UNOSAT COMPREHENSIVE BUILDING DAMAGE ASSESSMENTS – GAZA STRIP

The United Nations Satellite Centre (UNOSAT) conducted satellite imagery-based comprehensive damage assessments to structures within the Area of Interest (AoI), i.e.: the Gaza Strip, Occupied Palestinian Territory. These assessments were based on satellite images collected before and after the start of the war (07 October 2023). Images collected before the onset of the conflict: 01 May 2023, 10 May 2023, and 18 September 2023. Images collected after the start of the conflict date to: 15 October 2023, 07 November 2023, 26 November 2023, 06–07 January 2024, 29 February 2024, 31 March-01 April 2024, 03 May 2024, 06 July 2024, 03-06 September 2024, 01 December 2024, 25 February 2025, 04 April, and – most recently – 08 July 2025. These satellite images were compared with each other to assess changes and damages in time and space.

According to the latest satellite imagery-based analysis, UNOSAT identified 102,067 'destroyed' structures, 17,421 'severely damaged' structures, 41,895 'moderately damaged' structures, and 31,429 'possibly damaged' structures, totalling 192,812 structures. These correspond to around 78% of the total structures in the Gaza Strip, including an estimated 282,904 damaged housing units.

This information sheet shows analysis performed using five satellite images, all dating to after the start of the war. It also provides methodological details.

Analysis Timeline

JUL '25
08 July 2025
JUN '25
MAY '25
APR '25
04 Apr 2025
MAR '25
25 Feb 2025
FEB '25
JAN '25
DEC '24
01 Dec 2024
NOV '24
OCT '24
SEP '24
06 Sept 2024
AUG '24
JUL '24
06 July 2024
JUN '24
MAY '24
03 May 2024
APR '24
01 Apr 2024
MAR '24
29 Feb 2024
FEB '24
JAN '24
06 Jan 2023
DEC '23
26 Nov 2023
NOV '23
07 Nov 2023
OCT '23
15 Oct 2023
07 Oct 2023 START OF WAR
SEP '23

INSET #13/13: Khan Yunis City

34.2885313°E 31.3293630°N

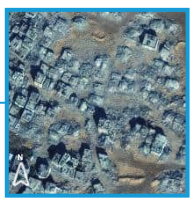
INSET #12/13: Rafah City (2)

34.2689332°E 31.3019062°N

INSET #11/13: Beit Hanoun

34.5270918°E 31.5410427°N

INSET #10/13: Jabalya



34.4899842°E 31.5311236°N

INSET #9/13: Rafah City (1)

34.2455155°E 31.3084465°N

Points of Interest within the AoI (Gaza Strip)

Key Figures

13	361 km²	192,812	282,904
Reports	Area of Interest	Damaged Buildings	Damaged Housing Units

Methodology

UNOSAT's overall damage assessment methodology comprises two components:

Comprehensive Damage Assessment (Building)

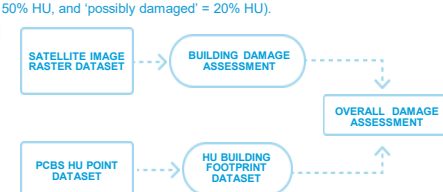
UNOSAT employed change detection analysis to assess the extent of damage to buildings, using raster datasets collected at different times to identify changes that indicated destruction.

Based on the level of damage severity, the detected damage was divided into three categories: "destroyed," "severely damaged," and "moderately damaged." The degree of damage seen and the use of extra indications, including debris, were used to calculate the assessment's confidence level. Additional automatically detected damage was added to the Comprehensive Damage Assessment using building footprints provided by UNOSAT/UN-HABITAT. This was done by using a proximity analysis to mark as "possibly damaged" any structure that was close to an impact crater (within a distance of 75 m) or adjacent to damaged buildings (within a distance of 15 m).

To estimate the number of damaged Housing Units (HU):

1. UNOSAT used building footprints provided by UNOSAT/UN-HABITAT, which includes data from the Palestinian Central Bureau of Statistics (PCBS), dating to 2017. This dataset provides HU values at each building footprint location.
2. The damaged HU information was then calculated using UNOSAT's comprehensive building damage assessment methodology. The total HU value at each damaged location was extracted from the building footprints using a proximity analysis. Then, based on the level of damage observed by UNOSAT analysts, the corresponding damaged HU was determined.

The upper thresholds for determining the extent of damage are as follows: 'destroyed' and 'severely damaged' = 100% HU, 'moderately damaged' = 50% HU, and 'possibly damaged' = 20% HU).



Damaged Housing Units (HU) out of Total HU per Governorate