

An aerial photograph of a tall, rectangular industrial building being demolished. The building has a grid-like facade and is partially collapsed, with thick plumes of white smoke billowing from its base and sides. In the background, a multi-lane highway curves through a green landscape, and a town with houses and trees is visible under a clear blue sky.

# Building Life Span Prediction

Clair Marie Wholean

Disposable Buildings



## Problem

PWC forecasts that

*the volume of construction output will grow by 85%*

to \$15.5 trillion worldwide by 2030.

A professional portrait of a middle-aged man with short brown hair and glasses. He is wearing a dark blue blazer over a white button-down shirt and a plaid tie. The background is blurred, showing what appears to be an office or hallway.

## Customer Profile

Large Real Estate Corporations

- CBRE
- Co-Star
- The Related Company
- JLL



# Customer Profile

## Government Agencies

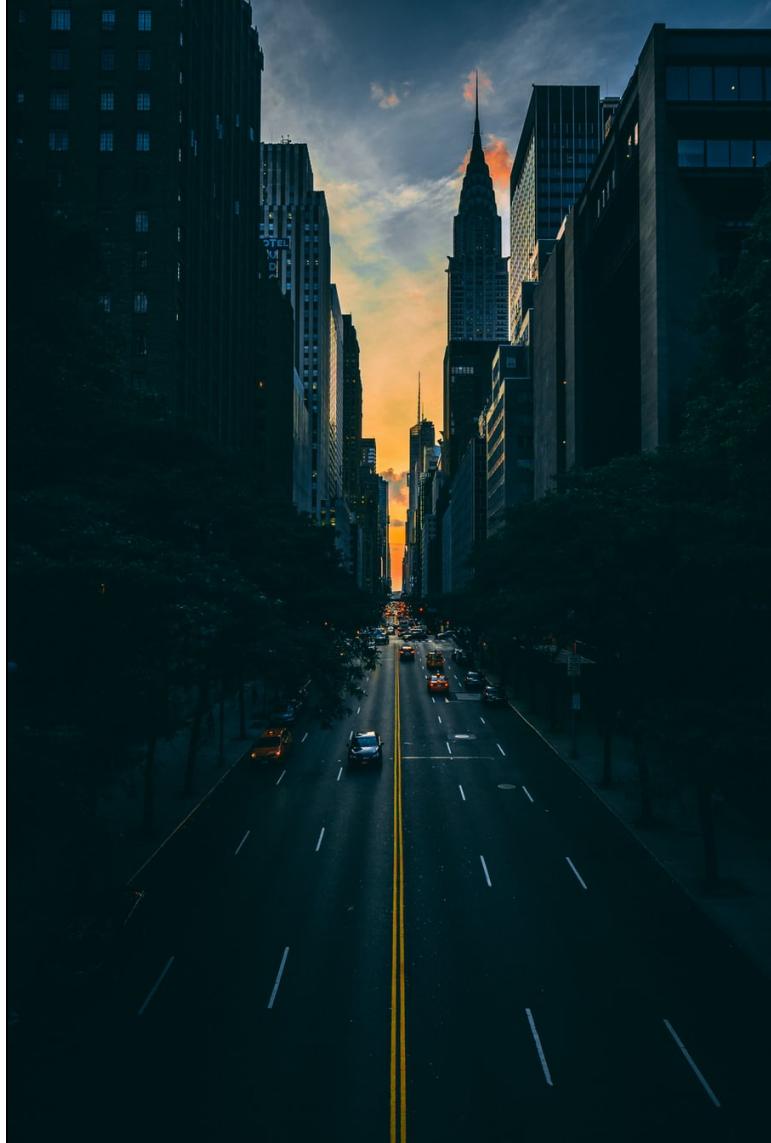
- HUD
- USACE
- NAVFAC



3,500 tax lots  
Demolished buildings  
Commercial only  
Constructed 1800 - 2017

