

**TO:** CITY MANAGER

1998 June 30

**FROM:** DIRECTOR PLANNING & BUILDING

**SUBJECT:** Barrett Commission of Inquiry into the Quality of Condominium Construction in B.C.

**PURPOSE:** To provide Council with information regarding recommendations contained in the Commission Report which may impact the City.

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**Recommendations:**

1. **THAT** a copy of this report be forwarded to the Honorable Jenny Kwan, Minister of Municipal Affairs and Housing.

**R E P O R T**

**1.0 Background:**

Council, at the regular Council meeting held on 1998 June 22, requested a staff report responding to those recommendations contained in the Barrett Commission Report entitled "The Renewal of Trust in Residential Construction", released on 1998 June 18, which are considered to have a bearing on the City of Burnaby's role and responsibilities.

On 1998 April 17, the Minister of Municipal Affairs and Housing announced the appointment of former B.C. Premier Dave Barrett to head a commission of inquiry into the quality of condominium construction in British Columbia, with particular focus on the issue of leaky condominiums. Mr. Barrett subsequently announced on 1998 April 20 that Peter Leask, Q.C., a prominent Vancouver lawyer and former treasurer of the Law Society, would provide legal counsel, and Robyn Allen, an economist and President of CYF Consulting Ltd., would provide Economic advice to the Commissioner.

Terms of Reference:

- 1. To inquire into the quality of condominium construction in British Columbia, and in particular the adequacy of protection for, and accountability to consumers, for faulty condominium construction.
- 2. To determine the reasons for, and the factors contributing, to faulty condominium construction, with particular focus on the issue of leaky condominiums.
- 3. To submit a report by 1998 May 29 to the Lieutenant-Governor-In-Council through the Minister of Municipal Affairs, recommending any measures, including but not limited to changes to legislation, regulations or administrative practices that the commissioner determines are necessary.

The reporting date was subsequently changed to June 19, 1998.

The Barrett Commission held 29 public hearings throughout the Province during late April and May. Presentations were made by condominium owners, strata council representatives, as well as individuals and groups involved in various public and private sector aspects of the industry. In total more than 730 submissions were made. As President of the Building Officials' Association of B.C., George Humphrey, Chief Building Inspector, presented and submitted information to the Commission on 1998 May 12. Copies of that submission are provided to Council under separate cover and a copy of that submission and the Barrett Commission report is available for perusal at the Building Department counter. It should be noted that many of the presentations by industry, including the Building Officials Association, identified concerns and recommendations that have continually been raised during several Provincial reviews of the building regulatory system since the Closkey report in 1988, without result.

## 2.0 Barrett Commission Report:

### 2.1 Summary of Report:

The Barrett Commission released their report entitled "The Renewal of Trust in the Residential Construction" dated 1998 June 16 at a press release on 1998 June 18. The report contained 82 recommendations and suggested draft legislation for a *Homeowner Protection Act*.

On the basis of the submissions and presentations, the Commission came to the following conclusions:

While the Commission certainly believed that some sectors of the building community were more culpable than others, they concluded the problems being encountered were symptomatic of an overall failure of the regulatory system and its participants, to effectively control and monitor the quality of residential construction in B.C.

The pace of economic expansion in much of the Lower Mainland during the 1980's and 1990's, has led to an excessive demand for development professionals and qualified workers. This has forced land prices up and squeezed profit margins and affordability. BC's urban centres, notably Vancouver and Victoria, are located in a geographic and climatic region most affected by significant rainfall and mild weather. These conditions increase the likelihood of water ingress, intensifying the process of wood rot.

However, climate and economic pressures do not account for the magnitude of the problem. The residential building process and building science issues have led to a disintegration in the quality of construction, however the Commission did not believe that the Building Code was a causal factor for building envelope failures.

New laws to protect BC homeowners, strict licensing and regulation of builders and developers, and a Reconstruction Fund for the victims of faulty building design and workmanship are the key elements of the 82 recommendations to the Provincial government. It appears that many of the recommendations address the concerns which have been continually raised by industry and local government, including Burnaby, since the Closkey report in 1988.

**2.2 Analysis of Recommendations:**

The report contained a number of recommendations which may directly or indirectly affect the Planning, Permitting, Inspection, and Finance processes within the City of Burnaby. The Chief Building Inspector was fortunate to be able to meet with Robyn Allen of the Commission on 1998 June 25, in order to not only obtain clarification of the wording and intent of the recommendations, but to further provide input on the issues involved.

It is important to note, that the recommendations which must still be adopted by the Province, provide a direction only, and do not outline a work plan for actual implementation. For this reason, an accurate estimation of impact on staff workload will follow the Provincial review, and creation of the necessary framework for implementation of the recommendations.

The following is a summary of the recommendations of the Commission that are considered to potentially involve the City or have a possible impact on staff, and where applicable, the initiatives which have been implemented by the Planning and Building Department. The recommendations are numbered to correspond to the numbering in the Commission report.

- **Recommendation #1:**

*That the definition of "leaky condo" be expanded to include:*

*A leaky building is any residential building within British Columbia, for which construction was completed in 1983 through 1998, and which experienced building envelope failures, requiring repairs in excess of \$2,000 per unit, for multi-family construction, and \$10,000 for single-family units or duplexes.*

**Comments:**

This definition has expanded the scope to which proposed legislation will apply, and will therefore increase the permitting, inspection and monitoring role to be assumed by Building Department staff.

- **Recommendation #2:**

*That the provincial government introduce, as quickly as possible, legislation to establish the Homeowner Protection Act and create the Homeowner Protection Office to:*

- strengthen consumer protection through implementing mandatory, private sector home warranty and statutory implied warranty for residential construction;*
- improve the quality of residential construction by regulating and licensing the residential construction industry;*
- undertake research and disseminate information;*
- provide access to dispute resolution for issues concerning residential construction; and*
- establish a reconstruction fund as a source of support for residential homeowners hardest hit by problems with construction quality.*

**Comments:**

This Office would report directly to the Minister of Municipal Affairs and Housing. It is expected that the responsibilities as outlined in a) and b) above would result in some additional monitoring responsibilities for City Building and perhaps Licensing staff. If warranty coverage is not provided to a home builder, building permits would not be issued by the City.

The office would also have the mandate to recommend changes regarding the standards of skills, abilities, roles and responsibilities for all parties including Building Inspectors, which may affect both the training required by and the responsibilities to be assumed by City staff with regards to residential construction.

- **Recommendation #3:**

*That the role and responsibility of what was formerly the Building Standards Branch, be reinstated under the proposed Homeowner Protection Office, as part of the Education and Research function of this new body, and that it provide guidance and direction on both interpretation and enforcement of the Building Code.*

**Comments:**

Burnaby, on several occasions has strongly supported reinstatement of the Building Standards Branch. If implemented, this recommendation will ensure that the Province provides the required expertise to coordinate solutions to issues involving code changes, interpretation, enforcement and product approval.

