

Construction ERP Handbook

A Guide to Selecting the Right ERP Software for Your Industry

GROW INTO THE FUTURE WITH THE RIGHT ERP APPLICATION

Attempting to run and grow a successful construction organization in today's business environment is a multilayered undertaking with many moving parts and players. With shifting industry demands and building delivery methods, it's more important than ever to focus on efficiencies and productivity, high-quality, on-budget project delivery, open communication between associates and clients, profitability, and client satisfaction—all while taking on more projects.

There are many ERP solutions on the market today that can solve pieces of this puzzle, but few that are able to offer a holistic answer to the problems that the modern contractor faces—handling bids, project management, budgets and job costing, subcontractors, compliance, and so much more.

This handbook guides construction companies through the evolving world of ERP applications, including functional requirements based on the type of construction and the contracting services provided. Readers will discover differences between general ERP and industry applications, standard features available in midmarket ERP systems, and industry-specific requirements.

FIND THE RIGHT CONSTRUCTION ERP SOFTWARE



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CONSTRUCTION MANAGEMENT AND GENERAL CONTRACTOR VERSUS SUBCONTRACTOR

Project Scope & Duties Impact System Needs

There are two main categories of contractors—General Contractors and Subcontractors. General Contractors are often hired directly by a client and are typically the lead contractor on a project. They may self-perform whole projects or portions of the project scope such as demolition, carpentry, framing, and drywall. For other parts of the project, they will hire Subcontractors.

General Contractors hire subcontractors to perform specific, specialized areas of the overall project, making their project scope much more limited than that of a General Contractor. Common examples of Subcontractors include Concrete Contractors, Electrical Contractors, and Plumbing, Heating, and AC Contractors.

For large-scale projects with extensive scope, it has become increasingly common for the land developer or owner to hire a Construction Management firm to oversee the entirety of the project, especially if the project includes several structures or phases. Alternate variations of this role are Prime Contractors and Design/Build Firms. The Construction Manager could also be the General Contractor, but this isn't always the case—it is just as likely that the Construction Manager will be hired independently and then hire their own General Contractor.

With each of these main categories comes a varied range of duties and responsibilities that impact their requirements in an ERP system.

CONTRACTOR	CONSTRUCTION MANAGER	GENERAL CONTRACTOR	SUBCONTRACTOR
Customer	Land Developer, Property Owner, Large Client	Land Developer, Property Owner, Client	General Contractor
Workforce	General Contractors	Self/Crew, Subcontractors, Vendors/Suppliers	Self and Crew
Primary Duties and Responsibilities	Large-scale project and budget management, hiring contractors, contract management, permits	Project and budget management, hiring subcontractors and vendors, payment to crew and subs	Specific areas of the overall construction and skill-based labor as specified by the contractor or client, payroll
Resource Management	All contractors and equipment, related scheduling, and all structures	Own crews and equipment, all subcontractors, and all related scheduling	Own crews, equipment, and scheduling



MAJOR TYPES OF CONSTRUCTION

Different Projects, Varied Requirements

There are four main sectors of construction work, and each comes with specific ERP needs for the contractor. Some, such as seeing critical data, managing projects from the field or office, reporting on field work, and AIA reporting and billing, are universal. Others are dependent not only on the sector but also on other factors, such as whether the project is publicly or privately owned and the occupancy classification for the building. OSHA compliance and certified payroll capabilities are crucial across the industry, and federally funded projects, especially in the heavy/civil sector, often require even more stringent standards and documentation. Following are four major construction types with ERP features contractors need to keep projects on budget and on time.

SPECIALTY CONTRACTOR—ARCHITECTURAL METALS AND FINISHINGS

“Acumatica Construction Edition had everything we were looking for. We are different from a regular construction contractor and liked that we could add our own specialty fields and customize it to the way we do business.”

– SEAN BARNETT, CFO, SPOHN ASSOCIATES, INC.

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RESIDENTIAL CONSTRUCTION— SINGLE & MULTI-UNIT



Residential construction varies widely in scope and size. The clients could be individual landowners, specialty home builders, land developers, mixed-use/commercial developers, or local authorities such as public housing providers. Projects range in size from building a detached single-family home to building a community of single-family homes to building a high-rise complex that houses hundreds of residents and commercial businesses. All projects must comply with government building regulations. State and federally funded housing require **certified payroll** and surety bonds and strict **OSHA compliance** documentation.

