

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF FEBRUARY 19, 2013

Item 17, Report No. 5, of the Committee of the Whole, which was adopted, as amended, by the Council of the City of Vaughan on February 19, 2013, as follows:

By approving the following recommendation of the Council (Closed Session) meeting of February 19, 2013:

- 1) That the applicant be advised that they may seek a court interpretation of the minutes;***
- 2) That confidential Communication C3, dated February 14, 2013, be received; and***
- 3) That the confidential recommendation of the Council (Closed Session) meeting of February 19, 2013, be approved; and***

By receiving the Communication from Ms. Franca Poretta, dated February 14, 2013.

**17 OFFICIAL PLAN AMENDMENT FILE OP.08.013
ZONING BY-LAW AMENDMENT FILE Z.08.048
SITE DEVELOPMENT FILE DA.11.040
2174824 ONTARIO INC.
WARD 2 – VICINITY OF ISLINGTON AVENUE AND LANGSTAFF ROAD**

The Committee of the Whole recommends:

- 1) That consideration of this matter be deferred to the Council meeting of February 19, 2013, to permit discussion between appropriate staff and the applicant with the goal of resolving the issues identified in this report and the discussion thereon; and**
- 2) That the deputation of Mr. Gerard C. Borean, Parente, Borean LLP, Highway 7, Woodbridge, and Communication C5, be received.**

Recommendation

The Commissioner of Planning recommends:

1. THAT this report BE RECEIVED, as information.

Contribution to Sustainability

N/A

Economic Impact

There are no requirements for new funding associated with this report.

Communications Plan

N/A

Purpose

To respond to the following resolution respecting Item 19, Report No. 1, of the Committee of the Whole, which was adopted, as amended, by the Council of the City of Vaughan on January 29, 2013, respecting the above-noted applications:

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF FEBRUARY 19, 2013

Item 17, CW Report No. 5 – Page 2

“That consideration of this matter be deferred pending a report by staff to Council providing information with respect to whether the material fulfills the statement outlined in the OMB Minutes of Settlement.”

Background – Analysis and Options

Location

The subject lands are located on the west side of Islington Avenue, south of Langstaff Road, comprised of three separate properties municipally known as 8294, 8298 and 8302 Islington Avenue, being Lots 2, 3 and 4 on Plan M-1107, City of Vaughan. The 5-storey residential apartment condominium building (Vero Boutique) is currently under construction.

Review of Proposed Wall Cladding

As per the direction received by Council, the Vaughan Building Standards and Development Planning Departments have undertaken a further review of the wording contained in the Minutes of Settlement and the definitions for the proposed substitute material. Ruling 12874-R of the Canadian Construction Materials Centre (CCMC) clearly states that the proposed substitute finish is “... a ready-mix, polymer-based, finish coat”. The ruling goes on to state: “The finish coats provide a texture that is governed by the aggregate size as well as the trowel motion... The different textures offered ...are....Freestyle, Limestone, Custom Brick, Stucco Finish,” etc .

In City staff’s professional opinion, it is evident that this is not brick cladding, and does not comply with the Ontario Municipal Board (OMB) Minutes of Settlement.

Relationship to Vaughan Vision 2020 / Strategic Plan

This staff report is consistent with the priorities set forth in Vaughan Vision 2020, particularly, “Manage Growth & Economic Well-being”.

Regional Implications

N/A

Conclusion

The Vaughan Building Standards and Development Planning Departments have reviewed the cladding material proposed to be substituted for use for the Vero Boutique residential apartment condominium building, and are of the professional opinion that the proposed material is not brick cladding, and does not comply with the Ontario Municipal Board (OMB) Minutes of Settlement.

Attachments

N/A

Report prepared by:

Grant Uyeyama, Director of Development Planning
Leo Grellette, Director of Building Standards

C	1
Item #	17
Report No.	5 (CW)
Council - February 19/13	

Bellisario, Adelina

Subject: FW: File OP.08.013 File Z.08.048 Committee of the Whole Meeting February 19th, 2013

From: Carlo Porretta [<mailto:cporretta@sympatico.ca>]

Sent: Thursday, February 14, 2013 10:41 PM

To: Abrams, Jeffrey; Magnifico, Rose; Carella, Tony

Subject: File OP.08.013 File Z.08.048 Committee of the Whole Meeting February 19th, 2013

Hi Jeffery

I understand you are the person I should direct this correspondence to and you will distribute accordingly. On behalf of

OFFICIAL PLAN AMENDMENT FILE OP.08.013

ZONING BY-LAW AMENDMENT FILE Z.08.048

SITE DEVELOPMENT FILE DA.11.040 2174824 ONTARIO INC. WARD 2 – VICINITY OF ISLINGTON AVENUE AND LANGSTAFF ROAD

Please be advised myself as well all residents involved in the previous Stake Holder process are against any changes the developer is requesting from the minutes of settlement that was approved by Council in regards to the above mentioned project. Materials were agreed to be that of brick and/or stone and we expect City representatives to be watchful and ensure the Developer adheres to their commitment.

