Gazi University Journal of Science
Part B: Art, Humanities, Design And Planning
GU J Sci Part:B
1(1):1-14 (2013)

An Evaluation of Gazi University Faculty of Architecture Buildings with Regard to Turkish Standards Related with Accecibility for People with Disabilities

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Received: 22/03/2013 Accepted: 27/03/2013

ABSTRACT

This research evaluates the accessibility of the existing environment for a possible physically handicapped student in a wheelchair in the Faculty of Architecture, before and after the 2011 renovation of the Gazi University Faculty of Architecture buildings with regard to the Turkish Standard "*TS9111.2011 The Requirements Of Accessibility In Buildings For People With Disabilities And Mobility Constraints.*" The main purpose of this study is to determine the level of accessibility of the building and how the renovation altered and improved the existing condition with regard to accessibility standards that are in effect in Turkey. At first all the activity areas and spaces of the faculty building were classified and renamed for a systematic evaluation. Then these areas were observed and evaluated with a series of investigation forms which were prepared with regard to main topics in TS 9111.2011 All these forms were evaluated within themselves and then re-evaluated within the whole of the building in order to form a broader look to the General Accessibility Value (G.A.V) of the building. The evaluation showed an altered level of accessibility due to the renewal of the building and also provided information about the types of problems that have been solved and also still exist, and classified these problems with regard to their nature. Finally a proposal for the solutions of the problems that were observed is given at the conclusion.

1. INTRODUCTION

Accessibility of the built environment by the physically handicapped users is one of the most important issues in today's society. In Turkey laws and regulations were prepared and related standards TS 9111,1991 *"Specifications for Designing Residential Buildings for the Disabled"* were in effect since 1991 that described the dwellings and residential environment built specially for the handicapped users. Recently in November 2011 the related Turkish Standard TS 9111,2011 "*The Requirements Of Accessibility In Buildings For People With Disabilities And Mobility Constraints"* was renewed and republished by the Turkish Standards Institute. As mentioned in References, in preparation of this standard and wide range of international standards and regulations about the accessibility issues were covered. The final outcome is now covering not only the residential buildings that handicapped people live but also the general built environment for the handicapped users to live their lives freely and without obstruction. This change in perspective has improved the alternatives for new designs and has given the architects broader knowledge in accessibility related issues.

As architects, we are obliged to consider and understand the physical conditions and needs of the users that we

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are designing our buildings for. In the case of the handicapped users, whatever their types of handicaps are, making empathy with the possible user is far more important than any regular user. The social interaction and inclusion of the handicapped user to the daily life and their being part of the community, work life, healthcare and social life relates directly to their ability to access the built environment. If the designers that build these environments are not aware of the population of the handicapped users, who are able and are willing to participate like any other citizen, a huge number of people are excluded from the opportunities and services that today's city life provides. This sensitivity should be given to the students of **a**rchitecture **f**aculties from the beginning to the end of their school years. This will solve many accessibility related problems of the newly built environment from the beginning without even occurring and will give newly graduated architects an edge over their co-workers and colleagues. Handicapped people and together with them their families are affected from their situation. Most of them are not being able to leave their homes even for healthcare services. Not to mention having a proper education, applying to job opportunities or inclusion to the recreational activities an individual should be able to attend to live a healthy, self-satisfying and happy life.

Chard, G., & Couch, R., (1998) in their study take a higher education facility in Liverpool and apply a survey on the buildings regarding their accessibility and usability by handicapped students. Their main motivation was to include the handicapped student**s** in the surveying process to collect results from their perspective and find immediate solutions to their needs. As stated in their study; *There disabled students contributed to the collection of relevant information: a student who is registered blind, a student with a severe upper limb impairment and a student who is a wheelchair user. ... Responses were individual to each reflecting their needs, but common themes emerged. Difficulties were access to buildings, carrying books, opening heavy doors,... difficulties with car parking, broken pavements, lifts and toilets not always being available for use and poor signage*. [2] Certain problems stated in their study were also observed in our study. Luckily their study included handicapped students and their personal responses were retrieved. Unfortunately in the Gazi University Faculty of Architecture there were no handicapped students enrolled to any department and the research in this study was applied by the researcher.

