Energy Management in the Ontario Mid-Tier Commercial Real Estate Sector

Market Characterization and Engagement Strategy

Prepared for the IESO

Final Report

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ACRONYMS

BAS	Building automation system
CRE	Commercial real estate
ECM	Energy conservation measure
EE	Energy efficiency
GAAP	Generally accepted accounting principles
HVAC	Heating, ventilation and air conditioning
IESO	Independent Electricity System Operator
IFRS	International Financial Reporting Standards
IRR	Internal rate of return
RBA	Rentable building area
MURB	Multiple unit residential building
NOI	Net operating income
NPV	Net present value
O&M	Operations and maintenance
PM	Property manager
RBA	Rentable building area
ROI	Return on investment
RTU	Remote thermal units
SIR	Saving to investment ratio
SME	Small and medium enterprise
SOE	Save On Energy

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Executive Summary

This report presents a characterization of organizations that manage mid-tier commercial real estate (CRE) buildings and a strategy to engage them in the energy transition. The report is based on a survey conducted among 77 building owners and property managers, supplemented by site visits at eight mid- tier buildings.

How is energy metered and paid for in the mid-tier CRE sector?

Two-thirds of surveyed buildings have a net rent arrangement, in which operating costs including utilities are paid separately from the rent. One third of surveyed buildings have a gross rent configuration, meaning that the rent amount includes operating costs.

Many respondents demonstrated a poor understanding of metering and lease mechanisms to monetize the value of investments in energy efficiency. There is a need for education and capacity building in this market, about how building owners can create value from energy efficiency.

What energy efficiency measures are most commonly implemented in mid-tier buildings?

Based on survey responses, energy efficiency is associated with retrofits and equipment replacement, rather than operational measures. Lighting retrofits were the most common measure implemented by survey respondents, followed by heating, ventilation, and air conditioning (HVAC) system retrofits. Half of buildings had energy audits within the past five years, the recommendations from which focused mainly on lighting. Operational measures, behavioral changes and recommissioning were rare among respondents. Approximately one fifth of respondents indicated that they are not taking specific actions to manage energy.

To encourage energy management in mid-tier commercial real estate, there is a need for capacity building among respondents to identify energy end-uses, track and compile energy consumption data using tools such as the Energy Star Portfolio Manager.

What are the key drivers of energy efficiency investment in mid-tier commercial real estate?

The most-cited motivation among respondents to invest in energy efficiency among respondents was to reduce utility and operational costs. Improving sustainability was also important to survey respondents. Tenant satisfaction and attraction were less important drivers for energy efficiency projects. Although energy intensity and sustainability are a concern for most respondents; 60% had sustainability and energy intensity improvement targets.

What groups exert influence over building improvement decisions?

According to respondents, tenants are interested in utility costs and sustainability. Most respondents indicated that tenants assess utility costs when shopping for leasable space, and engage with the owner once the lease is signed to manage energy expenditures. However, most interviewees indicated that tenants generally have little influence on investment decisions. Decisions to implement energy efficiency were based on the return on investment, or on the opportunity to earn significant project incentives. Given the variety of rent structures, tenants and owners may not be aware of options that would benefit both groups. This also illustrates the impact that better energy disclosure programs could have on tenants and owners.

The site visits found that building operational staff engagement with energy performance was generally low. Even where energy performance was a priority at the ownership or organizational level, on-site staff at buildings that received site visits had many other responsibilities and priorities, as well as limited awareness and capacity to improve performance. The survey found that mid-tier property managers and building operators rely heavily on vendors to identify and develop energy efficiency opportunities. Industry associations, and BOMA in particular, were named by respondents as the most trusted source for information and tools to advance energy efficiency. This highlights the need for capacity building among channel partners and to deliver high- quality services to foster energy efficiency investments.

How aware are mid-tier CRE management companies regarding their buildings' energy performance and Save on Energy (SOE) programs?

Forty three percent of respondents indicated that they believed their buildings' energy performance was "above average", compared to 21% who indicated "below average". This suggests that many building owners and property managers are not aware of their buildings' actual performance or performance relative to others in their sector. There may be an opportunity to use competition to drive greater engagement from this sector, by presenting owners and property managers with a comparison of their buildings' performance with average and best practice performance levels for mid-tier buildings in Southern Ontario. Although less than half of respondents are aware of the Independent Electric System Operator (IESO), all of them knew about the SOE brand and the vast majority have applied to it. Regarding energy disclosure, 24% of respondents from buildings larger than 100,000 ft2 were not aware of the energy and water reporting and benchmarking regulation.

What are the most common barriers to the adoption of energy efficiency improvements?

Survey respondents indicated that access to financing was the most common challenge to implementing energy efficiency in their buildings, followed by finding a qualified contractor and identifying project opportunities. The survey and site visits also revealed that awareness of energy efficiency opportunities, and education regarding technologies and leasing mechanisms to create or share value from energy efficiency investments were generally low.

1 Context and Report Structure

The CRE market is composed of different ownership, operating structures and building classes, making it challenging to pinpoint the element or program that would foster energy efficiency improvements in this sector. Therefore, there is a need to better understand the various objectives and constraints of stakeholders involved in managing office buildings to eventually be able to design a feasible, acceptable and appropriate engagement strategy.

According to the 2016 Achievable Potential Study from the IESO, small and large office segments represent 10,788 GWh, or approximately 25% of the achievable potential in the commercial sector. However, it has proven difficult to engage a significant portion of stakeholders involved in managing office buildings in energy efficiency. This is particularly true for mid-tier buildings,[1] a sector in which engagement levels are lower than for Class A and AAA buildings.

This report is aimed at: (1) providing observations on how organizations managing mid-tier buildings manage energy; and (2) providing the foundation for an engagement strategy to encourage them to improve their energy management practices.

Characterization

The first step consists of observing if there is such a gap amongst building classes with respect to energy management practices and try to understand the rationale behind it. This is achieved by using the methodology detailed in Appendix I, characterizing the office building stock (Appendix IV), conducting a literature review (Appendix II), establishing survey design around a set of core assumptions (Appendix III) and carrying out site visits, all of which will be organized around nine core questions:

1. How do mid-tier office building operators meter and pay for their utility costs?
2. What type of building improvements were made to their properties?
3. How much influence do tenants have over building operations and improvement decisions?
4. How aware are mid-tier building CRE management companies and their tenants about cost- effective opportunities to reduce their utility costs?
5. How do mid-tier building CRE management companies perceive energy efficiency and what actions are they planning to improve their energy performance?
6. How do mid-tier building CRE management companies manage utility costs and energy efficiency projects?
7. What are the drivers and barriers to the adoption of energy efficiency improvements?

[1] In this report, mid-tier buildings are defined as class B and C buildings

8. What are the main differences between engaged and non-engaged mid-tier building CRE management companies?
9. What is the best way to reach mid-tier building CRE management companies?

Engagement strategy

The second step consists of laying out the foundation for an engagement strategy based on the market characterization results. The strategy includes how to identify and reach out to mid-tier organizations, lessons learned, proven best practices and the most effective ways to engage with such organizations based on the information they communicated during the characterization process.

2 Mid-Tier CRE Market Characterization

This section presents the results of a survey conducted with 77 owners and operators of mid-tier CRE buildings in Ontario. Detailed information about the sample of survey participants is presented in Appendix V. The sections below present the results of the survey for each overarching question.

For this report, mid-tier commercial real estate buildings are considered to be Class B or C office buildings with total rentable area between 10,000 ft2 and 350,000 ft2. Some respondents indicated their buildings included retail space or other uses, but the primary use of all buildings that participated in the survey is office. A description of different classes of office buildings is provided in Appendix IV.

CRE Building Classification

Class A: The most prestigious buildings with the most amenities in the best locations. They generally are the most attractive buildings built with the highest quality materials and construction methods. Additionally, these buildings usually have a professional manager, good access, and are typically located in highly visible areas on high traffic streets.

Class B: These buildings are a grade below Class A. Generally, they are slightly older buildings with good management and quality tenants. Class B buildings are well maintained overall and quite functional. Class B office buildings commonly have an acceptable curtain wall finish, adequate (but not state of the art) mechanical, electrical and safety and security systems, and a mid-quality level of interior finish.

Class C: These office buildings are generally older and…usually have higher than average vacancy rates for their market. Older, less desirable architecture, limited infrastructure and antiquated technology define these buildings. The curtain walls and the mechanical, electrical and safety and security systems of Class C building are generally dated, and the quality of finish is often below average.

(Source: BOMA Canada Office Building Classification Guide, 2016)

2.1 Energy Metering and Invoicing

Figure 1 below illustrates that 68% of buildings are in a net type of arrangement where tenants pay their share of utility costs. In these buildings, owners' investments in energy efficiency will create benefits for the tenants from the reduction in utility costs – rather than for the building owner – unless the owner uses a mechanism to monetize those benefits through operational expenses.

Among tenants who pay for their own energy usage, 51% also pay for their share of common areas, while for 49% of tenants, the owners absorb the portion of energy associated with common areas.

Energy efficiency opportunities may offer the greatest financial reward for those 32% of buildings currently in a gross rent arrangement, because by implementing energy efficiency prior to shifting to

a net rent arrangement, the owner reduced operating expenses in a manner that will increase the property value during the gross-to-net rent conversion.

In a gross rent arrangement, the owner bears the risk of any unexpected increases in utility cost. By converting to a net rent, owners transfer these risks to tenants. During this conversion, a portion of the gross rent is converted to the base rent, and the building operating costs are converted to recoverable operating expenses to be added to the base rent. The net rent should stay the same. The gross rent minus operating expenses constitutes the net operating income that is divided by the capitalization rate to estimate the property value.

A gross rent building owner that reduces operating expenses while having the same gross revenues from the rent will see increases in both net operating income and property value. An owner of a net rent building that reduces the building operating expenses transferred to tenants will not automatically see net operating income increase, making it more complicated to justify energy efficiency improvements. However, for those 32% of buildings currently using a gross rent scheme, significant energy efficiency investments and interventions should be attractive because lowering utility costs before converting to a net rent scheme allows the gross rent to translate into higher base rents and hence higher property values.

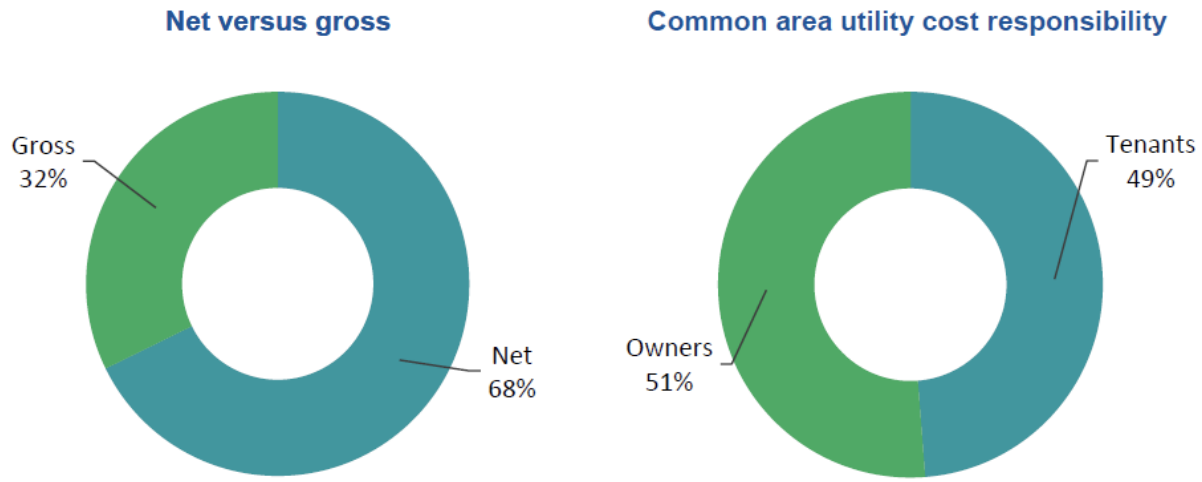

Figure 1: Energy Invoicing

Figure 2 below illustrates that 52% of all multi-tenant buildings have a single main utility meter, while 35% of multi-office buildings have dedicated utility meters for tenants. These results are consistent when compared against how tenants are invoiced utility costs. Indeed, in all buildings with dedicated tenant utility meters, tenants pay their utility costs directly to utilities. It is uncommon that tenants from large multi-tenant office buildings have their own utility meters since spaces are tailor configured for each tenant and would require utility meters to be installed and removed on a regular basis.

It is suspected that some respondents may have given the wrong answer by confusing submeters and utility meters. Since metering and cost allocations are at the core of energy management, there seems to be a need for capacity building among survey respondents to better understand the different metering and cost allocation schemes.

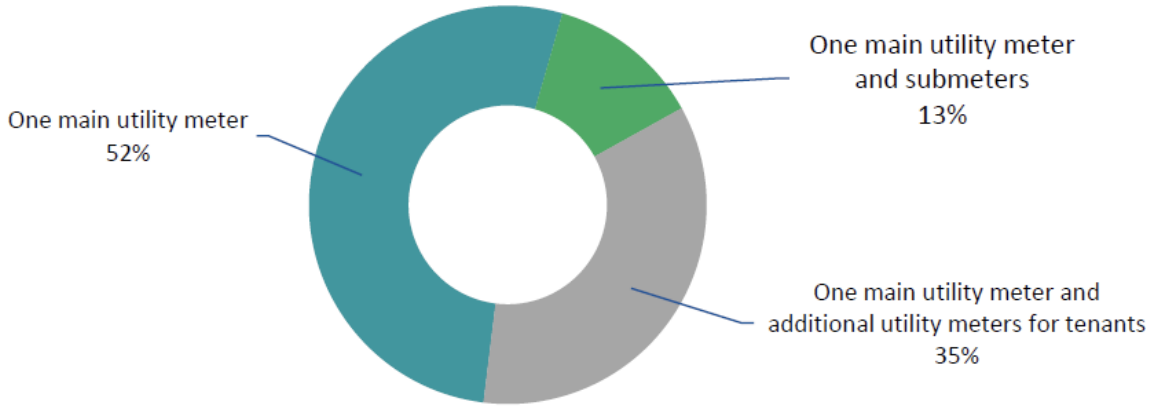

Figure 2: Multi-Tenant Building Metering Configuration

2.2 Energy Efficiency Interventions

As illustrated in Figure 3, energy efficiency investments over the last 10 years surpass non-energy related investments. The main energy investments are associated with lighting and HVAC improvements.

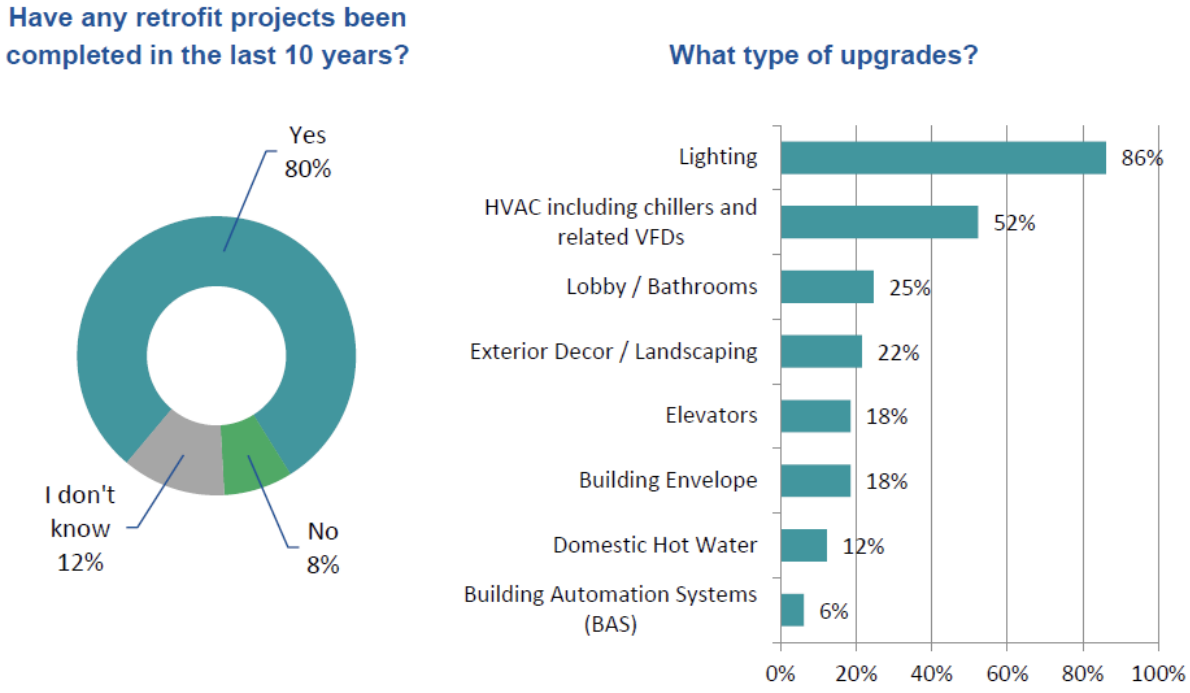

Figure 3: Major Upgrades in Previous 10 years

Figure 4 below represents a subset of 20 respondents called for follow-up questions, 10 (50%) of which had an audit performed. In those audits, lighting retrofits in common areas and HVAC were proposed 40% of the time. It is important to mention that a significant portion of respondents had no recollection if measures other than lighting were proposed. Another interesting observation is that measure recommendations seem to be very limited. However, care must be taken when interpreting these results due to the small sample size. In the same subset, only 25% knew when recommissioning was last performed. This confirms the observation of a general lack of engagement with energy performance among building operators.

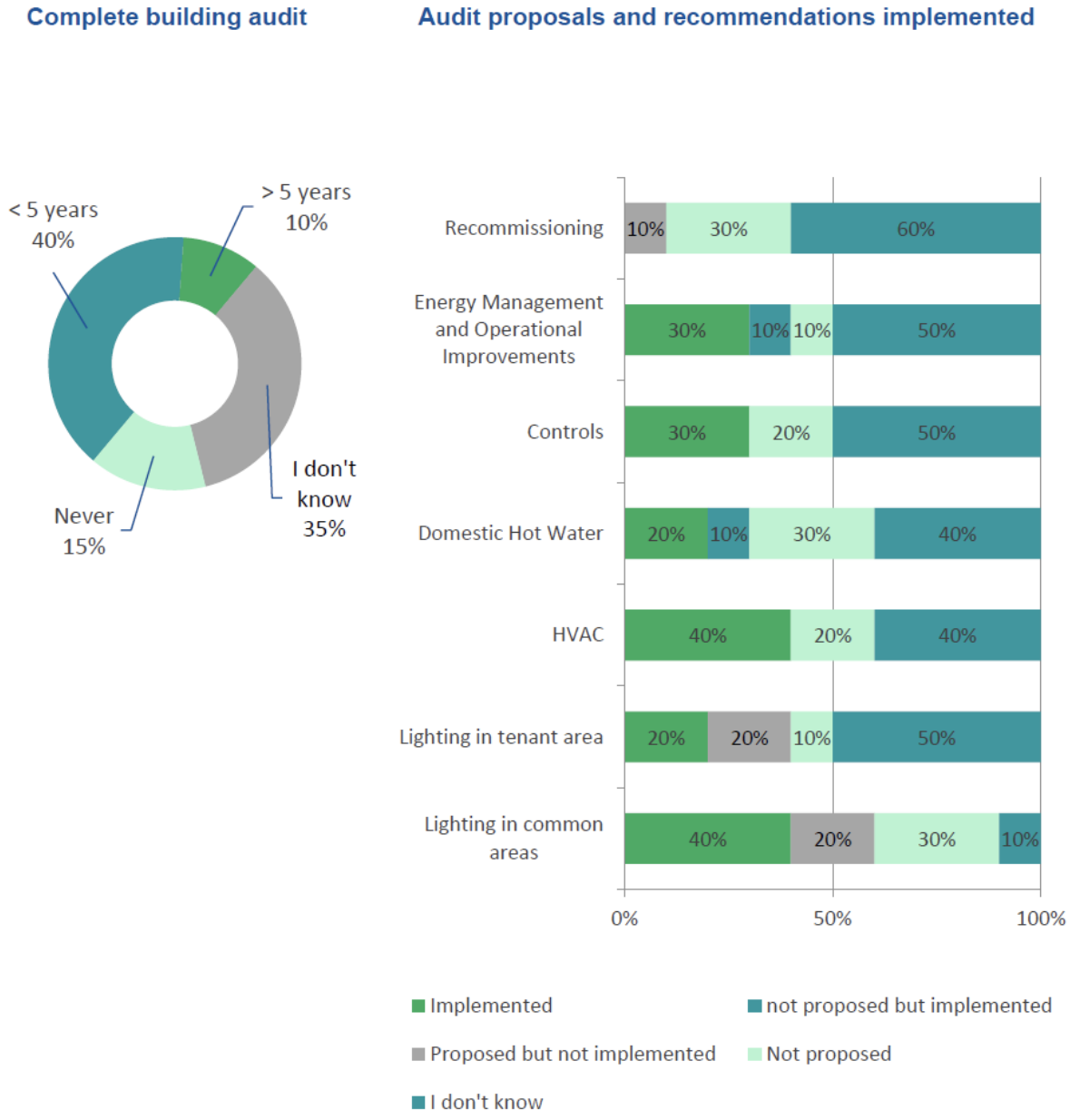

Figure 4: Energy Audits and Measure Implementation

When asked the open question, “What specific actions were done to reduce energy costs?”, lighting is the main action taken by 51% of respondents, as illustrated in Figure 5, followed by HVAC measures and no actions as second and third most often mentioned. Energy management, behaviour change and decommissioning were not mentioned as key elements, which seems to highlight that energy efficiency is associated with retrofit type measures.

