

Eyes on Russia



Devastation in Avdiivka:
Mapping damage to civilian infrastructure
since the full-scale invasion

DECEMBER 2023

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This report uses information collected through open-source research and verified by CIR’s investigators to provide detailed descriptions of selected conflict events and their impact on the population of Ukraine.

Front & back cover: Eyes on Russia Map.

EXECUTIVE SUMMARY

The Centre for Information Resilience (CIR), in partnership with volunteer OSINT investigator [Alexis J. Falconer](#) (hereafter referred to as Falconer), has identified a significant intensification of Russian strikes on civilian infrastructure in Avdiivka, Donetsk Oblast, since the renewed Russian offensive on the city on 10 October 2023. With national and international media largely unable to access Avdiivka, this report uses open source analysis to uncover the nature of damage to the city's civilian infrastructure.

Data collected by CIR suggests that since the start of the full-scale invasion of Ukraine, Avdiivka's critical civilian infrastructure has been largely damaged or destroyed, including:

- **all 17 of the city's** educational institutions;
- **nine of the city's 11** healthcare facilities;
- **all five of the city's** churches;
- **all three of the city's** large supermarkets.

Since 10 October 2023, Russian forces have refocused strikes on the city, with a specific emphasis on its 26 high-rise apartment buildings, targeting 11 between 10 October and 10 November and eight between 11 November and 21 November. These buildings are likely targeted as they are the city's tallest buildings

facing Russia's axes of attack. Overall, Avdiivka has experienced a significant rise in the number of strikes targeting civilian buildings since 10 October 2023.

Between 10 September and 9 October 2023, CIR and Falconer recorded **14 incidents of damage to civilian buildings**. Between 10 October and 10 November, **54 incidents of damage to civilian buildings** were recorded and between 11 November and 21 November, **12 incidents**.

Although footage was collected from across Avdiivka, the vast majority of damage took place in the central 'Khimik' settlement. CIR investigators identified 182 buildings in the 'Khimik' settlement that had been subjected to damage since February 2022, with 11 completely destroyed, 63 partially destroyed, 51 moderately damaged, and 57 lightly damaged.

Although not a comprehensive list, this analysis suggests an overwhelming majority of buildings in the 'Khimik' settlement have been damaged since Russia's full-scale invasion of Ukraine. Of this, 25 of the city's 26 high-rise apartment buildings have been damaged, with many of them destroyed, which CIR assess is likely a deliberate Russian strategy to preclude them from use as observational positions.

INTRODUCTION: AVDIIVKA SINCE 2017

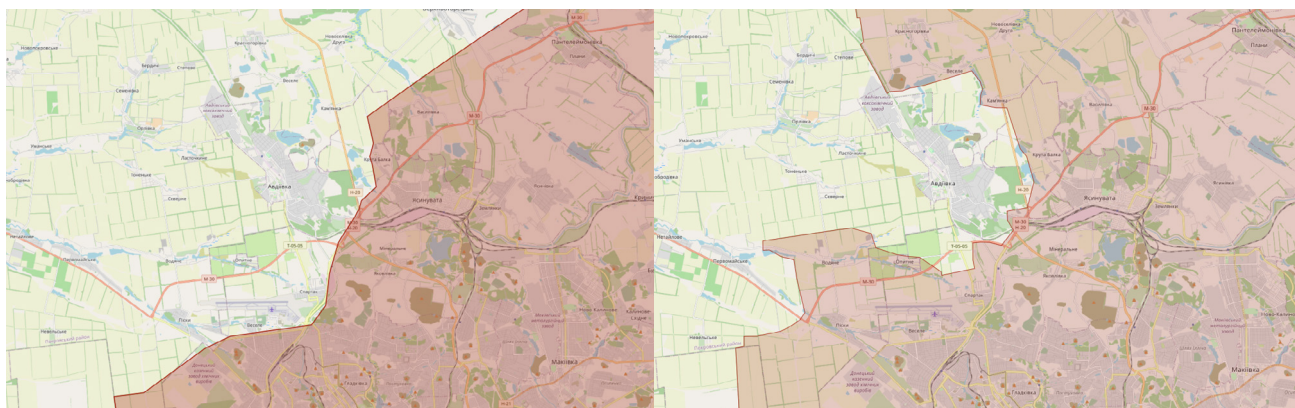


Figure 1: Approximate line of control in the Avdiivka area immediately prior to the full-scale invasion of Ukraine (left) and the current frontline as of 21 November 2023 (right).