Kindly let me know what the results of discussion and/or voting concludes after Tuesday February 19th's Committee of the Whole Meeting.

Regards

Franca Porretta
40 Birch Hill Road
Woodbridge, Ontario
L4L 1J2
416 578-0268

Gerry Borean

c 5
Communication
CW: Feb 5/13
Item: 17

From: Gerry Borean
Sent: February-04-13 12:53 PM
To: 'Claudia.Storto@vaughan.ca'
Subject: FW: VERO - ADDITIONAL EFIS EXTERIOR FINISH INSULATION SYSTEM INFORMATION
RE AMENDMENT TO MINUTES OF SETTLEMENT
Attachments: CCE31012013_00000.jpg; CCE31012013_00001.jpg; CCE31012013_00002.jpg;
CCE31012013_00003.jpg; CCE31012013_00004.jpg; CCE31012013_00005.jpg;
CCE31012013_00006.jpg; CCE31012013_00007.jpg; CCE04022013_00000.jpg

Good afternoon,

It is my understanding that staff has done a very cursory review of the proposed materials; once again, I emphasize that EFIS is a generic name for an exterior wall cladding system. The proprietary system manufactured, installed and sealed is DRYVIT OUTSULATION PD., done by Lido Wall Systems.

Attached please find for your use and for your staff's further review as appropriate:

1. Rain Penetration Control for Brick - issue of how much brick should project.
2. CMHC EFIS Limitations and what we are doing about them;
3. Dryvit 10 year Warranty - note highlights;
4. Article Ted Kesik, PH.D., P.Eng. April 10, 2012 on how to evaluate EFIS performance versus other Cladding systems. Note particularly Page 3 and Page 4. Note my client has not seen lower initial costs as it has increased insulation above Code requirements both on the panel and inside the steel studs.

Once again, I confirm that the product proposed is innovative and that it is my client's position that the product benefits are far better than brick masonry while providing the required appearance.

I believe it would be appropriate to forward this email and the enclosures to the Mayor and all councillors. I leave same to your judgment.

If you have any questions, please do not hesitate to contact me.

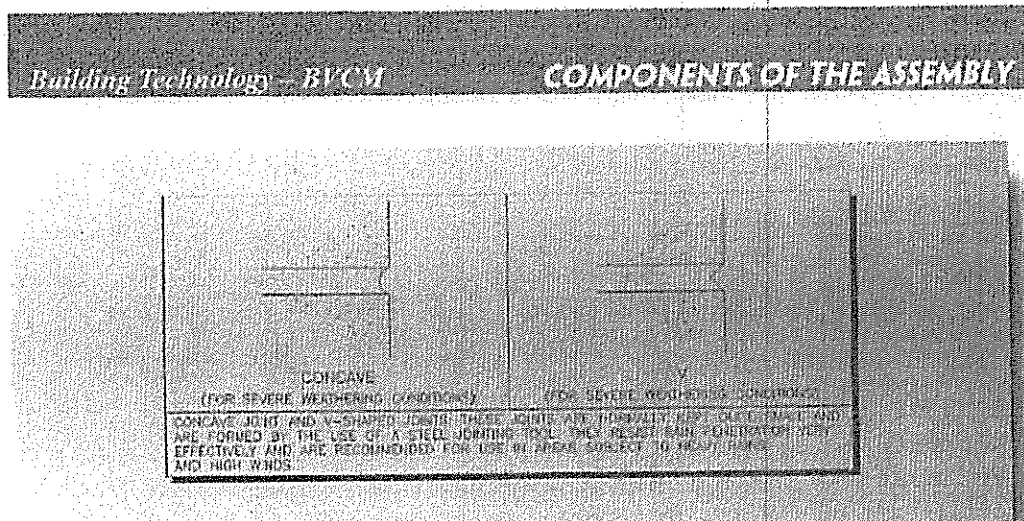
Yours truly,

Gerard C. Borean

Parente, Borean LLP
3883 Highway 7, Suite 207
Woodbridge, Ontario
L4L 6C1
Tel: (905) 850-6066 Ext. 228
Fax: (905) 850-6069

