Roosevelt University Wabash Building Waste Audit

Office Floors 12 & 13

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1.0 Introduction

1.1 Background

Roosevelt University prides itself on being a sustainable, green campus. Recently, Roosevelt's latest addition, the Wabash building has been certified at the Gold level in Leadership in Energy and Environmental Design certification from the US Green Building Council in Washington DC. According to Roosevelt's website, "The Gold certification, announced this week by the USGBC, recognizes the University's strong commitment to the environment and its leadership in sustainability from start to finish in construction of the new Wabash Building" ("Wabash"). Although Roosevelt University is a notably green campus, there is always room to grow. By instituting a waste audit and dissecting the waste within the new building, one can find how effective their waste and recycling practices really are.

To determine if the Wabash building's waste management and recycling systems are really as efficient as possible, Roosevelt University's Sustainability 240: Waste class did a waste audit of a single day's trash for the 12th and 13th office floors of the Wabash building. A waste audit is a "formal, structured process used to quantify the amount and types of waste being generated by an organization. Information from audits will help identify current waste practices and how they can be improved" ("How"). The waste audit objectives were to determine the composition and quantities of the waste, the effectiveness of the existing waste system, to identify areas of improvement, and to collect baseline data to measure the effectiveness of waste management.

2.0 Audit

2.1 Procedures

The office floor group started out by meeting in the lobby of the Wabash building and after establishing that everyone had shown up, they proceeded to the 13th floor. Upon arrival at the 13th floor they first took a look at the waste that had been left for them in the trash room. The group got a general idea of what the waste area looked like and how much waste there was. After noting that, they spread out two tarps brought by group members and split into two groups. One group took all of the recyclables while the other group took the solid waste (trash). After deciding who was in each group, supplies such as gloves, extra trash bags, scales, and clean up materials were distributed out.

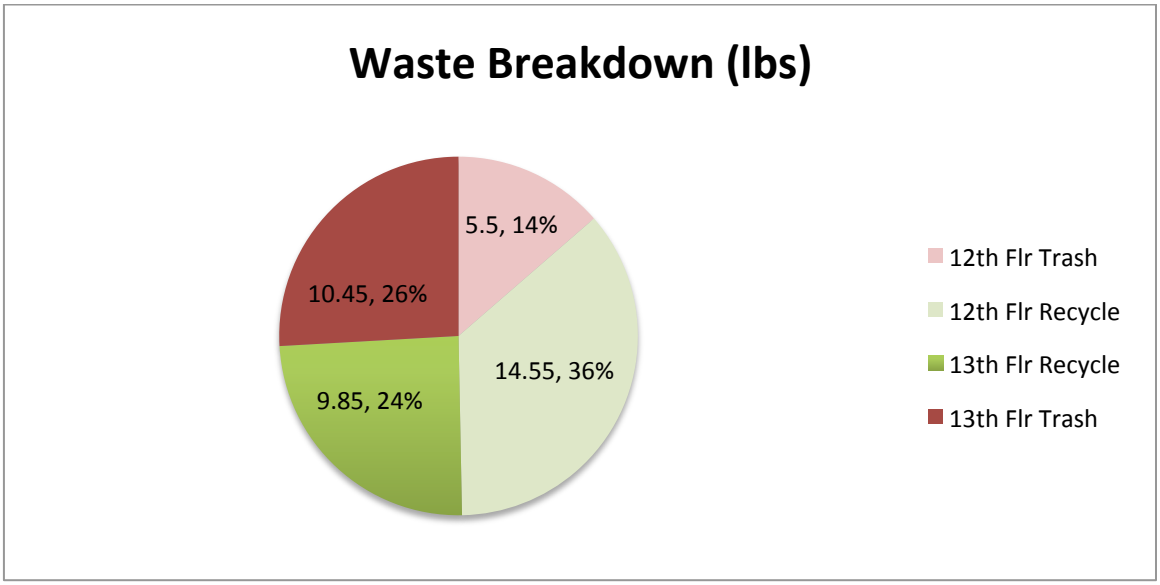
When everyone was ready, the sorting of waste and recyclables into different categories began. The solid waste side started by separating trash into categories such as food waste, papers, miscellaneous non-recyclable plastics, office materials, and objects that should have been put into the recycling bin (see appendix pictures 6.2.3, 6.2.4, 6.2.6). The recycling side also did the same by sorting office papers, plastics, metals, cardboard, miscellaneous mailings and other paper, as well as objects that did not belong in the recycling at all (see appendix pictures 6.2.5, 6.2.7). After everything was sorted, each group weighed the waste and recycling and recorded the results. Once everything was done being weighed from the 13th floor the same process was followed for the 12th floor (see appendix pictures 6.2.1, 6.2.2). Following that, they talked about what they saw and found, in addition to the possibility of why each item was there at that time. They continued on and discussed why some of the objects were put in the wrong place, why that

could be, and how to prevent it from happening in the future. After the completion of the weighing and sorting of both floors, clean up began and everything was put back in their proper bins.