- **Recommendation #4:**

*That the administration and interpretation of the Building Code be enhanced through the creation of Provincial inspectors capable of undertaking on-site inspections.*

**Comments:**

Under current legislation, it is the responsibility of local government through the building inspector as the authority having jurisdiction, to interpret the Building Code, and to conduct inspections within municipal boundaries. In a subsequent meeting with Robyn Allen of the Commission, the Chief Building Inspector expressed concern with an apparent duplication or erosion of existing Municipal inspection services. He was informed that the intent of the recommendation was not to replace local government inspection services, but to provide expertise within the Provincial government to assist in areas of interpretation, product approval and enforcement of trades qualifications and warranty provisions. It is intended that site inspections by proposed Provincial inspectors would only be conducted to cover these issues, and after involvement of the local authority.

Staff has concern regarding the creation of an additional bureaucracy which may duplicate, confuse, and reduce efficiency of existing processes. With adequate legislative tools and Provincial support, local government staff have the expertise to adequately deal with the issues at hand.

- **Recommendation #5:**

*That the provincial government allocate sufficient resources for training and apprenticeship programs, in association with business and labour, in the residential construction industry, through the Trade Apprenticeship Commission (ITAC).*

**Comments:**

This recommendation essentially identifies a requirement for the Province to financially support an effective trades training system. The need for improved trades training has also been an initiative supported by City Council and referred to the Province on several occasions. Inadequate training within the building trades has resulted in a prevalent "build by mistake" approach. The result is an inefficient use of staff time for required inspections and an inability to adequately address changing needs and responsibilities involving such issues as building envelopes and increasing environmental concerns. While the recommendation will add a responsibility to staff to monitor qualifications of the trades, it will provide for a more qualified construction industry resulting in a more efficient use of staff time.

- **Recommendation #7:**  
*All Part 5 (Wind, Water and Vapour ) requirements of the B.C. Building Code be applied to all multi-unit, residential buildings, greater than two stories in building height, or larger than 600 square metres in building area (regardless of firewalls).*
- **Recommendation #8:**  
*All multi-family buildings facing renovations to the building envelope be renovated under the provisions of Part 5 of the B.C. Building Code.*

**Comments:**

The report states that the Commission was unable to find evidence that the Building Code, per se, had caused the problems. Rain penetration results from a combination of water on a wall, openings to permit its passage and forces to drive it inwards. It can be prevented by eliminating any one of the three conditions.

Expansion of the Part 5 requirements to include a majority of Part 9 residential buildings will have a minor effect on enforcement procedures and administrative process. However, it is unclear to what extent the recommendation for all renovations to the building envelope comply with Part 5, will affect staff workload. Currently most municipalities, including Burnaby, do not require permits or inspections unless repairs or renovations involve structural work. Additional permits and inspections for items such as changing exterior cladding from wood siding to stucco or aluminum siding would involve additional staff time during both the permitting and inspection process.

- **Recommendation # 10:**  
*That all Municipalities review their zoning bylaws, and the calculation of FSR, with a view to promoting sound building envelope design practices. In particular the following revisions should be reviewed:*
  - a) *FSR calculations to be taken only to the inside face of the principal structural elements of the exterior walls necessary to support the building and inside walls;*
  - a) *exclude from FSR, walkways and top floor balconies protected by roofs; and*
  - b) *ways and means for promoting overhangs which does not conflict with other municipal planning objectives.*

**Comments:**

The report suggests that the failures were the result of numerous factors, including design features inappropriate for our climate; a reliance on face-sealed wall systems; and a fundamental lack of awareness regarding the principles of enclosure design suitable for our climate. In General, Burnaby does not appear to have experienced the level of building water penetration difficulties of other municipalities although there are a number of such projects identified in Burnaby.

The Assistant Director Current Planning provided the following comments:

- a) Regarding the suggestion of FSR calculations being made to the inside face of the principal structural elements of the exterior walls, it needs to be determined whether such calculations are practically feasible and do not become too intricate. Such FSR calculations could result in the manipulation of building designs to exclude larger than reasonable area from the calculated FSR, creating larger than expected densities.

- b) The proposed revisions related to walkway and balconies are not considered relevant to Burnaby. Only building walkways, whether covered or not, that provide necessary common access to residential multiple-family units are included in FSR. Balconies that are covered by roof but not defined as interior space are also excluded from FSR.
- c) Burnaby does not object to and indeed has promoted roof overhangs and/or pitched roofs for wood frame and low-rise multiple-family developments. For hi-rise apartments such overhangs have minor consequences. It may not be appropriate to mandate roof overhangs for all residential buildings.
- d) Whether specific exterior wall materials such as stucco should be excluded needs further study. Stucco, if properly detailed and installed, remains an acceptable exterior material. Weather protection and appropriate architectural consistency need not be mutually exclusive. Staff are supportive of projects which from conceptual stages are planned with possibly better weather protection properties such as properly detailed exterior overlapped siding materials or panel systems.

- **Recommendation #14:**

*That training provided through educational institutions, and continuing education offered by professional associations, clearly identify the special requirements for multi-family building envelopes in B.C.*

- **Recommendation #15:**

*Any Architect or Engineer involved in Letters of Assurance and the field review process, must have the qualifications, or sub-contract the building envelope design and review to a qualified Building Envelope Specialist, to be defined by AIBC and APEGBC in consultation with the Provincial Advisory Council.*

**Comments:**

The Architectural Institute of B.C. (AIBC) and the Association of Professional Engineers and Geoscientists of B.C. (APEGBC), with the assistance of other participants, is developing an extensive training course to qualify those wishing to be recognized as Building Envelope Specialists. The course is nearing completion and expected to be available in the fall of this year. With the approval of AIBC, the Building Officials' Association will be offering this course to its members, therefore City staff will have the opportunity to improve their knowledge in this field. Pending completion of the course materials, there are only a few firms considered to be qualified as Building Envelope Specialists at this time. In response to the current problem, staff have initiated a requirement that the design professional, in addition to the existing Letters of Assurance, submit confirmation for design and field review of the building envelope for compliance with Part 5 of the B.C. Building Code. This procedure will be followed for every multi-family residential project. Staff are also currently reviewing existing procedures to determine the most effective and efficient means to monitor this compliance through plan review and inspection.

- **Recommendation #17:**

*That municipalities should be explicit and give a written statement to all homeowners who inquire, to ensure their exact function, and responsibilities of their building Officials, are understood.*

**Comments:**

It was clear from the presentations to the Commission, and the comments of the Commission, that the role of the local government with respect to building inspection and plan checking, is widely misunderstood.

