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INTEGRATION AND USE OF PLAYGROUNDS WITHIN THE NEGLECTED GREEN SPACES IN OWERRI INTO URBAN LIFE

Okolo, Nndi Uchenna

Department of Architecture, Chukwuemeka Odumegwu Ojukwu University, Uli Campus

Email: nu.okolo@coou.edu.ng

Abstract

Playgrounds are used by both children and adults in neighbourhoods and layouts in urban areas, where they exist in different forms and sizes in order for them to fulfil the intended purposes. Recreational, as well as other economic activities that support them, take place in these spaces. Such informal playgrounds exist within and around the neglected green spaces in the layouts located in the Old Owerri urban area. These green spaces were structured into the urban development of Owerri by planning authorities, but have become neglected, with some undesirable activities taking place within them. This research sought to investigate the factors that influence the proper integration of these playgrounds into the neglected green spaces. The research method used was survey research with questionnaire administered on residents of selected layouts in Owerri. Obtained data was analysed using descriptive statistics and multiple regression analysis tools. Findings revealed that if these factors are taken into consideration, there will be proper integration of these playgrounds into the neglected green spaces in Owerri urban. It is recommended that the provision of these playgrounds in the green spaces should be done within the context of the actual needs of the users and provision of specific facilities for the different age groups should be done.

Keywords: green spaces; playgrounds; recreation; neglected spaces

INTRODUCTION

Urban residents in Owerri need several facilities in their neighbourhoods to enhance the quality of their lives. These facilities need to be located in close proximity to them. An example of such facilities is playgrounds within the urban area. Within Owerri urban area are neglected green spaces, located in the layouts created by the planning authorities in Owerri. These green spaces in the layouts have been abandoned, giving rise to activities that negate the aspirations of the creators of the urban environment. Passing observance shows, however, that formal and informal play occur in and around these spaces.

Literature shows that the physical, social and mental wellbeing of urban residents are affected by play in many ways. Playgrounds have been found to shape the cities and lives of residents (Layton & Penbrooke, 2017). Health benefits derived from these include lower blood pressure, reduced arthritis pain, weight loss, lower risks of diseases. Also, exercises help to maintain a healthy weight. A correlation has been found to exist between access to outdoor recreation

spaces and overweight/obesity in adults (Evans, 2018). Playgrounds also increase social capital by creating the spaces for people to meet with each other. Play activities also offer intellectual benefits such as increased confidence, creativity and better self-esteem (Veni, 2015). Furthermore, using playgrounds in green spaces have been found to improve a positive outlook to life, concentration and calmness of the mind. Certain emotional benefits from play reduce stress, anxiety, depression and improve moods and stress and increased creative exploration in children (Evans, 2018).

Integration of green infrastructure and playgrounds for recreational activities can be designed for mutual benefits. The playgrounds are for the recreational activities while the green areas enhance urban air quality and create nature experiences. Research in psychology shows that meditative walking through the forest increases happiness, a positive mind set which can create positive intellectual and psychological resources. Exposure to trees, grass and flowers is known to reduce stress (according to Attention Restoration Theory). Nature spaces also help to build social capital among residents (Wolf, 2017). Research also reveals that another approach to playgrounds could be to locate eating and drinking places in close proximity to these spaces to enhance interaction between parents who watch their children play (Project for Public Spaces, 2008). This is easily noticeable in the neglected green spaces in Owerri urban where some of these entertainment spots exist around these informal playgrounds.

It was noticed in a pilot survey that these informal playgrounds exist in and around these neglected green spaces. This study is part of a wider research on integration of stranded vegetative spaces into the built environment of Owerri Urban, Imo State, Nigeria. This part of the research set out to examine what factors influence proper integration of the informal playgrounds into these neglected green spaces. The objective of this was to understand the actions that need to be taken to enable proper integration of playgrounds into the green spaces in the layouts. These factors that influence these playgrounds in the neglected spaces were defined as variables. The hypothesis chosen to guide this work was that these variables have no significant relationship with the number of playgrounds in the neglected spaces. These variables are as follows: Public power supply; Number of neglected spaces in the layouts; Any entertainment joints in the neglected spaces that are informal; Types of playgrounds. Improvement of these factors can enhance the conditions of these playgrounds in the neglected spaces.

