

IEPC

Integrated Energy
Performance Contracting

Seven Pillars to Structure
Deepest Energy Savings
in Buildings



ecosystem



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The Advantages of Integrated Energy Performance Contracting

Integrated Energy Performance Contracting is defined as a contractual relation for full service deep energy retrofits based on aligned stakeholders' interests and continuous collaboration, addressing the whole building and providing performance guarantees that target lowest overall project costs and highest energy savings, resulting in significant greenhouse gas abatement.

Sharing risk and reward among business partners often leads to better performance and lower costs. The principle holds especially true when it comes to making buildings more energy efficient. That's why energy performance contracting is so often embraced for building retrofits.

Today, building owners have the opportunity to participate in the next evolution of this arrangement: Integrated Energy Performance Contracting (IEPC). This paper explains why building owners should consider IEPC, how it works, and what this type of partnership requires.

A host of barriers can get in the way of a retrofit project, such as high upfront costs, risk concerns, lack of financing or shortsighted investment logic. The main barrier, however, is the absence of a continuous and collaborative contractual relationship between building owners and industry professionals.

IEPC resolves this problem by coupling a risk/reward model with continuous collaboration. Over time, the same team of experts mines the building's systems and uses their growing understanding of its unique workings to uncover deeper savings, enhance the building's green value, and make it more comfortable for occupants. In an era when cities are increasingly benchmarking building energy performance, IEPC offers a way to achieve energy and environmental metrics that may be otherwise out of reach.

How does the arrangement work? What makes it different from conventional performance contracting or pay-for-work arrangements? This leading-edge approach is based on seven pillars that together create a unique model.

Seven Pillars of IEPC

01

Synergy then Evolution

02

Insight into the Whole

03

Highest Value, Lowest Cost

04

Collaborating for Success

05

Well Begun Is Half Done

06

Lean and Agile Management

07

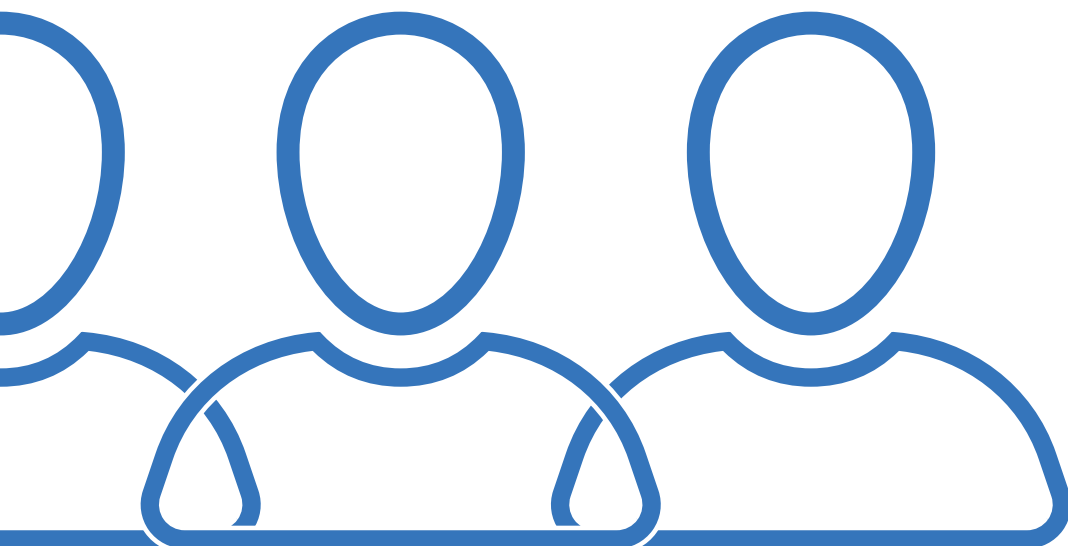
Innovation

1. Synergy then Evolution

A single company works on all phases of the retrofit: feasibility study, design, financing, construction, post construction, optimization, measurement and verification. This creates a team synergy that allows each phase of the project to seamlessly integrate into the next. Technical expertise is transferred without disruption. There is no confusion, lost information, or redoing of work with different contractors exiting and entering.

