

# REAL ESTATE

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MAXIMIZING PROPERTY VALUE

Insights from Multiple Linear Regression Analysis of  
Northwestern County House Sales

# EXECUTIVE SUMMARY

In our project, we utilized multiple linear regression, a statistical tool, to analyze the factors affecting house sales in a northwestern county. This approach helps us understand what features of a house might increase or decrease its value, guiding both sellers and buyers in the real estate market.

Our analysis provides a clear picture of what drives house prices in Northwestern County. By understanding these factors, stakeholders can make more informed decisions in the real estate market.



***"Home is part of  
your family."***

# BACKGROUND INFO

In the real estate market of a northwestern county, homeowners often contemplate renovations before selling their homes. The impact of these renovations on property values is crucial for informed decision-making.

The real estate market in this region is characterized by a diverse range of properties, varying in age, style, and condition.

Homeowners are frequently interested in undertaking renovations but are uncertain about the return on investment these improvements might yield. This uncertainty can lead to hesitation in making potentially value-adding changes to their properties.



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your family."***

# OBJECTIVES

The primary objective of this analysis is to determine how different home renovations impact the estimated value of homes in the targeted northwestern county. This includes examining various renovation projects such as kitchen remodels, bathroom updates, extensions, and other common home improvements.

Through this analysis, we aim to bridge the gap between speculation and evidence, providing homeowners and the real estate agency with a clear understanding of the value added by various home renovations in the context of the current market trends in the northwestern county.



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# METHODOLOGY

In our study, we used a method called linear regression to understand how different home renovations impact the value of homes.

To explain this in simpler terms, think of linear regression as a tool that helps us draw a clear line through a scatter of points.

Each point represents a house, with its price being influenced by various factors like the size of the house, the year it was built, and the types of renovations made.

# WHY LINEAR REGRESSION?

## Simplicity and Clarity:

It provides a straightforward way to see which factors (like a new bathroom or a renovated kitchen) are likely to increase a home's value and by how much.

## Predictive Power:

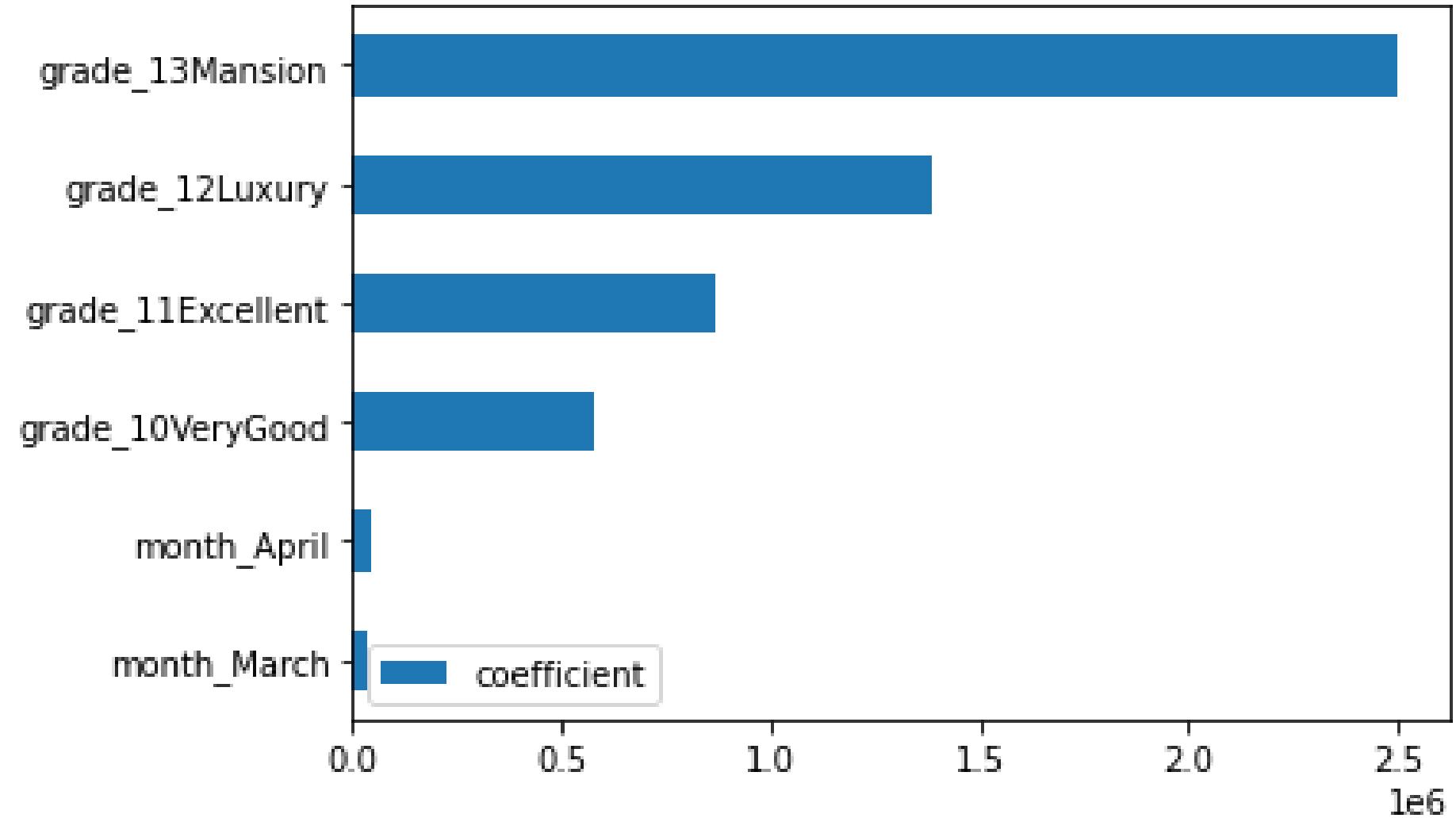
It helps us predict the possible increase in a home's value following specific renovations. This is incredibly valuable for homeowners who are considering making changes to their property.

