Supplemental Material II

Below we show our results on the eTRIMS Image Database containing 60 facade images. We divide the results into two parts. The first part (48 out of 60 examples) shows the satisfactory results. The second part (12 out of 60 examples) shows our results that are more or less problematic, together with our speculated reasons for failure cases. In each part, the results are arranged by file name.

Please see the intermediate results in Supplemental Material III.

Here is an overview of the eTRIMS Image Database:

Figure 1: An overview of the eTRIMS Image Database.

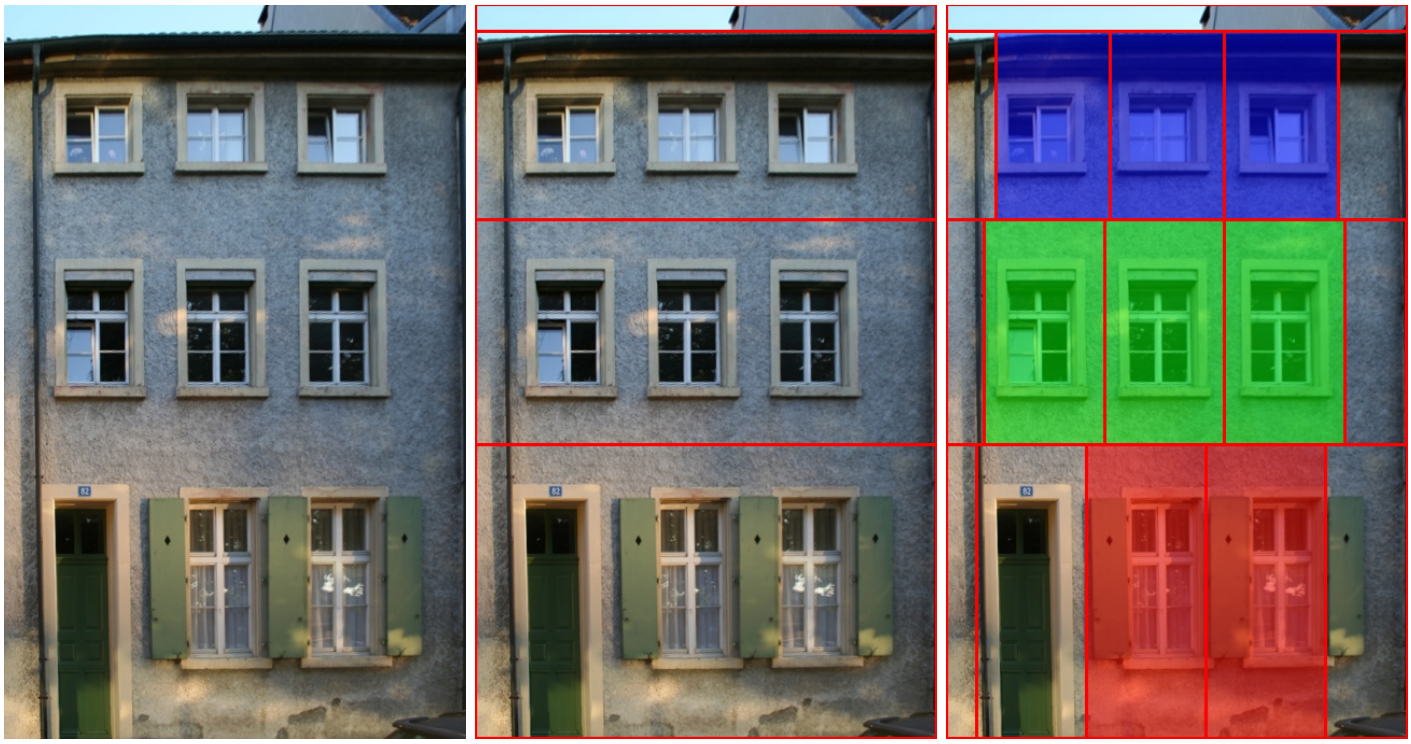
Part I

(a) (b) (c)

