



Claims Experience Workbook

**Lessons from a review of professional
liability insurance claims**

PRODEMUNITY
INSURANCE COMPANY



Ontario
Association
of Architects

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For the first time, Pro-Demnity has undertaken a comprehensive review of claims that arose over a multi-year period. The results of this review of claims arising between 2006 and 2011 are highlighted throughout the *Workbook*.

New information about what has triggered claims most often, which building types were involved, and who else in the design team was named is presented here.

The *Workbook* aims to help architects recognize and manage everyday risks, in their own interest and in the interest of the public.

The cumulative effect of all such risk-management efforts has the potential to make a real difference to the profession as a whole, and to the public – in Ontario, and beyond.

Where to find the noted resources

- Pro-Demnity document available at www.prodemnity.com
- Document is listed at www.prodemnity.com but accessed via a link to www.oaa.on.ca. Member log-in is required.
- Document may be purchased at www.shop.csa.ca
- Document is available at www.ontario.ca/laws

Water-related

	prodemnity.com	oaa.on.ca	ontario.ca/laws	shop.csa.ca
<i>Non-Drained Exterior Wall Exclusion</i> (Endorsement No. 2 to Pro-Demnity Policies No. 1, 2, 3 & 4)	■			
Pro-Demnity Important Notice, <i>Revisions to Non-Drained Exterior Wall Exclusion</i> (31 December, 2016)	■			
Pro-Demnity Bulletin, <i>Dealing with Substitutions to Your Design</i> (31 December, 2016)	■	■		
<i>Window Wall Endorsement</i>	■			
Regulation under the <i>Architects Act</i> (RRO 1990 Reg. 27)			■	

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Building type

<i>Claims stories</i>				
<i>Lady Falls, Case #8, Issue #2</i>	■			
<i>Personal Injury, Case #74, Issue #20</i>	■			
Infrastructure Ontario Endorsement	■			

The construction phase

Practice Tip 27, <i>Co-ordination of Consultants</i> (2012)		■		
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Consultants

Risk-management Worksheets (Tear-Out)	■			
Pro-Demnity Bulletin, <i>You have insurance...But what about the Engineering Consultants?</i> (April, 2015)	■	■		
Pro-Demnity Bulletin, <i>Engineer's Standard Terms of Engagement</i> (April, 2015)	■	■		
Pro-Demnity Bulletin, <i>Retaining Surveyors, Geotechnical and Hazardous Materials Specialists</i> (July 21, 2014)	■	■		
Practice Tip 30, <i>Retention of Specialist Consultants</i> (2014)		■		

General

<i>S478-95 Guideline on Durability in Buildings</i>				■
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Executive summary

Design errors resulting in water damage were at the root of the largest group of claims. Each year, from 2006 to 2011, Pro-Demnity defended roughly 20 water-related claims. All building types were affected. Water damage cost Ontario architects \$10.0 million, over five years – nearly 25% of all costs to resolve all matters that arose during the period.

Building type has proven to be a significant factor in claims. The process environments that distinguish one building type from the next are reflected in the claims that arose with respect to each. For instance, assembly buildings attracted more personal injury claims than any other building type, while hospitals were the setting of the costliest claims. The plaintiffs in claims involving Multi-unit residential buildings (MURBs) were rarely the architect's client: they were far more often a condominium association, purchaser or tenant.

Consulting services during the construction phase generated roughly 13 claims in each of the five years. Allegations that architects, engineers or other specialist consultants failed to uphold the standard of care in delivering their services cost Pro-Demnity \$7.0 million – which was 18% of all costs to resolve all matters that arose from 2006-2011. Builders and developers repeatedly argued that the architect and/or consultant caused some form of financial damage – such as a delay, loss of money, or loss of a contract.

Specialist consultants were named in half of all claims. Multiple errors or omissions made by both consultant and architect were the norm. Consultants, while they are a fact of life in architectural practice, add risk. The number, insurance status and manner of contracting specialists may compound the risks.

The Workbook is organized in four sections, each presenting information about one of the four principal themes that emerged in the *Review of Claims 2006-2011*. Additional resources will be needed by readers using the Claims Experience Checklists at the end of each section: these resources are available as shown in the table on page 4.



How to use the *Workbook*

The *Workbook* does not describe a comprehensive risk-management strategy for any architect's practice, nor does it determine the standard of care expected of Ontario architects.

It is not a replacement for a set of well-planned Quality Assurance protocols.

Whether one wishes to curb increases in future insurance premiums or to avoid the personal stress and strain brought on by errors and omissions claims, the *Workbook* aims to help the individual architect navigate the pitfalls that are evident in the claims history.

The *Workbook* highlights actions that might have reduced the incidence or severity of the claims made against Ontario architects between 2006 and 2011, in order to help architects see that such actions are not overlooked in the future.

Cost to Pro-Demnity = Cost to Ontario Architects

"Costs", throughout the *Workbook*, refer to Pro-Demnity's share of the damages paid directly to the plaintiff, plus the legal fees it incurred while defending the architect. The expression "cost Ontario architects", refers to the same combination of damages and defense costs – because the insurance premiums paid by Ontario architects are Pro-Demnity's principal source of funding for claims resolution.

Claims Experience Checklists

In each section, the reader will find facts from Pro-Demnity's claims experience followed by a related "Claims Experience Checklist". The recommendations in the Checklists stem directly from what was seen in the *Review of Claims* – they are activities that address either a recurring driver of claims, or a factor that was seen repeatedly to complicate the resolution of a claim.

Each Checklist refers to resources which are available online and /or in print, at various locations. See page 4 for a list of all of the relevant resources, and links to their locations.

[Tear-out supplement attached](#)

A Worksheet and set of Checklists is provided as a “tear-out” at the centre of the *Workbook*, so that copies may be made. These are working tools, ready to be applied to any project. They are also available at the Pro-Demnity website.

[Overview of the claims experience](#)

Figure 1 (on pages 8 and 9) shows the 2006-2011 claims by the type of error that the plaintiffs alleged.

While each claim was unique, clear patterns emerged during the review.

The *Workbook* presents a detailed analysis of the factors that drove the two largest groups of claims – errors leading to water ingress and allegations of substandard consulting services during construction.

The impact of the process environment that surrounds practice in one building type – and distinguishes it from practice in another – is a key theme, throughout.

Figure 1. What happened?
Costs to resolve various types of claims, 2006-2011

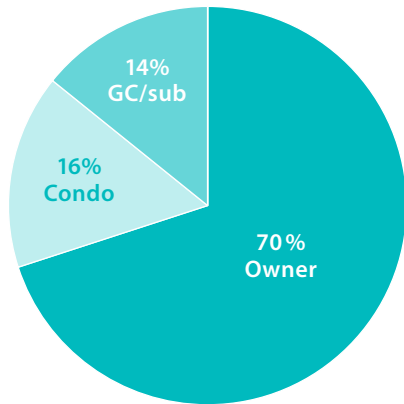


Figure 1A.
Plaintiffs in water-related claims

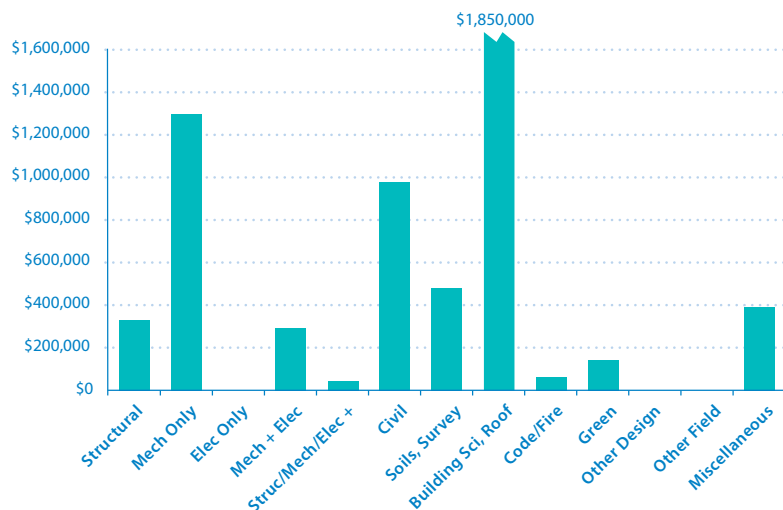
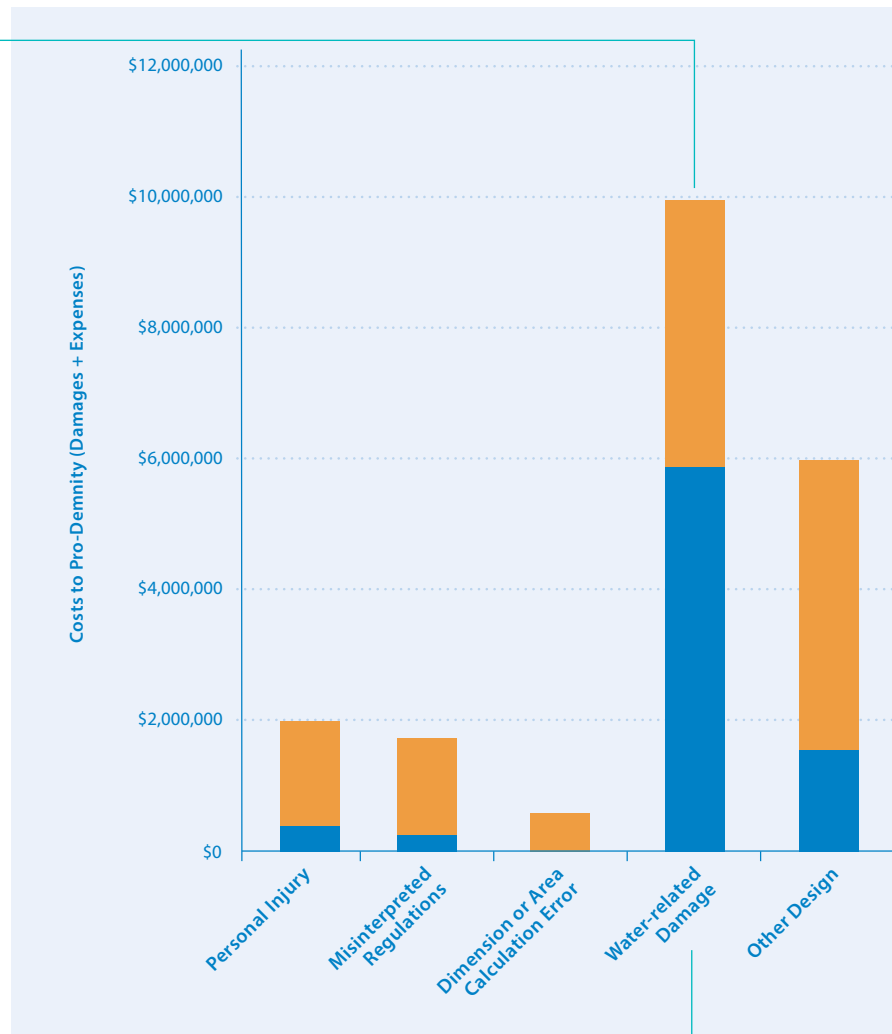


Figure 1B. Consultants named in water-related claims
Note: for water-related claims by building type, see Figure 3

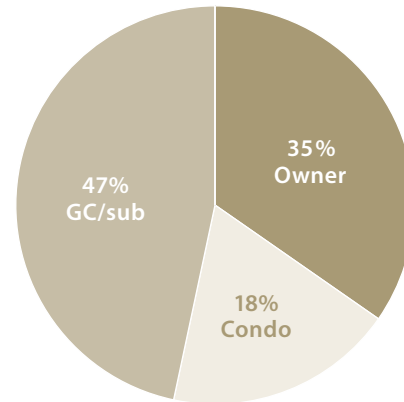
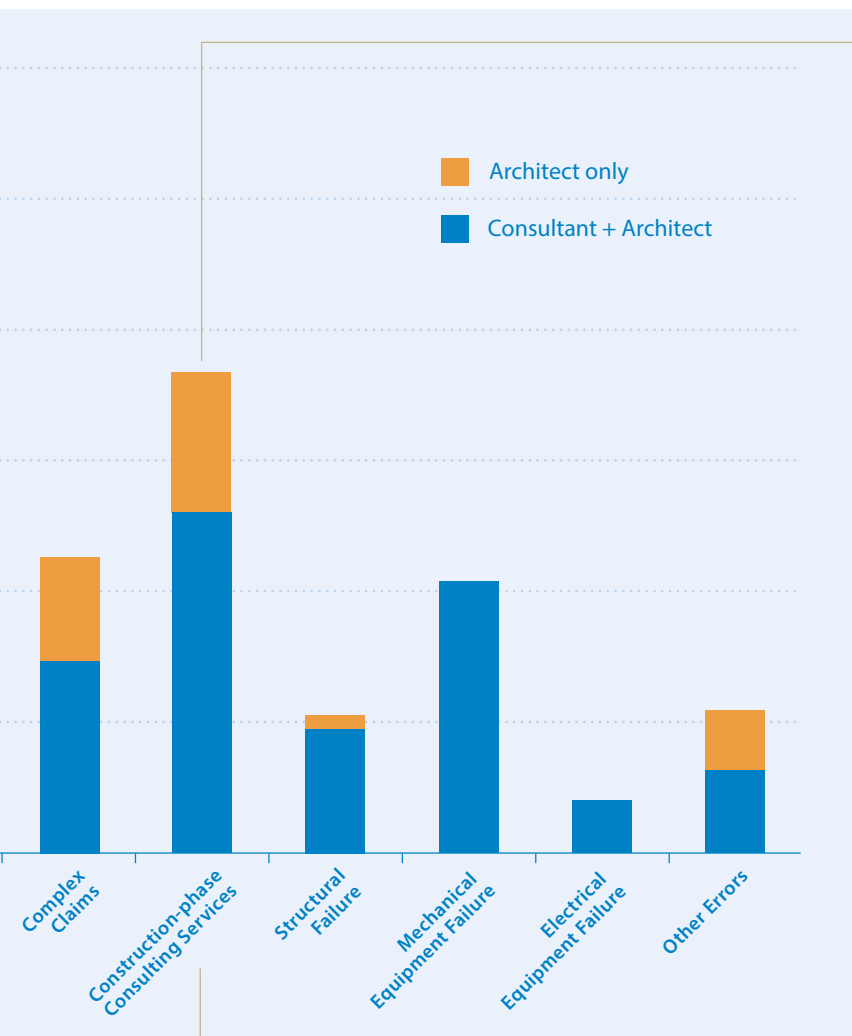


