

Chapter 4

Informed Design: A Post-Occupancy Evaluation Toolkit for Courthouses

Erin Persky, Jay Farbstein and Melissa Farling

4.1 Introduction

Courthouses are a unique building type. Justice architects and planners are tasked with ensuring courthouses meet the functional and security needs of many different user groups, including the entity that owns the building, court staff, judges, litigants, attorneys, public visitors, jurors, and those in custody, among others—each with distinct concerns, requirements, and expectations for the building. Courthouse planning guidelines have become more comprehensive and available (Judicial Council of California/Administrative Office of the Courts 2011) and, at the same time, courts must adhere to strict building performance and efficiency standards (California Natural Resources Agency 2016). One way to discern whether or not courthouse features are responsive to these needs and requirements is to evaluate the courthouse's performance by conducting a post-occupancy evaluation (POE) during its occupancy. While a building performance evaluation (BPE) covers the entire life-cycle of a building, the POE focuses on the phase following building occupancy, as detailed in this chapter (Preiser and Schramm 1997; Preiser and Vischer 2005; Preiser et al. 2015).

In conjunction with the American Institute of Architects – Academy of Architecture for Justice (AIA-AAJ), and a multidisciplinary advisory committee, the authors have developed a Post-Occupancy Evaluation (POE) Toolkit for

E. Persky (✉)
3511 State Street, San Diego, CA 92103, USA
e-mail: erinpersky@gmail.com

J. Farbstein
1500 Rustic Lane, Pacific Palisades, CA 90272, USA
e-mail: jayfarbstein@gmail.com

M. Farling
HDR, 3200 East Camelback Road, Suite 350, Phoenix, AZ 85018, USA
e-mail: Melissa.Farling@hdrinc.com

Courthouses. This chapter introduces the Courthouse POE Toolkit as a strategy for the dissemination and administration of an integrated system for evaluating courthouse performance.

4.2 POE Toolkit Project Parameters

During the POE planning process, it may be the case that stakeholders express a range of interests about the features upon which they would like to focus the investigation. The court architect may wish to demonstrate that her client is satisfied with the design and find out how well design features, materials, or systems are working; court managers may be looking for ways to improve the efficiency of operations, customer satisfaction or the levels of maintenance that are required; or the building owners may wish to develop design guidelines for future courthouses in their jurisdictions. Each of these perspectives requires different types of data and information gathering techniques. The Toolkit is intended to be flexible enough to respond to all these potential uses within a standardized framework.

Furthermore, the “toolkit” concept offers two primary applications: first, to assess the performance of a particular court building and to provide feedback to its owners, occupants and/or designers—this is the most common purpose of a POE. Second, the standardization of instruments provided in the Toolkit affords the opportunity to aggregate and compare findings from multiple POEs, allowing general conclusions to be drawn about what works and what does not work, and to tie outcomes, e.g., ratings, to specific design features. This level of analysis provides opportunities to develop and catalog evidence-based findings that would provide a valuable resource for planning future courthouses and for developing performance-based design guidelines.

This chapter describes key features of the Toolkit, including:

- A discussion of the purpose and applications of the Toolkit;
- A description of each instrument and its contribution toward measuring design performance;
- Suggestions about who should be involved in the process. Successful operation of a courthouse requires collaboration among many agencies, and the input of these groups is essential;
- Instrument and fieldwork methodologies;
- Discussion of how POEs can aid in the successful development and application of evidence-based design principles to courthouses.

The POE Toolkit is part of a broad effort by the AIA to disseminate knowledge pertaining to best practices in justice facility design. As such, users will be asked to share their data and findings in order to be able to access the instruments and instructions. The results will contribute to a database of information about courthouse design that will inform substantial improvement in the field and allow

researchers to examine the relationships among physical variables of courthouse design and their outcomes.

4.3 The Toolkit

The Courthouse POE Toolkit is configured to offer building evaluations of a broad range of scopes and depth of analysis. The Toolkit consists of:

- Guidance and forms for planning the POE, for example, as to who should be involved, roles, timing, scheduling, and the like;
- Information-gathering instruments;
- On-site fieldwork recommendations;
- Suggestions on data analysis methods and how to present the report.

