



**Committee Members**  
**Appearing Virtually**  
Charles Ward III, Chair  
Malcolm Gladstone, Vice Chair  
Victoria Brash  
Tian Feng  
Mitra Kanaani  
Eric Lum  
Barry Williams

## **NOTICE OF TELECONFERENCE MEETING**

### **Professional Qualifications Committee**

The Professional Qualifications Committee (PQC or Committee) will hold a meeting at the location below and via Webex Events

**10:00 a.m. on Wednesday, November 20, 2024**

**California Architects Board (CAB)  
2420 Del Paso Road, Suite 105  
Conference Room  
Sacramento, CA 95834**

The above-listed PQC members will be in virtual attendance during the meeting. A staff member of the California Architects Board will be in attendance at the above shown location.

**IMPORTANT INFORMATION:** To participate in the Webex meeting, please log on to the below website on the day of the meeting:

<https://dca-meetings.webex.com/dca-meetings/j.php?MTID=m85e870accde58270f0c7e2c60d642856>

**Webex Event/Meeting Number:** 2497 387 2810

**Password:** CAB1120

**Instructions to connect to the meeting can be found at the end of this notice.**

Due to potential technical difficulties, please consider submitting written comments by November 13, 2024, to [cab@dca.ca.gov](mailto:cab@dca.ca.gov) for consideration.

#### **AGENDA**

**10:00 a.m. to Noon**  
(or until completion of business)

**THE COMMITTEE MAY ACT UPON ANY ITEM LISTED ON THIS AGENDA.**

1. Call to Order / Roll Call / Establishment of a Quorum
2. Chair's Procedural Remarks and Committee Member Introductory Comments

*(Continued)*

3. Public Comment on Items Not on the Agenda

The Committee may not discuss or act upon any item raised during this public comment section, except to decide whether to place the matter on the agenda of a future meeting (Government Code sections 11125 and 11125.7(a)).

4. Review and Possible Action on March 30, 2022, Committee Meeting Minutes

5. Discuss and Possible Action on The Use of Generative Design Tools in Architecture

6. Adjournment

The time and order of agenda items are subject to change at the discretion of the Chair and may be taken out of order. The meeting will be adjourned upon completion of the agenda, which may be at a time earlier or later than posted in this notice. In accordance with the Bagley-Keene Open Meeting Act, all meetings of the Committee are open to the public.

The Committee plans to webcast the meeting on its website at [www.cab.ca.gov](http://www.cab.ca.gov). Webcast availability cannot be guaranteed due to limitations on resources or technical difficulties. The meeting will not be cancelled if webcast is not available.

Government Code section 11125.7 provides the opportunity for the public to address each agenda item during discussion or consideration by the Committee prior to it taking any action on said item. Members of the public will be provided appropriate opportunities to comment on any issue before the Committee, but the Chair may, at their discretion, apportion available time among those who wish to speak. Individuals may appear before the Committee to discuss items not on the agenda; however, the Committee can neither discuss nor take official action on these items at the time of the same meeting (Government Code sections 11125 and 11125.7(a)).

This meeting is being held via Webex Events. The meeting is accessible to the disabled. A person who needs a disability-related accommodation or modification to participate in the meeting may make a request by contacting:

**Person:** Marccus Reinhardt  
**Telephone:** (916) 471-0764  
**Email:** [marccus.reinhardt@dca.ca.gov](mailto:marccus.reinhardt@dca.ca.gov)  
**Telecommunications Relay Service:** Dial 711

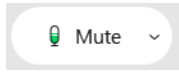
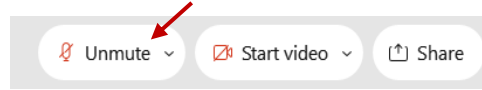
**Mailing Address:**  
California Architects Board  
2420 Del Paso Road, Suite 105  
Sacramento, CA 95834

Providing your request at least five (5) business days before the meeting will help to ensure availability of the requested accommodation.

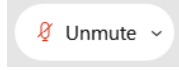
Protection of the public shall be the highest priority for the CAB and its committees in exercising its licensing, regulatory, and disciplinary functions. Whenever the protection of the public is inconsistent with other interests sought to be promoted, the protection of the public shall be paramount (Business and Professions Code section 5510.15).

### Microphone

Microphone control (mute/unmute button) is located on the command row.



Green microphone = Unmuted: People in the meeting can hear you.



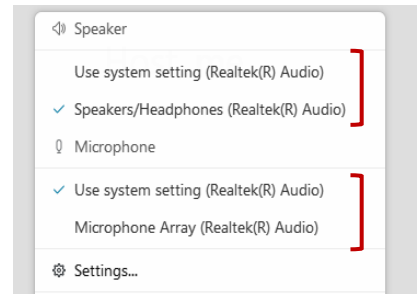
Red microphone = Muted: No one in the meeting can hear you.

*Note: Only panelists can mute/unmute their own microphones. Attendees will remain muted unless the moderator enables their microphone at which time the attendee will be provided the ability to unmute their microphone by clicking on "Unmute Me".*



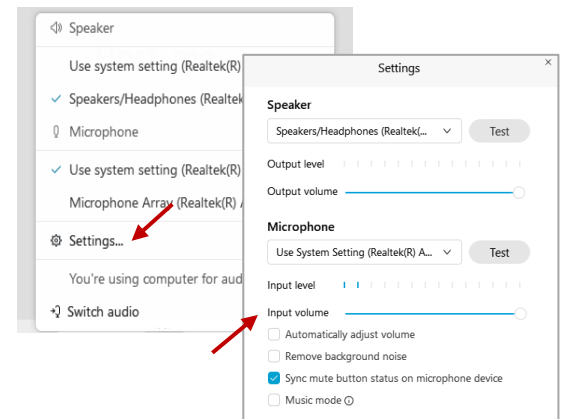
### If you cannot hear or be heard

- 1 Click on the bottom facing arrow located on the Mute/Unmute button.
- 2 From the pop-up window, select a different:
  - Microphone option if participants can't hear you.
  - Speaker option if you can't hear participants.



### If your microphone volume is too low or too high

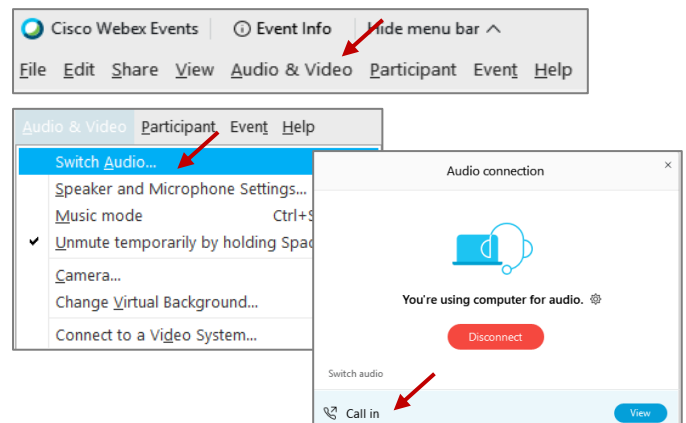
- 1 Locate the command row – click on the bottom facing arrow located on the Mute/Unmute button.
- 2 From the pop-up window:
  - Click on "Settings...":
  - Drag the "Input Volume" located under microphone settings to adjust your volume.



### Audio Connectivity Issues

If you are connected by computer or tablet and you have audio issues or no microphone/speakers, you can link your phone through Webex. Your phone will then become your audio source during the meeting.

- 1 Click on "Audio & Video" from the menu bar.
- 2 Select "Switch Audio" from the drop-down menu.
- 3 Select the "Call In" option and following the directions.



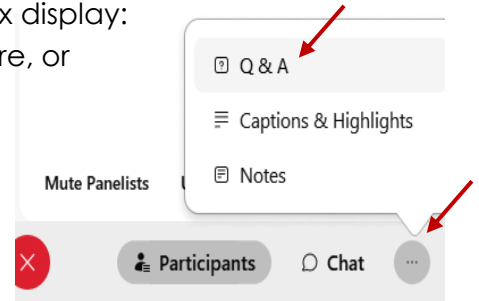
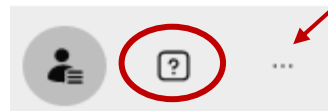
The question-and-answer (Q&A) and hand raise features are utilized for public comments.

*NOTE: This feature is not accessible to those joining the meeting via telephone.*

### Q&A Feature

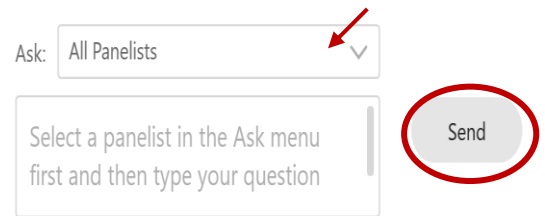
1 Access the Q&A panel at the bottom right of the Webex display:

- Click on the icon that looks like a “?” inside of a square, or
- Click on the 3 dots and select “Q&A”.



2 In the text box:

- Select “All Panelists” in the dropdown menu,
- Type your question/comment into the text box, and
- Click “Send”.



OR

### Hand Raise Feature

- 1
- Hovering over your own name.
  - Clicking the hand icon that appears next to your name.
  - Repeat this process to lower your hand.