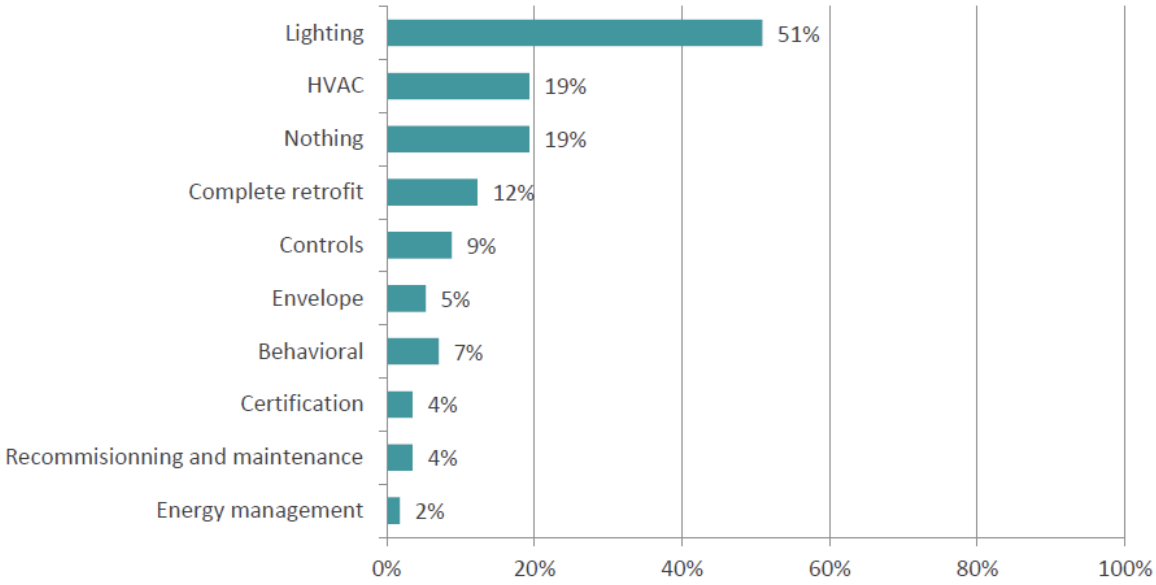

Figure 5: Specific Actions Taken to Reduce Energy Efficiency

Insight

Many respondents clearly associated energy efficiency with lighting retrofits. There is a need to expand energy efficiency opportunities to other types of interventions including HVAC and low capital expenditure interventions. Regarding the latter, although recognized as good practice, operational improvements and energy management had rarely been implemented by respondents, further illustrating the need for capacity building. These quick wins are often the first building blocks of an efficient energy management plan.

2.3 Tenant Influence on Building Improvement Decisions

Figure 6 illustrates that the vast majority of respondents think that their tenants' sensitivity to utility costs and environmental impacts is moderate or great.

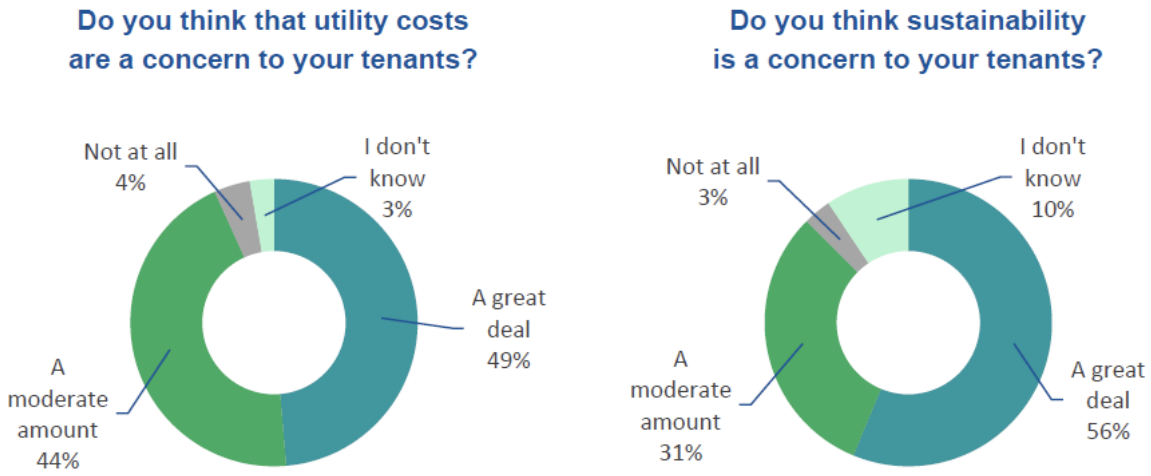

Figure 6: Respondents' Assumption about Tenant Sensitivity to Utility Costs and their Environmental Impacts

Figure 7 below illustrates the frequency with which survey respondents are asked by prospective tenants about utility costs, operating expenses, and sustainability. Note the consistency in respondent answers with respect to prospective tenants and actual tenants. In total, 80% of prospective tenants always or sometimes ask for utility costs while 82% of actual tenants frequently or occasionally talk about utility costs with the respondents.

An interesting observation based on Figure 7 is that tenants more often ask about utility costs, a component of the operating costs, rather than the sum of all operating costs. This further illustrates that tenants are sensitive to energy costs.

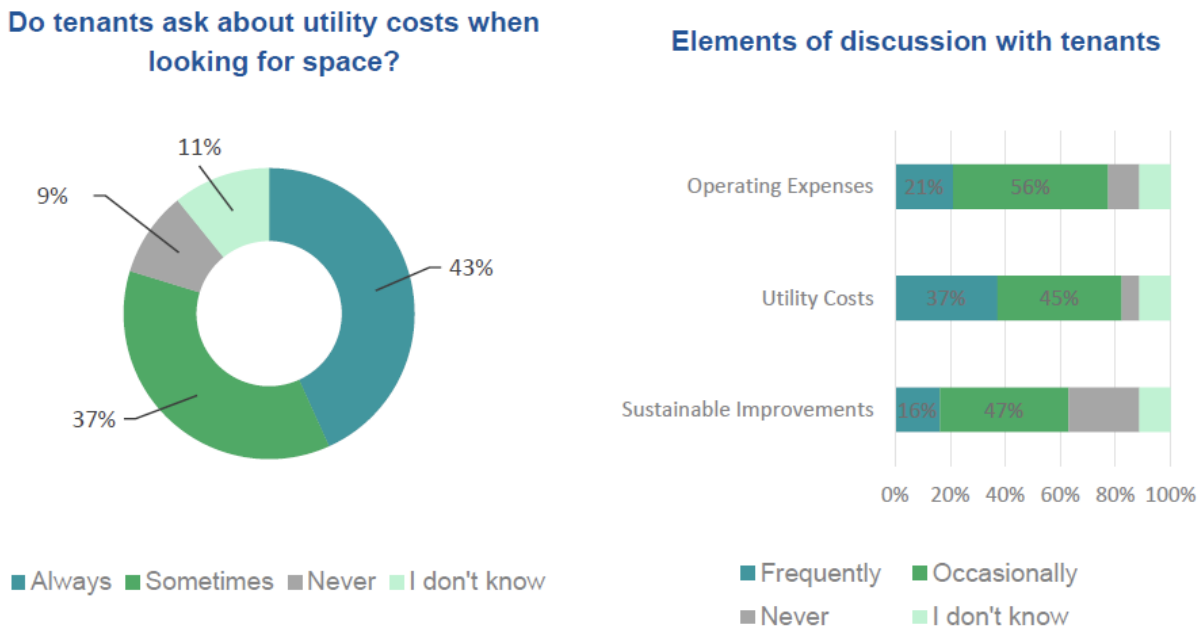

Figure 7: Prospective Tenant Rent Assessment Habits and Active Tenant Subjects of Discussion

Figure 8 below illustrates, although building owners and operators indicate that tenants have high sensitivity to utility costs, that sensitivity is not reflected in the drivers of energy efficiency projects. This may mean that tenants frequently express interest in or concern about energy efficiency but that owners do not consider tenant interest as a primary driver of investment decision-making related to energy projects.

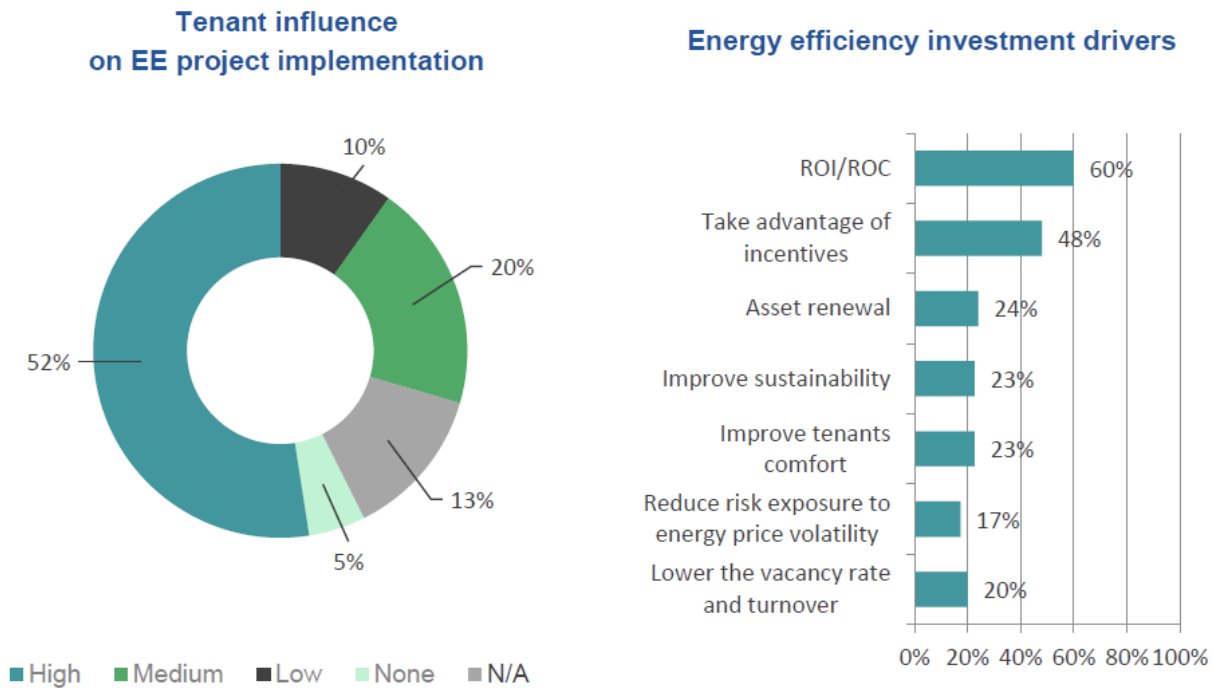

Figure 8: Influence of Tenants and Energy Efficiency Investment Drivers

2.4 Energy Awareness Among Management Companies and Tenants

When asked, “How much money do you spend annually on energy utilities?”, 55% of respondents were able to provide an estimate. However, the resulting $/ft2 cost varies between $1.50 and 5.00/ft2. This wide variation challenges the reliability of the information. This could be explained by the generic nature of the question, leading respondents to have different definitions of utility costs. Since cost tracking is at the core of energy management, there appears to be a need for capacity building among respondents to identify the relevant costs, and track and compile energy consumption data using off-the-shelf tools such as Energy Star Portfolio Manager.

As illustrated in Figure 9 below, respondents are well aware of the Save on Energy Incentive programs and have applied.

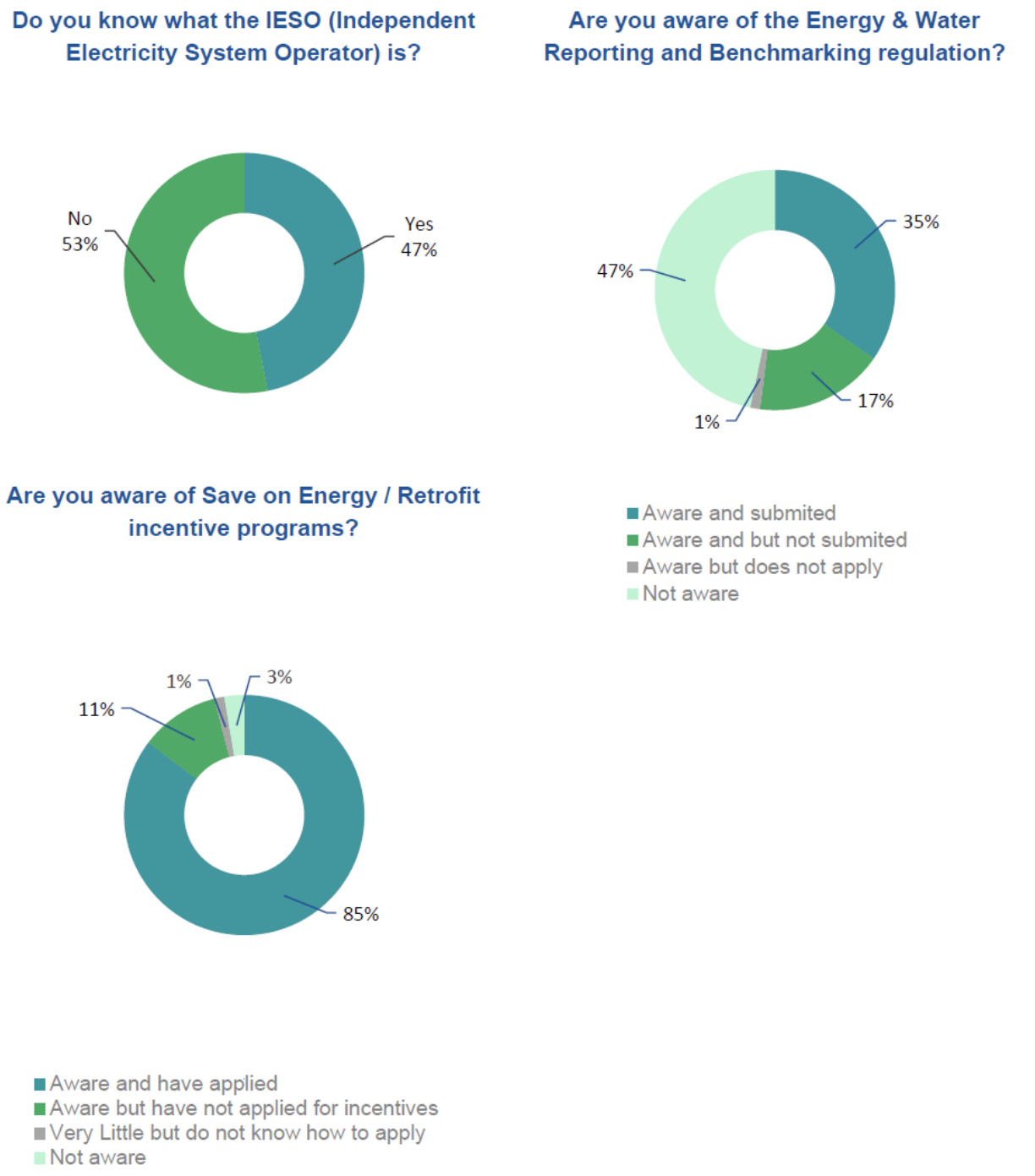

Figure 9: Respondent Awareness Assessment

2.5 Energy Efficiency Perceptions and Intentions

According to the survey results, the majority of mid-tier property managers are greatly concerned about utility costs and sustainability, as illustrated in Figure 10.

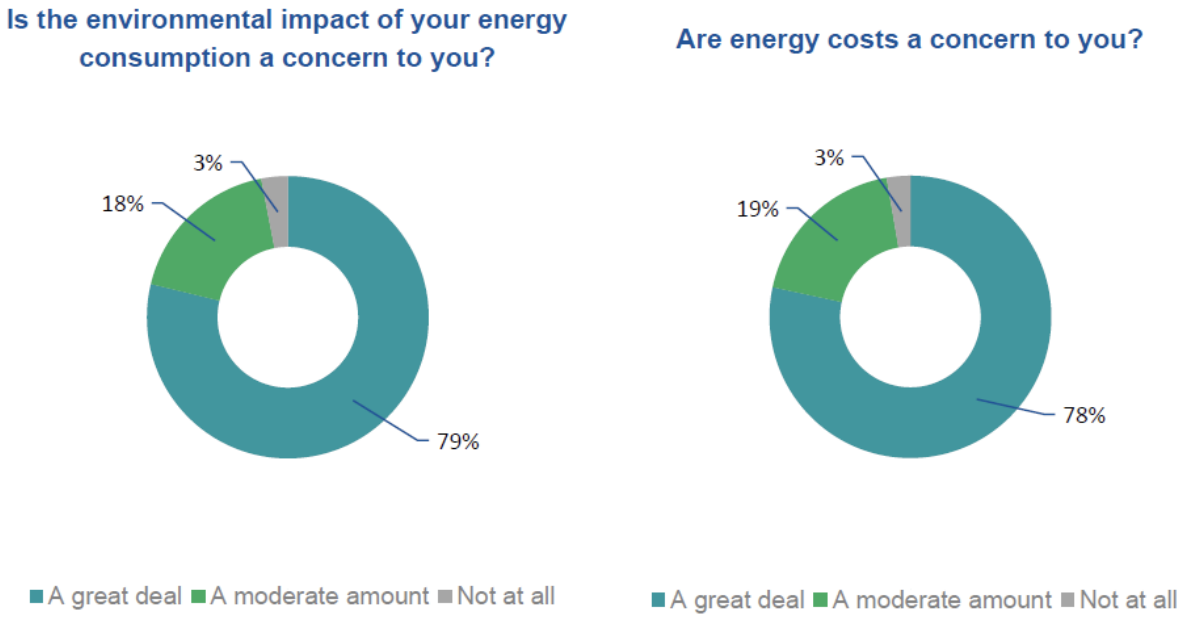

Figure 10: Respondent Concerns for Energy and Environmental Impacts

As illustrated in Figure 11 below, 74% of respondents estimate that their building energy performance is average or above average. This observation was also made when comparing respondent self-assessments with respect to the database classification. This means that a significant portion of building owners think that their buildings are efficient, but they are in fact below average. This finding suggests that there is a need for building operator education about building performance relative to other assets and the use of benchmarking tools. Making building operators aware of their building energy performance compared to competitors may be a strong driver for improvement and would provide a more reliable baseline for an efficient energy management plan.