In determining whether to conduct a POE and how to proceed with it, it is essential to be explicit about the goals and types of information desired, as well as available resources. A relatively brief POE, with a tour of the building and interviews with the court and building managers, may suffice. On the other hand, much more detail may be desired or even required, especially if a set of comparative POEs is being considered.

The Toolkit provides the opportunity to gather and analyze information about several aspects of a building's performance. Examples of areas investigated during a courthouse POE include, but are not limited to:

- Functional area operations; for example, the usefulness of clerk service windows, effectiveness of maps and signage, or the efficiency of security screening areas.
- User and occupant satisfaction; including workstation comfort, access to natural light, adequacy of support spaces, etc.
- Maintenance requirements and technical performance; such as frequency of equipment or repairs, condition of materials, or performance of mechanical/electrical/plumbing systems.
- Safety and security; assessed through evaluations of central holding facilities, the performance of security systems, and user satisfaction, etc.
- Energy and environmental sustainability; for example, water and energy usage, utility costs, material selection, and waste management protocols.

Generally, less resource- and labor-intensive POEs would gather fewer types of information, namely perhaps only quantitative data, whereas more intensive POEs might gather several types, i.e., both quantitative and qualitative. For any level POE, however, it is highly recommended that multiple methods of data collection be utilized since it is always valuable to look at an issue from multiple perspectives.

4.3.1 Data-Gathering Forms

The Courthouse POE Toolkit includes the following data-gathering instruments:

- Plan Review Form: aids in documentation of the physical characteristics of and functions within the courthouse building and its site. This form should be completed in advance of the site visit, with any missing or ambiguous items completed on site (see Fig. 4.1).
- Building Conditions Survey and Interview: evaluate the condition and performance of many features of the materials and systems of the courthouse. The survey (see Fig. 4.2) is completed while on the facility tour with its facilities and operations managers and other knowledgeable parties (see Sect. 4.4 “Who should be involved in the POE?”). A more detailed semi-structured interview (see Fig. 4.3) is also provided to be completed with the facilities manager about courthouse features as a follow-up to issues that may have arisen during the building conditions survey tour.
- Court Employee Survey: assesses the degree to which the design of the courthouse building supports the work-related tasks carried out by courthouse staff. Topics include the courthouse site, building access, staff areas and workspaces, and courtroom functionality (see Fig. 4.4).
- Visitor Survey: assesses the degree to which the design of the courthouse supports the functions people visit the courthouse to accomplish. Topics include the courthouse site, building access, wayfinding, safety, circulation, publicly accessible functional areas, the courtroom, and designated jury spaces (see Fig. 4.5).

Courtroom (duplicate and complete this form for **each type** of courtroom)

Main type of proceedings (check all that apply):

civil criminal arraignment traffic family drug juvenile delinquency
 juvenile dependency other _____

Number of courtrooms of this type: _____

Courtroom area: _____ net square feet

Courtroom dimensions: ____ feet wide x ____ feet long x ____ feet high

Well/Litigation Area

Bench arrangement:

center
 corner
 “re-centered” (not in geometric center of courtroom but aligned with entry door)

Fig. 4.1 Plan review form sample. Source Authors

	Very Good	Good	Neutral	Poor	Very Poor	Not Applicable	Comments
Main Entry & Lobby							
Signage/directories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Kiosks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Seating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Courtroom(s) (typical)							
AV systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Projectors/screens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Access controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Fig. 4.2 Building conditions survey form sample. Source Authors

2. Are there any features of this facility's design, including systems, that require excessive maintenance or that are showing excessive wear? If so, please list them and describe the issues or problems.

3. Is there any defective construction work that requires repair? If yes, please explain.

4. Are there any areas or systems that require little maintenance or that are "wearing well"? If so, what are they?'

Fig. 4.3 Building conditions interview form sample. Source Authors

IF YOU WORK IN A COURTROOM...

If so, please check the box below that best describes the type and size of courtroom you usually work in:

- Hearing room with limited spectator seating and no jury
- Non-jury courtroom
- Jury courtroom

The size of the **well/litigation area** is adequate to efficiently conduct courtroom proceedings.

Strongly Agree Agree Neutral Disagree Strongly Disagree

Fig. 4.4 Court employee survey form sample. Source Authors

If you spend time in a courtroom, please answer the following questions. If you did not spend time in a courtroom, please check this box [] and skip to the last question.