If connected via telephone:

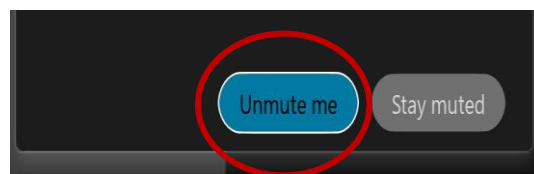
- Utilize the raise hand feature by pressing \*3 to raise your hand.
- Repeat this process to lower your hand.

### Unmuting Your Microphone



The moderator will call you by name and indicate a request has been sent to unmute your microphone. Upon hearing this prompt:

- Click the **Unmute me** button on the pop-up box that appears.

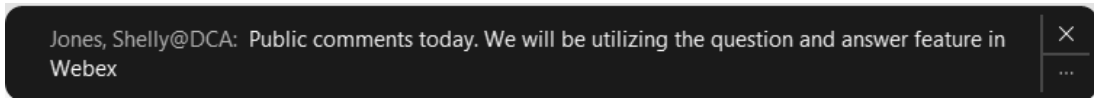


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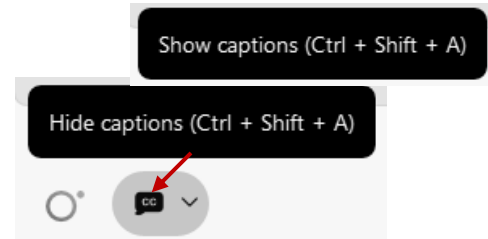
If connected via telephone:

- Press \*3 to unmute your microphone.

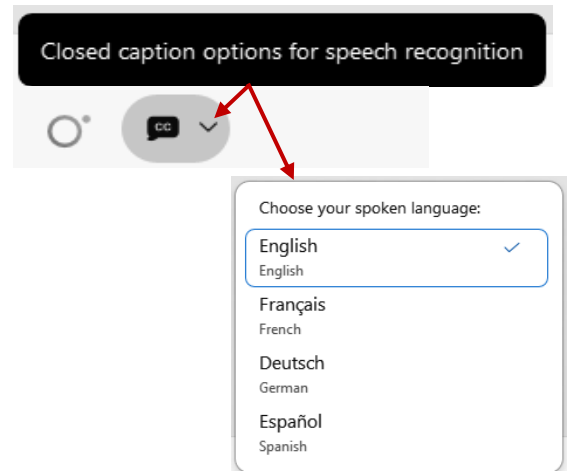
Webex provides real-time closed captioning displayed in a dialog box on your screen. The captioning box can be moved by clicking on the box and dragging it to another location on your screen.



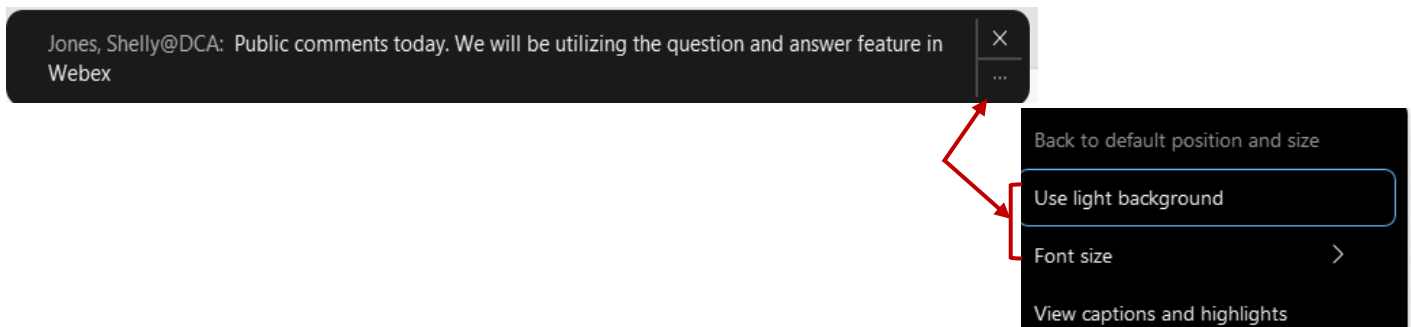
The closed captioning can be hidden from view by clicking on the closed captioning icon. You can repeat this action to unhide the dialog box.



You can select the language to be displayed by clicking the drop-down arrow next to the closed captioning icon.



You can view the closed captioning dialog box with a light or dark background or change the font size by clicking the 3 dots on the right side of the dialog box.



## **ITEM 1: CALL TO ORDER / ROLL CALL / ESTABLISHMENT OF A QUORUM**

Roll will be called by Vice Chair, Malcolm Gladstone.

Four members of the Committee constitute a quorum for the transaction of business. The concurrence of three committee members in attendance during a duly held meeting at which a quorum is established shall be necessary to constitute an act or decision of the Committee.

### **Committee Members**

Charles Ward, III, Chair  
Malcolm Brett Gladstone, Vice Chair  
Victoria Brash  
Tian Feng  
Mitra Kanaani  
Eric Lum  
Barry Williams

## **MEETING MINUTES PROFESSIONAL QUALIFICATIONS COMMITTEE**

March 30, 2022

Teleconference

### **A. CALL TO ORDER / ROLL CALL / ESTABLISHMENT OF A QUORUM**

Chair Charles Ward, III called the meeting to order at 10 a.m. and called the roll. Three members of the Committee constitute a quorum; there being four members present at the time of roll, a quorum was established.

#### **Committee Members Present**

Charles "Sonny" Ward, III, Chair  
Tian Feng  
Eric Lum  
Barry Williams

#### **Committee Members Absent**

Malcolm Brett Gladstone, Vice Chair

#### **Members of the Public Present**

Mark Christian, Director of Government Relations, The American Institute of Architects, California (AIACA)  
Glenn Gall  
Cary Bernstein

#### **Staff Present**

Laura Zuniga, Executive Officer (EO)  
Marccus Reinhardt, Examination and Licensing Manager  
Kimberly McDaniel, Regulations Manager  
Jesse Bruinsma, Examination Analyst, CSE  
Coleen Galvan, Communications Analyst (Co-Moderator)

## **B. CHAIR'S PROCEDURAL REMARKS AND COMMITTEE MEMBER INTRODUCTORY COMMENTS**

Mr. Ward announced the meeting was being webcast, with no physical location pursuant to Governor Gavin Newsom's January 5, 2022, Executive Order N-1-22. He subsequently advised members of the teleconference voting requirements.

Mr. Ward asked for public comment. There was no public comment.

## **C. PUBLIC COMMENT ON ITEMS NOT ON THE AGENDA**

Mr. Ward asked for public comment related to items not on the agenda. There was no public comment.

## **D. REVIEW AND POSSIBLE ACTION ON JANUARY 25, 2022 COMMITTEE MEETING MINUTES**

Mr. Ward asked for public comment. There was no public comment.

Mr. Ward asked for a motion to approve the January 25, 2022, minutes.

- Mr. Williams made the motion to approve the January 25, 2022, meeting minutes.

Mr. Feng seconded the motion.

Members Ward, Feng, Lum, and Williams voted in favor of the motion.

The motion passed 4-0.

## **E. DISCUSS AND POSSIBLE ACTION ON 2022-2024 STRATEGIC PLAN OBJECTIVE TO COLLABORATE WITH LEGAL TO IMPLEMENT ASSEMBLY BILL 1010 (CHAPTER 176, 2021 STATS.) IN DEVELOPING REGULATIONS AND ALIGNING COMMITTEE FINDINGS TO PROVIDE MORE CONSISTENCY AND MAKE CONTINUING EDUCATION REQUIREMENTS MORE RELEVANT TO CURRENT LICENSING REQUIREMENTS**

Mr. Ward introduced Ms. McDaniel to present this item. Ms. Zuniga explained that in the cover memorandum for this item the action requested asks the Committee to discuss the proposed regulatory text and define key terminology and concepts with a focus on:

- Zero net carbon design (ZNCD)
- Carbon neutral / high-performance architecture
- Providers' trainer and educator qualifications



- Examples of ZNCD continuing education (CE) course topics

Ms. Zuniga said that Attachment 1 (ZNCD Discussion Document) for this item is color-coded to assist in facilitation of the discussion with yellow related to trainers and educators, green related to ZNCD, and blue related to course topic examples. She advised that following the first attachment is the proposed text (Attachment 2).

Mr. Ward asked where within the proposed regulatory text is mention of carbon neutral and high-performance architecture. He said it appeared that such language was removed from the proposed text prior to the meeting. Ms. McDaniel responded that it is embedded within the definition for ZNCD based upon her research that included feedback from preliminary meetings with the AIACA and review of the California Senate legislative analysis. Otherwise, it would be necessary to separately define the term within the Initial Statement of Reasons.

Mr. Ward asked whether members wanted to start the conversation with reviewing the ZNCD Discussion Document one item at a time, or instead address individual member concerns regarding the attachment. Ms. McDaniel advised members she would like them to start the conversation by first addressing the ZNCD Discussion Document. She emphasized the importance of keeping the timeline in mind during the discussion because the mandate for implementation begins on January 1, 2023, while the deadline for the promulgation of regulations is July 1, 2024. Ms. McDaniel added that it is the intent of Board staff to have the regulations approved well before the deadline.