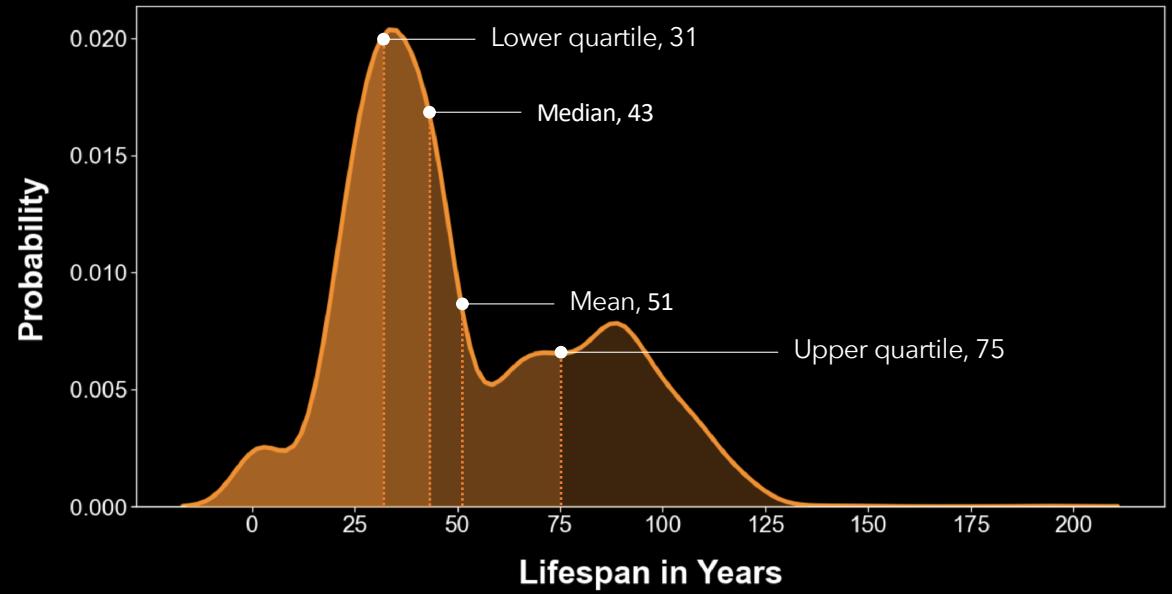
Data

PLUTO + NYC Permits

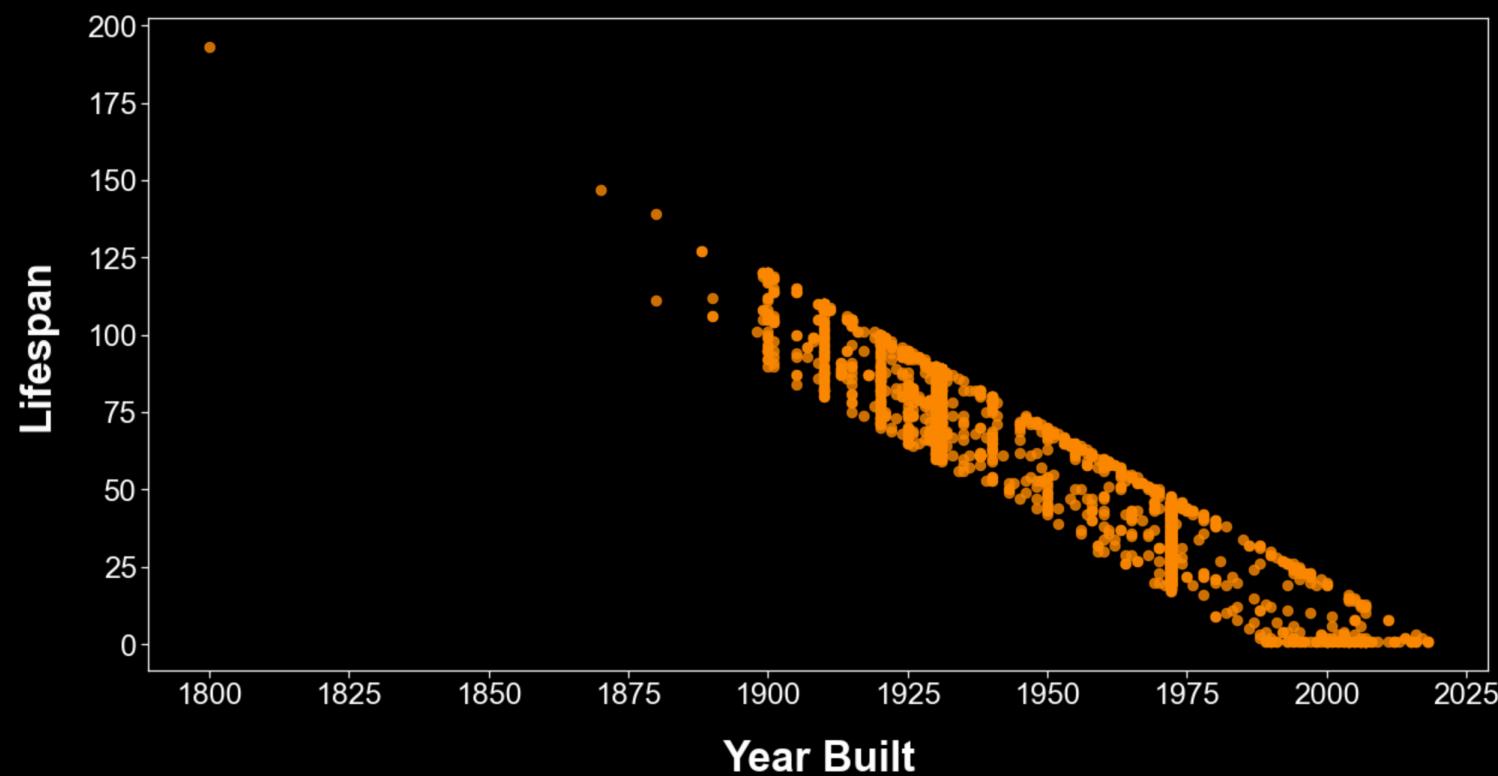


