

**WORKER CRUSHED BY
EXCAVATION WALL COLLAPSE**

Type of Incident: Fatality

Date of Incident: February 14, 2008

TABLE OF CONTENTS

SECTION	TITLE	PAGE NUMBER
1.0	DATE AND TIME OF INCIDENT	3
2.0	NAME & ADDRESS OF PRINCIPAL PARTIES	3
2.1	Owner	3
2.2	Prime Contractor/Employer	3
2.3	Employer	3
2.4	Employer	3
2.5	Worker	3
3.0	DESCRIPTION OF PRINCIPAL PARTIES	3
3.1	Employer	3
3.2	Worker	4
4.0	LOCATION OF INCIDENT	4
5.0	EQUIPMENT, MATERIAL AND OBSERVATIONS	4
5.1	Equipment and Material	4
5.2	Observations	5
6.0	NARRATIVE DESCRIPTION OF INCIDENT	5
7.0	ANALYSIS	6
7.1	Direct Cause	6
7.2	Contributing Factors	6
8.0	FOLLOW-UP/ ACTION TAKEN	7
8.1	Workplace Health and Safety Compliance	7
8.2	Industry	8
8.3	Additional Measures	8
9.0	SIGNATURES	9
10.0	ATTACHMENTS	9

SECTION 1.0 DATE AND TIME OF INCIDENT

1.1 The incident occurred on February 14, 2008 at approximately 3:45 p.m.

SECTION 2.0 NAME AND ADDRESS OF PRINCIPAL PARTIES

2.1 Owner

Perera Shawnee Ltd.
425 78 Avenue, S.W.
Calgary, Alberta
T2V 5K5

2.2 Prime Contractor/Employer

Perera Development Corp.
425 78 Avenue, S.W.
Calgary, Alberta
T2V 5K5

2.3 Employer

Steph Trucking and Welding Co. Ltd.
203 Kincora View, N.W.
Calgary, Alberta
T3R 1M2

2.4 Employer

On Track Excavating Ltd.
81 Kirby Place, S.W.
Calgary, Alberta
T2V 2K7

2.5 Worker

Dump Truck Operator

[REDACTED]

Calgary, Alberta

[REDACTED]

SECTION 3.0 DESCRIPTION OF PRINCIPAL PARTIES

3.1 Perera Shawnee Ltd. is the owner and developer of the Highbury Towers. The Highbury Towers are comprised of townhouses and 3 condominiums.

- 3.2 Perera Development Corp. is a Calgary based company and specializes in multi and single family residences. Perera Development Corp. is the prime contractor for the Highbury Towers Construction Project and is responsible for all stages of project development including planning, design and construction. Perera Development Corp. employs approximately 18 workers.
- 3.3 Steph Trucking & Welding Co. Ltd. is a family operated company and provides trucking and welding services in Calgary, Alberta. The trucking section of the company was working exclusively at the Highbury Towers Construction Project. Steph Trucking & Welding Co. Ltd. employs approximately 5 workers.
- 3.4 On Track Excavating Ltd. provides excavation and trucking services in the Calgary area and employs approximately 4 workers.
- 3.5 The dump truck operator ([REDACTED]) was the owner of Steph Trucking & Welding Co. Ltd. He had been operating trucks since the company formed in 2005.

SECTION 4.0 LOCATION OF INCIDENT

- 5.1 The incident occurred at the Highbury Towers located at 14635 Shawnee Gate, S.W., Calgary, Alberta (Refer to Attachment A – Map and Attachment B – Photograph 1).

SECTION 5.0 EQUIPMENT, MATERIAL AND OBSERVATIONS

5.1 Equipment and Material

- 5.1.1 The incident occurred in phase 2 of the Highbury Towers Construction Project where a section of approximately 36.0 metres long of an excavation wall collapsed. The excavation wall was approximately 65.0 metres long and 15.0 metres deep. The excavation wall was not stabilized either by shoring or cutting back (Refer to Attachment B – Photographs 1 and 2).

