

# Solutions for Construction



## Nixel Solutions for Construction

### **Managing project progress & billing, and building top management reports for multi-location construction sites.**

Nixel Solutions are built with robust web architecture that enables management of systems and data without any restrictions on location, distances and time.

Nixel Solutions emphasize the need for a reliable and secure access authentication system and a configurable interface that allows system administrators to restrict access of users to specific areas, tasks and features.

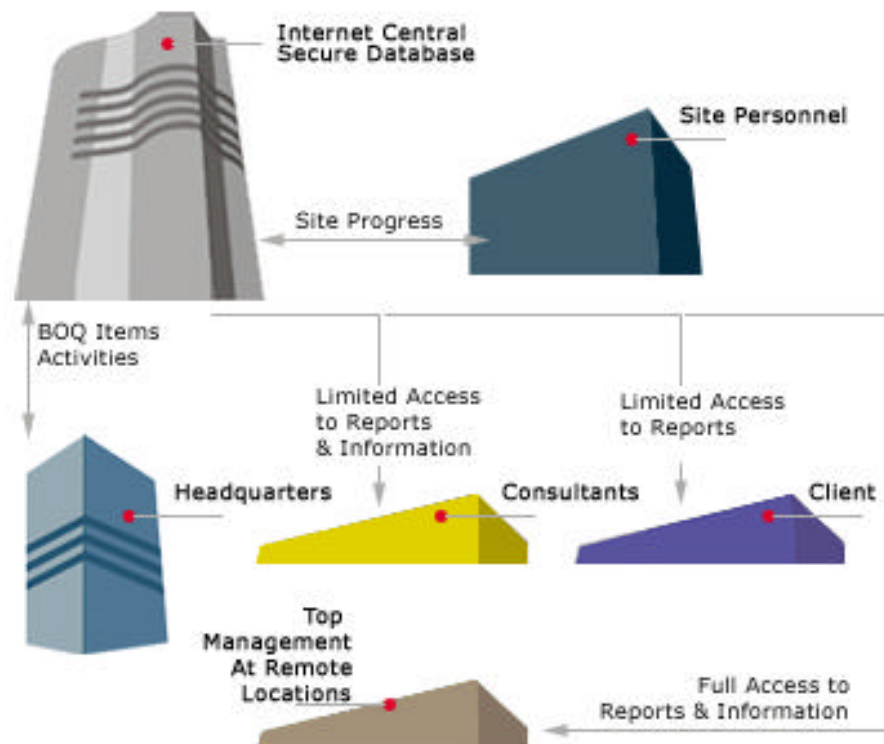
Nixel Solutions also highlight the need for a diverse set of management reports in easy to comprehend visual and tabular formats that are simple to access and view from any location and at any time whatsoever.