## Understanding Relationships:

It shows us not just that certain renovations impact home value, but also gives us an idea of the strength of these impacts.

# HOME SALES INFOGRAPHIC

The plotted variables had a significant effect on our model performance.



# KEY FINDINGS:

01

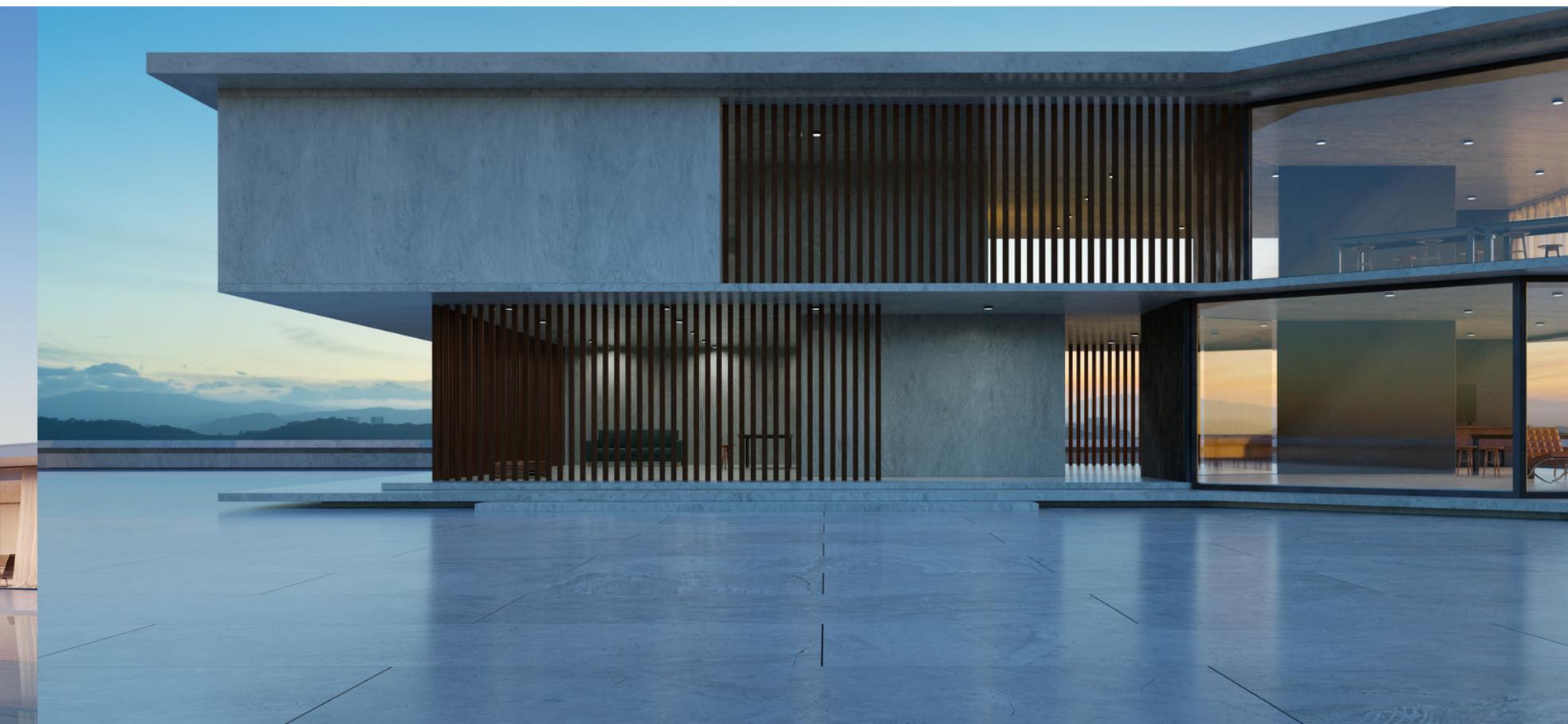
**Size Matters:** For every additional square foot in living space, house prices increase by approximately \$156. This indicates that larger houses tend to be more valuable.

02

**Newer Isn't Always Better:** Surprisingly, we found that newer houses (by year built) tend to decrease in price by about \$3,530 per year. This might be influenced by factors such as architectural style or maintenance needs.

