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A Child-Centered Approach to User-Oriented Design in Restricted Areas: The Case of Osmaniye Temporary Shelter

Elife BÜYÜKÖZTÜRK[1*]

[1]Osmaniye Korkut Ata Üniversitesi, Mimarlık Tasarım ve Güzel Sanatlar Fakültesi, Mimarlık Bölümü, 80010, Osmaniye

[1]https://orcid.org/0000-0001-8616-3641
*Sorumlu yazar: ebuyukozturk@osmaniye.edu.tr

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ABSTRACT

When a user-oriented design in restricted temporary shelter areas is interpreted through children, the idea that such a relationship may create a paradox emerges. Considering that these areas are generally used after disasters, it is natural that the sudden, rapid, and unplanned construction process cannot be carried out with a participatory design approach. In this article, the feasibility of designing while considering children's needs in a post-earthquake temporary shelter center, which defines an inward-oriented and limited space in the city of Osmaniye, is questioned.Based on this, data were collected and analyzed using two methods identified for revealing children's demands in the process of developing a user-oriented design: passive observation and interviews conducted with parents.In line with the findings obtained, design proposals covering the interior and exterior spaces of containers specific to the Osmaniye temporary shelter area have been developed.

Sınırlandırılmış Alanlarda Kullanıcı Odaklı Tasarıma Çocuk Merkezli Bir Yaklaşım: Osmaniye Geçici Barınma Alanı Örneği

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ÖZ

Sınırlandırılmış geçici barınma alanlarında kullanıcı odaklı bir tasarımın çocuklar üzerinden okuması yapıldığında böyle bir ilişkinin paradoks oluşturabileceği düşüncesi ortaya çıkar. Bu alanların genellikle afet sonrası kullanımını da göz önünde bulunduracak olursak; ani, hızlı ve plansız inşa sürecinin katılımcı tasarım pratiği ile yürütülememesi olağandır. Bu makalede, Osmaniye kentinde yer alan ve içe dönük, sınırlı bir alanı tarifleyen deprem sonrası geçici barınma merkezinde, çocukların ihtiyaçları gözetilerek tasarım yapmanın mümkünlüğü sorgulanmaktadır. Buradan hareketle, çalışmada kullanıcı odaklı bir tasarım geliştirme sürecinde, çocukların taleplerini ortaya çıkarmanın iki yöntemi olarak belirlenen pasif gözlem ve ebeveynlerle yürütülen mülakatlar aracılığıyla veriler toplanmış ve analiz edilmiştir. Elde edilen bulgular doğrultusunda; Osmaniye geçici barınma alanı özelinde konteynerlerin iç ve dış mekânlarını kapsayan tasarım önerileri geliştirilmiştir.

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1. Introduction

The earthquakes centered in Kahramanmaraş and Hatay that occurred in February 2023 caused destruction in 11 provinces and led to the loss of many lives. After the search and rescue and emergency

relief phases, disaster victims whose homes were severely damaged and rendered uninhabitable were relocated to temporary shelter facilities to continue their lives. One of the important issues to be addressed after the earthquake is the period that people go through until they are able to settle into permanent housing. During this period, in which disaster victims aim to recover from the material and emotional impacts of the earthquake and return to their daily routines, the shelters they reside in have a significant impact on their lives. Despite nearly two years having passed since the earthquake, many victims still continue to live in these temporary shelter areas.

Petti (2015) stated that these types of shelter areas, considered a form of temporary accommodation, generally consist of containers and are inhabited by people from various demographic backgrounds living within limited spaces. In order to meet the housing needs of those affected by the earthquake simultaneously, a large number of temporary housing units must be produced and set up rapidly, which necessitates urgent management of the process and often leads to certain complications. When the literature on temporary shelter areas is examined, it becomes apparent that the functional layouts are often similar, and the container units are typically derived from standard design templates. Although each geography and region has its own inherent conditions, the use of standardized designs for these structures has been critically addressed in various academic studies. Additionally, there is literature highlighting the inadequacy and poor quality of socialization spaces within container settlements. While still not at a sufficient level, some initiatives do exist in this regard. One such example is the Super Adobe Library (XXI, 2024), designed within a temporary shelter area in Kahramanmaraş, the epicenter of the 2023 earthquake.

