

Joseph Lstiburek, Ph.D., P.Eng, ASHRAE Fellow

Building Science

Adventures In Building Science

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Life is Tough Enough As it Is...

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Joseph Lstiburek 2

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

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Joseph Lstiburek 3

Don't Do Stupid Things

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Joseph Lstiburek 4

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

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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

Building Science Corporation Joseph Lstiburek 7

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

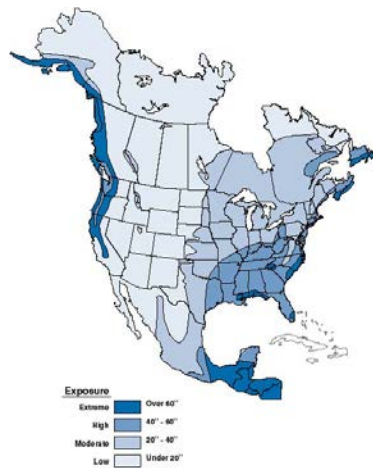
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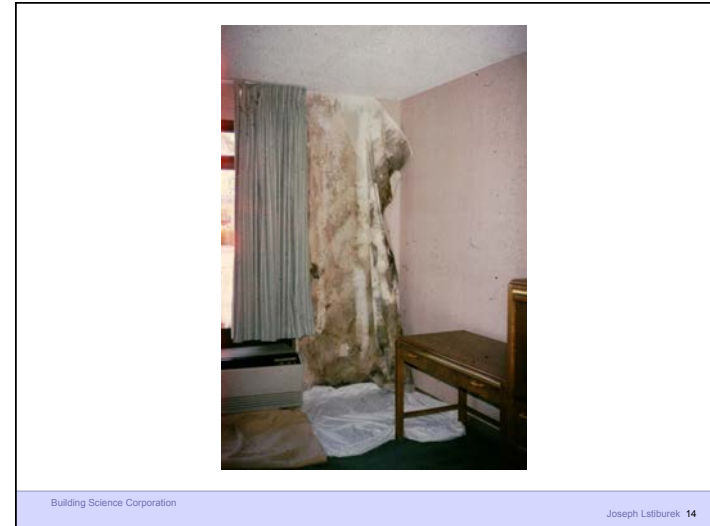
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Don't Do Stupid Things

