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## Proposal for Professional Consulting Services – Revision 1

Hidalgo County Courthouse

WJE No. 2023.0765.0

Mr. McCart:

Wiss, Janney, Elstner Associates, Inc. (WJE) is pleased to submit this proposal to Jacobs for professional building enclosure consulting services related to ongoing conditions at Hidalgo County Courthouse located at 100 N Closner Blvd in Edinburg, Texas. This proposal includes our proposed scope of services, fee estimate, and the means for you to authorize us to perform the scope of services.

### PROJECT BACKGROUND

Hidalgo County Courthouse is a recently constructed, approximate 330,000 square foot, 7-story tall courthouse building nearing construction completion. Jacobs Project Management Co. (Jacobs) is serving as the project manager, HDR Architecture Inc. (HDR) and ERO Architects (ERO) are serving as the Architect, and Morganti Texas, Inc. (Morganti) is serving as the Construction Manager. The building enclosure systems consist of glazed aluminum curtain wall, storefront windows, Portland cement plaster (stucco), porcelain wall cladding, and metal wall and soffit panels for the facade (Figure 1, below). Single-ply thermoplastic polyolefin (TPO) membrane is provided for the roof covering.



Figure 1. Overall view of north and east elevations at new Hidalgo County Courthouse. Image from Google Maps.



Based on email and phone correspondence with Jacobs to date, conference call with the Project Team on February 7, 2023, and a cursory review of record construction documents provided by Jacobs to WJE on February 23, 2023, the building is experiencing various conditions of air and water infiltration, as well as hygrothermal issues throughout the facade and roof. In addition, there is also reported non-conforming work installed by the Construction Manager and their subcontractors throughout the building. Jacobs has requested WJE to provide a proposal to review the record construction documents, perform a condition assessment with testing of the building components related to the reported issues for potential source(s) of air intrusion and/or hygrothermal issues, with written report and recommendations for corrective action and repair.

## SCOPE OF SERVICES

Our proposed scope of services regarding the review, investigation, and testing of the building enclosure for the reported issues at this building are as follows:

- **Task 1-Documents Review:** Perform a cursory review of available documents, including original drawings, record construction documents, previous reports by others, and/or roof warranty information to understand the general construction and current condition of the roof and facade systems.
- **Task 2-Meetings and Interviews:** WJE will participate in up to three (3) meetings by video teleconferencing with representatives from the Project Team before commencing our condition assessment. Any questions or clarifications that emerge from our document review or proposed scope of work will be discussed during the meeting. Investigative openings, if necessary, and testing locations will be coordinated during this meeting.
- **Task 3-Visual Survey:** Perform a cursory visual survey of the roof and facade areas throughout the building via roof access, vantage points, and small Unmanned Aerial Systems (sUAS/drones). If necessary, the visual surveys by our team of licensed engineers and architects will be aided by WJE drone pilots with Remote Pilot certificates, knowledge of Federal Aviation Administration (FAA) Part 107 rules and local regulations, extensive experience flying the drones in a variety of locations, and technical knowledge of the structures that they are examining. WJE complies with all FAA safety requirements and follows the guidelines of ASTM F3178-16 Standard Practice for Operational Risk Assessment of Small Unmanned Aircraft Systems (sUAS). Our visual survey will also include a review of interior conditions at the areas in question.

We have included estimated costs for exterior access rentals (e.g., aerial lift), and interior equipment access rentals (e.g., scissor lifts, ladders); however, access equipment could be provided by the contractors currently on-site to reduce cost.

- **Task 4-Limited Facade and Interior Moisture Surveys:** WJE will perform limited facade and interior moisture surveys, as necessary, that will include the aid of hand-held infrared (IR) thermography and moisture meters. These surveys will be performed in conjunction with the visual survey.
- **Task 5-Differential Pressure Survey:** WJE will perform a differential pressure survey between the interior and the exterior of the building, as well as between the interior spaces and ceilings.



Measurements will be recorded utilizing a DG-1000 micromanometer and smoke tracers to document the in-service air pressurization with the HVAC in operation. This survey will provide positive, neutral, or negative differential air pressure measurements to determine if air infiltration or exfiltration is occurring through the building enclosure, which will inform us of any possible conditions related to air leakage or humidity control issues related to general building pressures relative to the exterior.

