Defining Architectural Competency and Judgment for the Future Architect

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Problem

NCARB's recently updated Competency Standard – grounded in the 2022 Analysis of Practice and refined in 2023 – defines 16 categories of work establishing a baseline for a minimally competent, independent architect on the premise that an architect's responsibilities rely on capabilities rather than tools. NCARB's work is largely independent of the implications of technology, but the recent rapid evolution of artificial intelligence fundamentally challenges this separation. An analysis of the Standard against the current capacity of AI (as of this writing in the fall of 2026) suggest that algorithms could capably perform as many as six of the Competencies and substantially contribute to six more; only four would be left exclusively to the judgment of the architect (see Appendices 1 and 2). A strategy for the future of the architectural profession that includes licensure reform must prepare architects to be the professionals that society will need to respond to this AI evolution, as well as other the fundamental challenges of climate instability, urbanization, and widening inequity in an ever more complex built environment.

Vision

Building information modeling dramatically improved the productivity of practice in the past decade (see Appendix 3), and AI offers architects an even more important opportunity for the profession to leverage its value around what AI cannot do. Part of this thinking includes a reconsideration and expansion of the Competency Standard, beyond process and procedure, to something we provisionally call a "Professional Judgment Standard," where architects are valued not only for the buildings they design, but for their willingness and ability to lead consequential decisions and take responsibility for their impact on people, communities, and the environment.

In this context, architects use novel technologies to extend capabilities while providing what emergent AI technology cannot independently offer: ethically grounded judgment, leadership amid uncertainty, public accountability, and responsibility for advancing health, safety, welfare, and resilience. This responsibility is the primary defense against the argument that a computer can replace an architect.

Without such a clearly defined Professional Judgment Standard, the scenario is less optimistic. Following the precedent of BIM, the efficiency temptations of AI-driven practice might dramatically reduce the need for architects, as demand for services by licensed architects shrinks and AI-enabled unlicensed practitioners provide a wide array of services defined by the Competency Standard. Far fewer licensed practitioners would then assume responsibility for the results. When accountability is the only thing left to humans, you need fewer humans – and those who are left are more responsible for an expanding amount of work done by non-humans.