Even if most respondents think that their building efficiency is average or above, 63% of them say that they are considering making energy efficiency upgrades to HVAC and lighting because they assume that those measures have the highest potential. Interestingly, 22% said that they did not know where their highest potential lies.

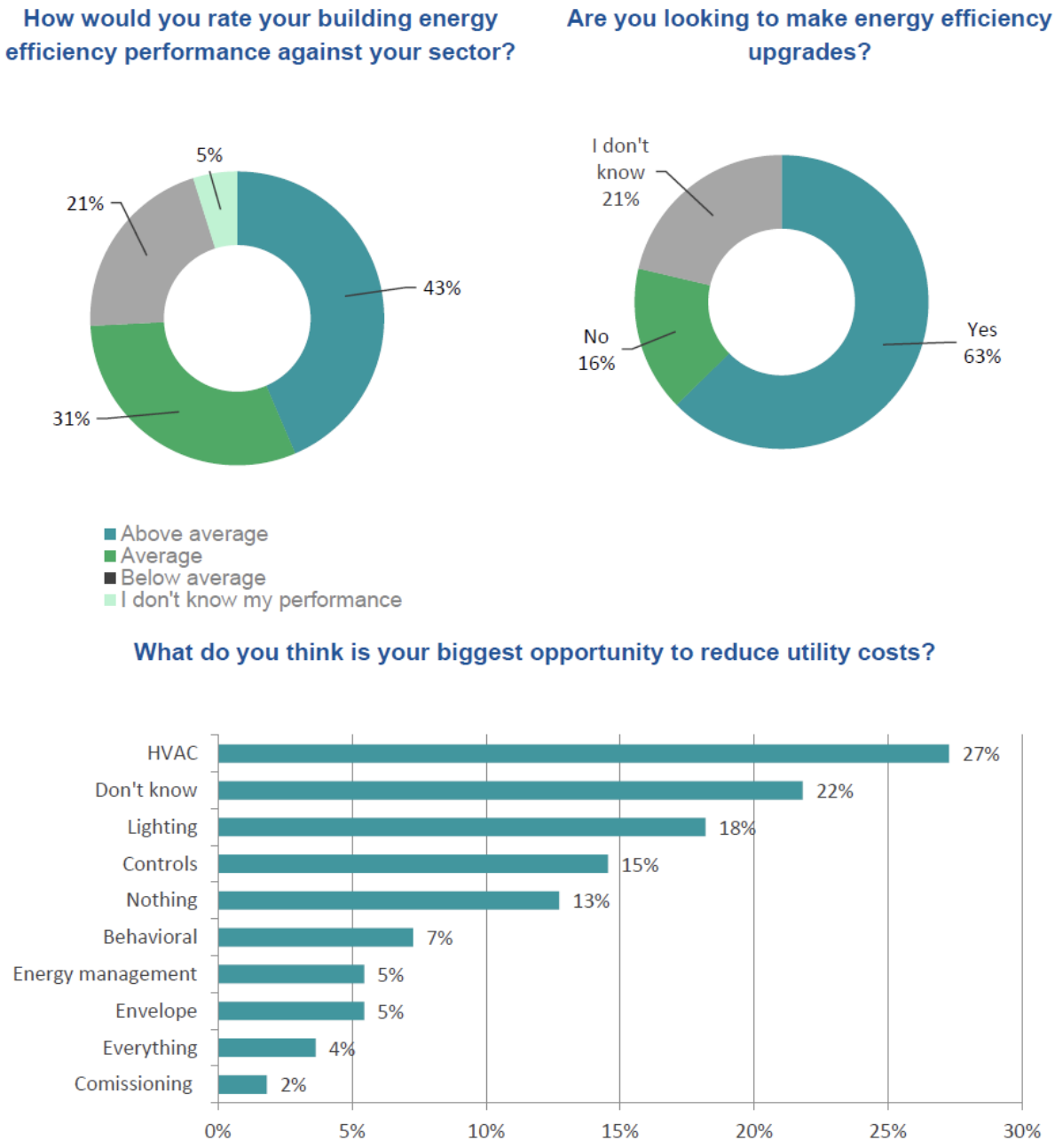

Figure 11: Respondent Perceptions and Intentions

Figure 12 indicates that respondents tend to have high confidence levels in energy efficiency solutions and think that their organization would be interested in implementing solutions that reduce operating costs. The results seem to indicate that, after focusing mainly on lighting retrofits, owners are now considering HVAC as the next step. Only a small share of survey respondents view operational measures such as behavior change, recommissioning and energy management as important sources of energy cost savings.

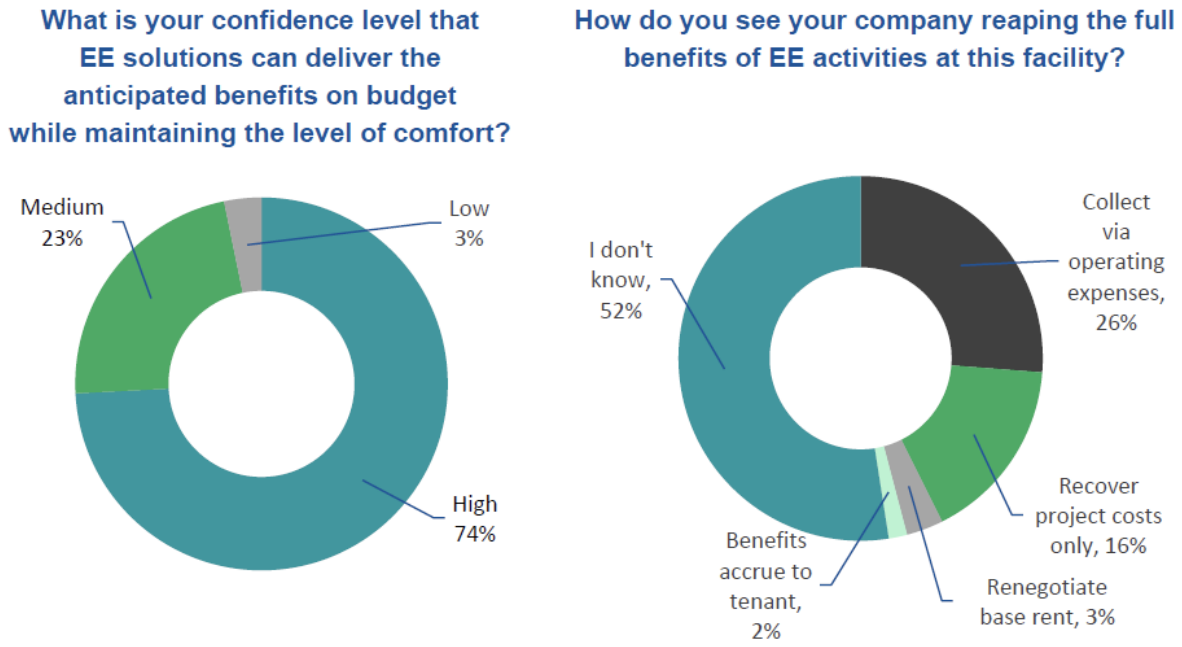

Figure 12: Confidence Levels in Energy Efficiency and Capacity to Reap the Full Benefits

Respondents exhibited a high degree of confusion regarding cost recovery mechanisms for energy efficiency projects and rent structures or other means of sharing the benefits of energy efficiency. Importantly, 52% of respondents did not know how their owner could reap the full rewards of EE interventions and 26% said it was impossible to recuperate the full value of projects and that only project costs could be recovered. Not knowing how an organization can benefit from EE projects seriously reduces the attractiveness of better energy management, especially if return on investment is the driver reason for investing in EE, rather than attractiveness and tenant satisfaction-retention. This finding further reinforces the need for capacity building in the sector to ensure every level of an organization is aware of the benefits of EE interventions and how they can best leverage these opportunities.

Insight

A significant portion of respondents could not answer all the survey questions, particularly those about how an owner can reap the benefits of energy efficiency investments; others provided contradictory responses to different questions. This suggests a lack of education in energy efficiency and energy management and highlights the need for energy management capacity building among mid-tier building managers and operators.

2.6 Utility Costs and Sustainability Management Practices

Figure 13 shows results for a sub-group of 20 respondents that were asked questions specifically about their staffing and energy capacity. Ninety percent of these organizations had a property manager on site, while only 20% had an energy and/or sustainability manager.

In 89% of all surveyed organizations, there is a specific individual in charge of identifying and implementing energy efficiency initiatives; in most cases, this is the property manager, who for mid-tier buildings usually works off-site. However, site visits revealed in every case that the on-site operator was the individual responsible for identifying measure opportunities. Sites with the highest performance had greater energy literacy on site through a dedicated team with more sophisticated energy management practices.

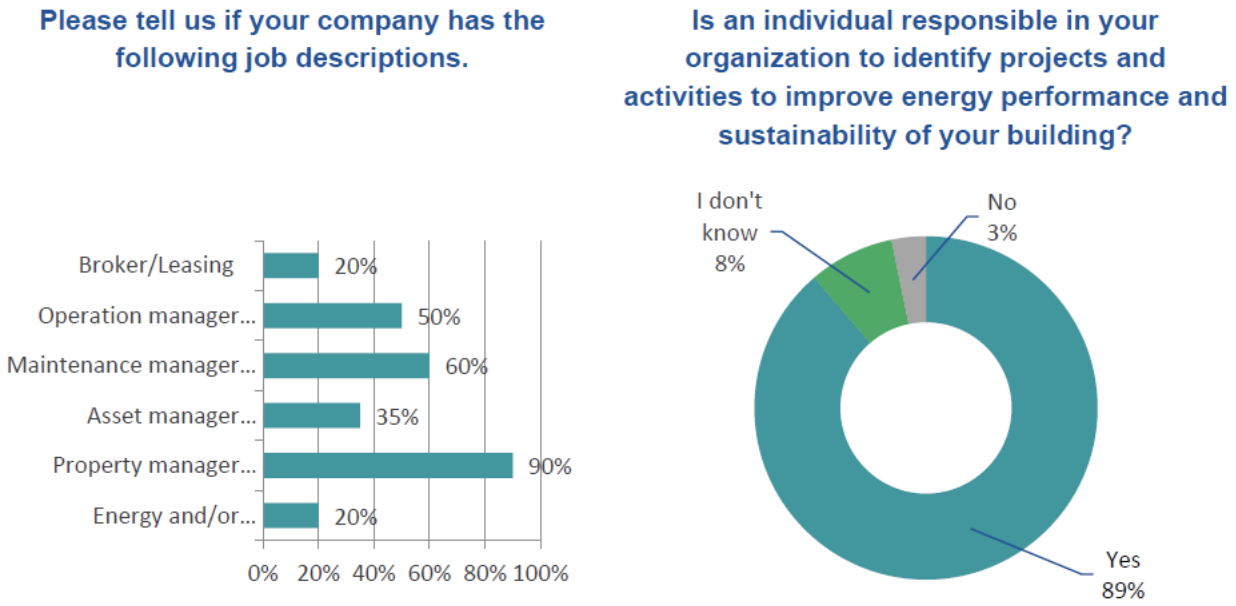

Figure 13: Energy Management Team Structure

Based on Figure 14 below, operations and leasing have the greatest influence on projects, followed by financing. This is somewhat contradictory since, according to Figure 19 further below, the main barrier to implementing projects is associated with financing and most projects fail to secure financing (see Subsection 2.7 below).

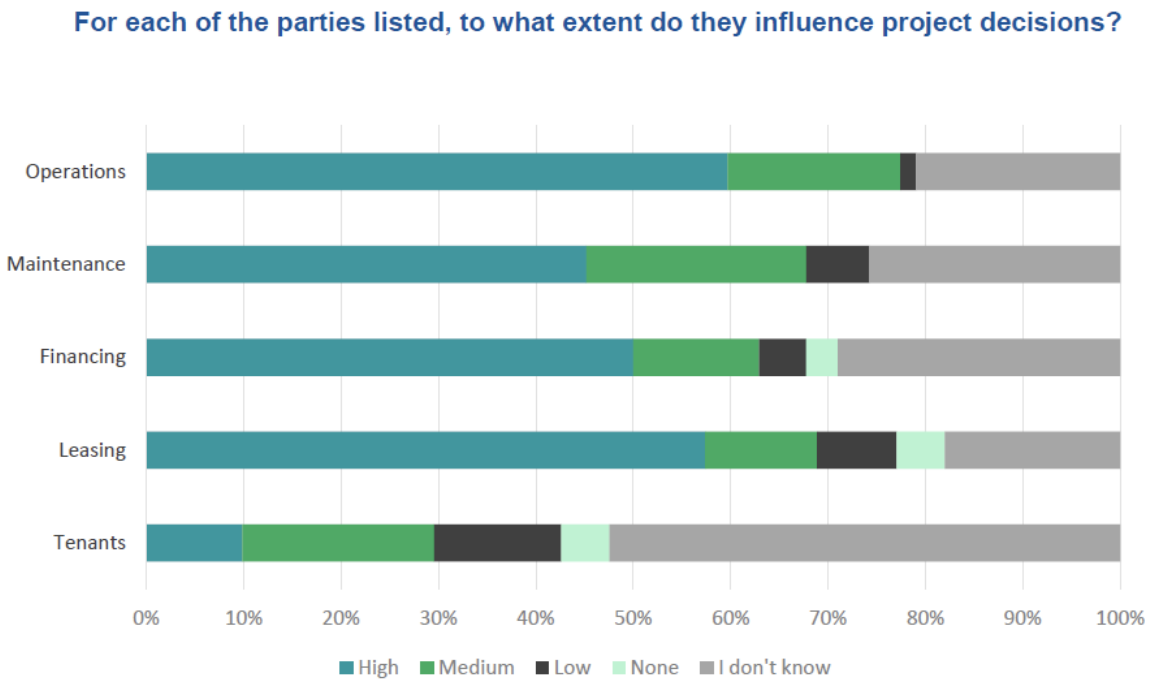

Figure 14: Energy Measurement Influencers

As illustrated in Figure 15 below, 58% of respondents rely on third-party audits and 53% of respondents rely on external support to identify projects. This further illustrates the need to support external organizations to know how to bring value to this market beyond lighting retrofits. This observation was confirmed during site visits during which vendors were identified by operators as the main source of energy efficiency improvements.

Surprisingly, the main indicator used by respondents to assess projects is the return on investment (ROI). Conversely, the payback period is the main indicator for most organizations in other sectors. This could result from confusing the two terms. This was somewhat confirmed during the site visits; only the payback period was mentioned. Early replacements or nonessential investments needed a payback period lesser than three to five years. Interestingly, the net operating income (NOI) and property value impact are the next most important indicators according to respondents. These indicators are specific to the sector and further emphasize the importance of illustrating how the full value of EE projects can be used to increase the NOI.

Insight

Many respondents rely only on external expertise, primarily vendors, to find energy efficiency opportunities. This highlights the need for capacity building among vendors to more systematically deliver more comprehensive proposals that include energy efficiency to building operators.

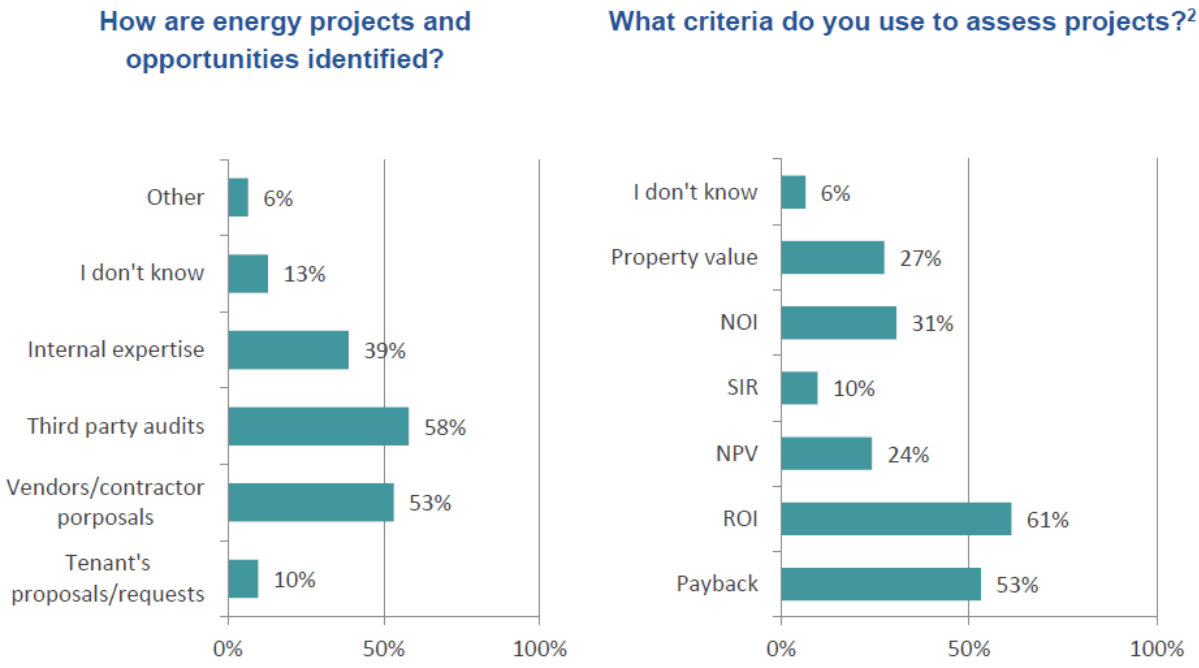

Figure 15: Project Identification and Assessment Processes[2]

When looking at how energy expenditures are managed, as per Figure 16 below, 86% of respondents say that they only compare themselves against the previous years. Only 26% and 23% compare themselves against corporate or external benchmarks respectively. Two respondents reported that they use the Energy Star Portfolio Manager tool to benchmark their properties against similar buildings. Moreover, nine percent said they do not track energy expenditures, while 21% of respondents do not use metrics to track energy and only 12% use energy metrics. This means that, for 67%, cost related metrics are more relevant.

Interestingly, preventive maintenance and operational improvement were identified as sound management practices by more participants compared to capital investments. This is somewhat contradictory to the previous results where operational interventions were not highlighted has key interventions performed in the past nor were they identified as opportunities going forward. This could be interpreted as a sign that, although respondents recognize operational types of interventions as sound business opportunities, building operators lack the expertise to implement these types of interventions.

[2] Simple payback period, return on investment (ROI), net present value (NPV), saving to investment ratio (SIR), net operating income increase (NOI), property value impact.

Insight

Few respondents used benchmarking tools and techniques to measure and compare their performance against similar buildings, and most could not provide a complete list of energy projects implemented in their buildings.