Goldsmith in his book "**Designing for the disabled. The new Paradigm"** describes disability, in a different manner; *The disabled is an ambiguous term. It can mean, as it usually does, people with disabilities, those who have got something wrong with them which a physician can describe. This is a medical model. Or it can mean people, whether or not they may be 'medically' disabled, who are in some other way disabled – who are financially disabled for example of socially disabled, or architecturally disabled. This architecturally disabled people, with whom this book is concerned, when using or attempting to use buildings can find themselves confronted by impediments which prevent them from doing so or allow them to do so only with difficulty and inconvenience.* He states that he rejects the **designing-for-the-disabled** practice which is rooted in the **treat-as-different** tradition [6].

Studies regarding design for the handicapped people mostly concentrate on the design standards published by national and international bodies. This is a necessary and important part of the subject. But also the point of view of the designers should be altered in a way that all design elements and buildings to be accessible and usable by all people without exceptions. *Buildings are designed for people to use-to give shelter, to house, for work and for play. An environment that is designed to be accessible, or inclusive, allows those activities to take place without restricting access to people with certain abilities only. Inclusive design does not disable users; it enables independent and equal use* [10] Sawyer, and Bright states this idea of inclusive design and supports it with certain principles that govern the Universal Design. The North Carolina State University Center for Universal Design lists seven principles of universal design that define major attributes of a building or any product to be;

1. *Equitable use-The design is useful and marketable to people with diverse abilities.*
2. *Flexible use-The design accommodates a wide range of individual preferences and abilities.*
3. *Simple and Intuitive-Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.*
4. *Perceptible-The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.*
5. *Tolerace for Error-The design minimizes hazards and the adverse consequences of accidental or unintended actions.*
6. *Low physical effort-The design can be used efficiently and comfortably and with a minimum of fatigue.*
7. *Size and space for approach and use-Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.* [10],[25].

Please note that the Principles of Universal Design address only universally usable design, while the practice of design involves more than consideration for usability. Designers must also incorporate other considerations such as economic, engineering, cultural, gender, and environmental concerns in their design processes. These Principles offer designers guidance to better integrate features that meet the needs of as many users as possible. [25].

These principles should be applied to not only newly designed products and buildings but also should enlighten the way to how an existing building and

surrounding areas can be accessible and usable by all users. In this study existing condition of the building has been evaluated and re-evaluated after the renovation in 2011 with regard to accessibility standards that are applicable in Turkey, not only for the accessibility and usability of handicapped users but also all users that use the Faculty of Architecture buildings.

As mentioned above many national and international standards are in use to accomplish this task. This research evaluates the existing environment before and after the 2011 renovation of the Gazi University Faculty of Architecture buildings with regard to *TS9111.2011 "The Requirements of Accessibility in Buildings for People with Disabilities and Mobility Constraints."*

The Accessibility and the usability of the classrooms, conference rooms, cafeterias and the social areas of the faculty building and their near surroundings were selected as a case and were observed before and after the renovation of the faculty building in summer 2011. The main goal of this study is to determine the level of accessibility of the building and how the renovation altered and improved the existing condition with regard to accessibility standards that are in effect in Turkey. Another aim of this study is to reveal any other problems that still exist in the buildings and to propose ways to repair them.

This study uses the method developed in the Ph.D. thesis of the author, "*Evaluation Of Shopping Centers With Regard To Accessibility Standards For The Handicapped,"* completed in 2007 and re-applies this method using the renewed Turkish Standards TS 9111.2011 as the regulations in effect and accepts these standards to be applicable and efficient way to avoid and solve problems for the handicapped students that might be willing to get an education on architecture, at the Gazi University Faculty of Architecture. Other standards that are applicable in Turkey such as TS 12576.2012 and international standards listed in references are also taken into consideration where necessary. This study does not intend to criticize anybody or institution but aims to reveal problems caused by the built environment that may limit lives of handicapped users and propose alternative solutions to solve existing situations.

This study is limited to the existing condition of the building at the time of the observations in 2011 before the renovation and 2012. The joint usage of the building with the Faculty of Engineering is not a relevant issue for this research as the common areas and the near surroundings are the same. But only the study areas and classrooms, laboratories and ateliers of the Department of Architecture that are situated on the 3rd floor of the educational building were closely evaluated. Academic staff offices and technical areas of the building are also not evaluated due to the fact that these separate buildings are not renovated and are not directly related to the educational services for a disabled student. At this study, possible user is defined as a person without any hearing and visual impairments, a physically handicapped lecturer in a wheelchair or a student in a state of temporary loss of mobility or a visitor in temporary decrease in agility is accepted as the possible user in the Faculty of Architecture Buildings.