How satisfied were you with the **waiting spaces outside the courtroom?**

Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Did Not Use
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How satisfied were you with **your ability to see all participants in the courtroom?**

Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fig. 4.5 Court visitor survey form sample. *Source* Authors

Detailed instructions for the administration of these instruments are included with each.

Opportunities to collect varying amounts of data are built into each instrument. For example, the Building Conditions Survey supports quantitative data collection by means of a checklist for rating the performance of many courthouse building and site features. Additionally, the survey offers space for commentary on each area in case elaboration is required. The Building Conditions Interview, the complement to the survey, supports entirely qualitative data collection via an in-depth, open-ended set of questions to allow for more thorough evaluation.

Furthermore, redundancy is built into the forms to obtain multiple perspectives on courthouse functions. Information can be cross-referenced against other instrument data to develop a more robust understanding of areas of inquiry that architects and other POE users can use to identify and solve existing problems.

4.3.2 Supplemental Studies

Though the Toolkit offers instruments to conduct POEs of considerable depth, it is possible that even greater depth may be achieved using instruments beyond those provided in the Toolkit. Examples of in-depth assessments not provided in the Toolkit include:

- Energy and environmental performance (see below for a list of references).
- Measurements of ambient conditions, such as acoustics and illumination.
- Comprehensive building condition assessments.

The following energy, environmental, and sustainability evaluation references may be useful:

- Leadership in Energy and Environmental Design (LEED)TM Project Design Checklists;
- AAJ Sustainable Justice Committee’s “Sustainable Justice 2030: Green Guide to Justice” and “Sustainable Justice Guidelines”;
- The Living Future Institute’s “Living Building Challenge”;
- General Service Administration (GSA) “High Performance and Sustainable Buildings Guidance”, “GSA Sustainability Matters”, and “GSA Sustainable Facilities Tool”.

4.4 Who Should be Involved in the POE?

An evaluation team must be assembled for the POE, and its composition will depend on the purpose and depth of the evaluation. These decisions about scope will suggest who should conduct the POE: can the design team, the building occupants, or the owners conduct the POE? Or should it include representatives of all of them and perhaps an outside professional or academic who specializes in building evaluation? If surveys are to be completed by court staff and/or visitors, or if the Building Conditions Interview is going to be conducted with the facilities manager, the latter is highly recommended. If environmental and ambient conditions are to be measured, expert assistance is critical. The project delivery method might also influence who should be involved in the subsequent POE.

Regardless of the intended POE scope, a successful evaluation must involve input from at least the following representatives:

- The design team;
- Those in court management who know and understand the operations of the courthouse under investigation, e.g., court operations and facilities managers;
- The owner agency;
- Someone with knowledge of and experience in conducting POEs. Such an expert may be contracted to conduct the POE, but in any case, will engage with representatives of the other groups.

4.5 The POE Process

The Toolkit provides preparation, on-site, and post-site visit guidance for evaluators to optimize their use of the POE instruments. Below are excerpts of instructions provided for these portions of the POE process.

4.5.1 Preparation

As the evaluation team is assembled, a member of the team must contact the facility to state their intent to conduct a POE. At this time the details of the POE should be explained, including:

- The staff members who should be present for tours and interviews;
- Types of data collection that will be carried out including methodology and requirements to carry out each one;
- Areas of the facility that must be accessed;
- Length of time the team will be on site, with proposed days and times;
- Specific requests. For example, copies of plans or other documents, permission to photograph.

Contact should be made well in advance of the visit so that the client can assemble the appropriate staff members to participate in the site tour, alert court staff and other parties of the POE and of their potential involvement, and receive necessary security clearances for the evaluation team.

After all of the relevant court staff is assembled, a site tour, interviews, and Court Visitor Survey recruitment times should be scheduled. The POE on-site activities should be scheduled according to optimal times for the completion of each form: for example, the Visitor Survey should be scheduled according to peak times of visitor volume in order to gain the most possible survey responses. The Building Conditions Tour should be organized for a time at which all courthouse areas can be accessed without interruption, which might be outside of business hours. The tour should also be done early in the visit to allow the team to gain a general understanding of the layout of the facility and observe some of the operations, which will benefit subsequent data collection. The Building Conditions Interview should be scheduled during a time at which the Facilities Manager and others can participate without interruption and at a time that will not conflict with visitor recruitment. The POE schedule should be sent to participating staff approximately one to two weeks prior to the beginning of the evaluation.