120+

*House Locations*



# KEY FINDINGS:

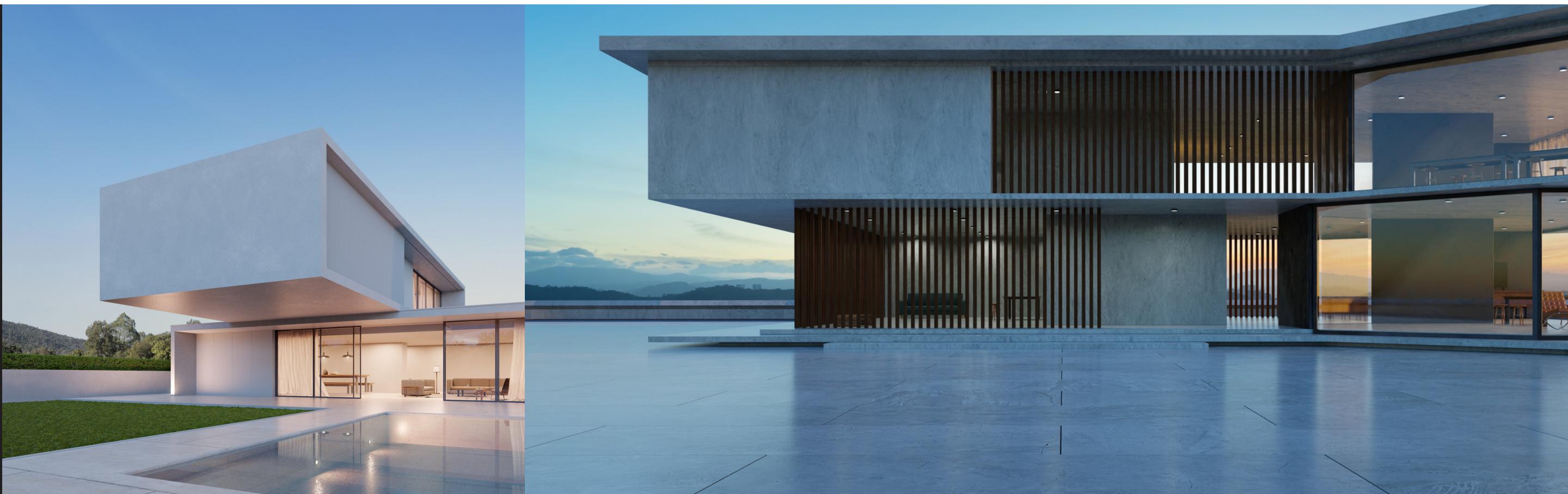
03

**More Floors, Higher Prices:** Houses with more floors are valued higher, with each additional floor raising the price by around \$41,108. This could reflect a preference for multi-story homes.

04

**Fewer Upper Floors, Better Value:** Interestingly, each additional square foot of upper floor space (sqft\_above) results in a decrease of \$53 in house price, possibly due to preferences for larger ground floor spaces.

120+  
*House Locations*



# KEY FINDINGS:

05

## Bathrooms Add Significant Value:

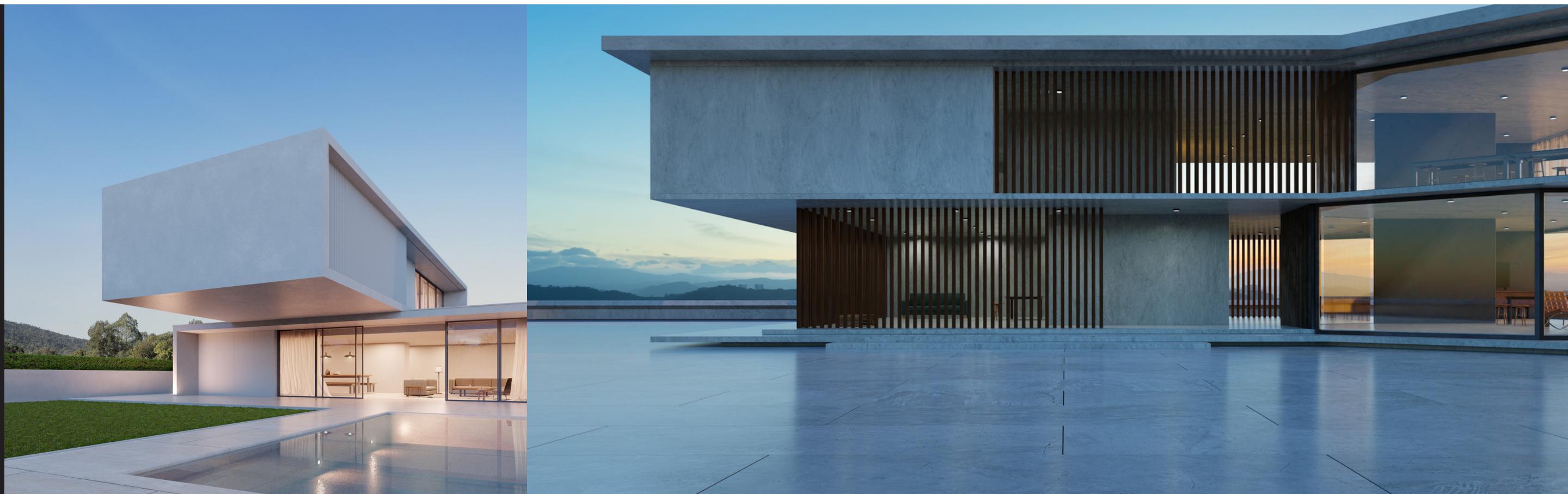
Each additional bathroom is associated with an increase of about \$54,226 in the house price, highlighting the importance of this feature.

06

**Bedrooms' Surprising Impact:** Contrary to expectations, each additional bedroom decreases the house price by \$31,711, suggesting that buyers might prefer fewer but larger rooms.