2. METHODOLOGY

At first all the activity areas and spaces of the faculty building were classified and renamed for a systematic evaluation. Then these areas were observed and evaluated in time before and after the renovation in 2011 with regard to TS 9111.2011 In order to accomplish that a series of investigation forms were prepared that are asking certain questions related to the topic of interest that the form is related from the topics in TS 9111.2011 Finally the answers and observations to these forms were evaluated. The evaluation showed an altered level of accessibility due to the renewal of the building and also provided information about the types of problems that have been solved and also still exist, and classifies these problems with regard to their nature. The activity areas and the related areas are classified as follows;

1. Activity areas around the building

City transportation and building entrance(s) relations regarding near surroundings

OPL: Open parking area / CPA: Closed parking areas / PTB: Public transportation point by bus PTM: Public transportation point by metro (ANKARAY) / SW: Sidewalks / SE: Site entrances.

2. Access to and from open and covered car parks, from the city to the building entrance and internal yard-building entrance and social and recreational area relations

PBE: Primary building entrance / SBE: Secondary building entrance(s) / EXY: External courtyard and social Areas / CFT: Cafeterias / CAN: Canteen / SOC: Internal social areas /

3. Vertical and Horizontal circulation and general unobstructed internal accessibility in the building

STR: Stairs / ELV: Elevators / COR: Corridors /

4. Access to activity areas in the building Classrooms, lecture halls, conference rooms, laboratories and libraries in the building

CLS: Classrooms / ATE: Ateliers / AMP: Amphi-type lecture rooms / LAB: Computer Laboratories / CNF: Conference Rooms / LIB: Library

5. Access to wet spaces in the building

WC: Water Closets at each level and around the faculty building

The evaluation forms prepared with regard to main topics in TS 9111.2011 are as follows.

Form1: Car parks, public transportation points and near surroundings

Form2: Means of access, ramps, entrances, doors, windows

Form3: Stairs and elevators and other accessibility related devices

Form4: Internal accessibility of activity areas.

Form5: Accessibility and usability of wet spaces

In preparation of these forms, "The Accessibility Determination Forms" for "open areas" and "buildings" which were prepared by the Turkish Republic Ministry of Family and Social Policies, General Directorate of Disabled and Elderly People's Services were used as guidance. But not only these forms but also international accessibility standards were also taken into consideration where necessary.

The questions asked in these forms are seeking answers if an existing condition is; "Compatible" (Com), "In-compatible" (I/Co) or "not-applicable" (N/A) with the regulation stated in the TS 9111.2011 related to the main topic of the form. Every "compatible" answer gives "0" (zero) points to the accessibility value of the form, every "ın-compatible" answer gives "3" (three) points to the accessibility value of the form and every "non-applicable" answer gives "1" (one) point to the accessibility value of the form at the applied activity area.

Accessibility Value (A.V) of a form is directly related to the amount of "in-compatible" and "non-applicable" answers. The higher the accessibility value (A.V) of a form or an activity area, the less accessible that space is. In this study, accessibility value (A.V) of a building is regarded as a negative aspect for an activity area and a building with regard to satisfying the needs of a disabled user. If a question in a form is not relative to an existing situation at an activity area the answer is left blank in order to avoid that question affecting the value of the form. At the evaluation stage these values received from all forms applied to activity areas are added to receive the General Accessibility Value (G.A.V) of the building. This is shown at the "Table 6: Work Plan and Accessibility Values"

3. RESULTS

3.1. Form1: Car Parks, Public Transportation Points and Near Surroundings

A total of **12** Questions (as related) were asked at **8** activity areas in and around the building. The number of answers received for these questions were;

Table 1. Form-1 answers

ACTIVITY AREAS		Com	I/Co	N/A	(A.V) 2011	Com	I/Co	N/A	(A.V) 2012
Open parking Area (From SEN-1 & SEN-3)	OPA	1	6	4	22	2	5	4	19
Closed Parking Areas (From-SEN-2)	CPA	0	7	4	25	0	7	4	25
Public Transportation point by Bus (Via SEN-2)	PTB	1	5	0	15	1	5	0	15
Public Transportation point by Metro (via-SEN-3)	PTM	1	5	0	15	1	5	0	15
Sidewalks (All around the Site)	SWS	0	7	0	21	0	7	0	21
Site entrances (to Yükseliş street)	SEN/1	0	6	0	18	3	3	0	9
Site entrances to Ali Suavi Street)	SEN/2	0	6	0	18	2	4	0	12
Site entrances (to Celal Bayar BLV.)	SEN/3	0	6	0	18	2	4	0	12

