

TO: Sylvia Carrillo, City Manager
From: Curtis Hancock, Director of Public Works
Date: July 6, 2023
Subject: City of Bastrop Police & Court Building Roof



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The Adell Powell Police & Court Building located at 104 Grady Tuck Ln, Bastrop, TX 78602 was commissioned in 2000. The current roofing system is original construction and is classified as an industrial 2" double lock rib Standing Seam Metal Roof (SSMR) on 1:12 pitch. SSMR systems are often chosen for their attractive appearance and longevity if properly installed. SSMR systems are either hydrostatic (i.e., designed and constructed to be totally water resistive) or hydrokinetic (i.e., not totally resistive to water intrusion and rely on slope to shed water). The current roofing system has several unfavorable characteristics that do not promote long-term resistance to water intrusion: 1) low slope (i.e., less than 3:12 or 25% pitch), exposed mechanical fasteners, and discontinuous metal panels.

SSMR panel roofs are not typically thought of as best choice for low-slope roofs. Although some manufacturers tout their systems as being suitable for slopes as low as 1/4:12 (2 percent), National Roofing Contractors Association (NRCA) recommends a minimum slope of 1/2 inch per foot as the minimum design slope for hydrostatic roof assemblies and 3 inches per foot as the minimum design slope for hydrokinetic systems. The greater the slope, the more reliable the leakage protection. When installed on low slopes the SSMR system needs to provide water resistance across the roof surface. Thus, low-slope metal panel systems should be designed and installed with the intent of making them membrane-like. To achieve this, the panel joints must be soldered or sealed together with sealant tape or sealant, or both. Also, fasteners that penetrate the panel at end-joint splices or flashings must be sealed with gasketed washers. In addition to making all the metal joints watertight, they must remain watertight while undergoing extensive movement from thermal cycling. Over time, thermal movement of the metal can tear through fastener gaskets and enlarge holes at fasteners. All fastener penetrations create opportunities for wind-driven water to infiltrate end-joint splices in the system and at each individual fastener location.

Over the past several years, the current SSMR system has undergone several attempts at repair with limited success. To address these continuous water ingress issues, three professional roofing contractors surveyed this location and have provided proposals to install a single-ply membrane over rigid insulation on the existing SSMR system. These proposals are attached for review and consideration.

Regards,

Curtis Hancock
Director of Public Works
City of Bastrop