Staff are currently reviewing opportunities to provide the public with information clarifying the role of City staff. Some of the avenues being explored are; providing information on the Web Page, preparing an information handout and submitting an article to "Information Burnaby". It should be noted, that the Building Officials' Association are also looking at providing similar information on their Web Page.

- **Recommendation #18:**

*That the Municipal Act be modified to remove the joint and several liability of a Municipality while retaining proportionate liability.*

**Comments:**

This issue has been of prime concern for Burnaby and other municipalities, and has also been the topic of several requests to the Provincial government for change. The Commission agreed with the position that the joint and several responsibility for municipalities is too onerous. Because of both a perceived and a real obligation on behalf of municipalities to carry out the enforcement of the Building Code, there have been and continues to be, a significant number of litigation claims naming the City as a defendant. Currently, the City is liable on a "joint and several" basis, for inspection activity that may not have been properly carried out. This means that the City could be held responsible for 100% of the costs of a successful judgment even though it may actually be less than 1% liable.

The Commission also recognized that this change would significantly reduce municipal litigation costs and the cost of liability insurance, and recommended that the savings be passed along in the form of lower permit fees or an increase in inspection services. It is suggested that any cost savings would be offset by increased workload on staff in the carrying out of their expected responsibilities implied in other recommendations, and in expanding their plan checking and inspection role with regards to the building envelope.

- **Recommendation #20:**

*That Municipal Councils review their building permit process with a view to enhancing the inspection of work, related to an effective building envelope, and that inspectors become more conversant with the role and effectiveness of building science issues related to the building envelope. The Union of BC Municipalities and the Homeowners Protection Office to provide direction in this regard.*

**Comments:**

The Commission suggested that existing inspections could be reorganized to reflect a building envelope approach rather than creating a separate, additional inspection. Staff will be reviewing current practices to determine what changes would be effective in dealing with this concern. Staff have recently attended training seminars on the science of the building envelope and will attend the training curriculum for Building Envelope Specialists scheduled for the Fall of 1998.

- **Recommendation #21:**

*That Municipalities waive building and permit fees on repairs related to the building envelope.*

**Comments:**

It should be noted that the recommendation is to waive *all* permit fees including electrical and plumbing. Currently, City bylaws do not require a building permit or inspections for repairs to building envelopes unless the repairs are of a structural nature. This recommendation would require a permit in all cases in order to properly record the extent of work, and the process resulting in the successful conclusion of the repairs. The recommendation to waive the permit fees is a concern to staff, relative to cost recovery for services provided.

While the number of permits for repairs to date is low, this number has been increasing since the Commission Inquiry and is expected to increase dramatically should the requirement for mandatory permits and use of qualified firms be instituted by the Province. Any consideration to reduce or waive permit fees would require clear guidelines as to what qualifies as repairs falling within "leaky condo" legislation.

It is expected that staff involvement with the issue of building envelopes and leaky condo repairs will increase, which also raises concerns relative to how this may affect our ability to deal with the normal demand for permits and inspections. To address customers' concerns and the Commission recommendations, staff are reviewing existing procedures to make the necessary adjustments to ensure that *all* repairs, structural or non-structural are properly carried out. As an interim measure, where staff note or are otherwise made aware of a building envelope repair in progress, an application for the repairs must be made to the Building Department accompanied by a report prepared by a qualified Building Envelope Consultant.

- **Recommendation #22:**  
*That the residential construction industry be regulated under public authority through a regulatory and licensing arm of the Homeowner Protection Office.*
- **Recommendation #23:**  
*That all renovation contractors performing building envelope reconstruction greater than \$2,000 per unit or \$10,000 for single-family and duplexes, be licensed and regulated by the Homeowner Protection Office.*
- **Recommendation #24:**  
*That developers and builders pay a special levy of \$1,000 per unit to be built in the coastal climate region of B.C. This levy to finance the Reconstruction Fund available to homeowners facing repairs and most in need as a result of poor quality construction.*

**Comments:**

Staff support these recommendations as they will effectively eliminate those in the industry who are not qualified, and in conjunction with the creation of a new mandatory home warranty program identified in recommendations #38 to #45, are intended to remove the ability for numbered companies to be excluded from their liability responsibilities.

While it remains an unknown at this time, it is assumed that City staff will play a role in collecting and monitoring the payments of the special levies outlined in these recommendations.

- **Recommendation #26:**  
*That the requirement for appropriate professional services on residential buildings, as constituted in the Architect's Act, be enforced.*

**Comments:**

The implications of this recommendation are unclear at this time. Municipalities and the Building Officials' Association have to date taken the position that enforcement of the AIBC or other professional Act rests with the respective Association, not the municipality. To enforce the AIBC and other professional Acts would require expertise in the contents of the Act, and a time consuming monitoring process which would, I suspect, cause some additional liability to accrue to the City. Virtually all buildings other than single and two-family dwellings are currently designed by a professional. The AIBC Act would also apply to single and two-family construction which exceeds a specified value or size.



- **Recommendation #34:**  
*Immediate and definite steps be taken, to ensure that all compulsory trades required by law to be on site in a residential project, be enforced.*
- **Recommendation #35:**  
*That the Homeowner Protection Legislation include the authority for the Homeowner Protection Office to recommend compulsory trade certification related to multi-family residential construction.*
- **Recommendation #36:**  
*That any developer, builder, general contractor, or sub-trade, who employ compulsory trades to work on a residential construction site, must file a report listing the names and trade qualifications of all certified and apprentice trades on the job, and that this list form part of the necessary documentation to be provided to future strata councils and homeowners.*
- **Recommendation #37:**  
*That a system of inspection be designed whereby municipal inspectors and provincial inspectors, through the newly formed Homeowner Protection Office, enforce the employment of qualified building trades on site, and that a system of discipline be developed for employers violating the requirements for qualified trades on residential projects.*

**Comments:**

These recommendations will require a great deal of discussion in order to develop an adequate process to ensure success. City staff will undoubtedly play a large part in the monitoring process in conjunction with the proposed Homeowners Protection Office. However, City involvement on-site is only for a very short portion of the construction duration making it difficult to monitor all of the trades on-site. An existing analogy which emphasizes staff concern is the current Electrical and Plumbing trade qualifications which are enforced through the permitting and licencing processes for the general contractor, but not for all the workers in his/her employ. This has proven to be problematic where licensed trades obtain permits and then proceed to use unqualified people to do the work.

- **Recommendation #38:**  
*Under the authority of the Homeowner Protection Act, immediate mandatory warranty for all residential housing built, as well as units undergoing renovations for structural or building envelope purposes. All units to be enrolled prior to the start of construction or renovations to receive the benefit of inspections.*

**Comments:**

This will require involvement of staff in cooperation with the Homeowners Protection Office to monitor registration in the warranty program, and coordinate this with the request for inspections. To include those involving repairs as identified in the recommendation and to provide an effective monitoring program will require amendments to existing permitting and inspection procedures.

