

New Construction Multifamily Building Recruitment—A “Full Contact” Game!

Pam Rathbun, Tetra Tech, Madison, WI
Carol Sabo, Tetra Tech, St. Simons Island, GA
Amber W. Watkins, DNV GL Energy, Santa Rosa, CA
Dorothy Conant, Independent Consultant, Hudson, MA
Zack Tyler, NMR, Somerville, MA

ABSTRACT

Utilities and energy efficiency program administrators are seeking to meet their energy efficiency goals by targeting hard-to-reach markets beyond the residential single family and nonresidential sectors. Multifamily buildings are a growing and energy intensive market and have become part of the energy efficiency game. To determine baseline or current energy practices for new multifamily buildings, program staff and evaluators need high quality data on building components, mechanical equipment, appliance types, end uses, and usage in both common areas and tenant units. At the same time, the multifamily sector is a complex market with different definitions across geographies, and multiple decision makers that change over time, which starts with the design phase and continues through occupancy. Identifying multifamily buildings and the appropriate contacts and engaging these players to participate in energy-related studies is a real challenge. The objective of this paper is to share some of the techniques that have and have not worked in identifying and recruiting multifamily buildings for on-site visits by combining the collective experience from three companies. This paper will explore different options that have been used to engage these market actors and some of the strengths and weaknesses of these options.

Introduction

Utilities, program administrators and implementers, and evaluators need high quality information on the multifamily market to (1) characterize this market, (2) understand the energy saving opportunities, and (3) help design program offerings that will appeal to this market. There are a number of challenges to collecting high-quality data.

Identifying participants is challenging because the definition of “multifamily” differs around the country, and for any given utility or program administrator their definition will usually dictate how the sample frame should be stratified. Sample methodologies may also be driven by previous study definitions and approaches to enable comparisons of trends over multiple years. Also, many utilities do not have the indicators in their billing data to identify multifamily buildings, and multifamily buildings exist in both residential and nonresidential billing categories. Additionally, the timeframe for completing new multifamily buildings once the permit is drawn may be several years, thus making it difficult to identify a sample of buildings recently completed and ready for occupancy.

Identifying and securing participants in new construction (NC) multifamily studies is resource intensive. In NC multifamily properties, project knowledge and granting approval for on-site inspections or surveys is often not isolated to a specific role, thus requiring the involvement of multiple decision makers in a study. Including multifamily program nonparticipants from the general population—particularly market-rate projects—is also difficult, because they are often not motivated to participate in studies based on direct financial incentives.

Finally, the sample design and weighting for population statistics is also difficult for this sector, which is quite diverse, with varying energy use intensities, energy suppliers, building types, equipment ownership, and property management circumstances.

This paper summarizes how three different studies attempted to address these challenges in identifying and recruiting newly constructed multifamily tenants and/or buildings to provide data to better understand baselines.

The Game Plan

Research studies are guided by a game plan that clearly lays out the study's researchable objectives. The objectives of the three studies discussed in this paper influenced the population selection, the sample size, and the strategy employed.

The first study was a statewide residential baseline assessment in New York that included single- and multifamily residential housing segments. The overall study objective was to understand the residential building stock and associated energy use, including the saturations of energy-consuming equipment (electric, natural gas, and other fuels), the penetrations of energy-efficient equipment, building construction characteristics, and energy management practices. Given the study objective, the sample was composed of all residential housing stock in New York State, with the exception of master metered multifamily buildings.

The objective of the second study, which is in process, is to develop a baseline of NC building practices and characteristics in the high-rise NC market. Program administrators will use this baseline data to calculate gross savings for projects participating in their Multifamily High-rise Program (MFHR Program). Given the study objective, this study focuses on the high-rise (four stories or higher and five or more units) multifamily NC market in Massachusetts.