Figure 1: basel_000003_mv0

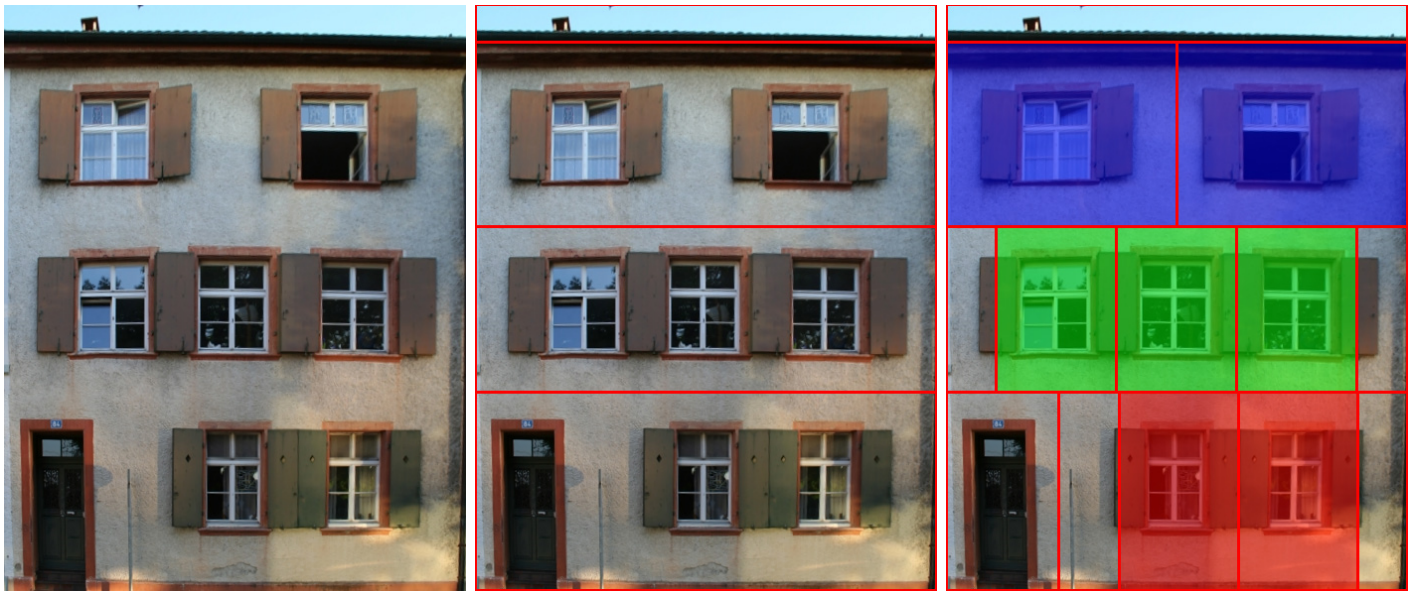
(a) (b) (c)

Figure 2: basel_000004_mv0



(a) (b) (c)

Figure 3: basel_000009_mv0



(a) (b) (c)

Figure 4: basel_000010_mv0

(a) (b) (c)

Figure 5: basel_000049_mv0

(a) (b) (c)

Figure 6: basel_000051_mv0

(a) (b) (c)

Figure 7: basel_000052_mv0

(a) (b) (c)

Figure 8: basel_000053_mv0

(a) (b) (c)

Figure 9: basel_000055_mv0

(a) (b) (c)

Figure 10: basel_000057_mv0

(a) (b) (c)

Figure 11: basel_000058_mv0

(a) (b) (c)

Figure 12: basel_000059_mv0

(a) (b) (c)

Figure 13: basel_000060_mv0

(a) (b) (c)

Figure 14: basel_000061_mv0

(a) (b) (c)

