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for Buildings & Business

"WE OFFER PEACE OF MIND THROUGH KNOWLEDGE AND EXPERTISE"

NEWSLETTER

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JANUARY, 2009

I'LL HUFF & PUFF 'TIL I BLOW YOUR HOUSE DOWN!



This case study is a little lengthy but to edit any part of it would not do it justice as it involves a major windstorm, inferior construction, minimum building code requirements, and mold.

We were called in three months later by a major insurer to investigate the extent of damage caused by a major wind storm that occurred that previous November. Up to that point a major approved restoration contractor had completed the emergency service aspect of the loss and produced a scope of damage and estimate based upon full replacement of material finishes and treatment for mold to partition walls between units.

High winds lifted the flashing to the south east corner of the building, lifting up the roof cover, insulation, and peeled it back over the front section. The roof slopes to the middle for drainage. The damaged area of the roof was confined to the rear section of roof over units 1 - 6 inclusive.

Although the roof was tarped, incimate weather prevented the roof from being repaired immediately, thus allowing water to penetrate the demising walls between units. Mold has built up in these walls due to the water. Mold appears quite evident behind the drywall in some areas in the current photos that were taken the following February.

Since the steel web joists run from front to rear, we felt that all these walls will be of insulated frame construction, and with the trapped moisture in these walls, they were a feeding ground for mold.

Our approach is unlike the normal restoration contractors method and for this particular restoration process is to complete some exploratory demo, by removing the outer and inner layer of drywall at the roof deck height in order to determine into what cavities that the water traveled down damaging the insulation and trapping this moisture.

The concern with this approach is that these walls are a fire wall, or they should be, which means that the outer layer is staggered over the inner layer so that no seams are on top of each other. This means that the outer layer has to be peeled back further than the inner layer.

There is also the possibility the outer layer has been glued to the inner layer with a grabber adhesive which could result in the integrity of the inner layer being compromised when the outer layer is removed.

Thus worse case scenario would be to replace the whole portion of the wall from the drain pipe back to the rear wall which is an area of approximately 45' x 20'. With the amount of areas affected this is a large amount of drywall to replace - a large house - approximately 11,700 square feet times two.

Depending on the tarp sizes used on the roof the weakest areas on the roof to allow water in will be around the seams where the tarps meet. The units are approximately 30 feet wide therefore, if larger tarps were used then the outer walls of all affected areas were probably protected the best.

Our exploratory work is to complete the following.

In unit # 3 as this unit is vacant. On both interior partition walls perform the following exploratory demo. At this stage do not remove the drywall in the adjoining unit.

- Remove the outer layer of drywall from the ceiling down 4' from the center drain pipe to the rear exterior wall
- Remove the inner layer of drywall from the ceiling down 2' from the center drain pipe to the rear exterior wall to expose any insulation and open up each stud cavity along this section

Now that the framing is exposed, it will give you an indication of the condition and damage to that particular wall. It should show you the area of travel of the water down each stud cavity as well as damaged insulation. We will call this area of travel in the stud cavity - fingers. So for each finger that you find

- Remove the outer layer of drywall from the ceiling down to the floor one stud over from the affected cavity (This should be 48" wide)
- Remove the inner layer of drywall from the ceiling down to the floor on each stud exposing the affected cavity (This should be 16" wide)

Then,

- Remove all insulation to exposed cavities

- Chemically treat all exposed cavities
- Replace damaged insulation in exposed cavities
- Replace inner layer of removed drywall
- Replace outer layer of removed drywall
- Clean up and remove all loss related debris to dumpsters

Please note all electrical, painting, and moving of any contents would be the tenant's responsibility.

All damaged framing should be considered as hidden damage and treated as an extra.

On 16 inch centers, there should be about 34 cavities or fingers in each section of wall. If the damage is severe enough, affecting a large number of these cavities, it would be more cost effective to remove and replace all the drywall and insulation to that wall where the damage occurred. The maximum finger repairs to consider would be 8 to any one wall.

Since one of the shops to the east of the diner has moved and set up equipment in the rear of unit # 5, we suggest that this equipment is moved to the center of the bay by the tenant who owns it, and we perform the same exploratory work in this bay as was performed in unit # 5. Since the partition wall between Unit # 5 and Unit # 6 could be done as well from Unit # 6 side of it because it is exposed and open.

