Reuben E.N.Okafor
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DECLARATION

This Thesis is my original work and has not been presented for a degree in any other University.

S N. OKAEOR

This Thesis is submitted as part of the University Examination for the Degree of Master of Architecture.

CHAIRMAN OF DEPARTMENT OF ARCHITECTURE
UNIVERSITY OF NAIROBI.
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Majority of Nigerians in the urban areas are involved in trading. Markets therefore form a very important nucleus in the urban life in Nigeria.

Due to the realization of the importance of market as a sure and sincere means of success the migration into the existing markets has increased. This rate of migration has however not been met by the same rate in the expansion of facilities. As such these markets are characterised by congestion, absence of adequate services and generally a very unhealthy environment.

The proposed new market has therefore been designed with these problems in mind and to be able to take the shock of these impacts. It is as well to cater for the different categories of traders, hawkers, roadside squatters, stall owners, shopkeepers, etc. It is a two level market which is co-ordinated for easy transition between these levels. Shops, stalls, hawking stands have been arranged to benefit from each other in the generation of customer traffic.

The site is sandwiched between two major roads in
lagos Island - Nnamdi Azikiwe Street and Fartin Street.
It is generally a flat site and Lagos is on a hydromorphic soil.

Presently there is no vehicular traffic through the site and this has been maintained in the design, though a service road goes from Breadfruit street to the semi basement delivery space which is served by delivery vans.

Lagos is generally hot and humid resulting in the limiting of the depth of buildings and the use of courtyard system of design. Sea breezes from the Atlantic oceans will help improve the ventilation and the use of local fans will be made in the stalls. The shops however have forced mechanical ventilation.

Generation of customer traffic through business areas has been very important. The trading activities have thus been enveloped by traffic generating activities. Pedestrian traffic across the highways - Nnamdi Azikiwe street and Fartin street have been directed to the upper level of shops and market: a pedestrian deck connection to the multi storey car park through the departmental store and market provides
a short cut to offices and an inducement to shopping. Spaces have as well been provided for impromptu entertainments. The structure is a reinforced concrete frame construction on raft foundation the columns being the main dividing elements for the stalls.

The market is a social welfare rather than a money making investment where rentage will be heavily subsidised. Cost however has not hindered the provision of essential facilities.

Movements of goods within Nigerian markets have been by human labour, carrying these goods on the head and using hand oarts. This is a very big trade for the unskilled Nigerian and a first stage in self employment for the urban migrant. This has been maintained in my new market. As this forms an essential part of the market activity, it has not been segregated in my design. It has been taken into consideration in the provision for pedestrian circulation.
LAGOS MARKET PR2CINCT

The market has remained the most important meeting place in Nigeria. It has remained the cultural, commercial and political centre of the Nigerian towns and villages. Nigeria has the largest markets in tropical Africa. The history of every Nigerian town whether in Yorubaland Iboland or Ilausaland is intricately connected with the founding of the main market.

The market places have remained the main village squares where villagers assemble for celebrations, recreation, trade and meetings. These village markets have grown near the palaces of the traditional rulers and near traditional worship places.

The market is a major component of urbanisation with towns growing up around the traditional market places and new towns springing up around new market centres.

There is a general awareness that trade forms the surest means of honest success in life. Therefore, there is increased migration to the urban areas for trade.
The Hawker and the Law

The owners of this site are...
Markets are no longer dominated by women as young men from schools are increasingly getting involved in market activities thereby increasing the literacy level in the market.

The processes of rapid urbanisation however, exceed the growth of traditional markets in Nigerian towns. As such the demand for the few available market stalls is very high. This has led to a very high degree of hawking and squatting and the existing urban Markets are very congested. The conditions of these places have become very unhealthy compared with the village markets which still retain their traditional qualities. The village market has remained a very good meeting place for friends. This is no more the case with the urban market which is characterised by lack of open spaces, dirt, overcrowding etc.

Lagos as a city is characterised with lots of problems like shortage of housing, traffic congestion, lack of essential services, a filthy and unhealthy environment and incidentally, lack of enough market stalls. Lagos is not only the political capital of Nigeria but also the economic
capital as well as the main link with the outside world. The importation of goods through Lagos makes it a very lucrative city for business.