The third study was a NC market effects study for an investor-owned utility (IOU) in the state of California. The overall study objective was to assess the energy performance effects the building code (Title 24 section 6) requirements have had on newly constructed low-rise and high-rise residential buildings as a whole, as well as the effects on a few specific components of the buildings in isolation from the building as a whole.

The Game Plan: What Types of Players Does our Team Need?

In order to design a research game plan that will provide a representative sample of the players needed to execute the game plan, it is critical that researchers understand the eligible players for the multifamily versus the single family market.

The U.S. Census¹ defines single family and multifamily housing as:

- *Single family*: fully detached; semidetached (semi-attached, side-by-side); row houses; and town houses. In the case of attached units, each must be separated from the adjacent unit by a ground-to-roof wall, and these units may not share heating/air-conditioning systems or utilities.
- *Multifamily*: residential buildings (both single family and multifamily) containing units built one on top of another and those built side-by-side that do not have a ground-to-roof wall and/or have common systems or utilities.

In New York, the different residential markets are defined according to how the program and building codes staff engage the different markets and structures as follows:

- *Single family*: one- to four-family buildings, including free-standing homes and townhouses.
- *Low-rise multifamily*: five or more units and three stories or less with individually metered or sub-metered units.

¹ <http://www.census.gov/construction/charts/definitions/#m>.

- *High-rise multifamily*: four stories or more with individually metered or sub-metered units
- *NC*: residential units built and occupied in 2012 or after (included gut rehabs down to studs).

In Massachusetts, the Residential New Construction Program has changed their definition of single family several times over the past seven years. In 2009 it matched the census definition (single family attached and detached), then it moved closer to the New York definition (one- to four-family buildings), and now only single family detached homes are eligible for single family incentives.

In California, there are multiple energy-efficiency programs delivered by the IOUs. Each program has a unique set of requirements. A multifamily property could participate in the California Advance Home Program² (CAHP), California Multifamily New Homes (CMFNH), and/or the Savings by Design (SBD) for the nonresidential components of the building.

The Game Plan: How Do We Find Eligible Players?

Once the researchable objectives and sample frame stratification have been developed, the next challenge is to identify the players to fill each position. Although one might expect that utilities or program administrators would collect information in their customer information and billing systems to identify multifamily common area and tenant accounts, that is rarely the case.

New York Residential Baseline Study

For this study, the multifamily segments of interest included tenants in existing individually metered units (with a sample goal of 500 surveys), and tenants in newly constructed individually metered buildings (with a sample goal of 100 surveys). Additionally, the study included property manager/owner surveys (with a goal of 200 telephone surveys) and 250 on-sites in tenant units from existing buildings and 25 on-sites in tenant units at newly constructed buildings. One challenge of the study was that only three of the seven utilities were able to identify and provide counts of multifamily units, and only one utility was able to accurately provide counts for NC projects. Given the lack of an existing or NC identifier in the majority of the utilities' customer information systems, the evaluation team had to first screen for multifamily tenants from the residential customer information systems to draw random samples and then conduct surveys with eligible samples. The client and the evaluation team decided to draw a sufficiently large random sample from the electric utility residential accounts that included single family homes and tenant units to ensure a representative proportion of each type. Surveyed tenants were also asked to provide property manager/owner contact information. The random sample approach resulted in a small percentage of tenants (less than one-half of one percent) that lived in newly constructed multifamily buildings; as such, this was not a good option for identifying contacts for a large enough sample of newly constructed multifamily buildings.

The evaluators used the following key sources of samples for primary data collection activities:

- Tenant telephone and web surveys—The major electric utilities provided a random sample of residential accounts in New York State.
- Multifamily property managers and owners telephone surveys—The evaluation team developed a list of property managers and owners based on information provided by the tenants who responded to the telephone and web survey. NC was flagged as a priority for the on-site recruiters.

² <http://www.californiaadvancedhomes.com/>; <http://cmfnh.com/>; <http://www.savingsbydesign.com/>.