Excerpts from CMHC's Best Practice Guide for Brick Veneer © 1997

From page 2-13: illustrates the preferred mortar tooling pattern for durability and rain resistance



From page 4-8: text to support the above illustration

RAIN PENETRATION CONTROL

As noted, one of the principal functions of the brick exterior wythe is to provide resistance to the passage of moisture into the wall assembly. To do this, it must be correctly installed:

- forming a good bond between the brick and mortar to resist cracking – CSA A179-94 requires a minimum of 0.2 MPa (30 psi)
- constructing with full head and bed joints, with mortar compacted in a weather-tight joint
- tooling the joints flush and concave or V-shaped to compact the mortar against the units and help close shrinkage cracks while preventing exposure of horizontal surfaces of the brick
- avoiding flush, raked or extruded mortar joints that are either not compacted or catch water running down the wall

NOTE

The minimum concave or V joints are now standard. Someone looking at our sample may be confused as the brick depth seen is not as deep as they see in badly applied brick.

EIFS LIMITATIONS

Some limitations of EIFS are as follows:

1. **Combustibility:** Some EIFS incorporate combustible components and/or combustible foam plastic insulation. The applicable Building Code must be complied with by selecting a system that meets fire safety requirements. *NOT AN ISSUE DUE TO SIDEYARD SETBACKS + BUILDING HEIGHT. BUILDING IS FULLY SPRINKLERED.*
2. **Impact resistance:** EIFS can be vulnerable to impact damage as a result of the relatively thin lamina. At areas where impact damage is likely, an appropriately reinforced EIFS product must be selected. In areas exposed to heavy impact or abuse, EIFS should not be used. *WE ARE USING STONE VENEER IN HIGH IMPACT AREAS.*
3. **Compatibility issues:** Each EIFS constituent component and materials that connect to the EIFS must be compatible to assure acceptable performance. This includes the lamina, sealants, joint treatments, insulation, adhesive/fastening, moisture/air/vapour barriers and substrate. The manufacturer should be consulted to verify that each component and material has been tested to be compatible. *HAS BEEN DONE BUILDING ENCLOSE WITH PANELS HAS 1 RESPONSIBILITY FOCUS - LIDO*
4. **Staining:** If exposed to frequent wetting, staining by mildew growth can result. Frequent wetting can occur where the EIFS are not effectively protected from rain, or in high humidity climates where areas are not exposed to direct sunlight (north elevations, shaded areas, etc.). *INSTALLATION DONE AS PANELS MADE IN FACTORY*
5. **Sensitivity to workmanship:** As is the case with many multi-component hand applied systems, EIFS performance is sensitive to workmanship. Quality control is necessary to assure the various components are properly applied, and that they effectively work together to provide the desired performance. *EXP will inspect at plant + in field*
6. **Long-term performance:** While a minimum 30-year service for properly designed and applied EIFS is anticipated and indicated by field performance, longer term service for many product formulations has not been determined. As with all cladding, maintenance is a prerequisite to longevity. Problems with local deterioration or moisture ingress must be dealt with promptly to achieve an acceptable service life. *MAINTENANCE PROCEDURES WILL BE GIVEN TO CONDOMINIUM CORPORATION*

ALSO
10 YEAR
WARRANTY

129 Ringwood Drive PO Box 1268
Stouffville, Ontario, L4A 8A2
Tel: 905-642-0444
Fax: 905-642-0450



DRYVIT SYSTEMS CANADA

RPM

Limited Materials Ten Year Warranty

Warranty Number: DRY0
Effective Date:

Project Title:	
System Installed: Outsulation PD	Square Footage:
Address:	City:
Province:	Postal Code:

Building Owner:	
Address:	City:
Province:	Postal Code:

Applicator:

DRYVIT SYSTEMS CANADA, hereinafter referred to as "DRYVIT" hereby warrants that the OUTSULATION PD SYSTEM materials manufactured and sold by Dryvit, including the insulation board, fasteners, base coat, mesh and finish shall be free from defects in the manufacture of the materials and when installed in accordance with the current published Dryvit specifications, details and application instructions for such system by an applicator/contractor firm that has completed an appropriate Dryvit Systems training program, will for a period of ten (10) years from the date of substantial completion of the project effectively drain any moisture that should enter the cavity between the insulation board and the required weather barrier and will not, within a period of ten (10) years from the date of substantial completion of the project lose their bond, peel, flake or chip. No such warranties stated herein shall be effective until and unless the materials subject to this warranty shall have been paid for in full.

