asiandesign.html>

