

Danny Project 1

Processing Report And Accuracy Report

03 July 2025



Survey Data

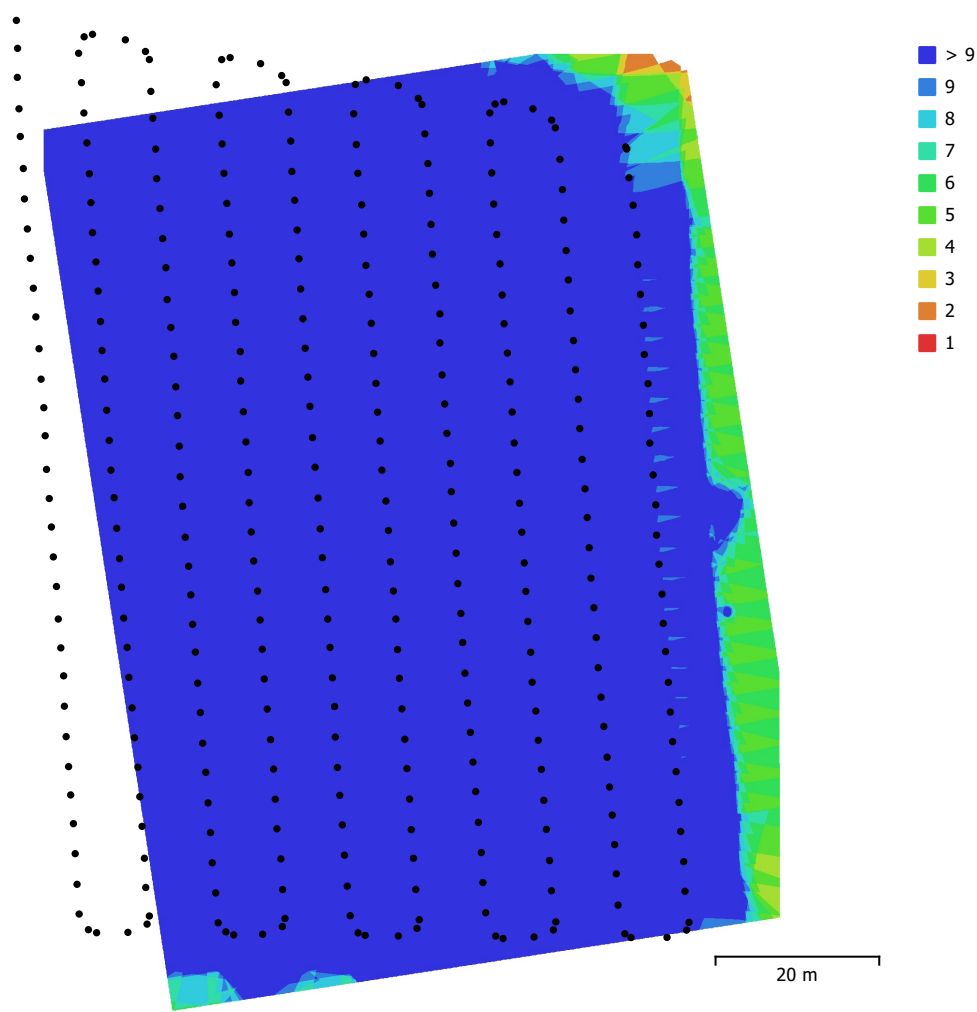


Fig. 1. Camera locations and image overlap.

Number of images:	324	Camera stations:	324
Flying altitude:	10.2 m	Tie points:	251,691
Ground resolution:	4.5 mm/pix	Projections:	1,068,625
Coverage area:	8.54e+03 m ²	Reprojection error:	0.677 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
EP800 (8.8mm)	5472 x 3648	8.8 mm	2.41 x 2.41 μm	Yes

Table 1. Cameras.