Mr. Ward asked whether his understanding would be correct that dependent upon the present conversation during the meeting and presentation to the Board in either May or September it would be possible for the regulatory proposal to be approved before January 1, 2023. Ms. McDaniel responded that it would be challenging to having the entirety of the regulatory process complete by the operative date for the new renewal requirement.

Ms. McDaniel summarized some of the key requirements specified within the proposed regulatory text:

- Five hours of coursework on ZNCD
- [Presented by] Trainers or educators with knowledge and expertise in ZNCD
- Audit of [licensee] records

Ms. McDaniel advised that the new requirement would be like the existing one on disability access requirements.

Mr. Feng suggested, for the benefit of new members, the Committee review the March 26, 2021, presentation on CE and the history of Assembly Bill (AB) 1010. Mr. Ward agreed with the suggestion. Mr. Feng, summarized for the new members the contemporary history of the Board's work to enhance the CE requirement for protection of the public. Mr. Ward then began the conversation with a review of the ZNCD Discussion Document. He reminded members that with the passage of AB 1010 the task before the Committee is to define the coursework, the requirements, and the related regulations. He opined the March 2021 CE presentation would be helpful to the current discussion because the Committee had in its preparation done significant work and defined areas of practice that California architects could perform better with corresponding CE.

Mr. Ward read the definition for ZNCD to members and speculated that most of the current discussion would be on this topic. He said, from his personal perspective, it would be his desire for the Committee to explore the course topics that would align with the definition of ZNCD that is ultimately agreed upon by members. Mr. Ward asked Ms. McDaniel to provide validation of whether those proposed topics would fall within the definition. He refined the objective of the current conversation for members and said the goal would be to define ZNCD and address the implementation of the requirement with the courses permitted by the proposed regulatory action.

Mr. Ward reminded members that at the previous meeting the consensus was to have a broad definition of ZNCD to allow for a greater variety of acceptable courses and topics. He then directed the members' attention to the March 2021 CE presentation to continue the conversation from the last meeting. Mr. Feng invited Mr. Lum to present any questions he may have regarding AB 1010 to members more familiar with its history. He reiterated that the Board through the Committee had been working on CE for more than three years and expressed his personal desire to see a convergence of the two initiatives to develop a regulatory proposal that is reflective of the efforts by each group.

Mr. Lum brought a minor error that he noticed in the ZNCD Discussion Document regarding the term "demonstrable" to the attention of members. Ms. McDaniel responded and confirmed the error; she explained that the term if kept in the definition for ZNCD would itself require clarification of meaning for the proposed regulatory language.

Mr. Ward asked Ms. McDaniel whether there was anything listed in the March 2021 presentation under Category 2 she believed would not fall under a course that would fulfill ZNCD as current defined in the ZNCD Discussion Document. Ms. McDaniel responded that the way ZNCD is defined in the related Discussion Document accommodates the subject matter topics listed in Category 2. She

added the regulatory text also incorporates the Category 2 topics into the definition.

Mr. Ward asked whether topics from other categories could be included in the definition. Mr. Ward said his concern is that in trying to further qualify a definition [for ZNCD] the opposite effect of what the Committee and Board are attempting to achieve may be the result. Ms. Zuniga advised the Committee that a broader definition for ZNCD, inclusive of the topics found in Category 2, would be easier to justify than an approach to incorporate additional topics from the other categories into the definition.

Mr. Feng said it would be ideal if all the topics covered in Category 2 were included in the definition and meet its intent.

Mr. Ward before opening to public comment asked whether any of the members had any statements regarding the discussion. Mr. Williams asked whether embodied energy (carbon) is being taken into consideration or covered under Category 2. Mr. Feng responded that as a member of the AIA Committee on the Environment there has been discussion on the topic of embodied carbon and a proposal to enhance the definition for ZNCD to include it.

Cary Bernstein (an architect member of the public) said remote projects that require tremendous transport disruption of the existing environment must have this impact factored into the carbon content calculations for the building.

Mark Christian explained to the Committee that many of the topics in Category 2 would likely meet the intent of the ZNCD requirement. However, he clarified that not all climate justice issues, or sustainability content would fall within the scope of the ZNCD requirement.

Glenn Gall said in his public comment that he is concerned the strict definition of trainers and educators would exclude researchers, regulators, and educators not directly involved with designing and building.

Mr. Lum asked for clarification whether all the topics within Category 2 is supposed to be embedded in AB 1010. He said AB 1010 is specifically focused on ZNCD and does not include sustainability, resilience, or climate justice. Mr. Ward responded by providing a summary on the history regarding continuing education from prior committee and board discussions on the subject. Specifically, he mentioned that the current discussion is an effort to expand what the Committee and Board believe to be a very narrow definition of ZNCD within the language of AB 1010.

Mr. Lum asked how Category 2 became AB 1010. Mr. Ward explained that Category 2 did not become AB 1010. He said that AB 1010 was parallel to the conversation on what the Committee and Board were working on at the time related to CE. Mr. Ward further explained that the Committee is bringing Category 2 into the conversation as it works to define what coursework should apply to ZNCD. He added that there is some crossover between the work of the Committee and AB 1010.

Ms. Zuniga said that the presentation the members were viewing is the product of the Committees work over two years and gives a general direction for where the Board would like to take the CE requirement in the future. She added that AB 1010, sponsored by the AIACA, was separate from the Committee's work and narrowly defines ZNCD. She further added that it is now the Board's responsibility to define the term and the parameters licensees complete to fulfill the CE requirement. Ms. Zuniga said that staff used the work from the Committee and documents referenced in the bill analysis to formulate the proposed definition before the Committee for its consideration.

Mr. Lum said he believes that resiliency is an important topic [from Category 2]; however, it is not really included in discussions of ZNCD. He said that if resiliency were something the Committee would like to include then it would be another subject matter apart from ZNCD.

Mr. Feng said that in the previous few weeks the AIACA Resilient Design Committee (RDC) reviewed the initial definition for ZNCD proposed by the Board and expanded it to include two new aspects: 1) embodied energy; and 2) resilient design through increased building performance to reduce the future rebuilding, repair, or reconstruction of the building. He said the effectiveness would be measurable by the building's carbon footprint. He said by expanding the definition for ZNCD, then most of Category 2 would be relevant and included, so it will hopefully reconcile some of the Committee's concerns.

Mr. Ward asked whether Mr. Feng would be able to share the text from the RDC discussion with the Committee. Alternately, Mr. Ward proposed that perhaps a description of the text would be sufficient for the Committee's discussion. He asked whether further qualification broadens or constricts the coursework. Mr. Ward suggested the Committee review the public comments and then ask Ms. McDaniel whether the proposed regulatory text would preclude coursework on embodied energy, resilient design, or building performance.

Mr. Ward asked whether any of the coursework discussed so far during the meeting is outside the existing definition for ZNCD. Ms. McDaniel responded that the focus of the definition is on operational aspects and that it would be necessary to add language that addresses embodied carbon.

Mr. Feng said it appeared there was a consensus regarding environmental justice. He felt that if the Committee, based upon the present discussion, could collaborate with Ms. McDaniel, and formulate a recommendation, then it would be probable for a proposal to go before the Board in May.

Mr. Ward suggested additional language to the proposed text regarding the submission by providers and educators of their documentation of qualifications that could be reviewed by staff. He said the language regarding provider and trainer qualifications does not seem broad enough and compared it to the proposed text (from the February 18, 2022, Board meeting) for CE on disability access requirements. Mr. Ward said the text for CE on disability access requirements seems too focused on codes. The rub, he said, is that there is no attention to the broader social implications. He said (relative to ZNCD) that it feels as though, given the broadness of the topic, there may be voices who are not heard in the discussion.

Mr. Feng asked whether the Committee could propose a list of those educators and trainers it determines are qualified to provide CE training on ZNCD. Ms. Zuniga asked for clarification from the Committee on how the language in the proposed text is deficient, so it can be rectified for use by licensees to meet the renewal requirement. She asked whether there were additional categories the Committee would like included in the language of the proposed text.

Mr. Ward said he would like to hear from a social justice perspective and there should be allowances for courses that address more global concerns regarding climate change. Ms. Zuniga said staff would take the Committee's feedback and see whether there is a way to broaden the range of individuals who would be qualified to provide training to licensees.

Mr. Feng asked whether it would be possible for the language in the text to be more high-level, so a broader range of providers would be eligible. Ms. Zuniga explained that the regulatory text must be self-explanatory. Mr. Ward said the topic of ZNCD is wildly controversial and the definition can be different to each person. He opined that even with a definition it does not change the degree of controversy related to the topic. He said ZNCD is more conceptual than, as an example, disability access requirements.

Mr. Feng asked what degree of specificity is required by the rulemaking process and whether board counsel could provide some direction on the matter. He expressed his reservations about listing those who would be qualified to provide coursework given the dynamic nature of ZNCD. Mr. Ward said he understands the limitations on staff resources and that he does not want to make the process burdensome by requiring approval of providers. He asked whether the ZNCD definition could be simplified rather than qualified to allow for a broader, more

flexible, more diverse, and less controversial discourse. Ms. Zuniga agreed that a broader definition would make it easier, and that staff would take the feedback from the Committee and bring back revised language for consideration. Mr. Feng asked whether public comment could be reopened for additional input by those in attendance.