4.5.2 On-Site

The evaluation team should arrive early to review the strategy for the day, confirm responsibilities, and discuss last-minute items related to the site visit. While on the facility tour, list follow-up questions that can be asked during the interview. Take as many photographs as possible, if permitted to do so. Permission should be arranged in advance of the site visit. If building drawings, construction documents, or other building information was provided, bring these on the tour. Look for relevant details or background information that had not been provided and note accordingly.

Unanticipated events are common and a strategy for handling them should be considered beforehand. For example, the visitor survey recruiter may experience a low acceptance rate, or disruptions to the court schedule may impact visitor survey recruitment or significantly skew the types of visitors at the courthouse during the POE. If a staff member is suddenly unavailable for an interview, prepare to reschedule the interview for as early as possible after the site visit.

4.5.3 After the Site-Visit

A debriefing session with the evaluation team is highly recommended and should occur as soon as possible after the site visit - if necessary, by conference call - to discuss:

- General thoughts about the success of the POE in terms of process and meeting its objectives;
- Review of impressions and findings about the building's quality and performance that should be captured for the report;
- Additional information that may require follow-up;
- Methodological concerns that could impact the data;
- The delegation of next steps, including responsibility for conducting analyses and drafting sections of the report.

4.6 Pilot Application of the POE Toolkit

In December 2015, a pilot POE was conducted on a large courthouse in North America to test the methodologies of each Toolkit instrument. The POE evaluated several areas of building performance, including site conditions and access, building systems, furnishings and amenities, functional area components (e.g., security screening, courtrooms, clerks service areas), circulation systems, and other topics, listed above. Staff and visitor satisfaction were assessed on a number of topics including courthouse building and site, functional areas utilized while in the building (e.g., staff workstations, publicly-accessible areas), and courtrooms. In addition, a number of qualitative features of the courthouse were assessed, including the degree to which the courthouse conveys a sense of openness, transparency, dignity, justice, and fairness.

The goals of this pilot study were to validate each of the POE Toolkit instruments, to assess technical building performance, to gauge courthouse staff and visitor satisfaction with the courthouse building and site, and to learn from the experience about what would be most helpful to include in the Toolkit instructions.



Fig. 4.6 Building conditions overall results by area. *Source* Authors

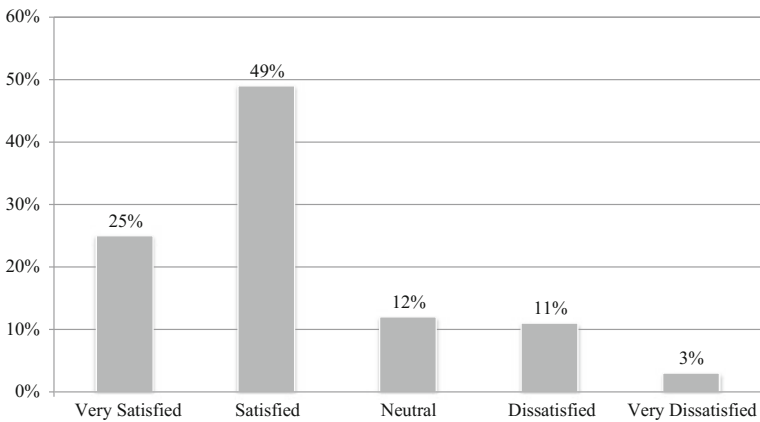


Fig. 4.7 Courthouse employee general workspace satisfaction. *Source* Authors

The courthouse scored highly in almost all areas, with facilities reporting over 95% of building performance items as “very good” or “good” (see Fig. 4.6).

Courthouse employees also rated the courthouse highly, including public areas, staff-only areas, and workstations (see Fig. 4.7).

Courthouse visitors were largely satisfied with the courthouse, particularly with regard to maintenance, cleanliness, and safety (see Fig. 4.8). One area requiring significant attention was the need for additional parking accommodations.

This pilot study garnered confidence in the results yielded by the data obtained with the Toolkit.

