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CSI Rochester

Building Science and Underwriting

www.buildingscience.com

Life is Tough Enough As it Is...

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Life is Tough Enough As it Is...
It's Harder When You Are Stupid

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Don't Do Stupid Things

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80 percent of construction defects involve water
98 percent of basements will experience water damage during their useful service life
40 percent of homeowners claim to have suffered from water damage
Water damage is the second most frequently filed claim

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Buildings Get Wet From The Outside
Buildings Get Wet From The Inside
Buildings Start Out Wet
Wet Happens

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Point Number 1
Buildings Must Be Designed To Dry

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Buildings Can Dry To The Outside
Buildings Can Dry To The Inside
Buildings Can Dry To Both Sides

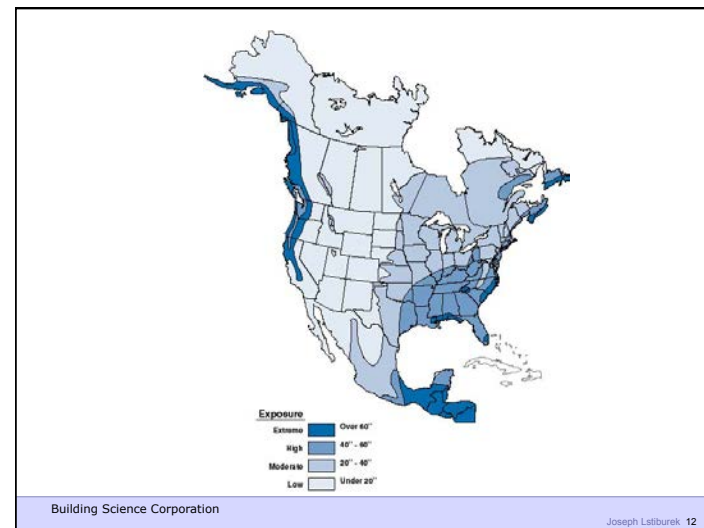
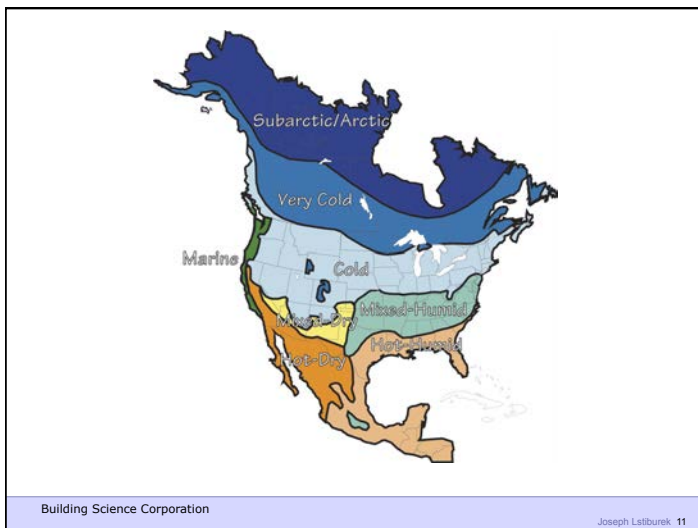
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2nd Law of Thermodynamics

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Heat Flow Is From Warm To Cold
 Moisture Flow Is From Warm To Cold
 Moisture Flow Is From More To Less
 Air Flow Is From A Higher Pressure to a Lower Pressure
 Gravity Acts Down

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Don't Do Stupid Things Vapor Barriers

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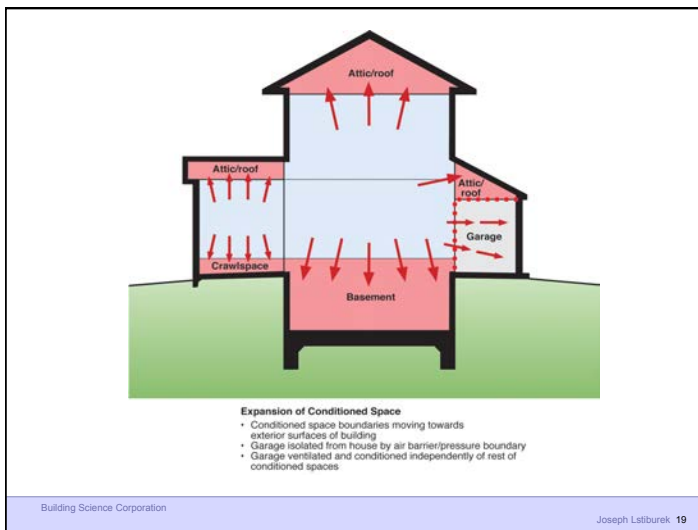
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Don't Do Stupid Things Insulated Basements

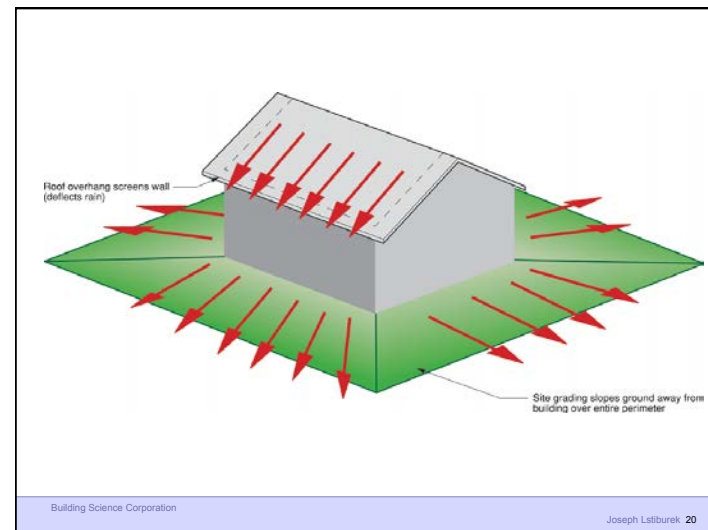
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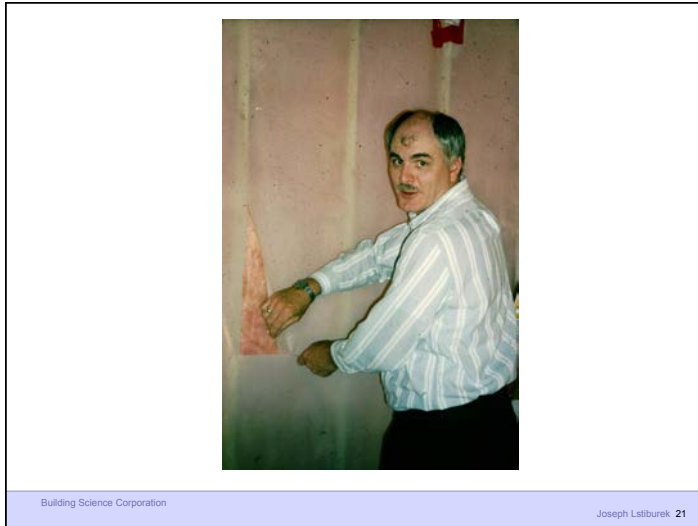
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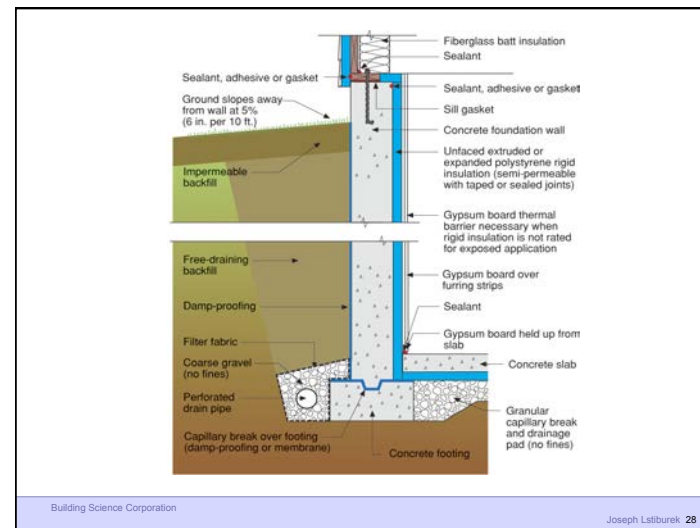
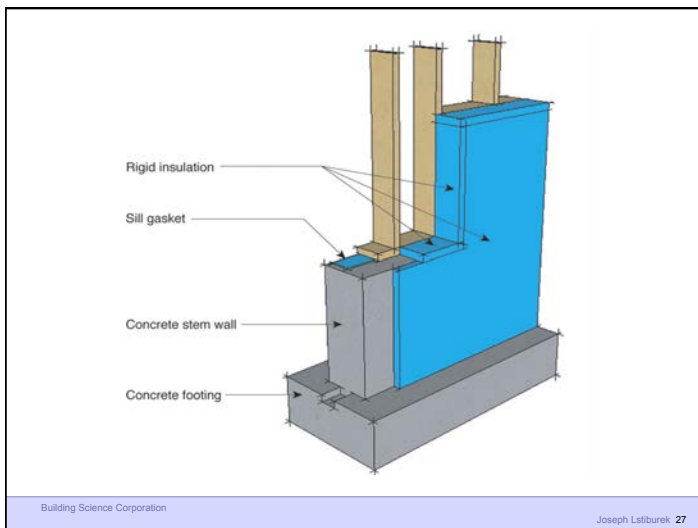
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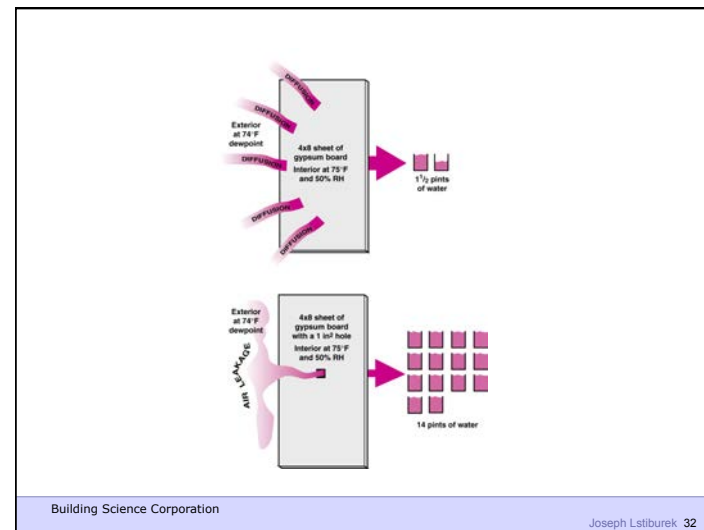
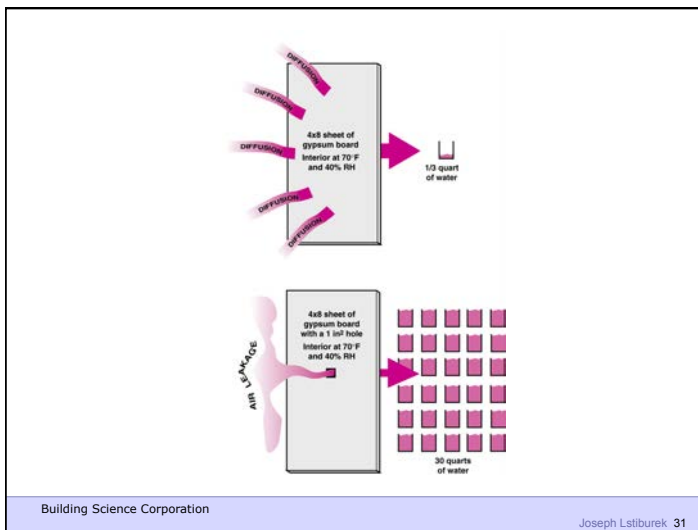


