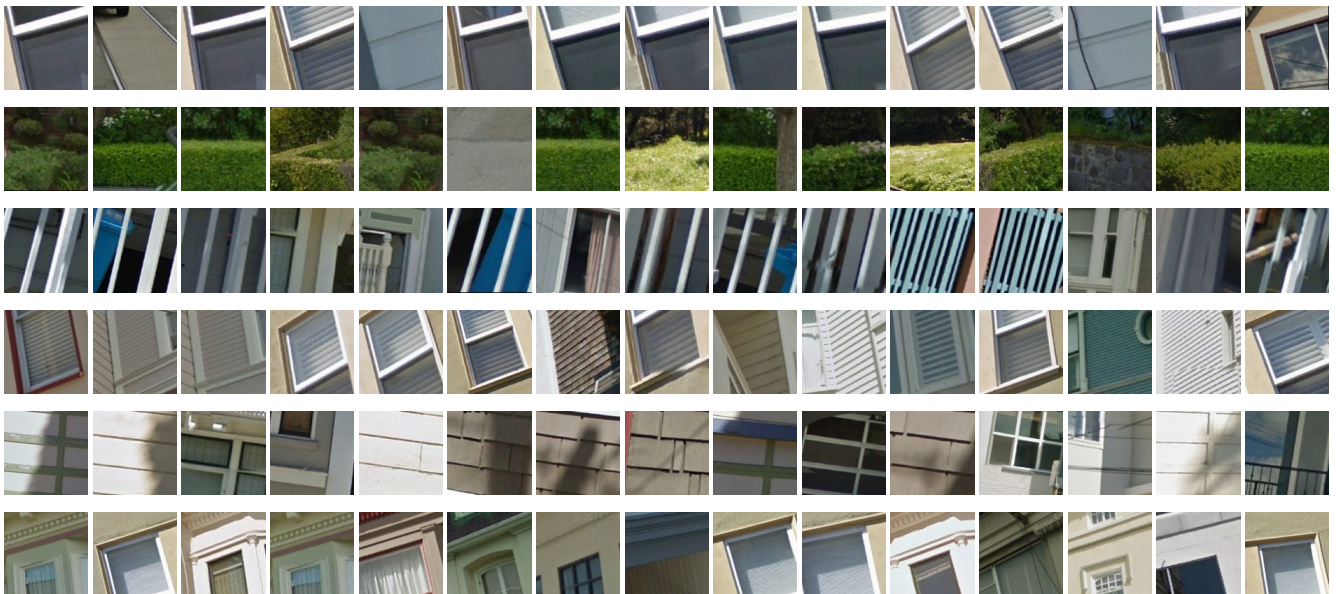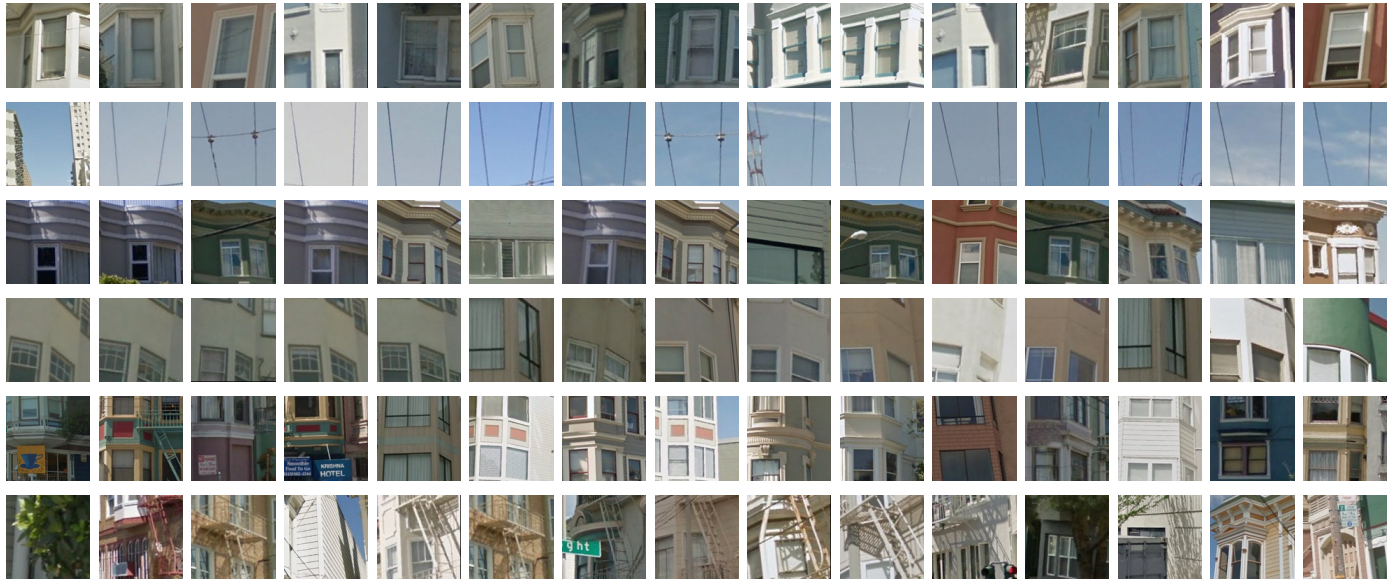# On Relating Visual Elements to City Statistics
Supplemental Material