Upon everything being cleaned up and everyone getting a chance to wash their hands, there was more discussion about what was found. Within the discussion, they talked about the amounts of waste found compared to what was expected, or thought, to be found by the next group during their waste audit of residential floors. After concluding the discussion, each person's responsibility was established and everyone went their separate ways.

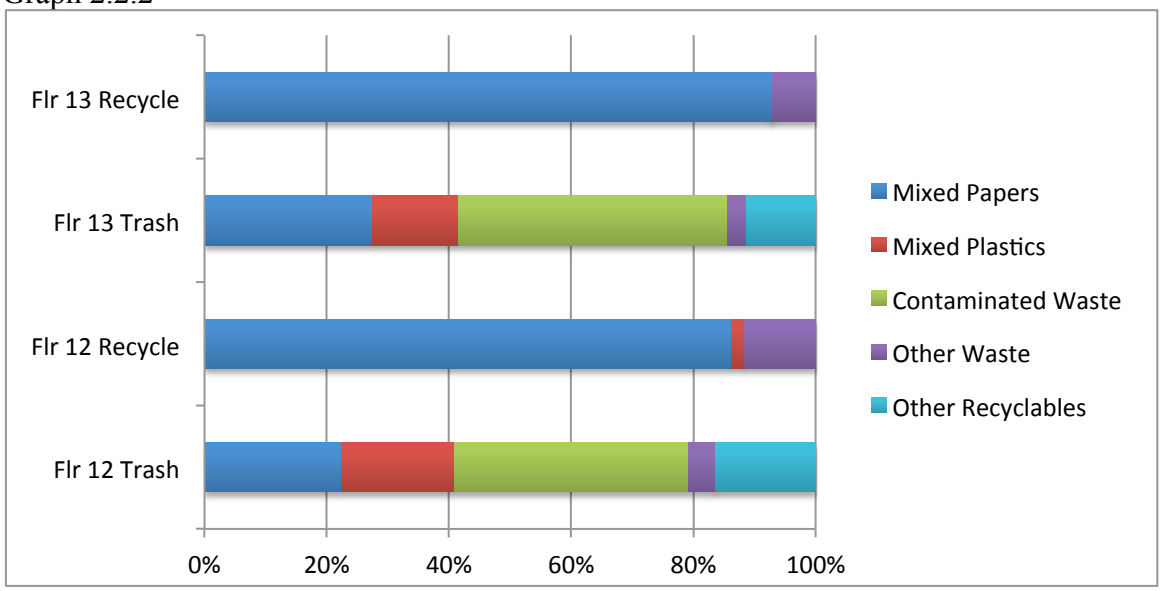
2.2 Results

Graph 2.2.1



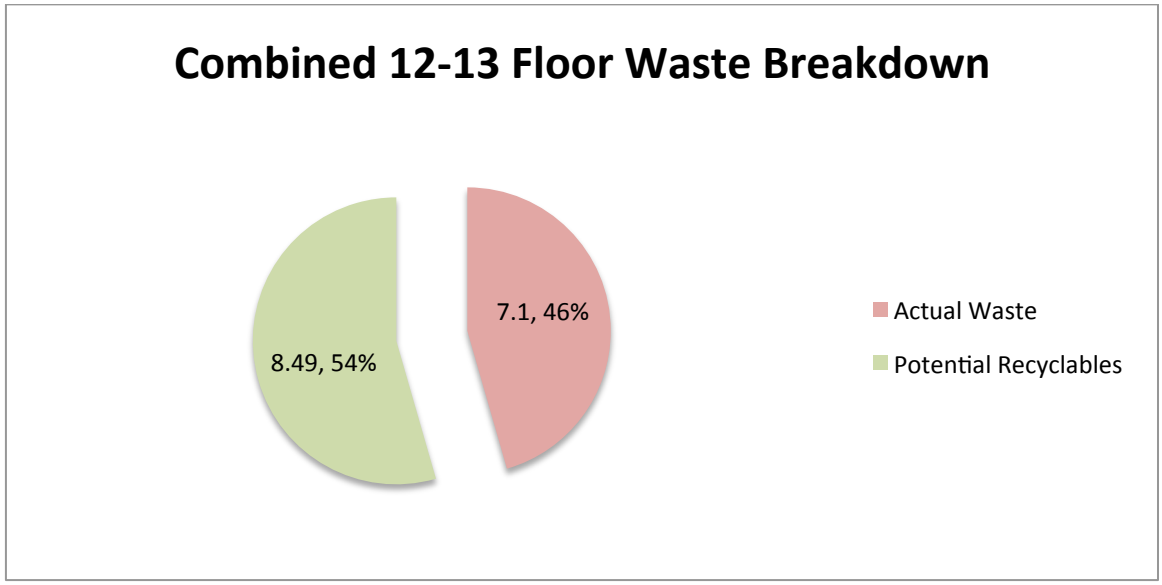
This graph shows a breakdown of floor trash and recycling bags before the group analyzed it. The breakdown shows an even distribution of waste produced by each floor. It shows that the 12th floor produced more recyclables and less waste. The 12th floor recycled 72% of its total waste and the 13th floor recycled two-thirds of that amount (48%).

