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ARCHITECTS, ENGINEERS, COMPUTER PRODUCT AND THE LAW: A MATTER OF ANTICIPATION

by Paul A. Mathew*

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I. INTRODUCTION

The architectural and engineering professions have been the subject of a vast expansion in liability exposure. Changes in the architectural and engineering business world, such as the increased size of projects, demands for new technology and specialized talents, expanded usage of sophisticated building materials, and the impact of volatile economic conditions, have combined to encourage

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the growth of sturdier, multidisciplined organizations. Similarly, changes in the architectural and engineering legal world such as the near abolition of the privity defense, increased judicial acceptance of malpractice theory, lengthened time periods of exposure to liability, and the ease of joinder under modern pleading practice, have combined to ensure architects and engineers a role as an active participant in the world of construction litigation.

The attention of the legal community has been focusing on the legal issues involved in computer product usage. "Computer product" refers to the functional capability of computer systems to access, analyze and report data. For the purpose of this article, "computer product" does not refer to the forms in which computing capability may be manifested. The original designations regarding form, "hardware," the processing unit, and "software," the operating information, have become blurred. Indeed, the Court of Customs and Patent Appeals has recognized the existence of "firmware"—the "embodiment of information into hardware."

Professional articles, promotional materials, law review articles, hornbooks, services, government publications, professional articles, Id. at 1078-81.

3. Id. at 1081-83.


6. SKIDMORE, OWINGS & MERRILL, COMPUTER CAPABILITY (1980); CALMA Co., INTERACTIVE COMPUTER-AIDED DESIGN CONSIDERATIONS FOR ARCHITECTS, ENGINEERS AND CONSTRUCTORS (1978) [hereinafter cited as INTERACTIVE COMPUTER-AIDED DESIGN].


10. See COMPTROLLER GENERAL, REPORT TO THE CONGRESS OF THE UNITED STATES,
association materials, and seminars are dissecting the usage of computer product. The 1980 edition of Anatomy of a Personal Injury Law Suit, published by the Association of Trial Lawyers of America lists twenty-seven theories of liability potentially applicable to computer product litigation. A newly released work on engineering evidence refers to potential computer product evidentiary problems.

Lawyers have begun to lecture on such topics as cost-benefit ratios, risk analyses, and the liability of officers and directors regarding computer operations. International lawyers have discussed the treatment of liability for programming errors. Lawyers are publishing articles concerning the effects of computer product contractual language in computer trade periodicals. Verdicts in the millions of dollars have been rendered against computer product suppliers.


13. These include prima facie negligence, professional negligence, failure to warn of dangerous conditions, derivative actions, passive responsibility involving respondent superior or imputed negligence, res ipsa loquitur, statutory violations, gross negligence, breach of express warranty, breach of implied warranty, strict products liability, invasion of the right of privacy, interference with contractual or business relations, fraud, misrepresentation, breach of warranty in new dwellings, implied contract of professional treatment, third party beneficiary actions, survival actions, wrongful death actions, workmen's compensation actions, federal tort claims, safe place to work actions, indemnity, contribution, and subrogation. See Association of Trial Lawyers of America, Anatomy of a Personal Injury Law Suit 34-38 (1980).


18. See Glovatorium, Inc. v. NCR Corp., C79-3393-WWS (N.D. Cal. 1981) (verdict included $50,000 breach of contract damages, $7,000 "bad faith" damages, $200,000
The architectural and engineering community is rapidly immersing itself in the use of computer product. The Comptroller General of the United States has recommended that all Federal agencies should encourage the use of computer product in Federal design projects.\textsuperscript{19} Architectural and engineering firms are becoming accustomed to incorporating in their work the output of computer product such as programs used to calculate energy usage, mechanical design and structural design.\textsuperscript{20} In leading firms, sophisticated computer product, such as programmed acoustical studies, programmed specification packages, stress analysis programs, cost estimation programs and graphic analysis programs, is now in use.\textsuperscript{21}

19. See \textit{COMPTROLLER GENERAL, supra} note 10.
20. See B. \textit{FORBES, supra} note 11, at S-2, S-3 & table V.B.1.
21. Forbes' 1976 survey revealed the existence and usage of 170 software programs used to calculate a very broad range of architectural and engineering problems. These programs included:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>PIPF</td>
<td>Air Conditioning Piping Design and Analyses</td>
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<tr>
<td>DOMINO</td>
<td>Architectural Floor Plan Generation</td>
</tr>
<tr>
<td>COMPBM</td>
<td>Design of Composite Beams</td>
</tr>
<tr>
<td>COWC</td>
<td>Reinforced Concrete Building Frames</td>
</tr>
<tr>
<td>CMLFCYCL</td>
<td>Life Cycle Cost Analysis</td>
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<td>CMCCY</td>
<td>Cost Estimating</td>
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<td>AAMCPM</td>
<td>Critical Path Scheduling</td>
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<td>DRAWBAR</td>
<td>Critical Path Scheduling, Graphical Output</td>
</tr>
<tr>
<td>SCPRG</td>
<td>Short Circuit Current Calculation</td>
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<tr>
<td>CSGS</td>
<td>Computation of Specific Gravity of Soil</td>
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<td>FDSA</td>
<td>Electrical Distribution System Analysis</td>
</tr>
<tr>
<td>LLC</td>
<td>Lighting Level Calculation</td>
</tr>
<tr>
<td>SBFF</td>
<td>Steel Beam Floor Framing</td>
</tr>
<tr>
<td>SBFA</td>
<td>Settlement of Building Footing Analysis</td>
</tr>
<tr>
<td>DDD</td>
<td>Engineering Drawing Documentation</td>
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<td>CSDRSP</td>
<td>Computerized Ship Drawing Retrieval and Status</td>
</tr>
<tr>
<td>EARTH</td>
<td>Earthwork Volume Calculation</td>
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<tr>
<td>ENERGY</td>
<td>Energy and Fuel Consumption Analysis</td>
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<td>IBMBEA</td>
<td>IBM Building Energy Analyses</td>
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<td>ENVIRON</td>
<td>Environmental Control</td>
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<td>FRAMUS</td>
<td>Steel Frame Analysis</td>
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<td>FRAMUS</td>
<td>Concrete Frame Analysis</td>
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<td>SUN</td>
<td>Interactive Graphic Plotted</td>
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<tr>
<td>ENRG 3</td>
<td>Annual Cooling Load Calculation</td>
</tr>
<tr>
<td>EXHAU</td>
<td>Industrial Exhaust System Design</td>
</tr>
<tr>
<td>INSUL</td>
<td>Building Insulation Economics</td>
</tr>
<tr>
<td>PIPEA</td>
<td>Piping Network Analysis</td>
</tr>
<tr>
<td>PACCT</td>
<td>Project Accounting-Contract Management</td>
</tr>
<tr>
<td>PLC</td>
<td>Project Labor and Cost Accounting</td>
</tr>
<tr>
<td>CPSS</td>
<td>Critical Path Scheduling System</td>
</tr>
<tr>
<td>SHADOW</td>
<td>Shadow Analysis Program</td>
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ARCHITECT/ENGINEER LIABILITY

ARCHITECT/ENGINEER LIABILITY

FORTUNE magazine recently described the computer assisted design and manufacture of hydraulic tubing for the DC-10 aircraft.\(^{22}\) Gibbs & Hill, Inc. has designed a conventional power plant to be built in Egypt for which "all engineering drawings—full sized, detailed and dimensioned—were computer generated."\(^{23}\)

II. RESPONSIBILITIES OF COUNSEL IN COMPUTER PRODUCT COUNSELING

A. AWARENESS OF THE ENVIRONMENT

Problems raised by incorporation of computer product in the output of architectural and engineering firms present great challenge to counsel. Dependent upon the extent to which an architectural and engineering firm has become involved with the usage of computer product, counsel can expect to be called on to render advice concerning the acquisition of computer product,\(^{24}\) the formulation of procedures used to document computer product usage,\(^{25}\) and litigation should computer product performance be substandard.\(^{26}\)

As the impact of computerization becomes more widely perceived, it will become the task of counsel to advise the architectural and engineering client on a broad range of legal and business considerations. The relationships between the architect and engineer, their clientele, and their computer product suppliers will call for careful evaluation of contractual language,\(^{27}\) long range business policy,\(^{28}\) and insurance coverage.\(^{29}\) It can be expected that counsel to an architectural and engineering firm might be called on to assist

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\(^{1}\) MASTERSPEC - Specifications
\(^{2}\) SEWER - Sewer Sizing
\(^{3}\) GASP - Structural Analysis
\(^{4}\) BSS - System Simulations

*Id.* table V.B.1. Development of programs used to simulate future conditions is currently one of the most heavily investigated and active fields in the computer product markets. Recently the National Bureau of Standards conducted a study costing in excess of $100,000 to determine the accuracy of the FASBUS II program developed to calculate fire loading of conventional steel frames. See *Fire Tests Computer Model*, Eng. News Rec., Oct. 15, 1981, at 36, col. 1.


25. See infra notes 133-38 and accompanying text.

26. See supra note 18 and accompanying text.

27. See infra notes 101-32 and accompanying text.

28. This article does not presume to replace business judgment with legal judgment. Rather, it is felt the business judgments inherent in the establishment of long
the firm in conducting forseeability and risk-benefit studies, the development of internal policy directives, and the evaluation of computer product audit data. In sum, it will be a continuing challenge for counsel to help establish, maintain and assert a proper balance of rights afforded the architect and engineer relative to the use of computer product.

B. EVALUATION OF THE CLIENT: THE ARCHITECTURAL AND ENGINEERING FIRM

When advising an architectural and engineering firm on computer product issues, counsel should pay particular attention to the level of computer product sophistication possessed by the firm. Computer product sophistication is recognizable in two conditions, one the level of computer product experience and two, the level of perceptivity to computer product legal issues. Most likely, an architectural and engineering firm will exhibit one of four experience/perceptivity profiles, each of which indicates a level of computer product sophistication.