120+

*House Locations*



# KEY FINDINGS:

07

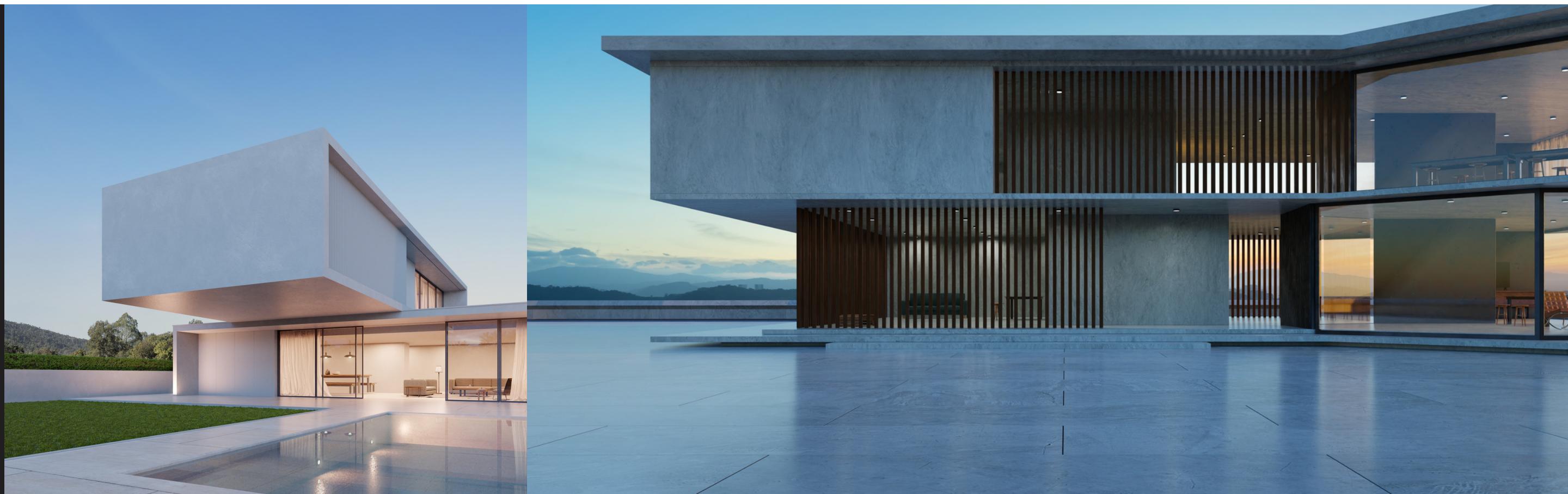
**Seasonal Variations:** House prices vary with months; for instance, selling in May can fetch about \$17,399 more than in January. This indicates a seasonal trend in house pricing.

08

**Quality Grades Drive Prices:** Moving from the lowest grade ('Poor') to higher grades like 'Very Good', 'Excellent', 'Luxury', and 'Mansion' can significantly boost the house price, with increases ranging from \$546,142 to \$2,521,888. This underscores the value of house condition and amenities.

120+

*House Locations*



# RECOMMENDATIONS



## For Sellers:

Focus on improving living space, adding bathrooms, and maintaining the overall condition to elevate the property grade.



## For Buyers:

Look for properties with desirable features but consider the impact of certain features like additional bedrooms on overall value.



## For Realtors:

Highlight the importance of house size, condition, and seasonal timing in property listings to align with market trends.



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***The dream  
house is a place  
that represents  
its owner.***

# THE TEAM



**Yitzhak Njenga**

**David Mwangi**

**Valerie Vinya**

**Earl Chirchir**

**Ann Karuga**

**Alice Nyamongo**



A large, modern house with a dark, angular roofline and vertical wooden slat siding. A prominent feature is a large glass door or window on the left side. The house is situated on a grassy slope overlooking a calm lake. In the foreground, there's a paved area with a small fire pit and two lounge chairs. The sky is filled with dramatic, dark clouds.

# THANK YOU