A geotechnical evaluation of the site was conducted in 2004. The geotechnical evaluation report stated that where any excavation was deeper than 1.5 metres, the walls must be stabilized either by shoring or cutting back.

On February 13, 2008 a survey crew observed a long and deep crack running along the fence line on the top ledge of the excavation wall. The survey crew discussed the crack with the site superintendent ([REDACTED]) on the same day (Refer to Attachment C – Photographs 1 and 2).

On February 14, 2008 at approximately 2:00 p.m., the site superintendent ([REDACTED]) and the excavator operator ([REDACTED]) inspected the crack that they were informed

of by the survey crew on February 13, 2008. The site superintendent () and the excavator operator () measured the crack and determined it to be in the range of 0.6 to 3.0 metres deep along its length. Perera Development Corp. did not take any action to control a possible cave-in hazard.

- 5.1.2 The dump truck involved in the incident was owned and operated by Steph Trucking & Welding Co. Ltd. The dump truck was a white 2001 International Model 9200 Diesel, 39,900 kilogram capacity, vehicle identification number (). The dump truck was parked approximately 12 metres away from the excavation wall. The dump truck was buried and crushed when the section of the excavation wall collapsed (Refer to Attachment B – Photographs 2, 3, and 4 and Attachment C – Photograph 3).
- 5.1.3 The excavator used to load the dump truck involved in the incident was owned and operated by On Track Excavating Ltd. The excavator was a Hitachi ZAXIS ZX200LC. This excavator sustained minor damage during the incident (Refer to Attachment B – Photographs 2, 3, and 4 and Attachment C – Photograph 1).

5.2 Observations

- 5.2.1 The temperature on February 14, 2008 at the time of the incident was 1.9 degrees Celsius. The temperature had fluctuated between -10 and 3.6 degrees Celsius on the day of the incident.

SECTION 6.0 NARRATIVE DESCRIPTION OF THE INCIDENT

- 6.1 On February 14, 2008 the dump truck operator () and the excavator operator () started their regular work shift between 7:00 and 8:30 a.m. at the Highbury Towers Construction Project.
- 6.2 At approximately 3:00 p.m. the dump truck operator () parked his dump truck near the excavation wall in phase 2 of the Highbury Towers Construction Project for loading.
- 6.3 The excavator operator () loaded the dump truck. The dump truck operator () then tarped the loaded box.
- 6.4 At approximately 3:40 p.m., the excavator operator () noticed small stones and debris falling from the excavation wall. He shouted to the dump truck operator () that the excavation wall was coming down and get out of the area.
- 6.5 The dump truck operator () ran to the dump truck and got into the cab of his dump truck.

- 6.6 The excavator operator ([REDACTED]) started to back his excavator out of the area.
- 6.7 As the excavator operator ([REDACTED]) began to move the excavator, a large section of the excavation wall collapsed, burying the dump truck. The excavator sustained a minor damage.
- 6.8 The excavator operator ([REDACTED]), along with other workers, attempted to dig the dump truck operator ([REDACTED]) out from the rubble.
- 6.9 A plumber ([REDACTED]) from JMMK Plumbing & Heating Inc. who was working at the site called 911.
- 6.10 At approximately 3:50 p.m., Emergency Medical Services (EMS) arrived at the site and pronounced the dump truck operator ([REDACTED]) dead at the scene.
- 6.11 EMS directed workers to clear the area.
- 6.12 Calgary Police Services and the City of Calgary Fire Department responded to the incident.
- 6.13 The dump truck operator's body was recovered by the City of Calgary Fire Department at approximately 8:30 p.m.

SECTION 7.0 ANALYSIS

7.1 Direct Cause

- 7.1.1 The dump truck operator ([REDACTED]) was fatally crushed in the cab of his dump truck when a section of the excavation wall collapsed and buried the dump truck.

7.2 Contributing Factors

- 7.2.1 The excavation wall was 65.0 metres long and 15.0 metres deep and was not stabilized either by shoring or by cutting back.
- 7.2.2 The prime contractor did not follow the recommendations of the geotechnical engineer for shoring or sloping of excavation walls deeper than 1.5 metres.
- 7.2.3 The prime contractor was aware that there was a crack along the top ledge of the excavation wall and did not take any action to control a possible cave-in hazard.

