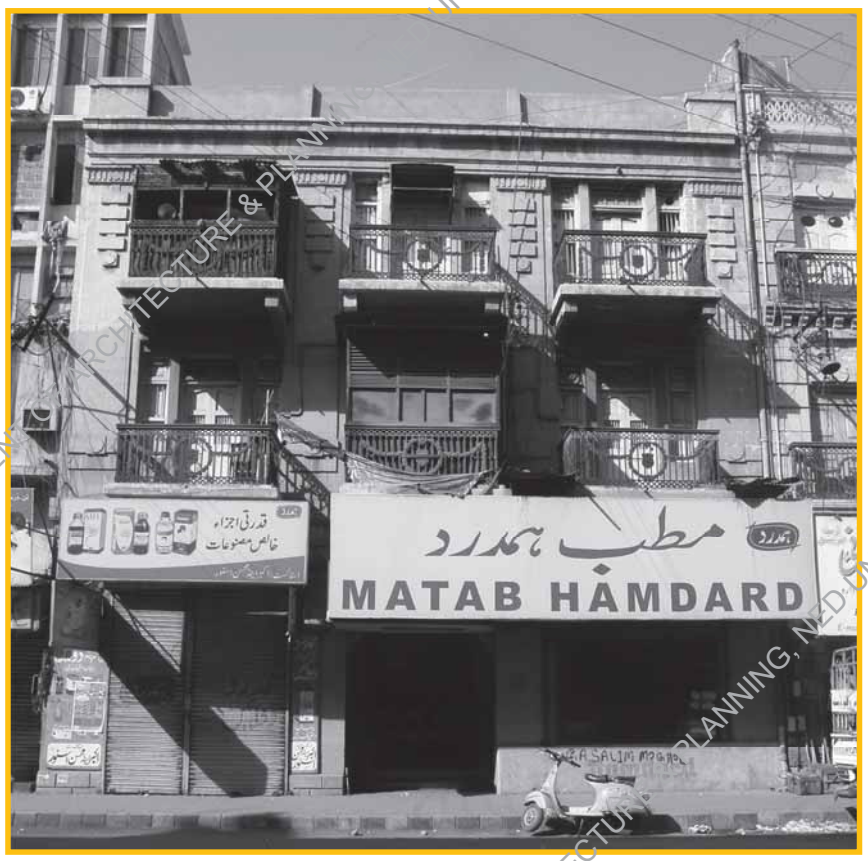
HAMDARD MATAB BUILDING

Renovation, Restoration and Repair Work



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November 2011

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1-Introduction

Buildings are meant to serve, particular purposes, thus require ongoing maintenance to prevent them from falling into disrepair due to continuous use. Every building is unique and consequently needs a tailored approach to its restoration and conservation. This research is carried out for the renovation, restoration and repair works of Hamdard Matab. The purpose of this report is to compile a research based analysis on the state of conservation of Hamdard Matab with an objective of giving recommendation for its appropriate restoration. The ***first part*** includes introduction, scope of Study, documentation and data collection and significance of the building. ***Second part*** of the report is divided into four main areas.

- Historical Background
- The "Matab": Description of architectural aspects and Analysis of present status
- Identification of problems
- Proposals for Restoration

The Hamdard Matab has great standing in Pakistan within the profession of *'tibb'* or '*hikmat'*. The place flourished under the guidance of Hakim Mohammed Said (late) whose commitment and contributions in the field acquired an extra ordinary importance and popularity to this matab. The existing building of Hamdard Matab begun with a small room in 1948, where Hakim Said initiated the Hamdard Foundation. The building initially started as a clinic and manufacturing lab for herbal medicines. By sheer determination and with the singleness of purpose he turned it, into a magnificent institution and a pharmaceutical industry of international fame. (www.hamdard.com.pk/biographyofhakimsaid/, 2010)

2-Scope of Study

The scope of restoration depends upon the need, and other circumstances, such as the status of the building, and the affordability of the work required. The building has been in use as 'matab' or herbal medicine clinic since 1948. Throughout its life, the building has undergone various changes and alterations, to accommodate the changing needs, extension of services and activity developments. In order to keep the building in efficient use its continuous maintenance processes were undertaken by successive managements, during the lifetime of Hakim Said. But lately the upkeep procedures have declined gradually. Due to which the structure has deteriorated, to a certain extent and requires some maintenance and repair works.

This study is undertaken to understand and identify the problems and shortcomings of the Hamdard Matab Building, with the objective to suggest possible repair and maintenance works for the betterment of this historic property.

3-Documentation and Data Collection

Documentation and data collection is the first and most important stage for initiating any conservation project. The purpose of documentation is to know the existing status and condition of the building, and be able to understand its problems in terms of materials, structural deformations and instabilities, deterioration and its causes, alterations, etc. Information gathered at this stage needs to be done with precision and should be very authentic, because this is what the entire project is designed and based upon. Such information is helpful to effectively supervise the site, as observed by Clark that 'Conservation involves managing change, and in order to manage change, it is vital to understand what matters and why?' (Clark, 2001, p7)

The required information and data collected for developing an understanding of this building is done through a measured documentation of the building undertaken by the architects and survey team of Hamdard Foundation. Added to this is detailed photographic documentation and site observations through visual means, done by the team of Heritage Cell, Department of Architecture and Planning, NED University, in November-December 2010. The information gained is analyzed through a tailored approach and finally used for developing the recommendations given at the end of this report.

The analyses are done through the detailed site surveys, interviews from the concerned people and users of the premises, and review of the Hamdard Pakistan Limited web site. The drawings provided by Infra Structure Development Division in September 2010, were verified on site and errors or required corrections were identified. The drawings were revised accordingly and resubmitted to Heritage Cell, DAPNED in October 2010. After final verifications the documentation drawings are used as base drawings, and further improved with visual observation during site visits.

The various stages included for this data collection are:

- Documentation (photographic and measured survey)
- Identification of Problems
- Analysis of Problems
- Suggestions for Remedies

After gathering required information, a comprehensive conservation plan for the property is being hereby proposed.

4-Significance of the Building

Ornamentation on building

The Hamdard Matab Building is an important example of Karachi's old buildings. The building's fine architectural features and ornamentation on the facade, as well as its internal furniture details, are influenced by colonial period trends.

Hamdard Matab is a pioneering establishment of its kind in the city. Apart from its institutional value, the building is built with good quality of stone having ornamental details in wrought iron.

The primary value of significance for Hamdard Matab premises is its fifty years association with Hakim Mohammed Said. The Hamdard Matab is a legacy of Hakim Mohammed Said, who is credited with its expansion, both in terms of services and vision. The partition of the sub-continent brought Hakim Said to Pakistan. He chose Karachi as his new base and laid foundation of Pakistani chapter of Hamdard in 1948 on Arambagh Road, Karachi, where he would sit in his Matab after Fajr prayers every Saturday and Sunday; staying in the clinic until he saw the last patient, even if it took him all day. Hakim Said was assassinated on October 17, 1998, in front of this building.

5-Hamdard Matab: Architectural Aspects and Analysis of Present Status

5.1-Location

The Hamdard Matab is located in Ram Bagh Quarter Block-6, on Aram Bagh Road, close to M.A.Jinnah Road. Plot layout of the building is such that shorter side become the frontage of the said building, giving depth to the width. Also slightly tapered from the back side, which is visible by looking at the backside boundary wall. The front part of the building housed the shop, dispensary, clinics and storage at different levels. The back side has the toilet block on north-eastern side whereas ladies waiting room and storage areas on the north-western side of the plot. This gives the building L-shaped layout in terms of covered area of the plot.

The building stands on a sandwiched plot, adjacent to the office of Ansar Burni Welfare Trust at one side and residential walk-up apartments on the other side. Being on sandwich plot the building has only one facade, all other sides being abutted with adjoining buildings. The building is exposed to noise and exhaust lead fumes due to heavy traffic as thorough fare on this busy road, directly affecting the building's façade. The building has an internal courtyard not visible from the road.