Figure 15: basel_000062_mv0

(a) (b) (c)

Figure 16: basel_000063_mv0

(a) (b) (c)

Figure 17: basel_000064_mv0

(a) (b) (c)

Figure 18: basel_000065_mv0

(a) (b) (c)

Figure 19: basel_000066_mv0

(a) (b) (c)

Figure 20: basel_000069_mv0

(a) (b) (c)

Figure 21: basel_000070_mv0

(a) (b) (c)

Figure 22: basel_000075_mv0

(a) (b) (c)

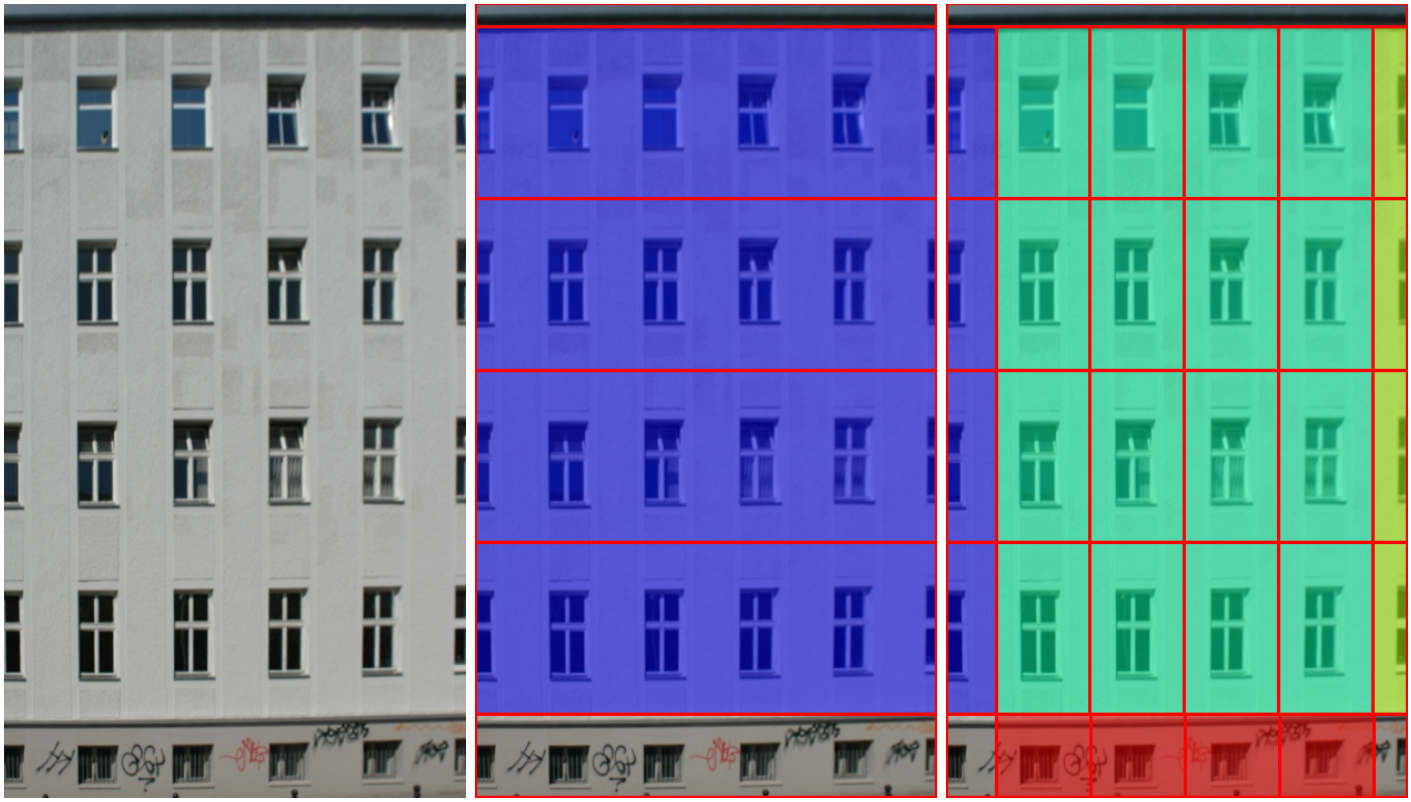
Figure 23: basel_000083_mv0

(a) (b) (c)