Now that all this exploratory work can be done with minimal interruption of the tenants, it will give a good overview of the condition of each of these 5 walls with the possibility of not affecting the tenant too much on the opposite side of each. There probably will be some rotten drywall on the opposite side of each of these walls in these tenancies that will have to be repaired.

This only leaves the partition wall between units 1 & 2 to explore. The side in unit 2 would probably be the best side to do because there is little equipment installed there. The only remaining wall not discussed is the exterior east wall in unit 1 which should be considered as well and if it is then do all the exploratory work in unit 1.

On April 25th, we received a fax in our office asking us to review the attached engineering report and four options of roof repair from the emergency service roofing contractor.

The engineering report reviews the roof from an assembly point of view. This report found that the first component was roof cover that was basically a tar and gravel roof, the second component was insulation board that was incorrectly installed, and only mentions the third component which is structure from a unit point of view.

No damage was mentioned to the structural component, however our observation shows that the metal deck has been buckled in one spot about one quarter of the way along the left (east) wall from the south east corner of the roof (see photos below).



This damage to the structure could be old damage or it could have been caused by an object striking the roof during the wind storm after the roof cover and insulation had lifted. There is no way to indicate which it was and it should have been addressed before the new roof cover was installed by roofing contractor for the restoration team. It could develop leaks in years to follow.

The inspection by the engineering firm was conducted shortly after the loss had occurred in November, but the actual written report did not follow until January 30th. During which time verbal communication was conducted between the engineers, the restoration contractor, the insured, the tenants, the roofer, and the adjuster. It is quite evident that not every one was on the same playing field during these conversations as to what has transpired in the repair and/or replacement process for the remedial work to be done to the roof.

We do not feel that no one was actually at fault here because of each individual's personal knowledge of roof construction; therefore we wish to point out the following for future claims of this nature.

SYSTEM vs COMPONENT vs UNIT PRICING

Especially when reading or listening verbally to an engineer's report of damage interpretation is everything, so be careful of what you end up requesting. The more people involved in determining damage and pricing the restoration, the more confusing it can become and it will complicate end results, so it is important for everyone to get on the same page including the engineer.

With an insured, a restoration contractor, and a sub trade involved along with the adjuster that is 5 different interpretations of what has to be performed to repair damage.

Now let's throw another element into the equation - obsolescence.

The large windstorm passed through the city damaging structures and landscapes by blowing off siding, roofing materials, falling trees, etc. The wind blew off a major section of this roof exposing the steel decking and the insulation in a large area. It was strong enough to rattle the flashing and capping to a degree that it was loosened enough that it had to be refastened around the perimeter of the roof.

The restoration company was called to secure the building and perform emergency service which they did to the best of their ability as it is extremely difficult to tarp and secure a large flat roof until a temporary patch could be applied. Finding a roofer to do the temporary patch and repair the damage after would have been a hard task because of the amount of damage that had occurred during this storm. There were so many locations around the area to mop and dash just to provide temporary patch.

Looking at this loss from another angle is the adjuster, he knew there was roof damage but to what extent he did not know so being a diligent adjuster, he called in a roofing engineer asking the engineer to inspect the damaged roof and report on its' condition which the engineer did.

Engineering reports are not the fastest thing to get back in situations like this so a verbal report is necessary to a degree. However with that said, definition usually gets lost in the transfer of information from one person to another and when it comes repair time, what the engineer suggests does not always get completed.

In this particular case, the term "repair the roof" was probably tossed around again and again. It is such a general term to use for this type of roof "repair the roof" meant something different to each individual. Here is how we saw it;

- To the insured, the entire roof
- To the engineer, the roofs covers, the insulation, and check the structure including the debris field
- To the restoration contractor, only the damaged section of the roof cover, the insulation, and the structure
- To the sub contractor (roofer), the damaged insulation as necessary, and the damaged roof cover along with flashing and capping
- To the adjuster, putting the roof back in the same shape it was prior to the loss

The debris field would only be a concern of the engineer because it would normally be overlooked by the other parties unless there was actual physical surface damage that could be seen by the eye. In most cases where on a flat roof the cover is lifted off insulation exposing the insulation and allowing wind to get under the insulation and the cover rippling it like a blanket on a bed, especially if the original installation is minimum code requirements or the original installation had short cuts taken to save money.