Location Map

5.2-The Facade

Description and Architectural Features:

The exterior facade built of stone, and presently covered with grey weather shield paint. Hamdard Matab is a G+2 storey structure, having a total height of approximately 40ft, from existing ground level. The exterior facade is well kept and does not have extensive alterations or modifications on it. The building has a short frontage divided into three equal panels framed with vertical column-like treatments that enhance verticality of the building frontage. The proportionate elevation is designed in a way which has easily divided into three vertical and horizontal bays. The vertical divisions have ornamental treatments on pilasters, whereas the horizontality is enhanced by a series of three cantilevered balconies on first and second floors. Although, appearing in good shape, some of these balconies have cracks in their cantilevered slabs, due to water accumulation and seepage into the RCC, supported by the brackets and accessible from the interior of the building. The parapet walls of the balconies are of wrought iron bars fixed into an approximately six-inch high concrete base and four inch high wooden top. The bars have festoon and garland design on them, depicting particular era's style. Due to the openness of this original design a clear and unobstructed view of the building is visible from the road.

The main access into the building is through a central entrance corridor having a shop on one side and a dispensary on the other. The original parapet of the building has been replaced with simple C.C. block masonry plastered with cement plaster. However, the older picture indicates a bar style parapet detail which should be restored.

DOCUMENTATED ELEVATION WITH SIGNAGE (AS EXISTING)

5.3-Plan Layout and Present Usage

Continuous use of any historic building is the most appropriate way of ensuring its survival into the future. The Hamdard Matab premises have been in continuous use since its establishment, due to which it still serves its use. The building falls into health care building category as it operates as herbal medicine clinic. Initially the building layout was straight along the main road, the vertical extensions on both sides are later additions. Besides them, there are around four more small structures haphazardly added to the site to incorporate the growing need of the users and various services. These later additions are either temporary shed like structures or block masonry units that do not contribute to the architectural quality of the site, thus could be removed to make way for better designed additional spaces.

At present, the site has a single main block of U- shaped, which forms the original layout. This layout can easily be divided into three significant sections; a deeper front, right and left wings, with a central courtyard. Left and right wings both face the courtyard. The left wing consists of toilets on all floors. From the front, central entrance corridor leads longitudinally to the back side courtyard, which acts as the ground floor waiting area. Along this longitudinal corridor, a dispensary is functioning with window counters, for giving numbers and medicine to the patients. The other side of corridor has a shop, which has its access from the road. The clear height of the corridor is about 13' 6". This corridor in turn links to the staircase foyer, storage rooms, waiting area, toilet blocks and consultant's room. There also exists back-side entrance to the dispensary, beneath the staircase. This entrance is used by the workers and staff members of Hamdard matab. On first floor, as one approaches from staircase, a minor corridor on right leads towards the storage room, waiting and consultant's room whereas the major circulation corridor on left hand takes to the different consultant's rooms. The room of Hakim Said also exists at this floor and is now in use of a senior consultant. The major circulation corridor also acts as men's waiting area. Duct spaces also start from this floor which are presently under- utilized and covered with asbestos sheets on the roof. On second floor, storage rooms exist along the front and right wing of the building. The remaining area is an open to sky terrace space. The rooms on this floor are under-utilized.

5.3.1-Ground Floor Usage

On the ground floor, almost 88% of the area is in use by the Hamdard Foundation. The remaining area [approximately 12%] had been leased for commercial activity and is functioning as a shop. This shop still has its original floor intact. On the upper two floors, the trust owns 100% area. The circulation corridor at the entrance leads to the waiting area at the back side courtyard. The dispensary is on one side of the corridor and a line of chair is running on the other side of the corridor used by waiting customers. The staircase leading to the first floor is at the far end on right side. There is a reception, along with dispensary, waiting area, storage rooms, washrooms for men, temporary generator room etc. A small library having a good collection on "*tibb*" or "medicine" books; was functioning at the ground floor room, but it has been closed after the death of Hakim Mohammed Said. (Refer drawing: i)

Dispensary

Entrance Corridor

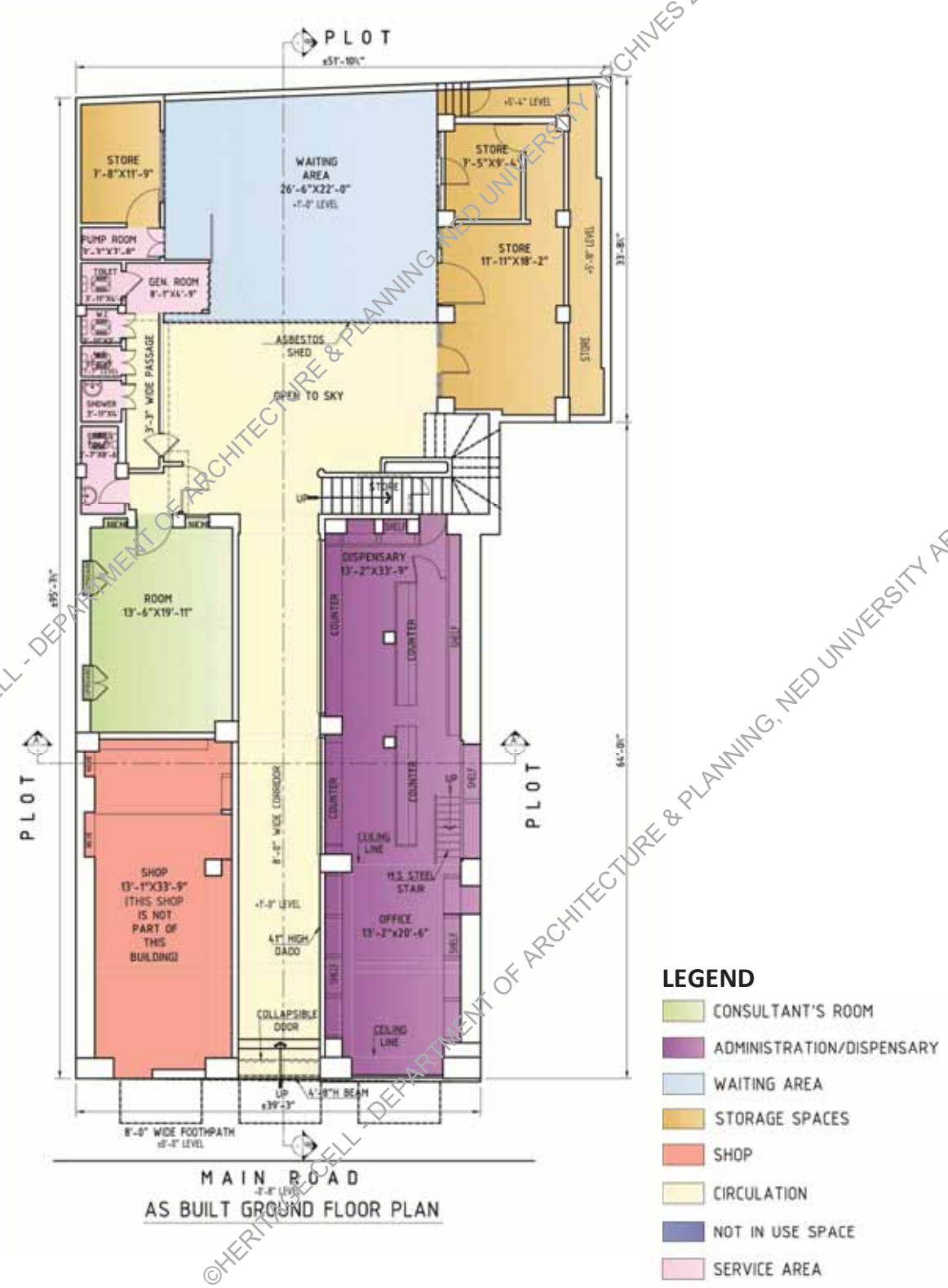
Original flooring at shop

5.3.2-First Floor Usage

The rooms on first floor mostly are used as the consultant "*hakims*" or doctor's rooms and waiting areas for the visitors and patients. The additional spaces are developed by introducing concrete partition walls with in the same foot print. By doing this, more consultant's spaces and waiting rooms has accommodated. The consulting clinic or room, which was once in use by Hakim Said, is now in use of a senior consultant Hakim Khalid. The balcony of Hakim Said's room is completely closed, as evident from the front elevation of the building. The service areas on the courtyard side have toilets, storage and waiting rooms. (Refer drawing: i and ii)

