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Why hire an architect for your roof repair or replacement project?

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Some real estate and property management firms hire contractors directly to perform medium and large-scale commercial roofing and building envelope repair work. Some hire consultants that only provide roof consulting services who sometimes lack the knowledge of the entire building envelope. There are numerous things that can drastically go wrong with this approach including relinquishing product and design decisions as well as entering into a project without set, concise specifications and a clear scope of work. This is a very risky endeavor, especially with the owner's capital at stake!

The answer to the question: "Why hire an architect for your roof repair or replacement project?" is complex, but best summed up by the word "protection". To elaborate on this aspect, we mean protection of all parties such as:

- * The owner (their asset and investment)
- * The tenant (there critical role in the property as lease/renter)
- * The property management firm (their performance and professional reputation)

Of course the protection and performance of the physical asset is obvious. Budgetary concerns are always included in the overall evaluation process and all available options are considered for the project.

The logical decision is to team up with a qualified architect who specializes in building envelope design and restoration. While many engineers and roof consultants understand roofing and are an asset to the industry, they quite often do not understand the entire "building envelope" as well as other aspects of the buildings architectural features and components that interface with the roofing. We are full service architects that understand the entire building, inside and out, and also specialize in building envelope design and restoration. This unique combination of services provides clients with exceptional professional service. Wessling Architects has performed numerous building envelope evaluations; many of which concluded in identifying negligence of an engineer or consultant who improperly evaluated critical architectural components that interfaced with the roof system. These mistakes can lead to roofing failure and system damage well before the useful life expectancy of the roof system.

Using a competent and experienced architect is cost-effective in several ways. You save valuable time by having the required review and evaluation take place resulting in the best approach for the roof project. A comprehensive evaluation and design process actually saves money by developing proper designs and specifications from the start, thereby dramatically reducing the potential for short or long-term problems. In general, we are able to substantially reduce the life cycle cost of your asset. All evaluation data is integrated into a complete set of contract documents for bidding. This will ensure all contractors in the competitive bidding process are providing the intended system and specific scope of work. When different contractors are called in to bid, there is no standard for them to follow. Critical project items such as roof insulation thicknesses vary between contractors bids which lead you to an "apples and oranges" comparison scenario. Another common roof detailing flaw is the improper roof perimeter edge terminations to the exterior facade walls.

With our knowledge of the available contractors, we target the appropriate contractors that fit the specifics of your project (type of roof system, manufacturer approved contractor, size of project, complexity of metal work, schedule requirements etc., etc.). We then promote the project and coordinate the entire bidding process for the project. All the contractors are brought together in a pre-bid conference to be shown the project and briefed of the project specifics. A question/answer period is always provided at both the pre-bid and during the entire bidding period. Final bids are organized and listed in a bid spreadsheet for review and recommendation. Low bidders are then de-scoped to confirm all project specifics have been included.

Repair and/or complete replacement can in many instances cost hundreds of thousands of dollars. Our approach at Wessling Architects is to provide comprehensive evaluation to develop an approach for your project which considers all existing conditions and architectural concerns.

While input from roofing contractors or manufacturers is helpful, this advice may leave you with confusing and incompatible data that can lead to erroneous decisions regarding your roof expenditures. Contractors and manufacturers can also be biased and have a conflict of interest in the roof, especially in effectively determining if the roof should be repaired or replaced or if the roof is a candidate for less expensive overlay roof or full replacement. Certain contractors are also better suited for certain roofing systems. The roof system that the contractor/manufacturer recommends may not be best suited to your building. A contractor or manufacturer may not provide the thorough review of the existing conditions of your building that may be currently deficient.

An evaluation of key components and conditions of your building as they pertain to your roof including but not limited to:

1. Current condition of roof system-repair/overlay or replacement evaluation
2. Review insurance requirements for the property.
3. Building use & type/construction/ building height/geographical location (required wind up lift rating)
4. Roof deck type & attachment to deck options/existing roof system specifics
5. Type, thickness and location of the roof insulation, including energy code requirements
6. Drainage type/condition/capacity/ roof slope method, are over flow drains needed
7. Parapets and penthouses

8. Roof accessories evaluation-skylights/ penthouse walls/screen walls/HVAC equipment, etc.
9. Through-wall flashing conditions, associated masonry and/or adjacent roof top wall areas
10. Roof termination/base wall flashing height problems
11. Volume of roof pedestrian traffic
12. Low roofs aesthetics/options
13. White and green roofs
14. Review budget vs. scope of work required and available options
15. Other factors which may be unique to your situation.

Consulting with an architect who specialized in roofing and building envelope design and restoration will ensure all aspects of your building are evaluated and considered. Identifying current deficiencies in the evaluation process will allow the designer to address and remedy any shortcomings. Wessling Architects provides visual evaluations with field roof test cuts as the first step in your roof evaluation process. The type of roof, its age, condition, composition, design, thermal efficiency, roof deck type, overall quality installation are all evaluated.

The first step is determining if the existing roof insulation is salvageable as reuse of the current insulation may provide significant economic savings for the owner. There are certain steps that need to be performed to confirm that a building is a candidate for an overlay roof system. Test cuts in the existing roof system are recommended to confirm the existing insulation type/performance characteristics as well as other important information such as deck type/condition etc. If moisture intrusion is suspected, an infrared or nuclear moisture survey can be performed with special equipment designated to detect latent moisture within the roof materials. Is there room at the roof perimeters, HVAC equipment curbs and the penthouse doors for the additional layer of insulation? The evaluation process will dictate whether replacement or repair is the best option.

Once the design approach has been confirmed, the architect develops detailed design drawings and specifications which are tailored to the project. After the bidding process is complete, a qualified contractor has been selected and the owner/contractor agreement has been properly completed, Wessling Architects provides the construction administration, which includes project management oversight throughout the construction process. This stage of the project is just as important as the evaluation and design process as it ensures that the design is executed properly. A pre-construction conference is held to review project specifics with all parties. Facility interaction, staging areas, construction schedule, and approach are all reviewed. Work is reviewed during construction to ensure conformance to the drawings and specifications. At the completion of the project, all warranties, maintenance recommendations and closeout information is assembled in a closeout manual for the property manager and owner.

We hope that this provides you with a better understanding of the importance of having a architect evaluate your current roofing system and, if roof replacement is required, having them provide the design, bidding and construction administration services to protect you and your owners asset. Stephen Wessling is the CEO of Wessling Architects, Quincy, Mass.