Mr. Ward asked whether the Committee was expected to approve the proposed text and provide a recommendation to the Board. Ms. Zuniga responded that staff would bring revised language to the Board in May based upon the feedback provided by the Committee.

Mr. Lum said he wanted to express his observations between the requirement in AB 1010 and the existing requirement on accessibility. He said the requirement for accessibility is rather specific and technical; being based upon regulations. He also said the wording for AB 1010 is similar in that it is focused on carbon-free renewable energy to meet building operation energy consumption. Mr. Lum further said it includes other topics, such as those discussed during the meeting, so he opined it is a very technical education.

Mr. Christian said he had a comment regarding paragraph (f)(1) in the proposed text. He said the language in the proposed text specifies that to qualify as a provider an individual must hold a license as a professional, civil, or structural engineer; it appears to exclude mechanical engineer. He suggested that unless mechanical engineer, which is very relevant to ZNCD, is within the definition of professional engineer, then it should be specified as well.

Mr. Christian asked whether there will be other opportunities to comment on the proposed regulatory text. Ms. Zuniga advised there would be several more opportunities, including future board meetings, the mandatory 45-day comment period, and any time the language is brought back before the board.

Mr. Christian also provided comment on paragraph (e) regarding the summative assessment and said there is a national standard related to mandatory CE for architects. He said all other U.S. jurisdictions and the National Council of Architectural Registration Boards (NCARB) accept this standard, which he elaborated is the AIA Standard (Standard).

Mr. Christian further said the AIACA believes there is a benefit to having a single standard on course criteria. He said the proposed text does not follow the Standard and explained that under the Standard summative assessments are only required for on-demand online CE courses but not for live in-person or online courses. Additionally, he said, the Standard requires a 70% pass rate, but the proposed text requires an 80% pass rate. Mr. Christian said not following the Standard would be disruptive and unnecessarily complicated for licensees. He

said the AIACA strongly recommends the proposed text be modified to align with the Standard.

Mr. Gall said the Committee should look beyond traditional practice; for instance, manufacturers, product representatives, and city planners that he said greatly have expanded his personal professional knowledge. He added that it appears these entities are being excluded from being acknowledged as valid providers.

Mr. Ward first responded to Mr. Gall's comment and expressed that he shares the same concerns and said there would be internal discussions to ascertain whether there is any ability to broaden the range of entities eligible to be providers. He then responded to Mr. Christian's comment and said the matter is being researched by staff and it is hoped more information will be available for the consideration at the next Board meeting in May.

**F. DISCUSS AND POSSIBLE ACTION ON 2022-2024 STRATEGIC PLAN  
OBJECTIVE TO AMEND EXISTING REGULATIONS TO REVISE AND  
EXPAND THE TYPES OF DEGREES ACCEPTED FOR LICENSURE TO  
REMOVE BARRIERS TO LICENSURE**

Mr. Ward lead the discussion by explaining the intent of the objective would be:

- Allow increased training experience and expand opportunities for candidates without a professional degree in architecture
- Align training and educational experience earned with contemporary professional practices and trends
- Permit candidates to earn training experience from related professions prior to achieving Architect Registration Examination testing eligibility
- Update references to National Council of Architectural Registration Board's programs
- Remove obsolete and redundant language
- Simplify the Table of Equivalents

Mr. Reinhardt explained the differences in the attachments provided members to aid in their discussion of what is being recommended in the regulatory proposal. He advised the members that in addition to approval of the proposed regulatory text, staff is seeking direction from Committee regarding the term "qualifying foreign country" which he said was based upon a now defunct NCARB publication. The NCARB publication defined a "qualifying foreign country" as one with licensure requirements like those for jurisdictions in the NCARB membership – requiring education, experience, and examination. Mr. Reinhardt said the list of qualifying foreign countries based upon the NCARB publication is available on the Board's website.

Mr. Reinhardt advised the Committee that staff was proposing multiple recommendations for Committee consideration regarding how to address the term “qualifying foreign county” no longer being supported by the NCARB publication. The recommendations included:

- Setting a fixed amount of foreign experience credit granted at a rate reduction, for instance at 50% credit
- Accepting without limit foreign experience regardless of the foreign licensure requirements but at 50% credit reduction
- Mirroring NCARB and providing a one-year limit at full (100%) credit

Mr. Ward asked Mr. Reinhardt to explain the individual proposed amendments commencing with the Table of Equivalents (TOE). Mr. Reinhardt explained for members the organizational structure of the TOE relative to the proposed amendments from staff. Mr. Ward asked for an explanation of the differences between (a)(3) and (a)(4) and why they receive the same educational experience credit. Mr. Reinhardt explained the difference between (a)(3) and (a)(4) is that the latter is related to earning a degree from a school with a program accredited by the National Architectural Accrediting Board (NAAB) **and** the degree would allow for entry into the NAAB-accredited program at **that** school. He added this would be like either the 4+2 or 4+3 Master's program.

Mr. Feng suggested there should be a consolidation between these two categories because he does not see a significant enough distinction between a nonaccredited four-year degree in architecture earned at a school without a NAAB-accredited program and a four-year degree in the same major earned at a school with a NAAB-accredited program. Mr. Reinhardt advised the members that staff would incorporate the feedback and return with amended language.

Mr. Feng said this is the perfect opportunity for revision of this regulation given the composition of the Committee and Board memberships. He added it is also an opportunity to apply a contemporary context to the regulations. He invited attending members of the public to provide their input into the discussion.

Mr. Reinhardt explained the new numbering system for the TOE and said that educational experience was consolidated into the upper portion of the table and training (work) experience remained in the lower portion. He said this makes it easier for board employees and candidates to logically locate the applicable categories. He also advised the Committee part of the consolidation included the elimination of categories that no longer seemed to be relevant given prior direction from the Board.

Mr. Williams asked how the Integrated Path to Architectural Licensure (IPAL) would be impacted by the proposed regulatory amendments. Mr. Reinhardt explained that the existence of IPAL was taken into consideration when



developing the proposed regulatory language presented for consideration and further said that IPAL was a driver for the proposed repeal of the previous category (a)(10) that limited training experience while in college to a one year maximum.

Mr. Feng asked whether educational experience credit is listed first followed by training experience. Mr. Reinhardt confirmed that is how the table is proposed to be organized along with additional improvements to make it easier for candidates to read. He added that this differs from how the TOE is presently displayed on the Board's website.

Mr. Feng asked whether the struck language would be replaced with contemporary terminology. Mr. Reinhardt explained that would be the case and then he explained the proposal to eliminate the redundant or unnecessary columns in the table to make it easier to understand for both employees and candidates.

Mr. Reinhardt continued to explain that the range of educational and training categories has been expanded for clarity.

Mr. Feng asked whether a professional degree as stated in the regulatory text is the same as a NAAB-accredited degree. Mr. Lum explained an assumption is made that an accredited degree is the first professional degree. He added that the assumption is made the nonaccredited degree is a four-year degree and that a five-year degree is accredited. Mr. Ward asked Mr. Reinhardt whether there are five-year programs that are nonaccredited.

Mr. Reinhardt explained there are five-year programs that are not NAAB-accredited, and he further explain that in the definition for a professional degree found later in the regulatory text it clarifies which degree types would fulfill that definition. He said staff would research whether the definition should be revised for contemporary context.

Mr. Feng said that with the changes by NAAB and NCARB in the past couple of years, it is a good time to revisit our regulations to align the regulatory terminology with the professional conventions. Mr. Lum said that a professional degree as defined in the regulatory text included accredited degree programs from NAAB and the Canadian Architectural Certification Board. He suggested a review of the professional degree programs of Mexico, the UK, and the EU for guidance on the definition. Mr. Feng said the Board should become familiar with the mutual recognition agreement requirements.

Mr. Feng asked for clarification why there is a distinction made between a nonaccredited four-year degree in architecture and the same type of degree from a school that also has a NAAB-accredited program. He said his preference

would be to have a distinction made between nonaccredited and accredited degrees with consideration of the field in which the degree is earned. He added the Board should take initiative to make the educational qualifications more specific.

Mr. Reinhardt advised members the four-year degree in a field related to architecture has been an issue in the past because of its prescriptive definition and provided members with examples. He said that because of the prescriptiveness candidates may be delayed in becoming eligible to test. Mr. Reinhardt read the definition from the existing regulatory text to members and explained that under guidance from legal counsel, the wording should be slightly modified, so a broader range of related majors would receive educational experience credit. He explained this would be accomplished by changing the language from "and defined as" to "such as". He further explained that without the change, candidates who do not have a degree in one of the prescriptive fields would receive half the educational experience credit as those with one; constituting an unnecessary delay in their licensure process.

