Extended Engagement: A Novel Approach to Sustained Relationships with Designed Landscapes

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ABSTRACT

Most landscape architects rarely continue to engage with sites after the formal completion of a project, and thus are typically unaware of the long-term outcomes that result from natural and human-centric processes of change. Because of this, they forfeit their ability to guide those changes, as well as valuable feedback on the design and management decisions that were made. While others in the field have previously advocated for designers to expand their relationships with completed sites, few if any sources address the systemic barriers that make this difficult or offer actionable suggestions on how such barriers could be overcome. Anecdotal evidence suggests that many in the field are already interested in the long-term outcome of projects, but that efforts to "keep in touch" often become unpaid work on the part of designers. This paper introduces "extended engagement" as a new conceptual framework that advocates for a holistic approach to the relationship between designers and designed spaces over the lifespan of the project. It details a study that used interviews and surveys to explore landscape designers' interest in tracking long-term site outcomes, as well as their current and desired levels of participation in extended engagement activities. Finally, it suggests actions that individuals and organizations could take to make extended engagement a more meaningful part of professional practice in contemporary landscape architecture.

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INTRODUCTION

For most contemporary landscape architects, site design is a long and painstaking process that culminates in turning the brand-new project over to its proud owners. To reach that point is a significant achievement that requires collaboration by a team of designers, as well as a range of allied professionals including architects, engineers, contractors, and suppliers. However lengthy and complex that process is, though, "completion" actually represents the *beginning* of the life of a new landscape. Over the ensuing years, plants will grow, materials will weather, maintenance will (or won't) be performed, and various users will move through the site. All of these factors can lead to change—sometimes dramatic change—on the site. Unfortunately, by this point most landscape architects have moved on to other projects and rarely have the resources to keep abreast of the long-term outcome of the sites they've designed; because of this, they lose both the ability to direct changes on site and the valuable feedback that those changes provide. This project introduces "extended engagement" as a new conceptual framework that advocates for a holistic approach to the relationship between designers and designed spaces over the lifespan of the project (Figure 1.1).

Figure 1.1. Diagram of extended engagement and continued landscape architect involvement.
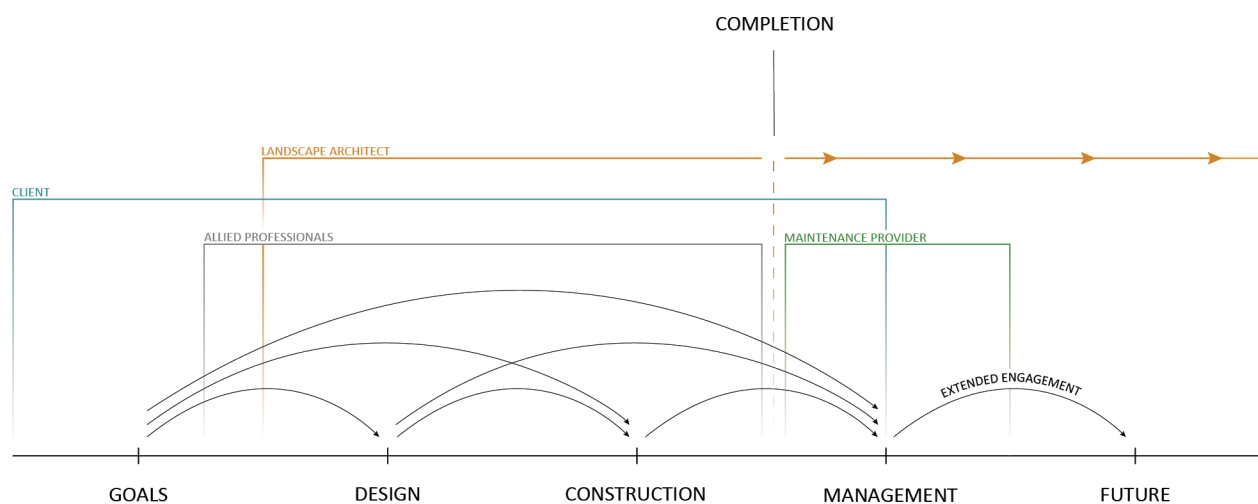
Extended engagement (EE) encompasses a wide array of strategies for maintaining meaningful contact with a site and its stakeholders and goes beyond mere monitoring, which is the "the systematic collection of data" to provide "indications of the extent of progress and achievement of objectives" (Independent Evaluation Group, n.d.). Across fields, monitoring is often viewed as an "internal exercise in bean counting" stipulated by regulatory or funding requirements (Curry, 2019). Similarly, in landscape architecture monitoring is primarily employed as a means to an end, with ongoing "box-ticking" required as part of certification programs such as LEED and SITES. While a number of standards exist that detail best practices for monitoring and evaluation procedures (Belaire & Yocca, 2012; Salmon-Safe Inc., 2019), very little research has examined and evaluated the practices by which monitoring is actually carried out (Dempsey & Burton, 2012).

Additionally, many landscape benefits are subjective, intangible, or difficult to evaluate directly, such as aesthetic appeal or improved mental health for users. The benefits may also change with seasons or over the life of the project (Dempsey & Burton, 2012). Even when clear evaluation metrics exist, they are often borrowed from other disciplines and do not always accurately reflect the specific values and priorities of landscape architecture (Farrell et al., 2023). Despite these limitations, conventional monitoring and evaluation remain important tools that can yield valuable information on long-term outcomes. Extended engagement offers an opportunity to reexamine monitoring through the lens of long-term learning and performance evaluation so that these "best practices" can actually be put into practice.

Current Model of Limited Engagement

Prevailing economic forces in the field of landscape architecture currently make it difficult to incorporate extended engagement activities into standard professional practice. The billable hours business model found in much of the industry means that time spent on "non-billable" activities still needs to provide some kind of benefit. Many benefits of extended engagement activities are felt in the

long term, while the costs are incurred upfront—making them hard to justify. Separate but similar forces operate in the public sector. Many governmental agencies have a legal mandate to select the lowest reasonable bid for public improvement projects. While these regulations save taxpayers money by preventing waste or fraud, they also exert a downward pressure on bids and incentivize bidders to save money wherever possible. Many extended engagement activities bring long-term benefits but incur costs in the short term, making them an easy target for cost-cutting in an effort to make a bid competitive. Additionally, many public works projects are funded through specific capital improvement programs, which are typically separate from maintenance and operation funds. This makes it possible for municipalities and agencies to create the need for more monitoring, maintenance, and other ongoing services without allocating enough money for additional staff, equipment, and supplies.

Increasing specialization has also long played a role in limiting designers' long-term connections with the sites they design. Landscape architecture is one of many fields that experienced a transition from "occupation" to "profession" in the mid-late 1800s. As with allied fields such as architecture and planning, educational standards for landscape architecture were developed, associations such as ASLA were formed, and licensing bodies were created to enforce newly-defined requirements (Baird & Szczygiel, 2007). This trend toward specialization has continued and today contributes toward professional siloing, or the independent operation of various disciplines without meaningful collaboration or information sharing between them. While defining a limited "scope of practice" is helpful in some contexts, such as managing liability, it also creates a norm in which designers have neither the responsibility nor the resources to continue their involvement with projects past the date of completion—beyond that, it becomes the domain of others.

Relationship Between Extended Engagement and Maintenance

While this project advocates for designers to engage with *all* of the change processes that occur in and on the spaces they design, it is worth noting that maintenance is perhaps the most visible and

most impactful of these processes. Therefore, it is important to understand the crucial yet contested

relationship between landscape architecture and landscape maintenance. Since parks, gardens, and

other designed landscapes are alive and therefore continuously changing, appropriate and timely

maintenance is critical for all aspects of these spaces. It can determine whether plants flourish or die,

and whether hardscape elements remain safe and appealing or become degraded and unattractive. As

landscape architects increasingly strive to prioritize sustainability in their designs, proper maintenance

can help ensure that green infrastructure elements of all sizes actually perform their intended ecological

function—and lack of maintenance can render them useless eyesores.

Due to its ongoing, repetitive nature, maintenance may in fact be the primary mode of extended

engagement in landscapes, and large amounts of valuable data on long-term outcomes is generated

through maintenance activities. Was a tree placed too close to a building, requiring pruning that would

otherwise be unnecessary? How fast did the shrub border fill in? Which parts of the plaza need to be

accessed by maintenance vehicles, putting an additional load on the permeable pavers? The answers to

questions like these can be useful for improving the design of similar projects in the future—but only if

they make their way back to designers. As important as maintenance is, though, landscape architects

typically have little influence over how or how often it happens, and little contact with the resulting

knowledge.

Virtually no systematic research has been done on the subject of landscape maintenance. Why

have knowledge gaps emerged between the two fields, and what can be done to bridge them? An

obvious answer is that maintenance is typically considered beyond landscape architects' scope of

practice, given that designers "generally lack control or influence over [the] investment flows, property

ownership structures, and political decisions" that determine maintenance outcomes (Brenner, 2013

quoted in Franco, 2022). Additionally, given the longstanding racial and class divides between most

landscape designers and the landscape maintenance workforce overall (Hirahara, 2000; Franco, 2022),

unconscious and/or conscious bias may play a role in the apparent lack of interest in the topic. Serious

engagement with maintenance as a means of producing knowledge would constitute a meaningful step

toward integrating spatial justice values into the design process itself.

Divisions and tension between landscape design and landscape maintenance work are not new.

