DENTON
DIGITAL BUILDING INTELLIGENCE

Revision 2.0

Designer Toolkit Narrative for Denton Digital Building Intelligence

A Designer's Guide to implementing the Power Over Ethernet based Connected Lighting and Automation System

EXECUTIVE SUMMARY

This designer toolkit aids owners, architects, lighting designers, and low voltage engineers in the process of concepting and designing a connected lighting and automation system using Denton Digital Building Intelligence. This narrative will help you navigate through the resources found in the designer toolkit and help you determine which information you need at your phase of the project. PoE Texas offers Concept to Completion supports for its product line included in the cost of its products. You are invited to reach out to our PoE experts at any time to ask questions or for your own personalized design charette.

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DESIGNER TOOLKIT CONTENTS

WHAT RESOURCES ARE INCLUDED

The Designer Toolkit Package includes these items:

1. **Concept Design Drawing Package**: This package includes information useful at the earliest concepting phase of the project specifically selected to help owners and architects make optimal decisions around incorporating a connected lighting and automation system into a facility. There are *estimating metrics* around sizing infrastructure and spaces, *scoping information* for determining what design work will need to be done, and a *general introduction to connected lighting and automation using PoE*.
2. **OT Drawing Template Set**: This package offers a rough template for a new set of drawings to be included in the project drawings identified as Operational Technology drawings (OT-xxx).
3. **OT Automation Schedule Tool**: This excel based tool helps the lighting or low voltage designer collect and arrange design information and make design decisions necessary to creating the power budgets, equipment schedules, and wiring schedules found in the OT Drawing Template.
4. **Denton Product Catalog**: This catalog includes PoE Texas' broad selection of products available for connected buildings from lighting to network infrastructure.
5. **Controls Narrative Template:** This helps to start the process for designers and owners to make and document key decisions around the controls narrative used to document and program the functionality of their intelligent system
6. **Denton Generic Drawings:** CAD files including templated one-line diagrams of the Denton System

You will find a detailed description and use for each element in the sections below.

We are constantly refining and improving this toolkit, so we welcome your feedback as a designer what other information you would like or whether we could present the information in a more useful format.

ADDITIONAL RESOURCES

The key objective with this toolkit project is to help owners and designers realize successful PoE-based connected lighting and automation based on best practices from previous project experience. Best practices continue to improve and grow over time, so please feel free to contact your own PoE expert to update your designer toolkit as well as get personalized project support.

Our world-class customer success team based in Austin, TX, is available during normal business hours and typically responds to support requests within an hour. We welcome a conversation with your team.

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CONCEPT DESIGN DRAWING PACKAGE

Summary of Resources

This drawing set includes the information crucial to a design team including the architect and owner to making the best possible design decisions and initial drawing set based on best practices and lessons learned. It is broken into three main parts:

1. Estimating Guidelines - Generalized guidelines to help owners and architects size a connecting lighting solution, make spacing allowances for equipment, and creating a scope basis for architects, MEP designers, and a low voltage designer.
2. OT/IT Interface Summary - Created for the critical Information Technology (IT) professional such as a Chief Information Officer (CIO) or her designate, this summarizes at a high level how Operational Technology (OT) can interface. It helps outline how much integration can and should happen between IT and OT.
3. OT Network Architecture - These drawings provide a high level explanation of how a Denton DBI based network will work and helps owners and architects visualize the what the system will look like in practice.

Guide to Use

One of the most challenging and value driving aspects of a PoE connected lighting and automation system is making the right decisions for implementing the system from the very beginning. Having an understanding of how the system works and good initial criteria create a valuable foundation for the project basis. We recommend using these tools as a means to educate team members on the new element in your project.

During the Concept Design Phase we recommend using these tools in addition to these key design activities:

1. Concept Design Charette - meet with key owner stakeholders to learn business drivers for selecting technology, outline for the customer what options they have available, and determine what technology features should be included in the design.
2. Create the design basis scopes for architect, MEP, and low voltage design teams as well as qualify a low voltage consultant if necessary.

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OT TEMPLATE DRAWING SET

Summary of Resources

This drawing set includes the a summary set of drawings and specification information for the Operational Technology (OT). It helps communicate this information:

- Scope basis for a low voltage designer including what elements are necessary for an OT drawing set—including the specifications
- The kind of information necessary for a low voltage contractor to accurately estimate and execute a connected lighting and automation project
- What drawings and systems are valuable for the Authorities Having Jurisdiction (AHJ's) to be able to understand how connected lighting and automation meet NFPA 101
- The Controls Narrative Template help explain the kinds of decisions and documentation needed by the commissioning/start up team to properly program the system
- Template CAD files for designers to import CAD drawings of the system

The OT Automation Schedules tool is a companion to this design set and helps the OT designer collect the necessary information to accurate calculate the power budgets, create an automation schedule, and create the wiring design for the OT scope.

Guide to Use

At the early stages of Design Development, an owner or architect should use these drawings to create the scope of work for the Operational Technology designer as well as communicate essential emergency lighting information to the lighting and electrical designer who can introduce the new technology to local AHJ's.

During the Design Development Phase we recommend using these tools in addition to these key design activities:

1. AHJ Introduction - using the emergency oneline drawings along with the Concept Design elements to introduce PoE connected lighting and automation to the building and planning departments to facilitate design reviews and obtaining permits
2. PoE connected lighting and automation introduction charette - a workshop with the design team to present the role and scope of the OT designer, create interface coordination points, and new design deliverable milestones