There are numerous academic studies on temporary shelter centers. Especially following the 2023 Pazarcık earthquake, temporary shelter centers have been examined from various perspectives in the literature. Avlar et al. (2023) explored the potential use of modular and cross-braced systems, developed design parameters, and accordingly designed a CLT E-BOX. Genç and Yılmaz (2024) emphasized the importance of not overlooking recreational spaces in the design of temporary shelter areas. Ünal and Akın (2023) examined temporary disaster housing in terms of user satisfaction. Büyüköztürk and Oral (2023) investigated site selection for temporary settlement areas after the earthquake using the Delphi method from the perspective of experts, and also conducted a user satisfaction analysis. They found that both analyses revealed similar problems and solutions. Giyik (2024) evaluated the temporary shelter practices in Nurdağı, Gaziantep in terms of adequacy, functionality, and quality. Ayvaz and Arpacıoğlu (2024) analyzed a container model proposal developed by students for post-disaster temporary housing areas. İlhan et al. (2024) conducted an ergonomic analysis of temporary shelter centers. Kalkan et al. (2024) examined the adequacy of emergency gathering areas in Malatya following the February 6, 2023 earthquake. Abanoz and Vural (2023) conducted a comparative analysis of temporary disaster housing used in Turkey and around the world and developed a new model proposal. Vural Arslan and Gülay (2023) experimented with the production of different container models in the post-earthquake process.

However, the existing literature is limited in terms of looking at the temporary shelter process from the point of view of the child user. On the other hand, in practice, designing with children in mind is limited to playgrounds made of plastic materials and libraries that serve as storage. Moreover, the accommodation process in temporary shelters, which is defined as a healing process, requires more caution towards children. In their study, Limoncu and Atmaca (2018) state that this issue should be approached more sensitively by stating that "the fact that children's life experiences are less than adults leads to the need to treat them more carefully".

In this context, the study focuses on how to design spaces with consideration for child users, and proposes design solutions encompassing both interior and exterior spaces, based on the example of a temporary shelter area in the province of Osmaniye. In light of these proposals, the aim is to create functional and effective spaces by approaching the design of post-earthquake temporary shelter areas from the perspective of children.

2. Conceptual Framework

Under this heading, a review of the existing literature on temporary shelters and user-oriented design approaches for children was conducted.

2.1. Temporary Accommodation Areas

Temporary housing refers to permanent and non-permanent housing that can be transported by a vehicle or is itself a vehicle. This term includes caravans, prefabricated housing, modular housing and disaster housing. This type of housing can be used by low-income people for vacation purposes (Sigfusson, 1997) as well as during disasters, migration and war (Tuncel, 2007).

Temporary accommodation units, which have been encountered for different reasons and uses in the process, first emerged as an indicator of the nomadic lifestyle. In the 17th century, horse-drawn carriages with working and sleeping areas were encountered (Günay and Engin, 2023). During the Second World War, temporary dwellings were allocated for the part-time accommodation of the labor group (Sigfusson, 1997). In the 20th century, mobile homes, which were widely used as secondary housing in areas with recreactive appeal, are now on the agenda with different areas of use.

2.2. The Place of the Child in User-Centered Design

As the user, the human being is at the center of space design. Schulz expresses this phenomenon where human is the focus of design as follows: "The location of the human being is the center of the 'Human Centered Design Approaches' space and the space is shaped according to human actions" (Schulz, 1971). In this respect, designers sometimes play the role of an interpreter who transfers user ideas to the project design process, and in some cases, they are in the role of producing the construction processes together with the users (Dereli, 2009). This design approach became widespread after Elizabeth Sanders pointed out in her article published in 1992 that the reason for the failure of the products on sale to meet expectations was that they were designed without taking users into account (Toros, 2020).

Since 1992, designing projects with a holistic understanding of the functional, physical and emotional needs of users has been one of the most discussed topics in design (Kuru, 2015). Law and Van Schaik (2010) state that creating user-centered design guidelines has become important for design research in this design approach that models the “user's experience”. This method, which includes the user in the research, addresses the underlying causes of the problem and makes it possible to discover current and valid designs.