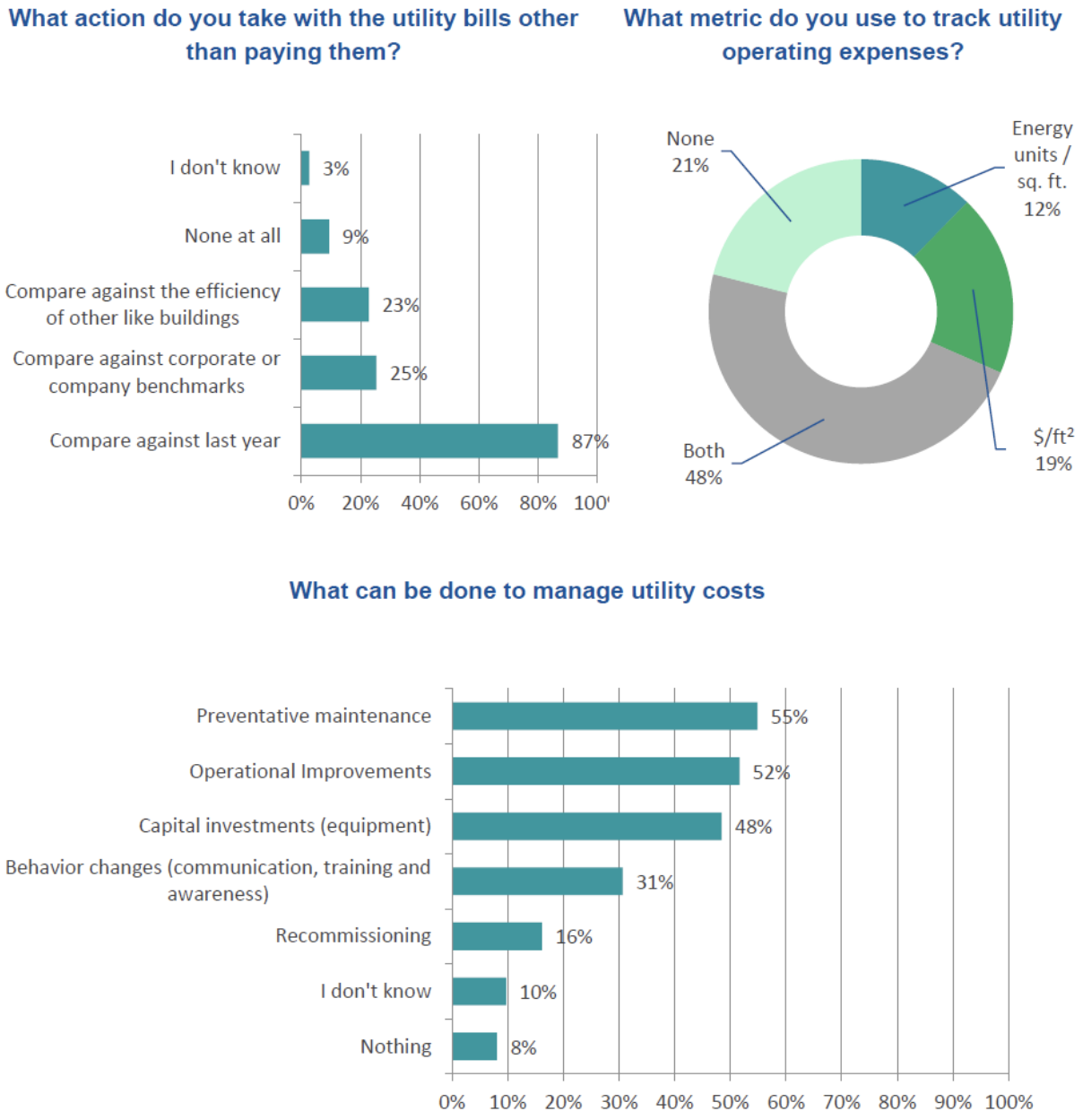

Figure 16: Energy Management Practices

As outlined in Figure 17, when asked, “When will you consider making an energy efficiency investment?”, 87% of respondents mentioned the forecasted end of life of assets followed by when undertaking major refurbishments or when space becomes available. This illustrates the relation to vacancy management and that corporate management only gets involved in site management for 21% of survey respondents. It further illustrates that early asset replacements are not considered as a sound strategy to improve the bottom line regardless of whether management trusts energy efficiency to deliver expected results. It also indicates that, during lease renegotiations, tenants seldom request energy management related improvements. There seems to be a strong timing driver in decision-making. Most respondents indicated that they are most likely to consider energy efficiency upgrades when replacing an asset.

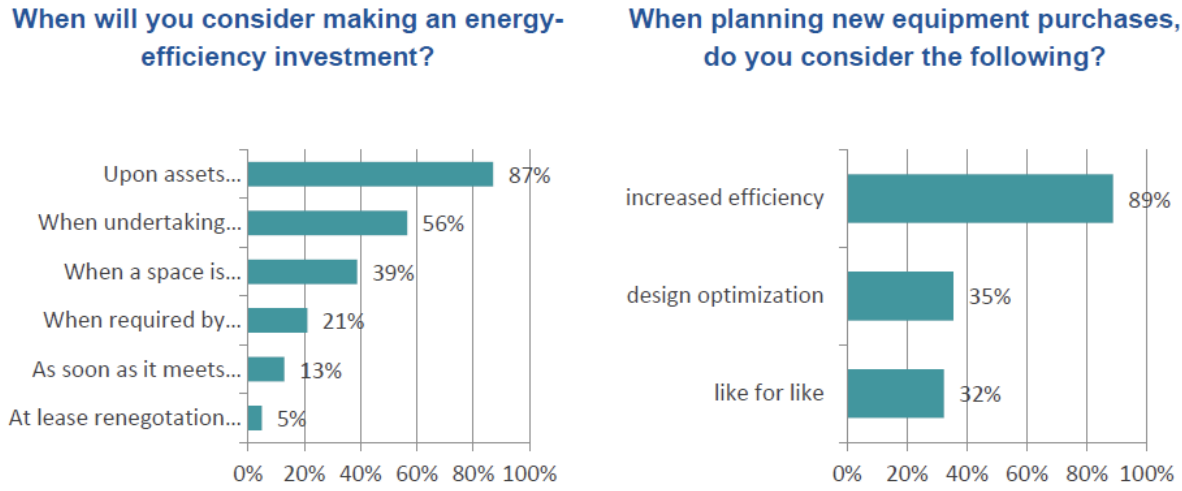

Figure 17: Energy Retrofit Drivers and Procurement Processes

As presented in Figure 18 below, when asked, “Who would you contact for information or assistance?”, utilities and suppliers were identified as the main sources, highlighting the need to equip trade allies to better support energy efficiency improvements, but most importantly to provide the level of support that the utilities used to provide. At the same time, some site operators were reluctant to participate in site visits, arguing that utilities had already conducted site visits and they did not lead to relevant results.

As a follow-up question to the survey, after utilities were no longer providing support in the province, when asked, “What is your preferred/trusted method of receiving business information?”, sector associations were identified as the main source, followed by vendors. This finding suggests two important consequences: (1) Mid-tier building operators rely heavily on vendor proposals, which highlights the need for capacity building among channel partners to deliver high-quality services to foster energy efficiency investments; and (2) industry associations such as BOMA are a critical vehicle to support mid-tier operators on energy efficiency. One key area for education appears to be to focus more on system driven proposals rather than equipment proposals. Equipment and lighting systems are similar due to the simple nature of lighting retrofits. However, to improve controls, HVAC

systems and energy management, building operators need to consider the building as a system of integrated equipment. This further highlights the need for capacity building among mid-tier building operators to help them appreciate the differences between system driven proposals versus equipment limited ones so that they know what to look for when requesting a quote or assessing a proposal.

Insight

Many respondents mentioned BOMA Toronto as a key source of reliable information and should play a central role in engaging organizations in implementing more energy efficiency.

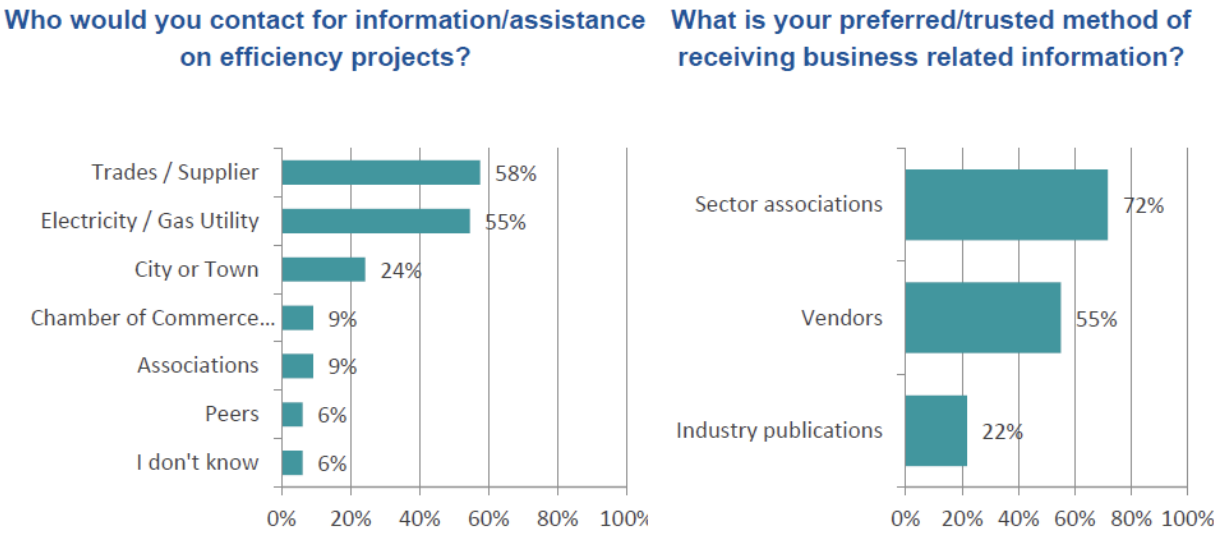

Figure 18: Contacts and Sources of Information

2.7 Barriers to the Adoption of Energy Efficiency Improvements

As shown in Figure 19 below, respondents indicated that access to financing is the main barrier to implementing energy efficiency initiatives, followed by obtaining corporate approval, lack of human resources, lower rates of return and difficulties in identifying opportunities. The need for financing options was confirmed in discussions with property managers and operational staff during the site visits conducted for this study. This barrier is recognized by many public organizations aiming at fostering energy efficiency in the private sector. Among these organizations, the Government of Quebec announced recently, in collaboration with Econoler and Fondaction, its support for the creation of a vehicle called SOFIAC, for Société de financement et d'accompagnement en performance énergétique, to be launched by fall 2020 and dedicated to providing financing and technical solutions specifically adapted to the needs of commercial and industrial building owners.

Respondents also indicated that it can be challenging to obtain corporate approval for energy efficiency projects (21%) and they lack the human resources to identify and develop energy efficiency opportunities and to manage projects (20%). Altogether these results echo the findings of a recent study by the Rocky Mountain Institute and BOMA, which found that Class B/C office buildings in the US face three consistent challenges to the widespread adoption of energy efficiency: lack of education in energy efficiency and green leasing structures, insufficient human resources to find and implement efficiency opportunities, and a need for project financing adapted to the mid-tier CRE sector[3].

Insight

Access to financing and obtaining corporate approval are the key barriers to implementing energy efficiency in mid-tier buildings, while split incentives are not. Further work should be performed to confirm the latter, which is assumed by many experts to be the main challenge.

[3] Cathcart et al., 2020, Unlocking Hidden Value in Class B/C Office Buildings, Rocky Mountain Institute

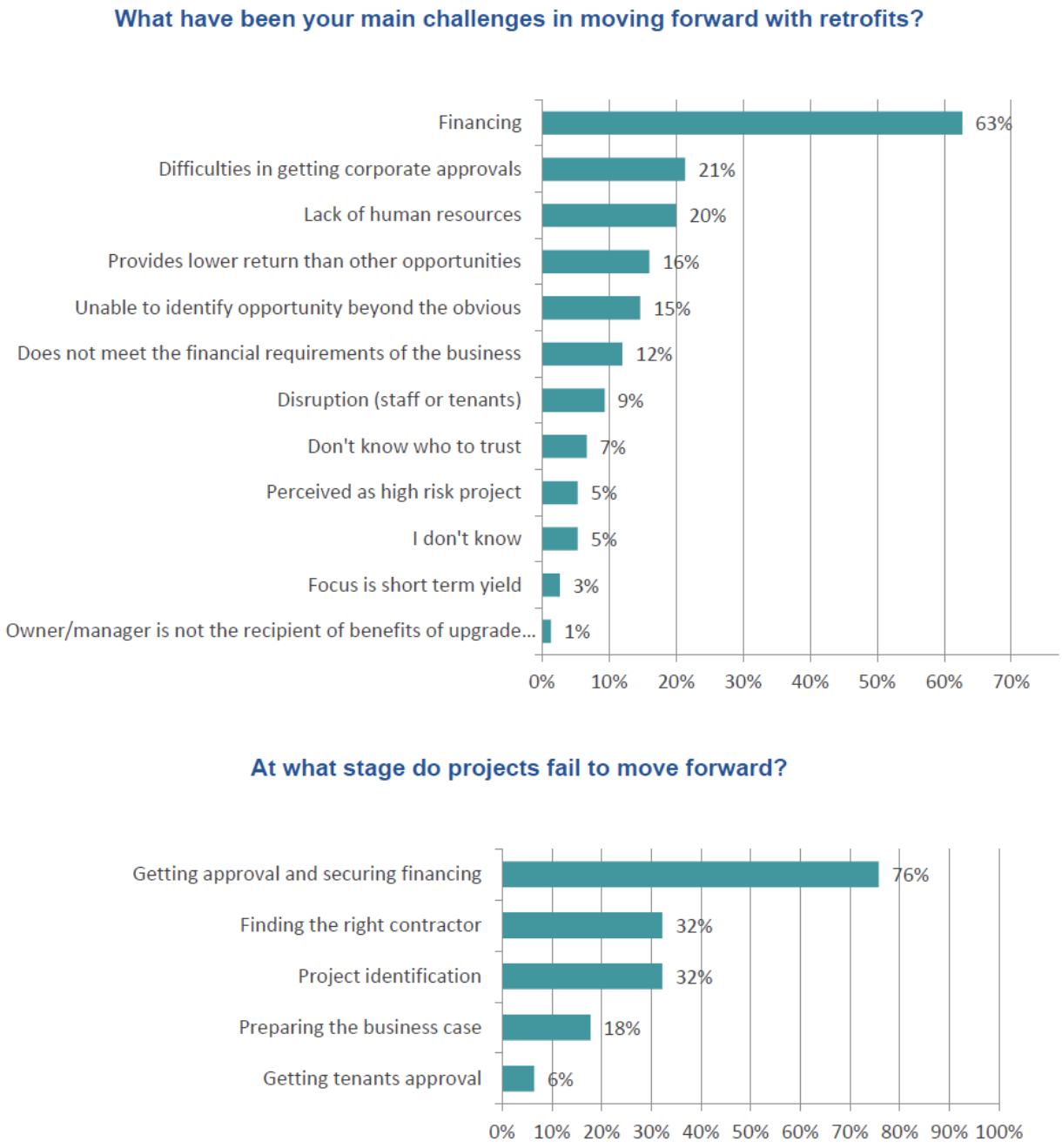

Figure 19: Energy Efficiency Project Barriers

The project team divided the survey respondents into two groups to compare buildings owned by owners that also own Class A buildings (the reference group) with buildings owned by owners who only own Class B or lesser assets (the base group). This approach is presented in detail in Appendix V. The goal was to test the hypothesis that owners who manage Class A buildings understand the value of energy efficiency and therefore apply the same management practices to their Class B/C buildings. Based on the survey answers from this group of respondents, there were no significant differences in energy management practices between the base and reference groups. Their perceptions, tenants, management practices and implemented projects were similar, with no major distinguishing factors.

It is important to note that these findings are based on a sample of only 76 buildings – 59 in the base group, 17 in the reference group – therefore caution should be taken in applying these results elsewhere.

Insight

The study team hypothesized that mid- tier buildings owned or managed by CRE management companies whose portfolios included Class A as well as mid-tier buildings would show a closer engagement with energy performance than buildings owned or managed by companies that own or manage only mid- tier buildings. However, the survey results did not support this hypothesis: the study team observed no significant differences in energy efficiency awareness, resources, or energy management practices between these two groups.

2.8 Best Communication Channels to Reach Mid-Tier Building Management Companies

As illustrated in Figure 20, 82% of respondents said that they would be interested in participating in energy efficiency webinars, workshop clinics and events. Their preferred communication channel is email; they often provided their private emails since they do not have corporate accounts or they prefer it to the corporate account because it works better with their cell phone. The involvement of sector associations is also important, especially BOMA, which was mentioned by several respondents. According to participants, there is a lot of trust in BOMA even if these organizations are not all members. BOMA could be a huge driver in this effort because of the trust factor.

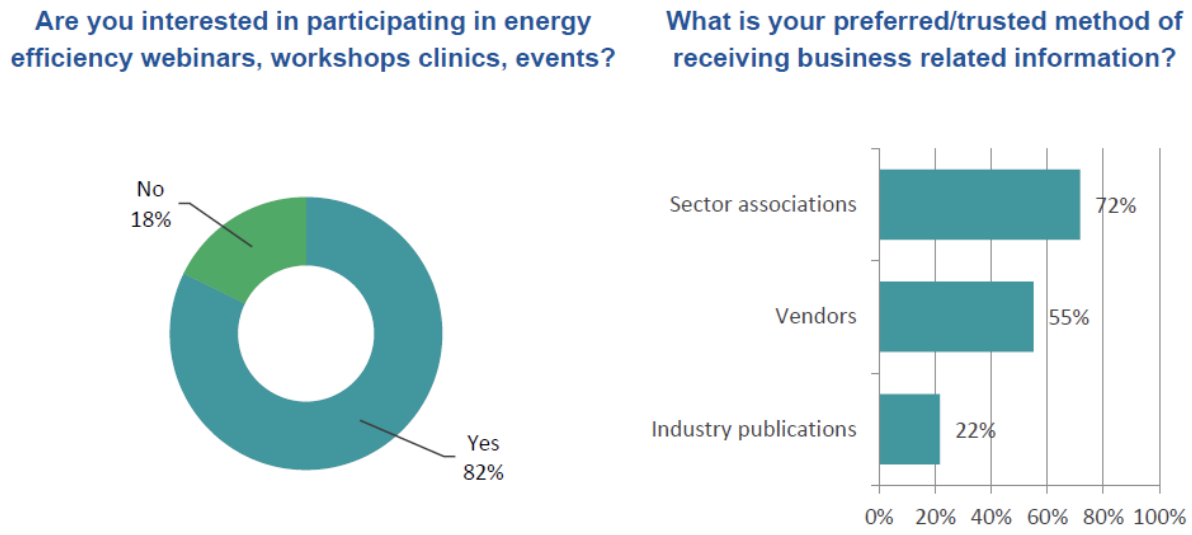

Figure 20: How to Contact Respondents

2.9 Site Visits

In total, the project team visited eight mid-tier buildings to identify the attitudes of building staff and management toward energy efficiency and better define the roadblocks for achieving higher energy efficiency in the mid-tier sector, as well as to provide a qualitative assessment of the energy efficiency potential of those buildings. The sites were selected based on survey answers to capture engaged and non-engaged buildings and assess the differences between the two groups. The visits were aimed at better understanding the attitude of O&M personnel toward energy efficiency. The walk-through visits did not constitute an energy audit but were carried out to provide a high-level picture of the energy efficiency condition of the various sites.

Overall, the energy efficiency of the buildings that received site visits may be considered fair at best, but with a large range from excellent to very poor. The energy used index (EUI) of visited buildings was not available and quantification of energy performance was not possible.

Following the site visits the project team divided each visited building into one of two groups, based on its management's level of engagement with energy efficiency. Engaged buildings generally considered energy efficiency to be a core part of their management approach and value creation strategy, whereas non-engaged buildings only considered energy efficiency on an ad-hoc basis.

A clear trend observed for the eight buildings was that the largest ones presented the best performance and lowest savings potential. The type of technical management also had a significant impact, with larger buildings typically having a professional management company with dedicated onsite staff, with better energy performance and energy efficiency awareness. In one instance, a larger building with a dedicated onsite operator demonstrated poor energy performance and lack of efficiency awareness that could be traced back to the owner's overall attitude toward energy efficiency. The smaller buildings and those managed by small companies, such as smaller family-owned corporations, were clearly less efficient due to lack of resources, both financial and technical expertise.

