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Visual pollution in the Algerian city: manifestations and causes. Case Study of the City of Batna

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Abstract. Construction is one of the most prominent phenomena in Algeria's cities. which resulted in deformation of the appearance of residential buildings that lacked aesthetic characteristics, The importance of the study of visual pollution lies in its direct relationship with the visual image of the city. The research aims to study the manifestations of visual pollution in the urban environment and to learn the factors and causes that led to it by studying the status of the centre of the city of Batna located In the Land Occupancy Scheme No. 8, based on the analytical and descriptive curriculum, the study showed the impact of Visual pollution and its relationship to the violation of building regulations.

Keywords. Visual Pollution, Urban Environment, Urban Legislation, City Centre of Batna

Introduction

Algerian cities have experienced considerable reconstruction of their centres and periphery, resulting in an increase in the rate of land consumption to meet the strong demand for housing and public utilities due to nature, the increase in the population and the phenomenon of displacement from the countryside in the early 1990s due to the poor political and security conditions of the country (**Elhadj. Mili 2022 pp 8188-8192**)

This rapid urbanization has been accompanied by a distortion of the urban appearance and visual image of Algerian cities, in our minds that pollution is related to water, air and noise pollution, but one pollutant that has attracted attention recently, and has been overlooked compared to other types of pollution, is visual pollution because visual comfort is an important and essential component of human-made safe environments (**Allahyari, H., Nasehi, S 2017 pp 655-667**)

Visual pollution is a term given to unattractive visual elements that are man-made, landscape, or anything else that a person does not feel comfortable looking at. It is an aesthetic issue where one's ability to enjoy the views it sees is undermined (**Sudeepta Banerjee- pp 4768-4771- 2017**)

Visual contamination affects human health by causing fatigue and dispersing vision leading to accidents, deteriorating mental health, rheumatic diseases, reducing decision-making

ability, affecting mood and behaviour, and the latest studies indicate its impact Pregnancy. (S Pragma, Gayatri Devi.R , 2022 pp 1924-1932)

It is considered the city of Batna The situation in which our study represents one of the fastest expanding urban areas in the State has caused many problems related to development, urbanization and indiscriminate spread that have led to massive uncontrolled urbanization (Hadda DRID, Abdelhalim BENDIB2015, pp. 211-220,) and accompanied the widespread spread of the phenomenon of optical pollution at the level of the built-up and non-built framework due to the misuse of public space, which stems from misconduct In addition to the planning system and its disregard for the aesthetic dimensions results in the loss of the architectural and aesthetic image of the city components based on all the above we can say that the city of Batna needs a more effective planning policy (Khireddine Dounia, Aichour Boudjemaa 2022 pp77-89)

Despite the legislation governing urban and urban life, which is one of the administrative functions of the local authority that regulates the actions of the population in the field of construction.(Rabiaa debbache2016. pp 5-20.) . One of the most important laws is Law 90/29 on Preparation and Reconstruction, which regulates the rules and controls of urbanization. (Law 90/29 of 1/01/12/1990) . The two new tools are the PDUA and POS, known as the Construction and Construction Tools (zerga yamina 2014 pp 34 35) by compressing the certificates and building permits, and the building permit is a tool that enables the Department to prior control the process.

In terms of technical standards and security requirements (Azri el zine 2008 p 12). Then Law No. 08/15 on the conformity and completion of buildings law comes. (Law No. 08/15 of 20/07/2008)

This is because there are many buildings that do not have official bonds or building permit with incomplete buildings that distort the urban appearance and thus try to address this situation of construction (Cherif yahmawi .2014).

The construction situation in the city with its place of study gives a distorted urban image, leading us to ask several basic questions: **what are the manifestations of visual pollution? And how much does it affect? How successful are the building codes in fact? How can it be curtailed?** The aim of this research is to try to answer these questions by monitoring the manifestations of visual contamination at the level of the built and unbuilt framework of the city centre and proposing some solutions that may contribute to addressing the phenomenon, improving the population's living framework and finding a way of participatory action between reconstruction and population-based administrations.