- **Recommendation #68:**  
*That the time limitations under various legislation be reviewed and amended, as appropriate, to accommodate the reasonable needs of residential property owners, including the Municipal Act, and the Real Estate Act, be amended to reflect the circumstances of the failure to perform by the municipality and the developer. Limitations under the Insurance Act should also be reviewed.*

- **Recommendation #69:**

*That the Homeowner Protection Act make available an alternate dispute resolution mechanism (ADR) for issues arising from the problems surrounding residential construction-in particular building envelope failures, and that:*

- a) the system be optional for consumers but compulsory for the developer, builder, contractor, sub-contractor, professional, and warranty provider; and*
- b) mediation be subject to private proceedings, while arbitration would be conducted under full disclosure rules.*

**Comments:**

This recommendation is to address the Commission suggestion that existing time limitations for notification of claim was creating barriers to effective redress for the consumer. The Commission also suggested that the litigation system did not serve either the homeowner or conscientious members of the residential construction industry well. The alternate dispute resolution mechanism is intended to mitigate court cases in the future and reduce the use of this approach even with current disputes because of the increased opportunity for homeowners to obtain financial resources and move forward with repairs. The right of court action will remain as a final means for redress.

- **Recommendation #73:**

*CMHC through the Canadian government, immediately double the amount of funding to BC's RRAP program and maintain funding levels for homeowners affected by building envelope failures, according to qualified demand.*

- **Recommendation # 74:**

*Candidates qualify, both prior to, and subsequent to repairs being undertaken, as long as the repairs are a function of special assessments, related to the leaky condo problem.*

**Comments:**

The RRAP program provides loans and grants to low-income homeowners and landlords of properties for low-income Canadians, bringing those homes up to health and safety standards. The program would apply to a number of low income households affected by problems related to leaking condos. However, it is significantly under funded and there is a waiting list of approximately 1 year.

The Senior Social Planner indicated that staff strongly support the recommendation to double the amount of RRAP funding. RRAP could be an effective vehicle for helping low income owners of leaky condos to fund their repairs. Without a substantial funding increase, the Burnaby RRAP office could not hope to meet the demand generated by low income leaky condo owners. As Council is aware, RRAP funding has been inadequate for several years. The problem has merely been exacerbated by the leaky condo problem.

Staff also support the recommendation to allow applicants to qualify for RRAP funding both prior to, and subsequent to repairs being undertaken. The facts are, that RRAP applications take time to process and strata councils often need to act promptly to address leaky condo problems. Recognizing these facts, recommendation #74 would ensure that applicants remain eligible for program benefits even though repair work may proceed prior to approval of their application.

While supporting the Commission's recommendations , staff would make the following observations:

- a) a formula needs to be established to ensure that a portion of the RRAP budget remains available for other low income homeowners in need.

- b) based on applications received to date, the majority of funding for leaky condo repairs in Burnaby's RRAP service area (Burnaby, North Vancouver City and District, Port Moody, New Westminister, and Coquitlam) could go to applicants outside the City, and
- c) while a doubling of RRAP funding would help, such funding would be insufficient for meeting the needs of **all** eligible leaky condo owners in Burnaby's RRAP service area.

• **Recommendation #81:**

*A procedure be established to use the permissive exemption clause of the Municipal Act and Vancouver Charter, whereby exemption from taxes payable be provided to all homeowners undergoing repairs related to the leaky cond problem.*

**Comment:**

The Director Finance advises that a property owner's share of property taxes is based on the Market Value of their property. The extent to which market value is negatively impacted by the water intrusion issue will automatically provide a decrease in taxes payable in respect of the property. Additional, permissive, tax exemptions are therefore not supportable.

**3.0 Next Steps:**

The Commission report provides recommendations on directions (the what to) to be taken by the Provincial Government and now requires the development of detailed implementation strategy (the how to). Subsequent to a review of the Commission report, the various participants, including BOABC, will likely forward further comments to the Ministry for consideration. It is our understanding that the Commission recommendations are currently being reviewed by the Ministry of Municipal Affairs, with the intent to bring about legislation dealing with some of the recommendations during the current sitting of the Legislature. Other recommendations however, such as those involving the creation of mandatory trades qualifications and certification, will require extensive review and discussion prior to establishing an implementation strategy.

In keeping with the recommendations, the Building Policy Section of the Ministry is currently reviewing Part 5 of the code to include any necessary revisions within the 1998 B.C. Building Code proposed for implementation in 1998 November, and also intends to clarify the requirement for design and review of the building envelope within the existing Letters of Assurance.

**4.0 Conclusion:**

The major recommendations contained in the Commission report for changes to the Building Regulatory System are generally in keeping with previous requests by local government. There are aspects of some of the recommendations which are cause for concern and others which require further clarification of intent. Regardless, any of the changes recommended to the existing regulatory system will have a profound effect on all of the participants in the construction industry. Therefore, it will be imperative that the Ministry continue to explore and develop the recommendations, and any necessary amendments thereto, with the input and assistance of the participants, to adequately address their concerns.

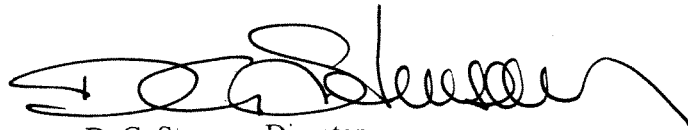
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RE: Barrett Commission

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Until the Province has concluded their review, and a framework for an implementation strategy has been developed in cooperation with industry, it is virtually impossible to determine the impact of the eventual legislation on the City. It is intended that staff will continue to monitor the process and will inform Council on developments as they become available. The Chief Building Inspector also intends to maintain the existing dialogue with the Ministry and Robyn Allen of the Commission throughout the current review phase, in order to provide constructive input on behalf of the City and the Building Officials' Association of B.C.

This report is provided for the information of Council. While this does not purport to be a complete response to all of the recommendations of the Barrett Commission, staff believe it would be appropriate to forward a copy to the Minister of Municipal Affairs and Housing for her information as it relates to those items having a bearing on the City's role in the Building Regulatory System.



