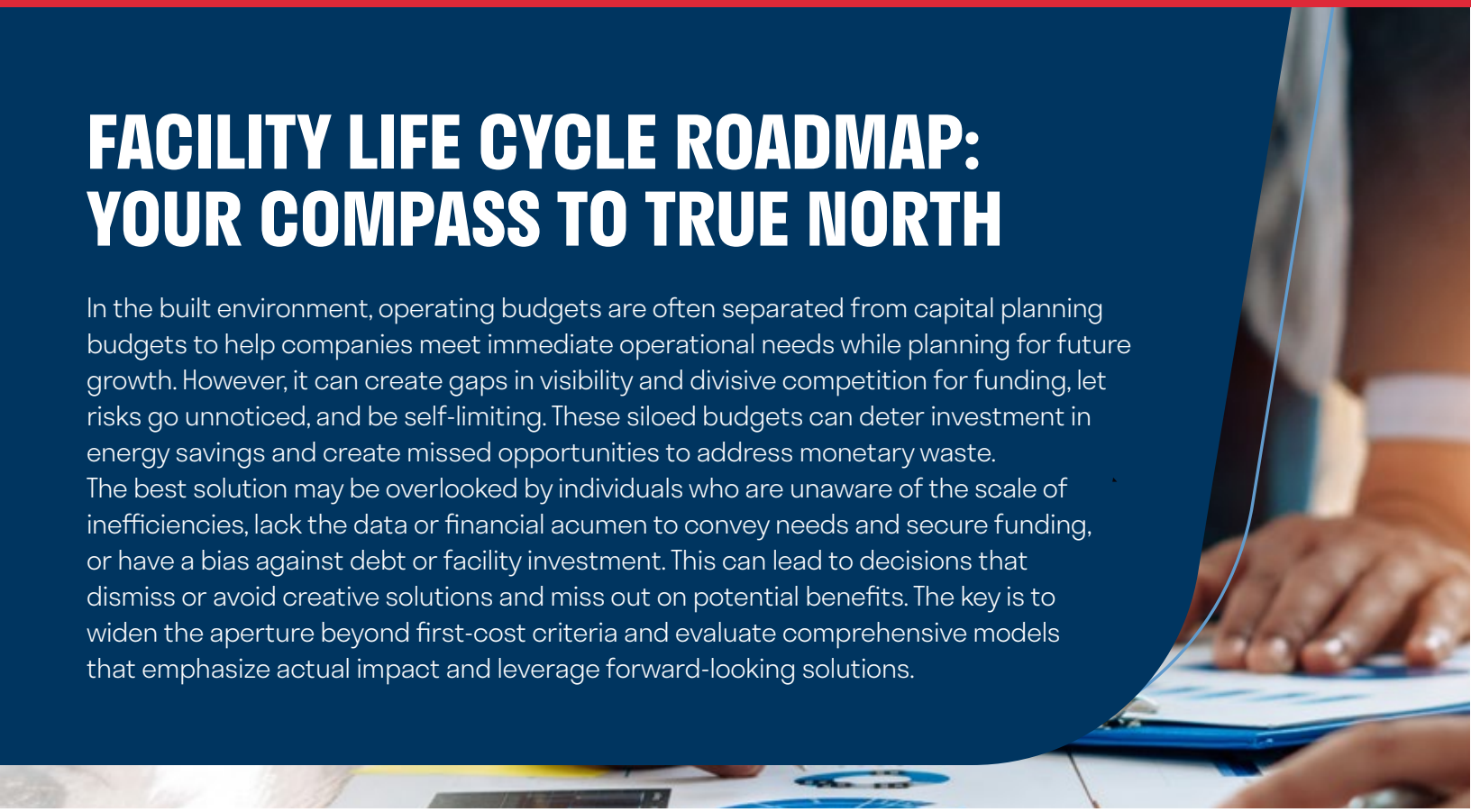
FACILITY LIFE CYCLE ROADMAP: YOUR COMPASS TO TRUE NORTH



In the built environment, operating budgets are often separated from capital planning budgets to help companies meet immediate operational needs while planning for future growth. However, it can create gaps in visibility and divisive competition for funding, let risks go unnoticed, and be self-limiting. These siloed budgets can deter investment in energy savings and create missed opportunities to address monetary waste.
The best solution may be overlooked by individuals who are unaware of the scale of inefficiencies, lack the data or financial acumen to convey needs and secure funding, or have a bias against debt or facility investment. This can lead to decisions that dismiss or avoid creative solutions and miss out on potential benefits. The key is to widen the aperture beyond first-cost criteria and evaluate comprehensive models that emphasize actual impact and leverage forward-looking solutions.

