

# Quality Procedures for Shop Drawings

By Jack Metcalfe

Often overlooked in today's fast-track, RFI burdened, quality conscious construction environment is a quality certification program for detailing, the process whereby steel design documents are translated into shop fabrication drawings and field erection drawings. Lacking the thundering power of a fabricating shop or the excitement of huge steel members being lifted into a structure, detailing lives in relative confinement in off-site drawing rooms with only a change in design, RFI, misunderstanding, or missed transmittal to call attention to its existence.

While the fabrication and erection communities both developed fine, well known and widely accepted certification programs to give credence to their members commitments to quality, the detailing profession had been left in a vacuum with no formal oversight of its commitments. There had been no acceptable means of judging a detailing firm's capability except by trial and error. Without a standard of measurement by which to judge an organization's operations, buyers were left on their own to choose a detailing firm, and to hope that the lowest price did not mean the lowest standard of supply.

Members of the National Institute of Steel Detailing (NISD) have long been concerned about the perceived lack of quality consciousness surrounding the detailing profession. It was apparent that a response to these perceptions was required if Detailers were to better serve the fabricated steel industry. A mechanism was needed to provide standard levels of assurance to the steel construction community. However, no other program existed, or exists today, which independently, without client favoritism, examined, measured, and certified a detailing firm's commitment to quality.

Therefore, the NISD, together with the American Bureau of Shipping (ABS) and with advice and encouragement from noted individuals within the fabrication, erection, and design fields, developed and introduced a Quality Procedures Certification Program in 1975-76.

Following a checklist format, the program required written references from the applying Detailer's clientele, proof of legal operation, documented quality commitment procedures, project references and operational responsibilities. Trained, independent ABS auditors were hired to review applications and to conduct on-site reviews of the applicant's firm to ensure that drawings were checked, that procedures were in place for the control of documents, for coordination with the engineer-fabricator-erector, for changes in design, for shop or field problems, for OSHA standards, and for material/code identification. Mandatory logs for documents were required and interviews with detailing personnel were conducted regarding mill practice knowledge, checking systems, code and specification knowledge and drawing procedures. Special credit was given for formal or on-the-job education or training. Exit interviews were held in which suggestions and criticisms could be reviewed with the applicant prior to a certificate being awarded or withheld. A minimum score was required to obtain a certificate. Firms did not need to be members of NISD, but could also be nonmember firms or detail drawing rooms within a fabricating, construction or engineering company. Complaints and appeals methods were established.

The program met with immediate success within the detailing community with a majority of NISD members and numerous inde-

pendent firms applying for certification, all believing that a measured, identifiable, commitment to quality would be a welcome service to the construction world. That did not prove to be the case. Either because of a lack of understanding, or because of an unrealistic fear that quality standards would increase the price of detailing, the demand for quality detailing procedures has been slow to materialize and, until now, has rarely been specified in contract documents. Only recently has there been an increasing understanding in the market place regarding the positive ripple effect quality drawings will create for costs, scheduling, and safety.

As a result of this awareness the NISD, with advice and counsel from other associations, is revitalizing and updating its program to closely compliment other relative certification programs. To better meet the demands of the industry, code writing bodies, bonding and insurance agencies, the checklist system is presently being revised to one of documented standards with even more mandatory elements. Audits are performed by professional engineers having knowledge and experience with detailing and fabrication. NISD continues to have the only existing program specifically tailored to the review, audit and examination of a detailing organization's procedures, controls, and commitments.

While no program can guarantee perfection, those requiring the use of this program can be assured that certified detailing organizations have practices and systems in place to meet the requirements of the client and of the project. It confirms that the organization has the personnel, experience, attributes, and means necessary to enable it to supply fabrication drawings, member placement drawings, and related items which meet today's demands for quality in structural steel construction. ■

For more information, or to discuss requiring the NISD QP Program in a project specification, please contact the National Institute of Steel Detailing, Oakland, CA. ([nisd@sbcglobal.net](mailto:nisd@sbcglobal.net))

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