As the design of outdoor spaces became increasingly professionalized—first as "landscape gardening,"

then as "landscape architecture"—practitioners advocated for the separation of design work from

construction and maintenance work (Franco, 2022). They argued that the intellectual work of design

required particular training that needed to be systematized and protected. This served both to restrict

access to the profession to the educated upper and middle classes, and to normalize the devaluation of

physical labor and the "multivalent knowledges" that are produced through repeated, direct

engagement with the landscape (Raxworthy, 2018).

This devaluation persists today and is evident in the pains landscape architects take to distance

their work from that of "landscapers"; in Michael Van Valkenburgh's gently mocking words, "Heaven

forbid that a landscape architect should hang out with [horticultural workers], much less join them,

wielding a saw or a hoe, fingernails dirty" (2013). However, despite being officially classified as

"unskilled" labor (National Fund for Workforce Solutions, 2022), landscape maintenance requires a

broad range of knowledge on plant growth, climate patterns, soil factors, and "general experience with

and sensitivity to the life-processes of the natural world" (Franco, 2022). Franco (2022) astutely points

out that these concepts were intimately familiar to the millions of rural farmers in southern Mexico who

lost their access to collectively held land in the mid-1990s, and who migrated to the US and have since

made up the majority of the landscape labor force here.

Legitimizing and valuing the knowledge and skills that go into the work of maintaining landscape

spaces is at the heart of the concept of "place-keeping." Originally used in the context of urban rivershed

management in the UK, the term encompasses the complex challenge of "how to *manage* public open

spaces, so as to keep them attractive, safe and clean" (Wild et al., 2008, emphasis in original). While "place-making," or the creation of high-quality public spaces, has long been a central concept in urban planning and landscape architecture, comparatively few resources are allocated to the long-term upkeep of these spaces (Dempsey & Burton, 2012). Place-keeping encompasses the interrelated and highly variable dimensions of maintenance, partnerships, governance, funding, policy, and evaluation.

While in theory place-keeping could be seen as an ongoing, cyclical enactment of place-making, in practice there is usually a clear separation between the two (Dempsey & Burton, 2012). If designers and other "makers" are not involved in some kind of "keeping" activities, there is little opportunity for future projects to benefit from lessons learned through ongoing interaction with sites. Resistance to this status quo has emerged in a variety of more "direct" or hands-on approaches to maintenance. Geffel (2021) argues that reconnecting with maintenance can remind landscape architects that designed spaces are constantly in flux, and that engaging in maintenance tasks such as mowing provides "an opportunity for landscape architects to pursue and engage [with] landscape change" rather than viewing maintenance as simply a series of repeated tasks intended to maintain a predetermined static state. In doing so, he simultaneously draws on Raxworthy's (2018) concept of the "veridic," or the dynamic relationship between plant and gardener, while also interrogating his former professor's assertion of the mere "instrumentality" of maintenance.

Research Motivations and Goals

While prominent practitioners and academics within the field have advocated for landscape designers to extend and expand their relationship with completed sites (Calkins, 2012; Franco, 2022; Geffel, 2021; Lavallee, 2019; Van Valkenburgh & Saunders, 2013), few if any sources address the systemic barriers that make this difficult or offer actionable suggestions on how such barriers could be overcome. Anecdotal evidence suggests that many in the field are already interested in the long-term outcome of projects, but that extended engagement efforts often become unpaid work on the part of designers—as

one landscape architect put it, "People are listening… but nobody's going to ask for this" (W. Andringa, personal communication, November 28, 2023).

With that in mind, this project seeks to understand the state of extended engagement in the professional practice of landscape architecture. It assesses current levels of participation by designers in extended engagement activities and examines the scope and variety of the various activities. It also identifies some of the information that extended engagement can yield, and examines challenges to expanding EE in professional practice as well as factors that seem to help make it possible. It is hoped that illustrating and explaining concrete strategies could provide designers with useful precedents to convince stakeholders that extended engagement is a worthwhile use of resources.

Research Questions

How do landscape architects maintain meaningful long-term contact with the spaces they design?

a) What strategies are being employed to maintain long-term contact, and how commonly are they used?

b) What specific aspects of long-term site outcomes are landscape architects interested in?

c) What factors make long-term contact difficult to establish and/or maintain, and what factors seem to enable long-term contact?

METHODS

As previously noted, very little formal research is available regarding professional practices in landscape architecture; therefore, there were few precedents to draw upon when designing this study. However, since the study seeks to answer questions about both actions and the motivations behind them, it was important to select methods that would provide both objective and subjective data. A combination of surveys and interviews was chosen, as surveys can be used to uncover patterns across large populations while interviews may yield more in-depth insights on participants' thoughts and attitudes. The pairing of surveys and interviews is widely employed in research on fields from health care (Fetters et al., 2013) to anthropology (Driscoll et al., 2007) to education (Harris & Brown, 2019). While this is often utilized to generate "confirmatory" results (i.e., corroborating questionnaire answers with interview data), in this study the relationship between the two methods was looser. Instead, interview content was used to both inform the surveys' questionnaire design and provide context for the results (Figure 2.1). Interviews were conducted before, during, and after the survey processes, and no interviewees were included in the pools of potential survey respondents.

Figure 2.1. Visualization of mixed-methods research process, where each aspect of the study informed and influenced the proceeding steps.
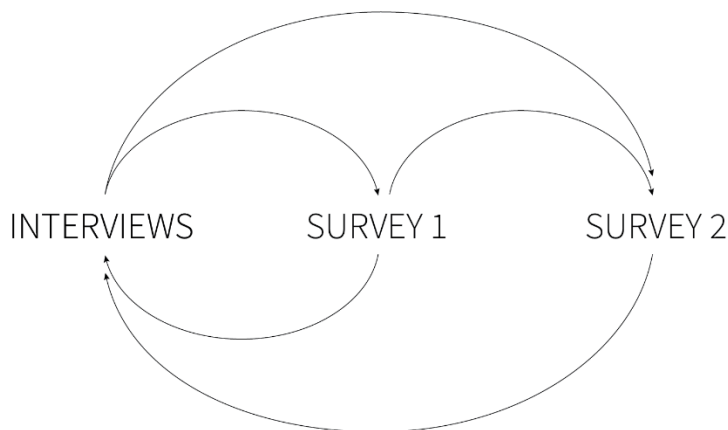
Note on Statistical Validity

Recruiting a truly representative sample from the nearly 25,000 Americans working in the field of landscape architecture was beyond the resources of this study. Instead, convenience sampling was employed for ease and cost-effectiveness. No results from this research should be taken to be statistically valid; rather, they are intended as a starting point to suggest further investigation.

Human Subject Research Compliance

This study was approved by the University of Oregon Institutional Review Board (IRB), and all research activities were conducted in compliance with IRB human subject research policies. All participants gave informed consent before participating in any research activity, and anonymization protocols were established to protect participants' privacy.

Interviews

Seven semi-structured interviews were conducted with a range of participants over the course of this project; one participant was interviewed twice. The interviews were conducted both in person and over Zoom and lasted between 30 and 90 minutes. To increase subjects' comfort level the interviews were not recorded; however, notes were taken using pen and paper. Interviewees included academics and researchers as well as practicing landscape design professionals in a range of positions. Some were sought out because their work touched on themes related to this study; others were referred by previous interviewees or by people I discussed my research with. Many of the extended engagement strategies mentioned throughout this research are drawn from these interviews. The conversations also were invaluable in helping explain the context in which designers make decisions related to ongoing engagement with projects.

Survey 1: "Confidence Survey"

The goal of the study's first survey (the "Confidence Survey") was to determine whether landscape designers having more information on the long-term outcome of a site is associated with

better long-term outcomes for that site (Table 2.1). Since it would have been impossible to assess actual

site performance and conditions, designers' level of confidence in those outcomes was used as a proxy

for success or failure. It is certainly possible for designer confidence to be an inaccurate reflection of

actual outcomes—designers may underestimate the success of a project, or have misplaced confidence

that it did succeed. However, given that a central premise of this study is that objective data on long-

term site outcomes is not widely available, most designers have nothing but their own assessment to

rely on when evaluating their projects. Four potential sources of information were included in the

questionnaire: clients, installation contractors, maintenance providers, and formal post-occupancy

evaluation policies within firms. These were chosen because interview participants indicated that they

are currently the most accessible sources of long-term outcome information for most designers, a view

that is supported by the existing literature. After refining the aims of the study, data on contact with

installation contractors was later excluded from analysis.

Table 2.1

Confidence Survey Questions

No.	Question	Sub-question	Type
1	Which of the following best describes your current workplace?		Multiple choice
2	Which of the following project types make up most of your work?		Multiple choice
3	Think back to a project you worked on that was completed at least two years ago. Which best describes your interactions with the following parties since the project was completed?	i) Client/primary stakeholder(s) ii) Installation contractor(s) iii) Maintenance provider	4-point Likert
4	Thinking back to the same completed project, how confident do you feel about the following statements?	i) I know which design choices have been successful. ii) I know which design choices could have been improved. iii) Someone is keeping an eye on the site/project. iv) The site/project still generally reflects the original design intent.	4-point Likert
5	Does your firm/organization have any polices or procedures for tracking long-term project outcomes?		Multiple choice

The Confidence Survey was intended to capture data from designers who were *not* particularly concerned with tracking long-term project outcomes, as well as those who were. To that end, invitations were sent to a random selection of landscape design professionals, including registered landscape architects as well as unlicensed professionals. Potential participants were selected using the ASLA member directory database, which is accessible to any ASLA member. As the directory lists members in alphabetical order by last name the first five listings for each US state and territory were selected, with some exclusions (Table 2.2).

