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Hiring an architect/engineer: Ensuring the success of any capital improvement project - by Michael Popeck

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The role of the architect/engineer (design professional) is critical to the success of any capital improvement. The design professional has the experience necessary to determine the proper scope of work to ensure the desired capital improvement project is a success. In many instances a client may decide to forgo the use of a design professional because they may determine that the fees associated with having the professional involved in the project are too expensive and they don't see the inherent value in their services. In this case, the client will typically hire the contractor directly and proceed with the work. The problem with this process is that there is no professional present to establish the required scope of work necessary to correct the building deficiencies. It would then fall to the board, property manager or contractor to establish the work scope. With smaller repairs this process may be fine because the value of the work and the potential risk if the project is unsuccessful is rather small. The real problem is when this process is used for larger projects such as a roof, façade or balcony replacement project. If the work scope determined is improper, the association can spend a significant amount of money on work that is either not related to the deficiencies or could potentially cause additional problems.

One of Falcon's clients has a mid-rise condominium building and previously undertook several large scale repair projects to their low-slope roof and exterior balconies to address leaking into the units below. Both of these projects were completed without the involvement of a design professional and it is unclear if the previous management company or the contractor determined the work scope. After both projects were completed the leaks persisted in all of the affected units and new leaks appeared in some of the top floor units. A new management company was hired and Falcon was promptly brought in to investigate both of these issues. After some investigation and testing, Falcon ultimately determined that the work that was undertaken by the board was not appropriate to address the deficiencies causing the leaks.

In the case of the balcony project, a new vinyl membrane was installed as it was thought that water was entering through the exposed concrete balconies. This project only included installation of the membrane over the concrete up to the stucco cladding and underneath the balcony doors. The siding was never removed to provide a proper transition and the balcony doors were never removed to allow for the membrane to be installed within the opening to create a sill pan flashing. Upon water testing the balconies, Falcon determined that water was entering through the frame of the balcony doors. Without a proper sill pan flashing, water continued to enter into the units below. The main issue that was causing the leaks was the initial lack of a sill pan flashing. The membrane was installed, but the balconies themselves were likely unrelated to the leaks encountered. The association would have likely saved a considerable amount of money and aggravation if they had addressed the deficiency correctly the first time. Now they have to remove all the work previously installed and address the flashing deficiency.

The existing roof was originally installed in an Inverted Roof Membrane Assembly (IRMA) configuration which has the membrane installed directly to the roof deck and loose laid insulation and stone ballast ontop. Attempting to locate any deficiency in this type of membrane is extremely difficult because you must first remove all the stone and insulation which is time consuming and costly. The repair procedure called for removal of all the stone ballast and roof installation to allow

for a new coating system to be installed over the existing roof membrane. This coating was intended to provide a new waterproof layer over the entire roof. The problem was that the decision to remove the insulation and stone ballast completely changed the building dynamics. While there is insulation present within the ceiling of the top floor units, the insulation within the roofing assembly was a critical part of the building envelope. Removal of the insulation changed the location of the dew point allowing for condensation to form on the underside of the roof deck which appeared as “leaks” to the residents. A new roof was installed with a full tapered insulation system which provided more insulation over the top of the deck than was originally installed in order to prevent condensation forming on the underside of the deck during the winter months.

Unfortunately for this particular client, forgoing a design professional was thought to save them money, but ended up costing them in the long run as all the money spent on these projects was wasted and more money was required to pay for the appropriate repairs.

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