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August 15, 2017

Ms. Amy Blain
City of Longview, Washington
1525 Broadway
P.O. Box 128
Longview, WA 98632-7080

RE: City of Longview Police Station, Parking Garage Observation
KGA Project: 17156-00

Dear Amy:

In accordance with your request, on July 19, 2017, I met you and members of the building committee of the above-referenced building.

Building Description

The existing 1968 City of Longview Police Station, located at 1351 Hudson Street in Longview, Washington, was constructed in 1968. In 1999, it was converted from a bank building to its current use as a Police Station. At that time, a second floor, consisting of steel beams with metal decking and concrete for the structure, was added over the main lobby area. A seismic upgrade to the building and the adjacent parking structure occurred at the same time.

Walk Through Review

Random cracks and partial repairs in the second floor of the parking structure were reviewed by the committee. Rusted rebar and tendons were observed. Spalled concrete and stained concrete where metal deck was previously removed could be observed below the ramp.

The cracks appear to be typical shrinkage cracks that are prevalent in this type of construction. Based on our experience with structures of this type, in our opinion, the cracks do not pose a structural concern as there is reinforcing present in the slab and in the beams and girders. Patching and repair of cracks is recommended.

Retrofit ties were observed at multiple locations along the interface joint between the main building and the garage.

Seismic Issues

The parking garage was seismically upgraded to the 1997 Uniform Building Code Essential Building Level during the 1999 floor infill project. New concrete shear walls and building ties were added to stabilize the main building and garage in a seismic event. Since this time multiple code changes have occurred. Current International Building Code forces are actually lower than the 1997 UBC forces. Therefore an additional seismic upgrade is not required.

Parking Garage Maintenance

Concrete slab cracks have developed and grown since the garage was originally constructed. Years of exposure to the elements has also resulted in corrosion to reinforcing. Corroding steel will expand, which increases the crack widths. Water in the cracks can freeze, further expanding cracks and degrading the concrete.

As a minimum, KGA recommends repair of exposed corroded steel rebar and tendons in the garage slab and walls with elastomeric concrete patches. The cracks should be routed out and filled with urethane sealant.

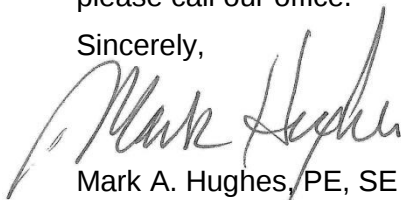
Fully covering the slab with a waterproof membrane would create the best protection. Deck Coating with elastomeric urethane applied over the concrete slab is recommended. The patches and crack seal are also required with the deck coating option. A regular maintenance program will have to be developed and followed to realize the full benefit. Regular funds would need to be allocated to repair and maintain the membrane.

The budget costs shown below for estimating purposes were supplied by a local contractor that performs this type of work. These costs are for structural related work only, and do not include any architectural, electrical or mechanical work. They are for budgeting purposes only, and any commitments or expenditures should be supported by cost estimating professionals or other contractors familiar with the proposed work.

Elastomeric concrete patches over exposed rebar/tendons:	\$100.00 per lineal foot
Routing & sealing cracks with urethane sealant:	\$ 5.00 per lineal foot
Deck coating with elastomeric urethane:	\$ 4.50 per sq. foot

I trust that the above information is satisfactory for your needs. If you have any questions, please call our office.

Sincerely,



Mark A. Hughes, PE, SE
Kramer Gehlen & Associates, Inc.