

NEW JERSEY COUNCIL ON AFFORDABLE HOUSING TASK 4 – COUNTING JOBS AT THE LOCAL LEVEL

Final Report Submitted To:
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EXECUTIVE SUMMARY

Growth share is the share of the affordable housing need generated by a municipality's actual growth from 2004 to 2018. There are residential and non-residential components to this calculation. The way in which affordable housing need is generated by non-residential growth is the subject of Task 4 - Counting Jobs at the Local Level. That method is as follows:

The non-residential component of growth share requires that one unit of affordable housing be provided for every 25 jobs that are created as measured by square feet of new or expanded non-residential construction according to use group.¹

Appendix E of the New Jersey Council on Affordable Housing's (COAH) Third Round Rules provides these ratios by building type. While the ratio of jobs created to affordable housing units required may change, the principle of the calculation remains the same. This principle was challenged by the New Jersey Supreme Court in a number of ways, and thus Task 4 concerns itself with the following considerations:

- 1. Counting jobs via square footage rather than directly through employment data or estimates.**

COAH was challenged by groups that wondered why employment data or estimates would not be a direct and accurate measure of jobs created. However, estimates of employment at the municipal level are not available in a timely manner. Only County Business Patterns data are available, but this data set has severe limitations, in that it is available only at the zip code level, which can cut across municipalities, and it also covers only private sector employment. Moreover, the data are available only with a significant lag time. As we approach 2008, the latest County Business Patterns data are for 2005. Knowing where new work space is being built and how much, on the other hand, is a stable and timely indicator of growth in a municipality. Moreover, municipalities currently track these construction data.

- 2. Not counting jobs created by the rehabilitation of existing unused or underused non-residential space.**

The decision to exclude from affordable housing need calculations any existing space that was redeveloped was one that was challenged by the Court. However, redevelopment involving the improvement of formerly under-occupied or un-occupied buildings into occupied ones does not actually generate net new jobs over time, to the extent that the affordable housing

¹ New Jersey Administrative Code 5:94-2:4. Appendix E of the Third Round rules is included in this report – see Appendix A.

obligation impact of the full square footage of such buildings, and not their present high-vacancy condition, was assigned to municipalities, per the current Appendix E ratios.

3. Seeking employment ratios specific to New Jersey.

A final critique of the existing Appendix E ratios was that they were largely based on national data, when New Jersey proportions might differ. In response, Econsult performed a national literature review, and conducted a large telephone survey of 1000+ New Jersey businesses, to provide COAH with a more comprehensive and relevant base of knowledge in determining Appendix E ratios.

The literature review and the survey results serve as the basis for the following recommendations for updated Appendix E ratios (see Figure E.1). Importantly, because we are considering employment density from a building-wide and municipality-wide perspective, we must account for the fact that a not insignificant portion of most buildings, particularly in multi-tenant facilities, is common space. Since the intended use of these ratios is to estimate the number of jobs associated with a municipality's intended growth in non-residential space, a calculation of jobs should take as its base on non-residential space the space that is actually occupied by workers. To be sure, common space ratios vary widely over time, building type, and geography; we assume that 15 percent of building space is unused from an employment standpoint.

We also recognize that even within the universe of occupied space, at any given time buildings will experience some vacancies as a result of natural economic and real estate cycles at the local, regional, and national levels. This, of course, will tend to overestimate the number of jobs assigned to a building or a municipality. To the extent that employment growth continues to occur, this will lead to a further overstatement in raw number terms over time, or to put it another way, a greater affordable housing requirement.

Like common space ratios, vacancy rates vary widely over time, building type, and geography. For new construction, this proportion is likely to be less than 10 percent. For the purposes of this analysis, we do not make any adjustment based on vacancy, but rather assign jobs to buildings assuming full occupancy. In this way, differing vacancy rates over time, building type, and geography do not affect the amount of affordable housing required, since all calculations are based on 100 percent occupancy.

Figure E.1 – Proposed Building Types and Ratios, Employees Per 1000 Square Feet

UCC Use Grp	Building Category	NJ Survey Median	Lit Review Median	Appendix E	Recommended Ratio, Net of 15% Common Space
B	Office	3.32	3.33	3.00	2.8
M	Retail	2.00	1.72	1.00	1.7
F	Factory	1.43	2.19	2.00	1.2
S	Storage	1.72	1.11	0.20	1.5
H	Manuf	1.83	2.19	1.00	1.6
A1	Theater	1.87	N/A	2.00	1.6
A2	Restaurant	3.75	6.80	3.00	3.2
A3	Library	1.88	N/A	3.00	1.6
A4	Arena	5.00	N/A	3.00	3.4
A5	Stadium	3.45	N/A	Exclude	2.6
E	K-12	2.67	0.92	1.00	1.7
I	Hospital	3.40	2.53	2.00	2.6
R1	Hotel	2.50	0.67	0.80	1.7
U	Other	1.50		Exclude	Exclude

Source: Econsult Corporation (2007)

1.0 CONTEXT

1.1 Current Treatment: COAH's Adopted 2004 Third Round Rules

Under the third round rules adopted in 2004, growth share is the share of the affordable housing need generated by a municipality's actual growth from 2004 to 2018. There are residential and non-residential components to this calculation. The way in which affordable housing need is generated by non-residential growth is the subject of Task 4 – **Counting Jobs at the Local Level**.

In its publication, "The COAH Handbook: Your Guide to Navigating the Third Round Rules," the New Jersey Council on Affordable Housing (COAH) defines the way in which the affordable housing obligation generated by non-residential growth is determined based on the 2004 third round rules:

The non-residential component of growth share requires that one unit of affordable housing be provided for every 25 jobs that are created as measured by square feet of new or expanded non-residential construction according to use group.²

Let us consider each component of this statement in turn:

- *One unit of affordable housing be provided for every 25 jobs that are created.* The accuracy of this ratio is not being addressed in this task. Another team, from the University of Pennsylvania, is tasked with updating the growth share ratios.
- *As measured by square feet of new or expanded non-residential construction.* Each municipality has a construction official who submits information on new construction and space-adding renovation to the New Jersey Department of Community Affairs' Division of Codes and Standards. COAH uses these data to determine the amount of actual non-residential growth in the municipality.
 - The total amount of new square feet of non-residential space being added in a municipality is therefore the sum of new construction and any renovation that adds space. In other words, **renovations that do not increase the amount of space were not included** in the sum.
 - Importantly, **demolitions currently count as negative square footage**, in that they decrease the amount of non-residential space in a municipality. Thus, demolitions decrease the amount of affordable housing that must be built in a municipality.
 - Combining the two points above, if a building is demolished and an identically-sized building constructed in its place, there is no net new affordable housing obligation created, since the two buildings' square footage cancel each other out.

² New Jersey Administrative Code 5:94-2:4. The current Appendix E of the Third Round rules is included in this report – see Appendix A.

- If a non-residential space is converted into residential space, an affordable housing obligation will result from the new residential space. There may be partially or fully offset by a corresponding reduction in the affordable housing obligation that results from the decrease in non-residential space.
- *According to use group.* **Appendix E of the Third Round Rules** segments the Uniform Commercial Code use groups into 14 categories, and provides ratios of jobs per 1000 square feet such that the number of new jobs can be determined based on the total square footage being added. For example, the ratio for Use Group B, which consists of office buildings, is three jobs per 1000 square feet, and thus a newly constructed 100,000 square foot office building would be assumed to add 300 jobs (100,000 SF x 3 jobs / 1000 SF), creating an affordable housing need of 12 units (300 jobs x 1 affordable housing unit / 25 jobs).

1.2 Court Challenges

In its opinion in regards to the adoption of COAH's Third Round regulations, the New Jersey Appellate Division listed a number of challenges to COAH's approach to calculating affordable housing need generated by non-residential development. These challenges form the basis of our response, and can be summarized as follows:

- *Using square footage of new non-residential development as a surrogate to predict job growth.* In its notice of appeal, ISP Management Company challenged the method of **determining job growth indirectly, via new non-residential space**, rather than employing a more direct approach and using more reliable information.³

COAH's rationale was that employment data at the municipal level is not updated as frequently as construction data, and that job data may not accurately reflect where the jobs are actually located.⁴ Therefore, the use of data on square footage of new construction, while not as direct in nature, is **routinely collected, and can be applied uniformly** in determining the affordable housing obligations of each municipality.

- *Not counting jobs created by the rehabilitation of existing underused non-residential space.* This decision, to **exclude from affordable housing need calculations any existing space that was redeveloped**, was noted in the court opinion as follows:

Appellants contend that the methodology selected by COAH significantly understates actual job growth. They argue that a valid growth share methodology requires that an affordable housing obligation be allocated to a municipality that experiences real growth in

³ See page 8 and 82 of the court opinion.

⁴ See page 86-87 of the court opinion.

jobs. They point out, and COAH does not dispute, that there is an abundance of existing vacant office and retail space in the State, and municipalities that experience actual job growth should also be required to provide their fair share of affordable housing to meet the need generated by that job growth.⁵

- *Allowing municipalities to subtract demolished space in their calculations of net job growth. COAH's rationale was that to allow reductions based on job loss not accompanied by decrease in square footage would require using a different data source, inconsistent with its intent to use **uniform data sources in calculating net job growth.***

Of the three challenges, the last one, concerning demolished space, was upheld by the court: "COAH has not acted unreasonably in subtracting demolitions from new certificates of occupancy."⁶

1.3 Scope of Work

Econsult was tasked with weighing in on these three specific challenges. It was also assigned to verify or update the building types and employment estimates in Appendix E of the Third Round Rules. Therefore, this report will proceed as follows:

- In Section 2, we will summarize the results of our **literature review** on the subject of building types and employment estimates. Most notable in the studies we reviewed is one commissioned in part by COAH's parent entity, the New Jersey Department of Community Affairs, entitled, "New Jersey Demographic Multipliers: The Profile of the Occupants of Residential and Nonresidential Development."
- In Section 3, we will review our approach to conducting a large-scale **survey of non-residential locations in New Jersey**, and share our data findings. One critique of Appendix E is that it is largely based on national studies and data; this survey seeks to provide the primary research necessary to arrive at employment estimates more in line with New Jersey norms.
- Section 4 concludes our report with **findings and recommendations**. Here, we combine our lessons learned from the previous two sections in offering an updated Appendix E. We will also comment on the challenges listed above, and offer some guidance on the wording of relevant rules for future rounds.

