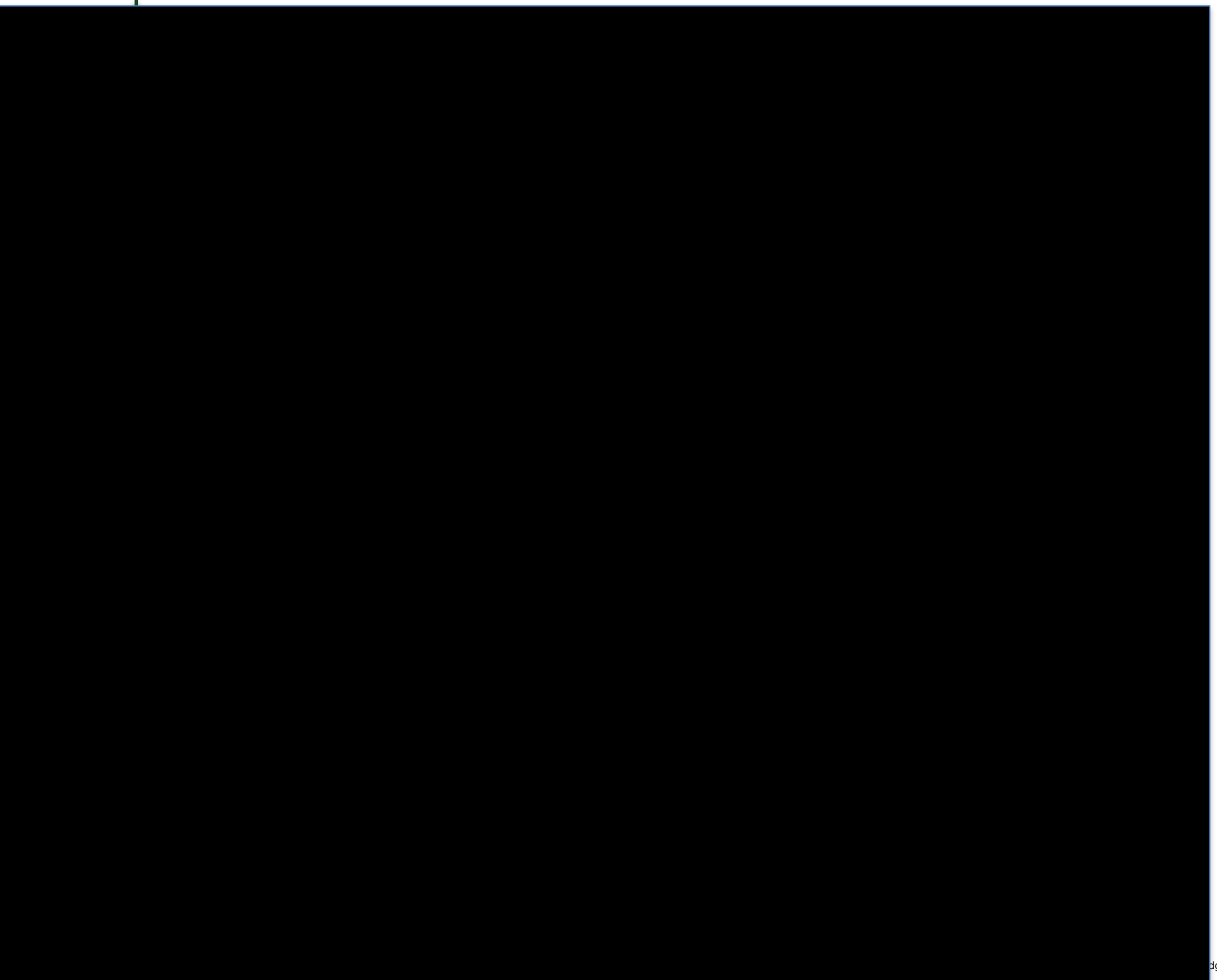


JOHN R.S. EDGAR
CONSULTING INC.

EIFS

Exterior Insulation and Finish Systems

Presenter

- John Edgar
- 40 years in the EIFS industry
- Active in Canadian and International Standards
- EIFS expert on OAHI Facebook page

Program

1. Message from EIFS Council of Canada
2. What is EIFS and what isn't ?
3. History
4. Difference between barrier and drained EIFS
5. What to look for
6. Who's Who in the industry
7. Standards and Ontario Building Code