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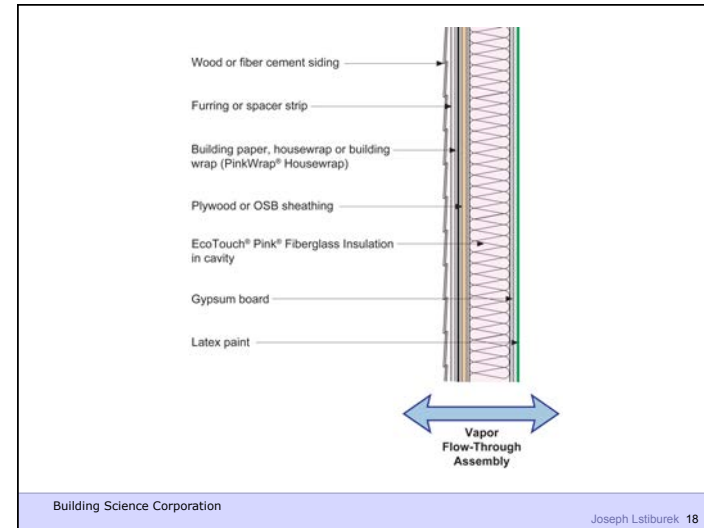
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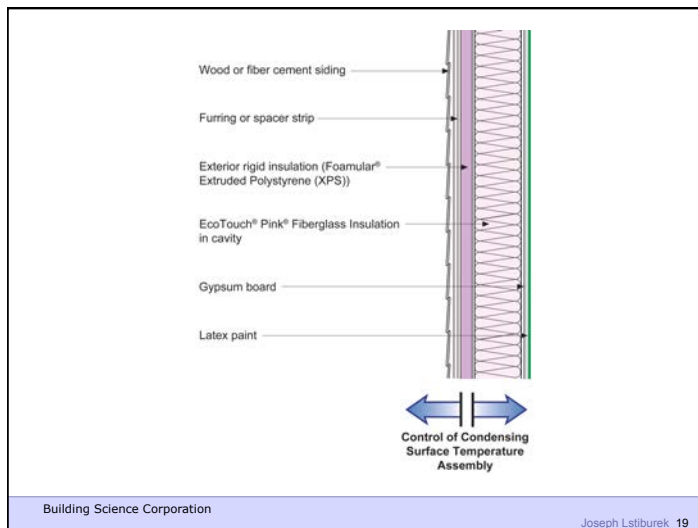
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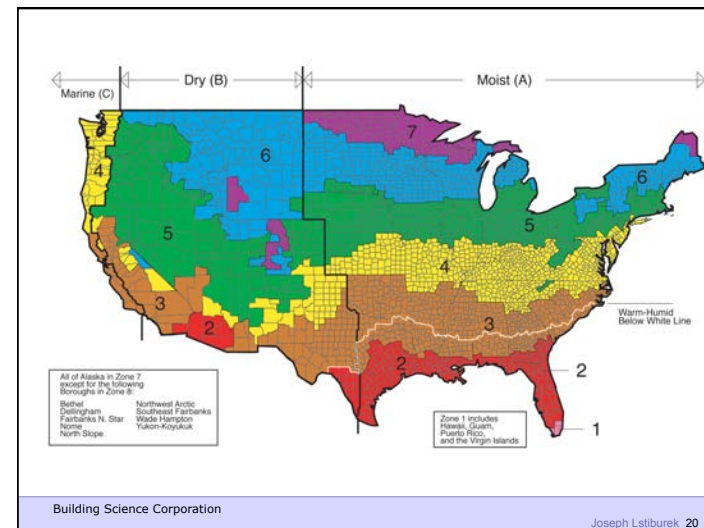
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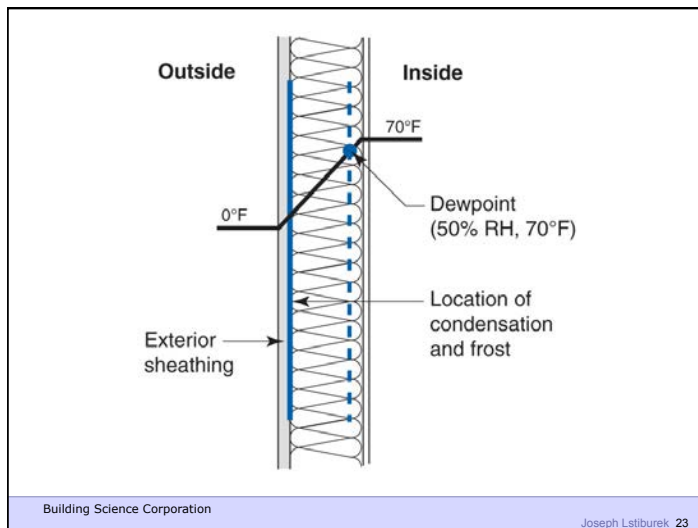
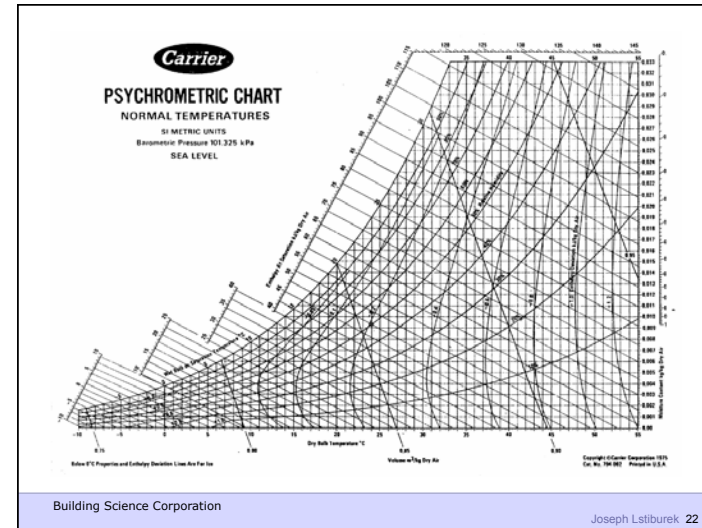
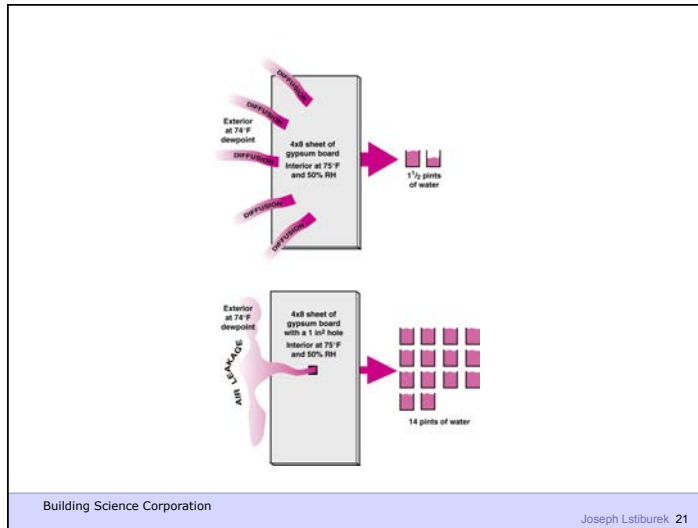
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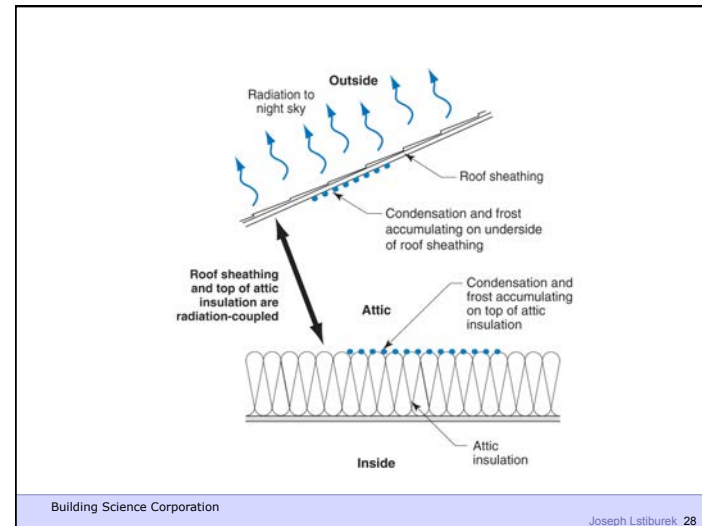
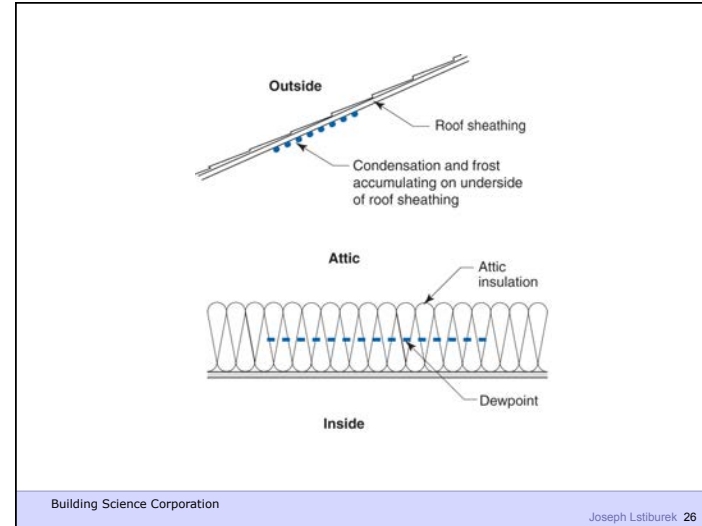
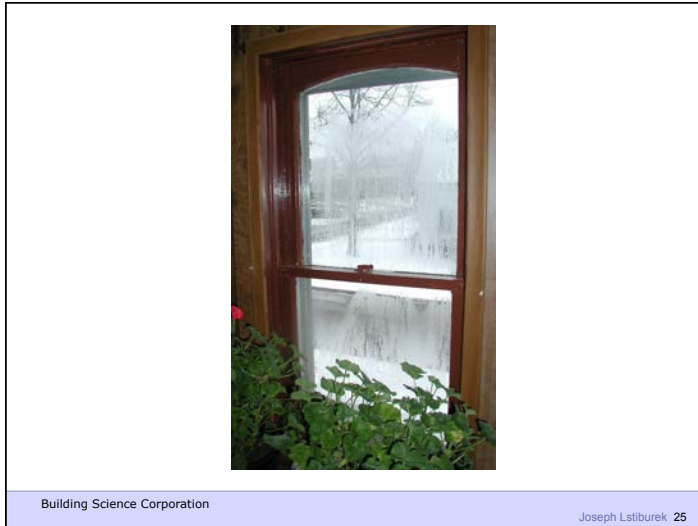
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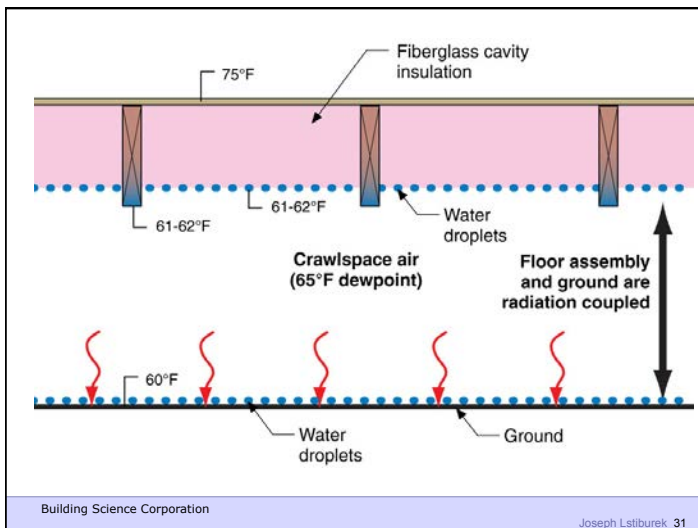
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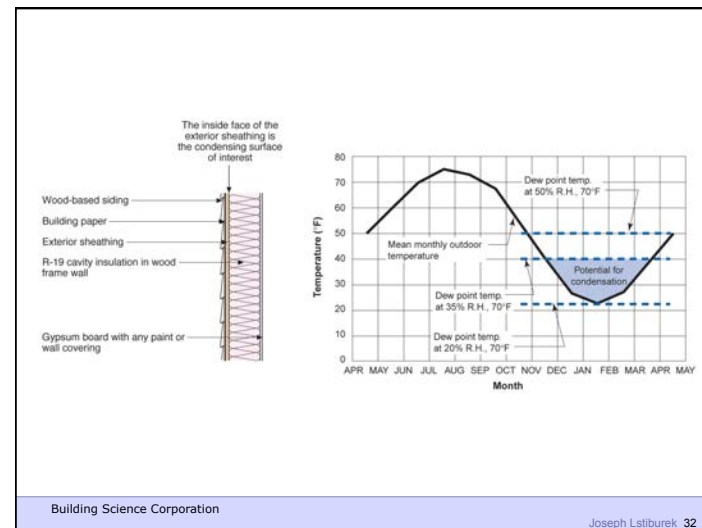
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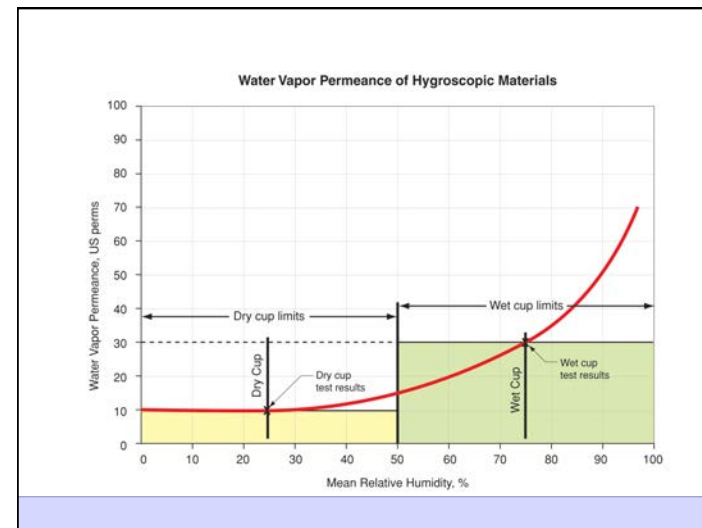
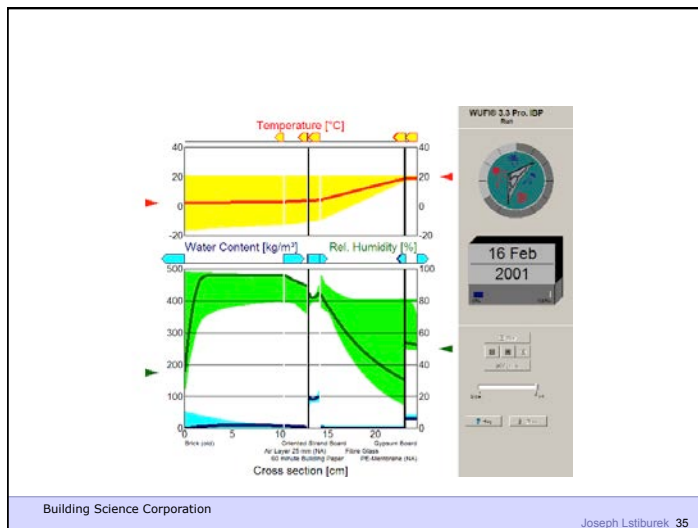
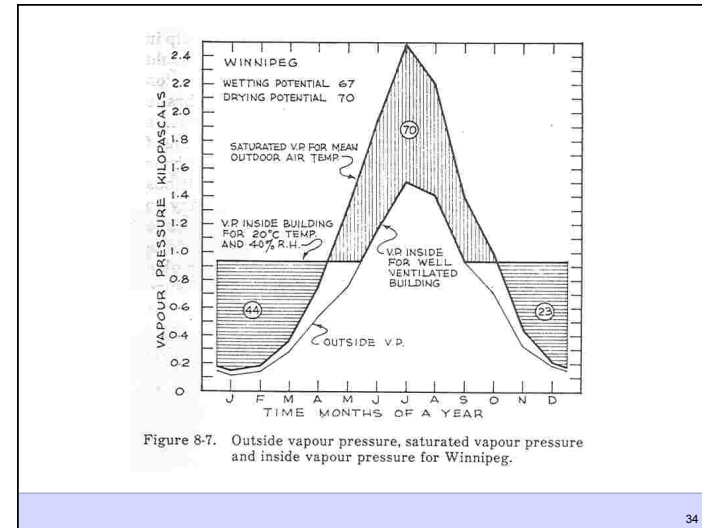
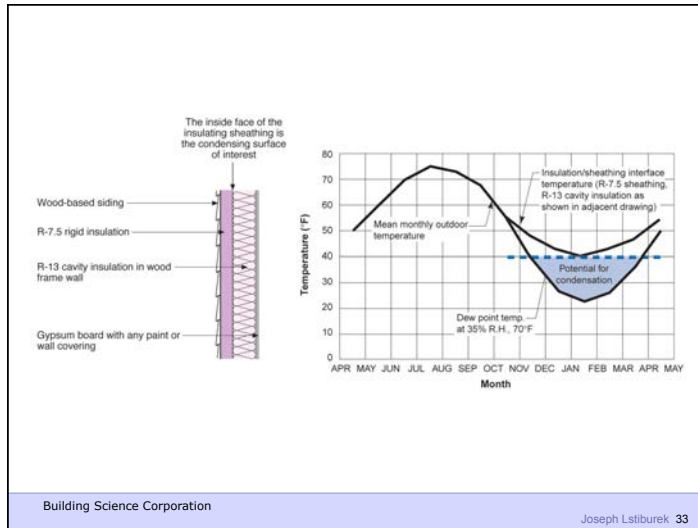
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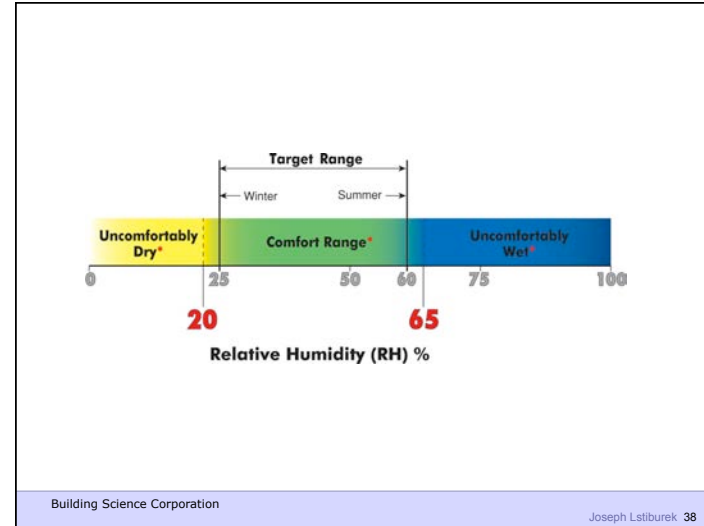
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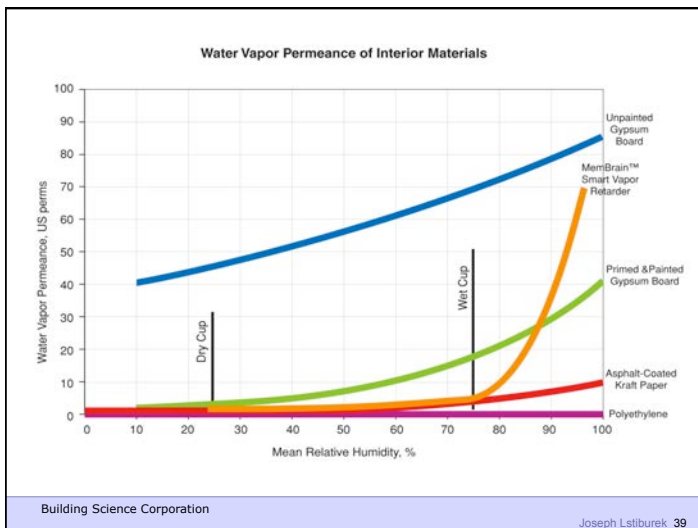
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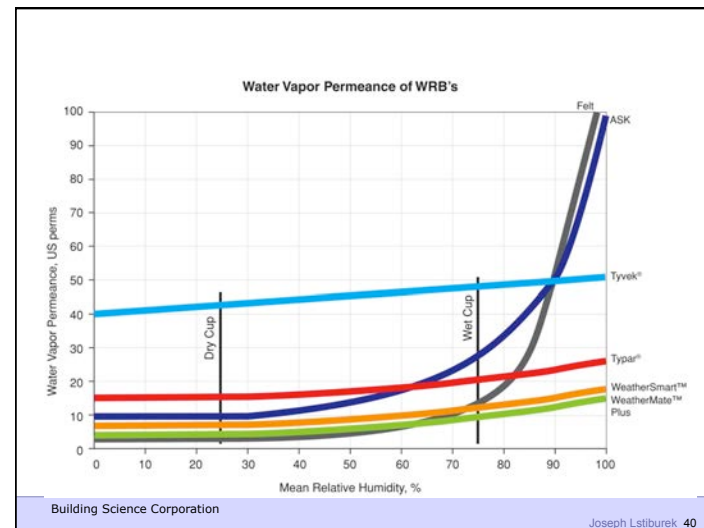
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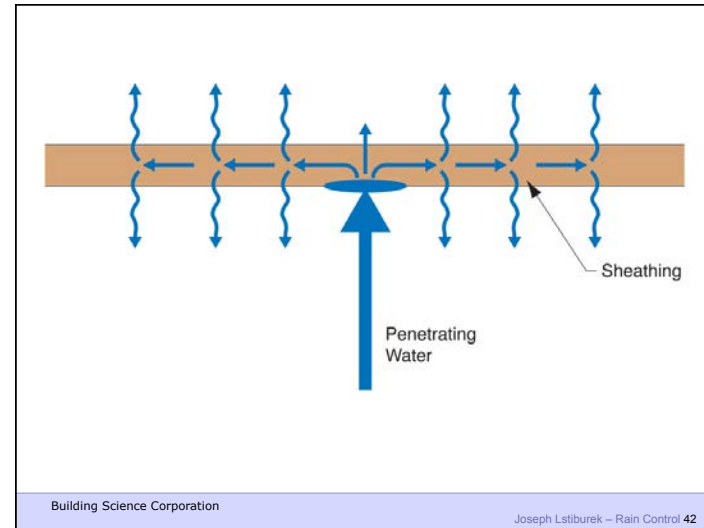
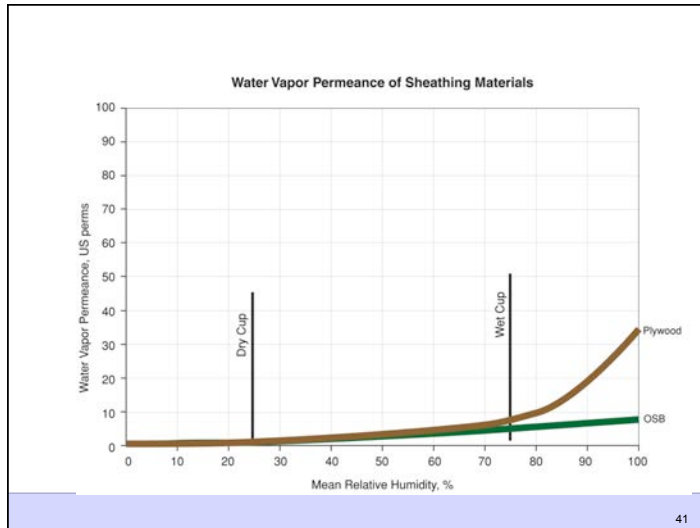
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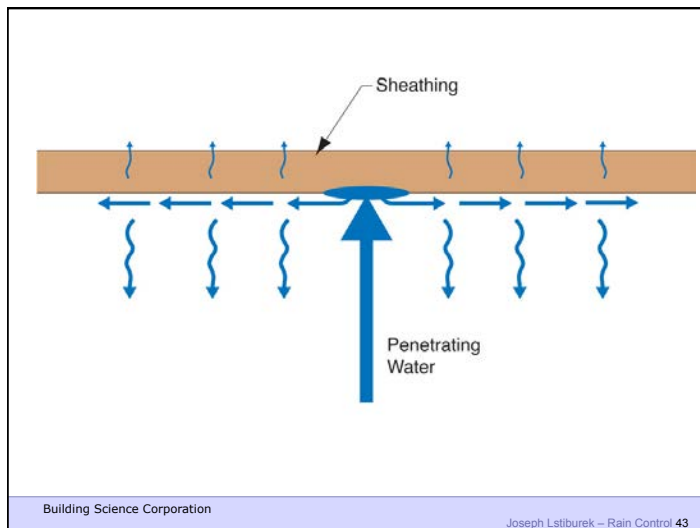
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Joseph Lstiburek – Rain Control 42