Most property managers expressed a need to improve their efficiency regardless of current performance, but they stated that more funding is required. Most of the information the owners obtain for efficiency projects comes from operators, vendors and consultants. The consultant team encountered pushback when performing the walk-through visits in some sites, ranging from initial refusal to allow a walk-through, to limiting the visit to certain spaces and not allowing access to mechanical rooms. The rationale was typically that a utility representative had already been onsite and there was no point in having another similar visit. In most instances, insistence on performing the walk-through allowed at least for a partial visit.

The following sections detail the main differences between engaged and non-engaged building management teams with respect to their organizations, energy conservation measure (ECM)

identification processes, retrofit assessments, approval processes, savings potential and what they need to do more.

The table below presents the site visit findings characterizing two groups of buildings: those engaged in managing their energy, and those not engaged with energy.

	Engaged	Not Engaged
Planning	Organized teams dedicated to tracking utility costs and identifying savings opportunities as they arise	No energy management plan, procedures or energy efficiency goals.
Energy Management	Formal energy management program with a structured approach and periodic meetings, defined targets and plans for implementing ECMs.	No energy team, nor a structured management approach for energy.
Personnel	Have a dedicated manager that closely follows utility costs and keeps abreast of possible savings opportunities. Both the manager and maintenance personnel are invested in maintaining the condition and performance of their building. Have onsite operational staff specialized in HVAC and operation.	Managed by a relatively small company with much more limited expertise in technically managing commercial properties. On-site staff are often difficult to engage.
Information	Access to technical and invoicing information, as well as ECMs implemented in recent years.	Level of interest for energy efficiency in day-to-day operation is low, with maintenance and operational issues being higher priorities.
Other		Smaller size of the building renders it not cost effective to have resources dedicated to efficiency.

2.9.1 How are ECMs identified

Engaged

- The corporate management team, in-house staff and base building engineers, and various contractors and professionals including energy management external providers.
- Based on utility programs.
- Energy auditing at some sites.

Not Engaged

- Contractors are often the main, and almost only, source of information for identifying ECMs. This option can be risky since contractors may push for ECMs that benefit them rather than being optimal for the building.
- In-house personnel lack the proper expertise to adequately identify ECMs.

2.9.2 Consideration for early replacements and end-of-life replacements

Engaged

- Early replacement will be considered if a valid business case can be made, as well as improvements at end-of-life. However, ECMs must meet payback periods of three to five years or less when incentives are considered.
- More efficient equipment is always considered as replacements. The marginal costs over more efficient options need to meet the above payback period requirement.

Not Engaged

- No early replacement is considered with the goal being to stretch current equipment past its useful service life.
- End-of-life considerations for ECMs are also not a priority and would occur more by happenstance than as part of a plan.
- ECMs may be considered when a replacement is required but will highly depend on financial considerations.
- Replacing with more efficient equipment at end-of-life occur more naturally due to overall product improvement rather than a conscious efficiency decision.

2.9.3 Process for approval and implementation

Engaged

- The site manager or operator identifies or transfers a third-party proposal to the financing or facility manager for assessment.
- Process varies between organizations but is well defined and understood by building operators.

Not Engaged

- There does not appear to be clear financial indicators established for ECM selections or a process for project approval.
- Operators are often not aware of the process if there is one.

2.9.4 Barrier to ECMs

Engaged

- There are no significant barriers to ECMs other than finding ECMs that meet organizational financial constraints.
- Payback periods of three to five years are the main constraints.

Not Engaged

- The attitude of operators/managers/owners combined is the largest barrier and most difficult to address.
- Operators do not see any gains to better manager utility costs.
- Financial constraints are the main barrier to implementing more ECMs with payback period requirements below two years.
- Lack of priority for energy efficiency, and lack of trust in the estimate savings provided.
- Lack of awareness about incentives or difficulty in filling out the required paperwork.

Insight

Property managers are overwhelmed with work and, although utility costs are a concern to them, most do not know what can be done to improve energy performance, and how to go about developing and implementing such work. Getting participants to participate in the survey proved to be more challenging than anticipated because of the lack of availability and interest in energy management.

2.9.5 Energy efficiency potential

Engaged

- The energy efficiency potential is limited due to efficient energy management.
- Typical measures implemented: lighting retrofits, occupancy sensors, HVAC controls, RTU scheduling, BAS, recommissioning
- Potential measures: more capital-intensive measures with longer payback period or more advanced O&M measures requiring higher level of commitment and expertise.
- Saving potential in the 10% to 20% range.

Not Engaged

- Building automation and control systems were typically not configured in consideration of energy performance, presenting significant opportunities to achieve low-cost operational savings.
- Potential measures: lighting retrofits (lamps, fixtures, controls), HVAC scheduling.
- Observed savings potential in the range of 20% to 30%.

2.9.6 Sector needs to realize greater energy efficiency

Engaged

- It was suggested that some training in advanced energy efficiency could be beneficial.
- Some training in optimizing controls and energy management (CUSUM, regression) would benefit the manager and maintenance person.
- Funding to reduce ECM payback periods to required levels.
- Commitment to more capital intensive measures.
- Awareness and expertise in more advanced measures, particularly building commissioning.

Not Engaged

- A cultural change from the top-down to illustrate to building operators that management recognizes better energy management as important. A fundamental change in priorities and perceptions by the owner and operator.
- Focus on a step-by-step approach that recognizes the capacity and organizational issues faced by these organizations.
- Start with the owner and building manager to implement energy tracking best practices.
- Energy management training to avoid only relying on third parties and vendors.
- Then implement a more structured energy management plan with achievable and realistic targets.
- Implement a clearer accountability structure illustrating the responsibilities and benefits to site operators and that energy management is not simply one more task that falls on the shoulders of operators.
- Focus on O&M type measures first since they require little capital investments and provide rapid returns.
- Technical support for identifying and implementing low and no-cost measures.
- Easier to obtain and better targeted incentives, such as those for O&M measures (ex. to clean up/understand messy HVAC systems).

Insight

Effective energy management practices require a structured approach involving the owner, property manager and site operators. It proved to be challenging to perform certain site visits even where the PM and higher management were interested in having a visit, because of a disconnect between these levels and on-site staff.

2.10 Observations During Survey Execution

This section presents key observations made during the data-collection process that are not tied to specific questions, and for which comparable data is not available for the entire sample of respondents.

- There is no centralized database that provides adequate contact names and information. The rapid pace of changes in the sector makes it difficult to track.
- Most independent building owners either own a mixed-use building with commercial retail/ restaurant and residential or MURB sector buildings.
- Contacting this group has been increasingly difficult due to changes in property management companies or property managers (PMs), lack of time to participate in surveys and lack of contact information.
- The PMs we did contact had limited time to participate or no time at all; they offered promises of call-backs or requested the digital version of the survey. Less than one percent of surveys were completed independently by this group.
- A lot of the PMs appear to be working in an independent capacity within their organization; they use their personal cell phones and email addresses instead of company email accounts.
- Time is an issue with this group. Capturing their attention, even if we present the survey as a way of helping them save money and become energy efficient still does not resonate. They appear to be pushed to their maximum time capacity because of either the sheer size of their portfolios or the many roles they fulfill since they are also in charge of building maintenance, leasing, arranging contractors, tenant requests, etc.
- Upper management had to be involved to get PMs to participate in the survey since they did not return calls, ignored messages and avoided speaking with us.
- To get this group's attention, there needs to be 'boots on the ground' to conduct onsite visits and capture the information needed.
- There seem to be multiple definitions of the role of PM in various organizations. In more sophisticated organizations, PMs play a specific role and there are various departments such as operations, leasing, and finance. In smaller organizations, PMs manage all operations and sometimes call themselves by a different title.
- Almost all of those surveyed asked to be contacted in the future by email, but admittedly rarely have the time to read or respond to the survey.
- Most PMs could not answer 100% of the survey questions; they required input from other company personnel or simply did not know the answer or whom to ask.
- Creating a database of trusted third-party channel allies that have submitted successful SOE applications was mentioned by several participants.
- PMs attend information sessions during the week, but building operators or those in a building operator-type capacity go in the evenings or on the weekend.

- Even larger, more sophisticated operations had PMs who were not interested in the well-being of their buildings; they did not want to improve; they were happy with the status quo even despite having a corporate mandate; they felt there was nothing they needed to do and that they were the authority of their facility.
- Over 75% of PMs require training to provide them with further information on what EE upgrades and behaviors are available.

2.11 Key Findings

Based on the site visit and survey findings, the following key findings were established.

- Effective energy management practices require a structured approach involving the owner, property manager and site operators. It proved to be challenging to perform certain site visits even where the PM and higher management were interested in having a visit, because of a disconnect between these levels and on-site staff.
- Property managers are overwhelmed with work and, although utility costs are a concern to them, most do not know what can be done to improve energy performance, and how to go about developing and implementing such work. Getting participants to participate in the survey proved to be more challenging than anticipated because of the lack of availability and interest in energy management.
- A significant portion of respondents could not answer all the survey questions, particularly those about how an owner can reap the benefits of energy efficiency investments; others provided contradictory responses to different questions. This suggests a lack of education in energy efficiency and energy management, and highlights the need for energy management capacity building among mid-tier building managers and operators.
- Based on the survey results, access to financing and obtaining corporate approval are the key barriers to implementing energy efficiency in mid-tier buildings, while split incentives are not. Further work should be performed to confirm the latter, which is assumed by many experts to be the main challenge.
- Many respondents clearly associated energy efficiency with lighting retrofits. There is a need to expand energy efficiency opportunities to other types of interventions including HVAC and low capital expenditure interventions. Regarding the latter, although recognized as good practice, operational improvements and energy management are not implemented by respondents, further illustrating the need for capacity building. These quick wins are often the first building blocks of an efficient energy management plan.
- Few respondents used benchmarking tools and techniques to measure and compare their performance against similar buildings, and most could not provide a complete list of energy projects implemented in their buildings.
- Many respondents rely only on external expertise, primarily vendors, to find energy efficiency opportunities. This highlights the need for capacity building among vendors to deliver more comprehensive energy efficiency solutions to building operators.

- Many respondents mentioned BOMA Toronto as a key source of reliable information that should play a central role in engaging organizations in implementing more energy efficiency.
- The study team hypothesized that mid-tier buildings owned or managed by CRE management companies whose portfolios included Class A as well as mid-tier buildings would show a closer engagement with energy performance than buildings owned or managed by companies that own or manage only mid-tier buildings. However the survey results did not support this hypothesis: the study team observed no significant differences in energy efficiency awareness, resources, or energy management practices between these two groups.

3 Engagement Strategy

The following section presents the foundation of an engagement strategy to engage organizations that manage mid-tier buildings in the energy transition.

This strategy seeks to increase participation in IESO programs by mid-tier CRE buildings, and to advance the level of energy efficiency activity and investment occurring in the sector overall.

Market description

This strategy is intended for use with mid-tier CRE buildings – Class B & C real estate between 10k ft^2 and 250k ft^2 – in Ontario.

The CoStar database identifies 11,587 office buildings in southern Ontario, 97% of which are Class B (33%) or Class C (64%). For more information about the CoStar database and the CRE building stock in Ontario, see Appendix IV.

- Nearly 60% of these buildings were built between 1950 and 2000.
- The segment between 10,000 and 250,000 ft2 represents 45% of all office buildings in Ontario, and 60% of the rentable area and is composed almost exclusively of class B and C buildings[4].
- Nearly 90% of office building owners own one building. However most owners and property management companies that participated in the survey own or manage multiple buildings.

Barriers to energy efficiency

A recent report from the Rocky Mountain Institute and BOMA identified three major barriers to widespread uptake of energy efficiency in Class B/C office buildings: the sector faces constraints on information, resources, and financing[5].

- The sector is information constrained: Property managers and operations staff often do not have time and attention to devote to learning about energy efficiency best practices, leasing mechanisms to monetize energy efficiency investments, or new technologies that could save energy and money in their buildings.

Building owners, managers, and operators in Ontario surveyed for this study reflect this finding in several ways. Two important examples are the lack of awareness about leasing mechanisms to overcome the split incentive and monetize value of energy efficiency investments, and the need for

[4] Slightly more than half of all office buildings in Ontario are smaller than 10,000 ft2, however these are not the focus of this characterization and engagement strategy.

[5] Cathcart et al., 2020, Unlocking Hidden Value in Class B/C Office Buildings, Rocky Mountain Institute.

information and tools to support operational energy savings. The survey team reported that only about 10% of survey respondents had a thorough understanding of energy efficiency.

- The sector is resource constrained: Class B/C buildings rarely have third-party management or engineering resources. Operational staff often have multiple roles and energy efficiency is typically not near the top of the priority list.

The results of the survey and site visits conducted with mid-tier building owners, managers, and operational staff confirmed this trend. Few buildings in the survey reported employing dedicated third- party building management services – according to the CoStar database, only 20% of Class B and 7% of Class C buildings in Ontario employ third-party management services. The site visits revealed that even where energy efficiency was a priority at the ownership or management levels, operators at several buildings did not consider it to be an important part of their role.

- The sector is financially constrained: Most property managers do not have access to significant funding for capital planning and are unable to overcome the initial cost of improving their building's energy performance.

Survey respondents identified access to financing as the most significant barrier to implementing energy efficiency projects in their buildings. Respondents also indicated that the most common point at which energy efficiency project development fails is obtaining project financing.

Another important barrier revealed through the survey was that many property managers had a negative past experience with the SOE program. Though they were not asked directly, several respondents reported that they participated in the SOE program to implement lighting upgrades, and indicated that they felt the incentives did not justify the time and effort to fulfill the program requirements, or that the rebate processing time caused problems for their financial operations.

Creating a contact database

The CoStar database is a good starting point for developing a contact database for the mid-tier CRE sector. CoStar is the most comprehensive source for building information and characteristics. Unfortunately, during the course of the survey the project team discovered that a large proportion of the contact information in the CoStar database is out of date.

A new tool that was made available to the public in 2020 provides more current contact information for building decision makers than CoStar. Loopnet.com is a new web-based software that is free to use and supported by CoStar on the back end. Loopnet lists all of the office space available in Ontario by city, and enables searches by multiple criteria. It also lists the year the building was built, rentable square feet, and a mapping function to enable users to visualize where a building is located. Depending on the building users can access the property management company or the leasing agent.

The contact database should include key building characteristics, as well as cells to record contact information for the building owner, property manager, leasing agent, and building technician-operator. Some of these fields will not be relevant for all buildings.

The contact database should include the following data fields:

- Rentable area (CoStar or Loopnet)
- Year built (CoStar or Loopnet)
- Building classification (CoStar only)
- Address: use separate columns for street address, city, and postal code, to facilitate analysis (CoStar or Loopnet)
- Owner: company, individual, email address, phone number (CoStar only)
- Property manager: company, individual, email address, phone number (CoStar or Loopnet)
- Leasing agent: company, individual, email address, phone number (CoStar or Loopnet)
- On-site staff: individual, email address, phone number (not available in published databases).

Marketing channels

The marketing channels in this circumstance are the people, organizations and activities necessary to deliver information to this sector to drive energy efficiency activity and investment, and to promote SOE programs.

Direct outreach to building owners and managers

The contact data base discussed above will be a primary tool for outreach to building owners and property managers. These contacts respond best to telephone calls – the survey team found that email was not an effective means of initial communication with most participants. The first point of contact should be a telephone call to with the property manager or leasing manager. The survey team also found that this group requires multiple touches to capture their attention and build a working relationship.

It is important to make contact with the executive level (a sustainability manager, vice president, or similar position) at the property management and or leasing company, to make them aware of the energy savings opportunity. The survey team found that the opportunity may fall upon deaf ears at the building level because of a lack of resources, and executive support is critical to driving action.

Secondary contacts through e-mail may be effective as a reminder, but do not expect follow up this way. Many surveyed property managers indicated that email was their preferred means of receiving information, but the team found that this group was generally not responsive to requests involving email follow-up, likely due to competing priorities for their time and attention.

In the mid-tier commercial building sector, capturing the attention of building owners and PMs, even if an opportunity is presented in a way to help them save money and become energy efficient at their facility, still doesn't resonate. They appear to be pushed to their maximum time capacity due to the

sheer size of their portfolios or the many “hats” they wear, because they are also in charge of building maintenance, leasing, arranging contractors, landscaping, tenant requests etc.

Messaging is key to this group. Opportunities framed in terms of energy savings or energy performance improvement were generally not successful in capturing the attention of surveyed portfolio managers. As discussed in the Pillars of the message section below, opportunities should be framed in terms that this industry uses on a regular basis: utility cost or operating cost per ft2, and property value. Messaging also needs to clearly address the resource and financing barriers discussed above. The team found that property managers and their associates do not have time to decipher energy-efficiency industry terms, or guess at how programs can help them. The value proposition should be clear and direct.

Offers of free or discounted education sessions, tradeshows or online sessions go a long way with this group. They are constrained in terms of education budgets and available time, but they are open to learning how best to manage their facility.

Trade allies

Based on the survey results, trade allies (service and equipment providers) were one of the top trusted resources for delivering energy efficiency information and tools to the mid-tier commercial building sector. In general these are existing business relationships, often invested with significant trust. Many surveyed property managers indicated that they would use a central resource listing trusted vendors and solution providers.

Developing a trade ally network creates opportunities to build capacity in the marketplace, by requiring or offering training and certification to equipment and service providers, who in turn build links between building owners and managers and the SOE program. A robust trade ally network could also serve as a primary means of advancing the market for energy efficiency in the absence of incentive programs, as well as developing the capacity of the market to identify and deliver cost-effective energy efficiency solutions.

Industry associations

BOMA was the most trusted authority for energy efficiency and industry information among survey respondents, even among those who were not themselves BOMA members. Given its level of trust among building decision-makers, BOMA could provide the most effective channel for energy efficiency information, tools, and educational opportunities. Co-branding materials and events may help to build familiarity and trust with the SOE brand.

Pillars of the message

The survey and site visit results have important implications for building effective messages for mid-tier office building owners and managers:

- This sector generally does not track energy consumption or intensity, but most building owners and managers track their utility costs per ft2. Messages framed using this metric are far more likely to engage building decision makers.
- More than twice as many survey respondents indicated they believe their buildings' energy performance is above average (43%) than indicated they believe their buildings' performance is below average (21%). Secure in this belief, they feel less urgency to take action and improve performance.

These findings and research on the Canadian mid-tier commercial real estate sector suggest the following two components of an effective message to building decision makers.

Use metrics that count

Low- and no-cost operational measures have the potential to improve energy performance by 15% in Class B/C office buildings. By also implementing capital measures with a simple payback of 3 years or less, building owners can improve the performance of their buildings by up to 35%[6]. This translates to…

- A reduction in operating expenses of \$0.26-\$0.61 per ft^2 per year.
- \$4-\$8 per ft^2 increased property value.
- 1.9-4.3% improvement in net operating income.

Burst the "above average" bubble

The survey of mid-tier office building owners and managers in Ontario found that 43% believed their buildings' energy performance to be above average, compared to 21% who believed their building was below average. The survey found that performance metrics such as energy use intensity are generally not well known by property managers and operational staff, but most respondents reported that they track their buildings' utility cost per ft2. Competition is an effective means of encouraging behaviour change among businesses[7]. Providing a clear reference point for what average and high performance mean, in terms that are meaningful to building owners and managers, is critical to building interest and driving engagement on energy performance.

Based on data collected by REALPAC and BOMA Canada,[8] and a mid-peak business electricity rate of \$0.094/kWh, the following are true:

- The average electricity cost for Canadian office buildings less than 100k ft2 is \$2.54 per ft^2 per year, for buildings 100k-250k ft^2 it is \$2.91 per ft^2 per year.
- Electricity cost for a high performing Canadian office building is \$1.88 per ft^2 per year.

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[6] Ibid.

[7] Consortium for Energy Efficiency, 2017, Behavior Insights and Tools: How Social Science Has Been – and Could Be – Applied to Connected Programs.