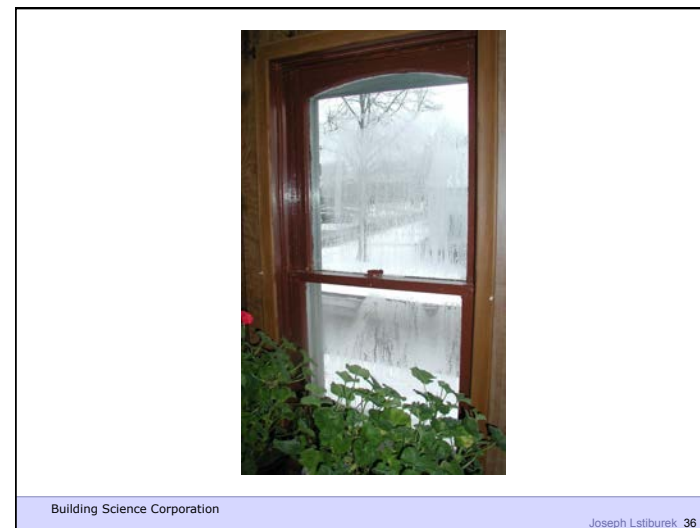
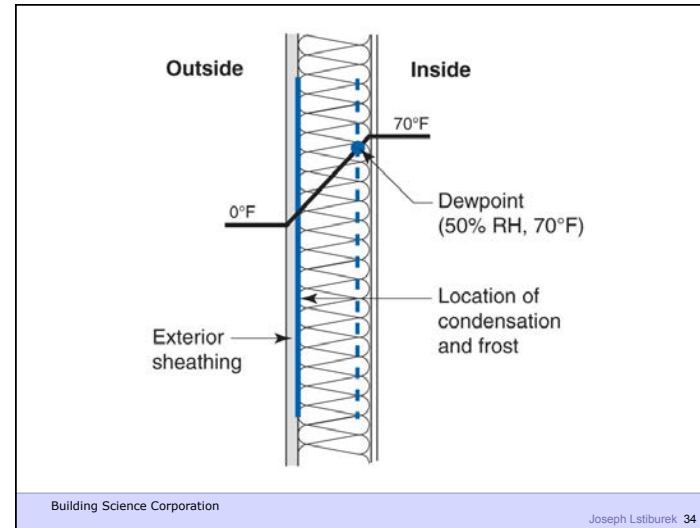
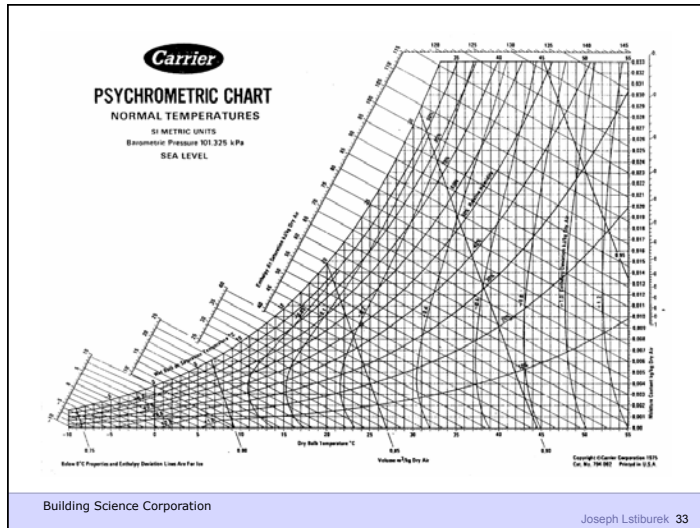




Don't Do Stupid Things
Humidifiers

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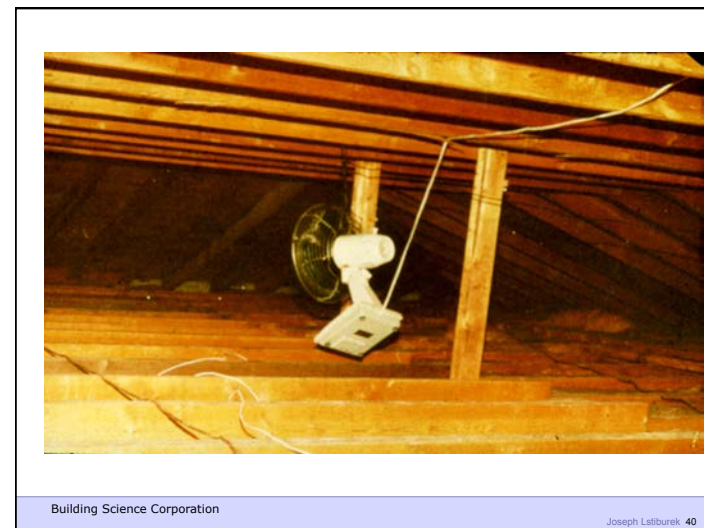


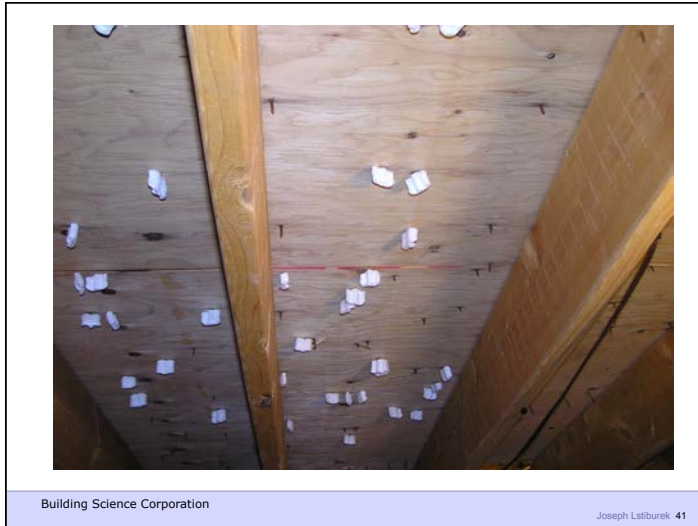


Vented Attics

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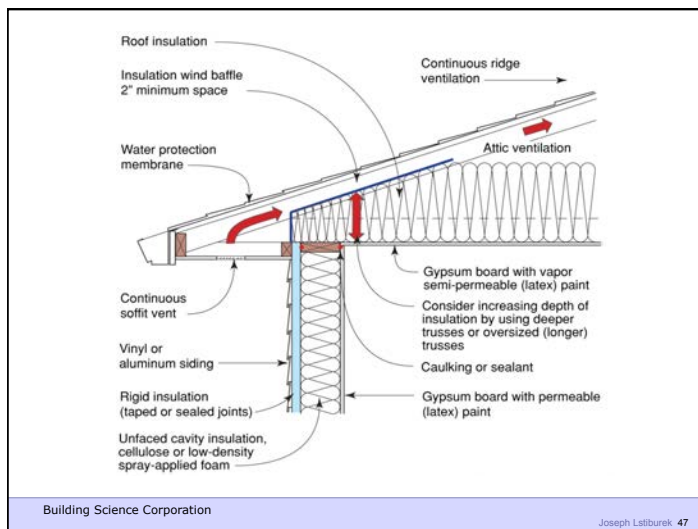
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Ice Dams

