

Influence of outdoor advertisements on architecture in the City of Lublin

Małgorzata Kozak

*Department of Contemporary Architecture;
Faculty of Civil Engineering and Architecture; Lublin University of Technology;
40 Nadbystrzycka St., 20-618, Lublin, Poland;
m.kozak@pollub.pl  0000-0003-4125-0148*

Abstract: Polish cities are currently facing an issue of intrusive billboards obstructing the facades of buildings. While the majority of articles on this subject focus on the negative impact this phenomenon, little attention is drawn to the destructive technical effects the advertisements have on the facades. This article addresses phenomenon of visual pollution examines the influence of based on the example of selected buildings located in Lublin's City Centre. The article analyses the placement of advertising signs, and categorizes of most technical and social problems that it entails. The relation between the occurrence of outdoor advertising and the increase in anti-social behaviour in commercialised space, raised in the article, could be a very important topic for further research. The results of the conducted study reveal that the installation of advertising billboards irreversibly damages the facades of buildings, which is especially visible when the advertisements are removed. The article complements the study on outdoor advertising, drawing attention to one of its little-discussed, technical aspects. Consequently, it may serve as a starting point for further discussion on the subject.

Keywords: billboard, outdoor advertisements, building facades, visual pollution, destructive effect

1. Introduction

Outdoor advertising has evolved considerably over the years, moving from paper signs to luminous screens and interactive LED billboards. Despite the transfer of advertising to the internet, outdoor advertising influences the consumers the most and continues to evolve [1]. The element which plays a significant role in advertisements is colour. Colourful advertisements are read 42% more often than the black and white ones [2]. Colour enhances also human memory [2], which is certainly taken into account in marketing campaigns. At the same time, advertisers began to utilise high building facades to mount advertising billboards and signs to ensure that they reach as many people as possible (Fig. 1). As a result, such advertisements

became ever-present in city space, forcing consumers to assimilate the information presented on them [3]. While the entrepreneurs undoubtedly have the right to advertise their products, their activity has visually cluttered the city space since the 1990s [4].



Fig. 1. Advertisements covering the entire facade and roof of a building, 31 Maja Street, Lublin. *Source:* Author

The research problem discussed in this article concerns the negative impact of outdoor advertising media, such as billboards, on building facades and their surrounding space. Legal regulations known as the Landscape Act, created in 2015, gave municipalities the opportunity to bring a number of changes to spatial development plans [5]. In other cities, London for example, such regulations have already been in place since 2007 and are precisely defined in The Town and Country Planning (Control of Advertisements) [6]. The problem of excessive presence of billboards in a cityscape has still persisted in 2021. Lublin is currently working on its own draft of this legal act hoping to apply more restrictive regulations to the city centre with a view to improve the appearance of the city. Once the act comes into force, the entrepreneurs will have to remove their advertising billboards, which will significantly improve the esthetics of the city. This removal, however, besides exposing old mounting fittings and accumulated dirt on plaster, will also lead to other problems making it necessary for the entire facades to be renovated.

The aim of this article is to examine Lublin city centre and its downtown area with the focus on the destructive impact of outdoor advertising on building facades. The article presents the extent of irreversible damage the installation of signboards causes to the facades of buildings located in the centre of Lublin. The visual condition of building façades after dismantled advertisements was investigated, as well as what adverse consequences the installation of advertisements on façades entails, such as left-over mounting elements, holes, and damp patches. Furthermore, the article discusses the phenomenon of visual pollution and negative social attitudes caused by an excessive outdoor advertising in the city centre. The problem presented in this article should be considered as an important topic for further research.