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Joseph Lstiburek – Rain Control 43

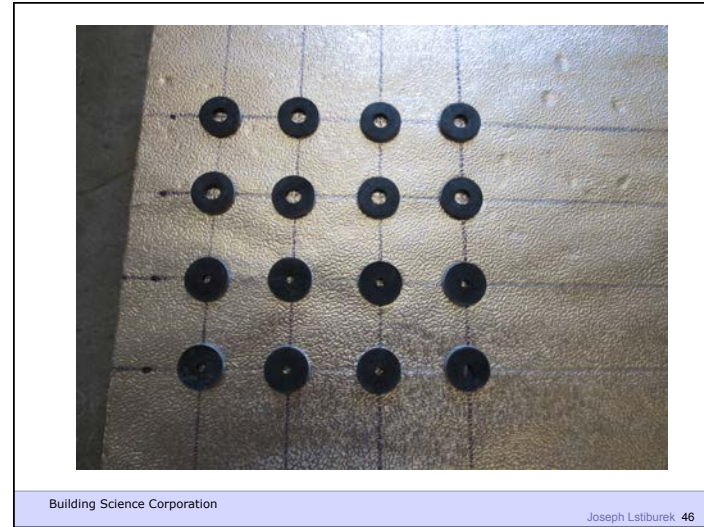


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Joseph Lstiburek – Rain Control 44

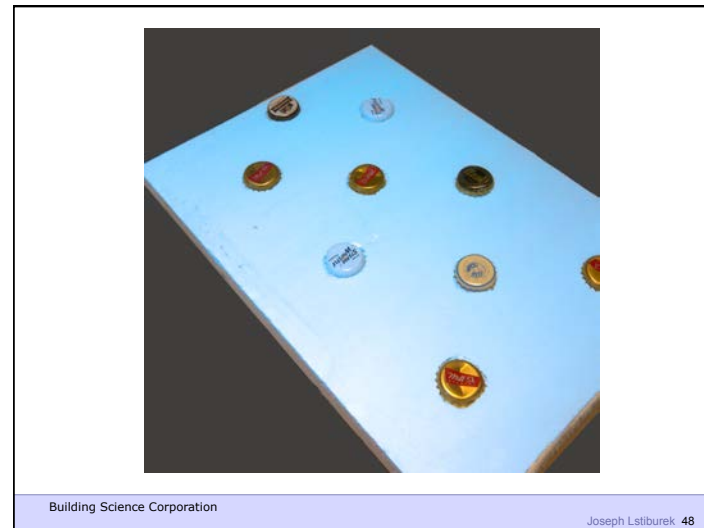
Rain Screen

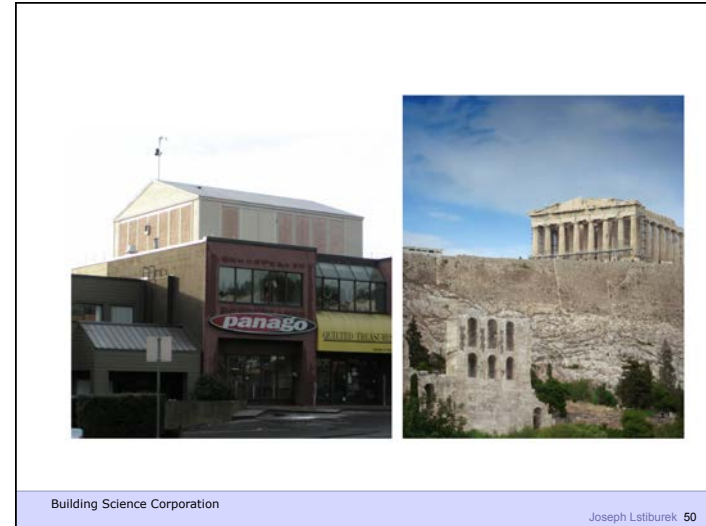
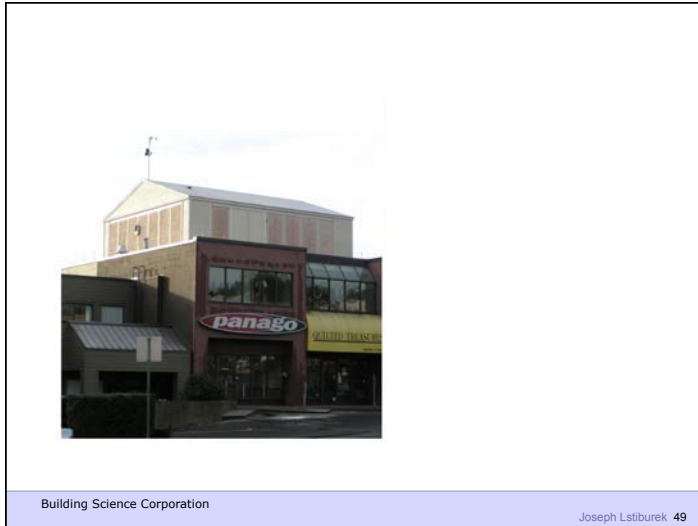
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Beer Screen?