COMMERCIAL/INSTITUTIONAL CONSTRUCTION



Commercial construction runs a gamut of project types: office buildings, hotels/resorts, restaurants, sports facilities, shopping malls, and other retail businesses. The construction of privately owned university structures (libraries, dormitories) and hospitals also fall under this umbrella. These projects are typically medium to large in size and are almost always owned by non-government entities. Exceptions to this rule include buildings such as courthouses and offices for government agencies. Contractors may need to file a **mechanics lien** to ensure payment on private projects or put up a bond for public ones. **Lien waivers, insurance,** and certificates of compliance are tracked closely.

GENERAL CONTRACTING, CONCRETE RESTORATION, FENCE & RAIL FABRICATION

“With Acumatica, I’m giving employees an ultra-efficient tool they need to do their jobs correctly and allowing them to do things easier. I’m handing them a smartphone versus a rotary phone. They are more well-equipped to do their jobs, which produces good outcomes for customers and helps us build the business.”

– MATTHEW SHAMP, EXECUTIVE DIRECTOR, CARLSON-LAVINE INC.

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INDUSTRIAL CONSTRUCTION

Examples of industrial construction structures include oil and gas platforms, refineries, processing plants, breweries and distilleries, steel mills, warehouses, and factories. Nuclear, wind, hydroelectric, and traditional power stations are also included in this construction classification. These projects are commonly owned by privately held, for-profit corporations, although there are occasional government investments in this sector, particularly in the area of power generation.



Many of these projects are highly specialized, and a great degree of careful planning and design is required. Contractors need highly skilled, technical field personnel such as mechanical, electrical, and structural engineers on the job site. The ability to review **drawing logs** and **submittals** in the field is crucial for these projects. These job sites also have more safety risks involved, and **OSHA compliance and reporting** are vital.

CIVIL/HEAVY CONSTRUCTION



The most frequent examples of civil/heavy construction are infrastructure works. Bridges, tunnels, railways, highways, transit systems, airports, canals, dams, pipelines, and wastewater treatment plants are all excellent examples of this work. These projects are typically publicly owned, with the most common exceptions being privately owned airports, transit systems, and roads.

Some general contractors specialize in civil construction, while others will employ a civil engineer full-time for the duration of a project to be on the job site regularly. As with industrial construction, the ability to access and share Drawing logs, submittals, **daily field reports**, and **project issues** in real-time is crucial. Being government-owned, **certified payroll**, **certificates of insurance**, surety bonds, and the ability to easily adhere to strict compliance management protocols and documentation are a must.

SPECIALTY CONTRACTOR—GLASS WORK & GLAZING—CURTAIN WALL, STORE FRONT, AND ENTRANCE SYSTEMS

“First thing every morning, I can see what our case-load is like, what’s in our backlog, what are our active projects, and see from an executive-level key indicators of the health of the business. I don’t have to wait until the end of the month or two or three months after that to have clean labor data to learn the profitability of a job. With Acumatica Construction Edition, all of us have that data in real-time.”

– JEFF HAMILTON, PRESIDENT, ROBERTS GLASS & SERVICE

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ERP OPTIONS

Specialized or General? Large or Small?

Smaller construction companies use accounting applications like QuickBooks with multiple plug-ins for project management, client management, scheduling, and field service. These low-end applications historically provide minimal features. As contractors grow, they **move to more robust midmarket ERP applications like Acumatica.**

There are construction ERP systems aimed at plumbing and HVAC contractors, civil/heavy construction, commercial contractors, land and real estate developers, engineers, and other specialized areas within the industry. While these programs have in-depth industry features, they are often confined to aging technology platforms with limited accounting functionality. The table below compares each type of construction ERP system.

GENERAL CONTRACTOR

“Having a solution that can communicate with other tools was a must. In construction there are a lot of pieces and moving parts, multiple vendors and subcontractors, and different expenses and financial controls that need to be tracked and communicated in multiple places. Integration is essential.”