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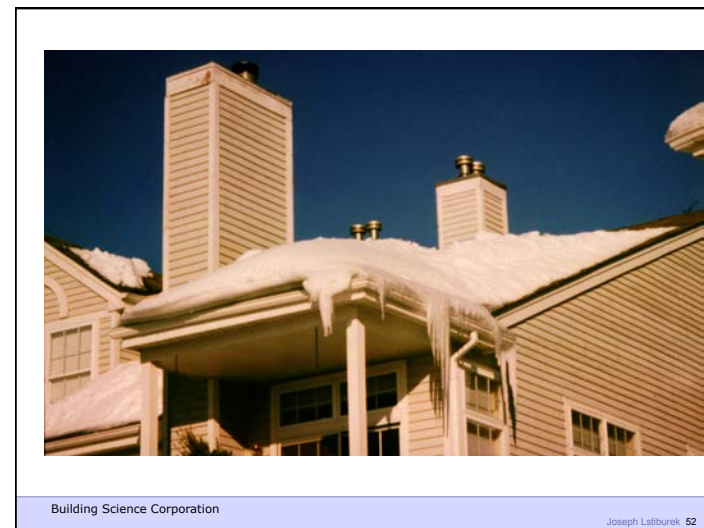
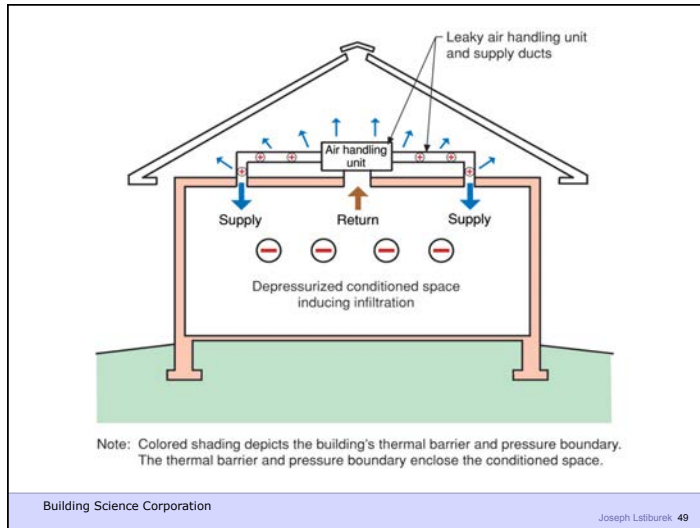
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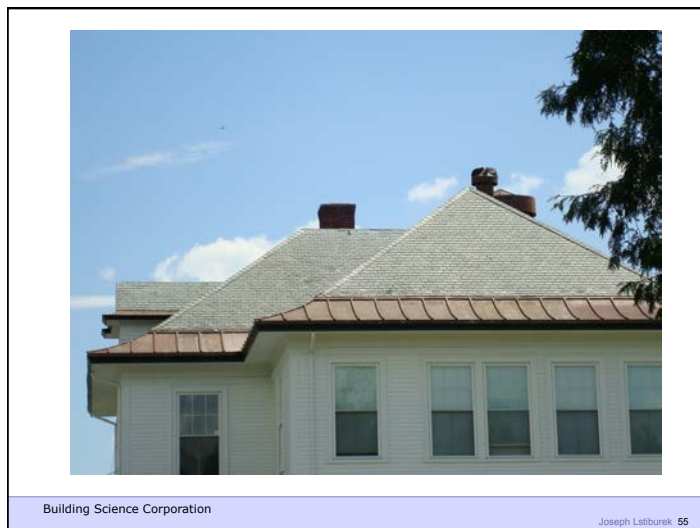
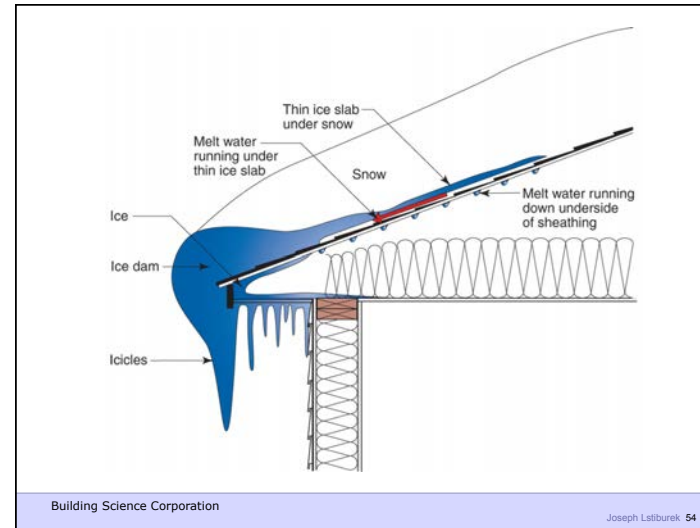
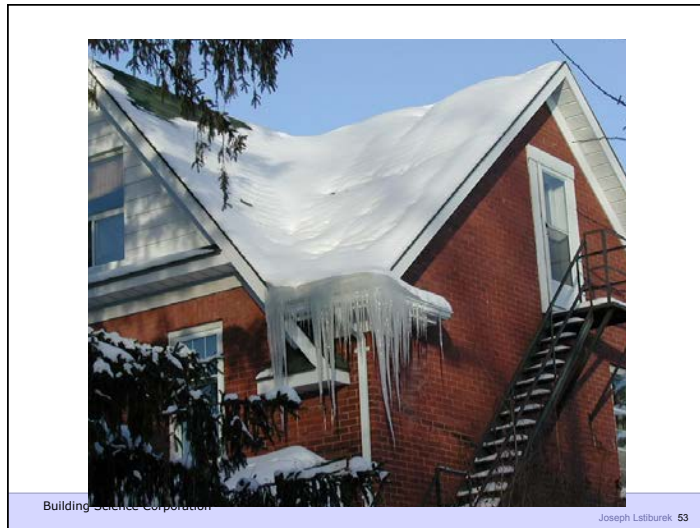
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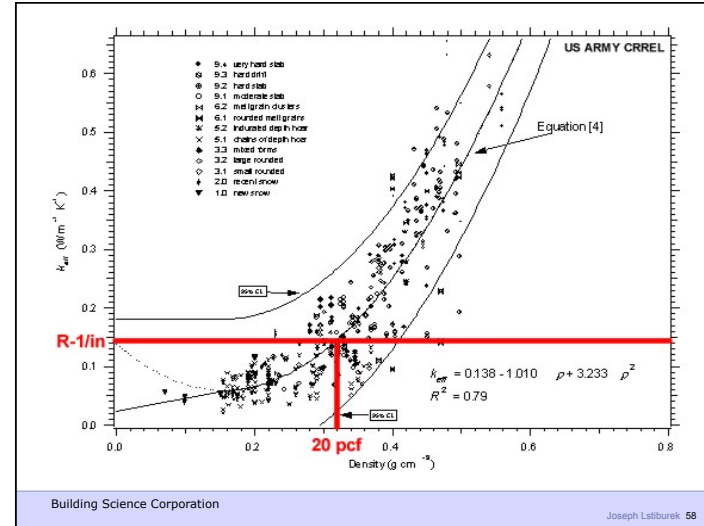