Table 2.2

Confidence Survey Recruitment Exclusionary Criteria

Criteria	Rationale
Student/associate members	Likely do not have enough professional experience to have seen a project progress from concept to completion and beyond
Affiliate/corporate/honorary members	Likely not to be landscape designers
Members with no listed employer	Likely to be retired or currently not employed in landscape design
Members whose listed employer was a university	Likely to not be currently practicing landscape design
Members who were employees of the same office of the same firm as a previously selected member	Likely to practice similar extended engagement activities as coworkers
Members whose associated email address appeared to be a personal account (e.g., did not contain the name of their employer or acronyms like "LA" or "ASLA")	Likely to be less receptive to survey invitation than those who would receive it in a professional context (i.e., in their work inbox)

In total, invitations were sent via Qualtrics to 259 potential recipients: five from each US state and the District of Columbia, and four from Puerto Rico. (Puerto Rico only had four members who met the full criteria, and both Guam and the US Virgin Islands had none). An email invitation with a personalized link to the survey was sent to each potential respondent early on the morning of Monday 2/26/24. In the accompanying message, I identified myself as a graduate student conducting research on long-term outcomes in designed landscapes and asked them to complete a brief survey. The subject line ("I'd love to get your input") was intentionally somewhat generic in an attempt to prevent response bias that might arise if potential respondents who were uninterested in long-term outcomes were deterred from opening the email. A follow-up reminder was sent by email mid-morning on Friday 3/1/24 to recipients who had not yet completed the questionnaire, and the survey was closed on the morning of

Monday 3/6/24. Of the 259 invitations sent, one turned out to be a duplicate contact and three

messages bounced, bringing the total pool of potential respondents to 255.

The questionnaire for the Confidence Survey was designed and administered in Qualtrics. While

there was no time limit on the questionnaire, test respondents indicated that it would take between

three and five minutes to complete. Aside from the initial question that served as an informed consent

agreement, respondents were able to skip any question. Questions 1 and 2 asked for basic professional

demographic information: the size/type of the respondent's workplace and what type(s) of work were

included in their practice.

Question 3 was designed to evaluate the relationships between respondents and several key

informants who could potentially provide information on long-term project outcomes. It asked

respondents to "think back to a project that was completed at least two years ago" and rate their

interactions with several parties *post-completion* on a four-point scale ranging from "no contact" to

"frequent contact". Each scale point was contextualized with brief descriptions (e.g., "frequent contact"

was characterized by "share[d] ideas" and "mutual decision-making").

Question 4 was designed to evaluate designers' ability to confidently assess aspects of projects

after completion. Respondents were asked to recall the same completed project and rate their level of

confidence in several statements on a four-point scale ranging from "not at all confident" to "very

confident". The statements were intended to represent different dimensions of the project: the first two

related to the respondent's own design choices on the project, and two statements related to whether

the site was being cared for and well managed. Together, they were intended to measure the degree to

which the project site and the designers themselves were experiencing positive long-term outcomes.

Question 5 was designed to ascertain whether respondents' firm/organization has formal

policies or procedures in place for tracking long-term project outcomes.

Survey 2: "Participation Survey"

The goal of the study's second survey (the "Participation Survey") was to assess current levels of participation in a wider range of extended engagement activities, determine the types of long-term outcome data designers found valuable, and identify factors that might either enable or prevent designers from engaging in EE activities (Table 2.3). Unlike the Confidence Survey, Participation Survey was primarily intended to capture data from designers who were either currently practicing extended engagement activities or were interested in doing so. Because one goal of the survey was to solicit suggestions of additional possible EE practices, it was judged that maximizing response rate was more important than capturing the widest sample possible. To that end, invitations were sent to every Oregon and Washington chapter member in the ASLA member directory database, with some exceptions as follows. The same exclusionary criteria from the Confidence Survey (see Table 2.2) were applied; however, since the results of the Confidence Survey indicated that most EE activities happened independently and were not associated with any formal firm-level evaluation practices, the Participation Survey did not exclude members who worked in the same office. Additionally, it was postulated that sending a second invitation to members who had already been invited to participate in the Confidence Survey might induce "survey fatigue" and lead to lower response rates, so these members were also excluded.

Table 2.3

Participation Survey Questions

No.	Question	Sub-question	Display logic	Type
1	Which of the following best describes your current workplace?			Multiple choice
2	Which of the following project types make up most of your work?			Multiple choice
3	Landscapes continue to change for many years after completion. What would you most like to know about the long-term outcomes of the projects you work on? Select all that apply.			Multiple choice
4	In your current position, how much information do you receive about long-term project outcomes?			Multiple choice
5A	What factors prevent you from getting more information about long-term project outcomes?		Respondents who selected "Not enough" on Question 4	Multiple choice
5B	What factors help you to be well-informed about long-term project outcomes? Select all that apply.		Respondents who selected "The right amount" or "Too much" on Question 4	Multiple choice
6	In your current position, how often have you maintained contact with a project for several years after completion through any of the following activities?	i) Regular contact with client ii) Regular contact with maintenance provider iii) Participation in maintenance work iv) Personal observation of the space/project v) Formal post-occupancy evaluation vi) Extended monitoring contract		5-point Likert

In total, invitations were sent via Qualtrics to 253 potential recipients: 104 from Oregon, and 149 from Washington. The same email invitation from Survey 1, updated with a personalized link to Survey 2, was sent to each contact early on the morning of Monday 4/8/24. A follow-up reminder was sent by email mid-afternoon on Thursday 4/11/24 to recipients who had not yet completed the questionnaire; the timing of the reminder was changed from Friday to Thursday after feedback that an increasing number of professionals are not working (or are working shorter days) on Fridays. The survey was closed on Monday 4/15/24. Of the 253 invitations sent, five messages bounced. One recipient asked for a shareable link to send to coworkers; 8 additional respondents completed the survey using that link bringing the total pool of potential respondents to 256.

The questionnaire for the Participation Survey was designed and administered in Qualtrics and was structured similarly to that for the Confidence Survey, with no time limit and the ability to skip any questions after the initial informed consent agreement. Questions 1 and 2 asked for the same professional demographic information as in Survey 1.

Question 3 was designed to evaluate the types of long-term outcome data that respondents thought would be valuable. It reminded respondents that "[l]andscapes continue to change for many years after completion" and asked them to select as many options as applied from a list of things they might want to know about those changes (see Figure 2.2). Eight potential data types such as "user experience" and "construction quality" were provided, as well as an "other" option with a text entry box. The suggested options were drawn from interview content as well as the existing literature.

Figure 2.2

Participation Survey, Question 3

Question 4 was designed to evaluate whether respondents were satisfied with the level of data they *currently* receive regarding long-term site outcomes. Having been primed by Question 3 to consider the many ways a site could change after completion, respondents were asked to answer the question, "In your current position, how much information do you receive about long-term project outcomes?"

Question 5 was designed to evaluate the factors that respondents perceived to either inhibit them from receiving adequate information or enable them to receive adequate information on long-term outcomes, depending on their response to Question 4. Those who indicated that they received "not enough" information were asked to select as many options as applied from a list of factors that

might prevent them from being well-informed; five options such as "budget" and "firm/organization

priorities" were provided, as well as an "other" option with a text entry box (see Figure 2.3). Those who

indicated that they received "the right amount" of information were asked to select the factors that they

thought helped them to be well-informed; the same list of options was presented to this group,

rephrased positively where applicable (e.g., "time demands from other work" became "ability to balance

time demands among projects"). The suggested options were drawn from interview content as well as

the existing literature.

Figure 2.3 Participation Survey, Question 5A.

Question 6 was designed to assess respondents' levels of participation in a wider range of

extended engagement activities than was presented in Survey 1. It was also intended to solicit

suggestions of additional activities that had not yet been considered. Six examples of EE activities such as

"regular contact with client" and "participation in maintenance work" were provided, as well as an

"other" option with a text entry box (Figure 2.4). The suggested options were drawn from interview

content as well as the existing literature.

Figure 2.4 Participation Survey, Question 5B.

Data Analysis

Response data from Surveys 1 and 2 was exported from Qualtrics into SPSS, where basic

descriptive analyses were performed. Data visualization was done using a combination of SPSS, R, and

Adobe Illustrator.

RESULTS

Survey 1: "Confidence Survey"

A total of 45 surveys were submitted, and although response quality was generally high, two surveys were discarded in their entirety due to poor data quality. This left 43 complete responses, for a response rate of just under 17%. Of those who clicked the link to begin the survey, 83% completed it.

Professional Demographics

A plurality of respondents (42%) reported working at a small firm (fewer than five employees) (Table 4.1). Twenty-six percent reported working at a large firm (more than 25 employees) and 19% worked at a medium-sized firm (5-25 employees). Nine percent reported working in a government department/agency, and 2% in each of institutions and "other." Overall, public and commercial projects were both part of the work of a majority of respondents (54% and 51% respectively); 30% reported that their work included residential projects and 19% said they engaged in other work (primarily institutional projects such as campuses).