# Analysis

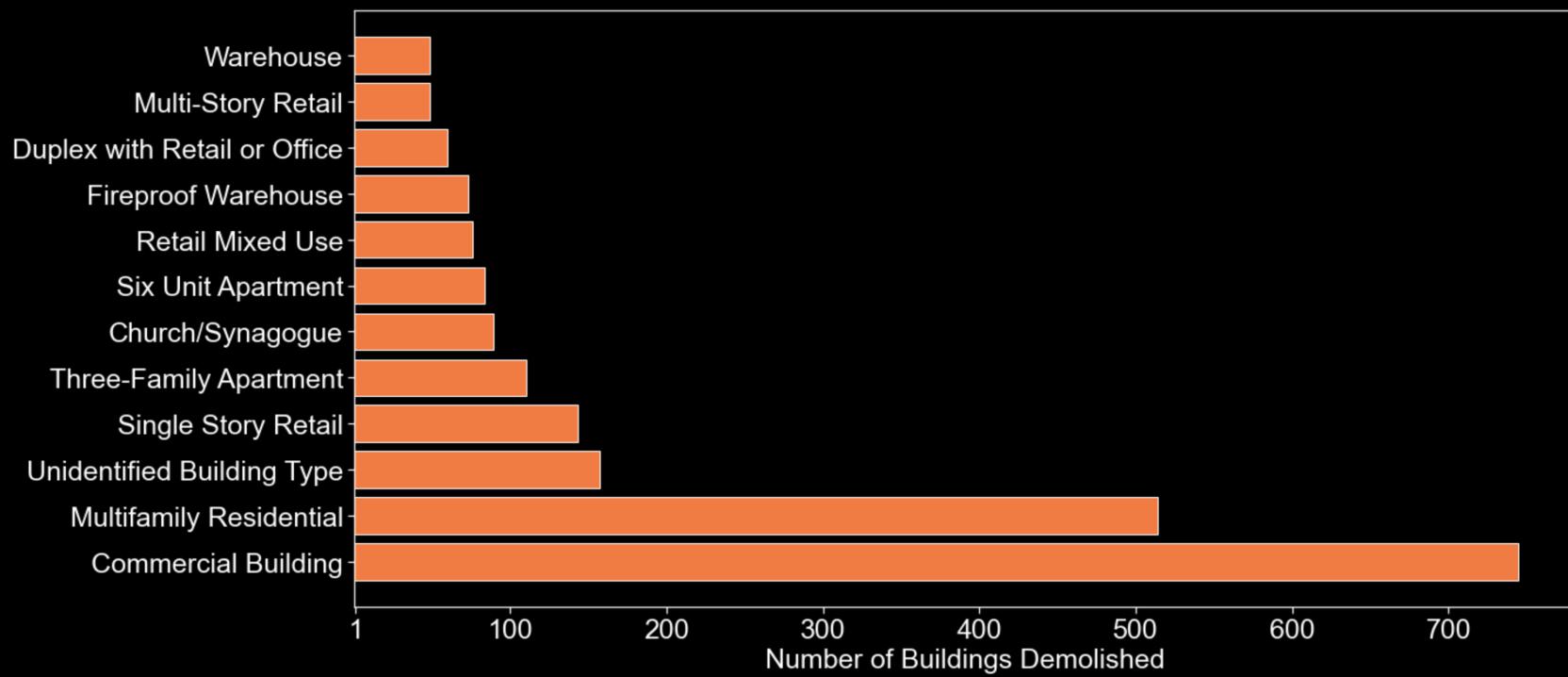
## Distribution of