The building improves through an evolutionary conversation among a united, multidisciplinary team of energy efficiency experts, engineers, construction managers, financiers, incentive/subsidy specialists, communications personnel, technical instructors, optimization specialists, and building owners and operators.

Accountability rests with a single company. As a result, time, material and intellectual capital are used to their fullest.

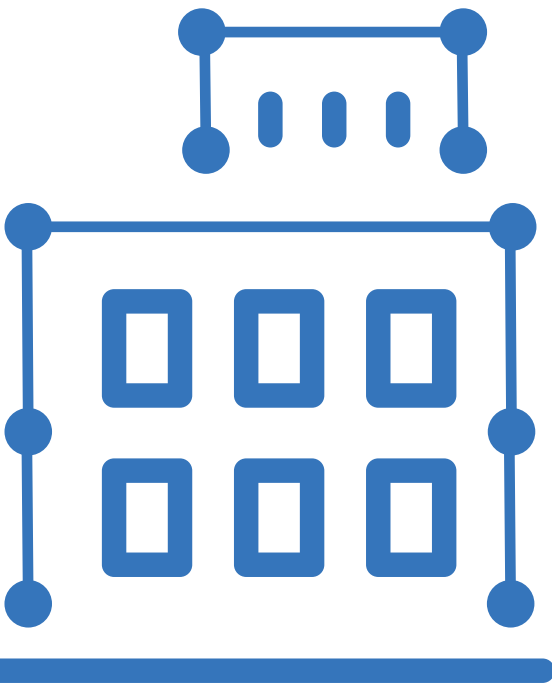


2. Insight into the Whole

Conventional retrofit projects too often proceed as though one building system has no influence over another – contractors work in their own narrow sphere. For example, a solar company advocates for photovoltaics, a lighting company for controls that save energy. But who makes clear that the level of investment in one will directly affect the level of investment needed in the other?

IEPC avoids such compartmentalization and waste by taking a whole building approach. The team begins by analyzing the building's energy profile. The findings help ensure that all improvements work together for maximum efficiency and cost-effectiveness. The project proceeds in a logical sequence, based on the interrelationship of systems, the age and performance of existing equipment, and the range of subsidies and incentives available.

By taking into account the building as a whole, industry professionals can customize the retrofit and account for any unique challenges. This fine-tunes the overall performance in a way that just replacing individual equipment cannot.



3. Highest Value, Lowest Cost

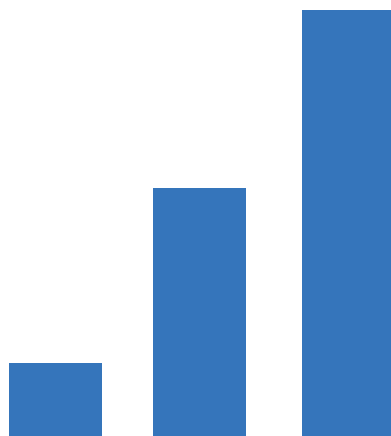
Building owners can expect IEPC to generate significant value for them; value that is economic, social, and environmental.

Many systems are available for valuing projects from a financial perspective. One of the most effective methods employs net present value (NPV). This approach takes into account different quantitative parameters – including savings, construction costs, and subsidies – and translates them into an easily grasped single dollar value.

This single number represents the value in today's dollars of the future cash flows of a project, and takes the entire project life cycle into consideration. A higher NPV signifies higher value for the client.

Of course, social and environmental benefits must also be taken into account when evaluating projects. Parameters to measure these are both qualitative and quantitative.

In short, it is important to consider all major parameters to ensure that the project achieves the highest overall value possible.