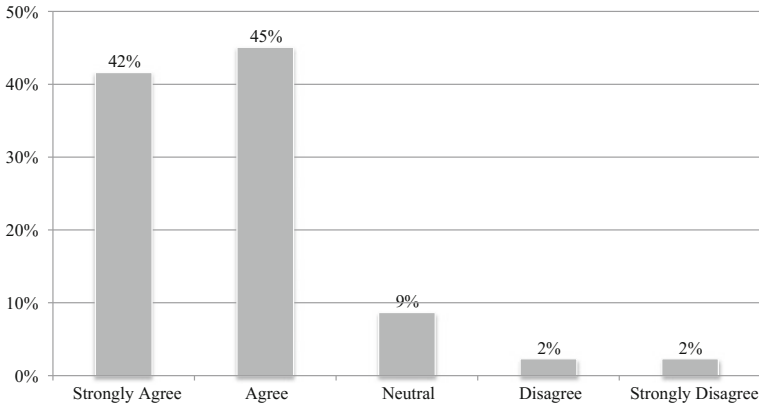


Fig. 4.8 Courthouse visitor feelings of safety and security. *Source* Authors

4.7 Conclusion—Opportunities to Contribute to Best Practices

While a single POE can provide valuable feedback to the clients, users, and designers of that particular building, as a “case study” it may be of little interest or value in terms of drawing general conclusions or results that can be applied to future designs. On the other hand, when many POEs are performed, the opportunity to draw general conclusions about lessons learned is greatly enhanced. Conducting regular POEs provides the opportunity for continuous improvement in building standards, procedures, designs, and operations.

There is little precedent for a systemized catalog of evidence-based design strategies specific to building type (Pati 2005). The Toolkit structure, as a function of the use of standardized instruments, supports consistency in the types of data collected and the means by which collection is completed. The database of results affords direct comparison of the data collected on multiple types of courthouse-specific design strategies to determine which are most effective. This data aggregation is particularly effective for building types that contain repetitive building programs, as is the case with courthouses. As application of best practices is crucial for the evolution of justice facility design, and access to evidence-based design strategies is of the utmost importance for ensuring that design decisions reflect best practices, this database will simplify access to the latest evidence-based design data pertaining to courthouses. The data collected can be used to contribute to the body of knowledge pertaining to courthouse design. Research studies can be conducted utilizing the data collected via the toolkits, resulting in substantial time and resource savings. This data can also contribute to the development and refinement of courthouse design guidelines.

The benefits of POE as part of the overall BPE process cannot be overstated. The goals of this Courthouse POE Toolkit are to streamline the process of conducting

building evaluations, to increase the frequency with which POEs are conducted, and to encourage courthouse research endeavors, in order to develop a resource for the support of widespread application of best practices to courthouse design.

References

- California Natural Resources Agency. (2016). California environmental quality act. Retrieved from <http://leginfo.legislature.ca.gov/faces/codes.xhtml>. Accessed on 26 April 2016.
- Judicial Council of California/Administrative Office of the Courts. (2011). California trial court facility standards. Retrieved from www.courts.ca.gov/documents/ctcfs2011.pdf. Accessed on 5 July 2016.
- Pati, D. (2005). *Maximizing the benefits of courthouse POEs in design decision support and academic inquiry through a unified conceptual model*. Doctoral Dissertation, Georgia Institute of Technology Retrieved from Georgia Institute of Technology SMARTech Database. hdl.handle.net/1853/6843. Accessed on 1 May 2016.
- Preiser, W. F. E., & Schramm, U. (1997). Building performance evaluation. In D. Watson, M. Crosbie, & J. H. Callender (Eds.), *Time-saver standards for architectural design data* (7th ed., pp. 231–238). New York: McGraw-Hill.
- Preiser, W. F. E., & Vischer, J. C. (Eds.) (2005). *Assessing building performance*. Amsterdam: Elsevier (republished in 2015, London: Routledge).
- Preiser, W. F. E., Davis, A. T., Salama, A. M., & Hardy, A. E. (Eds.). (2015). *Architecture beyond criticism: Expert judgment and performance evaluation*. London: Routledge.