Lifespan

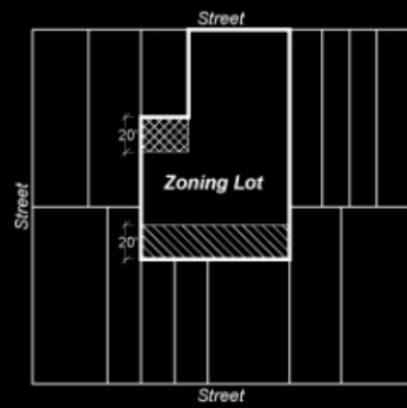
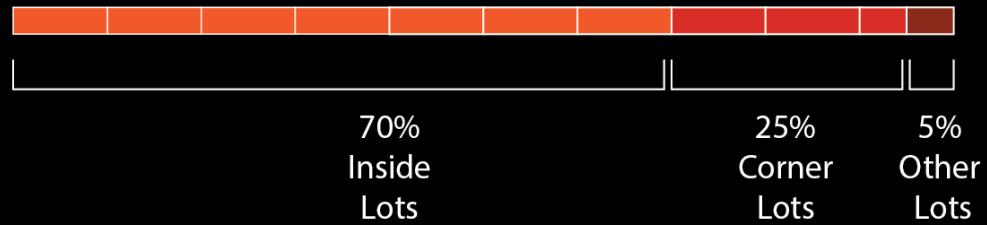


