

GREAT QUESTIONS TO ASK DEVELOPERS AND PROJECT TEAMS

CONTRIBUTORS & ACKNOWLEDGMENTS

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Questions for Municipalities to Ask Developers in the Permit and Review Process

To ensure high quality projects, municipalities can ask private developers/building owners specific questions prior to or early in the permit process, especially when the disposition of municipally owned property is involved. Following are examples of questions to ask, along with the kinds of answer to look for from qualified candidates.

These questions are provided as examples/guidelines to help guide your conversations with regard to sustainability and carbon goals. Some questions may not be applicable to every project. You may want to adapt the wording to fit specific contexts or circumstances. These questions may be used in either interview discussions or when requesting written responses.

SOME QUESTIONS TO ASK

- 1 What are the hazards related to developing this site (to the occupants of the proposed project as well as to the neighboring communities)?
- 2 What are the vulnerabilities of both of the above, given the proposed development plan?
- 3 How would you propose to – at least, minimize hazards and vulnerabilities – or at best, generate better conditions through your proposed development?
- 4 How will the site design and infrastructure (water management, roadways, drainage, sewer) take most advantage of [low-impact development](#) (LID) strategies to reduce impervious surfaces, heat island effect, and flooding?
- 5 What opportunities are there to minimize single occupant vehicle travel and parking on this site?
- 6 Are you planning on pursuing certification by a third party, and if so, at what level? (Third-party certifications include Passive House, Envision, LEED, LBC, or WELL)
- 7 How will this development optimize passive and solar design to minimize energy loads (siting, massing, shading, building envelope)?
- 8 What opportunities are there for solar energy and storage for this project (not limited to the roof)?
- 9 Have you considered any other efficiency or clean energy technologies such as CHP, heat pumps, micro-grids, or other for this project?
- 10 Is there any compelling reason that this project absolutely needs any form of fossil fuel on site, such as natural gas?
- 11 What utility programs are you pursuing for energy efficiency, EV charging, energy storage, or renewables?
- 12 How will the uses/occupancy of this building meet the needs of a vibrant, 24/7 community and contribute to public gains, economically, socially, and environmentally?
- 13 How does this development address or restore the existing natural systems or contribute to the health of [ecosystem services](#)?
- 14 How do you plan on achieving a carbon neutral building (or as close as possible as you can)?
- 15 What is the carbon footprint of the proposed development? (You can use the same methodology that is required for the [MEPA GHG emissions reporting protocol](#).)

- 16 What is the anticipated design-life in years of this building? In what ways are you planning for deconstruction of this building or parts of it in the future?
- 17 How do you work with your architect to ensure that there is very early input by the right consultants for energy and decarbonization? (The purpose of this question is to ensure that the municipality does not lock in, unintentionally, to a design direction too early that limits its choices. This happens frequently with commercial “spec” developers and the architects who work with them regularly over time.)

ADDITIONAL MEASURES TO CONSIDER...

- Ask developers whether any technical assistance or case study resources would help them achieve any of the items above. (Municipalities without internal resources or capacity could require that developers pay for a peer review.)
- Linkage – depending on the neighborhood context and features that would benefit the community (e.g., solar in a public area or bike paths), you can negotiate a linkage agreement for items off the development site (this does not require direct financial resources).
- Using Floor Area Ratio (FAR) bonuses as a non-financial incentive. Depending on your current policies, regulations, and incentives, you may choose to negotiate increased FAR in exchange for something “above and beyond” for decarbonizing or sustainability.

Questions for Developers or Building Owners to Ask Design Teams About Their Approach to Design and Performance

WHAT IS YOUR FIRM'S COMMITMENT TO SUSTAINABILITY, AND HOW DOES IT MANIFEST IN DAILY ACTIVITIES AND ON EVERY PROJECT?