Author Biographies

Erin Persky, Associate AIA, CCHP is a San Diego-based planner specializing in justice facilities, and has over 10 years of experience conducting justice-related research. Her research career began in the field of psychology, where she investigated mental illness in the probation and inmate populations of several counties in southern California. She later moved onto civic and courts research, studying ways in which specific site and building features encourage or hinder the relationship between government and constituents. Her research currently focuses on Post-Occupancy Evaluation, and Erin is now working with the Academy of Architecture for Justice (AAJ) Research Committee on the development of a “Toolkit” of building evaluation and user satisfaction instruments for architects or owners to use to evaluate their courthouses.

Erin has presented her work to the American Institute of Architects (AIA), National Association for Court Management (NACM), and the National Commission on Correctional Healthcare (NCCHC), and has been featured in *Architect Magazine* for her research. She works closely with the AIA, having served on several committees and is serving a five-year term on the AAJ Leadership Group. Erin holds a Bachelor’s Degree in Psychology and Social Behavior, *summa cum laude*, and a Master’s Degree in Political Science, both from the University of California, Irvine. She also holds a Master’s Degree in Architecture, *magna cum laude*, from the NewSchool of Architecture and Design. Erin is an Associate Member of the AIA, a Certified Correctional Health Professional with the NCCHC, and a bronze member of the San Diego Regional Chamber of Commerce.

Jay Farbstein, PhD, FAIA President of Jay Farbstein & Associates, Inc., Jay has more than 30 years of professional experience and is nationally recognized for his contributions in the field of facility planning, programming, and post occupancy evaluation—on which he has spoken and published widely and for which he has received many awards. Mr. Farbstein has led or participated in numerous research projects for clients including the National Institute of Corrections, US Postal Service, the US Department of Labor, The US Department of State, the World Bank, and the Bruner Foundation.

Jay has published widely on facility programming and evaluation, including *People in Places* (Prentice Hall), and articles in the AIA's Architects Handbook on Facility Programming, as well as in Wolfgang Preiser's books *Facility Programming; Programming the Built Environment, The Professional Practice of Programming*, and, as well as in many other journal's and edited volumes. He has been quoted in the New York Times, Time magazine, and many design journals, and has delivered papers to many professional and academic groups, including the AIA, Human Factors Society, Environmental Design Research Association, ASTM, and at symposia in the US, Canada, England, France, Spain, Germany, and Japan. Recently, Jay led a study of the application of neuroscience to the evaluation of correctional environments.

Mr. Farbstein earned an M. Arch from Harvard University and a PhD from the University of London. He is a Fellow of the American Institute of Architects where he co-chairs the Academy of Architecture for Justice's research program. He was chair of the Environmental Design Research Association, which awarded him its lifetime career achievement award and the CORE Certificate of Research Excellence, including a special Award of Merit for one of his research projects (done with Melissa Farling and others).

Melissa Farling, FAIA, LEED AP is managing principal of HDR in Phoenix, Arizona. She has a long track record of leadership in the profession and communities where she works. She is well-known for her research into the impacts of architecture on people, believing this knowledge is essential to enable the creation of sustainable and appropriate environments.

Ms. Farling is a member of the Leadership Group for AIA's Academy of Architecture for Justice (AAJ), served as an AAJ Research and Technology Committee co-chair from 2006–2015, is an active member on the AAJ Sustainable Justice Committee, and is on the Advisory Council for the Academy of Neuroscience for Architecture. Melissa was one of the principal investigators on a National Institute of Corrections funded study to examine impacts of views of nature on stress in a jail intake area. This study received the inaugural CORE Certificate of Research Excellence as well as a special Award of Merit from the Environmental Design Research Association. Her experience has focused on criminal justice facilities and public projects, and has led post-occupancy evaluations on criminal justice, educational, and behavioral health facilities. Melissa gives frequent presentations on evidence-based design applications and is a contributing author to the *AIA AAJ Sustainable 2030: Green Guide to Justice, Arizona School Design Primer: The Basic Elements of School Design* by Marlene Imirzian, and contributed the chapter, "From Intuition to Immersion: Architecture and Neuroscience" in *Mind in Architecture: Neuroscience, Embodiment, and the of Design* (MIT Press).

Melissa is a registered architect in Arizona holding a Bachelor's degree in Architecture from the University of North Carolina at Charlotte and Bachelor of Architecture and Master of Architecture from the University of Arizona.