

**SPACE STANDARDS AND VEHICULAR CIRCULATION IN THE DESIGN OF
INTEGRATED SERVICE STATION, ABEOKUTA**

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SEPTEMBER, 2021

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INTEGRATED SERVICE STATION, ABEOKUTA**

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**A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF
MASTER OF SCIENCE (M.Sc.) DEGREE IN ARCHITECTURE IN THE
DEPARTMENT OF ARCHITECTURE, COLLEGE OF SCIENCE AND
TECHNOLOGY, COVENANT UNIVERSITY.**

SEPTEMBER, 2021

ACCEPTANCE

This is to attest that this dissertation is accepted of the requirements for the award of Master of Sciences in Architecture in the Department of Architecture, College of Science and Technology, Covenant University, Ota. Nigeria.

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DECLARATION

I, AKINTADE, AKINLOLUWA JESUTOFUNMI (15CA03326) declare that this research was carried out by me under the supervision of Dr. Isidore C. Ezema of the Department of Architecture, College of Science and Technology, Covenant University, Ota, Nigeria. I attest that the dissertation has not been presented either wholly or partially for the award of any degree elsewhere. All sources of data and scholarly information used in this dissertation were duly acknowledged.

AKINTADE, AKINLOLUWA JESUTOFUNMI

Signature and Date

CERTIFICATION

We certify that the dissertation titled “**Space Standards and Vehicular Circulation In the Design of Integrated Service Station, Abeokuta**” is an original research work carried out by **AKINTADE, AKINLOLUWA JESUTOFUNMI (15CA03326)** in the Department of Architecture, College of Science and Technology, Covenant University, Ota, Ogun State, Nigeria under the supervision of Dr. Isidore C. Ezema. We have examined and found this work acceptable as part of the requirements for the award of Master of Science in Architecture.

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DEDICATION

This project is dedicated to God, to my parents; Engr and Mrs Joshua and Esther Akintade; and to my siblings; Akinyemi and Akinboluwasowopo. Thank you for the several memories forged from our recreational experiences.

ACKNOWLEDGEMENTS

I am genuinely grateful GOD, for His guidance, help, peace and inspiration. I am thankful for His help from the commencement to completion of this study. This research would not have been possible without these individuals.

Sincere appreciation is owed to my parents, Engr and Mrs Joshua and Esther Akintade, for their endless support to me throughout this program, and to my siblings Akinyemi and Akinboluwasowopo Akintade for their criticism and their help as part-time research assistants!

I am grateful for the significant contributions made by my supervisor Dr. Ezema. This research owes part of its existence to him.

I also wish to thank Dr. Oluwatayo for her extensive review, involvement and corrections made concerning this research. Subsequently, I wish to appreciate Dr. Alagbe, Dr. Izobo-Martins, Dr. Babalola and Mr. Oladotun. Their critiques and contributions made on the study helped during the several presentations refined it to its present state.

I extend much gratitude to Mr. Stanley and Mr. Samuel of Fatgbems Mega Retail Outlet, Abeokuta for their assistance during the fieldwork and case study evaluation of that facility.

I am grateful to Mr. Adebayo of NNPC Mega filling station for his understanding and granting the permission to conduct the case study. This study would be grossly incomplete without the respondents of the questionnaire. I wish to appreciate them for their willing participation in the survey.

TABLE OF CONTENTS

ACCEPTANCE	iii
DECLARATION	iv
CERTIFICATION	v
DEDICATION	vi
ACKNOWLEDGEMENTS	vii
TABLE OF CONTENTS	viii
LIST OF TABLES	xvii
LIST OF FIGURES	xix
LIST OF PLATES	xxi
LIST OF ABBREVIATIONS AND ACRONYMS	xxii
ABSTRACT	xxiv
CHAPTER ONE	2
INTRODUCTION	2
1.0 CHAPTER OVERVIEW	2
1.1 BACKGROUND TO THE STUDY	2
1.2 STATEMENT OF THE RESEARCH PROBLEM	3
1.3 AIM AND OBJECTIVES OF THE STUDY	5
1.4 JUSTIFICATION OF THE STUDY	6
1.5 SCOPE OF THE STUDY	7
1.6 SIGNIFICANCE TO THE STUDY	8
1.7 AREA OF THE STUDY	8
1.8 CLIENT AND USERS	10
1.9 DEFINITION OF TERMS	10
CHAPTER TWO	14
LITERATURE REVIEW	14
2.0 CHAPTER OVERVIEW	14
2.1 CONCEPTUAL FRAMEWORK.....	14
2.1.1 THE CONCEPT OF MOVEMENT IN ARCHITECTURE.....	14
2.2 SPATIAL CIRCULATION	15
2.2.1 COMPONENTS OF CIRCULATION	15
2.2.2 TYPES OF CIRCULATION	27

