Artificial Intelligence: Professional Standard of Care Considerations for Design

Professionals

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December 15, 2023

I.   Introduction

Artificial Intelligence ("AI") promises immense opportunities and benefits

for society, including the various professionals who serve society. To varying

and increasing levels professionals are embracing and integrating AI into

their practices, performance and deliverables for clients. This trend is

destined to accelerate and transform all professional practices in significant

but presently unknown ways in the foreseeable future. Simply put, those

opportunities also pose corresponding risks.

Google and related searches reveal abundant sources on the available tools

and benefits of AI utilization for professionals to assist in various ways in

performance of their services for clients. Significantly less has been

published about how AI affects the application of the well-recognized and

prevailing standard of care governing the evaluation of the adequacy of professional service performance.

It is not without precedent that technology advances at a rate that outpaces conventional industry guidelines; professional standards and experience; internal design professional firm guidelines; professional registration and ethical requirements; and relevant legal precedent.[1] We know – and should know – from that experience that if design professionals do not take the initiative in proactively addressing these professional practice developments and in understanding their implications for standard of care, those issues will be addressed by courts or other adjudicators – or worse, by forensic experts – in the context of professional liability claims arising out of AI utilization.

This article is intended to prompt discussion about how AI may impact standard of practice application for design professionals. Given the relative novelty of AI, the lack of relevant practice standards, guidelines and legal

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[1] For a discussion of the professional standard of care application in the context of innovative or unconventional design or other professional practices, see D.J. Hatem, Green and Sustainable Design, Part 1: Professional Liability Risk and Insurability Issues for Design Professionals, Design and Construction Management Reporter, June 2010, P. 10 (Donovan Hatem LLP, Boston, Mass.).

precedent, the modest and realistic objective of this article is to identify

issues rather than to venture in providing definitive answers especially given

all of the unknowns. We anticipate that there will be the need for

subsequent articles on this subject as consideration of these issues develop

and evolve in professional practice experience and legal precedent. Your

thoughts are invited.

II.   Professional Standard of Care: Implications and Challenges in Application to

AI

The Massachusetts Supreme Judicial Court in Klein v. Catalano defined the

standard of care for design professionals as follows:

> "As a general rule, '[a]n architect's efficiency in preparing plans
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> and specifications is tested by the rule of ordinary and
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> reasonable skill usually exercised by one of that profession...
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> [I]n the absence of a special agreement he does not imply or
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> guaranty a perfect plan or satisfactory result... Architects,
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> doctors, engineers, attorneys and others deal in somewhat
>
> inexact sciences and are continually called upon to exercise
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> their skilled judgment in order to anticipate and provide for

random factors which are incapable of precise measurement.

The indeterminable 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."

The standard of care will apply in myriad professional engagement contexts

– i.e., differing service scopes, roles, responsibilities and risks; various

project delivery methods; and other relevant and diversified constraints,

contexts, circumstances and factors. Despite this contextual diversity, the

standard of care is constant, but its *application* will be dependent upon and

particularly sensitive and adaptative to the specific relevant circumstances.

In these professional service contexts, questions may be raised and claims

may be asserted challenging whether in the relevant circumstances the

professional adhered to the standard of care.

In applying the standard of care in any specific professional liability claim context, courts (or other dispute resolvers) will consider the relevant circumstances and factors and should seek to evaluate the professional's performance in relation to an objective standard, i.e., how would another comparably qualified and experienced professional have performed under the same or similar circumstances prevailing at the time of the alleged standard of care breach. This evaluative process typically is informed by relevant professional practice standards and guidelines, and practice realities and pragmatics in the performance of the same or similar services in the profession.

How does the standard of care apply to design professionals in the context of AI?

What happens, however, if there are no directly applicable standards or guidelines, rules or regulations, or any relevant legal precedent? AI presents this question. Also, what happens if standards of practice in a particular area of professional practice are rapidly developing? AI presents

this question as well. What happens if that development occurs at such an accelerated pace as to create the risk of inability to discern whether any meaningful distinction can be defined between (a) prevailing standards at the time of alleged breach and (b) those prevailing at the time of standard of care adjudication (or other evaluation or determination). AI also presents that elevated risk in standard of care evaluation.

III.   <u>Distinctions In AI Utilization: Roles and Responsibilities of the Design Professional</u>

Design professional practices as to AI utilization significantly vary among firms – and even within firms. For that reason, one should be cautious and reserved about generalizations, much less to declare prevailing practices or standards. However, design professional utilization of AI may be generally classified in at least two categories: investigative and evaluative.

   (1) <u>Investigative</u>

The investigative phase of a project involves project scoping, definition, data collection, and conceptual design in which the basic form of the project is defined.

AI investigative use involves data collection, information gathering and summarization, synthesis, identifying potential conceptual design approaches and options, and related activities. The AI-generated products of these AI investigative uses aim to provide the design professional with information to assist and inform in the performance of its services for a client. The design professional is likely to use those products in the judgments and assessments that it makes in providing design and recommendations and in providing other services and deliverables to its client.

Since the design professional will – to varying degrees – be relying upon the products of these AI investigative activities, the professional should develop standards and guidelines for scoping and monitoring AI investigative assignments and quality control and assurance of AI-generated product.

In the investigative mode, the design professional typically will define the assignment parameters (search scope, sources, methodology) to be undertaken by the AI provider. The design professional should also perform

some quality assurance and independent verification over the AI-generated

products to check for compliance with the assignment parameters and

other appropriate criteria and requirements.