D. G. Stenson, Director  
PLANNING AND BUILDING

*GRH*  
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cc: Director Finance  
City Solicitor

*only clear*

Item	03
Manager's Report No.	19
Council Meeting	98/07/13

**BUILDING**



**ASSOCIATION**

**OFFICIALS'**

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**Presentation**

**The Barrett Commission**

**1998 May 12**

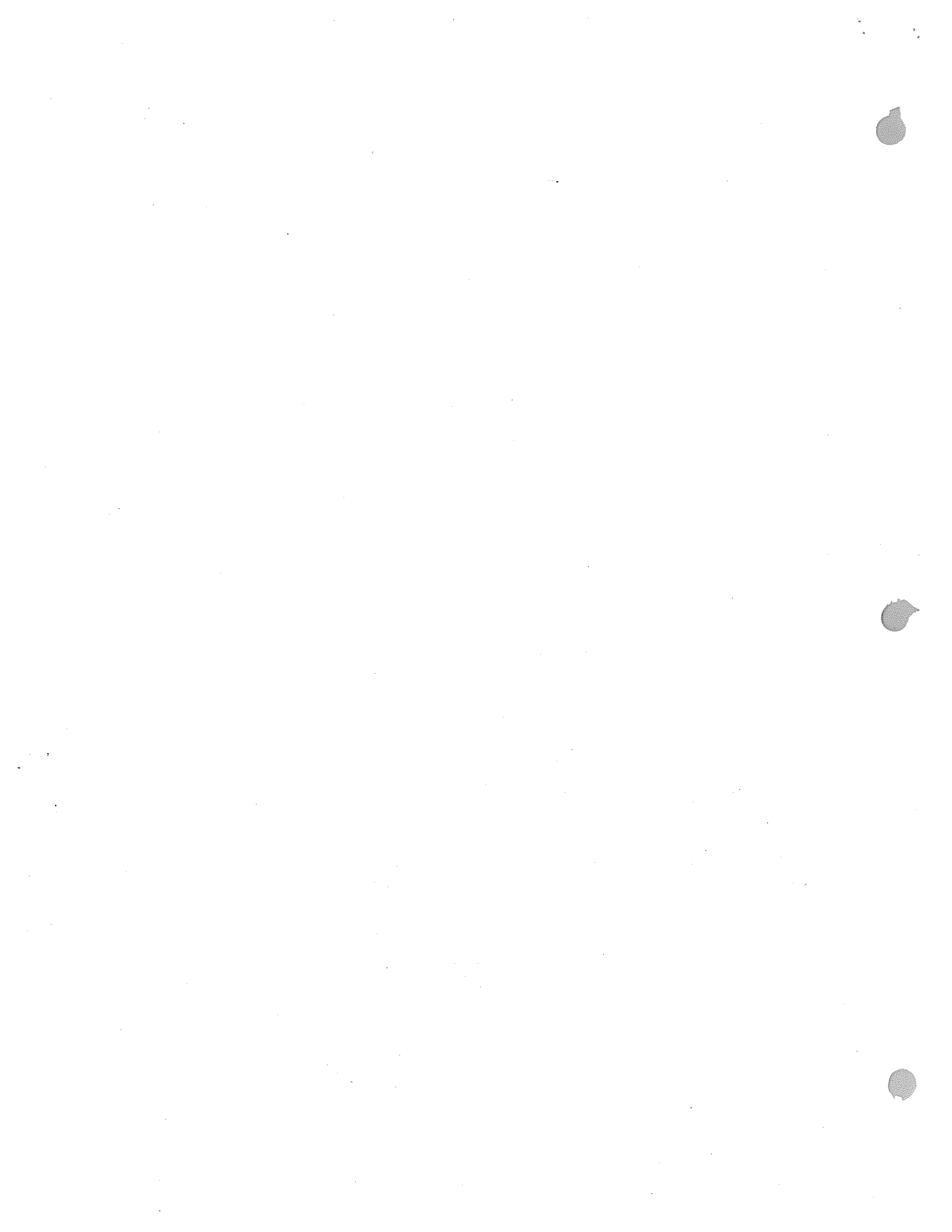
**Introduction:**

The Commission has heard and will undoubtedly continue to hear a wide variety of opinions regarding the issue of leaky condominiums. This is a very complex problem involving many factors. I intend to provide the perspective of the Building Officials' Association whose members are involved with the regulatory and enforcement aspects of the Building & Plumbing Code and a variety of municipal bylaws.

On the regulatory side, our members are involved in Committee work at both the Provincial and Federal levels with respect to the Building & Plumbing code change process. On the enforcement side, our members are involved with the administration of a permitting and inspection process for local governments.

Like some others before me, I also view this problem as symptomatic of a system failure. I would, however, like to emphasize that this represents a failure in only a portion of the building regulatory safety system, and while refinements in other portions of the system may also be required, this is not indicative of a greater concern for the building regulatory system as a whole.

The problems now surfacing are the result of failures in the system throughout all of the various facets of a construction project, making it virtually impossible to blame any one participant. It is a complex problem that encompasses everyone from the original owner/developer, through to those involved in the design/construction phases, provincial and local government authorities and the eventual owners. While some may be considered more culpable than others, I don't believe that any one sector, building product, building system or process can be said to be the sole contributor to the problem. Rather, the problems appear to result from a cumulative failure in several parts of the system. I don't believe that it was intended, or that the majority were aware of the consequences of their individual actions or lack thereof.



### **Who is BOABC:**

The Building Officials' Association of B.C. is an Association of approximately 600 members primarily representing local government Building Officials across B.C. & the Yukon. Membership in our Association is voluntary at this time and we include members from other disciplines within the design/construction community.

The primary objective of the Association is to promote consistent code interpretation and application, to provide technical assistance and information, to provide a forum for discussion, to provide education, and to provide a certification program for our members. With the support of the Professional Associations and other participants in the construction industry, the Provincial Government passed Bill 39, the Building Officials Act in 1998. This Act recognizes our profession and the responsibility to provide education, certification, a code of ethics and a discipline process for our members. In addition, the Association also received Provincial endorsement of our education strategy for the creation of a code course curriculum which will be made available not only to our members, but the industry and the public.

Our members work extensively with others in the building industry and serve on many Federal, Provincial, Professional and industry committees that review building regulatory issues. Our members have been involved on committees currently reviewing possible solutions to the current building envelope problems. While we are unable to force individual municipalities to adopt recommendations of BOABC relative to regulatory issues, we do promote standard approaches to such issues and have found that most local governments are receptive to this approach.

### **Building Code - Structure & Application:**

The B.C. Building Code is a Provincial regulation under the authority of the Municipal Act and is currently based on the 1990 National Building Code with B.C. amendments. The Canadian Commission on Building & Fire Codes (CCBFC) developed the National document with the voluntary assistance of experts from across Canada, including our members. The Canadian Codes Centre at the National Research Council of Canada provides technical assistance in the drafting of the model code which is then adopted by Provinces with local amendments.

The B.C. Building Code consists of minimum requirements with respect to life safety, health and structural sufficiency of buildings, including those involving alterations and additions. The code is not intended to be a textbook on building design and does not provide criteria for quality nor workmanship.

The Province's building code applies to all municipalities and regional districts with the exception of the City of Vancouver, unincorporated areas, and Federal properties, including First Nations lands.

The particular sections of the code which are germane to water penetration and the building envelope are: Part 3 which applies to buildings in excess of 600 m<sup>2</sup> (6,000 sq.ft.) in building area, Part 9 which applies to smaller buildings less than (600 m<sup>2</sup>) and Part 5, Wind, Water and Vapor Protection. The area requirements are based on the footprint, not gross floor area; therefore, a typical 3-storey Part 9 building could be a total of 18,000 sq. ft. resulting in 18 - 1,000 sq. ft. housing units.