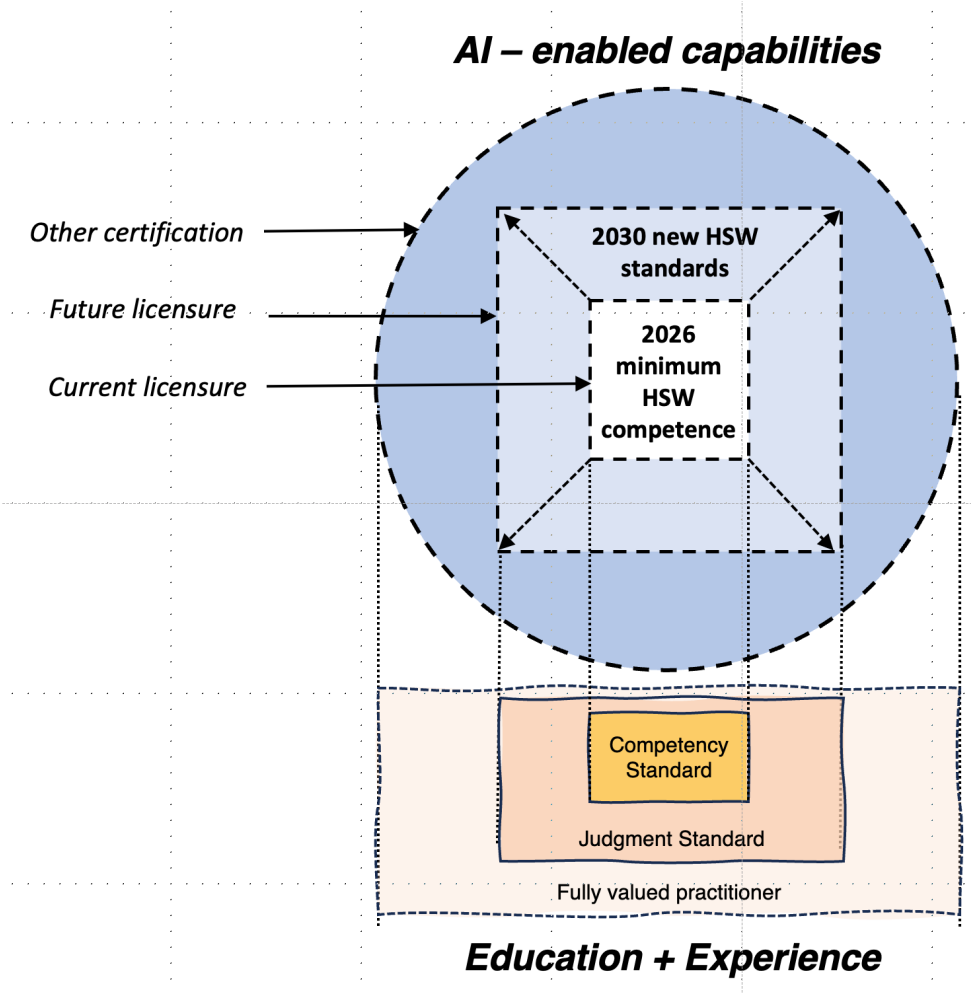
Strategy

This is the appropriate moment to act. Deregulation pressure, skepticism about professional education, redefinition of licensing standards, and rapid technological transformation are already reshaping the practice of architecture. The profession needs an explicit strategy that defines the future of practice: one where the architect's judgment is central, and technology enhances, rather than replaces, decision-making. The strategy should be generated by the organizations with a vested interest in the outcome: AIA, AIAS, ACSA, CCCAP, NAAB, NCARB, and NOMA. Together, they should define:

- the role of the architect in a technology-enabled design and construction process
- what constitutes competent professional judgment
- how that judgment should be defined, assessed, validated, and certified.

The diagram below sketches such a strategy, suggesting an expanding definition of health, safety, and welfare that reflects an augmented view of the architect's responsibilities, with parallel redefinitions of competency, judgment, and fully AI-enabled capable practice. This is but one possible future approach to a discipline enabled, rather than replaced, by AI.

We call upon the leaders of these organizations to consider, define, and undertake an effort to define the future strategy for architecture.



Author's Biographies

Phil Bernstein, FAIA, RIBA, DPACSA, NOMA is Deputy Dean and Professor in the Practice at the Yale School of Architecture, and a former vice president at Autodesk, where he was responsible for the company's Building Information Modeling strategy. Prior to Autodesk Phil was an Associate Principal at Cesar Pelli & Associates where he managed many of the firm's most complex commissions. He writes and lectures extensively on issues of project delivery, technology, and architectural agency.

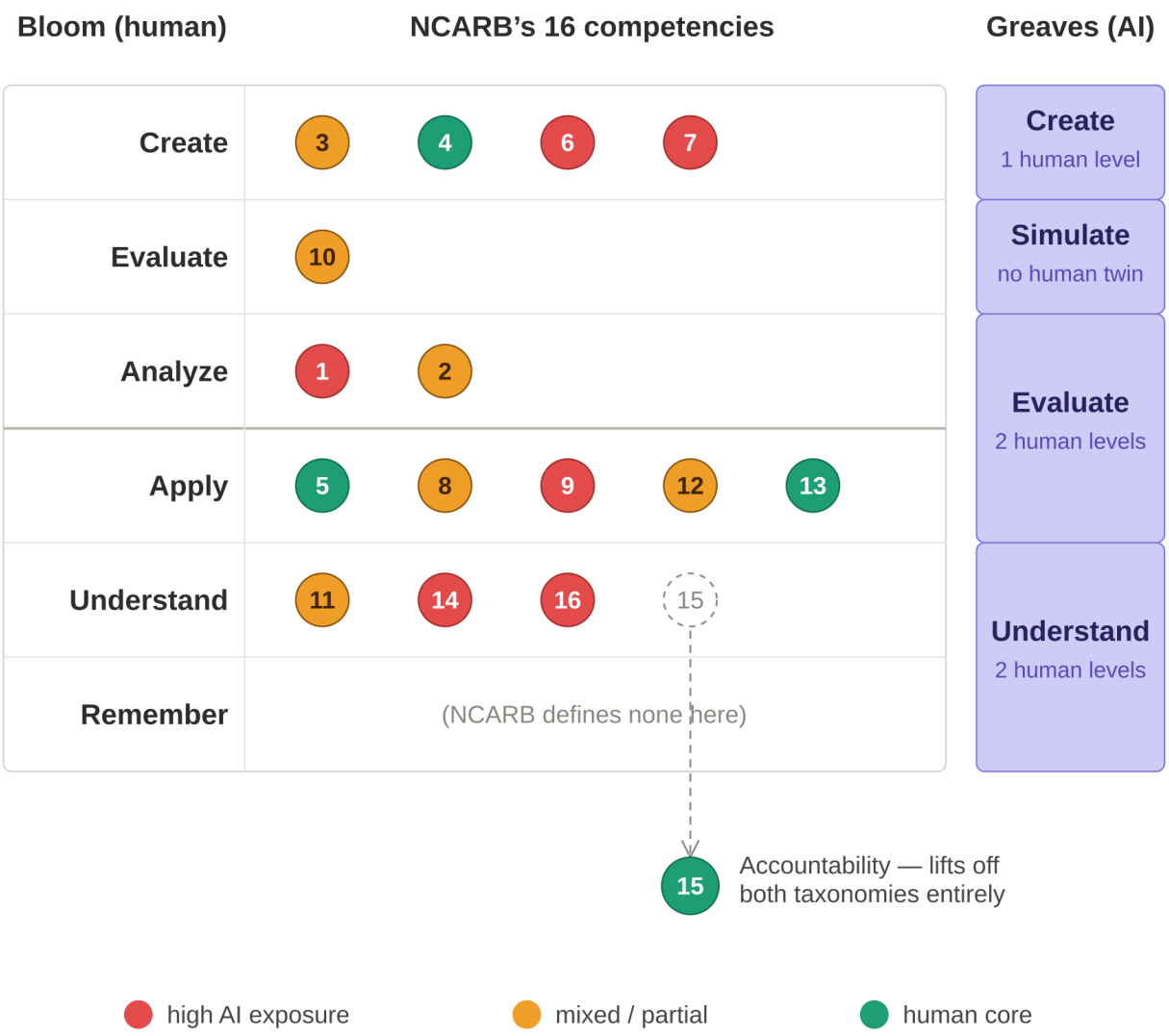
Renée Cheng, FAIA, DPACSA, NOMA, is the dean of the Herberger Institute for Design and the Arts and senior vice provost at Arizona State University. She is a graduate of Harvard's Graduate School of Design and Harvard College. She was the lead author for the AIA Guides for Equitable Practice issued in 2022 and has received numerous honors and awards for teaching and research. She is currently Chancellor of the ACSA College of Distinguished Professors.