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

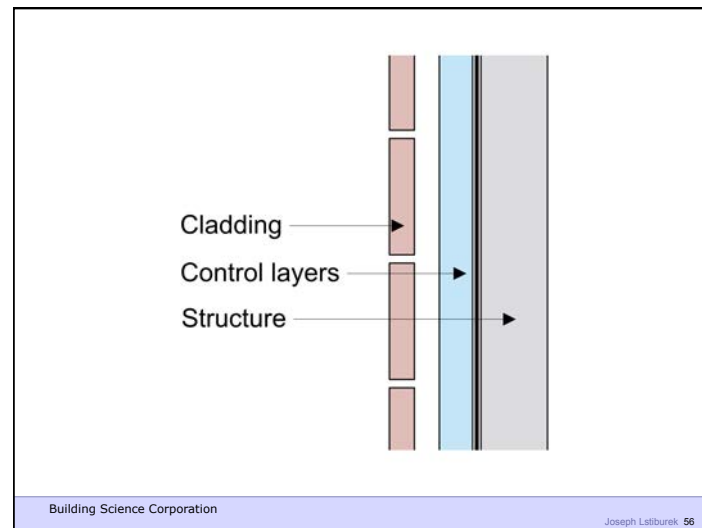
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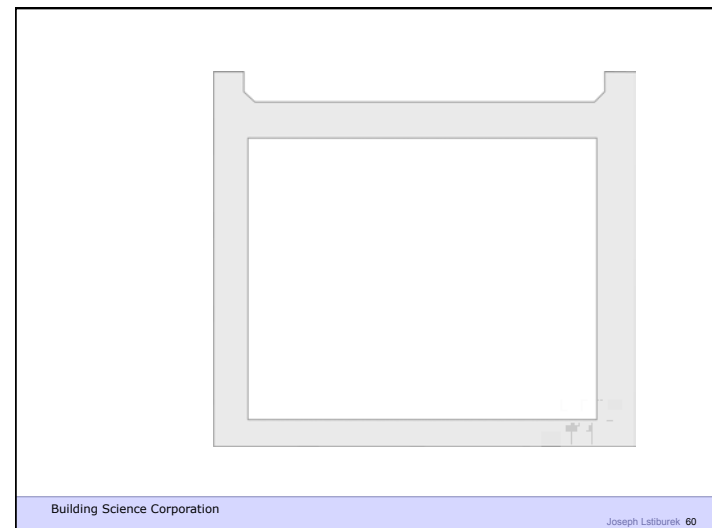
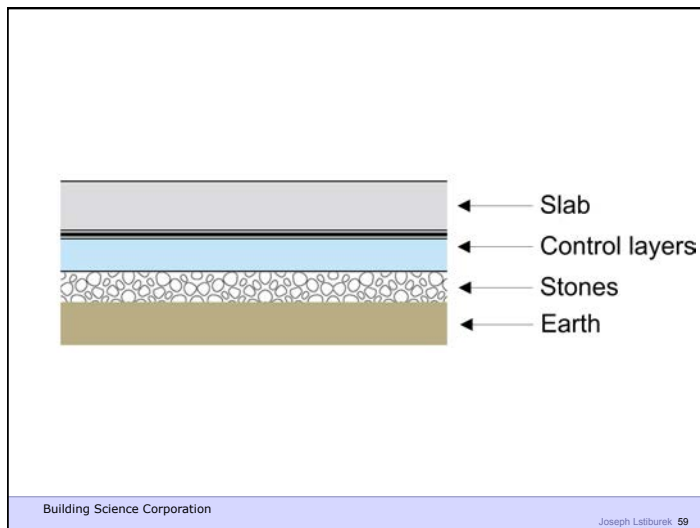
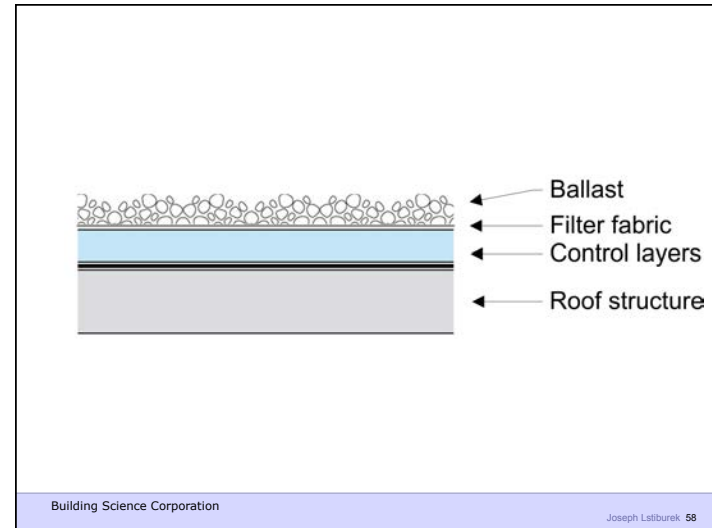
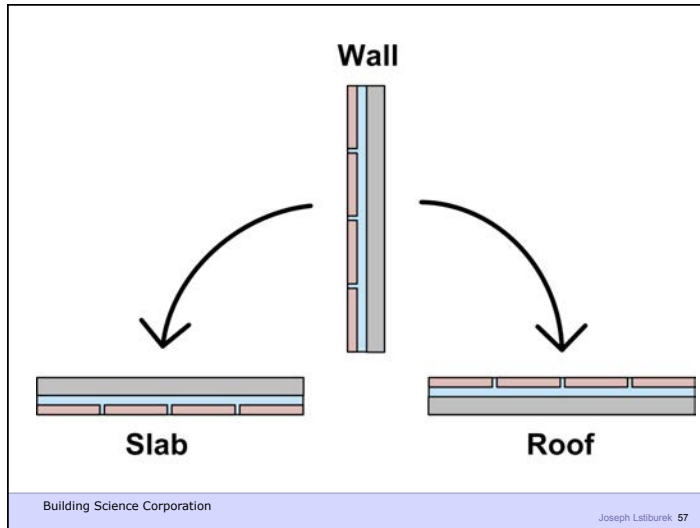
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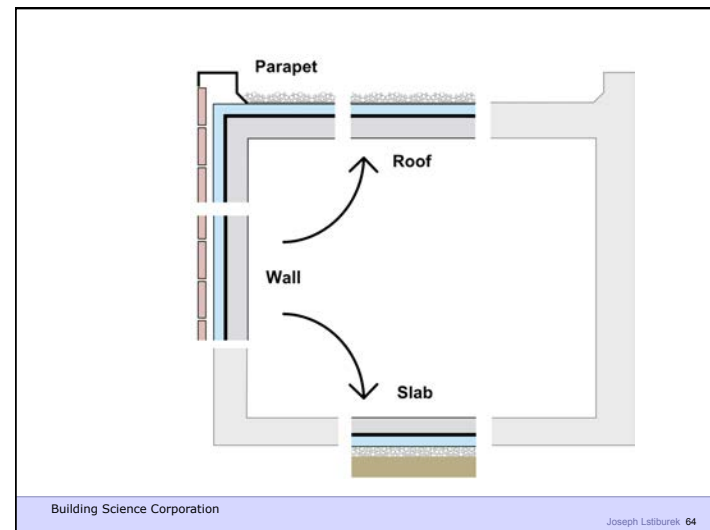
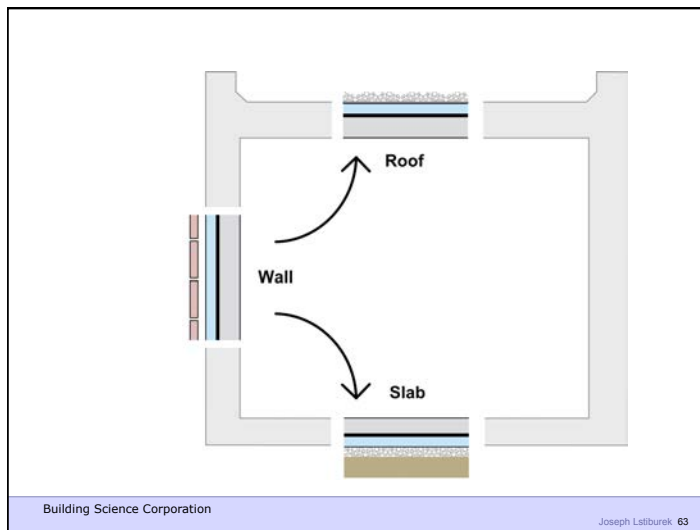
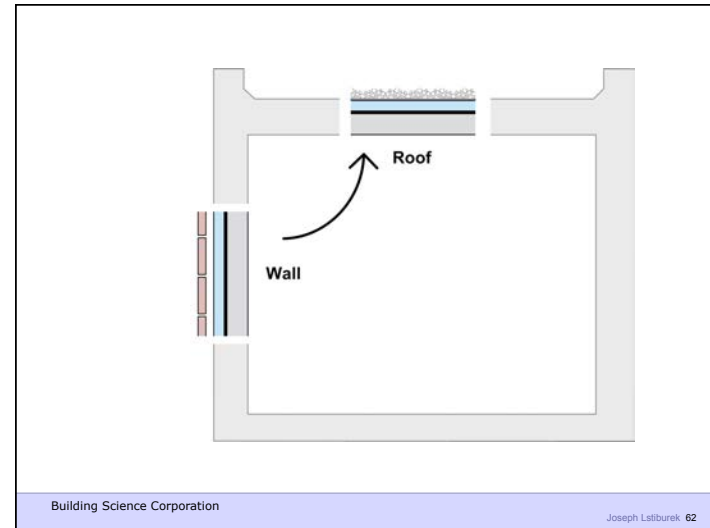
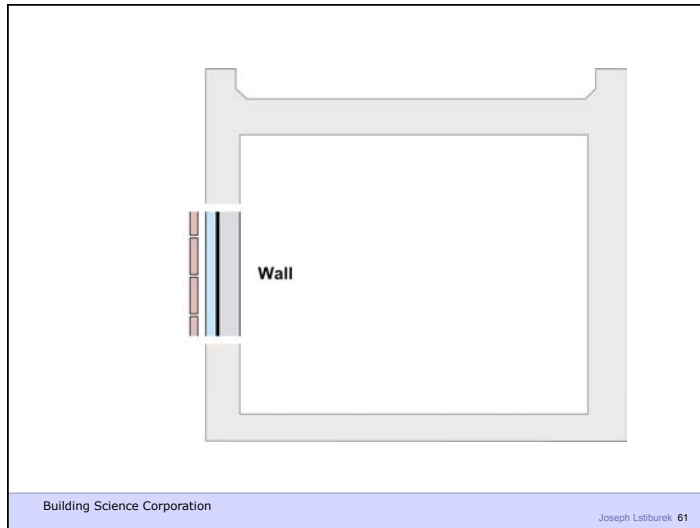
Water Control Layer
Air Control Layer
Vapor Control Layer
Thermal Control Layer