1.1. Literature review

For decades, outdoor advertising has troubled the professionals all over the world [7]–[11]. Excessive presence of advertisements in towns and cities has been causing controversies, and it stems from the absence of clear legal regulations. The Landscape Act gave the Polish municipalities the right to amend provisions of local plans and set specific rules concerning the location of advertisements in public space in 2015. To date, 44 municipalities have adopted the Act (1.8% of all municipalities) [12], including Kraków, Gdańsk, Szczecin, and Karpacz. In many others, such attempts were not fully successful. Warsaw, for instance, following the decision of the Supreme Administrative Court from September 2021, became obliged to make necessary changes in the act before it is resubmitted [13]. Meanwhile, Lublin is constantly working on provisions that have been presented in its own draft of such resolution [14]. The provisions concern the central part of the city, which is to be cleared of advertisements within two years from the adoption of the resolution [15], [16]. This article complements previous studies by focusing on the physical impact of advertisements placed on building facades. Additionally, the article discusses other problems these advertisements contribute to.

1.2. Characteristics of the study area

Lublin is the capital of Lublin Voivodeship, located in eastern Poland. It has 337 788 inhabitants and the city area covers 147.45 km². The population density is 2294.1 persons per km². A large group living in Lublin are non-registered students. There are approximately 65 000 students (data from 2021) [23]. The unemployment rate is 5.8% [24]. The number of people registered in Lublin has been declining since 1999. The reason for this is suburbanisation. However, the area of Lublin is increasing as it absorbs suburban municipalities. The largest proportion of residents are aged 30–34. Unemployment increased in the late 1990s. Several companies from various industries have their headquarters in Lublin, including the door manufacturer Pol-Skone, the vaccine factory BIOMED and Polfa Lublin, Stock Polska, the pasta factory Lubella, the sweets manufacturer Solidarność, Indykpol, Poland's largest brewery, Perla, and tobacco products manufacturer Zakłady Tytoniowe in Lublin. Most of these companies advertise their products on outdoor signs and billboards. There are 855 vacant advertising boards for rent in Lublin (as of 26 September 2022) [25].

Lublin has been divided into 27 auxiliary areas with the status of districts since 2006 (Fig. 2). Each district has a council and a board and operates on the basis of resolutions. The largest number of registered residents is in the Rury district and the smallest in the Abramowice district, which is also one of the largest districts in the city. The Śródmieście district is in 22nd place in terms of the number of registered residents [26]. The research conducted by Chmielewski Sz. and Chmielewski T. J. for 3 districts in 2013 – Śródmieście, Wieniawa, Czechów Południowy, shows that district Śródmieście had the largest number of advertising spaces, 926 to be precise. For the district of Czechów Południowy it was 518, and for the district of Wieniawa 165 [22]. A considerable number of these spaces are located at intersections and along main streets, where as strong, visual stimuli, they attract the attention of drivers [27], e.g. the intersection of Wojciechowska Street and Kraśnicka Avenue, or Mokrskiego roundabout, where some particularly luminous LED advertisements have been installed. Freestanding billboards significantly impact the commercial zones with mixed-use and industrial facilities such as Węglin, among others.



Fig. 2. Location of Lublin in the background of Poland and location of the survey area on the city of Lublin.
 Source: Author; map source: [26], [28]

3. Methodology

Twenty-three locations of billboards in the city centre were selected for the survey – Śródmieście district and parts of Wieniawa, Za Cukrownią, Bronowice, and Stare Miasto districts. The main selection criteria for the Śródmieście district was that this district is covered by a draft resolution of the Lublin City Council on the principles and conditions of placing small architectural objects, billboards, advertising fixtures and fences, their dimensions, quality standards and types of construction materials they may be made of [13]. Buildings that are registered as monuments in Lublin are covered by the Communal Programme for the Care of Monuments [29] and, therefore, the placement of billboards and advertising devices on these buildings requires a building permit, where it is necessary to obtain the consent of the Conservator of Monuments. Coloured advertising signboards, large-format advertisements and free-standing advertising billboards were considered. Free-standing billboards were not examined as they did not interfere with the fabric of the site but were referred to in terms of visual pollution. The second main criterion was the location of the advertisements on the facades of the buildings. The buildings on which the advertisements are located are in close proximity to each other and include residential buildings, shops located on the ground floors of these buildings and services. Another criterion was the mounting elements left behind or visible holes from the removal of signs on the facades of these buildings. Those buildings where the damage was clearly discernible were selected. The overall condition of the space surrounding these buildings was another factor taken into account in the selection process. Factors such as cleanliness and the presence of graffiti was considered. As the inner city district is the first to be covered by the Landscape Act, and where a majority of buildings have large outdoor advertisements, it became the main focus of this study [22]. It was necessary for the survey identify and select buildings showing significant damage from mounted signs or advertising