A flat roof SYSTEM consists of the following:

<u>COMPONENTS</u>	<u>UNITS</u>	<u>UNITS</u>
	<i>Tar & Gravel Cover</i>	<i>Hot Map Cover</i>
ROOF COVER	Cap Flashings	
	Gravel Cover	
	Hot Asphalt	Cap Flashings
	Cap Ply	Cap Sheet
	Hot Asphalt (up to 4 plies)	Hot Asphalt (up to 3 plies)
	Base Ply (up to 4 plies)	Base Ply (up to 3 plies)
	B - Vents Flashings	B - Vents Flashings
	Plumbing Jack Flashings	Plumbing Jacks Flashings
	Drains	Drains
	Hot Asphalt	Hot Asphalt
	Fiberboard	Fiberboard
INSULATION	Fastening Devise	Fastening Devise

	Fiberboard	Fiberboard
	Insulation Board	Insulation Board
	Sealant	Sealant
STRUCTURE	Steel Deck	Steel Deck
	Steel Web Joists	Steel Web Joists

Tar and gravel roofs are now becoming obsolete with the newer hot mop method much more efficient, less weight and more economical to install the repairs were completed using hot mop rather than tar and gravel.

The replaced section of roof cover was hot mop up to the tar and gravel, the insulation component was repaired as necessary, and the structure was not addressed.

The restoration of this process took a lot longer than it should have because of misinterpretation of what was required and it got temporarily derailed which resulted in more money being spent on this process that was necessary.

No one party can really be blamed, as everyone thought they were doing what was required of them to complete the restoration.

We contacted our roofing contractor to look at the roof and give us a quote as to replacing the roof cover for the debris field and address the center of the roof that was not draining the water off the roof properly. On May the 2nd, we received a quote and compared it to the restoration company's roofing contractor quote for the debris field and we recommended our roofing contractor to do the job. We also recommended that the insurer hire them direct to complete the repairs thus saving any overhead and profit that they would incur by doing it through a restoration company.

We also suggested that they hire us to complete an active audit in order to expedite work and control unexpected costs which you did.

The remedial work commenced on May 23rd. Hidden damage was discovered on May 23rd and May 24th (see the following photos).



The surplus gravel from the debris field (see photos above) was recycled by placing it on the old section of roof in order to help hold it down (see photos below), however this section of roof should be replaced by the insured because it poses a liability hazard as it is incorrectly fastened (see engineers report).



The new hot mopped roof area has had new vents added by our roofer to the section of roof that they have replaced (see photos below).



The center section of the east section of roof replacement was repaired by our roofer for better drainage (see photo above right).

Bubbles have appeared in areas of the restoration company's roofer's application (see below). They should be left until hot weather to see if they subside. Our roofer will inspect them in the fall at which time a decision can be made whether to acknowledge them or open the area up and repair.

The old damaged vents were reinstalled by the restoration company's roofer which should have been replaced (see below).

One of the vents has a collar missing on the restoration company's roofer's side (see below). Our roofer is correcting this vent.



In summary, we should address the bubbles this fall if necessary, and accept that this remedial work is complete.

We have called upon each tenant affected to address any concerns regarding the roof that they still have. All tenants were satisfied with the roof repairs and reported no leakage.

We highly recommend that our roofer become an approved vender for the insurer in the future.

As well as overseeing the roof remedial work, once we completed our exploratory demolition, we were authorized in advance to proceed immediately to oversee the mold abatement and repairs.

The mold was very much contained in the walls but there was considerable water damage to three demising walls.

The roof damage caused by the wind resulted in minimum code requirements being followed whereas they should have been improved upon, and inferior construction methods.

All in all if conventional restoration methods were implemented which could have resulted in all the demising walls, the roof cover, capping, flashings, and insulation being replaced the cost of this loss would have been in the neighbourhood of \$ 450,000 and the loss actually resulted in being approximately \$ 175,000.

This is one time where standing outside the box, with no financial interest to consider works as the trades and consultants were paid direct by the insurer.



If your **BUILDING** Has suffered a **LOSS** or has **DETERIORATED** due to **AGE, WEAR & TEAR** or **OCCUPANCY USE** and are considering a **RESTORATION, RENOVATION** or **REMODELING** Project, then Please contact our office at (778) 239 - 6808 or email us at integral@shaw.ca for a **FREE CONSULTATION**. Let us help you.



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