YOUR MOMMA’S GROUP

ARCH 631

BRYAN O’SULLIVAN
JOSH GUERRA
JEFF CHAPWOMAN
JASON GEORGE
STEVE NGUYEN
PROJECT REQUIREMENTS

Must support one team member and another person
Platform required to be at least 30mm from ground
Support both people with a lateral load applied by the instructor
A minimum of 3 types of stabilizing systems must be used
Demonstration of structural braces to follow
BUILDING SEQUENCE : COLUMNS
Josh and Steve assist Jeff in cutting a column.
BUILDING SEQUENCE : JOISTS AND DECKING
Steve measures the decking.
Bryan and Jeff measure the drill holes.
BUILDING SEQUENCE : JOISTS AND DECKING

Josh and Steve drilling through the decking and a joist.
Jason drills through a joist as Bryan and Steve look on.
BUILDING SEQUENCE : DIAPHRAGM
BUILDING SEQUENCE : DIAPHRAGM

Josh bolts a beam through joists to the decking.
BUILDING SEQUENCE : DIAPHRAGM AND COLUMNS
BUILDING SEQUENCE : DIAPHRAGM AND COLUMNS

Jason admires Josh and Bryan attaching columns to the diaphragm.
The assembled base and columns. WHOA! Look at that rotation Steve!
BUILDING SEQUENCE : FRAME
Hey Bryan! Check out that rigid connection. Pretty sharp, ehh?
BUILDING SEQUENCE : DIAGONAL BRACING
BUILDING SEQUENCE : DIAGONAL BRACING

Lateral bracing provided by Dr. Pepper. Be you!
BUILDING SEQUENCE : STABILIZING BEAMS
Josh, Steve and Bryan attach those stabilizing beams.
The final connection is made. Great job guys. Now lets test it!
"I could jump up and down on this all day!"
BUILDING SEQUENCE : TESTING

It passes the strenuous “Josh” test.
Bryan’s additional 73 pounds were NO MATCH for the frame!
It even handles the ultimate “Josh and Bryan and Steve” test. Dare we do more?!
Impossible! It passes the impossible “Josh and Bryan and Steve and Jeff” test!
ANALYSIS OF THE REACTION FORCES
LATERAL LOADS

Reaction of the rigid frame connections
LATERAL LOADS

Reaction without rigid frame connections
LATERAL LOADS

Reaction with cross bracing
LATERAL LOADS

Reaction without cross bracing
LATERAL LOADS

Reaction with diaphragm
LATERAL LOADS

Reaction without diaphragm
VERTICAL LOAD

No load applied
VERTICAL LOAD

Reaction under applied load.
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