boards. Buildings where it was not possible to clearly determine whether the condition of the facade could have been affected by advertising were not included in the survey. After analysing each street by GNSS and secondly by foot, objects that met the above criteria were selected. The researchers selected 8 streets of the surveyed neighbourhoods that were identified as the most critical due to the destruction of building facades and the amount and size of advertising on the facades. The first step of the research was to categorise the location of advertisements. Freestanding advertising billboards situated at street intersections were not included in the study, as this topic has already been sufficiently addressed in other works [19], [22], [27].

The research material consisted of the author's photographs of the objects and their division according to selected criteria, as well as information obtained from various publications and websites. Also, the measurements of wall cavities resulting from the dismantling of advertisements were taken in January 2022.

4. Results

4.1. Locations of advertisements

Following the field survey, 8 of the most critical sites located in the area of research were observed (Fig. 3). These are the streets and areas where there was to have the highest grade of visual pollution. In the Śródmieście district, these were mainly Okopowa, Lipowa, and G. Narutowicza, Solidarności Avenue, Nadbystrzycka and Głęboka Streets. In the Old Town on Unii Lubelskiej Avenue, large-format advertising obscured a large area of the buildings' facades, covering them almost entirely. In the Za Cukrownia district, on Fabryczna Street, many colourful advertisements are easily visible from the Downtown district. In the Wieniawa district, there is a view of large-format advertisements attached to the entire facades of multi-family buildings (Fig. 4). This confirms the presence of visual pressure exerted by numerous advertising surfaces on the urban landscape.

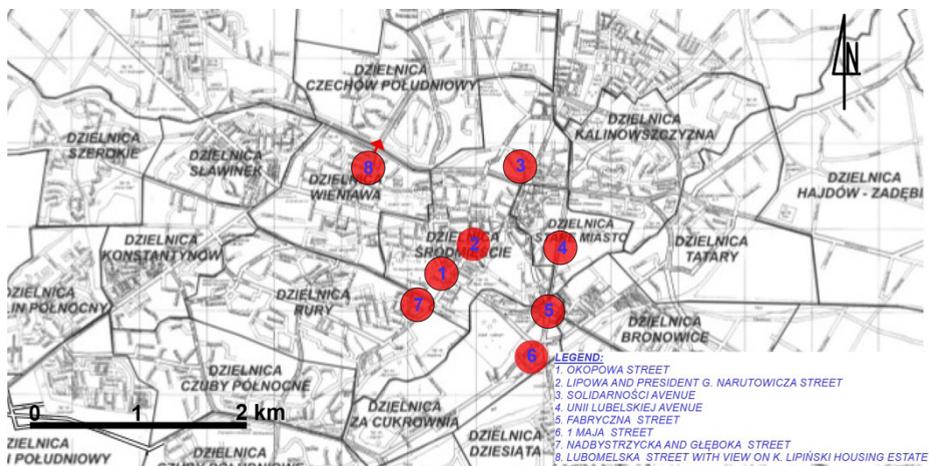


Fig. 3. Illustration showing the sites surveyed and the neighbourhoods where the survey was conducted. Source: Author; map source: [26]



Fig. 4. Large billboards placed on walls of residential buildings in K. Lipiński housing estate, view from Lubomelska Street. *Source:* Author

After an analysis, four most common locations for the placement of advertising billboards were selected:

1. Building walls (including railings) – 87%
2. Windows – 39%
3. Roofs – 9%
4. Open space (including intersections) – 13%

The largest number of advertisements was located on walls of building facades; the number of advertisements placed on windows was approximately two times smaller. Advertisements were also mounted on the roofs of some buildings (Fig. 5).