Among employees of small firms, 33% reported engaging in residential work, 50% in commercial work, 39% in public work, and 22% in other work. Of respondents employed at medium-sized firms, 63% reported engaging in residential work, 50% in commercial work, 38% in public work, and 25% in other work. Only 9% of designers at large firms reported engaging in residential work, while 50% said they worked on commercial projects and 100% said they did public work; none reported engaging in other work. Both residential and commercial work were reported by 25% of respondents working for a government department/agency, while 50% of respondents said they engaged in public work and 25% in other work. The sole respondent employed by an institution reported engaging in only commercial work, and the sole respondent of an "other" workplace reported engaging only in "other" work (planning buffers for utility projects).

Post-Completion Contact

Nearly all respondents (95%) reported having some level of contact with clients (Table 3.1), with responses fairly evenly distributed between infrequent, regular, and frequent contact. Far fewer respondents reported having any level of contact with maintenance providers: nearly two-thirds reported either no contact or infrequent contact, and only a few reported frequent contact.

Table 3.1

Confidence Survey, Post-Completion Contact Frequency

	None		Infrequent		Regular		Frequent	
Contact type	n	%	n	%	n	%	n	%
Client	2	4.7	14	32.6	13	30.2	14	32.6
Maintenance provider	14	34.1	16	39.0	8	19.5	3	7.3

Note. N = 43.

Confidence Levels

The primary goal of the survey was to evaluate how confident respondents felt in evaluating various aspects of long-term site outcomes. Respondents were asked to rate their level of confidence in four statements using a four-point scale ranging from "not at all confident" to "very confident." Confidence levels were consistently high across items, with a majority or near majority reporting being "very confident" about each of the four statements (Figure 3.1). Rates of "not at all confident" responses were generally extremely low (0-2%), except for the statement "Someone is keeping an eye on the site/project" (12%).

Figure 3.1. Proportional breakdown of Confidence Survey participants' confidence in evaluating several aspects of long-term site performance.

DESIGNER CONFIDENCE LEVELS

Legend: Not at all confident | Slightly confident | Somewhat confident | Very confident

I know which design choices have been successful	14	30.2	55.8
I know which design choices could have been improved	2.3 / 7	41.9	48.8
Someone is keeping an eye on the site/project	11.6 / 11.6	27.9	48.8
The site/project still generally reflects the original design intent	4.7	41.9	53.5
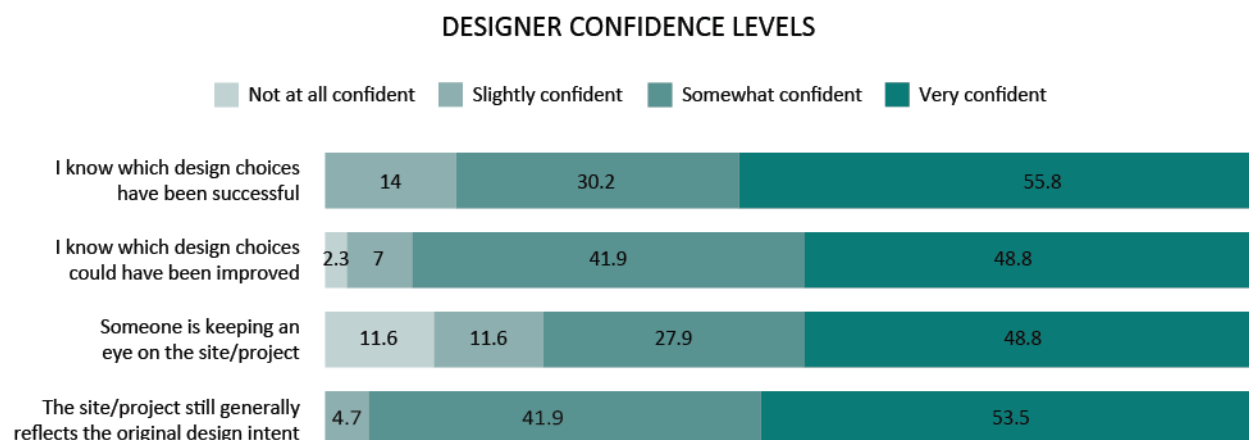
Firm/Organization-Level Policies or Procedures

Only approximately one-quarter of respondents reported that their firm or organization had formal policies or procedures around tracking long-term project outcomes, while nearly three-quarters reported that their workplace did not. Designers employed by government departments/agencies reported the highest level of formal policies: 75%, versus 28% of respondents at small firms and 18% at large firms. No respondents employed by medium-sized firms reported that their office had standard protocols for tracking long-term outcomes.

Survey 2: "Participation Survey"

A total of 65 surveys were submitted, of which six were partial responses that were discarded in their entirety. One completed response was also discarded because the respondent indicated that they were retired and are no longer a practicing landscape designer, leaving 58 complete responses. Of those, eight responses came from coworkers of an original invitation recipient, who requested a shareable link to send to others at their firm. The response rate was 23%, and the completion rate was 90%—higher on both measures than Survey 1.

Professional Demographics

An equal number of respondents reported working at small firms and large firms (33% each); equal numbers also reported working at medium-sized firms and in a government department/agency (17% each). Across all respondents, public projects were by far the most commonly reported work type, with 74% of respondents engaging in public work. Nearly equal numbers of respondents reported doing residential work (29%) and commercial work (28%). The "other" work reported by 10% of respondents included transportation planning, ecological management, residential campus planning, and projects for tribal groups.

Within employees of small firms, 63% reported engaging in residential work, 37% in commercial work, 47% in public work, and 5.3% in other work. Of respondents employed at medium-size firms, 20% reported engaging in residential work, 50% in commercial work, 70% in public work, and none in other work. Only 16% of designers at large firms reported engaging in residential work and only 21% in commercial work, while 95% reported working on public projects and 14% on other work. No respondents employed by a government department/agency reported doing either residential or commercial work, however, 90% reported working on public projects and 20% on other work.

Desired Long-Term Outcome Data

Survey respondents expressed interest in all types of long-term outcome data suggested, with each type selected by at least one in three respondents (Table 3.2). User experience and plant health/survival were the most commonly selected types, with a clear majority (four in five) expressing interest in each. Interest in material performance, climate benefits, and habitat success was also strong, with each type selected by at least half of respondents. Green infrastructure performance, adherence to recommended maintenance schedule, and construction quality were less uniformly interesting to respondents. Seven percent volunteered other types of data they were interested in, including long-term costs for maintenance and operation.

Table 3.2

Participation Survey, Interest in Various Types of Long-Term Outcome Data

	n	%
User experience	47	81.0
Plant health/survival	47	81.0
Material performance	40	69.0
Habitat success	29	50.0
Green infrastructure performance	26	44.8
Climate benefits (e.g. carbon sequestration, heat index reduction)	30	51.7
Construction quality	22	37.9
Adherence to recommended maintenance schedule	23	39.7
Other	4	6.9

Note. N = 58.

Regardless of the type of work practiced, user experience and plant health/survival were the most frequently selected desired data types (Figure 3.2). Material performance was the third-most commonly selected type for all respondents with the exception of those who reported practicing "other" work. Among respondents who engaged in residential work, over half were also interested in habitat success. Respondents engaged in commercial work also reported at least 50% interest in habitat success, climate benefits, and adherence to recommended maintenance schedule. Of those who reported working on public projects, half or nearly half were also interested in climate benefits, habitat success, and green infrastructure performance. Respondents who engaged in other work selected green infrastructure and climate benefits as their third-most common choice, and over half indicated they were interested in habitat success. Residential designers were the most likely to report desiring information on user experience, material performance, and construction quality. Those who reported engaging in other work were the respondents most interested in habitat success, green infrastructure performance, and climate benefits. Commercial designers were the most likely to report wanting

information on adherence to recommended maintenance schedules. Data on plant health/survival was desired fairly equally across all respondents.

Figure 3.2. Proportional breakdown by work type of Participation Survey respondents who reported interest in various types of long-term outcome data.
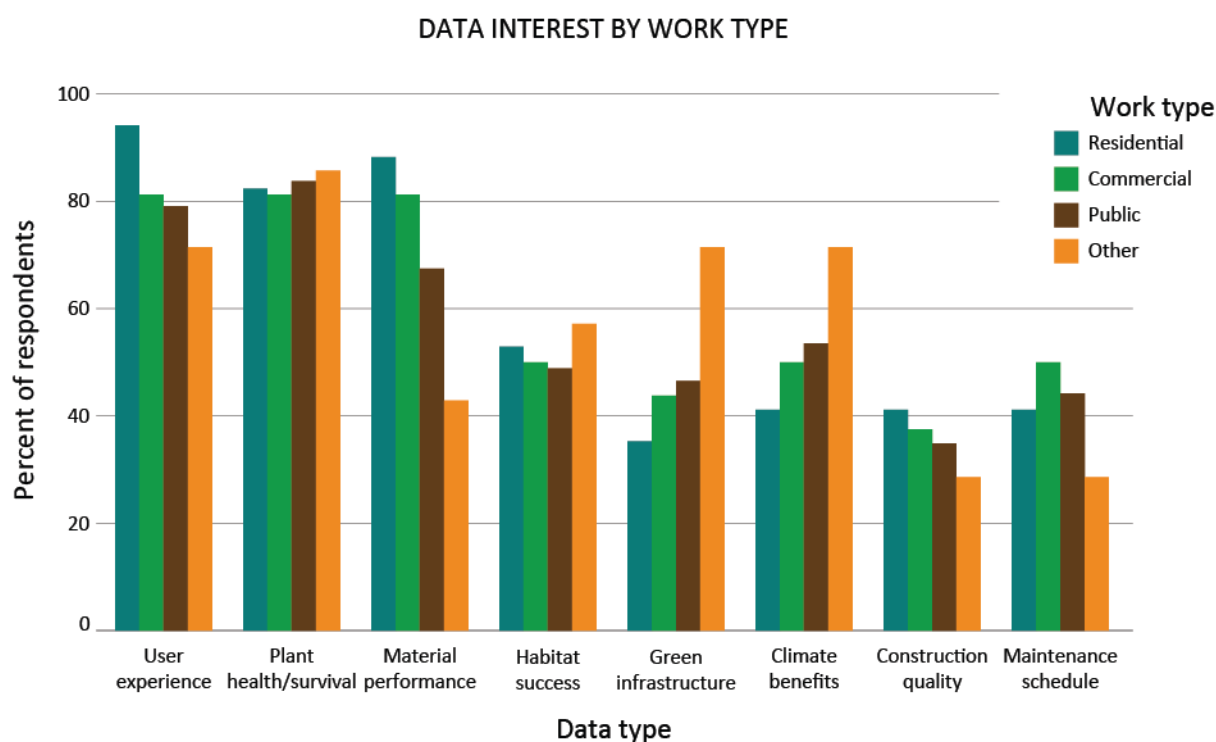
Satisfaction with Current Level of Long-Term Outcome Data