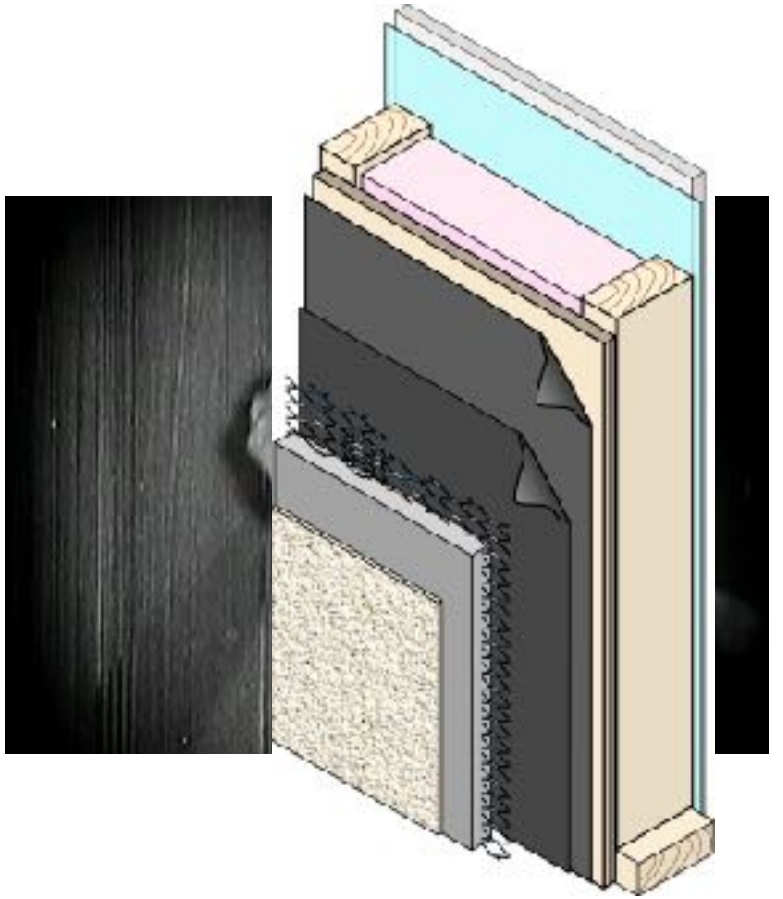
EIFS Council of Canada

History, what is and isn't EIFS

BACKGROUND

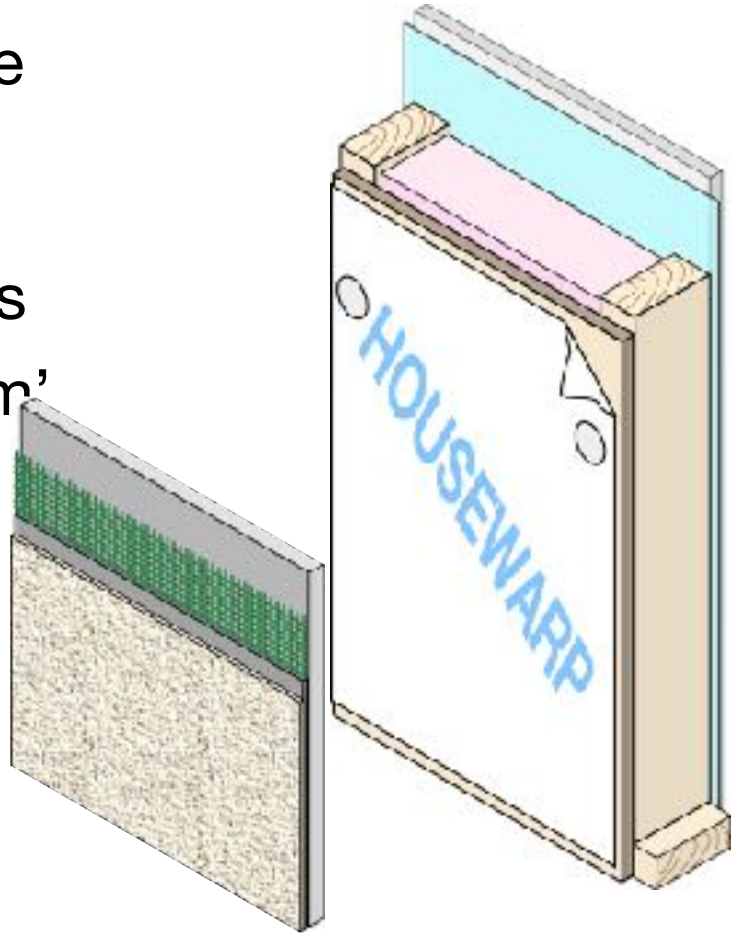
What isn't EIFS

- Stucco isn't EIFS
  - stucco is a cement-based plaster ~20 mm thick
  - stucco is supported by lath
  - stucco requires joints every 13.3 m^2 at a minimum
  - it may have an EIFS type of finish
  - stucco sounds hard when you knock on it.



What is not EIFS

- Cement board with a base coat, mesh and finish
- Alternative with insulated sheathing and taped joints
- not evaluated as a ‘system’ and has no performance requirements

