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Report prepared on February 13, 2009

Prepared for:

Project:

On February 10, 2009 Allied Roofing Company performed an inspection of the buildings with reported water intrusion. We were not able to see the interior of all units to verify the location of the water intrusion. It is always best to verify on the interior the location of the roof leaks. Our visual inspection of the roofs took us to the areas where plastic was used to cover the roof area as temporary solution to the water intrusion.

There are two types of roofs on these buildings. There are flat roofs and sloped roofs. Overall the roofs are in poor condition.

The flat roofs appear to have been replaced within in the last 1-3 years. That is with the exception of a few buildings, which still have a gravel roof system. The new roofs are a torch applied modified bitumen. Surprisingly enough, the older roofs are in much better condition than newer roofs. The new roofs look as if the roofing crew left one day and never returned to complete the work. The photos, which follow this report, document most of the problems with the flat roofs. The following are some areas of concern with the flat roofs:

- There is excessive amounts of debris in the form of scrap roofing material, un-used roofing material, plywood sheathing with long nails, old roofing materials and natural debris such as leaves.
- The sheet metal coping was not sealed off at the seams or fastener locations. There are numerous holes in the sheet metal coping. This was most likely caused by the removal of the coping when they re-roofed. While it can be sealed, it really should be replaced.
- The roofing membrane on the new roofs does not cover the equipment platforms or the top of the parapet walls. This can become a problem down the road. If it is determined that this condition is the cause of water intrusion, it will be come necessary to remove the sheet metal caps and roof over the platform. The sheet metal would then be re-installed.
- There are plastic roof drains in lieu of cast iron roof drains. The roofing membrane cannot adhere to the plastic material on a permanent basis. The result will be a separation between the roof drain and the roof membrane, which will cause water intrusion. All plastic roof drains should be replaced. The cost to replace each drain will be $0.00. The price would be less if there were multiple drains being replaced at one time. For now, the existing plastic roof drains should be monitored annually and re-sealed as needed.
- The roof to wall terminations are poorly completed. The structure does not have a provision in some areas for a termination metal. The termination metal allows the roofing membrane to be concealed and prevent water from migrating behind the roofing membrane. Where this situation occurs, the wood trim would need to be removed and a permanent termination metal installed. The wood trim would then be replaced or re-installed. Where there is termination metal, the roofing membrane is either applied to the surface of the metal or was not installed high enough above the lower vertical edge of the metal.
- The roof projections where sealed off at the base of the roof metal where it makes contact with the roofing membrane. The collar of the roof metal was not sealed. Water will migrate through this area and into the structure.
- There are some roof curbs, which were not roofed in. This has left the wood of the curb exposed to the elements. Not only will this cause water intrusion, the wood curbs will deteriorate.

The composition shingle roofs consist of what appears to be a 30-year dimensional shingle. As you know, there are several areas where the shingles have blown off. Aside from the strong winds in the area, the reason for this is due to the type of fastener used. The shingles were installed using a pneumatic staple. A staple has small surface area as compared to a roofing nail. A nail can withstand much stronger winds than a staple. Sometimes the air pressure for the pneumatic tool is too much. The result is the staple being driven into the shingle. This breaks that point of the shingle and compromises the resistance to the winds. Unfortunately there is not much that can be done about this situation other than re-roofing. The following are some other concerns with the composition shingle roofs.

- The type of roof metal used at the roof projections (waste and vent pipes) have a rubber storm collar connected to the collar of the sheet metal. This rubber storm collar is deteriorated at many of the roof projections. Since the rubber storm collar is part of the roof metal, it cannot be replaced with another storm collar. Since the diameter of the rubber storm collar is significantly larger than the roof projection, we cannot simply seal off the roof projection to the metal portion. The sealants would just fall through the opening and into the attic. The entire piece of roof metal would need to be replaced.
- The bottom edge of the roof at the roof to wall location needs to be re-worked so as to divert moisture away from the openings in these corners where the stucco meets the roof and wood trim. The openings would also be sealed with a polyurethane sealant. This situation is causing the water intrusion to the walls and ceilings of the first floor units. This occurs primarily on the buildings with flat roofs.
- All of the corners at the roof to wall locations are open to water intrusion to various degrees. This can easily be corrected by sealing these areas off using a polyurethane sealant.