- Existing Multifamily on-site visits—The evaluation team recruited on-sites from the completed property manager and owners telephone surveys.
- Multifamily NC on-site visits—Due to the limited number of newly constructed multifamily properties identified as part of the tenant telephone and web surveys, the evaluation team explored a number of other sources for this sample. These sources included asking property managers if they had other buildings that were newly constructed, internet searches to identify potential newly constructed multifamily buildings including the New York State website for Homes and Community Renewal, and outreach by phone to developers and builders.

Massachusetts Multifamily High-rise New Construction Study

For the Massachusetts study, which is ongoing, the target market is newly constructed projects completed in January 2013 or later and permitted under the 2009 *International Energy Conservation Code* (IECC). The goal of the study is to inspect a sample of projects that reflect the proportions of 4-10 story and 11 story and higher projects in the MFHR Program, as shown in Table 1 below.

Table 1. 4-10 story and 11 story and higher projects in the MFHR Program

| Project Size | Percent of Projects | Percent of Units |
|---------------------|---------------------|------------------|
| 4-10 Stories | 86% | 57% |
| 11 Story and Higher | 14% | 43% |

ICF International (ICF), the program implementation contractor, provided a list of participating projects completed in 2013 or 2014. Developers of participating projects tended to be more willing to participate in evaluation studies. Identifying eligible nonparticipating multifamily projects is much more difficult. ICF provided the evaluation team with a database that included more than 250 “prospective” projects. These are projects that ICF identified as potentially eligible to participate in the MFHR Program but had not necessarily been screened to verify that they met all eligibility requirements for participating. Because many of these projects were being actively recruited for the program, it was likely that many would be enrolled in the MFHR Program, making them ineligible to be a nonparticipant project in the study. In addition, many prospective projects were in the design stage or early construction, which means they were not far enough along to participate in the baseline study. Additional sources used to identify potential participants include:

- Building departments that Census Bureau data showed issued permits for new privately owned housing units in buildings with five or more units.
- Information on Boston Redevelopment Authority (BRA) website.
- City of Cambridge Community Development Department quarterly Development Log of large-scale development projects, which lists projects categorized by type and status—permitting, special permit granted, in construction, or complete.
- Individual city planning departments.
- Searches of developer, architect, and construction company websites.
- Media advertising for new multifamily housing, etc.

California Multifamily New Construction Markets Effects Study

For the California Market Effects study, the objective was to recruit a sample of recently completed or near completion low and high-rise, nonparticipant NC projects and gather whole building construction characteristic data including data on a sample of unit types with varying floor plans. In addition to building size, efficiency was a sample variable as was the electric service provider. The sample was intended to capture projects under the current energy code, 2008 Title 24, which was in effect from January 1, 2010, through July 1, 2014. Several data sources were used to develop a sample frame that started construction during the 2010–2012, the sources included:

- McGraw Hill Construction (MHC) Dodge data cataloging details of multifamily building construction projects started between 2010 and 2012 in California³.
- California Tax Credit Allocation Committee (CTCAC)⁴ reports that list 4 percent and 9 percent tax credit awards⁵ for construction of low-income multifamily housing allocated between 2009 and 2011⁶.
- A survey of 76 builders and developers involved with projects found in MHC-CTCAC data.
- IOU MFNC program participant lists (California Advance Home Program (CAHP), California Multifamily New Homes (CMFNH), and Savings by Design (SBD)), in order to remove program participants from the MHC, CTCAC, and survey project lists.

Following California IOU distribution strategies established in previous CPUC studies led by DNV GL, it was decided to attempt a 40/40/20 percent distribution of visited sites across the three IOUs, with SDG&E being represented by five sites and PG&E and SCE each being represented by ten sites. Within each IOU’s targeted number of sites, at least 50 percent of those were to be sites that fell into some kind of efficiency requirement stipulating exceeding the Title 24 baseline by 15 percent or more. The recruiting effort proved to be challenging on many accounts and as a result, the achieved sample varied slightly from the prescribed distribution of sites across the three IOUs by the Title-24 building code (many projects were delayed but approved under the previous code).