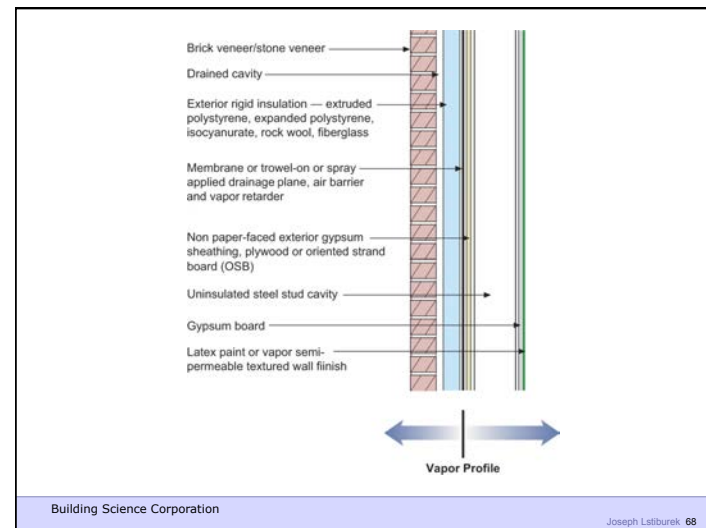
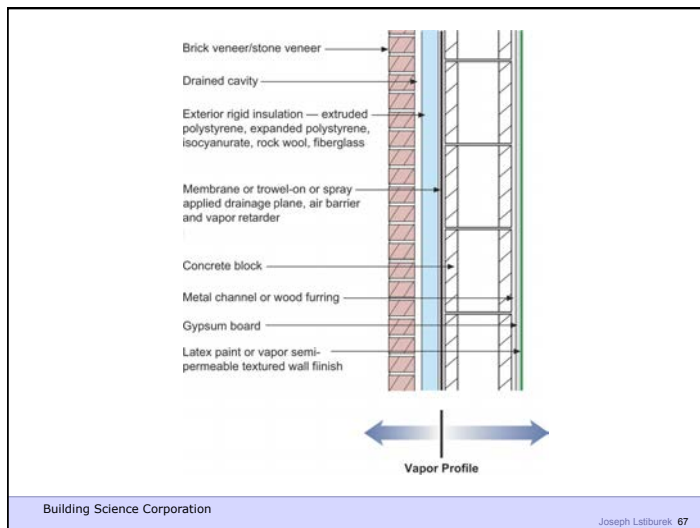
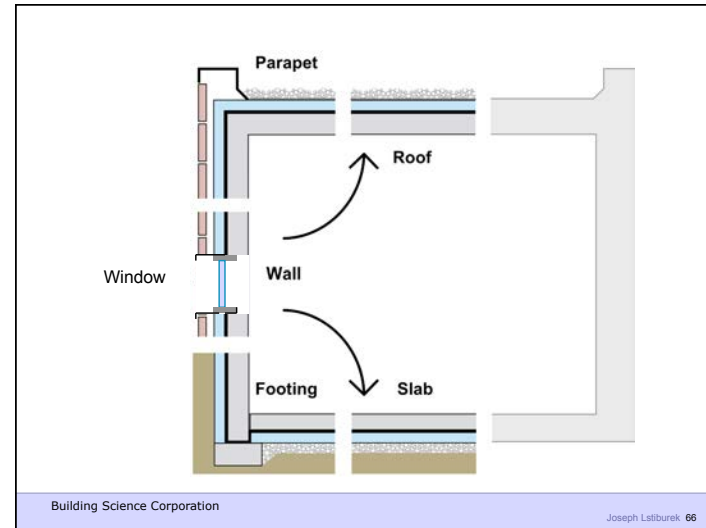
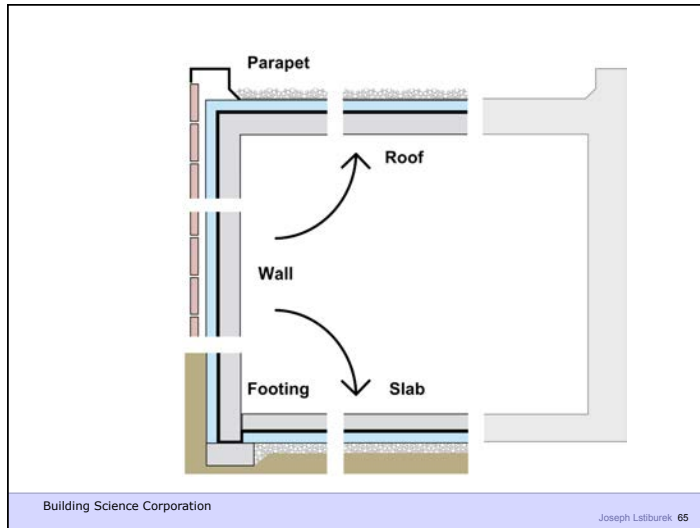
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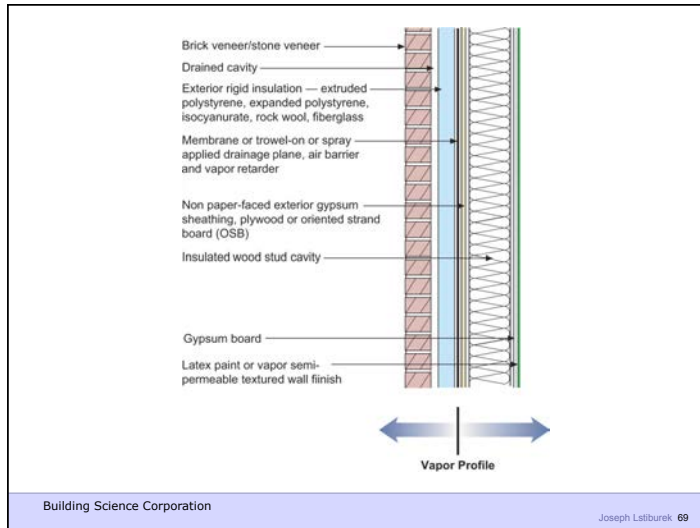
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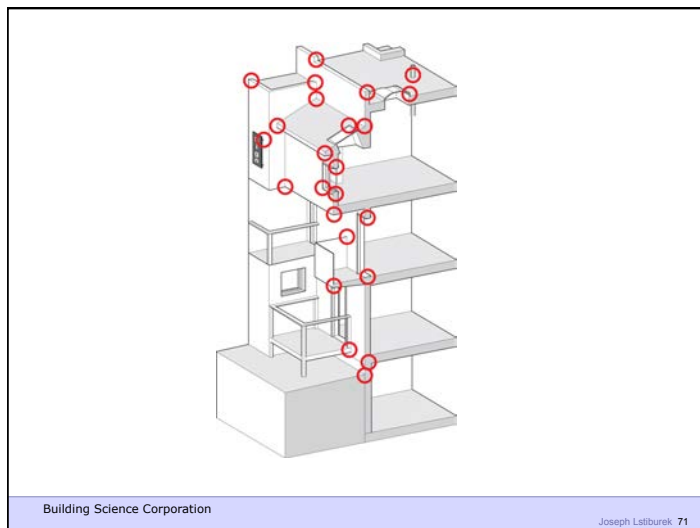


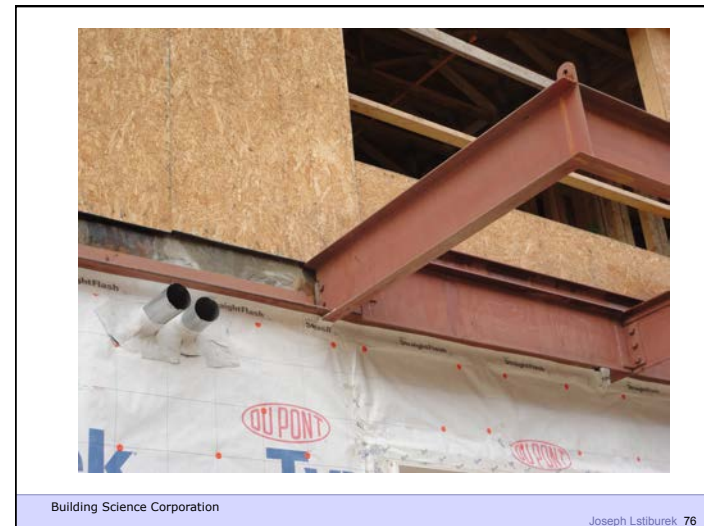
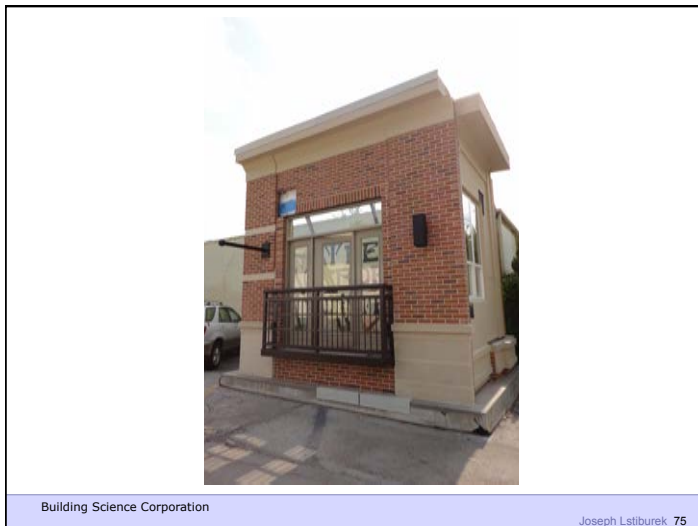