- We noted the roofing underlay as being about two inches from the roof edge. Normally and according to code the roofing underlay must overlap the roof metal at the edge of the roof. The secondary piece of wood trim at the edge of the roof sits slightly higher than the roof plywood. This creates a slight void under the shingles. The shingles will then have sag where moisture can migrate through the areas where the shingles meet and at the lower edge of the shingle. Without the coverage of the roofing underlay at the edge of the roof, it is quite possible the water intrusion above some of the garages is due to this situation. We noticed in these areas evidence of moisture damage along the bottom edge of the wood fascia or trim. This is further indication the water intrusion is being caused by this situation. At these locations, we can install new sheet metal and underlay along the edge of the roof to correct the deficiency.
- On the buildings without a flat roof, there is small roof section above the front entry. There is a window on the opposing wall of the front door where there is water intrusion. There are several deficiencies on the roof and the intersecting wood trim. The roof issues are the small valleys/crickets above this area coupled with the improper termination of the composition shingles at the roof to wall location. There are pieces of sheet metal, which are referred to as step flashings. These step flashings are used to properly terminate the composition shingles along the roof to wall run. Instead they used a fibered flashing compound applied to the shingles and up over the z-bar termination metal. The compound is cracked and allowing water to migrate beneath the composition shingles. The valleys/crickets adjacent this area are also compromised. It appears that they were re-roofed using the same materials on the newly re-roofed flat roofs. When they were re-done, the shingles were displaced and damaged. There is also evidence of numerous repairs to this area using a fibered flashing compound. It is recommended the roofing in this area be re-worked to correct the water intrusion.

What these roofs need most is a general maintenance program. General maintenance would remedy approximately 75% of the roof leaks. With this being more so on the flat roofs.

Below is a scope of work for the leaking units. The units with the same problems are grouped together with a per unit price. Below this you will find a scope of work for general maintenance.

Units classified under the 'original scope for repair':

Units: 18, 21, 24, 73, 75, 115, 319, 320, 366, 414, 415

1) Remove approximately 100 square feet of the existing composition shingles and the roofing materials at the valley/cricket and down to the roof edge above the window.
2) Furnish and install one a torch applied roof system at the valley/cricket. The roofing membrane shall be installed up under the z-bar termination metal at the roof to wall location.
3) Furnish and install one layer of 30lb roofing underlay to the entire roof surface where the existing composition shingles have been removed.
4) Furnish and install new composition shingles using step flashings along the roof to wall run. The new shingles shall match the existing color and style as close as possible. Please note there will be some difference in color and style due to the age of the existing shingles.
5) Furnish and install new ridge shingles where the existing has been removed.
6) Seal all corners and any open termination points using a polyurethane sealant.
7) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Units with missing composition shingles: 219, 320, 366, 371

1) Remove the damaged shingles on the perimeter of where the existing blew off.
2) Furnish and install one layer of 30lb roofing underlay to the exposed roof area.

3) Furnish and install new roof metal as required or where the existing is damaged or missing.
4) Furnish and install new composition shingles using step flashings along the roof to wall run. The new shingles shall match the existing color and style as close as possible. Please note there will be some difference in color and style due to the age of the existing shingles.
5) Furnish and install new ridge shingles where the existing has been removed.
6) Seal all corners and any open termination points using a polyurethane sealant.
7) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Units with multiple problems on flat roofs: 143, 171, 199, 247, 303, 360, 279

1) Remove all debris from roof and haul away.
2) Remove any plastic coverings and haul away.
3) Repair the roof where nails were used to secure the plastic. The repairs to the roof shall be done using a torch-applied membrane.
4) Cut out and remove the roofing membrane at the scupper drains. Replace the scupper drain as needed.
5) Install a torch applied roof system at the scuppers and tie-in to the existing torch applied roof system.
6) Remove the metal coping where the roof to wall termination needs to be corrected.
7) Remove the wood trim and save.
8) Furnish and install a torch-applied membrane at the roof to wall transition and tie-in to the existing torch applied roof membrane.
9) Furnish and install a new termination metal at the exposed wall area.
10) Re-install the existing wood trim and replace any damaged with new to match.
11) Re-install the existing sheet metal coping. All seams, holes and fasteners shall be sealed using a polyurethane sealant.
12) Seal the collars of all the roof projections using a polyurethane sealant.
13) Inspect roof and perform any other repairs deemed necessary to prevent future water intrusion.
14) Seal the outside of the scupper drain with a polyurethane sealant
15) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Unit: 97

1) Cut out the roofing from around the existing plastic roof drain.
2) Disassemble and remove the existing plastic roof drain.
3) Furnish and install a new 3” cast iron roof drain. The new drain shall be tied into the existing plumbing.
4) Furnish and install a torch applied roof system at the new roof drain and tie-in to the existing torch applied membrane.
5) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Unit: 34

1) Remove the composition shingles where they had been repaired previously.
2) Furnish and install new shingles at the tie-in in a manner that will provide for a watertight condition.
3) Remove and replace the existing roof metal at the roof projections where the rubber storm collars have deteriorated.
4) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Units: 6, 410

