



ILLUSTRATION BY JOEL KIMMEL

INSIDE TRACK

Lighting the Way

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In 2012, Cupertino Electric Inc., one of the largest specialty contractors in the United States, noticed a divide in its workforce. On one side were the engineers who design the San Jose, California, USA-based company's electrical systems. On the other were the project managers who oversee installation of the systems in residential and commercial buildings and industrial facilities (clients include Facebook, Pacific Gas and Electric, and the Port of Los Angeles). To help improve project outcomes and bring those sides together, the company hired someone with substantial experience as both an electrical engineer and project manager: Sam Alkhatib. Since then, Mr. Alkhatib has helped ensure Cupertino's project managers master best practices and exchange lessons learned on the job.

What unique challenges do electrical project managers face on large-scale construction projects?

Electrical work is dependent on construction trade partners completing their work accurately and on time. In order for electrical engineers to design an electrical system, they need to know what electrical loads are required. Without final floor plans from the architect and exact equipment specifications from mechanical trade partners provided in a timely manner to the electrical engineers and project managers, the electrical team faces challenges designing electrical systems within the designated time frame.

You have to learn how to communicate effectively with others by looking for cues and learn how to respond. This ultimately teaches project managers conflict resolution techniques, so things go a lot smoother.

How do you successfully coordinate with other trade partners?

We train our project managers to communicate effectively. To make sure that happens, we have a project management-focused effort at the company to take lessons learned from projects and share them with our project managers so they're well prepared to navigate challenges on a project.

Tell me about a lesson learned from a project you're managing right now.

I'm managing the electrical work on a US\$620 million, 1.35-million-square-foot (125,400-square-meter) mixed-use condo development project in San Francisco. It will include two high-rise, high-density condominium towers, as well as two midrise podium buildings with three levels of below-grade parking. The project has a very aggressive schedule: Construction began in July 2013 and is scheduled to be complete mid-2016.

Although the four towers are being built as a single project, one tower requires early occupancy in the first quarter of 2015. Due to the intersystem dependency among the towers, the project requires phased construction to allow a portion of the three remaining towers to be built concurrently. Because of this, we have four electrical crews working on-site. You can imagine the complexity involved with managing four different crews on the same project while also coordinating with other construction trade partners.

The complex project offers a great learning experience. For example, to adapt to demanding project needs, we have had to continuously monitor our processes and execution plan to make sure we are aligned with the project scope, time and budget. As a result, our team has become more efficient with on-site deliveries and prefabrication techniques. This in turn has led to additional best-practice project management standards at Cupertino Electric that we have incorporated into our training for existing and future project managers.

Emotional intelligence has also been valuable on this project. We teach our project managers to recognize others' feelings so they can predict conflicts and react to them.

How exactly has emotional intelligence helped your team?

Because of its complexity and size, we have a lot of different stakeholders on this project. They have different needs. With such an aggressive schedule, things can get tense. Because of this, you have to learn how to communicate effectively with others by looking for cues—body language, for instance—and learn how to respond. This ultimately teaches project managers conflict resolution techniques, so things go a lot smoother.

How are new energy efficiency regulations affecting projects you work on?

Efforts toward sustainability are definitely impacting construction projects. Many building codes and regulations are changing. In California, for example, the new 2013 Building Energy Efficiency Standards took effect on 1 July 2014 and include many changes made with energy sustainability in mind.

One of the major changes is the introduction of solar-ready provisions that require high-rise multi-family buildings with 10 stories or less to have an allocated solar zone that is free of obstruction and unshaded. Although the new rule doesn't mandate the installation of a solar energy system, the code is saying, "Hey, Mr. Designer, please reserve a spot in your project for solar energy technology." I predict the next code cycle will mandate the installation of photovoltaic systems. Code changes like this require the project manager to rethink the traditional approach to project planning and execution to allow for better system and team integration.

Is the demand for more sustainable buildings creating demand for electrical project managers?

In California, where I work, new building codes and regulations require a building owner who wants to change 10 percent of the lighting in his or her building to bring the entire lighting system up to compliance. As a result, a small project suddenly becomes much bigger and a project manager becomes necessary. So, yes, codes that have sustainability in mind are creating jobs. **PM**



Small Talk

Favorite place you've lived?

San Francisco. It's one of the world's must-visit places.

Favorite place in the world?

My home. I need to get some sleep.

Advice for new project managers?

Next-generation project managers need to evolve with the profession by mastering not only business management skills, but also technical and leadership skills.