- ! **Beware of** vague statements like, “We are committed to sustainability” or “We deliver high performance.” If they start that way, ask, “How?” or “What specifically do you do to achieve goals?”
- ▶ **Look for** specific, concrete answers like, “We set clear performance goals, use energy modeling and work with our engineers to track throughout the design.”
- ▶ **Look for** how a commitment manifests across a firm (rather than pointing to a handful of exemplary projects), such as how they implement the AIA 2030 Commitment across all project teams. Ask, “How do you know that [setting pEUI/energy goals] is happening on all projects?”
- ▶ **Look for** indicators of continuous improvement. For example, if they don't bring up the topic themselves, you can ask them a follow-up question: “How do you learn from your work, consistently?” Beware if they don't have an answer for this. It means they are not aware of past mistakes and therefore can repeat them.
- **Bonus:** To know how well they really manage and “own” their performance, you can ask them to talk about what the gap is between predicted and actual energy performance of their recent projects. Then you can ask how they have shrunk the gap over time. If they really know what they're doing, they should be able to answer you.

CAN YOU DESCRIBE YOUR PROJECT DELIVERY METHODOLOGY AND HOW IT ENABLES YOUR FIRM TO CONSISTENTLY DELIVER EXCELLENCE AND HIGH PERFORMANCE?

This question should evoke descriptions of integrative design from more experienced firms but will also get a good answer from less experienced firms. Asking specifically about integrative design often gets misleading answers.

- ▶ **Look for** teams that focus on collaboration and intentionally co-create a work plan that maps out a sequence of steps, allowing for the right analysis to happen in a timely manner to inform decisions, with each discipline providing input at the best time. These firms can be very specific about how they do this work and give examples.
- ▶ **Look for** answers that generally describe a front-loaded process. Early exploration and analysis are very intense with many iterations; implementation of the design ideas is organized and less chaotic.
- ! **Beware of** vague answers, and especially situations where architects point to a sustainability consultant to answer the question instead of answering it themselves.
- ! **Beware of** answers that rely on “one charrette”: the one-hit-wonder. Design charrettes (large team meetings) should happen, but not just once. They are part of a larger choreography of various meetings that happen throughout a process. Some firms think that one sustainability (or “LEED charrette”) is the same as an entire integrative design process.
- ! **Beware of** teams that are architect-dominated, where other disciplines (like mechanical engineering) are held off and can only provide input after major decisions have been made. This will drive up costs and compromise performance.

- **Bonus:** depending on the type of project, many architecture firms have started to do some of the very early energy analysis in-house with COVE.tool or similar software. This is not a necessity, but it is another indication of commitment.

WHAT ARE THE MOST IMPORTANT QUESTIONS YOU ASK CLIENTS TO INFORM DESIGN SOLUTIONS?

- ▶ **Look for** answers that elicit the client’s core values, philosophies (e.g., as a business or housing provider), future plans and strategies, and the larger context influencing the business or organization.
- ▶ **Look for** answers that seek creation of shared understanding of the client’s risk profile – given hazards such as storms, flooding, and power interruptions. Does the team desire to know what vulnerabilities exist, how to prioritize them, what level of resilience is required (e.g., uninterrupted operations, a day or a week of interruption, or other) and related information? Answers to these questions establish a foundation for financial investment in the building structure, enclosure, and equipment decisions that will come up later in the process.
- ! **Beware of** teams whose questions start too narrowly focused on a rating system, specific strategies, or renewable energy technologies.
- ! **Beware of** teams that do not ask about expected occupancy patterns or the owner’s capacity to manage or operate the property after it is built.
- ! **Beware of** teams that do not invite facilities personnel early in the design process.
- **Bonus:** It’s helpful when teams ask the client about their past experiences – what worked, what didn’t, what they appreciate about their current facilities, what causes them problems. This gives the team insights into what the client cares about and struggles with.

HOW DO YOU PRIORITIZE GOALS AND HELP YOUR CLIENTS MANAGE COST AND VALUE?

- ▶ **Look for** answers about goal setting that start by referencing benchmarks, especially the [AIA 2030’s DDx database](#), which has the best-in-class performing projects. Keep your ears open for the use of terms pEUI and EUI, which indicate a fluency in low-energy design.
- **Bonus:** The best answers will be that they start “[at zero](#)” and then use the benchmark target as the worst-case scenario!
- ▶ **Look for** approaches that look at life cycle costing (not just first cost, but the costs of maintenance, operation, and replacement over the building’s useful life). This is critical to manage costs and value.
- ! **Beware of** answers about cost estimation that are line-item approaches and don’t factor in specifics or life cycle costs (e.g., using a generic square foot number for mechanical systems without knowing what kind of system is intended).
- ▶ **Look for** approaches that compare systems or “packages” as options instead of line items.
- ▶ **Look for** answers that emphasize the importance of collaboration in managing cost. Typical cost

saving measures depend on trade-offs between disciplines such as the building envelope (structure and architecture), the HVAC system (MEP engineer), lighting (architect, interior designer, lighting designer, MEP engineer). and building controls vendor. Changing one of those components will affect all the others (e.g., insulated walls and glass eliminate the need for a perimeter heating system).