LITERATURE REVIEW

The theory of recreation was put forward by the German educationist and psychologist, Lazarus. It emphasises the need for mental and physical recuperation from the stresses and strains on individuals from other types of activities. Individuals need to participate in pleasurable and relaxing activities for physical and mental restoration. It further goes to show that recreational activities can enable the individual to recuperate exhausted energies (hnr.k-state.edu, 2020). The classical theory of play was expounded further by Friedrich Schiller. They theory expounds that both man and animals have a play impulse which can be stimulated by abundant energy that can manifest itself in the exercise of different faculties. It further states that during play actions the dual nature of man is harmonized and humanized. It emphasizes the free exercise of imaginative and intellectual facilities rather than physical facilities. The theory also says that play originates naturally and spontaneously and has both intrinsic and extrinsic value (Makaza, 2015).

Furthermore, psychologists state that the time spent in paying attention to natural scenic views such as oceans, mountains, watching a sunset and sitting in a park provides people with opportunity to rest, think, and possibly, to solve problems. This is stated in the Attention

Restoration theory postulated by Kaplan in 1995. Furthermore, the theory claims that nature has the ability to ameliorate the loss of mental energy. Researchers on this theory have revealed that cognitive benefits play a role in the ability of nature to restore attention (Krisch, 2014).

Playgrounds in human settlements have, therefore, become very central to the lives of residents and are places where structured and unstructured plays take place. They are places where children exercise their imaginations, their bodies and their brains. In playgrounds, community social links are built, and a strong sense of place is developed. Playgrounds present a unique connection with the natural world, and can be enjoyed with friends and family, and new friendships are built (Earthscape, 2021). Also, the development of playgrounds has been viewed as a combination of several researches from educationists. They have evolved over a period of time in residential places, from traditional to more adventurous places (Maraini, 2021). Playgrounds had traditionally been social spaces for children, but there has been an increase also in playgrounds for adults. More adults have been noticed to prefer outdoor gymnasiums in playgrounds to the chore of indoor exercise facilities. Consequently, more adults are seen using the playgrounds for exercises and social connections (bbc.com, 2012).

The idea of adult playgrounds is influenced by the nudge theory. This theory explains that human beings are innately lazy and could be gently guided or 'nudged' (for their benefit) to do the things they do not want to do. In this case, placing play equipment in playgrounds and next to the children's play equipment will gently nudge the adults to come to the playgrounds and use the equipment (bbc.com, 2012). Thus, the playgrounds generate benefits for the children as well as the adults, when properly integrated into the neglected green spaces in the respective layouts. It, therefore, becomes necessary to find out what factors can enhance the 'nudge' of residents to the playgrounds in the neglected green spaces, and improve the integration of these spaces into the lifestyles of the urban residents.

RESEARCH METHODOLOGY

The study was conducted using survey research method. Data was obtained through primary and secondary sources. Secondary data was obtained from existing government records on the spaces in the settlements that are neglected or lost. Information was also obtained from books, related unpublished materials and maps. Primary data was obtained by the use of questionnaire and interviews administered on the residents in these layouts. Case studies, observations, photographs, satellite images and measurements of these neglected spaces were also obtained. The population for the study was the 13 layouts in the Old Owerri urban (see Table 1).

Table 1: Selected neglected green spaces in 1987 Owerri layout plan (Old Owerri)

S/N	Layout	No of Designated Green spaces by the Planning Authorities
1	Emmanuel College Layout	1
2	Orlu Road Secretariat	1
3	Ikenegbu Layout	4
4	Ikenegbu Extension Layout	1
5	Aladinma Housing Estate	3
6	Aladinma Northern Extension	2
7	Otamiri South Layout	1

Source: (Ministry of Lands, Survey and Urban development, 2014)