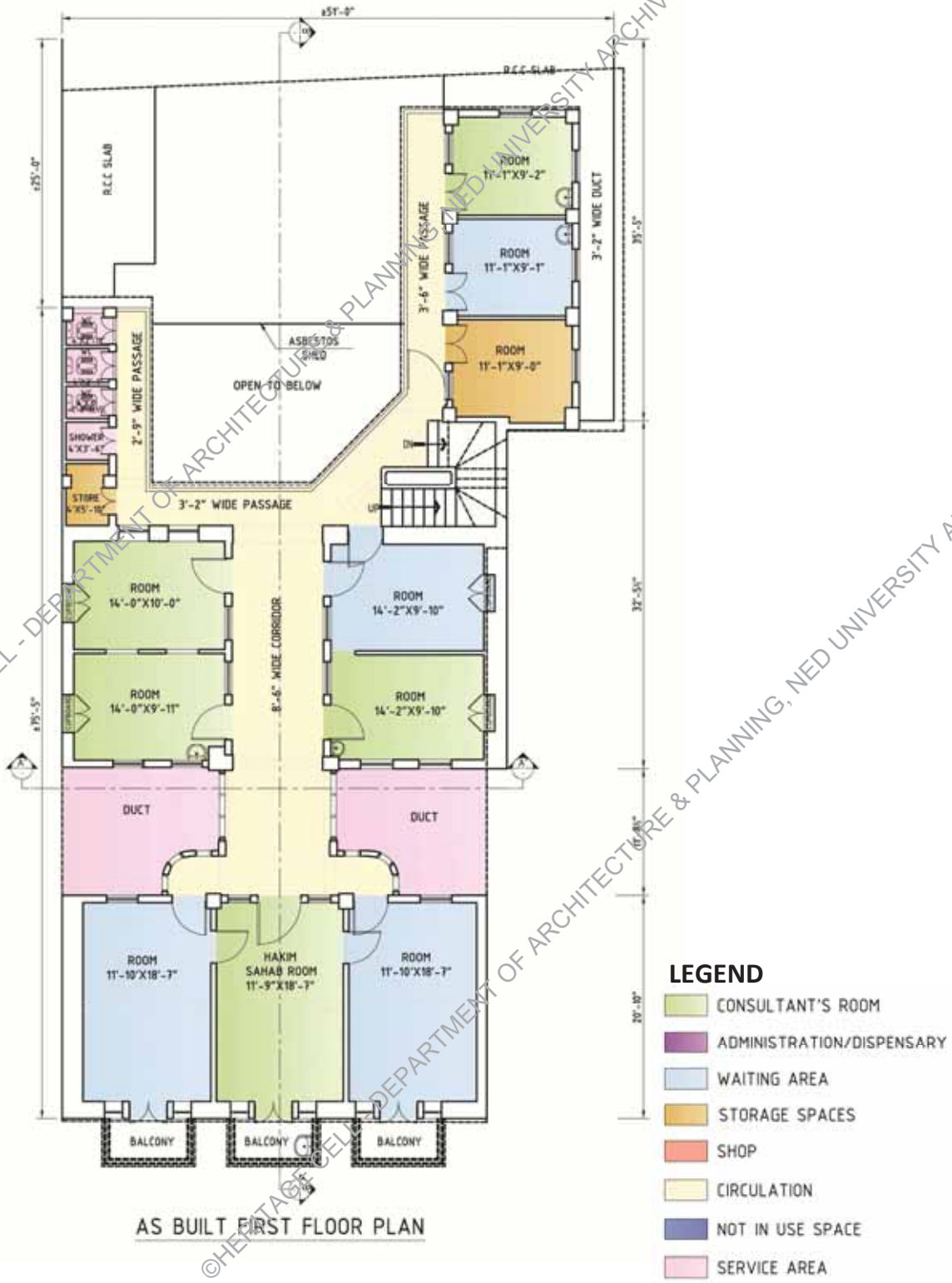
Hakim Said's Room

Consultant's Room



DOCUMENTATION PLANS

Drawing i



AS BUILT FIRST FLOOR PLAN

DOCUMENTATION PLANS

Drawing ii

Toilet blocks of first floor

Waiting Area

5.3.3-Second Floor Usage

Most of the spaces on second floor are being used as storage areas. The three rooms facing courtyard use to have a pathology lab which was closed in 2004. These rooms used as servant quarters for some time but now are not used. It is observed that this floor has been under utilized state. Some areas on the floor have accumulated debris, which need to be removed. The cemented area, which is open to sky, indicated seepage stains at different locations. This pointed towards the fact that flat roof of the area has improper surface water drainage. (Refer drawing: iii)

Almost completely underutilized floor

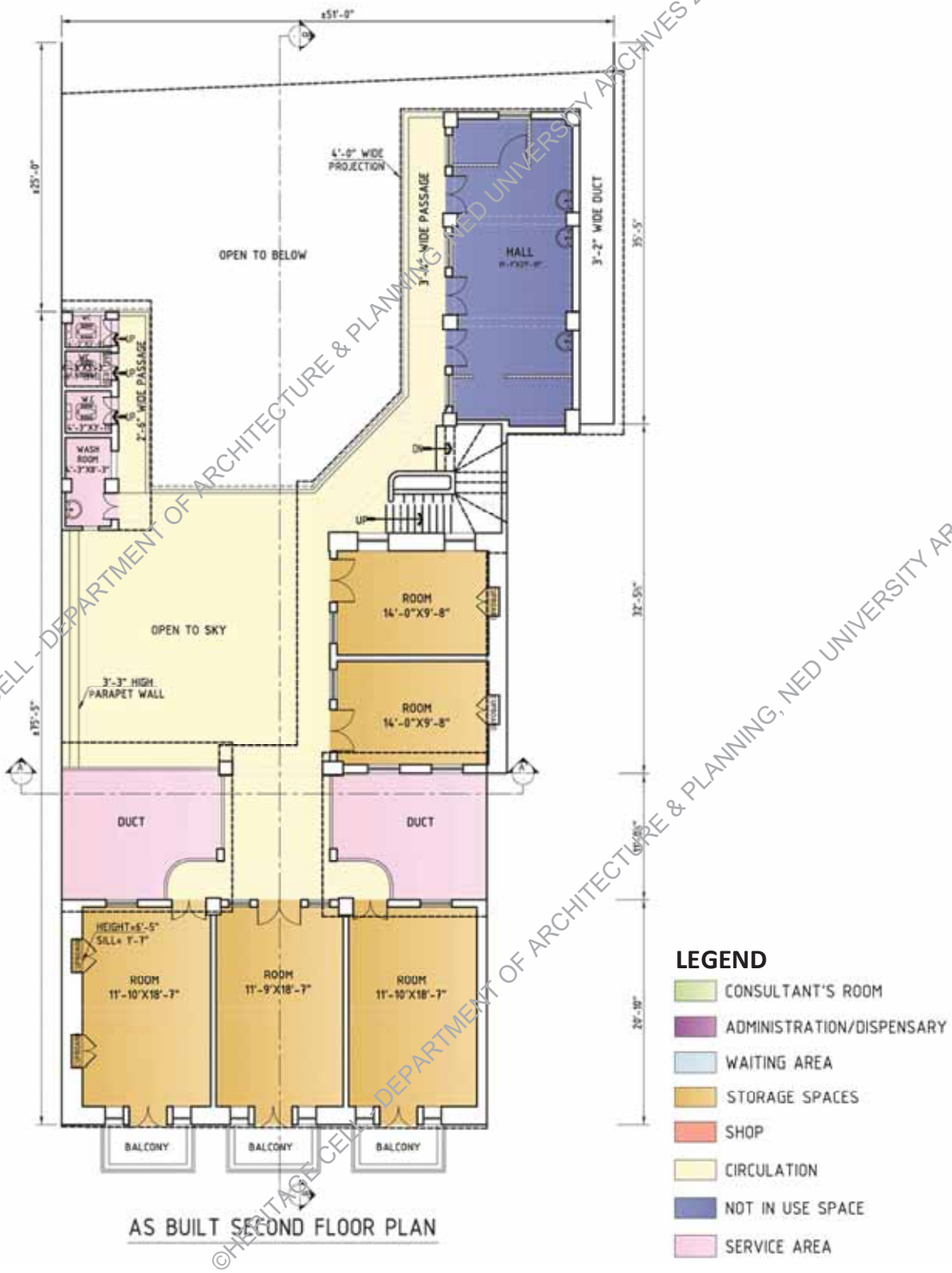
5.3.4-Roof Usage

The roof is accessible through a wooden staircase. The roof has exposed plumbing lines running all over its floor and also has piles of debris at different locations which need to be removed. There is no water tank at this floor. The water is supplied, to the building, by fibre glass water tanks which are placed over the roof top of second floor toilet block. On roof, water seepage stains are also observed, indicating the fact of improper surface water drainage and poor condition of screeding at different locations. Parallel to this it is also found that there are seepage stains at the side boundary wall which is due to the overflowing problem of adjacent building's tank. For drainage purposes pipelines are used instead of water spouts, in fact all of water spouts are choked. (Refer drawing: iv)