1- Conceptual study

1.1 Study Area:

The city of Batna is located in the north-east of Algeria and 135 km south-east of the capital Algiers according to figure 1. With an area of 82 km², it is the capital of the Auras region, the fifth largest city in the country. With a population of 375,000 people and 12 urban sectors, it is a point that attracts people from all over the country for cultural and national events, shopping and tourist visits to its natural and ancient archaeological sites (Wided Guedoudj, Ahmed Ghenouchi 2020 , pp 1-22). The city centre, which forms the ancient nucleus of the upbringing of the city of Patna, which reappears to 1844 (Habibi Yahyaoui. Kalla Mahdi,2018. pp 19-27)is part of the land occupancy scheme No. 8 It consists of a living group, the most important of which is the camp neighbourhood, as well as the Emir Abdelkader Stan neighbourhood in the northern part of the scheme, which is a neighbourhood or European-

grown, Plus5Guellian neighbourhood, 20 august neighbourhood, as well as part of Al-Khadrar neighbourhood

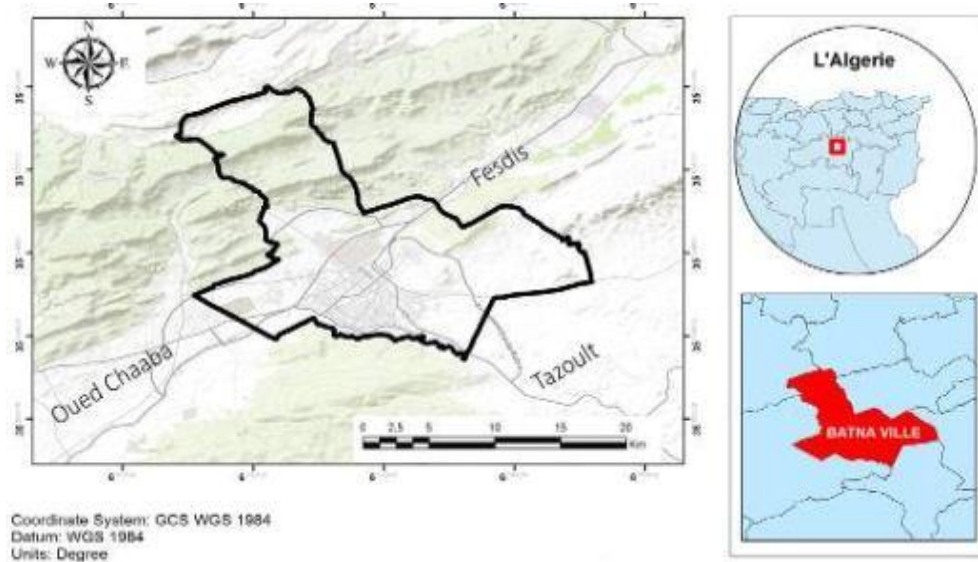


Figure 1: Study field site (**MESSAADI Ibtissem. RAHAM Djamel-.2020 pp33-39**).

1.2 Methodology:

The researcher used the descriptive and analytical curriculum, based on the review of written documents from articles, books, memoirs and documents drawn from special schemes for the construction and reconstruction of the city of Batna and the land occupancy scheme for the city centre, and the use of field surveys based on observational research tools to monitor the manifestations of visual contamination of individuals' behaviours, photography and use of the form with the target sample and interview with the administrations.

The research consists of two axes, the first of which is to address a general introduction to the phenomenon and identify the desired objectives. The second part concerns field study at the level of the city centre of Batna, which is represented by the land occupancy scheme No. 8 where the manifestations of visual pollution were monitored at the level of the built frame and the non-built frame and then analyzed the results of the form.

1.3 Conclusions and discussion:

1.3.1 Visual pollution in the field of study:

The sentiment of visual contamination in the field of study can be monitored at the level of the unbuilt frame, i.e. the urban spaces, and at the level of the built frame.

❖ **Visual pollution at the level of the built frame:**

Most of the built frame consists of residential buildings, which are European individual housing buildings and are characterized by its open facades, architectural decoration, scarlet ceilings and some of them have gardens such as the Amir Abdel Qader neighbourhood, which is located in the northeast of the city s wishes and are characterized by technological elements in building materials such as bricks, aluminium and glass.

The following table shows residential buildings in the field of study.

Table 1: Individual residential buildings in the field of study.

Individual Housing Status	number of houses	built-up area	Space Real Estate	Building Height
modern housing	1151	299836		ground floor+2-ground floor+4
European traditional residence	293	79817	492040	ground floor+1-ground floor+2
housing in danger of collapse	08	1696		ground floor+1
Housing in progress	28	10920		/
the total	1480	392269	492040	/

Source: Land Occupancy Scheme No. 08, 2017 + Field Study and Researcher's Treatment

According to Table 1: The number of individual-style residential buildings in the field of study is estimated at 1480 dwellings spread over a building area estimated at 39.22 hectares, 91.75% of the total housing area built, which reflects the dominance of the individual pattern accompanied by the horizontal expansion of the field of study, as well as 24.34% of the total area of study.