⁵ See page 85-89 of the court opinion.

⁶ Page 83 of the court opinion.

2.0 NATIONAL LITERATURE REVIEW

The most comprehensive report that was identified during our literature review of building types and employees per square feet was one delivered by the Rutgers University Center for Urban Policy Research and commissioned in part by the New Jersey Department of Community Affairs, parent agency of the New Jersey Council on Affordable Housing (COAH): “New Jersey Demographic Multipliers: The Profile of the Occupants of Residential and Nonresidential Development.”⁷ The goal of this study was to utilize state data and national studies to estimate the effect of new residential and non-residential development on population growth.

In estimating “nonresidential multipliers” (i.e. number of employees per 1000 square feet of non-residential space, by building type), the study defines such space as “gross floor area.” It also divides space into the following categories, and preliminarily suggests the following multipliers (see Figure 2.1):

Figure 2.1 – Nonresidential Multipliers Suggested by “New Jersey Demographic Multipliers” Study

<i>Nonresidential Use</i>	<i>Employees / 1000 SF</i>
I. Commercial	
A. Office	3.0-4.0
B. Retail	1.0-2.0
C. Eating & Drinking	3.0-4.0
II. Industrial	
A. Warehouse	0.2-0.8
B. Manufacturing & Industry	1.0-2.0
III. Hospitality and Other	
A. Lodging	0.5-1.0
B. Health	2.0-3.0
C. Schools	0.8-1.2

Source: Center for Urban Policy Research, Edward J. Bloustein School of Planning & Public Policy, Rutgers University (2006).

⁷ Center for Urban Policy Research, Edward J. Bloustein School of Planning & Public Policy, Rutgers University (August 2006).

Importantly, the report acknowledges that these suggestions are based on national studies and therefore may have varying levels of applicability to New Jersey. The report specifically notes that, compared to the rest of the US, a disproportionately higher amount of office space is used for research and development, because of the state’s significant pharmaceutical industry; and R&D tends to require more space per employee. Combined with the fact that other workplace trends, such as telecommuting and work sharing, are possibly taking place to greater or lesser degrees in New Jersey versus the nation, a nonresidential multiplier survey concentrating solely on New Jersey becomes all the more valuable.

The nonresidential multipliers suggested by the New Jersey Demographic Multipliers report are based on a number of national studies that were produced within the past twenty years, many of which were also included in our literature review. We also reviewed a number of additional studies on the subject, to provide a fuller picture of the issue (see Figure 2.2).⁸

Figure 2.2 - Summary of Non-Residential Multipliers Based on the New Jersey Demographic Multipliers Report and on Literature Review
Employees per 1000 Square Feet: Min/Max/ Median, Mean, Standard Deviation, and Range
Recommended by New Jersey Demographic Multipliers Report

Non-Res Use	Min	Max	Median	Mean	StdDev	Recom
<i>I. Commercial</i>						
A. Office	2.56	4.34	3.33	3.41	0.52	3.0-4.0
B. Retail	0.57	2.48	1.72	1.79	0.56	1.0-2.0
C. Eating & Drinking	0.38	14.29	6.80	7.07	5.89	3.0-4.0
<i>II. Industrial</i>						
A. Warehouse	0.46	1.92	1.11	1.05	0.47	0.2-0.8
B. Manufacturing & Industry	1.43	4.76	2.19	2.46	0.99	1.0-2.0
<i>III. Hospitality and Other</i>						
A. Lodging	0.43	1.10	0.67	0.71	0.25	0.5-1.0
B. Health	2.00	3.25	2.53	2.58	0.48	2.0-3.0
C. Schools	0.77	1.19	0.92	0.96	0.21	0.8-1.2

Source: various

⁸ See also Appendix B for a full bibliography of reports reviewed, and Appendix C for a comprehensive table of non-residential multipliers based on the New Jersey Demographic Multipliers report and on our own literature review.

3.0 NEW JERSEY SURVEY

3.1 Survey Methodology

To augment this review of national studies on the subject of non-residential multipliers with actual primary research specific to New Jersey, we hired the reed group to conduct a telephone survey of 1000+ non-residential sites. Here are the highlights of their approach to this task:⁹

- The phone list for this survey was Dun & Bradstreet's database of New Jersey business locations. Quotas were used to ensure that those actually surveyed represented the distribution of business types in the state.¹⁰
- The survey script, designed with the assistance of COAH and Econsult, was constructed to determine the relationship between square footage and employees.¹¹ The survey was pre-tested on New Jersey businesses to identify inefficiencies in survey design, and revisions were made accordingly.
- Professional market research interviewers conducted the telephone interviews, and all quality control and sample management measures common to the survey industry were employed to ensure data validity.¹²
- While a number of jobs are largely independent of a particular physical location, particularly in the construction industry, we count those jobs, to the extent that even the most location-independent job is somehow associated with a particular location.
- Self-reported building type data collected in the survey were checked against the State of New Jersey's Light Hazard Safety Database, the state's most comprehensive listing of organization names and building types. Where there were discrepancies, the state database was assumed to be correct.
- Respondents were allowed to give more than one building type, thus leading to more observations than surveys.
- To minimize the effect of outliers, we eliminated employees per square foot results that fell under the 10th percentile and over the 90th percentile for the dataset.

⁹ See Appendix D for a more detailed explanation of the survey methodology and Appendix E for tables related to the quotas employed to ensure accurate representation of all business types.

¹⁰ Because of specific interest expressed by COAH regarding institutions of higher education, these locations were over-sampled.

¹¹ See Appendix F for the actual survey script.

¹² For example, clusters of phone numbers are called up to five times before moving on, ensuring that harder to reach respondents have a better chance of being included in the sample.

3.2 Survey Results

The survey of non-residential sites yielded 943 usable survey responses, which exhibited the following characteristics - depicted first by building type and second by industry group (see Figure 3.1 and Figure 3.2):¹³

**Figure 3.1 – Non-Residential Survey Results
 Employees per 1000 Square Feet, by Building Type**

UCC Use Grp	Building Category	NJ Survey		
		Count	Median	Std Dev
B	Office	476	3.32	3.55
M	Retail	212	2.00	3.04
F	Factory	44	1.43	2.39
S	Storage	164	1.72	3.05
H	Manuf	16	1.83	2.18
A1	Theater	8	1.87	1.77
A2	Restaurant	51	3.75	3.97
A3	Library	65	1.88	3.18
A4	Arena	5	5.00	3.34
A5	Stadium	4	3.45	3.10
E	K-12	40	2.67	3.76
I	Hospital	14	3.40	2.06
R1	Hotel	15	2.50	1.68
U	Other	31	1.50	3.78
Total		1145	2.67	3.40

Source: the reed group (2007)

¹³ The sample size for survey results by building type is larger because respondents were allowed to label their location as more than one building type.

**Figure 3.2 – Non-Residential Survey Results
Employees per 1000 Square Feet, by Industry Group¹⁴**

Industry	Median
Ag, Forestry, Fishing	2.67
Construction	2.86
Finance, Insr, Real Est	3.41
Higher Education	1.67
Manufacturing	1.50
Public Admin	4.87
Retail	2.50
Services	2.50
Transportation, Utilities	3.33
Wholesale Trade	2.86

Source: the reed group (2007)

Now we can compare these New Jersey results with the ratios determined from our national literature review and from COAH's current Appendix E ratios (see Figure 3.3):

¹⁴ There were no responses from mining companies, so they are not included in this table. See Appendix G for more detail on higher education.

**Figure 3.3 – Survey Results vs. National Literature Review vs. Current COAH Rules
 Employees per 1000 Square Feet**

UCC Use Grp	Building Code	Building Category	NJ Survey			Lit Review Median	Appendix E
			Count	Median	Std Dev		
B	1	Office	476	3.32	3.55	3.33	3.00
M	2	Retail	212	2.00	3.04	1.72	1.00
F	3	Factory	44	1.43	2.39	2.19	2.00
S	4	Storage	164	1.72	3.05	1.11	0.20
H	5	Manuf	16	1.83	2.18	2.19	1.00
A1	6	Theater	8	1.87	1.77	N/A	2.00
A2	7	Restaurant	51	3.75	3.97	6.80	3.00
A3	8	Library	65	1.88	3.18	N/A	3.00
A4	9	Arena	5	5.00	3.34	N/A	3.00
A5	10	Stadium	4	3.45	3.10	N/A	Exclude
E	11	K-12	40	2.67	3.76	0.92	1.00
I	12	Hospital	14	3.40	2.06	2.53	2.00
R1	13	Hotel	15	2.50	1.68	0.67	0.80
U	14	Other	31	1.50	3.78		Exclude
Total			1145	2.67	3.40		

Source: the reed group (2007), Rutgers University (2006), COAH (2007).

3.3 Survey Analysis

Econsult was tasked with reviewing and potentially updating COAH's existing non-residential categories and ratios. Based on the results of our New Jersey survey, as compared to the current rules and to the national literature review we conducted, we would like to make the following commentary:

1) Office and 2) Retail – The ratio for both the New Jersey survey and the national literature review are higher than the current rules, possibly reflecting broader trends such as telecommuting, work sharing, and the increased role of the service industry in the wider economy.

