

P3 DEFINED

FROM INDUSTRY LEADERS

BY ENERGY SERVICES MEDIA

Organizations in the public sector compete for limited funding, often making infrastructure upgrades and new facilities challenging to achieve. Without these resources, many organizations turn to high-interest loans or current budgets to deploy projects which modernize infrastructure and achieve greater efficiencies.

Public-Private Partnerships (P3 or PPP) help create budget certainty by providing sustainable results guaranteed to the project. The P3 model delivers quality, energy-efficient buildings. By working with a partner, the risk of design, construction, finance, operations and maintenance are transferred from the public sector to the private sector in exchange for guaranteed fixed monthly payment terms.

Historically the U.S. has utilized the P3 model to procure large-scale economic infrastructures such as toll roads, highways, bridges, and airports. It has only been within the last ten years that P3s have started to gain momentum as a financing method for social infrastructure; schools, universities, hospitals, community housings, prisons, etc.

There are several variations of P3s, offering a range of unique solutions to the end consumer. The P3 model can be applied to existing facilities, new construction, or both. The PPP Knowledge Lab describes the key pieces of a contract as:

A central characteristic of a PPP contract is that it bundles together multiple project phases or functions. Nonetheless, the functions for which the private party is responsible vary and depend on the type of asset and service involved. Typical functions include:

- Design—involves developing the project from initial

concept and output requirements to construction-ready design specifications.

- Build, or Rehabilitate—when PPPs are used for new infrastructure assets, they typically require the private party to construct the asset and install all equipment. Where PPPs involve existing assets, the private party may be responsible for rehabilitating or extending the asset.
- Finance—when a PPP includes building or rehabilitating the asset, the private party is typically also required to finance all or part of the necessary capital expenditure.
- Maintain—PPPs assign responsibility to the private party for maintaining an infrastructure asset to a specified standard over the life of the contract. This is a fundamental feature of PPP contracts.
- Operate—the operating responsibilities of the private party to a PPP can vary widely, depending on the nature of the underlying asset and associated service. (PPP Knowledge Lab, 2020)

Examples given include technical operation of an asset and providing support services to the public party.

PPP Contract Types and Terminology. (n.d.). Retrieved from <https://pppknowledgelab.org/guide/sections/6-ppp-contract-types-and-terminology>.

Industry leaders Samara Barend, Founder and Chair of The Performance Based Building Coalition, Senior Vice President & North America Strategic Development Director for P3s at AECOM and John Fleming, Vice President & General Manager P3s at Johnson Controls share their knowledge of the market.



SAMARA BAREND
**FOUNDER, PERFORMANCE BASED
BUILDING COALITION (PBBC),
SENIOR VICE PRESIDENT & NORTH AMERICA
P3 DEVELOPMENT DIRECTOR, AECOM**

Barend is a champion on the issue, pushing Congress to make legislative changes and in educating Governors and Mayors on how to advance such a delivery approach. She has over a decade of experience focused solely on public-private partnerships, bringing perspectives from government and the private sector. She currently serves as Senior Vice President and North America Strategic Development Director for Public-Private Partnerships. In this role, she provides leadership in AECOM's P3 work across all business lines, including energy, water, transportation, and buildings and facilities.

ESM: *What is a public-private partnership?*

Barend: A public-private partnership is a mechanism that enables the private sector to invest in public infrastructure over the long-term in a performance-based manner. It is an approach that brings accountability to how we deliver public infrastructure. And it does so by incentivizing on-time delivery, budget certainty, and life cycle savings over the course of the assets.

ESM: *Have you seen changes recently with the P3 market in the U.S.?*

Barend: Yes, in the U.S., we have seen a tremendous increase in the number of social infrastructure projects that are moving forward. For buildings and facilities, more energy performance type contracts are on the horizon. More building owners are looking at how they can make their buildings more efficient, but also how they can build new buildings delivered on time and on budget. Looking at the energy performance of the overall building, owners view P3s as a way to meet sustainability goals more efficiently.

The P3 market in the U.S. started with transportation, whereas in Canada, it began with buildings. The buildings approach to public-private partnerships is now just taking off.

ESM: *What are challenges with a P3 model, and how are they overcome?*

Barend: The biggest challenge is simply educating the public sector and helping them understand how the actual structure works. It is much different than traditional delivery. It takes a lot more discipline upfront—in terms of developing a procurement process—and thinking through how you are allocating risks and laying out a project delivery process.

From that standpoint, it is changing the paradigm in how we deliver infrastructure in this country.