Eighty-six percent of respondents reported that they currently receive not enough information on long-term project outcomes, with only 14% reporting that they receive the right amount of information. No respondents reported receiving too much information. Government employees were the most likely (40%) and employees of large firms were the least likely (0%) to report receiving the right amount of information; 20% of employees of medium-size firms and 11% of employees at small firms also reported receiving the right amount of information.

Factors Perceived to Inhibit Data Gathering

Of respondents who said they did not receive enough information on long-term project outcomes, budget was the overall most commonly cited prohibitive factor (66%), closely followed by time demands from other work (62%). A majority (58%) also cited client disinterest as a hindrance. Firm/organization priorities and personnel changes were less commonly cited (26% and 20%, respectively). Several respondents (n=2) also mentioned the lack of available data, and others (n=4) commented that distance to project sites made it unfeasible to keep up with long-term outcomes.

These responses varied substantially between respondents employed in different types of workplace, however (Figure 3.3). Among designers at small firms, client disinterest was much more commonly reported than average, while time demands and budget were less commonly reported. Employees at medium-sized firms were more likely than average to report budget and time demands, client disinterest, and firm/organization priorities; none of these respondents reported personnel changes as a challenge to receiving adequate information. Respondents employed at large firms were more likely than average to cite budget but less likely than average to cite client disinterest, time demands, or firm/organization priorities. Of respondents employed at a government department/agency, all reported time demands and half reported firm/organization priorities as challenges to receiving adequate information, both higher rates than average; however, they reported budget and personnel changes at lower rates than average. None of these respondents reported client disinterest being a prohibitive factor.

Figure 3.3. Proportional breakdown by workplace type of Participation Survey respondents who said they *do not* get enough information on long-term project outcomes and who reported that each factor contributed to their lack of information.

INHIBITING FACTORS BY WORKPLACE
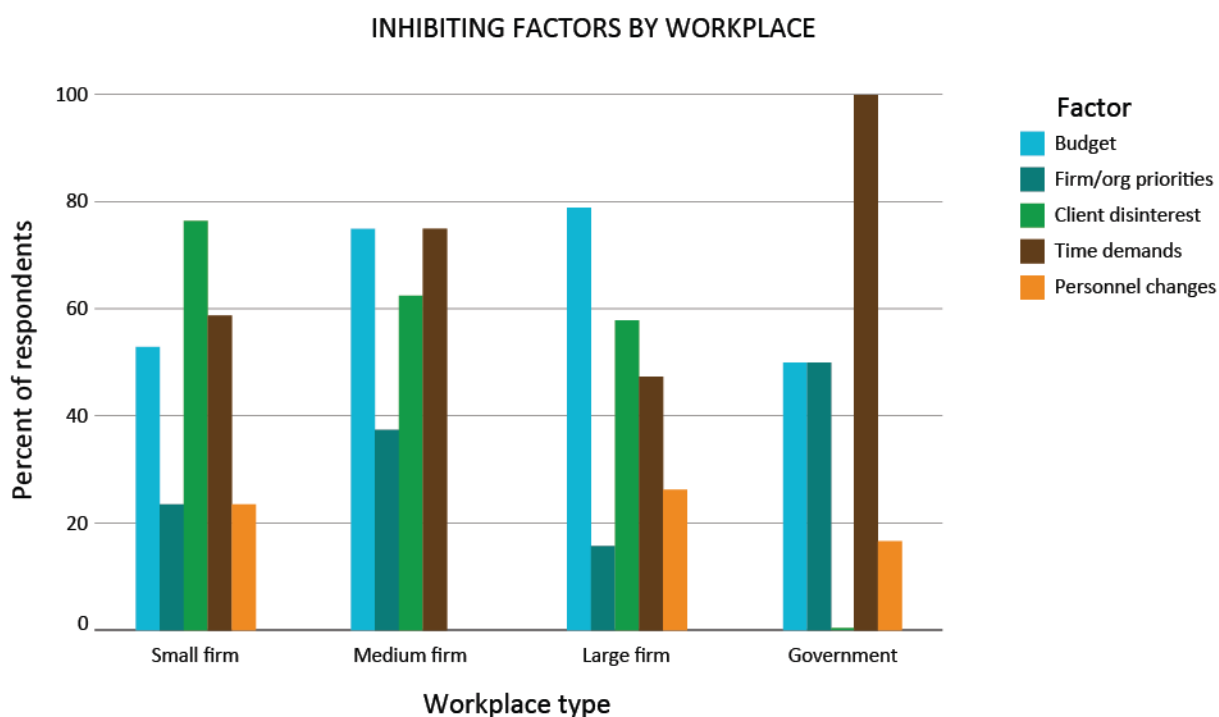
Factors Perceived to Enable Data Gathering

Personnel continuity was the most commonly cited enabling factor among respondents who said they receive the right amount of information on long-term project outcomes, with 75% reporting that it helped them to be well-informed. Firm/organization priorities and client interest were both frequently cited, each being selected by 50% of the respondents. Budget and ability to balance time demands among projects were less commonly cited at 13% each.

However, enabling factors varied considerably among respondents employed at different types of workplaces (Figure 3.4). Those working at small firms reported the highest overall rates of enabling factors, with each factor aside from budget cited by at least half of respondents. Respondents from small firms also reported the highest rates of client interest, with every respondent reporting that it

contributed to their status as being well-informed about project outcomes. Employees at medium-sized firms reported null to moderate rates of enabling factors. Responses by government employees showed the most variation, ranging from zero percent reporting that they were able to balance the time demands among their projects to 100% who said that personnel continuity helped them to be well-informed. No employees of large firms reported that they got enough information on long-term project outcomes.

Figure 3.4. Proportional breakdown by workplace type of Participation Survey respondents who said they *do* get enough information on long-term project outcomes and who reported that each factor helped them be well informed.
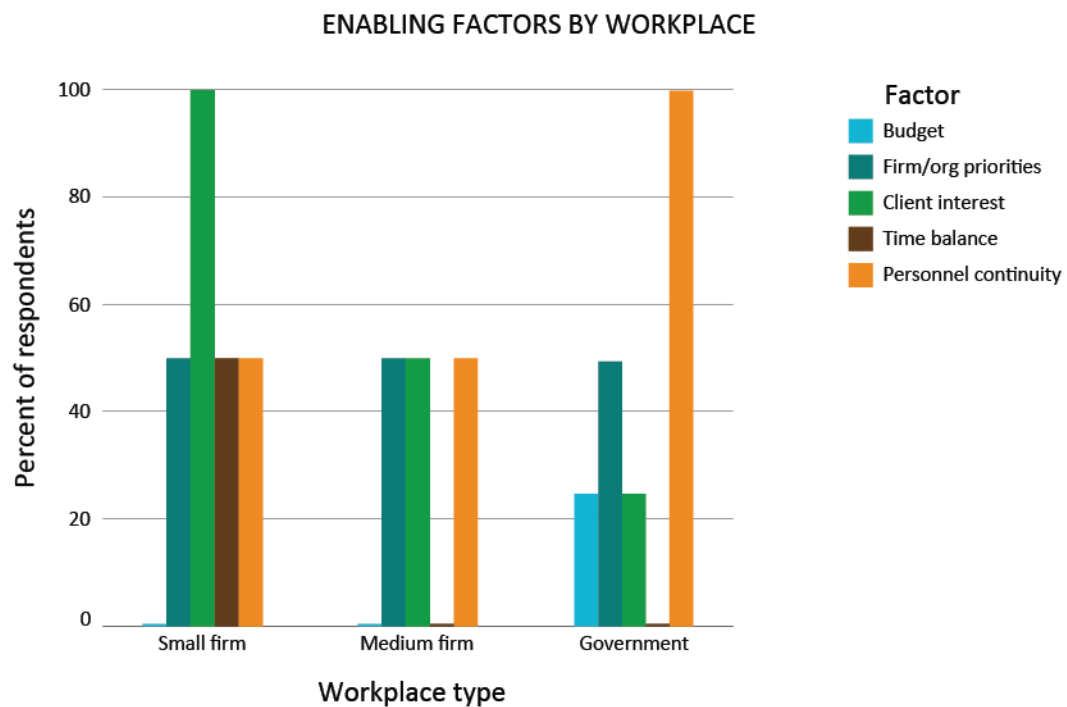
Extended Engagement Activities

Very few respondents reported that extended engagement activities were part of most or all of their projects, although nearly a third said they engaged in personal observation of the completed site/project most or all of the time (Figure 3.5). When measures were broadened to a range from some to most or all projects, only two activities—personal observation and regular contact with the client— were reported by more than half of respondents overall. However, once again there were noticeable differences between respondents employed at different types of workplaces (Figure 3.6). Employees at government departments/agencies were the only group to report participation in every activity, and consistently reported the highest rates of participation.