– BRUCE YOUNG, PRESIDENT & CO-FOUNDER
CURRAN YOUNG CONSTRUCTION

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FEATURES	LEGACY ERP	CORE ERP
Technology	Generally, older technology Difficult to integrate	Typically, modern technology with easy connectivity
General	Simple accounting with few connected business applications	Strong accounting with CRM, Project Accounting, Field Service, or other related applications
Construction Features	Specialized industry features and add-on applications	Robust project financials with some industry- specific features
Customization	Few customization or personalization tools	More powerful customization and personalization tools
Services	Direct consulting and support provided by the ERP vendor Few, if any, other options	Multiple consulting and support options, including partners and independent consultants



GENERAL ERP FEATURES

Standard Features Across ERP Systems

Today's ERP systems have evolved from the industry's best ideas. As a result, most ERP systems provide similar functionality with as little as 10 to 20 percent difference between applications. The following are common features available in midmarket construction ERP applications. However, **the way that each feature is supported is often different.** Contractors must pay careful attention to detail to differentiate between systems when evaluating ERP applications.

MASONRY, STONEMWORK, AND TILE CONTRACTOR/DISTRIBUTOR

“With Acumatica, the sky's the limit. Whatever we want to see, however we want to see it, we're able to create a simple inquiry to make that happen.”

– STEVE SLAUGHTER, PRESIDENT/CEO
FREDERICK BLOCK, BRICK, AND STONE

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PLATFORM AND TOOLS

There are many factors to consider when evaluating an ERP software platform and its tools. Every system has multiple levels of database and user security and some capability to customize screens and provide user-defined fields (UDF), but these abilities vary widely between applications. Even less common is the ability to support multi-discipline companies that manufacture, distribute, construct, and service—a commonality in the construction field that makes Acumatica stand out. Most ERP systems also offer import and export utilities to manage data but restrict access or charge for source code. All ERP applications provide basic reporting and inquiry tools—few provide the role-based dashboards and user-specific drill-down reporting that Acumatica does. Mobile capabilities are critical in construction, however, not all systems allow for complete data access and functionality at any place or time. There are also major differences between applications developed natively for the cloud like Acumatica, and legacy applications ported to the cloud that impact performance as well as customization and integration options.



ACCOUNTING

Every construction ERP system provides general ledger, accounts payable, accounts receivable, and bank management (cash management or bank reconciliation). However, functionality varies widely in these core financial modules. Some ERP systems are restricted to a limited number of account segments, and others do not support national or parent accounts or budgeting. Multi-company and multi-currency support are other features that are important for growing construction organizations that are supported by some ERP platforms. However, unlike Acumatica, other ERP systems don't support inter-company features. Nor do all systems provide tools for job cost/change management accounting, retainage, certified payroll, or AIA compliant billing. Project accounting, fixed assets, and standard payroll are provided natively or through third-party applications. Carefully evaluate each business process workflow. The steps it takes to complete each type of financial transaction can vary widely across ERP applications.



INVENTORY MANAGEMENT



Standard inventory functionality includes stock and non-stock item management with unit of measure definitions, pricing, and packaging. Standard inventory management features include replenishment, movement classes, and calendar-dependent physical inventory cycle counting. Some provide country of origin and advanced replenishment based on safety stock, lead times, reorder points, economic order quantities, or min/max stock definitions. Warehouse transfers are common, but kitting, barcoding, labeling, lot and serial tracking, expiration dates, and inventory allocation for orders set Acumatica apart. Most systems support average and standard inventory valuation. Unlike Acumatica, few ensure that the application provides embedded barcoding and mobile warehouse management to automate pick, pack, drop shipping, shipment to the job site, and other inventory transactions.

CRM/SALES



Most ERP systems support, sales commissions, quotes, and CRM. Few include the ability the same abilities as Acumatica to quote specifically for projects or for sale—an important factor in a CRM for construction companies that is not typically offered without a 3rd party add-on. The ability to include special discounts and promotions may be included but isn't common. Another essential feature is the ability to write full proposals and track events within the system. Acumatica offers this while many do not.

PROJECT MANAGEMENT



Make sure that the ERP system you choose meets your unique needs as a construction organization. Construction ERP systems like Acumatica provide contractors with automated workflows that include real-time task views, vendor and commitment management, CFMA benchmarking, robust compliance management, and powerful change management capabilities. Built-in document management enables remote access to submittals, drawing and photo logs, daily field reports, and RFIs from the field or the office.

Ask if the ERP solution has integrations with certified industry and business applications with SOAP or REST APIs—configuring the system to meet your organization's specific, complex needs.

Integration should be bidirectional between the construction application and the ERP system allowing you to synchronize field time reports and expenses, scope changes, and project issues between systems with available push notifications.