ESM: *What are common misconceptions about a P3?*

Barend: The most common misconception is that it is privately owned. The second biggest misconception is that you need to generate revenue - owners think it has to be like toll roads. And the third biggest misconception is that it costs more because the private sector funds it.

ESM: When a public institution is interested in pursuing a P3, what is one of the first steps they take?

Barend: The first step is to hire advisors if they do not have that talent in house. They need to make sure they get the right expertise on their side: financial, technical, and legal.

Then they need to do an assessment of whether or not the project is viable. They can perform a screening analysis, put together a business case as to why the project is viable, and determine whether the project is a good fit for a P3.

ESM: Are there projects that are not viable as a P3?

Barend: There are several buildings brought to the Performance Based Building Coalition, where we say, "They just are not viable for P3." This is due to their size—they are too small. For example, a \$20 million project: oftentimes, we have owners bring us a recreational building or a firehouse valued at \$20 million. That is not the appropriate size for a P3 for the amount of work and rigor. You need a complex project where the construction cost is big enough—more than \$100 million.

We suggest municipalities bundle smaller projects into one larger project. That way, they can get economies of scale, and it is much more efficient.

ESM: What is the Performance Based Building Coalition?

Barend: It is a nonprofit organization created in 2012 with the mission of catalyzing these private investments in public buildings. The organization is comprised of other associations, infrastructure funders, developers, contractors, engineering firms, architects, banks, and a diverse group of contractors. It includes all individuals and firms that would have a stake in the P3 industry, especially from a building standpoint.

We have been very focused on developing workshops at the state and municipal levels and helping cities and counties understand P3s. For example, we have gone to the city of Los Angeles and worked with them and hosted multiple workshops for them. We dove deep to help them understand how to move forward with the Los Angeles Civic Center Project. We offer our insights and expertise to any city or state that we can help. If we think they have a viable project, we will work with them, talk to them over the phone, and then we will bring in all of our resources and put together a pro-bono workshop for them.

We are also working at the federal level. We have developed legislation that would create \$5 billion of private activity bonds for buildings, schools, and courthouses. We currently have legislation pending.

For more information about the mission of the Performance Based Building Coalition, visit P3Buildings.org.



JOHN FLEMING
VICE PRESIDENT & GENERAL MANAGER
PERFORMANCE BASED INFRASTRUCTURE
(P3), JOHNSON CONTROLS

John Fleming has over 30 years of experience with Johnson Controls working in a variety of leadership positions throughout North America. Reporting directly to the Corporate Headquarters in Milwaukee, he currently leads P3 business within the Performance Infrastructure Group.

Through his leadership, Johnson Controls has been on thirty-eight winning consortium teams in the North American P3 marketplace.

In his role, Fleming provides the strategic leadership and leverages the value of Johnson Controls building solutions and technologies to meet the specific needs of a project.

Fleming has extensive background in construction, building systems technologies and Facility Operations. He is active in the promotion of alternate procurement strategies and continues to speak in public forums on building operations, energy management and the P3 for Existing Buildings' model.

ESM: How are P3 projects awarded?

Fleming: A project is won by looking at the total costs of construction, finance and operations. The winning team is typically chosen based on the net present value of these three costs. For example, we have won several projects even though our construction costs were high because we made certain decisions that brought the financial risk and operational costs down, landing a strong net present value as a result.

ESM: What typically happens at the end of the agreement term?

Fleming: When entering a P3, there's a certain level of uncertainty of what will happen at the end of the agreement, simply because the owner has options. Upon the conclusion of a contract, building management and operation goes back into the hands of the owner. There are a couple of different ways in which that transfer is done:

- **Hand-back Provision:** At the term of the contract, the private party completes an assessment of the equipment's useful life. The private party is responsible for 'handing-back' the assets in acceptable condition and, ultimately, financially responsible if the asset breaks before the assessed useful life.
- **Facility Condition Index (FCI) Requirement:** The buildings

FCI is measured by a third party or another designee; the building is then given a rating. If the FCI does not meet the pre-determined rating, the private party is then obligated to bring the building back to a specific FCI rating. See below for more information on FCI.

ESM: What role does technology play in a P3?

Fleming: While technology can be more expensive upfront, it's a vital component of a P3 model. Without it, the efficiencies and operations would suffer long term. P3s don't typically identify the technology that's required; however, there will be requirements for meeting specific building operation standards. For example, there may be an operational requirement that states rooms need to have audio and visual capabilities and be heated or cooled between 70°F and 73°F at all times.