SECTION 8.0 FOLLOW-UP/ ACTION TAKEN

8.1 Employment and Immigration; Workplace Health and Safety Compliance

- 8.1.1 Workplace Health and Safety Compliance (WHSC) received an incident notification on February 14, 2008, responded to the site and commenced an incident investigation on the same day.
- 8.1.2 On February 14, 2008, WHSC issued the following orders to Perera Development Corp.:
- stop work order for work in or around the excavated area of the site until a hazard assessment, including a geotechnical evaluation, were conducted and control measures were implemented
 - conduct an incident investigation and prepare a report outlining circumstances, causes and corrective measures
- 8.1.3 On February 14, 2008, WHSC shut down all construction areas of the site until a full site inspection could be conducted and the employer implemented the corrective measures
- 8.1.4 On February 14, 2008, WHSC issued a stop work order to On Track Excavating Ltd. requiring the damaged excavator to be repaired in accordance with the manufacturer's specifications.
- 8.1.5 On February 16, 2008, WHSC met with Perera Development Corp. to discuss possible causes of the incident as well as the compliance requirements related to the orders issued.
- 8.1.6 On March 14, 2008, WHSC received documents from Perera Development Corp. including the hazard assessment and a slope stabilization plan for the excavation wall affecting the church area.
- 8.1.7 On March 17, 2008, WHSC received documentation from On Track Excavating indicating that the excavator damaged in the incident was repaired by a certified mechanic.
- 8.1.8 On April 4, 2008, WHSC received an incident investigation report from Perera Development Corp. After reviewing the report, additional information regarding the causes of the incident and corrective measures was requested.
- 8.1.9 On April 16, 2008, WHSC met with Perera Development Corp. and the geotechnical engineer to review slope stabilization plans for the remaining excavation wall.
- 8.1.10 On July 3, 2008, WHSC received additional information regarding causes of the

incident and corrective measures from Perera Development Corp.

- 8.1.11 On September 22, 2008, WHSC achieved compliance with all orders issued to Perera Development Corp. regarding this incident.

8.2 Perera Development Corp.

- 8.2.1 On February 14, 2008, following the incident, Perera Development Corp. voluntarily stopped work at the site until an incident investigation could be conducted to determine the causes of the incident.
- 8.2.2 On February 15, 2008, Perera Development Corp. hired a safety consultant to assist them with the incident investigation as well as oversee the development and implementation of the site safety program.
- 8.2.3 On March 14, 2008, Perera Development Corp. submitted a hazard assessment and a slope stabilization plan for the excavation wall affecting the church area.
- 8.2.4 On April 4, 2008, Perera Development Corp. submitted an incident investigation report to WHSC.
- 8.2.5 On April 16, 2008, Perera Development Corp. submitted a slope stabilization plan for the remaining excavation wall.
- 8.2.6 On July 3, 2008, Perera Development Corp. submitted additional information regarding the causes of the incident and corrective measures.
- 8.2.7 On September 22, 2008, Perera Development Corp. complied with all orders issued by WHSC regarding this incident.

8.3 Additional Measures

- 8.3.1 There were no additional measures.

SECTION 9.0 SIGNATURES

[Redacted Signature]

[Redacted Name], Lead Investigator

Jan 15/09'
Date

[Redacted Signature]