Graph 2.2.2



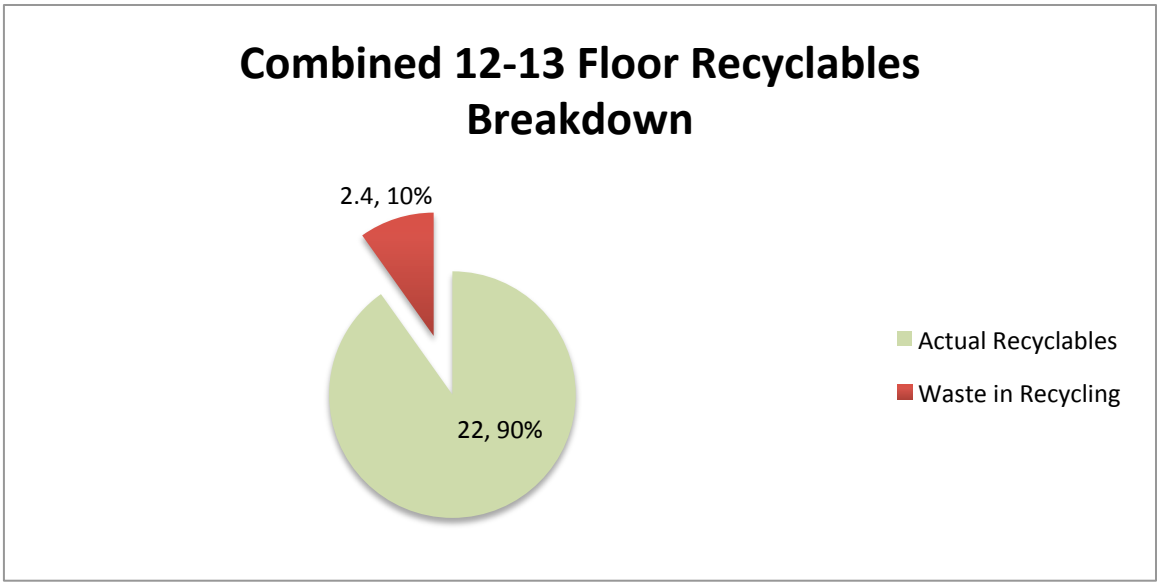
This graph shows a breakdown of waste after the group analyzed it. The graph shows that a majority of recyclables from both floors consisted of mixed papers including magazines, office paper, newspapers, packaging, paper bags, and cardboard. There were almost no plastics recycled from either floor. "Other waste" (Styrofoam, mixed composites) was found to be recycled. The 12th floor had approximately 11.6% of non-recyclables found in recycling containers while the 13th floor had about 7%. Approximately 42% of 12th floor trash and 46% of 13th floor trash consisted of organic and contaminated waste. Over 50% of materials in trash on both floors could have been recycled.

Graph 2.2.3



This graph shows the large potential of improvement for trash separation on both office floors. More than half (54%) of the trash the group analyzed could have been potentially recycled.

Graph 2.2.4



This graph shows the potential of improvement for recycling separation on both floors. In recycling containers there is about 10% room for improvement.

3.0 Extrapolation

Based off the group's results obtained during the waste audit, about fifty-five percent of all the waste could have been diverted to recycling. As for recycling, the percentage that accounted for waste came to thirteen percent. Within this section, office floors 12 and 13, the total number of office floors, and the whole Wabash building are extrapolated for a month's time. After the group extrapolated their results, they then compared the results to numbers for August of 2012 for the Gage and Wabash building and May of 2012 for the Auditorium building.

3.1 Waste Audit Results

This section documents the waste audit results for both waste and recycling for office floors 12 and 13 of the new Wabash building.

Waste Audit Statistics for Wabash Building			
Office Floor	**Waste**	**Recycling**	**Total**
12th	5.37 lbs.	12.85 lbs.	18.22 lbs.
13th	10.22 lbs.	9.15 lbs.	19.37 lbs.
Total	15.59 lbs.	22 lbs.	

Figure 3.1

Note the totals on this chart:

Total Recycling from floors: 22 pounds

Total Waste from floors: 15.59 pounds

Total Waste/Recycling from floors (not on chart): 37.59 pounds

3.2 Extrapolation Results: A Month (22 Work Days)

To extrapolate for a month of waste and recycling collection, the numbers obtained during the physical waste audit were extrapolated for about a month. The average number of days in a month comes to about 30 days. Since only work days need to be counted, this comes to about 22 work days in the average month.

Results Extrapolated to a Month (22 Work Days)			
Office Floor	**Waste**	**Recycling**	**Total**
12th	118.14 lbs.	282.7 lbs.	400.84 lbs.
13th	224.84 lbs.	201.3 lbs.	426.14 lbs.
Total	342.98 lbs.	484 lbs.	