Camera Calibration

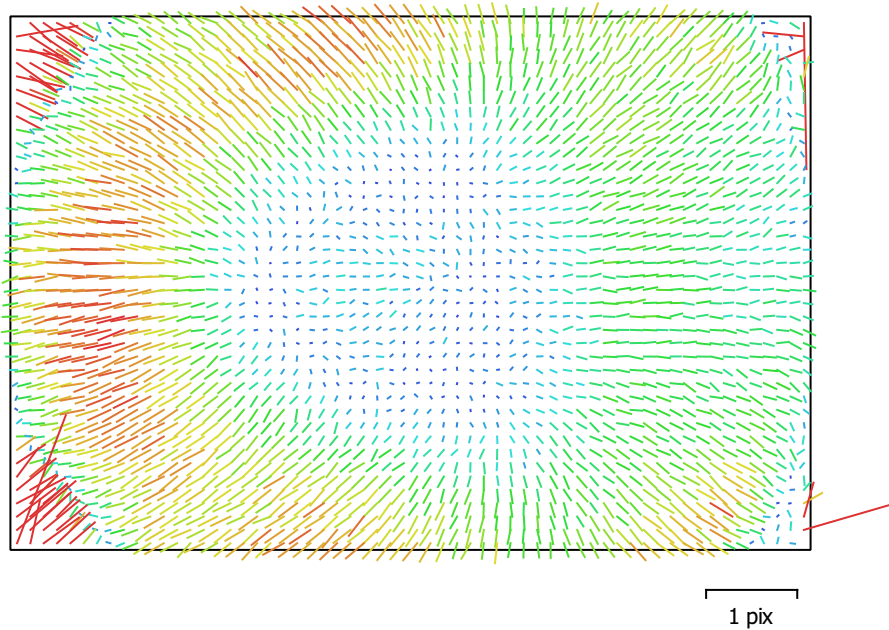


Fig. 2. Image residuals for EP800 (8.8mm).

EP800 (8.8mm)

324 images, precalibrated

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	8.8 mm	2.41 x 2.41 μm

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2
F	1965.88	4.8	1.00	0.74	0.41	-0.03	-0.01	-1.00	0.99	-0.98	0.96	-0.22	-0.57
Cx	-6.41248	0.035		1.00	0.28	-0.07	-0.03	-0.73	0.73	-0.72	0.70	-0.45	-0.41
Cy	13.4688	0.021			1.00	0.01	-0.04	-0.41	0.41	-0.40	0.39	-0.07	-0.61
B1	-0.119986	0.0061				1.00	0.04	0.03	-0.03	0.03	-0.03	0.09	-0.01
B2	-0.0284664	0.0059					1.00	0.01	-0.01	0.01	-0.01	-0.01	0.05
K1	-0.0806911	0.00039						1.00	-1.00	0.98	-0.96	0.22	0.57
K2	0.0113888	0.00011							1.00	-0.99	0.98	-0.22	-0.57
K3	-0.00144179	2.1e-05								1.00	-0.99	0.22	0.56
K4	9.22985e-05	1.9e-06									1.00	-0.21	-0.54
P1	0.00015702	8.2e-07										1.00	0.11
P2	-0.000112241	8.4e-07											1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