Wooden staircase

Fibre glass water tanks placed on the roof top of second floor

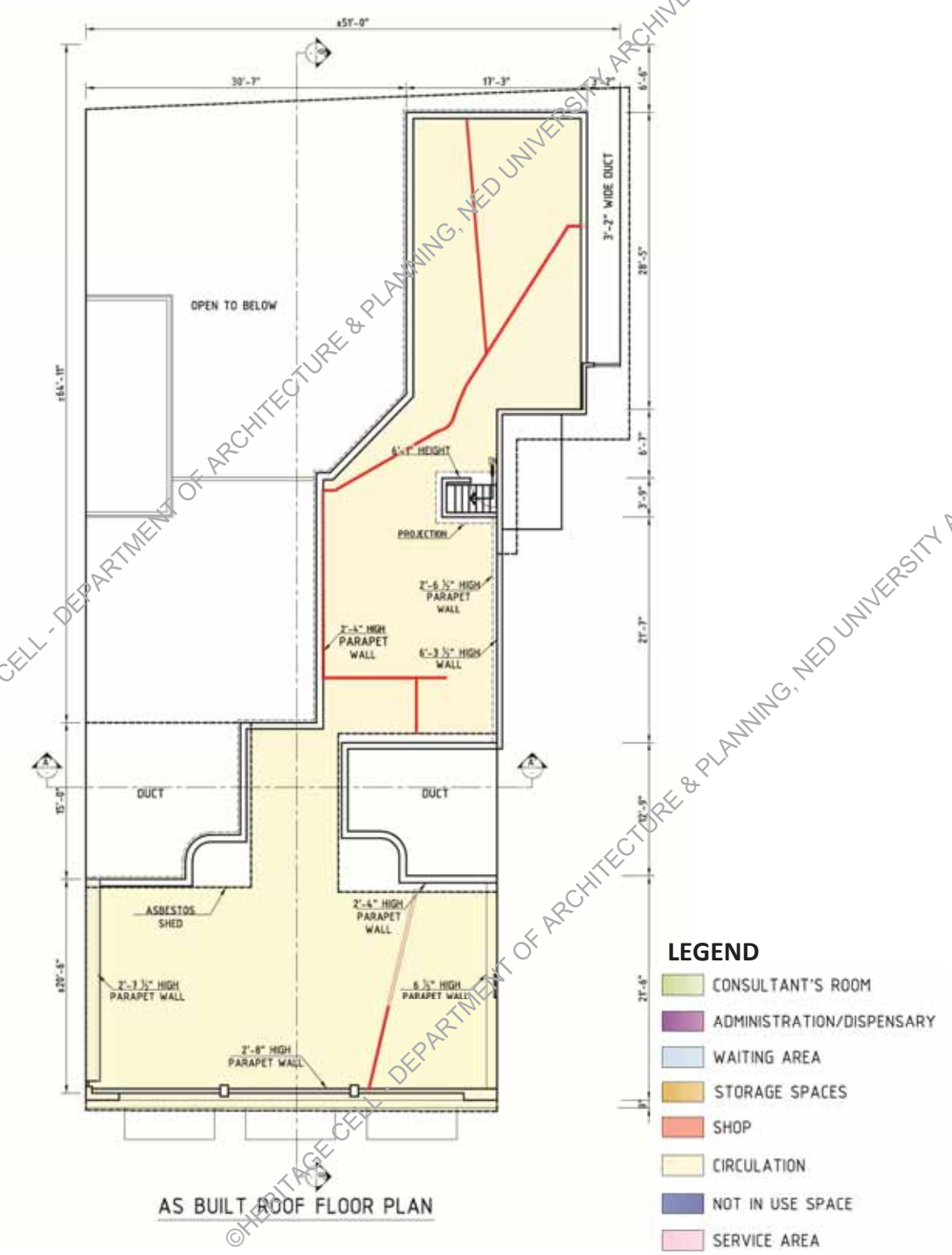
Exposed drainage lines, water tank of adjacent building is also seen