Figure 3.2

Notice the totals shown on the chart:

Total Waste from floors: 342.98 pounds

Total Recycling from floors: 484 pounds

Total Waste/Recycling from floors (not on chart): 826.98 pounds

3.3 Extrapolation Results: Office Floors Only

Next is the audit group's obtained results extrapolated up to a month - work days only - for all office floors in the building. In order to do this, they had to figure out how many office floors are in the Wabash building. According to Roosevelt University's website, floors six through thirteen contain some offices as well as floors one and two. (A Vertical Campus) This means there are a total of ten office floors. First the group had to average the waste and recycling for floors 12 and 13, and then multiply those totals by ten.

Extrapolated for all office floors in the Wabash building:

Total waste for both floors: 342.98 pounds/ 2= 171.49 pounds

Total recycling for both floors: 484 pounds/2= 242 pounds

Month's waste: 171.49 pounds x 10 office floors = 1714.9 pounds

Month's recycling: 242 pounds x 10 office floors = 2,420 pounds

Combined waste and recycling: 1,714.9 pounds + 2,420 pounds = 4,134.9 pounds

3.4 Extrapolation Results: Whole Building

This section extrapolates the group's results for all 31 floors of the building. To do this, the group took the month's amounts of waste and recycling for office floors 12 and 13 floors and averaged it (also done in the last section). After getting the average, they proceeded to extrapolate for 31 floors.

Extrapolated for a month for all floors in the Wabash building:

Total waste for both floors: 342.98 pounds/ 2= 171.49 pounds

Total recycling for both floors: 484 pounds/2= 242 pounds

Month's waste: 171.49 pounds x 31 floors = 5,313.4 pounds

Month's recycling: 242 pounds x 31 floors = 7,502 pounds

Combined waste and recycling: 5,313.4 pounds +7,502 pounds = 12,815.4 pounds

3.5: Extrapolation Results: Audit Results vs. Roosevelt's Results

To extrapolate even further, the results can be compared to waste and recycling amounts generated by the Roosevelt Auditorium building, Gage building, and Wabash building. Charts have been made up to once again show the results more easily. The following is Roosevelt University statistics (and the group's results for the Wabash building) for all three university buildings based on information from the collection companies:

Roosevelt University Building Statistics for May or August of 2012		
Building	**Total Waste**	**Total Recycling**
Auditorium	47, 703 lbs.	10,563 lbs.
Gage	29,008 lbs.	2,776 lbs.
Wabash	69,598 lbs.	24,238 lbs.
Group	5,313.4 lbs.	7,502 lbs.

Figure 3.3

Look at Roosevelt University's results for each building compared to the audit group's obtained results:

Waste:

Auditorium vs. **group results** = 47,703 lbs. vs. **5,313.4 pounds**

Gage vs. **group results** = 29,008 pounds vs. **5,313.4 pounds**

Wabash vs. **group results** = 69,598 pounds vs. **5,313.4 pounds**

Recycling:

Auditorium vs. **group results** = 10,563 pounds vs. **7,502 pounds**

Gage vs. **group results** = 2,776 pounds vs. **7,502 pounds**

Wabash vs. **group results** = 24,238 pounds vs. **7,502 pounds**

3.6 Extrapolation Conclusion

As can be seen, the group's results were significantly smaller than those from the other buildings in August or May of 2012. There are a number of reasons that this could be. For instance, the obtained results were from a different month and were also extrapolated. It is improbable that every floor generates the same amount of waste and recycling; however, uniform numbers had to be used while extrapolating. To put some of these numbers in perspective, statistics can be calculated. According to the Roosevelt University website, there were about 4,561 students enrolled in school in 2011 that were in Chicago and using all three buildings on campus. (Roosevelt Enrollment at a Glance) If the waste and recycling generated for all three buildings (as mentioned earlier) was taken and scaled to waste and recycling per student, the results would look as follows:

All 3 Buildings and Group's Results Measured for Each Student		
Building	**Total Waste**	**Total Recycling**
Auditorium	10.46 lbs.	2.32 lbs.
Gage	6.36 lbs.	.61 lbs.
Wabash	15.26 lbs.	5.31 lbs.
Group	1.16 lbs.	1.64 lbs.

Figure 3.4

Remember that the amounts above are pounds of waste and recycling per student for each building and the group's results. For this kind of calculation, it is hard to say that these results are conclusive considering it is scaled to students and does not factor in the waste and recycling contributed by faculty. However, the results above are still good for comparing how much waste is generated per student for each building including what the group got as results. As shown above, the waste audit group's results for waste and recycling per student came out to be significantly lower than that of any of the building statistics. Comparing Roosevelt University's results for the Wabash building, the waste and recycling contributed by each student is higher than that of the other two buildings. Overall, the Wabash building shows the highest amounts of both waste and recycling generated. One rare thing seen by the waste audit group, was that there was more combined recycling generated on office floors 12 and 13 compared to the waste generated whereas, the opposite goes for all the buildings actual data: more waste is generated than recycling. However, this can be attributed to many factors that cannot necessarily be determined by the waste audit group.