Figure 3.5. Frequency of Participation Survey respondents' participation in extended engagement activities (excludes respondents who indicated that the activity did not apply to their work).

EXTENDED ENGAGEMENT ACTIVITY PARTICIPATION

Never | Select projects | Some projects | Most or all projects

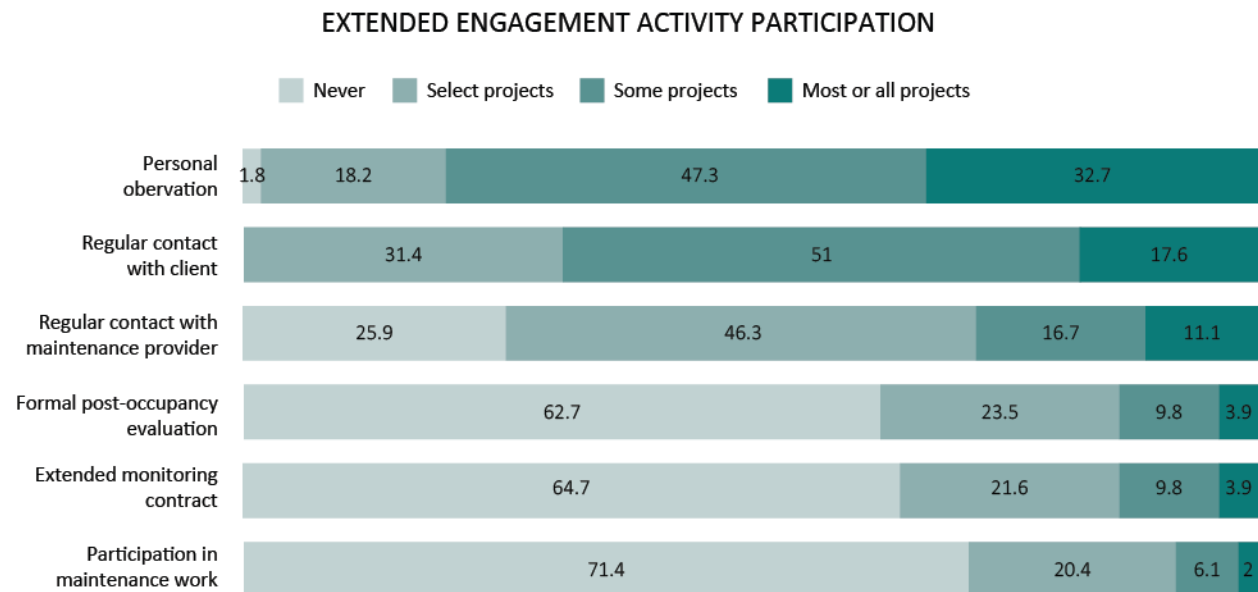|	Never	Select projects	Some projects	Most or all projects
Personal observation	1.8	18.2	47.3	32.7
Regular contact with client		31.4	51	17.6
Regular contact with maintenance provider	25.9	46.3	16.7	11.1
Formal post-occupancy evaluation	62.7		23.5	9.8 / 3.9
Extended monitoring contract	64.7		21.6	9.8 / 3.9
Participation in maintenance work	71.4		20.4	6.1 / 2

Figure 3.6. Proportional breakdown by workplace type of Participation Survey respondents who reported participating in each extended engagement activity on some, most, or all of their projects.

EXTENDED ENGAGEMENT PARTICIPATION BY WORKPLACE
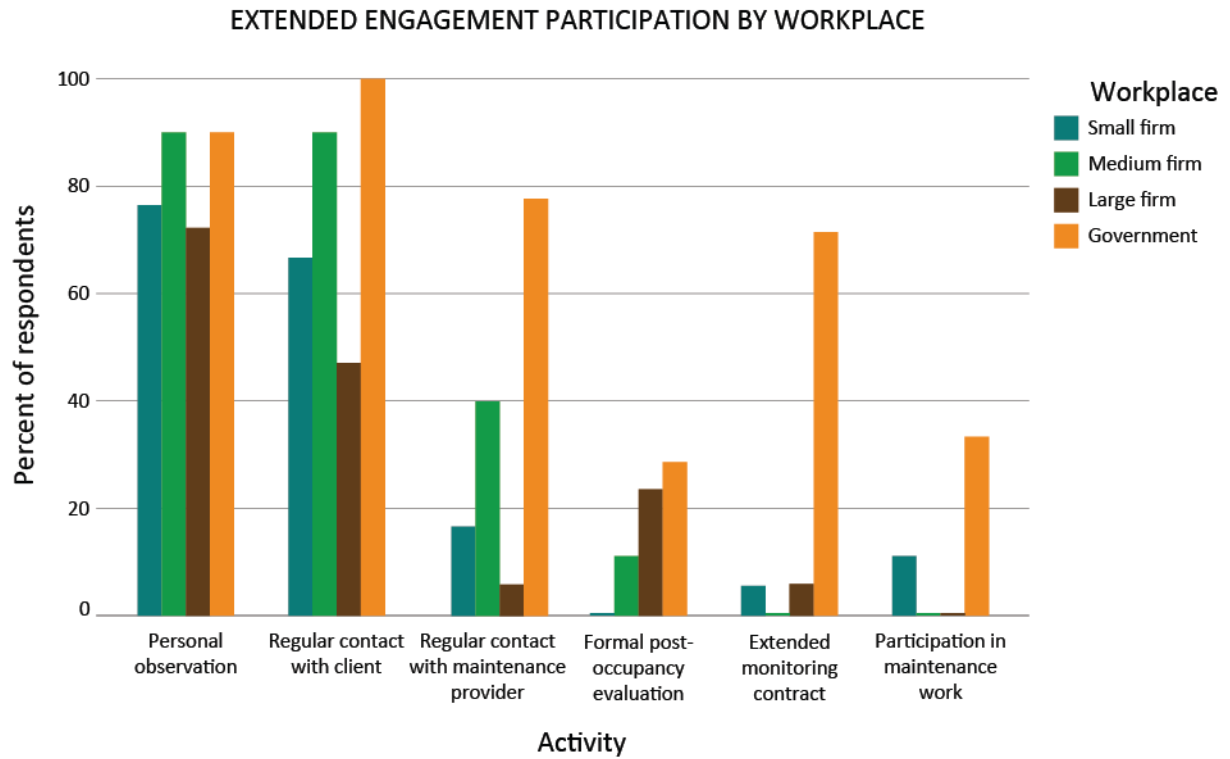
DISCUSSION

This study sought to explore the ways that landscape architects can and do sustain meaningful long-term relationships with the spaces they design. It was guided by three main research questions:

a) What strategies are being employed to maintain long-term contact, and how commonly are they used?

b) What specific aspects of long-term site outcomes are landscape architects interested in?

c) What factors make long-term contact difficult to establish and/or maintain, and what factors seem to enable long-term contact?

The results show that while there is already substantial enthusiasm for extended engagement-type activities, most EE is being done on an ad-hoc basis by individual designers, rather than at a firm/organizational level. This is supported by the finding that most landscape architects are interested in a wide range of data on long-term outcomes, which can be produced through extended engagement activities. While there are a variety of factors that make it harder or easier for designers to maintain long-term contact with projects, economics plays an important role in most workplaces.

Additionally, the results indicate that relationships between people and organizations are, unsurprisingly, a key element of most extended engagement activities. Some EE strategies identified through the study, such as personal observation, primarily involve designers interacting directly with the landscape. However, others rely on informants such as clients and maintenance providers who are "eyes and ears" on site. Cultivating relationships with those who use, care for, own, or otherwise have a stake in the long-term outcome of a site can increase the information that designers receive, and enable extended engagement with projects that are inaccessible to designers due to distance or other constraints.

Current Status of Extended Engagement

Perhaps the most notable finding of this research is the unexpectedly high level of existing

support among landscape designers for tracking long-term site outcomes. Even among those who were

currently less involved in extended engagement-type activities than they wished to be, many survey

respondents made comments that showed their enthusiasm for the idea. Multiple survey participants

also responded to the initial email invitation to express their interest in the study and their support for

increased attention to the topic. Respondents' comments included:

> "It is not a common practice [to track long-term project performance], but something I firmly
> believe in..... [we] need to learn from our designs and outcomes."

> "[W]e have submitted multiple projects to the LAF Case Study program. We are also working on
> developing internal metrics for post-occupancy evaluations."

> "No [my firm doesn't have policies or procedures for tracking long-term project outcomes] but I
> wish we did!"