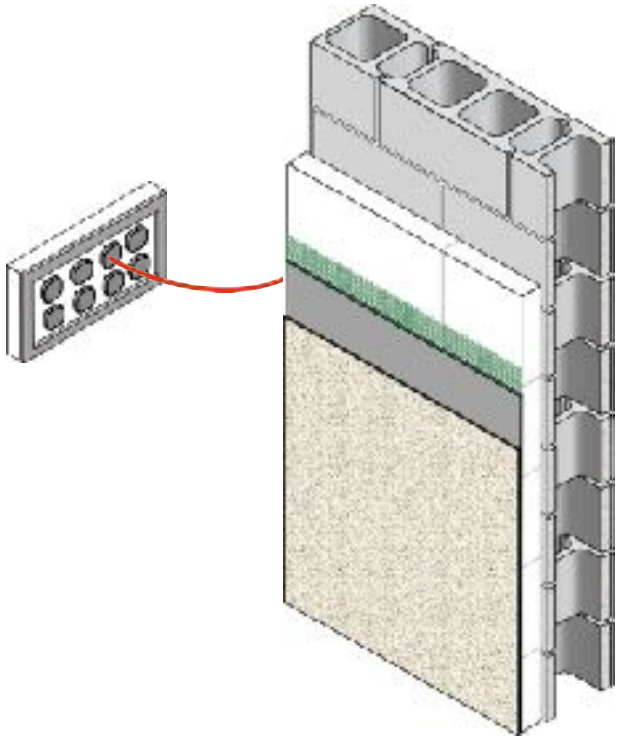


What is EIFS ?

- Exterior Insulation and Finish System
- Pronounced “eefs” not “efus”
- Can be barrier (before 2005) or drained
- Should be adhesively fastened, but some are mechanically fastened over paper or house wrap
- Home inspector problem: was it acceptable when built and is it acceptable today?

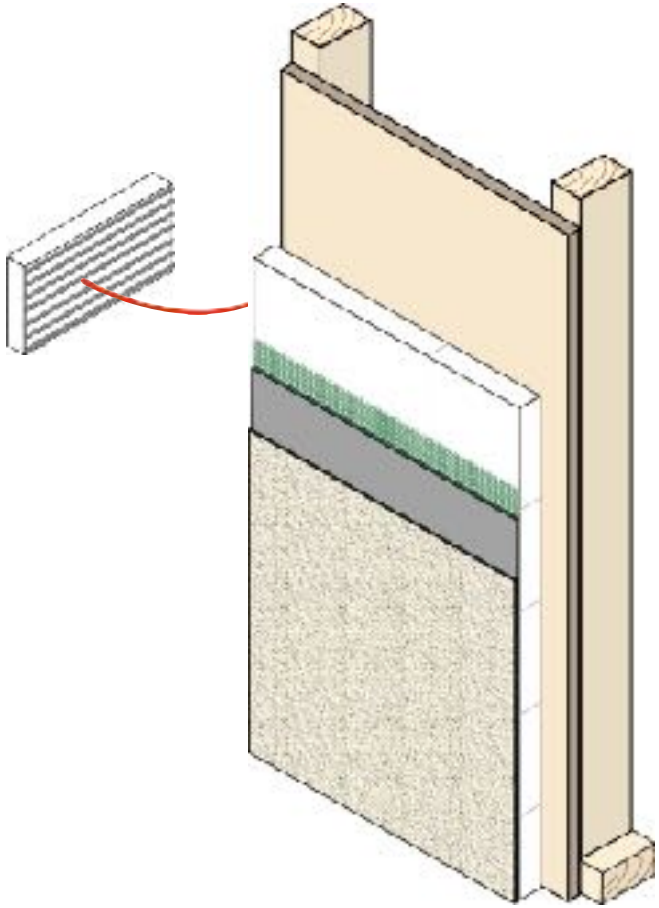
History of EIFS

- Invented in Germany c. 1960
- Only barrier EIFS - adhesively fastened to masonry or tile
- Used ‘ribbon and daub’ method
- Introduced to North America in the late ’60’s



History in North America

- Frame walls with water-sensitive substrates
- Ribbon and daub used at first
- Horizontal ribbons introduced to control thickness
- Barrier wall = no drainage
- Water intrusion issues c.1996 in NC and BC

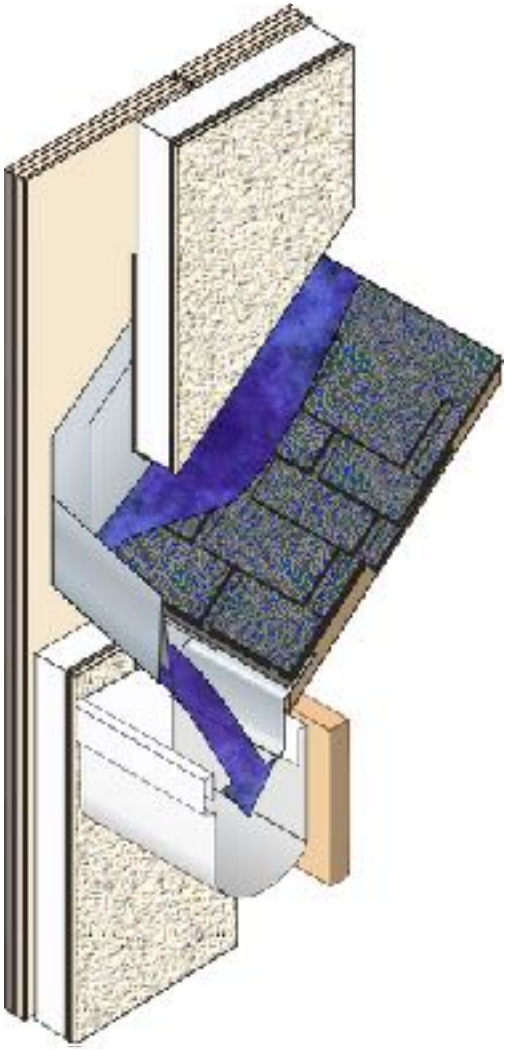


Window Problems

- Windows leak
- 50% damage under corners of windows
- Flashing has always been required under windows
- Flashing is required to drain outbound of the wall finish
- Photos from 1996
- Labelled on internet as an “EIFS problem”