This approach, which emerged as a reaction to methods that focus on the human and prioritize functionality (Steen et al., 2007), aims to design by seeing things from the user's perspective and developing a holistic understanding of product and space use (Kensing and Blomberg, 1998). In addition to making users a part of the design process, the user-centered design approach considers design together with its context in order to achieve unique designs (Toros, 2020). Thus, the process starts with context research and comprehensive observation/exploration. It then aims to develop design proposals (Design Council, 2020). In this process, it is necessary to analyze the user profile and needs correctly in order to obtain an innovative design with effective use.

In recent years, approaches in which children are both the subject and the object of design have come to the forefront (Christensen and James, 2008). Çukur (2009) conducted a study on the design of play areas inside and outside residential spaces for children. Nooraddin (2020) examined urban transformation projects carried out in Scandinavian countries with consideration for the needs of children aged 12-17. Many studies have been conducted on this topic, which has been the focus of attention for academics and some private architecture firms. Architecture firms such as Superpool and Şehir Dedektifi have made significant contributions in this field. These interdisciplinary firms aim to create child-friendly cities by observing and understanding the relationship children establish with urban spaces (Şevli, 2024).Şahin and Türkün Dostoğlu (2012), in their studies on kindergartens, emphasized the importance of incorporating children's opinions about the spaces they use into the design process. Zenter et al. (2024) initiated a discussion on child-friendly cities in a design studio setting after the February 6 earthquake, examining the topic within the scope of special education campuses. Gallacher (2016) explored young children's perceptions of their environments and highlighted their active role in shaping their surroundings. Büyükçınar and Özemir (2022) conducted a pilot study involving children in the organization of their own educational environments. Süner and Erbuğ (2018) investigated how child users are positioned within the design process. Arın and Özsoy (2015) addressed child participation in urban design processes in their study. Gülay Taşçı (2014) examined urban planning processes within the framework of children's right to participate. Başaran Uysal (2015) discussed the experiences of a volunteer women's group that came together to improve children's playgrounds in a medium-sized city. Curaoğlu and Çobanlar (2020) researched the role of children as stakeholders in space and furniture design through a case study conducted during the pandemic. These studies particularly emphasize that childhood—a crucial period for laying the foundation for learning—is often overlooked, and this group is frequently disregarded. Child-centered approaches support designs that take children's interests and

needs into account, enabling them to recognize and develop their own abilities (Büyükçınar and Özemir, 2022).

In this design approach, surveys and interviews conducted with children and parents play a significant role. Guha et al. (2004) point out two ways to uncover children's needs during the development phase of a user-centered design. The first approach suggests that ideas can be drawn from children's limited writing skills, verbal expressions, and drawings. The second emphasizes focusing on parents who are closely involved with their children. Both methods are frequently used in child-centered design research. Moreover, there are numerous studies that address the participation of children and parents in the "design decisions" of child-specific spaces (Sheat and Beer, 1989; Clark, 2005; Koralek and Mitchell, 2005; Hofmann, 2013; Bedell et al., 2011; Şahin and Türkün Dostoğlu, 2012).

In this study, it is aimed to develop design proposals by taking into account the opinions and suggestions of children regarding playgrounds and living spaces in the temporary shelter area.

3. Material And Method

3.1.Characteristics of the Study Area

The study sample area is the temporary shelter center in Osmaniye province, which is located in the Fakıuşağı Neighborhood in the city center, adjacent to the southern ring road, in the Karaçay stream bed.

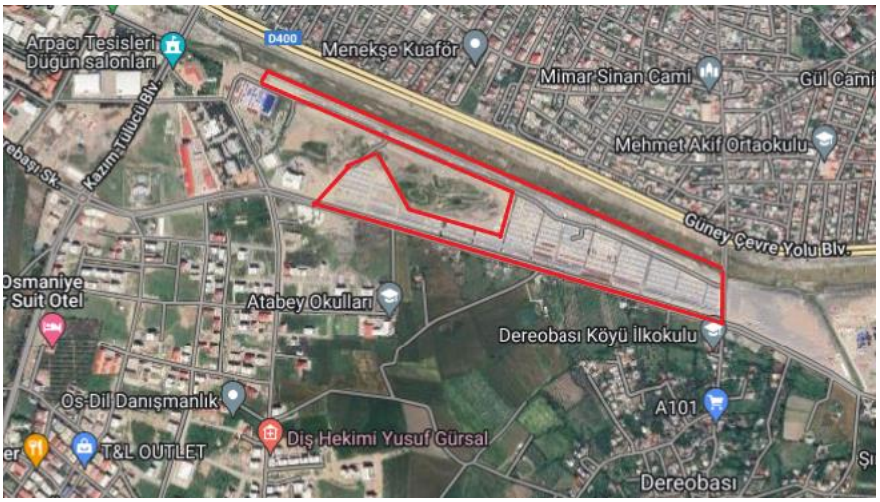

Figure 1. Osmaniye Temporary Accommodation Area (Büyüköztürk and Oral, 2023)

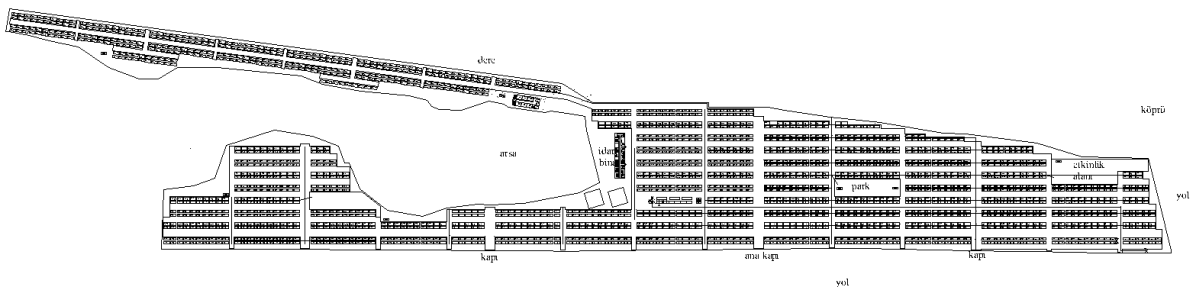

Figure 2. Site Plan of Osmaniye Temporary Settlement Area (Büyüköztürk and Oral, 2023).

The area, which has been in use for nearly two years, is surrounded by wire fencing and is subject to strict monitoring and control mechanisms. Within the site, there are 2,063 container units, arranged along horizontal and vertical axes divided by roads measuring between 8 to 15 meters in width. The Osmaniye temporary shelter center, located within a 182-decare (Büyüköztürk and Oral, 2023) fenced area, includes several child-focused spaces: a library container, a daycare center, a Turkish Red Crescent children's tent, a youth center container, and a single children's playground.

The interior of the containers, produced using standardized designs, includes seating areas, a kitchen counter, a bathroom, and a bedroom (Büyüköztürk and Oral, 2023).

3.2. Method

The method of the study is designed based on a qualitative research design. The key feature of qualitative research is its ability to examine situations within their natural environments. This study is structured as a case study, which is one of the qualitative research approaches. A case study is used to investigate a situation that occurs in daily life or a context that develops within that situation (Creswell, 2020). It is believed that evaluating an extraordinary situation such as a disaster through on-site observation and interview techniques will contribute to producing more accurate results, and the flowchart provided in Figure 3 has been followed in the study.

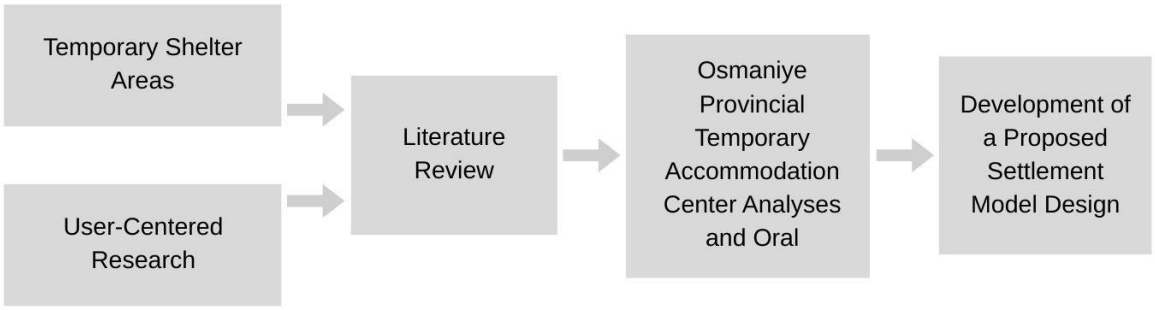

Figure 3. Work Flow Chart

In the first step of the study, national and international academic documents were reviewed, and the data obtained were used to form the theoretical framework of the study. After the literature review, observation and interview techniques were employed to collect data about the child user profile at the Osmaniye temporary shelter center. These data were then analyzed and evaluated. The field site was visited multiple times during different seasons and at various times of the day to analyze the children's use of the space. During the observations in the area, the passive observation technique was used, and no intervention was made in the children's activities. In this phase of the study, the method of interviewing parents, described by Guha et al. (2004) as a way to understand children's needs and demands, was preferred. Semi-structured interviews were conducted with 13 parents of children aged 0-10 years who agreed to participate in the research (Table 1).

Table 1. Information about the interviewees

	Gender	Number of Children
Interviewer 1	Woman	1
Interviewer 2	Woman	2
Interviewer 3	Woman	6
Interviewer 4	Woman	7
Interviewer 5	Woman	2
Interviewer 6	Woman	2
Interviewer 7	Woman	3
Interviewer 8	Woman	2
Interviewer 9	Woman	4
Interviewer 10	Male	5
Interviewer 11	Woman	2
Interviewer 12	Woman	1
Interviewer 13	Male	1

In the research, data was recorded only by taking notes with pen and paper, and no audio or video recording was made. Participants were generally asked questions to understand the shortcomings and wishes of children in the interior and exterior of the temporary shelter area. The interviews and observations provided the opportunity to actually enter into the events and develop empathy with the users of the space. In the last stage, the data obtained were deciphered and an improvement project was prepared in Osmaniye temporary accommodation center and evaluated by the interviewed families. From this point of view, design suggestions have been developed on the temporary accommodation areas established after the disaster in order to prevent similar problems in other disasters.

4.Results

At this stage of the study, the data obtained from the observations and interviews conducted during the field survey were analyzed under two main headings: interior and exterior space. The first section traces the adequacy of the interior space of the containers and the extent to which it allows for children's activities, while the second section aims to examine the exterior space of the temporary accommodation center from the perspective of child users.

4.1. Container Interior Analysis

In the temporary accommodation center, there are families with a single child as well as families with six or seven children. One of the frequently criticized issues specific to this area is that all families are provided with containers of the same size, without considering their demographic structure in terms of layout and dimensions. Field observations have revealed that families with a higher number of children lay mattresses or floor cushions on the ground for sleeping and store these beds on bunk beds during the day.

During interviews, participants stated that the interior space of the containers is extremely limited, making it difficult to find space for their belongings and preventing them from creating a dedicated area for their children.

"Unfortunately, there is nothing belonging to the child inside..." (Interviewee 1).

"There is a coffee table and they both study together" (Interviewee 2).

"There are beds, furniture everywhere, you can look..." (Interviewee 3).

"There is nothing extra, standard..." (Interviewee 12).

Container residents have described children's lives, especially during the winter months, as being "like a prison." During interviews, parents frequently expressed their concern about their children spending most of their time in front of the TV and tablet.

"There are two seats in a room. What are the children going to spend time with, the TV is always on..." (Interviewee 11).

"When the weather is nice, children can play outside. But when it rains, they are inside, they have nothing to do..." (Interviewee 7).

4.2. Container Exterior Analysis

According to the observation and interview reports of the study, it was determined that parents generally had a low level of satisfaction with the playground. Parents described their dissatisfaction with the playground, which does not allow for different activities, as follows:

"The area is very big, but the games that children can play are limited..." (Interviewee 1).

"Instead of building such a park, if it were empty, children would at least play ball..." (Interviewee 10).

"Children cannot release their energy, the area is large but its use is wrong..." (Interviewee 11).

In addition, the presence of factory-produced, fixed, standard playground equipment, which is frequently discussed with critical readings in many studies, limited children in play production and was criticized by parents in the interviews.

"Plastic playground, the same as everywhere..." (Interviewee 12).

"It is the same as the park everywhere..." (Interviewee 13).

In the oral interviews conducted at the temporary accommodation center, when parents were asked about their suggestions for the playgrounds established in the area, it was revealed that families generally described spaces where their children could play freely. Some parents stated that it would be more appropriate to use materials found in nature and easily available in the post-earthquake period instead of plastic materials.

"Tracks where children could jump and jump easily could have been established. Three wooden wheels can be set up side by side, and children would enjoy it more..." (Interviewee 2).

"Playgrounds that would develop children's sense of discovery and curiosity would attract their attention more..." (Interviewee 4).

"Children love growing plants and playing with soil. Such an area could have been created very easily..." (Interviewee 12).

Another issue emphasized by the interviewees in the area is the designs made without taking climate data into account. In the city where the summer months have hot and arid climatic data, the exposure of

the playground to direct sunlight restricts the use of the area. During the observations made in the area, it was determined that the playground is used only in the evening hours in the summer months. Especially in the winter months, the lack of a semi-open space where children can socialize, considering the infrastructure problem of this area located in the creek bed, causes children to be confined to the container interior with a limited space. The photographs in Figure 4 also point to similar problems such as traffic, climate data, etc.

"Open and closed areas could have been created where they could play in all seasons..." (Interviewee 3).

"Rather than a playground, the climate is not considered at all in the open area, so children cannot play at all..." (Interviewee 5).

"Children actually set up the game themselves with their friends. If there was an area suitable for playing in all seasons..." (Interviewee 6).

If there was a cover over the playground, children would play in all seasons... (Interviewee 7).

In their narratives, the interviewees described the security problem that children experience in the area due to vehicle traffic as follows:

"Children want to play ball on the street, but they can't play because cars pass by all the time..." (Interviewee 8).

"The biggest problem is traffic, cars are the reason why children cannot be free both around and inside the area..." (Interviewee 9).

Figure 4. Visuals of the field area (by the author, 7 October 2024)

5. Developing a Sample Design for Osmaniye Temporary Shelter Area

In this section, a sample design approach focused on child users was developed based on the data obtained from the observations and interviews conducted at the Osmaniye temporary shelter center. During the design process, the problems and requests emphasized by the parents in the face-to-face interviews were highlighted, and a user-centered proposal was aimed (Table 2). In this way, before developing an approach as a designer, the views and requests of the users were identified.

Table 2. Problems identified in the study

	Problem	**Demand**	**Proposal Design Approach**
Problem 1	Climate	Playground	Top cover design for container front gardens and top cover design on children's playground
Problem 2	Lack of special space for children	Study area	1.A flexible furniture design has been developed that can be placed in the interior of the container, where children can both study and use as storage space. 2. Closed units integrated into the top cover surrounding the children's playground have been created and library and workshop areas have been designed within these volumes.
Problem 3	Not considering all age groups in children's playgrounds	Playground arrangement	A trail design proposal has been developed that will allow participation of all age groups.

In the study, an attempt was made to address the topics highlighted in the table, and based on the developed design, the goal was to draw general conclusions through the sample area.

- Field studies, analyses, and interviews have revealed that designs created without considering the local climate pose significant issues. This situation particularly restricts the use of children's play areas and the outdoor spaces of containers. In response, two proposals have been developed in this study. First, it is suggested to design 1-meter-wide overhead coverings for the front yards of the containers. This space is planned to serve as both a play and seating area. In the design of the overhead covering, a play area has been created by adding climbing ropes and swing ropes to the side surfaces of the semi-open space to attract children's interest (Figure 5).
- The second proposed approach, designed with climate factors in mind, is a children's play area that accommodates various activities, allows year-round use, and can be easily assembled and disassembled. In the developed play area scenario, family suggestions were taken into account, and it was decided to design a course that facilitates children's interaction with others while incorporating open and enclosed spaces suited to the region’s climatic conditions (Figure 6). In the activities planned within the play area, factors such as climate, cost, and the needs of children of different age groups were considered in the design process. Accordingly, the play area was envisioned as a spatial structure that enables participation from both individual children and large groups. It includes various play activities such as climbing and jumping, providing both entertainment and opportunities for creative play. To enhance accessibility and address the lack of enclosed play areas, prefabricated play units elevated 2.5 meters above the ground were designed around the play area. These enclosed units are intended to serve multiple functions, including study spaces, a psychological counseling room, workshops, a library, and meeting rooms, all tailored to children's needs. The placement of the library and workshops was specifically designed at ground level to ensure accessibility for children with disabilities. Additionally, in the surrounding area, child-friendly restrooms, a nursing room, and accessible toilets were designed to meet ergonomic needs. These facilities were strategically positioned to

ensure they do not obstruct participation in the play area, prioritizing accessibility and ease of use. The enclosed workshop areas were designed without window openings on the facades facing the play area to minimize noise. Furthermore, glass wool insulation was used on the facades to provide both sound and thermal insulation.

Figure 5. Container Outdoor Top Cover Design Proposal (by the author)

Partial Site Plan (covers an area of 17,200 m²).

Playground Design

Library Design

Workspace Design

Workshop Design

Meeting Room Design

Figure 6. Container Outdoor Top Cover Design Proposal (by the author)

- To address the frequently criticized issue of heavy traffic, it has been proposed to remove vehicle traffic from the area and establish a separate parking zone. The traffic-free zone will allow children to easily access all parts of the temporary accommodation center and provide space for various activities to be organized in these areas.
- The climate's suitability for water play allows for the creation of a new play area at no additional cost. In this context, it is considered that spaces integrating water as a design element could be incorporated within the temporary accommodation center.
- During the interviews, families expressed that there was not enough space for children inside the containers. In response, a flexible furniture design serving multiple functions was developed for the container's interior. It was proposed to relocate the washing machine from under the kitchen counter to the bathroom, allowing this space to accommodate a multifunctional unit tailored to various needs (Figure 7).

Figure 7. Container Interior Flexible Furniture Design Proposal (by the author)

- The design product was created to meet various needs by combining different usage variations within a single furniture unit. Adaptable to different configurations, this unit can function as a drawing station, table, coffee table, and storage cabinet, making it suitable for children aged 1-10 (Figure 8).

Figure 8. Container Interior Flexible Furniture Design Proposal (by the author)

- The presence of vegetables planted in tin cans serving as makeshift pots, as noted in observation reports, suggests a potential design input for the area. In this regard, considering the climate's suitability for vegetable cultivation, a hobby garden has been proposed within the space (Figure 9).

Figure 9. Plant growing area design

The proposed designs realized at this stage of the study were projected and presented to 13 parents and the opinions of the participants were taken. The interviewees were asked to weight these designs, which they generally found positive, between 1-10. The score weights given by the interviewees are shown in Table 3.

Table 3. Information about the interviewees

	Interior Flexible Furniture Design	Children Playground	Container Front Semi-Open Space Design
Interviewer 1	8	10	10
Interviewer 2	7	10	10
Interviewer 3	9	8	10
Interviewer 4	5	8	10
Interviewer 5	7	8	9
Interviewer 6	8	8	9
Interviewer 7	9	7	10
Interviewer 8	10	8	10
Interviewer 9	10	7	10
Interviewer 10	8	8	10
Interviewer 11	7	9	10
Interviewer 12	7	9	10
Interviewer 13	7	9	10
Mean	7,8	8,4	9,8

6. Conclusions and Recommendations

In this study, the possibility of developing a design concept by considering the child user in temporary accommodation centers, which are the result of rapid production in the post-earthquake process, is examined through the Osmaniye Temporary Accommodation Center, which was established after the Kahramanmaraş and Hatay earthquakes. Before the design development stages, data was collected through observation and interview techniques, and thus, it was aimed to bring permanent solutions to the problems by directly addressing the demands and opinions of the user profile in the field. The study focuses on uncovering and improving the potential of temporary shelter areas, rethinking them with their

users, and exploring how they can be adapted to the needs of the youngest age group. The goal is to draw general conclusions through the case study of the Osmaniye temporary accommodation center.

In this context, passive observations were conducted in the Osmaniye Temporary Accommodation Center, and interviews were carried out with 13 parents to identify user expectations and the problems experienced within the area. Users frequently criticized the designs that were implemented without considering the local climate, the heavy traffic within and around the site, and the lack of dedicated spaces for children inside the containers.