Imagine if organizations could catch a glimpse of where they could be in 5, 10, or 20 years if they leveraged creative and informed solutions and funding to minimize operating cost, risk, and capital needs. That crystal ball used to visualize optimum possibilities is called a Facility Life Cycle Roadmap. By combining expertise in facility infrastructure, energy and operational efficiency, and financial modeling, organizations can use big picture thinking to ensure capital planning and operating budget decisions made at every fork in the road lead to their True North.

INTRODUCTION

The current economic landscape is making retrofit projects very appealing. The U.S. is in the middle of a generational investment in the advancement of energy efficiency and carbon reduction through various federal programs to both secure priority financing and offset a substantial portion of initial costs through grants and tax incentives. Funding in the hundreds of billions is available to facilitate equipment upgrades and modernization projects. Utilities are aggressively supporting energy and emission reduction with billions of annual funding made available by rebate programs. And equipment manufacturers have also made great strides to expand their portfolio of energy-efficient products.

With so many funding mechanisms and technological advances available, now is the perfect time to strike while the iron is hot and build a creative and predictive investment plan to inform budget planning and utilization of year-end funds. Start by assembling a cross-functional team with expertise in operations, engineering, finance, sustainability, and others with diverse industry insights to build and activate your roadmap. A collaborative approach will accelerate your process and minimize the risk of leaving money on the table while addressing priority items that could cause hazards, downtime, unplanned spending, and wasted energy.

In this paper, we offer our thoughts on what steps could be taken to:

- Engage a consultative solutions partner to accelerate planning and roadmap results.
- Document and assess facility assets for risk and prioritization of capital expenditures.
- Generate and execute creative solutions to reduce operating costs and maximize payback.

DIFFERENT ROUTES TO THE SAME GOAL

The process of creating a roadmap with prioritized projects and mature financial models can be a daunting task. There are numerous areas where a partner can bring industry knowledge of advanced technology solutions, regulatory and compliance, and funding and incentives. Goals of building a roadmap should include:

- **Baseline Evaluation:** Document the as-is state of equipment, operations, and costs.
- **Risk Identification:** Identify end-of-life assets, mission critical deficiencies, and hazards.
- **Funding Needs Timeline:** Highlight future investment needs to flag potential funding shortages.
- **Savings Opportunity List:** Development of scope that reduces energy, water, and operational cost.
- **Funding Options:** Multi-year cash flow models that incorporate the evaluation of incentives, grants, loans, tax incentives, rebates, and deal structures such as Power Purchase Agreements (PPA).

The foundation requires total visibility to all assets and operating costs, understanding of space and business requirements, and has a plan in place to ensure business continuity, cost control, and compliance. It must be comprehensive enough to identify all risks and needs, and objective in its evaluation of all creative options to maximize efficiency and financial benefits.

High-level tasks to establish a roadmap may include items such as:

- **Total Cost of Operations Review:** Analyze maintenance & repair records, utility costs, and other budget items such as vendor contracts.
- **Facility Condition Assessment:** Investigate and document the age, condition, and replacement cost of all assets to identify remaining life and operational deficiencies.
- **Asset Operation and Energy Audit:** Inspect all equipment, control systems, and trend data to identify inefficient operational sequences, set points, overrides, and other areas of concern.
- **Predictive Analysis:** Develop a risk matrix to determine what assets present the highest safety and failure risks and what assets represent the largest potential for savings.
- **Capital Needs Timeline:** Use remaining life knowledge to model a timeline of capital expenditure and identify potential capital budget shortages.
- **Financial Benefit and Funding Review:** Examine funding options to address capital needs and capture potential savings, tax incentives, and rebates to inform multi-year cash flow models.
- **Priority Scenario Comparison:** Weigh the cost/benefit of various combinations of bundled and individual capital project scope items to develop short and long-term roadmap actions.

Developing an effective roadmap takes time, but great strides can be made to lay its foundation by engaging a partner with expansive experience in all aspects of facility systems and financial solutions to conduct a high-level Preliminary Assessment (PA). Unleashing the power of a creative and qualified advisory service partner can yield innovative technical and financial solutions to transform the business in ways a piecemeal approach may never accomplish. Allowing them to demonstrate expertise through a PA (instead of handcuffing them to build proposals on known priority projects) is a pivotal first step to move beyond transactional buying that can limit creativity and value. After all, adopting a collaborative and innovative mindset for facility life cycle planning should be at the core of a roadmap intended to govern strategic and sustainable business practices. Therefore, the process laid out below depicts the blueprint a partner may follow to effectively guide an organization through their journey to establish and activate a roadmap.