The location of the study is Owerri, the capital city of Imo State, Nigeria. Owerri is a twin city made up of Old Owerri and New Owerri. Layouts in Old Owerri were used because of the high occurrence of these spaces within the area. Simple random sampling technique was applied in the study. Out of the 13 layouts, 7 were randomly selected for study. They were as follows: Orlu Road Secretariat Layout, Aladinma Housing Estate, Otamiri South Layout, Aladinma Northern Extension, Ikenegbu Extension Layout, Ikenegbu Layout, and Emmanuel College Layout. In each layout, all the existing neglected spaces were studied and questionnaires were administered on the respondents. The formula for determining the sample size for a yet to be known population size was

$$\text{Sample size} = \frac{(Z\text{-score})^2 \times \text{StdDev} \times (1\text{-StdDev})}{(\text{margin of error})^2} \text{ (Qualtrics.com, 2013)}$$

was used to arrive at the 385 respondents for the questionnaires. The map of one of the layouts – Aladinma Northern extension is shown as an example showing the neglected green spaces in residential layouts in Owerri in Plate 1. The neglected green spaces are shown in the map.

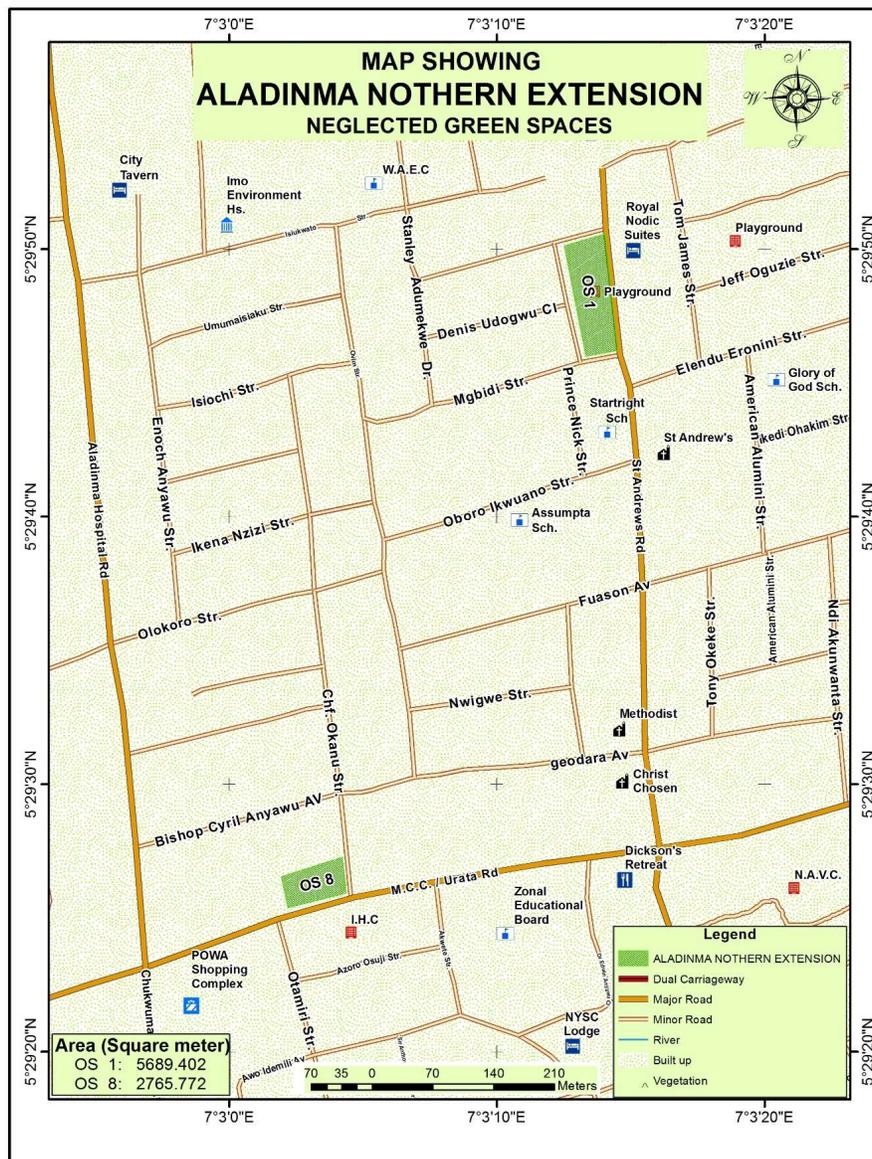


Plate 1: Neglected green Space in Aladinma Northern Extension OS 1 and OS 8.
 Source: Fieldwork, 2015

The obtained data was analysed at univariate and multivariate levels. The univariate analysis was conducted to see the behaviour and characteristics of the defined variables. The multiple regression analysis was used to characterize the relationships between the independent and the dependent variables, individually and collectively. Forty-five (45) independent variables identified in the wider research were entered into the regression model by forced entry method. This was to determine the variables that significantly influenced the dependent variable (the use of playgrounds in the neglected green spaces). Ninety-five percent (95%) confidence level was assumed for the study.