As to the condition of the buildings, the next table shows the status of the individual buildings in the field of study.

Table 2: shows the status of individual residential buildings in the field of study

appointment	Building Condition				total
Individual Buildings	Good	medium	In the process of completion	poor destructive	
number	1151	293	28	08	1480

Source: Land Occupancy Scheme Review Report No. 08 of 2017 + Field Study and Researcher's Treatment

Through the table n: 2 , 1151 dwellings in good condition were observed, 233 dwellings in moderate condition, 8 dwellings in poor condition and threatened with collapse and 28 dwellings in progress.

Although the physical condition of the residential buildings is good, their good or acceptable appearance has disappeared because of the existence of other moderate, poor or unfinished housing buildings, and because the area is a thriving trading centre and a source of income that is good than the economic situation of the local people who have improved their population. Add or refurbish floors to existing structures (**FaridaNaceur2013, pp400-408**)

Which is accomplished in the absence of legal building conditions, the visual contamination of these buildings is manifested by:

- ✓ The absence of the urban and architectural character of the city.
- ✓ The difference between old and modern residential buildings in the same neighbourhood and the emergence of different building techniques and materials between the dwelling and the other, especially materials used to cover the facades of buildings such as glass, aluminum and other finishing materials and lipid colors, resulting in a variation in the form of residential buildings.
- ✓ Implementation of building facades in contravention of the facades approved in the scheme by implementing a facade that is totally contrary to what was approved in the plans and designs of the building license, whether in shape or color, without studying what distorts the building and affects its surrounding residential buildings, the spread of air cubicles and water tanks in front of buildings or on roofs.
- ✓ Residents make additions and modifications to the external elements and spaces of the buildings and adjust their facades whether by changing the position of the openings, closing the balconies with various unthinking materials or leaving the residential building without finishing or without completing the completion for too much time resulting in deformation of the facades



Images1 and 2: Represent visual pollution of the buildings researcher2022

The two images 1 and 2 represent all the above about the visual contamination of buildings.

❖ **Visual pollution at unbuilt frame level**

The unbuilt framework is urban space and is an essential element of the city and usually, located between buildings, refers to streets, squares and other municipal-owned public places. They possess complex characteristics and are regulated by multiple urban factors. This enormous complexity of urban space and the wide range of users makes it vulnerable to the impact of different types of pollution (**Yevhen Voronych 2013-pp 309-314**). The field study shows the multitude of manifestations and views that distort the face of these neighbourhoods. These include: a lack of preparation on both sides, as well as the existence of unpaved sub-tracks that are difficult to navigate. We also record the lack or lack of occasional preparation of pavements and parking for cars that have become distorted spaces. Visual pollution is shown by:

- ✓ absence of preparation of roads, pavements and attitudes and their deteriorating condition, thereby distorting the country's perspective;
- ✓ The prevalence of construction wastes that can be classified into two categories: construction wastes generated during the construction process, demolition and

wastes resulting from the packaging of construction site construction materials such as sand and gravel, which constitute an obstacle and a danger to humans such as paints and adhesives(**Kumanan Kupusamy. Sasitharan Nagapan2019- pp 4842-4845**)The degradation of various networks, including sewage and water channels, which have caused water ponds to form on their surface or through drilling and unexamined sinks.

✓ Indiscriminate planting of trees in front of residences has a negative impact on the function of the pavement and road.

✓ Indiscriminate spread of pillars and electrical lines not studied for easement rights.

✓ The indiscriminate spread of unthinking signage and billboards that distort public places due to the design of commercial signage. as well as the negative impacts it can have on the visual quality of urban areas as well as on the quality of life (**Tanima Shrivastava, Ashish Choudhary 2016pp 516-521**), The lack of green spaces, despite the importance of this vital and aesthetic element, with the exception of some of the spaces belonging to certain dwellings. This is despite the fact that there are places for green spaces, but they are not prepared except (a small area adjacent to evolutionary dwellings). They do not function as spaces for gathering different groups of society.