There is no trade restriction in Nigeria. A migrant does not need a government licence to start any trade, provided it is not on dangerous drugs and alcohol. This encourages migration as the migrant feels that there will always be something to do in his new home. Usually, a migrant undergoes many stages before he finally settles down in Lagos as a trader.

He may not have enough money to start trade. He therefore starts off as a porter helping to transport goods for shop owners and customers for some money. His services are very essential in the market. When he has raised enough money, he becomes a hawker. Usually he hawks a few materials he has obtained on credit from other established traders. At the end of the day he settles his bill with the trader and keeps his profits. The remaining goods are kept in the stall until the next morning, when he may get some more materials.
Obstruction caused by squatters.

Market Types:
On raising enough money from this, he is ready to rent a market stall. As these are not always available he needs just a tarpaulin and a few bamboo poles to set up a temporary stall by the side of the street. At this stage he is usually harassed by the police and city council officials.

When he finally gets a stall, either by paying heavily to share with someone else or renting one from somebody or getting one through the city council, he settles down as a 'Lagosian'.

This difficulty in finding market stalls has created a lot of problems in an urban area such as Lagos. Roadside pedestrian ways have been utilized for setting up stalls causing congestion, dirtiness, over-crowding and disorder in the urban environment. There is increased hardship on the traders as well as on the customers.

There are three types of markets in Lagos:

1. The approved market (18 in number).
2. The unapproved market (9 are recorded).
3. The 'wares point'.

8
The 'wares point' is the street or open space which the Lagos City Council has approved as temporary markets. There are 40 'wares points' in Lagos.

It has therefore been necessary to look into the problems of this very essential urban activity. It was my initial intention to redevelop a market street in Lagos - Balogun, but I found out that most of the spaces had recently been built up by private developers. The discussion I had with Lagos City Council revealed that the present site had been acquired by the government for a textile market, multi-storey car park, offices and hotel blocks. The designs of the car park and market were already at advanced stages.

Presently the site is serving both as a textile market and a residential neighbourhood. The inhabitants are to be re-housed at Iponri and Ogba housing estates on Lagos mainland. I was assured by the project architect that adequate provisions have been made for the expected problems arising from the relocation of these people. I am hoping that with the experiences of the rehousing of people in
Site Survey:
Surulere to their advantage, they keep up to the words of the project architect.

My site survey was characterised by the basic problems of Lagos streets.

The shops and stalls were very crowded and unplanned. It was generally very hot and stuffy and people could be seen in their shops bare-bodies and fanning themselves.

Hawkers are a menace to the streets as they settled down at very inconvenient corners. It is prohibited to hawk on some streets but these hawkers pay no heed to this. Usually they are aware of the fact that they are committing an offence and are therefore always ready to run away on seeing an officer responsible for checking on this, or to bribe their way out if caught.

Traffic congestion and difficulty to get means of transport is also one of the problems of Lagos. Inhabitants of Lagos have accepted it as a way of life to struggle to get into the buses. As such it was very difficult to move around in Lagos during my survey.

Because my survey was during the Christmas season,
many officers connected with the new market project had
gone away on leave, so it was not possible to get all the
information I would have liked to have on the proposed
redevelopment of the site.

I am however indebted to Mr. V.A. Browne, Higher
Market Superintendent, Lagos County Council for his help
and support in my field surveys, to Alhaji Ismaila Okafor
who provided most of the financial assistance needed for
the survey and to Nathan Chike Nwodika who made my stay
in Lagos a success. Special thanks go to Mr. David Adeoye
and Mr. B. Ike-Eeheta and students of school of Environ-
mental Design Lagos University for information provided
on the study of Lagos.
The Site

The 4.32 hectare flat site is situated between Nnandi Azikiwe Street, Martin, Ali Balogun and Breadfruit streets in Lagos Island. Martin street is a major entry-street from Yaba on Lagos mainland to Lagos Island. Nnamdi Azikiwe Street is the main exit street from the Island. Ali Balogun street is a very busy bus-stop.

There is traffic congestion on Martin street every morning from 7.30 a.m. to 10.30 a.m. as workers from the mainland come to work and on Nnamdi Azikiwe street from 3.30 p.m. to 6.00 p.m. as they go back home.