The Game: Halftime Huddle

At the Halftime Huddle, it was obvious that the original game plans were not going to yield the desired results needed to address the studies’ researchable objectives and mid-study adjustments were needed. How did we adjust? Table 2 lists some of the halftime shortcomings that were identified and adjustments that were made for the New York residential baseline study.

Table 2. Halftime Adjustments to the New York Residential Baseline Study

| Objectives | Issues | Adjustments |
|--|---|---|
| The original plan was to survey from the general population of residential utility accounts to | The productivity for the telephone survey calling was very low despite the offer of two different modes for response (web-based and follow-up | Web-based surveys were subsequently added to increase sample productivity and manage costs (over 60% of |

³ McGraw Hill Construction collects data on new construction starts and provides the data to various market actors involved with building construction (<http://www.construction.com/about-us/>).

⁴ CTCAC is a committee in the California State Treasurer’s Office. Among other roles, it allocates and administers federal and state tax credit programs for low-income housing retrofits and new construction projects.

⁵ These are the approximate percentage of a project’s “qualified basis” that a taxpayer may deduct from their annual federal tax liability in each of ten years.

⁶ According to CTCAC staff, nearly all projects start construction during the calendar year after they are awarded a tax credit. For example, a project that received an award in 2009 would likely begin construction by 2010.

| | | |
|--|---|---|
| <p>achieve:</p> <ul style="list-style-type: none"> • 500 existing tenant surveys • 100 NC multifamily tenant surveys • 200 property manager/owner surveys • On-sites visits to 50 existing and 25 NC multifamily buildings, with 250 on-site visits of tenant units. | <p>telephone surveys) and a post-paid incentive (\$20 gift card).</p> | <p>respondents opted to respond via the web). For the next game, suggest using a web/mail survey approach.</p> <p>Used over a dozen telephone attempts, as well as emails and letter follow-ups to try to increase the response rate.</p> |
| | <p>The original number of completes was not going to yield a sufficient number of tenant respondents who would provide contacts for property manager/owners agreeing to the on-site visit.</p> | <p>Increased the desired number of completed surveys with the random sample of the population to attempt to reach the desired number of tenants. The residential baseline study actually resulted in a total of 379 surveys with tenants.</p> |
| | <p>Few of the surveyed tenants (11 of 379 tenants) lived in a newly constructed multifamily building.</p> | <p>Reduced quota of on-sites visits to multifamily buildings from 75 (including 25 NC) to a total of 67 with as many new construction on-site visits as possible. Explored other sources for NC, such as asking property managers if they had other buildings that were newly constructed, conducting internet searches to identify potential newly constructed multifamily buildings, and conducting phone calls to developers and builders.</p> |
| <p>Property owner/manager contact information was gathered from tenants who responded to the web survey</p> | <p>Most often, tenants did not have complete contact information available or were unwilling to share it.</p> | <p>Made extensive web searches to try to get sufficient contact information for the property owners/managers. This was a very time-intensive activity.</p> |
| | <p>An insufficient number of newly constructed multifamily sites were identified using this approach.</p> | <p>Property managers of existing properties were asked for contact information for other newly constructed properties.</p> |
| <p>Attempted to pre-stratify the utility account sample for NC using meter set date.</p> | <p>Meter set data did not align with actual newly constructed homes (constructed in 2012 or newer), and the quotas by region were not realistic given the small percentages of NC at that time.</p> | <p>To ensure a sufficient sample of new homes were included in the study, particularly for the on-site data collection, the NC sample was supplemented with tax assessment information obtained from the New York State Department of Taxation</p> |

| | | |
|--|--|--|
| | | and Finance for years 2011, 2012, and 2013 for all regions except New York City (due to the structure of the file). However, these data often did not include property owner/manager address, phone numbers, or email addresses. |
|--|--|--|

Table 3 below lists some of the halftime shortcomings identified and adjustments made to the Massachusetts Baseline Study.