4. Collaborating for Success

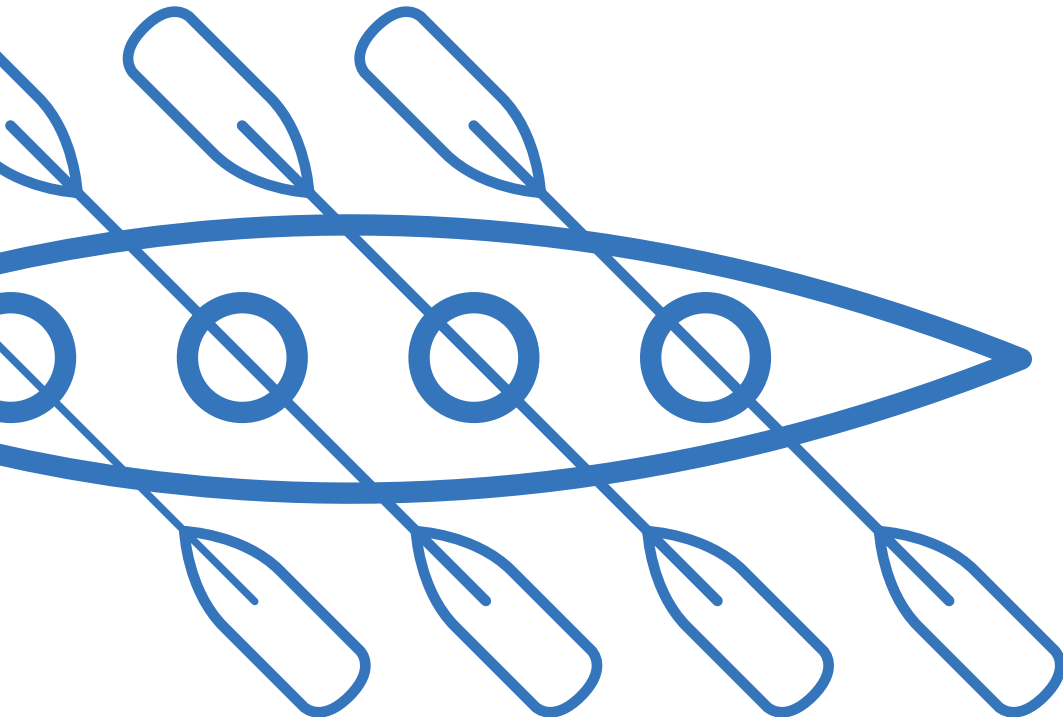
Because IEPC spreads risk and reward, it encourages parties to collaborate. Early in the process they agree to performance targets for the industry professional to achieve.

Both parties benefit when the targets are met – or even exceeded – because the owner and industry professional operate under aligned goals. Payment is based on performance, not a percentage of construction costs or an hourly fee.

The industry professional charges a flat fee for achieving the agreed upon targets, but must pay a penalty if the targets aren't reached. Conversely, if savings exceed targets, the industry professional and building owner can share the additional savings. Success of the team becomes success of the project.

Together, the stakeholders also establish guarantees that make the project more bankable.

This balance of risk and reward fosters a spirit of openness and mutual trust that leads to productive and creative effort.



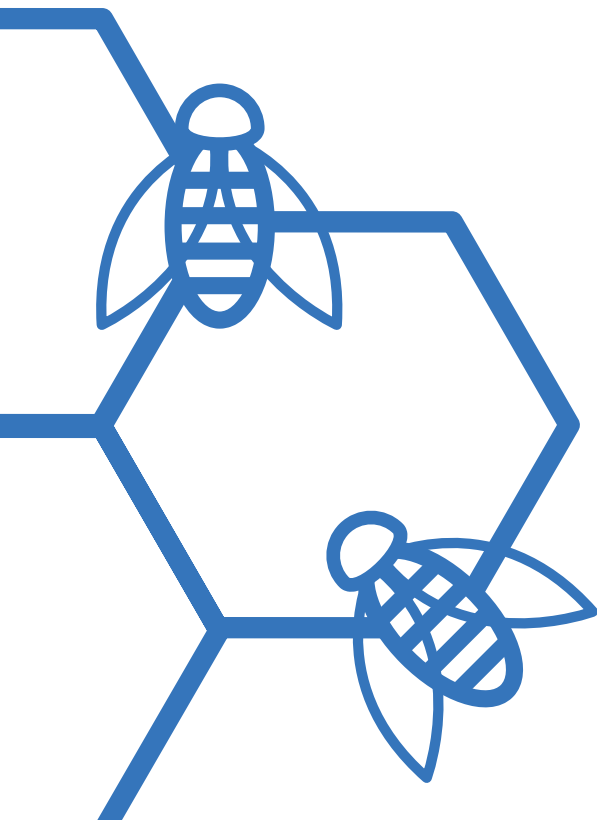
5. Well Begun is Half Done

The old adage well begun is half done proves particularly true when dealing with equipment that has a 25-30 year shelf life. Building systems are expensive. Getting a retrofit right, from the start, can save millions of dollars.