Before the renovation in 2011, the accessibility value (A.V) for activity areas were **152** and this provided **19.02%** of the General Accessibility Value (G.A.V) of the building. After the renovation, the accessibility value (A.V) for activity areas are **128** and this provides **18, 93** % of the General Accessibility Value (G.A.V) of the building in 2012. This indicates **-24 points** of alteration and **0, 09% decrease** in the ratio of the accessibility value (A.V) of these activity areas over the General Accessibility Value (G.A.V) of the building.

3.2. Form2: Means of Access, Ramps, Entrances, Doors, Windows

A total of **12** Questions (as related) were asked at **5** activity areas in and around the building. The number of answers received for these questions were;

Table 2. Form-2 answers

ACTIVITY AREAS		Com	I/Co	N/A	(A.V) 2011	Com	I/Co	N/A	(A.V) 2012
Primary Building Entrance (to-OPA-Site Ent-1)	PBE	1	6	2	20	5	4	0	12
Sec.Building Entrance (to Site Ent-2-Closed CPA)	SBE/1	1	7	1	22	4	3	2	11
Sec.Building Entrance (to Site Ent-3-OPA)	SBE/2	1	6	2	20	3	4	2	14
Sec.Building Entrance (to External Yard)	SBE/3	1	6	2	20	1	6	2	20
External Yard and Social Areas	EXY	1	6	2	20	1	6	2	20

Before the renovation in 2011, the accessibility value (A.V) for activity areas were **102** and this provided **12, 77%** of the General Accessibility Value (G.A.V) of the building. After the renovation, the accessibility value (A.V) for activity areas are **77** and this provides **11, 39%** of the General Accessibility Value (G.A.V) of the building in 2012. This indicates **-25 points** of alteration and **1, 38% decrease** in the ratio of the accessibility value (A.V) of these activity areas over the General Accessibility Value (G.A.V) of the building.

3.3. Form3: Stairs and Elevators and Other Accessibility Related Devices

A total of **15** Questions (as related) were asked at **11** activity areas in and around the building. The number of answers received for these questions were;

Table 3. Form 3 answers

ACTIVITY AREAS		Com	I/Co	N/A	(A.V) 2011	Com	I/Co	N/A	(A.V) 2012
Corridors	COR	1	4	0	12	3	2	0	6
Elevators (Primary Entrance)	ELV	1	2	4	10	6	1	0	3
Platform Lift (Stairs-Conference Hall)	PLF	1	2	4	10	5	2	0	6
StairME Bas.to 4th (Primary Entrance Hall)	S/ME	2	7	0	21	4	5	0	15
StairUT Bas.to 4th (One-legged Utility stairs)	S/UT	2	6	1	19	4	4	1	13
StairCF Bas.to 4th (Conference Hall)	S/CF	3	7	3	24	8	5	0	15
StairSE Bas-Sec.Ent.-Gro.-1a-2a-3a (Sec.Entr Hall)	S/SE	2	7	0	21	4	5	0	15
Half-Stairs (1st to 1a (6 steps))	HFS/1	3	7	0	21	5	5	0	15
Half-Stairs (2nd to 2a (12 Steps))	HFS/2	3	7	0	21	5	5	0	15
Half-Stairs (2a to 3rd (12 Steps))	HFS/3	3	7	0	21	5	5	0	15
Half-Stairs (3a to 4th (6 Steps))	HFS/4	3	7	0	21	5	5	0	15

Before the renovation in 2011, the accessibility value (A.V) for activity areas were **201** and this provided **25, 16%** of the General Accessibility Value (G.A.V) of the building. After the renovation, the accessibility value (A.V) for activity areas are **133** and this provides **19, 67%** of the General Accessibility Value (G.A.V) of the building in 2012. This indicates **-68** points of alteration and **5, 48% decrease** in the ratio of the accessibility value (A.V) of these activity areas over the General Accessibility Value (G.A.V) of the building.