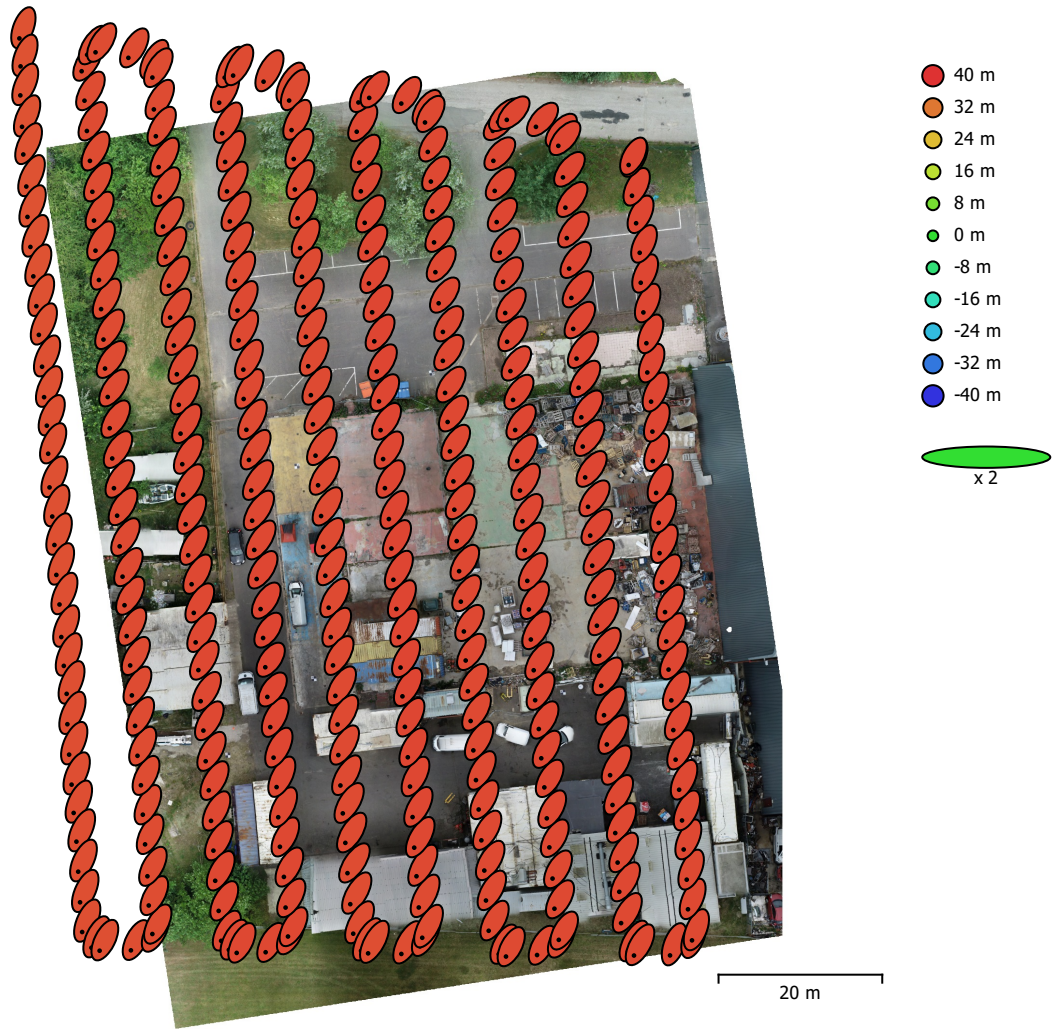


Fig. 3. Camera locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated camera locations are marked with a black dot.

X error (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
0.700397	1.18167	37.3432	1.37364	37.3684

Table 3. Average camera location error.

X - Easting, Y - Northing, Z - Altitude.

