



PALANISAMI & ASSOCIATES, INC.

STRUCTURAL ENGINEERS

April 6, 2023

Christopher Bowden
Director of Construction and Maintenance
IPG Living
1010 Lake St NE
Hopkins, MN 55343

RE: Parking Garage, 1010 Lake Street N.E. Hopkins, MN. Structural condition. PAI # 23041

Project:

The subject property is a two-story parking structure and provides parking for the adjoining apartment building Knollwood Towers. The garage has been closed since March 15, 2023 for structural safety concern. City of Hopkins issued City Property Maintenance Code Violation Notice on March 28, 2023. IPG Living, Property management Company requested Palanisami & Associates, Inc Structural Engineers to perform;

1. Observe the existing condition and render an opinion on opening the garage for occupancy
2. Review Braun Intertec structural condition reports.
3. Review existing garage original construction plans.
4. Prepare construction plans for repair certified by MN licensed Professional Engineer.

We estimate 6 weeks to prepare plans and select a specialty contractor to start the work. Depending on the type's improvements beyond structural repairs such as drainage and lighting the construction duration may take 8 weeks.

Site observation:

I performed the structural site observation on Saturday April 1, 2023 accompanied by Chris Kalla, attorney representing the Property Owner. Chris Bowden and I conducted 2nd observation on April 5, 2023.

Findings:

1. Structural Framing. Garage is two 60' bays wide separated by 12" CMU (block masonry) walls. Lower and upper levels have separate entrance and exit. The primary concern is structural integrity of upper level.
2. Upper level of framing consists of precast TT slabs 8'-0" wide X 25 1/2" depth, includes 3 1/2" flange depth. The Tee flanges are connected to each other with weldments at 4' intervals. The Tee slab joints are filled with sealant.
3. The underside of the joint is covered with nylon fabric to protect from any free falling of concrete chips. The end 4' to 5' of the joint is not covered with fabric and has storage shelves below. There is a continuous concrete curb roughly 3'-0" X 4" for full length along the wall that ties all the Tee slabs.

4. There are 32 slabs in each bay (31 joints) . 14 shear connectors in each joint. Total 868 connections. We estimate based on the rust stain and concrete spall below approximately 25% of the connections may not have full load sharing capacity of 2000 LBS.
5. The west bay drive isle is blocked off for traffic between 8th and 12th slab from north entrance. Steel plate covers an area roughly 5' X 5.
6. The flange and stem juncture of Tee slab is in good condition. The flange is functioning as cantilever from Tee stem.
7. No rust stem was observed in tee stem. The prestressing tendons within the stems are in good condition.

Analysis:

1. The primary issue is reduced shear connector capacity and needs to be restored.

Solution:

1. The concrete debris protection barrier below the joints shall remain until repair is done.
2. The traffic blocked out area at upper level shall remain until the repair is done
3. The repairs are to be completed in the summer of 2023.
4. The garage may be open for occupancy under monitoring at two weeks intervals until repair/construction starts.

I hereby certify that this plan, specification or report was prepared by me or under my Direct supervision and that I am a duly licensed professional engineer under the Laws of the state of Minnesota

Name P. Palanisami, P.E.

License Number - 11381



Signature

Date 4/6/2023

Attachment – Site observation photos.



PALANISAMI & ASSOCIATES, INC.
5661 International Parkway
Minneapolis, MN 55428
(763) 533-9403 Fax (763) 533 9586
eng@palanisami.com