Avdiivka, a small city 13 kilometres to the north of Donetsk city, has been at the forefront of Russia's war in Ukraine since 2014. Prior to the full-scale invasion of Ukraine, fighting for the city was emblematic of the broader war in the Donbas and centred on the city's industrial zone to the south-east. Occasional flare-ups between Russian-backed separatists and Ukrainian forces (such as in January-February 2017) would result in the shelling of the residential areas of Avdiivka, however this was irregular. An estimated 31,000 civilians were resident in the city prior to the full-scale invasion in February 2022, however according to Vitaliy Barabash (Head of the city's Military Administration), in November 2023, just over 1,000 civilians remained, approximately 3% of the city's total pre-invasion population.¹

On 27 March 2023, Ukrainian authorities declared

Avdiivka a 'red zone'², restricting access to most journalists and encouraging a city-wide evacuation.³

For those that stayed, conditions continue to deteriorate, with irregular supplies of food and power reaching the city and residents forced to shelter in basements. According to the Office for the Coordination of Humanitarian Affairs (OCHA), humanitarian workers and volunteers are increasingly unable to reach the city with at least 250 to 300 artillery shells and 20 aerial sorties targeting Avdiivka every day.⁴ Ukrainian officials claim that since the full-scale invasion, 154 civilians in Avdiivka have been killed in strikes.⁵ With national and international media largely unable to access Avdiivka, this report will attempt to uncover the nature of damage to the city's civilian infrastructure through open sources.

¹ Ukrinform, "Віталій Барабаш, начальник Авдіївської міської військкадміністрації" (13 November 2023). Available at: <https://www.ukrinform.ua/rubric-regions/3786262-vitalij-barabas-nacalnik-avdiivskoi-miskoi-vijskadministracii.html>

² According to Vitaliy Barabash, a 'red zone' prohibits access of volunteers and accredited journalists from accessing specific locations.

³ Ukrainska Pravda, "Volunteers and journalists banned from entering Avdiivka: city is in "red zone" (27 March 2023). Available at: <https://www.pravda.com.ua/eng/news/2023/03/27/7395277/>

⁴ UN Office for the Coordination of Humanitarian Affairs, "Ukraine: Deterioration of the humanitarian situation in Donetsk oblast - Flash Update #2: Avdiivka" (24 March 2023). Available at: <https://reliefweb.int/report/ukraine/ukraine-deterioration-humanitarian-situation-donetska-oblast-flash-update-2-avdiivka-24-mar-2023-enruuk>

⁵ Ukrinform, "Віталій Барабаш, начальник Авдіївської міської військкадміністрації" (13 November 2023). Available at: <https://www.ukrinform.ua/rubric-regions/3786262-vitalij-barabas-nacalnik-avdiivskoi-miskoi-vijskadministracii.html>

METHODOLOGY

CIR, in partnership with Falconer, has collected and geolocated footage showing damage to civilian infrastructure in Avdiivka, Donetsk Oblast between 1 February 2022 and 21 November 2023. A comprehensive dataset detailing damage to Avdiivka was collated by Falconer and provided to CIR, forming the foundation of this report.

The primary sources of footage were several local Telegram channels operated by residents and volunteers. When this on-the-ground footage was unavailable, CIR investigators conducted

supplementary analysis using satellite imagery. Data was collected and verified across Avdiivka's suburbs, train station and coke plant with the majority of data originating from within the 'Khimik' settlement, the city's central residential district, which as a result is the primary focus of the analysis.

Figure 2, below, shows a map of data points which represent geolocated videos and images collected by CIR and Falconer since February 2022.