Figure 24: berlin_000003

(a) (b) (c)

Figure 25: berlin_000011



(a) (b) (c)

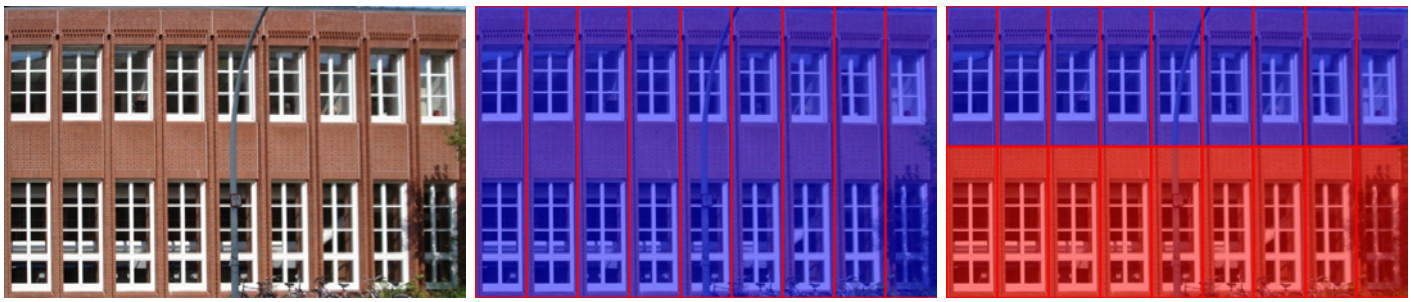
Figure 26: berlin_000028

(a) (b) (c)

Figure 27: berlin_000044

(a) (b) (c)

Figure 28: berlin_000056



(a) (b) (c)

Figure 29: bonn_000009

(a) (b) (c)

Figure 30: bonn_000013

(a) (b) (c)

Figure 31: bonn_000015

(a) (b) (c)

Figure 32: bonn_000018

(a) (b) (c)

Figure 33: bonn_000033

(a) (b) (c)

Figure 34: bonn_000042

(a) (b) (c)

Figure 35: bonn_000045

(a) (b) (c)

Figure 36: bonn_000047

(a) (b) (c)

Figure 37: bonn_000053

(a) (b) (c)