3.4. Form4: Internal Accessibility of Activity Areas

A total of **13** Questions (as related) were asked at **21** activity areas in and around the building. The number of answers received for these questions were;

Table 4. Form 4 answers

ACTIVITY AREAS (3rd Floor)		Com	I/Co	N/A	(A.V) 2011	Com	I/Co	N/A	(A.V) 2012
Classrooms (309)	CLS/1	11	2	0	6	11	2	0	6
Atelier (301)	ATE/1	9	4	0	12	9	4	0	12
Atelier (302)	ATE/2	11	2	0	6	11	2	0	6
Atelier (304, 304A, 306, 306A)	ATE/3	11	2	0	6	11	2	0	6
Atelier (307)	ATE/4	11	2	0	6	11	2	0	6
Amphi-type lecture rooms (314)	AMP/1	6	7	0	21	6	7	0	21
Amphi-type lecture rooms (316)	AMP/2	6	7	0	21	6	7	0	21
Computer Laboratories (305)	LAB/1	8	5	0	15	8	5	0	15
Computer Laboratories (308)	LAB/2	8	5	0	15	8	5	0	15
Conference Rooms (Akademi Salonu)	CNF/1	5	7	1	22	5	7	1	22
Conference Rooms (Yükseliş Salonu)	CNF/2	5	7	1	22	5	7	1	22
Library (Basement)	LIB	9	4	0	12	11	2	0	6
Cafeteria (Ground Floor Interior Access)	CFT/1	11	2	0	6	11	2	0	6
Cafeteria (External Yard Exterior)	CFT/2	11	2	0	6	11	2	0	6
Canteen (External Yard Exterior Access)	CAN	11	2	0	6	11	2	0	6
Internal Social areas (Basement Floor)	SOC/B	11	2	0	6	11	2	0	6
Internal Social areas (Ground Floor)	SOC/G	11	2	0	6	11	2	0	6
Internal Social areas (First Floor)	SOC/1	11	2	0	6	11	2	0	6
Internal Social areas (Ground Floor)	SOC/2	11	2	0	6	11	2	0	6
Internal Social areas (Ground Floor)	SOC/3	11	2	0	6	11	2	0	6
Internal Social areas (Ground Floor)	SOC-4	11	2	0	6	11	2	0	0

Before the renovation in 2011, the accessibility value (A.V) for activity areas were **218** and this provided **27, 28%** of the General Accessibility Value (G.A.V) of the building. After the renovation, the accessibility value (A.V) for activity areas are **212** and this provides **31, 36%** of the General Accessibility Value (G.A.V) of the building in 2012. This indicates **-6 points** of alteration and **4, 08% increase** in the ratio of the accessibility value (A.V) of these activity areas over the General Accessibility Value (G.A.V) of the building.

3.5. Form5: Accessibility and Usability of Wet Spaces

A total of **15** Questions (as related) were asked at **6** activity areas in and around the building. The number of answers received for these questions were;

Table 5. Form 5 answers

ACTIVITY AREAS		Com	I/Co	N/A	(A.V) 2011	Com	I/Co	N/A	(A.V) 2012
Water Closets	WC/B	8	7	0	21	8	7	0	21
Water Closets	WC/0	8	7	0	21	8	7	0	21
Water Closets	WC/1	8	7	0	21	8	7	0	21
Water Closets	WC/2	8	7	0	21	8	7	0	21
Water Closets	WC/3	8	7	0	21	8	7	0	21
Water Closets	WC/4	8	7	0	21	8	7	0	21

Before the renovation in 2011, the accessibility value (A.V) for activity areas were **126 points** and this provided **21, 36%** of the General Accessibility Value (G.A.V) of the building. After the renovation, the accessibility value (A.V) for activity areas are **126 points** and this provides **25, 45%** of the General Accessibility Value (G.A.V) of the building in 2012. This indicates **0 points** of alteration and **4.10% increase** in the ratio of the accessibility value (A.V) of these activity areas over the General Accessibility Value (G.A.V) of the building.

