

Experience Report



EIT Membership Number



Alisa Ali

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Work Experience Report

Engineering Project officer

Engineering Review Canada Post

- Edited and Reviewed engineering documents and drawings for compliance with cited specifications.
- Assisted team supervisors in preparing various types of technical documentation including:
 - a. Drawings
 - b. Excel templates
 - c. Work flow plan
 - d. Manuals
 - e. QA scopes.
- Participated in project meetings and conference calls as required.
- Guided follow-up webinars with associated project teams across the country.
- Provided timely technical solutions to team members.
- Assisted in training new team members using the IT tools and documentation created specifically for the review process.
- Prepared completed work orders ensuring it was sent to the contractor.
- Used technological skills to ensure tasks were done in a controlled, improved and timely manner.
- Communicated with the technical contractor teams regarding work order feedback via:
 - Email
 - Phone
 - Computer databases
- Assisted the project engineer in developing the future plan and enhancing the team performance. See Appendix 1.1
- Tracked the errors and discrepancies in technical information received from multiple sources.
- Performed Quality Assurance checks for finished assignments and prepared summary reports.

Associate Mechanical Engineering EIT

[REDACTED]

Building Science Trust

[REDACTED]

- Completed 30 technical assignments in property condition assessment.
- Edited and reviewed technical documentations such as drawings, manuals and spreadsheets.
- Conducted scientific investigation for new construction products in the field of building energy performance and HVAC systems.

Mechanical Engineering Drafting Technologist

[REDACTED]

[REDACTED]

Canada Post

[REDACTED]

Main duties

1. Prepared 2D and 3D Solid Works drafting assignments.
2. Created and adjusted drawings and models according to the Project Engineer's specification.
3. Attended technical meetings with the supervisors regarding:
 - Model accuracy
 - Design
 - Drafting standards
 - Design documentation.
4. Reviewed 3D models for completeness and accuracy.
5. Maintained all revisions of project drawings.
6. Updated and maintained drafting log.
7. Prepared engineering documents for customer submittal

Sample Project: Reproducing the motorization section CAD drawing June 2012

Job responsibilities

- Prepared detailed 2D design drawings and specifications for postal mechanical equipment using SolidWorks 2012
- Review specifications, sketches, drawings, bill of materials of previous CAD database to reproduce them using updated tools.

- Created 3D models of level change, motorization sections of the mail sorting machine. See Appendix 1.2 for pictures.

Mechanical Engineering Graduate Studies

██████████
University of ██████████ ██████████

The Masters of Engineering program covered two main areas of Engineering

- 1) Computational fluid dynamics and numerical heat transfer.
- 2) Managing engineering projects and manufacturing processes.

I have conducted term projects in the following courses:

- Design for Fire Resistance
- Engineering Management
- Invisced Incompressible fluid flow
- Conductive and Radiative Heat Transfer
- Convective Heat and Mass Transfer
- Manufacturing Systems

Mechanical Engineering Teaching Assistant and Lab Engineer

██████████
██████████ University ██████████

- Supervised fluid mechanics and heat transfer laboratory tests.
- Tutored students in the following subjects:
 - Fluid mechanics
 - Heat transfer
 - Applied mechanics
 - Engineering drafting
 - Mathematics.

Sample Project: Expanding Mechanical Engineering laboratories ██████████

Job responsibilities

- Supervised laboratory tests for undergraduate courses in the Mechanical Engineering program such as:
 - Fluid mechanics
 - Heat transfer

- Energy systems
- Supervised the technical aspect of the installation and improvements in laboratory equipment.
- Assisted in performing technical maintenance tasks.

Project Background

In 2001 Almergeb University expanded the laboratories building. The mechanical engineering department received 15 different devices and machines for undergraduate training for the following areas of study:

- Fluid mechanics
- Heat transfer
- Energy systems
- Mechanical vibrations

For example the fluid mechanics devices were designed to cover the following areas :

- Fluid properties measurements
- Pipes friction losses evaluation
- Open channels flow testing
- Pumps efficiency tests
- Flow studies
- Laminar
- Turbulent fluid flow simulation
- Measurement).

Application of Theory

A group of Engineers were assigned to assist in managing the installation activities. My role in the project was to:

- Assist in preparing the layout proposals.
- Review the layout proposals with the mechanical engineering team.
- Assist in managing the daily installation tasks.
- Ensure the required safety rules were followed.
- Perform the initial tests for the laboratory equipment.
- Inspect the machines regular performance during the trial period.