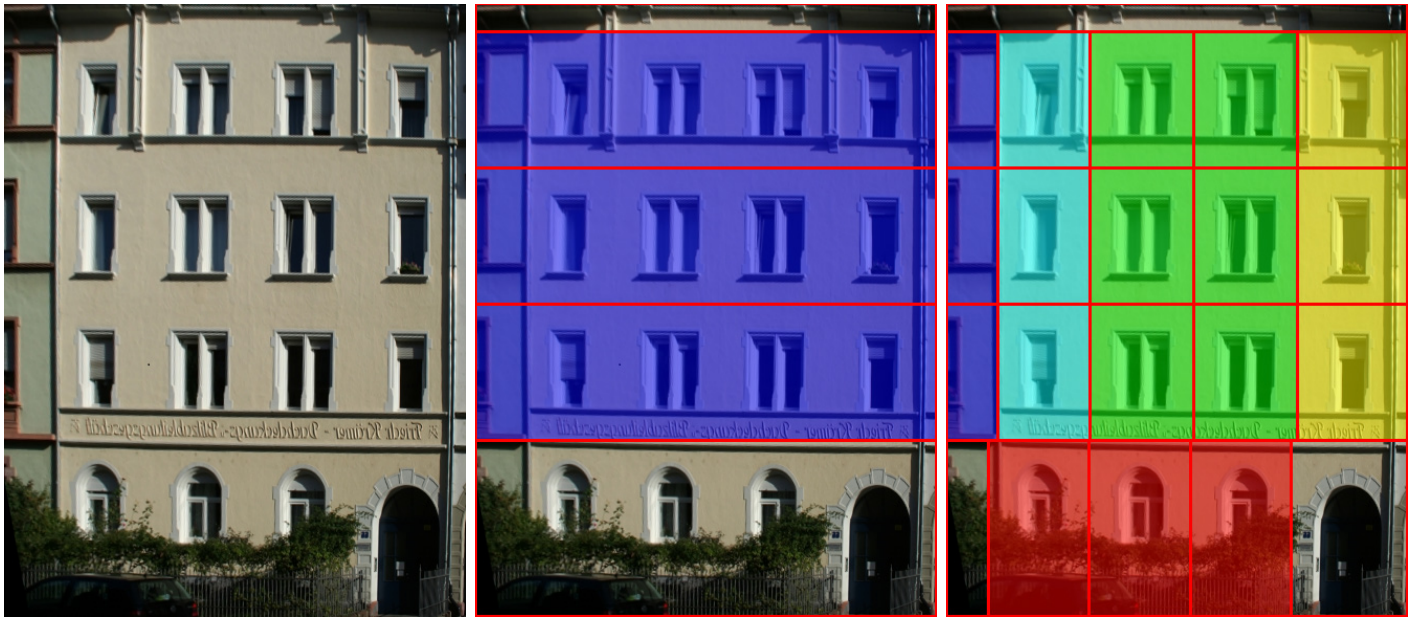
Figure 38: hamburg_000087

(a) (b) (c)

Figure 39: heidelberg_000001_mv0

(a) (b) (c)