AS BUILT SECOND FLOOR PLAN

DOCUMENTATION PLANS

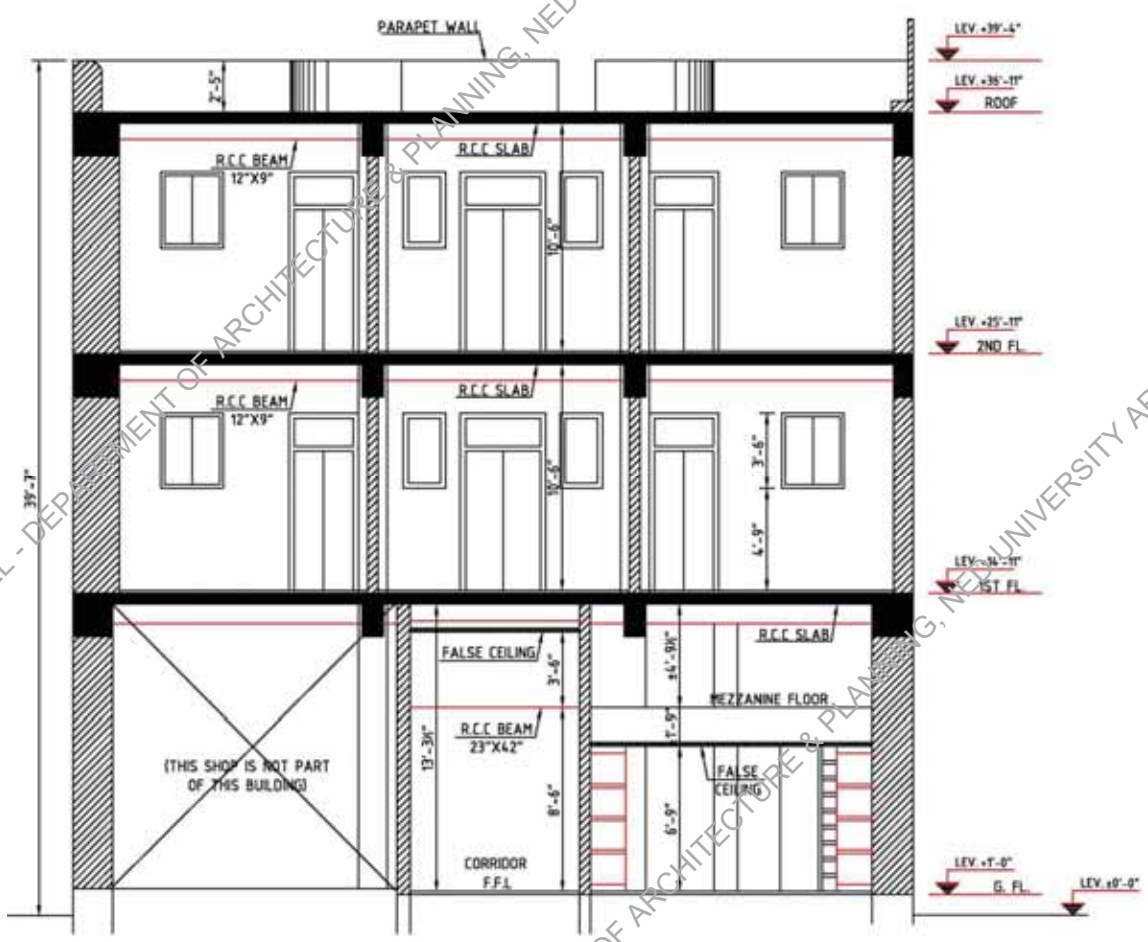
Drawing iii



AS BUILT ROOF FLOOR PLAN

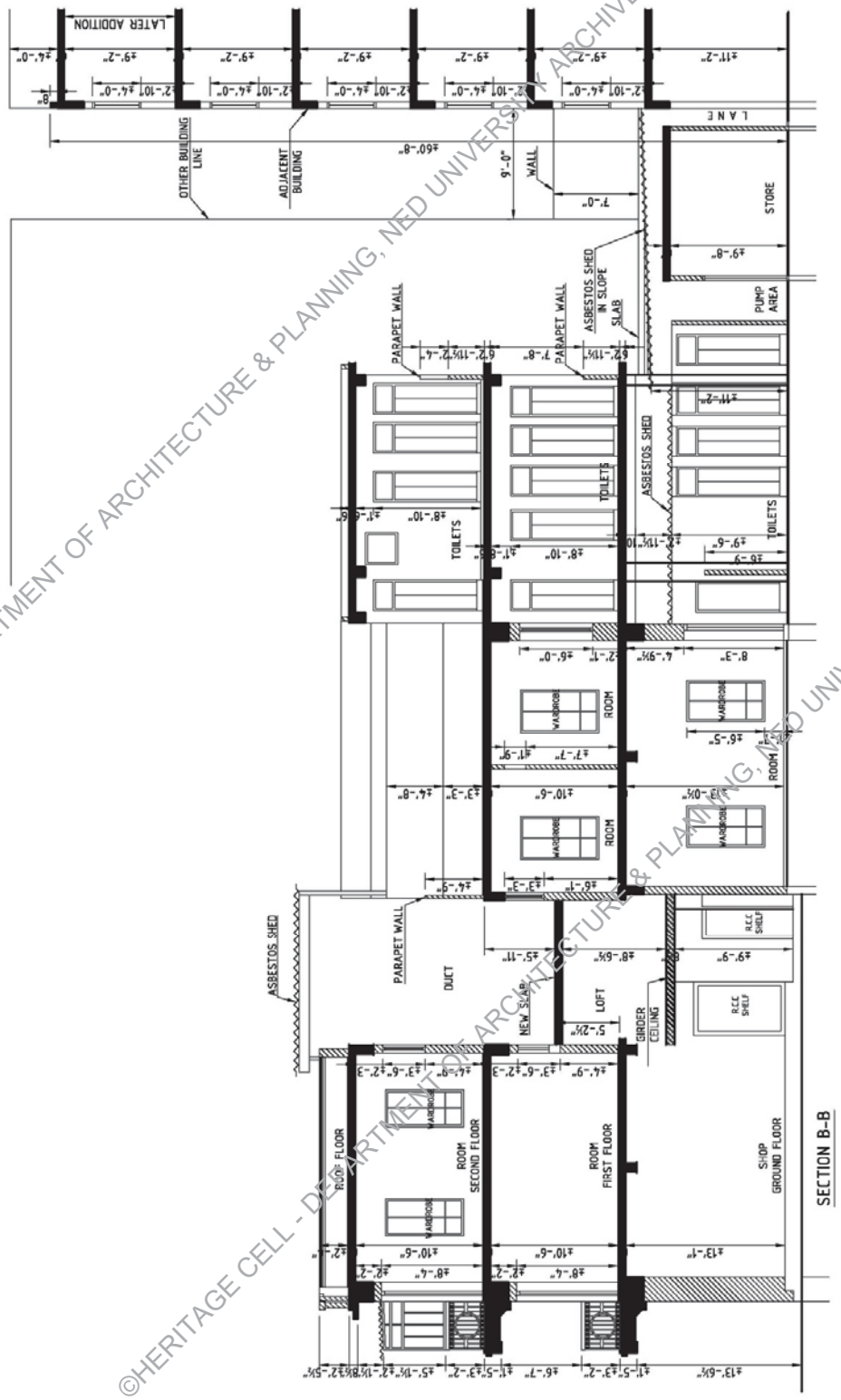
DOCUMENTATION PLANS

Drawing iv



EXISTING SECTION AT A-A

Drawing v



EXISTING SECTION AT B-B

Drawing vI

5.4-Structural System and Building Material

Originally the building has a load bearing structural system with wall thickness of about 1'on the outer periphery. The interior of the building however has R.C.C frame structure with columns and beams supporting the floor and roof slabs. The building thus has a composite structural system, combining stone and R.C.C construction techniques.

The present status of structure indicates that the load bearing structure is comparatively, in a better state than that of R.C.C frame structure. No major structural faults are observed on masonry walls, having plaster and paint finish. There are however, some patches of plaster repairs at a few places. For a detailed structural analysis it is recommended that it should be viewed by a structural engineer. In areas of building, which are made up of R.C.C frame structure, as a general remedy it is advised that consolidation and repair treatments are done to all damages R.C.C elements. This would include chiselling of damaged c.c. cover, treating the eroding bars with chemicals, applying surface bonding chemicals and then applying repair plaster/c.c. covering. Some cracks are noted in few of beams, columns, walls and cantilevered balconies. One column, at ground and first floor is completely repaired, as it was heavily deteriorated due to increasing cracks and damages on its surface. These will have to be tested in detail for durability, by a structural consultant and repaired/reinforced according to his recommendations.

Repaired column

Facade detail capturing the material

5.5-Flooring

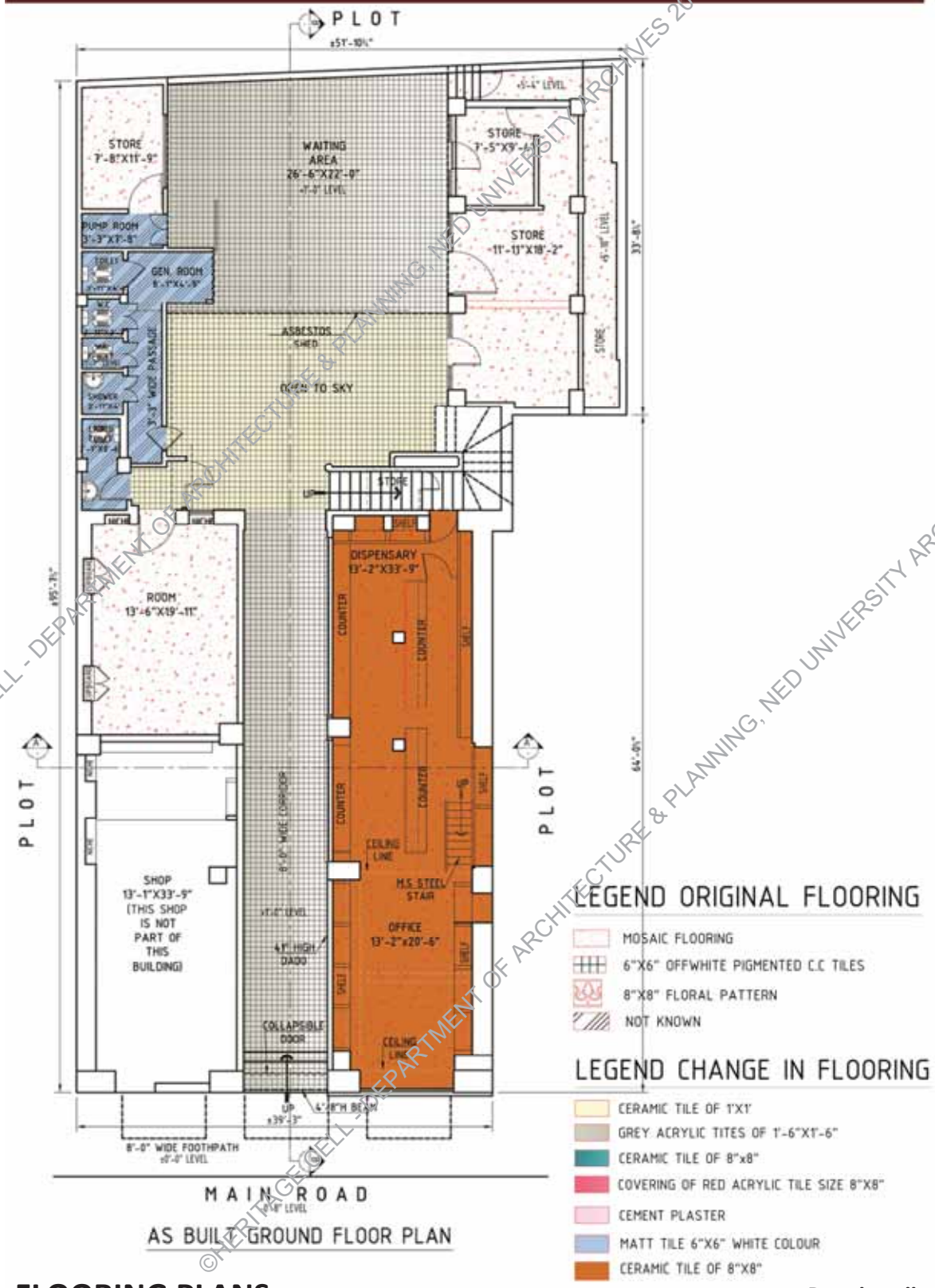
In case of Hamdard Matab three types of flooring had been placed initially including mosaic flooring, off-white pigmented tile flooring and pattern flooring. Mosaic flooring was laid at hall areas of ground and first floor. This is still intact and required regular maintenance and cleaning. A single motif of c.c. tiles of floral-geometric pattern, using light brown and black colours, is found on the corridor of second floor. This motif is supported with a decorative border, using floral patterned in black pigment, running along the sides of corridor. It was informed by occupants that such patterned flooring was originally existing on open to sky area