First, the architectural and engineering firm may have no involvement with the use of computer products. The firm, like many

range business policy should be made following a consideration of likely legal issues faced in the business environment.

29. See infra note 139 and accompanying text.
31. See F. Greguras, supra note 15, at 12-16.
33. The experience/perceptivity profiles are suggested on the basis of the author's telephone conversations with outside counsel, inside counsel, architects, engineers, computer managers and computer technicians.
34. The statistics are changing rapidly. "[G]o into ninety-nine percent of the architectural offices in the United States and you will find the computer is not a factor in routine architectural services." D. Sides, Notes on Computers and Architecture, Reflections on Computer AIDS 131 (1975). "Eighty-seven percent of the A/E firms and ninety-two percent of the schools (responding to a questionnaire sponsored by The American Institute of Architects) made use of computers in one way or another, some quite extensively and others occasionally." B. Forbes, supra note 11, at S-1.
others, may have been scanning the literature and supplier brochures and seeks advice concerning the establishment of a computer product capability. The firm's lack of experience probably equates with little or no awareness of computer related legal issues. In view of the large numbers of firms of this type, the extent and quality of advice rendered to the firm may be of great value.\footnote{The true costs of the use of computer services, particularly for interactive, in-house applications such as computer assisted design, can be deceptive. It has been estimated the initial fixed cost of computer-assisted design equipment represents only one-sixth of the overall cost of the use of such equipment. \textit{See generally Computer-Aided Design: Graphics are More Than Games, Building Design & Construction}, Oct. 1981, at 66 [hereinafter cited as \textit{Computer-Aided Design}].}

The second experience/perceptivity profile manifests itself in a contradiction. Even though the architectural and engineering firm may be moderately or heavily involved in the use of computer product, the firm may be unaware of the legal issues related to the use of the computer product. Firms fitting this profile run the gamut from the very small firm, using service bureau accounting applications, to large firms, designing multi-million dollar projects utilizing sophisticated computer product. It may be that the larger, heavily involved firm has in-house counsel seeking information concerning the impact of computer related problems on the organization's activities. The quickest way to determine whether the firm matches this profile is to examine the firm's contract and correspondence files with an eye toward finding executed, standard supplier contracts.\footnote{See infra notes 100-32 and accompanying text.}

The third experience/perceptivity profile is best characterized by firms having moderate or heavy involvement with the use of computer product, yet exhibiting a low level of awareness of computer product legal issues. Firms of this type may either have evolved a computer product capability or have come to rely on a single, nationally recognized, computer product supplier. Although this type of firm may have the computer product functions centrally managed and operated, it may be that the personnel in charge of the function have no awareness of contractual issues, the legal duties imposed upon a computer supplier, the possibility of computer programming error, or any record of computer service "trouble." Such personnel, perhaps as a reflection of the attitudes of the firm, might voice a skeptical attitude concerning the ability of the firm to hold a computer product supplier liable for negligence or breach of contract.
Similarly, such personnel might be heard to voice an attitude that the professional stamp on drawings renders the professional solely liable for any computer errors contained in the stamped document.\(^{37}\)

The fourth profile is illustrated by an architectural and engineering firm that has experienced moderate or heavy involvement with computer product and exhibits a high level of awareness of the legal issues involved. Typical firms exhibit active involvement with computer product suppliers in order to more effectively incorporate computer product output in the designs created by the firm. As a reflection of that effort, the firm strives to maintain and enhance goodwill of the computer product supplier. The firm may have developed a preference for the internal development of system software packages. Such firms make a point of calling for an attorney to rewrite standard supplier contracts for all substantial computer product purchases. Finally, the firm may be in the process of replacement of its computer system.

C. **Awareness of the Intended Computer Product Application**

Counsel should inquire thoroughly regarding the nature of the intended computer product application. The extent and quality of inquiry may well be reflective of the long term benefit, gained or lost, by the architectural and engineering firm using the computer product. Should counsel inquire about the nature of a computer assisted design application, the application now being promoted heavily throughout the industry, the architectural and engineering client might characterize that application using the following description:

A computer assisted design application consists of a main frame computer, processors, work station display devices, communications equipment, printers and operating instructions. The application seeks to integrate the most recent advances in computer technology with the active input of the professional designer.\(^{38}\) “Computer assisted design (CAD) is a human-oriented tool.”\(^{39}\) Utilizing an electronic capacity which allows the visual representation of basic parameters of a design, CAD enables a designer to design, draft, analyze and recreate a design without recourse to traditional drafting tools.\(^{40}\) A CAD system electronically “remembers” all project drawings submitted to it, can contain catalog listing complete with specifications for items used in the design, al-

\(^{37}\) See *supra* note 33 and accompanying text.

\(^{38}\) See *Interactive Computer-Aided Design*, *supra* note 6, at 2/11.

\(^{39}\) *Id.*

\(^{40}\) Bylinsky, *supra* note 22, at 106.
allows simultaneous viewing and correction at multiple locations, and allows the designer to "see" immediately how changes to the design impact other aspects of the overall project. Further, CAD systems can be used to integrate separate computerized service packages, and to test the created design "on-screen," thereby saving time and money. When joined to a rapid printing/drafting system, the computer assisted design can be "manufactured"; i.e., drawn in a fraction of the time required by traditional production methods. Because the CAD system visualizes the design, the environment most similar to the one in which architectural or engineering designer was trained, and because the system eliminates the drudgery of human drafting, the use of CAD is thought to improve productive morale. Additionally, on typical architectural, engineering or construction projects, 50 to 70 percent of the manhours normally required for basic documentation can be used for other purposes because the CAD system can generate needed documentation as an adjunct of its own operation. By utilizing the modern American communications network, it is quite possible to introduce the CAD system to the remote sites, the construction site or the divisional design office. Overall the CAD system can be expected to rapidly pay user architectural and engineering firms dividends in increased production, time and money saved, and better quality services. "CAD has more potential to increase productivity than any other development since electricity."

Such inquiry will place counsel on alert. Substantial resources will be required to realize the benefits promised by a computer product application such as computer assisted design. As the use of the computer to assist in design or in other applications increases, the firm might come to rely upon it. Foreseeably the opera-

41. INTERACTIVE COMPUTER-AIDED DESIGN, supra note 6, at 2/11.
42. Bylinsky, supra note 22, at 106.
43. Id. at 113.
44. INTERACTIVE COMPUTER-AIDED DESIGN, supra note 6, at 2/12.
45. Id. at 2/14.
46. Id. at 6/8.
47. Bylinsky, supra note 22, at 16.
48. Id. at 114.
49. The salaries of a typical CAD/CAM support group of six people might cost more than one million dollars in the first five years of system operation. See CAD/CAM Isn't Free From Growing Pains, INDUS. WEEK, Nov. 16, 1981, at 111-12. See generally Computer-Aided Design, supra note 35.
tions of the firm and even its cash flow might become dependent upon a computer product application.

D. EVALUATION OF COMPUTER PRODUCT SUPPLIER

Knowledge of the intended computer product application should be augmented with knowledge of the supplier of the computer product. Perhaps the most effective way of doing this is to sit in on a meeting between a major computer product supplier and the appropriate representative of the architectural and engineering firm. The information generated at such meetings will be of great reference value. Basic research concerning the supplier, his internal structure, his marketplace position, his accessibility and his current financial statement will aid in making an appraisal of the usefulness of the intended computer product application.

E. EDUCATION OF THE CLIENT: THE ARCHITECTURAL AND ENGINEERING FIRM

As the architectural and engineering firm will probably be well versed in the financial aspects of computer product use, it would be well for counsel to advise the firm of the legal implications of such use. An observation of Judge Vincent Biunno is the appropriate starting point:

The computer is a marvelous device that can perform countless tasks at high speed and low cost, but it must be used with care. This is because it can also make errors at high speed. Those who use computers for record and accounting purposes, including the government, are accordingly obliged to operate them with suitable controls to safeguard the reliability and accuracy of the information.50

The court will evaluate the computer product incorporation judgment of the architect and engineering using two standards. In the large majority of cases, the court will consider the quality of judgment rendered in terms of a professional standard; a standard reflecting the reliance of clients and third parties upon the skilled judgment of the architect and engineer. In some cases, probably still a few years away, the court might evaluate the quality of computer product incorporation judgment in terms of the general negligence standard. Such evaluation reflects the right of reliance of clients and third parties upon the ordinary, prudent judgment of the architect and engineer.

According to Professor Phillips, Professor of Law at the University of Tennessee, the architect and engineer are granted a "... re-

laxed standard of accountability owing to policy considerations" in the exercise of professional judgments. The relaxed standard is equivalent to "... an immunity or privilege" of sorts which is reflected in descriptions of the duty of care owed by the architect and engineer:

Architects, doctors, engineers, attorneys, and others deal in somewhat inexact sciences and are continually called upon to exercise their skilled judgment in order to anticipate and provide for random factors which are incapable of precise measurement. The indeterminate nature of these factors makes it impossible for professional service people to gauge them with complete accuracy in every instance... Because of the inescapable possibility of error which inheres in these services, the law has traditionally required, not perfect results, but rather the exercise of that skill and judgment which can be reasonably expected from similarly situated professionals.

Compliance with the professional judgment standard is achieved when the architect and engineer adheres to the accepted practices in his profession. Although the architect and engineer need not comply with customary practice so long as he acts in a manner consistent with due care, compliance with custom alone may not shield the architect and engineer from liability. Further, the accepted standard of practice will probably be considered on a national rather than a local basis.