## Lifespan by Year Built

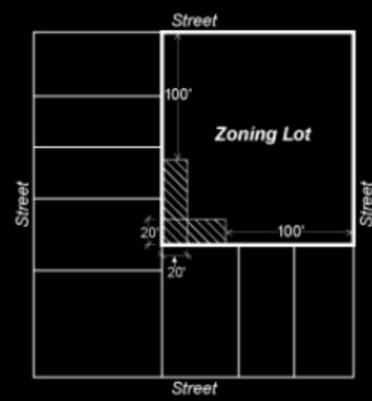


## Top Building Types Demolished

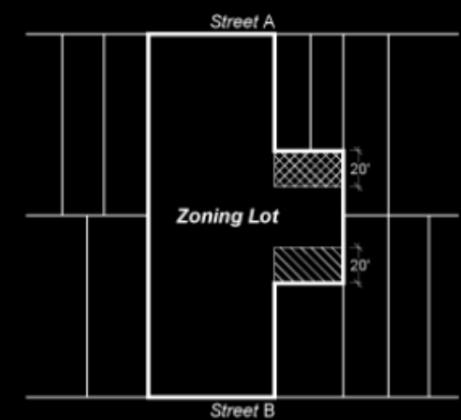




Inside Lot

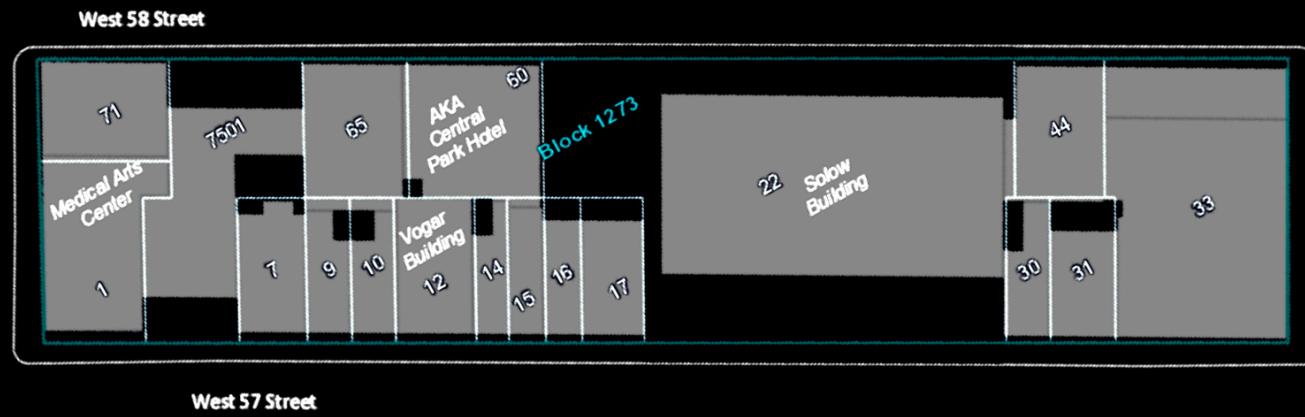


Corner Lot



Through Lot

## Lot Area



Lot Area, Storage Area, Building Frontage, and Year Built had strongest impact on lifespan.

# Frontage



Less frontage usually means longer lifespan.



More frontage means shorter lifespan, except if historic.



## Storage Area

Storage Use indicates low architectural quality.