Fig. 5. Advertisements installed on walls and roofs of buildings – 2 and 3 Fabryczna Street and 2 Okopowa Street. *Source:* Author

3.2. Identified problems related to the location of advertising signboards

The condition of the facades of the 23 of surveyed buildings with advertisements turned out to be much worse than of the buildings without advertisements. In many places, especially on Lipowa Street, building facades from which advertisements had previously been removed were left with holes of diameters ranging from 5mm to several centimetres, or remains of mounting elements. The probable reason for this was the change of owners of service premises who mounted and dismantled advertisements of their business (Fig. 6). Two types of damage on building facades caused by advertisements were identified:

- [1] Mechanical (mechanical damage of building facades – holes, cracks);
- [2] Biological and chemical – transformation of the building substance resulting from permanent dampness (mould, bird droppings).



Fig. 6. Holes in building facades left after demounting advertising signs. *Source:* Author

Further problems included the damage of the advertisements caused by atmospheric factors, such as wind, and visual pollution which lead to the contamination of building facades resulting from excessive presence of advertisements.

The survey identified five problems as a consequence of mounting and demounting advertisements, which were classified into the following categories:

1. streaking, mould, and contours of removed advertisements,
2. defects in walls or holes left in building facades,
3. birds,
4. litter,
5. graffiti.

The diagram below shows the ratio of the number of problems encountered to the number of sites surveyed (Fig. 7). The most frequently occurring problem are holes in walls or the reminders of old mounting elements. In 11 of the 23 sites surveyed, this problem was observed, which was 48%. Damp patches, mould, and contours of removed advertisements are also common. It represents 35% of the sites surveyed (8 out of 23 sites surveyed). Graffiti and litter are less frequent in 22%.

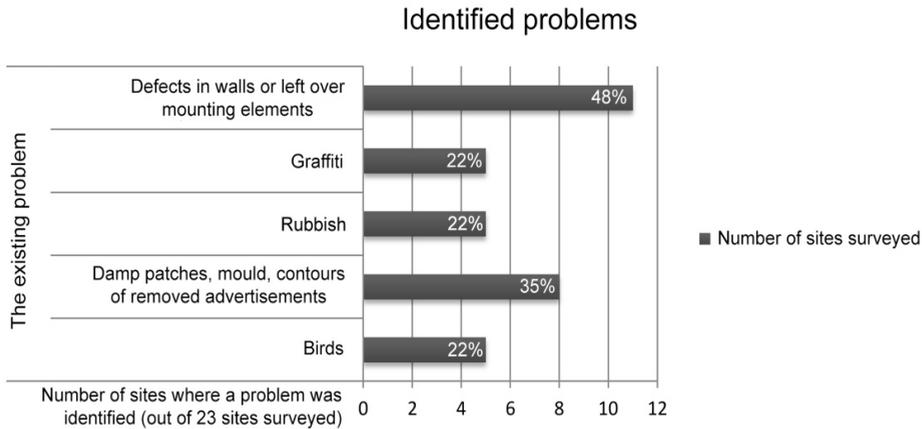


Fig. 7. Identified problems in relation to the sites surveyed. *Source:* Author

Every crack or additional hole allows water to penetrate the underlying layers of the wall, contributing to the degradation of the integrity of the building. Moisture, when retained in the wall, causes cracks that widen in time, creating space where atmospheric dirt deposits. Billboards on buildings were also observed to attract birds, which leave their droppings on walls and pavement below them.

In areas of flashings and the upper edges of advertisements (Fig. 8) it was possible to observe green, black, or grey deposits – microbiological contaminants such as algae and other fungal spores. Not all buildings with installed billboards show fungal contamination: it is influenced, among other things, by the orientation of the facade, therefore facades with billboards located towards the north and east are less exposed to light and more vulnerable to the development of microorganisms. Billboard mounting disrupts the continuity of thermal insulation of walls, which become prone to thermal bridges and required additional protection. On many buildings, the colour of plaster in areas that were previously covered with advertisements was noticeably different from the rest of the facade. There were also other visible, unevenly placed discolorations, such as black smears above and below the billboards and rusty stains caused by poorly fastened billboard mounting elements. The holes left by the dismantled advertisements have not been plastered or painted over, which creates the effect of a perforated wall (Fig. 9). The list of locations of outdoor advertisements and identified problems is provided in Table 1.