3) Factory, 4) Storage, and 5) Manufacturing – These three categories are further subdivided by hazard level. From a personnel standpoint, it is difficult to use existing classifications to distinguish between low-density uses such as storage or machine-intensive manufacturing and high-density uses such as high-skill and labor-intensive manufacturing.¹⁵ Since the ratios are not far from each other, one could make a case that the simplicity of collapsing these three categories into one category outweighs any accuracy gains in keeping them separate. For now, we recommend the retention of the existing categorizations.¹⁶

6) Theater, 8) Library, 9) Arena, and 10) Stadium – These four categories conceptually lend themselves to being collapsed into one category, since they represent similar uses and employment patterns; the results for the most part would support such a move. For now, we recommend the retention of the existing categorization. Stadiums are currently excluded from affordable housing requirements, but given the high proportion of low-skill employment they often generate, it is recommended to not exclude them from such calculations.¹⁷

7) Restaurant – This use is different enough from the previous four categories and from retail to merit its own category.

¹⁵ See Appendix G for additional detail on the distribution of employees per 1000 square feet in these three building categories.

¹⁶ Parking garages are a subset of the storage facility that likely have distinctly lower densities of employees per 1000 square feet. Our survey did not allow for the identification of parking garages, nor are they currently treated as a different building type, but they could be in the future.

¹⁷ Our survey responses included a fair amount of part-time employees for arena respondents, although not for stadium respondents. This is a factor in the determination of our recommended ratios. See Appendix G for more detail.

11) K-12 – The survey results are significantly higher than national averages and than the current rules. Perhaps this reflects the relatively low student-to-teacher ratio and the relatively high number of administrators in the state. Nevertheless, the relatively low sample size necessitates a greater reliance on the national numbers in offering a recommended ratio.

12) Hospital and 13) Hotel – Low sample sizes prevent a more conclusive assessment, so the national numbers are particularly useful here.

14) Other – More effort could go into reclassifying these buildings into one of the above uses, but these represent only a small portion of total survey observations and are unlikely to change over all conclusions regarding employment per square foot of construction. Many of these actual uses truly do not add any net new jobs and therefore the current policy of excluding this building type seems to make sense.

4.0 FINDINGS AND RECOMMENDATIONS

In this final section, we offer an updated Appendix E, based on our New Jersey survey and our national literature review of non-residential employment density. We also return to the initial discussions from Section 1, in terms of the logic behind the use of building space as a proxy for employment rather than employment projections themselves. Finally, we offer some guidance on how this analysis can be incorporated into future revised rules.

4.1 Proposed Building Types and Ratios

Econsult was tasked with reviewing and potentially updating COAH's existing non-residential categories and ratios. While similarities in results might suggest some reclassification of categories, we do not feel the evidence is strong enough to merit any reclassification at this time. Furthermore, there does not appear to be any major benefit to streamlining the categorizations, which would offset the loss in detail associated with combining building types.

As for ratios, our recommendations are largely informed by the New Jersey survey that was conducted for this very purpose. In fact, in most cases, our recommendations are the median ratios from the survey. However, where sample sizes were small or deviations from the current Appendix E ratios or the national literature review performed by the Rutgers University Center for Urban Policy Research for the New Jersey Department of Community Affairs in 2006 were great, the national literature review results were given greater weight.¹⁸

Importantly, these ratios represent the relationship between employees and work space.¹⁹ If instead we are considering employment density from a building-wide or even municipality-wide perspective, we must account for unused space, or else the number of employees estimated for a particular building or municipality will be overstated. Specifically, we consider that a not insignificant portion of most buildings, particularly in multi-tenant facilities, is common space: lobbies, hallways, stairwells, and other non-work space.

Since the intended use of these employment density ratios is to estimate the number of jobs associated with a municipality's intended growth in non-residential space, these adjustments are applicable; a

¹⁸ Survey medians were used in all recommendations except for the following: survey results for Arena, Stadium, K-12, Hospital, and Hotel were all substantially higher than national literature review medians and current Appendix E ratios, and sample sizes were small, so ratios were increased but not to the level of the survey medians. The Arena recommendation is further guided by the existence of a not insignificant number of part-time employees in those survey responses.

¹⁹ Studies incorporated in our national literature review are also concerned with the employment density ratio as defined in this way.

calculation of jobs should take as its base on non-residential space the space that is actually occupied. Therefore, in order to translate our ratios for such a use, we must subtract out common space.²⁰

To be sure, common space ratios vary widely over time, building type, and geography. Nevertheless, most industry reports report a common space ratio between 10 and 20 percent. We will therefore assume that 15 percent of building space is unused from an employment standpoint. Based on this approach and on our results and commentary from Section 3, we offer the following, updated building types and ratios (see Figure 4.1).

Figure 4.1 – Proposed Building Types and Ratios, Employees Per 1000 Square Feet

UCC Use Grp	Building Category	NJ Survey Median	Lit Review Median	Appendix E	Recommended Ratio, Net of 15% Common Space
B	Office	3.32	3.33	3.00	2.8
M	Retail	2.00	1.72	1.00	1.7
F	Factory	1.43	2.19	2.00	1.2
S	Storage	1.72	1.11	0.20	1.5
H	Manuf	1.83	2.19	1.00	1.6
A1	Theater	1.87	N/A	2.00	1.6
A2	Restaurant	3.75	6.80	3.00	3.2
A3	Library	1.88	N/A	3.00	1.6
A4	Arena	5.00	N/A	3.00	3.4
A5	Stadium	3.45	N/A	Exclude	2.6
E	K-12	2.67	0.92	1.00	1.7
I	Hospital	3.40	2.53	2.00	2.6
R1	Hotel	2.50	0.67	0.80	1.7
U	Other	1.50		Exclude	Exclude

Source: Econsult Corporation (2007)

²⁰ Another approach that could be considered for the future is to augment ongoing surveying of New Jersey firms, who as individual firms do not concern themselves as much with common space, with a survey of building managers, who would concern themselves with such matters and who would know such figures.

We also recognize that even within the universe of occupied space, at any given time buildings will experience some vacancies as a result of natural economic and real estate cycles at the local, regional, and national levels. This, of course, will tend to overestimate the number of jobs assigned to a building or a municipality: for example, a 100,000 square foot facility of a building type for which the employment density ratio is 2.0 employees per 1000 square feet would thus be estimated to hold 200 employees, even though at any given time, some portion of the facility is vacant and therefore has no employees in it. To the extent that employment growth continues to occur, this may lead to a further overstatement in raw number terms over time.

Like common space ratios, vacancy rates vary widely over time, building type, and geography. For new construction, this proportion is likely to be less than 10 percent. For the purposes of this analysis, we do not make any adjustment based on vacancy, but rather assign jobs to buildings assuming full occupancy. In this way, differing vacancy rates over time, building type, and geography do not affect the amount of affordable housing required, since all calculations are based on 100 percent occupancy.

4.2 Additional Recommendations

We must here address two important considerations first introduced in Section 1:

- *Counting jobs via square footage rather than employment estimates is supportable.* Estimates of employment at the municipal level are not available in a timely manner. Only County Business Patterns data are available, but this data set has severe limitations, in that it is available only at the zip code level, which can cut across municipalities, and it also covers only private sector employment. Moreover, the data are available only with a significant lag time. As we approach 2008, the latest County Business Patterns data are for 2005.

Knowing where new work space is being built and how much, on the other hand, is a stable and timely indicator of growth in a municipality. Moreover, municipalities currently track these construction data.

- *Not counting redevelopment of vacant space.* As stated earlier, the New Jersey Appellate Division contended that since the intention of growth share is to assign affordable housing obligation where growth has occurred, redeveloped properties that do so even without adding new space should add to that obligation. However, consider the following example of a redevelopment that translates into new jobs:

An existing office building is rehabilitated, and its resulting attractiveness leads to higher occupancy. Here is a situation in which a high-vacancy or completely unoccupied building becomes a low-vacancy or no-vacancy building. Therefore, the municipality has experienced an increase in employment density. However, it first had to experience a decrease in that employment density, since it is assumed that the building was once more fully occupied and then began to experience vacancies. In other words, that building's square footage, and the associated affordable housing obligation, was properly assigned to the municipality upon its initial construction; and as the building emptied, that affordable housing obligation was not adjusted accordingly, but was assumed to be commensurate with the building's square footage.

As this example illustrates, redevelopments that lead to increases in employment density are *either already accounted for using the existing mechanisms of counting jobs at the municipal level, or they are simply offsetting previous decreases in employment density*, such that there really is no net new affordable housing obligation created. Nevertheless, in cases of buildings becoming completely unoccupied, and then subsequently redeveloped and fully occupied, COAH may want to consider augmenting its current mechanisms by tracking such situations such that cases in which buildings become completely vacant and stay that way for a certain period of time are then removed from a municipality's square footage totals, and then added back in if they are subsequently redeveloped and re-occupied.

As suggested earlier, it will be important to conduct periodic surveys in subsequent years, to *monitor any major changes in employment density by building type*. Future surveys can utilize and build from lessons learned from this report to further hone our understanding of this important measure. For example,

subsequent surveys may seek additional detail on vacancies,²¹ distinct sub-types within existing building types,²² or year of building construction.²³

²¹ Ratios of employees per 1000 square feet account for a normal level of vacancy. There is a natural cyclicity to vacancies not unlike other cycles in the real estate market. Thus, even though using a constant ratio for estimating employees per 1000 square feet may translate to temporary overestimates or underestimates of actual jobs within a municipality when vacancy rates are low or high, these fluctuations will tend to even out over time.