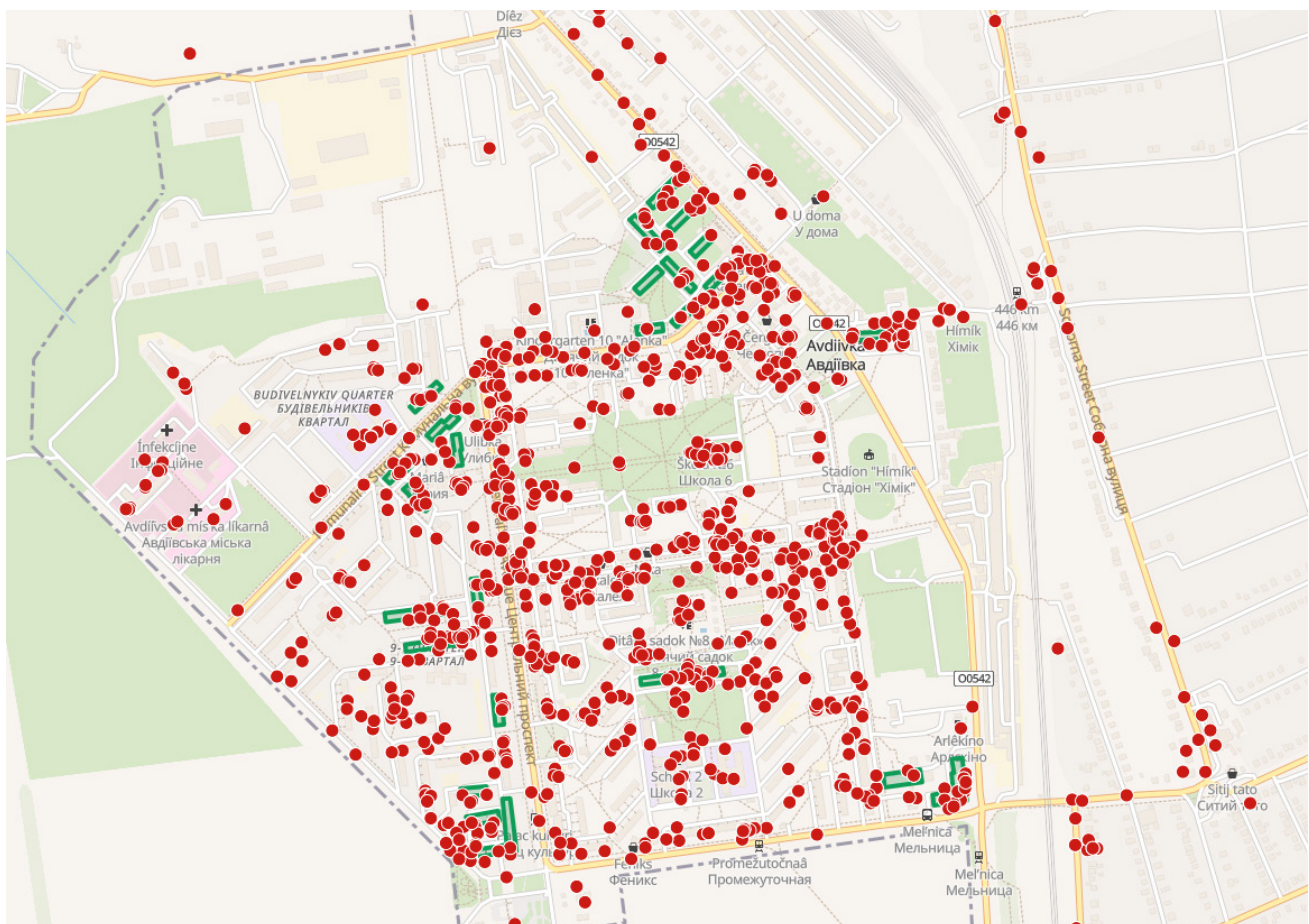


Figure 2: Overview of data points collected by Falconer and CIR showing damage to civilian infrastructure in Avdiivka, Donetsk Oblast, since February 2022, shown in red. Avdiivka's 26 high-rise apartment buildings are shown in green.

RUSSIA'S RENEWED OFFENSIVE: IDENTIFYING TRENDS BEFORE AND AFTER 10 OCTOBER 2023

Since 10 October 2023, Russian forces have recommitted to their assault on the small frontline city of Avdiivka, Donetsk Oblast. Although continuously under fire since the beginning of the full-scale invasion, strikes on the city with multiple launch rocket systems (MLRS) and aerial sorties intensified following the capture of several small settlements surrounding Avdiivka in November and December 2022. In what CIR assess as an

attempt to surround and capture the city, Russian forces have further escalated attacks since 10 October 2023 and have committed several brigades and regiments to this area of the front line. This renewed Russian offensive is reflected in a significant increase in damage to civilian buildings and infrastructure, including repeated attacks, across central Avdiivka, collected and geolocated by Falconer in partnership with CIR.