These are the four most busy streets in Lagos Island (see map).

Presently it is both a market and residential neighbourhood. The front rooms are generally used as shops and back rooms as bedrooms yards have been converted into stalls for renting. The inhabitants live in very deplorable conditions, cooking in the streets as they sell their goods to customers. Generally the sanitary conditions are very
deplorable with narrow undrained streets. There are 500 habitable rooms with an average of 4 persons per room and 300 stalls of all types. Bucket type toilets are still used by some of the people.

Water supply to the site is very inadequate and long queues for water start as early as 4.00 a.m. every morning.

Presently the site is not served by the underground sewer system but there are proposals to extend this to the site in the near future.

Electrical cables and telephone wires hang overhead in a haphazard manner with every one putting them up at random.

Buildings are generally dilapidated and the materials used are mud and wattle, corrugated iron-sheets, cardboard and other durable materials for the walls. The roofs are generally of rusted corrugated iron. Stalls have been constructed of iron-sheets. Actually there was an incidence of fire during my visit to the site which started in a local hotel and burnt down a few houses before the members of the fire brigade eventually put it off.
There is no vehicular traffic through the site. Delivery of goods is by human labour and hand drawn carts. It should be realized that despite the availability of mechanical methods of transportation, conveyance of goods in markets in Nigeria has been by head and by use of hand carts even to places where a delivery van can reach.

There is heavy pedestrian movement through the site. The existing pedestrian malls are however very narrow at times, less than a metre wide and generally not maintained. Hawkers still menace these narrow streets.
THE DESIGN OF LAGOS MARKET PRECINCT

Aim

The design of Lagos market precinct. This is predominantly a textile market that should cater for all categories of traders in textiles and related goods.

General Concept

The very high demand for market stalls has made it necessary to maintain two levels of market activities. The success of this proposal depends on the generation of customer traffic to both levels.

To achieve this the following decisions in the design have been necessary.

a. The use of pedestrian decks across Nnamdi and Martin streets which lead to the upper levels of the market. It has been necessary to maintain a safe pedestrian crossing and to segregate pedestrian traffic from the very busy highway vehicular traffic along these two streets.

b. The maintenance of pedestrian traffic from the multi-storey car-park through the departmental store into the market and out to the offices.
Location of the departmental store at the northern end of the site as most of the departmental stores are presently located along the Ilarina and Broad streets on the south.

The direct connection of the upper level of the market to the departmental store, supermarkets, shops and restaurants, the inter-traffic between which will generate customer traffic for the market at both levels. The departmental store has an escalator for easy conveyance of customers to the upper level.

The location of restaurants and snack bars will induce customers out of the store and consequently into the market.

The raised social level to increase visibility of activities in both levels of the market and to make it easier to go to both levels.

The maintenance of some shops on two levels. Customers going to the upper level consequently get into the market.
PROJECTED EFFECTS OF THE NEW MARKET ON THE NEIGHBOURHOOD

The concept of the new market has strongly been based on the expected changes it would bring to the surrounding activities.

a. Increased pedestrian movements to the site.

Increased demands for car-parking facilities around the market.

Very busy site during the day almost dead at night as the Lagos state government has decreed that no residential units should be within the market.

The use of pedestrian decks across the highways makes for safe crossing and induces customer traffic to the upper level of the market as explained above.

The proposed multi-storey car-park will serve both customers and tenants. A pedestrian deck has been provided between the car-park, departmental store and market.

The market site is situated in between two very busy
highways which are the main outlet and inlet into the Island. As such concentration of cars on this site will worsen the already very bad traffic situation on these roads. It is therefore unwise to provide special parking for the market.

It is hoped however that with the completion of the Dolphin Scheme of highways and the third Axial Bridge across the Lagos Lagoon, the traffic problems in the centre of Lagos will be eased.

It is as well my personal feeling that the use of private cars in Lagos Island should be discouraged. If the more privileged people use public transport system, this system will not only improve in quality but also in organization. Shoppers are therefore encouraged to walk. I have therefore concentrated on making pedestrian movement to and within the market both safe and compatible.

The market is centred around a social space below which there is a half basement for delivery of goods. A ramp system and a centralized elevator system are provided
for conveyance of these goods from the delivery spot to the stalls and shops. Adequate storage spaces are then made in the half basement for the hand carts.