It should be noted that the scope of a professional judgment is not necessarily limited to considerations affecting only parties in privity of contract with the architect and engineer. The Supreme Court of California has implied that the professional judgment of

52. Id. at 3.
54. Phillips, supra note 51, at 5.
58. See Note, Liability of Architects and Engineers to Third Parties: A New Approach, 53 Notre Dame Law. 309 (1977) (third party plaintiff not in privity with architect and engineer may not have cause of action against architect and engineer on the basis of the extent to which the transaction was intended to benefit the plaintiff, the foreseeability of harm to the plaintiff, the potential for unlimited liability, the effect of liability on the profession, the relative burden of prevention and the ability to bear the loss, the moral blame, and the policy of prevention of future harm).
the architect and engineer should be reflective of third party concerns.\textsuperscript{59} Those concerns include:

a. The extent to which the professional services rendered to a client by the architect and engineer are intended to benefit third parties;

b. The foreseeability of harm to the third parties;

c. The burden of prevention of loss relative to the ability to bear loss;

d. The moral blame implicit in the causation of loss.\textsuperscript{60}

In a minority of cases in the future, the court may evaluate the quality of a computer product incorporation judgment in terms of the general negligence standard. Under that standard, the exercise of ordinary, prudent judgment by the architect and engineer would discharge the general duty of care owed others.\textsuperscript{61} The most relevant statement of the rule appears in \textit{The T. J. Hooper},\textsuperscript{62} a case involving the failure to use advancing technology. In \textit{Hooper}, an owner of two tugboats was found negligent for his failure to equip the tugboats with radios. At that time, 1928, only one tugboat company provided radios for its tugboats even though the radio set was commercially available and in otherwise general use. The court held that had the tugboats been supplied with radios, the master would have heeded severe weather reports and put it into safe harbor, thereby avoiding the loss of barges in tow. In his opinion, Judge Learned Hand noted the possibility of exercising judgment in a manner acceptable with common practice yet failing to be ordinarily and reasonably prudent:

\begin{quote}
In most cases reasonable prudence is in fact common prudence; but strictly it is never its measure; a whole calling may have unduly lagged in the adoption of new and available devices. It may never set its own test, however persuasive be its usages. Courts must in the end say what is required; there are precautions so imperative that even their universal disregard will not exercise their omission.\textsuperscript{63}
\end{quote}

Although it seems anomalous to evaluate the quality of skilled, professional judgment in terms of the “reasonable” though unskilled standard, a few cases have so held. In \textit{Pederson v. Dumochel},\textsuperscript{64} the Supreme Court of Washington, noting its displeasure with excessive reliance on local, customary methods of practice, held a physician li-

\begin{itemize}
\item \textsuperscript{59} Biakanya v. Irving, 49 Cal. 2d 647, 320 P.2d 16 (1958).
\item \textsuperscript{60} Id. at 649, 320 P.2d at 19.
\item \textsuperscript{61} See generally W. PROSSER, supra note 53.
\item \textsuperscript{62} The T. J. Hooper, 60 F.2d 737 (2d Cir. 1932), cert. denied, 287 U.S. 662 (1933).
\item \textsuperscript{63} Id. at 740.
\item \textsuperscript{64} Pederson v. Dumochel, 72 Wash. 2d 73, 431 P.2d 973 (1967).
\end{itemize}
able for failure to use an x-ray machine. The same court in *Helling v. Carey*,65 held two ophthalmologists liable for their failure to test a patient for glaucoma. In *Darling v. Charleston Community Memorial Hospital*,66 the Illinois Supreme Court held a hospital liable for the failure to require a treating physician to seek consultation of other professionals during the treatment of a complex case.

The decisions, as a whole, indicate the power of the courts to monitor the evolution of standards used to evaluate professional conduct. Further, the decisions call attention to the possibility that the computer product incorporation judgment of the architect and engineer may be evaluated using the ordinary negligence standard.

Having reviewed the likely standards to be used in the evaluation of incorporation judgment, counsel should candidly advise the architectural and engineering firm that it should expect and consequently plan for exposure to potential liability. Potential liability exposure will probably fall into either one of two main streams.

First, the firm could experience liability exposure as a result of its judgment not to incorporate computer product output in design. Firms failing to employ computer product output in design will experience potential liability exposure that will evolve and expand with the passage of time. If current indications hold true, the decreasing cost, increasing reliability, accuracy, availability and ease of incorporation of computer product output in design will impact the factors taken into account in the incorporation decision.67 It has been suggested that where it is alleged damage resulted from the judgmental failure of the architect and engineer to incorporate computer product output in design, courts should consider evidence of:

a. The simplicity and reliability of the computer product concerned;

b. The availability and ease of operation of the computer product concerned;

c. The cost of the computer product use;

d. The benefit gained by the computer product use;

e. The impact of requiring the use of the particular computer product on the profession and on society.68

Under either the professional or ordinary standards, firms following

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68. *See generally DeRensis, supra* note 5, at 61; *Petras & Scarpelli, supra* note 7, at 36.
a "wait and see" policy regarding computer product use risk increased liability exposure.

Similarly, it may be that a damaged plaintiff, be he a client or third party, might challenge the judgment of an architect and engineer in the event the architect and engineer failed to provide timely alternate access to required computer product output. Such liability might arise as a result of the untimely failure of a computer system combined with a lack of potential back-up system availability. In those instances, the architect's and engineer's failure to provide for alternate system usage might lead to a breach of contract action for delay. The architect and engineer should take precautions against that possibility.69

The second primary source of potential liability exposure may be found in the architect's and engineer's incorporation of defective computer product output in design. Defective computer product is created when the computing process is subject to error: (1) error caused by mechanical fault or (2) error caused by human fault.70 Error caused by mechanical fault may stem from system dysfunctions, loss or fluctuation of electrical power or improper environmental conditions. Mechanical related error may be manifested in delay of processing or loss of data.71 Error caused by human fault may include improper computer programming, operation or maintenance.72 Human related errors resulting in jumbled inventory listings, mistaken reservations, or confused mailing lists, have been well documented.73 Intentionally caused human error has been the subject of legislation74 and litigation.75

As Figure 1 indicates, computer product error may originate both within and without the architectural and engineering firm. There is no reason to believe that the in-firm design process that utilizes internally developed or externally acquired computer technology is not subject to both mechanical and human error. Similarly, there is no reason to believe that portions of the design process accomplished by suppliers of computer product outside the

69. Remote site computer services are now being expanded to provide protection from natural disaster. See Retailer Gets Commercial Disaster Recovery Facility, MANAGEMENT INFORMATION SYS. WEEK, Mar. 10, 1982, at 21. See infra note 126 and accompanying text.
70. See Laska, supra note 7, at 167.
71. Id.
72. Id.
73. Id.
74. See FLA. STAT. ANN. §§ 815.01-.06 (West 1980) (computer related crimes).
architectural or engineering firm is not subject to both types of error.

Whether in tort or contract,\textsuperscript{76} courts will determine whether architects or engineers have discharged the duty to protect others against undesirable consequences of their acts.\textsuperscript{77} Modern litigation trends make it unrealistic to assume that the architect and engineer is not under a duty to protect others against the use of erroneous computer product in design. In the non-nuclear engineering environment, the scope of the architect's or engineer's duty to avoid the use of erroneous computer product will be determined using the "proximate causation" standard.\textsuperscript{78} In the heavily regulated nuclear engineering environment, the scope of the duty may be determined according to the "disclosure" standard.

In a speech before the National Academy of Engineers, Senior Circuit Judge David Bazelon clearly stated his preference for open, informed design judgments in the nuclear regulatory process: "When public values are called into play by engineering decisions, disclosure of known risks and unresolved problems is the only course that will protect public decision making."\textsuperscript{79} According to Judge Bazelon, only the most rigorous disclosure of factors comprising the design judgment will suffice in the nuclear engineering environment. "[The disclosure requirement] includes thorough exploration of uncertainties, even if engineering practice would otherwise leave a problem alone until it demanded a solution."\textsuperscript{80} In view of Judge Bazelon's remarks, it would not seem to be too great a leap to conclude the "disclosure" requirement in the nuclear regulatory environment calls for the knowledgeable disclosure of the potential for error in the computer product used to design nuclear systems.

Figure 1 also indicates the growing tendency of architectural or engineering firms to subcontract for design related computer product.\textsuperscript{81} That activity is reflective of the overall economy. The courts have held that contracts for a computer product between non-professional entities, entities in which no licensed professional reviews the computer product for accuracy, allow extensive reliance recov-

\textsuperscript{76} See generally Note, supra note 1, at 1083-1101.
\textsuperscript{77} See generally W. Prosser, supra note 53, § 42, at 244.
\textsuperscript{78} Id.
\textsuperscript{79} See Bazelon, supra note 30, at 8.
\textsuperscript{80} Id.
\textsuperscript{81} See Computer-Aided Design, supra note 35, at 69.
When a nonprofessional entity subcontracts to provide design related computer product to an architectural or engineering firm, however, the architectural or engineering firm is not entitled to rely professionally on the computer product for which they have subcon-
tracted. That result can be foreseen from a reading of two cases, *Bloomsburg Mills v. Sardonic Construction Co.*<sup>83</sup> and *Day & Zimmerman, Inc. v. Blocked Iron Corporation.*<sup>84</sup> In *Bloomsburg Mills*, an architect was prohibited from relying upon advertising supplied by the manufacturer of fibreglass insulation where the architect made no independent tests of the insulation. In *Day & Zimmerman*, an engineer was not allowed to rely upon manufacturer specifications for an oven where the engineer failed to determine whether the oven as specified was capable of furnishing the required design performance.

The situation regarding the ability of the architect and engineer to professionally rely on professionally created computer product output may be more favorable. That conclusion may be reached upon a reading of cases involving the architectural and medical professions.

