# STUDY

## INITIAL COST OF CONSTRUCTION

### MULTI-RESIDENTIAL STRUCTURES

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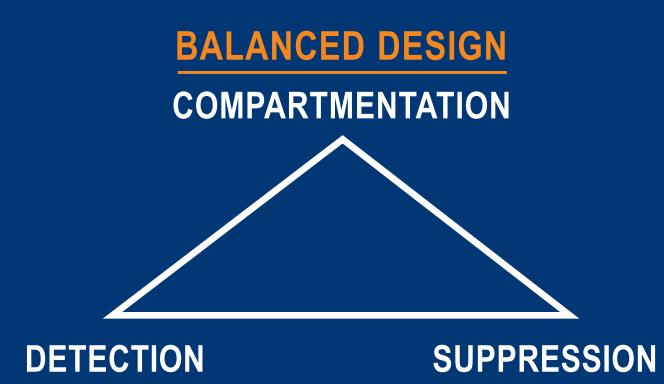


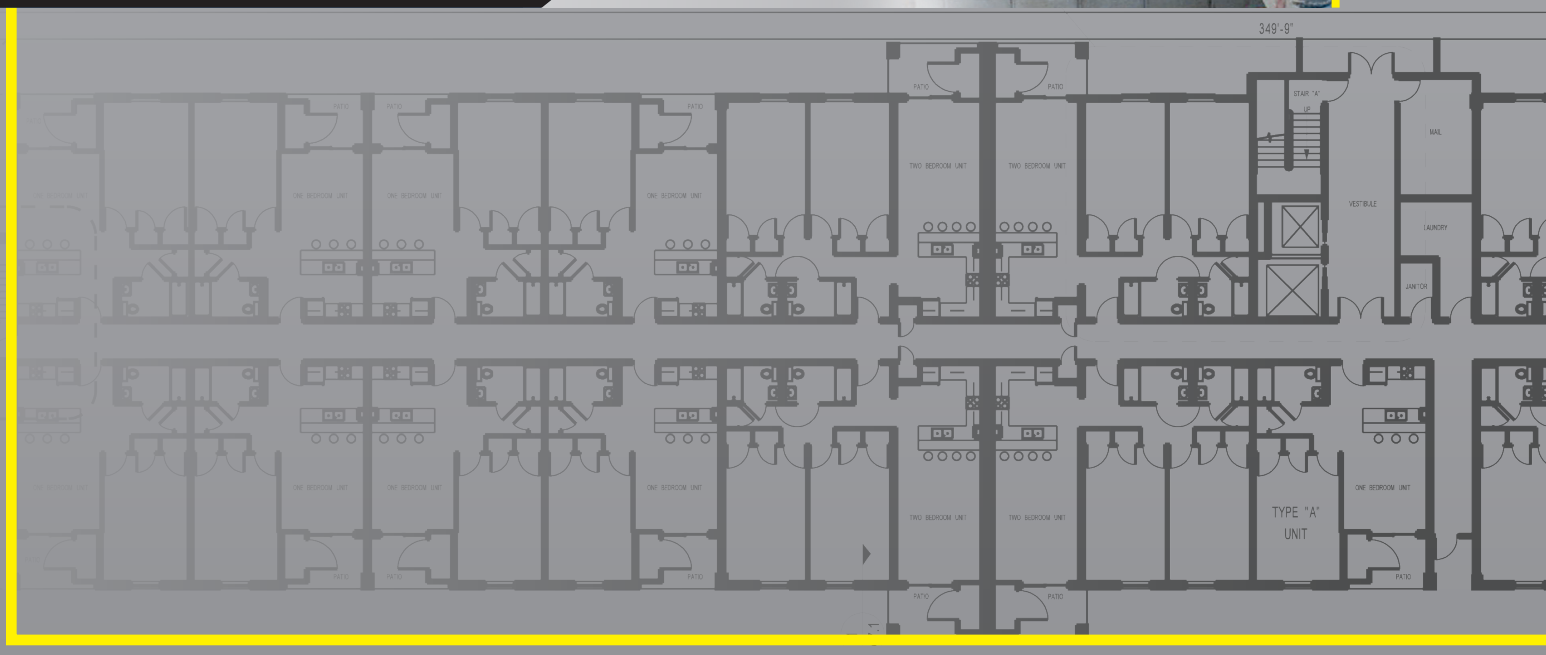


Addendum: Chicago, Illinois - October 2017

OCTOBER 2017

## Introduction

For the Chicago, Illinois cost comparison it was decided to use union wages based on the local construction climate. The reader is referred to the *Study, initial Cost of Construction, Multi-Residential Structures, October 2017* original report for a complete discussion on study design and methodology.

## Study Results and Discussion

The results of the construction cost study for each geographic location are presented in the following tables. The relative cost presented is a percentage of the conventional wood frame system.

Chicago, Illinois

| **Chicago, Illinois - September 2017** | | | |
|---|---|---|---|
| Union Wage | | | |
| **Building System** | **Cost** | **Cost/Sq Ft** | **Relative Cost** |
| **CONVENTIONAL WOOD FRAMING** | $ 26,018,621 | $ 269.34 | 100 |
| **LIGHT GAGE STEEL FRAMING** | $ 27,933,417 | $ 289.17 | 107 |
| **MASONRY & PRECAST** | $ 26,806,360 | $ 277.50 | 103 |
| **PRECAST CONSTRUCTION** | $ 30,934,179 | $ 320.23 | 119 |
| **ICF WALLS & PRECAST PLANK** | $ 29,407,648 | $ 304.43 | 113 |
| **ICF WALLS & ICF CONCRETE FLOOR ALTERNATE** | $ 31,146,700 | $ 322.43 | 120 |

The least expensive system is the conventional wood framing system. The relative cost of the most expensive framing system, the insulated concrete form wall system with insulated concrete form floor system is 20 percent higher. The load bearing masonry wall system with precast concrete plank floor system compares very favorably with both the conventional wood frame system with an increased cost of 3 percent over the conventional wood frame system. This is 4 percent lower than the light gage steel framing system, with respect to the conventional wood frame system.