[8] REALPAC, 2017, Energy Benchmarking Report: 2010 to 2015 Results, Performance of the Canadian Office Sector

Market needs

Based on the survey results and literature review, education, technical and human resources, and financing represent the most significant needs of mid-tier office building owners and property managers when it comes to improving energy and sustainability performance.

- Education to help the property managers and operational staff to understand their buildings' energy performance, and to provide access to information and tools. Many surveyed property managers indicated that they would commit time to online education or attend training if it was reasonably priced. Several of these respondents noted that their employer provided limited or no funding for employee education. Options include the following:
    - Training incentives or reduced-cost courses on energy efficiency and energy management in commercial buildings, such as the one-day Energy Efficiency for Building Operators and Maintenance Staff, Building Operator Certification, and Building Automation Systems Essentials courses.
    - Webinars or online courses on energy management tools (such as ENERGY STAR Portfolio Manager), technologies, and leasing mechanisms to capture and monetize the value of energy efficiency investments.
    - Energy management education series using a cohort model, in which an expert technical resource or trainer works with a group of six-12 portfolio managers over a series of webinars or courses, often with energy management assignments (such as gathering building energy data, entering the data in Portfolio Manager or another tool, performing a sleeping-building walkthrough and identifying no-cost savings opportunities). Such an approach could be accompanied by technical support with building energy auditing, data collection or analysis, or other services to compliment the training.
- Technical and human resources to increase the capacity of property managers to identify energy performance improvement opportunities, develop effective business cases, manage projects and contractors, verify performance improvements and energy cost savings, and fulfill SOE program requirements. Options include the following:
    - Tools to support energy efficiency service providers to develop effective project proposals and business cases for the mid-tier office building sector.
    - Energy management micro-consulting (virtual or on-site) to address specific questions or issues relating to building energy systems, data collection and analysis, and energy management system development.
    - Incentive structures to motivate contractors and service providers to complete Save On Energy program applications and technical requirements on behalf of program participants. Examples include mid-stream or hybrid incentive structures, or trade ally networks with customer service requirements for accredited companies.
- Financing options to overcome the lack of capital planning budgets and higher initial cost of energy efficiency capital improvements. Energy efficiency financing adapted to the needs of commercial building owners, such as the SOFIAC model recently announced in

Quebec, would provide a solution to the single largest barrier facing the mid-tier real estate sector, according to the survey results.

Maintaining engagement

Engagement marketing is the use of strategic, resourceful content that involves collaboration, and creates meaningful interactions over time.

Understand your target audience

Mid-tier commercial property managers are busy people. They are multi-tasking in their role and are taking on additional or alternative titles of leasing manager, rental agent, or maintenance manager. Each manager typically has a large portfolio of buildings, and at the building-level they are often an independent contractor to the property management company. Many of these independent contractors use their personal cell phones and e-mail addresses instead of company accounts.

Determine early in the relationship with a given building manager or ahead of time how the tenant pays for utilities. If utilities are included in the rent, that property manager likely has a mandate to reduce or contain utility costs. The value proposition in this case can be direct and does not rely on any new leasing mechanisms. It is also important to listen to the property manager – many survey respondents indicated that they had past experience with energy-efficiency programs, and some had negative experiences. The engagement must address these directly to rebuild the relationship with these end- users.

Be transparent about capabilities

As noted above, the mid-tier sector is constrained when it comes to education, resources, and financing for energy efficiency. Survey respondents in general did not place significant trust in energy efficiency programs. Property managers cannot afford to invest in energy efficiency projects that do not deliver the expected benefits and cost savings. Savings estimates and other promises of energy efficiency benefits should be credible, well-founded, and measurable (consider providing M&V plans). A negative experience for one property manager could ripple out to losing the opportunity to work with an entire portfolio of buildings. Instead the program and its representatives, including trade allies, should be clear about what is possible in terms of benefits and savings, realistic about costs, and up front about the type of support the program will and will not provide.

Develop trust through communication

As mentioned above, initial attempts to contact property managers should be by phone or in-person. Relationships and trust are key to driving action and investment by this sector. Begin with no- or low-cost opportunities, ensure these are successful, and build from there. This develops trust and creates the basis to develop larger opportunities in the future. Regular in-person visits, even if infrequent (such as quarterly) will strengthen that trust relationship and create opportunities to understand the building, equipment, and energy efficiency opportunities. Maintain outreach using phone calls and e-mails, to ensure that projects are moving as anticipated and delivering the expected results.

Offer educational opportunities

Energy efficiency education is a critical need among mid-tier property managers and building operators. Training courses such as the one-day Energy Efficiency for Building Operators course, webinars on green leasing structures, and training cohorts all create opportunities for the Save On Energy program to develop and renew relationships with key stakeholders. One-on-one education events such as on- site workshops, sleeping building tours, and walk-through audits are an effective way to build capacity and develop a project pipeline.

Appendix I: Methodology

The market characterization relies on information collected through a literature review, surveys and site visits.

Survey design

The survey questions were designed based on preliminary research activities and a set of key assumptions detailed in Appendix II and Appendix III.

Site visits

Site visits served to drill down specific survey elements and assess interviewee perceptions on sectorial experts' opinions. Visits also served to obtain some idea of building efficiency and opportunities.

Databases

The COSTAR[9] database was used to gather high-level information about the sector and provide contact information. The MPAC and BEEST databases were originally used but were deemed inappropriate due to a lack of segmentation options and contact information.

Advisory committee

A panel of engaged commercial real estate industry experts and sector association representatives was formed to advise the project team and provide insights on the sector. More specifically, their involvement allowed the project team to verify that high-level assumptions were sound, the survey questions were appropriately formulated, the interpretation of results was appropriate and the pillars of the engagement strategy were aligned with sector needs.

[9] https://www.costar.com

Appendix II: Preliminary Research and Survey Design

This section presents the results of preliminary research that provided the building blocks used to design the survey and plan site visits. This section presents the key elements of the preliminary research and their impacts on the market characterization.

Building Classification

Office buildings are generally classified into one of three categories: Class A, Class B, or Class C. Detailed descriptions of the classes are available in a BOMA report.[10] Property management involved in managing Class A assets are slightly better characterized since they typically have more resources and represent larger organizations. They are typically already energy literate and consider energy efficiency as a means of improving tenant satisfaction and reducing operating expenses. Their tenants typically value more sustainable management practices and are willing to pay a premium to occupy a building with a certification such as LEED or BOMA BEST®. On the other hand, very little is known about organizations that manage mid-tier buildings. There is no official definition for mid-tier buildings. In this report, mid-tier buildings are defined as Class B and C buildings.

Impact on the market characterization

It is assumed that there are more organizations that are not engaged on energy management in the mid-tier sector compared to Class A. As such, the characterization efforts are focused on organizations managing mid-tier buildings. Furthermore, this report is focused on office buildings since this market segment was identified as having the highest achievable potential among all commercial sectors.

Stakeholder Map

Many stakeholders have an influence on whether energy efficiency projects go forward in an office building. Although this is true for most economic sectors and represents an important barrier due to the challenge of aligning all stakeholders' objectives, it is particularly true for the office sector in which the number of stakeholders is higher compared to owner occupant type configurations. Figure 21 below presents a summary of CRE key stakeholders.[11]

[10] Office Building Classification Guide, BOMA Canada.

[11] Figure 21 is meant to illustrate the complexity of the environment and may not be representative of every configuration.

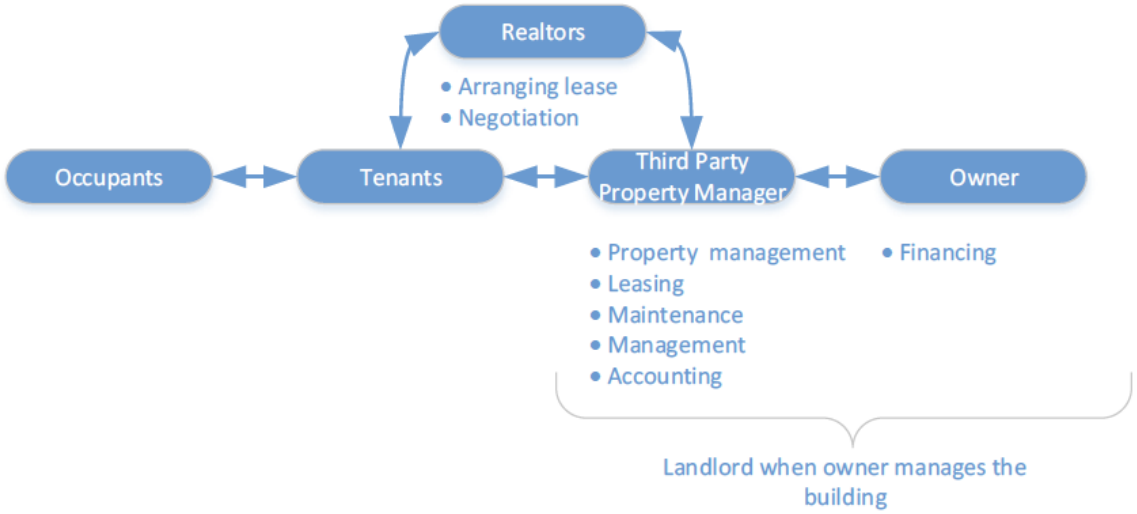

Figure 21: CRE Stakeholder Map

Impact on the characterization efforts

It is not known to what extent organizations that manage mid-tier buildings segment the above roles. The survey questions were designed to investigate role segmentation, create a mid-tier stakeholder map and assess stakeholder influence on the decision-making process.

Class A Structure and Decision Process

According to an Ontario Power Authority (OPA) report,[12] larger CRE organizations that manage Class A buildings have a project approval process involving the property manager, asset manager, and owner/portfolio manager. The process is illustrated in Figure 22 below.

[12] Conservation and Demand Management support for Ontario's Energy Efficiency Efforts, Ontario Power Authority, 2009.

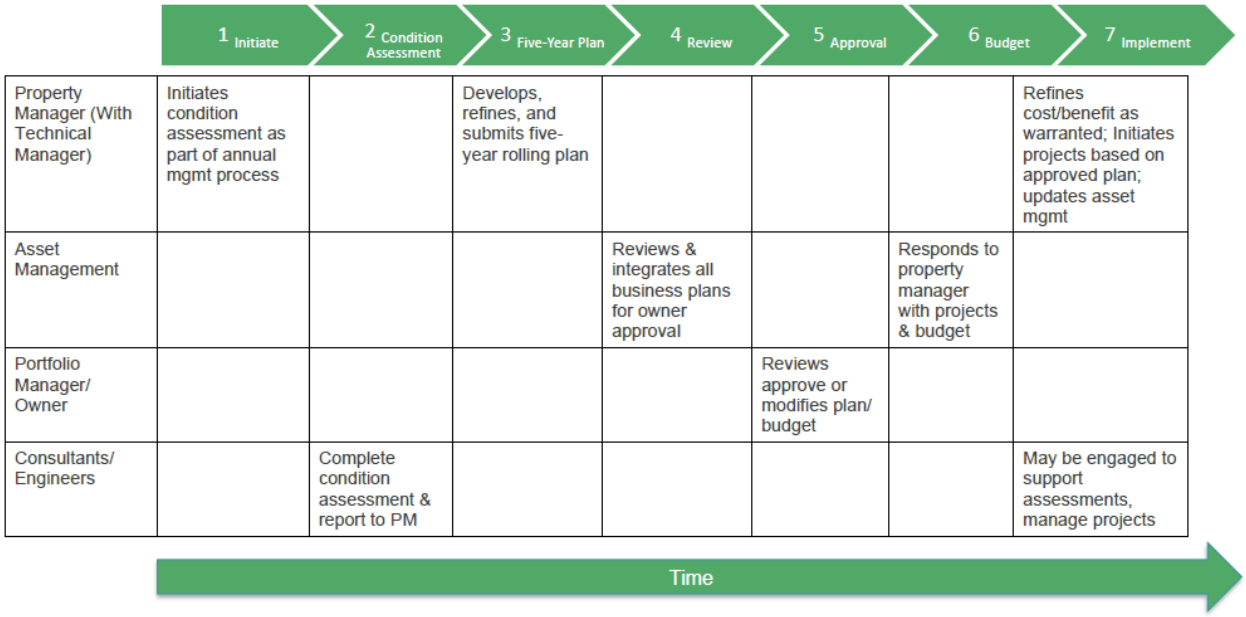

Figure 22: Appendix I Class A CAPEX Approval Process

Impact on the market characterization

It is not known if the above-mentioned process is applicable to organizations that manage mid-tier buildings. The survey questions were designed to map the decision process prevalent in these organizations.

The Australian Experience

In 2015, the Australian government prepared a country-wide characterization report of mid-tier commercial buildings in Australia.[13] This section presents the key results from the report.

Mid-tier building description

According to the Australian report, mid-tier office buildings generally have the following characteristics:

- Smaller buildings, generally under 10,000 square meters (107,000 sq. ft.);
- A diverse ownership profile (secondary mid-tier, private, family-owned, strata titled, government, foreign);
- Generally, more energy intensive due to a combination of age (built before 2000), ownership profile, passive management and tenant expectations;

[13] Mid-tier Commercial Office Buildings in Australia, A National Pathway to Improving Energy Productivity, Ernst & Young, 2015

- Older HVAC plant and lighting. HVAC is likely to be the original system (25+ years old) with zero or minimal controls and lighting tends to be T8 magnetic ballast fluorescent tubes;
- Where there is HVAC, it is often either a mix of central plant or individual package/split system units;
- Some have natural ventilation (operable windows) so the base building can be energy efficient by default;
- Typically, higher vacancy rates than premium and A-grade assets;
- A mixture of smaller offices, with mainly small and medium enterprise (SME) tenants with:
  - No corporate sustainability agenda;
  - Limited time, resource and knowledge about energy efficiency.
- Shorter lease terms than premium and A-grade assets;
- Less rent per square meter;
- Generally, no onsite dedicated team for property/facility management.

The tenants

According to the Australian report, tenant's primarily look at the cost of base rent and location when shopping for a space to lease. Tenants attracted by cheap base rent may neglect utility costs and realize their significance only after signing the lease. Without proper awareness about opportunities to reduce such costs, tenants tend to perceive utility costs as unavoidable. The report concludes that tenant's awareness contributes to the low uptake of energy efficiency solutions. If tenants do not make requests to better manage utility costs and improve their level of comfort, building owners are not motivated to implement improvements.

The barriers

The Australian report identifies the following barriers as relevant:

- Many mid-tier building owners are reluctant to invest in capital improvements because of barriers to accessing capital, a lack of awareness regarding energy efficiency and the benefits thereof or the perception that investing energy efficiency does not yield worthwhile returns.
- Building owners and tenants often do not have access to all the information they need to make fully informed decisions about buying a building, leasing a space or choosing a service provider.
- Mid-tier building owners do not typically network amongst themselves (unlike premium or A-grade building owners) and they are underrepresented on industry bodies.
- Split incentives between tenants and building owners mean that the latter are reluctant to invest in upgrades if tenants reap the benefits.

- A lack of tenant demand for better quality buildings/tenancies due to lack of awareness or lack of corporate policies drives environmental or social policies.
- The number of office building tenants can have a major impact on the retrofitting decision-making process due to the risk of disruption to existing tenants while upgrades are being implemented and the number of stakeholders that must be consulted and provide approval.
- There is a lack of appropriate skills and expertise amongst industry service providers and other stakeholders to advocate for and drive the uptake of upgrades.
- Government is not driving energy efficiency outcomes strongly enough to impact the mid-tier building sector.
- Most stakeholders in the mid-tier commercial office building sector are time poor and do not prioritize energy efficiency in the range of competing demands on their time and resources.

The pathway

The following items were proposed in the Australian report:

- Develop a robust and trusted evidence base;
- Build a compelling and quantified business case for energy efficiency upgrades;
- Create a shift in awareness, knowledge and behavior;
- Develop and identify tools to promote energy performance improvements;
- Establish representative bodies and networks;
- Promote innovative financing mechanisms.

Impact on the market characterization

Since the status of the Ontario market differs from the Australian market, mainly that current vacancy rates are very low across all building classes, the characterization report outlined herein is focused on confirming the split incentive, access to capital and tenant influence barriers.

The Pittsburgh Experience

Carnegie Mellon University published a paper on reasons why Pittsburgh Class B and C building owners were reluctant to invest in energy efficiency even if the benefits seemed to outweigh the costs.[14] The paper uses a normative approach to identify the normal expected behaviors with rational economic principles and a descriptive approach to understand the actual mindsets of decision makers.

[14] Neither a borrower nor a lender be: Beyond cost in energy efficiency decision-making among office buildings in the United States, Carnegie Mellon University, 2019.

According to the normative approach, the following four factors with economically focused preferences are necessary conditions for building owners to invest: (1) low uncertainty in energy savings; (2) capital availability; (3) time preference; and (4) incentive alignment between owner and tenant.

The study revealed that mid-tier owners: (1) were concerned about uncertainty in the energy savings and desired measures to reduce that uncertainty (a guarantee); (2) discounted the future energy savings of energy efficiency investments, but only a minority of this discounting was due to time preferences; (3) had enough capital to pay for the investments themselves and preferred to pay themselves, with some respondents even rejecting a no-interest loan; and (4) rarely cared about owner-tenant split incentives but did care about energy efficiency if it could improve tenant retention.

Impact on the market characterization

The study provides contradictory results with respect to the split incentive barrier often characterized as a key barrier in the CRE sector. The market characterization is focused on drilling down the split incentive and access to capital barriers.

Ownership and Control

Energy is consumed by multiple assets that are operated and owned by different stakeholders. The following are three categories of assets proposed by the project team to illustrate the complexity of implementing EE projects.

Common building assets: Assets delivering services to all tenants such as central heating plants, chillers and common area lighting. They are most often owned and controlled by building owners.

Tenant building assets: Assets delivering services to a specific tenant such as split units, tenant lighting. Asset ownership varies between owners and tenants, but tenants most often have control over the assets.

Tenant specific assets: Assets delivering services to a specific tenant such as computers, printers, etc. They are most often owned and controlled by tenants.

In an arrangement where the building only has one main utility meter, tenant utility costs based on the pro-rata share are affected by how all the above-mentioned assets are operated.

Impact on the market characterization

This report is focused only on common building and tenant building assets and assesses how these costs are transferred to tenants in the case of net rent in which tenants pay for a portion of utility costs.

Leases and Utility Costs

Leases are typically negotiated between realtors representing prospective tenants and the property management or leasing team. Each tenant lease is independent. Leases typically have fixed a pro-rata share ratio of operating expenses (net leases) and escalation rates agreed upon for the duration of the lease.

The lease contract specifies how tenants cover utility costs. The following is a summary of lease arrangements from the utility cost perspective.[15]

Gross lease: In a gross lease arrangement, the cost of utilities is included in the rent. The tenant is not aware of the utility costs and the owner assumes the risks of utility cost inflation. If a project reduces utility costs, the owner reaps the full benefits.

Modified gross and net lease: For the purpose of this analysis, a net rent or modified gross lease means that tenants pay for utilities via an item on the operating expenses. In case tenants have their own utility meter, their operating expenses include their pro-rata share[16] of the common area/asset utility costs. If a building only as one utility meter, tenant operating expenses include the pro-rata share of all utility costs.

In a building with only one utility meter and where tenants are in a modified gross lease or a net lease, the excessive energy consumption of high energy-intensive tenants adversely affect the utility costs of all tenants.

Impact on the market characterization

The characterization is focused on understanding the type of lease prevalent in the Ontario market and its influence on energy efficiency decisions.

Key Ratios and Terms

There are important ratios and terms specific to the CRE sector. The following section provides high level descriptions of those relevant to the characterization outlined herein.

Cap rate: The cap rate is often used in evaluating property value. It represents the ratio of net operating income (NOI) to property value. The cap rate is predominantly market driven. In other words, a property is typically sold X times its NOI. Increasing the NOI thus has a proportional impact on property value.