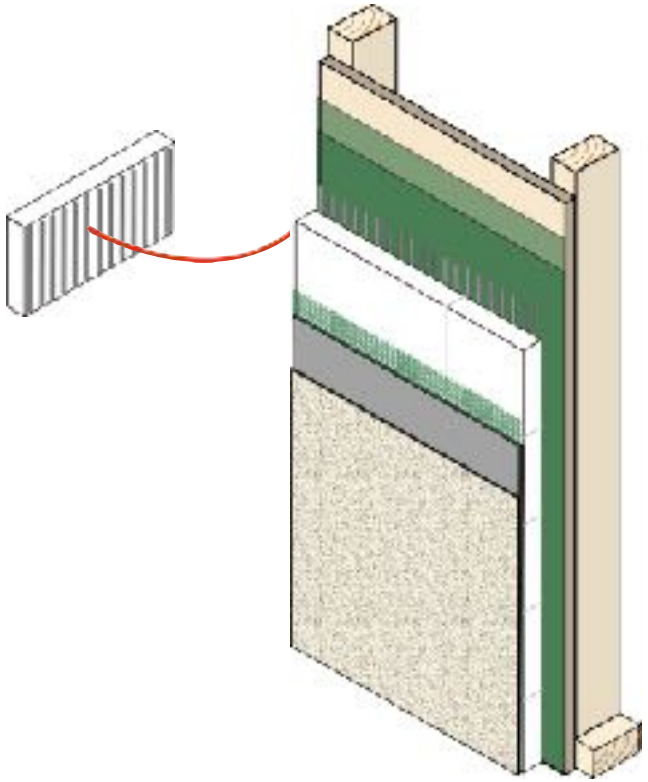
Diverter Flashings

- Missing diverter flashing resulted in 35% of NC water intrusion issues
- Water flows into the wall
- Diverter directs water into eavestrough.
- If it is missing it should be corrected.



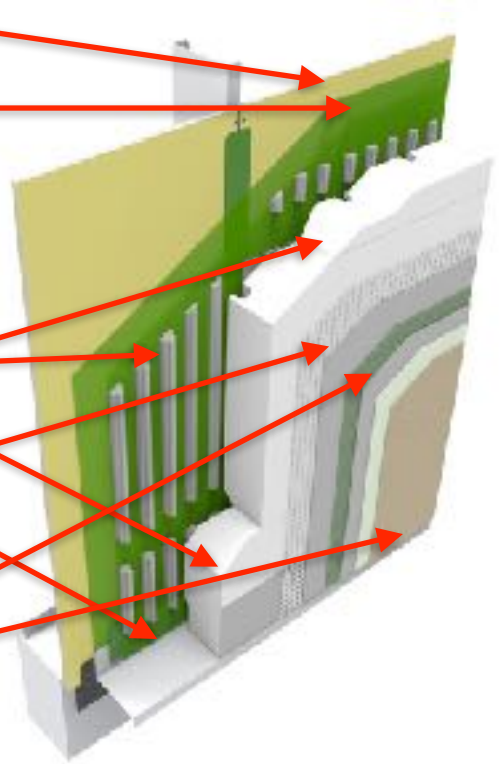
Current EIFS

- EIFS changed to include back-up protection and drainage.
- two coats LA-WRB required over wood sheathing.
- Vertical ribbons of adhesive allow incidental water to drain.



What is EIFS ?

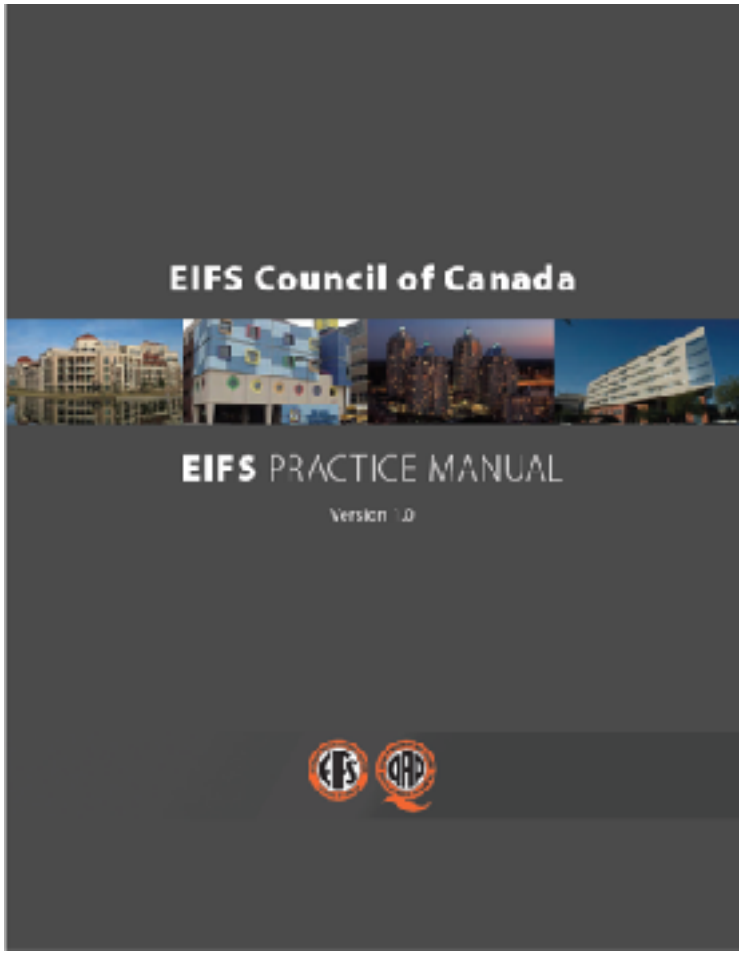
- Substrate
- Liquid-applied water resistive barrier
- Flashing
- Pre-wrapped starter
- Adhesive ribbons
- GDDC insulation
- High impact mesh
- Standard mesh + base coat (lamina)
- Finish