Communication Skills

I prepared documentation and coordinated the installation teams. I participated in meetings held in the laboratory. I gave an abundance of presentations to students.

Social Implication of Engineering

See Appendix section 1.3 for the Fluid Mechanics Laboratory Layout Proposal

Mechanical Engineer

████████████████████

General Public Works Company

████████████████████

Sample Project: Development of a local sewage treatment plant

Job responsibilities

Supervised and installed mechanical systems for sewage plants, pumping stations and water treatment works. I was responsible for maintaining productive consulting relationships with the suppliers to meet the project requirements. This task was pertinent to company's local projects.

I supervised the safety testing, systems installation, and modifications. I also was responsible for reviewing existing designs and preparing engineering layouts and proposals.

Project Background

In 1999, The Public Works Company in the city of Alkhoms was assigned to upgrade the local sewage plant in the city of Zlitan by the ministry of construction and public works, to meet the future demands. The total budget for the upgrade was approximately eight million dollars.

This project contained multiple engineering divisions including:

- Civil
- Mechanical
- Electrical
- Chemical

Because of this fact, there were four different teams working with an international subcontractor. I was assigned in the mechanical installations department with group of technical workers in order to manage the installation activities.

Application of Theory

I reviewed the mechanical devices documentations in accordance to design and technical demands, with the subcontractors before making the final supplying decision. I also advised the project owner about possible modifications.

I performed the initial mechanical tests for the hydraulic systems such as pumps performance in accordance to flow rate and connections methods.

Practical Experience

During the execution of the project, I applied the practical principles of mechanical engineering in the following applications:

- In pumps selections and testing power, head, required flow rate and pressure).
- I applied the project management rules in scheduling, materials flow and control.

Management of Engineering

For the management of engineering requirements for this project I performed the following tasks:

- Supervised team of 10 engineering technicians in the technical aspect
- Prepared the estimation reports of detailed unit costs and required manpower
- Assisted project directors in preparing engineering tasks, timetable and flowcharts
- Organized and updated project documentations
- Revised required Standards and procedures
- Provided engineering expertise to solve site problems occurred during construction

Communication Skills

Throughout the project execution I developed and strengthened my communication skills in the following ways:

- Formal Meeting preparation skills
 - Presentation creation
 - Time management skills
 - Brainstorming skills
- Presenting daily tasks to diverse team members
- Reporting skills required for different supervisory levels

Social Implication of Engineering

This project has a direct impact on the environment and public welfare. The main objective for this type of project is to provide a good source of clean water for agricultural needs of a specific area.

Volunteer Work

Position: Event Signage Manager

[Redacted]

[Redacted]

Position: Equipment Quality Assurance Tester

[Redacted]

[Redacted]

Education

| Degree | Institution and Location | Year | Special Projects and Concentrations |
|---|---------------------------------|-------------|--|
| Master's Degree in Mechanical Engineering | [Redacted] | [Redacted] | <ul style="list-style-type: none">• Computational Fluid Dynamics and Numerical Heat Transfer• Managing engineering processes and projects |
| Bachelor's Degree in Mechanical Engineering | [Redacted] | [Redacted] | <ul style="list-style-type: none">• Designed a residential solar energy heating system |

Additional Training

| Training Program | Institution and Location | Year |
|--|--------------------------|------------|
| Project Management Preparation | [REDACTED] | [REDACTED] |
| Property Condition Assessment | [REDACTED] | [REDACTED] |
| Microsoft Excel Advanced Management Expert Level | [REDACTED] | [REDACTED] |
| Laboratory Safety | [REDACTED] | [REDACTED] |
| Advanced Numerical Analysis Programming | [REDACTED] | [REDACTED] |

Skills and Qualifications

- Bachelor's degree in Mechanical Engineering
- Master's degree in Mechanical Engineering
- EIT designation by Professional Engineers Ontario
- Experience in the analysis of fluid flow and heat transfer in power systems through numerical simulation
- Knowledge of ASME standards and codes
- Sound knowledge and experience of CAD design and drafting using SolidWorks and AutoCAD
- Excellent interpersonal/communication and presentation skills
- Proven team player rule experience on projects with multiple divisions
- Excellent time-management, project management and reporting skills

Computer and Technical Skills

- *Engineering modeling programs:* COMSOL, Chemkin, Tecplot10, Sigmaplot
- *Programming Languages:* FORTRAN, Visual Basic under Excel
- *CAD programs:* SolidWorks 2012-2014, AutoCAD
- *Desktop and project management:* Microsoft Office, Visio, Gantt Project, JDE, and Client Connect