PURCHASING/PROCUREMENT



Purchasing includes blanket orders, receipt of goods processing and put-away features. Other common features include landed costs, FOB definitions, vendor returns, and bar code scanning. Few systems offer Acumatica's ability to purchase job site materials and have shipped directly to the field. Other applications require third-party software for these and other advanced features.

SPECIALTY CONTRACTOR—GLASS WORK & GLAZING— CURTAIN WALL, STORE FRONT, AND ENTRANCE SYSTEMS

“We knew operating on Excel and siloes wasn't going to allow us to grow or be more profitable or be more efficient and get information out to the field . . . If I look back over the last three years, we've doubled revenues while maintaining our profit margins, which is a feat to have that substantial growth and maintain profits.”

– JEFF HAMILTON, PRESIDENT, ROBERTS GLASS & SERVICE

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CONTRACTOR FEATURES

Contractor-Specific ERP Features

Construction ERP is available from core ERP publishers, and smaller specialized vendors focused on niche industries and functionalities. General ERP applications provide robust cross-functional processes and features. Smaller ERP vendors focus on a particular contractor and construction needs with focused feature sets. Contractors must choose between the two options. While some requirements such as financials, project management, AIA certified billing, and job costing are universal, others are specific to the type of work a contractor does. Below is an overview of the main types of contractors and the business requirements important to their trades and practices.

CIVIL CONTRACTOR—RAILWAY

“Having access to almost everything and being able to drag and drop and drill down, has been transformational,”

– JASON THOMAS, PRESIDENT, REMCAN

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GENERAL CONTRACTORS

General contractors build in all four major types of construction, including everything from single-family homebuilders to firms that erect large commercial, industrial, and civil structures. They may self-perform all aspects of a job or hire a subcontractor to perform specific work. They may also act as construction manager. The needs of this group are very diverse due to the extensive scope of projects and areas of specialization.

- Subcontractor Management
- Drop-Shipping
- Daily Field Reports
- Change Order Management
- Compliance Management
- Contract Management
- Certified Payroll
- Automated AP and Approval workflows

HEAVY/CIVIL CONSTRUCTION CONTRACTORS

These contractors specialize primarily in infrastructure projects with large scopes and budgets. Heavy construction equipment and temporary structures are regularly needed on their projects. Civil engineers and safety officers are often required to be at their job site daily. Most projects are publicly funded and have strict compliance requirements as well as bond requirements.

- Compliance Management
- Daily Field Reports
- Submittals
- Drawing & Photo Logs
- Equipment Management
- Material Management
- Safety Notices
- Certified Payroll
- Project Issue Management

CROSS-INDUSTRY CONTRACTOR—CONSTRUCTION, FIELD SERVICES MANAGEMENT

“The time system can now be locked down, financial modules can be closed and controlled, and Acumatica allows me an extra week every month that I can work on projects or initiatives . . . It also helped from a cost perspective.”

– REBECCA OGLE, CFO, SAFETY MANAGEMENT GROUP

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SPECIALTY CONTRACTORS

These contractors specialize in areas such as building front installation, curtain walls, ironwork, glass installation, and glazing work, often acting as subcontractors as part of larger projects.

- Field Service Management
- Material Management
- Contract Management

CONCRETE CONTRACTORS

Often working as subcontractors and bringing their own forming equipment and engineering, these contractors primarily engage in work such as cast-in-place concrete foundations, curb and culvert construction, and paving of private parking lots.

- Equipment Management
- Contract Management
- Submittals

MASONRY, STONework, AND TILE CONTRACTORS

Contractors are primarily engaged in masonry work, stone setting, and other stonework such as bricklaying, retaining walls, and marble work. Work ranges widely in scope as both the main contractor and a subcontractor.

- Material Management
- Field Service Management
- CRM Opportunity Management

PAINTING AND PAPER HANGING CONTRACTORS

Specialty trade contractors primarily engaged in painting and paper hanging. Examples of work performed include house painting, traffic lane painting, and wallpapering.

- Inventory Management
- Field Service Management
- CRM Opportunity Management

CARPENTRY AND FLOOR CONTRACTORS

These contractors and subcontractors perform work such as framing, joinery, trim and finish, and built-in cabinetry. Job sizes range from single-family homes to large commercial projects, and they could be a contractor or sub.