PRESENTATION OF DATA, DISCUSSION AND ANALYSIS

The data obtained showed that children and adults created different types of playgrounds for exercise and play in the respective layouts. Results of the multiple regression analysis showed that four (4) independent variables had significant relationship to the dependent. The variables that significantly influenced the dependent variable (Number of informal playgrounds in the neglected spaces) were (i) Public power supply; (ii) Number of neglected spaces in the layouts; (iii) Any entertainment joints in the neglected spaces that are informal (iv) Types of playgrounds. The following is the univariate analyses of the aggregated data on these variables

i. Public power supply

Analysis of power supply in the respective layouts showed that the infrastructure for power supply exists but the supply is not stable. When asked whether there was public power supply in the location, almost all respondents affirmed that there was. This is shown in Table 2 and Figure 1. It is noteworthy, however, that unstable power supply is a perennial problem in urban areas in Nigeria and this is not different in Owerri. This situation around these neglected spaces, therefore, makes them uncomfortable and unsafe for any form of play or recreation during the late evenings and nights. Residents were likely to perceive these places as unsafe at these times.

Table 2: Public power supply

Value label	Percent
Yes	99.129
No	0.871
Total	100.0

Source: Fieldwork; 2015

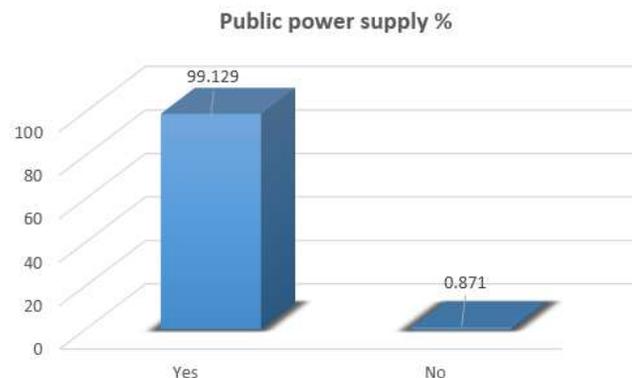


Figure 1: Public power supply

Source: Fieldwork; 2015

ii. *Number of neglected spaces in the layouts*

The neglected green spaces vary in numbers within the respective layouts. Layouts that have 1-2 neglected green spaces are more common. This number of neglected green spaces represents 85.45% of the existing neglected green spaces in old Owerri urban as seen in Table 3 and Figure 2. Others have 3-4 neglected green spaces and constitute 13.34% % of the neglected green spaces while layouts with more than 4 are the least common and the spaces constitute 1.21%. The result shown in Table 3 and figure 2. A great proportion of the resident population of Owerri urban live in these layouts. The playgrounds exist in or around these neglected spaces, and act as informal meeting points for unstructured play. They have proved helpful to the residents for exercises and social connections. Thus, the playgrounds need to be integrated into these neglected green spaces to encourage the communal interactions in these layouts among the children and adults. The proper integration of playgrounds in these spaces will present places of relaxation and play for the residents to reduce the stress of urban life when they come back home from their daily work.

Table 3: Number of neglected spaces

Value Label	Percent
1-2 spaces	85.452
3-4 spaces	13.341
5-6 spaces	1.208
Total	100.000

Source: Fieldwork; 2015

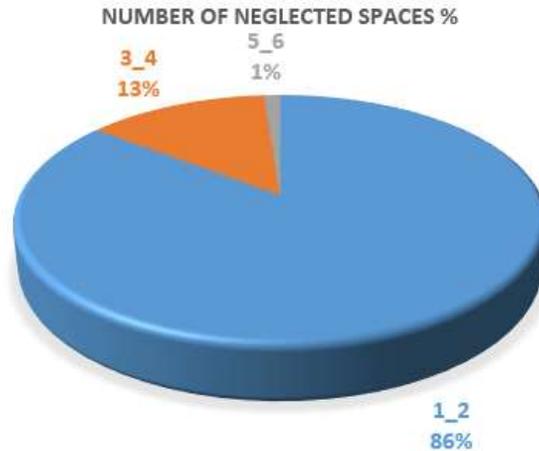


Figure 2: Number of neglected spaces

Source: Fieldwork; 2015

iii. *Any entertainment joints in the neglected spaces that are informal*

Almost half of the respondents (48%) indicated that informal entertainment joints and informal playgrounds existed in the locations where they were. The other half (51%) indicated that they did not. This is illustrated in Table 4 and Figure 3. These included petty food vendors, informal football fields and informal children's' playgrounds. Also included were local bars/restaurants which offered relaxation to some of the residents after the day's work.

Table 4: Any entertainment joints in the neglected spaces that are informal

Value Label	Percent
Yes	48.171
No	51.829
Total	100.000

Source: Fieldwork; 2015

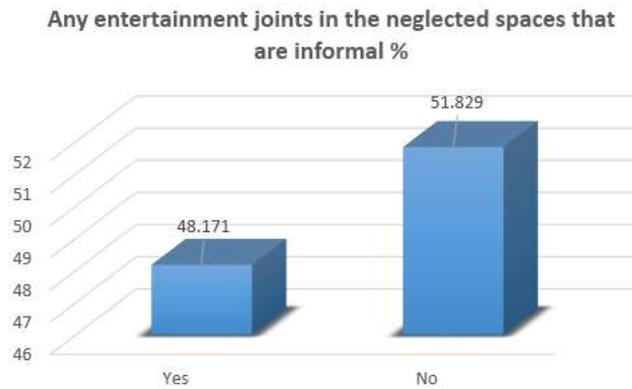


Figure 3: Any entertainment joints in the neglected spaces that are informal

Source: Fieldwork; 2015

iv. Types of playgrounds

Analysis of data from the respondents showed that the greater proportion of the playground facilities available was used by the children (82%). A much smaller proportion (18%) were used by the adults. This is shown in Figure 4. Such informal play activities take place on the streets and inside the compounds of the residents. This showed that there was the need to increase the facilities available for adult’s play to ‘nudge’ them to go to these spaces to enjoy the social and health benefits.

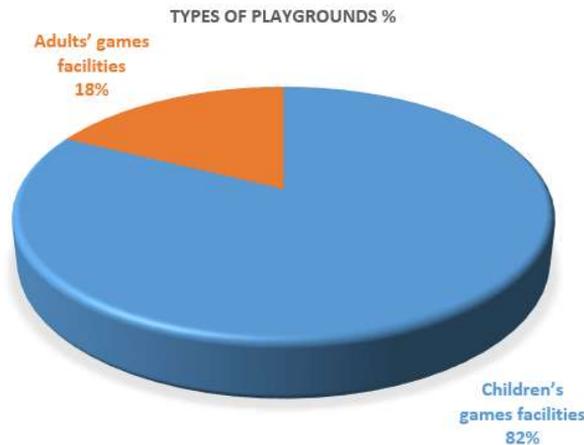


Figure 4: Types of playgrounds

Source: Field work 2015

Multiple regression analysis

The study of the dependent variable (number of informal playgrounds) was to highlight the influence of the independent variables on the neglected spaces in Owerri. The multiple

regression analysis was carried out to characterize their relationship with the dependent variable individually and collectively. Forty-five (45) variables were introduced by forced entry into the model to see which variables impact and influence the dependent variable. This revealed the four (4) explanatory variables that could affect these playgrounds in the neglected spaces. The R^2 (coefficient of determination) value is 54.3% (Table 4). Thus the 4 variables collectively explain this amount of residual variation of the independent variables on the dependent variable.

The model summary results are as follows:

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.737 ^a	.543	.256	.218
b. Dependent Variable: Number of informal playgrounds				

Source: Fieldwork, 2015

The Analysis of Variance result obtained (Table 6) reveals a significance of .008. This shows that collectively, all the independent variables affect the dependent variable.