Beth Garver Lundell, AIA, NOMA is Dean of Practice at the Boston Architectural College, where she integrates academic learning with professional and community-engaged practice. Previously, she worked with Rafael Viñoly Architects in New York and San Francisco, including several years overseeing complex laboratory construction on-site. She has served on the ACSA and AIAS Boards of Directors and currently serves on the CCCAP Board and as an NCARB Licensing Advisor. Her work focuses on workplace learning, experiential education, assessment design, and material reuse.

APPENDIX 1 – AI Implications for the Competency Standard

(Source: Phil Bernstein and authors in concert with Anthropic/Claude Sonnet 4.5)

Examining the NCARB Competencies through three lenses illuminates the implications of AI for licensure. Bloom's taxonomy of learning suggests a hierarchy of ascending competencies for a capable learner; a second taxonomy, developed by Phil Bernstein and Mark Greaves in Phil's book *Machine Learning* (2025), translates Bloom into AI-based capabilities. Together the two form a third lens, mapping the Competencies, color coded by level of AI risk exposure :



APPENDIX 2 – Detailed Rationale for AI Exposure Rank shown in Appendix 1

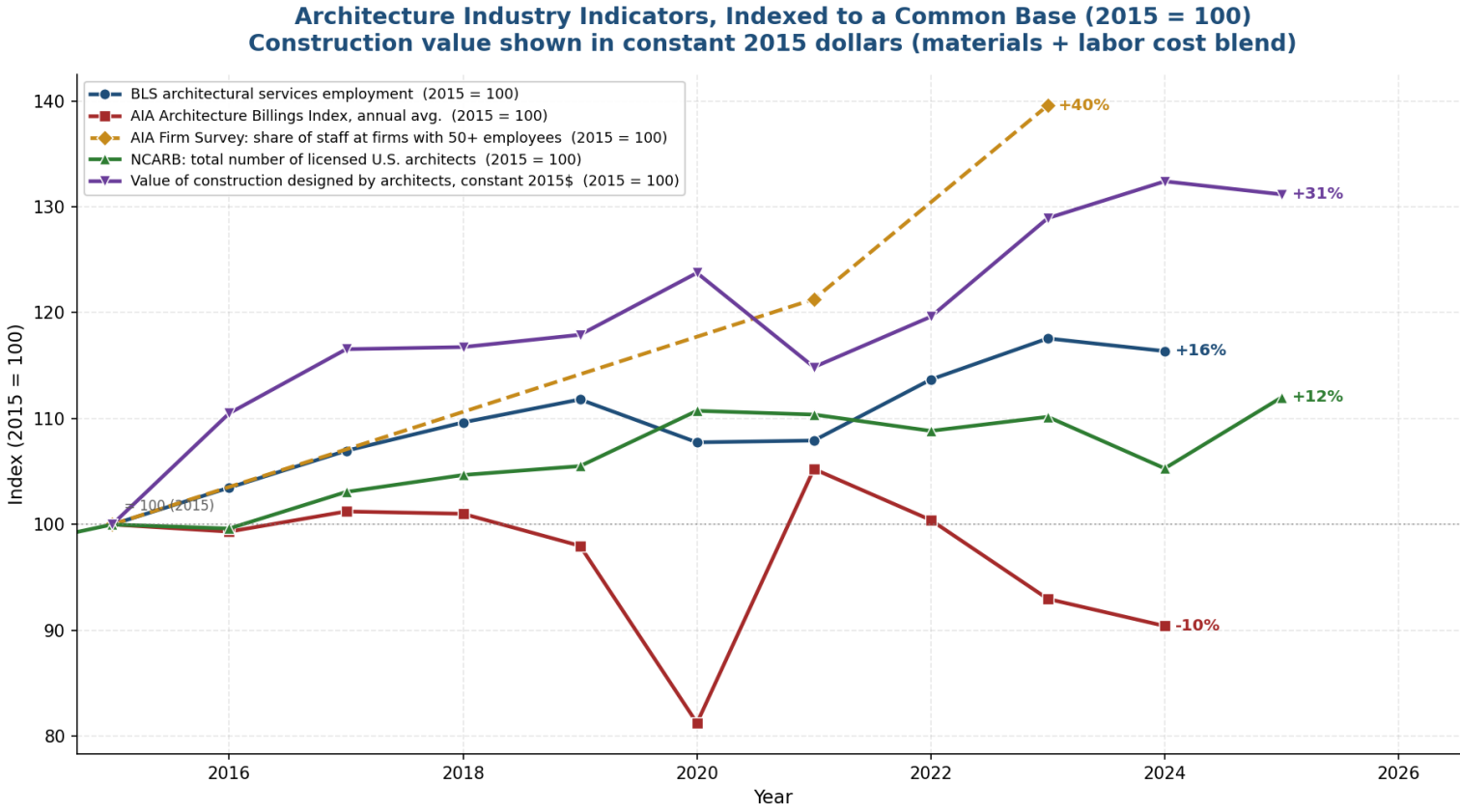
(Source: Phil Bernstein and authors, in concert with Anthropic/Claude Sonnet 4.5)