In a series of three cases, the Supreme Court of Oregon explicitly reviewed the standard for an architect and engineer to rely upon professional opinion. In the earliest decision, *Scott v. Potomac Insurance Co.*<sup>85</sup> an architect was not allowed to rely upon the professional judgment of the heating engineer whom the architect had retained to design the building's heating systems. Declaring that the contractual relationship between the architect and engineer had the effect of establishing the heating engineer as the architect's agent, assistant or employee, the court reasoned the architect could not rely solely upon the engineer's judgment regarding substitute materials to be used in the heating system.<sup>86</sup>

The second Oregon decision, *Johnson v. Salem Title Co.*,<sup>87</sup> reached a similar holding using the concept of non-delegable duty. In *Johnson*, an architect retained an engineer to design a wall that subsequently failed. The Oregon court declared the architect was not entitled to rely upon the judgment of the engineer because the architect's contractual, non-delegable duty was to provide a wall complying with the local building code.<sup>88</sup>

In the third decision, *Owings v. Rose*,<sup>89</sup> the Oregon Supreme Court carefully qualified both of its prior decisions enroute to affirming a judgment for an architect seeking to rely upon the profes-

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<sup>86.</sup> *Id.* at 1088.
<sup>87.</sup> *Johnson v. Salem Title Co.*, 425 P.2d 519 (Ore. 1967).
<sup>88.</sup> *Id.* at 522.
<sup>89.</sup> *Owings v. Rose*, 497 F.2d 1183 (Ore. 1972).
sional judgment of an engineer. In Owings, plaintiff architects sought indemnity from defendant engineers on the basis that a floor slab design, incorporated in the architect's overall design, had been negligently prepared by the engineer. Evidence of the reliance of the architect upon the expertise of the engineer and details of the contractual relationship existing between the architect and engineer was heard by a jury. Initially, the Oregon court re-read the Scott decision as implying that an architect may negligently rely upon the advice of a professional. Second, the court noted the concern for safe design voiced in Johnson was properly accounted for in Owings as a result of the allocation of duties in the contract between the architect and engineer. Accordingly, the court found the evidence supported a jury finding that the architect had reasonably relied upon the judgment of the engineer and should be allowed a recovery in indemnity.

In the case of In re Johnson's Estate, plaintiff was referred to defendant surgeon on the strength of a family physician's diagnosis that plaintiff's uterus contained a tumor. The defendant surgeon conducted no independent examination of the patient, and in reliance upon the diagnosis of the family physician operated on plaintiff. The surgeon, upon close examination of the uterus, formed a judgment that plaintiff was pregnant and accordingly did not remove the uterus. Following the initial surgery, plaintiff's symptoms continued, requiring a second surgery, in which it was determined that the uterus contained a tumor. On those facts the Supreme Court of Nebraska held:

Where a patient's physician informs a surgeon of the diagnosis which the physician has made, and with the authority of the patient employs the surgeon to perform an operation which the physician deems advisable or necessary, the surgeon may rely upon the diagnosis of the physician and is not required to make an independent diagnosis before operating, in the absence of information or conditions which would put the surgeon upon inquiry as to the correctness of the physician's diagnosis and the advisability or necessity for the operation.

Where, under the above conditions of employment, the surgeon, relying wholly upon the physician's diagnosis, operates, and during the course thereof discovers facts or conditions which suggest a rea-

90. Id. at 1186-87.
91. Id. at 1186.
92. Id. at 1187.
sonable basis for a different conclusion from that arrived by the physician which, if true, would make the proposed operation inadvisable or unnecessary, and there exists no emergency requiring him to proceed, the surgeon is not negligent if he refrains from completing the operation until a further proper diagnosis based upon the newly discovered facts or conditions is made, and a proper course of action based thereon is determined.

Likewise, where under the above conditions of employment, and before performing the operation, the surgeon discovers facts or conditions which appear to contradict the physician's diagnosis or which cause the surgeon to question the correctness of the physician's diagnosis or to reach a different diagnosis, with the result that a different or no operative treatment is indicated, and there is no emergency and the surgeon operates without making an additional and proper diagnosis to determine the questions presented and the action to be taken, the surgeon is negligent and liable to respond in damages for such injury and detriment to the patient as proximately follows.95

In sum, the courts might allow an architect or engineer to contractually rely upon design related computer product created by another architect or engineer, so long as the consideration bargained for, included a promise to furnish professional design services utilizing computer technology and the reliance upon those services was professionally reasonable.96

Consideration of the problem of incorporation of defective computer product output in design should not end without regarding in-house or consultant generated computer product output. Cases are now being reported concerning the ability of intruders to affect computer operations.97 Although concerns of this nature generally fall within the ambit of system security,98 the ability of intruders to access and alter information in a computer data base via a sophisticated telecommunications network is a real possibility. Accordingly, such activity should be considered in planning for the incorporation of computer product output in design.

97. See supra note 75 and accompanying text.
98. See infra note 138 and accompanying text.
III. HANDLING OF SPECIAL PROBLEM AREAS

A. EXTENT OF COUNSEL'S INVOLVEMENT

By showing an awareness of the business and legal considerations regarding computer product uses, counsel will make it a great deal easier for the architectural and engineering firm to consider active involvement of counsel in the firm's computer related activities. As a reflection of the general "gold rush" fever now being felt by those involved with computer product use, a few words of caution may be in order. The depth of involvement of counsel will depend on a number of factors, among them, the cost of counsel's services, the extent of the firm's involvement with computerized work, and the general quality of goodwill attendant in the relationships enjoyed by the architectural and engineering firm and its computer product suppliers. The primary determinant of involvement will be the preferred style of the firm. It may be that the architectural and engineering firm prefers to conduct a "professionally" oriented, "business oriented" or "entrepreneurially" oriented practice.99 Those styles of practice reflect a preferred level of risk taking, a factor counsel should consider both in giving advice and the overall extent to which he should realistically expect to be involved in the firm's computer related activities.

B. CONTRACTING CONCERNS

Even though the law will construe contractual relationships on the basis of a holistic analysis involving tort theory, contractual duties assumed, statutory standards imposed and actual performance rendered,100 the starting point in architectural and engineering professional relationships is the oral or written contract. The same premise holds true for computer product contracts. Accordingly, counsel to architectural and engineering firms should become acquainted with the law relative to computer product contracts.

This law is continuing to broaden and expand.101 Due to the unfamiliarity with the technology involved, the courts have been slow to grant computer product transactions the protection envisioned by the Uniform Commercial Code. With increasing familiarity and aided by further analysis, courts may extend the code protections, where not excluded by agreement of the parties, to computer prod-


100. See generally Note, supra note 1, at 1076-83.

101. One might expect the explosive growth and mass distribution of software programs, for one, to shortly qualify such materials as consumer goods subject to products liability theory. See Nycum, supra note 7, at 19.
uct contracts. Many authors have made analyses of litigation theories, including negligence, products liability, and res ipsa loquitur liability, which may be alleged in a computer product dispute. Counsel might also wish to review the status of the law regarding broad topics of secondary interest. By then researching specific jurisdictional treatment of the topics, counsel can properly prepare for involvement in the negotiation and drafting of computer product contracts.

Counsel would also benefit from a comparison of typical contract phraseology used by major buyers and sellers of computer goods. Appendix A includes a representative version of the standard terms and conditions of sale favored by major computer product sellers. Appendix B contains a condensed version of the terms and conditions of sale required by the General Services Administration of suppliers of computer products under the Federal Supply Schedules. Review of the content of the appendices will alert counsel to many of the contractual issues to be resolved in computer product contracting.

The initial effort of counsel involved in negotiation of a computer product contract should focus on the task of attempting to ensure the computer product contracted for accurately reflects the needs of the firm. It is the accepted practice in design contract relationships for the owner to contract with the architect and engineer for the accomplishment of a detailed “scope of work.” The scope of work relative to design for a major international construction contract may be several hundred pages in length. In view of the tremendous expense and potential liability exposure associated with the incorporation of computer product output in design, the hard work necessary to generate a computer product scope of work provi-

103. See Nycum, supra note 7, at 8-15; Chandler, supra note 7, at 438-39; Laska, supra note 7, at 166-73.
104. See Chandler, supra note 7, at 435-38; Moorhead, supra note 7, at 143-46.
105. See Chandler, supra note 7, at 412; R. Bernacchi & G. Larsen, supra note 8, at 165-68.
sion in the computer supplier architect and engineer agreement constitutes a wise investment.

A computer product scope of work provision in the computer supplier-architect and engineer agreement will necessarily include a detailed statement of functions to be performed. Particular equipment should be specified according to manufacturer specifications and accepted computer industry standards.\footnote{109} Should counsel fail to eliminate a "merger clause" from the contract the inclusion by reference of proposal documents and other correspondence is advisable.\footnote{111} Particulars regarding new or used components, delivery schedules, responsibility during shipment, and installation dates should be included in the basic terms.\footnote{112}

Counsel should make specific contractual provision for the treatment of problems encountered in the installation and operation of computer product facilities. Acceptance of computer products both during and after installation can be conditioned on meeting minimum performance standards.\footnote{113} In the event installation might become unduly lengthy or fail altogether, counsel should secure

\begin{footnotes}
\item[109] The American National Standards Institute (ANSI) has published almost seventy standards applicable to computerized information processing. On or about April 15, 1982, the American National Standards Institute, in conjunction with the American Society of Mechanical Engineers, published a standard applicable to computer assisted design. Digital Representation for Communication of Product Data, Designator Y14.26M-1981. The Nuclear Regulatory Commission currently reviews the acceptability of controls for the development and use of computer codes in accordance with ANSI standard, Designator N45.2.11-1074, Quality Assurance Requirements for the Design of Nuclear Power Plants. A recent study of the computer code quality assurance procedures used in the nuclear power industry calls for the audit of architect/engineer firms, selected utility companies and national laboratories. See B. Sheron & Z. Rosztoczy, supra note 32. See supra notes 79-80 and accompanying text.

\item[110] A typical merger clause might read as follows:

The Parties have read this agreement and agree to be bound by all its terms and further agree that it constitutes the complete and exclusive statement of the agreement between them which supersedes all proposals, oral or written, and all other communications between them relative to the license and use of the equipment.

See D. Brandon & S. Segelstein, supra note 7, at 193; Deutsch, supra note 17, at 92; Spanner & Mack, supra note 17, at 116.

\item[111] See D. Brandon & S. Segelstein, supra note 8, at 210-12; Deutsch, supra note 17, at 92.

\item[112] See generally Appendix B.