Figure 1C.
Plaintiffs in claims about consulting services during the construction phase

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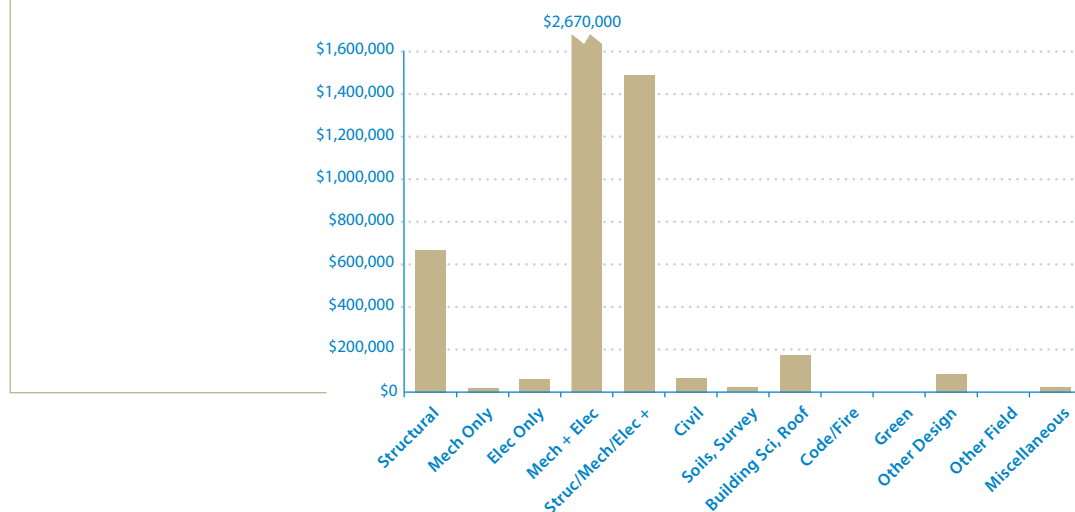


Figure 1D. Consultants named in claims about consulting services during the construction phase
Note: for claims related to construction-phase services by building type, see Figure 11



Highest-cost category: Water-related claims

Leaks through walls, roofs or foundations made up the costliest group of claims that arose from 2006-2011. Ontario architects incurred nearly \$8.0 million in combined damages and expenses to resolve 61 enclosure failures. An additional \$2.0 million helped resolve 30 more claims that involved pipe or equipment failures, or other water-related matters.

A building owner or occupant (who may not have been the architect's client) usually initiated these claims – arguing, in the majority of cases, that contractors, subtrades, maintenance personnel, municipal inspectors, or consultants shared responsibility with the architect for the damages they experienced.

Pro-Demnity paid damages in six of 10 of these claims: cases where the architect, through his or her actions (or lack of action) was considered to be partly or wholly liable. The damages were always less than the amounts initially claimed. Pro-Demnity's costs (including direct damages plus legal expenses) are shown for five different categories of water-related claim, in Figure 2.

Roof leaks in the 2006-2011 claims cost Pro-Demnity more than \$2.5 million to resolve. While poor workmanship was often a factor, well-established building science principles often had been poorly applied. Condensation on cold surfaces, insufficient ventilation, missing vapour barriers, structural movement, or too few drains were evident. The only claim during the period that involved an “emerging” envelope technology featured a vegetated roof, where plant roots penetrated the roof membrane at a house, damaging the supporting roof structure.

Wall leaks and window failures were equal in number to roof leaks, but incurred more costs to resolve – nearly \$4.0 million in total. Precast concrete panels, brick, or wood cladding featured in 13 different claims, at a combined cost just over \$2.0 million. Window-related claims, of which there were four, together cost about \$300,000. Exterior insulation and finish systems (EIFS) featured in eight claims, which consumed the remaining \$1.6 million.

The costs to settle EIFS claims during the study period far exceeded the costs to settle claims involving any other single cladding type (see Figure 2).

All but one of the EIFS claims that Pro-Demnity has defended involved non-drained systems. (Since 1998, EIFS featured in 39 claims, which together cost Pro-Demnity more than \$7.0 million in total.) Although several claims concerning face-sealed EIFS were defended some years ago, using a “state of the art” argument, this is now nearly impossible, in light of the wide-spread failure of such systems.

Designs that incorporate any kind of non-drained exterior wall (of which face-sealed EIFS is but one example) are no longer covered for water ingress by the professional liability insurance policies Pro-Demnity provides. Exceptions – particular types of solid masonry walls, for example – are listed in the policies and attached endorsements.

Below-grade, water-related claims involved either insufficient subfloor drainage, ineffective foundation waterproofing or saturated slabs-on-grade. Eleven such claims cost Pro-Demnity \$1.5 million.

► Fundamental design decisions were at the root cause of most water-related claims

Pipes that burst drew architects into claims where missing insulation or other co-ordination oversights contributed to freezing. Pro-Demnity paid just under \$1.0 million to help settle 22 pipe-related claims, with other parties nearly always contributing a significant share of the overall sum that was awarded to the plaintiff. Sprinkler pipes burst in nine of these claims. In others, sump pumps, air conditioners or hot water heaters discharged water onto floors which were inadequately sloped to drain.

Other water-related matters cost Pro-Demnity roughly \$1.0 million in total. Several cases of poorly planned site drainage (directing surface water toward doorways) implicated specialist consultants as well as the architect. Pro-Demnity defended the architect alone in three cases of poorly drained shower stalls.

Fundamental design decisions, such as roof slope (too low), materials selected (defective or failing prematurely), or drainage patterns (ineffective) were recurring themes in the water-related claims.

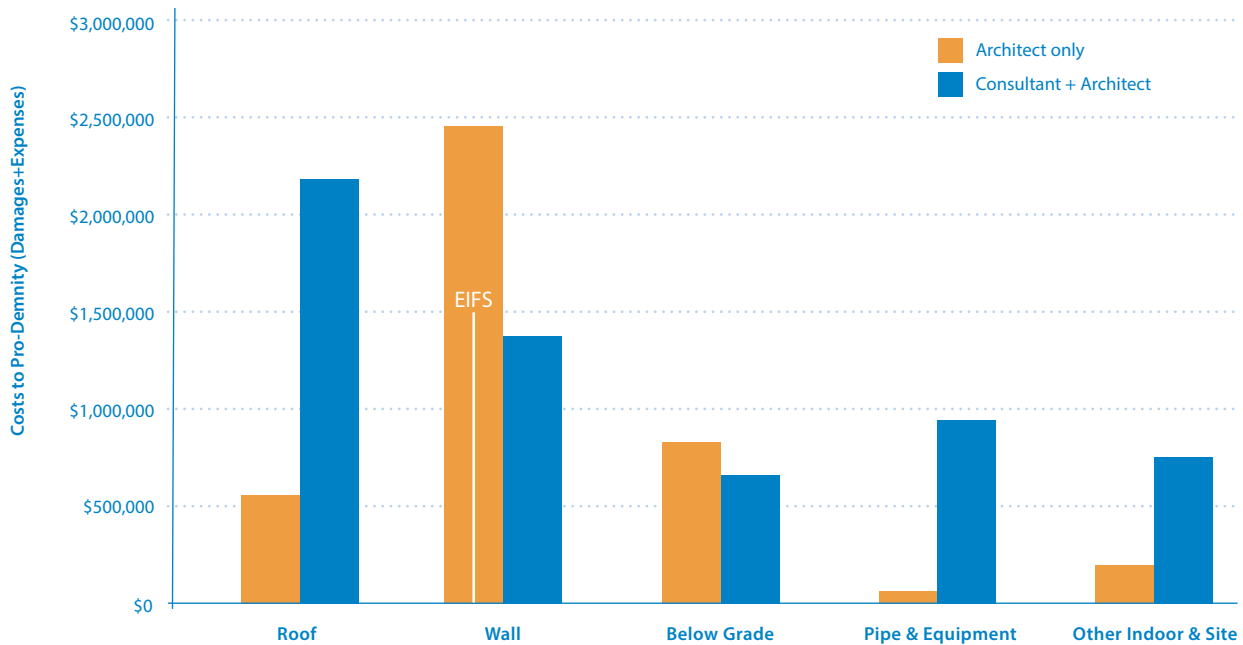


Figure 2. Components affected in water-related claims, 2006-2011

Flawed bid documents were, in some cases, enough to trigger a claim, in the absence of any other perceived error or omission. On occasion, flawed bid documents compounded the impact of a less-than-optimal design approach. Poor detailing at roof-wall junctures, at roof curbs or at parapets, led to water ponding or ice build-up in at least nine cases of water ingress. Metal roofing systems with few details or incomplete specifications were the subject of two costly claims.

Construction-phase changes also helped trigger water-related claims – whether by oversight or intentional substitution. In at least six cases, roof curbs or scuppers were not installed as per details. Below-grade leaks occurred where the review of foundation waterproofing was alleged to have been below par.

Substitution of alternative systems or details, contrary to the architect's choice, frequently was an element of a claim scenario. This is starkly evident in EIFS claims, and in others. Substitutions often were initiated by an owner or developer, in an attempt to curb construction costs.

Where the architect did not object, did not document his or her objection well, adopted the changes, or acted in such a way as to send mixed messages to the owner – and an installation failed – arguments in the architect's defense were challenging to make. This often led to increased costs. Recent changes to the *Non-Drained Exterior Wall Exclusion* address substitutions to an architect's design: exclusion of water ingress coverage now relates to the "as-built" condition.

Pro-Demnity's Important Notice, *Revisions to Non-Drained Exterior Wall Exclusion* (2016) provides information to policy holders regarding "what to expect" if a future claim arises in respect of a substitution.

When an owner substitutes a product or system, an architect must react clearly, consistently and with careful documentation. This is stipulated by the Regulation under the *Architects Act* – which prescribes the following, as a minimum standard of practice:

"Every member or holder shall present clearly to the ... client the consequences that may be expected from any deviation in a design ... in a case where the member's or holder's judgment is overruled by nontechnical authority."
(O.Reg. 27, 49.8)

▶ A non-drained exterior wall is excluded from water ingress coverage

Pro-Demnity's Bulletin, *Dealing with Substitutions to Your Design* (31 December, 2016) aims to help architects facing undesirable owner-accepted substitutions. It contains a sample letter to the owner, reflecting the spirit of the Regulation under the *Architects Act*. This letter can be tailored to suit many different scenarios, according to the architect's professional judgment, given all aspects of the specific circumstance.

Specialist Consultants were involved in more than half of water-related claims. Usually, they were named by plaintiffs. Pro-Demnity added one or more consultants as parties to such proceedings on 11 occasions, in its efforts to allocate responsibility appropriately.

Mechanical and structural engineers were most often named, each appearing in eight enclosure-related claims. Undersized ventilation equipment, humidity levels well in excess of normal expectations for indoor environments, condensation, and sometimes mould implicated mechanical engineers, as did most claims that featured floor drains, roof drains and scuppers. Claims that structural movement contributed to a roof leak involved structural engineers.

Enclosure specialists (including building science consultants, roof inspectors, and Tarion Bulletin 19 Field Review Consultants) were named in seven water-related claims – complex, multi-party disputes, each of which proved costly to settle. While MURBs were the setting of three of these claims, the other four claims occurred in various building types, including: a community centre, a fire station, a hotel, and an office building.

All building types generated water-related claims. However, some building types more often involved enclosure failures than others (see Figure 3) and some more often involved consultants (see Figure 4).