Wind, Water and Vapor Protection covered in Part 5 applies to larger buildings falling under Part 3 and identifies the performance objectives of building envelopes. This part of the code is not prescriptive, but sets out performance objectives. The requirements are flexible, allowing the designer many alternative ways to meet the code objectives. Part 9 of the code, which applies to smaller buildings, is prescriptive and offers more explicit design and installation instructions.

The current Part 5 of the code requires that "*Exterior wall cladding shall be so installed that it sheds water to prevent its entry into other components of the building assembly.*" It further requires that "*where there is likelihood of some penetration, drainage shall be provided to take the water to the outside.*"

The new Part 5 contains similar provisions but deals with the issue of weather and environmental protection in a more extensive manner. Neither the old nor the new Code will, however, provide explicit provisions of what constitutes good design. Rather, they state the objectives that a properly designed building envelope must meet. These include: that the walls must be designed to prevent rain penetration, vapor and air leakage, and to allow for drainage of any moisture that does get in. The new Part 5 is more detailed and explicit in terms of the performance requirements of a good design, but still does not prescribe how to meet this criteria.



The Building Code does not design building envelopes; rather, it establishes minimum performance standards which must be met in design and construction. The Province proposes to adopt the 1995 edition of the National Building Code in the Fall of 1998, carrying forward only those changes considered unique to B.C. With the recent demise of the Building Standards Branch, it is important to note that the Province lost the ability to affect further technical changes to the code to address climatic concerns, which may also be considered unique to B.C.

## **Responsibilities under the B.C. Building Code:**

### **Design & Professional Assurance:**

The B.C. Building Code requires that for all large or complex buildings, a coordinating Registered Professional must be engaged to accept responsibility for the coordination of the design and to direct the services of a team of professionals who will be responsible for the various aspects of the design, including structural, mechanical, electrical, geotechnical and architectural.

The building envelope is part of the architectural design of the building. It is included in the letter of Assurance of "Architectural Design" and "Commitment for Field Review". The Letter of Assurance states in part, that the "*Project substantially conforms to the architectural requirements of the current B.C. Building Code...*" Components of the building envelope that are specifically listed in this Letter of Assurance include roofing and flashing, wall cladding systems, and thermal insulation systems, including condensation control and cavity ventilation.

Just as we rely on Structural Engineers for the structural adequacy of buildings, we rely on Architects for their assurance that the building envelope will perform as required by the code. The requirement for Field Review by the Professional does not commit the designer to check every detail of the building envelope. It does, however, mean that based on his/her professional judgement, the designer is committed to carry out the level of field review that is believed necessary to ascertain that the work is being carried out in accordance with his/her design. Architects must make judgements as to the skills and reliability of the contractor, the subcontractors, and the workers on site in order to determine the level of field review required to provide this assurance.

## Role of Building Officials:

A Building Official includes individuals who undertake permit plan reviews, building inspections or Building Department administration responsibilities for local government. One of the responsibilities of the Building Official is to enforce the standards established in the Building Code and Municipal bylaws. This function is based on a set of minimum provisions outlined in the B.C. Building Code with respect to public health, fire and structural sufficiency.

The role of local government with respect to Inspection and Plan Checking is generally misunderstood. The Ministry of Municipal Affairs & Housing issued a publication in 1997 November entitled "Buying a New Home: A Consumer Protection Guide" which contains in part, the following excerpt :

*"Many people assume that it is government's role to ensure that houses and buildings are constructed in conformity with building codes. They believe that an inspector checks and approves all design and construction details, including the quality of the work, to guarantee the fitness of the new home. This is not the case, and placing complete faith in the system of building codes and inspections to protect you is unwise for several reasons.*

*The Building Code is intended primarily to ensure that health and safety standards for buildings are met, not to guarantee overall construction quality. Workmanship, finishes, landscaping, and driveways are examples of items which are not regulated by the building code but are often the focus of complaints by new home owners. A building with a design that meets all code requirements may still cause problems for the buyer if the design is not properly executed during construction or if the drawings are not sufficiently detailed to guide the builder.*

*Local government enforce the standards established by the Building Code. The Municipal building inspection office usually reviews major construction stages, identifies deficiencies and ensures they are corrected before certifying the building fit for occupancy. It is unrealistic to assume, (given the complexity of a modern building and volume of construction), that an Inspector can ensure the quality of every aspect of every structure. Quite simply, the Inspector cannot witness the pounding of every nail."*

Local government provides Plan review and Inspection services to achieve a satisfactory general level of compliance with a variety of bylaws, including building, electrical, plumbing and gas and zoning. These services are not intended to assure individual owners or occupants of overall compliance of a specific building. The onus for constructing and maintaining buildings in a safe condition rests with property owners, designers and contractors. Without duplicating the extensive effort required to design a building and provide supervision throughout its construction, local government cannot ensure the level of compliance expected of an owner and the professional team. Indeed, to the extent that industry comes to rely on local government checks and inspections, overall safety standards may be compromised if owner/developer and professional attention to safety is reduced. There is no alternative to involvement and commitment by the owner/developer and professional consultants.

The building inspection function is, in fact, a monitoring function in the sense that staff must rely on a sample of events at prescribed stages in the construction process to indicate general compliance to the requirements of the Building Code, as outlined above. When deficiencies are identified through these "spot checks", they are required to be corrected, however, they do not guarantee that all Bylaw and code requirements have been met. The effect of these inspections is to deter shortcuts and promote a greater degree of compliance overall. This procedure is used because the cost of blanket enforcement would be prohibitive. Municipalities therefore do not attempt to duplicate the expertise of the owner's consultants. Local government administers processes to make owners, their consultants and contractors aware of their obligation to comply with code and bylaw requirements and to use appropriately qualified consultants in designing and supervising the construction process.

A "resident" Inspector who is on the job constantly from beginning to end, and evaluates construction from start to finish, is better known as a "Clerk of the Works" or "Site Superintendent". This is, however, not the function of a Municipal Building Official.

Local government plan review and inspection services identify many potential safety concerns which they require to be corrected in the interest of public health and safety. Due in part to limited resources available to Building Departments, these services provide procedures which devote attention to areas where the expertise and experience of the building official suggests there may be higher than normal or acceptable risk.

When the scope of the current problem became known, Building Officials worked to increase their level of understanding and knowledge with respect to the performance of materials, assemblies and building envelopes and worked closely with others in the industry to explore procedures and practices to prevent future occurrences. At this time, there are only a few recognized Building envelope specialists pending completion of the Vancouver/AIBC training program. Many Lower Mainland municipalities are either now requiring building envelope specialists to be involved in the design and construction process while others are preparing for this eventuality.