It is specifically understood and agreed that no warranty whatsoever is made with respect to (i) materials produced by other manufacturers and not bearing Dryvit's name or logo which are used in the installation of Dryvit's materials hereunder, (ii) materials, including insulation board, produced by manufacturers for Dryvit but not specifically sold by Dryvit or its authorized Distributor even if such materials bear Dryvit's name or logo, nor (iii) any sealant materials.

Further, this warranty is void if the Dryvit materials are intermixed with other chemicals or materials not specifically required by Dryvit's specifications or application instructions.

Further, no warranty whatsoever is made for damage caused in whole or in part by acts of God or natural phenomenon, such as but not limited to falling objects, fire, earthquake, floods, pests, chemical fumes or pollutants in the atmosphere; nor architecture, engineering, insufficient or defective waterproofing between Dryvit materials, or between Dryvit materials and non-Dryvit materials, nor defective or improper workmanship by the applicator, nor other damage or injury not caused by defects in Dryvit's materials as covered under this warranty.

This constitutes the entire warranty agreement and Dryvit makes no other warranties expressed or implied with respect to the materials except as expressly stated herein. DRYVIT DOES NOT MAKE ANY WARRANTY OF MERCHANTABILITY WITH RESPECT TO THE MATERIALS DESCRIBED HEREIN OR THE APPLICATION THEREOF

AND FURTHER, DRYVIT MAKES NO WARRANTY THAT THE MATERIALS ARE FIT FOR ANY PARTICULAR PURPOSE.

DRYVIT WILL BE RESPONSIBLE FOR DAMAGE TO SHEATHING OR FRAMING MEMBERS WHICH IS A RESULT OF A FAILURE OF THE MD SYSTEM TO DRAIN MOISTURE FROM THE CAVITY AS PROVIDED HEREIN. DRYVIT SHALL NOT BE RESPONSIBLE FOR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND. The sole responsibility and liability of Dryvit under this warranty shall be to repair or replace the Dryvit materials described herein shown to be defective during the warranty period and, if necessary to repair and/or replace any sheathing or framing member which is damaged as a result of the system failing to drain moisture from the cavity between the insulation board and the weather barrier as provided herein. No other charges or expenses will be allowed by Dryvit.

This warranty is issued to the original owner of the structure into which Dryvit's materials shall have been incorporated, but may be transferred or assigned to a subsequent owner of the structure upon written notice to Dryvit at the address provided below. Such transfer or assignment shall not extend the original term of this warranty.

Since the goods are building materials and are not intended to be sold to a "consumer" except as part of real estate or as a major addition thereto, this warranty shall not apply to any party constituting a "consumer" as such term is defined by the Magnuson-Moss warranty act.

This warranty shall be interpreted under the laws of the Province of Ontario.

Dryvit shall not have any obligations under this warranty unless the owner notifies Dryvit Systems Canada: P. O. Box 1268; Stouffville, Ontario; L4A 8A2; Attn: General Manager; in writing, within thirty (30) days of discovery of alleged defects. Dryvit shall be allowed a reasonable period of time, authorization to remove samples, and to perform any testing Dryvit deems necessary to investigate and determine the cause of the defect. The Owner shall provide and cause any temporary repairs to be accomplished in a timely manner to prevent further damage to the structure or contents of the building until the cause of the defect is determined and permanent repair recommendations may be made.

Dryvit shall not have any obligations hereunder unless the system shall have been maintained by the owner with reasonable care.

NOTE: WE HAVE NEVER BEEN ABLE TO
OBTAIN A 10YR WARRANTY ON
BRICK FACADE.

Authorization: _____

How to Arrive at the True Value Propositions of EIFS

Ted Kesik, Ph.D., P.Eng.
Professor of Building Science
University of Toronto

This is the first of two articles that explores the value propositions of EIFS by defining a framework for fair valuation that can be used to determine EIFS benefits and limitations. A second article to follow will examine the value propositions in the context of successful delivery through the EIFS Quality Assurance Program (EQI).

A while back I received a copy of a recent ASHRAE research report (RP-1365) titled *Thermal Performance of Building Envelope Details for Mid and High-Rise Buildings*. A colleague of mine, Mark Lawton, from Morrison Hershfield's Vancouver office, had sent me the report and I have two things to say about it: first, the building science research is exemplary; and second, thermal bridging in most common building assemblies is very significant and often reduces the effective thermal resistance of wall assemblies by more than 50%. It's what most building scientists have had a gut feeling about for a long time now, and Mark Lawton's study confirmed our worst fears - much of the insulation we provide in our building envelopes is bypassed through thermal bridging.