- ! **Beware of** architects whose track record between design and cost estimation cycles has consistently resulted in major redesigns. This could be an indication of poor collaboration or poor understanding of costs.

WHAT ROLE DOES A RATING SYSTEM PLAY IN YOUR APPROACH TO DESIGN?

- ▶ **Look for** firms that understand that the value of using rating systems is actually quality control – they know that projects that use rating systems only as a guide, without actual certification, don't actually achieve the intended goals!
- ▶ **Look for** answers that show the use of rating systems as supporting tools and not the main event. Meetings to focus on LEED and documentation are fine and necessary, but the rating system is not the defining aspect of how to design an entire project.
- ▶ **Look for** a good project management approach where the tracking of credits and activities for the rating system certification is managed similarly to any other obligation the project has (e.g., permitting requirements). There is a clear process and responsibilities are assigned to proper team members.
- ! **Beware of** answers that rely on rating systems like LEED to set goals, especially in a kickoff meeting or charrette. Rating systems are intended to measure how well you've done, not drive design decisions. Essentially, the real answer should be that rating systems don't play a role in design at all -- just in assessing how well the design achieved the sustainability goals!
- ! **Beware of** the use of sustainability "charrettes" (big team meetings). Firms that artificially separate sustainability from the rest of design indicate a lack of understanding, which can result in higher costs.
- ! **Beware of** a "one-hit-wonder" charrette. Firms that do one big charrette and then no others don't understand the purpose of a big team meeting or how to design a collaborative process.
- ! **Beware of** firms that claim they can deliver the same level of performance without a rating system. If the owner is rigorous, and very clear on what to expect and demand from the process and holds the team accountable, this is possible. Otherwise, it has been proven that the team will not actually achieve the same result.

IF YOU HAVE COMPLETED A HIGH PERFORMANCE (PASSIVE HOUSE, NET ZERO, OR LIVING BUILDING CHALLENGE) PROJECT IN THE PAST, WHAT WERE YOUR BIGGEST CHALLENGES AND HOW DID YOU OVERCOME THEM?

- ▶ **Look for** specific examples. These could range from learning how to better collaborate or leverage analysis to inform decisions in a way they was not used before, or it could refer to a lot of testing and refining (e.g., using physical models or mockups). Beware of firms that have no answer for this. Everyone has learned hard lessons!
- ! **Beware of** team members who say the biggest challenge was another team member (e.g., architect,

engineer). This may have been a real challenge, but there should have been other ways of dealing with that reality, without letting it compromise the outcome of the project.

- ! **Beware of** teams that talk about the continued difficulty and expense of dealing with embodied carbon related to material selection. This could point to a lack of organization internally or knowledge and use of existing resources. The team should describe the progress they made with an existing challenge.

WHAT DRIVES SUCCESS ON HIGH PERFORMANCE, NET ZERO PROJECTS?

- ▶ **Look for** responses that talk about the quality of collaboration and how effectively all the different disciplines worked together to conduct analysis and make decisions.
- ▶ **Look for** teams that talk about building systems optimization (which can only be achieved through collaboration).
- **Bonus:** Although the owner controls this and the design teams do not, extra credit goes to those who can speak to the importance of investing more time and resources up front, early in the design process, where time spent has much more value and impact on the project outcomes and performance.
- ▶ **Look for** teams that know that passive design is the first and most important “free” strategy!
- ▶ **Look for** teams that understand the importance of analysis like energy modeling, when and how to use it and how it should inform design decisions.
- ▶ **Look for** teams that talk about the importance of understanding occupancy and how the building will be used and operated, and ask for the involvement of facility managers in the process.
- ▶ **Look for** teams that have done post-occupancy evaluations (POE) of their built work, whether or not they were paid for that service. (Very committed firms do “guerrilla POE” when they are not hired to do it because they are serious about understanding how their product is performing.)
- ! **Beware of** teams that focus on spending more money as the primary solution to achieving higher performance, or claim that it’s the only way to be successful.
- ! **Beware of** teams that rely on the purchase of [Renewable Energy Certificates](#) (RECs) as the primary way to achieve Net Zero energy.
- ! **Beware of** teams that advise against advanced [commissioning](#) and/or [building envelope commissioning](#). These are your opportunities to ensure that the building and equipment are performing as intended in design.