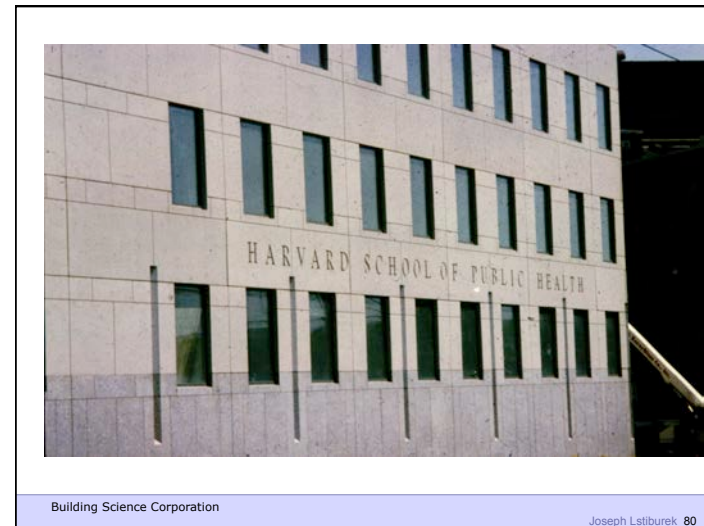
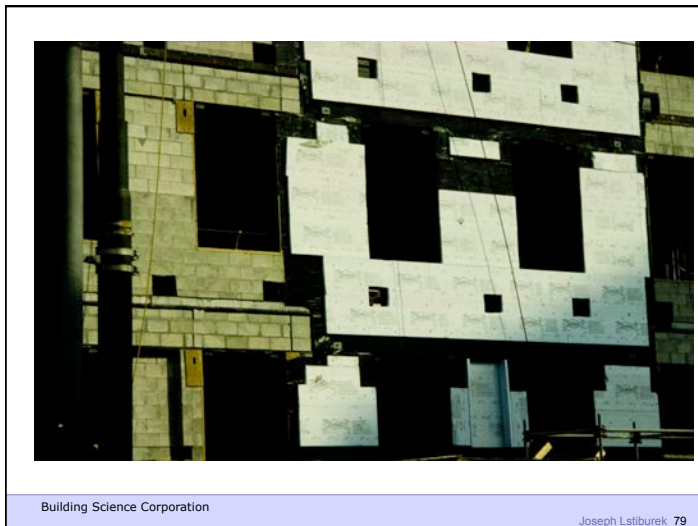
Commercial Enclosure: Simple Layers

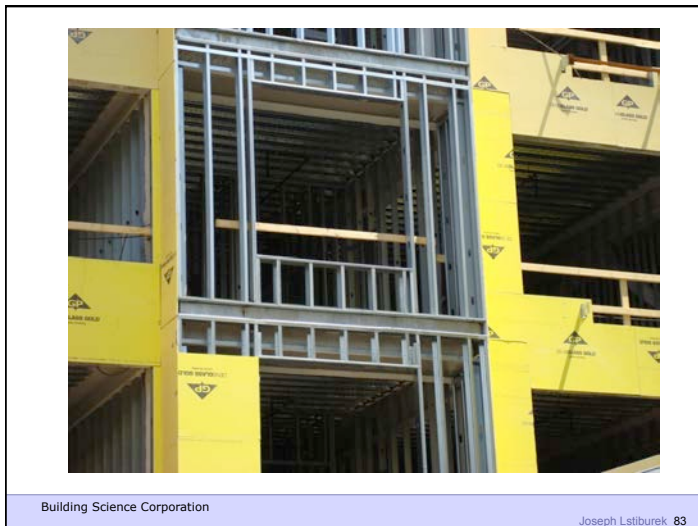
- Structure
- Rain/Air/Vapor
- Insulation
- Finish

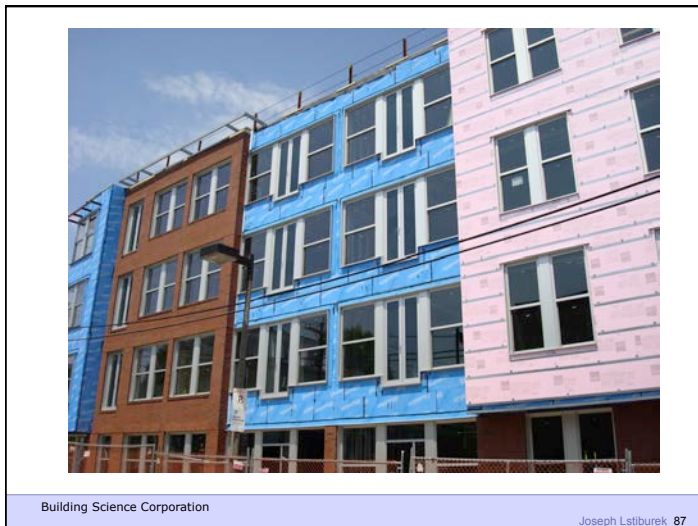
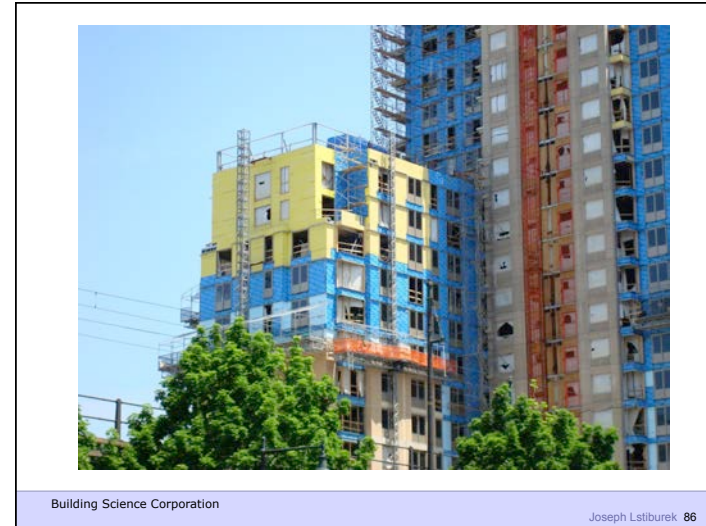
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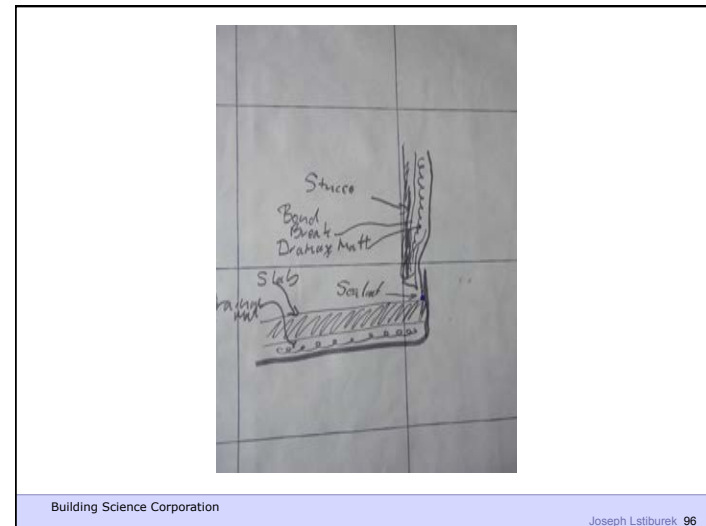
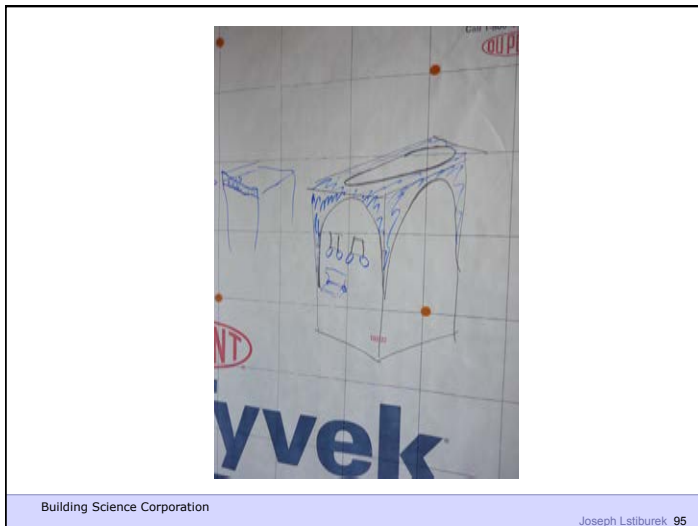


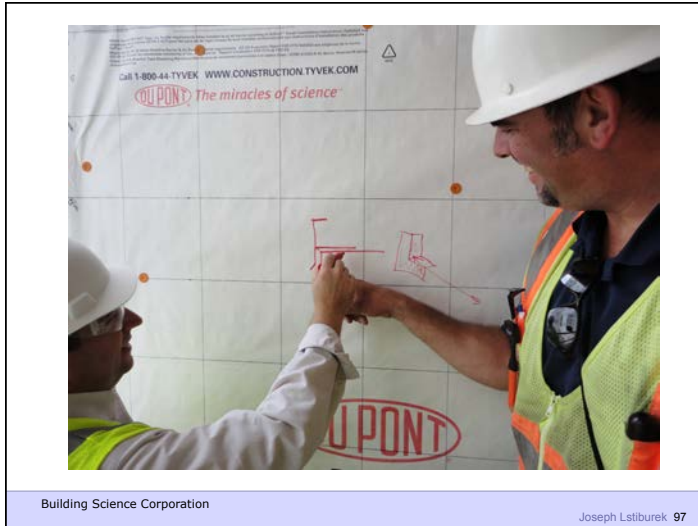


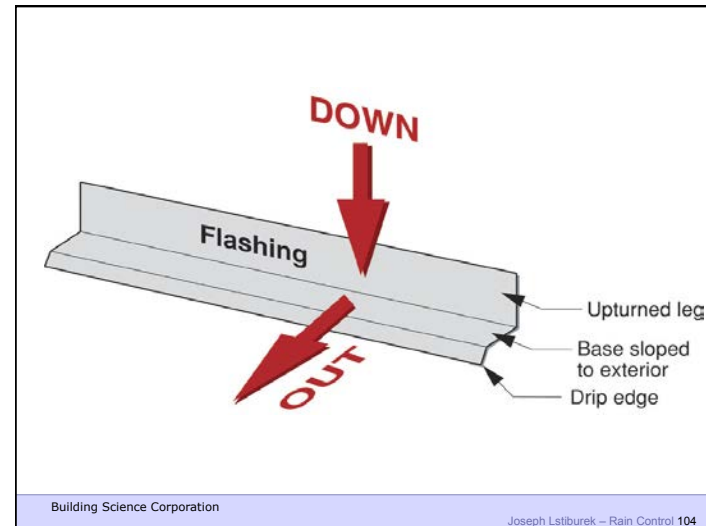
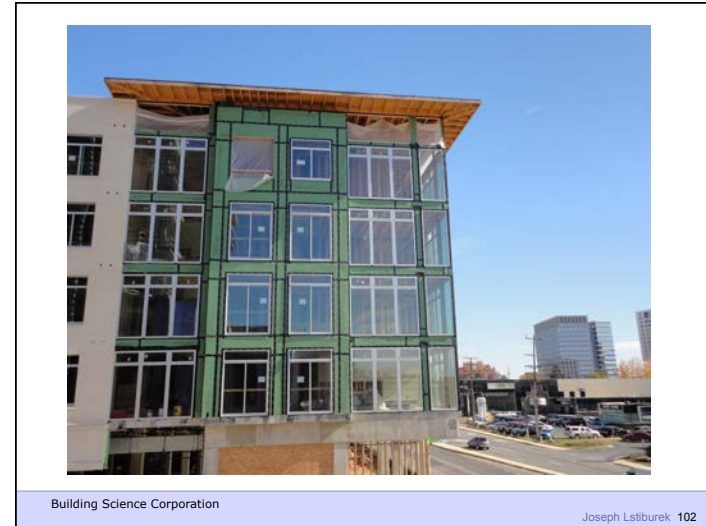