Figure 40: heidelberg_000025_mv0

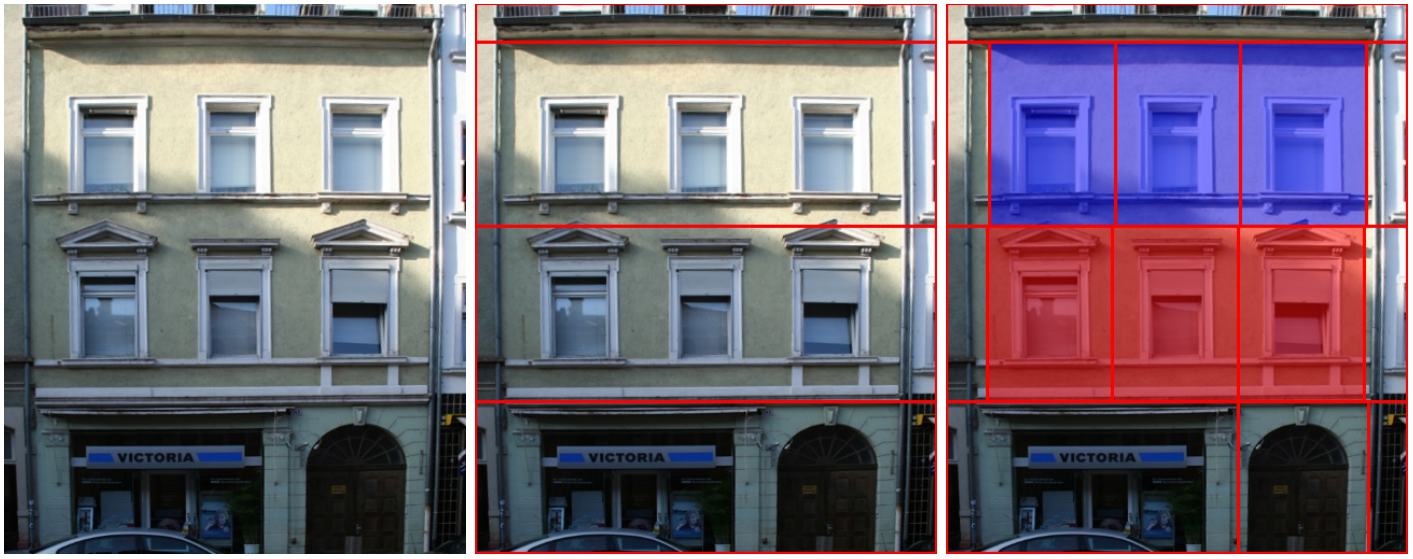


(a) (b) (c)

Figure 41: heidelberg_000029_mv0

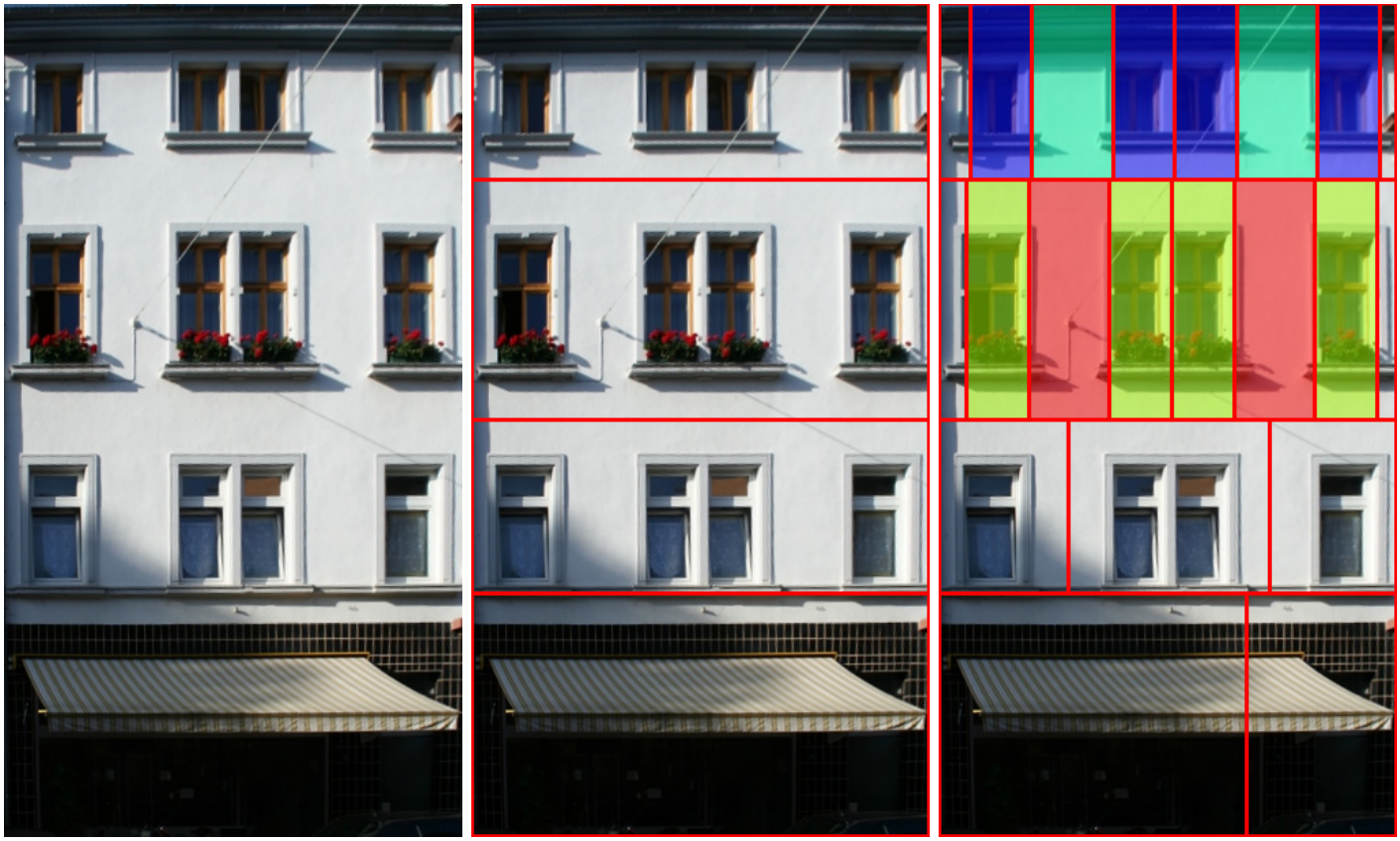
(a) (b) (c)