Mr. Feng said he believes this is a huge challenge for staff especially in modern practice where there are many fields that purport to be architecture-related. He believes more expertise is required to formulate a reasonable definition to delineate those fields that are architecture-related from those that are not. He further said it is concerning there are academic fields that would receive the same amount of educational experience credit as others that are completely unrelated to architecture, based upon the existing regulatory language. Mr. Lum asked whether the proposed language would allow for the inclusion of a degree in sustainability. Mr. Feng said it seemed unclear and reiterated the suggestion to employ educational experts to assist in the definition. Mr. Reinhardt said either replacement of the existing language with what is proposed or the use of educational experts to create a broader definition would likely achieve the intent.

Mr. Ward expressed his concern that a student attending a two-year program at community college loses a year of credit, which seems unfair. He also suggested a reordering of the categories to place the degree or technical certificate in an architecture-related field earned at a community college before the more generic category of a two-year degree in any field. He expressed his concern for those who obtain two-year, so they can transfer to a four-year or accredited program in architecture but lose a year of educational credit because of existing regulations.

Mr. Williams concurred with Mr. Ward's assessment; however, explained that some two-year programs do not offer the same level of courses for students as

others and consequently an affected student must retake courses in a NAAB-accredited program to make up for any deficiencies. Mr. Ward asked whether a student who attended a two-year architecture program and then subsequently graduates from an accredited program would receive the maximum educational experience credit. He then explained that if on the other hand the candidate did not graduate from an accredited program but instead worked for an architecture firm, then they would only receive one year, which he felt is unfair. Mr. Reinhardt confirmed that such a candidate would receive the five years of educational credit.

Mr. Feng said that in his college district many students who earn a two-year degree enter the job force and work for a firm. Mr. Lum said another thing to consider is that many community colleges have articulation agreements with schools like the University of California, Berkeley (Cal Berkeley) and California College of the Arts. He said at these universities the two-year programs are treated as the first two years in the respective architecture program.

Mr. Ward asked whether there is any sort of accreditation for two-year architecture programs. Mr. Lum responded that other than graduate programs, there is no undergraduate accreditation in architecture. Mr. Ward said that while there are several two-year programs that are tailored to work closely with local accredited program, there are also many that offer architecturally adjacent programs that do not. He said there is no third-party accreditation process for the state to validate two-year programs and added that the only thing to provide some validation is the fact that certain accredited programs will accept two years of transfer credit from some programs. He further added that there is no portal of any kind or qualification the state could point to as acceptable evidence of qualification.

Mr. Feng asked Mr. Williams how California Polytechnic State University, San Luis Obispo (SLO) addresses this issue. Mr. Williams explained that SLO has worked with some of the local community colleges that say their programs are in alignment with what SLO teaches in the first two years. He speculated that perhaps the problem is what the other schools are teaching and how that relates to the SLO curriculum.

Mr. Ward said it is very important on multiple levels that two years of architectural educational experience be granted for a two-year degree in architecture.

Mr. Ward reiterated his concern regarding the four-year nonaccredited degree receiving more educational experience credit than a four-year degree that would be accepted for entry into an NAAB-accredited program. He believes

both degrees should be granted the same amount of educational experience credit.

Mr. Feng asked what rationale was used for determining the amount of educational experience granted to holders of a postprofessional degree and why does it appear to be dependent upon the type of first professional degree earned. Mr. Reinhardt replied that based upon his findings, it appears the additional one year of educational experience credit was intended to recognize the experience gained when performing educational work beyond the professional degree.

Mr. Ward asked whether there is a maximum education experience credit that a candidate can earn. Mr. Reinhardt explained that normally the maximum is five years. However, he said, that those with postprofessional degrees in architecture may receive an additional year for an absolute maximum of six years.

Mr. Reinhardt explained proposed category (a)(10) that relates to work (training) experience under the direct supervision of an architect. He added that candidates who use this path must still complete the NCARB Architectural Experience Program (AXP) with few exceptions. He explained that as an example of an exception, that an architect licensed at least three years would not be required to complete AXP for a California license. Mr. Reinhardt said in this kind of situation an individual would be permitted to document up to eight years of training experience. He added this was a consideration in the proposal to allow a maximum credit of up to eight years for completion of AXP.

Mr. Feng asked for an explanation of the methodology used in determining the amount of training experience credit and whether it is a 1-to-1 relationship. Mr. Reinhardt responded that a candidate earns one year of experience for each year (2000 hours totals one year) of architectural (or equivalent) training they receive. Mr. Feng expressed his disagreement with candidates receiving experiential credit on a 1-to-1 basis for architectural training. He said that the eight-year requirement is comprised of the three elements; education, [training] experience, and examination. He opined that it does not seem fair to equate each year of training experience to one of education.

Mr. Williams asked whether California has always allowed an individual to document eight years of training experience without any education to receive a license upon completion of the CSE. Mr. Reinhardt responded in the affirmative and added this was known as the apprenticeship path. Mr. Williams recalled that former Board President Jon Baker used the apprenticeship path and said he was uncertain whether the Board should increase the number of required years for those who use solely training experience to achieve licensure.

He added this path is for those individuals who cannot afford to attend college so they could become an architect.

Mr. Ward ask for some clarification regarding the amount of credit granted to those utilizing the apprenticeship method for obtaining a license. Mr. Reinhardt provided an explanation of how the credit would be granted but said he did not have a complete answer. Mr. Ward asked for additional information to be presented at the next meeting for discussion.

Mr. Feng shared with members his rationale regarding experience credit for those opting to take the apprenticeship path. He explained that during his many years volunteering for NCARB he worked on the development of experience-based qualifications for the NCARB Certificate. He said specific focus was made on the use of educational objectives in the evaluation of work performed and determining whether the results are reflective of the learning intent of an architectural educational program using the NAAB standard. He opined this was a more scientific way to measure and evaluate the work experience.

Mr. Feng continued that education is a fundamental element in becoming an architect; however, he said that the objectives of architectural education could also be met by other means.

Mr. Lum agreed with the concept proposed by Mr. Feng and raised another concern regarding the type of work performed. He elaborated on his concern and stated that it is difficult to know whether the work performed was architectural in nature and that it is possible an individual working at a firm may simply be answering phones, doing marketing, or performing some other nonarchitectural work. He mentioned that NCARB (through its AXP) requires mandated hours in specific tasks. Mr. Lum said still another concern is whether the person is working full-time or part-time and suggested that instead of documenting years, which are not clearly defined, it should be documentation of hours performing architectural work – like the reporting in AXP.

Mr. Feng said architects (to protect the public health, safety, and welfare) must fundamentally understand how [building] structure works. He questioned how much exposure to structure an individual would have if working under an architect that focuses on interior design. He asked whether the Board would feel comfortable knowing this. Mr. Williams agreed with the concept and said there must be some format for evaluation to ensure a candidate receives a well-rounded training experience. Mr. Ward added that he approves experience forms for his employees seeking licensure and said it is a duty to check and verify the work experience in accordance with NCARB and Board requirements. He added that California is one of the few jurisdictions that allows for an apprenticeship path but said it is not clear how, from reading the TOE, a

candidate would accomplish licensure, and requested this information in the future.

Mr. Reinhardt continued his explanation of the proposed amendments and advised the Committee of the proposal to allow for up to eight years of experience credit for completion AXP to align the amount of credit granted with the maximum experience granted for obtaining an NCARB Certificate.

Mr. Reinhardt then presented the category regarding training experience performed in a "qualifying foreign country." He explained to members that the NCARB publication which served as the basis for the term no longer exists. He asked the Committee to consider elimination of the "qualifying foreign country" and acceptance of a limited amount of work experience from any foreign country.

Mr. Ward voiced his concerns regarding how staff would ascertain whether foreign work experience fulfills licensure requirements without the use of a third-party publication and speculated that it may be necessary to accept all foreign experience. Mr. Feng suggested staff work with NAAB and NCARB as resources in formulation of an approach for acceptance of foreign work experience. Mr. Feng said it may be an option to develop California-specific rules for acceptance of foreign architectural experience.

Mr. Ward said he was concerned about the foreign architectural experience receiving credit at 50%, especially when there may be educated and very experienced foreign architects that may end up being discounted by the proposed amendments. He said this should be thoroughly researched by staff for a future meeting.

Ms. Zuniga suggested, due to present time constraints, that staff take the Committee's input and return at a future meeting with revised language. She added that this regulatory proposal does not have the urgency of the other packages being considered by the Board, which have legislatively mandated deadlines.

Mr. Ward summarized several key points from the day's discussion:

- Educational experience for four-year programs
- Increasing the amount educational experience for two-year programs
- An explanation of the apprenticeship process under existing regulations and circumstances
- Request staff conduct research on foreign architectural experience credit

**G. ADJOURNMENT**

The meeting adjourned at 2:09 p.m.

## **ITEM 5: USE OF GENERATIVE DESIGN TOOLS IN ARCHITECTURE**

### **Summary**

The Board at its June 6, 2024, meeting received a presentation from California architect Zigmund Rubel regarding responsible control and generative design tools. During the presentation Mr. Rubel posed a question to the Board of how should architects responsibly use technology to practice architecture. More specifically, Mr. Rubel suggested the Board should consider how to adopt a Human + Machine mentality with the growing use of generative tools, and consider the risks and challenges associated with the use of artificial intelligence (AI) in architecture.

### **Questions for Consideration**

How does the Board protect the public health, safety, and welfare in the age of AI tools?