The social space acts as a transition between the two levels at the market and there is a visual connection with the activities on both levels. Adequate seats are provided for relaxation and hawking and kiosks for soft drinks are also provided.

The rest of the market activities are centralized around courtyards. This has been necessary to create intimacy and visual connection between all parts of the market around these courtyards and for ventilation of the shops and stalls. Stalls and shops alike have front-ages from these courtyards and mutually benefit from each other in generations of customer traffic. Balcony circulation around these courtyards have been covered with highlevel roof, for protection against weather. Around these courtyards are market activities in open stalls and kiosks.

Shops and departmental stores form a buffer between
the market activities and the busy highway traffic. The inter-traffic "between these has been used to an advantage to create customer traffic for the market stalls. There are 8 main entrances into the market, 6 of which have been provided with stair flights to the upper-level, two of these are entries from the first floor level across the highway. The market can as well be approached through the walk - through shops with two frontages.

Though predominantly a textile market, sales of other related goods are possible. It is mainly for dry goods. Jankara and Ebute Ero markets at the outskirts of Lagos Island handle the sales of food items including meat and vegetables. It is not convenient to bring the sale of food items like vegetables and fruits etc. to the centre of Lagos as lorries are barred from coming into the centre and women involved in these transactions cannot convey these goods in and out everyday by bus. Again Jankara and Ebute Ero markets are not too far from the proposed market precinct.
The establishment of super markets and departmental stores will handle sale of food items.

These are located at the periphery of the market, forming a buffer zone between the market activities and the highways.

They vary between 3.6 m x 7.2 m x 10.8 m, 7.2 m x 10.8 m. They handle the sales of a variety of goods, textiles, electronics, cameras and a few others.

Shop window design will vary according to the tastes of the shopkeeper and the products being sold, therefore the design of this is left to the shopkeeper. The shop front has been worked out on a grid of 1.1 m. which will include a door and two panes for display above which is louvred for ventilation. A beam above 2.5 m. high gives a surface for advertisement.

For flexibility, a store has been provided on mezzanine level above the entrance door in steel construction. This could be removed from shops that do not need it, and the height for storage varied in other
cases. Access to this storage is by ladder.

The market stalls

These are within the central portion of the market and benefit from the flow of customer traffic between the shops and stores.

Sizes:

There are four sizes of lock up stalls viz: 2.4 m x 2.4 m, 2.4 m x 3.6 m, 3.6 m x 3.6 m and 3.6 m x 7.2 m. These are arranged to benefit each other with the generation of customer traffic.

Sharing of stalls has been a common practice in Nigerian markets. This practice promotes mutual co-operation among the traders. Sharing is therefore encouraged in my design. Stalls of 3.6 m x 3.6 m and more can be shared by two traders.

Storage:

This has been a critical problem in Nigerian markets. Adequate storage facility has thus been provided for each stall in form of shelving, storage under display tables and a storage rack above the entrance. This last storage is accessible by means of a ladder.

Stall arrangement:

A straightforward circulation system has been
maintained by the use of a 3.00 m. corridor to expose all
the stalls to customer traffic so that they benefit from
the interflow of traffic between the shops and departmental
store.

It is common practice for the Nigerian trader to use
the whole stall/shop front for display and he has the
mentality that the nearer these goods are exposed to
customer traffic, the more the sales. It has therefore
been necessary to give a 60 cm. buffer space between his
property and public circulation. This space affords a
'step off space for the buyer as he goes through the long
session of bargaining, to avoid obstruction and a seating
area for the stall-keeper and his customers.

The stalls have to be exposed to the customers on
both levels. It has therefore been necessary to use the
circulation corridor to provide shade from the sun's rays
for the stall.

To maintain air movement, the upper half of all stalls
has been left opert for circulation. Use of local fans has
been very common in Nigeria. As such ceiling fans have
"been provided for in the design.
Solar Protection

Ventilation and air movement
CLIMATE

Balconies are used for solar protection and circulation.