Assembly buildings and office buildings attracted a slightly higher proportion of pipe/equipment claims than did other building types. Consultant involvement in water-related claims was higher in assembly buildings than in any other building type. Among the enclosure failures, nearly all were roof-related.

Schools and hospitals, along with retail and industrial buildings were the least affected by water-related claims, incurring, together, roughly \$1.5 million.

Multi-unit residential buildings – most often condominiums – generated more water-related claims than any other building type. Roughly half involved consultants. Enclosure claims far outpaced pipe/equipment claims in both frequency and cost. Two-thirds of enclosure-related costs went to resolving problems with exterior walls or windows. (MURBs were defined, for the purposes of this study, as three units or more, any height.)

Single-family houses were the scene of 13 water-related claims, which incurred \$800,000. The median cost per claim was slightly higher than in a school, hospital, retail or industrial building. The majority of claims (six) had to do with roof failures, but the majority of costs (\$360,000) went to resolving exterior wall failures (none of which, during the period, featured EIFS).

Claims in hotels, as in MURBs, were mostly to do with exterior walls.

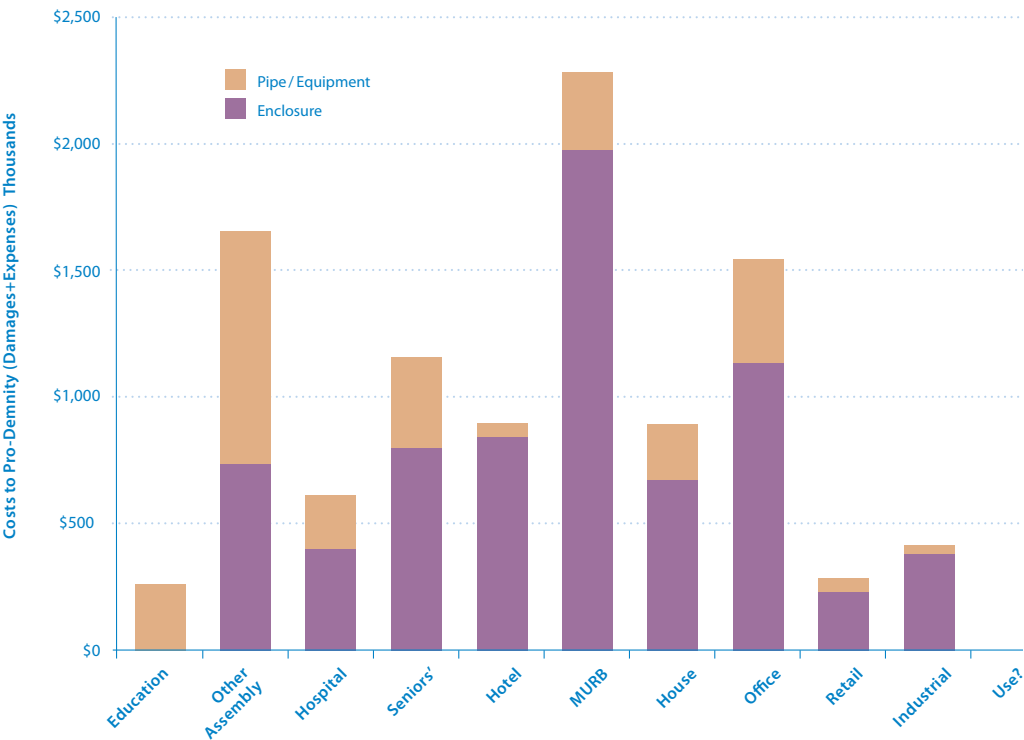


Figure 3. Water-related claims by building type

WATER-RELATED

Claims Experience Checklist

Use this Checklist at any stage in the project as part of a more extensive risk-management program.

Design Stage

- ☐ Select wall and window systems to comply with the Pro-Demnity *Non-Drained Exterior Wall Exclusion* and *Window Wall Endorsement*.
 - ☐ Carefully consider fundamental design decisions, such as roof slope, material selection, drainage patterns and ventilation – keeping in mind the claims experience and fundamental building science principles.
-

Bid Documents

- ☐ Indicate roof drains, scuppers, etc., in sufficient number.
 - ☐ Thoroughly describe roof-wall, roof-curb, and parapet details.
 - ☐ Show how ALL wall systems are to be drained and ventilated.
 - ☐ Show how ALL surfaces (walls or floors) slope to drain.
-

Substitutions – Owner Approved

- ☐ Read the Regulation under the *Architects Act* – entire section 49 (8).
 - ☐ Object in writing, clearly indicating the probable consequences. Refer to the *Sample letter to Client*, contained in Pro-Demnity's 2016 Bulletin *Dealing with Substitutions to Your Design*. Using your professional judgment, adapt the contents to fit the particular scenario.
 - ☐ Refrain from acting as if you have little or no objection – particularly when certifying payment and writing Field Review Reports, or signing a Schedule G for a condominium.
-

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Specialist Consultants

- ☐ Pay extra attention to the risks with respect to the disciplines most often named in water-related claims: mechanical and structural engineers, building science consultants and roof/wall inspectors, explicitly assigning tasks for both parties, with regard to co-ordination.
 - ☐ Obtain peer reviews of the work of all disciplines preparing bid documents to describe the building enclosure and mechanical systems.
 - ☐ Consult with a building enclosure specialist whose practice complements your strengths, availing yourself of assistance at all stages of a project, where warranted. Confirm that the specialist is a qualified professional, who carries appropriate errors & omissions insurance.
 - ☐ Make sure all consultants carry professional liability insurance which is co-ordinated with yours (see pages 26 through 31).
-

Building Type

- ☐ Pay extra attention to areas where the water-related claims arose, in:
 - MURBs, hotels, and seniors' housing: enclosure, mostly exterior wall;
 - houses: roofs and exterior walls;
 - assembly buildings (other than education): enclosure, mostly roof.
-

Continuing Education

- ☐ Invest in sessions that emphasize the fundamentals of enclosure design – for any architectural staff who make decisions at any stage, including:
 - designers;
 - detailers and project managers responsible for bid documents, and;
 - field review and construction contract administration personnel.

Where to find the resources noted in this Claims Experience Checklist? See page 4.



Type of claim and building type

The process environments in which buildings are designed and constructed – which vary, according to building type – were clearly reflected in claims.

“What happened” in the claims varied considerably from one building type to the next. The exposure of a particular building type to personal injury claims, mechanical equipment failures, or other matters will be highlighted in the next few pages. This is not to suggest that the overall risks are greater in one building type or another – but rather to help architects manage the risks that seem to dominate with each building type.

The specialist consultants named in the claims varied with building type, and the allegations made against particular disciplines also varied. This, too, is illustrated in some detail, on the next few pages.

Even the plaintiffs who lodged claims varied, to some degree. While the architect’s client initiated most claims in almost every building type, tenants, public visitors, or contractors lodged claims at varying rates, according to building type.

Assembly buildings, by definition, accommodate the public. The following analysis excludes claims in schools and higher-education buildings, because these were far fewer in number than claims in community and recreation centres, clubs and banquet halls, courthouses, places of worship, libraries, theatres, casinos and other types of public-assembly venue (see Figure 4).

In assembly buildings, clients expect materials to sustain heavy wear over an extended period of time, and assume that climate-control systems will meet the demands of even the largest crowd. Publicly funded building owners tend to prefer that specialist consultants be subcontracted to the architect. Structural, mechanical and electrical engineers tend to be given a full role in both general review and the “money-management” side of construction contract administration. Each of these conditions helped define the themes that recurred in claims most often. Claims in assembly buildings consumed \$7.2 million over five years – 17% of Ontario

architects’ costs to help settle all claims for the period. This was second only to the cost of settling all claims in multi-unit residential buildings (MURBs). Personal injury, poor service during the construction phase, or errors leading to water damage were frequently alleged.

The 14 **personal injury claims** were most often related to slips and falls, on or near stairs. Falls also occurred in shower stalls and swimming pools. Other injuries resulted when building elements fell onto someone, causing, in one instance, a fatality. Consultants were named in four of these claims – when lighting levels were too low (in the case of slips on stairs) or when interior design or structural design was at issue.

Together, the 14 personal injury claims in assembly buildings cost Pro-Demnity \$1.0 million. Similar claims in other building types incurred another \$1.0 million. Personal injury claims place added stress on all involved, and the courts, where they find an injury warrants a remedy, are naturally inclined to draw on multiple sources of funds, in order to try to help the injured person. This is illustrated in many of the accounts presented in Pro-Demnity’s *Claims* stories, over the years. Notable are Case #8 (Issue #2, 1994) and Case #74, (Issue 20, 2016).

The 12 **water-related claims**, together with the 12 claims regarding **construction-phase consulting services** cost Pro-Demnity \$2.7 million, which was 40% of the costs to settle all claims in assembly buildings. Among water-related claims, 40% of these costs were related to roof leaks, 11% to pipe ruptures, and just 6% to wall failures. (A single, very unusual claim consumed the remaining 43%.) Among construction-phase claims, 40% of costs were related to allegations that the architect or consultants caused a delay, 35% to unfair management of the bid process, and 25% to errors in payment certification. See pages 10-13 for more about water-related claims, or pages 22-25 for more about claims during the construction phase.

Among the 11 “**other design**” claims in assembly buildings, half involved multiple, somewhat unrelated allegations – such as the case of condensation on the inside face of exterior walls, which also alleged inappropriate lighting levels and cost overruns. Other claims in this category alleged improper plan layouts, faulty materials, dysfunctional door hinges, incomplete bulkheads between adjacent uses, or missing floor drains. Together, “other design” claims in the period cost Pro-Demnity \$1.8 million.

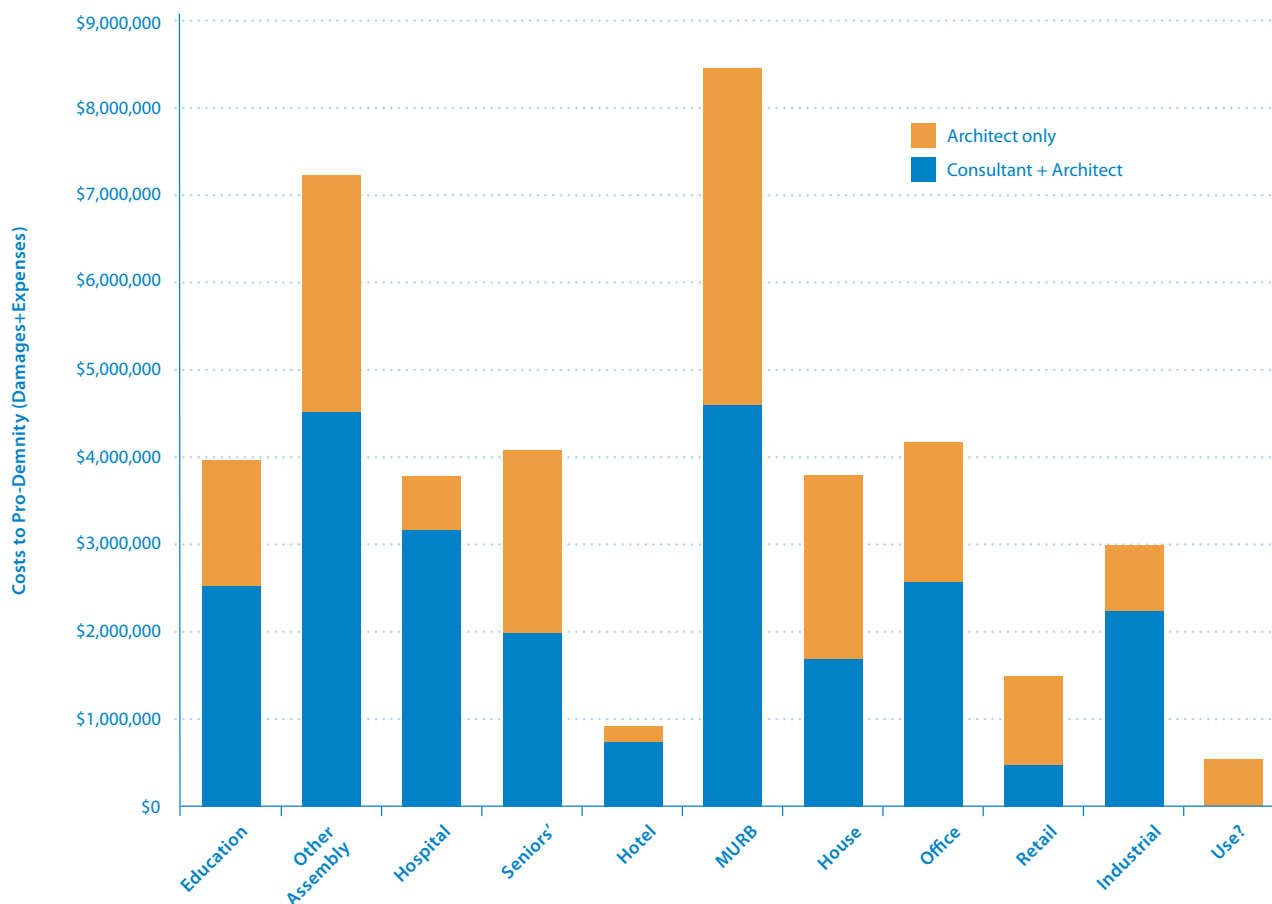


Figure 4. All claims by building type, 2006-2011

The plaintiff was a member of the public (with no relation to the design team) in 23% of claims in assembly buildings – a direct consequence of the fact that this building type accommodates all manner of visitors, as its fundamental purpose. Contractors initiated 13% of the claims, and subsequent purchasers just 1%. The architect's client initiated 50% of the claims in assembly buildings.