What measures should be taken by the Board to ensure the public there will be human oversight in the use of AI tools?

### **Links to related articles on the use of AI in architecture**

#### **Archinect**

[What Is the Real Threat of Artificial Intelligence to the Architecture Profession?](https://archinect.com/features/article/150258718/what-is-the-real-threat-of-artificial-intelligence-to-the-architecture-profession)

(<https://archinect.com/features/article/150258718/what-is-the-real-threat-of-artificial-intelligence-to-the-architecture-profession>)

#### **Harvard Design Magazine**

[Data, Digital Media, and a Different Design Office](https://www.gsd.harvard.edu/2023/06/andrew-witt-on-data-artificial-intelligence-and-architecture/)

(<https://www.gsd.harvard.edu/2023/06/andrew-witt-on-data-artificial-intelligence-and-architecture/>)

#### **Forbes**

[How Generative AI Will Change the Jobs of Architects and Civil Engineers](https://www.forbes.com/sites/bernardmarr/2024/03/15/how-generative-ai-will-change-the-jobs-of-architects-and-civil-engineers/)

(<https://www.forbes.com/sites/bernardmarr/2024/03/15/how-generative-ai-will-change-the-jobs-of-architects-and-civil-engineers/>)

See next page



## **Action Requested**

The PQC is asked to consider the above questions in its discussion on the topic and provide direction to staff as appropriate.

## **Attachment(s)**

1. Responsible Control and Generative Design Tools
2. NCARB AI Statement
3. RIBA AI Report 2024



# RESPONSIBLE CONTROL AND GENERATIVE DESIGN TOOLS

A discussion for the future of architectural practice in California and beyond

# THIS TIME TOGETHER

## 1. Introductions

Name

Position

What do you think are we talking about?

Landscape

## 2. Background

## 3. Large Language Models vs. Generative design tools

Future

## 4. Responding

## 5. Discussion

# [ *Possibly new* ] TERMS

**Artificial Intelligence** - intelligence exhibited by a machine, particularly a computer systems.

*It is a field of research in computer science that develops and studies methods and software that enable machines to perceive their environment and uses learning and intelligence to take actions that maximize their chances of achieving defined goals.*

# CAN AN AI PASS THE ARE?

Hmmmm.

<https://www.construction-physics.com/p/could-chatgpt-become-an-architect?triedRedirect=true>



# HISTORICAL MILESTONES TO CONSIDER

## ● 1950s

Early discussions on machine intelligence and consequences by Alan Turing, Norbert Wiener, and others.

## ● 1976

Early ethical guidelines for AI proposed by the first AI ethics pioneer, Walter Maner.

## ● 2016

Alpha Go, an AI machine, beats human grand master at "Go" strategy game

## ● 2021

The EU proposed the world's first legal framework for regulating AI, the AI Act.

## ● 1960's

Computer Aided Design conceived and implemented

## ● 1990's

Introduction of 3D CAD / Building Information Modeling

## ● 2000's

Introduction of Building Information Modeling

# LARGE LANGUAGE MODELS - LLM



Large language models are AI systems trained on vast amounts of text data

These models can generate human-like text, making them useful for various applications.



They have the potential to revolutionize content creation and automation

With their ability to understand and generate natural language, LLMs can assist in tasks like writing, summarization, and code generation.



Responsible development and deployment are crucial

LLMs can perpetuate biases present in their training data, and their outputs should be carefully monitored and filtered.

Large language models are powerful tools, but their responsible use and ethical considerations should be prioritized.

# MIDJOURNEY - DESIGN A HOSPITAL





# CHAT GPT - CAN A "LLM" BE AN ARCHITECT?

Asked to Chat GPT: <https://chatgpt.com/>

In a metaphorical sense, sure!

While a language model like me isn't designing physical structures, it's architecting responses and generating content based on input and parameters provided.

Just as an architect considers various factors when designing a building, I take into account context, intent, and the nuances of language to generate relevant and coherent responses.

***So, while I'm not a traditional architect, you could say there are similarities in the process of creation and design.***

# CHAT GPT - HOW DO I DESIGN A HOSPITAL?

Designing a hospital involves a comprehensive approach that considers numerous factors to create a space that is functional, efficient, and conducive to healing. Here's a general outline of how I would approach designing a hospital:

**Needs Assessment:** Understand the specific requirements of the hospital, including the services it will provide, the number of patients it will accommodate, and any special considerations such as pediatric care, geriatric care, or specialized medical units.

**Site Selection:** Choose a suitable location for the hospital, considering factors such as accessibility, proximity to other medical facilities, transportation options, and available space for future expansion.

**Functional Layout:** Design the layout of the hospital to optimize patient flow, staff efficiency, and communication between different departments. This includes arranging patient rooms, treatment areas, operating theaters, diagnostic facilities, and administrative offices in a logical and accessible manner.

**Safety and Compliance:** Ensure that the hospital design complies with building codes, healthcare regulations, and safety standards. This includes provisions for fire safety, infection control, accessibility for people with disabilities, and environmental sustainability.

**Patient Experience:** Pay attention to the comfort and well-being of patients by incorporating elements such as natural light, soothing colors, comfortable furnishings, and quiet areas for relaxation and reflection.

**Technology Integration:** Integrate advanced medical technologies and information systems into the hospital design to support efficient healthcare delivery, data management, and communication among healthcare providers.

**Flexibility and Adaptability:** Design the hospital with flexibility to adapt to changing healthcare needs and advances in medical technology. This may involve modular construction, flexible room layouts, and infrastructure systems that can be easily upgraded or expanded.

**Collaboration and Communication:** Foster collaboration and communication among healthcare providers by creating shared spaces, such as conference rooms, break areas, and interdisciplinary care teams, to encourage teamwork and information exchange.

**Community Engagement:** Involve the local community in the hospital design process to ensure that the facility meets the needs and preferences of the people it serves. This may include soliciting input from patients, families, healthcare professionals, and community leaders through surveys, focus groups, and public forums.

**Continuous Improvement:** Design the hospital with a focus on continuous improvement, feedback, and evaluation to identify opportunities for enhancing patient care, operational efficiency, and staff satisfaction over time. By considering these factors and engaging in a collaborative and iterative design process, architects can create hospitals that are not only functional and efficient but also supportive of the health and well-being of patients, staff, and the community.

# CHAT GPT - WHAT IS REQUIRED IN AN MRI SUITE

Designing an MRI suite in a medical facility requires careful planning to ensure patient safety, comfort, and the optimal functioning of the MRI scanner. Here are some key components and considerations for an MRI suite:

**Room Layout:** The MRI suite typically consists of several areas, including the control room, patient preparation area, and the MRI scanning room itself. These areas should be laid out in a way that allows for efficient workflow and easy access for patients, staff, and equipment.

**Magnetic Shielding:** MRI scanners generate strong magnetic fields, so the MRI scanning room must be properly shielded to contain the magnetic field and prevent interference with nearby equipment or devices. This often involves installing ferromagnetic shielding materials in the walls, floor, and ceiling of the scanning room.

**Safety Protocols:** Safety is paramount in an MRI suite. Strict safety protocols should be followed to ensure that patients and staff are protected from the potentially harmful effects of the magnetic field. This includes screening patients for any metal implants or objects that could pose a safety risk in the MRI environment.

**RF Shielding:** In addition to magnetic shielding, the MRI scanning room must also be shielded from radiofrequency (RF) interference to ensure high-quality imaging. This involves installing RF shielding materials in the walls, floor, and ceiling of the scanning room.

**Patient Comfort:** MRI scans can be intimidating for some patients, so it's important to design the MRI suite with patient comfort in mind. This may include providing amenities such as comfortable seating, soothing lighting, and calming music to help patients feel more relaxed during the scan.

**Accessibility:** The MRI suite should be accessible to patients with mobility impairments or disabilities. This may involve providing wheelchair ramps, spacious changing rooms, and other accommodations to ensure that all patients can easily access the MRI scanner.

**Emergency Preparedness:** In the event of a medical emergency during an MRI scan, the MRI suite should be equipped with emergency response equipment and protocols to ensure that patients receive prompt medical attention. This may include emergency call buttons, medical gas outlets, and crash carts stocked with essential supplies.

**HVAC Systems:** Proper heating, ventilation, and air conditioning (HVAC) systems are essential in an MRI suite to maintain a comfortable temperature and humidity level for patients and staff, as well as to prevent equipment overheating and ensure the integrity of the MRI scanner.

**Control Room:** The control room houses the MRI scanner control console and monitoring equipment, allowing technologists to operate the scanner safely from a separate room while observing the patient through a window or video monitor.

**Utility Connections:** The MRI suite must be equipped with appropriate utility connections, including electrical outlets, data ports, and medical gas lines, to support the operation of the MRI scanner and other equipment in the suite. By addressing these components and considerations, architects can design MRI suites that provide a safe, comfortable, and efficient environment for both patients and staff within a medical facility.

# UP CODES - FINDING BUILDING CODES

The screenshot shows a web application interface for finding building codes. The top navigation bar includes a search bar with the text "Search Building Code 2018 of Wyoming" and a magnifying glass icon. To the right of the search bar are links for "Codes", "Projects", and "scott".