Air movement through stalls and market has to be induced. As such shops are mechanically ventilated with air exhausted unto the highways. Air movement is therefore induced through the market to replace the displaced air. As such market stalls are open above display counters. However, to maintain a reasonable cost, and security, vent blocks have been used above display counters of all stalls.
PERFORMANCE SPECIFICATION

Stall types

/ a. Hawker at pedestrian malls.

seats necessary - kerbs, concrete seats, benches.

b. Mobile Stalls.

trucks, hand carts and on head.

The food hawker.

she requires spaces near stalls where
she can stajs sell food to customers and shopkeepers. Requires water tap to wash up.
1
d.
e.
Open stalls.
For sales of dry fish, vegetables etc. Storage facilities necessary for unsold foods at the end of the day.

Lock up stalls.
These are varying sizes, with storage provided, enough clearance for pedestrian movement. Most of the stalls have "been provided with locking facilities. Stall sizes – 2.4 x 2.4 m., 2.4 x 3.6 m., 3.6 x 7.2 m.
Small shop - 3.6 x 10.8 m., 3.6 x 7.2 m.

These have 2 frontages and walk through facilities.

Display window design will depend on the goods sold and the taste of the shopkeeper.

Medium sized stores.

7.2 x 10.8 m.

Corner Shops.

In this display is possible on 3 walls.
Big shops

Junior departmental store with mezzanine shopping level with the market. Acts as a generator of customer traffic.

Departmental store

This is to act as a magnet and generate customer traffic for smaller shops and market stalls – Has an escalator system of vertical transportation. Its visual contact between the two floors and a roof light for natural lighting on both levels. An elevator and staircase are provided for transportation of goods.
Sfrop fronts

These are varied to avoid monotony. The fronts depends on the type of goods and taste of the tenant.

Staircases.

These are located at entrance points, are wide with Middle handrail to handle the large volume of traffic. Floor underneath depressed to give enough headroom for toilets.

Toilets

These are evenly distributed to serve the market By sinking the space below the staircase, toilets have been provided at the main entrances to the market, and two toilets at the southern entrance to the market can be used even after market hours.
Restaurants (3 in number)

Located on upper level of the market to act as generator of shopper traffic. These can be used after market hours and are designed to liven the market site at night.

Kiosks

Located along the pedestrian malls and social places.
Eating houses

(Local Hotels)
It is usual for any women or men to share spaces for sales of food and drinks.

Market administration
At the southern entrance to the market overlooking the social space. This comprises general office, switch room and space for security men.

Children playground/nursery next to mosque
Space has been left around the mosque as children's play area and nursery school. This will cater for the children who come to the market with their parents.

Postal agency
At an entry point.

Public Telephone Booths
Located at entry next to postal agency and main circulation points.
SERVICES ASPECT

1. Delivery of goods

A semi basement is provided for delivery of goods to the market by delivery vans. Distribution through the market is by hand cart or by head. Two elevators convey these goods to the upper floor level from where they go to the respective stores or stalls.

A ramp system runs from this basement to the upper floor level: and the ground level shops. Due to the high population of labourmen and porters in the existing markets, I have provided for his trade and livelihood. Hand carts are stored in the semi basement. As conveyance of goods form part of the market activities, there has not been segregation between this and other market activities.

2. Disposal of garbage.

Garbage is picked up by garbage vans from the semi basement space. As such it has been necessary to allow for both natural and forced ventilation of the basement. Each collection of stalls has garbage collection vessels.
At the end of the day, cleaners pick up these garbages in hand carts, wheel them down to the semi basement from where it is finally removed by the Iagos City Council.

**Drainage**

The roofs are drained through drain down pipes into a network of drain system from where the storm joins the central drain along Nnamdi Azikiwe and Martin Streets.

**Toilets**

These are evenly distributed through the market. The spaces below the half landings of staircases have been used to advantage to provide toilets.

**Sewage**

The soil sewer is connected to existing lines along Nnamdi, Martin and Breadfruit Street.

**Fire**

This is a very critical problem. Chances of tenants creating fire within the market is however very low due to the realisation of the dangers.
Sprinkler system is recommended but fire fighting hoses and equipments are provided next to all staircases and at strategic points. Education of public on use of these is quite essential.

**Street Furniture**

Advertising is very essential in a market, for shops. Show window advertising is very essential. This has been provided. Above show windows facility for advertisement showing title of shop, items sold etc. has been provided. The raised social space can be further livened by sale of advert spaces to firms.

