Supplementary Material

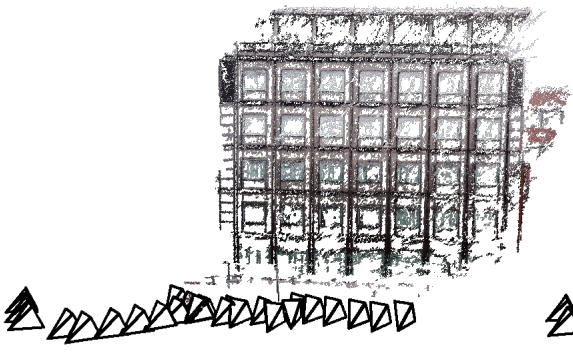
November 18, 2012

In this supplementary material, we provide additional results. For each data set we have presented in the paper, we include example input images and the user template provided to guide the repetition detection. We show the calibration results of our framework and compare to the results obtained by Bundler [Snavely et al. 2006] and the method of Zach et al. [2010]. In order to make this comparison more clear, we demonstrate the dense reconstructions produced by PMVS [Furukawa and Ponce 2007], a state-of-the-art multi-view stereo algorithm, using the camera parameters computed by each method. We also show the final 3D grid and its projection in several example images. Finally, we provide various editing results. For the occlusion removal examples, we also show results produced by Patchmatch [Barnes et al. 2009] on the reference images.
Please note that for data sets *Building 7* and *Building 8*, the method of Zach et al. [2010] calibrated the cameras as 3 subsets and we provide the dense reconstructions using each subset.

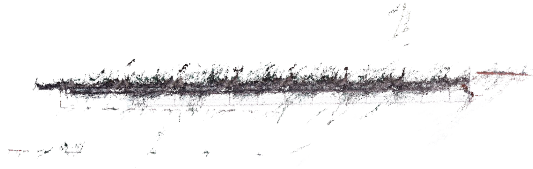
INPUT IMAGES

DENSE RECONSTRUCTIONS

OUR RESULT

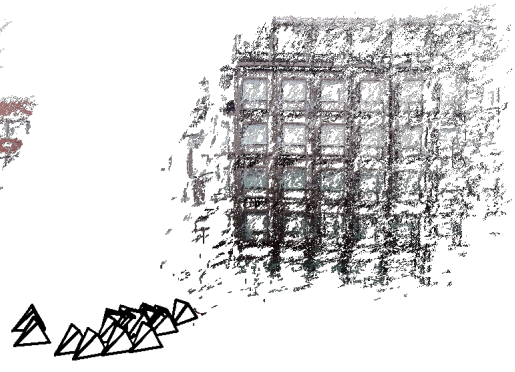


FRONT VIEW

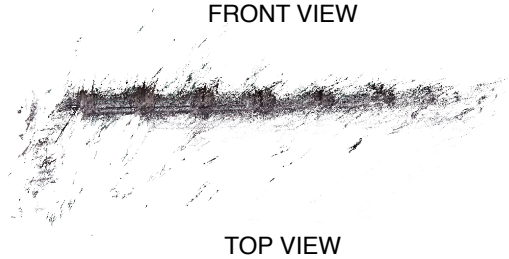


TOP VIEW

BUNDLER



FRONT VIEW



TOP VIEW

ZACH ET AL.'10

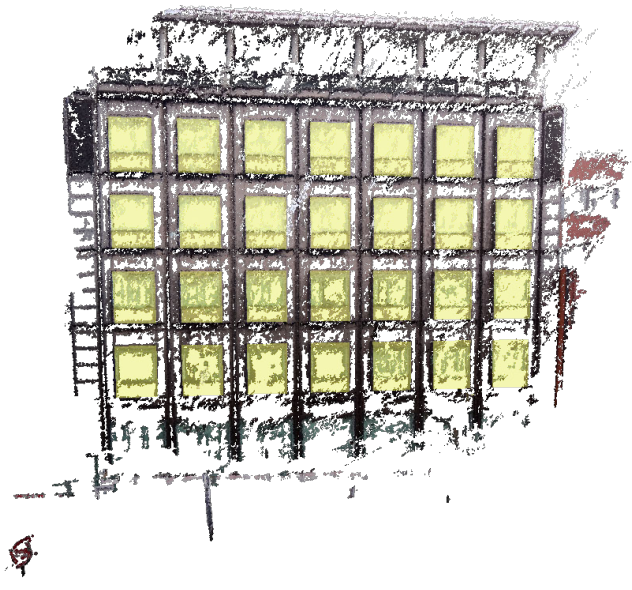
NO OUTPUT

FRONT VIEW

NO OUTPUT

TOP VIEW

EXTRACTED SYMMETRIES



3D GRID (7-by-4)