JOB Parking Garage, 1010 Lake Street N.E. Hopkins PAI # 23041

SHT. NO. 1 OF _____

CALCULATED BY PP DATE 4/6/2023

CHECKED BY _____ DATE _____

SCALE _____

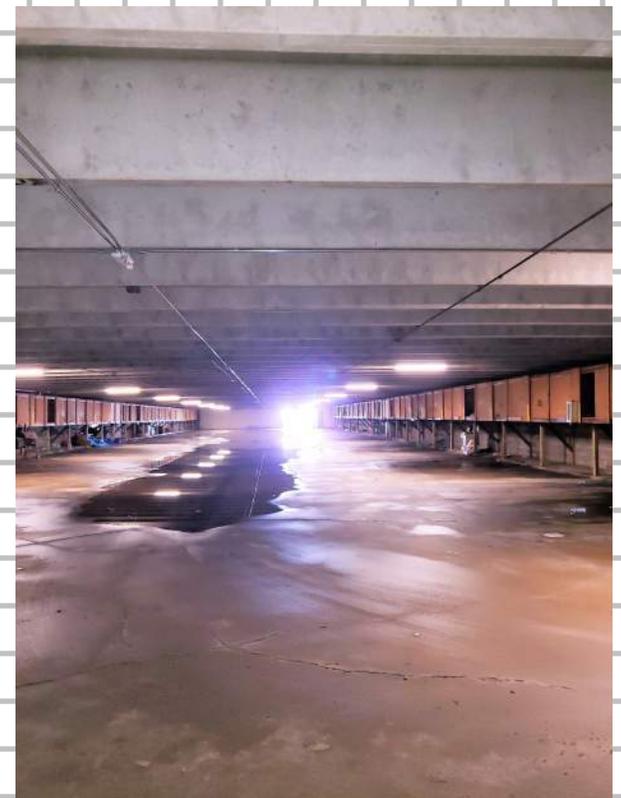
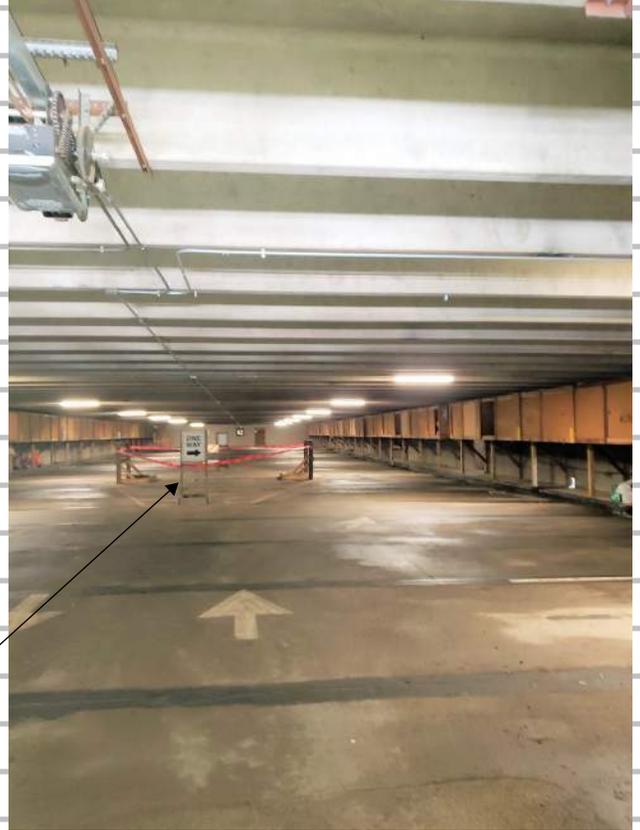


1. North face, entrance and exit

traffic blocked

2. West bay upper level. Looking South

3. West bay lower level. Looking South





debris protection cover

prestressing strands

4. Steel beams at drive through south end west bay

5. typical shear connector. Concrete cover to embedded angle has delaminated. cause - Corrosion of angle. The steel slug is placed between the angles and welded to angle. West bay. West end. This condition is similar at other locations.





PALANISAMI & ASSOCIATES, INC.
5661 International Parkway
Minneapolis, MN 55428
(763) 533-9403 Fax (763) 533 9586
eng@palanisami.com

JOB Parking Garage, 1010 Lake Street N.E. Hopkins PAI # 23041
SHT. NO. 3 OF _____
CALCULATED BY PP DATE 4/6/2023
CHECKED BY _____ DATE _____
SCALE _____

6. Tee slab joint condition. Top. The black material at top may be carbon fiber sheet reinforcing across joint or water proofing. Needs examination.



7. Traffic blocked off area. west bay
Top delamination