Ground Control Points

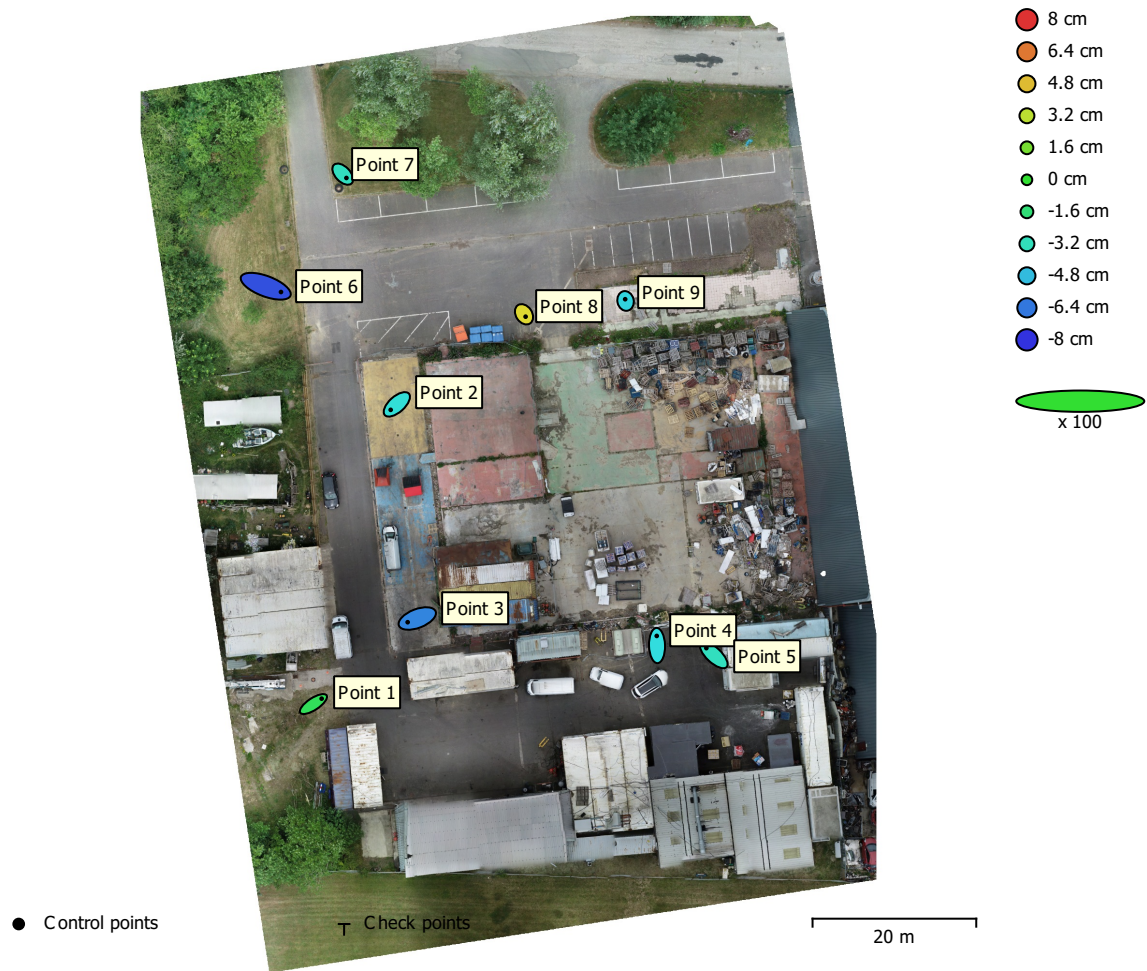


Fig. 4. GCP locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated GCP locations are marked with a dot or crossing.

Count	X error (cm)	Y error (cm)	Z error (cm)	XY error (cm)	Total (cm)
9	1.82267	1.33798	4.45303	2.26104	4.99418

Table 4. Control points RMSE.

X - Easting, Y - Northing, Z - Altitude.

Label	X error (cm)	Y error (cm)	Z error (cm)	Total (cm)	Image (pix)
Point 1	2.0086	1.31884	-0.913962	2.57083	0.188 (2)
Point 2	-1.50549	-1.34072	-3.82155	4.32068	0.334 (2)
Point 3	-2.35023	-0.907741	-6.06923	6.57139	0.515 (2)
Point 4	-0.067073	2.34899	-4.01503	4.65218	0.734 (2)
Point 5	-1.80759	1.68769	-3.26105	4.09269	0.300 (2)
Point 6	3.71988	-1.41046	-7.31827	8.32971	0.385 (2)
Point 7	0.89659	-0.936161	-3.25934	3.50764	0.433 (2)
Point 8	0.390559	-0.581235	4.1533	4.21192	0.717 (2)
Point 9	-0.0935279	0.425654	-4.24323	4.26555	0.749 (2)
Total	1.82267	1.33798	4.45303	4.99418	0.522

Table 5. Control points.
X - Easting, Y - Northing, Z - Altitude.