Consider this scenario: A building's annual energy costs are \$3 million. The retrofit design fails to identify maximum energy savings – say it uncovers 23% rather than the possible 35%. The result? The building owner ends up paying \$7.2 million more on energy than is necessary over 20 years.

Given the large amount of money at stake, IEPC puts strong emphasis on design and feasibility studies. Industry professionals work closely with building operators to gain a deep understanding of the building and to verify any available analysis and performance data.

Industry professionals that undertake conventional building retrofits tend to limit the design and feasibility phase to reduce costs. But IEPC does the opposite. By putting extra time into early discovery and planning, IEPC achieves more accurate estimates, and greater cost control and savings.

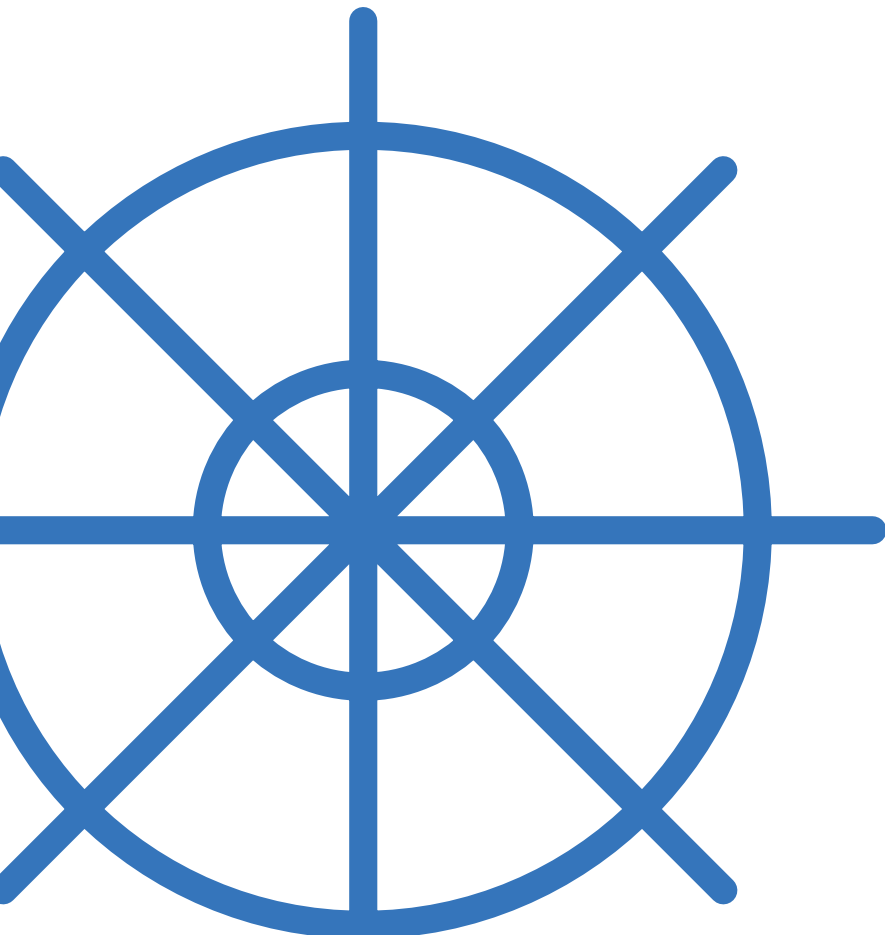


6. Lean and Agile Management

IEPC industry professionals use a results-based approach known as lean management. Rather than simply meeting calendar deadlines, lean management aims for constant improvements in overall efficiency.