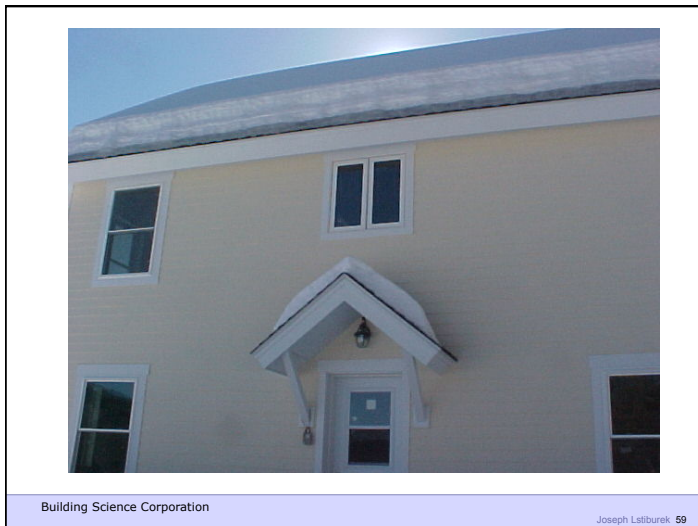
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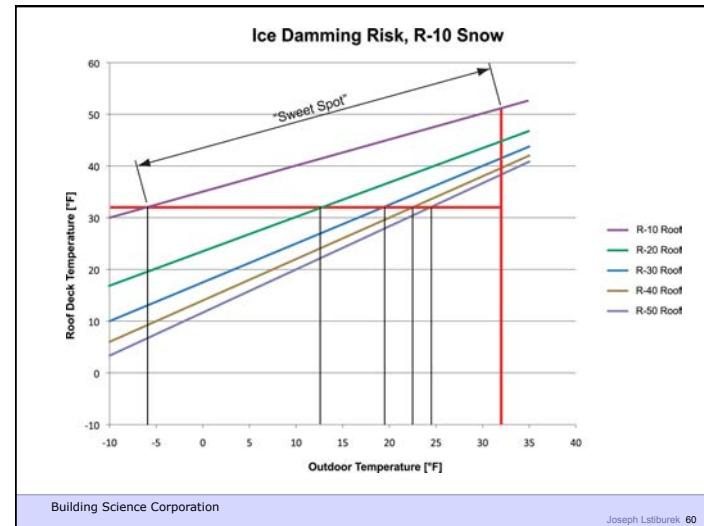
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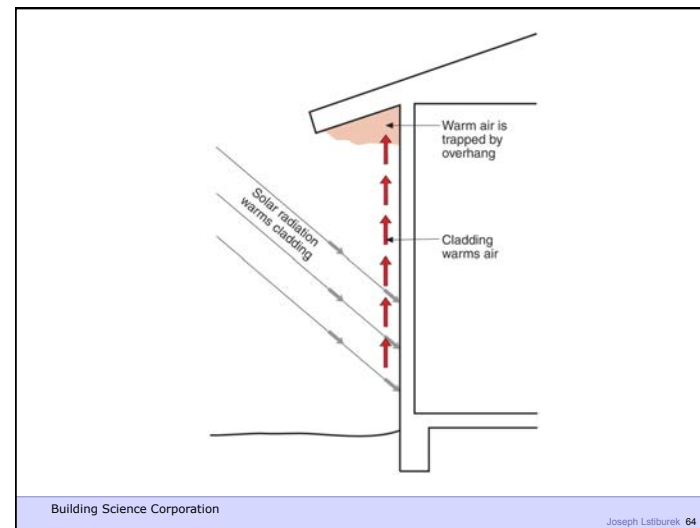
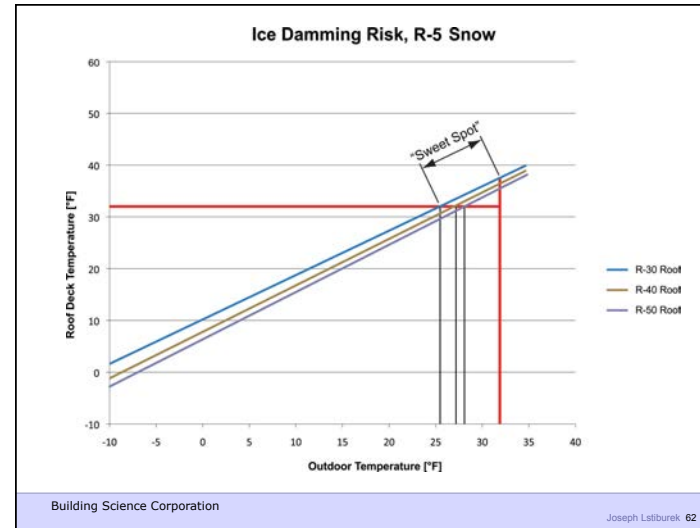
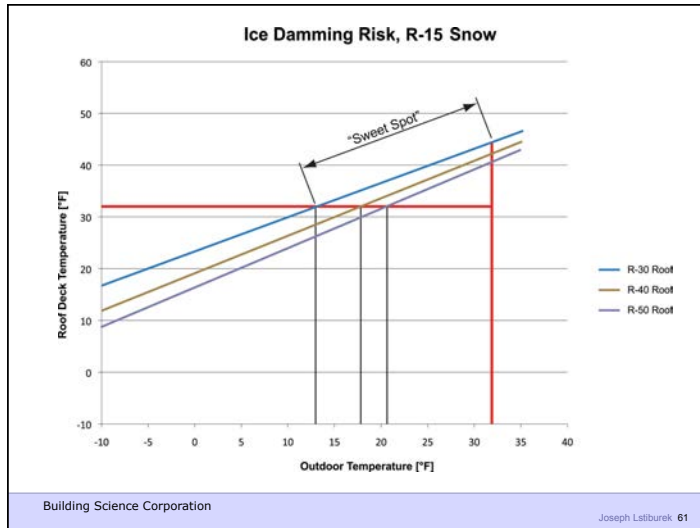
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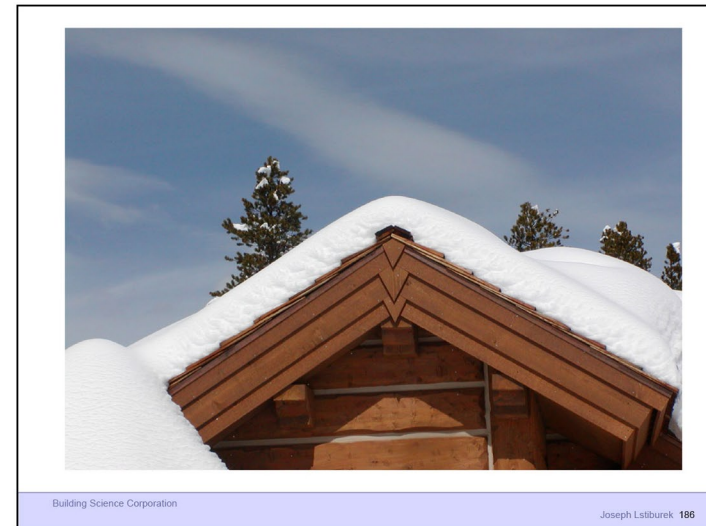
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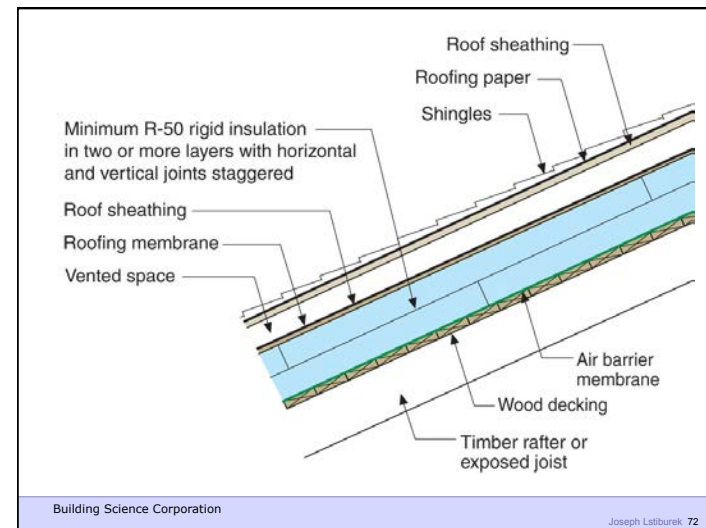
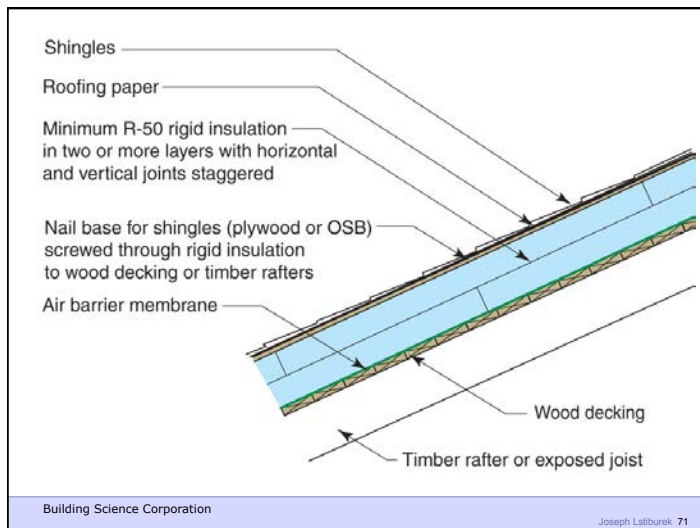
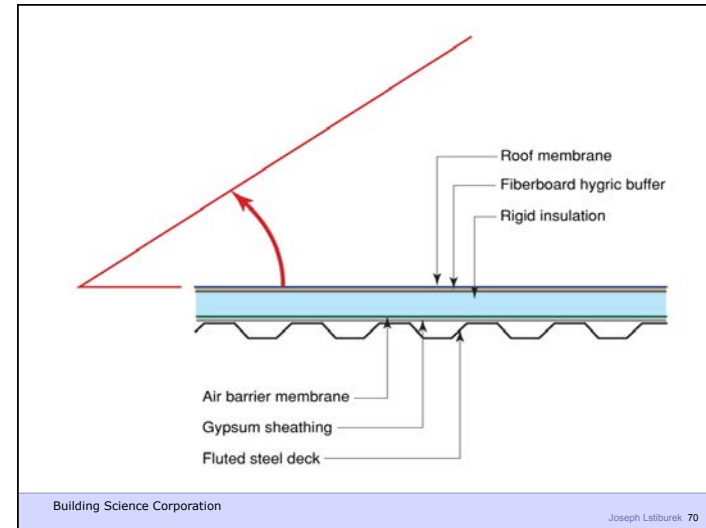
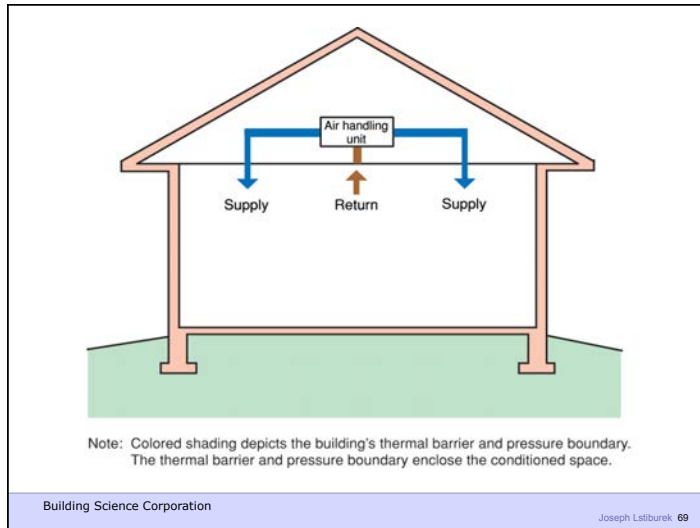