- Contract Management
- Field Service Management
- Construction Payroll

ROOFING, SIDING, AND SHEET METAL CONTRACTORS

These contractors install roofing, siding, and sheet metal work. Other work includes siding, downspout, and gutter installation, and ductwork.

- Compliance Management
- Field Service Management
- CRM Opportunity Management

SPECIALTY CONTRACTOR—ASPHALT PAVING

“With Acumatica we have a single source of truth that’s actionable, which cuts down on errors, cuts down on confusion, and ultimately makes us more profitable.”

– SHEL WAGGENER, PRESIDENT
AMERICAN ASPHALT REPAIR & RESURFACING

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PLUMBING, HEATING, AND AC CONTRACTORS

These are specialized contractors that mainly perform plumbing, heating, air-conditioning, working primarily as the primary contractor. Other work includes piping, gas line installation, and drainage system installation.

- Equipment Management
- Field Service Management
- CRM Opportunity Management

EXCAVATION AND DEMOLITION CONTRACTORS

Commonly working as subcontractors and using large equipment, these trades complete functions such as grading in preparation to build, digging foundations, building wrecking, and concrete breaking.

- Equipment Management
- Contract Management
- Compliance Management

ARCHITECTURAL FIRMS

Architectural Firms provide building designs to land developers and owners for new structures. They may also act as a Design/Build firm for projects. In that case, have ERP needs like a Construction Manager or General Contractor.

- Contract Management
- Drawing & Photo Logs
- Submittals

ELECTRICAL CONTRACTORS

These are specialty trade contractors that execute a wide range of work, including whole-house wiring, telecommunications, alarm, and sound equipment installation, cable splicing, and on-site electrical repair.

- Compliance Management
- Inventory Management
- Field Service Management

LAND DEVELOPERS

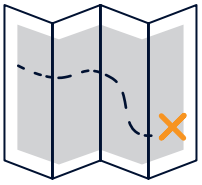
Land developers oversee the procurement of property and the subsequent planning and development for the specific use of the land. They hire construction management or general contracting firms to build according to plans.

- Contract Management
- Compliance Management
- Subcontractor Management

ENGINEERING FIRMS

Civil, electrical, industrial, mechanical, and structural engineering firms act as consultants on job sites to ensure that plans are followed precisely to comply with codes and regulations and ensure safety on highly dangerous jobs.

- Compliance Management
- Drawing & Photo Logs
- Submittals



ACUMATICA CONSTRUCTION EDITION

Construction ERP—The Acumatica Way

Thousands of contractors **across specializations** rely on Acumatica to maximize resources, reduce costs, and improve profits. Developed with superior mobile technology, it enables a 360° view of your business anytime, anywhere, from any device. The user-friendly platform includes robust financials, job cost accounting, payroll, inventory, service, project, change, and compliance management. Built-in business intelligence and leading construction management and estimating programs natively connect for exceptional functionality under a single pane of glass with a single source of truth for the entire organization. Acumatica supports contractors from across the project and specialization spectrum.