Figure 42: heidelberg_000035_mv0



(a) (b) (c)

Figure 43: heidelberg_000037_mv0.



(a) (b) (c)

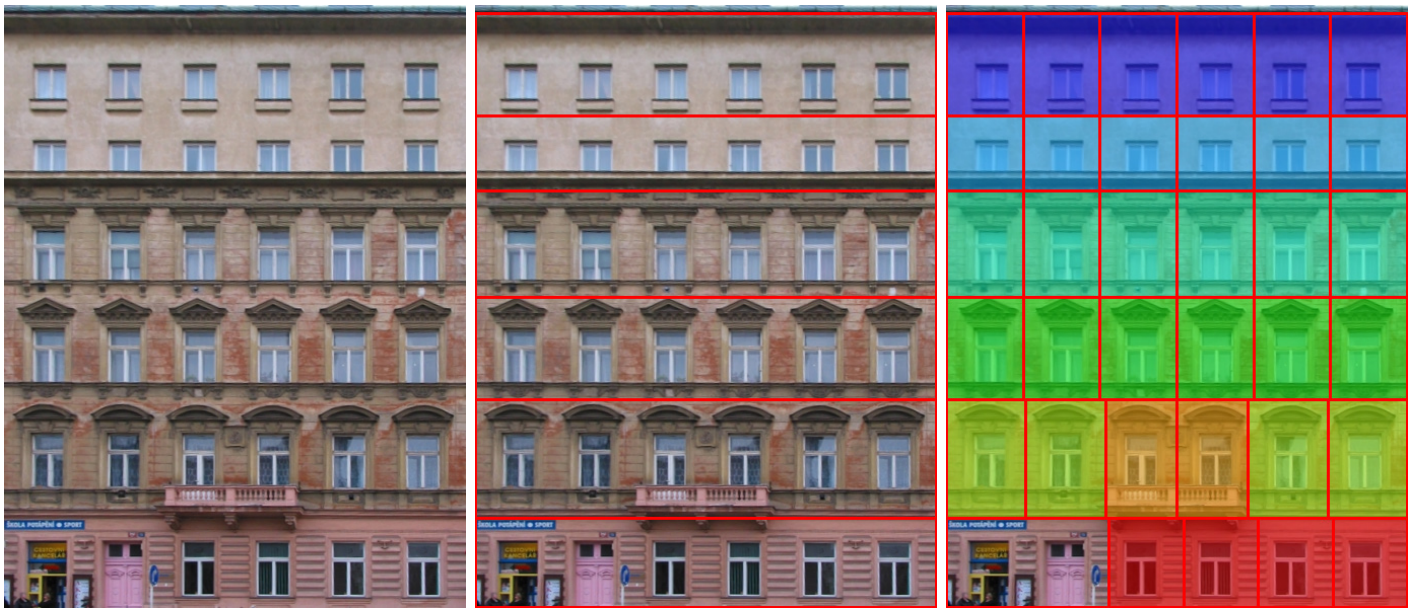
Figure 44: heidelberg_000038_mv0.