²² For example, in the factory, storage, and manufacturing categories, there are clearly uses that are more labor-intensive or less labor-intensive; for example, manufacturing spaces can be almost completely automated to the point of very low employment densities, or they may require high employment densities. Additional survey questions may provide useful data in identifying more accurate ratios.

²³ It may be determined from such surveying, for example, that there are fundamental differences in employment density between existing buildings and newly constructed ones.

APPENDIX A – CURRENT APPENDIX E OF THE THIRD ROUND RULES

**APPENDIX E
 UCC USE GROUPS FOR
 PROJECTING AND IMPLEMENTING
 NONRESIDENTIAL COMPONENTS OF GROWTH SHARE
 13-Jul-04**

A one in 25 non-residential ratio shall be used to determine the number of affordable units to be created for each new job

Use Group	Description	SF Generating One Affordable Unit	Jobs Per 1,000 Square Feet
B	Office buildings. Places where business transactions of all kinds occur. Includes banks, corporate offices, government offices, professional offices, car showrooms and outpatient clinics.	8,333	3
M	Mercantile uses. Buildings used to display and sell products. Includes retail stores, strip malls, shops and gas stations.	25,000	1
F	Factories where people make, process, or assemble products. Includes automobile manufacturers, electric power plants, foundries, and incinerators. F use group includes F1 and F2.	12,500	2
S	Storage uses. Includes warehouses, parking garages, lumberyards, and aircraft hangers. S group includes S1 and S2. .	125,000	0.2
H	High Hazard manufacturing, processing, generation and storage uses. H group includes H1, H2, H3, H4 and H5.	25,000	1
A1	Assembly uses including concert halls and TV studios.	12,500	2
A2	Assembly uses including casinos, night clubs, restaurants and taverns.	8,333	3
A3	Assembly uses including libraries, lecture halls, arcades, galleries, bowling alleys, funeral parlors, gymnasiums and museums but excluding houses of worship	8,333	3
A4	Assembly uses including arenas, skating rinks and pools.	8,333	3
A5	Assembly uses including bleachers, grandstands, amusement park structures and stadiums	Exclude	Exclude
E	Schools K – 12	25,000	1
I	Institutional uses such as hospitals, nursing homes, assisted living facilities and jails. I group includes I1, I2, I3 and I4.	12,500	2
R1	Hotels and motels	31,250	0.8
U	Miscellaneous uses. Fences tanks, barns, agricultural buildings, sheds, greenhouses, etc.	Exclude	Exclude

Source: New Jersey Council on Affordable Housing (2006)

APPENDIX B – FULL BIBLIOGRAPHY OF REPORTS INCLUDED IN NATIONAL LITERATURE REVIEW

Abbreviations are used in Appendix C - Comprehensive Table of Non-Residential Multipliers (based on 2006 New Jersey Demographic Multipliers Study and on literature review).

- ARES - "Industrial Employment Densities," American Real Estate Society (1997).
- BOMA - "Office Space Utilization Rates," Building Owners and Managers Association (1996).
- CADOE - "Pacific Gas & Electric Survey," California Department of Energy (1996).
- CBECs - "Commercial Buildings Energy Consumption Survey," US Department of Energy (2003).
- CRT - "Census of Retail Trade," US Census Bureau (1997).
- LAEDC - "Redeveloping Obsolete Industrial Land with Modern Manufacturing Facilities: The Job, Wage, and Tax Implications for State and Local Government," Los Angeles County Economic Development Corporation (2000).
- MARTIN - "The Economic Impacts of the Value Added Regional Distribution Industry in the Portland Area," Martin Associates (2003).
- METRO - "Employment Density Study," Metro (1999).
- NELSON - "Planner's Estimating Guide: Projecting Land Use and Facility Needs," Arthur Nelson (2004).
- OTAK - "Phase 3: Regional Industrial Land Study for the Portland-Vancouver Metropolitan Area," Otak Inc. (2001).
- PARKGEN - "Parking Generation 2nd Edition," Institute of Transportation Engineers (1987).
- SANDAG - "Evaluation of Growth Slowing Policies for the San Diego Region," San Diego Association of Governments (2001).
- SFPD - "Community Planning in the Eastern Neighborhoods: Rezoning Options Workbook," San Francisco Planning Department (2003).
- TRIPGEN5 - "Trip Generation 5th Edition," Institute of Transportation Engineers (1991).
- TRIPGEN6 - "Trip Generation 6th Edition," Institute of Transportation Engineers (1997).
- USEPA - "Energy Star Hospitality Facts," US Environmental Protection Agency (2002).

- USIRS - "The Internal Revenue Service Faces Significant Challenges to Reduce Underused Office Space Costing \$84 Million Annually," US Department of the Treasury (2004).
- WASTATE - "Industrial Land Supply and Demand in the Central Puget Sound Region," Puget Sound Regional Council (1998).

**APPENDIX C – COMPREHENSIVE TABLE OF NON-RESIDENTIAL MULTIPLIERS
 (BASED ON 2006 NEW JERSEY DEMOGRAPHIC MULTIPLIERS STUDY AND ON
 NATIONAL LITERATURE REVIEW)**

Abbreviations are taken from Appendix B - Full Bibliography of Reports Included in Literature Review. Shaded rows represent reports not included in the 2006 New Jersey Demographic Multipliers study.

Non-Res Use	Source	Year	Empl/1000SF
<i>I. Commercial</i>			
A. Office	PARKGEN	1987	2.68
	TRIPGEN5	1991	3.30
	CADOE (large)	1996	2.56
	CADOE (small)	1996	3.58
	TRIPGEN6	1997	4.00
	BOMA	1997	3.55
	WASTATE	1998	3.07
	METRO	1999	3.64
	LAEDC	2000	3.51
	SANDAG	2001	3.21
	CBECs (NE)	2001	2.99
	SFPD	2003	3.33
	NELSON	2004	3.05
	RUTGERS	2004	4.27
USIRS	2004	4.34	
B. Retail	CADOE	1996	1.70
	CRT	1997	2.44
	TRIPGEN6	1997	2.00
	WASTATE	1998	0.57
	METRO	1999	1.67
	LAEDC	2000	1.87
	CBECs (NE)	2001	1.72
	SANDAG	2001	1.70
	NELSON	2004	2.48
C. Eating & Drinking	TRIPGEN5 (restaurant)	1991	8.70
	TRIPGEN5 (fast food)	1991	14.29
	CADOE	1996	4.90
	CBECs (NE)	2001	0.38

Non-Res Use	Source	Year	Empl/1000SF
<i>II. Industrial</i>			
A. Warehouse	PARKGEN	1987	0.46
	TRIPGEN5	1991	1.28
	CADOE	1996	0.70
	ARES	1997	1.58
	TRIPGEN6	1997	1.28
	METRO	1999	0.59
	LAEDC	2000	1.28
	CBECS (NE)	2001	1.11
	OTAK	2001	0.82
	MARTIN	2003	0.55
	SFPD	2003	1.92
RUTGERS	2006	0.20	
B. Manufacturing & Industry	PARKGEN	1987	2.42
	TRIPGEN5	1991	1.96
	ARES	1997	2.61
	TRIPGEN6	1997	1.82
	WASTATE	1998	1.70
	METRO	1999	1.43
	LAEDC	2000	2.65
	OTAK	2001	1.85
	SANDAG	2001	3.40
	NELSON	2004	4.76
<i>III. Hospitality and Other</i>			
A. Lodging	CADOE	1996	0.79
	METRO	1999	0.67
	CBECS	2001	0.43
	SANDAG	2001	1.10
	USEPA	2002	0.57
B. Health	CADOE	1996	2.99
	TRIPGEN6	1997	3.25
	WASTATE	1998	2.00
	METRO	1999	2.43
	CBECS	2001	2.18
	NELSON	2004	2.62
C. Schools	CADOE	1996	1.19
	TRIPGEN6	1997	0.92
	CBECS	2001	0.77

Source: various

National Literature Review - Summary Table

Non-Res Use	Min	Max	Median	Mean	StdDev	Recom
<i>I. Commercial</i>						
A. Office	2.56	4.34	3.33	3.41	0.52	3.0-4.0
B. Retail	0.57	2.48	1.72	1.79	0.56	1.0-2.0
C. Eating & Drinking	0.38	14.29	6.80	7.07	5.89	3.0-4.0
<i>II. Industrial</i>						
A. Warehouse	0.46	1.92	1.11	1.05	0.47	0.2-0.8
B. Manufacturing & Industry	1.43	4.76	2.19	2.46	0.99	1.0-2.0
<i>III. Hospitality and Other</i>						
A. Lodging	0.43	1.10	0.67	0.71	0.25	0.5-1.0
B. Health	2.00	3.25	2.53	2.58	0.48	2.0-3.0
C. Schools	0.77	1.19	0.92	0.96	0.21	0.8-1.2

Source: various

APPENDIX D – NEW JERSEY SURVEY METHODOLOGY



MEMORANDUM

To: Lee Huang, Econsult

From: Ted Reed and Jennie Mabee

Re: Marketing Research Methodology, COAH project FINAL

Date: September 4, 2007

Sampling Methodology

Sample Source

The most comprehensive listing of businesses and business locations in New Jersey is provided by Dun and Bradstreet (D&B). Although D&B tends to under-represent new businesses and small businesses, it is the most comprehensive publicly available list of businesses and business locations in the state.

A Census of Businesses

For this project we obtained two sets of counts for business in New Jersey. The first is a complete enumeration of business headquarters and single site locations, broken out by two digit SICs and by number of employees. Based on this listing, there are 294,236 businesses of all types (including not for profits and public agencies) operating in the state of New Jersey in June 2007. The full breakout is provided in Appendix A to this memo. The second count is of all business locations in the state. This count recognizes that some businesses operate out of multiple locations. In June 2007 businesses in New Jersey were operating out of 328,632 locations. Since we want our numbers to reflect all business locations (again including not for profits and public agencies), we have used this distribution of business locations in the state as the universe from which we have drawn our sample of businesses. It will be noted that the number of business locations exceeds the number of headquarters and single site locations by 34,396 business sites. The distribution of these business locations by SIC and number of employees is included in Appendix E.