4.0 Analysis

4.1 WARM Model Calculator Discussion

Utilizing The Environmental Protection Agency (EPA)'s Waste Reduction Model (WARM), it is possible to calculate the amount of greenhouse gases that have been diverted from being emitted into the atmosphere. Calculations have been performed using the extrapolated data on the Wabash building's present diversion rate in order to evaluate what effect current efforts are having on carbon dioxide emissions. Additionally, three alternative scenarios were computed to project the effects of improved diversion rates in recyclable materials, compostable materials, and a combination of the aforementioned two. All amounts discussed have been extrapolated to the level of one month using the method described above, and have been scaled to the level of pounds.

Scenario 1 (See appendix 6.3.1)

By engaging in its current practices, the Wabash building is diverting 925 lbs. of CO2 from being emitted into the atmosphere. It is no small point to mention that this is huge step in the right direction. This number is approximately equivalent to the amount of CO2 emitted by 13,214 cars in the same time period (all calculations arrived at assuming 150 miles of travel at 20/miles per gallon, source: COTAP.org/carbon-emissions-calculator/). Without the current percentage of recyclables that are being diverted from landfills, the Wabash building would be emitting 81 lbs. of CO2. That being said, there is certainly room for improvement.

Scenario 2 (See appendix 6.3.2)

If, through assiduous planning and oversight, the building were able to reach an 80% diversion rate for recyclable materials, this would amount to an additional 104 lb. reduction of CO2 emissions. Having already reduced CO2 emissions by 925 lbs. this amount would increase to 1029 lbs. of CO2 emissions reduction per month, equivalent to removing 14,700 cars from the road.

Scenario 3 (See appendix 6.3.3)

If a composting system were to be implemented in the building with an 80% diversion rate it would result in a further 72 lb. reduction in CO2 emissions, which equates to approximately 1028 less cars driving per month. While it may not seem exceptional to move from a 925 lb reduction to a 997lb reduction, it should be kept in mind that the data that serves as the basis for this analysis was collected from the administrative floors of the building; floors that generally have a smaller percentage of food scraps in their waste stream.

Scenario 4 (See appendix 6.3.4)

Finally, if both of the above-discussed goals were met in tandem with each other, they would reduce CO2 emissions by 176 lbs: moving from a 925 lb reduction (at current levels) to 1101 lb. reduction, or the equivalent of 15,728 cars not driving for a month. To hope for the attainment of 80% diversion rates would be, perhaps, somewhat idealistic, though certainly not inconceivable, especially when one notes that the Wabash building already achieving an 81% diversion rate for its office paper. These numbers are meant to serve as inspiration for the results that can be accomplished by dint of a more sedulous recycling/composting practice.

4.2 Complete Waste Stream Analysis

Waste Stream to Landfill

The waste stream generated by the 12th and 13th floor of the Wabash building was a fairly predictable example of what is to be expected from offices (See graphs 2.2.1-2.2.4). The waste headed for the landfill totaled 15.59 pounds, while the recycled material accounted for 22 pounds, making the total waste 37.59 pounds. The majority of the non-recycled waste was food and food related products, such as napkins, cups, and containers. Between the 12th and 13th floors, 4 pounds of mixed paper, 1.54 pounds recyclable cups, and .5 pounds of aluminum cans were thrown in the trash when they could have been recycled. This accounts for approximately 39% of the total waste being disposed of in a single day. This is a serious issue, as we are losing out on the potential to reuse these materials, which in the long run cuts down on environmental costs associated with extraction and production. This is especially relevant for aluminum cans as their production is very energy intensive. We can avoid these unnecessary costs and contribute less overall mass to the landfill by simply being more conscious of our decisions when we approach the split stream waste bins and also by using less disposable containers and investing in reusable products.

Recycled Waste Stream

Since our waste audit took place on two office floors, we had a large amount of recycling due to the fact that so much paper was used in a given day. In fact the entirety of the 13th floor's recycling came from office paper, newspaper & mail, and magazines. These paper products also accounted for 63% of the total recycling on the 12th floor, with most of the rest being attributed to cardboard for packaging. The rest of the recycling stream came from recyclable drinking

containers, e.g. cans, cups and bottles. Between the two floors the percentage of paper waste sent to the recycling was 81%, with 19% being improperly sent to the landfill.

While the recycling from the office floors seemed to be working in a fairly efficient manner, with a majority of paper being recycled, problems arose when the issue of contamination was confronted. Within the recycled material two major sources of contamination were found. First, we were surprised to find an abundance of cigarette butts were being disposed of in the recycling (see appendix picture 6.2.8). This finding is both problematic in terms of recyclable materials, and also a bit mysterious as smoking is strictly forbidden within the Wabash building. While the cigarette findings may have been circumstantial due to the nature of trash collection for our waste audit, the second source of contamination seemed to be one which may occur on the scale of the entire building. We found that, in our recycling, almost all of the floor's paper towels from the restrooms were being disposed of as recyclables. This is problematic because, while they are paper products, they are also wet and contaminated. If this practice persists throughout the entire building it may render a large portion of our recyclables unfit for recycling when being sorted at the respective sorting centers. While the paper towels themselves may have accounted for a small percentage of our waste, if we could eliminate them from our recycling stream we may be saving our recyclable materials from being deemed contaminated and therefore non recyclable.