2.2.3	CIRCULATION PATTERNS	30
	Turning right at Circulation Pathways.....	30
	Inertia.....	30
	Back Tracking.....	30
	One-Sided Viewing.....	30
	Main Path.....	30
2.3	WAYFINDING	30
2.3.1	WAYFINDING DESIGN PRINCIPLES.....	32
2.4	SPATIAL EXPERIENCE.....	36
2.4.1	MEASUREMENT OF SPATIAL EXPERIENCE	37
2.4.2	SPACE STANDARDS AND VEHICULAR CIRCULATION	40
2.5	HISTORY OF FILLING STATIONS IN NIGERIA.	41
2.6	INTEGRATED SERVICE STATIONS	42
2.6.1	COMPONENTS AND FACILITIES OF INTEGRATED SERVICE STATIONS.....	46
2.6.2	DESIGN AND FUNCTION OF FILLING STATIONS.....	49
2.6.3	STANDARDS AND REQUIREMENTS OF FILLING STATIONS.....	51
2.6.4	CRITERIA FOR LOCATION OF FILLING STATIONS OR SERVICE STATIONS	58
2.6.4	GENERAL ARRANGEMENT OF FILLING AND SERVICE STATIONS.....	62
2.7	PROBLEMS ASSOCIATED WITH VEHICULAR CIRCULATION IN FILLING STATIONS	63
2.8	GAPS IDENTIFIED IN LITERATURE	65
	CHAPTER SUMMARY.....	66
	CHAPTER THREE.....	67
	RESEARCH METHODOLOGY.....	67
3.0	CHAPTER OVERVIEW	67
3.1	RESEARCH PHILOSOPHY.....	67
3.2	RESEARCH APPROACH	68
3.2.1	QUALITATIVE RESEARCH.....	69
3.2.2	QUANTITATIVE RESEARCH.....	69
3.2.3	MIXED APPROACH	69
3.3	STUDY POPULATION.....	69
3.4	SAMPLING SIZE.....	70

3.5	SAMPLING TECHHNIQUE	70
3.6	RESEARCH DESIGN	70
3.6.1	INSTRUMENT OF DATA COLLECTION	71
3.6.2	DETAILED METHODOLOGY.....	72
3.7	THE CASE STUDY APPROACH.....	73
3.8	CASE STUDY SELECTION	74
3.9	PROCEDURE FOR DATA COLLECTION.....	75
3.10	VARIABLE STUDY	75
3.11	DATA ANALYSIS.....	76
3.12	VALIDITY AND RELIABILITY OF RESEARCH INSTRUMENTS	76
3.13	ETHICAL CONSIDERATION	76
3.14	CHAPTER SUMMARY.....	77
	CHAPTER FOUR	78
	RESULTS.....	78
4.0	CHAPTER OVERVIEW	78
4.1	SOCIO-ECONOMIC CHARACTERISTICS OF USERS	78
4.1.1	SEX OF THE RESPONDENTS	79
4.1.2	AGE OF THE RESPONDENTS	79
4.1.3	STATUS	80
4.1.4	TENURE OF USE.....	80
4.1.5	TIME SPENT IN SERVICE STATION	81
4.1.6	PURPOSE FOR SERVICE STATION USE.....	81
4.1.7	DRIVING CAPABILITY OF RESPONDENTS.....	81
4.2	ASCETAIN THE EXTENT TO WHICH VEHICULAR TRAFFIC AND CONGESTION OCCUR IN STUDY AREAS	81
4.2.1	EXISTENCE OF VEHICULAR TRAFFIC AND CONGESTION OCCUR IN STUDY AREAS	82
4.2.2	FREQUENCY OF OCCURRENCE OF VEHICULAR TRAFFIC AND CONGESTION IN SERVICE STATIONS	83
4.2.3	ASCERTAIN IF VEHICULAR TRAFFIC AND CONGESTION IS AS A RESULT OF SPATIAL PLANNING.....	83
4.3	IDENTIFY FACTORS RESPONSIBLE FOR VEHICULAR TRAFFIC AND CONGESTION IN SERVICE STATIONS.....	83
4.3.1	FUEL SCARCITY	86