\item[113] Generally, performance of computer product systems is defined in terms of "downtime" percentages, i.e., the percentage of time which the system is unavailable for productive use. See D. Brandon & S. Segelstein, supra note 8, at 254-64. See also R. Bernacchi & G. Larsen, supra note 8, at 232-36.
\end{footnotes}
specific contractual provisions establishing limiting time frames. Similarly, should installation or performance become unacceptable, counsel should seek contractual provisions defining the right to replace or reject failed components, the right to cover in the market, the right to terminate for default and the right to equitable adjustment.

Once counsel has contractually secured the computer capability desired by the architectural and engineering firm, he should then carefully consider steps to protect and preserve that capability. Foremost in a host of issues contained in that consideration is the subject of limitation of liability. Contracting for limitation of liability in the computer product world is an imprecise, risky business. Not until businessmen are thoroughly acquainted with the limitations of computers and the people who design the systems, and hence can effectively evaluate the dangers of non-performance, will a limitation of liability clause be agreed to meaningfully with an accurate appraisal of the risk involved.

Nonetheless, computer product liability limitation has become standard business practice and is enforceable in a court of law. The scope of computer product liability limitation may be as broad as the parties contract for, and is only loosely policed, if at all, by the unconscionability doctrine of the Uniform Commercial Code.

It is to be expected that the computer product supplier will attempt to disclaim liability as broadly as possible. In such situations counsel would do well to determine whether the computer product supplier is the holder of a Federal computer product contract. Should counsel consult a current copy of the General Services Administration's "ADP Schedule", FSC Group 70, part 1, section A or B, counsel can determine whether the computer product supplier warrants merchantability of his products, disclaims only consequential damages, or has agreed to the payment of liquidated damages.

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115. See generally Appendix B. See also Spencer & Mack, supra note 17, at 116-20.
116. See Moorhead, supra note 7, at 162.
117. See Appendix A, ¶ 13(a); Appendix B, ¶ 12.
120. See Moorhead, supra note 7, at 153-59.
122. Id.
damages in certain instances. Armed with that knowledge, counsel can proceed to negotiate the issue.

Limits on liability may be reflected in other contractual language. It is acceptable for contracting parties to limit applicable remedies. The specification of remedies to be allowed in case of breach reflects a subtle limitation of overall liability. Thus, counsel should be particularly alert to the potential of limiting applicable remedies by the language used to define the installation and operation phase responsibilities of computer product suppliers.

At this point, counsel could seek to tailor the final contract to be more reflective of the particular issues presented. Provision for back-up equipment, either in terms of remote memory storage capability or availability in case of local disaster, is recommended. Proper performance by the computer product supplier should be conditioned on the provision of timely notice of defects, updates of technical and operations manuals, and announcements of related educational opportunities. The body of law and choice of forum to be used to resolve disputes should be specified. Provision should be made requiring the computer product supplier to secure and renew adequate liability insurance coverage during the life of the contract. Provisions excusing performance of both parties in the event of the occurrence of unforeseeable, uncontrollable conditions might also be included. Specific protection against patent

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125. See, e.g., Chatlos Sys., Inc. v. National Cash Register Corp., 635 F.2d 1081 (3d Cir. 1980). See also Appendix B.
126. See D. BRANDON & S. SEGELSTEIN, supra note 8, at 261.
127. Id. at 228, 235, 236, 280 & 317.
128. See supra notes 100-05 and accompanying text.
129. See D. BRANDON & S. SEGELSTEIN, supra note 8, at 291, 373 & 402.
130. A typical "force majeure" clause might read as follows:
Neither the (computer product supplier) nor the (computer product buyer) shall be liable for delay or failure to perform its obligations under this agreement if such failure or delay is due to any cause or condition.
   a. beyond the reasonable control of either of the parties.
b. not the result of fault or negligence of either of the parties.
c. not foreseeable by either of the parties at the time this agreement was entered into.
d. not preventable by the taking of reasonable precautions by either of the parties.
Such causes or conditions include without limitations (i) acts of God, or of the public enemy, or of a government acting in any capacity, (ii) fires, floods, earthquake, epidemic, quarantine restrictions, riots, nuclear accidents or unusually severe weather, (iii) strikes, lockouts, or freight embargoes, (iv) shortages of labor, materials or energy, (v) acts or omissions of any third party or (vi) defects or failures in equipment or in software owned by others.
and copyright infringement and non-assignability of the computer product contract should be extended to the architectural and engineering firm.Beyond the ones mentioned, myriad potential issues geared to the intended computer product application may also be included.

C. Operating Concerns

As we have seen, the courts will not allow an architect or engineer to abrogate the exercise of professional judgment during the design process. In those interests, in which an architect or engineer seeks to rely upon the professional judgment of another architect or engineer, the law will closely scrutinize such reliance for professional reasonableness. Thus, evidence documenting the exercise of judgment related to the use of computer product in the design process is of vital importance. Counsel should assist the firm with a review of the ability of the firm to generate legally admissible documentation of the firm's use of computer product in design.

Courts using either common law or statutory rules of evidence have ruled on the admissibility of evidence documenting computer product use. As in all evidentiary issues, the admissibility of such evidence is conditioned on a proper showing of au-

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131. See Appendix B ¶ 13 (as amended). See also D. Brandon & S. Segelstein, supra note 8, at 56-68; R. Bernacchi & G. Larsen, supra note 8, at 61-84.

132. See generally D. Brandon & S. Segelstein, supra note 8; R. Bernacchi & G. Larsen, supra note 8.

133. See D. Bender, supra note 9, § 6.05 (admissibility of evidence showing use of computer product in design to be evaluated under the particular rules of evidence recognized by the forum, i.e., the Federal Rules of Evidence, the Uniform Business Records as Evidence Act, the Uniform Rules of Evidence, common law evidentiary principles, or other statutes).

134. See Transport Indem. Co. v. Seib, 178 Neb. 253, 132 N.W.2d 871 (1965) (admissibility of computer evidence under Business Record Act); King v. State ex rel. Murdock Acceptance Corp., 222 So. 2d 393 (Miss. 1969) (computer evidence admissible under the common law if computer equipment recognized as standard equipment, entries were made in the regular course of business at or reasonably near the time of the happening of the event recorded, and the foundation satisfies the court that source of information, method and time of preparation were such as to indicate the evidence is trustworthy and justifies its admissibility).
In that regard, it has been argued that a foundation focusing on the computer system itself and procedures for data entry and correction does not satisfy the authenticity requirement. Although that type of information is necessary, it is incomplete without testimony on the existence of specific application controls which operate to assure that human or program errors have not occurred and that security procedures governing access to the data file, programs and equipment reasonably guarantee accurate system results.

Overall, a proper foundation for the admissibility of documents describing computer product use to design should focus on the makeup of the system, the reliability of the system, the procedures used to enter data in the system, the accuracy of the programming logic and the controls used to detect machine and human error.

Counsel should guide the firm in its efforts to gather documentation of computer product use that meets the foundation requirement. Informal deposition of the architect and engineer regarding the usage of computer product in design is of value. Appendix C contains a series of basic questions that could serve as the framework of an initial deposition. The questions serve the dual purpose of acquainting counsel with the broad scope of the firm’s use of computer product in design and informing the architect and engineer of the extent to which the law will examine his judgment relative to the use of computer product. Once counsel has digested the information gained in the initial deposition, counsel should then conduct a second deposition tailored to uncover the reality of the firm’s attempts to monitor the usage of computer product. Questions asked in the follow-on deposition should center on the thoroughness of computer product testing procedures, the quality of data entry, corrective procedures and security controls. This composite set of information can then be reviewed with the architect and engineer and corrective action may be taken as is necessary to meet the requirements the law will impose on admissible computer product documentation.

Another primary operating concern of the architectural and engineering firm using computer product in design is the question of

136. See Singer, supra note 7, at 169.
137. Id. at 171-72.
the scope of insurance coverage. The firm's current errors and omissions policy, if it does not specifically exclude coverage of computer product related design errors, may be silent on the subject. In that case, counsel should strongly recommend the particular policy be amended or supplemented by rider.139

D. INTERPROFESSIONAL CONTRACTING

As has been previously indicated, it may be possible for the architect or engineer to contractually rely upon the computer product output of another architect or engineer. The standard contracting documents, however, used by the two professions do not fully reflect that position.

Three documents published by The American Institute of Architect's purport to provide initial guidance for interprofessional contracting. Chapter Ten, Architect's Handbook of Professional Practice, entitled "Interprofessional Agreements," makes no mention of computer product use in design.140 Although A.I.A. Document C-141 (a), "Standard Form of Agreement Between Architect and Engineer," requires both the performance of independent professional services141 and insurance protection for errors and omissions,142 the document makes no mention of the use of computer product in design other than to declare the engineer may be reimbursed for the expense of data processing as an item of additional expense.143 Similarly, although A.I.A. Document G-602 (a), "Soil Investigation and Engineering Services Agreement," requires both the provision of insurance protection for errors and omissions144 and

139. See R. Bigelow & S. Nycum, supra note 8, ch. 15 & Appendix L. Typical insurance exclusionary language might be amended as follows: Amendment of Exclusion Endorsement

The Insuring Agreement and all other provisions of this insurance shall not apply to claims or "costs, charges and expenses" for or arising out of the ownership, rental, leasing, operation, maintenance, use or repair of any real or personal property, including property damage to property owned by, occupied by, rented or leased to the Insured, except that this exclusion shall not apply to claims or "costs, charges and expenses" arising out of any negligent act, error, mistake or omission which occurs due to the use of the computers and other related electronic equipment by the Insured or by others for whom the Insured is legally responsible in providing "professional services" as described in the Declarations of this Policy.

140. See generally American Institute of Architects, Handbook of Architectural Practice ch. 10 (Jan. 1975 ed.).

141. See American Institute of Architects, Doc. C-141(a), at 2 (1979 ed.).

142. Id. at 8, art. 11.1 (Insurance).

143. Id. at 7, art. 5.1.3 (Reimbursable Expenses).

representation regarding professional services, the document makes no mention of the use of computer product.

Counsel should clearly specify the relationship of the parties in contracts involving reliance upon professional computer product. First, counsel should include a contract provision defining the scope of work to require the provision of computer product related to design:

The work required by this agreement includes the provision of design related services which may include data generated by automatic data processing equipment or computer technology.