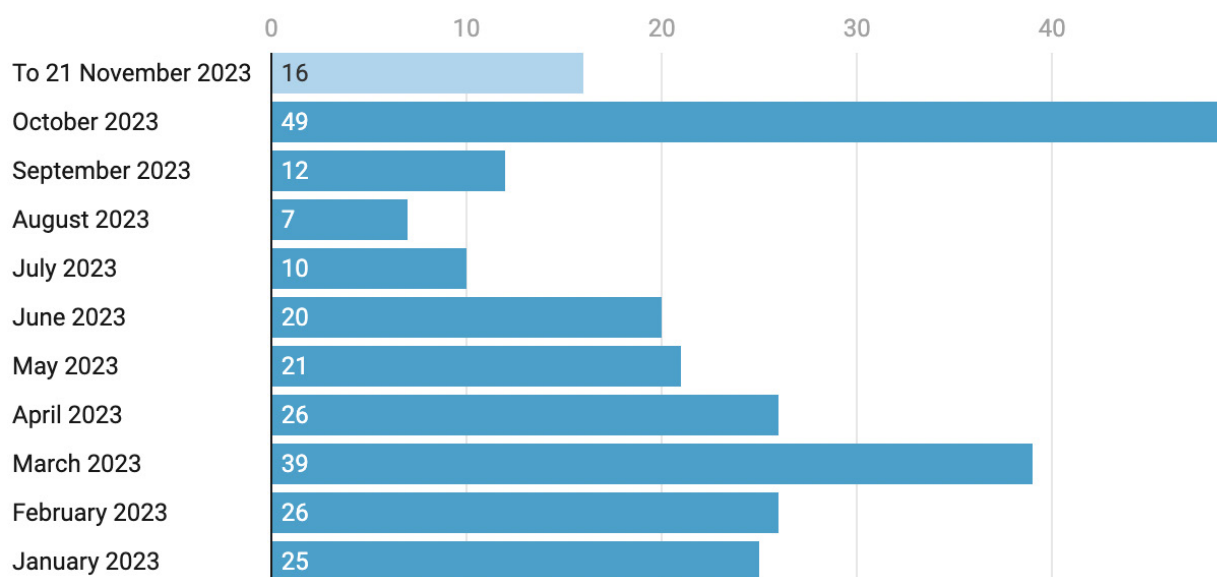


Figure 3: Monthly breakdown of unique verified instances of damage to civilian buildings in Avdiivka, Donetsk Oblast, since January 2023. **Note:** Data for November complete until 21st November.

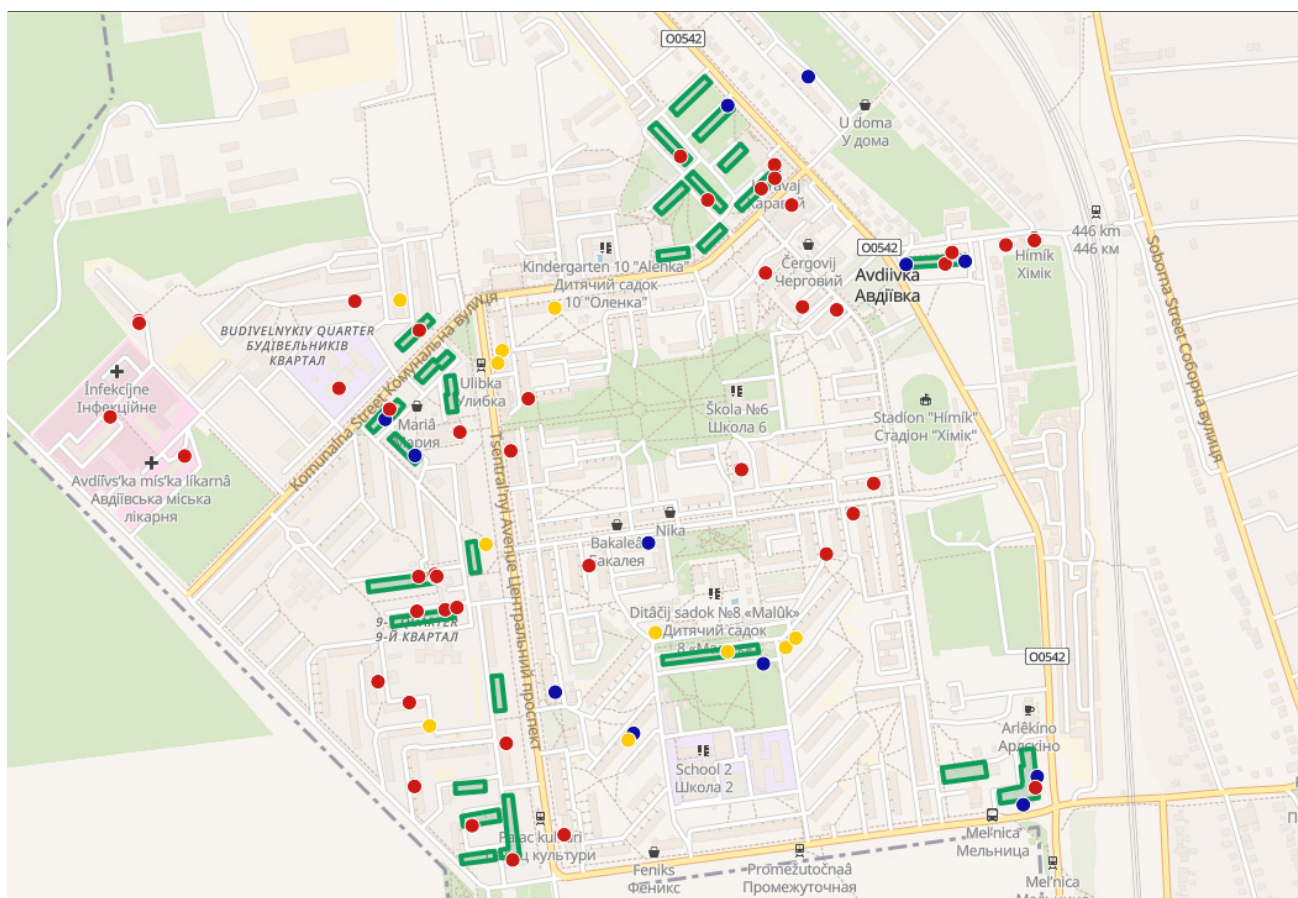


Figure 4: Monthly breakdown of damage to civilian buildings in Avdiivka, Donetsk Oblast. Incidents between 10 September and 9 October 2023 are marked in yellow, incidents between 10 October and 10 November are in red, and incidents between 11 November and 21 November 2023 are in blue. All 9-14-storey high-rise buildings are marked in green.

