

## **1.0 EXECUTIVE SUMMARY**

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The objective of this assignment was to gain a clear understanding of the energy analysis procedures. There were multiple objectives to complete and analysis. The first analysis was to determine the LEED rating points of the building. It was determined that Bronx School for Law, Government and Justice did not come close to a LEED certified building. The next procedure was to determine whether Bronx School for Law complied with the Standard 90.1 for both building envelope and lighting. The results of this analysis determined that the school does in fact comply with the Standard 90.1.

A lost rentable space break down was completed and was determined to have a 14.8% of lost rentable space. This number is rather high however; an entire floor was added to the building for a mechanical room where typically a school contains gas-fired rooftop units. The first cost for the mechanical system was also obtained. This figure gave a general idea as to the cost of mechanical system versus the entire building.

Finally, load estimations and annual energy costs were performed. In general when comparing the HVAC loads generated from HAP they were significantly lower than the actual design loads. There are several explanations for this discrepancy for instance, in this HAP analysis restrooms, stairs, electrical closets and mechanical spaces were not accounted for. These spaces are not cooled but do have an impact on the overall building load. There are several labs which contain fume hoods and other equipment that need to be exhausted. In order to prevent the building from having “negative” pressure enough supply air has to be provided, which leads to a load on the air handler. Another difference can be the accuracy of computer programs used. HAP is only one of many energy analysis programs in the market and other commercial energy programs are available.

The last analysis was the determination of energy cost based of the load estimations from HAP. As actual load data was not obtained in time a comparison of the accuracy of this report could not be performed.