#	Competency	Exposure	Bloom	Greaves	Ranking Rationale
1	**Assess regulatory requirements**	**High**	Analyze	Evaluate	Bounded code/AHJ lookup; Upcodes-class tools already do it
2	**Evaluate existing conditions**	**Mixed**	Analyze	Evaluate	Site analysis automatable, but field judgment stays human
3	**Develop the program**	**Mixed**	Create	Create	AI drafts space lists; client/stakeholder framing is human
4	**Design for public / env. well-being**	**Human core**	Create	Create	Defining "well-being" is a contested value call, not generation
5	**Socio-demographic + universal design**	**Human core**	Apply	Evaluate	Normative/equity judgment about whom the design serves
6	**Design solutions to requirements**	**High**	Create	Create	Generate-test-iterate is native simulation (Forma/TestFit/Finch)
7	**Create deliverables**	**High**	Create	Create	Drawings and specs are the most template-driven artifacts
8	**Coordinate building systems**	**Mixed**	Apply	Evaluate	Clash detection automates; cross-trade tradeoffs need a human
9	**Prepare / administer CA documentation**	**High**	Apply	Evaluate	RFIs, submittals, pay apps = document pattern-matching
10	**Evaluate construction progress**	**Mixed**	Evaluate	Simulate	Conformance checks automatable; site observation less so
11	**Execute contracts**	**Mixed**	Understand	Understand	Term retrieval automates, but negotiation (11.4) resists it
12	**Implement work plan**	**Mixed**	Apply	Evaluate	PM tooling assists; resource tradeoffs need ownership
13	**Organize the project team**	**Human core**	Apply	Evaluate	Relational orchestration of people, not a computable task
14	**Understand statutes**	**High**	Understand	Understand	Pure retrieval over a documented corpus — total overlap
15	**Understand ethics / standards**	**Human core**	Understand*	*off both ladders*	Answerability/liability isn't a cognitive level — no model can hold it
16	**Understand business principles**	**High**	Understand	Understand	Bounded factual retrieval; LLM-complete

APPENDIX 3 – Architectural Productivity, 2015 – 2025

(Source: Phil Bernstein and authors in concert with Anthropic/Opus 5)

After the destabilizing effects of the pandemic in 2020-2021, the American profession began to see the implications of BIM in productivity; growth in firm employment was 16% since 2015, licensed architects expanded only 12%, while the value of construction designed by architects expanded by 31%. The number of staff in large offices expanded dramatically, by 40% from 2015, suggesting that much of this productivity advantage accrued to bigger offices with more technological prowess. While we can only speculate on AI impacts, we confidently predict more productivity. The benefits to firms large or small, and the implications for the demand for licensed architects, is less certain.



Real construction value deflated using a blended cost index: 60% BLS PPI 'Net Inputs to Construction Industries' (materials) + 40% BLS Average Hourly Earnings, Construction (labor wages) — blend weights are a standard rough approximation of construction cost composition, not a precise input-output measure. Blended construction costs rose ~51% cumulatively, 2015-2025.