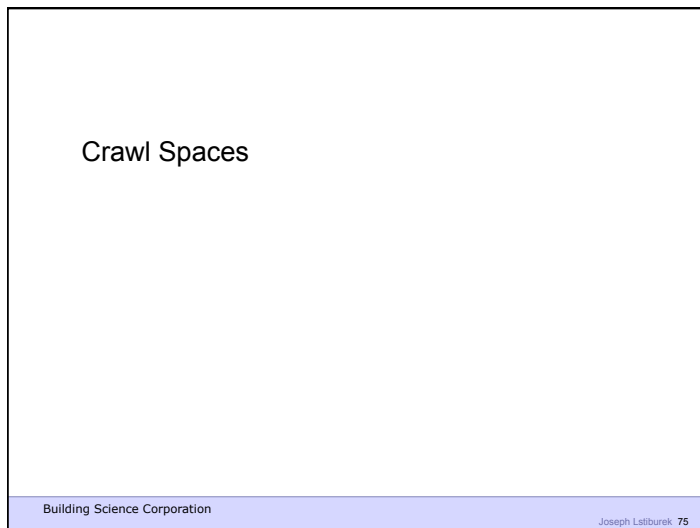
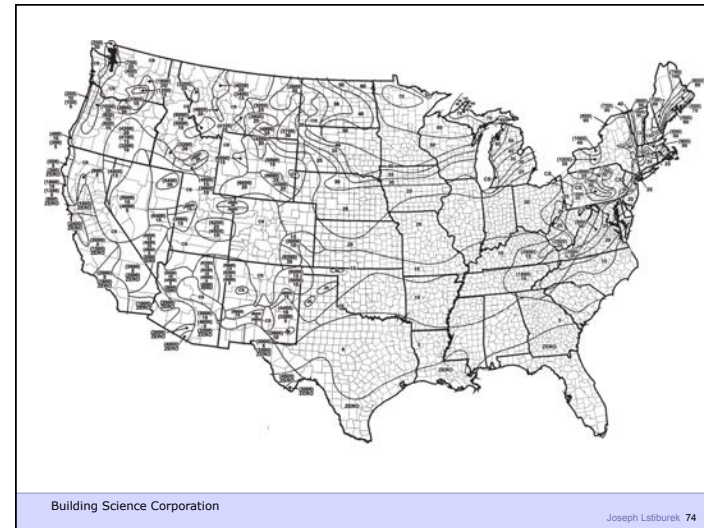
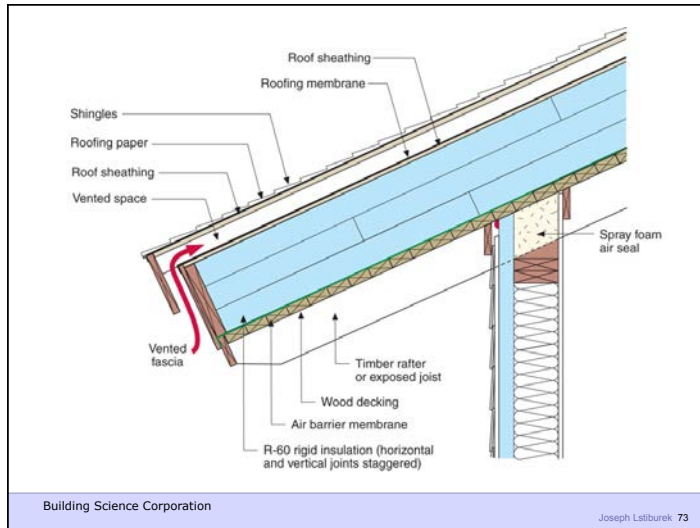
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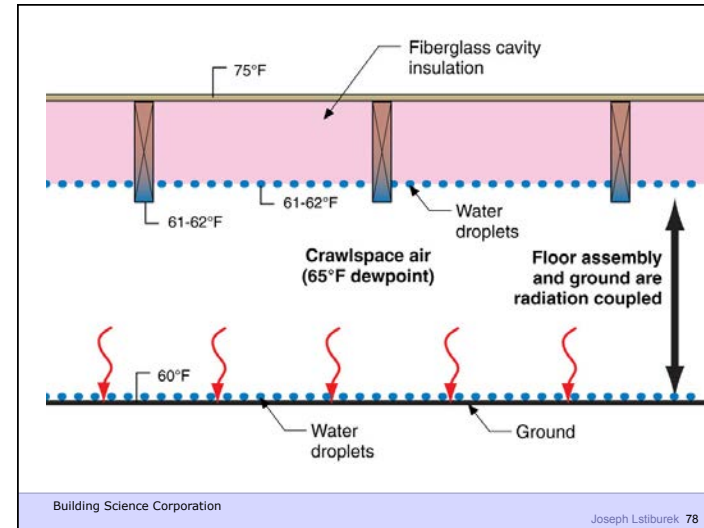