Sample of Business Locations

From this total listing we have selected a sample of business locations in proportion to the incidence of businesses in each size (number of employees) x SIC cell in the matrix of businesses included in Appendix A. Because of specific interest expressed by COAH in information on institutions of higher education (SIC 8221 and 8222) we over sampled within this SIC. The total number of business locations sampled was 42,200. This represents 42,000 business locations sampled at random and a supplemental sample of 200 businesses in higher education. This supplemental sample was drawn in proportion to the number of locations in each employee size category. Details on the distribution of the final sample are included in Appendix E.

Based on the distribution of industries and company sizes in New Jersey, targets for each industry and company size grouping were established (see Appendix E). These targets were designed to ensure adequate representation of the many types of businesses in the final data set. The final distribution of interviews appears in Appendix E.

Data Collection Methodology

Questionnaire Design

The questionnaire was developed with input from COAH in order to ensure that the survey collected all data required to perform the desired analyses. The survey was designed to capture critical information about how New Jersey businesses utilize their space and the relationship between square footage and number/type of employees. Key survey information collected included:

- Total company size (number of employees)
- Location size (number of employees at this location) including detailed information about distribution of full and part time employees as well as distribution of employees who work on and off-site
- Self-reported UCC building type
- Total square footage occupied including proportion of that space accounted for by public or common areas, square footage not currently in use and a detailed breakout of how space is used
- Primary business (industry)
- Types of jobs performed at the location and distribution of employees by each job type

The survey instrument appears in Appendix F.

Survey Pre-Test

The survey was pre-tested on a limited sample of New Jersey businesses to identify any problems in survey design prior to launching data collection. Revisions were made based on this pre-test to improve survey flow and quality of information collected.

Data Collection

Data were collected by professional market research interviewers in personal telephone interviews. Interviews were conducted incorporating stringent protocols to ensure data quality and validity. Data collection quality control measures included:

- Each interviewer was personally briefed by a Senior Project Director who is knowledgeable about project objectives as well as the sensitivity of the research
- Each interviewer completed multiple practice surveys with supervisors acting as respondents to ensure that all interviewers were familiar and comfortable with the survey before contacting potential respondents
- 20% of each interviewer's work was validated by a supervisor
- 10% of each interviewer's work was live monitored by a supervisor
- 10% of each interviewers work was validated via phone follow up with the respondent by a supervisor
- No more than 25% of the total quota completed by a single interviewer

Sample Management

Sample was administered via computer and all sample information for each respondent was recorded in the final survey data file. Sample was grouped into 21 sub-files, or replicates, with approximately 1,000 cases each. Replicates were randomly compiled so that industry and size categories were represented in proportion to the overall sample. Interviewers were required to make a minimum of five attempts on each number in a replicate before moving on to the next replicate. This system ensures that harder to reach respondents have an equal chance of being included in the sample.

In addition, survey participants were entered into a lottery drawing for one of 10 Apple iPods in appreciation for their time. Providing an incentive promotes participation among less motivated respondents who might otherwise exclude themselves from the sample.

Quality Control Measures for Data Integrity

CATI Survey Administration

The survey was programmed for computer administration. Using this CATI (computer assisted telephone interviewing) approach enables interviewers to focus on keeping the respondent engaged and collecting meaningful information rather than following the complicated skip patterns and instructions this survey entailed. In addition, multiple checks to ensure consistency of responses across related questions were programmed into the survey to allow interviewers to clarify and, if needed, correct inconsistent or inaccurate responses during the interview.

Data Cleaning and Verification

Throughout the data collection period, data were reviewed and cleaned to ensure that responses followed a consistent pattern and identify any irregularities requiring clarification or verification. Data irregularities such as contradictory responses, incomplete responses or extreme numerical values (outliers) were validated with a follow-up call to the respondent.

Verification of UCC Building Types

Self-reported UCC building type data collected in the survey were checked against the “Light Hazard Safety Database” compiled by the State of New Jersey. Where discrepancies existed, the “Light Hazard Safety Database” categorization took precedence.

APPENDIX E – NEW JERSEY BUSINESS COUNTS AND QUOTAS

Table E.1 - New Jersey Business Universe Counts – Headquarters and Unique Locations

# employees	Industry											
	Agriculture/ Forestry/ Fishing	Mining	Retail Trade	Con- struction	Finance/ Insurance/ /Real Estate	Services (excl Higher Ed)	Higher Education (subset of services)	Manu- facturing	Transportati on/ Public Utilities	Public Admin	Wholesale Trade	Total
1 – 50	7,943	135	46,972	31,651	20,663	134,215	40	14,408	10,979	687	17,180	284,873
51-100	32	5	603	233	347	1,702	0	673	296	153	408	4,452
101-249	8	1	178	98	203	996	6	487	161	158	226	2,522
250-499	3	1	60	32	89	463	11	183	74	67	89	1,072
500-999	1	0	37	4	50	219	14	115	45	28	40	553
1,000 or more	1	1	74	6	70	291	18	186	49	40	28	764
TOTAL	7,988	143	47,924	32,024	21,422	137,886	89	16,052	11,604	1,133	17,971	294,236

Source: Dun & Bradstreet (2007)

Table E.2 - New Jersey Business Universe Counts – All New Jersey Business Locations

# employees	Industry											
	Agriculture/ Forestry/ Fishing	Mining	Retail Trade	Con- struction	Finance/ Insurance/ /Real Estate	Services (excl Higher Ed)	Higher Education	Manu- facturing	Transportati on/ Public Utilities	Public Admin	Wholesale Trade	Total
1 – 50	7,985	141	48,107	31,899	21,371	136,317	42	14,679	11,423	894	17,690	290,548
51-100	43	6	871	276	649	2,512	0	797	415	422	569	6,560
101-249	16	3	494	137	577	2,122	13	634	353	699	476	5,524
250-499	9	9	313	62	294	1,596	20	311	192	440	242	3,488
500-999	7	3	373	23	342	1,250	36	240	144	195	174	2,787
1,000 or more	43	12	5,806	115	3,082	5,307	118	1,082	1,624	1,635	901	19,725
TOTAL	8,103	174	55,964	32,512	26,315	149,104	229	17,743	14,151	4,285	20,052	328,632

Source: Dun & Bradstreet (2007)

Table E.3 - Completed Surveys by Industry and Company Size

# employees	Industry											
	Agriculture/ Forestry/ Fishing	Mining	Retail Trade	Con- struction	Finance/ Insurance/ /Real Estate	Services (excl Higher Ed)	Higher Education	Manu- facturing	Transportati on/ Public Utilities	Public Admin	Wholesale Trade	Total
1 – 50	27	1	168	113	85	473	2	56	40	6	65	1,036
51-100	0	0	4	1	0	6	0	2	1	2	2	18
101-249	0	0	3	2	1	12	1	3	2	3	2	29
250-499	0	0	3	0	0	5	0	0	0	1	0	9
500-999	0	0	1	0	1	4	3	1	0	0	0	10
1,000 or more	1	0	23	1	8	25	4	1	8	4	3	78
TOTAL	28	1	202	117	95	525	10	63	51	16	72	1,180

Source: the reed group (2007)

Table E.4 - Space by Employee Survey

BUILDING TYPE (FROM Q.S4 – COMPLETES CAN FALL INTO MULTIPLE GROUPS)	TAR-GET	INDUSTRY(FROM SAMPLE)	TAR-GET	COMPANY SIZE (FROM Q.S1)	TAR-GET		
Place where business transactions take place	100	Ag, Forestry, Fishing (01-09)	29	1 – 50	1039		
Place where products displayed/sold	100	Mining (12 – 14)	1	51-100	24		
Factory	100	Retail (52 – 59)	201	101-249	20		
Storage facility	100	Construction (15 – 17)	116	250-499	13		
High hazard manufacturing/storage	100	Finance, Insurance, Real Estate (60 – 67)	94	500-999	11		
Theater/concert hall/TV studio	100	Services (70 – 89, excluding codes 8221 and 8222)	529	1000+	74		
Restaurant/night club/tavern/casino	100	Higher education (codes 8221 and 8222)	10				
Site of library/lecture hall(s)/arcades, etc.	100	Manufacturing (20 – 39)	63				
Arena	100	Transportation, Utilities (40 – 49)	51				
Stadium	100	Public Admin (91 – 97)	15				
School	100	Wholesale Trade (50 – 51)	72				
Hospital/nursing home/assisted living facility etc	100						
Hotel, motel or dormitory	100						
Other	100						
TOTAL= 1400							

Source: the reed group(2007)

APPENDIX F – NEW JERSEY SURVEY SCRIPT

(ASK TO SPEAK TO A MANAGER WHO IS KNOWLEDGEABLE ABOUT THE NUMBER OF EMPLOYEES AND SQUARE FOOTAGE USED AT THIS LOCATION. IN SMALLER COMPANIES, THIS COULD BE THE OWNER, OFFICE MANAGER OR GENERAL MANAGER, IN LARGER COMPANIES START IN THE HUMAN RESOURCES DEPARTMENT AND TRY TO GET A REFERRAL TO SOMEONE WHO CAN ANSWER THE QUESTIONS)

I am calling from reed|group, an independent market research company in Philadelphia. We are doing a very brief survey designed to understand how different businesses use their space and we'd like to include your company's input. The survey should take no more than 5 minutes of your time. If you qualify and complete the interview, we will enter you into a drawing to win one of 10 Apple iPods valued at \$250. **(IF RESPONDENT ASKS, Your chances of winning are 1 in 140)**

Screener

S1. Including yourself, how many full- and part-time employees does your company have in total, that is, at all locations including all the divisions, subsidiaries and branches of your company? If your company owns any franchise locations, please include these as well. Please include all full and part time employees and any employees who telecommute or work primarily off-site. **(READ ONLY IF RESPONDENT SAYS DON'T KNOW)**

If you cannot provide an exact number, please just give us your best estimate. **Please check one answer**

	TOTAL EMPLOYEES ALL COMPANY LOCATIONS
--	--

Interviewer: Is this an actual figure or an estimate? **Check one**

- Actual
- Estimate

(DATA CLEANING NOTE: RESPONSE IN Q.S1 SHOULD BE CHECKED AGAINST SAMPLE INFORMATION, IF MORE THAN 10% DIFFERENCE IN THE TWO FIGURES, FLAG FOR REVIEW AND VERIFICATION)

S2. Does this company have more than one location?

