



444 Cedar Street, Suite 1500  
Saint Paul, MN 55101  
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tkda.com

March 31, 2016

Mr. Jeff Arnold  
Lakewood Enterprises  
PO Box 16447  
Saint Paul, Minnesota 55116

Re: Water Infiltration Investigation  
Ashland Apartments, Saint Paul, Minnesota  
TKDA Project No. 16095

Dear Mr. Arnold:

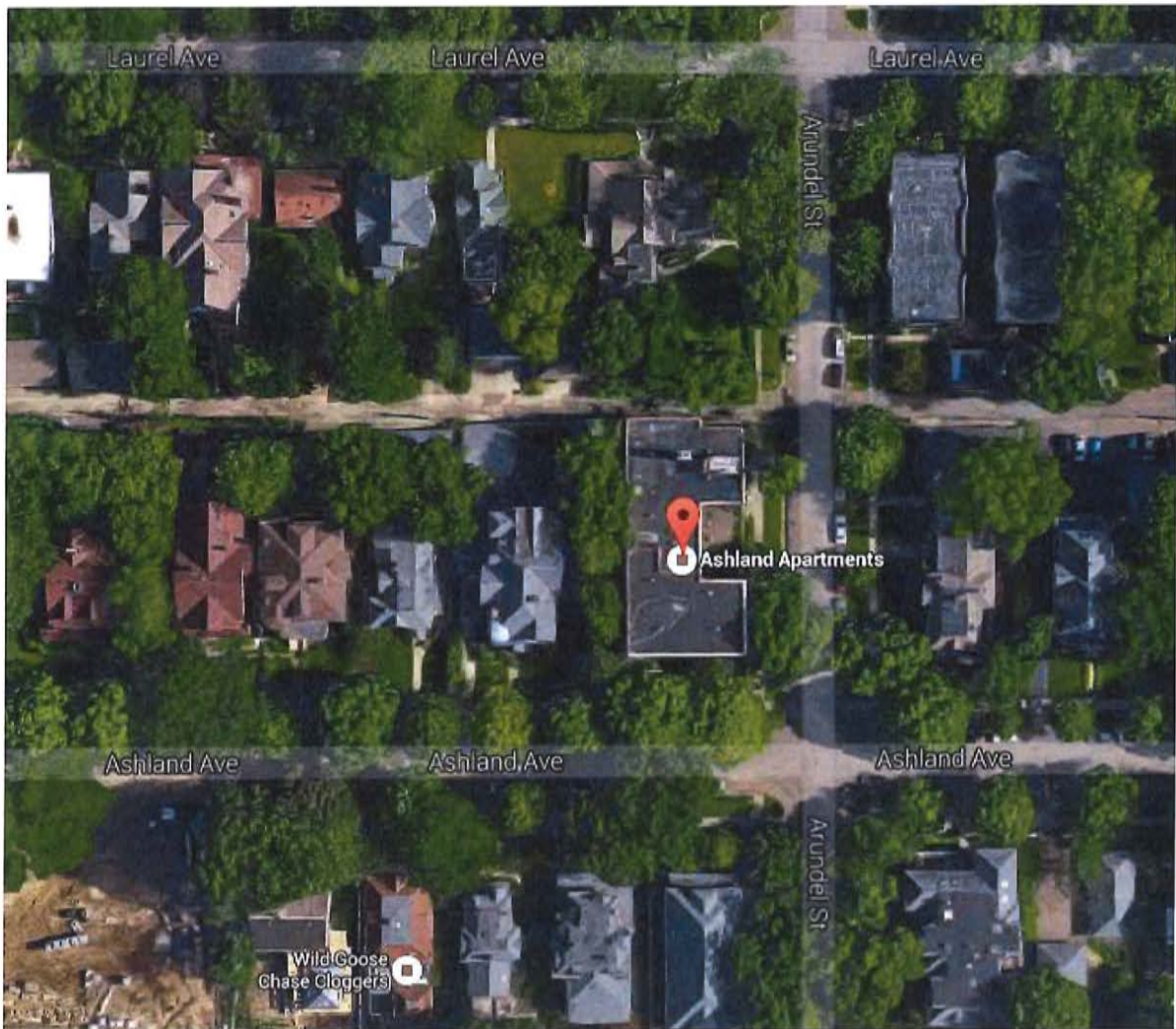
At your request, TKDA performed a site visit and reviewed available photos to provide an opinion of whether the poor condition of the alley behind the Ashland Apartment complex is a contributing factor for the water infiltration reported regularly in the basement.