The left sidebar is dark blue and contains several icons and a list of items under the heading "CODES". The list includes "Building Code 2018 of Wyoming" (with subtext "ADOPTS WITHOUT AMENDMENTS International Building Code 2018 (IBC 2018)") and "Chapter 10 Means of Egress". Under "Chapter 10 Means of Egress", there are several sub-sections: "1001 Administration", "1002 Maintenance and Plans", "1003 General Means of Egress", "1004 Occupant Load", "1005 Means of Egress Sizing", "1006 Number of Exits and Exit Access Doorways", "1007 Exit and Exit Access Doorway Configuration", and "1008 Means of Egress Illumination".

The main content area is titled "Chapter 10 Means of Egress" and has a sub-section "Section 1001 Administration". Under "Section 1001 Administration", there are two sub-sections: "1001.1 General" and "1001.2 Minimum Requirements".

**1001.1 General**  
Buildings or portions thereof shall be provided with a means of egress system as required by this chapter. The provisions of this chapter shall control the design, construction and arrangement of means of egress components required to provide an approved means of egress from structures and portions thereof.

**1001.2 Minimum Requirements**  
It shall be unlawful to alter a building or structure in a manner that will reduce the number of exits or the minimum width or required capacity of the means of egress to less than required by this code.

**[F] Section 1002 Maintenance and Plans**

**[F] 1002.1 Maintenance**  
Means of egress shall be maintained in accordance with the International Fire Code.

**[F] 1002.2 Fire Safety and Evacuation Plans**  
Fire safety and evacuation plans shall be provided for all occupancies and buildings where required by the International Fire Code. Such fire safety and evacuation plans shall comply with the applicable provisions of Sections 401.2 and 404 of the International Fire Code.

**Section 1003 General Means of Egress**

**1003.1 Applicability**

The right sidebar is titled "Linked Resources" and contains a section "ILLUSTRATIONS" with several diagrams. The diagrams are: "Gross vs. Net Area", "1003.4 - Dead End Corridors", "Common Path of Egress Travel", "Minimum Corridor Width", "Occupant Load Calculation", "Dead End Corridors", "Single Exit Condition", and "1003.5.1 - Separation of Exit and Exit Access Doors".

**"AI IS ALREADY DEMONSTRATING IT HAS THE  
POWER TO COMPLETELY REVOLUTIONIZE THE  
ARCHITECTURAL WORKFLOW, WHETHER IT BE  
GENERATING VISUALS BASED ON TEXT PROMPTS  
OR ENHANCING RENDER QUALITY AT THE CLICK OF  
A BUTTON."**

*- Chaos and Architizer, the State of AI in Architecture Report*

# GENERATIVE DESIGN TOOLS

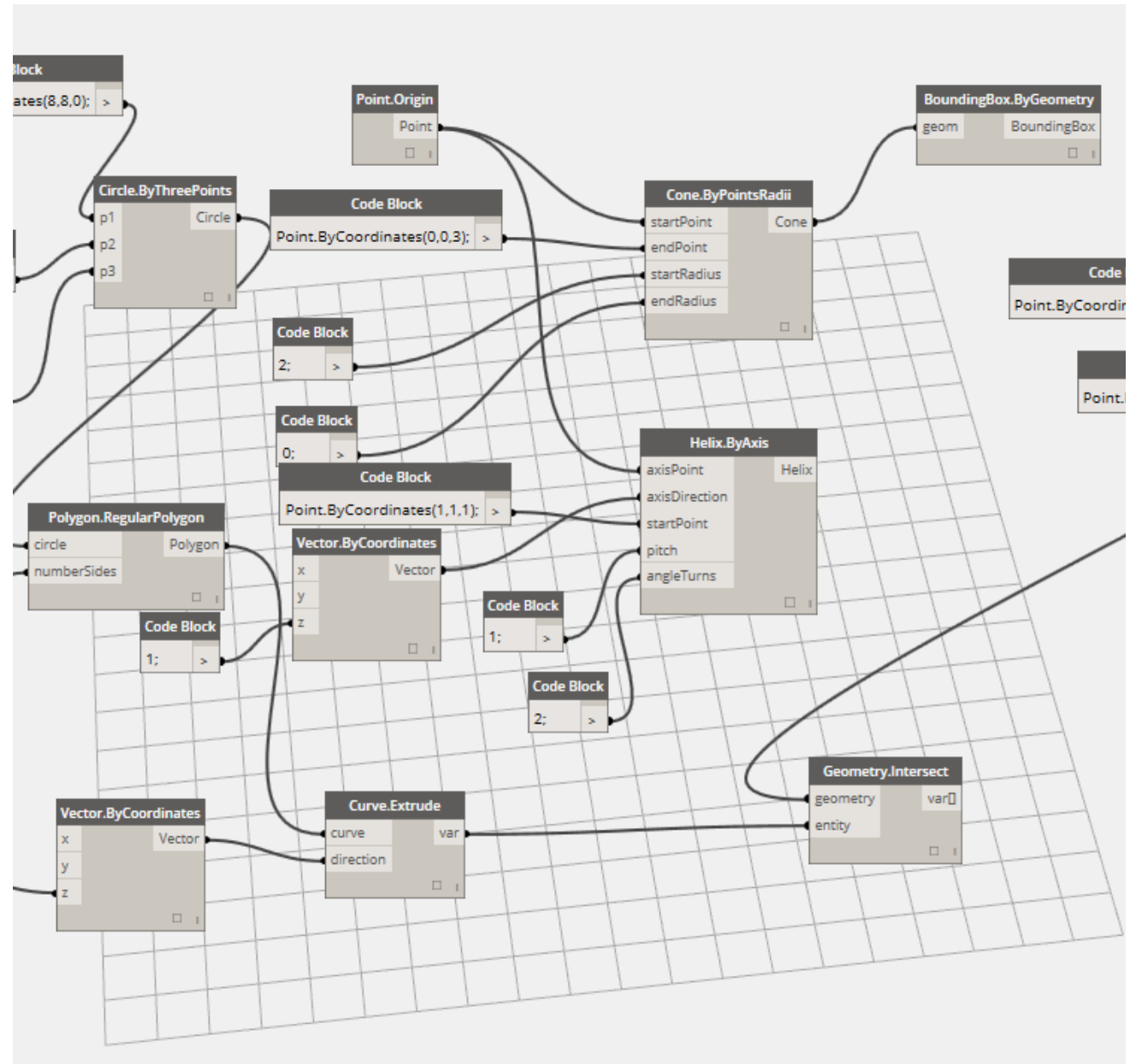
Generative design tools utilize artificial intelligence and computational techniques to explore a vast design space and generate a diverse set of design solutions. These tools have the potential to revolutionize various industries by automating and optimizing the design process.



# DYNAMO

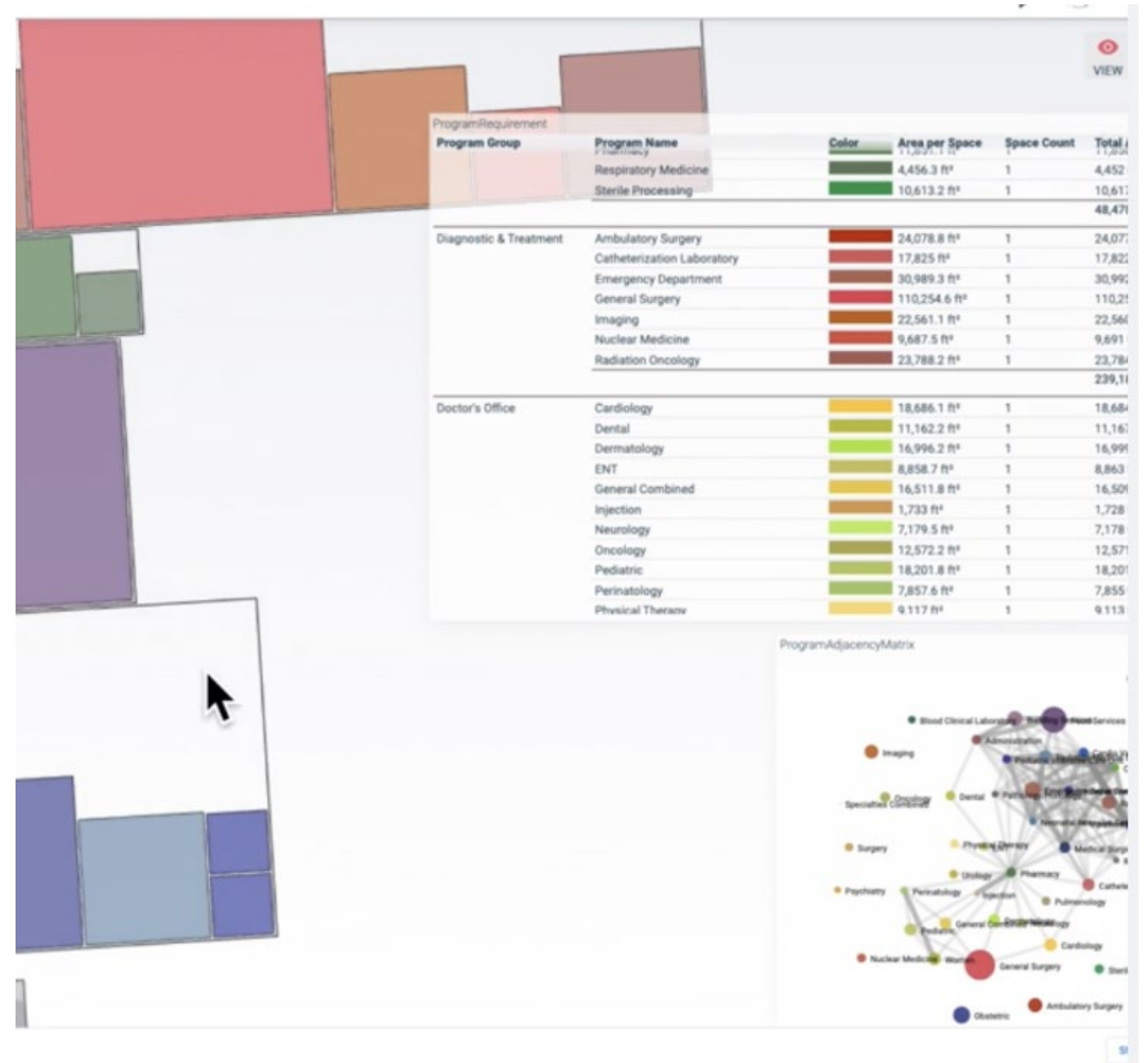
Dynamo is an open-source visual programming language for Autodesk Revit, written by engineers and construction experts. It is a programming tool that permits you to type lines of codes and scripts, while also developing an algorithm that consists of nodes.