Between 10 September and 9 October 2023, the month before the renewed offensive, 14 separate incidents of damage to civilian buildings were recorded, all but one were residential apartment buildings. By contrast, between 10 October (the first day of Russia's renewed offensive) and 10 November 2023, investigators identified 54 separate incidents of damage to civilian buildings, including a hospital, two pharmacies, a large supermarket, and two churches. Whilst damage between 10 September and 9 October appeared indiscriminate, incidents between 10 October and 10 November were predominantly recorded in the northeast and west of the city, disproportionately affecting Avdiivka's high-rise buildings, suggesting more directed targeting efforts.⁶ Between 10

October and 10 November, Russian forces damaged 11 of the total 26 high-rise buildings identified. Since 24 February 2022, CIR and Falconer identified damage to 25 of the 26 high-rise buildings. CIR assess that these buildings are likely targeted as they are the city's tallest buildings facing Russia's axes of attack. From analysis of the frequency, character, and concentration of damage inflicted on civilian infrastructure in Avdiivka, CIR assess that a critical element of Russian strategy is to engage in both the indiscriminate shelling of urban areas and using more precise weaponry to target specific buildings. This strategy has been repeatedly used by Russian forces in Ukraine since the full-scale invasion including most notably in Mariupol and Bakhmut. This strategy

⁶ In this context, CIR and Falconer understand 'high-rise' buildings as the city's nine to 14-storey apartments, of which 26 were identified.

is, according to CIR's analysis, intrinsically linked with offensive action, as Russian forces appear

to intensify strikes on civilian infrastructure when attempting to take and hold Ukrainian cities.⁷



Figure 5: Overview of damage to Avdiivka's 26 high-rise buildings between February 2022 and 21 November 2023. Destroyed buildings are marked in **black (three)**, partially destroyed in **red (six)**, moderately damaged (including fire damage) in **orange (four)**, lightly damaged in **yellow (ten)**, and buildings with no damage reported in **green (one)**.

CIR's analysis has found that strikes against civilian infrastructure in Avdiivka have continued at a consistent pace, with 12 incidents recorded between 11 November and 21 November 2023.

All 12 incidents targeted residential buildings, with eight damaging Avdiivka's high-rise buildings including the destruction of Avdiivka's tallest apartment building on 15 November 2023.⁸

⁷ Modern War Institute at West Point, "Urban Operations in Ukraine: Size, Ratios, and the Principles of War" (20 June 2022). Available at: <https://mwi.westpoint.edu/urban-operations-in-ukraine-size-ratios-and-the-principles-of-war> and Institute for the Study of War, "Russian Offensive Campaign Assessment, April 11" (April 2022) Available at: <https://www.understandingwar.org/background/russian-offensive-campaign-assessment-april-11>

⁸ Авдеевка Переключка (t.me/nasha_avdeevka) "Новые обрушения 14-этажки. □ 15.11.2023", Telegram, 15 November 2023. Retrieved from: https://t.me/nasha_avdeevka/27447

CIVILIAN DAMAGE IN AVDIIVKA SINCE FEBRUARY 2022

Since the full-scale Russian invasion of Ukraine, CIR and Falconer have identified at least 366 incidents of unique damage to civilian buildings in Avdiivka, including repeated attacks, the overwhelming majority of which took place in the city's 'Khimik' settlement. Analysis by CIR investigators found that in the central 'Khimik' settlement, only 16 buildings appear to be undamaged; however, this may be due to a lack of available footage. In total, CIR investigators identified 182 buildings in the 'Khimik' settlement that had

been damaged since February 2022, with 11 completely destroyed, 63 partially destroyed, 51 moderately damaged, and 57 lightly damaged. Although not a comprehensive list, this analysis suggests an overwhelming majority of buildings in the 'Khimik' settlement have been damaged since Russia's full-scale invasion of Ukraine. With such a concentration of damage to the 'Khimik' settlement, it is clear that Russian forces have, since February 2022, deliberately targeted this heavily residential and commercial district of the city.