Energy efficiency aside, the report also provided temperature indices at key locations of the building enclosure, and it became obvious the interior surfaces were often cold enough to support condensation, and hence the potential for mould growth. And the interstitial temperatures definitely indicated a high likelihood of air leakage leading to condensation and subsequent moisture damage. Thermal bridging is not just compromising energy efficiency, but also involves health and durability issues in our cold Canadian climate.

Building Value Propositions for Exterior Wall Enclosures

So what is a building designer to do? Shortly after reviewing the thermal bridging report, friends and colleagues of mine from industry approached me to discover my thoughts on the EIFS value proposition. As someone who has no favourite building enclosure system, I agreed to give it some thought. The first thing I did was go back to *CBD-48 Requirements for Exterior Walls* by Neil Hutcheon, December 1963. (<http://www.nrc-cnrc.gc.ca/eng/ibp/irc/cbd/building-digest-48.html>) Like building physics, some things in the building science field will always hold true like this list of fundamental performance requirements.

Principal Requirements of a Wall

1. Control heat flow;
2. Control air flow;
3. Control water vapour flow;
4. Control rain penetration;
5. Control light, solar and other radiation;
6. Control noise;
7. Control fire;
8. Provide strength and rigidity;
9. Be durable;
10. Be aesthetically pleasing;
11. Be economical.

Since Hutcheon's time, additional objectives have been adopted, such as consideration of the environmental impacts associated with building methods and materials. There has also been a significant displacement of traditional methods and materials of construction over the past 50 years. This has proven both good and bad because traditional wall systems were not very energy efficient, but often made up for it by being quite durable. Today, designers need a more comprehensive framework of performance requirements to select appropriate wall systems.

Framework for Assessing Exterior Wall Enclosure Performance

The table developed below is a helpful performance evaluation framework for selecting exterior wall enclosures. It contains all of the requirements highlighted by Hutcheon, expanding on some of these with greater detail, and adding environmental impacts and buildability in recognition of our contemporary context of year round construction and forecast skilled labour shortages.

PERFORMANCE REQUIREMENT	FACTORS & CONSIDERATIONS	
Structural Strength/Rigidity	<ul style="list-style-type: none"> • Loadbearing/Non-loadbearing • Wind Loading 	<ul style="list-style-type: none"> • Seismic Loading • Thermal Effects
Control of Heat Flow	<ul style="list-style-type: none"> • Effective Thermal Resistance 	<ul style="list-style-type: none"> • Avoidance of Thermal Bridging
Control of Air Flow	<ul style="list-style-type: none"> • Stack and Wind Pressures • Normalized Leakage Area 	<ul style="list-style-type: none"> • HVAC Influences • Internal Partitioning
Control of Moisture Flow	<ul style="list-style-type: none"> • Rain Penetration • Vapour Diffusion 	<ul style="list-style-type: none"> • Air Leakage • Condensation Potential
Control of Solar Radiation	<ul style="list-style-type: none"> • Opacity/Emissivity • Solar Orientation 	<ul style="list-style-type: none"> • Fenestration (Wall/Glazing Ratio) • Shading Devices
Control of Sound Transmission	<ul style="list-style-type: none"> • Airborne Sound 	<ul style="list-style-type: none"> • Vibration
Control of Fire	<ul style="list-style-type: none"> • Fire Resistance 	<ul style="list-style-type: none"> • Combustibility
Durability*	<ul style="list-style-type: none"> • Ultraviolet Degradation • Corrosion • Carbonation • Freeze/Thaw • Abrasion • Fatigue • Instability/Incompatibility • Serviceability/Maintenance 	<ul style="list-style-type: none"> • Biological Attack (mould, insects, animals, plants) • Chemical Attack (soils, contaminants, pollutants) • Efflorescence • Subflorescence • Spalling • Retrofit/Refurbishment
Economy	<ul style="list-style-type: none"> • Initial Cost • Maintenance Cost 	<ul style="list-style-type: none"> • Operating Cost • Life Cycle Cost
Environmental Impacts	<ul style="list-style-type: none"> • Resource Depletion • Environmental Degradation • Reduction of Biodiversity 	<ul style="list-style-type: none"> • Greenhouse Gases • Pollutants
Buildability (Ease of Construction)	<ul style="list-style-type: none"> • Seasonality • Tolerances 	<ul style="list-style-type: none"> • Coordination • Sequencing
Aesthetics	<ul style="list-style-type: none"> • Visual • Tactile 	<ul style="list-style-type: none"> • Acoustic • Olfactory
<small>* Another aspect of durability related to envelope assemblies is differential durability (Kesik 2002), a term used to describe how useful service life differs - both between components, and within the assemblies and materials comprising components. [Kesik, T., 2002. <i>Differential Durability and the Life Cycle of Buildings</i>. Proceedings of the APCC/EAAE 2002 International Conference on Research, May 22-25, 2002, McGill University, Montreal, Canada (CD-ROM).]</small>		

Table 1. Exterior wall enclosure performance requirements and their related factors and considerations.

