

APARTMENT LAYOUT AND PRIVACY SATISFACTION

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Housing design has always been a crucial subject of architect's concern. Architecture in general and housing design in particular has often been criticized by some architects and also in academic literature for not fulfilling people's needs and requirements. The alleged failure of modern housing over the last fifty years has often been attributed and related to a perceived break in the continuity of tradition in the design and layout of the new dwellings as provided by developers. In particular the housing types introduced by the western architecture are not conformed to the traditional nor to the apparently desired new ways of life of the majority of Muslims families in Iran. It has been admitted that the physical layout of the traditional houses is in consonance with the cultural norms and fulfilled the level of privacy in residential design, contrarily, in the middle of the twentieth century there was a break in cultural continuity with the introduction of new housing typology. These housing types were responded to a new set of needs but privacy needs in particular disappear in these transitions. The aim of this article is to investigate the apartment layout in the contemporary apartments of Tehran from privacy perspectives. In this paper the authors also attempt to focus on the potentials of achieving privacy according to the Muslim perspectives. To achieve this goal, the information was gathered from 200 questionnaires on how the occupants react towards the element of privacy in different apartment layouts. The results were used to provide a guideline for apartment layouts design in order to achieve the highest level of privacy. Finally the findings were used for analyzing the level of privacy in the housing plan. This study believes that this approach can be applied for analyzing different layouts of residential environments regardless of cultural background.

Key words:

Apartment layout, privacy, housing in Tehran, structural permeability index, design analysis

• Introduction:

The modern housing of Islamic societies has been criticized by many researchers for not in accordance with people needs and ignorance of socio-cultural parameters in design of houses (ABU-GAZZEH 1995, Al-Kodmany 1999, Bokhari 1983). The alleged failure of modern residential buildings of these societies has often been related to the discontinuity in tradition and imitation of modern western architecture without utilization for Islamic culture (Radi 2004). Although the impact of modern architecture on Islamic community is not the same in many areas likewise many houses built were not giving attention to the occupants consideration and more research on cultural needs is needed especially in the Middle East. Concomitantly, the rush to satisfy intense demand for rapid growth and modernization, Western

principles of architecture were used without modification. Tehran, the capital of Iran, is also essentially a modern city, developed in the last 50 years. The city is design with modern infrastructure with an extensive network of narrow, twisted streets ran through the city (Whalen 2008). As commented by Madanipour (1999) ...” *The urban transformation from the nineteenth century has radically changed the image of the city from a traditional, Middle Eastern city into a modern one, a transformation which can be observed through patterns of land use, street pattern and building form.*” Although the process of the restructuring of the street occurred in a series of stages but it originally started by the “Act concerning Building and Widening of Streets and Alleys“ in 1933. This act implemented a grid iron street system for allowing easy traversal of automobiles. Besides, in the old city, street system was a hierarchical distribution pattern of narrow, winding streets leading to cul-de-sacs. Today an orthogonal network of roads is imposed and so as the building form, it changed from introverted, low rise courtyards to extroverted medium and high rise buildings.

In the past decades Tehran is experiencing the highest rates population explosion and the demand for new apartments and residential units are also escalating. To satisfy such a demand one of the issues that is neglected is systematic study on cultural needs and real requirements of the residents. One of the essential issues that is not giving minute attention in housing design is privacy. The element of privacy in the Iranian society cannot be taken lightly in every day life especially in housing design. The Muslim society tend to ignore the importance of privacy and taking the western civilization as a model of modernism. Some researchers believed that the transformation in life also demand a new requirements in designing of the house so that the residents can adapt with these new conditions especially in the city centre. Needless to compare with the tradition of the past, the rule of women has changed in the society and the traditional houses can not survive the present requirements. However, the idea of privacy can not be replaced with efficiency and physical aspects of a comfortable place alone. In this condition, there is a need to examine the potential of analyzing the contemporary needs and requirements with Islamic aspects of privacy elements.