## Study Conclusions and Recommendations

Based on the construction cost estimates prepared by Mr. Maholtz, the cost associated with using a compartmentalized construction method utilizing a concrete based construction material was very favorable with light weight conventional wood frame construction cost and light gage steel framing construction cost. Even the other concrete based construction systems were within a 20 percent increase over the light weight conventional wood frame construction system. In many cases this amount can be partially offset by the contingency budget typically recommended for the owner to carry for unanticipated expenditures during the project.

The minimal increase in construction cost can also help pay for itself over the life of the structure. Materials like concrete masonry, precast concrete, and cast-in-place concrete have many other advantages beyond their inherent fire performance including resistance to mold growth, resistance to damage from vandalism, and minimal damage caused by water and fire in the event of a fire in the building. In many cases, with this type of construction the damage outside of the fire compartment is minimal. This provides for reduced cleanup costs and quicker reoccupation of the structure.

Based on the results of this study, we recommend that a similar study be undertaken to evaluate use of similar construction techniques and their associated construction cost impact on other typical building types like, schools, retail establishments, and commercial office buildings.

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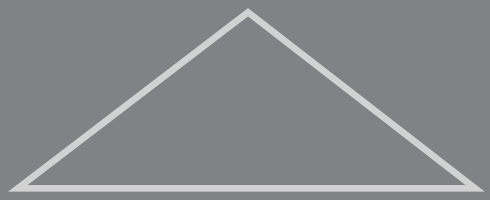
MULTI-RESIDENTIAL STRUCTURES

**BALANCED DESIGN**

**COMPARTMENTATION**



**DETECTION** **SUPPRESSION**

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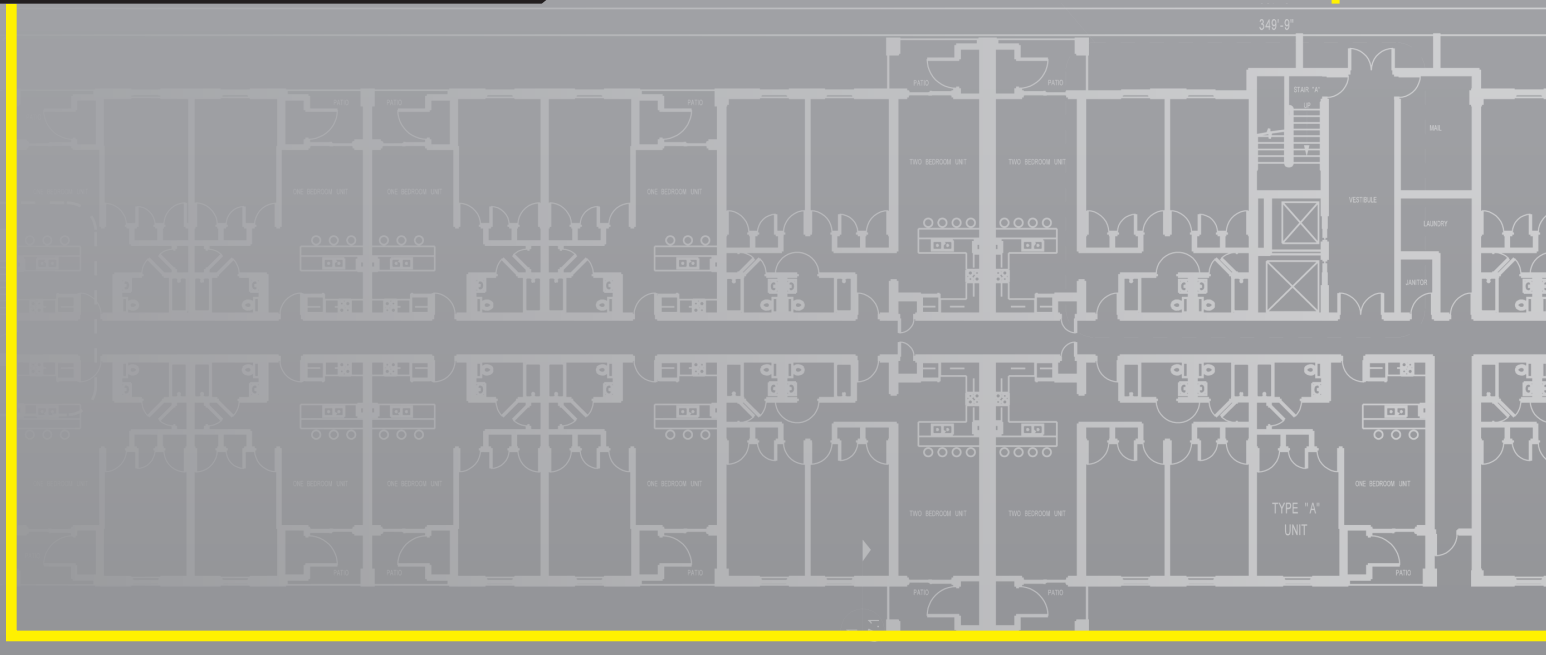



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