FOR THIS BUILDING TYPE, WHAT STRATEGIES HAVE BEEN THE MOST EFFECTIVE TO ACHIEVE THE BEST PERFORMANCE? GIVE EXAMPLES OF SOME LESSONS LEARNED.

- ! **Beware of** architects who defer completely to their green building consultant, engineers, or other consultants to answer this question.
- ▶ **Look for** very concrete examples that draw on their past project experience. Experienced professionals should be able to tell you something along the lines of, “Over the last 8 projects like this

one that we've designed, we've learned that these 3 strategies have consistently been effective but strategy X never worked the way we thought, strategy Y was more expensive than it was worth and strategy Z kept failing.”

- ▶ **Look for** specific correlations for lessons learned – these can be limited to the design phase, such as taking an idea from analysis through iterations to the final design strategy. Or, they can extend beyond design, from the initial idea, to the analysis that was done to explore that idea, to construction, and then post occupancy, with measurement of performance to track the predicted performance to the actual.
- **Bonus:** Super-achieving firms, signatories to the AIA 2030 Commitment, may share how they correlate their portfolio performance to specific consultants and strategies. These firms take the time to analyze data to see patterns and learn from them.

BASED ON YOUR EXPERIENCE, WHAT HIGH-PERFORMANCE DESIGN STRATEGIES WOULD YOU DEFINITELY IMPLEMENT ON THIS PROJECT THAT WOULD BE COST NEUTRAL OR COST SAVING?

- ▶ **Look for** the number one answer – passive design! “Free” energy, proper siting, building orientation, smart massing – all of those decisions are free and can impact the building’s energy consumption significantly.
- ▶ **Look for** the number two answer, also known as “first fuel,” a focus on energy efficiency including heat and energy recovery. It results from making smart decisions, for example, doing energy simulations to inform decisions and then prioritizing highly efficient material and equipment choices. High-efficiency equipment may have a higher first cost, but a better life cycle cost and may qualify for utility incentives.
- ▶ **Look for** answers that talk about optimizing the integration of systems – like optimizing daylighting to reduce the need for electric lights or a well-insulated building envelope to reduce the demand on HVAC equipment – or to eliminate perimeter heating completely.
- ▶ **Look for** a focus on the building enclosure (especially Passive House compliant envelope). Generally, this is a good answer in MA. There are exceptions for cases where buildings are very large, with very intense internal operations such that the enclosure is minor (e.g., a huge, square-shaped biopharma manufacturing plant).
- ! **Beware of** any team that starts out saying that all sustainability strategies cost more. This means they don’t understand the basics of good design.
- ! **Beware of** any team with many buildings clad in all-glass curtain walls, that brag about their glass buildings or defend glass-enclosed buildings as “efficient.”

HOW DO YOU PROTECT THE HEALTH OF FUTURE BUILDING OCCUPANTS THROUGH DESIGN?

- ▶ **Look for** answers that talk about air quality within the building. This includes the location of fresh air intake vents, the type of filtration used, equipment choices, and materials used in the building that can impact air quality.
- ▶ **Look for** teams that talk about building systems optimization (which can only be achieved through collaboration).
- **Bonus:** goes to any team that tells you that [displacement ventilation](#) (DV) strategies (where possible) are the healthiest approach to ventilation in general.
- ▶ **Look for** teams that understand that many materials in typical building products can off-gas and contribute to unhealthy indoor air and know what to look for and what to specify to keep occupants healthy.
- **Bonus:** If social justice is a priority for the team, be aware that some products may not be harmful to occupants in the building but do harm residents in the “fence line” communities in which they are manufactured.
- ▶ **Look for** teams that have experience with the [WELL building standard](#), a rating system created specifically to focus on indoor environmental quality.
- **Bonus:** goes to teams that have experience conducting [Post Occupancy Evaluations](#) that assess occupant health, among other things.