For background purposes, the following information was provided to TKDA.

- The apartment building was built in 1925 and has had multiple owners in its lifetime. It is located at 443 Ashland Avenue in Saint Paul, Minnesota.
- The roof contains two internal roof drains that drain a total of approximately 7,000 square feet of roof area.
- The current owner purchased the building in 1986.
- When the current owner purchased the building, he conducted a renovation project to update the units in the facility. The renovation project began in 1986 and ended in 1987.
- Prior to the renovation project, stormwater was routed into the sanitary sewer. At the request of the City of Saint Paul, the Owner disconnected the roof drains from the sanitary sewer as part of the renovation project and "daylighted" the stormwater pipes into the alley behind the apartment complex approximately 6 inches to 12 inches above the alley surface. An inspector for the City of Saint Paul examined the stormwater discharge at the time and gave approval, but written documentation of the approval could not be found at this time.
- The reported regular water infiltration was observed by the owner in the north wall of the building's unfinished utility room in the basement portion immediately adjacent to the alley. The owner reported that there are no other areas of water infiltration.

Items TKDA observed at the site visit on March 25, 2016.

- The Apartment complex is located at the northwest corner of the intersection of Ashland Avenue and Arundel Street. The complex faces Ashland Avenue to the south, and Arundel Street is to the east of the complex. The alley is located to the north (behind) the apartment complex. The alley slopes to the east, toward Arundel Street.



Location of Apartment Complex from Google Earth





- The pavement in the alley is in very poor condition and severely cracked. It appears that there was an older section of concrete pavement that was patched in the last 10 years with asphalt pavement. There are numerous cracks approximately 1/2 inch in width and sections of pavement that have been displaced vertically over 1 inch.



Alley Condition –photo from the Owner taken February 19, 2016

- The alley and adjacent grade are sloped such that the alley acts as conveyance for stormwater, not only for rainwater falling on the alley itself, but also for surface runoff from the adjacent yards, driveways and garage roofs.
- The Owner has constructed an improvised gutter system using roof gutters to direct the outflow from the stormwater drains toward the end of the alley near the alley intersection with the Arundel Street. The owner reported that the gutter system was installed sometime after 2002 as a response to water regular water infiltration in the basement that had begun around that time.

- There is a low spot (depressed approximately 2 inches) in Arundel Street at the intersection with the alley. This low spot was filled with water at the time of the site visit.
- Positive drainage away from the building wall and the absence of ice, snow or standing water adjacent to the building suggest infiltration through the joint of the pavement and the building is not a significant contributing factor.



Low Spot in Arundel Street –photo from the Owner dated March 13, 2016

- There is a Bell Telephone utility manhole in the alley near the apartment complex. There is significant cracking and vertical displacement of the alley pavement adjacent to the manhole. Mr. Arnold stated at the time of the site visit that the manhole is abandoned. TKDA was unable to remove the manhole cover at the time of the site visit to confirm the presence of water or whether the utility had been abandoned. TKDA returned to the site on March 29, 2016, and removed the manhole cover and verified that there are several feet of standing water in the manhole. The majority of the interior wall surfaces were saturated, while a few isolated areas were dry.





Standing water in Bell Utility Manhole – March 29, 2016 Photo by TKDA

- There was water on the floor of the basement at the time of the site visit. It appeared that the water was infiltrating into the basement wall in the unfinished utility room immediately adjacent to the alley north of the building. It appeared that the water was infiltrating through circular holes approximately 1/2" in diameter located in the existing concrete block foundation wall approximately 8" above the basement slab. Other than the wall adjacent to the alley, there were no other observed locations of water infiltration at the time of the site visit.

Based on the information provided and the items that TKDA observed at the site visit, the alley is meant to act as a means of conveyance for the stormwater drainage of the neighborhood. The alley should collect the stormwater drainage from the properties adjacent to it and direct the drainage into the street and thus into the storm sewer system. However, due to the presence of numerous cracks in the alley pavement, a portion of the stormwater infiltrates the soil under the alley and, in TKDA's opinion, is a contributing factor for the leakage into the adjacent basement of Ashland Apartments.

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Please feel free to contact us if you have any questions about this report.

Sincerely,



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TGHA/RBK/mas

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.

Signature:  Date: 3/31/16

Printed Name: Troy G.-H. Androli Lic. No.: 47947

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.

Signature:  Date: 3/31/16

Printed Name: Robert B. Krussow Lic. No.: 47553