Digital Elevation Model

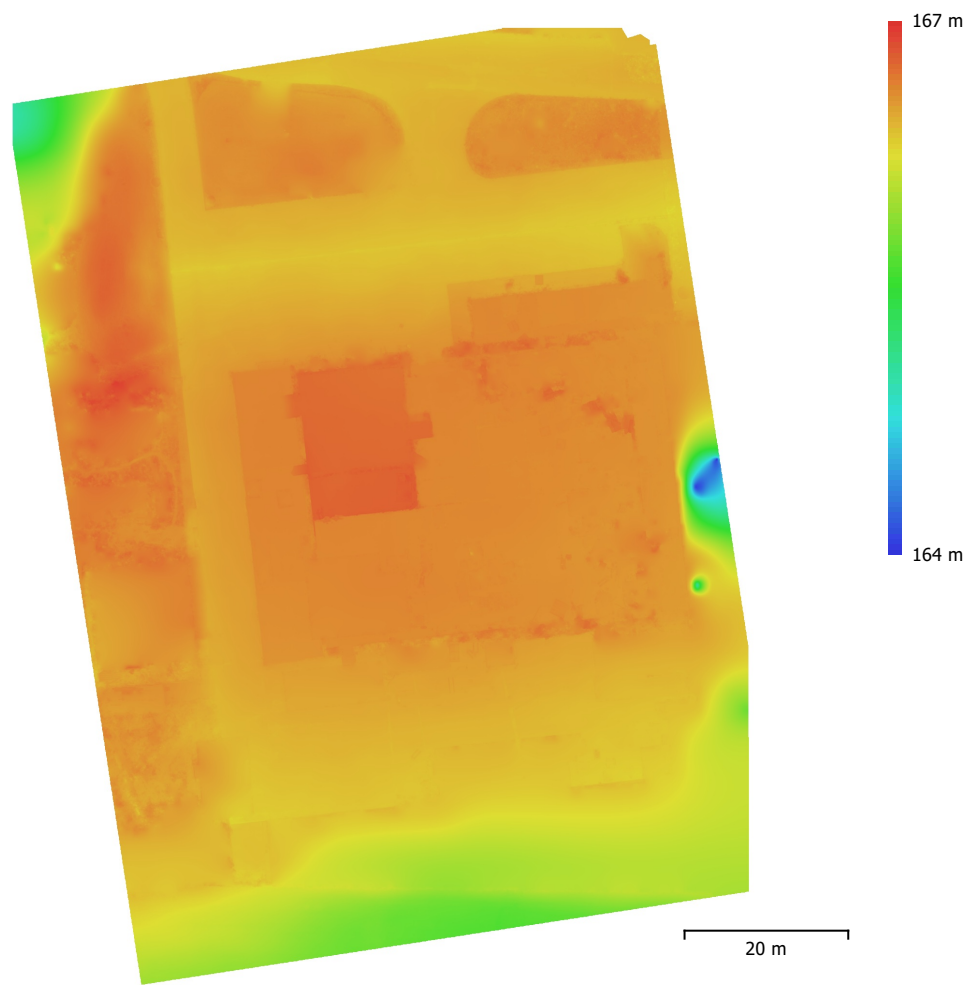


Fig. 5. Reconstructed digital elevation model.

Resolution: 8.99 mm/pix
Point density: 1.24 points/cm²

Processing Parameters

General

Cameras	324
Aligned cameras	324
Markers	9
Shapes	
LineString	6880
Coordinate system	OSGB36 / British National Grid + ODN height (EPSG::7405)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	251,691 of 287,097
RMS reprojection error	0.17979 (0.676996 pix)
Max reprojection error	2.19531 (36.3031 pix)
Mean key point size	3.4939 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	4.45397

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
Key point limit per Mpx	1,000
Tie point limit	4,000
Exclude stationary tie points	No
Guided image matching	No
Adaptive camera model fitting	Yes
Matching time	1 minutes 32 seconds
Matching memory usage	2.19 GB
Alignment time	1 minutes 7 seconds
Alignment memory usage	471.46 MB

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k4, p1, p2
Adaptive camera model fitting	Yes
Optimization time	12 seconds
Date created	2025:07:03 09:43:03
Software version	1.8.5.15368
File size	26.14 MB

Depth Maps

Count	312
Depth maps generation parameters	
Quality	High
Filtering mode	Moderate
Max neighbors	16
Processing time	18 minutes 35 seconds
Memory usage	4.39 GB
Date created	2025:07:03 10:17:26
Software version	1.8.5.15368
File size	1.91 GB

Dense Point Cloud

Points	114,517,634
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Moderate

Max neighbors	16
Processing time	18 minutes 35 seconds
Memory usage	4.39 GB
Dense cloud generation parameters	
Processing time	11 minutes 16 seconds
Memory usage	9.04 GB
Ground points classification parameters	
Max angle (°)	9
Max distance (m)	0.03
Cell size (m)	20
Classification time	4 minutes 36 seconds
Classification memory usage	4.39 GB
Date created	2025:07:03 10:28:43
Software version	1.8.5.15368
File size	1.61 GB
Model	
Faces	16,423,509
Vertices	8,225,249
Vertex colors	3 bands, uint8
Texture	8,192 x 8,192 x 24, 4 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Moderate
Max neighbors	16
Processing time	18 minutes 35 seconds
Memory usage	4.39 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	9 minutes 42 seconds
Memory usage	12.95 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	8,192
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	4 minutes 26 seconds
UV mapping memory usage	3.62 GB
Blending time	18 minutes 31 seconds
Blending memory usage	106.38 GB
Date created	2025:07:03 10:46:55
Software version	1.8.5.15368
File size	2.55 GB
DEM	
Size	9,998 x 12,983
Coordinate system	OSGB36 / British National Grid + ODN height (EPSG::7405)
Reconstruction parameters	
Source data	Dense cloud
Interpolation	Enabled
Processing time	42 seconds
Memory usage	307.68 MB
Date created	2025:07:03 11:35:03
Software version	1.8.5.15368
File size	289.43 MB
Orthomosaic	
Size	19,995 x 25,965
Coordinate system	OSGB36 / British National Grid + ODN height (EPSG::7405)

Colors

3 bands, uint8

Reconstruction parameters

Blending mode

Mosaic

Surface

DEM

Enable hole filling

Yes

Enable ghosting filter

No

Processing time

3 minutes 26 seconds

Memory usage

997.45 MB

Date created

2025:07:03 11:45:59

Software version

1.8.5.15368

File size

7.48 GB

System

Software name

Agisoft Metashape Professional

Software version

1.8.5 build 15368

OS

Windows 64 bit

RAM

127.69 GB

CPU

13th Gen Intel(R) Core(TM) i7-13700K

GPU(s)

NVIDIA GeForce RTX 4080