Displacement Ventilation (DV) creates a single direction of air, where fresh air pushes out stale air. In typical systems, where air intake and return are both located in the ceiling, there is a continuous mix of old and fresh air.

DV can be achieved through different approaches. Some are integrated into the actual building structure: walls, floors, and/or ceilings. Others use raised floor systems. This approach is most difficult when renovating an existing building.

WHAT ROLE DOES INNOVATION OR RESEARCH & DEVELOPMENT (R+D) PLAY IN YOUR PRACTICE?

- ▶ **Look for** firms that build R+D into their project work or have dedicated groups in the practice that focus on R+D in parallel to project work. Make sure they give examples of the kinds of things they've learned and how they've applied what they've learned to their work.
- ! **Beware of** any team that minimizes the importance of ongoing research and thinks that is the realm of academia. Ask those firms how they stay current on state-of-the-art best practices if they don't do applied research that is integrated with their work. (Going to conferences is not the same thing.)

PLEASE GIVE EXAMPLES OF HOW YOU HAVE INCORPORATED OPERATIONAL ISSUES INTO THE DESIGN PROCESS, TO INFORM DECISIONS.

- ▶ **Look for** responses that talk about how the firm involves facilities staff in the design process, including creating operational budgets and plans (or helping to).
- ▶ **Look for** mention of life cycle cost analysis, which indicates attention to maintenance cost and resource needs.
- ▶ **Look for** concrete examples of understanding the capacity and capability of facility managers – and how those understandings influenced specific design decisions (of equipment, control systems, location and access of things like lighting, etc.).
- ! **Beware of** answers that indicate a lack of understanding of systems being beyond the ability of staff to manage and maintain them.
- **Bonus:** Ideally, they can also give examples of how they have gone back to a project after turnover to learn about how the occupancy and operation of the building might have been different from expected, and what they learned from that for the future.

WHAT IS YOUR TEAM'S QUALITY ASSURANCE/QUALITY CONTROL PROTOCOL FOR THIS PROJECT?

- ▶ **Look for** answers that indicate that they actually have a rigorous quality control process at all time and that it will be applied for this project.
- ▶ **Look for** answers that include specific names or roles and specific timing and phases associated with check ins, including examples of what content they check for.
- ! **Beware of** anything vague or dismissive, like, "We have a standard quality control process that we use all the time."

WHAT DO YOU DO TO MINIMIZE CHANGE ORDERS?

Change orders can happen for many reasons. They can be caused by unforeseen conditions, owners changing their mind, or other factors. Some changes are caused by the design team, the result of poor collaboration, coordination, or lack of detail in the design documentation or specifications. The average volume of change orders across their portfolio (of similar projects) is a good indicator of the rigor of their process in general. It will likely be an indication of the rigor and care the firm will also apply to sustainability and performance.

- ▶ **Look for** any evidence of how they create clarity and a shared understanding of project expectations, deliverables, and coordination requirements among team members. Such evidence may include early creation of a project roadmap, the frequency of coordination meetings, and communications protocols, among other things.
- ▶ **Look for** examples of drawing samples from construction documents to see the level of clarity, specificity, and coordination. Or ask general contractors or construction managers the architect worked with previously about their impression of completeness. The firm's quality control process, if it is truly embedded in their operations, should be one way it controls change orders.
- ! **Beware of** architects who try to keep consultants out of the project until later (usually to manage the budget). This will delay important input, which can create a ripple effect of changes that pop up later.

Consider an Alternative Strategy to Traditional Interview Approach: A Design Simulation Session

This alternative interviewing process is like “speed dating.” The intention is to move away from the feeling of a performance, where the client is the audience, to more of a relationship and a joint experience that mimics a working relationship so the client gets a sense of what it would be like to actually work together. This new process simulates design integration, takes less time, uses fewer resources, and gives the client a much more “real” insight into how it is to actually collaborate with these individuals. The typical “dog and pony” show for short-listed candidates has some downsides. For firms, it’s an expensive gamble; a serious investment of time and money to develop beautiful imagery (and sometimes physical models), and even more time to rehearse perfect answers to prepared questions, often hiring a coach. For the client, it is hours sitting through presentations that can all blur together after a while. Worse, the performance given by the teams doesn’t give the client any insight into what it would really be like to work with them, or what the collaboration dynamics among the team is really like.