Consultants were named in 37 of the 77 claims, at a cost to Pro-Demnity of \$4.5 million. In 28 claims, the specialists were subcontracted to the architect, which reflects the tendency of assembly building owners to prefer such an arrangement.

Recurring themes in claims against mechanical engineers in assembly buildings included design errors leading to excess humidity and condensation (in four claims) and missing floor drains or burst sprinkler heads (in four more). Structural engineers were named in relation to roof collapses, foundation cracking and some of the personal injuries (in 15 claims in all). Civil engineers, electrical engineers and roof inspectors were each named in two or three claims. While some of the claims alleging substandard consulting services during the

construction of assembly buildings named engineers or other specialists, such claims were less common (and cost Ontario architects considerably less) than similar claims in other building types.

► Assembly buildings: personal injury, water damage, subcontracted consultants

Risk-management approaches of particular relevance to ASSEMBLY buildings, therefore, include:

- Consider design elements related to public safety concerns, such as: slips or falls on stairs, or other types of personal injury;
- Keep water out of the building enclosure – at uniquely-shaped roofs, roof-wall junctions, and elsewhere;
- Co-ordinate with the mechanical engineer, with respect to the building enclosure; and
- Verify the insurance carried by consultants – particularly those subcontracted to the architect. (See pages 26-31 for more about sub-consultants.)

Hospitals were designed and constructed amid conditions that were not very different from those surrounding assembly buildings. Like assembly buildings, hospitals accommodate the public, and are required, by Code, to be built of “long life” components. Hospitals contain an intense array of technical systems, and are occupied continuously. For most of the projects in the 2006-2011 claims, consultants provided both general review and construction contract administration services. (The study period was before Alternate Financing and Procurement (AFP) was widely adopted for new construction.)

The 31 claims that arose in hospitals from 2006-2011 cost Ontario architects \$3.8 million (see Figure 6). On a per-claim basis, hospitals were second only to seniors’ housing. The average cost per claim in hospitals was 30% higher than that in assembly buildings – a function of the relative complexity of claims in hospitals.

Claims related to construction-phase services outweighed claims related to water damage in hospitals – which was the reverse of the pattern seen in assembly buildings (comparing Figures 5 and 6.) The building enclosure was rarely at issue in hospitals: there were no claims related to roofing or exterior walls, during the period, and just one related to foundation waterproofing. Several demanded repair of leaky shower stalls, and a few featured leaky pipes or mechanical equipment. Structural failures and personal injury claims in hospitals were few.

A member of the public commenced only one hospital claim, between 2006 and 2011. Contractors initiated at least 20%

of claims in hospitals – considerably more than in any other building type. These were often brought by subtrades rather than generals, often naming the mechanical and/or electrical consultant alongside the architect. The architect’s client initiated 65% of claims – more than in assembly buildings, and roughly as many as in houses or in office buildings.

We caution that the AFP or P3 processes may not reduce the likelihood or severity of future claims against architects. Many of the conditions that have contributed to claims in the past remain unchanged. The risk-transfer philosophy inherent in AFP or P3 may even encourage claims.

Work carried out on hospitals using AFP is now typically insured using single project policies arranged outside the Pro-Demnity program. The Infrastructure Ontario Endorsement (to Pro-Demnity Policies 1, 2, 3 and 4) excludes from coverage any claim that an architect would be liable for delay, cost overruns, or various types of penalties or liquidated damages payable by other parties, under any contract. Additional limitations of coverage are best understood by reading the I.O. Endorsement in its entirety.

Consultants were associated with a group of claims that consumed 80% of Pro-Demnity’s costs to settle all of the 2006-2011 hospital claims (\$3.1 million). Consultant-related claims in hospitals often contained two or more allegations, and Pro-Demnity’s average costs were four times higher when consultants were named than when they were not named.

Recurring themes for mechanical engineers, who were named in 12 of the claims in hospitals, had mainly to

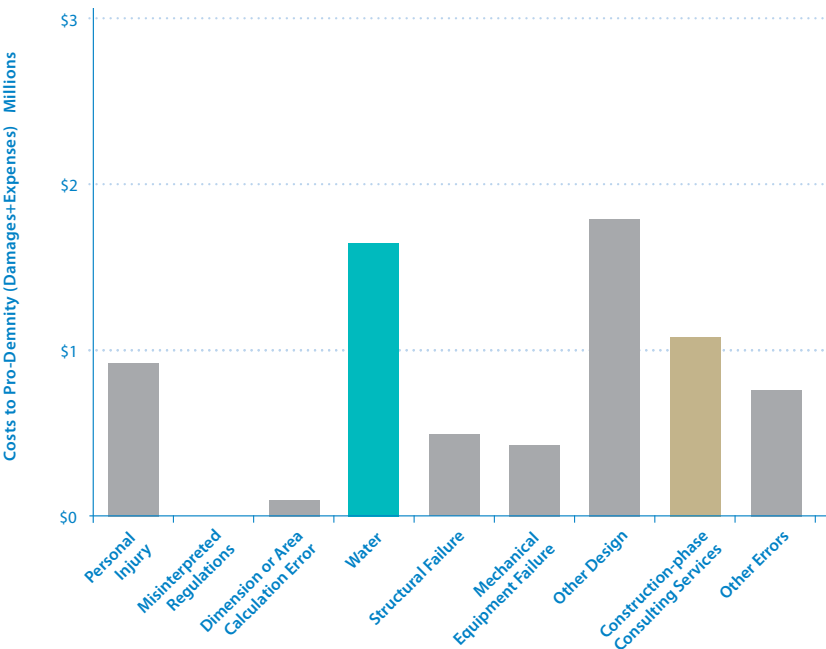


Figure 5. What happened in ASSEMBLY BUILDINGS

do with HVAC equipment – which was noisy, produced icicles or caught fire. In three separate and unrelated claims, a structural, mechanical or electrical engineer had used an outdated seismic code, which led to very expensive retrofits. Structural engineers were named in hospital claims less frequently than they were in relation to other building types. Exterior works (retaining walls, etc.) and the mishandling of Change Orders were the principal issues, rather than roof or building collapses.

Just three of the hospital claims named a consulting discipline other than structural, mechanical or electrical engineers. In 28 of the 31 claims in hospitals, consultants were either subcontracted to the architect, or members of the same multi-discipline firm.

Risk-management approaches of particular relevance to HOSPITALS, therefore, include:

- Establish and document the required design service life of all components, in accordance with *S478-95 Guideline on Durability in Buildings* (as referenced in Part 5 of the OBC);
- Monitor the timeliness of the work of the mechanical and electrical engineers, and carefully co-ordinate their work with the overall architectural work, from the earliest design stage, through to occupancy; and
- Consider both the general and subtrade contractor as potential claimants, who may argue that a costly delay was caused by substandard consulting services during the construction phase (provided by any member of the consulting team).

Multi-unit residential buildings (MURBs) are realized amid a unique set of processes. The pressure to build at utmost speed is extremely high. Major building elements that purport to expedite the construction process appear in the market regularly. While technical audits are mandated under Ontario's *Condominium Act*, developers tend to minimize the role of the design team in field review. Consultants tend to be contracted directly to the developer, who is often also the builder.

From 2006-2011 more claims arose in MURBs than in any other building type. This may be, in part, a reflection of a province-wide boom: construction of MURBs exceeded \$20 billion during the five-year period (at least 30% more than all spending on government building construction during the same period). Most of the MURB claims were in condominiums.

Claims in MURBs were driven mainly by water damage, “other design” matters or oversights identified in technical audits. To a lesser extent, consulting services during the construction phase, and mechanical equipment failures were at issue. Personal injuries and structural failures played a relatively minor role. Together, 98 claims in MURBs consumed \$8.4 million – 20% of all of Ontario architects’ insurance costs for the period (see Figure 7).

Among the **water-related claims** in MURBs, exterior wall and window failures consumed the greatest share of costs. EIFS featured in three claims in MURBs, during the period, while brick cladding, glazing systems, or other cladding systems were at issue in six claims.

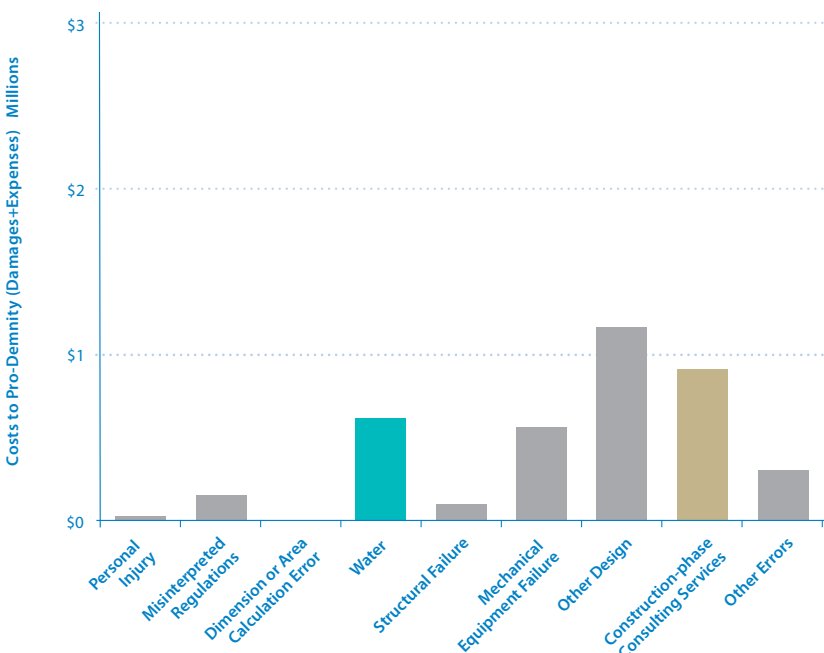


Figure 6. What happened in HOSPITALS

Together, the 26 wall and window failures in MURBs cost Pro-Demnity nearly \$1.5 million, while the six roof and four foundation wall failures cost \$600,000. Ruptured stormwater mains or standpipes and failed rainwater leaders at balconies or elsewhere cost \$200,000. The \$2.3 million total that Pro-Demnity incurred defending all of the water-related claims in MURBs represents 25% of its costs to defend all water-related claims in all building types (refer back to Figure 3 on page 12).

► **MURBs: exterior wall & window failures, balconies & guards, tenant – not client – as plaintiff**

The 27 “other design” claims alleged a wide range of matters, such as inadequate fire separations, poor barrier-free access, sinkholes adjacent to a building under construction, or major electrical deficiencies. Together, these cost Pro-Demnity roughly \$2.3 million to resolve. **Shattered glass in balcony guards** and other failures at balcony rails featured in six claims during the period, which added \$500,000 to the tally. **Technical audits** (carried out under the Condominium Act) triggered a further 8 claims, which cost another \$500,000. Just two of the claims arising from technical audits were defended on behalf of the architect alone. All but one of the remaining technical audit claims named the mechanical engineer, most naming other specialists as well.

Costs to settle claims of **substandard consulting services during the construction phase** were 40% related to delays, improper certification or slow processing of changes.

(“Certification”, in MURB claims, related to certification of code compliance or certification of payment.) The remaining 60% reflected the full range of other concerns listed on pages 22-25. Consultants were involved in two of the costliest construction-phase claims in MURBs, even though they had been contracted directly to the developer. In all, there were 17 claims which cost Pro-Demnity \$1.7 million.

A condominium board, purchaser or tenant made more than 50% of all MURB claims. The architect’s original developer-client lodged fewer than 20%, and contractors less than 10%. Buildings outside Ontario were the scene of just two of the MURB claims that arose from 2006-2011 – both of which made relatively sizable initial demands.

Consultants were named in 54 of the 98 MURB claims, which cost Ontario architects \$2.5 million. Roughly \$1.2 million of this amount went to settling the 11 claims where the consultant was subcontracted to, or a member of the same multi-discipline firm as the architect. This illustrates that while contracting consultants directly to the developer does not eliminate (and may not much reduce) the likelihood of a claim arising against an architect, it tends to help lower Pro-Demnity’s settlement costs, once a claim has arisen. For more about contractual liability and consultants, see pages 26-31.

