

Silverthorn Collegiate Institute, Toronto, Ontario



LOCATION : 291 Mill Road, Toronto, Ontario

OWNER : Toronto District School Board
TDSB.

TEAM MEMBERS : **Mechanical Consultant**
Mr. Imran Majeed
Advanced Buildings Solutions Inc.

Electrical Consultants
Suri & Associates Ltd.



MECHANICAL ENGINEERING SERVICES:

Mr. Majeed was engaged to provide following services:

- Mechanical - Roof top unit Assessment
- Site review
- Concept Studies & Design Development
- Preparation of Construction Documents
- Estimating Construction Cost
- Cost Control & Value Analysis throughout the Design Process
- General Administration & Design Coordination throughout the work

PROJECT DESCRIPTION:

The project includes upgrade existing roof top units, exhaust fans, ductwork, piping, electrical upgrades in support of mechanical upgrades and services.

Existing System: The building has rooftop equipment on two levels of roof detailed as follows:

1. Low roof accessible from Mechanical Room M2 has 7 rooftop hvac units, one heating only units and two condensing units:
 - Most of the rooftop hvac equipment except the following three units on low roof are found to have been installed less than 10 years ago and appears in acceptable condition.
 - Two of the hvac units are of Trane make of 8.5 ton & 5 ton capacity. The units serve Computer Classroom 135 and Classroom 134 respectively. The age of equipment is approx. 20 years.
 - One of the hvac unit is of Carrier make of 6.0 ton capacity. The unit serve ESL Offices. The age of equipment is approx. 12 years. The equipment appears in poor to fair condition.
2. High roof accessible from Mechanical Room M4 has one condensing unit and number of exhaust fans:
 - The 7.5 ton condensing unit is of Trane make and is connected to indoor split unit. The unit is approx. 20 years and appear in fair condition.
 - One of the exhaust fan with rusty rooftop ductwork serving Cafeteria Servery also appears in poor condition and shall be considered for replacement alongwith exposed ductwork.

Recommendations:

Most of the rooftop equipments have recommended lifespan of 15-20 years. As noted above number of equipments exceed or are approaching their lifespan and hence are recommended to be replaced. It is recommended that three hvac units of 8.5 ton, 6.0 ton & 5.0 ton capacity, one condensing unit of 7.0 ton capacity and exhaust fan serving the Cafeteria Servery shall be considered for replacement based on the age and condition of the equipment.