as well. But later on it was replaced with cement plaster flooring. The c.c. tiles of pattern flooring are in good state of conservation and require removal of debris and cleaning. Rest of the building had plain c.c tiles of off-white colour. This flooring is either covered with red vinyl/acrylic tiles or with plastic carpets at most of the spaces. From waiting area of ground floor and corridors of the building such flooring has replaced with ceramic tiles of different sizes. Ceramic tile flooring has installed to the later added toilet block. (Refer drawing: vii, viii, ix, x)

Mosaic flooring

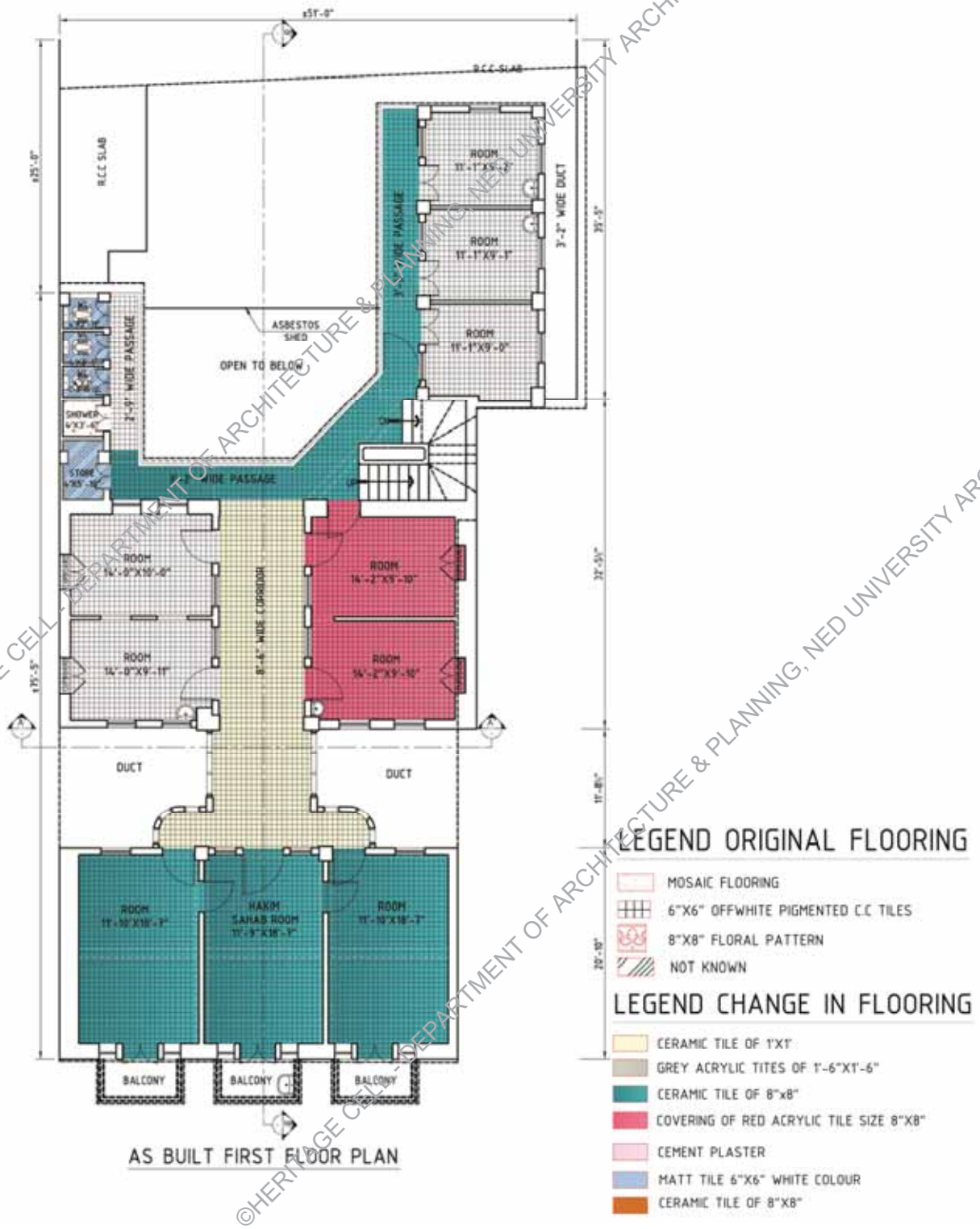
Pigmented tile flooring

Pattern flooring



FLOORING PLANS

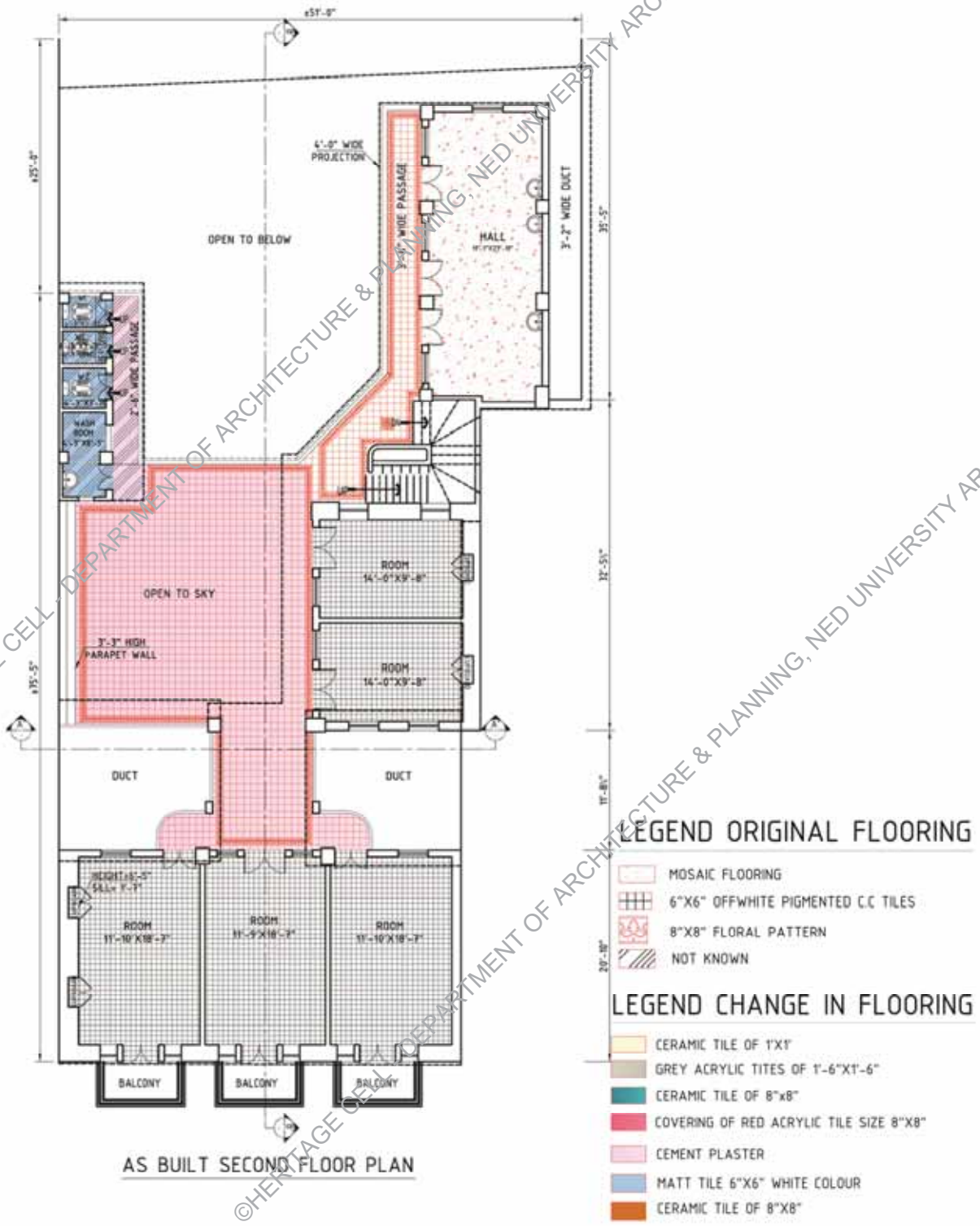
Drawing vii



AS BUILT FIRST FLOOR PLAN

FLOORING PLANS

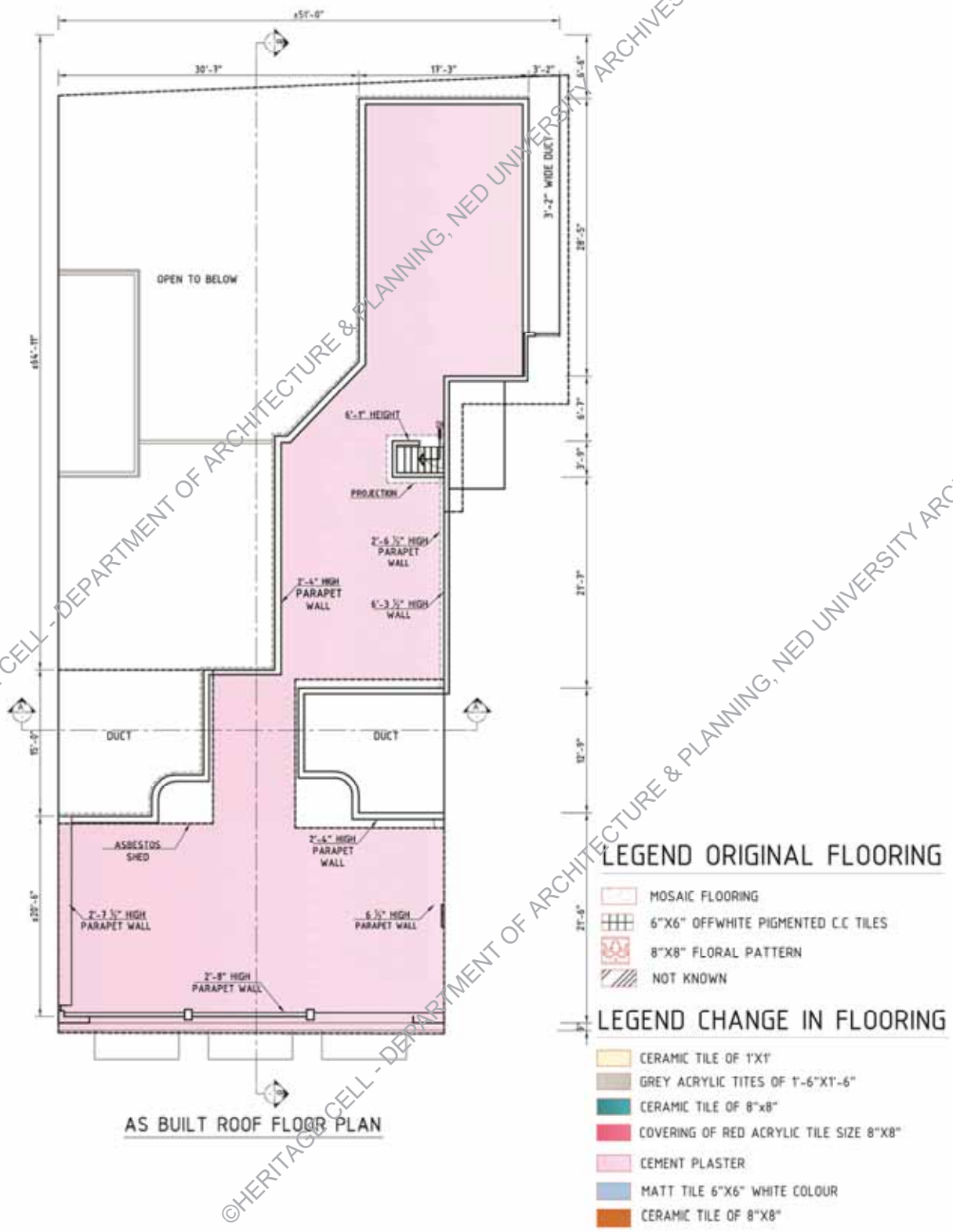
Drawing viii



AS BUILT SECOND FLOOR PLAN

FLOORING PLANS

Drawing ix



AS BUILT ROOF FLOOR PLAN

FLOORING PLANS

Drawing x

6-Alterations and Changes

Alterations and changes are part of any building that has survived to present day under certain usage. These should be considered as part of the historic development of the building. The Hamdard Matab building is an example which has undergone a lot of changes in the original layout over the years; basically to accommodate the growing requirements of usage and make the functioning of the premises more efficient and comfortable. All these alterations and changes should be given importance, but on the other hand they need to be examined for any diverse effects to the building fabric. If such be the case, their possible rectification should be proposed under a well formulated program.

6.1- Facade Alterations