✓ Lack of play and entertainment spaces, but there are large vacant spaces used to play but they are not Prepared and not equipped, its appearance represents another element of Visual pollution

Images 3 and 4: Represent visual pollution in public spaces, authors, 2022



2. Field study

2.1 Assessment of visual pollution in the field of study and its causes:

Through a field study conducted at the level of the city centre of Batna to identify the phenomenon of visual pollution, a questionnaire was prepared containing three axes. The first is on population assessment of visual pollution in public spaces. The second is on population assessment of visual pollution at the building level and the third is on the laws governing the construction of reality. It was distributed to a sample of 148, representing 10% of the city centre's total population. The respondents' answers to the questionnaire were as follows:

2.1.1 First line of questionnaire:

Table 3: Evaluation of visual pollution at the level of the unbuilt frame

questions	answer
Do you see your neighborhood clean?	27.03% Yes
	72.97% No
How to see where to put garbage?	27.3% Organization
	66.2% unregulated
	6.75% careless
How do you see light poles and electrical wires?	33.11% organization
	49.32% Disorganized
	17.57% careless
Does the spread of building materials and demolition rubble distort your surroundings?	No 37.16%
	Yes 62.84%
How do you see the development of banners and billboards in your neighborhood?	35.81 % Regulator
	52.03% random
	%12.16 careless
Does it bother you to grab traders on the sidewalks to display goods?	75% Yes
	25% No

Source: authors, 2022

We note from Table 3 data that the sample investigated was positive about the manifestations of visual contamination as follows: 72.97% sees the city centre as unclean compared to 27.03% sees it as clean 66.2% of garbage places are unregulated, compared to 27.3%, which 6.75% are indifferent to. As for the lighting poles and electrical wires, 49.32% is unregulated, compared to 33.11% is regulated and 17.57% is indifferent. As for the spread of aggregate and construction materials, according to the sample permit, the center is disfigured by 62.84% compared to 37.16% see otherwise. With regard to signage and billboards, 52.03% of the sample states that it is random and unregulated, and 75% of the sample considers that the takeover of the sidewalks by traders to display the goods causes disturbance as opposed to 25% states that it does not disturb them.

2.1.2 Second line of questionnaire:

The answers of the examinees on this axis were as follows;

Table 4: Assessment of visual pollution at the level of the built frameworks

questions	answer
How do you see the facades of the buildings in your neighborhood?	18.24% Beautiful
	22.30% Medium
	59.46% inferior
Are incomplete buildings distorting the neighborhood's view?	91.22% Yes
	08.78% No
What does building workshops look like?	Bored% 58.11
	30.41% Satisfied
	11.48% Nothing
How do you see construction workshops in your neighborhood?	.21.62% organization
	78.38% Chaotic
What are the reasons for deforming the appearance of buildings in your neighborhood?	43.92% Due to population
	27.70% Because of management
	15.54% Because of the designer
	12.84% Don't know

Source: authors, 2022

We note from Table 4 data that the sample investigated was positive about the construction appearance as follows:

59.46% of the facade sees the buildings as poor compared to 22.30%. It sees them as average and 18.24% see them as beautiful. As for the buildings that are incomplete, 91.22% sees them as distorting the appearance of the neighborhood versus 08.78%. While the population feels about building workshops, 58.11% is bored with 30.41% feeling good and 11.48% feeling nothing. The 78.38% construction workshops are chaotic as opposed to 21.62%, and the 43.92% is due to the population, compared to 27.70% to the department and 15.54% to the designer.

2.1.3 Third line of questionnaire:

The respondents' answers on this topic were as follows

Table 5: Evaluation of building regulations

questions	answer
Where is the difficulty in obtaining a building permit?	%64.86 Administrative Procedures
	21.62% Financial cost
	13.51% Absence of Ownership
Is the construction carried out according to the plan attached to the building permit?	15.54% Yes
	84.46% No
What is the reason for not adopting the scheme attached to the building permit?	41.89% Completion cost
	52.03% Because of design
	06.08% Don't know
Did you carry out the settlement procedures within the framework of Law 08/15?	40% Yes
	%59.46. No
What is the benefit of obtaining a building settlement permit?	29.06% Legal settlement for construction
	. %26.35 Construction completed
	33.78% Together
	10.81% Last
Where is the difficulty in obtaining a building settlement permit?	27.70% Financial Cost
	38.51% Administrative Procedures
	%33.78 Together

Source: authors, 2022

From the data of Table 5, we note that the sample discussed was positive about the legal aspect of construction as follows:

64.86% considers it difficult to obtain a building permit to lie in administrative procedures as opposed to 21.62%, which it considers to lie in the financial cost and 13.51%, which it considers to be in the absence of ownership.