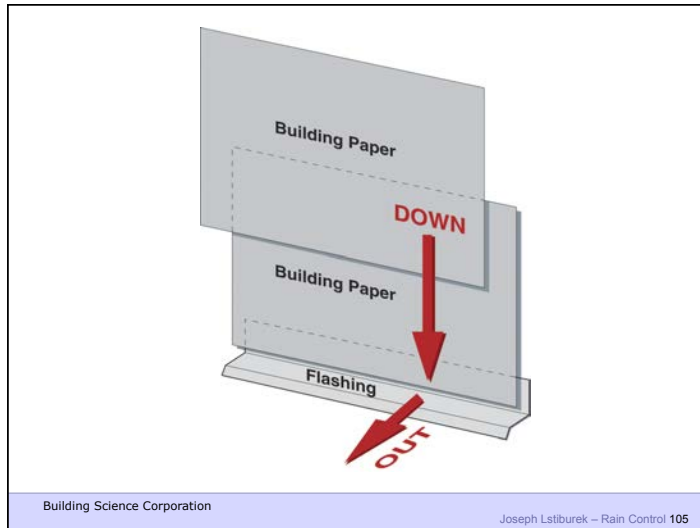


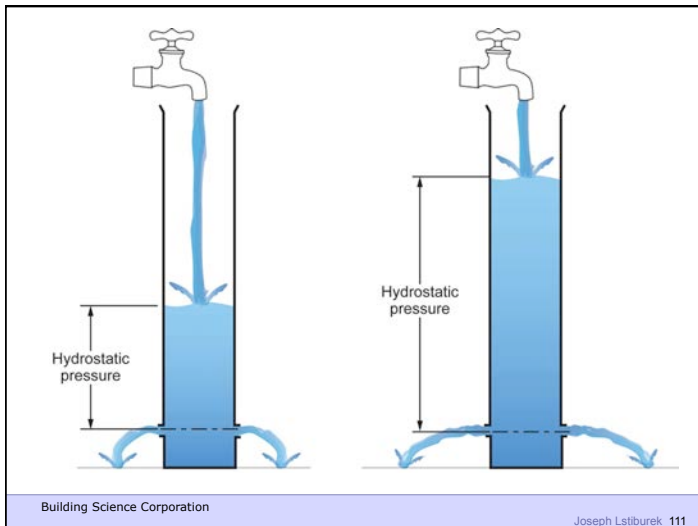


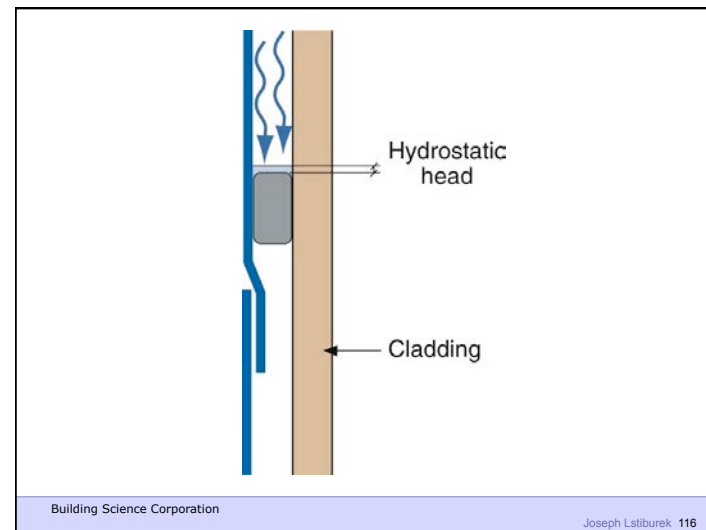
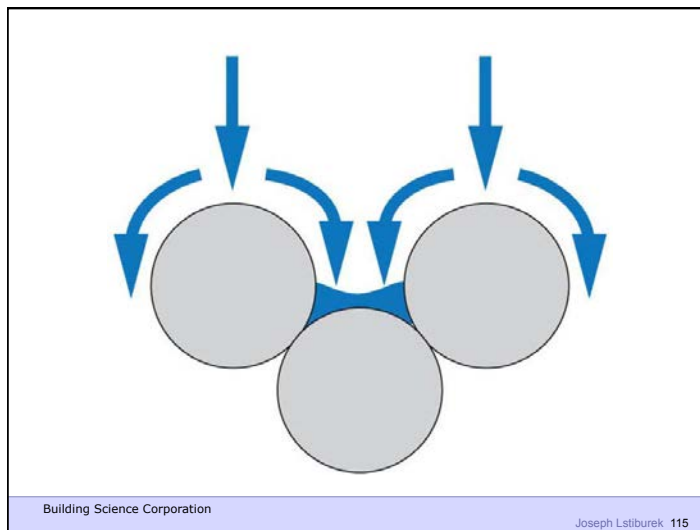
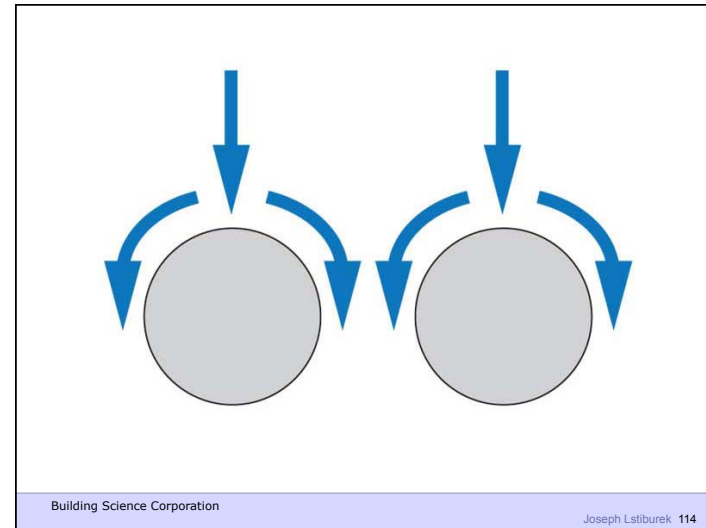
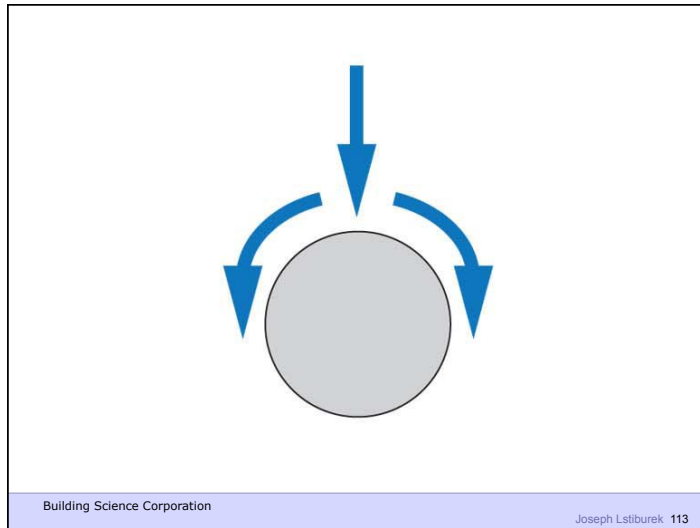