Technology plays an incredibly significant part in Johnson Controls approach because if the rooms do not meet the operation standards, we will not get paid. We use technology for predictive diagnostics, which help us understand how efficiently the building is operating and where it needs to be corrected.

When asked how a P3 and traditional construction model compare, Fleming provided the following examples:

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Facility Condition Index (FCI) or Facility Condition Needs Index (FCNI) is a tool used to benchmark the relative condition and physical health of a facility or group of facilities. The FCI was created by Applied Management Engineering (AME) and was first published in 1991 by the National Association of College and University Business Officers (NACUBO). The measure is typically derived from a Facility Condition Assessment (FCA) conducted by a third-party. The FCI is the ratio of the cost of deficiencies to the current replacement value (NACUBO, 2016).

Typically the FCI scale is 0% - 100% (0.0 - 1.0). The higher the FCI index rating, the more capital requirements needed. Usually, the condition scale is as follows, but generalizations of whether a facility condition is 'good' or 'bad' are highly subjective.

FACILITY CONDITION INDEX (FCI)

"Good" Condition	0 - 5% (0.0 - 0.05)
"Fair" Condition	5 - 10% (0.05 - 0.10)
"Poor" Condition	10 - 30% (0.10 - 0.30)
"Critical" Condition	+30% (+0.30)

TRADITIONAL CONSTRUCTION VS. P3

RISK SCENARIO	TRADITIONAL CONSTRUCTION
<p>Unforeseen issues arise during the construction phase of the project. There are costs associated, and now the project is at risk of missing its completion date.</p>	<p>The contractor would default to the decision of the public party, impacting costs and completion timeline. There may be a set deadline in place, but there is no incentive to hit it.</p> <p>For example, at the peak of the project, the weekly construction costs hit \$1 million. When an issue arises, in a traditional model, the response is:</p> <p><i>“Everybody, tools down. We have got to decide. Is it going to be A or B? What are we going to do?”</i></p> <p>They do not want to proceed with ‘A,’ only to then be redirected to ‘B’ so they take two weeks to come back and decide. That’s a \$2 million loss.</p> <p>The construction contractor would likely get a change order to implement the required project modifications. In the meantime, the public party is paying for this, regardless of project delays, quality issues or performance.</p>
<p>Post-construction, during operation, the building becomes non-operational.</p>	<p>Any scheduled activity within the space would be canceled. The public party would follow a traditional procurement process—create a scope of work, bid out services and contract out the work—leading to a long process that impacts the budget and, ultimately, the community in which the building serves.</p>
<p>Post-construction, energy efficient equipment is not hitting the consumption measures that were originally discussed.</p>	<p>The public party would complete the process of hiring a contractor, engineer or rehire the original contractor to fix the problem. Depending on the age of the equipment, there is risk that the warranty no longer applies.</p>

**EXAMPLES PROVIDED BY JOHN FLEMING,
VICE PRESIDENT & GENERAL MANAGER P3S, JOHNSON CONTROLS**

PUBLIC-PRIVATE PARTNERSHIP

A P3 is a fixed-price construction contract. The private party understands what that impact is, building process procedures are in place to make sure things get escalated in hours, rather than days or weeks, to be resolved quickly.

A critical factor in the ability to hit deadlines is due to the private party's flexibility to make decisions quickly. Compared to the public party, there are fewer hoops to jump through. If something comes up that was unforeseen, the public party is able to adapt and make the best decision quickly.

A **Substantial Completion date** is a predetermined date that is agreed upon by both parties involved. This date signifies that the construction is sufficiently complete and the financing switches from construction-funding to long-term financings.

Up until the substantial completion date, the public party hasn't paid anything even though they technically own 95% of the entire asset. With the P3 model, the title does not change. Thus, the owner still owns the building without making any payments.

The private party is responsible for meeting the substantial completion date and any costs that arise from missing the date. If construction is completed on the substantial completion date, the client is obligated to pay the private party. However, it is conditional upon the building being available. If it is not available, the liquidated damages are incredibly high. The private party can't afford to miss a completion date, so schedules are set in a matter that puts them in a position to succeed. The project is completed ahead of schedule for that very reason.

In a P3, operational risk is managed through the **Availability Model**.

If the whole building or parts of the building are not available during its operation, the private party is financially responsible. Payment would be deducted from the private party until the building is up and running.

This is an incentive for the private party to be proactive about monitoring the operation of the building. Systems and technologies can be installed that help predict efficiencies, and if inefficiencies are on the horizon, they will be corrected before it impacts operation.

The private party's design team models the energy consumption measures and standards; therefore, the private party is obligated to maintain and meet those standards throughout the term of the contract.