Table 3. Halftime Adjustments to the Massachusetts Multifamily High-Rise Baseline Study

| Objectives | Issues | Adjustments |
|--|--|--|
| The original plan proposed inspecting a sample of 30 projects—10 projects participating in the MFHR program and 20 projects not participating in the program. In order to develop a realistic scope and budget for this study, the Team conducted two dry-run inspections. | The dry-run inspections showed that recruiting projects not participating in the MFHR program would be extremely challenging and time consuming. | Reduced target sample to 17 projects—10 new non-participating projects and 5 new participating projects plus 1 non-participating and 1 participating project from the dry-run inspections. |
| | The MFHR program has a very high market penetration rate (at least 50% of the market), leaving a relatively small pool of nonparticipants interested in participating in an evaluation study requiring an on-site inspection. | Incorporated mystery shopping projects with subsequent plan review at building departments. Resulting information was more limited and qualitative for some building measures. |
| | Building managers were not likely to provide access to occupied units for the necessary in-unit inspections. As a result, there was a small window of optimal time when the evaluation team could access completed, but unoccupied, units. | Incorporated some flexibility in recruitment to allow for a variable scope in the on-site inspections (e.g., the number of units that building managers would allow to be inspected would vary from project to project). |

Table 4 below lists some of the halftime shortcomings identified and adjustments made to the California New Construction Market Effects Study.

Table 4. Halftime Adjustments to the California New Construction Market Effects Study

| Objectives | Issues | Adjustments |
|---|--|--|
| <p>The original on-site plan called for the research team to recruit, audit, and analyze 20 high-rise MFNC projects and 25 low-rise MFNC buildings by IOU and efficiency (baseline vs. high-performance), all of which would comply with the 2008 code.</p> | <p>The research team found that the process of recruiting, collecting data on site, and developing simulation models cost was about twice as high as originally anticipated for the high-rise building.</p> | <p>The desired number of high-rise buildings was significantly decreased from 20 to 4 (the results were used as a case study approach). The low-rise sample nearly achieved its goal, with 24 of the 25 sites recruited, but the sample distribution by IOU varied slightly.</p> |
| | <p>Even though projects had broken ground during the desired time frame (2010–2012), many had delays (likely due to the recession) and did not have their plans approved. The projects were submitted under the 2005, 2006, and 2007 codes and subject to the previous code cycle even though they were constructed much later.</p> | <p>The problem could have been mitigated by requiring that plans be acquired in advance of the visit or allow staff to walk away from the site if the construction plans were not within the desired code cycle. However, since the study recruited from a near census population, this would have resulted in fewer projects evaluated and a loss of project resources associated with the travel and coordination. Obtaining construction plans in advance would also have led to project delays. The study allowed prior code cycle projects and evaluated measures based on that code.</p> |
| | <p>We encountered limited contact resources for privately owned condominiums/townhomes. These type of properties (often market rate), once sold, present a unique challenge for researchers because there is limited or no information on the building construction, such as access to plans and equipment selection processes, and there is limited cooperation. Typically, these properties rely on a Homeowner Association volunteer to communicate study needs with the property owners. Securing access to multiple units on a single visit is too much of a burden</p> | <p>Recruitment strategies for this building type require a direct approach and must be treated like a single-family residence. The research team was only able to secure one property of this type in the sample frame. There were no set goals for this building type but recruitment barriers made them particularly difficult to secure.</p> |

| Objectives | Issues | Adjustments |
|------------|--|---|
| | for volunteers. | |
| | It was substantially more difficult to enlist market-rate owners than income-qualified owners in the study. Income-qualified owners (cities or private developers) are more likely than market-rate owners to understand and appreciate the research objectives. | The study secured 40% of low-rise MF market rate housing projects; however, the study length had to be extended by a couple weeks to wait for a few market-rate owners that had projects under construction. Refusals for market rate were more common than income-qualified. |
| | Assuming property managers are the best respondent and contacting them first resulted in early refusals or nonresponse. | For completed projects, we found asset managers and facility managers were able to grant authority, had the data we desired, were more responsive, and the benefits of participation were transparent from their perspective. For projects under construction or near completion, we found the project managers were the appropriate contact. |