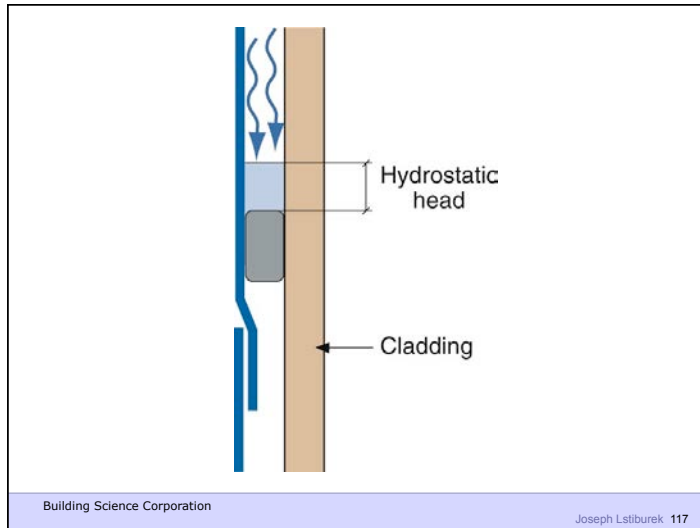






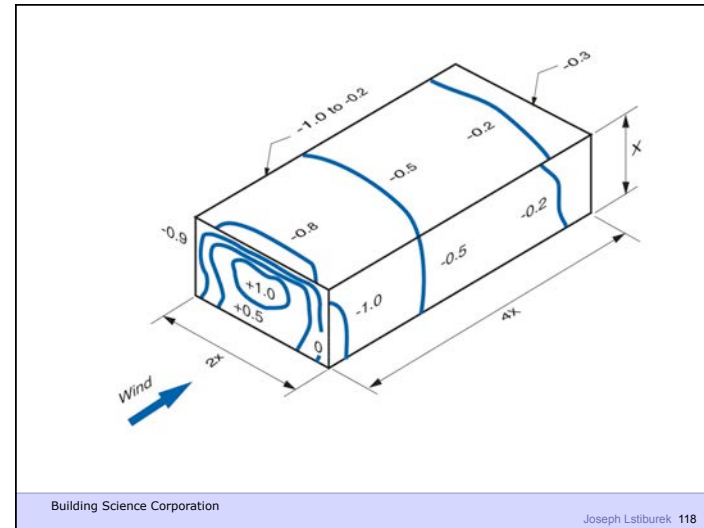






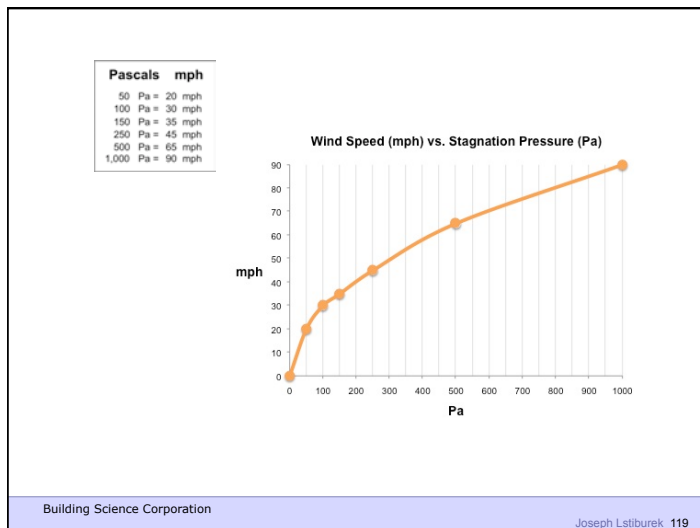
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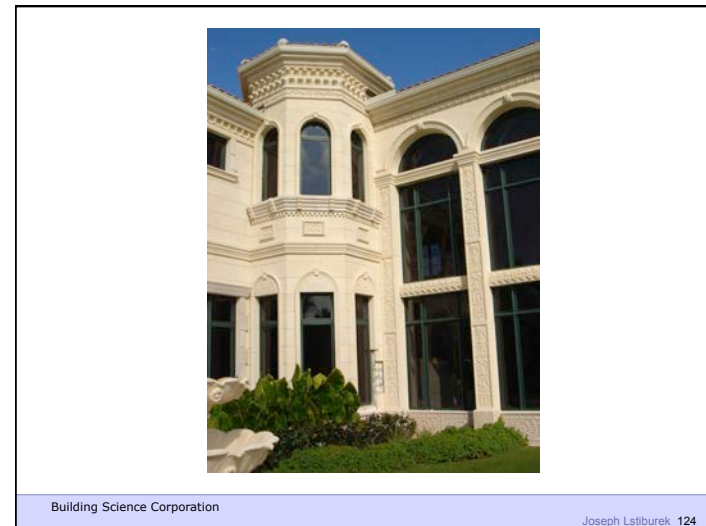
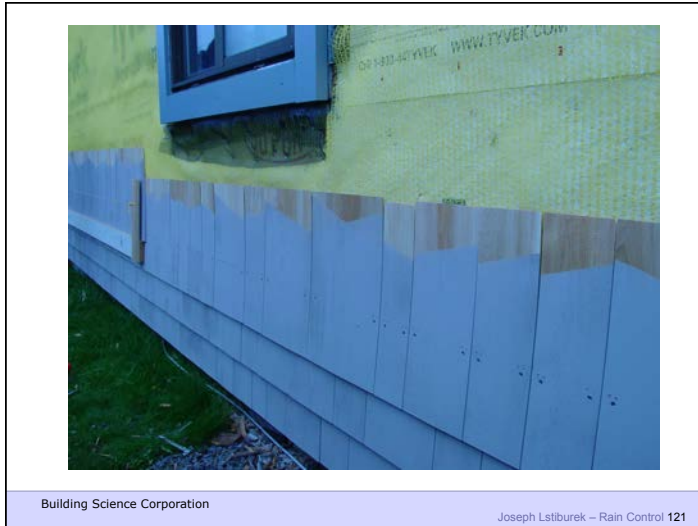
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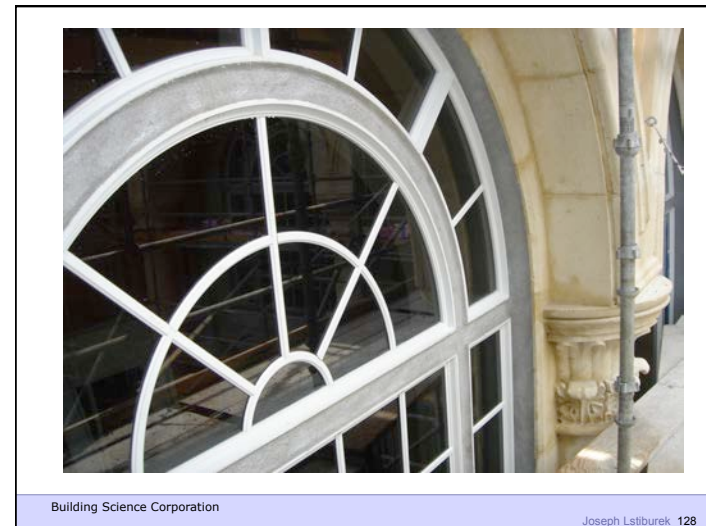
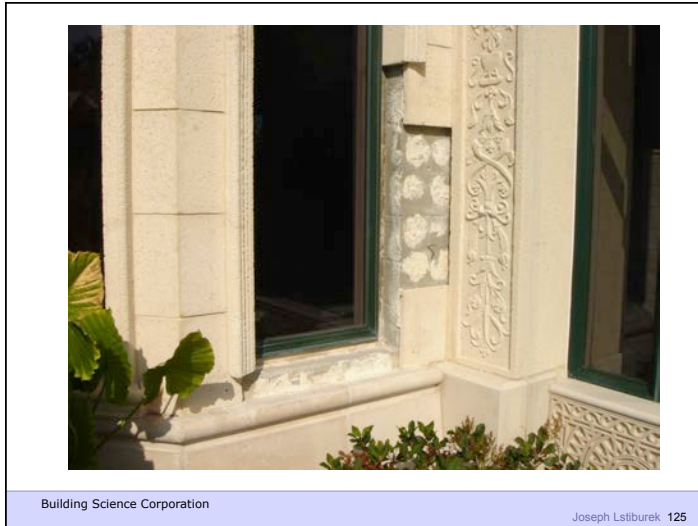
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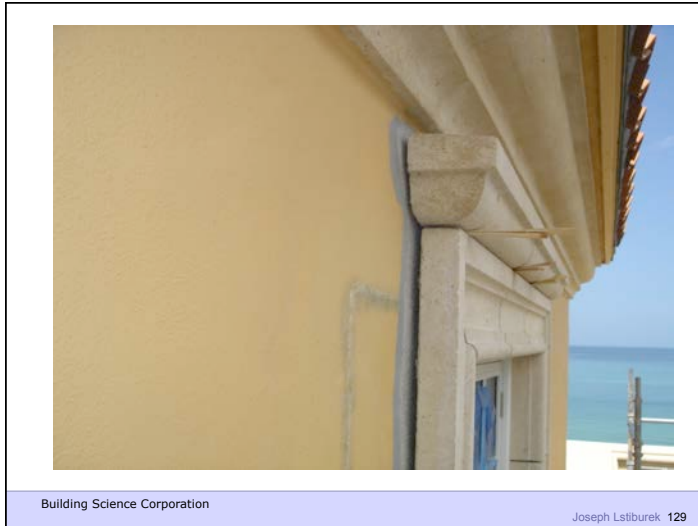


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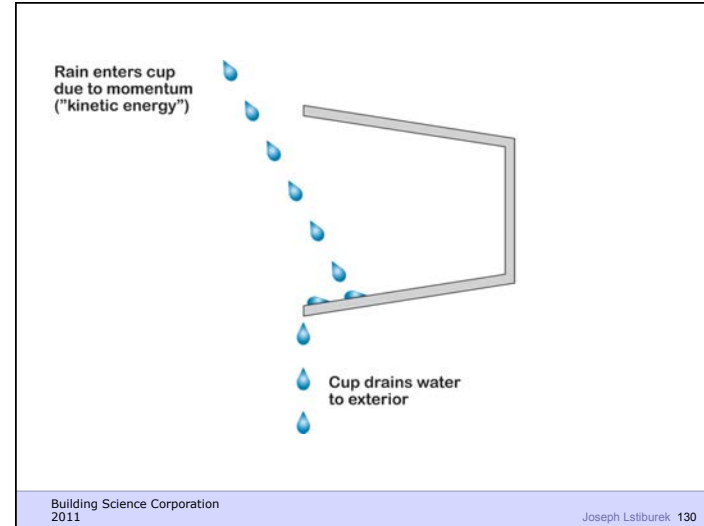






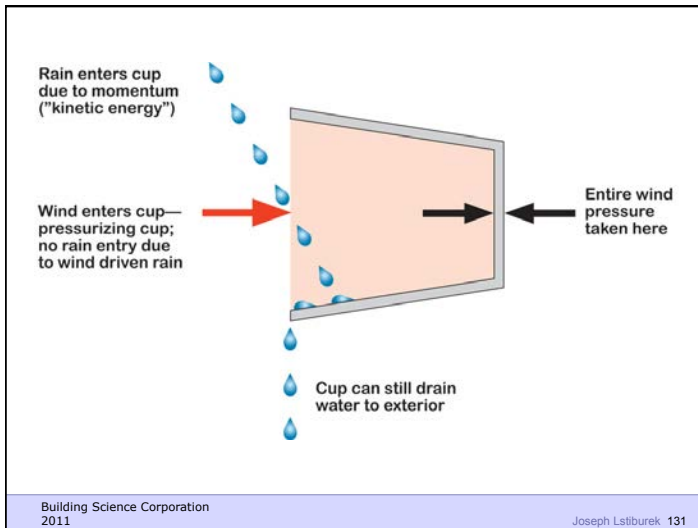
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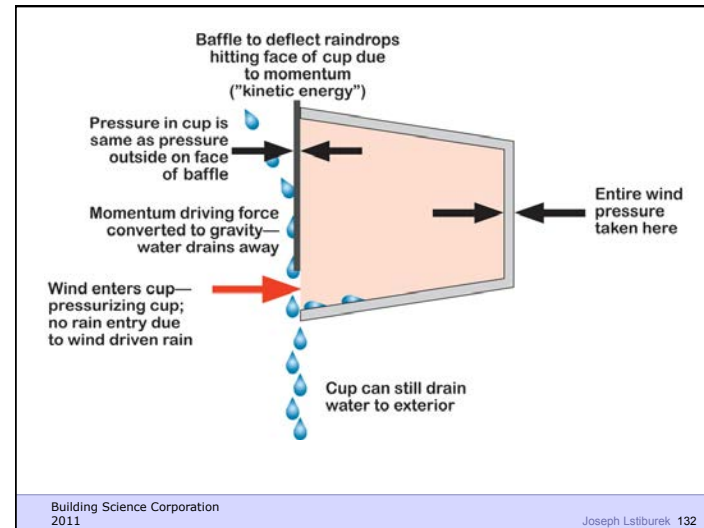
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