> "I use these convserations [sic] [about long-term site performance] as relationship building"

> "We should [have policies in place to track long-term outcomes], but don't"

> "[O]nce construction is complete the project is over. To follow that landscape over time would be
> a separate/new project. ...Instead I find out that information by visiting sites on my own time
> (unpaid) or by keeping relationships with past clients to casually get updates."

Indeed, this study finds that extended engagement as it is currently practiced largely consists of

individual attempts to address a larger systemic issue, with little meaningful engagement on the part of

most firms or organizations. In fact, respondents who said their workplace had formal policies or

procedures for tracking site performance were actually slightly *less* likely to say they were "very

confident" in response to the Confidence Survey's question about confidence in long-term outcomes

than those whose workplace had no policies. Formal tracking was the least-commonly reported of the

three extended engagement activities included in the survey, and respondent comments indicated that

procedures were often limited in scope, such as a basic site inspection immediately following

completion. This suggests that existing firm/organization-level activities may not actually provide useful,

high-quality information—or if they do, the results may not be accessible to designers throughout the

organization.

The Many Aspects of Long-Term Outcomes

On average, Participation Survey respondents each expressed interest in four of the suggested

data types—an impressive number considering that some kinds of data, such as green infrastructure

performance, aren't especially relevant to all types of landscape design. The fact that most respondents

indicated that they were interested in planting success suggests that while they may not have much

control over whether the plants they specify actually survive, designers are at least conscious of the fact

that, in Andrew Lavallee's words, "plants are not commodities. They are living, long-term investments"

(2019). A similarly high proportion of respondents said they were interested in user experience, a

positive sign when landscape architects increasingly challenge each other—and themselves—to consider

local communities the ultimate "experts" on their own needs and desires, and to center those

preferences in their designs.

That material performance was the third-most common data type in which respondents

indicated interest was a surprise. The majority of conversations with interview participants centered

around concerns over plant survival and maintenance, with passing (if any) mention of materials or

furnishings. While embodied carbon in materials has recently become a hot topic in the field, these

assessments largely center on extraction, processing, and transportation rather than what happens after

installation. Survey crosstabs indicate that interest in material performance was notably higher among

respondents who reported doing residential and/or commercial work as opposed to public or "other"

projects, perhaps reflecting a greater use of custom or specialty materials on those projects and subsequent uncertainty about how well they are performing.

Overall, only around half of respondents indicated interest in climate benefits, green infrastructure performance, and/or habitat success—a lower number than expected given the centrality of climate change and biodiversity loss to current discourse, both in the broader culture as well as in landscape architecture specifically. More effort should be made to ensure that "ecologically functional" landscapes are actually performing to their expected level, especially as requirements such as impervious surface offsets become more common and as carbon crediting programs expand into landscape-adjacent fields such as forest management. While increasing landscape function is always beneficial, designers have an added ethical imperative when they or their clients are benefiting legally or monetarily from any services, like carbon capture, that they claim their landscapes are providing. Additionally, interest in climate benefits and/or green infrastructure performance was at least 10 percentage points lower than average among residential designers. This suggests that many residential designers aren't considering the climate mitigation potential of residential projects—a missed opportunity, since residential design is the largest sector of the landscape architecture market ("Frequently Asked Questions,", American Society of Landscape Architects, n.d.). Although individual projects tend to be small, cumulatively they could make a real contribution to climate change mitigation.

Also of concern is the low level of interest in adherence to recommended maintenance schedules, given anecdotal evidence that designers often blame inadequate or poor maintenance for negative outcomes such as plant death. This is additionally surprising given that very few Confidence Survey respondents reported having frequent or regular contact with maintenance providers on a project, raising doubts that they have any real access to reliable information about how the site is being cared for.

What Makes Extended Engagement Possible?

Ultimately, there is no "one size fits all" approach to increasing extended engagement in landscape architecture since every workplace and every project is different. In general, though, the biggest impediments to extended engagement as determined by the Participation Survey were budget, time demands from other work, and client disinterest. These all stem from the understandable human tendency to minimize real short-term costs at the expense of potential long-term gains. However, EE produces knowledge that can benefit clients, individual designers, *and* design firms. When designers are left to participate in extended engagement on their own initiative, they have less incentive to share the resulting knowledge with their teams and will likely take it with them when they leave or retire. Firms should consider making extended engagement an explicit priority, allocating more resources to EE activities, and making a concerted effort to convince clients that these are services worth paying for.
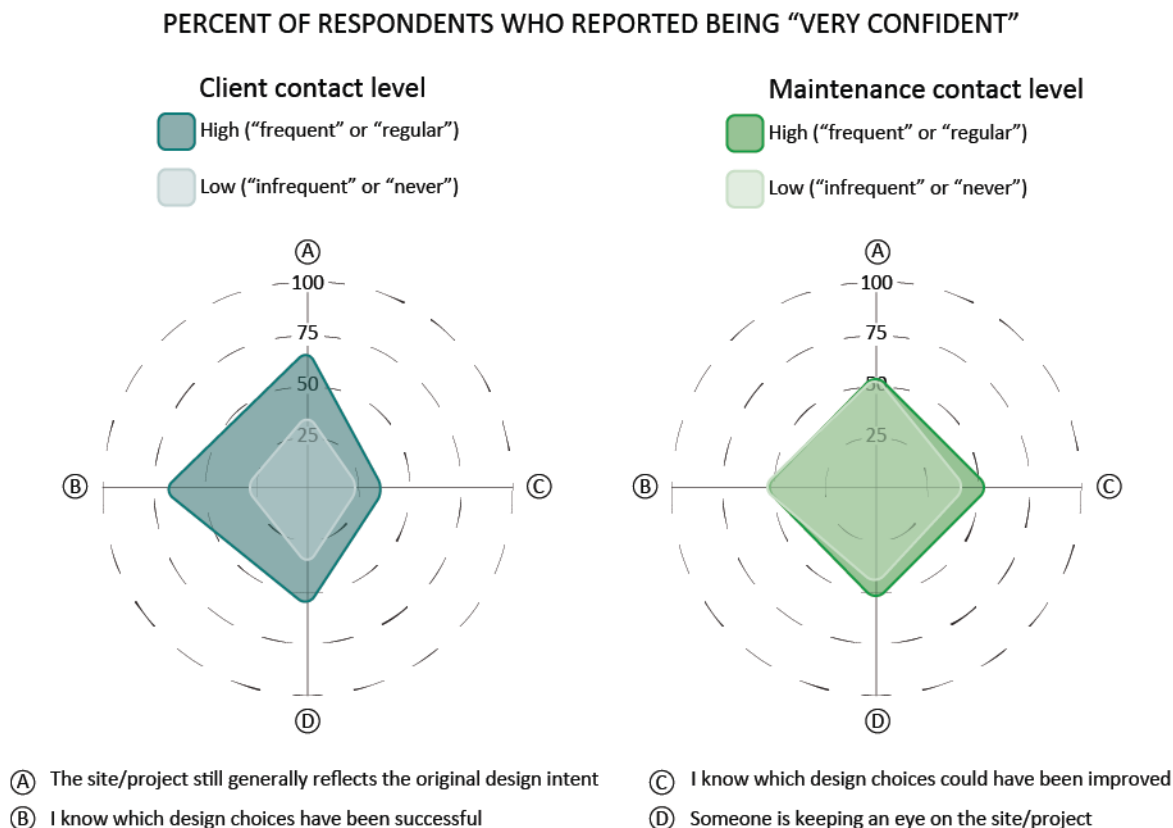
The Participation Survey results suggest that specific challenges vary by firm size. Small firms are willing to allocate resources to tracking long-term outcomes but have a hard time getting the necessary buy-in from clients. Large firms also seem to value tracking long-term site outcomes—unsurprising when we consider that some high-profile offices such as Olin and OJB have their own internal research divisions—but struggle to fund such programs adequately. Medium-sized firms faced the most challenges of all, perhaps indicating that are caught in an "unhappy middle": too large to have the flexibility to allocate resources to something that doesn't immediately generate revenue, and too small to attract employees with the skills and interests necessary for a dedicated internal research team. This may help explain why the Confidence Study showed that designers who worked at medium-sized firms were the most likely to report not engaging in any of the three given extended engagement activities. Employees of government agencies—who were the most likely of any respondents to say they receive enough information on long-term site outcomes—benefit from the institutional knowledge that comes from personnel continuity, but are strapped for time in which to participate in EE activities.

Relationships: The Heart of Extended Engagement

Cultivating relationships with those who use, care for, own, or otherwise have a stake in the long-term outcome of a site can increase the information that designers receive and enables engagement with projects that are inaccessible due to distance or other constraints. The results of the study make clear, though, that context makes a real difference in whether relationships with informants translates to meaningful relationships with landscapes. While it provided some qualitative context to guide respondents, the Confidence Survey was primarily concerned with *quantity* (frequency) of interactions, rather than *quality*. This lack of distinction may be distorting the relationship between informant contact frequency and confidence levels.

Given that a central premise of this study is that having more information empowers better decision-making, it would seem to follow that more contact with key informants like clients and maintenance workers would lead to higher levels of confidence. However, this was not uniformly the case in the Confidence Survey. While a positive association was found between client contact frequency and confidence levels, frequent contact with maintenance providers had very little impact on confidence (Figure 4.1). This may be due to the fact that maintenance workers have not historically been viewed as partners in the placemaking process (Franco, 2022). In the absence of a concerted effort to share knowledge with maintenance staff, it seems plausible that for most landscape architects, frequent contact with them would in fact be a sign of problems (and possible conflict) on a project.