Recurring allegations against mechanical and/or electrical engineers (who were named in a third of MURB claims) included deficiencies in chillers and air-conditioners, inadequate roof drainage, insufficient

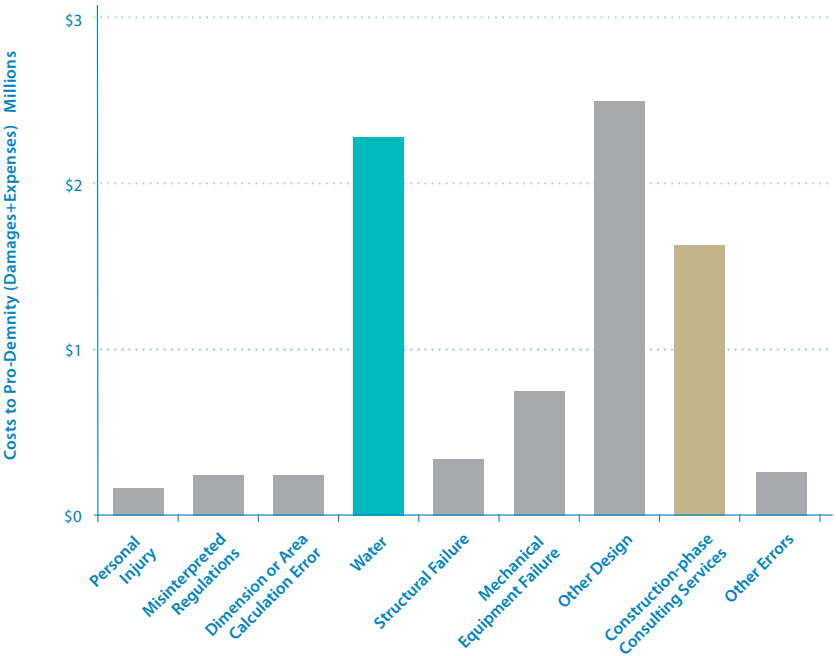


Figure 7. What happened in MURBs

fire-stopping, or substandard consulting services during construction.

Recurring allegations against structural engineers (who were named in 19 MURB claims) included foundation wall leaks, and various impacts on neighbouring properties during construction (e.g. vibration or collapse).

Civil or soils engineers were named in eight of the MURB claims – the aforementioned failures at stormwater mains, sinkholes, and vibration complaints. Two claims (together costing Pro-Demnity nearly \$500,000) named the Field Review Consultant (FRC) who carried out the “Tarion Bulletin 19” inspection.

Risk-management approaches of particular relevance to MURBs (including Condos), therefore, include:

- Consider the interests of the eventual occupant who may assert architectural standards;
- Design and review exterior walls in order to resist water infiltration;
- Co-ordinate the work of consultants carefully, during all phases, regardless of the contractual structure; and
- Ask the developer to verify the insurance carried by its specialist consultants, and document your efforts to obtain and review it (see pages 26-31).

Single-family houses involve different materials and construction methods than other building types, and most must comply with Part 9 of the Ontario Building Code. The architect’s role during construction

varies widely with each client, as does the manner of contracting specialist consultants.

Houses: neighbours, local regulations, diverse consulting specialties

The claims related to single-family houses cost Pro-Demnity \$3.8 million to resolve – roughly as much as all claims related to hospitals or schools (see Figure 4 on page 15). The average cost per claim was higher than expected, given the size and construction value of houses. Pro-Demnity’s costs to help settle claims related to houses were 20% water-related (mostly roof leaks), 16% due to the misinterpretation of regulations (nearly always by the architect), 14% due to structural failures, 11% alleging substandard services during construction (always by the architect), and 30% citing “other design” matters (see Figure 8).

The 12 “other design” claims in houses included a variety of complaints from neighbours (e.g. water draining over land or an obstructed view) and several allegations that the architect delivered incomplete drawings which did not comply with the Building Code.

While **consultants** were involved in just 14 claims related to houses, the specialties named by the plaintiffs were diverse: civil and soils engineers, surveyors, green roof and fire protection specialists featured in nearly as many claims as structural or mechanical engineers. Consultants

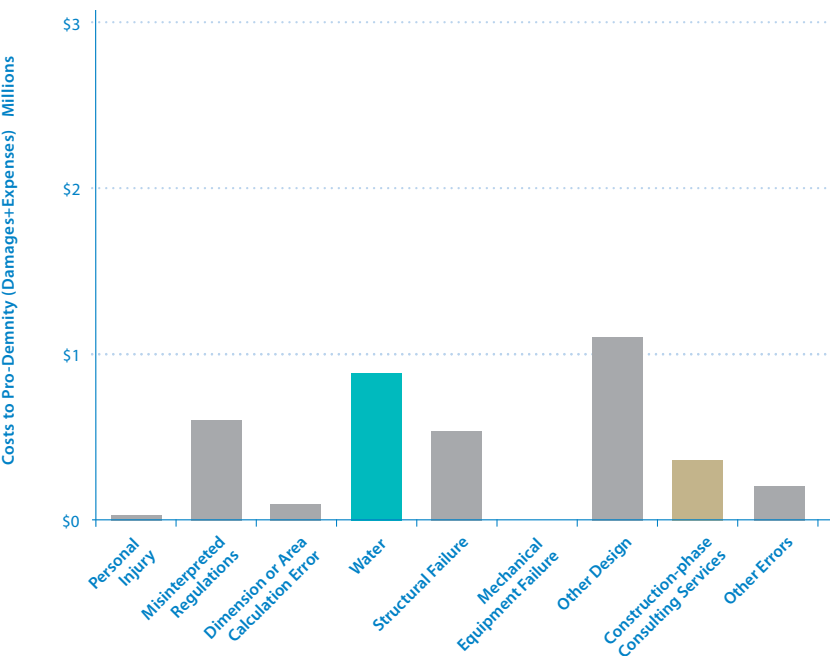


Figure 8. What happened in HOUSES

were contracted directly to the homeowner as often as not. A flood line improperly located on a drawing was among the allegations, as were foundation settlement and insufficient ventilation.

Risk-management approaches of particular relevance to HOUSES, therefore, include:

- Obtain a peer review of construction documents – with a particular focus on roof details;
- Take extra care in interpreting land-use planning, zoning, and other regulations. Confirm with the authorities in writing that interpretations are agreed, and keep a retrievable record.
- Consider the potential impacts of all aspects of the design on the neighbours’ properties.

Office buildings are realized amid conditions that resemble those surrounding assembly buildings or MURBs – but only in some ways. On one hand, office buildings are as public as assembly buildings, though generally simpler and more repetitive in form. On the other hand, they often are subject to some of the cost-cutting conditions seen in MURBs, yet there is no third-party technical audit mandated by law.

Water-related claims made up the costliest subgroup, consuming \$1.5 of the \$4.2 million total spent on this building type. As in MURBs, but in contrast to assembly buildings, more than 50% of costs to settle water-related claims in office buildings went to resolving exterior wall failures. An additional 40% went to resolve problems

related to insufficient subfloor drainage. Construction-phase claims were the second-costliest category at \$1.1 million and most often alleged delay or improper certification (see Figure 9).

► **Office buildings: exterior wall & window failures, delays & certificates, subcontracted consultants**

“Other design” flaws related to office buildings included a handful of claims involving very specialized technologies. The misinterpretation of a regulation was the subject of one relatively costly claim. No structural failures were alleged in relation to office buildings (during the period), and Pro-Demnity’s costs to settle the two personal injury claims in office buildings were relatively low.

Consultants were named in nearly half of claims in office buildings. Specialists in building enclosure inspection were named in three claims, structural engineers in six, and mechanical engineers in six. Consultants were subcontracted to the architect in 75% of the claims in office buildings.

Risk-management approaches of particular relevance to OFFICE buildings, therefore, include:

- Carefully design and review exterior walls to keep the water out;
- Verify the insurance carried by consultants.

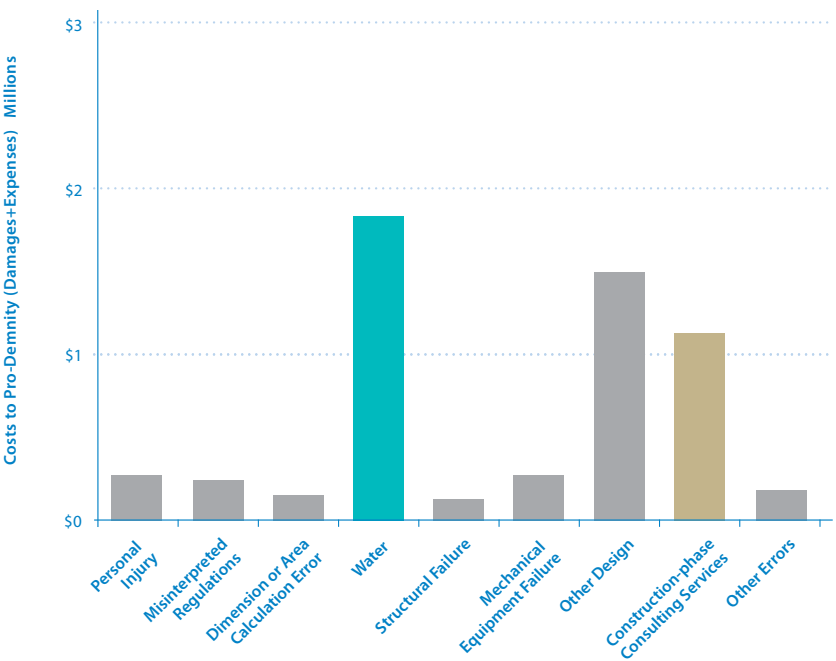


Figure 9. What happened in OFFICE BUILDINGS

BUILDING TYPE

Claims Experience Checklist

While water ingress and consulting services during the construction phase are prime concerns for all building types, the claims experience has suggested additional priorities, allocated to each building type, as follows. Use this Checklist at any stage in the project as part of a more extensive risk-management program.

Assembly buildings

- ☐ Consider design elements related to public safety concerns, such as: slips or falls on stairs, or other types of personal injury.
 - ☐ Keep water out of the building enclosure – at uniquely-shaped roofs, roof-wall junctions, and elsewhere.
 - ☐ Co-ordinate with the mechanical engineer, with respect to the building enclosure.
 - ☐ Verify the insurance carried by consultants – particularly those subcontracted to the architect (see pages 26 to 31).
-

Hospitals

- ☐ Establish and document the required design service life of all components, in accordance with *S478-95 Guideline on Durability in Buildings*.
 - ☐ Monitor the timeliness work of the mechanical and electrical engineers, and carefully co-ordinate their work with the overall architectural work, from the earliest design stage, through to occupancy.
 - ☐ Consider both the general and subtrade contractor as potential claimants, who may argue that a costly delay was caused by substandard consulting services during the construction phase (provided by any member of the consulting team).
-

Multi-Unit Residential Buildings

- ☐ Consider the interests of the eventual occupant who may assert architectural standards.
 - ☐ Design and review exterior walls in order to resist water infiltration.
 - ☐ Co-ordinate the work of consultants carefully, during all phases, regardless of the contractual structure.
 - ☐ Ask the developer to verify the insurance carried by its specialist consultants, and document your efforts to obtain and review it (see pages 26-31).
-

Houses

- ☐ Obtain a peer review of construction documents – with a particular focus on roof details.
 - ☐ Take extra care in interpreting zoning and other regulations. Confirm with the authorities in writing that interpretations are agreed, and keep a retrievable record.
 - ☐ Consider the potential impacts of all aspects of the design on the neighbours' properties.
-

Office Buildings

- ☐ Carefully design and review exterior walls to keep the water out.
- ☐ Verify the insurance carried by consultants.

Where to find the resources noted in this Claims Experience Checklist? See page 4.



Another major category of claim: Construction-phase consulting services

Errors or omissions in the provision of consulting services during construction led to the second most costly group of claims, during the study period. Among the 58 such claims, half were defended on behalf of the architect alone, at a cost of just over \$2 million, while half involved specialist consultants, at a cost of \$5 million.

Every year, during the study period, between eight and 17 new construction-phase claims arose. The costs to resolve the year's group usually ranged from \$1.0 to \$1.3 million; however, for one exceptional year, the total was roughly \$2.7 million. Second only to water-related claims, liabilities during the construction phase amounted to 18% of Ontario architects' insurance costs for the five-year period (see Figure 1).

Contractors appeared as plaintiffs in these claims more often than in other sorts of claims. General contractors argued, among other things, that consultants had caused delays which led to a loss of revenue. Additional allegations, repeatedly made by subtrade contractors, ranged from unfair award of contract (mishandling of the bid process) to inappropriate valuation of changes to the contract.

▶ Together, unfair valuation and the slow processing of Change Orders cost Ontario architects \$2.6 million

Building owners, tenants or condominium boards collectively made more claims than contractors. Where there were material failures, some plaintiffs added poor field review, poor review of shop drawings, or over-certification of payment to their list of allegations.

Pro-Demnity expects to pay damages to help settle roughly six in 10 of the claims that arose in relation to construction-phase services, which is consistent with its

expectations concerning water-related claims. The costs to resolve four different categories of claim, each alleging substandard consulting services during the construction phase – are shown in Figure 10.

Money matters – that is, claims related to poor administration of moneys in the construction contract – incurred, collectively, nearly \$3.4 million. This figure represents 46% of the cost of resolving all claims related to construction-phase services, or 8% of the cost to resolve all claims that arose between 2006 and 2011.