(2) Evaluative

In some situations, the design professional may contemplate utilizing AI to

perform evaluative services; i.e., to evaluate, assess, predict, analyze,

characterize and develop design options and recommendations, all based

on available data, information or other relevant inputs.

The use of evaluative AI-generated products on a *primary* basis

understandably and rightfully so is and should be controversial for most

professionals. More explicitly, most professionals prefer not to primarily

rely upon AI for evaluative-type inputs. Some professionals, however, are

more comfortable utilizing AI evaluative inputs as a *secondary* quality

assurance check of sorts on the *primary* judgments or other evaluative-type

services directly performed by the professional or on the underlying data or

other information relied upon by the professional in that performance.

Distinctions between the investigative and evaluative roles of AI utilization may be demonstrated by the following scenario involving the design of a foundation system for a new building.

- Design Objectives: Investigate, evaluate, develop recommendations and conceptual approaches as to final design of a foundation structure for a new building.

- AI Utilization: How may and should AI be utilized to inform and assist the Engineer of Record ("EOR") in achieving the Design Objectives?

    - Investigative: Data collection as to site history; geological (and groundwater) factors and considerations; relevant information as to subsurface conditions and existing as-built conditions of adjacent structures; prior relevant site and subsurface reports, etc.

    - Evaluative: Achievement of the Design Objective requires a number of assessments, interpretations, judgments, characterizations and recommendations as to scope and products of subsurface investigation and identified ground conditions; design considerations and constraints; Owner budgetary, schedule and long-term use and maintenance

programmatic objectives; construction means, methods and other factors that may impact either ground conditions, design approaches, or adjacent structures; and settlement tolerances or predictions in the completed building, and/or in adjacent structures.

As to these Design Objectives what are the appropriate, sensible and prudent balances in AI utilization as between the investigative and evaluative realms?

Based upon the considerations presented in the preceding discussion, it would appear that AI may provide significant benefits on a *primary* investigative basis, subject to the design professional's quality assurance verification, in assisting in and informing the design professionals' achievement of the Design Objective. The evaluative-type services, however, should be performed on a *primary* basis by the design professional, with the potential role of AI on a *secondary* basis in providing checks on the recommendations or deliverables generated by the design professional's services.

Conventional definitions of conceptual design – including the developmental processes and decisions made at the conceptual design phase – neither accurately nor precisely align with the integrative and evaluative distinctions in AI engagements and AI generated products. More specifically, in one approach AI investigative activities may include the assimilation or synthesis of existing information to aid in the development of conceptual design approaches by the design professional; in a more "enhanced" approach, the AI role may extend to identifying design options, precluding others, comparatively rating available options and providing recommendations as to those options. The latter approach certainly involves evaluative input.

In a more conventional understanding of a conceptual design phase a design professional typically would perform all of those investigative services including those in the "enhanced" AI approach. That said, the "enhanced" approach clearly involves the exercise of judgment based on various evaluative criteria and other considerations specific to the project.

As previously stated, those judgments and evaluations should be performed on a *primary* basis by the design professional.

Design professionals should be attentive and adherent to appropriate limitations on AI utilization. The failure to do so could have important standard of care implications and consequences.

IV. <u>AI: Standard of Care Application Issues</u>

The application of the standard of care in the specific context of design professional utilization of AI is likely to be influenced by and based upon consideration of several issues:

- Were the design professional's judgments as to AI utilization reasonable under the circumstances and in conformance with any standards, guidelines or professional practices prevailing at the time of the alleged breach?

- How does the design professional's AI utilization compare to that of other design professionals performing at the same time in the same or similar circumstances?

- Was the design professional's reliance upon AI-generated products reasonable?

- Did the design professional (especially as the Designer-of-Record) exercise appropriate oversight over the AI assignment and quality assurance and verification of AI-generated products?

- Were there any project-specific or contractual requirements, standards or guidelines regarding AI utilization and, if so, did the design professional comply?

- Did the design professional firm implement appropriate internal guidelines and requirements for AI utilization and effectively monitor compliance?

- Did the design professional firm implement and comply with internal guidelines and requirements for quality assurance and verification as to products of AI utilization?

- Did the design professional firm contractually define minimum standards for subconsultant AI utilization and quality assurance and verification as to AI utilization?

There are likely other relevant issues and factors that would and should be considered in the application of the standard of care in the AI context.

The bottom line is that in the present environment of rapid development in AI utilization there are many unknowns – risks – and uncertainties as to standard of care application.

V.   AI and Standard of Care: Looking Ahead and Recommendations

Design Professionals should be proactive in not only embracing AI but appreciating its impact on standard of care application. The issues identified in this article – and others – should be proactively addressed by design professionals.

Some may contend that the issues and concerns raised in this article may have the effect of frustrating, inhibiting and retarding the realization and optimization of AI utilization by design professionals. At a level those reactions are understandable but need to be prudently balanced with appropriate consideration of relevant standard of care application considerations. The paucity of published articles or papers addressing those considerations suggests that the thrust to engage AI at present is significantly imbalanced in relation to standard of care deliberation. An

objective of this article is to recalibrate the equilibrium and thereby provide

a more informed and prudent basis for design professional judgments as to

AI utilization.

We invite and welcome your comments and suggestions as to forward

thinking and constructive steps in integrating in a professionally responsible

manner AI into design professional practice.