
BetterBricks Industry Voices:

Aprille Balangue

A Q&A with Aprille Balangue, Engineer and Principal, TFWB Engineers, Seattle, WA, about the advantages of specifying LLLC.



What is your experience in the lighting industry?

I am an electrical engineer and a lighting designer. I migrated here from the Philippines after earning my engineering degree and began my career with TFWB Engineers. I've worked here for 14 years, starting out as a drafter/designer and working my way up to where I am now. They taught me everything there is to know about how to apply the engineering design concepts I'd learned back home. I knew from the beginning that lighting was my favorite part of electrical engineering, because it adds beauty and function to a space. It's something people can see and can relate to right away. Ever since then, I've been the lead lighting designer for most of our school, hospitality, and civic projects.

Why are you using Luminaire Level Lighting Controls (LLLC)?

Lighting control goes hand in hand with the lighting itself. It's a critical part of the design for a comfortable environment. On our newer jobs, we're primarily specifying LLLC – not just because of the clean appearance, but also because of the end-user flexibility and the rebates utilities provide for this feature. There are so many options for the types of sensors you can integrate into LLLC fixtures. They're easier to hide and make invisible, making them just appear part of the

fixture. LLLC truly allows us to fully grasp the benefits and groundbreaking possibilities of controls technology.

What is a project where you specified LLLC?

I was working with the design team on a project at Madrona School, and we were trying to figure out how to fit all the elements in the ceiling space during the coordination process. The idea of integrating the sensors in the lighting fixtures emerged, and we realized this would eliminate the occupancy sensors and the daylight sensors on the ceiling while creating a cleaner aesthetic. This also saved money on the additional labor for installation of these devices, and ultimately made it an easier system to commission and calibrate. Budget is a central concern for many of the projects I work on, and LLLC offers the most value over time.

What were the barriers with specifying LLLC in the Madrona School project and how did you overcome them?

Sometimes school district decision makers for building systems design can be conservative – they want to stick with what they know, so when you introduce newer technologies like wireless, they might get worried. Some concerns that come up are “How reliable is this?” or “This is new to us; we're not familiar with it.” But once they see the advantages of LLLC, and particularly the savings, they're willing to embrace it. The districts where we have installed LLLC haven't had any issues to date, so it's really helped a lot of other clients open their eyes to evolving technology and lighting.

Did the project require any particular LLLC products?

Yes, Madrona School required a different occupancy sensor made for their particular height. We chose a high bay product with integrated sensors from a reliable vendor. The photocell functionality doesn't change, just the occupancy sensor.

As far as the physical look, the sensor is bigger typically for high bay fixtures, but as technology evolves, they're making them even more aesthetically pleasing.

How did LLLC help you meet code with the Madrona School project?

The 2015 and 2018 energy codes both have the C406 section, which is the additional efficiency package option. Most of the requirements are divided amongst mechanical and lighting, with some architectural. The lighting requirements are less complicated to comply with and less expensive to implement. LLLC helps us meet the code easily, in addition to saving time and energy on the administrative side. With these integral sensors and LED technology on a networked digital control system, we can reduce lighting power density and provide enhanced lighting controls to meet the C406 section.

What is the commissioning process like for an out-of-the-box product?

We always work closely with our reps because they are the ones commissioning the lighting controls. We try to be as clear and detailed as possible in our specifications and in our lighting control schedule, so they can understand what we're trying to do. The fixture is preprogrammed and installed at the factory, which makes it really easy. When it gets to the site, whoever is commissioning it simply needs to calibrate and verify it is performing the way it should.

What else would you want people to know about LLLC?

In addition to providing the standard requirements for the lit environment, like proper illumination levels and associated controls, LLLC offers additional granular level of control such as providing the end-user the ability to turn on and off or dim individual fixtures for various scene settings. At Madrona School, for example, these controls are available to both teachers and students. It's a nice way to give them the ability to set lights at a level they're comfortable with.



What other advice you would give to other specifiers thinking about LLLC?

I would highly encourage the use of Luminaire Level Lighting Controls, because it is the smart technology of the present and the future – especially in our “Internet of Things” world. LLLC is flexible, meaning it can respond to varying conditions including occupancy, daylight design lighting levels, even external energy grid conditions. From a design perspective, LLLC preserves the architectural aesthetic of a space by eliminating conduits and cables to external wired control devices. And a final piece of advice for specifiers: When choosing your products, stick with manufacturers and local reps that have a good track record. They can support you throughout the design and installation process, as well as help provide solutions for seamless integration in more complex lighting control applications.



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