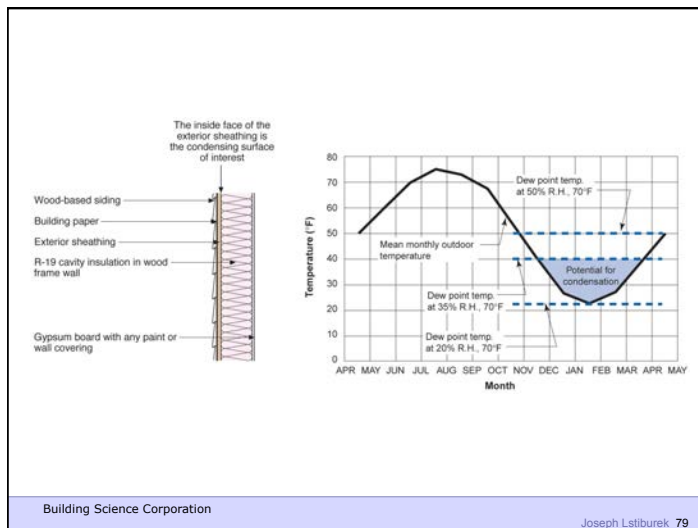
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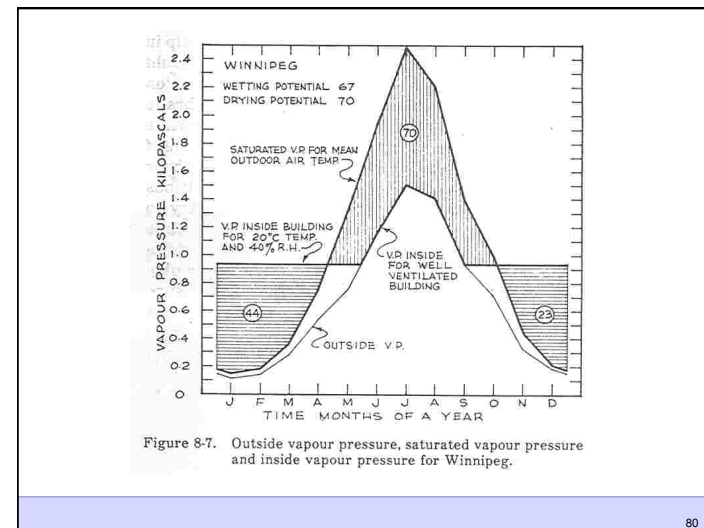
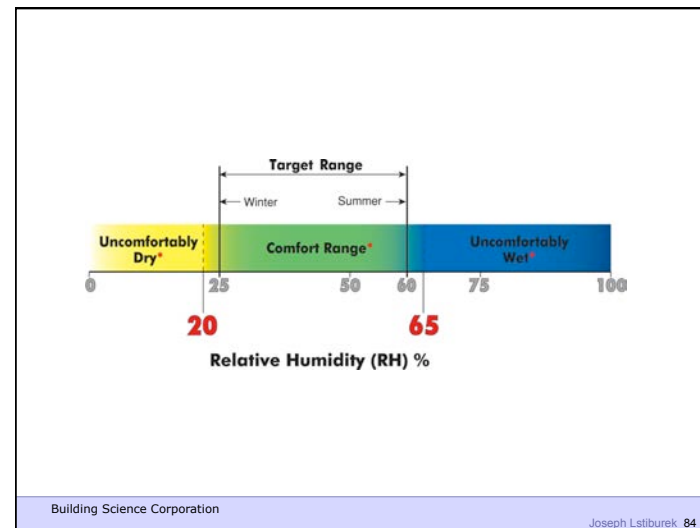
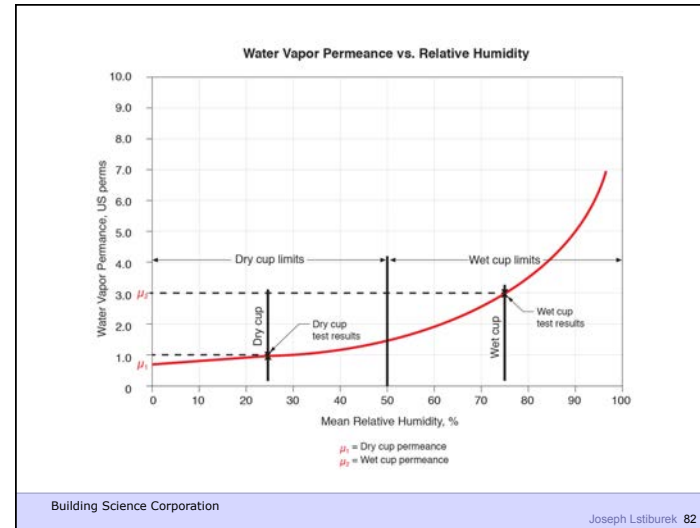
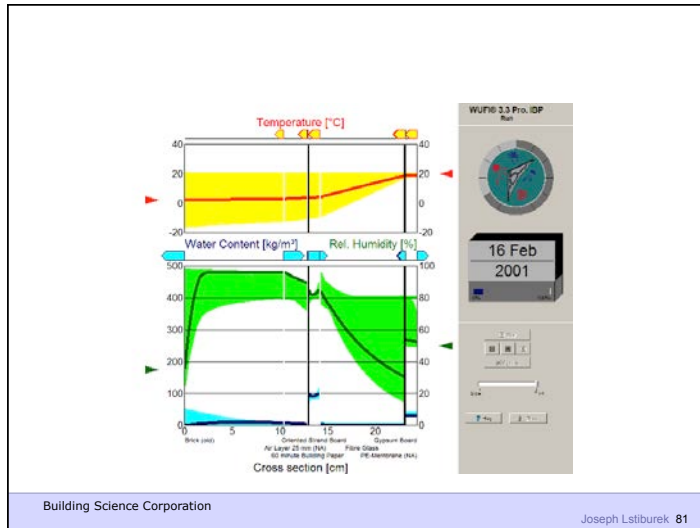
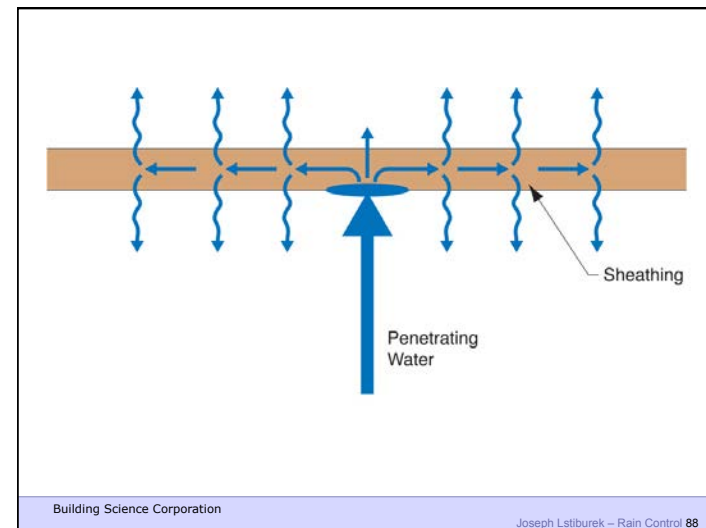
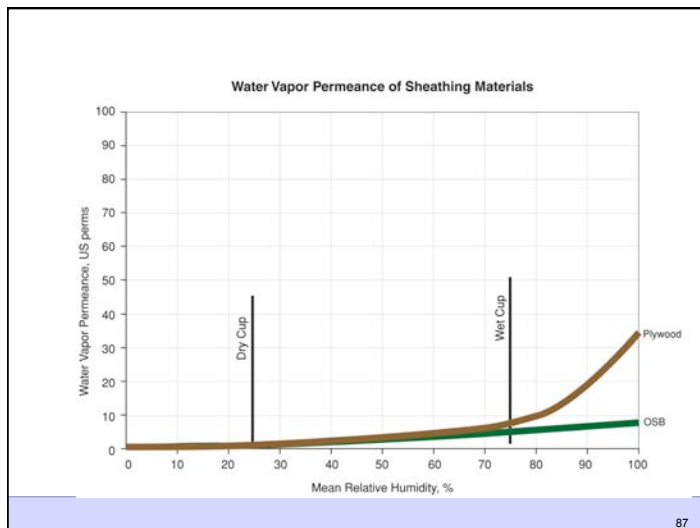
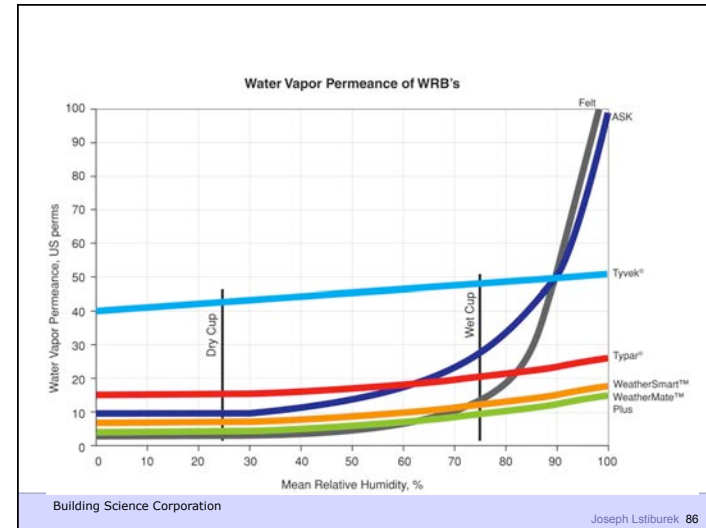
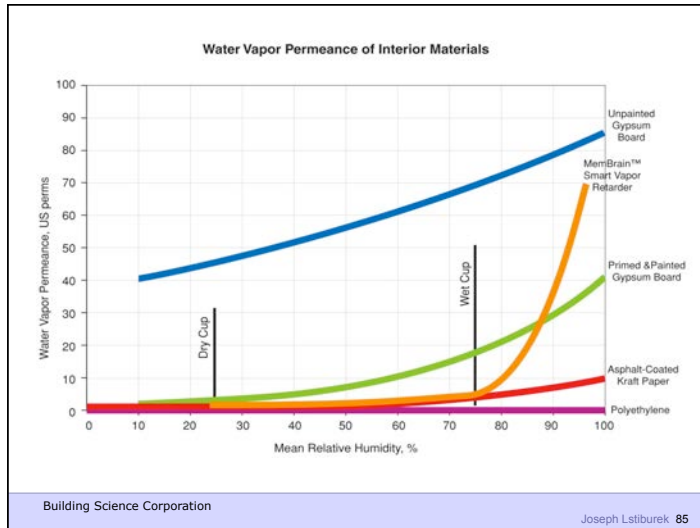
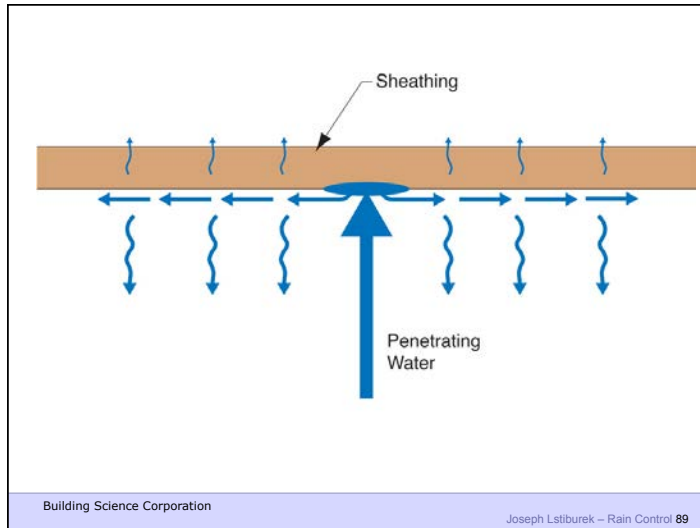


Figure 8-7. Outside vapour pressure, saturated vapour pressure and inside vapour pressure for Winnipeg.

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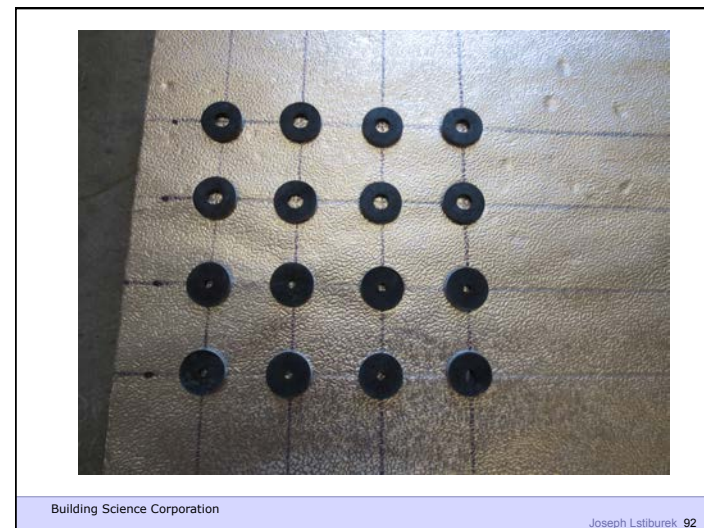






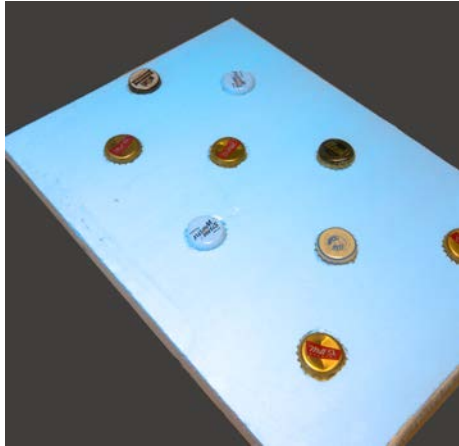
Rain Screen

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Beer Screen?


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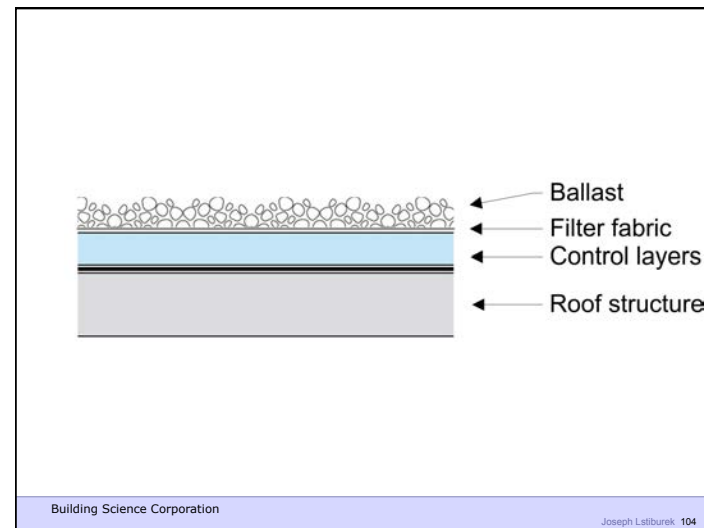
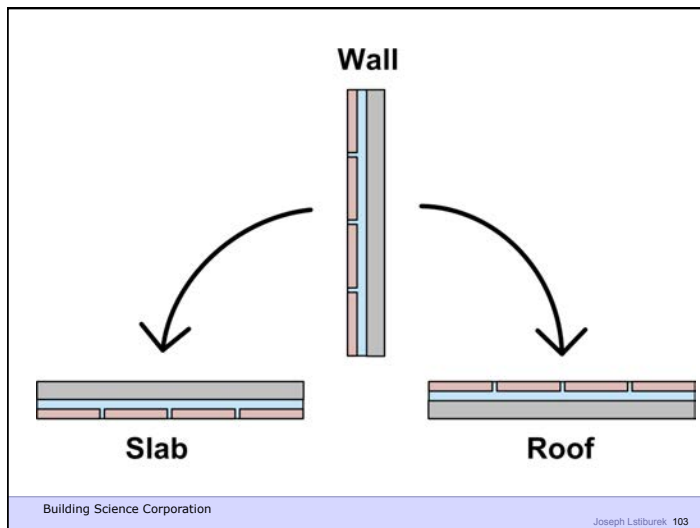
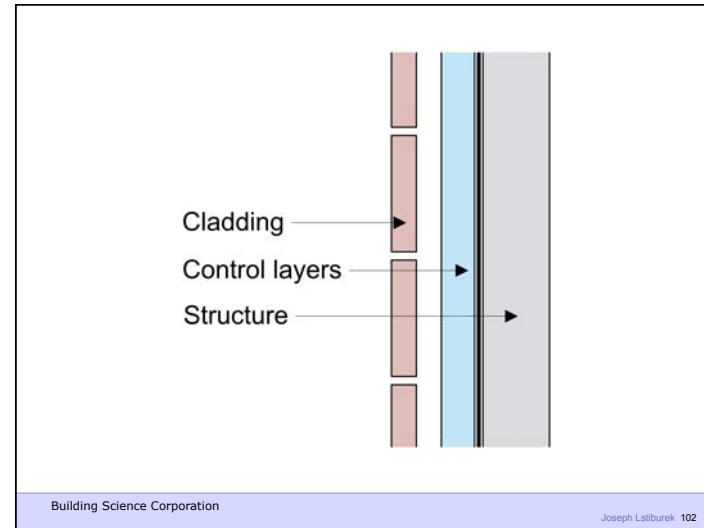
If You Need To Run A Hygrothermal Model
To Figure Out If Your Wall Works You
Have The Wrong Design

