



Takeoff and Estimating Software for Mechanical, Electrical, and Plumbing Contractors

In the highly competitive world of Mechanical, Electrical, and Plumbing (MEP) trades, all efficiencies that can be gained—from takeoff through build-out—are crucial to a company's bottom line. Ultimately, the success of a project occurs even before a company wins the work. It all starts with a highly accurate bid built on the precision and timeliness of a company's takeoff and estimation processes. This accuracy provides the firm with the flexibility to build with a fair profit margin and remain competitive.

The business of MEP contractors is one where every aspect of a job is complex and unique. Years ago, the core of these trades focused on running the conduit, pipe, and duct work. Over the years the industry has become more technical. Commercial buildings are much more sophisticated than they were just a decade ago. They have computer-controlled energy and lighting management systems.

To enhance productivity, reduce waste, and increase profits, MEP contractors must invest in modern technology and equipment. Now battery-powered cable feeders reduce a one-hour process performed by a handful of workers to just one person on a 15-minute job.

Tools that increase efficiency and effectiveness are not limited to the construction site. The drive for project accuracy begins with reviewing the digital

takeoff of structural/engineering drawings and designs to assure that all required building system solutions are captured up front. This overview process is the best way to avoid unnecessary problems down the road, such as failed inspections, rework, and project penalties.

Manual processes are insufficient and costly

Before digital technologies, the tools used for takeoff and estimating consisted of the rolling linear scale, pencils, highlighters, notepads, and calculators. As personal computers became common in business, estimators replaced their calculators and notebooks with digital plans and software spreadsheets. Some estimators still use the old-school tools today to manually perform material takeoffs and to generate cost “guesstimates” that eventually make their way into formal bids.

Manual processes are both time and labor intensive. Estimators spend too many hours carefully combing through numerous printed plans to tabulate product counts such as the linear feet of pipe, conduit, and duct. They do tedious counts of fittings, switches, and faucets. It takes significant time and skill to determine the values of material due to unique conditions and systems requirements, as well as odd shapes where it is challenging to measure correct values.

Further complicating the process are change orders, clashes, requests for alternatives, and the inevitable deviations from the original architectural “design intent” where the actual development and implementation plans deviate. Detecting, managing, and reconciling these conflicts is a complicated, exhaustive task. With manual processes, the estimator must sift through marked-up plans and prior estimates to work up a change or develop an alternative and incorporate it into the overall project budget and bid. Even small changes create a time burden that adds to the cost of bidding on projects—and takes away from the profit margin.

Contractors invest considerable time and money in their takeoff and estimating processes in the hope of winning work. Now there is a more accurate and efficient way for MEP contractors to double their estimating productivity effectively. Contractors who go digital submit more bids in less time with greater confidence when they use takeoff and estimating software applications.



On-Screen Takeoff & Quick Bid improve productivity

On-Screen Takeoff® enables estimators to measure lengths, count quantities, and select system components from digital plans viewed on a computer screen. Counts and measurements are calculated with the click of a mouse, the on screen drawing is highlighted to show what area of the drawings is involved. The estimator applies conditions such as duct work, fire suppression system, branch conduit and lighting, duplex or quad receptacles. Rather than tabulating the takeoffs on a notebook or spreadsheet, the estimator lets the application track and tally all the materials.

Quick Bid® applies the current material, labor, markup, and other costs to the takeoff data to estimate project costs. An important element of creating an accurate estimate is the ability to break a project down into smaller pieces and roll them up again into an overall bid; for example, creating MEP estimates by floors.

From start to finish, On Center Software develops accurate and detailed bids in much less time compared to manual methods. Our automated approach to takeoff and estimation enables quick historical recall from prior bids and change order processing, without starting over

from scratch. It also increases the ability to detect conflicts visually and to sort and organize in multiple ways for more efficient scheduling of materials and crews.

On Center Software has a high degree of integration so that takeoff data flows right into cost estimates. The best value lies in On-Screen Takeoff and Quick Bid which simplifies and accelerates the bid development process. The data is organized and used for project tracking, when integrated with Digital Production Control®.



Reduce redundancy and increase efficiency

On-Screen Takeoff and Quick Bid quickly pay for themselves in several ways—first by increasing the number of jobs a company bids on, which win more work. Second, by eliminating the need to print, handle, organize and store volumes of paper-based plans and other documents. Third, by easing the estimator’s analysis of the building and grouping objects into appropriate assemblies for a smooth installation. A contractor can save time after pre-inspection when reviewing the initial designs and bids and compare them to the actual MEP designs and implementation. Most importantly, these applications assist in the accurate translation of specified specialty system design requirements into an equally accurate takeoff and estimate.

Digital plans and designs imported directly into the applications allow an estimator to takeoff all aspects of the project including electrical runs, indoor and outdoor sprinkler systems, and duct runs. Because the estimator specifies and views specific conditions directly on the computer screen, it is easy to work up accurate material counts, types, and quantities to develop accurate estimates that meet the design and code requirements.

In Quick Bid, you can maintain and manage a library of standard assemblies and MEP designs. These assemblies are combinations of materials, quantities, costs, and labor that together form a unit of activity. These general parts can be instantly recalled and reused among projects to save time. Built-in cost databases that are unique to MEP are another time-saver designed to reduce errors and develop a more accurate bid. Moreover, a good estimating software package allows an estimator to import complete and current cost lists from multiple sources including vendors and subcontractors.

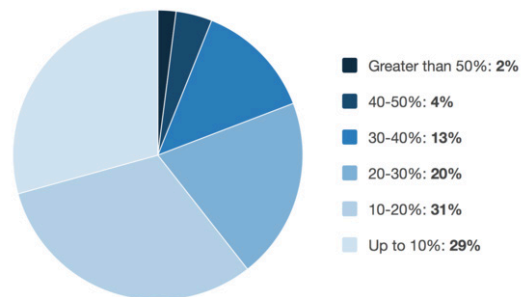
With On-Screen Takeoff and Quick Bid, estimators avoid spending significant time as designs change by just overlaying any new plans over the original plans to identify and highlight the differences, identify potential conflicts, and perform a new takeoff. The system directly applies the changes to the estimate, all with a few clicks of a mouse.

A knowledgeable estimator uses the digital takeoff and estimating tools to specify what assemblies and labor are required to perform a particular portion of a project, as well as how many parts are needed based on the measures identified during the takeoff process. Once the materials and labor are determined, prices and rates are applied, a markup calculates, and the detailed estimate publishes for the bid.

ON CENTER SOFTWARE CONTRACTOR SUITE CUSTOMER RESEARCH

Increase your profits by 20%

Percentage of profits increase with the use of On Center Software’s Contractor Suite



Source: TechValidate survey of 45 users of On Center Software Contractor Suite



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Better ways to manage costs

Quick Bid generates reports that help the business owner manage labor and material costs. There are reports to manage material inventories and purchases and to plan person-hours and costs for a variety of job categories and tasks. Depending on the reporting capabilities, labor breaks down into subcategories for site and installation work to name a few.

These software programs also export costs and quantities to standard accounting systems and Excel workbooks. That saves time and avoids keystroke errors.

A better way to conduct business

MEP contractors that have already adopted digital takeoff and estimating applications cannot imagine going back to manual methods. These programs help:

- **Save Time and Money:** Reduce the cost of shipping and printing plans. Spend far less time doing takeoffs and estimating for each bid. Submit more bids to win more projects.
- **Reduce Costly Mistakes:** Eliminate manual entry errors and see on the screen that everything is accounted for, and decrease the likelihood of misinterpreting designs.
- **Improve Collaboration:** Get everyone in the company on the same digital page for how to bid and work a job.
- **Differentiate from Competition:** Submit bids, respond to change requests, and offer alternatives quickly and with confidence.

Conclusion

A MEP contractor's success begins with expertise, attention to detail, and teamwork, and continues with the ability to takeoff, estimate, and bid projects fast and accurately. Communications from the office to the job site are vastly improved. PDFs of new digital plans can be sent to laptops and tablets in seconds. Taking too long to generate a bid manually leads to rough numbers. Bidding too high because of inaccurate costs will cause a company to lose jobs. Conversely, if a company bids too low due to inaccurate data, it will lose money on its work. The objective is to get it right the first time, every time. Digital takeoff and estimating software programs make the difference between creating a backlog of work and profitable jobs, and just keeping the doors open, scrambling for another bid.

On Center Software has been a trusted provider of construction automation management solutions for nearly three decades. On Center was the first in the industry to offer the best-in-class digital solutions for takeoff and estimating: On-Screen Takeoff® and Quick Bid®. Our award-winning software is recognized by the industry, our customers, and partners in 60 countries around the world and is part of construction management curriculum at more than 300 universities and institutions.