How to avoid the issues above in the next game

In summary, identifying the eligible population and conducting surveys/on-sites with multifamily tenants and property owner/managers can be a very time-intensive and expensive endeavor. Some of the recommended plays for future studies, and some plays to avoid based on our experiences with these three studies are as follows:

Make these plays:

- Provide a clear definition of multifamily and conduct any research separately from single family, recognizing that the sector includes accounts in both residential and commercial utility customer information systems.
- If utility indicators are not available in the customer information system, use available statewide census or other data sources showing percentage of residential population that is multifamily and/or that is NC when developing the sample plans, and definitely over sample. Expect that the sample will result in a response rate of less than 10 percent.
- By the time recruiters reach the project decision maker, they should attempt to find answers to their screening questions from the myriad of possible sources (e.g., online, building departments, architects) and defer questions that are not crucial to the on-site inspection. Most properties have a website; starting research on the web will save time and resources. This may also lead to key contacts like the name of the asset managers.

- Clearly identify the benefits of the study to the potential respondent and consider including other types of incentives to motivate program nonparticipants to become research participants, such as a fast-track to multifamily programs, benchmarking energy usage, or identifying quick-hit energy efficiency measures. These were the types of incentives that potential respondents have requested. A \$500 incentive for an on-site does not necessarily encourage participation by a multimillion-dollar 20-story building.
- Consider working directly with professional associations of multifamily building developers and property managers, recognizing that it will increase the timelines for the study.
- Simplify the recruitment for the customers—have a single-point of contact on the research team from the initial inquiry until the staff is on site, but select personnel who have the right skills and track record in recruiting for this sector.
- Use email—it is more effective than a phone call when attempting to reach higher-management decision makers, but make sure to use both forms of contact. Also, email invitations to complete a survey over the web are also more effective than a cold call.
- Create a sense of urgency—“How soon can we come?” Spontaneity can get you in the door the next day if you are well prepared.
- Be a cheerleader for your recruiters when they need support and encouragement. The same is true for your inspectors—sometimes there are long days in the field.
- Get your referee involved—don’t be afraid to ask the client for assistance. Have a well-prepared PDF customer notification letter, preferably on client letterhead, with a client contact.
- Equip your staff with the right uniform (ID badges, letters, tools, and cash incentive cards).
- Ensure the lines of communication remain open after a site visit so that follow-up questions can be asked and supplemental data can be requested as needed.

Avoid these plays:

- Asking property managers for approval to visit the site; try to reach higher levels of management.
- Overwhelming facility contacts with too many needs—they have a job to do and it might not involve helping the research team. Be resourceful and reasonable.
- Putting inexperienced recruiters in the field and exhausting the sample frame. Use your best resources for the multifamily game.
- Secondary data/sample sources need to be vetted and should not be accepted at face value (e.g., data on project age).
- If using tenant surveys to provide property manager contact information, do not expect the data provided to be accurate, particularly for web-based surveys that do not allow for further probing.
- Recruiting and scheduling projects that are very recently completed or near completion is particularly difficult, because the players are busy meeting final deadlines and do not have time to schedule an on-site inspection. Also, in most cases, the project does not yet have a full-time building manager to work with.
- If you have to rely on building departments, be prepared that cooperation on providing building plans will vary significantly from jurisdiction to jurisdiction. Moreover, the usefulness of the filed plans will vary from jurisdiction to jurisdiction and also site to site within the same jurisdiction.

References

CPUC 2010–12 Market Effects Study (WO54) – implemented by DNV GL Energy, NMR, and Cadmus.