4.3.2	QUEUE CUTTING	86
4.3.3	PARKING ON VEHICLE ROUTES TO USE INTEGRATED FEATURES.....	86
4.3.4	INADEQUATE SPACE FOR VEHICLE TURNING	86
4.3.5	DIFFICULTY WITH CIRCULATION PATTERN.....	86
4.3.6	SHORT TRAVEL DISTANCE BETWEEN ACCESS ROAD AND FORECOURT.....	86
4.3.7	CIRCULATION ROUTE CLASHES WITH OTHER ACTIVITIES AS REGARDS INTEGRATED FEATURES	86
4.4	ACCESS SPATIAL MANAGEMENT FEATURES ADOPTED IN SERVICE STATIONS	87
4.4.1	MEAN RANKING OF CIRCULATION FEATURES	88
4.4.2	CASE STUDIES.....	89
4.4.2.1	CASE STUDY ONE: NNPC Mega Filling Station.....	90
4.4.2.2	CASE STUDY TWO: Fatgbems Mega station and Retail Outlet, Abeokuta, Ogun.	99
4.4.2.3	CASE STUDY THREE: Conoil Mega Station.....	105
4.4.2.4	CASE STUDY FOUR: Oando Filling station.	111
4.5	ASSESSMENT OF THE EXTENT TO WHICH SPACE MANAGEMENT STRATEGIES ADOPTED INFLUENCES VEHICULAR CIRCULATION IN SERVICE STATIONS.	116
4.5.1	EXPERIENCE OF RESPONDENTS IN RELATION TO SPACE STANDARDS.....	117
4.5.2	OVERALL EXPERIENCE OF RESPONDENTS	117
4.6	DISCUSSION OF FINDINGS	118
4.7	THE SITE	119
4.7.1	SITE LOCATION.....	119
4.7.2	SITE JUSTIFICATION.....	121
4.7.2.1	SITE ANALYSIS	124
4.7.3	SITE CONDITIONS.....	126
	CHAPTER FIVE.....	131
	DESIGN CRITERIA AND APPROACH.....	131
5.0	CHAPTER OVERVIEW	131
5.1	PROJECT GOALS AND OBJECTIVES	131
5.1.1	PROJECT BRIEF	131
	Proposed Integrated Service Station	131
5.2	SPACES, SIZES AND RELATIONSHIPS.....	132
5.2.1	RECREATIONAL SPACES	133

Recreational Park.....	133
5.2.2 EXHIBITION AND DISPLAY SPACES	133
5.2.3 SERVICE SPACES	133
5.2.4 ADMINISTRATIVE SPACES.....	134
5.2.5 COMMERCIAL SPACES.....	134
5.3 DESIGN PLANNING	135
5.4 STRUCTURAL STABILITY	135
5.5 FUNCTIONALITY	136
5.6 AESTHETICS	137
Form 137	
5.7 LIGHTING	138
5.8 FIRE SAFETY.....	138
5.9 BUILDING CONSTRUCTION AND MATERIALS.....	139
5.10 GREEN STRATEGIES FOR SITE WATER MANAGEMENT	139
CHAPTER SIX.....	142
DESIGN PHILOSOPHY, CONCEPTUALIZATION AND PROPOSAL	142
6.0 CHAPTER OVERVIEW	142
6.1 CONCEPT AND ITS JUSTIFICATION.....	142
6.1.1 MATERIAL CONCEPT.....	143
6.1.2 FORM CONCEPT	143
6.2 DESIGN DEVELOPMENT PROCESS	143
6.2.1 SITE ZONING.....	144
6.2.1.1 NOISE ZONING	144
6.2.1.2 CIRCULATION ZONING	144
6.2.2 BUBBLE DIAGRAMS	145
6.2.3 CIRCULATION PATTERN (PEDESTRIAN AND VEHICULAR).....	147
6.2.3.2 VEHICULAR CIRCULATION	147
REFERENCES	148
APPENDIX	158
OBSERVATION GUIDE.....	161