Second, counsel should include a contract provision defining the required expertise of the professional:

[The supplier of professional design related services] represents that it possesses the necessary professional capabilities, qualifications, licenses, skilled personnel, equipment, experience and expertise to perform the work in a timely, professional manner according to the terms of this agreement.

Third, counsel should include a contract provision expressing the intended reliance, such as:

[The supplier of professional design services], in return for full and fair consideration stated in this contract, shall perform the work in accordance with the specification and requirements of this contract and in accordance with professional standards of skill, care and diligence. It is expressly stated and understood by [the supplier of professional design services] that (the recipient of professional design services) shall be entitled to rely upon the professional quality, accuracy and completeness of the work including that portion of the work generated by automatic data processing equipment or computer technology of whatever type. It is further expressly stated and understood [the recipient of professional design services] may, at his sole option, subsequently incorporate all or any part of the work of [the supplier of professional design services] into and as a part of services rendered by [the recipient of professional design services] to its clients.

Finally, counsel should include a contract provision providing indemnification for losses suffered as a result of the intended reliance:

[The supplier of professional design services] shall be liable for and shall indemnify and save harmless [the recipient of professional design services] from actual loss or damage or damage or liability to

145. Id. at 2, art. 1.5 (Qualifications).
persons or property of whatsoever kind which is in any manner caused or contributed to by reason of the reliance of [the recipient of professional design services] upon the professional quality, accuracy and completeness of the work including that portion of the work resulting form the use by [the supplier of professional design services] of automatic data processing equipment or computer technology of whatever type.

IV. CONCLUSION

A rapid influx of computer technology into mainstream architectural and engineering practice is underway. The potential for liability inherent in such usage calls for special analysis and action. Indeed, accepted indicators of proper professional practice, the use of restraint, deliberation, patience and the assistance of peers, require architects and engineers using the new technology to seek assistance of counsel. By focusing the attention of the architect and engineer on contracting and operational concerns, counsel can properly serve his client.

APPENDIX A

COMPUTER PRODUCT SELLER
STANDARD TERMS AND CONDITIONS OF SALE

The following are the terms and conditions under which Computer Product Seller ("CPS") sells and licenses its Products in the United States of America.

1. TAXES - Prices are exclusive of all sales, use and like taxes. Any tax CPS may be required to collect or pay upon the sale, licensing or delivery of the Products shall be paid by Purchaser to CPS.

2. DELIVERY, SECURITY INTEREST, DELAYS - Delivery will be F.O.B. CPS's plants. Unless otherwise directed by Purchaser, CPS will prepay the freight and bill Purchaser for constructed transportation charges. Such charges shall not exceed the applicable rates published by the carrier for the Products shipped. Purchaser assumes all risk of loss upon delivery of the Products by CPS to the carrier. Insurance will be provided by CPS on the Products while in transit, unless instructions to the contrary are clearly stated on the face of Purchaser's order. Purchaser will be charged for such insurance at the rate of $0.50 per $100.00 of equipment valuation. In the absence of instructions to the contrary, CPS on behalf of Purchaser will select the carrier but shall not be deemed thereby to assume any liability in connection with the shipment nor shall the carrier be construed to be the agent of CPS. If Purchaser specifies the carrier in writing to CPS, or if Purchaser requests actual carrier invoices, then shipment will be made collect. Purchaser will be responsible for all storage, rigging, drayage and other charges at Purchaser's site. Purchaser hereby grants CPS a security interest in the products and in any proceeds, including accounts receivable, thereof as security for all its obligations hereunder. Upon request by CPS, Purchaser shall execute any instrument required to perfect such security interest. CPS shall not be liable for any damages or penalty for delay in delivery or for failure to give notice of delay when such delay is due to the elements, acts of God, delays in transportation, delay in delivery by CPS's vendors or any other causes beyond the reasonable control of CPS. The delivery schedule shall be extended by a period of time equal to the time lost because of any such delay.

3. PAYMENT - Terms are cash upon delivery or, at CPS's option, net thirty (30) days from date of delivery. If deliveries are authorized in installments, each shipment shall be paid for when due without regard to other scheduled deliveries.
4. PATENTS - If notified promptly in writing of any action (and all prior claims relating thereto) brought against Purchaser alleging that Purchaser’s use, sale or other disposition of the Products (including use of licensed software) infringes a United States patent or copyright, CPS will defend such action at its expense and will pay the costs and damages awarded against Purchaser in such action, provided that CPS shall have sole control of the defense of any such action and all negotiations for its settlement or compromise. If a final injunction is obtained in such action against Purchaser’s use of the Products or if in CPS’s opinion the Products are likely to become the subject of a claim of infringement, CPS will, at its option and at its expense, either procure for Purchaser the right to continue using the Products, or replace or modify the same so that they become non-infringing, or grant the Purchaser a credit for such Products as depreciated and accept their return. Depreciation shall be an equal amount per year over the life of the Products as established by CPS. CPS shall not have any liability to Purchaser if the alleged infringement is based upon: (i) use or sale of the Products in combination with other products or devices that are not made by CPS; or (ii) use of the Products in practicing any process; or (iii) the furnishing to Purchaser of any information, service or applications assistance. Purchaser shall defend and hold CPS harmless against any expense, judgment or loss for alleged infringement of any patents, copyrights or trademarks that results from CPS’s compliance with Purchaser’s designs, specifications or instructions. No costs or expenses shall be incurred for the account of CPS without the prior written consent of CPS. In no event shall CPS’s total liability to Purchaser under or as a result of compliance with the provisions of this clause exceed the sum paid to CPS by Purchaser for the allegedly infringing Products. The foregoing states the entire liability of CPS with respect to alleged infringement of patents and copyrights by the Products, or any part thereof, or by their operation.

5. SOFTWARE PRODUCT LICENSE

A. All binary licensed software, including any subsequent updates, is furnished under the following license terms and conditions:

1. The software, and any part thereof, may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the CPS copyright notice and any CPS pro-
proprietary notices on the software) only for use on such CPU.

2. In the event that an equipment malfunction occurs in the above single CPU causing the software to become inoperable on such single CPU, the software, or copies thereof, may be used on another single CPU on a temporary basis during such malfunction.

3. Purchaser shall not provide or otherwise make available the software or any part or copies thereof in any form to any third party, except Purchaser's employees or agents directly concerned with Purchaser's licensed use of the software.

4. No title to, or ownership of, the software or any parts thereof is transferred to the Purchaser.

5. CPS shall have the right to terminate: (i) any software license for which the license fee has not been paid; and (ii) any or all of the software licenses granted hereunder if Purchaser fails to comply with these license terms and conditions. Purchaser agrees, upon notice of such termination, to immediately return or destroy the software provided under such terminated licenses and all portions and copies thereof.

B. Under each binary software license purchased hereunder without media, Purchaser may copy the software so licensed for use on a single CPU in accordance with the terms and conditions of Paragraph A above.

C. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and CPS.

6. EQUIPMENT CHANGES - CPS reserves the right, without prior approval from or notice to Purchaser, to make changes to the equipment: (i) which do not affect physical or functional interchangeability or performance at a higher level of assembly of CPS equipment; or (ii) when required for purposes of safety; or (iii) to meet equipment specifications.

7. WARRANTY

A. Hardware Warranty

1. CPS Hardware Products, except as stated otherwise in an applicable price list, are warranted against defects in workmanship and material for a period of ninety (90) days from date of installation or, if CPS is not to install, from date of delivery. CPS Hardware Products purchased, however, as 1, 2, 3, and 4 series modules and listed in the then current Accessories and Supplies
Group Price List are warranted against defects in workmanship and material for a period of one (1) year from date of delivery. If CPS is to install any Products but is prevented by causes beyond its control from doing so within thirty (30) days from the date of delivery, the warranty period will commence on the thirtieth (30th) day after delivery.

2. CPS's sole responsibility under this warranty shall be to either repair or replace, at its option, any component that fails during the applicable warranty period because of a defect in workmanship and material, provided Purchaser has promptly reported same to CPS in writing. All replaced Products or parts shall become CPS's property. Services provided under the warranty will be performed during the period of 8:00 a.m. to 5:00 p.m., Monday to Friday, excluding locally observed CPS holidays.

3. For Products installed by CPS which have a ninety (90) day warranty, CPS will honor the warranty at Purchaser's site within the contiguous forty-eight (48) United States, Hawaii and District of Columbia. For: (i) products not installed by CPS; and (ii) products with a one (1) year warranty, CPS will honor the warranty at a CPS repair facility in the United States as specified by CPS's shipping instructions. It is Purchaser's responsibility to return, at its expense, the allegedly defective Products to CPS. Purchaser must obtain shipping instructions from its local CPS sales office prior to returning any Product under the warranty. Transportation charges for the return of the Products to Purchaser shall be paid by CPS within the contiguous forty-eight (48) United States, Hawaii and the District of Columbia. For all other locations, the warranty excludes all costs of shipping, customs clearance and any other related charges. If CPS determines that the Products are not defective within the terms of the warranty, Purchaser shall pay CPS all costs of handling, transportation and repairs at the prevailing CPS repair rates.

B. Software Warranty

1. Software with a CPS Support Category of 1 or 2 is warranted to conform to the CPS Software Product Description ("SPD") applicable at the time of order. CPS's sole obligation hereunder shall be to remedy any nonconformance of the software to the SPD. Such remedy shall be provided as specified in the Software Support Catego-
ries Addendum to the SPD for any nonconformance reported to CPS during the one (1) year period following delivery. Software with a Support Category of 3 is furnished “as is”. Software purchased as license only is provided without media and “as is”.