5.0 Summary

5.1 Improvements and Recommendations

As was expected for office floors, the majority of waste collected was recyclable. Over all, a lot of waste items did make their way to the proper receptacle. The biggest improvement that Roosevelt can make to their recycling program is to make sure employees and visitors are properly educated as to where the proper designated areas for recycling are including what can and cannot be recycled. The office floors do not have single stream recycling meaning that there is a separate compartment for paper, cans and bottles, and other recyclable material. This method allows for less contamination and for individuals to think more about what is being recycled.

Contamination is the biggest obstacle when it comes to recycling paper. Paper can be easily contaminated just by accidently putting wet paper with dry paper set aside for recycling. Wet paper is a contaminant; if the paper is drenched with water prior to recycling it should be landfilled. The reasoning is that exposure to water shortens paper fibers. While conducting the audit there were a few bags that contained brown paper towels and tissue from the bathroom. Paper towels, although they are made from paper, are not recyclable. Even though paper itself is recyclable, paper towels are not; when they are used for example to dry hands they become contaminated, and paper towels are primarily a product manufactured from previously recycled paper. Paper can only be recycled and broken down to a certain extent.

An unconventional method to recycle contaminated paper is to add it to compost as a brown material. Because they are made of recycled fibers, used paper towels break down very easily. This method can be implemented to create high-quality mulch to use in gardens.

Roosevelt could find a way to partner with food services and could integrate their initiative for composting food scraps with composting paper towels and other contaminated paper products for use in gardens, such as at those on the Schaumburg campus.

The audit reflects that a total of 8.49 lbs could have been recycled. As an alternative to the use of recyclable or Styrofoam cups **see #1 below:**

1) The use of personal cups and a community coffee pot would be cost effective with each person in the department chipping in a few dollars each month for the cost of coffee, after the one big contribution for a community coffee pot. It would require washing your cup and therefore the use of water but, that can be accomplished at the same time that an employee washes his or her hands.

Hopefully we are all employing sanitary practices and cleansing our hands before and after meals to prevent the spread of germs. Our audits produced totals of non-recyclable used napkins (along with foods) of 2.05 lbs. and 4.5 lbs. from floors 12 and 13 respectively. To alleviate the use of paper products in such an unsustainable manner **see #2 below:**

2) Bring cloth hand towels to the job site. Instead of using and wasting possibly tons of paper towels annually the use of a personal wash cloth could suffice. Again, this is not an extra expenditure of water; whether you use paper towels or cloth you have to use water and hand sanitizer.

3) A major component of the waste solution is education. A short, but mandatory, educational program on how to recycle would do wonders. Roosevelt University administrators might be surprised to find out how many people really don't know how to recycle correctly. This educational program can be done via a Video Display Terminal (VDT) lesson that can be viewed in a manner of minutes at the employees' workstation. A similar webinar can be offered to

students running on a revolving spool so that it is offered 24/7. Highly visible promotion of this effort can be posted on school information boards and online.

(See appendix 6.4.1 and 6.4.2 for education and visibility suggestions)

4) Our audit revealed a significant amount of tobacco product waste (see appendix picture 6.2.8). The use of smoking materials is not permitted inside RU. As of October 5, 2012, according to the American Nonsmokers' Rights Foundation, 81.3% of the U.S. population lives under a ban on smoking in "workplaces, and/or restaurants, and/or bars, by either a state, commonwealth, or local law. Smoking is banned in Illinois in most buildings and vehicles used by the general public, used as a place of employment, or owned by the government or other public body by The **Smoke Free Illinois Act** (410 ILCS 82; Public Act 095-0017) anti-smoking law that took effect in Illinois on January 1, 2008. Don't ask don't tell doesn't work for recycling (or for public safety!). If employees see smoking they should be encouraged to say something.

6.0 Appendix

6.1 Data

Figure 6.1.1

TRASH (in lbs.)	Type	12th Floor	13th Floor	Could have been recycled
ORIGINAL BAGS		5.5	10.45	
Composites	Chip Bags	0.2	0.25	0
Recyclable Cups		0.68	0.86	1.54
Strofoam cups		0.04	0.06	0
Food/ UsedNapkins		2.05	4.5	0
Aluminum Cans		0.2	0.3	0.5
Mixed Paper		1.2	2.8	4
Type 1 Plastic	Drink bottles	0.5	0.5	1
Type 4 Plastic	Plastic Bags	0	0.55	0.55
Mixed Plastics		0.5	0.4	0.9
Totals		5.37	10.22	8.49
Total Waste that could have been recycled				55%
Full box of erasers			1.05	
***Variance was from liquid that was dumped out				