Figure 4.1. Confidence Survey respondents' level of confidence in assessing long-term outcomes, comparing groups that had high and low levels of contact with either clients or maintenance providers.

PERCENT OF RESPONDENTS WHO REPORTED BEING "VERY CONFIDENT"

Client contact level	Maintenance contact level
High ("frequent" or "regular")	High ("frequent" or "regular")
Low ("infrequent" or "never")	Low ("infrequent" or "never")

A The site/project still generally reflects the original design intent
B I know which design choices have been successful
C I know which design choices could have been improved
D Someone is keeping an eye on the site/project

A more effective exchange of information might be brought about by making relationships with extended engagement partners—including maintenance providers—more collaborative. Collaboration, characterized by mutual trust, frequent communication, sharing of ideas and resources, and consensus-building, is challenging to enact as well as to evaluate in many contexts (Greenwald & Zukoski, 2018). However, the effectiveness of collaboration in bringing about improved outcomes has been reported in areas as diverse as health care and consumer protection lobbying (Greenwald & Zukoski, 2018). While differing levels of collaboration may be desirable or appropriate in different scenarios, "the core of collaborative relationships among groups is the collaborative relationships between individuals who are

part of those groups." (Frey et al., 2006) This should give encouragement to designers who are already practicing extended engagement activities, especially those activities that involve interacting and exchanging information with others. The individual relationships they build have the potential to foster larger, more systematic relationships between firms/organizations and other groups.

Also related to the primacy of individual relationships is landscape architects' frequent role as bridges or connectors between various parties such as clients, stakeholders, and allied professionals. In classical organizational analysis, the "weak ties" formed by those who connect otherwise-separated groups are thought to play an outsized role in the diffusion of information through social networks. New ideas tend to travel quickly through groups of people with stronger ties to each other, but their reach is limited by the fact that such networks tend to be relatively small and closed (Granovetter, 1973). However, even once an idea fully saturates a "strong tie" network, it may be shared with further groups through weak ties. This is even more true of innovations that challenge the status quo (such as extended engagement) which are generally adopted first by "marginal" figures, then spread to "central" influential figures via weak ties (Granovetter, 1973). Classical organizational analysis refers to individuals with many weak ties as "liaison persons"—a common position for landscape architects to hold in practice if not in title.

Engaging with the Future

To help address all of these challenges, further research can help solidify our understanding of extended engagement and the benefits it can bring, as well as shed more light on the factors that both enable and inhibit EE activities. Specific research aims that are suggested by the results of this study include the potential use of open-source, low-cost Wi-Fi connected sensors to remotely gather performance data on sites. Bringing the "Internet of Things" into the landscape could provide designers with a wealth of information that is currently unavailable, especially as it relates to green infrastructure and climate benefits.

Measuring things, though, is of limited use unless you know what the data are telling you. Future research should investigate practices around setting explicit performance goals for landscape architecture projects—particularly ones for which increased "functionality" is a desired outcome. Whether for a residential pollinator garden or a city-wide network of stormwater treatment swales, designers should consider using SMART (Specific, Measurable, Achievable, Relevant, and Time-Bound) or other goal-setting frameworks to help ensure that projects are actually delivering on their promises and not just paying lip service to social and ecological ideals.

Finally, as previously mentioned, the findings of this study suggest a commonly missed opportunity to meaningfully engage maintenance professionals as collaborators in monitoring long-term site outcomes. Because they interact so regularly and so closely with a site, maintenance workers could provide valuable information on vegetation and material performance. Establishing productive working relationships would also provide a foundation of trust and mutual respect that could allow designers and maintenance providers to share some creative agency and become partners in placekeeping. To help cultivate these relationships, organizations such as ASLA should explore potential partnerships with groups like the National Association of Landscape Professionals. Firms should prioritize hiring and retaining employees who are fluent in Spanish, given that a substantial percentage of the landscape maintenance workforce is primarily Spanish-speaking. Additionally, more research should be done to describe novel or "alternative" approaches—such as the "design/build/maintain" firm structure—that treat maintenance providers as collaborators in extended engagement.

Depending on your perspective, the idea of implementing extended engagement across the field of landscape architecture could seem like an impossible challenge—or a boundless opportunity. If indeed "[p]eople are listening… but nobody's going to ask for this," extended engagement provides a framework for proactively cultivating interest from clients, the public, and other landscape stakeholders. It also encourages designers to reframe aspects of professional practice to focus on long-term learning

and iterative improvement. Extended engagement has the potential to help move the field toward more

sustained, meaningful, and productive relationships with other people and the landscapes we are all

invested in.

REFERENCES

Baird, C. T., & Szczygiel, B. (2007). Sociology of Professions: The Evolution of Landscape Architecture in the United States. *Landscape Review*, *12*(1), 3–25.

Belaire, A., & Yocca, D. (2012). Operations, Maintenance, Monitoring, and Stewardship. In *The Sustainable Sites Handbook*. Wiley.

Calkins, M. (Ed.). (2012). *The Sustainable Sites Handbook*. Wiley.

Curry, D. W. (2019). Perspectives on Monitoring and Evaluation. *American Journal of Evaluation*, *40*(1), 147–150. https://doi.org/10.1177/1098214018775845

Dempsey, N., & Burton, M. (2012). Defining place-keeping: The long-term management of public spaces. *Urban Forestry & Urban Greening*, *11*(1), 11–20. https://doi.org/10.1016/j.ufug.2011.09.005

Driscoll, D. L., Appiah-Yeboah, A., Salib, P., & Rupert, D. J. (2007). *Merging Qualitative and Quantitative Data in Mixed Methods Research: How To and Why Not*. *3*(1).

Farrell, K., Barnes, M., & Hill, K. (2023, October 28). *How Do We Know What's Working? Getting Real with Landscape Metrics*. ASLA Conference 2023, Minneapolis, MN. https://778c1607566f28c5e8fd-e6db6de54823ad7fd298e0f6ff75b72a.ssl.cf1.rackcdn.com/ASLA_314_YONFTSWH_563_SAT-C02.pdf

Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving Integration in Mixed Methods Designs—Principles and Practices. *Health Services Research*, *48*(6pt2), 2134–2156. https://doi.org/10.1111/1475-6773.12117

Franco, M. A. (2022). Invisible Labor: Precarity, Ethnic Division, and Transformative Representation in Landscape Architecture Work. *Landscape Journal*, *41*(1), 95–111. https://doi.org/10.3368/lj.41.1.95

Frequently Asked Questions. (n.d.). *American Society of Landscape Architects*. Retrieved May 3, 2024,

from

https://www.asla.org/FAQAnswer.aspx?CategoryTitle=%20About%20the%20Profession&Categor

y=3150#DispID3140

Frey, B. B., Lohmeier, J. H., Lee, S. W., & Tollefson, N. (2006). Measuring Collaboration Among Grant

Partners. *American Journal of Evaluation*, *27*(3), 383–392.

https://doi.org/10.1177/1098214006290356

Geffel, M. (2021). Landscape Design through Maintenance: Field Case Studies in Parametric Mowing.

Landscape Journal, *39*(2), 1–16. https://doi.org/10.3368/wplj.39.2.1

Granovetter, M. S. (1973). The Strength of Weak Ties. *American Journal of Sociology*, *78*(6), 1360–1380.

Greenwald, H. P., & Zukoski, A. P. (2018). Assessing Collaboration: Alternative Measures and Issues for

Evaluation. *American Journal of Evaluation*, *39*(3), 322–335.

https://doi.org/10.1177/1098214017743813

Harris, L. R., & Brown, G. T. L. (2019). *Mixing interview and questionnaire methods: Practical problems in

aligning data*. *15*. https://doi.org/10.7275/959J-KY83

Hirahara, N. (Ed.). (2000). *Greenmakers: Gurīn mēkāzu: Japanese American Gardeners in Southern

California*. Southern California Gardeners' Federation.

Independent Evaluation Group. (n.d.). What is Monitoring And Evaluation? *The World Bank*.

https://ieg.worldbankgroup.org/what-monitoring-and-evaluation#

Lavallee, A. (2019, February). Life Insurance For Plants. *Landscape Architecture Magazine*.

National Fund for Workforce Solutions. (2022, January 6). There's No Such Thing as a "Low-Skill Worker."

National Fund for Workforce Solutions. https://nationalfund.org/no-such-thing-as-low-skill-

worker/

Raxworthy, J. (2018). *Overgrown: Practices Between Landscape Architecture & Gardening*. The MIT Press.

Salmon-Safe Inc. (2019). *Salmon-Safe Certification Standards for Parks and Natural Areas (Version 6.0)*.

    https://salmonsafe.org/wp-content/uploads/2018/04/SS-Parks-NA-Standards-v6-May-2019.pdf

Van Valkenburgh, M., & Saunders, W. S. (2013, March). Landscapes Over Time: The Maintenance

    Imperative. *Landscape Architecture*, *103*(3), 106–114.

Wild, T. C., Ogden, S., & Lerner, D. N. (2008). *An innovative partnership response to the management of*

    urban river corridors – Sheffield's River Stewardship Company. 11th International Conference on

    Urban Drainage, Edinburgh, Scotland, UK.