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Lessons from Visualizing the Functions of the Building Enclosure

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DOI: <https://doi.org/10.17831/rep:arcc%25y212>

Keywords: Building Enclosure, Experiential Learning Theory, Vapor Retarder, Air Barrier System

A study completed in 2012, by the author, surveyed designers and builders about their use and understanding of the air barrier system in residential construction. Results show that a larger percentage of builders than designers reported always performing blower door tests on their projects. The study also showed that a larger percentage of builders than designers believe that an air barrier system must be continuous to be effective. It is well known that an air barrier system must be continuous to be completely effective and it is hypothesized that more builders believe this because they have first hand, visual experience of air infiltration. Blower door tests depressurize a building to expose air leaks through the enclosure. If visualization of air infiltration has convinced more builders of the importance of the air barrier system, what other visual and experiential tests of the building enclosure could be devised for building professionals to reinforce the importance of other enclosure components? This paper explores possibilities for new experiential tests for a highly misunderstood layer of the enclosure, the vapor retarder. Reasons for its misunderstanding are numerous: placement is climate based, it is sometimes only millimeters thick, it is made of many parts, information on the topic is often unreliable and it is generally a confusing topic. For these reasons, the vapor retarder is often misused within the enclosure creating potential problems for structural rot and mold within walls. Is there an onsite testing option for this layer that would provide the same visual feedback that the blower door test gives for the air barrier system? This paper seeks to identify possible methods to teach building professionals using hands on experience and visualization about the function of the vapor retarder.

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Published

2014-06-26

How to Cite

McGlohn, E. (2014). Lessons from Visualizing the Functions of the Building Enclosure. *ARCC Conference Repository*. <https://doi.org/10.17831/rep:arcc%y212>

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7.2 Cell Structure Lesson Objectives Describe the structure and function of the cell nucleus. Describe the role of vacuoles, lysosomes, and the cytoskeleton. Identify the role of ribosomes, endoplasmic tubulins; they help organize cell division in animal cells Organelles That Build Proteins Three kinds of organelles work with the nucleus to make and distribute proteins: ribosomes: small particles of RNA and protein found throughout the cytoplasm in all cells; they produce proteins by following coded instructions from DNA the endoplasmic reticulum (ER): an internal membrane system where lipid components of the cell. How are these functions illustrated? 4. Which feature of the nucleus is not clearly shown by the visual analogy?