3D GRID PROJECTED ON TO THE IMAGES

INPUT IMAGES





...
Building 2
(27 images)

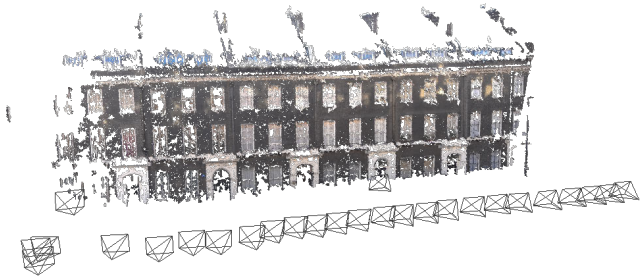
DENSE RECONSTRUCTIONS

OUR RESULT

FRONT VIEW

TOP VIEW

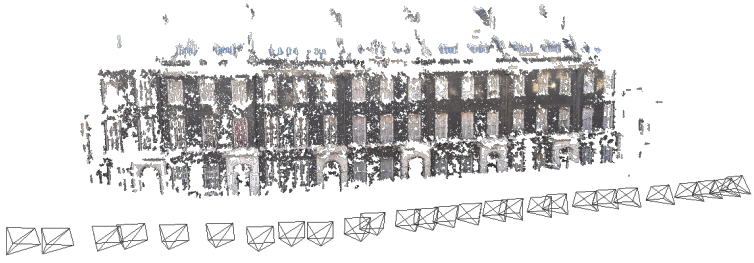
BUNDLER



FRONT VIEW

TOP VIEW

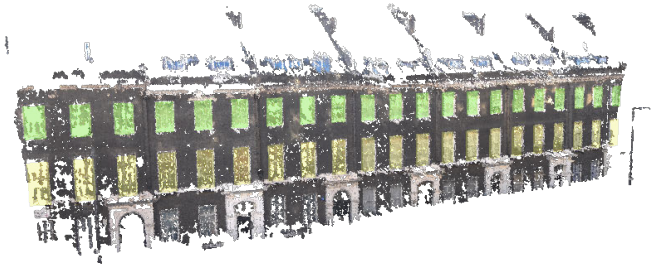
ZACH ET AL. '10



FRONT VIEW

TOP VIEW

EXTRACTED SYMMETRIES



3D GRIDS (21-by-1)

3D GRIDS PROJECTED ON TO THE IMAGES

INPUT IMAGES



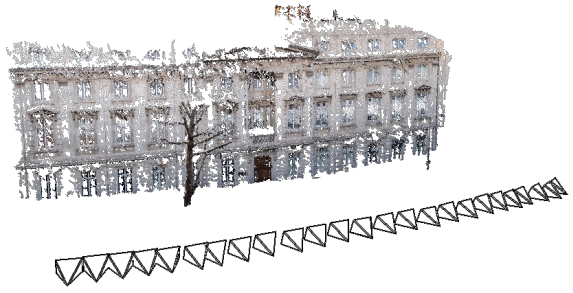


...

Building 3
(26 images)

DENSE RECONSTRUCTIONS

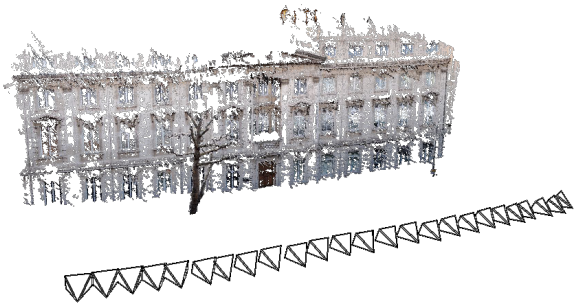
OUR RESULT




FRONT VIEW

TOP VIEW

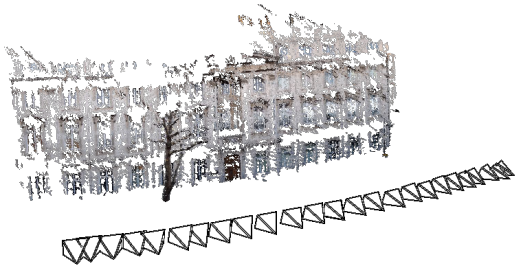
BUNDLER




FRONT VIEW

TOP VIEW

CVPR'10




FRONT VIEW

TOP VIEW

EXTRACTED SYMMETRIES



3D GRIDS (5-by-1)