[Redacted Name], Reviewer

Jan 15, 2009.
Date

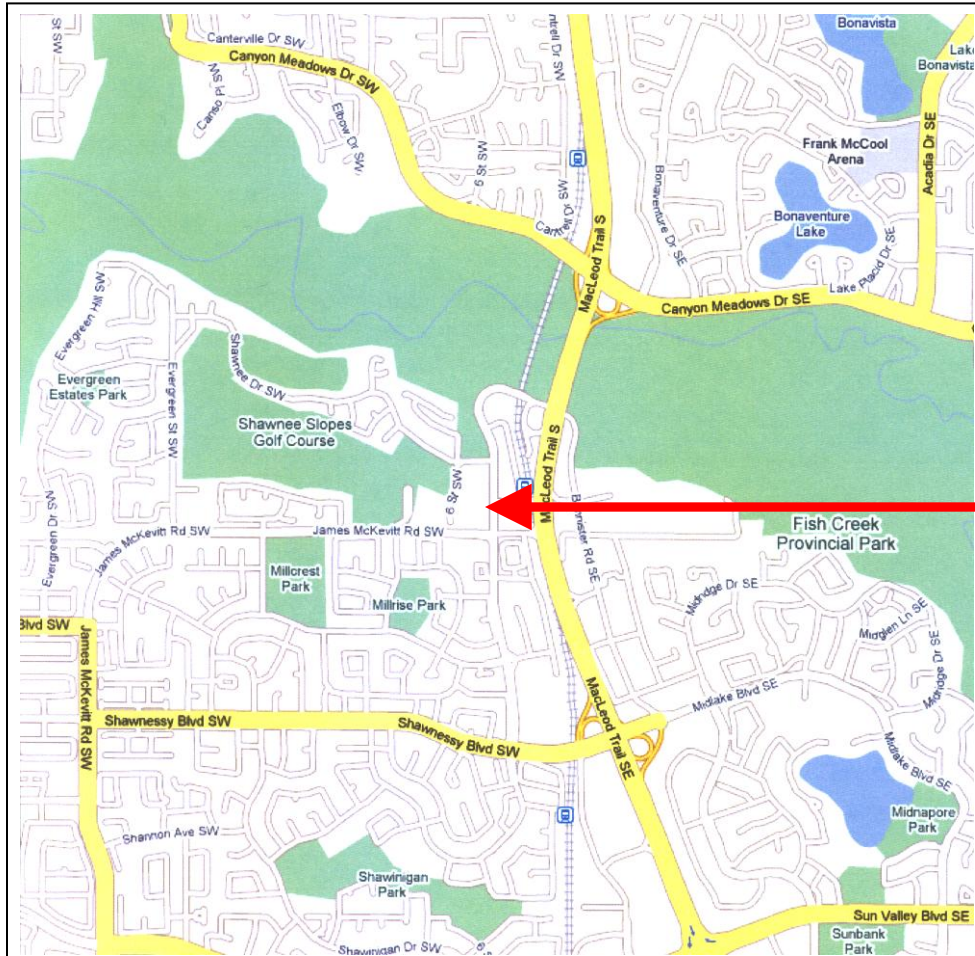
[Redacted Signature]

[Redacted Name], Regional Senior Manager

January 15/09.
Date

SECTION 10.0 ATTACHMENTS:

- | | |
|--------------|--------------------------|
| Attachment A | Map |
| Attachment B | Incident Photographs |
| Attachment C | Pre-Incident Photographs |



The arrow shows the location where the incident occurred at Highbury Towers located at 14635 Shawnee Gate, S.W., Calgary, Alberta.



Photograph 1: Shows an overview of the incident

1. Collapsed section of the excavation wall that buried the dump truck
2. Tower Crane
3. Church



Photograph 2: Shows the collapsed section of the excavation wall in the phase 2 area of the project. This photograph was taken by the tower crane operator ([REDACTED]) after the incident

1. Excavator used to load the dump truck
2. Church



Photograph 3: Shows excavator and buried dump truck. This photograph was taken by the tower crane operator ([REDACTED]) after the incident

1. Cab of the dump truck
2. Excavator



Photograph 4: Shows excavator and damaged dump truck



Photograph 1: This photograph was taken by the crane operator ([REDACTED]) on February 13, 2008 prior to the collapse of the wall

1. Excavator
2. This section of the wall collapsed during the incident
3. Church
4. Crack along the top ledge of the excavation wall



Photograph 2: Shows the crack running along the top ledge of the excavation wall. This photograph was taken by the survey crew on February 13, 2008

1



Photograph 3: This photograph was taken in November, 2007 by Steph Trucking and Welding Co. Ltd.

1. Dump truck involved in the incident