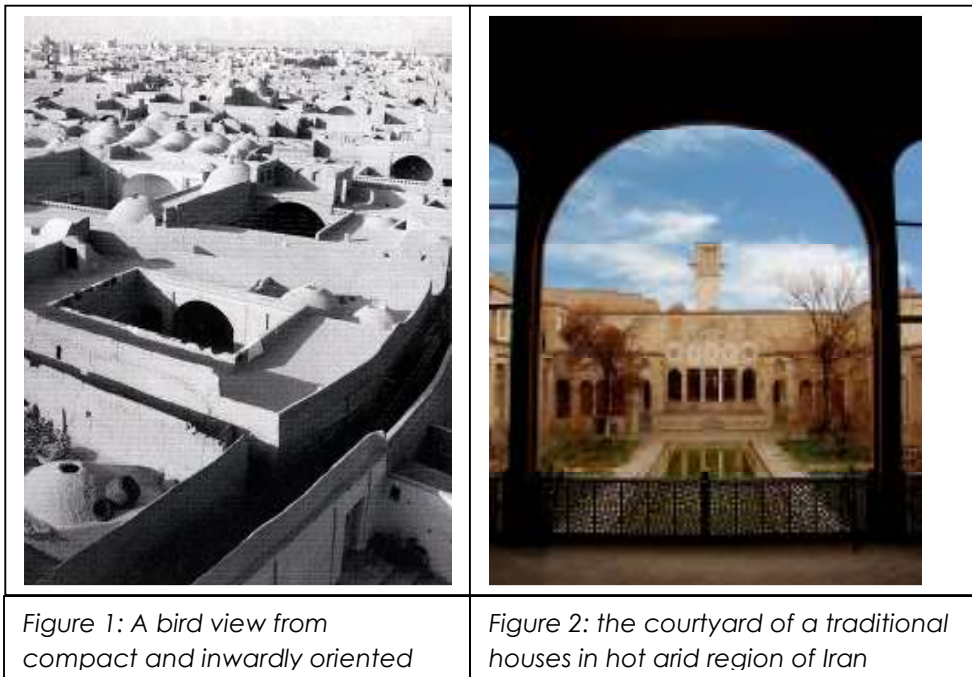
- ***Privacy in Iranian traditional houses***

Studies on Western forms of privacy, revealed differences in practices and conceptualizations arising from age, gender, social class and other factors that may influence the perspective of privacy. Better understanding of privacy need to explore the cross-cultural, and interdisciplinary inquiry of the said society (Alshech, 2004). It is well documented that, in Muslim societies the Holy Quran and the tradition of the Prophet (sunnah) are the basic sources to be followed. With regards to the architectural design, neither the Quran nor the *Sunnah* can provide a detailed codes of house design and construction, as long as the house designs do not conflict with *sharah* (Mortada, 2003). With respect to the concept of privacy in Islamic perspective it seems that individual freedom is circumscribed so as nobody is permitted to harm other members of the community, it means that community do protect and empowers the individual. Generally, Islamic law categorizes gender relationship within the two categories of lawful and unlawfull “*mahram*”. The word “*mahram*” defines the legal relationship between the male and the female either by marriage or close blood ties. Any person outside this lawful area of “*mahram*” is stranger. Sex separation is part of the Islamic system and Islam disapproves of free mixing between unrelated members of opposite sexes. By this categorization also, Islam confines the privacy boundaries of individuals.

In particular this emphasis (on separation and category of relationship between men and women) is the most concerns of Islamic scholars in order to show the effect of privacy in housing design. For example, the stranger is prohibited to enter other's houses unless he is permitted by the owner.

The family is the main concern in privacy particularly the protection of female members from the eyes of male strangers. The consideration of The Holy Quran shows that, separation and shield of the domicile from public domain is emphasized and boundaries between the open public sphere and protected privacy is defined and required in Islam. On the other hand, privacy according to the Islamic principle is an affiliation of principle upon a Muslim to separate his or her secluded private life from public intercourse.

With respect to Islamic rules, the traditional architecture was the product of Islamic beliefs and values of the inhabitants. The Iranian traditional architecture like other Islamic domains was responsible to the residents culture and the privacy of individual and his family as maintained in both houses and neighborhoods. Seyfian and Mahmudi 2007 believes that privacy in Iranian architecture comprises of two concept of security and respect to others right. Hence, this concept and the climatic reasons became the basis of the organization of the spatial layout of the neighborhood and houses in Iran.



Hierarchy is one of the most important characteristics of Iranian traditional architecture that provides privacy. It deals with separation of the different domains from public to private. In fact there are three main recognizable transition zones in traditional cities i.e public, semi-public, and semi-private domains. The movement patterns and their diminished size from public to private stressed on changing character and function of domains. In addition, the neighborhood gateways were stressing the penetration of successive level of public or private life. This hierarchal

movement pattern provided the separation between the most private zone of city “the house” and public domains like bazaar and other public spaces.

This hierarchy is also recognizable in traditional court yard houses that provides the highest level of privacy for residents. A courtyard house is a type of house where the main part of the building and all living areas are disposed around a central courtyard. Besides the climatic reasons, this inward looking houses were organized to provide a private and personalized space for the house habitants (Figure 1.0). In these inward looking houses residents felt free from the outsiders and the family activities took place without encroachment of strangers (Figure 2.0). The visitors could not see the inside of a house from the alley when the door was open. It was provided by the hierarchal movement pattern of the entrance elements. In this system, the gradual movement from the entrance into the centre of the house (from the semi public space, the alley, to the most private part of house) is recognizable. In order to access the house spaces, it was necessary to pass from pre - entrance, entrance, vestibule, and corridor in order to get into the court yard. Thus the visitor do not have any view into the courtyard as he passed through the corridor. This indirect and hierarchal movement pattern satisfied the highest level of privacy for residents.

The study of Iranian traditional houses reveals that these houses were built in accordance to the religious and cultural requirements of their residents. They satisfied the highest level of privacy and regardless of the size of house or the social position of the owner when similar architecture principles were applied to achieve the acceptable and comfortable habitats. But as mentioned above some cultural values were lost during the modernization of Iranian cities and in the rush for modernization such issues as efficiency and affordability were substituted with other simple criteria deemed to suit the Islamic culture of Iran.

In spite of the importance consideration of people requirements in design of housing the related research shows that the focus on user characteristics and their spatial requirements in housing design is essentials. There is also a lack in consideration of match or mismatch between apartment layouts and users spatial requirements in the contemporary architecture of Iran. This paper specifically focuses on privacy requirements and needs in modern housing of Tehran by analyzing the modern apartment layout in Iran with privacy perspective. Vaziritabar (1999) points out that there are five kinds of privacy is considered in housing study: i.e. **Personal privacy** - that deals with privacy of every individual from the other family members. **Family privacy** - which is a kind of privacy deals with privacy of family members from non family members and its relationship between private life of family and friends, guests and etc. and it also concerns with separation of the private life of family members from the others. **Intra family privacy** - that deals with the privacy of activities of family members inside the house. **Visual privacy** - this kind of privacy deals with the visibility of the family members from the outsiders. **Neighbor privacy** - this kind of privacy deals with privacy of family members from their neighbors. **Urban privacy** - this deals with the privacy of family members in the neighborhood. It also deals with the desire for living in crowd or more private types of thoroughfares. **Auditory privacy** - concerns with privacy of residents from noise of surrounding environment of home.

Hence by considering the different kinds of privacy this study deals with personal privacy, family privacy, intra family privacy and visual privacy. Regarding to the goal of this study especially in visual privacy the windows and other apartment elements that are not related to the apartment layout are not considered.

- **Objective:**

The main goal of this study is to provide an approach for analysing the apartment designs as a basis of privacy. The study sets the following objectives:

- To identify the design layout preferred by those households who desire a high level of privacy
- To examine the effect of houses layout on privacy achievement

- **Methodology:**

This research is qualitative in nature. The methodology of the research is focusing on the people believes and attention in the apartment layout. Questionnaire was used in the inquiry in order to get the user's reactions. The questionnaire was distributed by random technique among 200 respondents. In order to clarify the results, the combination of both closed-ended and open-ended questionnaires was used in this paper. The information was gathered from respondents on how they think about privacy in different layouts of houses.

Sampling procedure

To reduce the scope of empirical investigation into a manageable size attention were confined to Tehran city and focused on small sample of subjects from defined population. The participants of the study were selected according to the following criteria:

(1) Gender. The households where both men and women were participated in questionnaire. But related to the age of the respondents such as teenagers and elderly person who may have different needs to privacy, thus the respondents selected among the ages group of 20 to 60 years were also asked.

(2) Social class. As the desire for privacy is different among social classes, it is necessary to compare populations of similar status. Kheir Al-Kodmany (1999) argues that in the low-income groups, for instance, the crowded living conditions force a lack of privacy, so privacy norms are much less stringent than for high-income groups. But the situation is different in Tehran. Studies show that the residents in southern parts of Tehran that considerably the most crowded and low income residents are desiring a high level of privacy. In this study the sample was drawn from household respondents of the medium income people in Tehran.

(3) neighborhoods. The apartment selected randomly from western part of Tehran which the plenty of new apartments is apparent.

- **Results:**

Questionnaires were divided into four categories: i) Personal privacy, ii) Intra family privacy, iii) Family privacy, iv) Visual privacy. Participants were asked on how they feel about privacy in different apartment layouts.

Personal privacy: Respondents were asked on how often they wished to be alone when they are at home in order to find out their personal desirable privacy. 67% of the respondents wanted a high level of personal privacy especially when they feel too tired. For 23% it was less important. Respondents were also asked on how they achieve the highest level of personal privacy at home. 64% of respondents stated

that when there is enough personal rooms. 10% of respondent did not answer the question and 26% believed they can feel enough privacy in a shared room.

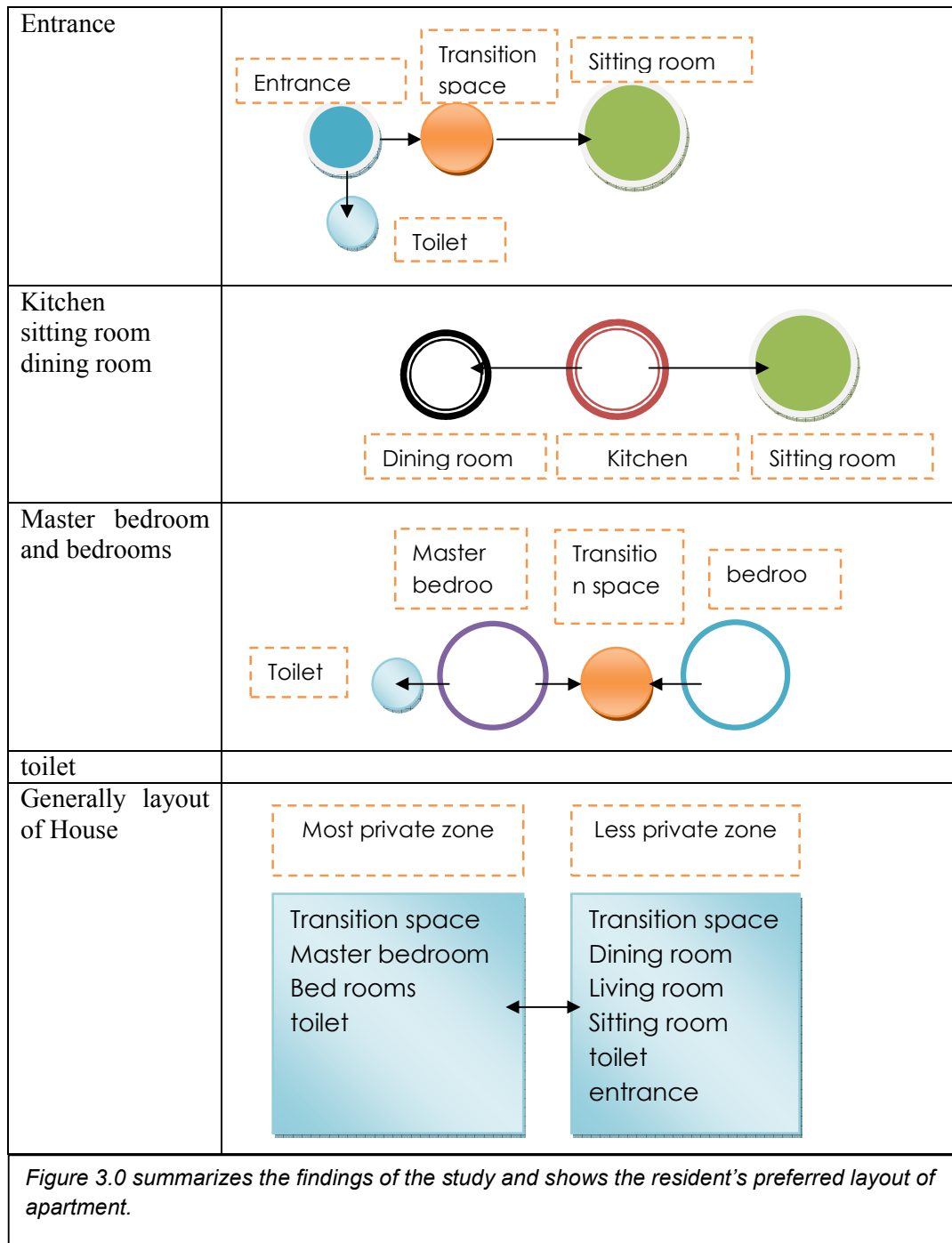
Family privacy: The respondents were asked on how they think about the privacy achievement when the kitchen is open and not demarcated by walls. 55% of respondents answered that it decreases the level of privacy while 40% believed that they find such a design is comfortable and modest. 5% of the respondents did not answer the question. In relation to the kitchen they were asked on how they feel when the guests can see inside the kitchen while the owner is cooking. 48% of the respondents answered that they feel uncomfortable while 38% found it comfortable and 14% did not answer the question. About the position of the toilet they were asked on how they feel if the only toilet is located in the master bedroom. 74% of the respondents answered that it decreases the level of family privacy. Only 15% believed that most of the time their guests are their relatives and it does not matter if the toilet is in the master bedroom, and only 11% did not responded to question. The other question about the separation of the toilet for guests and the owner were asked, 65% of respondents found it comfortable while 35% of respondents found it impossible in the limited space of their apartments. The other question asked were on how they think if their apartment were designed into two separate zones with less private areas for living room, sitting room, and kitchen and more private zone for bedrooms. 71% of respondents believed that it provides a high level of privacy while 23% asserted that they do not find it necessary and 6% didn't answer the question. Questioners were also asked for having a separate room for guests. 78% of respondents believed it is not necessary and only 22% believes it would be more comfortable.

Visual privacy

With regards to the entrance door, the respondents were asked on how they feel if the entrance door were opened to a transition space apart from a sitting room. 78% thought it help to increase the level of visual privacy. 22% believed that the entrance space is not necessary and stated that it could be used for another reasons specially for a very small apartments. The questionnaire were asked on how they feel when the apartment entrance doors are opposite to each other. 75% for the respondents asserted they feel uncomfortable and 15% did not answer to the question. In relation to the location of elevator door, 84% of the respondents found it uncomfortable if it opens right in front of their entrance door, while 16% of the respondents did not answer the question.

Summary:

The consideration of the results shows in the family privacy zone, the majority of respondents prefer a two main zones of less private and more private in their apartment layouts. They also prefer to find a transition space joining a different parts of house to in order to provide a hierarchy in design. The findings also show that although the life style is changing, nevertheless, the residents prefer the highest level of privacy as much as possible. Figure 3.0 summarizes the findings of the study in a graphical diagram. According to the people's requirement the relation of different space of apartments is recognized in this table.



Analyze of a sample apartment

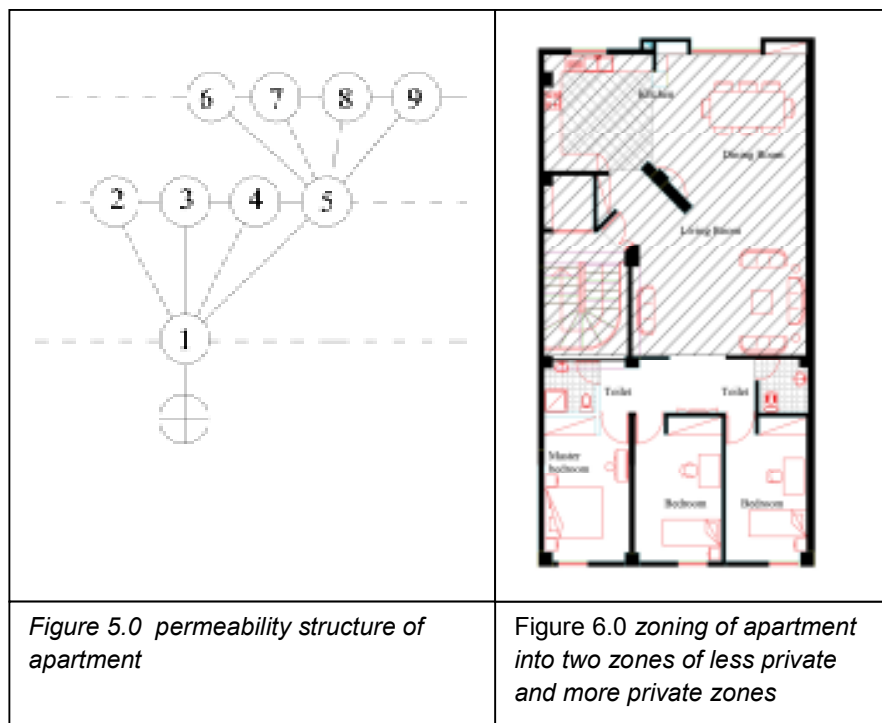
This part deals with the analyzing of a sample layout of an apartment with a view of privacy factor as a basis as discussed in the above findings. Figure 4.0 shows the plan of an apartment in western part of Tehran. This house is built 3 years ago. In

considering the relationship between the different spaces of the apartment according to the structural permeability model is illustrate in Figure 5.0. Structural Permeability is a model that is used to visualize the explanation and evolution of the results with a proper graphical representation” (Wahid 1998). This technique is one way to conduct the analysis of space by standard method of graphs. In the light of this technique it is possible to show the hierarchy and spatial arrangement of domestic spaces.



Figure 4.0 apartment plan and spaces

As Figure 6.0 shows that this apartment is divided into spatial compartments. The first level consists of the dining room, the living room and the kitchen. Whilst the bedrooms are gathered around a transition space. It shows that the zoning of more private and less private in this apartment is according to the residents point of view in order to achieve the level of privacy. Consideration of structural permeability model of this apartment shows that the transition space of (1) is located beside the entrance door that this also increases the level of privacy. Generally two transition spaces of (1) and (5) provide a hierarchy in apartment layout that is acceptable is privacy achievement. Such organization may cause the bedroom doors do not open to the sitting room area which not desirable for most of the respondents. According to the respondents requirement the location of toilet is not acceptable. Both of the toilets are located in the more private zone and it means that the guests and strangers must enter to this zone. This location decreases the level of privacy.



Conclusion:

This study examined the impact of design on privacy achievement and it shows how the location of apartment spaces can increase or decrease the level of privacy. In conclusion this study supports Vaziritabar (1999) hypothesis that “privacy is related to built form”. It is apparent that, in the privacy satisfaction in the apartment can not have all these criteria. The design of apartment in Iran need to consider the need of he occupants as well as the religious aspect of the concept of “mahram” as explained earlier in this paper. The provisions of modern design is restricted by the cost, space dispositions ad the cost of the land in urban areas. However, it is the ingenuity of the architects to consider all the variables in order to achieve privacy as required by the religious requirements. For example while the majority of respondents desired to have their own personal room, it is impossible especially in the apartments with 70m square or less because generally these types of apartments comprise two bedroom including a sitting room and a kitchen. However, the result of the study could provide an insight for design of apartments. Although the method is applied for Tehran apartments but it is flexible enough to be applied for different societies with different contexts. The differences will be shown through the level of desired privacy in different societies according to the design.

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