Unfair valuation of changes to the construction contract was, on a per-claim basis, the most costly allegation made within the “money matters” category. It was alleged in just three claims, all involving consultants, which together cost Pro-Demnity \$1.0 million.

Improper certification of payment was alleged in 11 claims – five against the architect alone and six involving consultants. Mechanical or electrical engineers, or both, were named in five of the latter. One additional claim was made alleging inappropriate certification of Code compliance by an architect. Together, all 12 claims cost Pro-Demnity \$1.2 million to resolve.

Strikingly, the cost-per-claim to Pro-Demnity, when consultants were involved in claims concerning improper certification of payment, was 2.5 times the cost-per-claim when consultants were not involved.

While any one claim may have alleged either over-certification (when the plaintiff was a building owner, developer, or condominium board) or under-certification (when the plaintiff was a contractor), the far more common allegation was over-certification – made in nine of the 11 claims. Certification of payment by an architect for work outside its competence was the subject of one claim.

Unfair award of construction contracts, or other errors related to the bid process or bonds, was alleged in six cases. The architect alone was alleged to have mishandled the bid process in four cases, at a cost to Pro-Demnity of roughly \$600,000. (Three of the plaintiffs were unsuccessful bidders and one was a building owner who considered a letter of intent, written by its architect, to contradict its instructions.) Consultants were involved in two more cases, which cost Pro-Demnity an additional \$600,000. The more significant of the two was a multi-factor claim, naming a structural engineer alongside the architect, in which a contractor defaulted and no copy of the bond required in the construction contract had been secured.

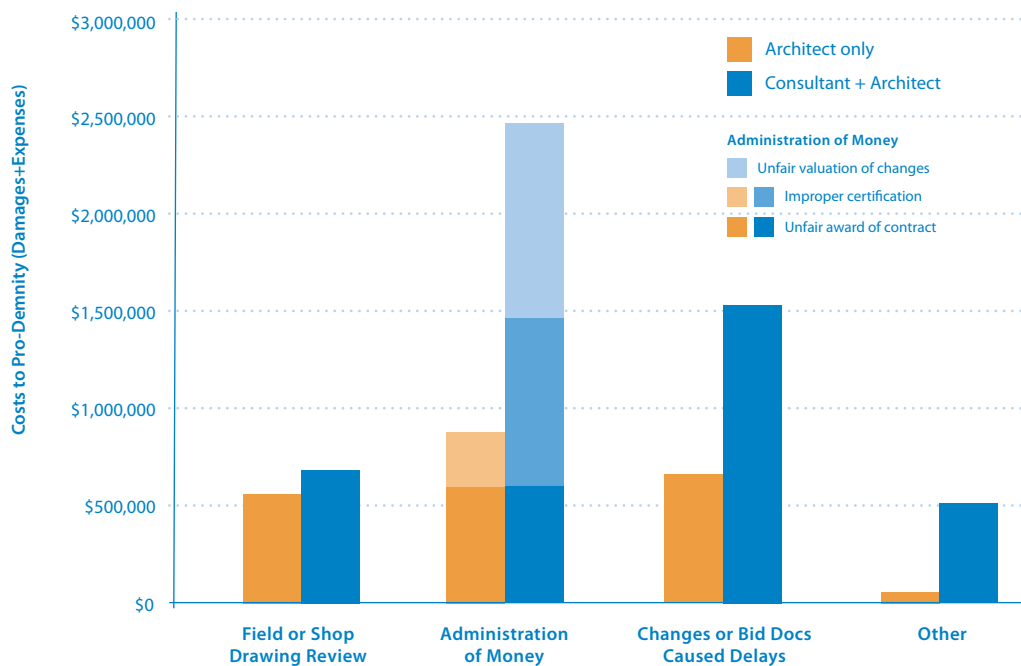


Figure 10. Services alleged sub-standard in the 2006-2011 claims

Delay claims collectively incurred \$2.2 million, which was 30% of the cost of resolving all construction-phase claims, or 5% of the cost to resolve all claims that arose between 2006 and 2011.

In most cases, delay was alleged in tandem with, or as a result of other complaints. (Roughly 60% of plaintiffs were contractors, the remaining 40% building owners.) For example, delay of the construction work was sometimes related to the administration of moneys in the construction contract. In eight cases, delay was explicitly cited as a matter separate and apart from unfair valuation of changes or improper certification of payment.

Delay, from the plaintiff's perspective, was often tied to the slow processing of change orders. Slow response to issues at the site was alleged in four claims against the architect alone (at a cost of just under \$300,000) and four claims involving consultants (at a cost of \$1.3 million). Thus, delay – allegedly caused by consultants in processing changes – was the costliest single sub-category of construction-phase claim. (Improper certification of payment was a close second.) Mechanical and/or electrical engineers were named in delay claims twice as often as structural engineers.

Poorly co-ordinated construction contract documents, or contract documents delivered late in the period immediately post-bid, were cited in two additional delay claims. Insufficient field review by the architect was, in the mind of at least one plaintiff, another cause of delay.

Note that claims for delay may (in some scenarios) be excluded from coverage under Pro-Demnity's policies.

Poor review was alleged in eight claims, which cost Pro-Demnity \$1.2 million.

Shop drawing review errors featured in just two claims, costing, together, roughly \$200,000 to resolve. One claim was made against the architect alone (regarding window shop drawings) and one involved a civil engineer (regarding balcony rail shop drawings).

Field review featured in the remaining six claims. The two that involved consultants were both multi-factor claims involving three or more specialist disciplines. Among the other four, the most costly concerned an architect who provided field review services, informally and unpaid, after making a formal withdrawal from the project.

► Improper certification of payment was frequently alleged and often involved consultants

Other allegations naming the architect alone were nearly equal in number to other allegations naming consultants. Here, as elsewhere, the defense of the architect cost Pro-Demnity far more when specialist consultants were named than when they were not named: the reasons are elaborated on pages 26-31.

In addition to structural, mechanical and electrical engineers, these claims named geotechnical and site services consultants. Among the allegations were: vibration felt in an adjacent building (during construction), failure to warn of the location of a buried cable, and blocked sewer pipes.

Poor co-ordination of consultants by the architect was a contributing factor in many of the construction-phase claims. Therefore, it seems that a renewed focus on the architect's duties to co-ordinate consultants' activities during construction merits urgent attention. The potential for errors to be made in certifying payment and delays to be caused by the slow processing of change orders – by any member of the consulting team – warrants concern, as these matters featured in many costly claims.

Practice Tip 27, *Co-ordination of Consultants* (May 2012) defines “co-ordination” as having 43 aspects, 19 of which are carried out during the bid, permit and construction phases. It employs a rich array of terms to describe what an architect does, to “co-ordinate”. Some of the terms from PT27 are reflected on page 25.

The specialist consultants named in construction-phase claims most often were structural, mechanical or electrical (s/m/e) engineers. This is consistent with the

fact that the s/m/e disciplines are the most often and most deeply involved in the administration of moneys in the construction contract (helping to process certificates of payment and change orders). In every case where a discipline other than s/m/e was named, one or more of the s/m/e engineers was also named. The “others” were, in this context: civil, geotechnical and site services engineers and building envelope specialists.

In two-thirds of the construction-phase claims that named consultants, the specialists were subcontracted through the architect – perhaps a function of the manner in which structural, mechanical and electrical engineers traditionally have been retained. The associated costs were \$4.4 million.

Most building types were affected by construction-phase claims. Figure 11 shows Pro-Demnity's costs to resolve construction-phase claims, by building type. (It can be compared to Figure 3, which shows water-related claims by building type.) Concerns with construction-phase consulting services most often affected MURBs, seniors' housing, office buildings and non-education assembly buildings. Hotels, retail and industrial buildings were least affected. The claims alleging sub-standard services during construction, in seniors' housing and hospitals were, per claim, among the costliest of any that arose from 2006 to 2011.

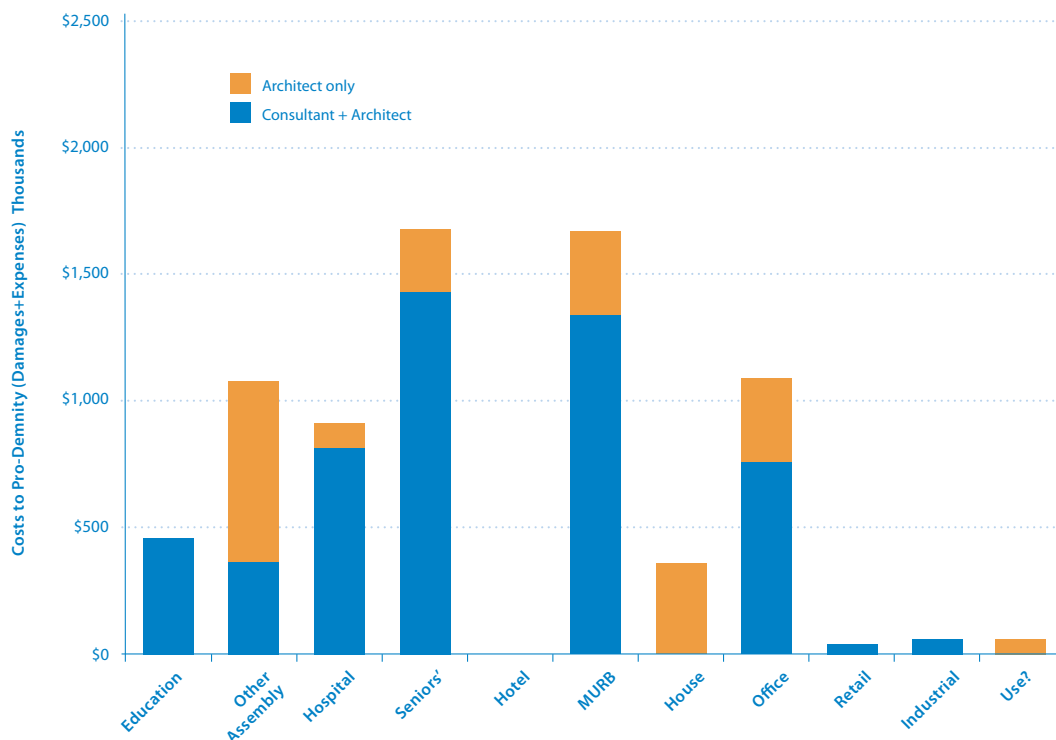


Figure 11. Claims of substandard consulting services during construction, by building type

CONSTRUCTION-PHASE CONSULTING SERVICES

Claims Experience Checklist

Use this Checklist at any stage in the project as part of a more extensive risk-management program.

General

- ☐ Define your role, and put the agreed scope of consulting services in writing – including, in particular, the scope of any specialist consultants subcontracted through you.
 - ☐ Beware of “limited” construction-phase services: your liability may not be limited.
 - ☐ Keep in mind that contractors and subcontractors are potential claimants.
-

Co-ordination*

- ☐ Review Practice Tip 27, paying particular attention to the “co-ordination” activities related to the construction phase.
 - ☐ Document your expectations of the consultants in detail.
 - ☐ Document your efforts to monitor and expedite consultants’ work.
-

Money matters

- ☐ Review the evaluation of changes by consultants on an ongoing basis, and try to address and resolve conflicts as they arise.
 - ☐ Periodically reinforce the importance of accurate certification – particularly to mechanical and electrical engineers, documenting your efforts.
 - ☐ Do not certify work that is properly certified by another discipline.
-

Delay claims

- ☐ Verify that consultants process Change Notices and Change Orders within a reasonable time frame. Document your efforts thoroughly.
 - ☐ Be aware that “delay” may be added to any other complaint made by a contractor or owner. Expedite your services and those of your consultants.
-

Review

- ☐ Be aware that field review can generate a claim, even if it is unpaid. Either negotiate an appropriate fee or stay off the site.
 - ☐ Do not try to review what properly should be done by specialist consultants.
-

Substitutions

- ☐ Complete the steps listed under Substitutions – Owner Approved in the water-related checklist, page 13.
-

Continuing Education

- ☐ Invest in sessions that focus on the architect’s duties with respect to contract administration, as regards both:
 - elements within the architect’s own purview, and;
 - the co-ordination of the consultants’ work.

* Co-ordinate means: **organize; identify quality standards; establish procedure for; manage information flow; review; arrange; resolve inconsistencies; establish a congruent relationship; monitor; update; provide direction; receive requests; resolve conflicts; expedite; integrate**

Practice Tip 27 contains valuable descriptors of the architect’s role in co-ordination – from schematic design through to the end of the construction phase.

Where to find the resources noted in this Claims Experience Checklist? See page 4.

Consultants: Risks and claims

Nearly 60% of Ontario architects' costs to resolve the claims that arose from 2006-2011 went to settling claims in which specialist consultants were named alongside the architect. Both Professional Engineers and non-engineers were involved. Two or more consultants were named in one-third of these claims.