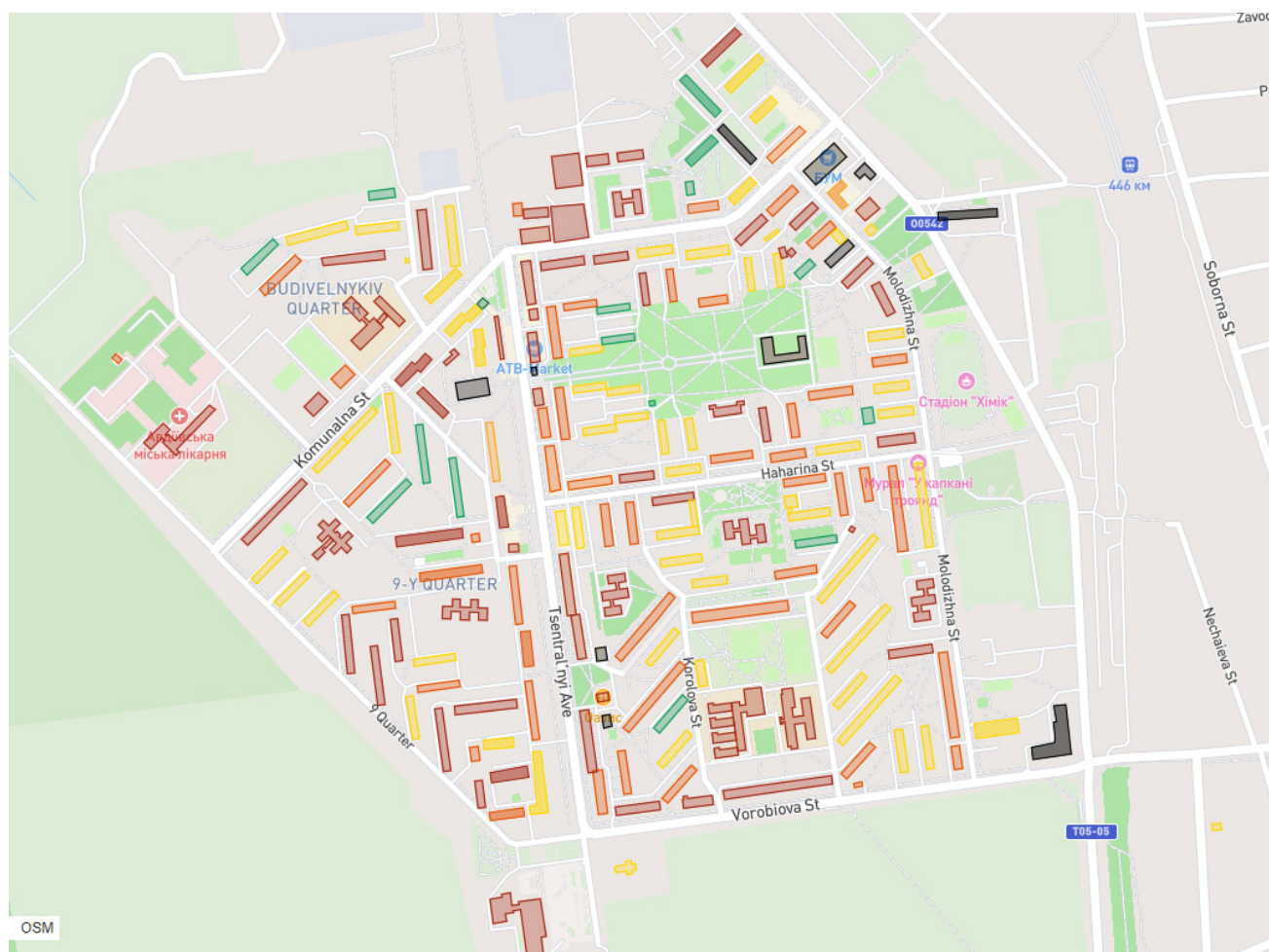


Figure 6: Overview of damage to all buildings within the 'Khimik' settlement between February 2022 and 21 November 2023. Destroyed buildings are marked in **black**, partially destroyed buildings in **red**, moderately damaged buildings (including fire damage) in **orange**, lightly damaged buildings in **yellow**, and buildings with no damage reported in **green**.