Table 6: Work Plan and Accessibility Values (Continued)

		Evaluation Forms		Form1: Car parks, Public Trans. and near surroundings (A.V)		Form2: Means of access Ramps, Entrances, Doors, Windows (A.V)		Form3: Stairs and elevators and other access. related devices (A.V)		Form4: Internal Accessibility of Activity areas.(A.V)		Form5: Accessibility and usability of Wet spaces (A.V)	
		2011	**799**	152	(19, 02%)	102	(12, 77%)	201	(25, 16%)	218	(27, 28%)	126	(15, 77%)
	GENERAL ACCESSIBILITY VALUE (G.A.V)	**2012**	**676**	128	(18, 93%)	77	(11, 39%)	133	(19, 67%)	212	(31, 36%)	126	(18, 64%)
	ACTIVITY AREAS	Floor	ABB.	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
1	Open parking Area (From SEN-1 & SEN-3)	G	OPA	22	19								
2	Closed Parking Areas (From-SEN-2 & SEN-3)	B	CPA	25	25								
3	Public Transportation point by Bus (Via SEN-2)	G	PTB	15	15								
4	Public Transportation point by Metro (via-SEN-3)	G	PTM	15	15								
5	Sidewalks (All around the Site)	G	SWS	21	21								
6	Site entrances (to Yükseliş street	G	SEN-1	18	9								
7	Site entrances (to Ali Suavi Street)	G	SEN-2	18	12								
8	Site entrances (to Celal Bayar BLV.)	G	SEN-3	18	12								
9	Primary Building Entrance (to-OPA-Site Ent-1)	G	PBE			20	12						
10	Sec.Building Entrance (to Site Ent-2-Closed CPA)	G	SBE/1			22	11						
11	Sec.Building Entrance (to Site Ent-3-OPA)	G	SBE-2			20	14						
12	Sec.Building Entrance (to External Yard)	G	SBE-3			20	20						
13	External Yard and Social Areas	G	EXY			20	20						
14	Corridors	Ba.-4th	COR					12	6				
15	Elevators (Primary Entrance)	Gr.-4th	ELV					10	3				
16	Platform Lift (Stairs-Conference Hall)	Ba-Gr.	PLF					10	6				
17	StairME Bas.to 4th (Primary Entrance Hall)	All	S-ME					21	15				
18	StairUT Bas.to 4th (One-legged Utility stairs)	All	S-UT					19	13				
19	StairCF Bas.to 4th (Conference Hall)	All	S-CF					24	15				
20	StairSE Bas-Sec.Ent.-Gro.-1a-2a-3a (Sec.Entr Hall)	All	S-SE					21	15				
21	Half-Stairs (1st to 1a (6 steps))	1st-1a	HFS-1					21	15				
22	Half-Stairs (2nd to 2a (12 Steps))	2nd-2a	HFS-2					21	15				
23	Half-Stairs (2a to 3rd (12 Steps))	2a-3rd	HFS-3					21	15				
24	Half-Stairs (3a to 4th (6 Steps))	3a-4th	HFS-4					21	15				

Table 6: Work Plan and Accessibility Values

	ACTIVITY AREAS	Floor	ABB.	Form1: Car parks, Public Trans. and near surroundings (A.V)		Form2: Means of access Ramps, Entrances, Doors, Windows (A.V)		Form3: Stairs and elevators and other access. related devices (A.V)		Form4: Internal Accessibility of Activity areas.(A.V)		Form5: Accessibility and usability of Wet spaces (A.V)	
25	Classrooms (309)	3rd	CLS/1							6	6		
26	Atelier (301)	3rd	ATE/1							12	12		
27	Atelier (302)	3rd	ATE-2							6	6		
28	Atelier (304, 304A, 306, 306A)	3rd	ATE-3							6	6		
29	Atelier (307)	3rd	ATE-4							6	6		
30	Amphi-type lecture rooms (314)	3rd	AMP-1							21	21		
31	Amphi-type lecture rooms (316)	3rd	AMP-2							21	21		
32	Computer Laboratories (305)	3rd	LAB-1							15	15		
33	Computer Laboratories (308)	3rd	LAB-2							15	15		
34	Conference Rooms (Akademi Salonu / Gr.Floor)	Ground	CNF-1							22	22		
35	Conference Rooms (Yükseliş Salonu / Gr.Floor)	Ground	CNF-2							22	22		
36	Library (4th floor / Basement)	4th / Bs	LIB							12	6		
37	Cafeteria (Ground Floor Interior Access)	G	CFT-1							6	6		
38	Cafeteria (External Yard Exterior Access)	G	CFT-2							6	6		
39	Canteen (External Yard Exterior Access)	G	CAN							6	6		
40	Internal Social areas (Basement Floor)	B	SOC-B							6	6		
41	Internal Social areas (Ground Floor)	G	SOC-G							6	6		
42	Internal Social areas (First Floor)	1	SOC-1							6	6		
43	Internal Social areas (Ground Floor)	2	SOC-2							6	6		
44	Internal Social areas (Ground Floor)	3	SOC-3							6	6		
45	Internal Social areas (Ground Floor)	4	SOC-4							6	6		
46	Water Closets (All Floors)	All	WC									126	126

4. EVALUATION

All the following forms were evaluated within themselves and then re-evaluated within the whole of the building in order to form a broader look to the General Accessibility Value of the building.