Net operating income (NOI): This is the gross rent revenues minus operating expenses. There are no official international financial reporting standards or generally accepted accounting principles

[15] BDC's "*13 terms you need to understand before signing your commercial real estate lease*" (2019/09/29).

[16] Often based on square footage.

definition of NOI, and the definition may differ slightly between organizations. It typically excludes amortization and debt services. It represents the revenues from a building when all debts and assets are paid for.

Operating expenses: These are expenses incurred to operate buildings. They include property taxes, maintenance, utility costs, amenities, etc. What is and what is not an operating expense depends on the contract. In some leases, property improvements can be amortized and included in the operating expenses while they cannot in other contracts.

Impact on the market characterization

The characterization is focused on understanding the influence of EE projects on the NOI.

Localization

Localization plays an important role in building classification and the capacity of owners to justify higher rents and their willingness to invest in properties.

Impact on the market characterization

Although this is an important factor, for practical reasons, this report is focused on the market as a whole.

Market Status

At the time of preparing this report, the Ontario CRE market was characterized as healthy. Vacancy rates were low in mid-tier buildings across the province. Typically, Class B and C buildings are believed to have higher vacancy rates than A and AAA buildings. It is assumed that the vacancy rate is a particularly important factor when assessing opportunities for owners and the timing of investments.

Impact on the market characterization

The characterization is focused on assessing the impact of vacancy rates and lease maturity on investment cycles.

Appendix III: Survey Design Assumptions

This section presents key assumptions used to create the surveys and identify which sites to visit.

Barriers

The approach adopted for the purposes of this report and questions explored during the surveys and visits are based on assessing the following core barriers identified from interaction with experts, experience from the project team and preliminary research results.

Barriers to energy efficiency:

- Lack of time and expertise;
- Lack of awareness regarding savings opportunities;
- Tenant preferences;
- Split incentives;
- Lack of access to capital.

Lack of time and expertise

PMs are increasingly overwhelmed with responsibilities. In organizations that do not have sustainability goals or for which EE is not seen as a key opportunity to improve the bottom line, it is unlikely that PMs have the time and expertise to implement EE initiatives, whether they be operational or capital in nature.

Furthermore, PMs can take on many of the roles. Responsibilities between asset managers and PMs are merging as more responsibilities fall on the shoulders of PMs. Although centralizing many responsibilities onto PMs could lessen the complexity of aligning stakeholder interests, it could also mean that PMs have less time to manage energy and must focus more on building O&M.

Lack of time and expertise is also assumed to be important for mid-tier tenants. Without the time and expertise for tenants to evaluate proposals from PMs, it may prove difficult for PMs to justify improvements or renegotiate rent.

Lack of awareness

Tenants, PMs and owners lack awareness about the opportunities and benefits of better managing utility costs. This includes awareness about energy-saving opportunities, incentive programs, as well as where to start and who to trust.

In a net rent arrangement, utility costs are not straightforward to identify. They are included in the operating expenses transferred to tenants. Tenants may only look at the overall operating expenses and not individual cost items and, as such, may not be aware of the actual utility costs.

Since there are no mandatory utility cost disclosure rules, it is difficult for PMs and tenants to determine if their building utility costs are competitive. In addition, operating expenses may not be properly understood by realtors who may not use this information to attract tenants.

Lastly, PMs and tenants may not know where to start and assume that utility costs are unavoidable.

Tenant interest

It is assumed that most mid-tier tenants represent small and medium enterprises (SMEs). Such organizations typically do not have sustainability policies like larger organizations. As such, energy efficiency and sustainability may not be a differentiator that helps owners attract and retain tenants. When this is the case, PMs rarely have the official mandate to drive down operating costs.

Due to their lack of awareness, tenants may perceive energy efficiency as solely associated with sustainability and assume such improvements as not cost effective and that it leads to rent increases.

Split incentives

One of the main sources of complexity for implementing EE projects in the CRE sector is assumed to be associated with the number of stakeholders. Split incentives, simply put, represent a misalignment of stakeholder interests whereby efforts and reward are not aligned.

For an EE initiative to move forward, occupants have to adopt certain sets of behaviours; tenants have to value and look for higher efficiency buildings and be ready to pay a higher base rent (but presumably a lower overall net rent); realtors have to be aware of building characteristics (higher EE = lower operating costs) to attract the right tenants; PMs or leasing teams have to leverage higher EE (lower operating costs) by negotiating/renegotiating higher base rents; PMs have to have the time to identify opportunities and prepare a business case; the financing department has to understand how to structure the deal to maximize value; and the owner has to be willing to invest to increase the NOI and property value.

However, initial discussions with PMs and observations from preliminary research revealed mixed conclusions about split incentives. They are assumed to be a significant barrier.

Between tenants and owners

For example, in a net rent arrangement, the owner would pay for an EE investment, but the tenants would benefit from the savings. Although this can be used to attract and retain tenants, this is only true when tenants value higher efficiency buildings and realtors promote such improvements. In this arrangement, for the owner to capitalize on investments, the base rent must be renegotiated, making the implementation of EE solutions more complex.

Between third-party property management and owners

Unless the owner provides clear directives to the third-party property management company, the latter may not be motivated to find and implement EE solutions. They would rather focus on services valued by the owner and rewarded in the contract.

Between groups within the owner organization or third-party property manager

Split incentives are also associated with stakeholders in the same organization. For example, having more efficient equipment requiring refined maintenance may not be acceptable for the maintenance representative unless the operating budget or capacities are upgraded accordingly. Another example, which is often the case in many organizations, is when operating expenses are managed by a different group then capital expenses. Often, the financing department controls capital expenditures while the operations department controls operating budgets.

Lack of access to capital

Access to capital is a key barrier in all market sectors regardless of whether it is associated with debt aversion, incapacity to secure financing or operating cash restraints. Owners may be reluctant to use their debt capacity to finance EE and rather focus their capital on acquisitions or other investments about which they have greater knowledge and expertise. A good example of this is focusing on exterior decor to attract tenants.

The Meaning and Benefits of Energy Efficiency

The intent of this section is not to provide an extensive description of energy efficiency and its benefits. It is meant to portray EE as it was presented to survey participants. Often, EE is associated with early asset replacements in the form of capital investments. However, for the purpose of this study, EE has a much broader sense. It includes the following

- Operation improvements: Improving how buildings are managed. These include recommissioning, preventive maintenance and energy management best practices.
- Capital expenditures: Early replacements of inefficient assets or efficiency improvements to assets at their end of life. The gain in efficiency can come from better design and more efficient equipment.
- Behavioral changes: Changes in the way energy is used through incentives, awareness campaigns, training or other means of influencing behaviors of building occupants and PMs.

EE leads to many benefits for building owners and tenants:

- Direct energy benefits: Lowering utility costs and, consequently, building operating costs by lowering energy usage while maintaining the same level of comfort.
- Non-energy benefits: Indirect benefits such as improved productivity, higher comfort levels, improved occupant satisfaction, decreased absenteeism and sick leaves.

Monetization Mechanisms for Energy Efficiency Benefits

There are multiple ways for CRE owners to reap the rewards of energy efficiency projects, although energy efficiency is more complex in this sector compared to organizations that own and occupy

buildings. This section proposes some approaches for reaping the benefits and is not meant to be exhaustive.

Direct energy benefits: In gross leases, all direct energy benefits go to owners. In a net rent arrangement, the direct energy benefits automatically go to tenants through reduced recoverable operating expenses. To recuperate capital or reap the rewards of investments, owners can add an expense, in the operating expenses, equivalent to the amortized costs of improvements or equivalent to reductions in utility costs. This method is somewhat controversial since improvement charges are debatable operating expenses.[17][18][19][20]Owners can also renegotiate rent with actual tenants to increase the base rent while ensuring overall net rent decreases. Such mechanisms can be formalized in lease types such as green leases.

Non-energy benefits: Owners can reap the rewards by leveraging improvements to attract higher quality tenants and charging a higher base rent. It is much harder to attribute non-energy benefits to EE projects compared to energy benefits that can be easily tracked using measurement and verification techniques.

A study from the United States Environmental Protection Agency20 suggested that energy savings can improve property values regardless of the leasing structure. The study concluded that, for net leases, renegotiation is an effective approach to improve tenant and owner bottom lines. The study also emphasized that value added from EE projects is much better illustrated by focusing on the property value increase rather than the internal rate of return (IRR). Recuperating improvement costs through amortized charges on operational expenses does not lead to improved property values, rendering EE much less attractive.

[17] “Operating Costs”, Daoust Vukovich LLP, 2009.

[18] “Before You Sign That Lease”…”, Harvard Business Review, 1988

[19] Capital Expenditures – Includable or Not? (2019/08/29)

[20] “Upgrading Tenant Spaces”, United States Environmental Protection Agency, 1994

Appendix IV: Office Building Stock Description

This section provides an overview of the market based on the CoStar databases office building extracts dated from 25 March, 2020. The complete Costar database consists of 90,456 buildings of which 11,587 or 13% are office buildings and 47,253 or 52% are retail buildings. The CoStar building classification is based on the primary function of buildings, meaning that there could be a significant amount of office spaces in retail, industrial and flex buildings that are not addressed by analyzing office buildings only. However, for practical reasons, the remainder of this analysis is focused on office buildings only.

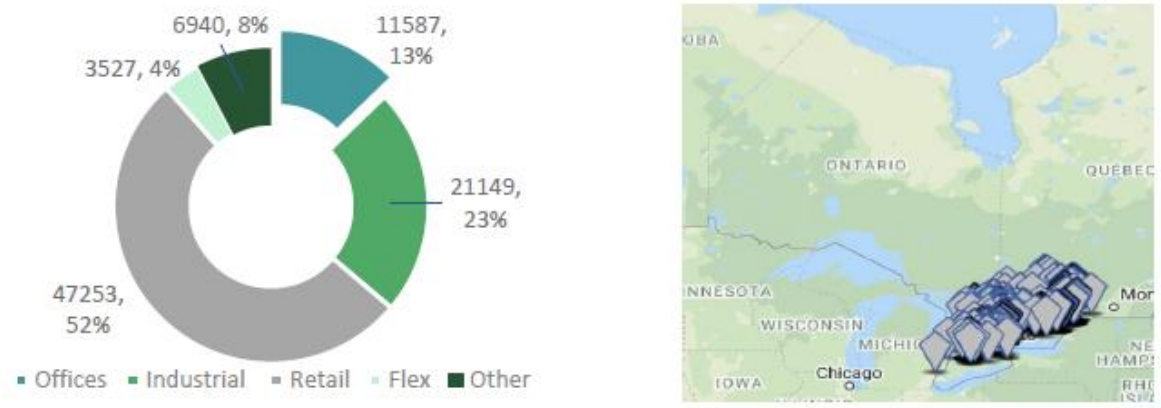

Figure 23: CoStar Database Building Stock (25 March 2020)

As illustrated in Figure 23, the office buildings registered in the database are in the southern part of the province. As illustrated in Figure 24, most of them are B and C buildings built between 1950 and 2000.

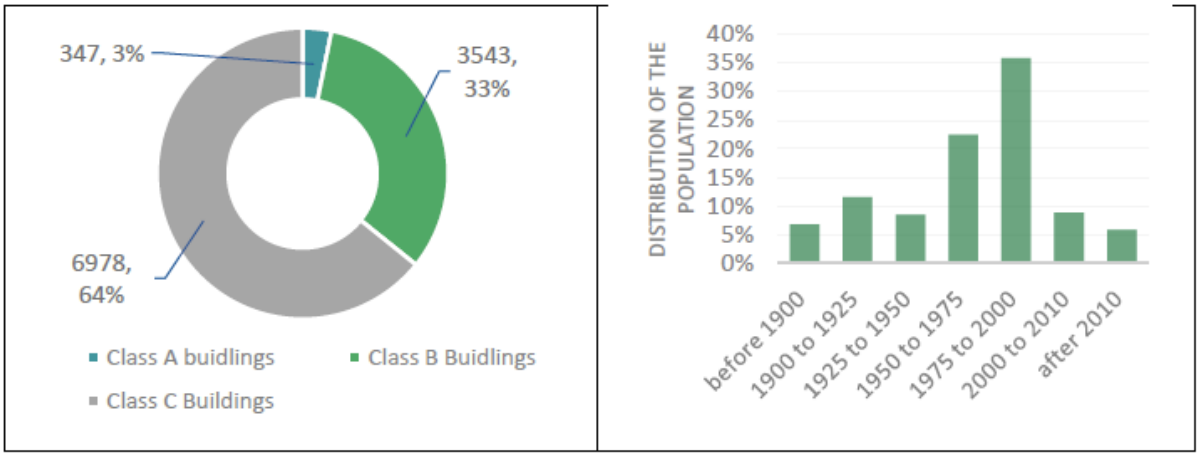

Figure 24: Office Building Classes and Construction Year in CoStar Database

Figure 25 below illustrates the distribution of buildings and rentable area by building size. Figure 26 and Figure 27 further below illustrate building classification by building size and construction year respectively. While 52% of the buildings are smaller than 10,000 ft^2, they only represent five percent of the total rentable area. Although buildings larger than 250,000 ft^2 only represent three percent of the buildings, they represent 35% of the rentable area. However, about 63% of the buildings larger than 250,000 ft^2 are class A buildings.

The segment between 10,000 and 250,000 ft represents 45% of the buildings and 60% of the rentable area and is composed almost exclusively of Class B and C buildings. As outlined in Figure 26 and Figure 27, building classification is correlated with building size and age, and the majority of smaller or older buildings are Class C buildings while more recent and larger buildings are Class A.

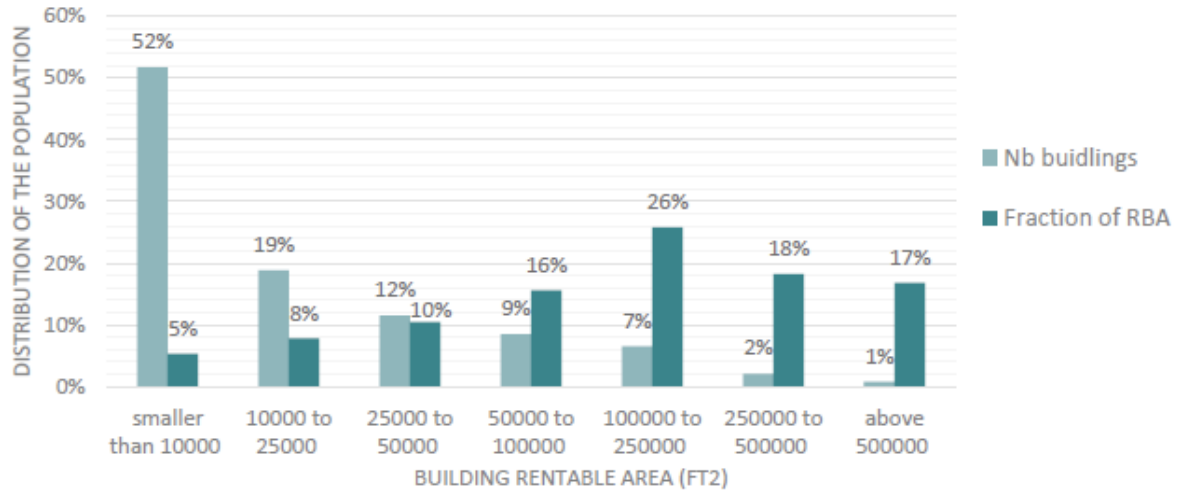

Figure 25: Distribution of Office Buildings (Number of Buildings and Total Rentable Area) by Rentable Area

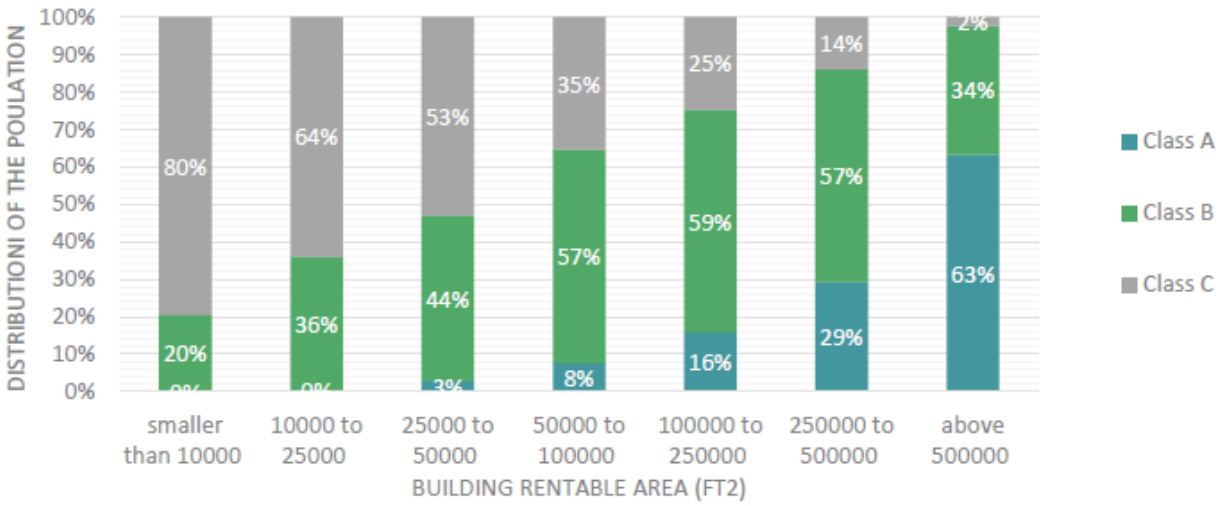

Figure 26: Distribution of Office Buildings (Classification) by Rentable Area

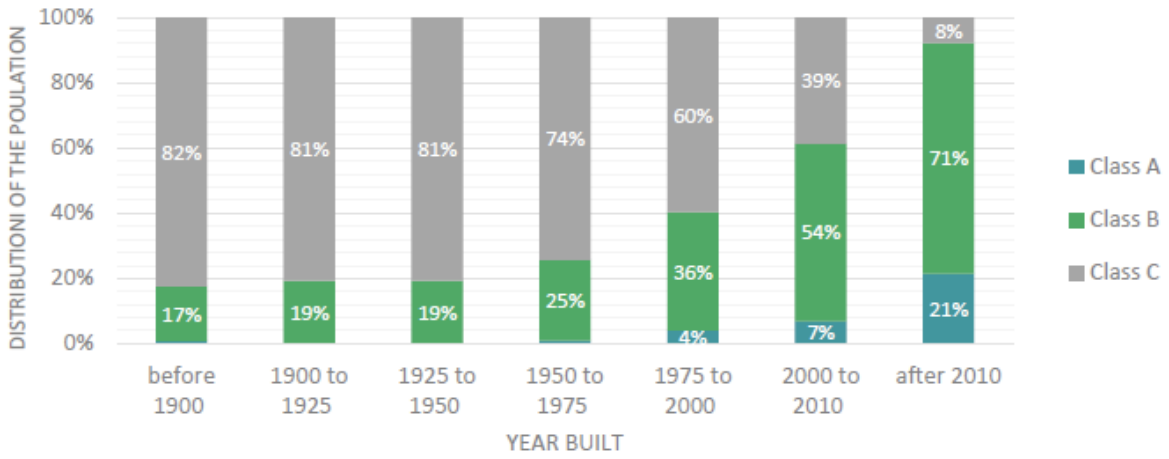

Figure 27: Distribution of Office Buildings (Classification) by Construction Year

As depicted in Figure 28 below, most buildings are managed and owned by the same organization; this tendency is even more prevalent for lower class buildings. Based on Figure 28, most tenants pay for their electricity, however, this arrangement is found less often in lesser-class buildings that have a higher percentage of gross rent arrangements. Both of these observations must be interpreted with care because of the database scarcity about third-party management companies and rent services fields. Furthermore, companies use multiple names depending on services and assets, rendering it difficult to characterize an organization with large portfolios and extensive services.