## Enabling real-time data availability, enterprise control & analysis

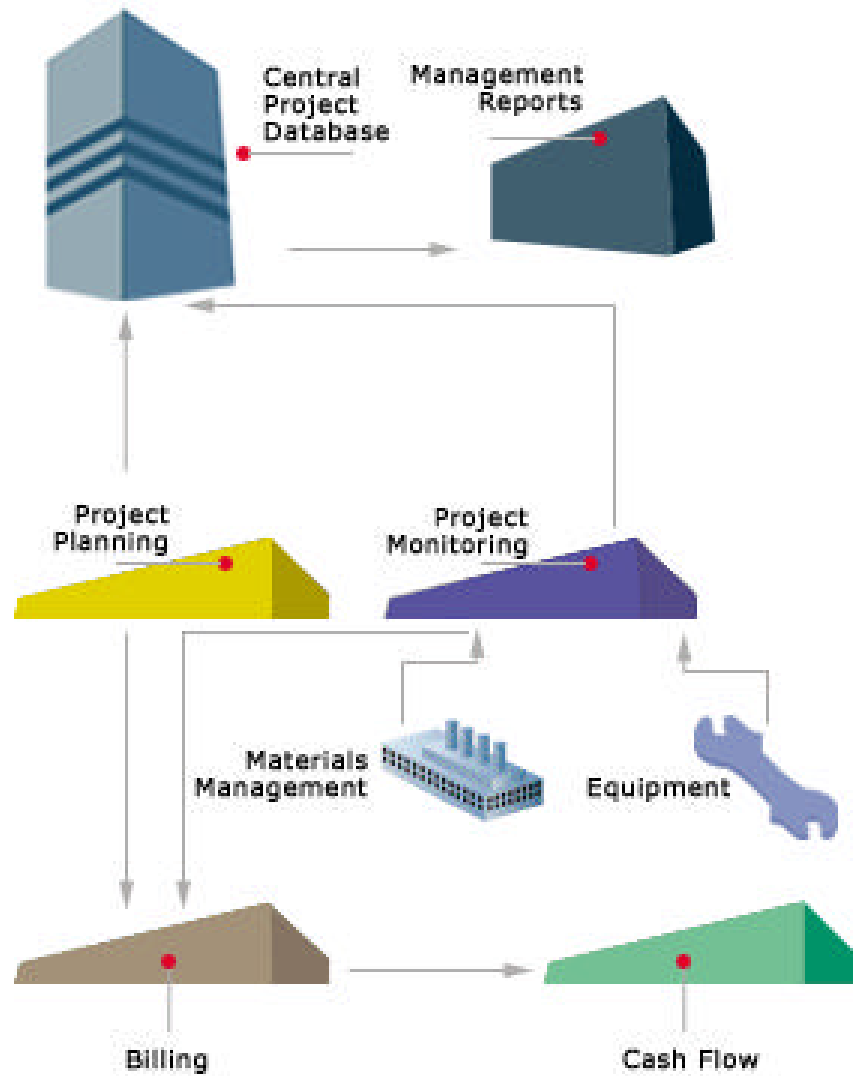
Nixel Solutions for Construction Project Monitoring, Billing & Management have been built over a robust web architecture to enable easy multiple location operation with a single centralized database. The user interfaces are simple and intuitive and built along the lines of global web standards. A relational database maintains the necessary high volume data securely.

The primary modules of the Nixel solutions are

- **Project Planning**
- **Project Monitoring**
- **Billing**
- **Cash Flow**
- **Materials Management**
- **Equipment**
- **Management Reports**



## Nixel Solutions for Construction



## Nixel Solutions – Summary of Modules

### Project Planning

- Project Profile
- Project Team Composition & Privileges
- Bill of Quantities
- Commercial Profile
- Project Schedule
- Variation Orders

### Project Monitoring

- Work Done Entries
- Progress Reports - Daily, Weekly, Spot
- Scheduled vs Actual Progress

### Billing

- Work Done Value Computation
- Economic Indices
- Escalation
- Taxation
- Interest
- Others

### Cash Flow

- Advance Requests
- Client Payments
- Advance Recoveries
- Interests
- Retention
- Bank Guarantees

### Materials Management

- Material Receipt
- Material on Site Advance
- Material Issues
- Material Consumption Tracking
- Inventory

### Equipment

- Equipment deployment
- Equipment advance

### Management Reports

- Project Reports
- Across Project Comparisons

## Process Flow that encapsulates the complete Project Cycle

### Project Planning

The project begins with the encoding of the Bill of Quantities for a project into the database in a structured format that enables easy recall and interface with the other modules. The Bill of Quantities follows a process of workflow that require verification and approval before the project begins. Once approved the Bill of Quantities (BoQ) cannot be revised without a formal variation order.

The project's commercial terms and conditions are also entered into a structured commercial profile. The commercial profile can be revised any number of times during the life-cycle of a project.

### Project Monitoring

The monitoring of a project begins when resources are committed and deployed and the need for a close control on time and costs becomes critical. Monitoring needs to be carried out with critical data inputs from the work site. Entry of quantities of work done and other progress on the site by site managers and engineers forms the basis for this monitoring. Entries of work done are detailed with sub-items and other supporting information including AutoCad graphs of section profiles in cases like excavations, filling and tunneling. The data entered on site enables a detailed analysis of work progress on the project through graphs and charts that show the percentage of work done at the various sections and items of the project. These can also be shown visually using graphics and modeling.

### Billing

Bills based on the work done on the various items mentioned in the Bill of Quantities are computed and submitted periodically. These bills are developed using the entries of work done on site and then applying the terms and computations in the commercial profile to add or deduct project additions and rebates, escalation, taxes, interest and other charges and adjustments. The bill is submitted with a summary and supporting details. The bill is scrutinized and certified after making corrections and adjustments to the rates and quantities of work based on the assessed progress on the project jointly with the client.