Fig. 8. a) Algae stains and drips caused by advertisements: 18A Lipowa Street; b) Building facade after removal of advertisements, 45 Chopina Street. *Source:* Author



Fig. 9. The points highlighted in red are holes left after repeated removal of advertising signs, *Source:* Author

Table 1. List of locations of outdoor advertisements and identified problems. *Source:* Authors

No.	Localization	Location of advertisements				Existing problem				
		Wall	Window	Roof	Open space	Birds	Damp patches, mouldy contours	Rubbish	Graffiti	Defects in walls or left over installation elements
1	Building, 18 Lipowa Street 51°14'36.9"N 22°33'11.6"E	x				x	x			
2	Building, 1 Dr J. Sztajana Street 51°14'34.3"N 22°33'12.5"E	x				x	x			x
3	Billboard, Unii Lubelskiej Avenue 51°14'29.6"N 22°34'24.2"E				x			x	x	
4	Billboard, intersection of Głęboka and Nadbystrzycka Street 51°14'20.4"N 22°33'06.5"E				x			x		
5	Building, 1 Nadbystrzycka Street 51°14'20.0"N 22°33'07.1"E	x				x				x
6	Building, 75 Narutowicza Street 51°14'25.5"N 22°33'12.3"E	x					x			x
7	Building, 78A Narutowicza Street 51°14'21.9"N 22°33'10.2"E	x	x					x		x
8	Building, 71 Narutowicza Street 51°14'27.0"N 22°33'13.8"E	x				x	x			x
9	Building, 67 Narutowicza Street 51°14'28.5"N 22°33'15.5"E	x								x
10	Building, 65 Narutowicza Street 51°14'29.2"N 22°33'16.4"E	x	x			x		x		x
11	Building, 45 Chopina Street 51°14'31.3"N 22°33'16.5"E	x	x				x		x	x
12	Building, 19 and 21 Lipowa Street 51°14'33.3"N 22°33'11.5"E	x					x			x
13	Building, 31 Narutowicza Street 51°14'41.0"N 22°33'28.6"E	x					x			
14	Building, 28A Narutowicza Street 51°14'40.0"N 22°33'30.9"E	x						x	x	
15	"Gala" Shopping Mall, 1201 Unii Lubelskiej Avenue 51°14'19.5"N 22°34'22.5"E	x	x							
16	Buildings, 2 and 3 Fabryczna Street 51°14'15.9"N 22°34'20.1"E	x	x	x				x		
17	Building, 29 and 31 1 Maja Street 51°14'06.9"N 22°34'14.0"E	x	x	x			x			x
18	Building, Plac Bychawski 3 51°14'05.5"N 22°34'09.8"E	x						x		x
19	Billboards in front of the Orthodox Cathedral, Tysiąclecia Avenue 51°15'05.6"N 22°34'28.5"E				x					
20	Building, 24C Lubartowska Street 51°15'08.1"N 22°34'04.0"E	x	x							
21	Building, 22c Lubartowska Street 51°15'07.5"N 22°34'04.9"E	x	x							
22	Building, 4 Probstwo Street 51°15'08.7"N 22°33'58.7"E	x	x							
23	View from Lubomelska Street in the direction of the K. Lipiński Housing Estate 51°15'07.8"N 22°33'06.6"E	x								

4.3. Other identified problems

Another aspect that has been observed was a greater tendency to litter in some areas where billboards are present. For instance, at the intersection of Nadbystrzycka and Głęboka Streets, it was possible to notice fragments of advertisements that were torn by wind littering the pavement (Fig. 10). The surroundings of the largest billboard on wheels in Lublin, located on Unii

Lubelskiej Avenue, showed signs suggesting that the place attracted those involved in such as writing graffiti and alcohol consumption: the lawn near this advertisement was covered with empty alcohol bottles and cans (Fig. 11).