State of the art

- EIFS Council of Canada Practice Manual
- Covers everything you need to know about EIFS installation today
- Free download from ECC website at:

  eifscouncil.org/eifs-practice-manual



What to look for

CHECKING A HOUSE WITH EIFS

Question #1

- When was the EIFS installed ?
  - Before 2000 = probably barrier EIFS.
  - Check details carefully for signs of water intrusion.
  - If none, it is probably OK.
  - 2000 - 2005 = change to drained EIFS.
  - CCMC required secondary weather protection.
  - After 2005 = only drained EIFS acceptable.
  - Since January 2014, EIFS included in Ontario Building Code.

EIFS Checking

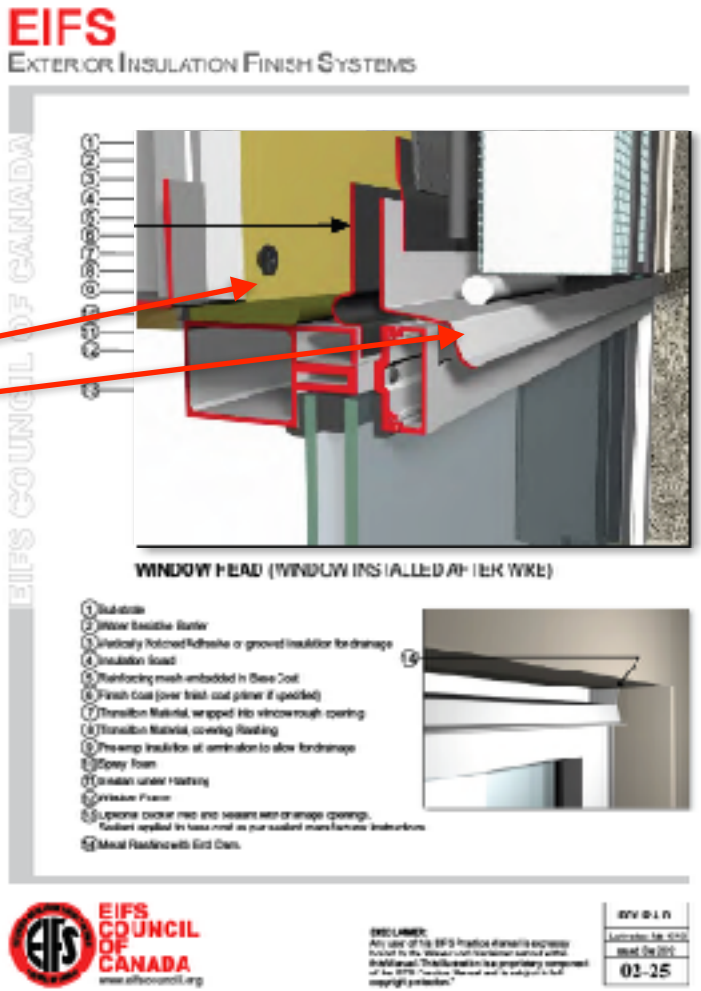
EIFS Check

Windows - the 50%er

- Windows let you know if there is a concern.
- Check for signs of wetness with a Tramex Moisture Meter.
- If indications show moisture over 30%, then invasive inspection is recommended.