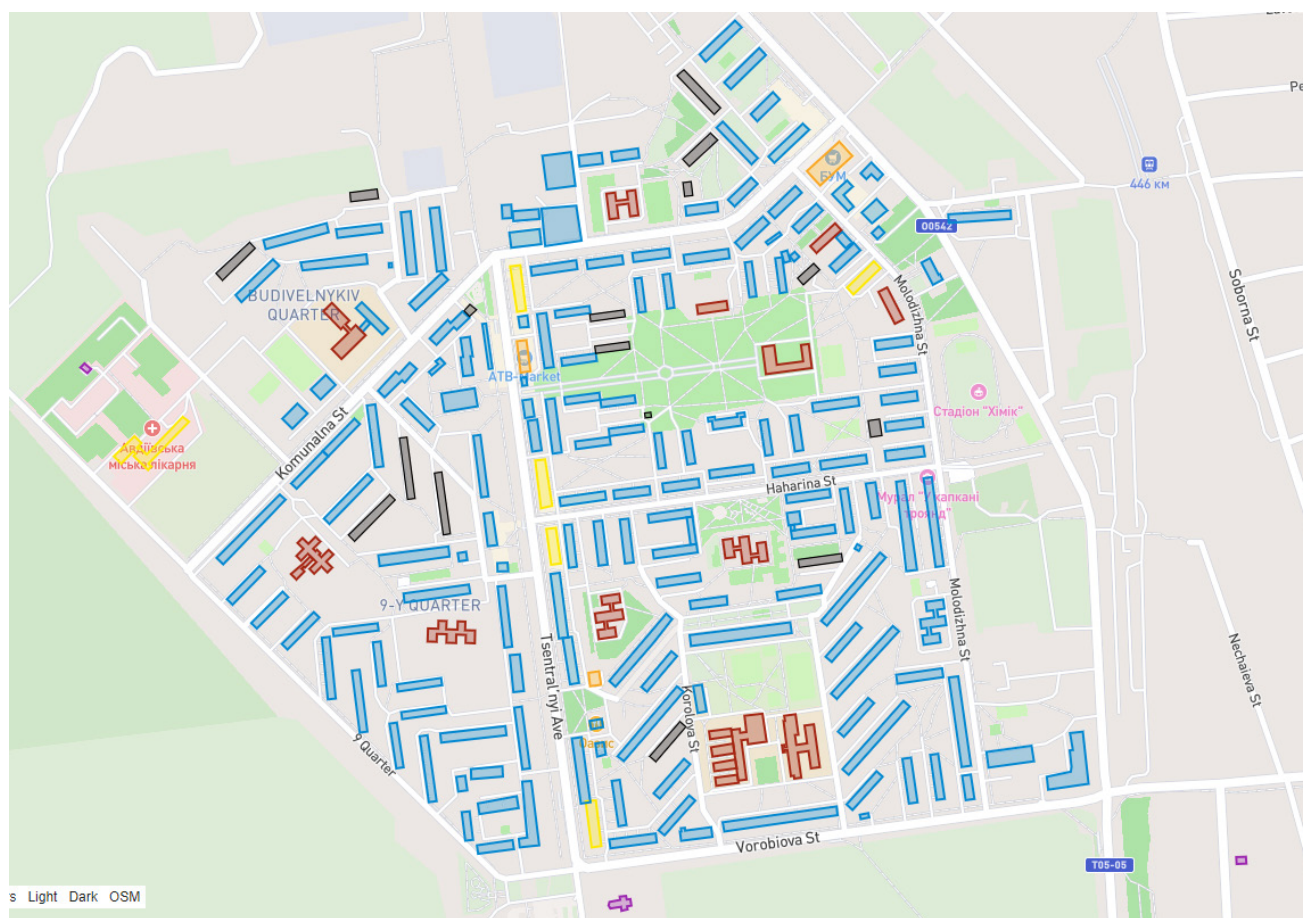


Figure 7: Overview of damage to all buildings within the ‘Khimik’ settlement between February 2022 and 21 November 2023 by category. Damaged or destroyed residential buildings are marked in **blue**, educational institutions in **red**, medical facilities in **yellow**, religious buildings in **purple**, supermarkets in **orange**, and undamaged buildings in **black**.

DAMAGE TO EDUCATIONAL INSTITUTIONS

Of the 366 incidents, CIR’s analysis identified that all 17 educational institutions in the city have been damaged since 24 February 2022, including all seven of the city’s kindergartens and both vocational institutions. Two of the 17 educational institutions have been completely destroyed,

12 have been partially destroyed, and three have suffered moderate damage. It is unclear whether Russian forces have directly targeted educational institutions; however, it is important to note that damage is concentrated around those situated outside of the ‘Khimik’ settlement.