During documentation and data collection, the façade has been critically analyzed; the following defacing alterations are identified.

Paint on Stone Surface: The original material of the exterior façade is stone. However, the stone surface has been painted over with grey colour paint. (Refer drawing: xi)

Hoardings and Signages: The existing façade has huge sign board bearing the name of "Hamdard Matab", along with it there exists other smaller horizontal and vertical sign boards as well. These boards all together give an unpleasant impact to the building; covering almost half of the ground floor frontage. In addition to that, the shop shutters and tile cladding also completely covers the ground floor. Thus additions have completely obscured the original ground floor frontage. (Refer drawing: xi)

Alterations in Balconies: As mentioned earlier that there exist three cantilevered balconies on each of the first and second floors, making the total of six balconies altogether. Out of the three cantilevered balconies of first floor, central balcony has been completely closed by using asbestos sheets and wooden louvers. This balcony is accessible from inside room; which once was the room of Hakim Said and now is in use of the senior consultant. This balcony also served as the washroom for some time after the death of Hakim Said, but now it has been in no use. From interior it is still in very dilapidated state. (Refer drawing: xi)

Balcony of first floor

Similarly out of the three cantilevered balconies of second floor, left corner balcony has been closed by using asbestos sheet and is been used as storage room. Also addition of asbestos sheet is observed on the centre balcony on second floor as temporary covering. (Refer drawing: xi)