Dynamo helps you create programs by using graphic elements called “nodes”. It’s a method of programming better appropriate for visually oriented types, like architects and engineers, or even [BIM developers](#).



# HYPAR

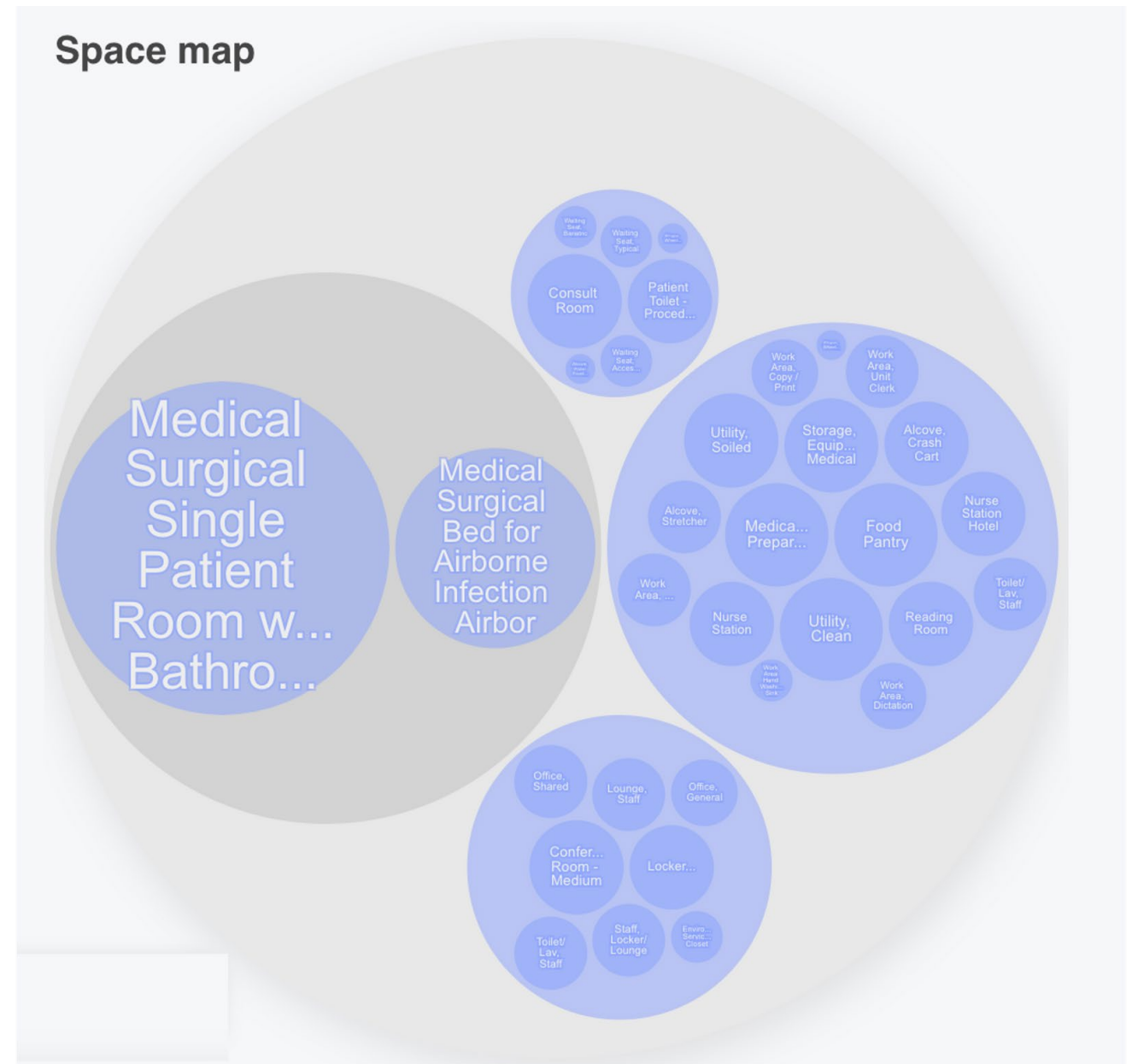
Hypar is a design automation platform for buildings. Anyone, anywhere can create and share design logic so everyone can build better. Hypar delivers sector-specific applications, like our workplace planning solution, powered by our platform.





# FORSIGHT

Forsight is a functional space programming tool based on population and burden of diseases to determine functional space requirements based on rules



**“WITH GREAT POWER COMES  
GREAT RESPONSIBILITY.”**

VOLTAIRE

**“TRUST, BUT VERIFY.”**

PROVERB

**“ASSUMING TRUST,  
BUT ALWAYS VERIFY.”**

FRAME OF MIND

# **WHERE DOES THE PRACTICE ACT, FIT IN?**

A QUESTION TO BE CONSIDERED

**HUMAN**



**MACHINE**

We will coexist, stronger, if we can act together

# RISKS AND CHALLENGES

Likelihood of occurrence with generative design tools



75%

Algorithmic Bias  
*(Especially in LLM's)*



65%

Privacy Breaches  
*(In the end product, but possibly in the making)*



55%

Malicious Misuse  
*(Both practitioners and imposters)*



40%

Regulatory Compliance  
Issues  
*(How the algorithms are informed)*

# FUTURE THOUGHTS

Adoption of Ethical AI Frameworks and Governance



Integration of Explainable AI Systems



Development of AI for Social Good



Focus on Privacy and Data Security





# THOUGHTS? QUESTIONS?

Open to feedback and discussion



# CALIFORNIA ARCHITECTS BOARD

Thank

You

# NCARB's Position on the Use of Artificial Intelligence in the Architectural Profession

## NCARB's Position on the Use of Artificial Intelligence in the Architectural Profession

Advancements in artificial intelligence (AI) and computational design are providing architects with new labor-saving tools and transforming many of the tasks associated with project delivery. The proliferation of AI use in practice is raising legitimate questions about how the responsibility and accountability of the architect might be altered by this technological wave.

At NCARB's June 2024 Annual Business Meeting (ABM), 150 licensing board members from around the country took part in a workshop on artificial intelligence and regulation. Prior to this workshop, NCARB's regional leaders hosted an AI presentation at the March 2024 Regional Summit; a wide-ranging exploration of AI was also featured at NCARB's inaugural Futures Symposium in December 2023.

Although the ABM participants' opinions were divided on how regulators should engage with AI, NCARB and its regulatory community approached consensus on several points:

- Regulators should not limit the use of technological advances that support the profession's ability to improve the health, safety, and welfare of the public.
  - It falls outside of NCARB's mission and expertise to evaluate or provide opinion on specific AI tools and their application, nor is there precedence for enforcing limitations on a tool's use.
- Any proposed regulation that addresses AI usage in practice must ensure the licensed practitioner remains in responsible control and continues to be accountable for all technical submissions under their seal.
- AI is a tool—it is not a replacement for professional judgement. Regardless of AI tools used, it remains the architect's responsibility to provide services in conformance with the standard of care.
- NCARB is committed to staying apace with the profession and to ensuring that licensure requirements consider both current practice methods and the overarching responsibility that rests with the architect.

In evaluating perspectives from the regulatory community, NCARB plans to work with its licensing board members to further explore two areas regarding guidance and best practices for the architect's use of AI:

- Reassessment of responsible control parameters to determine whether they appropriately address the use of AI tools.
- Identification of best practices for ethical AI usage, including determining whether, when, and how the use of AI and its supporting datasets should be declared.

Going forward, NCARB will continue to monitor the expanding use of AI across practice and its potential interface with the regulatory mission of NCARB and its members. NCARB remains committed to collaborating with its licensing board members to ensure the best interests of the public are served through the effective and reasonable regulation of architectural practice.