Based on interview narratives, proposed design approaches were developed to create a space where children, within the fenced-off area, could experience a freer, traffic-free life and engage in various activities throughout the year. A piece of furniture and two spatial projects designed according to these approaches were evaluated by the interviewed parents. According to Table 2, all 13 users generally viewed the designs positively, with average ratings as follows: interior furniture design – 7.8, children's play area design – 8.4, and semi-open space design – 9.8. Among the proposed design approaches, the semi-open space design in front of the container was the most favored by participants, while the flexible furniture design for the interior raised concerns due to the limited space available. In conclusion, even in temporary accommodation centers based on rapid production processes, user-centered and participatory design approaches that consider user needs can lead to successful outcomes.

6.1. Suggested Design Approaches Specific to Child Users in Temporary Shelter Areas

Temporary accommodation centers are the primary living spaces where individuals continue their lives in the post-disaster period, even for a certain period of time. These living spaces where disaster victims reside for a certain period of time, even if they are not fully residential, need to be designed with the user in mind or some of the problems that arise in the construction process should be improved in the process. In this context, in this study, the proposed design approaches developed in the interior and exterior spaces of containers in temporary accommodation centers for child users are as follows:

- The spaces where children take refuge after an earthquake should provide an environment that allows them to engage in both active and passive activities. Design approaches in temporary accommodation centers should prioritize this consideration.
- In this post-earthquake period, various activities that prioritize the interests, needs and expectations of children and enable them to realize their own interests and abilities should be organized and trainings should be provided on this subject.
- In the interior of a container, which consists of a sleeping and living area, spaces should be designed to provide a sense of belonging for the child and to accommodate basic activities such as sleeping, playing, and studying at a minimum level. In these confined spaces, furniture should be designed to offer multifunctional use and align with the principle of flexibility, allowing for space-saving and enhanced usability.

- For the child, play is not a means but an end, a question of existence. The child begins to play as soon as he/she exists and embodies life in play. Therefore, it is necessary to increase the value of play in spatial arrangements for play, which is one of the basic life needs of children. From this point of view, children's playgrounds in temporary shelters should be improved by taking into consideration their psychological therapeutic effect after a disaster.
- Rather than designing uniform play spaces within the area, incorporating open and flexible spaces that allow children to design their own play environments is the most effective approach. Children can create their own social play areas and transform existing spaces through participatory practices and workshops. This, in turn, provides them with the opportunity to become active participants in shaping their own lives.
- The adaptability of these spaces to a lifestyle that directly interacts with the outdoors, combined with the removal of vehicle traffic, can be seen as an opportunity to revive the lost street play culture. In this way, temporary accommodation centers are envisioned as a means to raise awareness against the increasing isolation of play from nature and its confinement within indoor spaces in recent years.
- In temporary shelter areas established after disasters, play spaces should be designed with open and semi-open areas, taking the region's climatic conditions into account. Additionally, incorporating small-scale hobby gardens within the area is expected not only to provide food supply but also to offer children a unique opportunity for exploration.
- Children with disabilities should not be ignored during design and inclusive design principles should be adopted.

In this context, it is thought that these suggestions developed in this context can be informative and guiding from the perspective of child users in post-earthquake temporary shelter areas, and can provide a comprehensive perspective and awareness in similar practices.

Conflict of Interest Statement

The author declares that there is no conflict of interest.

Summary of Researchers' Contribution Rate Declaration

The author declares that she has contributed 100% to the article

Ethics Committee Decision

Osmaniye Korkut Ata University Science, Scientific Research and Publication Ethics Committee's decision dated 11/10/2024 and numbered E.2015558 was taken within the framework of the decision of the ethics committee.

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APPENDICES

INTERVIEW QUESTIONS

1. Is there a special area for your child in the container interior, or have you made such an arrangement?

2. Is it possible for your child to do activities such as studying/playing etc. in the container interior?

3. Do you think the children's playground in the temporary accommodation center is sufficient? Does your child spend time here?

4. Can you describe what kind of activity area your child needs in the temporary shelter center?

5. What is the most important deficiency of your child in the area, including indoor and outdoor areas?

6. Could you please state your opinions about the suggestions for improvement of the temporary shelter center shown in the figure?