



case study

Pricing It Out

Analysis of a sample office space for an engineering firm.

Applications:

- Open Office Areas
- Individual Workstations
- Conference Rooms
- Private Offices
- Semiprivate Work Areas

Project Scope: 52,000 square feet

Herman Miller Products:

Conviva Programmable Infrastructure



Conviva™ programmable infrastructure provides competitive first costs, effortless programming, and dynamic control for designers and tenants

Conviva is a modular electrical and data infrastructure for buildings that eliminates much of the hardwiring required with traditional electrical systems by delivering plug-and-play power to virtually anywhere within the space. All Conviva components are programmable, which allows users to instantly—and simply—create associations between any electrical device, switch, or sensor on the system via a hand-held Wand.

Electrical contractors review architect's blueprints, interior designer's layouts, reflected ceiling plans, and much more on a daily basis in order to estimate electrical costs for their clients. We decided to take a similar approach in order to compare the material costs and installation of a traditional electrical system with that of the Conviva infrastructure. We also assessed the performance capabilities that Conviva offers versus a traditional electrical solution.

Our analysis is based on a 52,000-square-foot office space for an engineering firm. We used interior design layouts created by a design firm and electrical drawings created by an independent contracting/construction firm. The Conviva team then analyzed the material, labor, equipment, and other construction management costs for purchasing and installing a Conviva plenum-rated infrastructure solution to meet the program and design requirements of the space under analysis.

Estimates were based on 2006 materials and labor costs in a unionized major metropolitan area, assuming that the scope of the work would be completed by electrical contractors, whose rates were calculated at \$75/hour.

Let's take a look at the numbers.

TOTAL MATERIAL, LABOR, AND ELECTRICAL DELIVERY TO BUILDING	TRADITIONAL SOLUTION \$752,035 - \$14.46/sq.ft.	CONVIA SOLUTION \$746,036 - \$14.34/sq.ft.
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Bottom line: Convia programmable infrastructure makes good economic sense for your first cost considerations.

But there's more to this bottom line.

Let's take a look at the performance.

Convia's advantage is also found in its imbedded programmability and the performance it offers. Forty Power Distribution Modules and 334 Smart Connectors provide capabilities and performance far superior to what a traditional electrical system could deliver. Smart Connectors act as the core of the Convia system and allow for any switch on the system to be associated with any electrical device via infrared technology. Using the office layout for reference, we will describe the programming that Convia delivers for a lower cost. (See layout, page 6.)

Programming can be localized to meet functional needs of a department.

In an open office area, such as the southwest corner where there is a high density of workstations, having a flexible infrastructure like Convia offers both collaborative and individualized control.

- 26 indirect light fixtures define this zone of 57 workstations. 14 Smart Connectors were placed throughout this space so as to create 14 zones.
- In this scenario, the user has a choice of programming to a high degree of granularity. This entire area can be considered one lighting zone or 14 different lighting zones, manipulated and virtually associated through the use of the Wand. The flexibility of such programming creates a scenario that meets the specific needs of subgroups in this area, whether it is for design purposes, program requirements, or energy efficiency. A single Convia Switch can control all 26 fixtures or individual fixtures, depending on the needs of the tenant.
- A Scene Controller can be used to record 4 preset scenes, where up to 14 different subgroups of lights can be calibrated to create a combination of different effects for particular activities during the day. This scene setter can be updated quickly and easily, whenever desired, to create different effects.

Programming can be centralized to address open and public areas such as corridors and lobbies.

The main circulation corridor includes over 95 recessed lights that run across the south and east side of the building. This type of auxiliary space can benefit from Convia's ability to be controlled as a separate zone.

- These 95 fixtures could be included within various adjacent lighting zones or simultaneously grouped to a sensor that controls this entire set of fixtures as a single zone to be turned on and off separately at the beginning and end of the day.
- Or it could be programmed more flexibly, depending on the needs of the tenants. Convia allows for the same group of lights controlled by a designated switch to also belong to zones in different areas of the plan.

- This group of lights could also be added to a Scene Controller to be included as part of a scene set, which might include support areas, storage zones, and egress areas. Such areas could still be controlled independently without interfering with the building's emergency system. Programming can be localized and centralized for mixed use areas. The layout includes examples of spaces that may be close in proximity but far apart in lighting needs or requirements. Such examples include conference rooms adjacent to individual workstations or private offices adjacent to semiprivate work areas.
- In the private and semiprivate office areas running along the south and north peripheries of the building, 2x2 fluorescent fixtures can benefit from the local and flexible control that Convia allows. Looking along the south wall of the plan, 22 light fixtures are controlled by 8 Smart Connectors, effectively creating 8 zones between the private offices and the semiprivate support staff area. A switch in this zone can control all 22 fixtures, yet the same switch can be quickly reprogrammed to control an individual fixture or smaller group of fixtures if needed by the tenant.
- In conference room areas or presentation spaces like those in the southwest corner of the plan, Convia's Scene Controllers can be used to program specific lighting scenes for a variety of presentation setups. Convia-controlled light fixtures and devices can be orchestrated to support different activities, light levels, and presentation equipment, for example.
- In reception areas, where it would make sense to use a switch or Scene Controller to operate large areas of the footprints, a single switch can be programmed to operate as a master switch for the entire footprint of the office space without altering other local controls for individual areas.

The Convia system can be adapted and configured countless times to meet the needs of a specific facility and the culture and practices of that space. As an intelligent infrastructure, the system adapts to changing design needs and program requirements of a space. It allows a designer an unprecedented range of freedom when designing zones and effects for a specific space and activity. And it can offer tenants the means to easily manipulate the system to support the changing needs of an environment or a single user.

The real bottom line: Convia delivers an infinite amount of flexibility while costing less than a traditional electrical system.