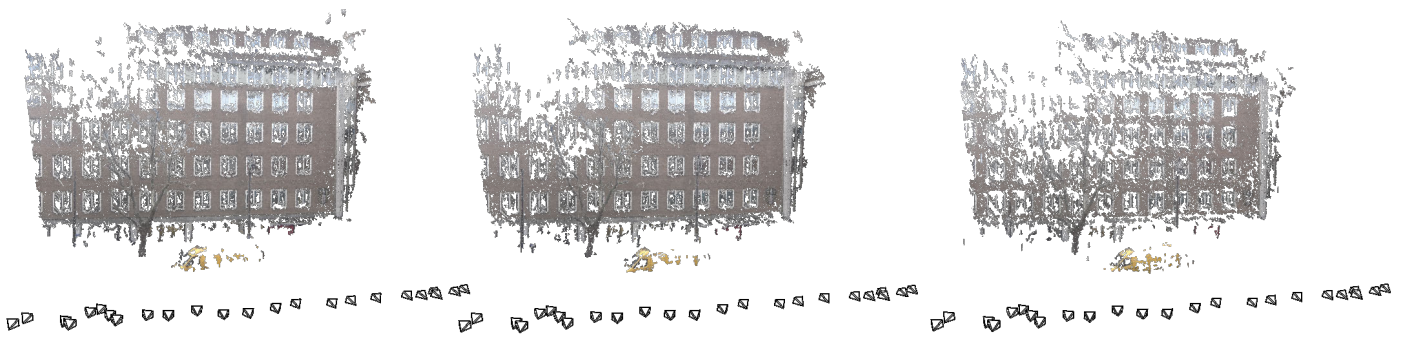
3D GRID PROJECTED ON TO THE IMAGES

INPUT IMAGES

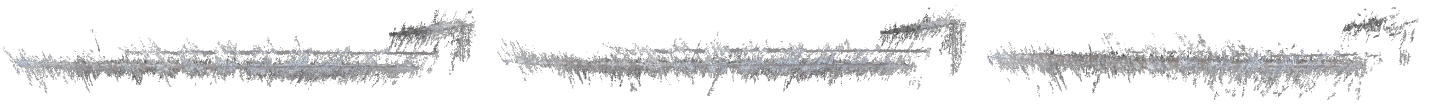
...
Building 4
(24 images)

OUR RESULT | BUNDLER | ZACH ET AL.'10

DENSE RECONSTRUCTIONS

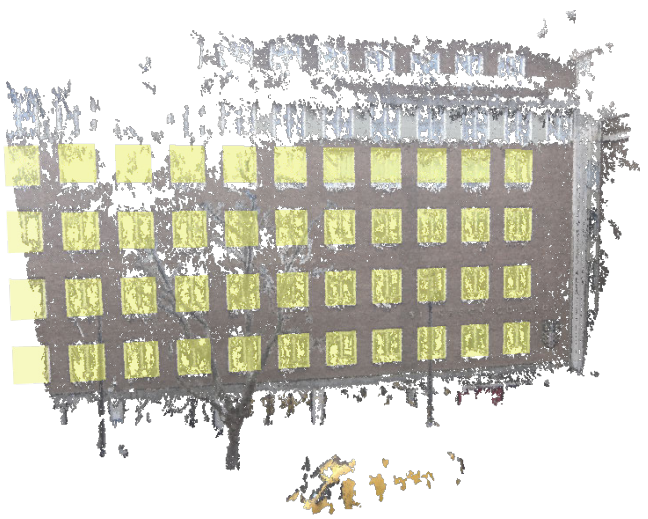


FRONT VIEW | FRONT VIEW | FRONT VIEW



TOP VIEW | TOP VIEW | TOP VIEW

SYMMETRY DETECTION



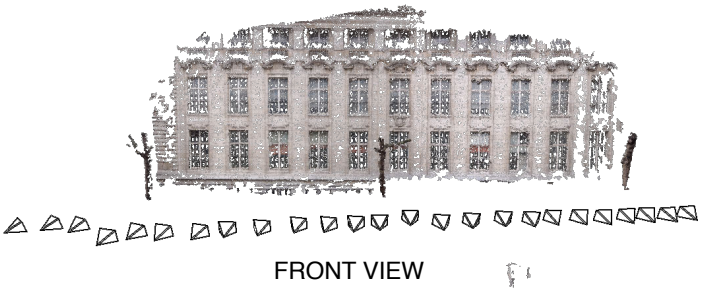
3D GRID (11-by-4) | 3D GRID PROJECTED ON TO THE IMAGES

INPUT IMAGES

...
Building 5
(25 images)

DENSE RECONSTRUCTIONS

OUR RESULT



FRONT VIEW

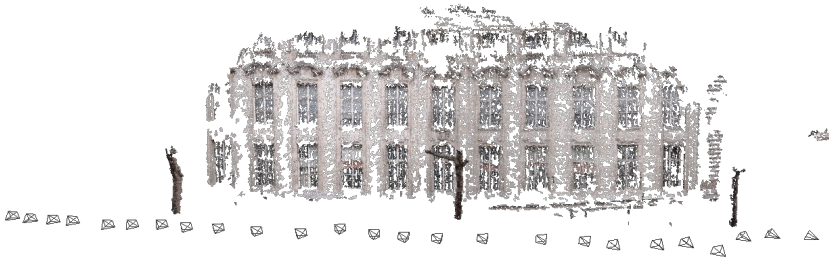
TOP VIEW

BUNDLER

FRONT VIEW

TOP VIEW

ZACH ET AL.'10

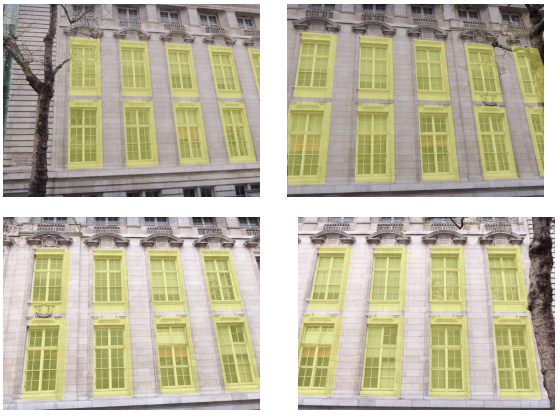


FRONT VIEW

TOP VIEW

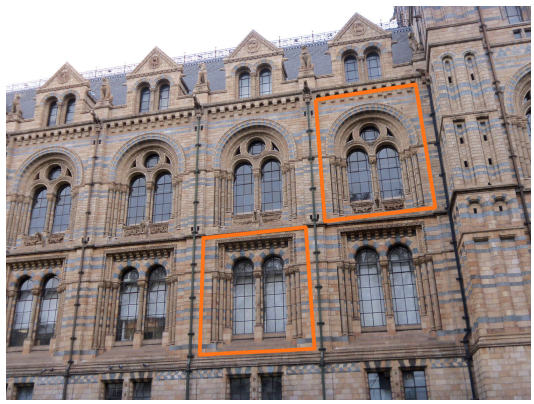
EXTRACTED SYMMETRIES

3D GRID (11-by-2)



3D GRID PROJECTED ON TO THE IMAGES

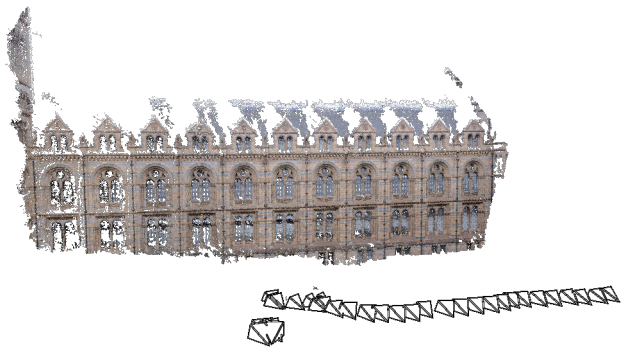
INPUT IMAGES



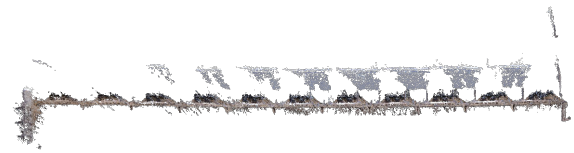

...
Building 6
(32 images)


DENSE RECONSTRUCTIONS

OUR RESULT

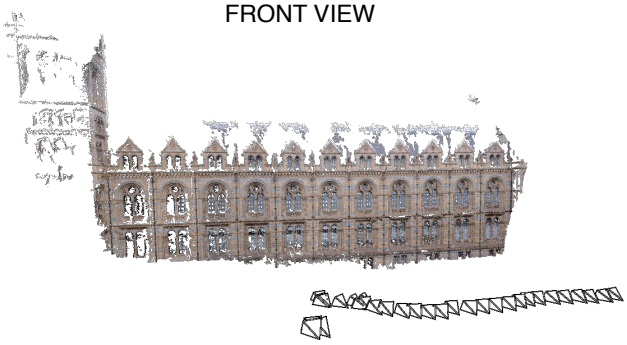


FRONT VIEW



TOP VIEW

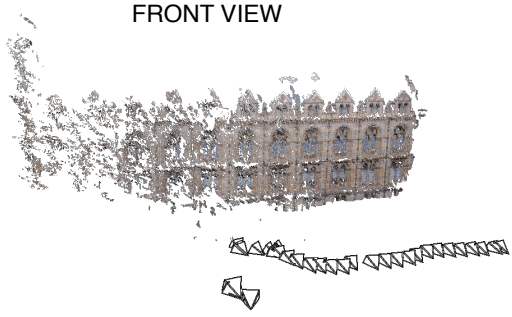
BUNDLER



FRONT VIEW

TOP VIEW

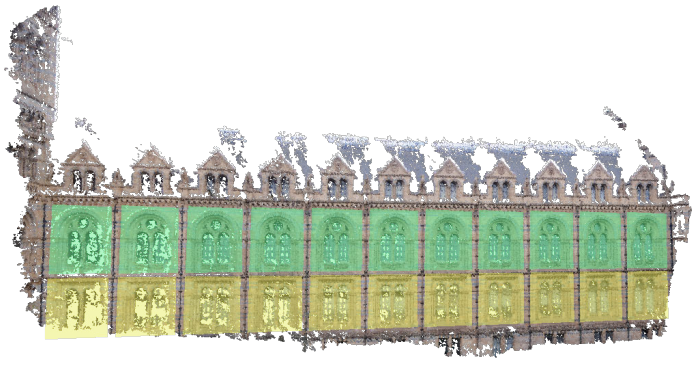
ZACH ET AL.'10



FRONT VIEW

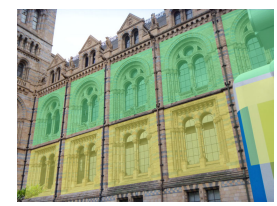
TOP VIEW

EXTRACTED SYMMETRIES



3D GRIDS (11-by-1)

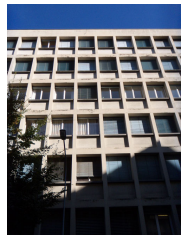
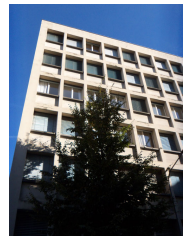
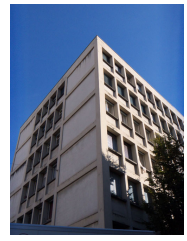


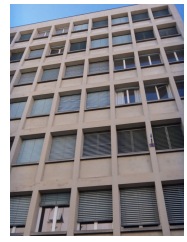
3D GRID PROJECTED ON TO THE IMAGES

INPUT IMAGES



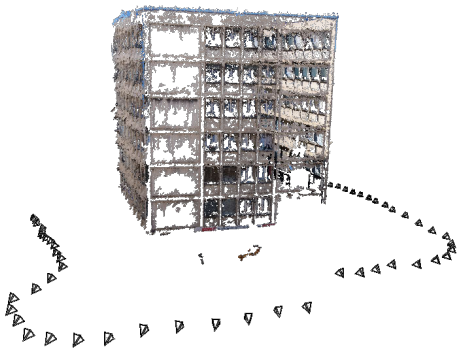





...
Building 7
(51 images)

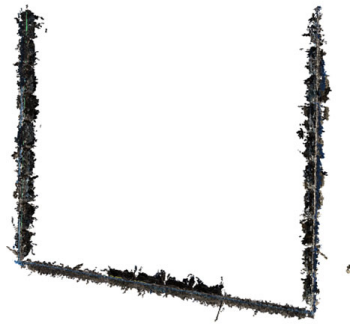



DENSE RECONSTRUCTIONS

OUR RESULT

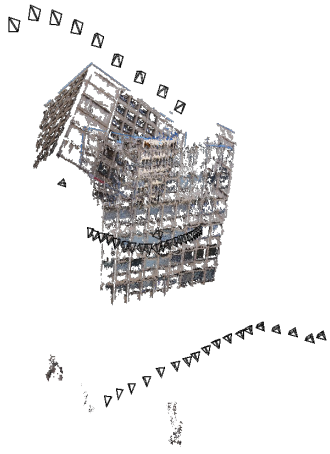


FRONT VIEW

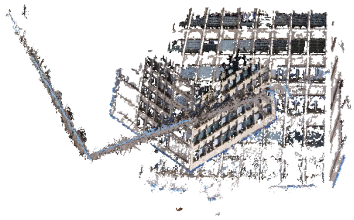


TOP VIEW

BUNDLER

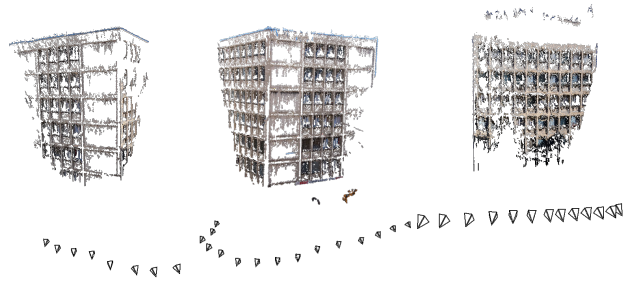


FRONT VIEW



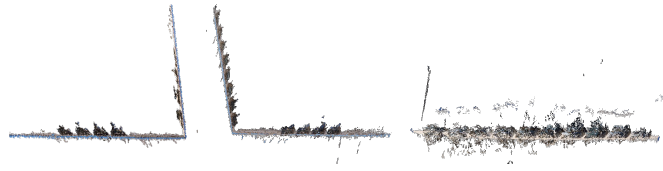
TOP VIEW

ZACH ET AL.'10



sub-part 1 sub-part 2 sub-part 3

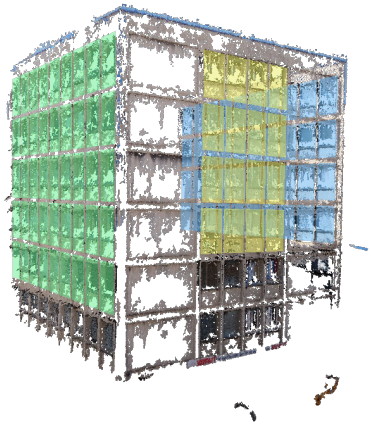
FRONT VIEW



sub-part 1 sub-part 2 sub-part 3

TOP VIEW

EXTRACTED SYMMETRIES



3D GRIDS

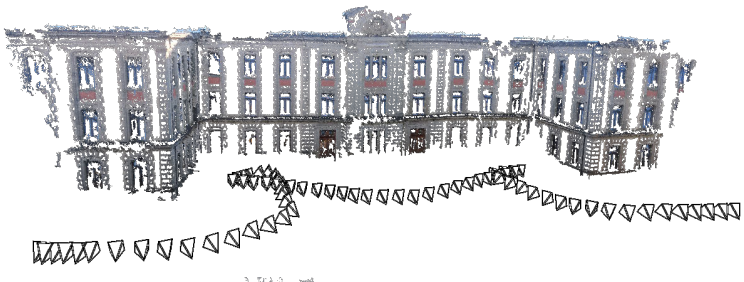
3D GRIDS PROJECTED ON TO THE IMAGES

INPUT IMAGES

...
Building 8
(72 images)

DENSE RECONSTRUCTIONS

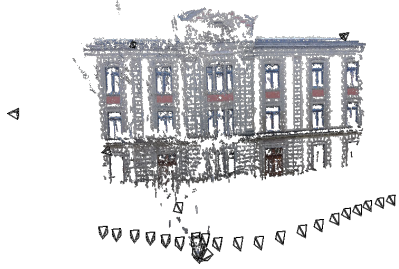
OUR RESULT



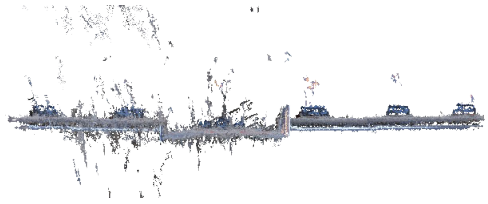
FRONT VIEW

TOP VIEW

BUNDLER

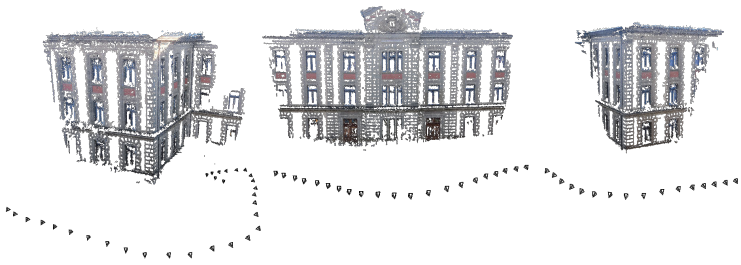


FRONT VIEW



TOP VIEW

ZACH ET AL.



sub-part 1 sub-part 2 sub-part 3

FRONT VIEW

sub-part 1 sub-part 2 sub-part 3

TOP VIEW

EXTRACTED SYMMETRIES

3D GRIDS

3D GRIDS PROJECTED ON TO THE IMAGES

INPUT IMAGES

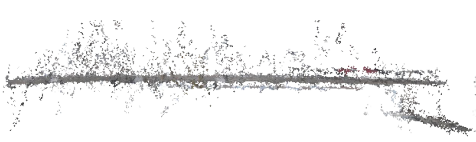



...
Building 4
Low Res.
(24 images)


DENSE RECONSTRUCTIONS

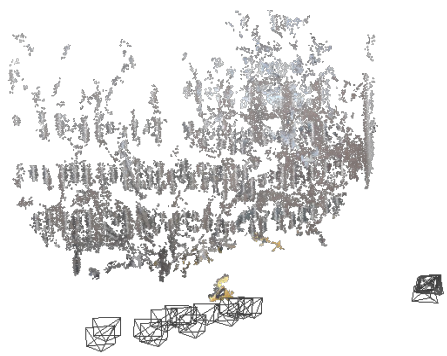
OUR RESULT

FRONT VIEW

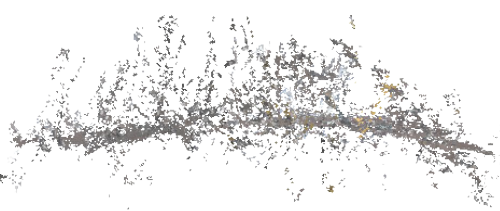


TOP VIEW

BUNDLER

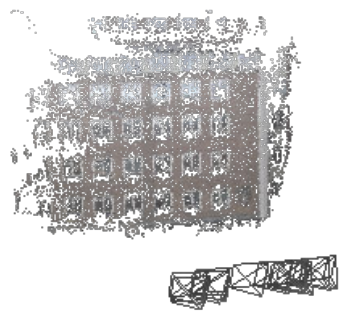


FRONT VIEW

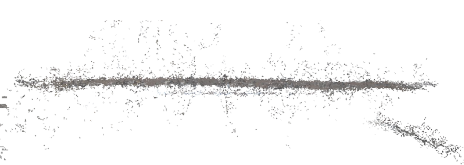


TOP VIEW

ZACH ET AL.'10

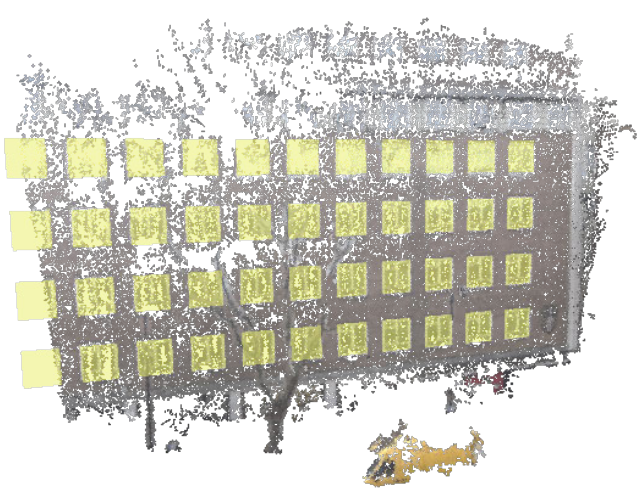


FRONT VIEW

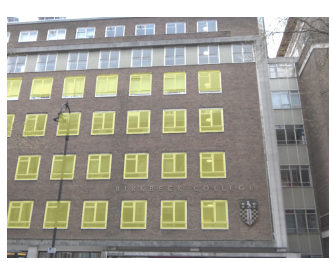


TOP VIEW

SYMMETRY DETECTION



3D GRID (11-by-4)




3D GRID PROJECTED ON TO THE IMAGES

OCCLUSION REMOVAL EXAMPLES

REFERENCE IMAGE

OUR RESULT

BARNES ET AL.'09

PROPAGATION TO OTHER IMAGES

INPUT

OUTPUT

REFERENCE IMAGES

OUR RESULT

BARNES ET AL.'09

PROPAGATION TO OTHER IMAGES

INPUT

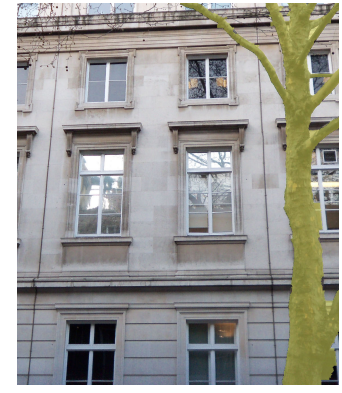
OUTPUT

REFERENCE IMAGES

OUR RESULT

BARNES ET AL.'09

PROPAGATION TO OTHER IMAGES



INPUT OUTPUT INPUT OUTPUT

REFERENCE IMAGES






OUR RESULT

BARNES ET AL.'09

PROPAGATION TO OTHER IMAGES











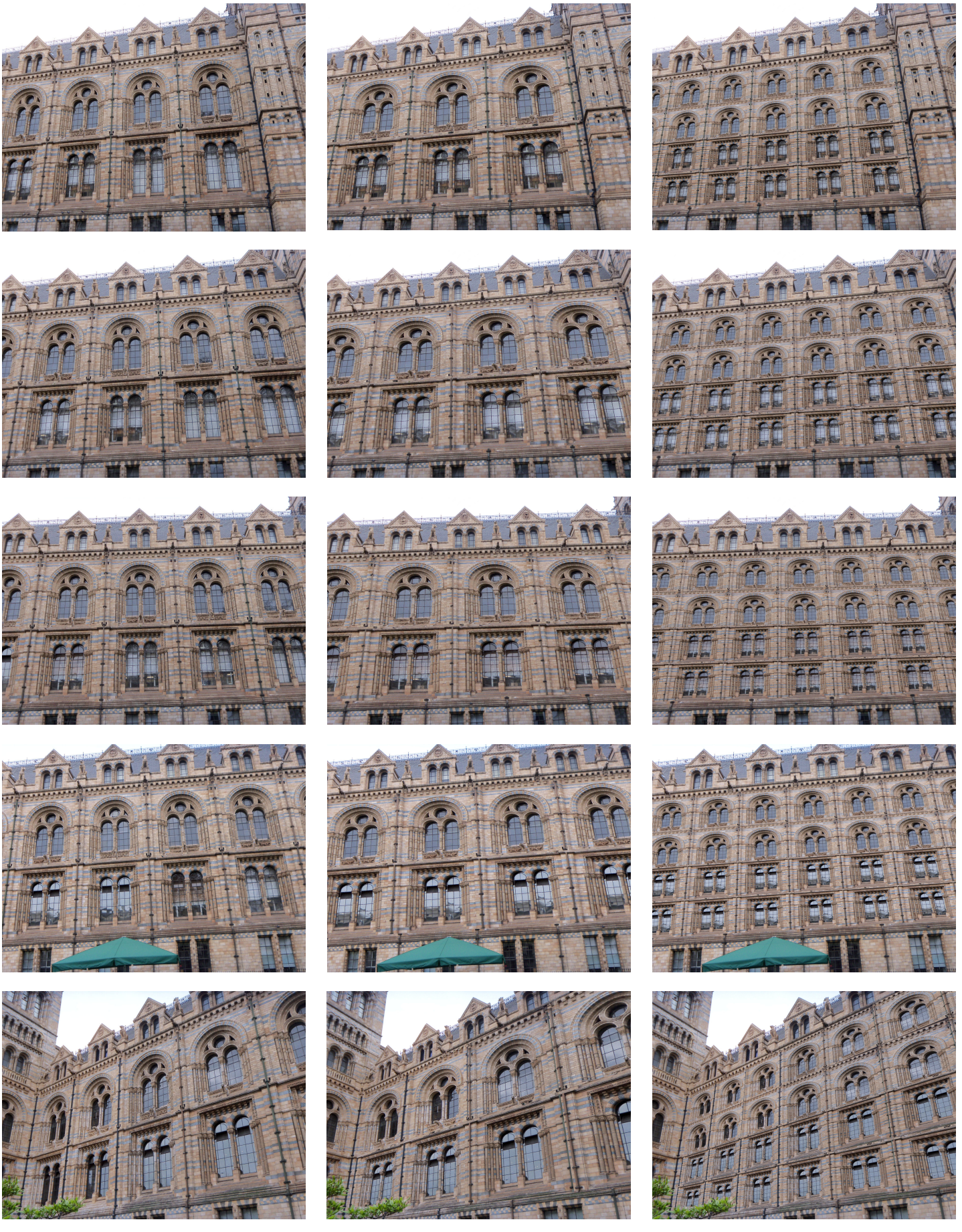

INPUT

OUTPUT

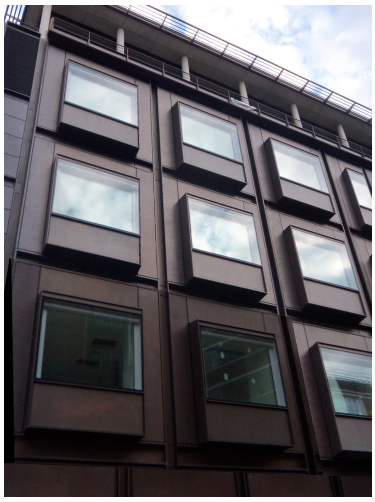
INPUT

OUTPUT

GRID EDITING EXAMPLES



INPUT IMAGE EDIT 1 EDIT 2









INPUT IMAGE EDIT 1 EDIT 2












INPUT IMAGE EDIT 1 EDIT 2