- Yes **READ:** For the rest of this survey, please answer questions in terms of this location
- No (**SKIP TO Q.S3B/C**)
- Don't know/Refused (**TERMINATE**)

S3A. Including yourself, how many of those (**ANSWER FROM Q.S1**) employees are on the payroll for **this company location**? Please include all full and part time employees as well as any employees who telecommute or work primarily offsite. (**READ ONLY IF RESPONDENT SAYS "DON'T KNOW"**) If you cannot provide an exact number, please give us your best estimate. (**RESPONDENT MUST PROVIDE A WHOLE NUMBER, DO NOT ACCEPT A RANGE, IF DON'T KNOW OR REFUSED, TERMINATE**)

S3B/C. How many of the **(FIGURE FROM Q.S1A OR S.3A)** employees are full-time?
 How many are part-time? **(IF UNABLE TO PROVIDE RAW NUMBER,
 MAY PROVIDE PERCENTAGE INSTEAD.**

**PERCENTAGES MUST = 100, SUM OF NUMERICAL RESPONSES TO Q.S3B
 + Q.S3C MUST = RESPONSE FROM Q.S1A, ALLOW DON'T KNOW AND
 REFUSED)**

	<i>Type of Employee</i>	<i>Number</i>	<i>RANGE OF RESPONSES</i>
QS3A	Total		0 TO 999,999 DK/REF TERMINATE Interviewer: Is this an actual figure or an estimate? Check one <input type="checkbox"/> Actual <input type="checkbox"/> Estimate
(CHECK COMPANY SIZE TARGETS BEFORE CONTINUING)			
QS3B	Full-Time		0 TO 100 OR 0 TO Q.S3A ALLOW DK/REF
QS3C	Part-time		0 TO 100 OR 0 TO Q.S3A ALLOW DK/REF
Interviewer: Are these figures actual or estimates? (ONLY COLLECT THIS ONCE FOR Q.S3B AND Q.S3C) <input type="checkbox"/> Actual <input type="checkbox"/> Estimate			

S3D. Do any of your full or part time employees telecommute or spend most of their time working off-site?

- Yes
- No (**SKIP TO Q.S4**)

S3E. How many of the (**FIGURE FROM Q.S3B**) full time employees on the payroll at this location telecommute or spend most of their time working offsite? (**IF UNABLE TO PROVIDE RAW NUMBER, MAY PROVIDE PERCENTAGE INSTEAD. PERCENTAGE RANGE OF RESPONSES = 0 TO 100; RAW NUMBER RANGE OF RESPONSES IS 0 TO Q.S3B RESPONSE, ALLOW DON'T KNOW AND REFUSED, IF 0 SKIP TO Q.S3G**)

S3F. And, how many of those (**FIGURE FROM Q.S3E**) employees spend ANY of their time working in New Jersey? (**IF UNABLE TO PROVIDE RAW NUMBER, MAY PROVIDE PERCENTAGE INSTEAD. PERCENTAGE RANGE OF RESPONSES = 0 TO 100; RAW NUMBER RANGE OF RESPONSES IS 0 TO Q.S3E RESPONSE, ALLOW DON'T KNOW AND REFUSED**)

S3G. How many of the (**FIGURE FROM S.3C**) part time employees on the payroll at this location telecommute or spend most of their time working offsite? (**IF UNABLE TO PROVIDE RAW NUMBER, MAY PROVIDE PERCENTAGE INSTEAD. PERCENTAGE RANGE OF RESPONSES = 0 TO 100; RAW NUMBER RANGE OF RESPONSES IS 0 TO Q.S3C RESPONSE, ALLOW DON'T KNOW AND REFUSED, IF 0 SKIP TO Q.S4**)

S3H. And, how many of those (**FIGURE FROM Q.S3G**) employees spend ANY of their time working in New Jersey? (**IF UNABLE TO PROVIDE RAW NUMBER, MAY PROVIDE PERCENTAGE INSTEAD. PERCENTAGE RANGE OF RESPONSES = 0 TO 100; RAW NUMBER RANGE OF RESPONSES IS 0 TO Q.S3G RESPONSE, ALLOW DON'T KNOW AND REFUSED**)

QS3E	Full-Time Work off-site or telecommute		0 TO 100 OR 0 TO Q.S3B RESPONSE ALLOW DK/REF IF 0, DK OR REF, SKIP TO Q.S3G
QS3F	Full-Time Work off-site or telecommute Any Time in NJ		0 TO 100 OR 0 TO Q.S3E RESPONSE ALLOW DK/REF
QS3G	Part-Time Work off-site or telecommute		0 TO 100 OR 0 TO Q.S3C RESPONSE ALLOW DK/REF IF 0, DK OR REF, SKIP TO Q.S4
QS3H	Part-Time Work off-site or telecommute Any Time in NJ		0 TO 100 OR 0 TO Q.S3G RESPONSE ALLOW DK/REF
<p>Interviewer: Are these figures actual or estimates? (ONLY COLLECT THIS ONCE FOR Q.3SE THROUGH Q.3SH)</p> <p><input type="checkbox"/> Actual <input type="checkbox"/> Estimate</p>			

S4. Now please think about the building in which your company is located. Please tell me which one of the following best describes how this building is used. **(READ LIST, STARTING AT POINT WHICH SEEMS MOST APPROPRIATE GIVEN RESPONDENT'S INDUSTRY; ACCEPT MULTIPLE RESPONSES)**
Is this building...(READ)...?

- A **place where business transactions take place**, such as a bank, corporate or government office, professional or medical office, car showroom or outpatient clinic
- A **place where products are displayed and sold** such as retail stores, strip malls, shops or gas stations
- Any type of factory**, power plant, foundry or incinerator
- A **storage facility** such as a warehouse, parking garage, lumberyard or aircraft hangar
- A **high hazard manufacturing** or storage facility
- A **theater, concert hall or TV studio**
- A **restaurant, night club, tavern, casino** or other similar business
- The **site of a library, lecture hall(s), arcades**, bowling alley, funeral parlor, or gymnasium
- An **arena**, such as an ice skating rink or pool
- A **stadium**, amusement park structure, grandstands, or bleachers
- A **school** for K – 12
- A **hospital, nursing home, assisted living facility** or jail
- A **hotel, motel or dormitory**
- Some other type of building I haven't mentioned?
(SPECIFY) _____

CHECK BUILDING TYPE TARGETS BEFORE CONTINUING

S5A. What is the total square footage your company occupies at this location? Please include all space whether it is currently being used or not. **(READ ONLY IF RESPONDENT SAYS, “DON’T KNOW”)** If you cannot provide an exact number, please give us your best estimate. **(DO NOT ACCEPT A RANGE, IF DON’T KNOW OR REFUSED, TERMINATE)**

Total Square Footage

Interviewer: Is this figure actual or an estimate?

- Actual
- Estimate

S5B. Does that figure include a share of common or public space? By common or public space, we mean areas such as rest rooms and hallways.

- Yes
- No **(SKIP TO Q.5D)**
- Don’t know **(SKIP TO Q.5D)**

S5C. What is the square footage of common or public space included in your total square footage? **(IF RESPONDENT CAN NOT PROVIDE A RAW NUMBER, ACCEPT A PERCENTAGE, RANGE OF RESPONSES FOR RAW NUMBER IS 1 TO Q.S3A RESPONSE, RANGE OF RESPONSES FOR PERCENTAGES IS 1 TO 100, ALLOW DON’T KNOW AND REFUSED)**

Square Feet or % Common or Public Space

Interviewer: Is this figure actual or an estimate?

- Actual
- Estimate

S5D. Out of 100%, what proportion of that (**ANSWER FROM Q.S5A**) square feet is currently **not being used**? (**READ ONLY IF RESPONDENT SAYS "DON'T KNOW"**) If you can not provide an exact number, please give us your best estimate. (**IF RESPONDENT CAN NOT PROVIDE A RAW NUMBER, ACCEPT A PERCENTAGE, RANGE OF RESPONSES FOR RAW NUMBER IS 1 TO Q.S5A RESPONSE, RANGE OF RESPONSES FOR PERCENTAGES IS 1 TO 100, ALLOW DON'T KNOW AND REFUSED**)

Total Square Footage or % Not in Use

Interviewer: Is this figure actual or an estimate?