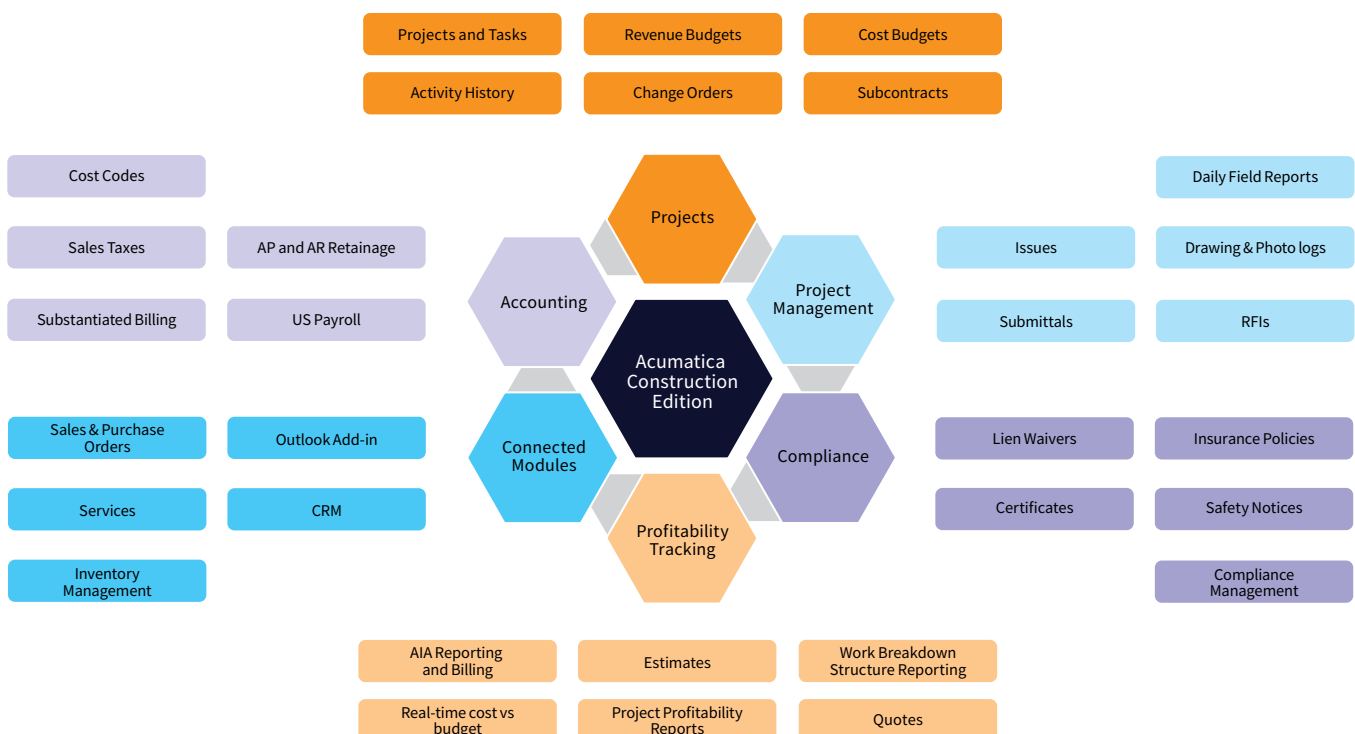
Acumatica connects construction organizations to top-tier construction management and estimating programs for best-in-class functionality in a single, cohesive platform configured to meet the complex and evolving needs of the building community.

BUILDING MATERIALS SUPPLIER

“We’re looking at creating a building company for residential homes. We know with Acumatica we can spin up a new division easily to facilitate that, and, if we acquire more businesses, Acumatica can continue to grow with us.”

– TIM PATTON, ICT DIRECTOR, SAM

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Discover Why Contractors Rely on Acumatica for their Success

Learn More

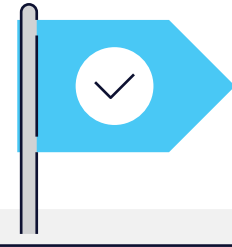
Grow Your Construction Business with a Complete, Streamlined, Modern Construction ERP Solution

Operating and growing a construction firm in today's business environment is a multilayered undertaking. Shifting industry demands and building delivery methods make it more important than ever to gain efficiencies and deliver on-budget, high-quality projects with high levels of client satisfaction.

Many ERP solutions and applications only solve pieces of the puzzle, leading to information silos, double data entry, and a lack of real-time information flow between the office and the job site.

Acumatica Construction Edition is a scalable, true cloud ERP application that provides best-in-class functionality in a single, cohesive platform configured to meet the needs of general contractors, specialty subcontractors, homebuilders, land developers, and civil construction businesses.

Improve customer service and drive out inefficient processes with accurate, complete, and real-time insights into all areas of your business. Unique consumption-based licensing makes Acumatica an affordable option for all sectors of the construction industry.



“Just a few months ago, the government told us we were the only contractor to meet its deadlines and remain in budget, so rather than building one of every three houses, they want us to build all the houses in the Cape...Acumatica really is an all-in-one, adaptable solution that quickly enables everything you need to run your business. And it is effortless to use.”

– GRAHAM LEONARD,
CHIEF FINANCIAL OFFICER
& OPERATIONS MANAGER,
DUKATHOLE GROUP

ABOUT ACUMATICA

Acumatica Cloud ERP provides the best business management solution for digitally resilient companies. Built for mobile and telework scenarios and easily integrated with the collaboration tools of your choice, Acumatica delivers flexibility, efficiency, and continuity of operations to growing small and midmarket organizations.

Business Resilience. Delivered.

Learn more about how Acumatica can work in your business by visiting us online at www.acumatica.com.