LIST OF TABLES

Table 2.1: Other components and facilities of integrated service stations	48
Table 4.1: Socio-economic and Demographic characteristics of Respondents	79
Table 4.2: Ascertaining the extent to which vehicular traffic and congestion occur in service stations.....	82
Table 4.3: Identifying factors responsible for vehicular traffic and congestion in service stations.....	85
Table 4.4: Types of Petrol Service Stations Investigated	87
Table 4.5: Mean Ranking of Spatial Features.....	89
Table 4.6: Facilities in NNPC Mega station	92
Table 4.7: Components of Vehicular Circulation in NNPC Mega Filling Station	97
Table 4.8: Availability of Space planning principles and Wayfinding features in NNPC Mega Filling Station	97
Table 4.9: Evaluation of space management strategies adopted in NNPC Mega Filling Station.....	98
Table 4.10: Facilities in Fatgbems Mega Retail Outlet	101
Table 4.11: Components of Vehicular Circulation in Mega station and Retail Outlet	104
Table 4.12: Availability of Space planning principles and Wayfinding features in Mega station and Retail Outlet	104
Table 4.13: Evaluation of space management strategies adopted in Fatgbems Mega station and Retail Outlet.....	105
Table 4.14: Facilities in Conoil Mega Station	108
Table 4.15: Facilities in Oando Filling Station.....	113

Table 4.16: Ranking of Case Studies	115
Table 4.17: Mean Ranking of spatial experience of adopted space standards.....	117
Table 4.18: Overall spatial experience with space standards	117

LIST OF FIGURES

Figure 2.1: Frontal approach	16
Figure 2.2: Oblique approach	17
Figure 2.3: Spiral approach	17
Figure 2.4: Projected Entrance	18
Figure 2.5: Recessed Entrance	18
Figure 2.6: Flush Entrance	19
Figure 2.7: Locations of Entrances.....	19
Figure 2.8: (a) Linear Path Configuration (bi) Linear circulation layout in Baker House, USA, by Alvar Alto and (bii) Landscape Formation One by Zaha Hadid	21
Figure 2.9: Radial Path Configuration.....	21
Figure 2.10: Concentric Path Configuration of the Apple Headquarters Cupertino, California, USA by Foster and Partners	22
Figure 2.11: (a) Spiral Path Configuration; Spiral path configuration in the Guggenheim Museum, New York City, USA by Frank Lloyd Wright	22
Figure 2.12: (a) Grid Path Configuration. (b) Grid path Configuration in a city in Mexico	23
Figure 2.13: Grid Network of Organisation in the Israel Museum	23
Figure 2.14: Combined Path Configuration.....	24
Figure 2.15: Paths by Spaces.....	25
Figure 2.16: Paths through Spaces	26
Figure 2.17: Paths that terminate in Spaces.....	26
Figure 2.18: Element of Wayfinding by Lynch, (1960)	32

Figure 2.19: Diagram of Decision Making while Wayfinding by Arthur and Pissani, (1997)	32
Figure 2.20: Framework of Experience	33
.....	33
Figure 2.21: Types of forecourt arrangements	47
Figure 2.22: Neuferts Architects data. (Bousamah Biache and Nicholas Walliman, 2002). 62	
Figure 2.23: Enoc Gas station	63
Figure 3.1: The Research Onion.....	68
Figure 3.2: Graphical Representation of the Research Design.....	71
Figure 4.1: Map and Site of NNPC Mega station	90
Figure 4.2: Map and Site of Fatgbems Mega Retail Outlet.....	99
Figure 4.3: Map and Site of Conoil Mega Station.....	106
Figure 4.4: Map and Site of Oando Filling Station	112
Figure 4.5: Map of Nigeria Showing Ogun State.....	120
Figure 4.6: Map of Ogun State Showing Abeokuta	120
Figure 4.7: Map of Abeokuta Showing Site.....	121
Figure 4.8: Average rainfall in Abeokuta, Nigeria.....	127
Figure 4.9: Average wind speed in Abeokuta, Nigeria	128
Figure 4.10: Wind Rose Graph of Abeokuta, Nigeria.....	128
Figure 4.11: Average temperature in Abeokuta, Nigeria	129
Figure 4.12: Average humidity in Abeokuta, Nigeria.....	130
Figure 5.1: Key Functional Spaces in the Service Station	133
Figure 5.2: Green Strategies for Water Management for residential developments	140
Figure 6.1: Representation of Noise, Circulation, Function zoning	145
Figure 6.2: Functional Relationships between spaces represented in Bubble Diagrams	146