The Building Official can only enforce the minimum construction requirements contained in the Building Code and Municipal bylaws. The design of a building and the method of construction are the responsibility of the owner, designer and contractor. The Building Official does not provide site supervision, policing, training/education nor enforcement on qualitative aspects of construction. It is an unfortunate reality that many marginal participants in the industry rely on Municipal building inspections to spot incorrect application of materials, in what has become known as “build by rejection”, although this is not the intent of the Municipal inspection process.

### **Typical Inspection Schedule:**

The number and nature of building inspections will vary between Municipalities, based on the direction provided by Council and the complexity of the project. The following is, however, an indication of the typical inspections stages carried out by most Municipalities:

- a) Forms for the footings and foundations are complete, but prior to the placing of concrete;
- b) Forms for the floor slab, vapour barrier, perimeter foundation insulation, reinforcing steel, heating ductwork or pipes for radiant heating are complete, but prior to placing concrete; plumbing and electrical below the finished slab must be inspected and approved prior to building inspection;
- c) Framing and sheathing, all exterior doors, window and roof membrane are completed, including the installation of flashing, fire stopping, bracing, chimney and ductwork, rough wiring, gas venting, and rough plumbing but before the insulation, lath, gypsum board or other interior or exterior finish is applied which would conceal such work;

- d) The insulation and vapour barrier are in place, but prior to the concealing of such work;
- e) The building has been completed and is ready for occupancy, but prior to actual occupancy. The operation of the life safety systems, such as fire alarms, etc., are also reviewed at this stage.

To carry out the above schedule, a Building Official may visit a typical small housing project a total of 3-5 days in increments of 1 - 3 hours while the project construction may take 6 - 9 month to complete.

### **Concerns of BOABC:**

#### **Increased Responsibilities:**

As with many other businesses, budget restraint and restructuring is a common occurrence in many municipalities in response to rising costs and a slowing economy. Building Departments have been affected by this restraint and restructuring which has all too often resulted in static or reduced staff levels to handle an increasing workload. While construction activity is inconsistent, the responsibilities being assumed by Building Departments is increasing. This, in part, is due to the increasing complexity in the construction environment and the legislative requirements which affect it.

Code and zoning issues are becoming more complex. Municipalities are assuming new and increased responsibilities, resulting from Provincial downsizing, downloading and the creation of new legislation in response to current needs, especially in the areas of waste management and environmental controls, increased requirements of the Workers' Compensation Board and the Freedom Of Information and Protection of Privacy Act, an increase in the number of unskilled trades, and an increase in the number and complexity of new products and materials. In addition, Building Departments are constantly amending or adding procedures to address issues of critical concern, such as hydronic heating, post tensioning, roofing, stucco application, and more recently, the building envelope.

Another concern for Building Officials' is the direction chosen by the Province to reduce support for the regulatory system affecting the construction industry and initiatives by some local governments to reduce or eliminate plan checking and inspections in the hope of reducing liability exposure.

I believe these decisions indicate a lack of understanding of the importance of the role of the Building Official as the only independent third party in the construction regulatory system. The sole objective of the Building Official is to protect the public interest with respect to compliance with health and life safety provisions of codes and bylaws applying to the construction and use of buildings. The current practice of many developers, which is to build each project under a separate company, the lack of required liability insurance for professionals, and the current law of joint and several liability, all too often leave the Municipality which play only a monitoring role, holding the entire bag for the negligence of others. Some Municipalities have attempted to reduce their liability exposure through a greater reliance on the Professional through the Certified Professional program created by the City of Vancouver. While this is considered a worthwhile code education program for the professional, it has not proven to be a successful replacement for municipal inspections. It is the current legal opinion that Municipalities cannot abrogate their responsibility by passing this responsibility onto other parties. In fact, they increase their liability exposure because they are now responsible for the work of others over which they have no control.

Other segments of the Provincial regulatory safety system, such as Provincial gas, electrical, boilers, elevating devices, etc., have always enjoyed strong Ministries and endless Provincial support. The lack of similar support for the building portion of the safety system, which comes under the Ministry of Municipal Affairs and housing, however, can be summed up by the fact that there have been six different Ministers over the past six years and the Building Standards Branch was cut in 1997. The Building Standards Branch, consisting of five staff and a budget of approximately \$500,000.00 was the only Provincial body providing the necessary technical coordination of the building regulatory system for an industry which is one of the largest in B.C.

Until the Province recognizes and accepts their responsibility to provide the same level of support accorded other segments of the safety system, I see little opportunity to achieve a cohesive approach to resolving current and future issues affecting the construction industry. It should be noted that with the demise of the Building Standards Branch, the Province also lost the staffing and technical ability to deal with any provincial code change process. This would include the ability to create possible changes to address current building envelope concerns, if in the final analysis, this is found to be necessary.

## Status of Current Safety System Review:

### History:

A number of recommendations were contained in the Closkey report of 1988 which resulted from the Save on Foods Roof collapse. Some of those recommendations were implemented by the Building Standards Branch, most notably the Letters of Assurance which provided a mechanism to ensure that Architects and Engineers understood and fulfilled their responsibilities relative to design and field review. With the increasing complexity of projects, the letters also addressed the need for a coordinating Registered Professional ensure that all aspects of professional involvement on a project were dealt with and coordinated. With the involvement of all participants in the construction industry, the former Branch also created a document titled "Options for Renewal" in 1994. This document identified a number of proposed changes or refinements to the regulatory system in response to many of the concerns being expressed during this Inquiry. Some of these included: defining the roles and responsibilities of all players; making participants accountable to a degree commensurate with their level of responsibility; limiting liability exposure of Local Government; mandatory insurance for participants; Province wide application of the Code; improved training, education and certification for participants; and introduction of a mandatory warranty program.

Although there was strong support and urging from all participants, these recommendations were not acted upon. With the demise of the Branch, much of this work was subsequently transferred to the larger "Safety Systems Review" in 1996 which went beyond the Building segment and included all of the Provincial safety systems. Unfortunately, the Building regulatory portion of this system became relatively insignificant and therefore many of the issues important to the construction industry have been manipulated to fit into a safety system structure which is designed primarily to address the needs of the other segments, such as boilers, elevating devices, gas safety, etc.

The participants, including our members, have become disillusioned by the current process and with some of the resulting recommendations, which seemingly continue to ignore the constructive input by the participants in favor of a predetermined solution. While the Safety System Review is continuing under the direction of an "Interim Advisory Group", there has been little support for, nor progress, on the recommendations contained in their final report titled "The Next Horizon."

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I have *attached* to my report an article titled "Liability Claims" dated 1997 January 06 which outlines the role of local government and issues which must be addressed by the Province. The issues identified in this report were supported by UBCM and forwarded on several occasions to the Province for consideration. To date, no action has been taken regarding these issues.