Visual Elements for Theft in San Francisco: *These example visual elements for the theft statistic in San Francisco represent high density windows, windows with fire escapes, and repeated vertical "bars". Most of the thefts in San Francisco occur downtown where these kinds of visual elements are present.*
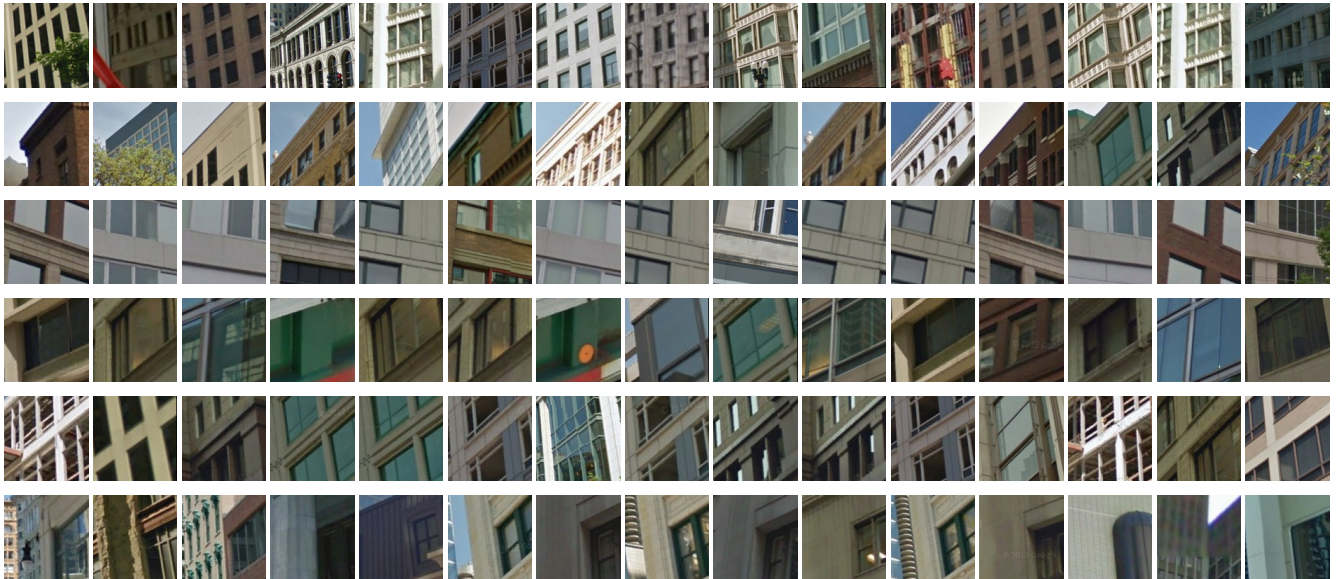