INITIAL ENGAGEMENT / CONCEPT CALL

Organizations should meet with a partner to understand the potential benefits of a partnership and ensure alignment. Discussion topics that will help facilitate constructive collaboration include:

- **Industry / Market Drivers:** Discuss the current landscape of the market and geography, external factors impacting business and operations, and legislation and incentive programs.
- **Business Objectives:** Discuss the company's mission and initiatives, how the business is changing, and how facilities and assets impact results.
- **Operational Challenges:** Discuss perceived risks and opportunities such as aging equipment, rising energy and maintenance costs, lack of energy expertise, and the ability to fund projects or meet safety and compliance requirements.
- **Partner Capabilities:** Discuss viable solutions for each challenge, looking for creativity and potential to create game-changing opportunities.

- **Partner Experience:** The solution partner should illustrate the power and expertise of their network and highlight examples of how they addressed similar challenges elsewhere.
- **•Define the Process:** Discuss what a typical process flow looks like, what the decision-making process looks like, timing, key players, and any entity-specific terminology.
- **•Determine next Steps:** Discuss any priority items to target, and the feasibility of developing a comprehensive baseline of energy, assets, and roadmap for life cycle planning.

Assuming all signs point to high potential for a solid partnership, the organization may choose to move forward with a high-level PA as a first step, allowing the partner to review data on operating expenses and conduct a site walk through to analyze and present initial findings that could quickly lead to more in-depth review of identified opportunities and risks as shown below.

PRELIMINARY ASSESSMENT

A Preliminary Assessment (PA) is a simple and streamlined review that aligns with an ASHRAE Level 1 Energy Audit and demonstrates the ability to quickly assess data and facilities and provide recommendations. The service partner may choose to issue a Memorandum of Understanding (MOU) or similar document outlining:

- Information and Resources Required
- Activities to be Performed and Buildings/Systems to be Evaluated
- Deliverables, Timing, and Cost (if any)

The use of detailed PA questionnaires before and during site inspections helps to expedite the transfer of knowledge and drive productive staff interviews and streamline field activities. They should include details on categories such as:

- Facility Overview, Space Use, Requirements
- Historical Projects and Known or Suspected Deficiencies
- Energy and Water Management
- Asset, Vendor, and Budget Management
- Current and Short-Term Priorities
- Long-Term Needs and Goals
- Site Logistics, Personnel and System-Specific Details

Activities should produce evidence of opportunities to avoid risk, generate savings, or improve operation and/or environmental factors and primarily include a review of general building and system information, utility benchmarking, an abbreviated site walk through, and a report listing recommendations on potential scope, energy and operational savings, and incentives. Deliverables may include:

- **Executive Summary** with key observations and a prioritized list of recommendations.
  - Low- or no-cost improvement opportunities.
  - Priority items such as equipment at risk of failure.
  - Items to consider for further investigation.
  - High-level estimation of potential project scope price range, energy savings, potential rebates and incentives.
- **Utility Analysis** highlighting key takeaways on rates, benchmarking, and usage anomalies.
- **System-Specific** sections such as HVAC and Controls, Lighting, Water, Renewables, etc.
  - A summary of key discovery items and potential for improvement.
  - Supporting detail such as existing conditions, pictures, setpoints, efficiency rating, age, and condition.

The collaborative PA presentation could result in immediate decisions being made to move forward with low-cost energy conservation measures, modification to controls, and operational changes. In addition, a program strategy should begin to form by gaining consensus on what items identified for further investigation should be fully developed into capital upgrades and energy efficiency measures.

This would also be the time to determine how the solution partner will recover their costs moving forward, and if the activities should be expanded to evaluate and document additional assets to assist in overall roadmap content. The solution partner may then issue the solution development proposal for execution.

SOLUTION DEVELOPMENT

This is where an experienced partner with the talent to provide innovation in technical and financial components of a solution can turbocharge the roadmap and leapfrog past other options to reach True North. The core activities of any partner may include conducting site surveys to document, test, and data log assets and creating a project proposal.

However, the differentiation provided by a true consultative partner with a full suite of proficiencies will result in a capital needs timeline and creative solutions that maximize both efficiency and financial benefit. To get there, they lean on their expertise with proper equipment sizing, alternative system configurations and technology, and options to offset initial costs and lower life-cycle energy and operational costs. This process may be iterative, requiring multiple consultations to finalize scope selection.