While consultants were named often in claims, their errors rarely were the only cause of a claim. Sometimes an architect's error compounded the consultant's error; sometimes an architect's error was wholly unrelated to the consultant's error. Even when Pro-Demnity succeeds in being "let out" of a consultant-related claim, it incurs legal expenses along the way.

Consultants may heighten the risks for architects, as a result of:

1. The number of specialists on a project;
2. Consultants not being insured appropriately;
3. The potential for liability in contract; or
4. Some combination of 1 + 2 +/- 3.

Number of consultants not insured

Number sub-contracted through the architect

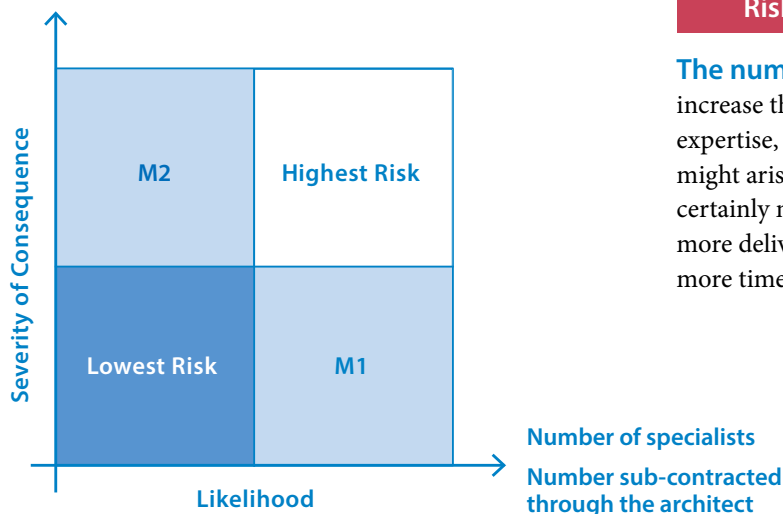


Figure 12. Risk-assessment framework

A framework for assessing risks, shown in Figure 12, may help architects better understand why each of these risk factors is significant, and to evaluate consultant-related risks, as they accumulate, in any given project. In the "Highest Risk" zone, claims are both likely to arise and likely have a serious impact. At the other extreme is the "Lowest Risk" zone, in which claims are both less likely to arise and less likely to have much impact.

In between (in the grey zones in Figure 12), are two kinds of scenario. In M1, there is a likelihood that a claim could arise, but the consequences, for the architect, may be (relatively speaking) lower-impact than in the "Highest Risk" zone – that is, if consultants are adequately insured. In M2, the likelihood of a claim arising may seem low, but the consequences will be more severe. Both M1 and M2 may be described as moderately risky scenarios for the architect, and therefore worthy of careful attention.

► **A high-risk scenario = where claims are more likely + consequences will be severe**

A Risk-management Worksheet for architects working with consultants is shown in Figure 13.

(A working copy is provided with the Claims Experience Checklists, in the tear-out sheets at the centre of the *Workbook*.) The following pages provide step-by-step instructions for its use, plus relevant highlights from the claims history, to help architects evaluate the consultant-related risks that exist on each project, and to take action to reduce these risks.

Risk factor 1 (Column 1 of Figure 13)

The number of specialists in a design team may also increase the likelihood of a claim arising. While specialist expertise, by its very nature, should address risks that might arise if it were not applied, more specialists certainly means more co-ordination for the architect – more deliverables to monitor, more questions to ask, and more time required to define the roles and responsibilities

Mechanical engineers were involved in 70 claims, due to engineering errors that resulted in noisy roof chillers; insufficient heating, cooling or ventilation; or failed equipment (e.g. hot water heaters, energy-recovery ventilators, or dehumidifiers). Architects were drawn in where their oversight played a role (or was alleged to have played a role) in an equipment failure – often when a frozen pipe or machine was located in an unheated or uninsulated space.

Mechanical engineers were named in nearly twice as many claims as structural engineers. The resolution of the 70 claims naming just mechanical engineers, or just mechanical and electrical engineers (in addition to the architect) cost Pro-Demnity \$8.6 million – roughly 20% of all costs for the period. Additional costs were incurred in 30 more claims where mechanical engineers joined in an even longer list of defendants. While this may seem excessive, in assembly buildings, hospitals, and some of the other building types, mechanical engineers are routinely responsible for roughly 20% of the value of the construction work. They specify elements that have moving parts – and many claims were made by plaintiffs who, after failing to maintain their own equipment, alleged that its failure was due to a design flaw. Such an allegation may prove false but, in the event of a claim, the matter must be defended by a lawyer, and that incurs legal costs.

Mechanical engineers were heavily implicated in claims alleging delay during construction: plaintiffs often invoked slow or improper valuation of changes, unfair bid practices, or errors in payment certification. Mechanical engineers seemed to be targeted repeatedly by mechanical contractors, in this regard.

► Claims that involved consultants rarely arose from a single error

Structural engineers were involved in several dramatic events: roof collapses; the collapse of an entire building; caisson or foundation wall failures during construction; and personal injuries. Less dramatic events included parapet failures long after occupancy, and leaks attributed to structural settlement or cracking. The engineers were subcontracted through the architect in roughly half of these claims. The resolution of the 42 claims that named structural engineers alone cost Pro-Demnity \$3.4 million.

The “Tier 2” disciplines for 2006-2011 were civil engineers, geotechnical consultants, land surveyors and building science specialists. Parking lot re-grading, subfloor drainage, and erroneous location of flood lines were among the allegations. These consultants were involved in a total of 30 claims, costing nearly

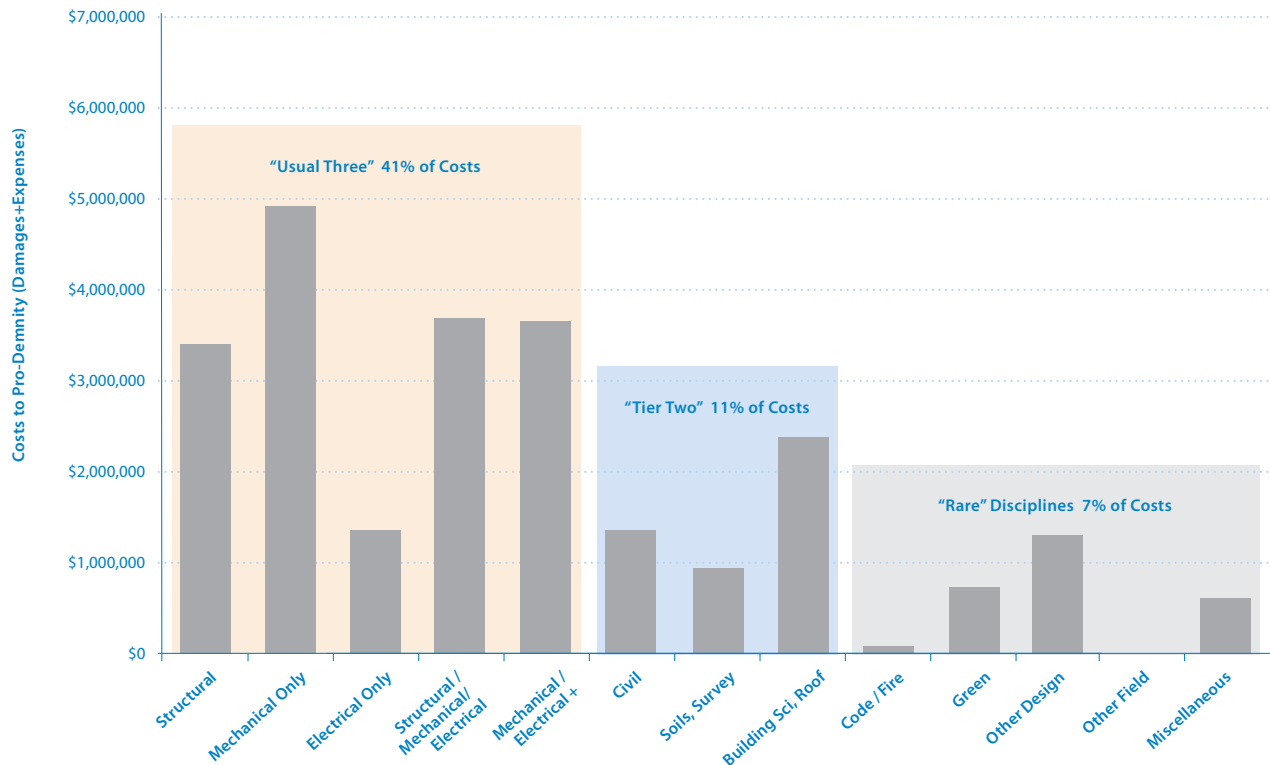


Figure 14. Consulting disciplines in claims, 2006-2011

\$5.0 million – roughly 10% of the costs to resolve all claims that arose during 2006-2011.

Miscellaneous specialties, each named just once or twice in the 2006-2011 claims, included: accessibility specialist, elevator consultant, green roof consultant, interior designer, laboratory specialist, landscape architect, sustainability specialist, and security consultant.

Risk-management Worksheet, STEP 1B: Look back at all of the specialist consultants you listed in column 1. Refer to Figure 14 to identify the consultants who were named in claims most often, and to the text on page 28 to understand why. Reflect on your project, and circle the four to six consultants whom you now think present the greatest risks. Continue reading.

Risk factor 2 (Column 2 of Figure 13)

The insurance of specialist consultants is a concern because it can have a severe impact on the defendant architect, in the event of a claim. No matter how the consulting contracts are arranged, if a specialist is not adequately insured, then all defendants – including Pro-Demnity on behalf of the Architect – will have to contribute a greater share of the final settlement than they would have, had every defendant been adequately insured.

Risk-management Worksheet, STEP 2A: Use column 2 to answer, “Does the consultant carry professional liability insurance?” Circle Yes, No or ?. Verify your assumptions, as you continue reading.

To understand how insurance applies to specialists in Ontario, it is helpful to classify each consultant as a member of one of three groups:

- A. Professional Engineer – regulated;
- B. Specialist, non-engineer – regulated; or
- C. Specialist, non-engineer – not regulated.

Group A, the Professional Engineer is required, barring special circumstances, to be insured – by Ontario’s *Professional Engineers Act*. However, there is an opt-out clause, in the Regulation under the same Act, which permits an engineering firm to provide advice to the public without insurance, if it satisfies particular tests (RRO 1990, Reg. 941 74(2)d). One option for the engineer is to obtain a signed authorization from the entity to whom it is contracted, acknowledging that the engineer is providing advice without insurance coverage.

An architect would be very unwise to retain an engineer who does not carry professional liability insurance.

Group B, the Specialist, non-engineer, regulated includes only:

- Ontario Land Surveyors;
- BCIN designers;
- Professional Geoscientists;
- ARIDO-registered Interior Designers; and
- Landscape Architects.

In Ontario, there is an Act (and, in some cases, a supporting Regulation) governing each of these five disciplines – but the requirements in each Act are unique to each discipline.

These laws make it nearly certain that another architect, an Ontario Land Surveyor or a BCIN designer (of a particular class) carries professional liability insurance. The laws make it reasonable to expect – but not perfectly certain – that a Professional Engineer or Professional Geoscientist carries some amount of professional liability insurance. ARIDO confirmed in November 2017 that, as of that date, its members carry some amount of insurance. (Architects should, nevertheless confirm that the amount of coverage carried by any of the last three types of consultant is co-ordinated with the coverage the architect carries.) Ontario law provides no assurance that a non-ARIDO interior designer or a Landscape Architect carries insurance for its potential errors or omissions.

While some consultants elect to purchase insurance (even when the law does not require them to do so), architects cannot assume that any individual consulting firm has so elected.

► **A title that appears “professional” is no guarantee that a consultant is insured. The question must be asked in every case.**

Group C, the specialist non-engineer (not regulated) includes more than 60 additional specialties, many of which are listed in the Canadian Handbook of Practice for Architects (CHOP 2009, Chapter 1.2.3) – and none of which is required by law to carry errors and omissions insurance. Architects working with these disciplines are advised to verify the consultants’ insurance – on a case-by-case basis.

Figure 15 provides a quick reference to the three classes of specialist, highlighting the disciplines who were named in claims from 2006 to 2011.

MUST BE INSURED (Ontario law)	MUST BE INSURED unless disclosed that not insured	NO INSURANCE REQUIRED and seen in claims (2006-2011)
Ontario Land Surveyor	Professional Engineer structural mechanical electrical civil building envelope traffic acoustic/vibration hydrological seismic Tarion Bull.19 Professional Geoscientist	Roof Consultant Inspector (roof/other) Landscape Architect Accessibility Elevator Green Roof Interior Designer Laboratory Sustainable Design LEED

Figure 15. Who is insured under Ontario law?

Risk-management Worksheet, STEP 2B: Use Figure 15 and the text in the three preceding paragraphs to check any assumptions you made in STEP 2A. Adjust your Yes, No, or ? answer accordingly.

Whether the consultant's insurance coverage is adequate and properly co-ordinated with the insurance coverage provided by Pro-Demnity is another important matter. Appropriateness of coverage must be verified in every case.