Fig. 10. Advertisements torn by the wind at the intersection of Głęboka Street and Nadbystrzycka Street. Source: Author



Fig. 11. Rubbish next to a billboard as a symptom of anti-social behaviours. Unii Lubelskiej Avenue. Source: Author

The impact of advertising on the behaviour of space users requires separate interdisciplinary research. This problem, although only briefly presented in the article, should therefore be treated as an important topic for further research.

5. Discussion

Visual pollution is created not only by outdoor advertising, but also by any eyesoring cabling and infrastructure elements [30]. The management of outdoor advertising with software such as GIS would help control the location of any advertising devices. Researchers Sz. Chmielewski, M. Samulowska, M. Lupa created the Visual Pollution application, which, using mapping and a GIS model, helps determine the level of visual pollution [31]. The authors of this application developed a visual pollution level for Zana Street in Lublin, Rury district.

On the contrary, large advertisements can certainly add character to places with no significant features [17]. This phenomenon has been described by R. T. Wilson and B. D. Till [1], who used the case of the Times Square in New York as an example. Thus, when a place is devoid of any distinctive elements, an installed billboard may become a point of reference. At the same time, however, advertisements are associated with certain environmental problems, which at the time of a climate crisis mustn't be ignored. For instance, the larger the advertisement, the more energy and material is needed to produce it. Another problem concerns the disposal of advertisements.

It has often been stated, that unattractive places encourage vandalism [2], whereas well-maintained places with greenery, no graffiti, and aesthetic rubbish bins, are more likely to remain clean and, in general, inspire different kinds of behaviours. Graffiti found on many billboards can be considered a manifestation of a struggle against advertising. People who place their own messages on outdoor advertisements, regardless of their temporary nature, refuse to accept the one-way flow of advertising messages [32]. Graffiti and advertisements are, in turn, linked to negative social behaviours such as littering. According to a 2008 Danish report on the fight against graffiti, if the incidence of graffiti is reduced, littering can be halved. Litter is a major aesthetic threat to the city. According to the American Public Works Association, litter constitutes to be a threat to public health, safety, and prosperity [2].

Additionally, billboards, which mostly depict material goods, encourage people to keep buying and fuel consumerism [17]. According to the 2021 report published by the Chamber of Commerce of Outdoor Advertising, increasing attention is being paid to eco-friendly advertising solutions [33]. A large part of city space is becoming commercialised, that is, oriented exclusively towards making profit. This phenomenon, however, should not be considered as negative, as long as the needs of people are taken into account [34].

The presented results of the research indicate that advertisements significantly disrupt the structure of facades, which leads to their faster deterioration. The main cause of facade damage are atmospheric phenomena such as rain, wind, frost, and air pollution. Droppings also affect the chemical transformation of the plaster and contribute to other destructive processes [35]. Microbiological contaminants such as algae and other fungal spores, it being formed in areas subject to moisture retention [36]. Improper installation of billboards may also result in other types of wall damage such as salt efflorescence, discoloration, peeling or falling off plaster [37]. Thus, part of the profits made by advertisers from such advertisements could be allocated to future facade renovation [12].

6. Conclusions

A city, which is a desirable place to live in, is a clean city. Our first, visual impressions of something can permanently influence our opinion because we judge everything with our eyes.

Although building facades are constantly exposed to atmospheric pollutants, such as dust and exhaust fumes, combined with wind, rain or snow, advertisements contribute to the degradation of facades in a more significant way. This pertains to improperly mounted billboards and signs, which when insufficient gap is left between them and the walls, block the air flow. This eventually leads to the appearance of damp patches and efflorescence. Due to the constant change of service premises owners and their businesses, advertising signboards are changed as well, which makes the building facades subject to repeated damage.

After Lublin adopts its landscape resolution, a number of outdoor advertisements will have to disappear from buildings, leaving facades with defects in plaster, drilled holes and remains of fixtures and fittings. Since such damage is certain to detract from the artistic value of buildings, many of them will require complex renovation. Yet, despite of this fact, adopting the landscape resolution will overall bring more benefits to the city by improving the aesthetic quality of its space.

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