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Institute for Research in Construction

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Evaluating the Effectiveness of Window/Wall Interface Details to Manage Rainwater

Objectives

This laboratory project will evaluate specific window/wall interface construction details to determine how effectively they manage rainwater intrusion into a wall assembly.

Background

Inadequate detailing and installation of windows are causing a significant number of building envelopes to fail prematurely. To reduce the number of failures, new construction details have been developed to better manage water intrusion at the window/wall interface. There is a need to evaluate the effectiveness of these details.

Statement of Work

We will begin by developing a procedure to assess the ability of these new details to mitigate rainwater penetration into a wall assembly. Then, using our dynamic wall testing facility, we will assess the water-management capabilities of specific construction details for a select combination of window types and wall-cladding systems (e.g., vinyl, and hardboard) installed according to both standard methods and variations of best practice. The facility simulates wind-driven rain conditions on wall specimens 2.4 by 2.4 metres in size.

Expected Outcomes

The results of this collaborative study will be verification of the effectiveness of the window/wall interface details. The information will be used by Canada Mortgage and Housing Corporation to develop a best-practice guide for window installation in both low-rise wood-frame construction and high-rise residential buildings. For each wall assembly tested we will provide detailed results on its performance.

Partners

Canada Mortgage and Housing Corporation, Public Works and Government Services Canada, DuPont Tyvek, and Building Diagnostics Technologies Inc.

Dynamic Wall Testing Facility

Start/Expected Completion Dates

This project began in May 2003 and will be completed in 2006.

Project Manager

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For more information, see http://irc.nrc-cnrc.gc.ca/bes/hmpe/rainwater_e.html

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