Visual Elements for Affluence in San Francisco: *Affluence in San Francisco is connected to hedges (second row), gates (third row), wood paneling (fifth row), and intricate window moldings (bottom row).*
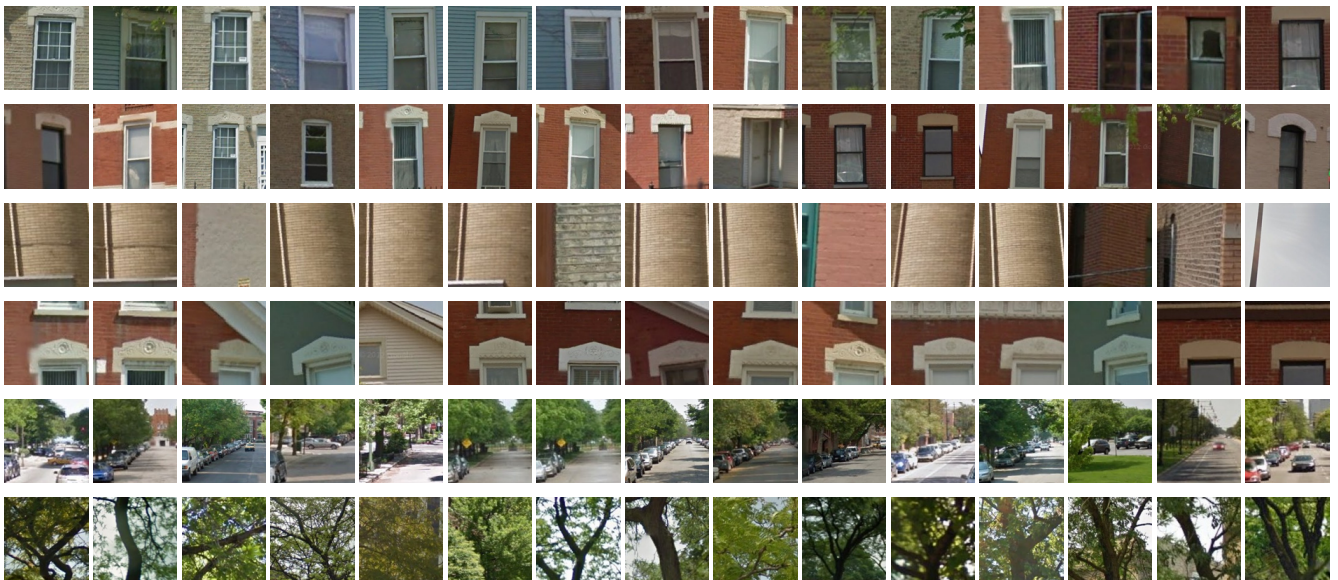
Visual Elements for Graffiti in San Francisco: *Many of these visual elements correspond to architectural styles specific to certain locations in San Francisco (large bayview windows). Fire escapes (bottom row) are also correlated with graffiti.*

Visual Elements for Trees in San Francisco: *Most of the visual elements for trees in San Francisco are simply examples of different styles of trees. One interesting note is that the third row is a visual element of an architectural style, likely specific to the presence of trees in San Francisco.*

Visual Elements for Theft in Chicago: *Similar to San Francisco, the visual elements in Chicago relate to high density windows and repeated vertical bars. This similarity is likely the cause for the strong generalizability between these two cities for the theft predictors.*

Visual Elements for Affluence in Chicago: *Many of the visual elements for affluence in Chicago relate to the moldings around windows and the presence of trees. The fourth row shows the classic "tree-lined street" visual element that we often associate with wealth.*

Visual Elements for Graffiti in Chicago: *Visual elements like simplified windows (first, fourth, and fifth rows) and the specific architectural style from the second row seem like they bear a reasonable relation to graffiti. However, we found that graffiti in Chicago was difficult to predict indicating that these visual elements may not be discriminative enough.*

Visual Elements for Theft in Boston: *Just as in all of our other cities we note visual elements related to theft that exhibit high density windows. In addition, the bottom row seems to be a visual element for lamp posts. We believe that this visual element is important because lamp posts are often present in areas of high density foot traffic, which are prone to theft.*

Visual Elements for Affluence in Boston: *Our predictor for affluence in Boston performed very well in our experiments. We attribute this performance to the variation in the visual elements and their individual uniformity (all of the images in a row look visually similar). Rounded door and window thresholds (second row), bayview-style windows (fourth and last rows), and darker-colored bricks (fifth row) all make intuitive sense as visual elements that relate to affluence.*

Visual Elements for Graffiti in Boston: *The visual elements that relate to graffiti in Boston include windows with bars or other obstructions (first row), bricks that seem unkempt (second and fifth rows), and particular styles of windows. The last row actually contains an image of graffiti (seventh column), although it is unclear how this particular visual element is related to it.*