All above warranties are contingent upon proper use of the Product. These warranties will not apply: (1) if adjustment, repair or parts replacement is required because of accident, unusual physical, electrical or electro-magnetic stress, neglect, misuse, failure of electric power, air conditioning, humidity control, transportation, failure of rotating media not furnished by CPS, operation with media not meeting or not maintained in accordance with CPS specifications or causes other than ordinary use; or (ii) if the Product has been modified by Purchaser; or (iii) where CPS serial numbers or warranty date decals have been removed or altered. In addition to the foregoing, any applicable on-site warranty will not apply: (i) if prerequisite Products (as specified in the applicable price list, product specifications or contracts) are missing; or (ii) if the Product has been installed by the Purchaser; or (iii) if the Product has been dismantled or reinstalled by Purchaser without the supervision of or prior written approval of CPS. Products may contain used parts that are equivalent to new in performance when used in the Products. EXCEPT FOR THE EXPRESS WARRANTIES STATED HEREIN, CPS DISCLAIMS ALL WARRANTIES ON PRODUCTS FURNISHED HEREUNDER, INCLUDING WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS: and the stated express warranties are in lieu of all obligations or liabilities on the part of CPS arising out of or in connection with the performance of the Products.

8. ACCEPTANCE OF PRODUCTS - Acceptance shall occur: (i) upon successful completion of the test procedures and/or programs established by CPS as evidenced by an acceptance report signed by a CPS representative, for Products installed by CPS; or (ii) upon delivery, for Products not installed by CPS, unless CPS is notified in writing within ten (10) days from receipt of the Products Purchaser that the Products do not conform to CPS product specifications. CPS’s sole obligation for such nonconforming Products shall be limited to repair or replacement, at its option, pursuant to the provisions of the foregoing WARRANTY clause.

9. INSTALLATION OF COMPUTERS, COMPUTER OPTIONS AND CONTROLLERS - Except as otherwise agreed in writing
or stated in an applicable price list, computers shall be installed by CPS in any location within the contiguous forty-eight (48) United States, Hawaii and the District of Columbia. Installation of field installed options shall not be the responsibility of CPS unless Purchaser agrees to pay for such installation. Purchaser shall make available a suitable place for installation in accordance with CPS's installation procedures. Purchaser shall furnish all labor required for unpacking and placement of the equipment. Notwithstanding the foregoing, CPS shall be under no obligation to install the equipment: (i) unless the equipment and installation site are made available to CPS for installation within thirty (30) days from the date of delivery and CPS has been so notified; and (ii) unless Purchaser makes available all prerequisite products (as specified in the applicable price list or product specifications); or (iii) if the equipment has been modified without CPS's prior written approval or subjected to unusual physical, electrical or electro-magnetic stress, accident, neglect, misuse or other damage beyond the control of CPS. Notwithstanding the above, CPS does not accept any responsibility to connect CPS equipment to non-CPS equipment. Should CPS, however, as a convenience to Purchaser, connect such equipment, it does so only on the condition that it has no liability for any damage that may result.

10. CPS'S PROPERTY - Materials (including documentation, schematics and equipment), test equipment, licensed diagnostic software (for which Purchaser has not obtained a license), and associated media to be used by CPS personnel at the installation site shall remain the exclusive property of CPS and shall be for the sole use and under the control of CPS. Purchaser shall allow CPS personnel access to the installation site to remove all such property after installation or maintenance operations have been completed.

11. CANCELLATION AND RESCHEDULE CHARGES - In the event Purchaser: (i) cancels any order or portion thereof; or (ii) fails to meet any obligation hereunder, causing cancellation or rescheduling of any order or portion thereof; or (iii) requests a rescheduling of scheduled equipment and such request is accepted by CPS, Purchaser agrees to pay to CPS cancellation/reschedule charges as a percentage of the list price of the cancelled or rescheduled equipment, said charges having been agreed upon, not as a penalty, but as a result of the difficulty of computing actual damages. Such charges are as follows:
CANCELLATION OR RESCHEDULE NOTICE RECEIVED

61-90 days prior to Scheduled Delivery Month 5% of $200, whichever is greater
31-60 days prior to Scheduled Delivery Month 10% or $200, whichever is greater
30 days or less prior to Scheduled Delivery Month 15% or $200, whichever is greater
During Scheduled Delivery Month 20% or $200, whichever is greater

Purchaser may not cancel or reschedule any order or portion thereof after delivery.

12. EXPORT - Regardless of any disclosure made by Purchaser to CPS of an ultimate destination of the Products, Purchaser will not export, either directly or indirectly, any Product or system incorporating such Product without first obtaining a license from the U.S. Department of Commerce or any other agency of the United States Government, as required.

13. DISCLAIMER AND LIMITATION OF LIABILITY

A. IN NO EVENT WILL CPS BE LIABLE FOR: (i) SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES; OR (ii) ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, ARISING OUT OF OR IN CONNECTION WITH THIS CONTRACT OR THE USE OR PERFORMANCE OF CPS PRODUCTS, WHETHER IN AN ACTION OF CONTRACT OR TORT INCLUDING NEGLIGENCE. CPS'S LIABILITY FOR DAMAGE TO PROPERTY SHALL BE LIMITED TO PHYSICAL DAMAGE DIRECTLY CAUSED BY THE SOLE NEGLIGENCE OF CPS AND SHALL IN NO EVENT EXCEED ONE (1) MILLION DOLLARS.

B. No action, whether in contract or tort including negligence, arising out of or in connection with this contract may be brought by either party more than eighteen (18) months after the cause of action has accrued, except that an action for nonpayment may brought within eighteen (18) months of the date of the last payment. This paragraph shall not apply to actions for breaches of the above stated Software Product License provisions, or to actions for violations or infringe-
ments of CPS's rights relating to software licensed thereunder.

14. GENERAL PROVISIONS - A contract will become binding only when a written acceptance of Purchaser's order is sent to Purchaser by CPS. Such contract is governed by the laws of the State of PAIR. This contract constitutes the entire Agreement between the parties with respect to the subject matter hereof and supercedes all proposals, oral and written, all previous negotiations and all other communications between the parties with respect to the subject matter hereof.

These terms and conditions shall prevail notwithstanding any different, conflicting or additional terms and conditions that may appear on any order submitted by Purchaser. Deviations from these terms and conditions are not valid unless confirmed in writing by an authorized officer of CPS at its corporate offices.

Such contract is not assignable without prior written approval of CPS and any attempt to assign any rights, duties or obligations under such contract without such approval shall be void.

All rights and remedies, whether conferred hereby or by any other instrument or law shall be cumulative, and may be exercised singularly or concurrently. Failure by either party to enforce any contract term shall not be deemed a waiver of future enforcement of that or any other term. If any provision of this contract is held invalid under any applicable statute or rule of law, such invalidity shall not affect other provisions of this contract which can be given effect without the invalid provisions, and to this end the provisions of this contract are declared to be severable. Notwithstanding the above, such invalid provision or clause shall be construed, to the extent possible, in accordance with the original intent of the parties.
APPENDIX B

COMPUTER PRODUCT CONTRACTING WITH THE GENERAL SERVICES ADMINISTRATION

The General Services Administration, Automated Data and Telecommunications Service Procurement Division, enters annual supply schedule contracts for the rental, purchase, maintenance and repair of general purpose automatic data processing and punched card equipment and software. At the present time, approximately 280 supply schedule contracts for such equipments or services have been awarded as a result of negotiation with computer product suppliers pursuant to section 302 (C) (10) of the Federal Property and Administrative Services Act of 1949, 63 Stat. 393, as amended 41 U.S.C. 252 (c) (10). Each of the Federal agencies may order computer product equipments supplied under the supply schedule contracts in accordance with the procedures set forth in the Federal Procurement Regulations 1-4.11 et seq. Each contract entered by a Federal agency using the supply schedule contracts between the computer product supplier and the General Services Administration is subject to the provisions of three documents, Standard Form 32, General Provisions (Supply Contract), April 1975 edition, GSA Form 1424, GSA Supplemental Provisions September 1978 edition and the Special Provisions of ADP Schedule, FSC Group 70, Part 1, Section A, “General Purpose Automatic Data Processing Equipment and Software.” Relevant excerpts from the three documents follow.

Standard Form 32 (Supply Contract) April, 1975 Edition

5. Inspection
   (a) All supplies, which term throughout this clause includes without limitation raw materials, components, intermediate assemblies, and end products, shall be subject to inspection and test by the Government, to the extent practicable at all times and places including the period of manufacture, and in any event prior to acceptance.
   (b) In case any supplies or lots of supplies are defective in material or workmanship or otherwise not in conformity with the requirements of this contract, the Government shall have the right either to reject them, with or without instructions as to their disposition, or to require their correction. Supplies or lots of supplies that have been rejected or required to be corrected shall be removed or, if permitted or required by the Contracting Officer, corrected in place by and at the expense of the Contractor promptly after notice, and shall not thereafter be tendered for acceptance unless the former rejection or requirement of correction is disclosed. If the Contractor fails promptly to remove such
supplies or lots of supplies that are required to be removed, or promptly to replace or correct such supplies or lots of supplies, the Government either: (i) may by contract or otherwise replace or correct such supplies and charge to the Contractor the cost occasioned thereby; or (ii) may terminate this contract for default as provided in the clause of this contract entitled "Default." Unless the Contractor corrects or replaces such supplies within the delivery schedule, the Contracting Officer may require the delivery of such supplies at a reduction in price that is equitable under the circumstances. Failure to agree to such reduction of price shall be a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes."

6. Responsibility for Supplies

Except as otherwise provided in this contract, (i) the Contractor shall be responsible for the supplies covered by this contract until they are delivered at the designated delivery point, regardless of the point of inspection; (ii) after delivery to the Government at the designated point and prior to acceptance by the Government or rejection and giving notice thereof by the Government, the Government shall be responsible for the loss or destruction of or damage to the supplies only if such loss, destruction, or damage results from the negligence of officers, agents, or employees of the Government acting within the scope of their employment; and (iii) the Contractor shall bear all risks as to rejected supplies after notice of rejection, except that the Government shall be responsible for the loss, or destruction of, or damage to the supplies only if such loss, destruction or damage results from the gross negligence of officers, agents, or employees of the Government acting within the scope of their employment.