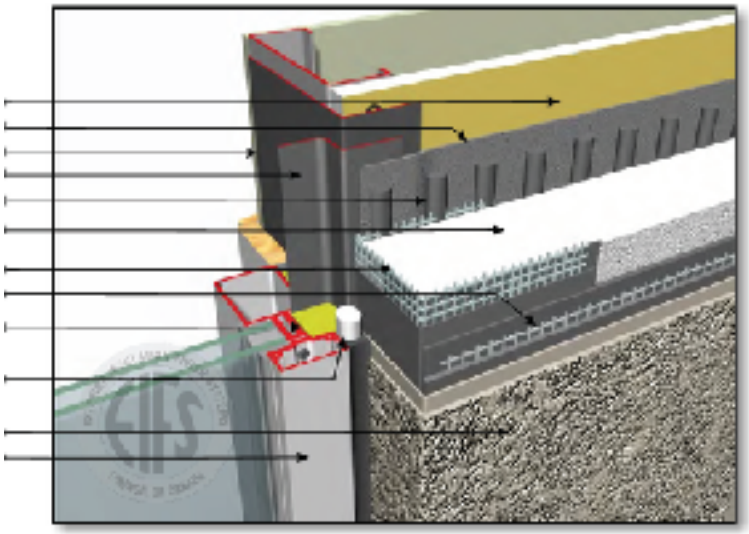
Window Head

- Rough opening protected
- Head flashing
- What to look for:
  - flashing
  - end dams
  - drainage space



Window Jamb

- Rough opening protected
- What to look for:
  - 13mm (1/2”) sealant bead
  - Sealed to base coat
  - Is it still bonded ?
- A ‘fillet’ seal between window face and EIFS finish is not correct.



WINDOW JAMB
(TRANSITION "WRB" MATERIAL AT ROUGH OPENING AND TRANSITION MEMBRANE ONTO FRAME)

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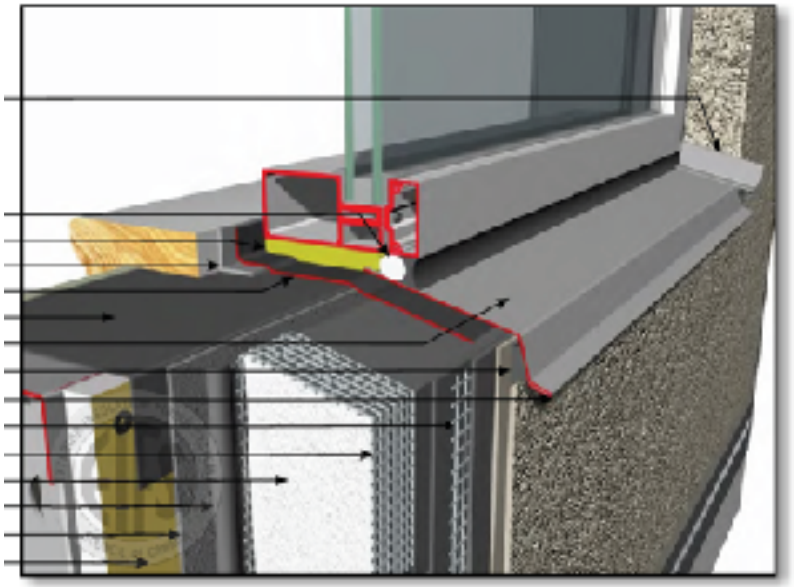
EC R&D
08-25

Window Sill

- Sill flashing to drain outbound of cladding
- Code requirement for all windows and all cladding
- Will have to change for SB12 and new energy codes



WINDOW SILL, OPTION -B- (MEMBRANE SUB-SILL)

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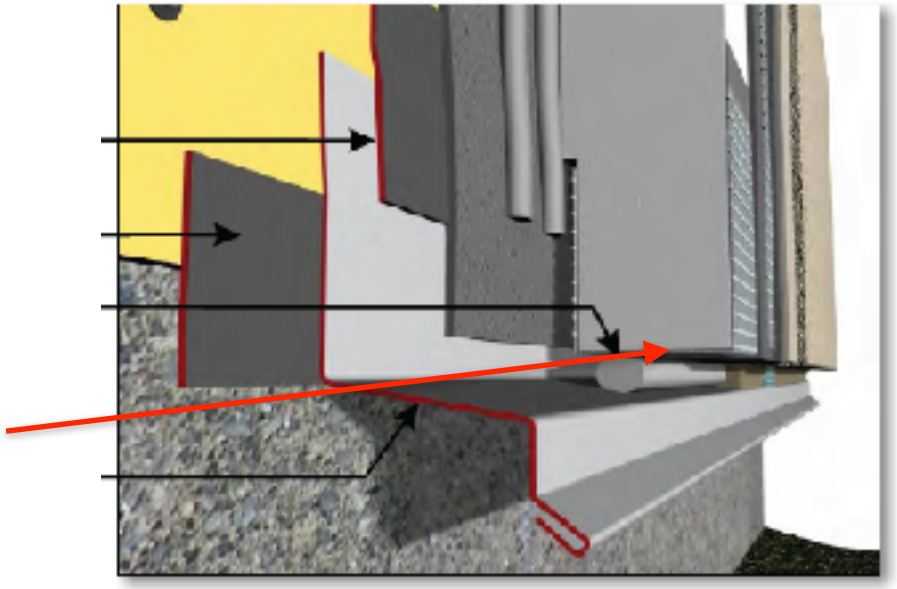
Termination above grade