No framework can claim to be a perfect means of assessing something as complex and multi-faceted as exterior wall enclosure performance. But in fairness to Neil Hutcheon, one of the founding fathers of modern building science in Canada, this framework certainly considers all of the big ticket items. If there is something missing or incomplete, it is unlikely to be a deal breaker or a tipping point in the decision making process.

Exterior Wall Enclosure Performance Assessment Matrix

Translating a performance framework into an assessment matrix was the next task at hand. It is generally recognized that human beings are not very good at fine grained assessments involving multiple parameters. Ratings that require experience and judgement fall into a fuzzy area where rating something on a scale of 1 to 10 is difficult, and on a scale of 1 to 100 impossible to justify (for example, what's the practical difference between a score of 73 versus 72?). Personally, I like using a three-tier rating system with modifiers. This yields qualitative ratings such as "somewhat inferior" or "definitely superior" along with "subjective" for requirements that are difficult to measure quantitatively. After some research and talking to colleagues, I came up with a performance assessment of the present generation of EIFS in Table 2. Due diligence would require a more detailed and quantitative assessment of these performance parameters, but the qualitative approach is a practical way of eliminating exterior wall systems that are clearly not suitable to a particular application, or do not meet a client's performance expectations.



PERFORMANCE REQUIREMENT	COMMENTARY	RATING		
		INFERIOR	AVERAGE	SUPERIOR
Structural Strength/Rigidity	• Lightweight, fully adhered, continuous cladding provides strong resistance to wind loads, reduces seismic and thermal loads.			●
Control of Heat Flow	• High thermal resistance with minimal thermal bridging.			●
Control of Air Flow	• Continuous air barrier behind extruded polystyrene.			●
Control of Moisture Flow	• Drainage layer and flashings enhance moisture management. • Exterior insulation reduces condensation potential.			○
Control of Solar Radiation	• UV resistant coating over continuous cladding system.			○
Control of Sound Transmission	• Airtight construction reduces airborne sound transmission. • Insufficient mass for vibration and low frequency sound.			○
Control of Fire	• Combustible cladding with low flamespread. • Fire resistance rating depends on backup wall assembly.		●	
Durability	• 30 to 50 year service life. • 10 to 15 year maintenance cycle (caulking), painting as required. • Poor impact and abrasion resistance.			○
Economy	• Low initial and maintenance costs. • Thermal efficiency contributes to low life cycle cost.			●
Environmental Impacts	• Relatively low for EIFS materials. • Energy efficiency contributes to greenhouse gas reductions.			●
Buildability (Ease of Construction)	• Winter heating and/or protection required. • Forgiving tolerances, flexible coordination and sequencing.			○
Aesthetics	• Wide range of colours and textures. • Readily combined with other facade materials.			?
● Definitely ○ Somewhat ? Subjective				

Table 2. Performance assessment matrix for the present generation of EIFS in Canada.

By the present generation of EIFS in Canada, I am referring to fully adhered systems with a drainage layer (pressure moderated drain screen) designed, manufactured and installed according to CAN/ULC-S716 Standard for Exterior Insulation and Finish Systems (EIFS) - Parts 1, 2, 3 covering *Materials and Systems*, *Installation of EIFS Components and Water Resistive Barrier*, and *Design Application*, respectively. And it's important to keep in mind when comparing alternative wall systems to only consider those governed by comparable technical standards. The quality of design, workmanship and materials all affect the performance of wall systems and it's only fair to compare apples with apples.

Meaningful Performance Indicators

Overall, EIFS scores very high based on the performance assessment matrix that was used. This approach relies heavily on expertise and experience, not unlike medical diagnosis, and it may be susceptible to subconscious biases. That's why it's important to unravel the subconscious processes that are involved in assessing the performance of building enclosures.¹ Perhaps I owe it to my formal education, but having been indoctrinated to systems thinking, I tend to view building enclosures, and especially walls, as entire systems going from the interior to the exterior surface. It does not make much sense commenting on the suitability of a cladding in the absence of a backup wall assembly. Concrete masonry block backup affords different possibilities and outcomes for cladding systems than steel stud backup walls. Lately I've been looking at performance indicators aimed at addressing a process that has been erroneously referred to as value engineering (when it really means someone is trying to save money by being cheap and stupid).