(a) (b) (c)

Figure 45: heidelberg_000047_mv0

(a) (b) (c)

Figure 46: munich_000005



(a) (b) (c)

Figure 47: prague_000002

(a) (b) (c)

Figure 48: uk_000129

Part II

(a) (b) (c)

Figure 1: basel_000005_mv0. Due to the strong mirror reflection of the windows in the top left corner, they fail to be grouped with other windows at the same floor.

(a) (b) (c)

Figure 2: basel_000073_mv0. The strong horizontal lines on the roof prohibits our current splitting heuristic to partition the top floor into more pieces.

(a) (b) (c)

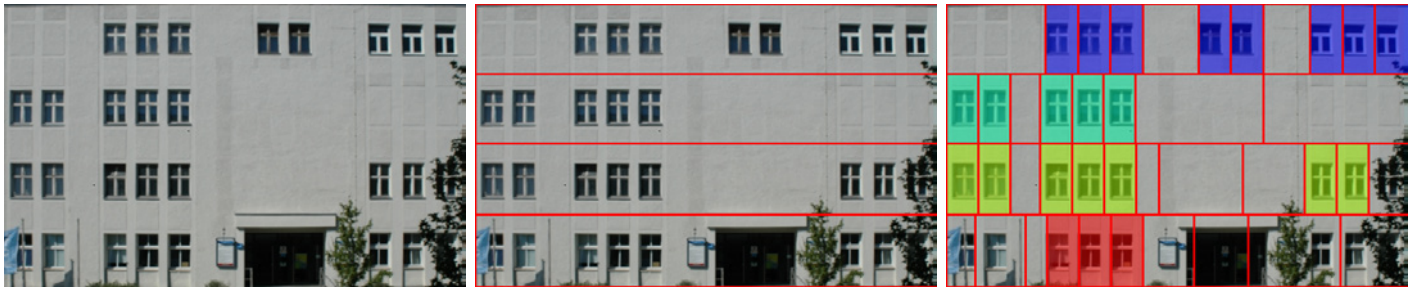
Figure 3: basel_000074_mv0. The image patch comparison method (normalized cross correlation) in our current implementation is quite basic, solely depending on image intensity. It may sometimes fail to group elements that are visually similar (the window in the bottom left corner), though all of individual elements have been successfully extracted. We expect improvement if more advanced techniques can be adopted.

(a) (b) (c)

Figure 4: basel_000077_mv0. The thick grass in the middle causes the deviation of the horizontal splitting line and also influences the grouping.

(a) (b) (c)

Figure 5: basel_000078_mv0. Due to the strong deviation of the shooting angle, the facade exhibits strong self occlusion after image rectification. This leads to interleaved edges and influences the splitting step.



(a) (b) (c)

Figure 6: berlin_000027. The splitting in the middle of the ground floor is less satisfactory due to the interference of bulletin board and trees, which also form large blocks. The grouping result of that floor is influenced by the flag, trees and the shadow cast by them.

(a) (b) (c)

Figure 7: bonn_000011. The strong mirror reflection of the windows and the occlusion by the trees cause less satisfactory grouping results.

(a) (b) (c)

Figure 8: bonn_000039. The middle of the top floor is not partitioned satisfactorily, mainly caused by the strong vertical edges induced by the sculpture in the middle.

(a) (b) (c)

Figure 9: basel_000080_mv0. The image patch comparison method in our current implementation sometimes may group elements that are visually dissimilar (the first floor), though it might be simply addressed by fine tuning the threshold.

(a) (b) (c)

Figure 10: heidelberg_000022_mv0. The strong mirror reflection of the windows and trees in the first floor causes less satisfactory splitting and grouping results.

(a) (b) (c)

Figure 11: heidelberg_000048_mv0. Imperfect grouping results due to the same reason explained in Part II, Figure 3.

(a) (b) (c)

Figure 12: karlsruhe_000012_mv0. The dark shadow and strong mirror reflection of some windows cause less satisfactory grouping result.