- Above grade !
- Flashed to drain
- Sealed with drains and bug vent screens

- Pre-wrapped or back-wrapped

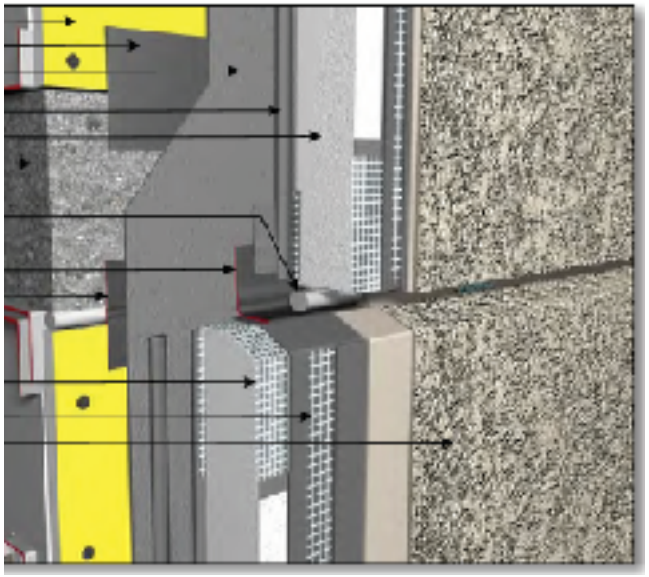


Selfie Cameras

- Good for checking the underside of termination
- Example =
  a project from 1980's
- Has some wear and tear but was properly done for the time.
- Will require maintenance

Floor Line Joints

- A requirement for wood frame - always !
- If it is not there, then cross grain shrinkage in joists may crush the EIFS.
- If it hasn't been there for many years and nothing has happened … it won't happen.



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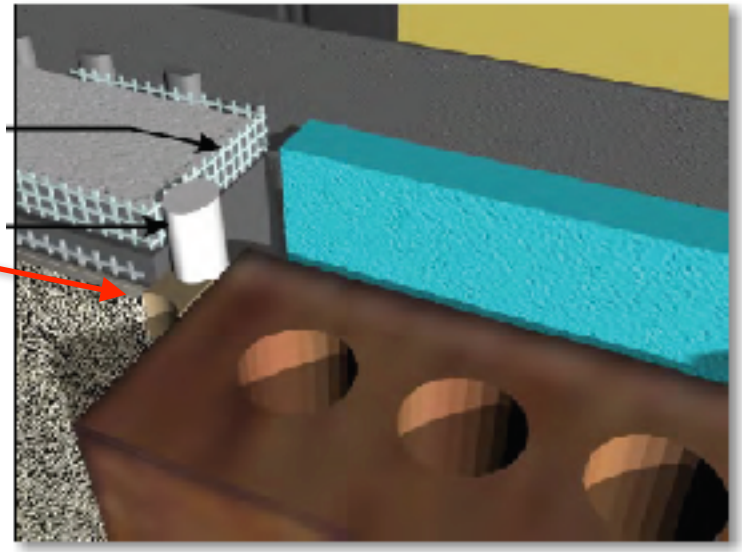
11-25

Vertical Termination at Another Material

What to look for:

- 20 mm (3/4”) sealant joint
- Sealant bonded to base coat, not finish



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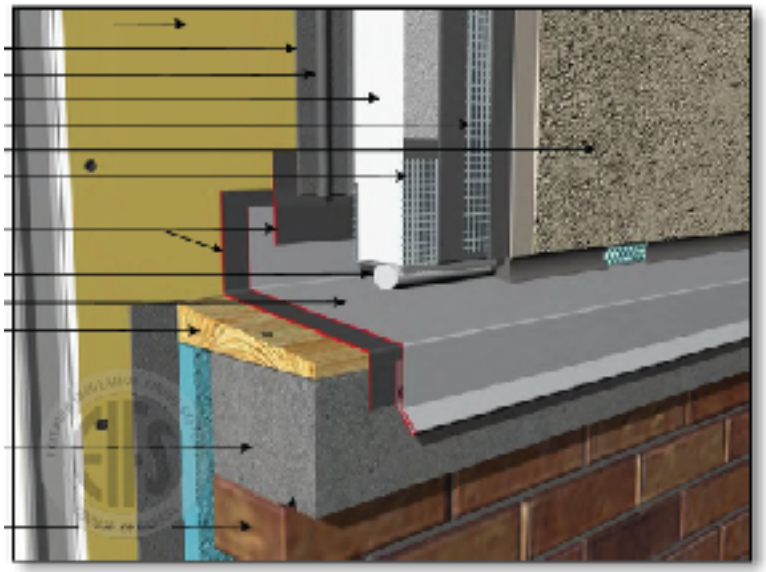
13-25

Horizontal Termination at Another Material

- Water draining behind EIFS flashed to exterior
- What to look for:
  - flashing drains beyond cladding below
  - Sealant with gaps or no sealant (not required)
  - If no sealant, check for back-wrap