11. Default

(a) The Government may, by written notice of default to the Contractor, terminate the whole or any part of this contract in any one of the following circumstances:

(i) If the Contractor fails to make delivery of the supplies or to perform the services within the time specified herein or any extension thereof; or

(ii) If the Contractor fails to perform any of the other provisions of this contract, or so fails to make progress as to endanger performance of this contract in accordance with its terms, and in either of these two circumstances does not cure such failure within a period of 10 days, or such longer period as the Contracting Officer may authorize in writing, after receipt of notice from the Contracting Officer specifying such failure.
(b) In the event the Government terminates this contract in whole or in part as provided in paragraph (a) of this clause, the Government may procure, upon such terms and in such manner as the Contracting Officer may deem appropriate, supplies or services similar to those so terminated, and the Contractor shall be liable to the Government for any excess costs for such similar supplies or services: Provided, that the Contractor shall continue the performance of this contract to the extent not terminated under the provisions of this clause.

(c) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

12. Disputes

(a) Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract that is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Secretary. The decision of the Secretary or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so erroneous as to imply, necessarily, bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

(b) This "Disputes" clause does not preclude consideration of law questions in connection with decisions provided for in paragraph (a) above: Provided, that nothing in this contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

13. Notice and Assistance Regarding Patent and Copyright Infringement
The provisions of this clause shall be applicable only if the amount of this contract exceeds $10,000.

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed hereunder, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.


6. Responsibility for Supplies (Rejected Supplies)

As provided in Article 6 of Standard Form 32, the Contractor shall bear all risks as to rejected supplies after notice of rejection. The Contractor shall be liable for all costs, including but not limited to storage costs, incurred by the Government in taking such measures as are expedient to save unnecessary loss to the Contractor. Should the Contractor upon due notice fail to remove or provide instructions for the removal of such rejected supplies within the period specified by the Government, or if no period is specified, within a reasonable period of time, the supplies may be stored for the Contractor's account, or reshipped to the Contractor at his expense, or sold to the highest bidder on the open market and the proceeds applied against the accumulated storage and other costs, including costs of the sale. The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

11. Default

(b) Waiver of Delivery Schedule

None of the following shall be regarded as an extension, waiver, or abandonment of the delivery schedule or a waiver delay by the Government in terminating for default; (ii) acceptance of delinquent deliveries; and (iii) acceptance or approval of samples submitted either after default in delivery
or in insufficient time for the Contractor to meet the delivery schedule.

Any assistance rendered to the Contractor on this contract or acceptance by the Government of delinquent goods or services hereunder, will be solely for the purpose of mitigating damages, and is not to be construed as an intention on the part of the Government to condone any delinquency, or as a waiver of any rights the Government may have under subject contract.

13. Patent Indemnity

If the amount of this contract for supplies or services is in excess of $10,000, the Contractor shall indemnify the Government and its officers, agents, and employees against liability, including costs, for infringement of any United States letters patent, except letters patent issued, upon an application that is now or may hereafter be kept secret or otherwise withheld from issue by order of the Government, arising out of the performance under this contract, or out of the use or disposal by or for the account of the Government of such supplies or services. The foregoing indemnity shall not apply unless the Contractor shall have been informed as soon as practicable by the Government of the suit or action alleging such infringement, and shall have been given such opportunity as is afforded by applicable laws, rules, or regulations to participate in the defense thereof; and further such indemnity shall not apply if: (a) the infringement results from compliance with specific written instructions of the Contracting Officer directing a change in the supplies to be delivered or services to be performed, or in the materials or equipment to be used, or directing a manner of performance of the contract not normally used by the Contractor; or (b) the infringement results from the addition to, or change in, the supplies furnished, or services performed, which addition or change was made subsequent to delivery or performance by the Contractor; or (e) the claimed infringement is settled without the consent of the Contractor, unless required by final decree of a court of competent jurisdiction."

GSA, ADP Schedule, FSC Group 20, Part 1, Section A, “General Purpose Automatic Data Processing Equipment and Software.”

Important Notice:

4. Items Not Supported by Specifications. To GSA's knowledge, items on this ADP Schedule are not covered by Federal or other adequate Government specifications and the quality of the items has not been approved. No determination, therefore, has been made that they have the optimum characteristics to meet established definitive needs. They may, however, possess characteristics required
to meet agency needs. No test methods or test requirements have been established by the Government. Any agency ordering from this schedule must, therefore, determine whether the item will meet its requirements and that on receipt it does meet contract provisions.

Special Provisions

1. Scope of Contract

(3) Used Equipment. Contracts awarded hereunder for purchase of equipment cover only new, unused equipment. The purchase of used equipment is neither intended nor authorized, except where such purchases are provided for under “Purchase Options” or similar provisions.

The Government reserves the right to obtain used equipment (both rental and purchase) at lower prices outside this schedule of contracts, even though items of the same or similar equipment may be available under this Schedule of contracts. Such procurments may be made from Schedule contractors, or from other persons or concerns.

8. Time of Delivery, Shipment, and/or Installation. (See applicable provisions in contractor’s pricelist.)

9. Liquidated Damages. Liquidated damages, in the amounts set forth in the provisions entitled “Liquidated Damages” of the contractor's pricelist, are applicable to Special Items 132-1, and 132-6. When applicable, the provisions of Article 11, Default, of Standard Form 32 (as amended herein) and Clause 11, Default, of GSA Form 1424, also apply. (Special Item 132-1 refers to the rental of General Purpose Automated Data Processing and Punched Card Equipment. Special Item 132-6 refers to the purchase of General Purpose Automated Data Processing and Punched Card Equipment.)

Clauses 11(f) of Standard Form 32, General Provisions (Supply Contract), is redesignated as Clause 11(g) and the following is inserted as Clause 11(f):

(f)(i) In the event the Government exercises its right of termination as provided in paragraph (a) above, the Contractor shall be liable to the Government for excess costs as provided in paragraph (b) above and, in addition, for liquidated damages, in the amount set forth elsewhere in this contract, as fixed, agreed, and liquidated damages for each calendar day of delay, until such time as the Government may reasonably obtain delivery or performance of similar supplies or services.

(ii) If the contract is not so terminated, notwithstanding delay as provided in paragraph (a) above, the contractor shall continue performance and be liable to the Government for such liquidated damages for each calendar day of delay until the supplies are delivered or services performed.
Article 11(f), as set forth above, is supplemented by Clause 11 of GSA Form 1424 and the provisions entitled “Liquidated Damages” set forth in the contractor’s pricelist.

12. Warranty Exclusion and Limitation of Damages. Except as expressly set forth in writing in this agreement, or except as provided in the clause entitled, “Contractor's Commitments, Warranties and Representations” and except for the implied warranty of merchantability, there are no warranties expressed or implied. In no event will the contractor be liable to the Government for consequential damages as defined in the Uniform Commercial Code, Section 2-715 in effect in the District of Columbia as of January 1, 1973, i.e.:

Consequential damages resulting from the seller's breach include
a. Any loss resulting from general or particular requirements and needs of which the seller at the time of contracting had reason to know and which could not reasonably be prevented by cover or otherwise, and
b. Injury to person or property proximately resulting from any breach of warranty.
INITIAL DEPOSITION QUESTIONS

1. State your name, occupation, employer, and professional licenses held.
2. Describe your involvement with Architect's and Engineer's (A/E) computer product operations.
3. Does A/E computer product operation generate,
   a. Working Drawings?
   b. Indexes?
   c. Gantt Charts?
   d. Manpower loadings?
   e. Design cost budgets?
   f. Percentage completion estimates?
   g. Specifications?
   h. Material takeoffs?
   i. Pricing and unit cost references?
   j. Manufacturer specifications?
   k. Bills of quantity?
   l. As-Built drawings?
   m. Distribution lists?
   n. Security records?
   o. Finished drawings?
   p. Operator notes?
   q. Input data?
   r. Individual system user listings?
   s. Any other documents.
4. Does A/E computer operation automatically generate a Master Log? Alternatively, is a Master Log generated by hand?
5. Does Master Log contain
   a. Names/passwords of individuals using system on a day-by-day basis?
   b. Dates system was operational and in use?
   c. Listing of equipments tied into system on days system was used?
   d. Listing of projects run?
   e. Listing of conditions comprising system environment on days of usage, i.e., temperature, humidity, power quality?
   f. Telecommunications line checks?
   g. Program control checks?
   h. Security codes in use? Used?
   i. Maintenance status?
   j. Back up systems on line? Used?
6. Is the Master Log printed in machine language or English? If
the Master Log is printed in machine language, can the system translate the log to English?

7. Is Master Log periodically updated with respect to:
   a. Computer product contracts?
   b. Invoices?
   c. Shipping documents?
   d. Correspondence?
   e. Maintenance histories?
   f. Operations procedures?
   g. Building environmental changes?
   h. Unique operating characteristics?
   i. Component specifications?
   j. Installation operations?
   k. Debugging operations?
   l. Acceptance tests?
   m. Problems encountered?

8. Are you responsible, in any way, for maintenance of system security? If so, describe your responsibilities and the actions you take to discharge those responsibilities.

9. Please describe in detail the job coding, individual coding, and security coding system used by the A/E computer system.

10. Can the A/E computer system be used by persons at remote sites? If so, please describe that capability in detail. Describe the procedures used to document remote site usage of the system.

11. Describe the system used to schedule, and the observance of, staff vacation periods.

12. Describe in detail the ability of the system to,
   a. Automatically generate a history of the transactions comprising computer assisted design projects.
   b. Generate a history of the transactions, including data entry, of typical engineering programs such as STRESS or STRUDL.
   c. Provide backup in case of “Head Crash” or the need for regeneration of data.
   d. Maintain separation of programming and operating functions, particularly with regard to financial or accounting applications.
   e. Automatically prepare written reports describing the interruption of operations.

13. Is the A/E System audited on a periodic basis? Is a comparison made of budgeted computer time usage versus actual computer time usage?
14. Describe the extent of background investigations made of computer operating personnel.

15. Describe how documents generated by the computer system are merged with the overall document storage system used by A/E.