Table 6: ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.939	44	.090	1.891	.008 ^a
	Residual	3.314	70	.047		
	Total	7.253	114			

Source: Fieldwork, 2015

As stated, the variables that significantly influenced the dependent variable (Number of informal playgrounds) in the neglected spaces were the following: (i) Public power supply; (ii) Number of neglected spaces in the layouts; (iii) Any entertainment joints in the neglected spaces that are informal (iv) Types of playgrounds.

The influence of these variables is not due to chance or random error. The probability point of significance of *Public power supply* on the dependent variable *Number of informal playgrounds in the neglected spaces* is .035; the significance of *Number of neglected spaces in the layouts* on the dependent variable is .001; the significance of *Any entertainment joints in the neglected spaces that are informal* on the dependent variable is .026 while the significance *Types of playgrounds* on the dependent variable is .001. These are seen in Table 7.

Table 7: Coefficient table for the independent variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Co-linearity Statistics	
	B	Std. Error	Beta			Zero - order	Partial	Part	Tolerance	VIF
1(Constant)	.797	.603		1.322	.190					
Public power supply	.506	.235	-.196	2.152	.035	.239	.249	.174	.789	1.267
Number of neglected spaces in the layouts	-.167	.046	.333	3.615	.001	.404	.397	.292	.767	1.304
Any entertainment joints in the neglected spaces that are informal	-.136	.060	-.270	-2.280	.026	-.147	-.263	-.184	.465	2.151
Types of playgrounds	.275	.079	.478	3.473	.001	.248	.383	.281	.344	2.907

Source: Fieldwork, 2015

Policy implications:

The R² (coefficient of determination) of these 4 variables (54,3%) shows that they collectively affect the use of playgrounds in the neglected green spaces. The Beta weights arranged in descending order shows the order in which the independent variables contribute to the dependent variable as follows:

1. *Types of playgrounds (Beta value .478)*- Introduction of different types of playgrounds for the adults and children in the respective neglected green spaces will nudge the residents to use these playgrounds and enable their proper integration.
2. *Number of neglected spaces in the layouts (Beta value .333)*- the number of these neglected spaces will affect the playgrounds that can be introduced into a particular layout. Consequently, the residents see these spaces as an opportunity to have playgrounds easily available to them.
3. *Any entertainment joints in the neglected spaces that are informal (Beta value .270)*- (Entertainment joints in these neglected greens would trigger the location of these playgrounds. These joints would nudge more residents to come and use the playgrounds in these neglected spaces.
4. *Public power supply (Beta value .196)*- -Stable power supply would encourage the use of some electrically operated play equipment. It would also encourage residents to relax in these places in the evening and night times.

The B values also reveal by how much the independent variables can affect the dependent variable when they are either increased or decreased. $Y=B_0 + B_1X_1+B_2X_2+B_3X_3+B_4X_4+E$
 Where Y is the dependent variable and B₁, B₂, B₃, B₄ are the independent variable and E are the other variables that are due to error.

Consequently, $Y=B_0 + .506X_1-167X_2+-136X_3+.275X_4+E$

- i. Public power supply (B value 506)- any 100% change in power supply will positively improve the activities of the playgrounds by 50.6%
- ii. Number of neglected spaces in the layouts (B value -167)- any 100% decrease in the number of neglected green space will negatively change the playground activities by 16.7%
- iii. Any entertainment joints in the neglected spaces that are informal (B value -136)- any 100% decrease in the number of entertainment joints will negatively change the playground activities by 13.6%
- iv. Types of playgrounds (B-value .275)- any 100% change in the types of playground will positively change the playground activities by 27.5%

CONCLUSION AND RECOMMENDATIONS

Provision of these playgrounds in the neglected green spaces should be done within the context of the actual needs of the users. Location of the types of playgrounds and entertainment activities in these layouts should provide specific facilities for the different age groups. This would create proximity of these facilities to the users. It becomes important to find out the specific playground needs of residents in each layout and locate them within these neglected green spaces. Improving the factors which are represented by the independent variables will enhance the conditions and use of the playgrounds and play activities in these layouts. Individuals need to participate in pleasurable and relaxing activities for physical and mental restoration as well to satisfy their social needs for community engagement and linkages. Situating these playgrounds in these neglected green spaces will also promote the interaction between man and his natural environment as well as assist in the restorative environment of these neglected green spaces.

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