4.1. Evaluation according to Forms:

4.1.1. Form1: Car parks, Public Transportation points and near surroundings

The renovation in 2011 did not really affect the accessibility values of the open and close car parks and the near surroundings of the building. Especially there are still no accessible routes from the public transportation points or there is no parking space reserved for an accessible user compatible with TS 9111 in either parking area. No drop off area has been reserved and none of the sidewalks around the building are connected to roads or to each other with curb-ramps that are compatible with TS 9111. The signage and information at site entrances and the accessibility of the car parks, public transportation points and near surroundings have only slightly improved after renovation in 2011. Both closed parking areas has still no means of access to ground level by an elevator, stair ramp, platform lift or a ramp.(Figure 1) After the renovation in 2011 the site entrance 1 is equipped with curb ramps on the pavement and handicapped accessible gates.(Figure 2)

a b c

Figure 1. Closed Parking Areas (From SEN-3) a: 2012 , (From SEN-2) b: 2012, c: 2012

a b

Figure 2 Site entrances (to Yükseliş street) a:2011, b:2012

4.1.2. Form2: Means of Access, Ramps, Entrances, Doors, Windows

Access from the site entrances to building entrances have slightly improved after the renovation. Primary building entrance of the education building has been equipped with a proper ramp and is now directly linked with the site entrance with an un-obstructed accessible route. (Fiure 3) The entrance doors at the primary entrance were operated by hand and were not sufficient in width. They are now operated automatically and are compatible with standards in width, maneuvering areas and signage. Secondary building entrance is still operated by hand and not easily graspable by handicapped users. A ramp that existed in 2011 has been removed in 2012 (Figure 4) Secondary building entrance to external yard has been equipped with a ramp in 2011 (Figure 5) Other entrances to buildings are automatically operated and level entrances without obstruction. However the other routes to secondary site entrances and open parking area to the secondary building entrances are still not linked with a ramp or a stair lift. This is still a major obstruction for handicapped users that will come by metro station to the building. Also there is not enough signage leading to an accessible entrance in either of the secondary entrances or secondary site entrances. The accessibility related with the means of access, ramps, entrances doors and windows have only slightly improved after the renovation in 2011.

a b

Figure 3. Primary Building Entrance (to-OPA-Site Ent-1) a: 2011, b: 2012

a b

Figure 4 Sec.Building Entrance (to Site Ent-2-Closed CPA) with ramp a:2011, without ramp b:2012

a b

Figure 5 Sec.Building Entrance (to External Yard) a:2011 , b:2012

4.1.3. Form3: Stairs and Elevators and Other Accessibility Related Devices

As a major change in vertical circulation a working elevator has been installed after the renovation in 2011.(Figure 6) This elevator links all the levels of the educational building together with the existing elevator that links the administrative building and the part of the educational building. Another major improvement has been the installation of a platform lift on the stairs to the basement floor where social activities and library is situated (Figure 3). The general condition of the stairs and the railing has been improved significantly after the renovation but there are still missing handrails on large staircases that link half-floors. Another problem is that there are no ramps of automated platform lifts or stair lifts are installed on the stairs of the building that link half floors which education takes place. A handicapped student has to go down 3 floors to the ground floor and get on another elevator to reach the studios situated on

half floors such as 301 and 302. (Figure 7) Although there are still some problems, the accessibility of the stairs and elevators and other accessibility related devices have sufficiently improved after the renovation in 2011.