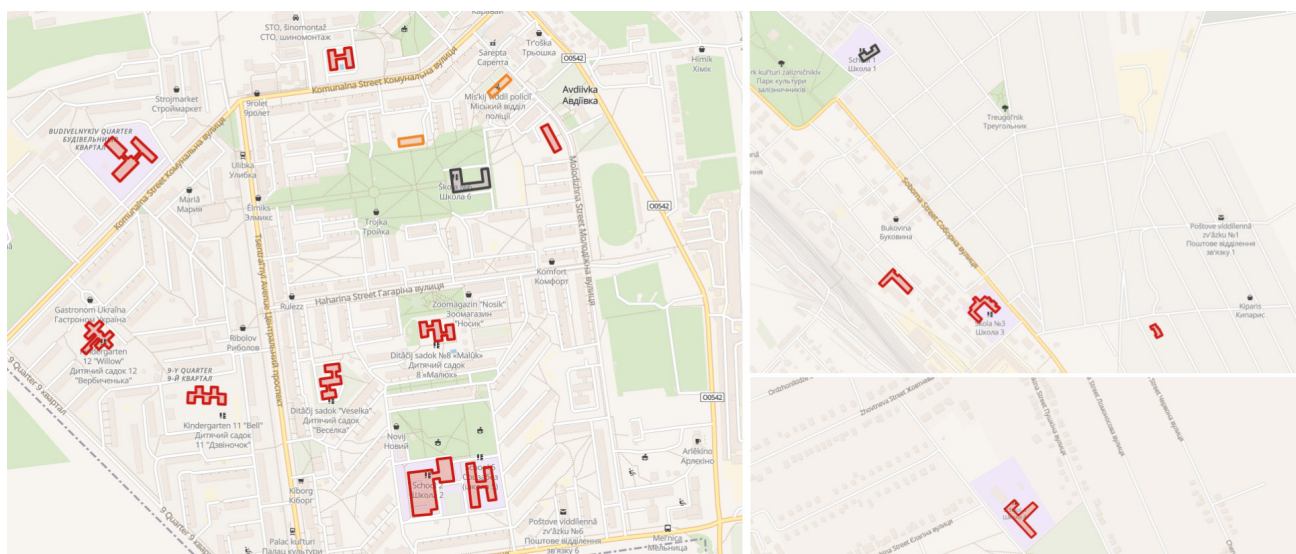


Figure 8: Overview of damage to Avdiivka’s educational institutions between February 2022 and 21 November 2023. Destroyed buildings are marked in **black**, partially destroyed in **red**, moderately damaged buildings (including fire damage) in **orange**, lightly damaged buildings in **yellow**, and buildings with no damage reported in **green**.

DAMAGE TO HEALTHCARE FACILITIES

Nine of the total 11 healthcare facilities have been damaged, including both hospitals and all but two of the city’s eight pharmacies. Between 10 October and 10 November, four healthcare facilities were damaged by Russian forces, including the city hospital, a dental clinic, and two pharmacies. Of these nine damaged facilities, one was completely destroyed, four were partially destroyed, two were moderately

damaged, and two were slightly damaged. Both hospitals in the city were substantially damaged and partially destroyed. According to Vitaliy Barabash, as of November 2023, there are only two doctors and four nurses that remain in the city of approximately 1,500 civilians.⁹ These healthcare professionals have stayed despite sustained strikes against Avdiivka’s hospitals and pharmacies.

⁹ Ukrinform, “Віталій Барабаш, начальник Авдіївської міської військкадміністрації” (13 November 2023). Available at: <https://www.ukrinform.ua/rubric-regions/3786262-vitalij-barabas-nacalnik-avdiivskoi-miskoi-vijskadministracii.html>



Figure 9: Overview of damage to Avdiivka's healthcare facilities within the 'Khimik' settlement between February 2022 and 21 November 2023. Destroyed buildings are marked in **black**, partially destroyed buildings in **red**, moderately damaged buildings (including fire damage) in **orange**, lightly damaged buildings in **yellow**, and buildings with no damage reported in **green**.

DAMAGE TO RELIGIOUS SITES

All five of the city's churches, including a hospital church, have been damaged since the full-scale invasion, with damage recorded to two of the

five on 13 and 14 October 2023. Of these five churches, two were partially destroyed, one moderately damaged, and two lightly damaged.

DAMAGE TO FOOD RETAIL PROVISIONS

All three of the city's supermarkets have been damaged since the full-scale invasion, with the 'Amstor' supermarket within the city's only shopping centre 'Sarepta' destroyed on 13

October 2023. Of these three, two were completely destroyed, whilst one was partially destroyed. As a result, it remains unclear if civilians in Avdiivka have access to any large supermarkets.

CONCLUSION

The human cost to strikes on Avdiivka is undeniable, with substantial damage to every critical sector of civilian infrastructure. Although Avdiivka was declared a ‘red zone’ on 27 March 2023, which involved an evacuation order, the city’s remaining civilian population continues to live without infrastructure critical for their subsistence, such as healthcare facilities, supermarkets, churches, and schools.¹⁰

The categorisation of a ‘red zone’ restricts journalistic access to the city, underscoring the importance of obtaining local testimony from Telegram. According to Barabash, over 154 civilians have been killed in strikes against civilian infrastructure.¹¹ It is likely that as the Russian offensive continues, the situation will continue to worsen for those that remain.

¹⁰ New York Times, “Inside the Ukrainian Frontline City Residents are Refusing to Leave” (2 April 2023). Available at: <https://www.nytimes.com/2023/04/02/world/europe/avdiivka-ukraine-russia-war.html>

¹¹ Ukrinform, “Віталій Барабаш, начальник Авдіївської міської військадміністрації” (13 November 2023). Available at: <https://www.ukrinform.ua/rubric-regions/3786262-vitalij-barabas-nacalnik-avdiivskoi-miskoi-vijskadministracii.html>

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