**Seats**

Weather resistant fixed benches are provided at points of rest and relaxation. Due to the heavy rains concrete benches are to be used in open areas.

**Litter boxes**

To be provided along pedestrian ways. These are bulky to avoid it being stolen and are to be emptied daily.  

15.
Business space and Inducement of shoppers to the market.
EVALUATION

Priorities in the design of market precincts in Lagos have been:

1. The provision of more business spaces for the urban migrant.
2. Catering for all stages of trade within the market.
3. Inducement of customer traffic through all business areas.
4. Improvement of comfort of both the shopper and the seller.
5. Maintainance of lively atmosphere in the site after business hours.

More business spaces have been catered for by the maintainance of two levels of shopping within the market. To induce pedestrian traffic through the market on both levels malls have been used as short cuts from Martin street across the market to Nnamdi Azikiwe street, over pedestrian decks.
Site after Business hours
This maintains a safe crossing of highways.

2. Short cut from the multi-storey car park and bus stop on Ali Balogun street through the departmental store, market and to the offices at the south.

3. The location of the departmental store in the north end of site will induce intertraffic between this and departmental stores, along the Marina and Broad streets. This again generates customer traffic through the market.

The internal organisation of the business spaces has been carefully designed to expose every space to customer traffic and the use of courtyard system of design increases visibility of goods being sold and an easy assessment of the market activities.

Restaurants have been located along malls which are open for 24 hours as such these can operate late into the night. Shops have as well been maintained at the periphery of the site. These are to sell even at night. As such the pedestrian circulation along
Climate
these shops have been designed to induce window shopping as a means of relaxation in the nights thus making the site lively at night.

Mechanical ventilation of the shops (where the cost of this can he met in rentage) induces air movement through the market, thus ventilating it. The maintainance of openness above all stalls gives a free circulation of air through all stalls thereby improving the comfort of the shoppers and sellers in the market.

Solar protection is maintained by the use of balconies which are as well used for circulation.

On the whole my new market has not only been designed to meet the above mentioned conditions but has as well been made to cater for all grades of traders within the market. Realising that there must be hawkers who would settle at any place to sell and the fact that the owner of goods usually indicates the route through which the porter must convey his goods, enough circulation space has been
provided to cater for these.

Basing the design of our new markets on the above determinants will greatly improve the conditions of this very essential urban activity in Nigeria.
APPENDIX

Retailing in Melbourne by D.F. Johnson and J. F. Winter.
British Shopping Centres by Alfred Davies.
The future patterns of shopping. A.M.E.C.
Shopping Centres U.K. by Victor Trach.
Regional Shopping Centres by Colin B. Jones.
Architects' Talk by Ernst Sauert.
Time Saver Standards for Building Types by J. de Quincey
and John H. Callender.
Anatomy of Traditional Markets in Mexico by M.H. Fajula
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Time Saver Standards: a handbook of architectural design
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Victor Trach.
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Anatomy of Traditional Markets in Nigeria by L.R. Vagale.
Time Saver Standards a handbook of Architectural Design
by John Hancock Callender.
Centres for Urban Environment Survival of the Cities by
Victor Cruen.
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<thead>
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<th>Loading packing</th>
<th>Quality of</th>
<th>Toilet Facility</th>
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Cement block

<p>| Timber |</p>
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<td>about 10 years</td>
<td>7 a.m.- 8 a.m.</td>
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<td>about 16 years</td>
<td>8 a.m.- 7 p.m.</td>
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<tr>
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<td>8 a.m.- 6 p.m.</td>
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<td>8.30 a.m.- 6.30 p.m.</td>
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<td>about 10 years</td>
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| Shop with Area less than 10\(^\text{xia}\) | 1 | 4 | 45 |
| Percentage of Total | 0.60 | 2.60 | 28.40 |

| Shops with Area more than 10\(^\text{x}12\) | 5 | 1 | 53 |
| Percentage of Total | 4.5 | 0.90 | 47.80 |

<p>| Sub Total | 6 | 4 | 1 | 98 |</p>
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<th>Domestic</th>
<th>Potman-</th>
<th>Traditional</th>
<th>Wall</th>
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