Professional Memberships

Member, American Society of Mechanical Engineers (ASME)

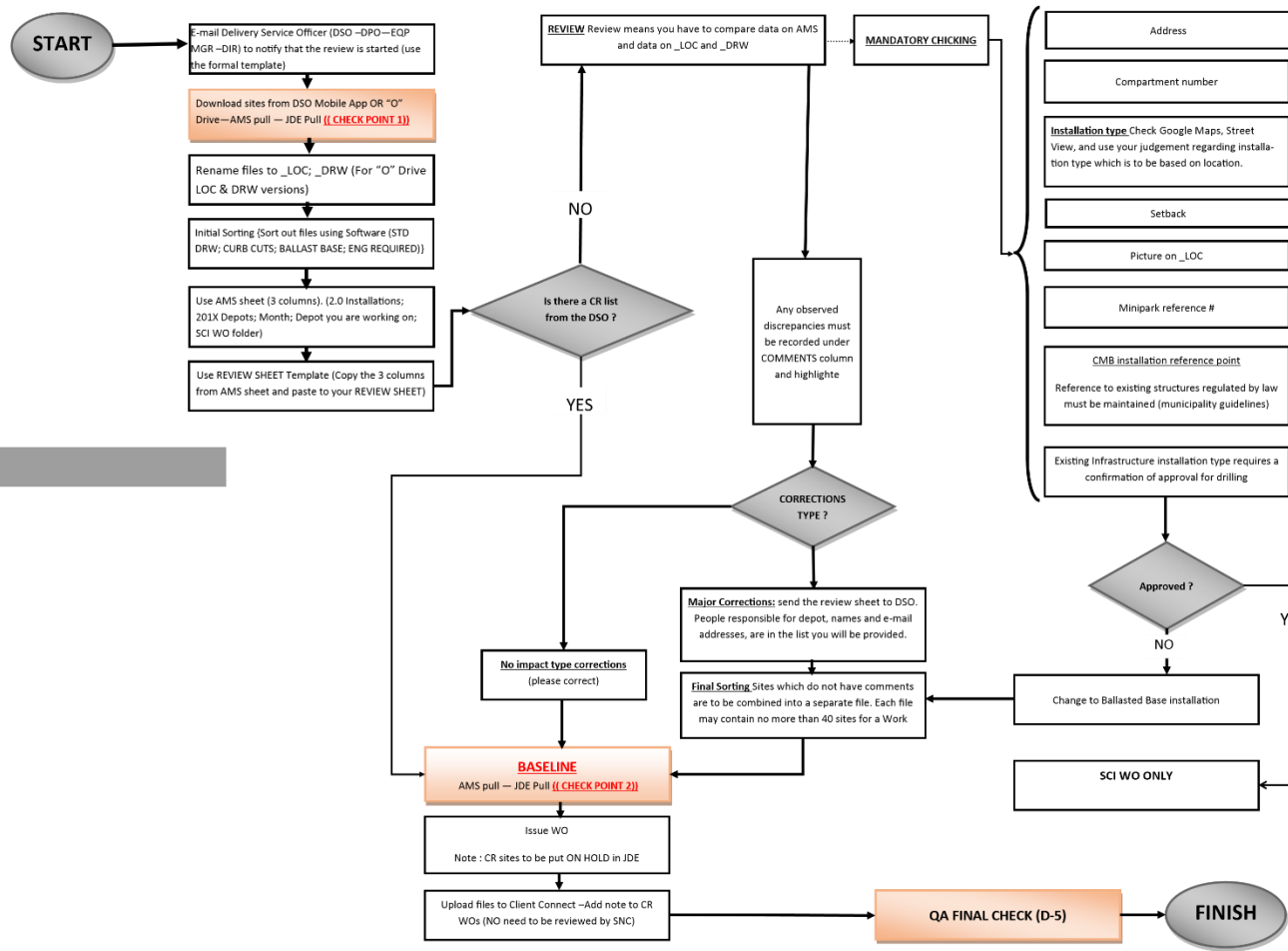
EIT , Professional Engineers Ontario (PEO)

Intern Mechanical Engineer, Ontario Society of Professional Engineers (OSPE)

Appendix

1.1 Work Scope

PROJECT 2.0 Installations — Review Process



Notes:

