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POST OCCUPANCY EVALUATION OF THE LIBRARY BUILDING: DIYARBAKIR PROF. DR. FUAT SEZGIN PROVINCIAL PUBLIC LIBRARY

Hale DEMİR KAYAN [a], Ruşen ERGÜN [b*]

[a] Associate Prof.; Dicle University, Faculty of Architecture, Department of Architecture, 21280, Diyarbakır, Turkey
ORCID 0000-0002-3796-2567

[b] Research Assistant; Dicle University, Faculty of Architecture, Department of Architecture, 21280, Diyarbakır, Turkey
ORCID 0000-0001-5253-3245

*E-mail address: *rusen.ergun@dicle.edu.tr*

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Abstract

Libraries are one of the oldest public buildings in history. Their main goal is to provide access to and disseminate information. There are various types of libraries according to user profile and purposes such as university libraries, school libraries, national libraries, and public libraries. Public libraries have the most comprehensive library feature, serving all people for free. It is also a place for people's socialization and cultural activity. This study aims to evaluate the building performance of Diyarbakır Professor Doctor Fuat Sezgin Provincial Public Library. In the study, Post-Occupancy Evaluation method was used. The results were made about the design quality, indoor environment quality and service quality. The satisfaction index formula developed by Dominowski was used to analyse user satisfaction. The satisfaction level of design quality was determined as 69.38%, indoor environment quality satisfaction level of 72.79% and service quality satisfaction level as 68.48%. These results show that user satisfaction generally remains at a negative level. In this study, suggestions have been developed for increasing the satisfaction level of this library building and for new library building designs. It is thought that this study will be a guide to improving the quality of library buildings.

Keywords: **Design quality; Diyarbakır; Indoor environment quality; Library buildings; Post-occupancy evaluation; Service quality.**

1. INTRODUCTION

Libraries are the most important resource and space providers where access to information is provided. The history of these buildings dates back to the Sumerians. Their main purpose is to ensure the development of societies. There are many types of libraries such as university libraries, school libraries, national libraries and public libraries. While university libraries generally serve faculty members and university students, national libraries serve government officials and researchers, school libraries serve teachers and students, and public libraries serve all segments of society. [1]. In the manifesto published by UNESCO (United Nations Educational, Scientific and Cultural Organization) and IFLA (International Federation of Library Associations and Institutions) in 1994, public libraries are defined as spaces that everyone can use free of charge [2]. Public libraries are society's science, culture, education and social activity space [3–5]. As mentioned above, there are no restrictions on user groups in public libraries. For public libraries to achieve their basic objectives, they must be at a sufficient level in terms of various criteria such as user, collection, staff, budget and building [2]. A collection is any printed, electronic or audio-visual resource purchased at a library or included in the program. Since the public library serves all segments of society, its collection should be comprehensive and able to meet the needs of all users [6]. The budget element, which is

Figure 1.
Diyarbakir and the location of the library building (Diagram by the authors)

Figure 2.
Diyarbakir Prof. Dr Fuat Sezgin provincial public library (Photos by the authors)

important in increasing the number and quality of libraries, should be able to meet the library and personnel consumption of the users. [7]. The library buildings element is expected to meet the following criteria;

- Ability to meet the needs of users in terms of functionality
- Space flexibility
- Suitability of socializing areas
- Appropriateness of entertainment, research and study spaces
- Inter-space interaction suitability
- Working areas are motivating and inspiring
- Air conditioning and lighting suitability
- Ensuring security
- Suitability for information technology
- High-quality remarkable building design [8].

In this study, the suitability of the use of Diyarbakır Professor Doctor Fuat Sezgin Provincial Public Library building as a library building is investigated. The study aims to determine the characteristics of the library building and to offer design and construction suggestions to increase user satisfaction. One of the most important methods of determining the quality of a building is to consult the opinions of the real users of the building. This method can also be defined as post-occupancy evaluation (POE) [9]. The level of user satisfaction depends on the quantitatively determined difference between expectation and fulfilment. As this difference decreases, the satisfaction rate increases [10, 11]. In the study, the Post Occupancy Evaluation (POE) method was used to determine the suitability of the building's design and construction features for use.

2. STUDY AREA

Diyarbakir (37°92' N 40°22'E) is located in southeastern Turkey in the region also known as Mesopotamia, between Karacadağ Mountain and the Tigris River. Professor Doctor Fuat Sezgin Provincial Public Library, which was examined within the scope of the study, was built as 2 blocks on 711 blocks and 1 parcel in the Kayapınar district of Diyarbakır province (Figure 1).

Prof. Dr Fuat Sezgin Provincial Public Library (Block A) was opened in 2020 and has a capacity of 210 people. Prof. Dr Aziz Sancar, Toy and Children's Library (Block B) is not yet in use (Figure 2).

B Block is excluded from the scope of the study as it is still not in service. The building designed by Studio Vertebra was awarded the 3rd prize in the "Projects of the Future" project category at the "2A Continental Architectural Awards".

2.1. Description of the building

Diyarbakır's traditional architectural design criteria were used in the design of Professor Doctor Fuat Sezgin Library building. The use of courtyards in building design, the use of landscape elements in the courtyard, and the use of terrace roofs are the design criteria inspired by traditional Diyarbakır houses.

The courtyard of the building is accessed from two sides, east and west. While the western entrance opens directly to the courtyard with a narrowing passage, the eastern entrance opens directly to the courtyard. Block A has approximately 1100 m^2 of floor space. The main entrance of block A is provided from the southwest facade.

The rectangular building was designed with a gallery space in its centre. The building has a total of 4 floors: basement + ground floor + first floor + second floor. The ground floor, first floor and second floor are actively used by users. The basement floor is not included in the study as it is a private and not yet completed space. (Figure 3).

While the flooring of the wet areas is ceramic, the flooring of the working and office areas is homogeneous anti-static PVC-based flooring. All ceilings are 0.50 Mm Glv. 300 x 1000 mm long side locked non-perforated wooden patterned suspended ceilings. The interior walls are painted white colour and the exterior walls are designed as curtain walls. Elevators and stairs are designed for vertical circulation. However, the use of elevators by students is prohibited. Stairs have metal steps and metal railings. The stairs with a total height of 32 steps and a pier of 17.2 are positioned on the southeast border of the gallery.

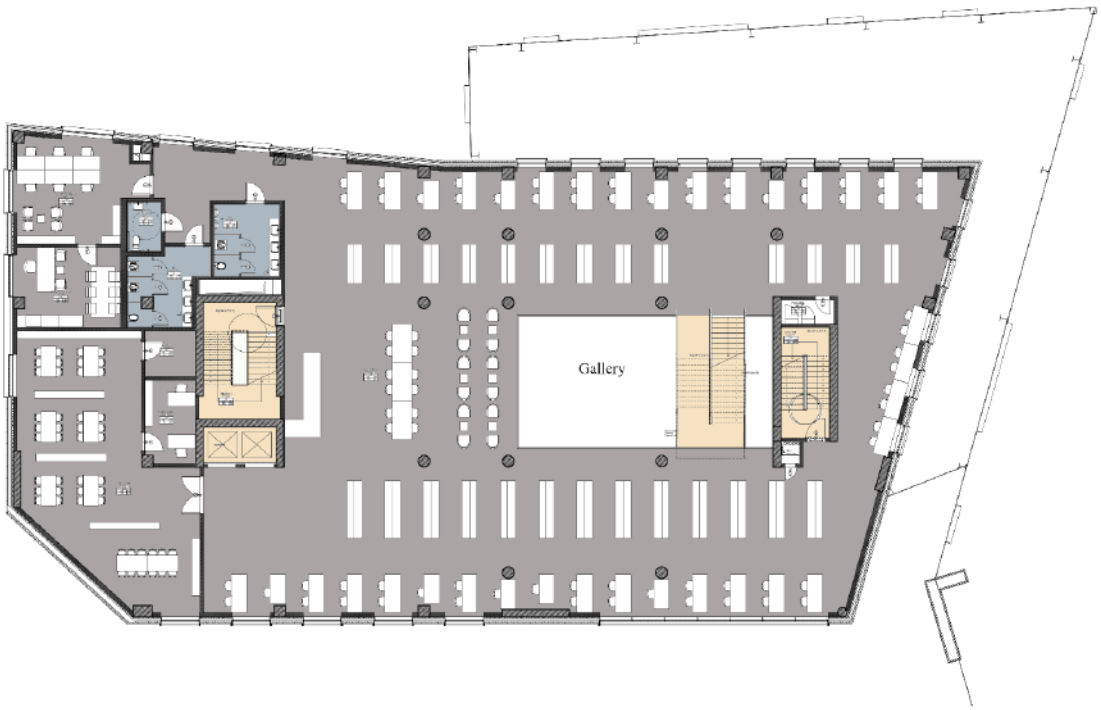
While the natural lighting of the building is realized with the facade windows, no system is designed for natural ventilation and the ventilation is carried out entirely mechanically.

3. METHOD

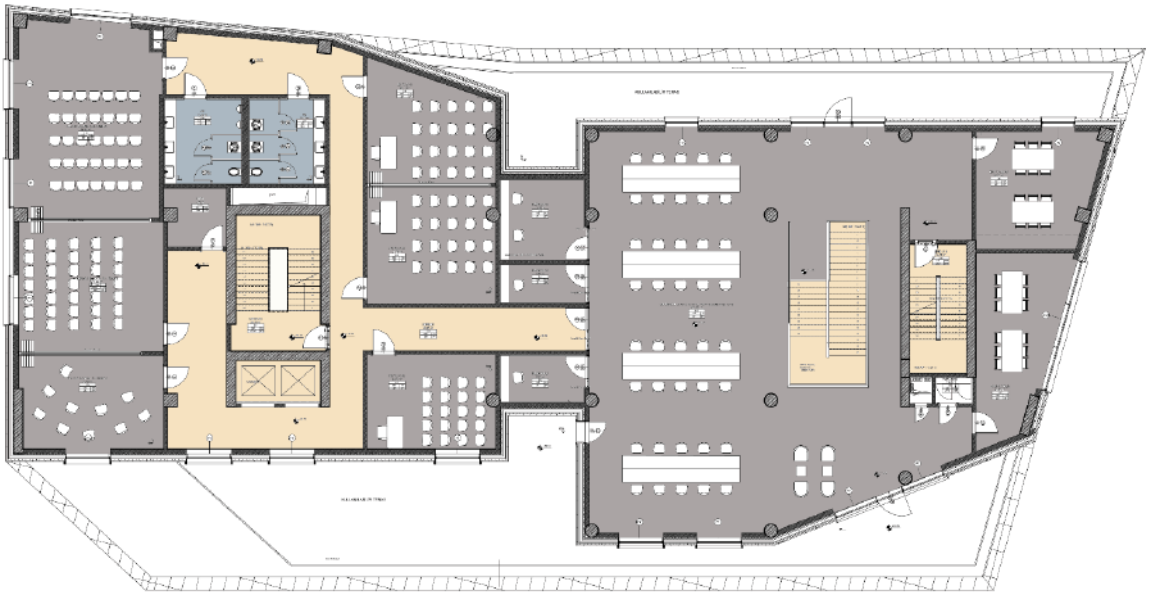
One of the most important methods of determining a building's design and construction quality is POE. [12]. POE is a method that allows buildings to be evaluated by referring to the opinions of the users of a building. [13]. Preiser (1999), defined POE as the evaluation process of a structure that has been built and put into use systematically and regularly by consulting the opinions of the users. Consulting users' opinions helps determine the level of achievement of the building's design and implementation [15].

Within the scope of this study, the POE method was used in the analysis of the library building. Within the scope of this method, literature review, field study, questionnaire, project reading and face-to-face interview techniques were used together. To determine the performance characteristics of a building in the POE method; building design quality, building interior

Ground floor plan
Library, Male/Female/Disabled Wc Male/Female Masjid, Librarian Rooms Souvenir shop



First-floor plan
Library, Executive Offices, Workshops, Officer's Room Store, Male/Female/Disabled Wc, Technical Room, Horizontal/Vertical Circulation



Second floor plan
Meeting Hall, Store, Male/Female/Disabled WC, Education Classes, Music Rooms, Visual and Audio Resource Utilization room, Group Workspaces, Horizontal/Vertical Circulation

Legend Working places Circulation areas Wash areas

Figure 3.
Library floor plans (Elaborated by the authors from the archive of Kayapınar Municipality of the Republic of Turkey)

environmental quality and quality of building service spaces are analysed [16–18]. In the design quality criteria; the design of the building, the interaction between the spaces, the relationship of the building with the immediate environment and the aesthetic features of the building are analysed. The interior quality criteria; are used to determine the features that affect human health such as visual comfort, air quality, and acoustic comfort. In the service quality criterion, infrastructure features such as water drainage and electrical installation are analysed [14, 19]. In order to limit the POE criteria, the sub-criteria determined by Mustafa (2017) for the performance evaluation of the Iraqi-Erbil Salahaddin University Architecture and Software Engineering buildings were adapted [16]. This adaptation was made by the authors, taking into account the criteria set for library structures by IFLA (Table 1).

Table 1.
Building Performance Analysis Criteria

Design Quality	Building layout	Suitability of building horizontal-vertical circulation elements
		Interaction between spaces, size of spaces, aspect ratio
		Relationship between building and environment
		The suitability of the facade design of the building with the function
		The general architectural design of the building
		Ceiling height of spaces
		Design of openings and adequacy of openings
		Space and equipment flexibility
		Adequacy and suitability of socializing places
		Suitability for use by persons with disabilities
		The suitability of the materials used on the exterior of the building
	Interior appearance	Interior coating suitability
		Interior equipment adequacy and suitability
		Interior general design features
		Compliance with directional signs and plates
	Exterior appearance	Outdoor view
		Landscaping
		The suitability and adequacy of the land for the purpose of building use
	Access	Access to the location of the building in the city
		Vehicle and bicycle parking suitability
		Access to socializing areas
Indoor Environment Quality	Thermal Comfort	Heating systems
		Insulation properties
	Indoor Air Quality	Natural and artificial ventilation
		Indoor odour quality
	Acoustic Comfort	Sound insulation
		Noise level
	Visual Comfort	Natural and artificial lighting
		Outdoor visibility
	Security	Night lighting
		Alarm systems and security personnel
		Entry and exit security
		Fire security
		Audio and visual privacy
		Building parcel limiting elements
Service Quality	Service Availability	General cleaning of the building
		Building maintenance (repair and renovation)
		Internet access
		Electrical installation
	Materials and Labor	Floor, ceiling and wall materials
		Workmanship

In this study, a user satisfaction survey was prepared to evaluate the library building in terms of the above criteria. To evaluate the building user satisfaction in terms of each criterion, 92 questions in the form of a five-point Likert scale, 2 multiple scales, a total of 94 questions were asked, apart from the demographic structure determination questions.

In order to determine the sample to be surveyed, the research population must first be determined [20]. The change of current building users over time shows that the number of users is high and active. It is very difficult to reach all users in a building with a large user base and causes a waste of time [21]. The average daily number of users of the building is 250. In the study, 250 users were considered as the target research population. Depending on the face-to-face survey, at least 10% of the total number of users should be surveyed [21]. Considering this situation, the number of people surveyed is expected to be at least 25.

A total of 60 people were surveyed in this study. In this study, a questionnaire was applied to a total of 60 variable users. Staff did not want to be included in the survey. Responses of 54 of them were included in the scope. The remaining 6 people were excluded due to reasons such as not answering some questions or giving more than one answer to the same question. This number satisfies the 10% number of users formula. In addition, it can be said that the sample number of 54 people may be approximately sufficient according to the calculations made from the sample size determination formulas and the sample size determination tables [22–24]. In addition, the fact that there was no significant difference between the results of the survey we applied in two different periods, 01.08.2022 (results from 32 people) and 10.05.2023 (results from 22 people), shows that this sample size is sufficient. So much so that even though the number of samples increases, it can be said that the similar repetition of the results will only cause a lost in terms of economy and time. The data from the questionnaires included in the study were transferred to the SPSS Statistical Data Analysis Package Program and user satisfaction analysis were made. The satisfaction index formula developed by Dominowski (1980) was used to evaluate the user satisfaction averages [26].

$$Satisfaction\ index\ (I) = \frac{\sum_{i=1}^{5}(a_i)(x_i)}{5\sum_{i=1}^{5}x_i} x100\%$$

In the satisfaction index calculation formula, ai: is the rating assigned to i and it is fixed. This fixed value is determined by the definitions as 1: I have no idea, 2: I strongly disagree, 3: I do not agree, 4: I agree, and 5 I strongly agree. xi is the frequency value assigned to i and user responses are frequency values [26]. Hassanain et al., (2016), Satisfaction index values above (85%) are very positive, between (70.1%) and (85%) positive, between (55.1%) and (70%) negative, below (55%) were interpreted very negatively [26]. Demir (2019, 2022) on the other hand, shortened the definitions by expressing these values with symbols. Satisfaction was expressed as over 85% (++), between 70.1% and 85% (+), between 55.1% and 70% (-), and below 55% (--). In this study, building evaluation was made according to the intervals given above [27, 28].

4. FINDINGS AND DISCUSSION

4.1. The Demographic Structure

Of the 54 participants, 25 (46.3%) were female and 29 (53.7%) were male. The number of male/female users participating in the survey from randomly selected library users is almost equal. Among the participants, 14 people (26%) were aged between 15–18 years; 16 people (39%) aged 19–24; There are 11 people (20.4%) aged 25-29 and 7 people (13.1%) aged 30 and over. These results show that users are generally teenagers.

In the question in which the education level of the people surveyed was determined, it was determined that 24 people (44.5%) had a high school education, 6 people (11%) had an associate degree, and 24 people (44.5%) had undergraduate education. In the face-to-face interviews, it was determined that the library was generally used as a study area by the people preparing for the exams. In the face-to-face interviews, the fact that the users generally said that they use the library because of the insufficient free study areas in Diyarbakır. In addition, some private education centers in Diyarbakır have exam restrictions and stated that they rent their own library as a fee depot. This situation can show that the study spaces in Diyarbakır are insufficient, and users with low income levels generally have to use the libraries as study areas. In addition, in the last part of the survey, “What is your reason for choosing the library?” For the multiple choice question, 50% of the participants preferred “my home environment is not suitable for studying” and 34% preferred “for studying”. The results show that the library building is mainly used for the study.

When the users were asked how long they had been using this library, It was determined that 29 people (53.70%) between 1–6 months, 12 people (22.2%) between 7–12 months, 13 people (24.07%) between 13-28 months used the library building. Generally, the short-term use of the library supports that stu-

dents usually use it to prepare for exams. So much so that exams such as university entrance exam (TYT-AYT) and high school entrance exam (LGS) are repeated every year in Turkey.

Ask the participants, "Which periods do you use the library?" question has been asked. It was determined that 46 of the participants answered "I use it between 08.00-17.00", which can also be defined as working hours.

When the results, it can be said that the users are generally students and they use it during working hours. It can be said that the library, which serves between 07:00–21:00 on weekdays and 08:00–16:00 on Saturdays, restricts the use of people working during working hours.

4.2. Design Quality

In this chapter; Detailed analyses and evaluations were made under the titles of building layout, interior appearance, exterior appearance and access.

4.2.1. Building layout

User satisfaction level in terms of influencing factors such as building height (81%), space height (85%), building entrance perception (78%), building design setup (76%), building form (73%) and building aesthetics (71%) is positive. However, it was found to be negative in terms of criteria affecting building layout, such as suitability with surrounding buildings (67%) and building-disabled relationships (64%) (Table 2). Considering these results, it can be said that the building is successful especially in terms of external appearance, but in general, it has not achieved a high level of success in terms of basic criteria such as compatibility with the environment and the suitability of the interior for the library function.

Table 2.
Building layout

	Performance indicators and criteria	Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Building layout	suitability with the surrounding buildings	5	31	6	12	0	67.74074	-
	general building design setup	13	26	11	4	0	77.77778	+
	building form	14	26	7	7	0	77.40741	+
	building aesthetics	12	27	8	7	0	76.2963	+
	the perceptibility of the building entrance	10	32	8	4	0	77.77778	+
	building height	14	31	5	3	0	81.13208	+
	space height	15	33	5	1	0	82.96296	+
	adequacy of stairs in the building (vertical circulation)	6	23	14	11	0	68.88889	-
	adequacy of elevator in the building (vertical circulation)	4	10	20	20	0	59.25926	-
	adequacy of corridor in the building (horizontal circulation)	8	24	13	9	0	71.48148	+
	access to the fire escape	5	22	17	10	0	68.14815	-
	access of persons with disabilities to the building	4	22	15	12	0	66.79245	-
	size of spaces	6	19	9	20	0	64.07407	-
	quiet working environment	4	8	13	29	0	55.18519	-
	quality of workspaces	6	4	10	34	0	53.33333	--
	ınterior design features of workspaces	7	28	11	8	0	72.59259	+
	building flexible design features	14	7	14	19	0	65.92593	-
	flexible design features of the equipment	7	15	20	12	0	66.2963	-
	cafeteria	13	28	9	3	1	78.14815	+
	socializing area	8	31	11	4	0	75.92593	+
	spaces form	4	20	17	13	0	65,55556	-
	general comfort of the building	12	30	10	2	0	79.25926	+
	suitability of the courtyard	5	15	24	10	0	65.55556	-
	active availability of the courtyard	5	22	17	10	0	68.14815	-
	suitability of landscape areas in the courtyard	4	27	14	9	0	67.62963	-
	suitability of sitting areas in the courtyard	2	10	26	16	0	59.25926	-
	suitability of the water element in the courtyard	3	6	25	20	0	57.03704	-
	active availability of the courtyard in summer	3	13	24	14	0	61.85185	-
	active availability of the courtyard in winter	4	12	26	11	1	62.59259	-
	availability of the courtyard as an event space	4	10	24	16	0	60.74074	-
	Mean						68.56	-

Figure 4.
a) Building form, b) building main entrance, c) building rear entry (Photos by the authors)

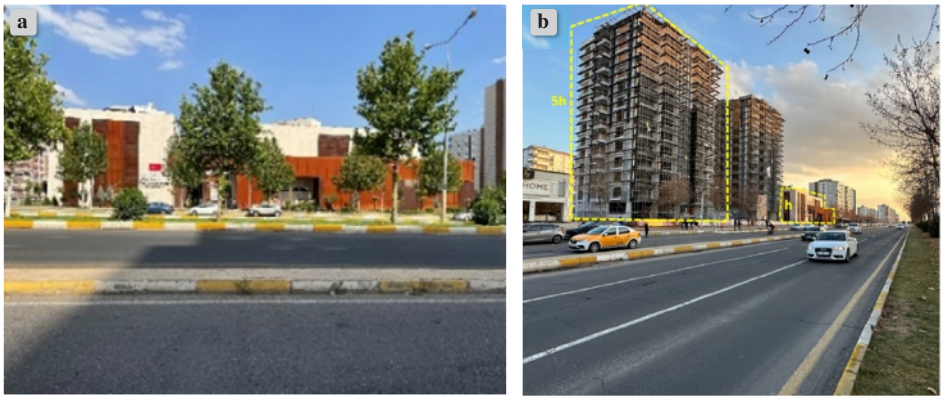


Figure 5.
a) Building design, b) close environment (Photos by the authors)

The form of the building is a segmented rectangle. It can be said that this building form is generally liked by users (77%). The courtyard between the two library buildings was designed as a gateway to connect the east (327th Street) and west (Mahabbad Boulevard). However, the fact that the rear entrance on the east façade is closed prevents these passages as well as consumes the perception of the rear entrance to a large extent (Figure 4). In the question asked about the perception of the building entrance, an average of 78% was positive. However, in face-to-face interviews, it was determined that the vast majority of users answered without being sure and thinking about the perceptibility of the main entrance. (Figure 4). This shows that the use of the building is as important as the design.

In the question in which the suitability with the built close environment was investigated, it was determined that the satisfaction rate was quite insufficient at 67.7%. As a result of the field study, it was determined that the average number of floors of the buildings around the library building is 12, and the library building has 2 floors (Figure 5 Building design and close environment). It seems that the results of the field study and the survey are in agreement.

The fact that the library building is at a low level compared to its immediate surroundings negatively affects its visibility and visual suitability with other buildings. These results show that not enough attention is paid to the immediate environment in the design of the library building.

Users are generally satisfied with the adequacy of the corridors (71.5%) as a horizontal circulation element. However, as a vertical circulation element, the level of satisfaction with the properties of the stairs (68.9%) is quite low and at a negative level. As a result of face-to-face interviews, the main reasons for this dissatisfaction are; It has been determined that the staircase is used in the middle of the space and without insulation from the working areas and the insulation properties of the materials used are low (non-insulated metal steps) (Figure 6).

Figure 6.
a) Metal stair steps, b) location of the stair, c) library rules (Photos by the authors)

Figure 7.
a) Users waiting in the queue in the courtyard to have a workspace (at 05.45), b) users waiting in line inside the building to have a workspace (at 15.30) (Photos by the authors)

The low satisfaction with elevators (59.2%) is because they are not allowed to be used. (Figure 6). The reason for the low level of satisfaction with access to the fire escape (68.1%) is that, according to face-to-face interviews, access is difficult and direction signs are missing.

Yücel (2016) stated that people with disabilities should be specially considered within the scope of the public library buildings' ability to serve the whole society [29]. There are criteria set by IFLA (2005) [30] regarding the accessibility of persons with disabilities to library buildings. Some of these criteria are the easy and safe access of disabled people to the library building, the use of international signs and materials necessary for comfortable movement in the building, and the use of wheelchair-accessible elevators [30].

When asked about the suitability of the building examined within the scope of the study for the use of the disabled, it was determined that there was a general dissatisfaction rate of 66.8%. As a result of the face-to-face interviews, it was stated that disabled people could not access the upper floors, especially because the elevators were closed for use. Even if the elevators are opened for the use of these individuals in the field study, vital problems may occur if the elevators are disabled in case of any disaster. In addition, it has been determined that no differentiation in the flooring or special signboards has been taken for the accessibility of disabled people. It has been determined that there is no significant design problem in the interior furnishing settlements and ground floor entrance height. When the results are examined, it has been determined that the disabled people do not have a significant problem in terms of access to the building, but that the precautions to be taken by IFLA [30] regarding the access of the disabled are not adequately complied with.

The building, which users find too compact to be changed (65.9%), is far from a flexible design feature. In the building design where spatial flexibility is restricted, users also expressed the flexibility of the equipment (66.2%) with low satisfaction.

The level of satisfaction with the adequacy of the working areas is very low (53.3%). In face-to-face interviews, it was determined that the dimensions of the building were quite inadequate compared to the number of users. As a result of face-to-face interviews and field studies, it was determined that users came to the entrance of the courtyard from 05.00 in the morning to have a working area (Figure 7). In the last part of the questionnaire, “If you had the right to make one spatial change in the building, what would you like to do?” The fact that the option “I would like to enlarge the workspaces” is the most preferred (46%) supports these results.

Inspired by the traditional houses of Diyarbakır, the courtyard has 2 benches, a tree, a broken fountain and a bicycle parking (Figure 8). The platform, which was created for conversations in the courtyard and has a height of approximately 30 cm from the ground, is used by users for sitting purposes. Satisfaction rates related to courtyard features; active use of the courtyard in general 68.1%, the use of the courtyard as a resting area (67.6%), the suitability of the size of the courtyard (65.5%), the active use of the courtyard in the summer season (61.8%), the active use of the courtyard in the winter season (62.5%), the suitability of the courtyard sitting areas (55%), the use of the courtyard as an activity area (59.5%) was determined

Figure 8
a) Courtyard seating, landscape elements, b) bicycle parking (Photos by the authors)

Table 3.
Description of tested beams

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Interior Appearance	Interior design	7	28	11	8	0	72.59259	+
	Interior signage and wayfinding	6	26	14	7	1	70.74074	+
	Placement of indoor equipment	8	25	12	9	0	71.85185	+
	The effect of interior design on working efficiency	12	30	10	2	0	79.25926	+
	Personal workspaces	11	21	14	8	0	72.96296	+
	Co-working space	7	17	14	16	0	65.55556	-
	Mean						72.15	+

as water element adequacy (57%) in the courtyard. The level of satisfaction with the courtyard, which is one of the most important units of the current building layout, is generally quite low.

These results show that the courtyard in general did not achieve its purposes such as a socializing area and a resting area.

Although the B block of the library has not been opened, it is thought that the cafeteria (65.5%) which is of insufficient size will be even more inadequate to serve in future periods. In the last part of the survey, when asked what would you like to do if they had the right to make a single spatial change, 33.3% of the users preferred the option of "an additional beverage preparation area", which supports this result. Although there are socializing places near the building, there are people from high-income groups in this district. Considering that the user profile of the building is generally people with lower income levels outside this region, it is economically problematic for them to use the social areas with high costs in the region. It has been determined that the social areas in the immediate vicinity are used very little by library users in face-to-face interviews and field studies.

Leckie and Hopkins (2002) define public libraries as one important public spaces of life activity and social interaction, where folk culture is constructed. They also stated that all expenditures made for libraries that are successful in terms of socialization are an important investment in social capital [18]. Aabo et al., (2010) defined libraries as public spaces that function as a square to emphasize their importance as a place of socialization.

It can be said that the library within the scope of this study is not at a sufficient level in terms of both social space and information access spaces, and that it cannot adequately reach the characteristics of being a social space as stated by Leckie and Hopkins (2002) [18] and Aabo et al., (2010) [4]. In addition, it can be said that the library buildings, specified by IFLA [8] do not meet the criteria of "meeting the needs of users in terms of function" and "suitability of socialization areas" at a sufficient level.

4.2.2. Interior appearance

The level of satisfaction between the general design of the interior of the building and its working efficiency is high (80%). The level of satisfaction of the users with the equipment (table, chair, socket places, light receiving, proximity to the noise source) in the space is close to the threshold value (71%) (Table 3).

Figure 9.
Interior appearance (Photos by the authors)

Table 4.
Exterior appearance

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Exterior appearance	Close environment landscaping	7	26	12	9	0	71.48148	+
	Dimensions of the parcel	7	8	26	13	0	63.33333	-
	Panorama	9	23	15	7	0	72.59259	+
	Courtyard landscaping	2	10	24	18	0	58.51852	-
	Mean						66.47	-

User satisfaction (73%) from personal workspaces is slightly above the threshold.. Satisfaction is also slightly above in the parameters of interior (space) design (72.59%), warning and direction signs inside the building (70.7%), and collaboration (65.5%). Co-working space satisfaction, on the other hand, received the lowest satisfaction value. The speech and movements of the users adversely affect their attention and concentration in common working spaces (Table 4, Figure 9).

In general, indoor working environment efficiency is considered sufficient. However, the value of other interior features, especially the co-working space, needs to be increased. Because the first area where students are directly exposed to the image and use while working is the interior.

4.2.3. Exterior appearance

The average user satisfaction evaluation of the appearance criterion is negative.Satisfaction levels from high to low, respectively; panorama 72.59%, close environment landscaping 71.48%, dimensions of the parcel 63.33% and courtyard landscaping 58.51%. This level is the lowest criterion of design quality (Table 4).

As a result of the field study, it was determined that the building was built with a drawing distance of 10 m from the west facade and 5 m from the other facades. The building occupies the majority of the parcel on which it was built, leaving very little space for landscape elements and socializing areas (Figure 10).

The Asante Public Library, which received the 2020 AIA/ALA Library Building award, is designed in a 12-acre park. On the basis of the project, the shading properties of trees, their effect on lighting and the

Figure 10.
layout of the building on the parcel, courtyard landscaping and facade cladding material (Photos by the authors)

Table 5.
Access

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Accessibility	Location of the building in the city	16	27	3	8	0	78.88889	+
	Access by private vehicle	17	29	6	2	0	82.59259	+
	Access by Public Transport	6	24	13	11	0	69.25926	-
	Car parking	3	10	24	17	0	59.62963	-
	Bicycle parking	11	26	13	3	1	75.92593	+
	Perception	16	25	10	3	0	80.0	+
	Mean						74.37	+

relaxing properties of the landscape are among the most important criteria of the project concept [31]. Considering the features of the Asante Public Library, it can be said that the exterior of the building is surrounded by metal construction, the existing structure was built on a very small area, and the landscape area did not achieve sufficient success in terms of exterior appearance of the library, which is within the scope of little work. These results are in agreement with user thoughts.

4.2.4. Access

When determining the physical location of public libraries, the locations of other libraries in the city should also be considered. In addition, the required region of the city should be selected by researching the user profile. The main purpose of this is to ensure that all the people have access to libraries without any discrimination as a social class [32].

The library building is on the 75-meter road, which is one of the main lines of the newly built Kayapınar district of Diyarbakır city. To the question of how the users who participated in the survey can reach the library, 8 people (6%) by private car, 28 people (44.44%) by foot, 6 people (14.8%) by minibus, 8 people (25.92%) by public bus, 2 people (3.8%) by midibus and 2 person (3.8%) stated that they came to the building. According to these results, 44.44% of users access on foot, 55.56% by motorized or non-motorized vehicle (Table 5). This suggests that library users generally come from remote areas of the city.

While the satisfaction level of access by private vehicles was sufficient, it was determined that access by public vehicles was not satisfactory. During the face-to-face interviews, it was stated that there is no direct public transportation line from many parts of the city to the library; it was stated that only access was provided by two vehicles.

When users are asked about their access time to the library, 14 people (25.92%) take less than 15 minutes; 26 people (48.1%) between 15 and 30 minutes; 10 people (18.5%); 2 persons (3.7%); 1 person (1.9%); in more than 1 hour; 1 person (1.9%) stated that they reached the building in more than 1.5 hours. This data shows that about 74% of the users come from parts of the city remote from the library. When the access time and access patterns of the users to the library are examined, it can be said that the current parcel selected for the library is far from the regions where the user profile lives and there are problems with transportation. So much so that when users were asked about their reasons for choosing the library, only (10.3%) chose the option “I prefer it because it is close to my house”. These results may show that the location chosen for the library is not suitable for the user profile. However, users seem to be satisfied with the land location (78.88%). According to the face-to-face interviews, the main reason for these results is that the library is in a luxurious area. It is seen that the library can be found easily when the place perception (building) (82.59%) is questioned. While the satisfaction level of a sufficient car parking place is very low (59.62%), the users stated that the bicycle parking lot in the courtyard (75.92%) is sufficient. As a result of field studies, project readings and face-to-face interviews, it was determined that no bicycle or vehicle parking lot was included in the project during the design and construction phase, and the bicycle park was added to the courtyard after the demand of the users. When the analyses about the physical acces of the building are examined, it can be said that the building does not fit the user profile of the immediate environment enough [32].

4.3. Indoor environment quality (IEQ)

Thermal comfort, indoor air quality, acoustic comfort, visual comfort and safety measures were also

Table 6.
Thermal comfort

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Exterior appearance	Thermal insulation	8	23	12	11	0	70.37037	+
	Cool indoors in summer	14	25	10	4	1	77.40741	+
	Warm indoors in winter	11	19	16	6	2	71.48148	+
	Orientation of building	13	21	14	5	1	74.81481	+
	Mean						74,50	+

Table 7.
Indoor air quality

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Indoor air quality	Indoor air quality	11	33	4	6	0	78.14815	+
	Odour quality	8	32	9	4	0	76.60377	+
	Natural ventilation	8	14	19	12	1	65.92593	-
	Mechanical ventilation	11	21	16	6	0	73.7037	+
	Ventilation system	4	27	13	10	0	69.25926	-
	Mean						73,07	-

examined in the evaluation of the indoor environment quality of the building.

4.3.1. Thermal comfort

To determine the thermal comfort level of the building, the questions directed to the users are at the threshold value in the satisfaction index. (Table 6).

To provide thermal comfort in the building, there is a mechanical heating, cooling and ventilation system. The indoor thermal comfort of the users is at a sufficient level in the summer (77.47%) and winter (71.48%) seasons. in addition, the general satisfaction of the users with the building orientation supports the satisfaction with the seasons. Although these results show that users are satisfied with thermal comfort, it should not be forgotten that mechanical air conditioning systems cause significant damage to sustainability, such as high energy consumption, fossil fuel use, and CO_2 emissions [33, 34]. The fact that one of the five most basic criteria that libraries should have in the AIA/ALA awards is environmental sustainability, which shows the importance of sustainable building designs in libraries [35]. The thermal insulation satisfaction index (70.37%) is almost at the threshold value. However, considering that indoor thermal comfort features directly affect the quality of education, this rate is expected to be much higher. In the face-to-face interviews, it was determined that the main reason for this was the negative effect of the thermal insulation of the gallery space designed in the middle of the space. In addition, the absence of shading devices in the building may cause the building temperature to rise at certain times of the day (12.00-15.00) and the use of more artificial ventilation. The use of shading elements in buildings in hot and arid climates reduces the energy consumed for thermal comfort by 10-40% [36]. In addition, considering the hot and dry climate of Diyarbakır, the absence of shading elements may negatively affect sustainability.

4.3.2. Indoor air quality

It has been determined that the users have a general satisfaction in the parameters of indoor odour quality (food, humidity, WC, etc.) (76.6%), indoor air quality (78.14%) and artificial ventilation quality (73.73%) (Table 7).

It has been determined that there is a significant dissatisfaction with the natural ventilation (65.92%) and general ventilation system (69.25%). As a result of face-to-face interviews and fieldwork, it was determined that the lack of natural ventilation in the building was the main reason for this. (building windows are fixed and cannot be opened) (Figure 11). Airless and smelly places are harmful to human health. In addition, it reduces their working and perception performance [37]. Considering that the users of the

Figure 11.
Fixed windows (Photos by the authors)

Table 8.
Acoustic comfort

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Acoustic Comfort	Indoor noise quality	10	27	12	4	0	76.22642	+
	Sound quality	13	19	13	9	0	73.33333	+
	Acoustic quality	6	20	14	14	0	66.66667	-
	Mean						72.07	+

Table 9.
Visual comfort

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Indoor air quality	Natural lighting	10	29	10	4	0	76.98113	+
	Effect of natural lighting on screen (computer) visibility	8	28	11	7	0	73.7037	+
	Artificial lighting quality	11	35	6	2	0	80.37037	+
	Effect of artificial lighting on screen(computer) visibility	8	32	13	1	0	77.40741	+
	The effect of the exterior panel on visual comfort	10	13	23	7	1	68.88889	-
	Mean						75.47	+

existing library building are mostly students, the insufficient level of ventilation system for the users may negatively affect their learning and working characteristics.

Although the size of the windows seems to be an advantage for natural lighting, the fact that no measures have been taken for light control, especially on the upper floors, disturbs the users. In the face-to-face interviews, it was stated that natural lighting causes glare in certain periods.

4.3.3. Acoustic comfort

The low noise level in the spaces used as workspaces led to general satisfaction (76.22%) (Table 8).

It was determined that there was general dissatisfaction with the sound insulation (73.33%) and acoustic quality (66.66%) of the building. In the face-to-face interviews, the use of sound from indoor groups as the main reason for the low acoustic quality of the building. It has been reported that flooring materials reflect sound. One of the most important reasons for using libraries as study areas is that the environment is quiet [12]. The fact that the sound insulation properties of the existing building are not at a level that can prevent the sound in the external environment may negatively affect the working quality of the students.

4.3.4. Visual comfort

It has been determined that there is a general satisfaction (80.37%) from artificial lighting due to the increase in screen visibility and the brightness and

Table 10.
Security

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Security	Built environment lighting	6	24	16	6	2	69.62	-
	Building exterior panel	11	21	14	8	0	72.96	+
	Visual privacy	7	25	10	11	1	69.62	-
	Auditory privacy	8	19	18	9	0	69.62	-
	General safety precautions	8	22	14	10	0	70.37	-
	Entrances and exits to the building	4	20	15	15	0	64.81	-
	Camera security system	13	30	9	2	0	80	+
	Security personal	9	24	12	9	0	72.22	+
	Number of personnel working	4	5	16	29	0	54.07	--
	Fire security	3	22	18	11	0	66.29	-
	Fire brigade access to the building	3	21	24	6	0	67.77	-
	Mean						68.85	-

light colour at the appropriate level for the work area. When the safety indices related to the artificial and natural lighting features of the building are examined, it can be said that there is no significant problem. (Table 9). However, satisfaction indexes related to the effect of lighting on screen visibility are expected to be higher.

Lighting affects human metabolism and psychology. Lighting levels that can meet the physiological needs of users in library buildings can positively affect the working time and productivity of users [38]. In field studies, it was determined that no measures were taken to control the natural lighting provided by large windows. In the face-to-face interviews, it was stated that sunlight negatively affects the visibility of the screen and causes glare at certain times of the day, especially at the tables close to the windows. By solving the few problems related to the lighting level, it will positively affect the working time and productivity of the users, as Ataç (2013) stated.

When the exterior panel aesthetics (colour, texture, etc.) were analysed in the previous sections, it was determined that there was a general dissatisfaction, but satisfaction in terms of visual comfort. In the face-to-face interviews, it was determined that the main reason for this was that the panel prevented distraction thanks to its distinctive feature.

4.3.5. Security

It has been stated that measures such as the use of alarm system, closed circuit camera system, systems to prevent criminals from entering the building should be taken in order to ensure security in the Adcock et al. (1991) library buildings [39].

In the analysis of indoor security measures in terms of user satisfaction, it was determined that there was only a high degree of satisfaction with the presence of the camera system (80%). As a result of face-to-face interviews, it has been determined that the security camera system has started to be used due to the events that disturb the peace of the users recently (Table 10).

It has been determined that there is a significant level of dissatisfaction with all security measures except the security camera system of the building. As a result of face-to-face interviews and fieldwork; It has been determined that the reasons for this dissatisfaction are that there is only one security staff member, member cards are not checked at the entrance and exit despite being in the library rules, anyone can enter without being checked, the night lighting is very low, and visual privacy is not provided. Considering the security measures that Adcock et al. (1991) [39] stated and that should be taken in the library buildings, it can be said that the security measures in the existing building are insufficient.

4.4. Service quality

It can be said that there is a general dissatisfaction with the service quality, where service access and workmanship characteristics are analysed.

4.4.1. Serviceability

It was determined that there was a general satisfaction (75.92%) with the electrical service of the building. However, it was determined that users were not satisfied with the electrical installation (68.51%).

Table 11.
Serviceability

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Serviceability	Term of maintenance and quality	3	19	17	15	0	63.7037	-
	General cleaning	5	28	11	10	0	70.37037	+
	Cleaning the garbage	11	28	8	6	0	76.60377	
	Power cut	14	21	13	6	0	75.92593	+
	Electrical installation	7	23	11	12	1	68.51852	-
	Plumbing	8	20	11	15	0	67.77778	-
	Wired internet connection	4	10	19	20	1	58.51852	-
	Wireless internet connection	2	9	18	24	1	55.18519	-
	Mean						68,85	-

Table 12.
Materials and workmanship

Performance indicators and criteria		Building performance level						
		Number of users					Mean response (%)	Rate of satisfaction
		5	4	3	2	1		
Indoor air quality	Floor covering material	6	24	16	6	2	68,48	-
	Wall covering material	13	26	8	7	0	76.66	+
	Ceiling covering material	8	23	15	8	0	68.92	-
	Workmanship	9	20	15	6	4	67.33	-
	Precaution against rain	5	27	7	15	0	68.14	-
	Mean						69,90	-

The main reason for this is the insufficient socket inputs for the use of electronic devices. Contrary to the satisfaction level of the periodic collection of garbage, it was determined that there was dissatisfaction with the general cleaning of the building (70.37%) (Table 12). As a result of face-to-face interviews, it was determined that there was only one cleaning staff in the building and therefore it was insufficient in terms of cleaning.

When the quality of the plumbing (67.77%) was questioned (making noise, flowing, dripping), users stated that they were not satisfied. As a result of face-to-face interviews, some of the examples given are that the fountain in the courtyard could not be used because it was not maintained, and the sink faucet remained out of order for a long time despite being repaired now. When internet access was questioned, it was determined that there were significant connectivity problems in both wired and wireless internet. As a result of face-to-face interviews, it was stated that many users could not benefit from any electronic resources due to the inefficient internet access of the library. In the study conducted by Bertot, McClure, and Jaeger (2006), it was stated that providing internet access in public libraries to people who cannot otherwise access the internet has benefits such as access to digital information and making libraries a gathering space [40]. As it can be understood from this study, insufficient internet access may prevent the library from reaching the library's goals, especially the criteria for compliance with information technologies specified by IFLA [8].

4.4.2. Materials and workmanship

It was determined that there was a general dissatisfaction with the floor (68.5%) and ceiling coverings (68.92%) while the building elements were only satisfied with the wall material (white paint) (76.66%) (Table 12).

As a result of face-to-face interviews and fieldwork, the reasons for the dissatisfaction with the flooring; it has been determined that the joints are not well welded, noise from the floor and rapid deformation of the materials (Figure 12).

As a result of face-to-face interviews, it was determined that the reason for the dissatisfaction with the ceiling covering was that the parts that fell due to water intake could not be reinstalled and the plumbing was visible. The fact that the level of satisfaction is very low in terms of the measures taken against

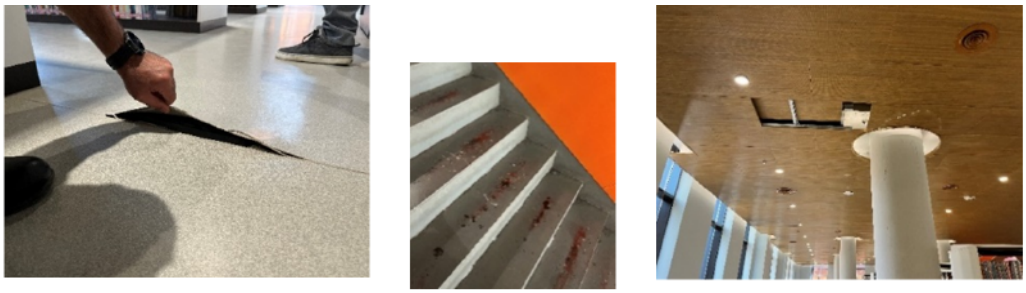


Figure 12.
Deformed floor covering material, deformed step, and deformed ceiling covering material (Photos by the authors)

rain in the building supports this situation. As a result of the field study, it was determined that there was significant water infiltration not only on the ceiling but also on the walls. These results show that more attention should be paid to workmanship and material selection.

5. CONCLUSION AND RECOMMENDATIONS

One of the most important places of access to information is libraries. The most comprehensive of the libraries, also known as the socialization and culture area, according to the user type, are the public libraries. Public libraries can be used by everyone without discrimination in the community. For public libraries to meet the needs of this user profile, they must be at a level that can provide user satisfaction in terms of elements such as building, collection and personnel.

In this study, it was tried to determine the level of conformity with the function of Professor Doctor Fuat Sezgin Provincial Public Library building. For this purpose, POE method was used. Within the scope of this method, literature review, project readings, face-to-face interviews and field study techniques were used together. With the applied method, the design quality, indoor environment quality and service quality of the building were tried to be determined. It has been determined that there is a general dissatisfaction with the criteria affecting the design quality of the building such as interior appearance, exterior appearance and access. In particular, it was determined that the building's suitability for the number of users, close landscaping, parcel suitability, parking suitability and transportation dissatisfaction were at high levels. While there is significant dissatisfaction in terms of thermal comfort, indoor air quality, acoustic comfort and security criteria determined for the evaluation of indoor environment quality, there is only partial satisfaction in terms of visual comfort. Acoustic comfort of the materials used, not opening the windows, lack of shading elements and inadequacy of insulation were the criteria that most affected thermal comfort dissatisfaction. While there is general dissatisfaction in terms of serviceability and material and workmanship criteria determined for the evaluation of service quality, it has been determined that there is only partial satisfaction in terms of electrical installation.

As a result of the analyses and evaluations specific to the existing building, the following criteria can be suggested to increase quality in library buildings.

- While the building is being designed, architects and the library staff, who are permanent users of the library, should cooperate. Architects should take into account the directions of librarians.
- While choosing the land in terms of its urban location, the city should be considered as a whole and the region where it is most needed should be preferred. A negative example of this is that the users of the existing building often come from remote areas.
- While designing the library building, in regions with harsh climatic conditions, climate-appropriate designs will increase energy efficiency. For example, in hot and dry climates where this library is located, the use of shading devices, landscape elements and water elements will reduce the energy consumed for cooling (Figure 13).
- The design strategies of traditional architecture should be properly analysed and used in the design of library buildings. Contributes to the sustainability of these buildings. For example, instead of designing the courtyard, which is used in the current building, inspired by traditional Diyarbakır houses, only as a spatial space, designing the court-

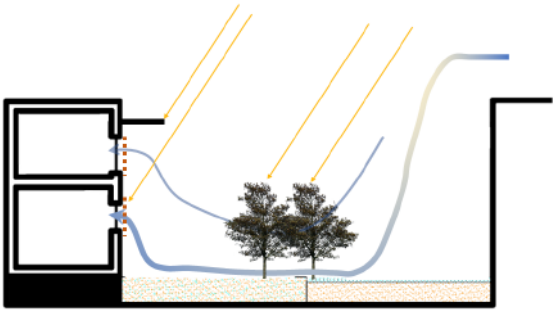


Figure 13.
Recommendations for use of passive design strategies in the library building (Sketch by Ruşen Ergün)

yard elements such as trees and pools and the dimensions of the courtyard to create a shaded area will have a positive effect on energy efficiency (Figure 13).

- In the design of the recreation area, the close-environment relationship should be well established. For example, in the design of the existing building, associating it with the park located at the back of the building will increase the recreation areas.
- In the selection of the library building area, its access throughout the city should be analysed. For example, there is no direct access to the building within the scope of the study by public transport from many parts of the city. Considering that the increase in the number of vehicles used negatively affects sustainability, this situation affects both access and sustainability negatively.
- Considering the user profile in the city, the number and dimensions of libraries should be determined. The biggest complaint of library users within the scope of the study is spatial inadequacy, which is a negative example.
- Library buildings should have advanced technology infrastructure. This facilitates information access

It is hoped that these recommendations will be a guide for all professions involved in the design, construction and use of library buildings to achieve high quality.

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