The purpose of the Design Simulation Interview is to uncover what the capability of each of the key disciplines is, how people think, how they work together to synthesize their various viewpoints, and how compatible they are with your culture and approach. The outcomes can be surprising. The architect may be great, but the MEP engineer may not be collaborative or open to having analysis inform design. Or the MEP engineer may be stellar but is stifled by the architect, and is not allowed to provide input early in the design process. This is something you would never learn in a traditional interview.

HOW IT WORKS:

Instead of the traditional interview and marketing process, the short-listed candidates each commit to take part in a 90-minute to 2-hour session as a very abbreviated charrette. (The candidates already reviewed detailed project information when responding to the initial RFQ.)

Those taking part in this process include representatives of each discipline that will be critical to achieve Net Zero or low carbon goals. Typically, this is the architect and MEP engineer. Others will be included depending on the project type. For example, if there is an industrial kitchen, a kitchen expert might participate. A contractor or construction manager, a structural engineer, a landscape or civil engineer are others who may be invited to take part – the owner or project team can decide which disciplines are mission-critical for the project. Participants will have access to the project information prior to the interview.

This process has two parts and can be done in person or virtually.

PART 1 DIVERGENCE: WHAT HAPPENS?

Each discipline goes to a separate space (real or virtual) and has 45 to 60 minutes in isolation. They are told that they are Ruler of the Universe or Prime Designer during this time and they have their chance to articulate how they think the entire project should be approached, purely from their perspective. This can be in drawings, sketches, words, diagrams – in whatever way they feel most comfortable. Their output shows what they think is most important, what the drivers are (the design considerations that influence decisions), and the priorities.

PART 1 DIVERGENCE: WHAT DOES THIS DO?

This experience serves two purposes. First, it puts each discipline on an equal footing where each person's focus is as important as all others. This deters the typical paradigm where the team's prime, the architect, tends to be the dominant voice – even unintentionally. Other experts tend to speak up less or they do not challenge the architect, and that leads, too often, to unnecessary costs. Secondly, it shows the true capacity of each key member within the team, how they think, solve problems and communicate. Do they approach things by rules of thumb, or do they really explore, dive deeply, and respond to the client's and project's needs. The added bonus is that, for introverts who do their best processing in quiet solitude, this allows them to thrive.

PART 2 CONVERGENCE: WHAT HAPPENS?

The second phase is convergence or synthesis. The group comes together with the owner (all members of the owner team should be present) to reconcile all of the different approaches into a singular design approach. This is where rubber hits the road. The client can witness how the team collaborates to resolve the varying design approaches, priorities, and conflicts from each perspective into a synthesized whole and experience how it is to engage directly with the team and participate in this process.

PART 2 CONVERGENCE: WHAT DOES THIS DO?

This process is a lot less expensive and time consuming for the competing design firms, and it is a lot more fun for everyone involved! There is no comparison between the passive activity of watching presentations and the active engagement of participatory problem solving. This collaborative experience reveals the culture of the team, their ability to listen to each other (and to the client), and their problem-solving abilities and conflict management skills.

CONCLUSION:

Overall, the process provides a real sense of how it will feel to work with the team over the course of the project, which could be a year or longer. It enables you to ask a number of questions:

- Can they participate in a truly creative process?
- Do they listen to each other?
- How do they resolve internal conflict?
- Do they consider operational issues?
- Is anyone's ego dominating and will design suffer as a result?
- How do they work with the client? Do they listen to the client's goals and priorities, or do they get carried away with their own interests or design desires?

The overall goal of this approach is to free the individual disciplines and encourage creative thought, problem solving, and ownership of the project. Team members are not expected to be experts on all aspects of design, but the process should bring out the best from their perspective. Critical aspects and strategies are synergized together at the end, and the process shows how that synergy is achieved through interaction. For the candidate design teams, this approach reduces the amount of time and resources invested in a marketing show that provides limited value in terms of conveying capability and working relationships.

UP NEXT

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