## Year Built

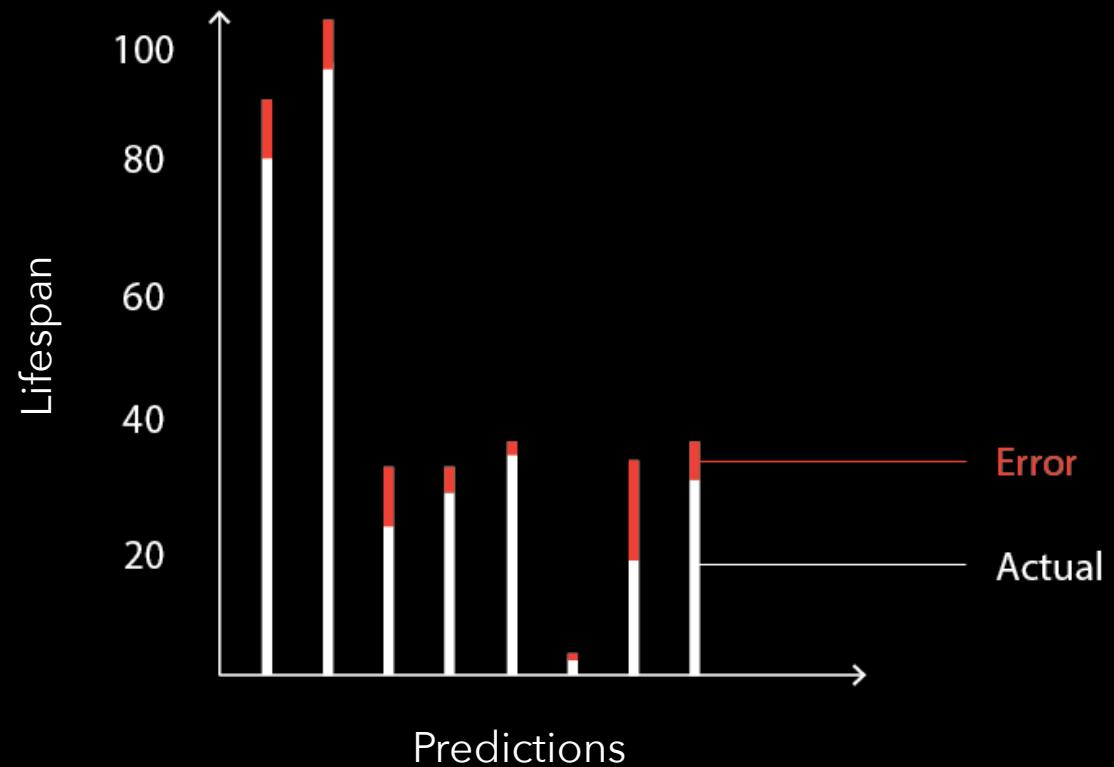


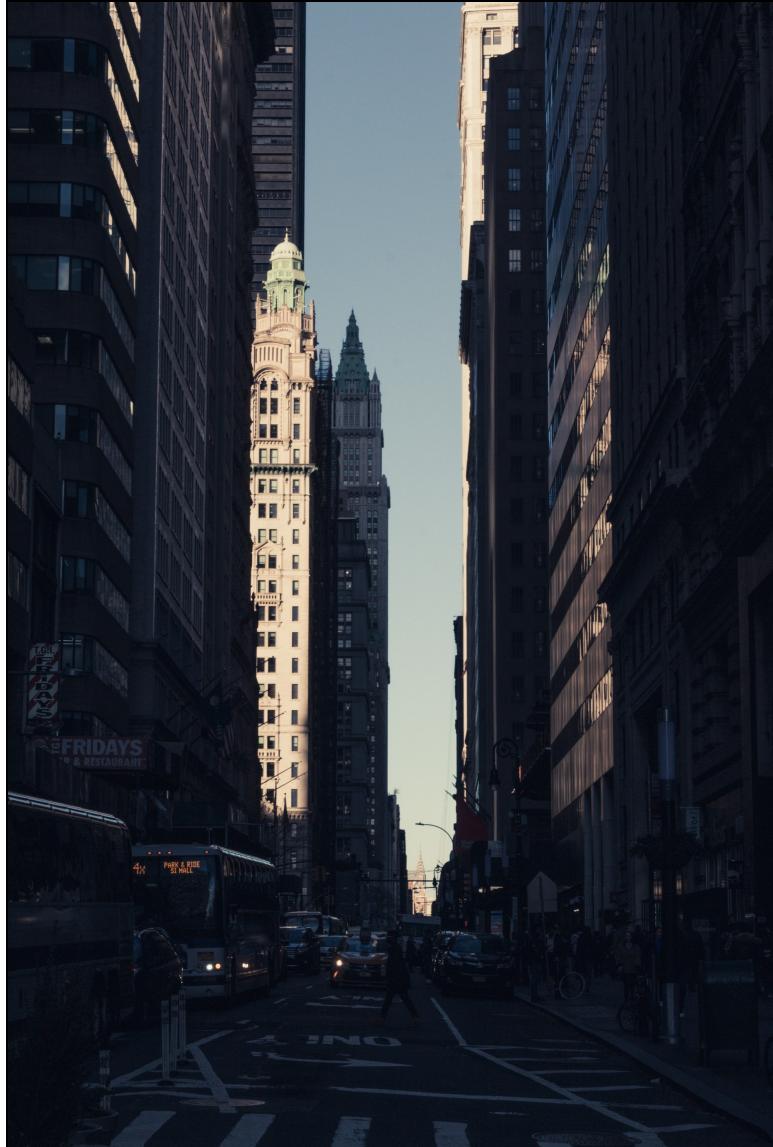
Younger buildings  
have a shorter lifespan.

## Recommendations

RMSE = 9.1

Predictions are off  
by  $\pm 9$  years





# Future Study

Existing Buildings

Architectural characteristics

## Contact Info



Clair Marie Wholean

Founder of Archneura & Registered Architect

[cw@archneura.com](mailto:cw@archneura.com)