### **Contributing Factors to Building Envelope Failure:**

#### **Multiple Factors:**

As in this case, failures of such magnitude are not usually the result of one or only a few contributing factors. Any one of the items listed below would, by themselves, not cause such catastrophe if other elements are adequately addressed. For example, the mere fact that water may enter through a poor detail or joint may not result in a severe problem if the envelope were to allow the moisture to escape or the assembly to dry.

#### **CMHC Survey:**

In 1996, CMHC released a report titled "Survey of Building Envelope Failures in the Coastal Climate of British Columbia." This survey identified two problem areas being design and construction. The design concerns include: the overall design and detailing of the buildings, form, materials used, roof overhangs, how the materials are put together and their exposure to weather. With regard to the construction of the building envelope performance, they identified the overall building form, building materials, assemblies and details, in addition to the quality of construction as areas of concern.

Problems have continued to emerge despite continuing advances in the understanding of the building envelope. The following is a partial list of what I believe are some of the contributing factors:

- Changes in the complexity of building design increasing the number of intricate joints and connections. Inadequate detailing.
- Zoning bylaw requirements inadvertently promoting the deletion of overhangs and the creation of exterior corridors through the definition of what is included in Gross Floor area.



- Owners'/Developers' desire to transpose architectural styles from other climatic zones, such as California.
- National Code inclusion of increased vapor barrier and insulation requirements in response to energy concerns.
- Lack of understanding and training in the building sciences involved in moisture movement through wall assemblies.
- Lack of adequate apprentice training program for building trades.
- Lack of understanding of maintenance responsibilities of owners.
- A building boom which saw new, untrained and less skilled participants in the industry.
- Expanding availability of new materials and assemblies.
- Inadequate consumer protection through warranties.
- Increased economic pressures to reduce costs.
- Inadequate standards for field review and site supervision.
- Inadequate control of moisture content of framing material.
- Design of building envelopes that ignore the eventuality that water or moisture will enter the wall assembly and must therefore be designed to facilitate its removal.

**Recommendations for Change:**

- Reinstate and expand the responsibility of the Building Standards Branch to include the support for training and education of participants.
- Implement only those objectives outlined in "New Horizons" document which were previously endorsed by the participants in the "Options for Renewal."



- Establish mandatory qualifications and certification of all participants, including Building Officials'.
- Establish mandatory warranty system. (Warranty, bonding, insurance).
- Create a Provincial product approval process.
- Clearly define in legislation the roles and responsibilities of all participants, including owners.
- Remove the Joint and Several provisions and create legislation which makes participants' accountability commensurate with their responsibility.
- Mandatory liability insurance for Professionals and other participants.
- Develop, with the assistance of industry, code requirements which will address the unique climatic conditions of Southwestern B.C.
- Have the Professional Association explore establishing a standard of practice outlining the requirement for a minimum level of design services and field review.
- Create legislation to address liability and accountability for all participants, including numbered companies.
- Take steps to strengthen the apprenticeship program for building trades.
- Evaluate existing buildings which are performing well, to determine what is different.
- Develop consumer education materials on maintenance and property management.

### **Current Initiatives:**

The Building Envelope Research Consortium (BERC) was formed in 1995 to investigate and remedy the problems that have arisen. This cross section of major participants have started a six step program to address the problem:

- 1) Conduct a field survey of the problem.
- 2) Develop a best practices guide for designers, and builders.
- 3) Develop quality assurance protocols.
- 4) Complete an analysis of building envelope drying rates.
- 5) Create an education program for all industry participants.
- 6) Establish model projects where recommended guidelines are installed and monitored over time.

CMHC, in partnership with industry, investigated 46 housing projects in the Vancouver area. This investigation indicated the problem was essentially one of water ingress to the building rather than from interior moisture or construction moisture finding its way out. CMHC is developing a best practice manual for building construction types on the West Coast which is expected to be released later in 1998.

To address shortcomings at the construction phase, a quality control protocol for professionals, builders, and inspectors is being drafted and will be available later in 1998.

The Architectural Institute of B.C. took the lead role in developing a building envelope education curriculum. This four module program will be the basis for a certified building envelope specialist program to be established by 1998 June.

The Provincial Government has released a discussion paper titled "Improving Quality and Accountability in Residential Construction." The Minister has indicated that the plan is to introduce amending legislation, which would include a mandatory warranty program which is expected to be dealt with in the Spring Legislative session.

Education seminars, exploring possible causes and solutions, have been carried out by several Associations, including the Building Officials' Association.

Many of the more experienced developers have created their own extended warranty programs and employ a Building Envelope specialist to review their designs and construction practices. Some firms, with the assistance of their qualified trades, have developed standard wall and connection details which, based on past performance, address the current water penetration concern.

### **Conclusion:**

It is the Province's role to establish codes and standards and to provide those involved with enforcing these codes and standards with the necessary tools to accomplish this task. The owner/developer has the responsibility to ensure that construction complies with the standards. The Registered Professional has the responsibility to design the construction and undertake field reviews to confirm substantial compliance. The role of the Building Official is to monitor (inspect) the design and construction process during the building permit plans review stage and at specific stages during the construction.

I believe this problem has two distinct parts which requires two distinct methods of resolution:

#### ***Elimination of Future Concerns:***

- 1) *What changes are required in the Building regulatory system to ensure that future construction of building envelopes will perform in the manner required?*

The initiatives required to address this problem have been identified by many over the past few years, and again, during this Inquiry. Commitment, by the Province and the participants, which I believe exists, is required to eliminate future concerns. The Province, with the assistance of expertise within the industry, must therefore move immediately to implement the initiatives necessary to strengthen the Building Regulatory Safety System, which will in turn address this current problem and provide a framework to reduce the likelihood of similar events in the future.

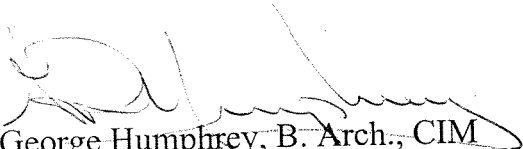
*Correction of Existing Problems:*

- 2) *What can be implemented to address the growing number of buildings experiencing water damage, and how may owners be assisted with the completion of expensive repairs in a manner which is both cost effective and technically correct?*

This issue is far more complex as many purchasers have, and will continue to, experience financial hardship for problems beyond their control.

Because I believe that this is a system failure, all participants in the system should be included in any proposal to assist in the repair of existing buildings due to premature failure of the building envelope. The Provincial Government, with the assistance of the participants, should explore options to: provide low interest or interest free loans, Provincial or Federal grants and tax incentives, and the establishment of a fund to be contributed to by all participants. Establishment of such a fund must not simply result in additional costs being transferred to the eventual purchaser through an increase in the cost of the product.

Respectfully submitted by:



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