In lieu of documenting the solution development process in the same manner as the PA where the exchange of data is critical to getting out of the blocks quickly, below we will highlight advanced methods a provider will deploy to generate next-level options to propel the roadmap discussion forward.

Evaluation of Financial Resources and Legislation

A best practice at the onset of solution development is to identify applicable laws, legislative trends, and available financial benefits such as Rebates, Incentives, Grants, Tax Credits, or Bonus Credits that may be available.

Evaluating all current and pending legislation and proactively anticipating future laws set out by Building Performance Standards and Federal, State, and Local laws may flag the need to develop for more comprehensive and future-proof scope to enable future compliance. Decisions should not be made that could hinder the organization's ability to meet current or future requirements for efficiency, emissions, electrification, etc. which are increasingly present across states and municipalities.

An initial review should identify potential items that could influence overall targets and development direction. For example, if the property qualifies for tax credit bonus multipliers due to its classification as a disadvantaged or energy community, solar photovoltaic and EV charging should be evaluated. It could also uncover program funding deadlines and other key factors to avoid missed opportunities to secure benefits.

Taking a proactive approach not only ensures a major offset of project first costs, but it also facilitates the inclusion of high-efficiency equipment and minimizes total cost of ownership over the life of the system.

Innovative Design

Arming themselves with knowledge of established or probable legislative mandates, utility rate structures, and a deep understanding of asset condition and operation is a critical first step in the design process. It may direct them to target fuel switching or peak demand reduction and may even involve deploying energy procurement expertise to capitalize on favorable market conditions. If resilience risks exist that could impact business continuity, solutions such as solar photovoltaic systems, backup generation, and battery energy storage systems can be explored. If the building's envelope is allowing infiltration and substantial heat gain/loss, addressing it can result in downsizing HVAC equipment which reduces initial and ongoing costs. There are many techniques an advanced expert will utilize to optimize infrastructure design and ensure it is married with an exhaustive review of potential funding mechanisms.

Financial Modeling

In addition to the transactional project pricing, additional analysis and modeling provides more comprehensive and consultative solutions for consideration. This could include:

- Benefits such as energy and operational savings, rebates, grants, incentives, and non-financial benefits such as comfort, compliance, safety, etc.
- Long-term or life-cycle analysis that incorporates escalation of pricing, interest rates, utility rates, and labor rates.
- Cash flow models with details of financing, savings, and capital contribution or budget fund reallocation.

Having taken these steps, a provider can generate comprehensive bundled solutions or provide options for multi-phase approaches for visibility to long-term planning and potential for full program results.

THE IMPORTANCE OF STARTING NOW WITH THE RIGHT PARTNER

There are many macroeconomic factors impacting everyone in the built environment. In our previous white papers, we discuss this in more detail. Requirements for energy efficiency and sustainability are hitting organizations from all angles, be it government initiatives to drive inevitable mandates, investors and consumers looking for environmental responsibility, or tenants looking for affordable and modern spaces. On the flip side of that coin is the wide availability of funding options, ultra-efficient technology, and partners with integrated capabilities and know-how to accelerate facility and financial planning.

Organizations that are not currently seeing innovation and consultative guidance from their partners would be well-advised to evaluate their strategy. They may determine the procedural direction provided here has identified gaps in their ability to optimize solutions through heightened partner expectations.

At Crete United, we believe now is the time to elevate thinking in the built environment to improve the communities we work, live, and play in. We welcome the opportunity to speak with you further about your business goals to explore the possibility of proving our ability to help you define and reach True North as you create your Facilities Management Roadmap.

LET'S WORK TOGETHER

Whether you have talent and experience in the commercial / industrial MEP space, want to join our network or need our services, contact us today.

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CONSISTENCY, LASER FOCUS AND DIRECT ACCOUNTABILITY

Crete United is an energy efficiency powerhouse with in-house mechanical, electrical, plumbing, and building automation capabilities. We are focused and committed to improving the built environment.

Crete United is a unified network of local mechanical, electrical and plumbing (MEP) and Building Automation companies spanning the U.S. You can work with just one of our partners or we can bring multiple services together so that you can experience a fully integrated, energy efficient solution for every aspect of your building's health.

Across the nation, our self-performing teams create energy efficient solutions that advance your sustainability goals while improving your bottom line.

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ELEVATING ENERGY EFFICIENCY