- Actual
- Estimate

1. How would you describe your company's primary business? **(RECORD RESPONSE VERBATIM)**

PRIMARY BUSINESS:	
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(DATA PROCESSING NOTE: CODE RESPONSES TO THE INDUSTRY LIST BELOW)

- (1) Accommodation and Food Services (including hotels, motels, restaurants)
- (2) Administrative and Support Services (including call centers, employment agencies, professional organizations, collection agencies, credit bureaus, travel agents, security services including guards, armored cars, exterminators, janitorial, landscapers)
- (3) Agriculture, Forestry, Fishing and Hunting
- (4) Arts, Entertainment, and Recreation (including all types of entertainment and casinos, golf courses, skiing facilities)
- (5) Construction and specialized trade contracting
- (6) Educational Services (including all types of schools)
- (7) Finance and Insurance
- (8) Health Care and Social Assistance (including all types of physicians, social services for youth, elderly and other groups and health care facilities such as nursing homes, rehab, as well as vocational rehab and day care organizations)
- (9) Information/Telecommunications/Data Hosting and Transmission (including books, newspapers, magazines, television, motion pictures, radio, telephone, internet, etc.)
- (10) Manufacturing
- (11) Management of Companies and Enterprises (including holding companies)
- (12) Mining, Quarrying, and Oil and Gas Extraction
- (13) Other Services (except Public Administration) (including all auto mechanic related jobs, repair services, personal care services, non-veterinary pet services, religious, civic and social organizations)
- (14) Professional, Scientific, and Technical Services (including lawyers, engineers,

accountants, architects, scientist, advertising/marketing consultants,
veterinarians)

- (15) Public Administration/Government
- (16) Real Estate, Rental and Leasing
- (17) Retail Trade (all types of goods including mail order, catalog, online sales)
- (18) Transportation and Warehousing (including all types of transportation, mailing/shipping/messenger/delivery services, and all types of warehousing)
- (19) Utilities
- (20) Waste Management and Remediation Services (including waste collection)
- (21) Wholesale Trade (all types of goods)
- (22) Something else

2A. Now I'd like to understand what type of work is performed at this location. First of all, what types of staff do you have at this location? I am looking for categories like management, operations, production workers, etc. or categories like those that can be used for payroll. **(FILL IN CATEGORIES BELOW, DO NOT ALLOW DON'T KNOW OR REFUSED)**

2B. Out of 100%, what percent of the total employees at this location are represented by each of the types of jobs you mentioned? Please include both full and part time employees but do not include employees who telecommute or work primarily offsite.

What percent of the employees working at this location are in...**(READ EACH JOB CATEGORY)...? (IF DON'T KNOW, READ)** If you can not give me an exact figure, please just give me your best estimate. **(IF RESPONDENT CAN NOT PROVIDE PERCENTAGES, ACCEPT RAW NUMBERS, RANGE OF RESPONSES FOR RAW NUMBERS IS 0 TO Q.S3A, RAW NUMBERS MUST ADD TO Q.S3; RANGE OF RESPONSES FOR PERCENTAGES IS 1 TO 100, MUST ADD TO 100% ALLOW DON'T KNOW AND REFUSED)**

JOB CATEGORY (ALLOW UP TO 10)	PERCENT OF EMPLOYEES AT THIS LOCATION
TOTAL	100% OR Q.S3

Interviewer: Are these figures actual or estimates?

- Actual
- Estimate

**(DATA PROCESSING NOTE: USE LIST BELOW AS CODE LIST FOR JOB TYPES
IN Q.2A/Q.2B)**

Q2A/Q2B Job Types
(1) Management staff including top executives, Advertising, Marketing, Promotions, Public Relations, and Sales Managers, Operations Specialties Managers as well as all other managers and administrators
(2) Business operations specialists such as buyers, purchasing agents, entertainment agents, claims adjusters, appraisers, examiners, cost estimators, emergency management specialists, human resources professionals, business analysts, convention planners
(3) Financial Specialists including accountants, budget analysts, financial analysts/advisors, loan officers, appraisers, etc.
(4) Computer and mathematical staff including computer programmers, engineers, scientists, support specialists, actuaries, statisticians, mathematicians,
(5) Architects/engineers including surveyors, cartographers, drafters
(6) Scientists
(7) Community and Social Services staff including social workers, counselors, religious workers, clergy
(8) Legal staff including lawyers, judges, legal support staff
(9) Education, Training, and Library staff including teachers at all levels and school support staff
(10) Arts, Design, Entertainment, Sports, and Media staff including all entertainers as well as artists, designers, writers, photographers
(11) Healthcare Practitioners/Technicians and Support including all physicians, nurses, physician's assistants, health care technicians
(12) Protective Service Occupations including all law enforcement and private security personnel
(13) Food Preparation and Serving Related Staff
(14) Building and Grounds Cleaning and Maintenance Staff

(15) Personal Care and Service Staff including hairdressers/barbers, entertainment attendance, animal trainers/caretakers, attendants, child care and home health care workers, fitness trainers
(16) Sales and Related Staff
(17) Office and Administrative Support Staff
(18) Farming, Fishing, and Forestry Staff
(19) Construction and Extraction Staff
(20) Installation, Maintenance, and Repair Staff
(21) Production Staff including assemblers, fabricators, food processing workers, factory workers
(22) Transportation and Material Moving Staff
(23) Military Personnel
(24) Something else _____

3. Now I'd like to understand how your company's space is used. In answering this question, please include only the space that your company is currently using. Do not include any space that is currently not in use.

As I read the following ways space might be used, please tell me out of 100%, what percentage of your company's space is currently used in this way? You will have a chance to tell me types of space that are not on the list before we finish the question. What percent of the total space is **(READ)? (ACCEPT UP TO 4 OTHER SPECIFIES, IF RESPONDENT CANNOT PROVIDE PERCENTAGES, ACCEPT RAW NUMBERS, RANGE OF RESPONSES FOR RAW NUMBERS IS 0 TO Q., RAW NUMBERS MUST ADD TO Q.S3A; RANGE OF RESPONSES FOR PERCENTAGES IS 1 TO 100, MUST ADD TO 100%, ALLOW DON'T KNOW AND REFUSED)**

	% OF TOTAL USED SPACE
Commercial or retail, including showrooms and display areas	
Office space	
Production space	
Conference rooms, classrooms, auditoriums, etc.	
Common or public space(s) including waiting areas, rest rooms, hallways, etc.	
Storage or warehouse space	
Other Please Specify: _____	
Other Please Specify: _____	
Other Please Specify: _____	
Other Please Specify: _____	
Total	100%

Interviewer: Are these figures actual or estimates?

- Actual
- Estimate

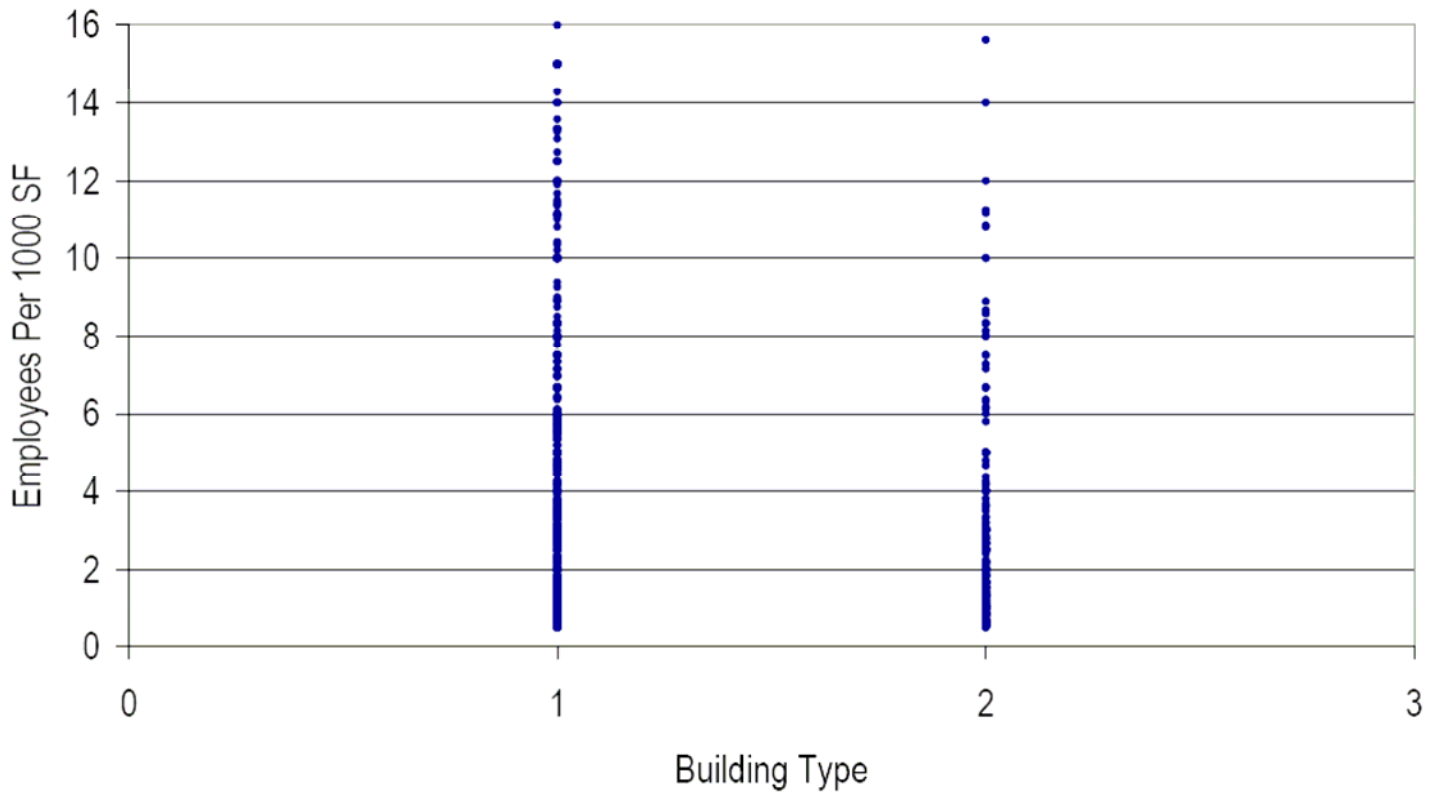
4. And finally, so I can enter you in the drawing to win one of 10 Apple iPods, please give me your name, title, company name and address. **(DO NOT ACCEPT HOME ADDRESS, MUST PROVIDE COMPANY NAME AND STREET ADDRESS – ASSURE RESPONDENT THAT NAME, COMPANY NAME INFORMATION WILL BE USED ONLY FOR THE DRAWING AND TO VERIFY THAT A SURVEY WAS ACTUALLY COMPLETED, THIS INFORMATION WILL NOT BE RELEASED TO ANY THIRD PARTIES NOR WILL IT BE LINKED TO YOUR INDIVIDUAL RESPONSES)**

Name	
Job Title	
Company Name	
Address 1	
Address 2	
City	
State	NJ
Zip	

Thank you for taking the time to participate in this survey!