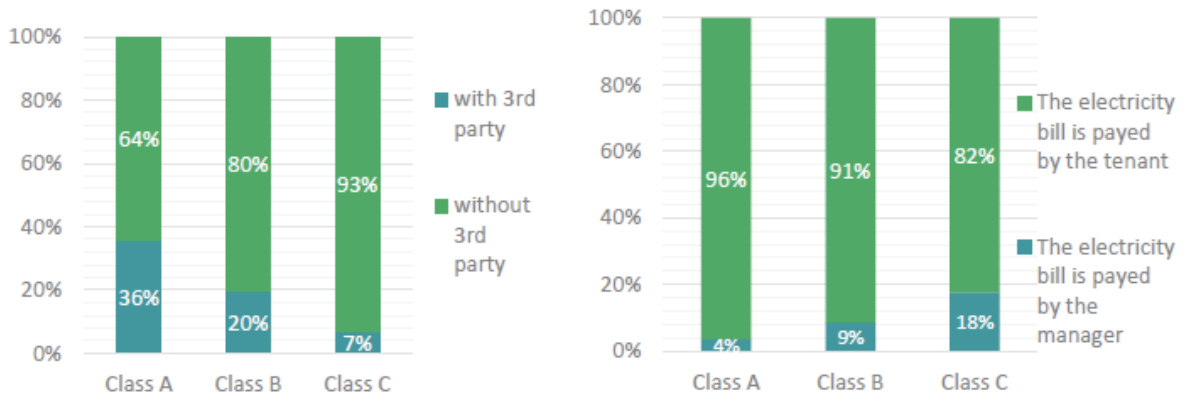

Figure 28: Building Management Structure[21] (Owner Manager Versus Third-Party Managed) and Rent Structure[22] (Net Versus Gross)

As illustrated in Figure 29, 89% of owners only own one building and they represent 35% of the total rentable area in the province. Fewer than one percent of owners own more than 21 buildings but capture 14% of the rentable area.

As illustrated in Figure 30 further below, 56% of owners own portfolios with a total rentable building area (RBA) smaller than 10,000 ft^2 but they only represent five percent of the total RBA in the province. Conversely, three percent of owners own portfolios with a total RBA larger than 250,000 ft^2 but capture 57% of the RBA in the province.

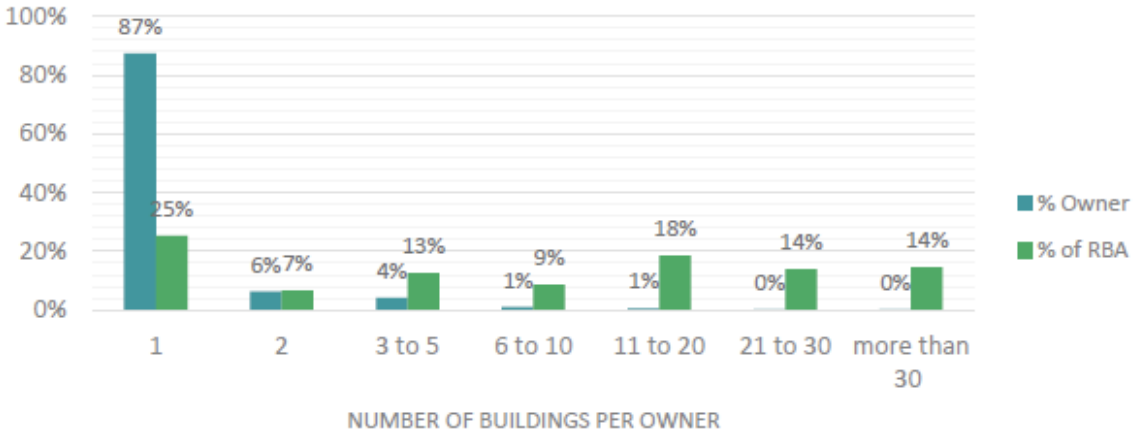

Figure 29: Ownership Profile per Number of Buildings per Owner

[21] 8,666 buildings out of 11,587 buildings have owner information. It is assumed as per Costar recommendations, that buildings without property management company information are managed by the owner

[22] 1,847 out of 11,587 buildings have rent services information

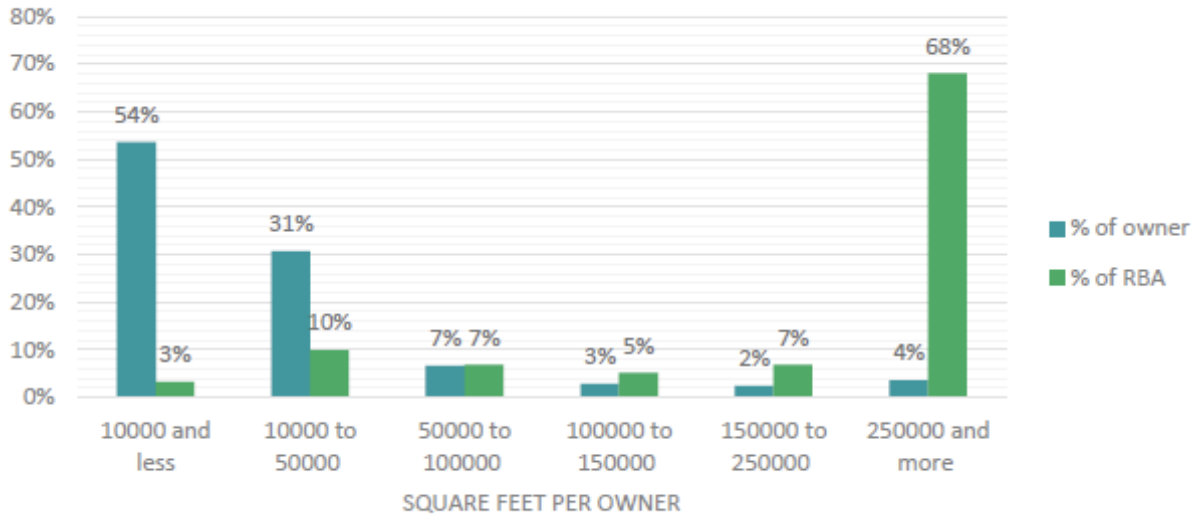

Figure 30: Ownership Profile per Number of Buildings per Owner

Figure 31 below illustrates that 18% of owners who own Class A buildings also own Class B buildings, and 45% of Class A building owners own Class C buildings. These mixed class owners account for 37% of the total RBA. Only 37% of owners who own Class A buildings have a portfolio composed 100% of Class A buildings.

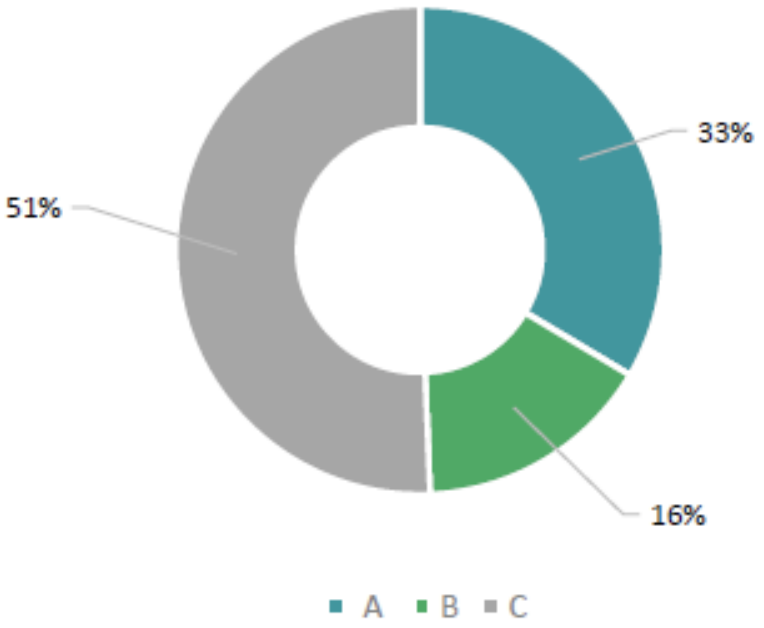

Figure 31: Class A Owner Portfolio Lowest Building Ratings

Analysis

The analysis of the Costar database allowed the project team to characterize the building stock and ownership profiles of office buildings in the province.

Key observations:

- Class A building owners also manage Class B and C assets, represent 35% of the Ontario RBA and own nine percent of all buildings. Assuming that Class A building owners manage buildings in a similar fashion and that they consider energy efficiency as a value creation proposal in all their buildings, this implies that 35% of the RBA in Ontario has been or will be improved without further engagement efforts, which is contradictory to the assumption that this sector offers the highest achievable potential. It is thus assumed that energy efficiency in Class A buildings is managed on a building-by-building basis.
- Fewer than four percent of owners own more than six buildings but they represent 47% of the provincial RBA. The limited number of owners and significance in RBA portfolio make this group attractive from a transaction costs and savings potential perspective.
- The majority of office buildings are smaller than 10,000 ft^2 but combined only represent five percent of the RBA in the province. Although they represent a significant portion of buildings, their potential is lessened by their small size and ownership profile, with the majority of owners only owning one building. This leads to the assumption that the transaction costs to achieve the savings potential for this group could be significant with limited results.
- Owners with fewer than six buildings represent 53% of the RBA and could represent a group with fewer resources compared to the biggest owners, leading to the assumption that energy management is of lesser importance due to the portfolio size.
- The majority of Class B and C buildings are owner-managed and tenants pay for their electricity; on one hand, these facts simplify the decision process because it is possible to negotiate directly with the financier but, on the other hand, these facts introduce a split incentive barrier.

Impact on the survey

Based on the above-mentioned observations, the survey was focused on Class B and C buildings between 10,000 ft^2 and 350,000 ft^2. It includes organizations that manage Class A, B and C buildings based on the assumption that energy efficiency is managed on a building-by-building basis.

Appendix V: Survey Sample

The following is a description of the survey sample.

- Sample:
  - Sample size: 76
  - Building RBA: 10,000 to 350,000 ft2
  - Classification: A, B and C
- Surveyed organizations:
  - Owners: 32
  - Third-party property managers: 45
- Portfolio owned or managed by surveyed organizations:
  - Number of buildings: 351 (3.3% of B and C office buildings)
  - RBA: 33,700,000 ft2 (10.4% of B and C office RBA)
- Surveyed groups:
  - Base group: 59 B and C buildings from owners with B or lesser-class buildings in their portfolios. They own portfolios with on average four buildings and 250,000 ft2.
  - Reference group: 17 A, B and C buildings the owners of which also own Class A buildings in their portfolio. They own portfolios with on average 15 buildings and 1,500,000 ft2.

As detailed above, two groups were created to assess results, one group of buildings that are part of a portfolio with Class B and lesser-class buildings and another group of buildings for which the highest classification is A. The reference group is composed of owners with larger portfolios and with more resources.

The distribution of the base group RBA and geographic distribution are illustrated in Figure 32 and Figure 33 below. As illustrated in Figure 32, the survey sample is skewed toward larger buildings. The fact that the survey sample building RBA distribution is skewed toward larger buildings exemplifies the complexity of reaching owners with a smaller portfolio. Therefore, survey results must be interpreted with caution.

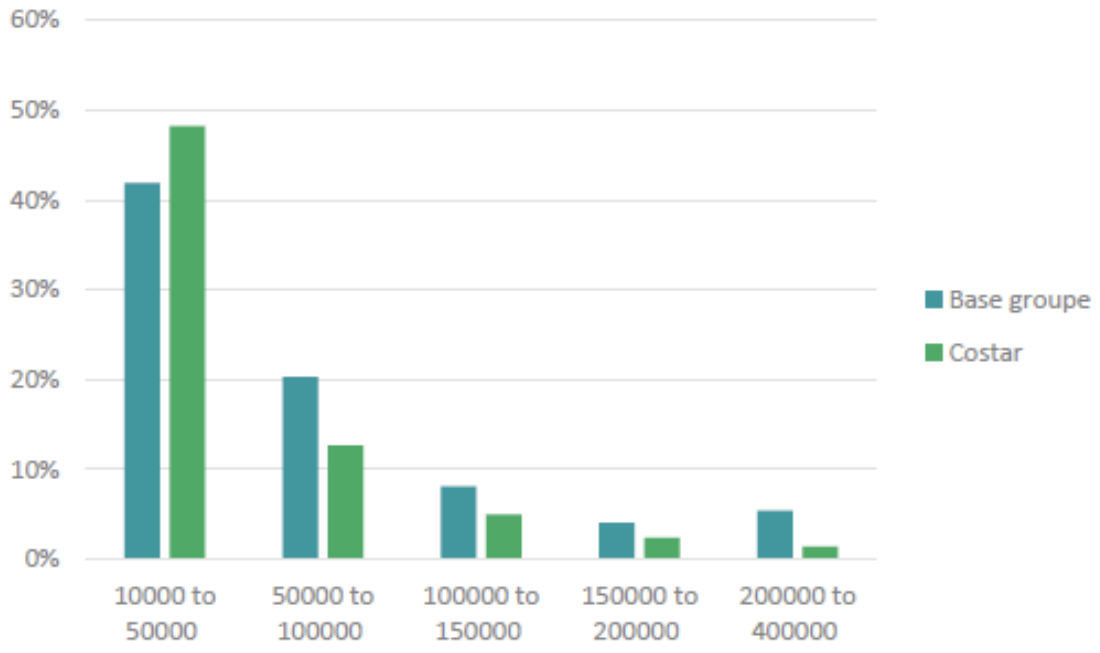

Figure 32: Survey Sample Base Group) Versus Costar B&C Buildings

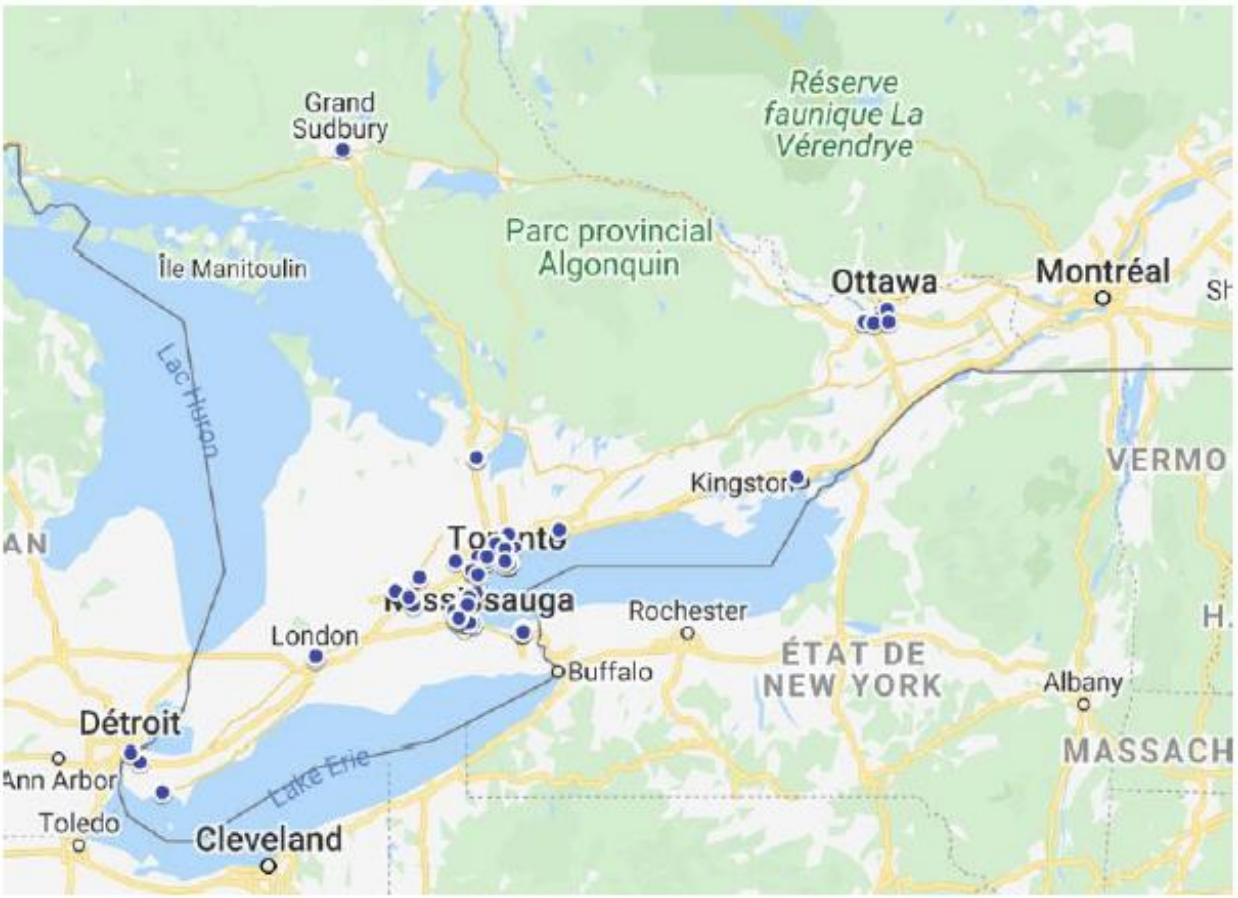

Figure 33: Survey Geographic Distribution

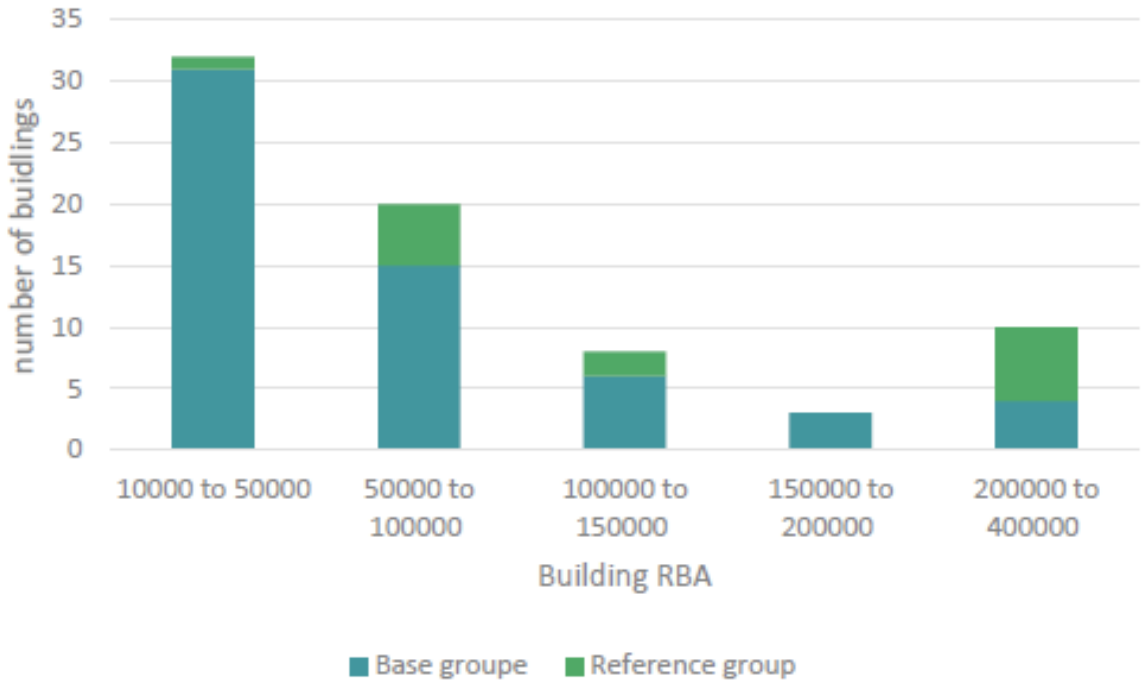

Figure 34: Survey Sample (Base Group and Reference Group)


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