TERMINATION ABOVE DISSIMILAR CLADDING

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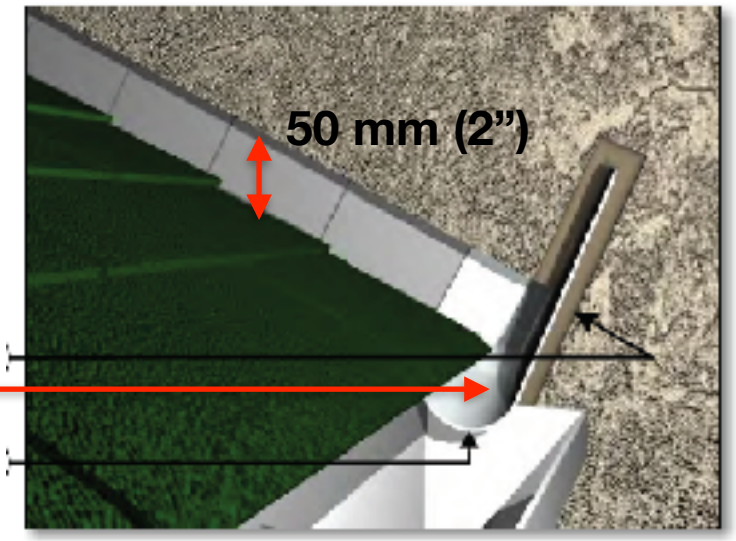
14-25

Termination at Roof

- Clearance of 50 mm (2”) required
- Allows re-roofing and debris clearance
- Another view of a commercially available diverter flashing



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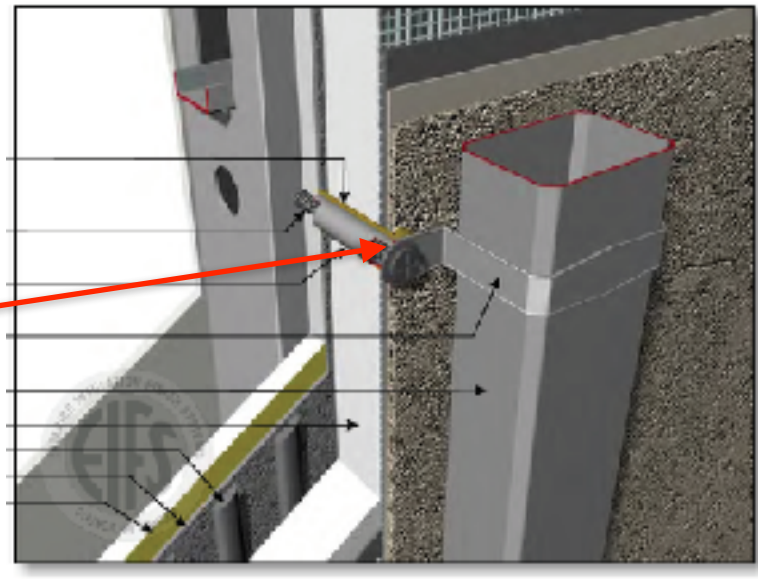
Attachments

- The detail that follows completion of EIFS
- Should be fastened through sealant-filled PVC sleeve
- Look for sealant bulge behind flange
- Rarely done, but evidence of a really good job if present.



RAIN WATER LEADER ATTACHMENT

Dealing with older installations

MAINTENANCE

Expectations

- EIFS should last 25 years before refreshment.
  - Re-base coat and finish application may be required.
- Finishes can be painted with acrylic coatings.
  - Pressure wash with TSP.
  - Add bleach if mildew is present.
- Damage should be repaired a.s.a.p.
- Sealant lasts 10 (urethane) to 25 (silicone) years.
  - Replace sooner if deterioration is evident.

Older Installations

- Dirty, exposed surface deteriorating
- Can be cleaned with low pressure spray wash (500 PSI max)
- Judgement call:
  - re-coat with waterproof base coat

    –or–
  - tear off and properly flash

Maintenance

- 25-year-old EIFS
- Needs cleaning
- Minor surface cracks
- Mechanical fastener ghosting
- Recommend new application of base coat, mesh and finish.

Sealant

- Requires replacement
- This was too thin - failed cohesively
- Cut out and replace or patch over.

ULC S716 Standards

CODES AND REGULATIONS

Canadian EIFS Standards

- Ontario adopted ULC S716 EIFS standards in 2014.
- Covers:
  - material and system testing
  - installation
  - design
- Any new installation = it's the law.

Ontario SB-12

- Performance requirements are changing.
- References will be for '*effective'* insulation.
- Thermal bridging, e.g., studs, must be accounted for.
- Thermal performance will require continuous insulation outbound of the sheathing.
- EIFS offers the most cost-effective way of achieving requirements.

Who are the suppliers in Ontario ?

MANUFACTURERS

Manufacturers

- Adex Systems Inc
- BASF Wall Systems (Senergy)
- Dryvit Systems Canada
- Durabond Products Ltd
- DuRock Alfacing International Ltd
- STEF (Ottawa region)
- Sto Canada LTD

All are supporting members of the EIFS Council of Canada.

We’re near the end …

COLORADO DETAIL

One of those clients

- There is a height restriction, so the view of the mountains is not blocked.
- The guy next door builds his roof 6” too high.
- Naturally you get a court order to have him lower his roof to the allowed level.
- Apparently he does not take it well.
- When rebuilding the roof he also changes the attic venting.
- The stucco contractor is careful with his termination details.

Open for Questions

EIFS Practice Manual

http://eifscouncil.org/eifs-practice-manual