Effective R-Value/\$/m² - The first one is the effective R-value per dollar of cost per m² of the entire exterior wall assembly, inboard to outboard. Since energy prices are poised to spiral sharply in the years ahead, yet many owners/investors are still concerned with initial costs, this is a performance indicator that balances these two concerns. I have not done the numbers in detail, but my back of the envelope accounting yields a very high score for EIFS, especially now that we can quantify thermal bridging so accurately.

Cost/m²/year or Cost/m² Over Service Life - A complete exterior wall system has a cost that includes the initial expenditure followed by operating (energy) and maintenance costs. Maintenance costs may include exterior cleaning, caulking, painting, etc., as well as the cleaning and painting of interior finishes, if applicable. One approach is to translate these into a total cost per year, but remember to escalate the energy prices and take inflation into account for materials and labour. It's also important to decide on a reasonable service life for the wall - this number may be different among alternative wall systems.² Another approach is to convert all of these costs into a net present value over the estimated service life. Either way, it is possible to compare economic performance between any number of competing alternatives. EIFS is generally less materials intensive with a lower initial cost than other wall systems, and its higher effective thermal resistance yields smaller operating costs, resulting in a lower than average total system life cycle cost.

Savings Contribution to Building System Benefits - This is an indicator that stems directly from systems thinking and real value engineering. Assume that a particular wall assembly has a lower initial cost but a comparable performance in all other regards to alternative wall assemblies. It is interesting to calculate the ratio of savings contribution to benefits derived from the intelligent re-investment of cost savings. For example, if the savings from an exterior wall system were invested toward improving the quality of windows and glazing, then the durability, operating and maintenance costs savings (benefits) could be comparatively assessed among competing wall systems. To be rigorous, reductions in the capacity, and therefore the cost, of HVAC equipment arising from better performing windows should be included in the analysis. Using this technique for all manner of components, assemblies and equipment is an objective way to compare the total value obtained per dollar of building investment. The savings obtained from deploying EIFS can afford significant improvements to weak links in the building enclosure to help deliver high performance buildings cost effectively.³

¹ For a systematic assessment of EIFS performance, refer to: Day, Kevin C. *Exterior Insulation Finish Systems: Designing EIFS (Clad Walls) for a Predictable Service Life*. 8th Conference on Building Science and Technology, February 2001.

² The Model National Energy Code for Buildings (MNECB 1997) assumed a 30-year useful service life for exterior wall enclosures. This does not suggest the wall is not serviceable beyond this point, but specified maintenance will be required to continue satisfying all of the performance requirements.

³ The energy efficiency requirements in the 2012 Ontario Building Code and ASHRAE 90.1-2010 give continuous exterior insulation systems a significant advantage under the performance compliance path.

The EIFS Value Proposition

So how does the present generation of EIFS stack up? Technically speaking, EIFS walls can cost effectively achieve thermal efficiency, moisture management and air leakage control. The materials and methods used for EIFS have relatively low environmental impacts compared to many other alternatives. Low initial costs for EIFS also allow challenged building budgets to direct savings to improving weak links in critical components like windows and doors. From a durability perspective, EIFS perform as well as many competing alternatives provided they are detailed using best practices, and avoid being located at the base of buildings where they may be vulnerable to impacts, abrasion and chemicals. In terms of their future adaptability to climate change, EIFS are full adhered cladding systems that typically have higher resistance to wind loads than mechanically fastened alternatives. But does all of this mean EIFS is a superior value proposition?

First, let's look at the major limitations of EIFS:

1. The impact resistance of EIFS is being continually addressed with new formulations for supplemental reinforcing layers, but as with many other vulnerable cladding materials, it is advisable to avoid the use of EIFS in areas prone to high abuse by impact and abrasion.
2. EIFS requires that acceptable application temperatures be maintained and this can be either restrictive and/or costly during cold weather; and
3. Like many other cladding systems, EIFS has specific limitations to be observed where codes require a non-combustible cladding due to limiting distance restrictions.

On the positive side of the ledger:

1. The thermal efficiency of EIFS is a major advantage provided by continuous insulation;
2. Reduced air leakage is a beneficial feature of the water resistive barrier and insulation adhesive that is applied to the entire surface of the exterior wall;
3. Reduced condensation potential is a widely acknowledged advantage of continuous, exterior insulation;
4. Versatility and adaptability to a wide variety of exterior wall types; and
5. Low carbon footprint that is quickly offset by energy savings (reduced greenhouse gas emissions).

The big question remains: Will these advantages be realized on every EIFS project?