Figure 6.1.2

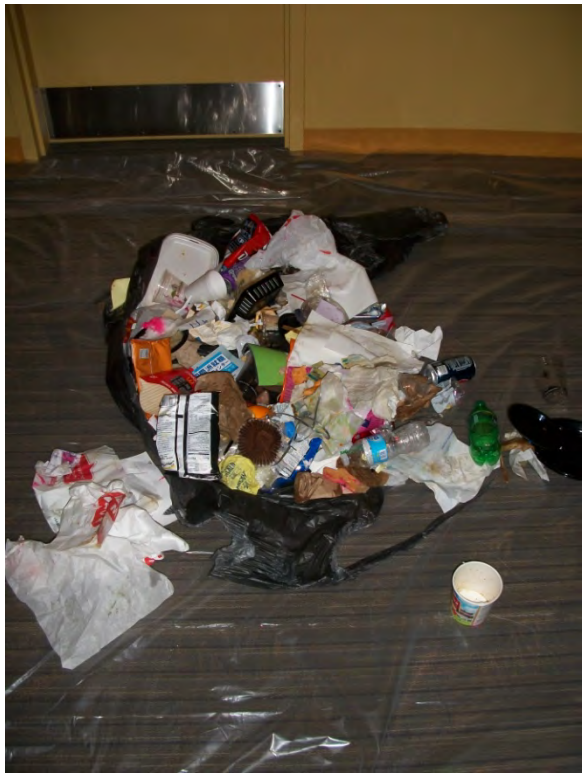
Recycling (in lbs.)	12th Floor	13th Floor
Original Weight of Bag	14.55	9.85
Office Paper	3.2	2.7
Magazines & Mail	4.3	4.55
Newspaper	0.6	1.9
Packaging	0.3	0
Cardboard	4.45	0
Et Cetera	3 12 oz. cans, 3 coffee cups, 4 plastic bottles	0
Total	12.85	9.15
Waste in Recycling (weight of trash bag itself)	1.7	0.7
Percentage of waste	13%	8%

6.2 Pictures

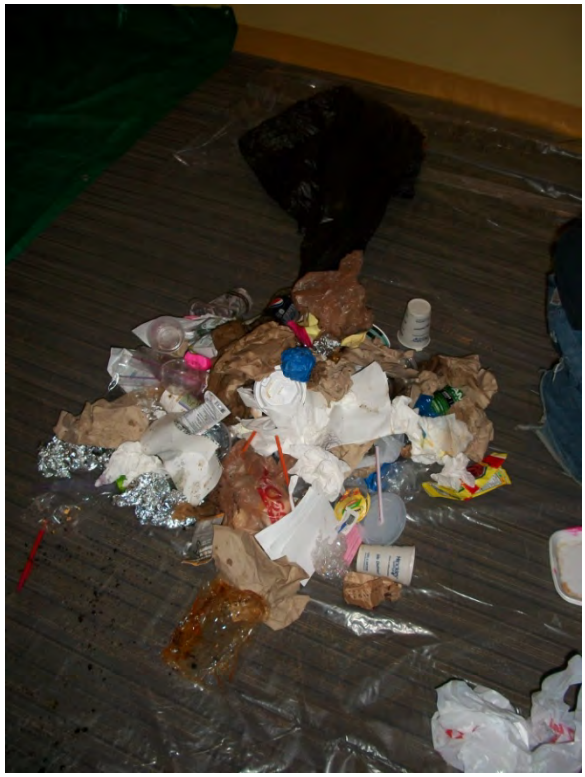
6.2.1 Dumping trash from 12th floor

6.2.2 Organizing recycling from 12th floor

6.2.3 First trash bag from 13th floor, unorganized



6.2.4 Second trash bag from 13th floor, unorganized



6.2.5 Recycling bag from 13th floor, unorganized

6.2.6 Organized trash from 13th floor

6.2.7 Organized recycling from 13th floor

6.2.8 Strange appearance of tobacco waste in 13th floor recycling bag

6.3 WARM Model Scenario Tables

6.3.1 Scenario 1 Table

GHG Emissions from Baseline Waste Management Scenario (MTCO2E):	81
GHG Emissions from Alternative Waste Management Scenario (MTCO2E):	-925
Total Change in GHG Emissions: (MTCO2E):	**-1,005**

	Baseline Scenario					Alternative Scenario						
Material	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO2E**	**Tons Source Reduced**	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO2E**	**Change (Alt - Base) MTCO2E**
Aluminum Cans	0	8	0	N/A	0	0	0	8	0	N/A	0	**0**
HDPE	0	39	0	N/A	2	0	0	39	0	N/A	2	**0**
PET	0	22	0	N/A	1	0	0	22	0	N/A	1	**0**
Corrugated Containers	0	69	0	N/A	-3	0	69	0	0	N/A	-215	**-211**
Magazines / Third-class mail	0	137	0	N/A	-64	0	137	0	0	N/A	-421	**-357**
Newspaper	0	39	0	N/A	-39	0	39	0	0	N/A	-108	**-69**
Office Paper	0	91	0	N/A	107	0	91	0	0	N/A	-261	**-368**
Food Scraps	N/A	102	0	0	70	0	N/A	102	0	0	70	**0**
Mixed MSW	N/A	7	0	N/A	7	N/A	N/A	7	0	N/A	7	**0**

Scenario 1 (above): what is being accomplished through current efforts.