LIST OF PLATES

Plate 4.1: Recessed Entrance into NNPC Mega station	91
Plate 4.2: NNPC Dispensary Area	93
Plate 4.3: Entrance less than 9metres width	93
Plate 4.4: Inadequate set-back to Integrated Feature	94
Plate 4.5: NNPC Integrated Features.....	95
Plate 4.6: NNPC Generator House	96
Plate 4.7: Recessed Entrance into Fatgbems Mega Retail Outlet.....	100
Plate 4.8: Fatgbems Dispensary Area	102
Plate 4.9: Fatgbems Integrated Features	103
Plate 4.10: Conoil Dispensary Area	107
Plate 4.11: Approach Facade of Conoil Complex Building	109
Plate 4.12: Conoil Generator House	110
Plate 4.13: Conoil Lubrication/Service Bay	111
Plate 4.14: Oando Forecourt In Perspective	112
Plate 4.15: View Of Traffic Congestion Situation.....	114
Plate 4.16: Vegetation on the site	125
Plate 4.17: M.K.O Abiola stadium Abeokuta.....	130
Plate 4.18: OOPL Abeokuta	130

LIST OF ABBREVIATIONS AND ACRONYMS

AEC	-	Architecture, Engineering and Construction
CEUD	-	Centre for Excellence in Universal Design
FAO	-	Food and Agricultural Organisation of the United Nations
IHFG	-	International Health Facility Guidelines
IUSGS	-	United States Geological Survey
IRC	-	Indian Road Congress
WHO	-	World Health Organisation
SPSS	-	Statistical Products and Service Solutions
TAHPI	-	Total Alliance Health Partners International
DPR	-	Department of Petroleum Resources
PPPRA	-	Petroleum Products Pricing Regulatory Agency

ABSTRACT

Fuel service stations have evolved over time and now incorporated a number of integrated and associated services. The increased scope available at service stations tends to exert pressure on space availability and vehicular management in such facilities. This paper assessed the adoption of space management best practices, in order to design an integrated service stations in Abeokuta, a rapidly growing city in Southwest Nigeria with a view to improving upon the present standards, also to those relating to circulation of vehicles in service stations. It strived to achieve this by ascertaining the extent to which vehicular traffic and congestion occur in the studied service stations; identifying the factors that are responsible for vehicular congestion and obstruction of sales services in the service station; assessing the spatial management strategies adopted in the service stations, assessing the extent to which the spatial management strategies adopted influences vehicular circulation in the service stations and embed these findings in the proposed design. The selected study area for this project is Abeokuta in Ogun State. The design proposal was sited along President Boulevard Road, Adjacent M.K.O. Abiola stadium, Abeokuta, Ogun State. The study is a descriptive quantitative and qualitative research and it evaluates the adoption of space standards and vehicular circulation in 4 filling/service stations. The observed prevailing space standards were evaluated alongside prescribed best practices recommended by urban planning authorities. A census sampling was used in selecting the users. Data was collected between July, 2021 and August, 2021 using observation guides and questionnaire. They were analysed using the Statistical Program of Social Sciences, version 26.0, and presented in tables and figures. The results from the mean rankings revealed that most existing integrated service stations fall short of prescribed benchmarks mainly due to the desire of property owners to maximize land use, targeted at optimizing income and profit often to the detriment of good environmental planning. The findings informed subsequent design of integrated service stations in the study area. In addition, it provided necessary baseline data for environmental planners and development control practitioners in the study area. These findings were incorporated into the proposed design.

Keywords: architectural design, integrated service stations, space standards, vehicular management, Abeokuta.