### Cash Flow

Cash flow in a project is critical and needs to be managed accurately and carefully. Advances are periodically sought and received against deployment of resources and purchase of volumes of material. These advances are adjusted against bills through the process of recovery based on the norms specified in the commercial profile. Payments received against bills are accounted. Based on the commercial terms and conditions for the project, interest payments on advances received and on bills that are overdue for payment are adjusted. Account statements based on the amounts due, the resources that have been committed, the costs that have been incurred and the amounts that have been received are periodically reviewed to enable better control on the financial management of the project.

**Materials Management**

As the project progresses, a store at each site receives and issues a large volume of construction material like steel, cement, sand and others like bitumen and finishing compounds. The management of this material requires a lot of coordination since large financial resources are committed during the progress of the project. Advances are provided against this material and these are accounted. As the material is consumed, the amount provided as advance is adjusted suitably against the billed amounts. A running account of material receipts, material issues, material consumption, advances received and recoveries made is done and the same is then transferred to the billing during the generation of the bill.

**Equipment**

Every project requires the use of equipment and these are deployed to sites based on their need and schedule. Deployment of equipment involves high costs and at times special investments are made in equipment and accessories. Clients provide advances to cover these expenses and these are recovered over a specified duration through recoveries that are deducted from each bill. Equipment deployed are profiled and advances received against their deployment recorded. Equipment deployment requests and schedules can also be managed effectively.

**Management Reports**

Management teams of construction companies need to manage operations across sites that might be at various geographic locations. The management of these sites will include knowing the progress on the project, the resources deployed including people, equipment and material, understanding the billings that have been done and the monies received, drilling down to look at individual BoQ items and site daily progress reports, delays in payments and interest burdens that will need to be borne or passed on to the client. In addition, a number of what-if analyses can help simulate possible situations such as an increase in a critical raw material or the effect of a delay on the total project schedule.

Reports cutting across projects can also help to analyze relative performance of the projects as well as understand the total operations of the division / company summed up for all projects. Comparisons could include rates of similar items across projects, resources deployed for specific items and costs incurred. Summation of performance of projects could include total billings done across projects in a certain period or analysis of possible cash flow that could accrue through customer payments.

Management reports are expandable and can be created using a sophisticated report editor and added to the software.

## Business, Functional & Technological Knowledge+Expertise

**Nixel was founded by engineers and the passion and understanding of the mathematics and discipline of engineering is well understood by us. Over the past decade we have had opportunity to work with hundreds of organizations across many business and industrial domains, in their various functional areas, enriching our knowledge in each of them. This translates into a strong ability to cross-pollinate ideas and bring in best practices into our systems and software.**

Nixel Technology has been providing advanced technology & information management solutions to engineering, building & manufacturing organizations since 1991. Promoted by graduates of IIT, Nixel has been successful in understanding business needs for productivity & quality, business processes and their complexity and the transitional emotions that go into any change in organizations, and delivering solutions that work for business enterprises and result in large improvements in productivity, quality, costs & thereby competitive advantage.

Nixel has engineers at the core of its operations, for interfacing with customers, understanding their problems and operations, helping them formulate strategies and methodologies and finally designing & developing software that will help in automating their business processes and enabling better management of knowledge.

Through a decade of maturity in software design and development, Nixel has evolved a structured methodology to software & information design, project management and quality assurance that enables us to deliver software to our customers with high reliability, security and effectiveness, on time.

These solutions have been built from a good grasp of functional & design issues relating to construction site management. It has also involved a good understanding of software and information design, good knowledge of CAD, imaging & web interfaces.

Nixel with its maturity of management and project execution is well suited to provide you with this solution and help you implement it and generate early payback. Our engineers also understand CAD and civil design well. Our developers are skilled in programming and development of web interfaces that are simple to use and effective. Our project management methodology will ensure adherence to project schedules. Finally our quality assurance team will address all problems in the software so that when it is finally deployed, it is ready to use and benefit from.

## A Committed Technology Partner

For more information on Nixel Technology we invite you to visit us at [www.nixel.com](http://www.nixel.com) or email [sales@nixel.com](mailto:sales@nixel.com). Please also feel free to call us at 91-22-5916463 or fax to 91-22-5922394.

We look forward to discussing technology & strategic possibilities and engaging in a partnership with your organization.



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