Risk-management Worksheet, STEP 2C: Highlight ALL consultants whose insurance status is unknown – and ALL those who do not carry insurance – as adding risk. Turn the unknowns into knowns. After reading through to the end of page 31, decide on a course of action to address the risks presented by those with no insurance coverage.

Resources to help architects verify whether the consultants' insurance is adequate include Pro-Demnity Bulletin *You have insurance, but what about the engineering consultants?* (April 2015), which contains a checklist to help architects read a consultant's insurance policy. The Bulletin identifies the aspects of a consultant's insurance policy to consider, in order to bring such coverage into alignment with the coverage provided by Pro-Demnity to architects. This Bulletin may be read as applicable to all consultants – be they engineers or other non-engineering specialists.

Pro-Demnity Bulletin *Engineer's Standard terms of engagement* (April 2015) provides further discussion of related provisions in architects' standard contracts, namely OAA 600 (2008 & 2013), OAA 800 (2011, OAA 900 (2014) and RAIC 9 (2007).

Risk-management Worksheet, STEP 2D: Obtain and review a copy of every consultant's professional liability insurance policy – with particular attention to, but not limited to, those that are subcontracted through you. Use the Bulletins cited in the previous two paragraphs to assist with your review.

Risk factor 3 (Column 3 of Figure 13)

Contractual liability and the sub-consultant

Architects who directly retain sub-consultants tend to increase their exposure to professional liability claims as they may render themselves contractually responsible for the sub-consultants' breaches of contract, errors or omissions.

A review of sample claims illustrates that Pro-Demnity's share of the final settlement was often higher where the architect retained the sub-consultants, instead of the owner. In some cases, architects are named as defendants primarily as a result of their contractual connections to their under-performing sub-consultants.

Contractual liability for the architect's sub-consultants generally increases the likelihood of claims as well as their potential magnitude.

While the choice of contractual structure often is made by the client, architects can identify where it adds risk to the risks already identified in columns #1 and #2 of the Risk-management Worksheet.

Risk-management Worksheet, STEP 3A: Use column 3 to answer, "To whom is each consultant on the project contracted?" – *Architect, Client or Other* ("Other" might be, for example, a constructor or a previous landowner.)

The contractual relationship between architect and sub-consultant is analogous to a general contractor/sub-contractor arrangement. The architect undertakes to provide a package of design consulting services, taking on added contractual responsibility for all elements. Just as a general contractor is ultimately liable for the competent performance of its mechanical subcontractor, an architect may be liable for the competent performance of its mechanical sub-consultant.

An approach to containing risk exposure is for the architect to ensure that its sub-consultants:

1. Accept equivalent obligations to the architect under their sub-consultant agreements as the architect has accepted under its client/architect agreement; and
2. Provide a certificate of insurance to the architect which confirms that the sub-consultant is adequately covered with respect to its scope of work.

Ideally, the architect would obtain blanket protection by agreeing with its client that it cannot be sued for an amount which exceeds its own insurance coverage or that of its sub-consultants.

OAA Documents 600 (2013) and 900 (2014) provide helpful contract language in that regard.

The research confirms that the architect's retainer of sub-consultants complicates the defense of the architect, and may incur costs that would not have been incurred, had the consultant been contracted directly to the architect's client.

Having specialists contract directly to the client reduces the architect's exposure to claims that have mainly to do with consultant error. This makes particular sense where the specialist works directly and near-exclusively with the

client – as do relocation planners, security experts, and information technologists. Nevertheless, architects may still be exposed to "duty of care" allegations that relate to the co-ordination of the work of specialist consultants, no matter what the contractual structure.

Risk-management Worksheet, STEP 3B: Highlight ALL consultants subcontracted to Architect as adding risk.

Practice Tip 30, *Retention of Specialist Consultants* (July 2014) may help with this step: it outlines why architects are advised to avoid subcontracting surveyors, geotechnical and hazardous materials consultants.

Pro-Demnity Bulletin *Retaining Surveyors, Geotechnical and Hazardous Materials Specialists* (July 21, 2014) complements Practice Tip 30, giving more detail about the relevant insurance coverage and outlining additional risk-management initiatives for architects to consider.

Risk factors 1 + 2 + 3 at work in your project

Risk-management Worksheet: wrap-up

Steps 1B, 2C and 3B identified the highest-risk consultants in relation to each of the risk factors. Taking a look at the Worksheet overall, one can now see where the risks are compounded.

Risk-management Worksheet, STEP 4: Identify the individual consultants whom you have highlighted two or three times – that is, in two or more of columns 1, 2 or 3. Keep the potential severity of impact (should a claim arise) in mind at all times. First, close the gaps that exist for each of the consultants you've identified as the highest risks. Then address all of the others.

All consultants who are subcontracted to the architect should be insured – and adequately insured, as described in Pro-Demnity's April 2015 Bulletins (noted on the previous page). If a consultant is not insured, or not adequately insured, then consider retaining a different consultant (who is adequately insured), or having the uninsured consultant contract directly to the building owner/developer, having disclosed its insurance status to that entity.

Market activity and claims

All building types generated a significant number of claims, and all building types incurred significant claims-resolution costs.

Building permits in Ontario (from 2006-2011) reflected construction valued at roughly \$120 billion. A breakdown of construction costs, by building type, is shown in Figure 16. Pro-Demnity's costs (damages plus legal expenses) to resolve all claims that arose against architects from 2006-2011 amounted to \$41.5 million.

No single building type has yet proven riskier than another.

From the perspectives of both insurer and practitioner, both frequency and severity can be considered indicators of serious risk. In the 2006-2011 claims, some building types featured often while others tended to feature in very costly claims. The most frequent were assembly buildings (e.g. churches, theatres, arenas, and other civic buildings) and multi-unit residential buildings; the most costly (on a per-claim basis) were hospitals and seniors' housing.

particular building types. For example, public assembly buildings are, more than any other building type, the scene of personal injury claims. Hospitals attract relatively complex claims that tend to be multi-factor and multi-party, are sometimes lodged by a contractor-plaintiff and often involve a mechanical engineer. Claims in multi-unit residential buildings were lodged by condominium associations, purchasers or tenants far more often than by the architect's client. Even water damage tended, during the study period, to occur differently in each building type: appearing mostly at the roof in public assembly buildings, mostly at the wall or window in multi-unit residential buildings, and nearly as often at the roof or at the wall in single-family houses.

These correlations may be explained, in some measure, by comparing the conditions that surround the design and realization of each building type, such as the client's goals, the techniques used in construction and the regulations that apply to that building type alone.

The review of the 2006-2011 claims concluded that any suggestion that one building type might, by its very nature, attract more claims is, as yet, unwarranted. In contrast, the observation that particular hazards appear to relate to each building type seems more likely to help architects in managing their day-to-day risks. For suggestions as to how to manage such risks, see the section of the *Workbook* entitled "Type of claim and building type", on pages 14-21.

What happened in the 2006-2011 claims clearly varied according to building type.

This review suggests that the individual practitioner ought to focus on the kinds of risks that relate to

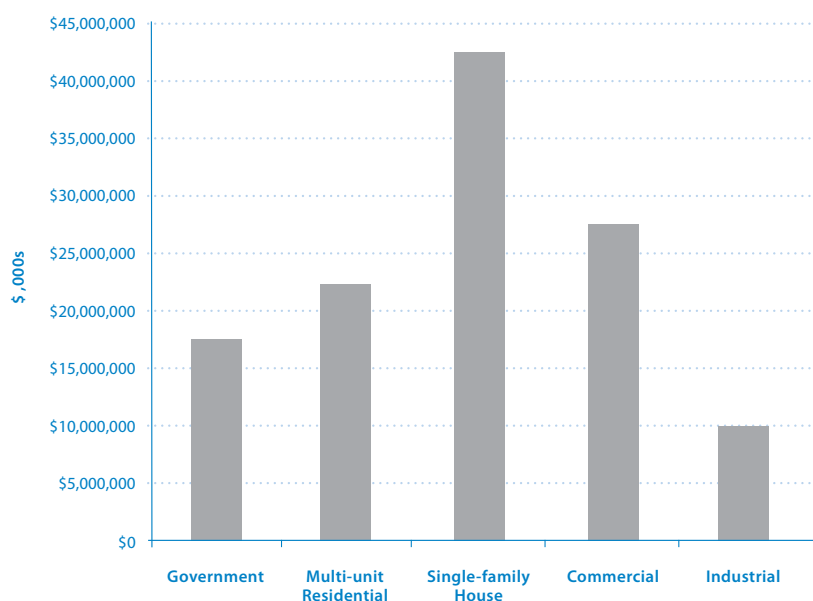


Figure 16. Cost of construction and renovation in various building sectors 2006-2011.

Data from Statistics Canada Tables 026-0006 and 026-0006, Building permits (accessed January 2015)



Summary

In 2013, Pro-Demnity initiated its first large-scale review of claims. The objective driving the publication of this (first ever) *Claims Experience Workbook* is that all Ontario architects might benefit from Pro-Demnity's claims experience. By showing what triggered claims most often, over an extended period – that is, between 2006 and 2011 – the *Workbook* aims to help architects identify and manage many of the risks that arise in everyday consulting practice.

Design errors leading to water damage, which occurred in all building types, led to the largest and most costly group of claims. Allegations that consulting services during the construction phase did not meet a reasonable standard of care led to the second-largest group. Strategies to reduce the risk of these two types of claims are outlined in two Claims Experience Checklists included in the *Workbook*. The Checklists are duplicated in the tear-out pamphlet, in the expectation that they will be used repeatedly.

Building type was a significant factor in claims – but we do not characterize any one building type as particularly prone to overall risk. Rather, certain factors clearly distinguish claims in one building type from those in another. “What happened” varied considerably in the claims, according to building type, as did “who claimed damages” and the consulting specialties that were involved in each claim. The process environments which distinguish each building type are clearly reflected in the claims. Therefore, suggested strategies to reduce risks are outlined in another Claims Experience Checklist – by Building Type.

Specialist consultants were named in half of all claims. A fact of life in architectural practice, both engineers and other specialists nevertheless add risk. The number of specialists, their insurance status and the manner of contracting consultants combine to determine the degree of risk. The *Workbook* contains a Risk-management Worksheet which aims to help architects better understand and manage the risks that consultants present in a given project.

The Checklists and Worksheet provide a practical link between Pro-Demnity's claims experience and any new project in an architect's office today. The *Workbook* also highlights key resources to help architects reduce risks (most of which are available on the website of either Pro-Demnity or the OAA).

Costs

While the claims history, by its very nature, highlights the liability of Ontario architects (and others) for a variety of errors and omissions, the fact that this history was not more extensive, or even more costly, is testament to the daily efforts of Pro-Demnity's claims managers and their defense teams. All “costs” cited in the *Workbook* have included both damages paid to the plaintiff at the end of the claims resolution process and expenses paid to legal teams and expert witnesses who argue in the architect's defense. The monetary demands initially made by plaintiffs, if totalled, would out-run, by an order of magnitude, the sum of “damages + expenses” reported here.

Next steps

Future Workshops are being developed, during which participants will actively apply components of the *Workbook* to a sample project. Many Ontario architects have already attended a presentation of *Lessons from Claims*, which provided an overview of Pro-Demnity's claims history to members of the local Societies of Architects, in 2016-17. Others will have had a chance to read this document before a workshop is held in their area.

Pro-Demnity is committed to making a periodic review of claims, at a reasonable interval, and to sharing the results, in order to help the profession as a whole to protect the public interest.



The Review of Claims 2006-2011

Origins

The overriding purpose of this first-ever, large-scale review was to summarize Pro-Demnity's experience, and to find patterns – initially, with a focus on consultant-related claims, and later, with respect to all claims. Soon after the internal report was delivered, Pro-Demnity and the Ontario Association of Architects struck a Joint Working Group, to consider appropriate responses to the review. The Working Group championed the production of the *Workbook*, with the goal of disseminating the key observations made in the review to all members of the OAA, in a format that would encourage active use.

Limitations

The *Workbook* and the Claims Experience Checklists are faithful to the observations made during the *Review of Claims 2006-2011*. Neither pretends to address all of the factors coming to bear on an individual practitioner or project, many of which are described in the *Canadian Handbook of Practice for Architects*, and others which may arise, as time unfolds. Future claims may arise from factors that did not give rise to claims during the study period. Neither the *Workbook* nor the Checklists purport to override the professional judgment that must be applied by every architect, given all of the circumstances he or she faces.

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Several Claims Experience Checklists are proposed here. The steps recommended in the Checklists stem directly from what was seen in the *Review of Claims* – highlighting activities that would have addressed either a recurring driver of claims, or a factor that was seen repeatedly to complicate the resolution of claims.

Practitioners are not expected to limit their risk-management activities to the initiatives listed in the Claims Experience Checklists – the Checklists highlight initiatives to be taken as part of a more comprehensive quality-control process, in an effort to reduce the incidence or severity of claims.

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Professional Geoscientists Act (SO 2000, Chapter 13) and Regulation 59/01.

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