- **Task 6-Blower Door Air Leakage Testing:** WJE will perform differential pressurization and depressurization air leakage site detection per ASTM E1186. This will include inducing a differential pressure across the building envelope using calibrated blower door fans in conjunction with infrared imaging and/or theatrical fog to help locate air leakage paths into the building that may not be readily apparent under normal building pressurization. This testing will better enable us to accurately determine air leakage sites that may be contributing to the reported conditions.
- **Task 7-Water Testing:** WJE will conduct limited diagnostic water testing at areas of reported issues. WJE will perform diagnostic water testing of select areas in general accordance with AAMA 501.2, *Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems*. These test efforts will be performed utilizing a Type B-25, #6.030 brass nozzle with a 1/2-inch FNPT as manufactured by Monarch Manufacturing Works, Inc., as required by the AAMA 501.2 standard and at a pressure between 30 and 35 psi, or as determined by field personnel suitable for the project. WJE will provide the test equipment, hoses, and booster pumps as required to achieve the required test pressure. Sufficient water and electricity sources are to be provided by the Owner.
  - **Task 7a-E1105 Testing (Add Option 1):** WJE can perform field air and water penetration testing of the glazed systems on the building in accordance with ASTM E783 and ASTM E1105 chamber testing. We would propose chamber testing on eight (8) glazed wall system specimens during one mobilization. We would allocate (4) days on-site for this testing.
  - **Task 7b-AAMA 501.1 (Add Option 2):** In addition to or in lieu of the chamber testing, WJE could perform dynamic testing of the glazed systems, cladding, and perimeter conditions in accordance with AAMA 501.1-17 using a calibrated aircraft engine equipped with water spray nozzles. The engine is supported and maneuvered between test locations using a project-supplied 10K Telehandler forklift. Engine placement and stabilization may require in field anchorage considerations that can only be assessed on-site. Testing is based on calculated wind speed equivalent to the project specified static test pressures for water penetration resistance. We would allocate (4) days on site for this testing, in which multiple facades and large portions of the building can be tested.

Access to the test areas, as well as water and electrical sources shall be provided by the Owner or Construction Manager. If the dynamic testing is selected in lieu of chamber testing, the Construction Manager will provide the 10K Telehandler forklift, which is not currently included in our fee proposal.

Any water testing methods selected will be diagnostic in nature to understand the issues that are reportedly occurring and to what extent. Testing for Project Record, previous project re-testing, or additional testing as a result of testing failure is currently not included in this proposal, but can be performed as an Additional Service or under separate proposals.



- **Task 8-Roof Moisture Survey.** WJE will conduct an infrared (IR) survey and roof cores/probes, in an attempt to identify locations of entrapped water or saturated insulation within the low-slope membrane roofing assemblies. Full descriptions for our anticipated scope of services are as follows:
  - **Task 8a-Infrared Survey:** We will perform an infrared (IR) thermography survey at the roofs using an unmanned aerial system (UAS or drone) and/or hand-held IR thermal imagers. IR testing equipment and thermal imagers measure surface temperature variations, which will typically indicate the presence of moisture in the underlying materials. The IR survey will be performed at night, starting shortly after dusk, and we require access to all roof levels in the evening in order to obtain the highest viewpoint for performing the IR survey. Locations of suspected moisture in the roof assembly will be marked with chalk or spray paint on the roof surface.
 

Infrared surveys will be conducted at all accessible roof areas, including Grand Roof, Level 4 roof, Level 3 roof, and Central Utility Plant. The survey will include the field of the roof, as well as below mechanical units, as possible without limitation. At roof locations where an infrared survey is not feasible, we will supplement our moisture survey with non-destructive impedance moisture meters and scanners (e.g., Tramex Roof and Wall Scanner, or similar). We anticipate the IR surveys can be completed in one (1) evening by two (2) WJE personnel.
  - **Task 8b-Roof Cores/Probes:** We will conduct roof cores and/or probes the following day to confirm the results of our infrared survey and potential locations of entrapped moisture. WJE can perform temporary roof patches at any roof cores/probes; however, we recommend permanent repairs be performed by a qualified roofing contractor to perform permanent repairs. Our fee below does not include contractor costs to repair roof cores/probes, as we recommend these repairs be performed by a preferred contractor hired by the Owner.
- **Task 9-Post Survey Meeting:** WJE will discuss with representatives from Project Team upon completion of our surveys and testing. This meeting will outline our preliminary findings and briefly discuss the recommended options that we intend to include within our report.
- **Task 10-Written Report:** Following our assessment, we will submit a written report that summarizes items that have been identified as potentially problematic and discusses our findings and recommendations for corrective action. Further investigations, including inspections openings and/or material sample testing, may be recommended to better inform our repair recommendations; however, this letter report will attempt to provide corrective action options for Project Team review.
 

If determined that HVAC issues are apparent as a result of our surveys, additional investigation and sub-consultants for the HVAC systems may be required for corrective action. WJE is capable of facilitating additional sub-consultants; however, HVAC issues related to the mechanical equipment are outside of our expertise.

## LIMITATIONS

Services beyond those described above which would likely provide more detailed information regarding the condition and performance of the building enclosure (e.g., inspection openings and/or comprehensive water/air leakage testing), are not included in the current proposed scope, but can be performed as Additional Services if requested. Other building enclosure elements and systems are not included in the proposed scope (e.g., structure, HVAC, etc.). No audit or evaluation of ADA compliance and other life-safety requirements will be provided.