1) Remove the wood trim from around the leaking windows.
2) Remove the siding as needed.
3) Inspect the condition of the flashing paper and window frame.
4) Seal off the edge of the window frame with a polyurethane sealant.
5) Furnish and install new wood trim to match the existing. The new wood trim shall be primed prior to installation.
6) Re-install/replace the siding as needed.
7) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Unit: 386

1) Remove old sealants as required at the bottom edge of the composition shingle roof where it transitions to the stucco wall.
2) Furnish and install new roof to wall step flashings as needed to divert the water away from the wall.
3) Seal off the stucco and wood components at the roof to wall transition with a polyurethane sealant.
4) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Unit: 25 Tenant claimed there was no water intrusion.

Unit: 256 1st floor unit. Nobody was home at the time of inspection. At this time it is unknown to us where the water intrusion is on the interior of the unit since this a 1st floor unit with no roof directly overhead.

Units classified as 'second scope (separate bid)'

Units: 112, 338

1) Remove approximately 100 square feet of the existing composition shingles and the roofing materials at the valley/cricket and down to the roof edge above the window.
2) Furnish and install one a torch applied roof system at the valley/cricket. The roofing membrane shall be installed up under the z-bar termination metal at the roof to wall location.
3) Furnish and install one layer of 30lb roofing underlay to the entire roof surface where the existing composition shingles have been removed.
4) Furnish and install new composition shingles using step flashings along the roof to wall run. The new shingles shall match the existing color and style as close as possible. Please note there will be some difference in color and style due to the age of the existing shingles.
5) Furnish and install new ridge shingles where the existing has been removed.
6) Seal all corners and any open termination points using a polyurethane sealant.
7) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Unit: 356

5) Remove old sealants as required at the bottom edge of the composition shingle roof where it transitions to the stucco wall.
6) Furnish and install new roof to wall step flashings as needed to divert the water away from the wall.

7) Seal off the stucco and wood components at the roof to wall transition with a polyurethane sealant.
8) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Units with multiple problems on flat roofs: 149 and 227.

1) Remove all debris from roof and haul away.
2) Remove any plastic coverings and haul away.
3) Repair the roof where nails were used to secure the plastic. The repairs to the roof shall be done using a torch-applied membrane.
4) Cut out and remove the roofing membrane at the scupper drains.
5) Install a torch applied roof system at the scuppers and tie-in to the existing torch applied roof system.
6) Remove the metal coping where the roof to wall termination needs to be corrected.
7) Remove the wood trim and save.
8) Furnish and install a torch-applied membrane at the roof to wall transition and tie-in to the existing torch applied roof membrane.
9) Furnish and install a new termination metal at the exposed wall area.
10) Re-install the existing wood trim and replace any damaged with new to match.
11) Re-install the existing sheet metal coping. All seams, holes and fasteners shall be sealed using a polyurethane sealant.
12) Seal the collars of all the roof projections using a polyurethane sealant.
13) Inspect roof and perform any other repairs deemed necessary to prevent future water intrusion.
14) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Unit: 293

1) Cut out the roofing from around the existing plastic roof drain.
2) Disassemble and remove the existing plastic roof drain.
3) Furnish and install a new 3” cast iron roof drain. The new drain shall be tied into the existing plumbing.
4) Furnish and install a torch applied roof system at the new roof drain and tie-in to the existing torch applied membrane.
5) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Unit: 9

1) Remove the existing patch, which was installed previously. The patch is loose and allowing moisture through.
2) Spud clean the gravel roof system for the repairs.
3) Furnish and install a torch-applied membrane to the area of the old patch and tie-in to the existing membrane.
4) There is a clogged roof drain over this unit. We will make an attempt with a water hose to clear the line. Should that not work, a plumber will need to be contracted by the owner to clear the drain line.
5) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Units: 314, 316, 366, 396

8) Remove the wood trim from around the leaking windows.
9) Remove the siding as needed.

10) Inspect the condition of the flashing paper and window frame.
11) Seal off the edge of the window frame with a polyurethane sealant.
12) Furnish and install new wood trim to match the existing. The new wood trim shall be primed prior to installation.
13) Re-install/replace the siding as needed.
14) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Units with leaks into the garage: 314, 316, 324

1) Lift edge bottom edge of shingles and insert a secondary layer of roofing felt up under the existing felt, which does not cover the roof metal.
2) Remove and replace the roof metal and shingles as needed.
3) Seal off the corners of the roof to wall terminations with a polyurethane sealant.
4) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Units, which were noted as needing work and not on the list:

Units with missing composition shingles: 29, 220. 230, 277

1) Remove the damaged shingles on the perimeter of where the existing blew off.
2) Furnish and install one layer of 30lb roofing underlay to the exposed roof area.
3) Furnish and install new roof metal as required or where the existing is damaged or missing.
4) Furnish and install new composition shingles using step flashings along the roof to wall run. The new shingles shall match the existing color and style as close as possible. Please note there will be some difference in color and style due to the age of the existing shingles.
5) Furnish and install new ridge shingles where the existing has been removed.
6) Seal all corners and any open termination points using a polyurethane sealant.
7) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Unit: 314

1) Remove approximately 100 square feet of the existing composition shingles and the roofing materials at the valley/cricket and down to the roof edge above the window.
2) Furnish and install one a torch applied roof system at the valley/cricket. The roofing membrane shall be installed up under the z-bar termination metal at the roof to wall location.
3) Furnish and install one layer of 30lb roofing underlay to the entire roof surface where the existing composition shingles have been removed.
4) Furnish and install new composition shingles using step flashings along the roof to wall run. The new shingles shall match the existing color and style as close as possible. Please note there will be some difference in color and style due to the age of the existing shingles.
5) Furnish and install new ridge shingles where the existing has been removed.
6) Seal all corners and any open termination points using a polyurethane sealant.
7) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Unit: 165

1) Furnish and install two missing heater vent caps.

Pricing:

Units classified under the 'original scope for repair':

- Units: 18, 21, 24, 73, 115, 319, 320, 366, 414, 415 - $0.00 per unit
- Units: 219 - $750.00, 320 - $250.00, 366 - $0.00
- Units: 143, 171, 199, 247, 303, 360, 279 - $0.00 per unit
- Units: 6, 410 - $0.00 per unit
- Unit: 97 - $0.00
- Unit: 34 - $0.00
- Unit: 386 - $0.00
- Unit: 371 - $0.00

Total - $0.00

Units classified as 'second scope (separate bid)'

- Units: 112, 138 - $0.00 per unit
- Units: 356 - $0.00
- Units: 149, 227 - $0.00 per unit
- Units: 314, 316, 366, 396 - $0.00 per unit
- Units: 314, 316, 324 - $0.00 per unit
- Unit: 293 - $0.00
- Unit: 9 - $0.00

Total - $0.00

Units, which were noted as needing work and not on the list:

- Units: 29 - $0.00, 220 - $0.00, 230 - $0.00, 277 - $0.00
- Unit: 314 - $0.00
- Unit: 165 - $0.00

Total - $0.00

Total for all repairs to all units identified above and on the previous pages $0.00

Recommendations for all buildings:

Flat Roofs:

1) Clean roofs of all debris and haul away.
2) Seal off the metal coping seams, fasteners and holes with a polyurethane sealant.
3) Inspect all roof to wall transitions and perform repairs to the roofing membrane as needed to ensure a watertight condition.
4) Re-seal all roof projections using a polyurethane sealant at the collar of the roof metal and white mastic at the base of the roof metal.

5) Inspect all roof drains and re-seal using the appropriate sealants depending on the area of the drain being sealed. The outside of the scupper drains shall be sealed using a polyurethane sealant. The drains at the roof shall be sealed using white mastic or torch applied membrane.
6) Roof-in any curbs or misc items not completed during the previous roof project.
7) Inspect the roofs and perform any additional repairs deemed necessary for a watertight condition.
8) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Sloped Roofs:

1) Clean roofs of all debris and haul away.
2) Remove and replace the damaged roof metal at the roof projections with new. This would include the roof metal with the rubber storm collars that deteriorated. The cost per roof projection is not included in the pricing and shall be $0.00 each. There are approximately 4 roof projections per unit.
3) Repair all roof to wall transitions at the lower edge of the roof where the roof intersects the stucco walls.
4) Check all roof to wall transitions and seal off using a polyurethane sealant.
5) Seal all roof projections using a polyurethane sealant.
6) Inspect all roofs and perform any minor repairs as needed.
7) Complete above in a prompt and workmanlike manner including clean up and hauling of all debris from premises.

Pricing for recommendations:

Flat Roofs: $0.00 per building

Sloped Roofs: $0.00 per building with flat roof

Sloped Roofs: $0.00 per building without flat roof

Conclusion:

The roofs are in need of extensive roof maintenance. There are many deficiencies of concern. With corrective action, the roofs can be serviced for at least another 3-5 years. Possibly longer with continued maintenance. It is recommended the roofs be inspected and cleaned at least once annually. This helps minimize debris build up on the roofs and in the rain gutters. Preventive maintenance will help curb future water intrusion.

I hope this information is helpful. Should you have any questions or need further assistance, please let me know.

With Thanks,

Jared Ewart
Allied Roofing Company