6.3.2 Scenario 2 Table

GHG Emissions from Baseline Waste Management Scenario (MTCO2E):	-925
GHG Emissions from Alternative Waste Management Scenario (MTCO2E):	-1,029
Total Change in GHG Emissions: (MTCO2E):	**-104**

	Baseline Scenario						Alternative Scenario					
Material	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO 2E**	**Tons Source Reduced**	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO 2E**	**Change (Alt - Base) MTCO 2E**
Aluminum Cans	0	8	0	N/A	0	0	6	2	0	N/A	-55	**-55**
HDPE	0	39	0	N/A	2	0	31	8	0	N/A	-27	**-28**
PET	0	22	0	N/A	1	0	18	4	0	N/A	-20	**-21**
Corrugated Containers	69	0	0	N/A	-215	0	69	0	0	N/A	-215	**0**
Magazines / Third-class mail	137	0	0	N/A	-421	0	137	0	0	N/A	-421	**0**
Newspaper	39	0	0	N/A	-108	0	39	0	0	N/A	-108	**0**
Office Paper	91	0	0	N/A	-261	0	91	0	0	N/A	-261	**0**
Food Scraps	N/A	102	0	0	70	0	N/A	102	0	0	70	**0**
Mixed MSW	N/A	7	0	N/A	7	N/A	N/A	7	0	N/A	7	**0**

Scenario 2 (above): 80% diversion rate of recyclables

6.3.3 Scenario 3 Table

GHG Emissions from Baseline Waste Management Scenario (MTCO2E):	-925
GHG Emissions from Alternative Waste Management Scenario (MTCO2E):	-997
Total Change in GHG Emissions: (MTCO2E):	**-72**

	Baseline Scenario					Alternative Scenario					
Material	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO2E**	**Tons Source Reduced**	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO2E**	**Change (Alt - Base) MTCO2E**
Aluminum Cans	0	8	0	N/A	0	0	0	8	0	N/A	0	**0**
HDPE	0	39	0	N/A	2	0	0	39	0	N/A	2	**0**
PET	0	22	0	N/A	1	0	0	22	0	N/A	1	**0**
Corrugated Containers	69	0	0	N/A	-215	0	69	0	0	N/A	-215	**0**
Magazines / Third-class mail	137	0	0	N/A	-421	0	137	0	0	N/A	-421	**0**
Newspaper	39	0	0	N/A	-108	0	39	0	0	N/A	-108	**0**
Office Paper	91	0	0	N/A	-261	0	91	0	0	N/A	-261	**0**
Food Scraps	N/A	102	0	0	70	0	N/A	20	0	81	-2	**-72**
Mixed MSW	N/A	7	0	N/A	7	N/A	N/A	7	0	N/A	7	**0**

Scenario 3 (above): results from an 80% diversion rate of compostable materials

6.3.4 Scenario 4 Table

GHG Emissions from Baseline Waste Management Scenario (MTCO2E):	-925
GHG Emissions from Alternative Waste Management Scenario (MTCO2E):	-1,101
Total Change in GHG Emissions: (MTCO2E):	**-176**

	Baseline Scenario					Alternative Scenario					
Material	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO2E**	**Tons Source Reduced**	**Tons Recycled**	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Total MTCO2E**	**Change (Alt - Base) MTCO2E**
Aluminum Cans	0	8	0	N/A	0	0	6	2	0	N/A	-55	**-55**
HDPE	0	39	0	N/A	2	0	31	8	0	N/A	-27	**-28**
PET	0	22	0	N/A	1	0	18	4	0	N/A	-20	**-21**
Corrugated Containers	69	0	0	N/A	-215	0	69	0	0	N/A	-215	**0**
Magazines / Third-class mail	137	0	0	N/A	-421	0	137	0	0	N/A	-421	**0**
Newspaper	39	0	0	N/A	-108	0	39	0	0	N/A	-108	**0**
Office Paper	91	0	0	N/A	-261	0	91	0	0	N/A	-261	**0**
Food Scraps	N/A	102	0	0	70	0	N/A	20	0	81	-2	**-72**
Mixed MSW	N/A	7	0	N/A	7	N/A	N/A	7	0	N/A	7	**0**

Scenario 4 (above): 80% diversion rate of both recyclable and compostable materals

6.4 Recycling Education Suggestions

One of the things we noted was that it appears the office employees either do not fully understand the need to recycle or they may not know how to recycle properly. Along with a more direct plea for involvement in recycling efforts it may help to include a chart of what and how to recycle. The charts below will provide some helpful information to that end.

Figure 6.4.1

Figure 6.4.2

	Plastics	Identifies the type of plastic
	Glass	Dispose of glass bottles and jars in a bottle bank or use your glass curbside collection
	Recyclable Aluminum	Place in aluminum recycling facility
	Recyclable Steel	Place in a steel recycling facility
	Mobius Loop	Object is capable of being recycled
	Mobius with percentage	% of recycled material contained in the product
	The National Association of Paper Merchants mark	Made from minimum 75% genuine waste paper and / or board fibre, no part containing mill produced waste fibre
Wood 	The Forest Stewardship Council logo	Products containing wood from well managed forests
Tidyman 		Dispose of this carefully and thoughtfully

6.5 Sources

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