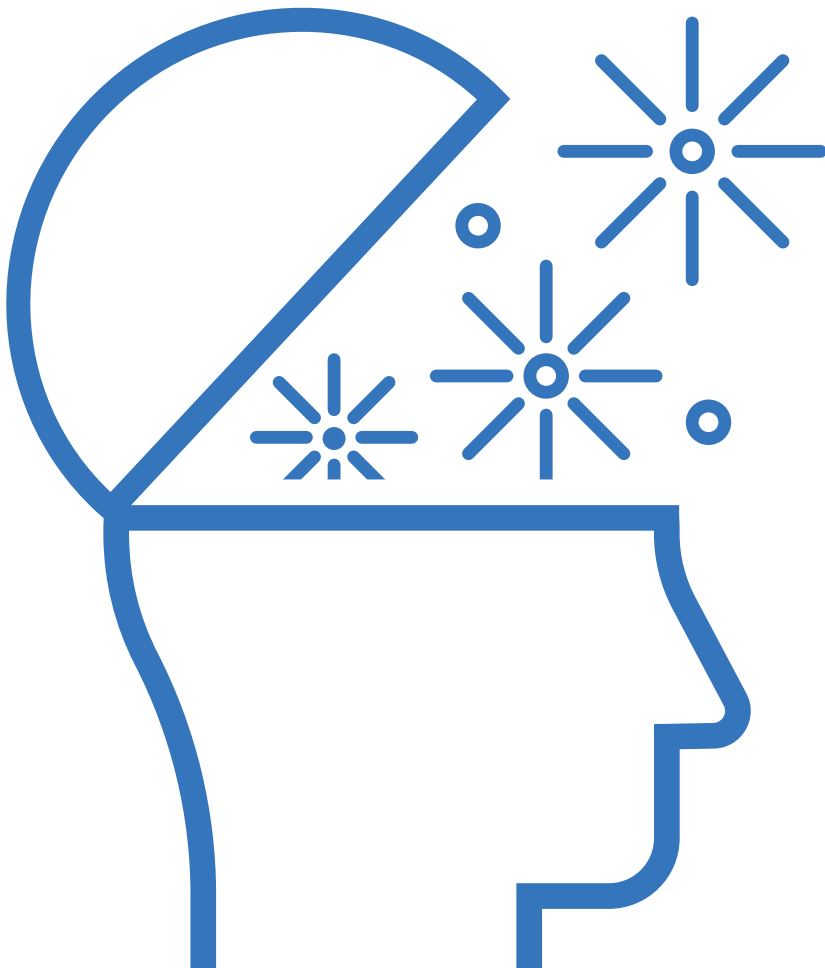
The team focuses on creating value and eliminating waste, rather than just cutting costs. In a building retrofit project, this might mean finding the most reliable, cost-effective technical solution, one that offers the highest return on the investment while generating significant energy savings, operational efficiency, comfort and other benefits.

The approach is also agile. Industry professionals tackle problems as they arise in the course of the project and make changes mid-course, if necessary, to deliver a project on time and within budget.



7. Innovation

The first six pillars of IEPC naturally lead to the seventh, innovation. Teamwork, insight into the whole, properly aligned incentives, collaboration, strong pre-planning and good management – together, these tenets encourage outside-the-box thinking. By its nature, IEPC spurs innovation that brings value. The IEPC approach is set up to accommodate new technologies, opportunities and continuous improvement.



How to Create IEPC Success

Successful IEPC projects spring from teams that are engaged, flexible and committed to put in the time and effort to achieve best results.

IEPC's remuneration model rewards excellence. In other words, by using IEPC, industry professionals are compensated based on highest value generated, so it is in their interest to innovate, maximize savings, and be as efficient as possible. This goes against the traditional model of pay-for-work costs.

As a result, IEPC requires a technical and cultural shift in market practices used by the construction and retrofitting industries. Most important, this approach entails a change in mindset, a willingness to take risks, a true commitment to results as well as the ability to seek innovative solutions to achieve better, greener, and economically sound buildings.

Who Will Benefit From IEPC?

A range of buildings can benefit from the synergies and collaboration of IEPC, among them commercial and industrial facilities, hospitals, schools and multifamily housing.

For commercial buildings, an IEPC retrofit will improve net operational income and resale value. Green capital investment leads to a financial payback.

Moreover, building owners show their willingness to be good community – indeed global – citizens by reducing greenhouse gases. North American cities are pursuing aggressive environmental goals and expect large building owners to help.

So what can a building owner ultimately expect from IEPC? In short, highest building performance, deepest energy savings, greatest occupant comfort, and an increase in asset value – all brought about at lowest cost thanks to an approach that aligns the interests of building owners and industry professionals.

For case studies or for more information, please contact iepc@ecosystem-energy.com. The complete white paper on IEPC is also available for download at <http://IEPC.info>.