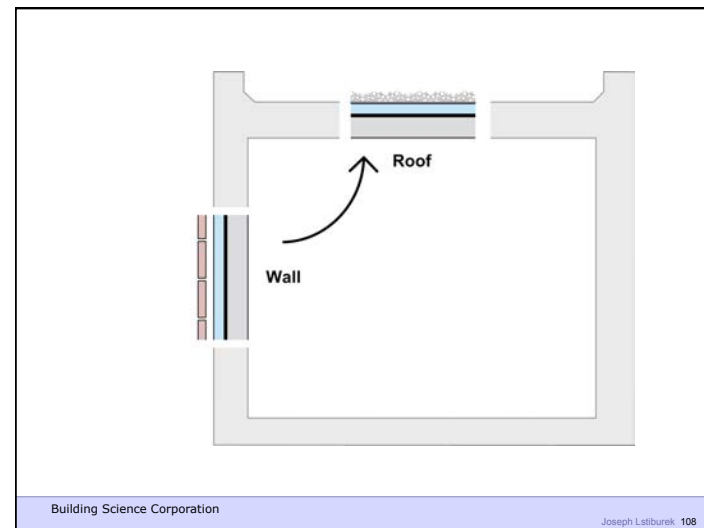
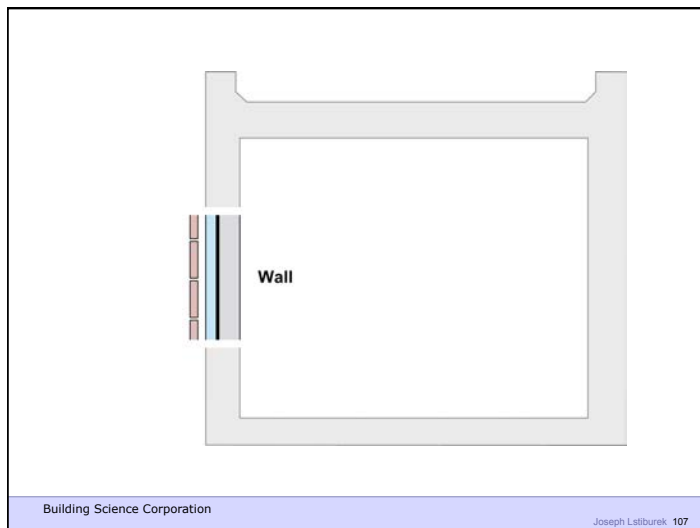
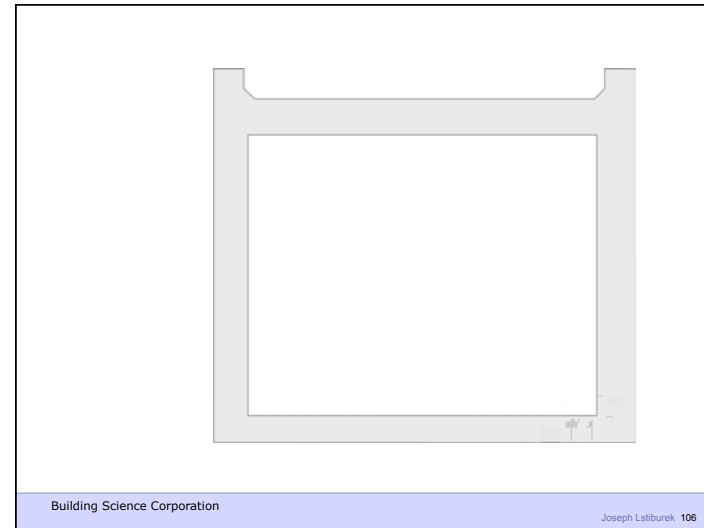
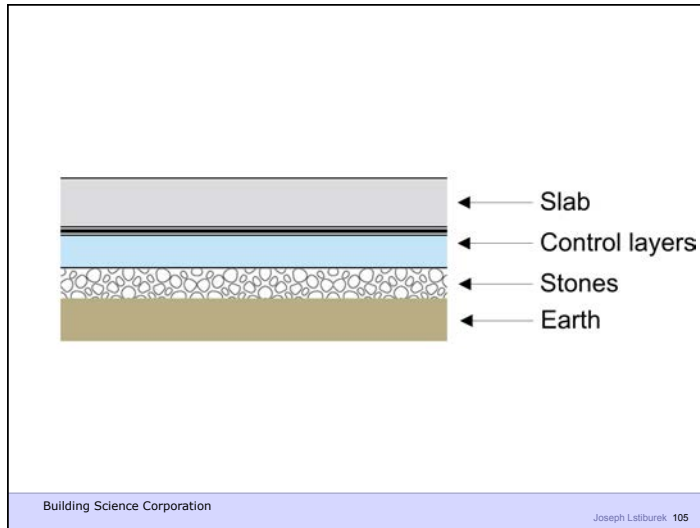
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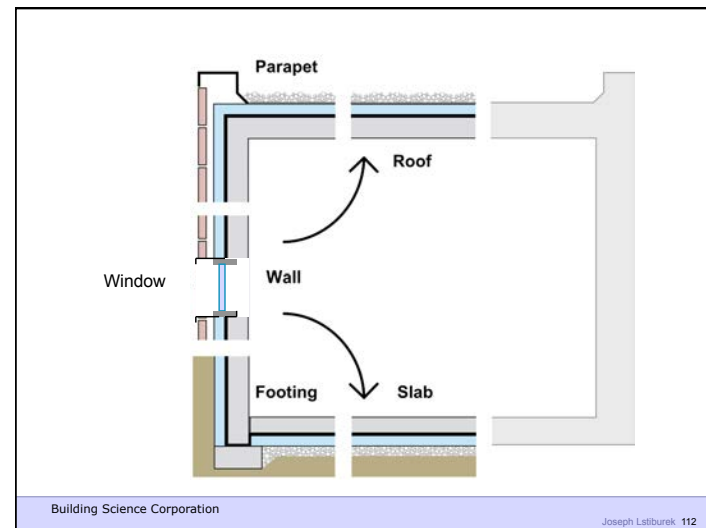
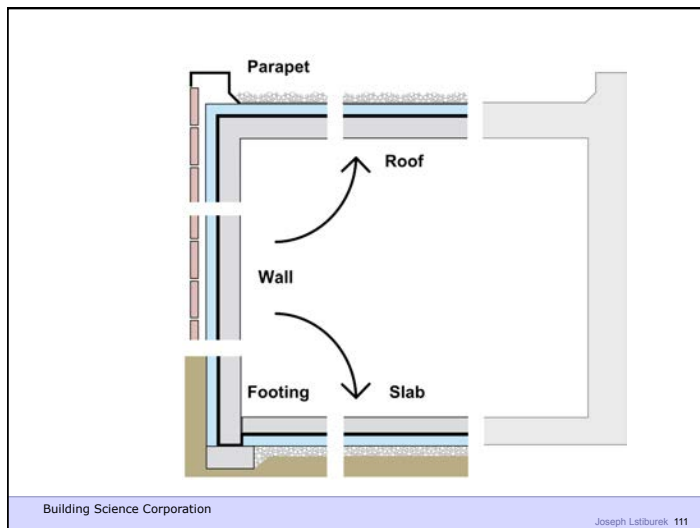
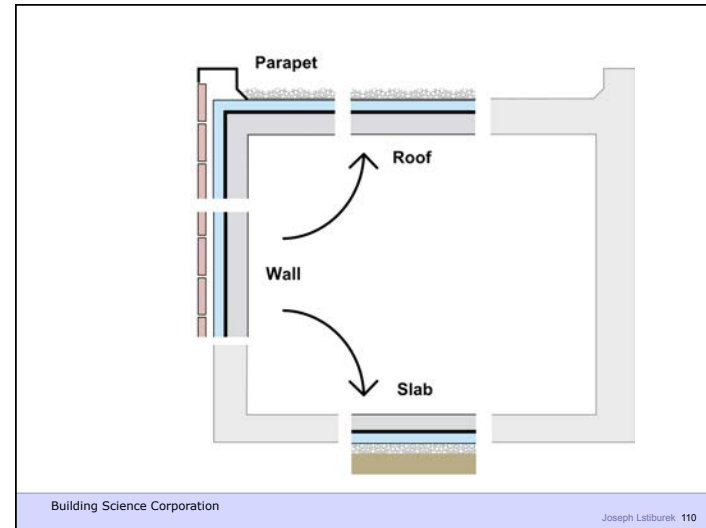
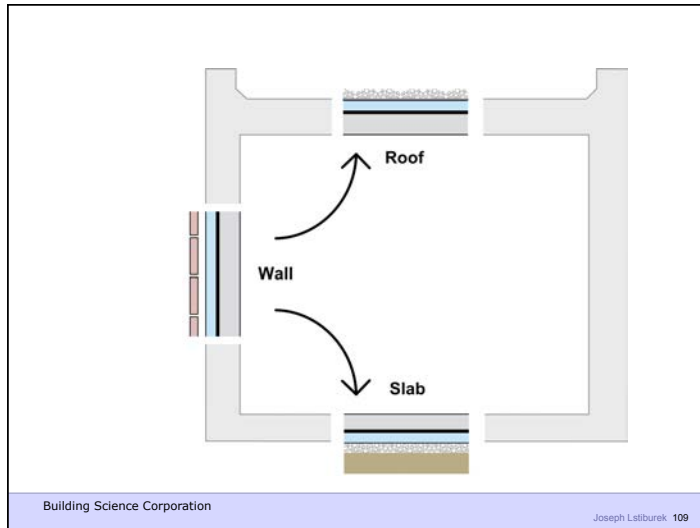
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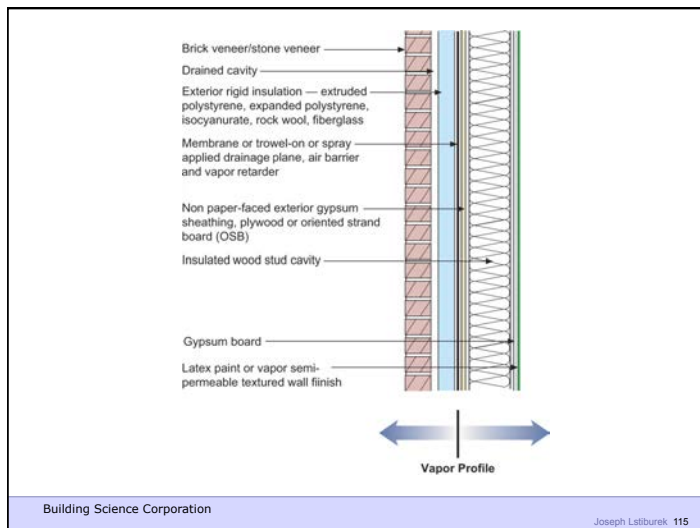
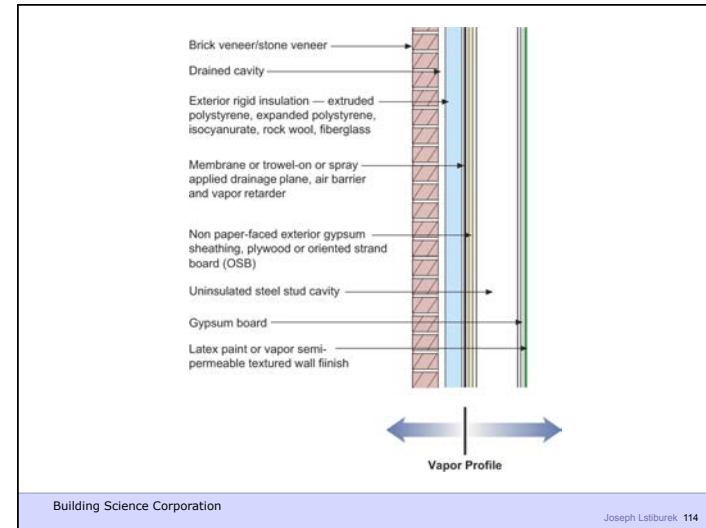
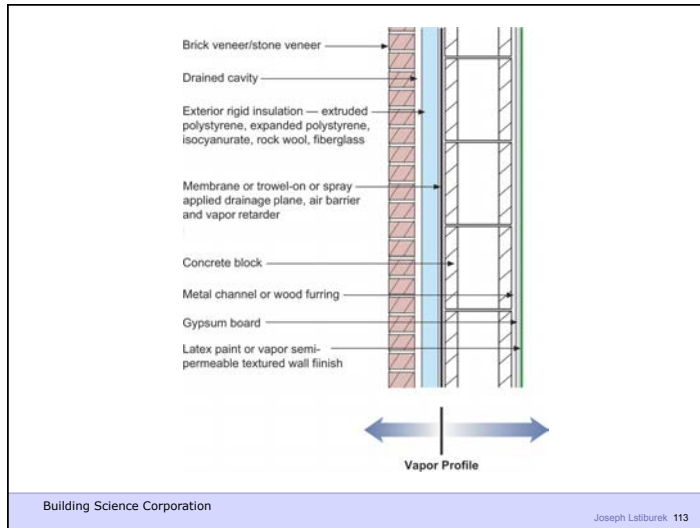
Water Control Layer
Air Control Layer
Vapor Control Layer
Thermal Control Layer

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Commercial Enclosure: Simple Layers

- Structure
- Rain/Air/Vapor
- Insulation
- Finish

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