With the introduction of the new EIFS Quality Assurance Program by the EIFS Council of Canada, the value proposition will be predictable and consistent across Canada. This is a critical consideration in a construction industry that is challenged with a lack of qualified personnel, highly variable technical skill levels, and an inability to innovate cost effective building solutions. Let's face reality, costs for new buildings continue to rise but there has been almost no appreciable improvement in performance. The present generation of EIFS is more like our auto and electronics industries, delivering products that have been designed and assembled according to recognized standards under a consistent quality assurance program. This is a major development in our building industry and may well prove to be more significant than all of the other performance advantages that are provided by EIFS.

In my next article, I will examine the EIFS Quality Assurance Program value propositions.

NEW RESOLUTION

In consideration of the request made by 2174824 Ontario Inc. to change the exterior material, Vaughan City Council agrees with this request based on the following considerations:

- Technical suitability of the material based on Ruling 12874-R of the Canadian Construction Materials Centre.
- The enhanced thermal insulation value of the material and its life cycle cost benefit to the owners.
- The recognition of the CMHC's Best Practice Guide for EIFS statement "A minimum 30 year service for properly designed and applied EIFS is anticipated and indicated by field performance."
- The provision of a 10 year material warranty by Drivit Systems.
- The use of the "brick faced" Drivit Outsulation PD System manufactured and installed by Lido Wall Systems.
- The provision of a stone faced material up to 6'8" (2.03 m) at the areas of high exposure traffic at the ground floor level.

Therefore Vaughan City Council agrees to amend the Ontario Municipal Board (OMB) minutes of settlement and associated documents to permit the foregoing. Staff is directed to immediately notify the Ontario Municipal Board (OMB) of this decision.

COMMITTEE OF THE WHOLE FEBRUARY 5, 2013

**OFFICIAL PLAN AMENDMENT FILE OP.08.013
ZONING BY-LAW AMENDMENT FILE Z.08.048
SITE DEVELOPMENT FILE DA.11.040
2174824 ONTARIO INC.
WARD 2 – VICINITY OF ISLINGTON AVENUE AND LANGSTAFF ROAD**

Recommendation

The Commissioner of Planning recommends:

1. THAT this report BE RECEIVED, as information.

Contribution to Sustainability

N/A

Economic Impact

There are no requirements for new funding associated with this report.

Communications Plan

N/A

Purpose

To respond to the following resolution respecting Item 19, Report No. 1, of the Committee of the Whole, which was adopted, as amended, by the Council of the City of Vaughan on January 29, 2013, respecting the above-noted applications:

“That consideration of this matter be deferred pending a report by staff to Council providing information with respect to whether the material fulfills the statement outlined in the OMB Minutes of Settlement.”

Background – Analysis and Options

Location

The subject lands are located on the west side of Islington Avenue, south of Langstaff Road, comprised of three separate properties municipally known as 8294, 8298 and 8302 Islington Avenue, being Lots 2, 3 and 4 on Plan M-1107, City of Vaughan. The 5-storey residential apartment condominium building (Vero Boutique) is currently under construction.

Review of Proposed Wall Cladding

As per the direction received by Council, the Vaughan Building Standards and Development Planning Departments have undertaken a further review of the wording contained in the Minutes of Settlement and the definitions for the proposed substitute material. Ruling 12874-R of the Canadian Construction Materials Centre (CCMC) clearly states that the proposed substitute finish is “... a ready-mix, polymer-based, finish coat ...”. The ruling goes on to state: “The finish coats provide a texture that is governed by the aggregate size as well as the trowel motion... The different textures offered ...are....Freestyle, Limestone, Custom Brick, Stucco Finish,” etc .

In City staff's professional opinion, it is evident that this is not brick cladding, and does not comply with the Ontario Municipal Board (OMB) Minutes of Settlement.

Relationship to Vaughan Vision 2020 / Strategic Plan

This staff report is consistent with the priorities set forth in Vaughan Vision 2020, particularly, "Manage Growth & Economic Well-being".

Regional Implications

N/A

Conclusion

The Vaughan Building Standards and Development Planning Departments have reviewed the cladding material proposed to be substituted for use for the Vero Boutique residential apartment condominium building, and are of the professional opinion that the proposed material is not brick cladding, and does not comply with the Ontario Municipal Board (OMB) Minutes of Settlement.

Attachments

N/A

Report prepared by:

Grant Uyeyama, Director of Development Planning
Leo Grellette, Director of Building Standards

Respectfully submitted,

JOHN MACKENZIE
Commissioner of Planning

GRANT UYEYAMA
Director of Development Planning

LEO GRELLETTE
Director of Building Standards

GU/LG