As for construction according to the plan attached with the building permit, 84.46% declares that the scheme is not respected, compared to 15.54% declares it respected. The reason for not adopting the attached plan with the construction license is 41.89% due to the cost of completion as opposed to 52.03% because of the design and percentage

06.08% declares that she does not know. As for the conduct of settlement procedures under Law 08/15, 59.46% declares that she has not done it, compared to 40.54% declares that she has done it.

The aim of obtaining the construction settlement permit is 29.06% which you see from all the settlement of the legal status of the construction And 26.35% see it for completion of construction and 33.78% see it for the previous two goals and 10.81% declares it for other goals. The difficulty of obtaining a construction settlement permit is 38.51%. It states that it lies in administrative procedures as opposed to 27.70%. It states that it lies in the financial cost and 33.78% declares that it lies in the first two workers together.

From the foregoing conclusion, there is a compatibility between visual contamination in the field of study and the causes and factors leading to it through the following results of the questionnaire:

✓ Assessing the population of public spaces through: the absence of neighbourhood hygiene, the spread of waste, poles and wire to unregulated electricity, unexamined signs and the display of commercial goods as indicators of the population's visual contamination.

✓ The population's assessment of the appearance of construction through: the degree of beauty of building facades, the impact and boredom of unfinished buildings and construction workshops are indicators of visual pollution carrying the population and then management

✓ The difficulty of obtaining the building permit on the one hand and the failure to comply with the requirements of the building permit provided and the attached designs on the other hand is explained by the user's dissatisfaction with it.

✓ The long administrative procedures in which the applications for settlement relating to Law 08/15 are conducted with the absence of the necessary legal bonds, in addition to the user's objective of obtaining a legal bond for the building at the expense of completing the completion of the building and improving its appearance.

✓ Identification and narrowing of the settlement buildings prior to the date of 2008, making the buildings completed after that date irrelevant, a period of 10 years in which a large proportion of the buildings, as before them, appeared.

Conclusion:

The absence of mechanisms for applying the laws on the regulation of construction of various licenses and certificates and not controlling them on the ground or which have come to address the appearance of construction through Law 08/15 on the rules of conformity and completion of buildings makes the intensity of visual pollution accumulate over time in the city a problem of urban underdevelopment and development And so some suggestions and recommendations can be made that may contribute to some extent to addressing the situation of construction that distorts our cities and upgrading the city's environment, including individual neighbourhoods, by:

✓ Activate ongoing tribal and remote surveillance of construction and reconstruction work through designated agents and in accordance with the relevant laws.

✓ The obligation to respect design schemes, to involve the population in the design process, to take into account their wishes and requirements and to take into account the costs and duration of the completion with the physical capacity of the building owner.

✓ Disseminating environmental and urban cultural awareness of the importance of the aesthetic aspect of residential buildings through sensitization campaigns through various means of communication;

✓ Consultation with and involvement of the population in the development of building and reconstruction laws.

- ✓ Providing affordable construction materials to enable residential building owners to complete their completion by fighting the black market and traders' monopoly on such materials.
- ✓ Facilitate and streamline administrative procedures and reduce the burden on building owners to obtain various certificates and licences.
- ✓ Finding ways and means consistent with society's ideological and cultural dimension in banking transactions for loans to residential buildings.
- ✓ To commission urban and architectural certified studies offices to study neighbourhoods and various aspects of construction and prepare appropriate technical and detailed studies so that they can accelerate the settlement of buildings' status and the application of Law 08/15.
- ✓ - Taking into account in the settlement the buildings completed after the promulgation of Law 08/15 to this day.

References:

- 1- Allahyari, H., Nasehi, S. Evaluation of visual pollution in urban squares, using SWOT, AHP, and QSPM techniques (Case study: Tehran squares of Enghelab and Vanak). *Pollution*, Volume 3 Issue 4 pp 655-667, January 2017. <https://jpoll.ut.ac.ir/article62780.html>
- 2- Al-Sharif Hamawi. The area of intervention of the conformity law 08/15 in the settlement of anarchic constructions.-policy books and law-No. 11. 2014
- 3- Azri Zayn, Procedures for issuing construction and demolition decisions in Algerian legislation, *Al-Moukar magazine*, No. 3, p. 12. 2008
- 4- Elhadj Benkhaled. Mohamed Mili. Illegal Construction Imposed by the Private Lands in Peripheral Urban Areas of M'sila, Algeria. *Engineering, Technology & Applied Science Research*. Vol12, No1.pp 8188-8192. 2022 <https://doi.org/10.48084/etasr.4703>
- 5- FaridaNaceur, Impact of urban riveloing on inceptions of safety in island settlements: Case study of Bouakal, *Batna-Frontiers of Architectural retural reess-volume*, is 2, ide 4, ide 4, pp 4, pp. 400-408,
- 6- Geraldine Duniyah, Aishur Bujama - Tattana City from Organized Planning to Mutilation (Case Study of the Biskara-Algeria Road Axis) - *Mediterranean Journal of Social Sciences* - vol. 13k, No 1, p. 77-89, January 2022, <https://doi.org/10.36941/mjss-2022-0008>
- 7- Guidodge. Ahmed Ghannouchi - Urban attraction in public squares: the mutual impact of urban environment and social activities in Batna Orb. *Revista Brasileira de Gestão Urbana* - Volume: 12 ,pp 1-22 - 2020 - <https://www.scielo.br/journal/urbe>
- 8- Hadda DRID, Abdelhalim BENDIB-ANALYSIS OF URBAN SPRAWL PHENOMENON IN BATNA CITY(ALGERIA) BY REMOTE SENSING TECHNIQUE-*Analele Universităţii din Oradea*
- 9- Kala Mahdi My darling salutes - near the city - an industrial zone in the town of Batna (northeast of Algeria) - managing major technological risks through an integrated approach to urban resilience - *Anil University Dean Uradia, Sierra Geografie-no1*. pp 19-27- <http://istgeorelint.uoradea.ro/Reviste/Anale/anale.htm-2018>
- 10- Komanan kapoussami Sasitharan Nagapan-Construction Waste Estimation Analysis inResidential Projects of Malaysia - *Engineering, Technology & Applied Science reth-viol*. 9, No. 5-pp 4842-4845- 2019. <https://www.researchgate.net/profile/Abd-Halid-Abdullah/publication/337824922>.

- 11- Law 90/29 of 1/01/12/1990 on preparation and reconstruction - [8][9] [10] [11] - Law No. 08/15 of 20/07/2008 on the conformity and completion of buildings
- 12- Ma 'adi Smam. RAHAM DJAMEL-Étude Méthodologique de La Croissance URBAINE EN ALGERIE-Sciences & Technologie-D-N ° 52.pp33-39.Décembre.2020.. <http://revue.umc.edu.dz/index.php/d/article/view/3467>
- 13 - Rabia Dabbash. Contravention of the construction and implementation mechanisms of Algeria's laws governing construction between legislation and implementation. Sciences & TechnologieD. No. 43.p5-20.2016. <http://revue.umc.edu.dz/>
- 14- Seriaa Geografie-vol25,no. 2 , pp. 211-220, 2015 - <http://istgeorelint.uoradea.ro/Reviste/Anale/anale.htm>
- 15- S Pragya, Gayatri Devi.R -Pollution does it affect overall health:A systematic analysis-International Journal of Early Childhood Special Education-Vol 14, Issue 02,pp1924-1932,.2022, <https://www.int-jecse.net/abstract.php?id=990>
- 16- Sudepta Banerjee- A STUDY OF VISUAL POLLUTION AND ITS EFFECT ON MENTAL HEALTH-INTERNATIONAL SCHOLARLY RESEARCH JOURNAL'S- VOL-4/30 -MAR-APRIL-pp 4768-4771- 2017- www.srjis.com.
- 17- Tanima Shrivastava, Ashish Choudhary. MODEL TO MITIGATE VISUAL POLLUTION BY ADS AND SIGNAGEFOR URBAN UNISON-International Journal of Engineering Research and General Science Volume 4, Issue 3-pp516-521. May-June, 2016 <http://pnrsolution.org/Datacenter/Vol4/Issue3/73.pdf>
- 18- Yevhen Voronych-Visual pollution of Urban Space in Lviv -Space et form / scientific journal of Polish Academy of Sciences and West Pomeranian University of Technology, Szczecin, Poland- 20/2013-pp 309-314- <http://www.pif.zut.edu.pl>
- 19-Zarqa Yamina, Algeria's Preparation and Reconstruction Tools between Objectives and Employment, Journal of Humanities, University of Biskra Issue, 34-35, 2014.