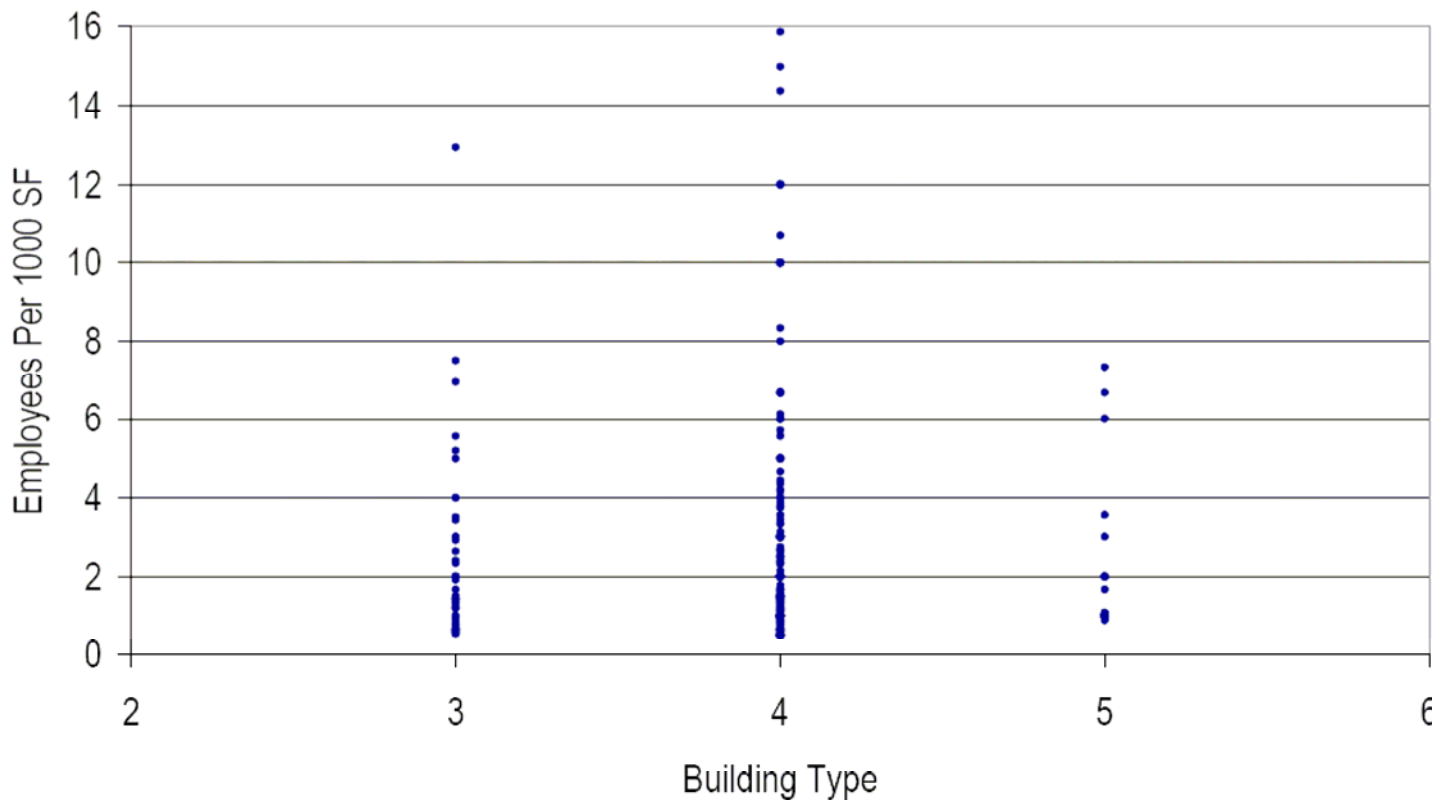
APPENDIX G – ADDITIONAL NEW JERSEY SURVEY RESULTS OF INTEREST

**Distribution of Employees Per 1000 SF, Selected Building Types
(1 = Office, 2 = Retail)**



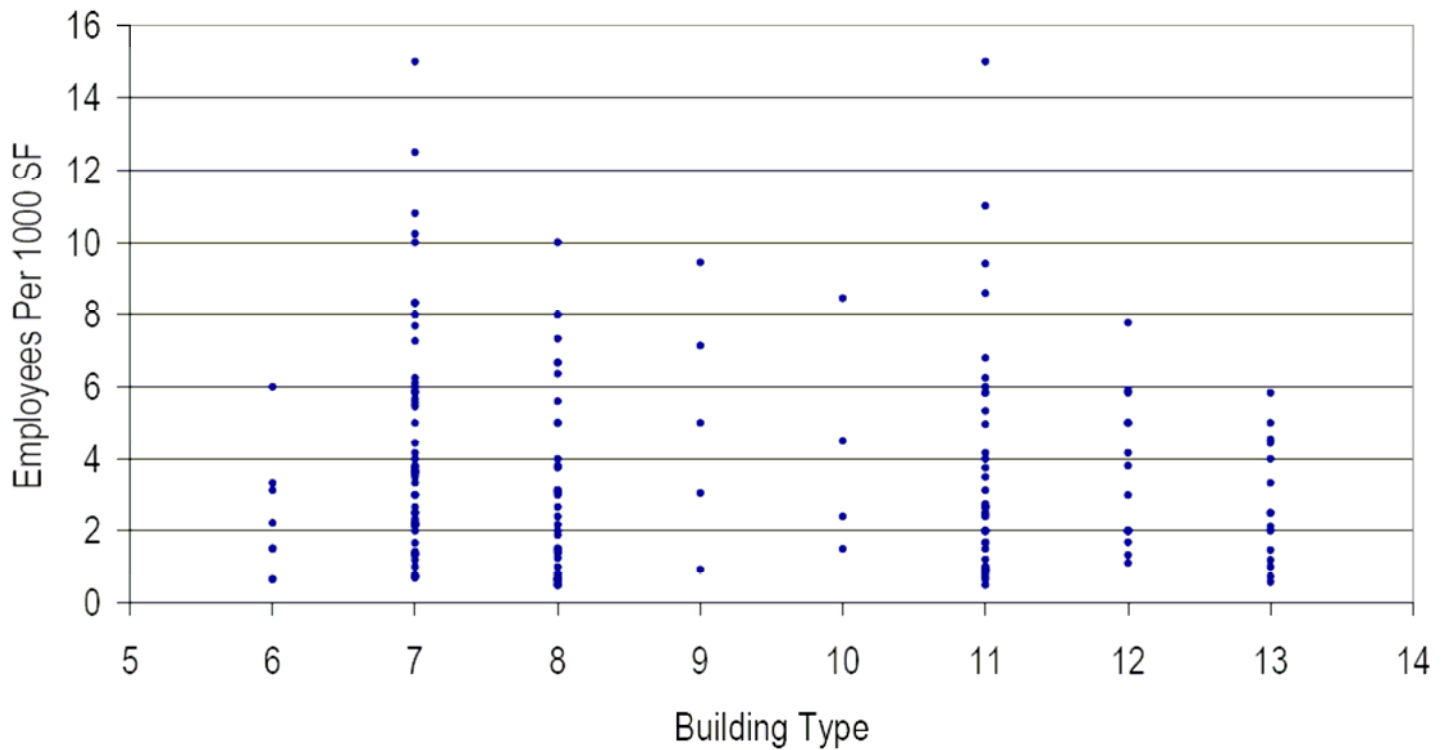
Source: the reed group(2007)

Distribution of Employees Per 1000 SF, Selected Building Types
(3 = Factory, 4 = Storage, 5 = Manufacturing)



Source: the reed group(2007)

Distribution of Employees Per 1000 SF, Selected Building Types
(6 = Theater, 7 = Restaurant, 8 = Library, 9 = Arena, 10 = Stadium, 11 = K-12,
12 = Hospital, 13 = Hotel)



Source: the reed group(2007)

Survey Responses, Selected Building Types and Industries

	S3A Location # employees	S3B Total FT employees	S3C Total PT employees	Q3 % Office space	Empl / 1000SF
Arenas	17	2	15	10	9.44
	40	40		90	0.20
	1	0	1	10	5.00
	2	2		99	0.16
	6	6		5	0.03
	1	1		0	0.93
	1437	728	709	30	3.05
	25	4	21	10	7.14
Stadiums	11	11		100	8.46
	72	65	7	5	2.40
	150	150		25	1.50
	8	6	2	5	26.67
	400	350	50	30	0.29
	9	9	0	75	4.50
Higher Education	1437	728	709	30	3.05
	400	350	50	30	0.29
	160	68	92	20	2.67
	1	1	0	100	1.43
	350	200	150	20	0.41
	990	890	100	7	0.80
	15	12	3	10	0.30
	2	1	1	20	1.67
	57	54	3	40	1.88
	675	317	358	14	1.52

Source: the reed group (2007)