Figure 6. Elevators (Secondary Entrance) a: 2011, Newly installed elevator (Primary Entrance) b: 2012, Newly installed Platform Lift(Stairs-Conference Hall) c: 2012

Figure 7. Half-Stairs (1st to 1a (6 steps)) a:2011, Half-Stairs (2a to 3rd (12 Steps)) b:2011, StairSE Bas-Sec.Ent.-Gro.-1a-2a-3a (Sec.Entr Hall), c:2011, StairME Bas.to 4th (Primary Entrance Hall) d:2011, e:2012, StairUT Bas.to 4th (One-legged Utility stairs) f: 2011, g:2012

4.1.4. Form4: Internal Accessibility of Activity Areas

The internal accessibility of the classrooms, ateliers and the laboratories of the Department of Architecture, have not changed radically with regard to accessibility issues. The worn-out desks and chairs of the amphi-type lecture room has been changed in 2011 but there are still no spaces reserved for handicapped user in amphi-type lecture room 314 and 316. The ateliers at the 3rd floor of the education building are still equipped with same desks and chairs. (Figure 8). The major change is the location of the library which has been relocated to the basement floor where there are accessible stairs and a stair lift that can carry handicapped students to that level. Before the renovation the library was located on the 4th floor and there were no means of access to that level by an elevator or a stair lift. Along with that the surface materials of the library on the floor level was worn out carpeting that had obstructed easy movement in the library. This has been removed in the new library on the basement floor. (Figure 9) Also the renovation in the internal activity areas has changed due to the removal of partitions in social areas. The conference rooms on the ground floor were and are still not very accessible to handicapped users. Both conference rooms do not have ramps leading to the podium and there are no spaces left for handicapped users in either of them. (Figure 10) These improvements have altered the accessibility of the Internal Accessibility of Activity areas very slightly.

Figure 8. Amphi-type lecture rooms (314) a:2011, Atelier (307) b: 2011

Figure 9. Library (4th floor) a:2011 , b:2011 , Library (Basement) c:2012

Figure 10. Conference Rooms (Akademi Salonu / Gr.Floor) a:2011, Conference Rooms (Yükseliş Salonu / Gr.Floor) b:2011

4.1.5. Form5: Accessibility and Usability of Wet Spaces

The renovation in 2011 did not really affect the accessibility values of the wet spaces as they have already been installed appropriately for handicapped students in 2011. The major problem that still exists in every floor and in every toilet is that they are not level with the floor that they are on. At least a 10 cm height is raising the toilet areas from level and no ramps are linking the toilets. (Figure 11) Another issue is that these cabins prepared appropriately for handicapped users are used as storage areas for cleaning equipment as there is no handicapped student attending the school. Minor improvements should be applied in order to have these wet spaces arranged appropriately for the handicapped students.

Figure 11: Water Closets (Ground Floor) a:2011, b: 2012, c: 2012, d: 2012

5. CONCLUSIONS

As a result of the evaluations the Gazi University Faculty of Architecture educational buildings that have been renovated in summer 2011 show an altered state of accessibility related issues when observed with evaluation forms prepared with regard to Turkish Standard TS 9111.2011.

The evaluation shows a **123 points (15, 39%) decrease** in the General Accessibility Value (G.A.V) of the building after the renovation in 2011.

Main improvements in accessibility are observed in the vertical circulation possibilities in the educational building. All levels of the education building are directly linked to each other by an elevator or a stair lift vertically.

Along with all this positivity some problems still exist, such as the inaccessible state of the wet spaces throughout the building that may be repaired with minor construction.

The most important issue that should be solved must be the continuity of the accessible route within each level and half levels of the building. The level changes between the floors and half floors due to the different level heights of the education building should be repaired at once. There should be stair lifts, and platforms lifts between half floors of the building and also the stairs linking half floors should be equipped with handle bars and railings for users with limited mobility.

The closed car parks should be equipped with stair lifts and platform lifts where necessary if the handicapped user is to use the closed parking areas without any constraints. As there are no spaces designated for the handicapped user, either a student or a staff of the faculty, the existing condition shows that they are not considered as a possible user to this facility.

Another major improvement should be done in the area of informative and descriptive signage. Signage leading to accessible entrances and wet spaces should be installed.

Many improvements have been applied and the major quality of the space has improved after the renovation of the faculty buildings. This improved the quality of the space also effects the recognition of the faculty building in a positive manner. But the most important issue according to our study should be that all areas of all building should be accessible and usable to all users without exception.

As any healthy person can suffer from such immobility at any period of their lives which can be permanent or temporary, a **"design for all",** principal should be applied in new buildings as well as to renovation of existing buildings. As the major focus of this study emphasizes on a handicapped user in a wheelchair, either a student or staff, any improvements that are going to take place in the future should consider that as an important issue.

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