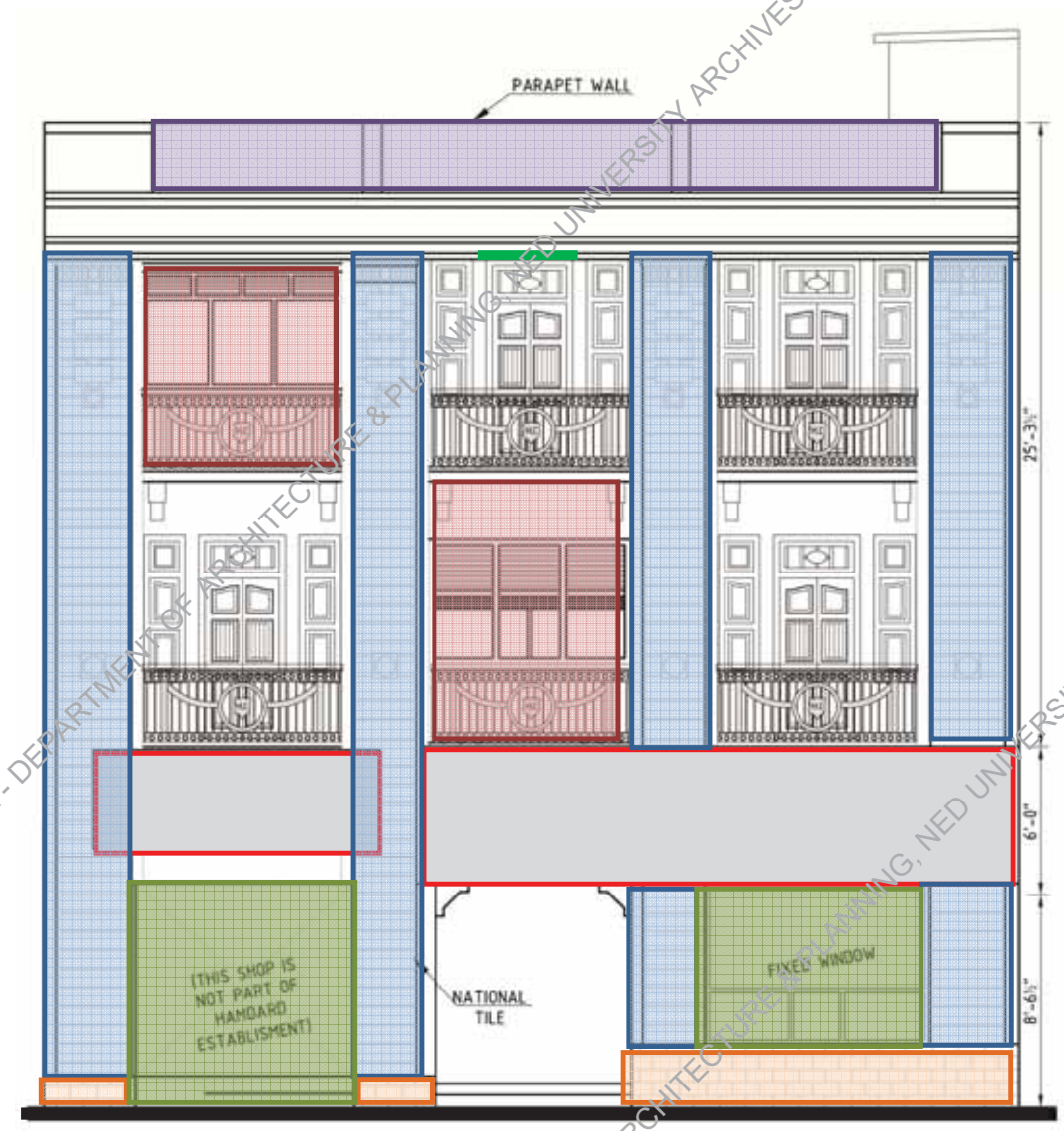
Left corner balcony on second floor

Centre balcony on second floor

Parapet wall on roof: The original parapet wall at the roof level has been completely replaced by masonry parapet wall finished with plaster. Although traces of original parapet wall still exists at the interior of the building. (Refer drawing: xi)

Replaced parapet wall

Original parapet detail



LEGEND

- Addition of Hoardings
- Paint on Stone Surface
- Tile cladding covered with paint
- Shutters addition
- Closed Balconies
- Altered Parapet Wall
- Asbestos sheet

FACADE ALTERATIONS

Drawing xi

6.2- Changes in Plans/ Layout

The interior of the building has been surveyed for its various uses to gauge the level of convenience and efficient functioning of the building.

6.2.1-Alterations on Ground Floor

More than 50% of the courtyard is covered with asbestos sheets creating a covered waiting area. The adjacent apartments on the back create problem of garbage dumping onto asbestos sheets covering the waiting area. The back lane which was once the open lane, has converted into storage area, by covering it through asbestos sheets.

Asbestos shed over waiting area

Observation during survey indicate that problem of garbage dumping from neighbouring plots is of serious nature as the situation worsens in rainy season, when the garbage gets dampened and smelly. In addition asbestos roofing also starts leaking at certain locations. Apart from that, later installed plumbing pipes at different locations throughout the building also create a visually disturbing impact on the façades. Besides these certain other structures presently existing on the plot are later additions. These include the rooms built adjoining the toilet block, as machine area generator room and storage area. The storage area served both as storage and servant room, at present. (Refer drawing: xii)

Addition of partition wall inside hall area

View of Ground level storage from top, which was once back lane within the same plot

Back lane conversion into additional storage

6.2.2-Alterations on First Floor

On first floor, partition walls have added for dividing single rooms into two, for incorporating additional consultants within the building. The balcony of Hakim said's room has been altered into different functions from time to time and is now in dilapidated state. It was initially altered to serve the function of toilet which was later changed into AC unit's duct. The unplanned alterations along with their improperly fixed drain-pipes causing problem of water penetration,

as water washes over surfaces and now creates puddles over cantilevered balcony's floor. Due to the absence of proper drainage of standing water from the floor, seepage occurs through the slab, damaging the construction materials. Later added washbasins along with their exposed drainage lines have also observed, giving unpleasant visual of building's interior facades. The proper duct spaces are not in use also. The original flooring has been replaced or covered, using red acrylic tiles and ceramic tiles. Finishes seems to be in very dilapidated state. (Refer drawing: xiii)

Access into the Balcony of Hakim Sahib's and existing condition of the said space

View of the duct area from first floor

View of the duct area from second floor

6.2.3-Alterations on Second Floor

On second floor, a cantilevered balcony, at the corner, has been altered into additional storage area. This balcony has visually closed from outside but accessible from inside of the building. The hall at the back, facing towards the courtyard, was once used as pathology lab. Partition walls have added inside the hall for utilizing the space accordingly. The addition of washbasins along with their drainage pipes have observed at this floor also. The original pattern flooring has been replaced by applying cement pilaster on the floor, although the traces of the original pattern flooring have also observed. The cemented floor has water seepage stains at various locations,

indicating the problem of poor screeding and improper surface water drainage. This standing water seeps through the slab, causing damage to the structural members. (Refer drawing: xiv)

6.2.4-Alterations on Roof

At roof, the addition of asbestos sheets for covering the duct areas, has observed. Another alteration is of exposed drainage lines, which runs all over the roof, in order to supply water to the building which is coming from fibre glass water tanks. The water spouts at the roof have been closed and 1/2 inch diameter pipes have introduced, for clearing off rain water. These pipes have pierced through the roof slab, through which rain water drains off at second floor. From there water spouts have channelized it at ground level and ultimately into the gutter; which can be seen as the exposed drainage on ground floor. The original parapet wall from the front side has been altered completely. (Refer drawing: xv)

6.3 Altered Doors, Windows and Ventilators

The existing doors, windows and ventilators of the building are made of timber, painted with several layers of white oil based paint. Out of which, some of them have been altered either to accommodate the fixing of AC units or replacing timber window by installing net. Maintenance and upkeep of most of the doors, windows and ventilators are in dilapidated state. (Refer drawing: xii,, drawing xiii, drawing xiv, and drawing xv)

Damaged ventilator at ground floor

Alteration of windows and ventilators of Hakim Said's room

Installation of net, replacing timber windows of hall on second floor

6.4 Altered Parapet Wall

In all the floors, parapet walls running at interior of the building have a typical block pattern. These pattern blocks were, later on filled with cement infill or mortar. The traces of such block pattern still found at different locations inside the building.

Alterated interior parapet which still have traces of original design

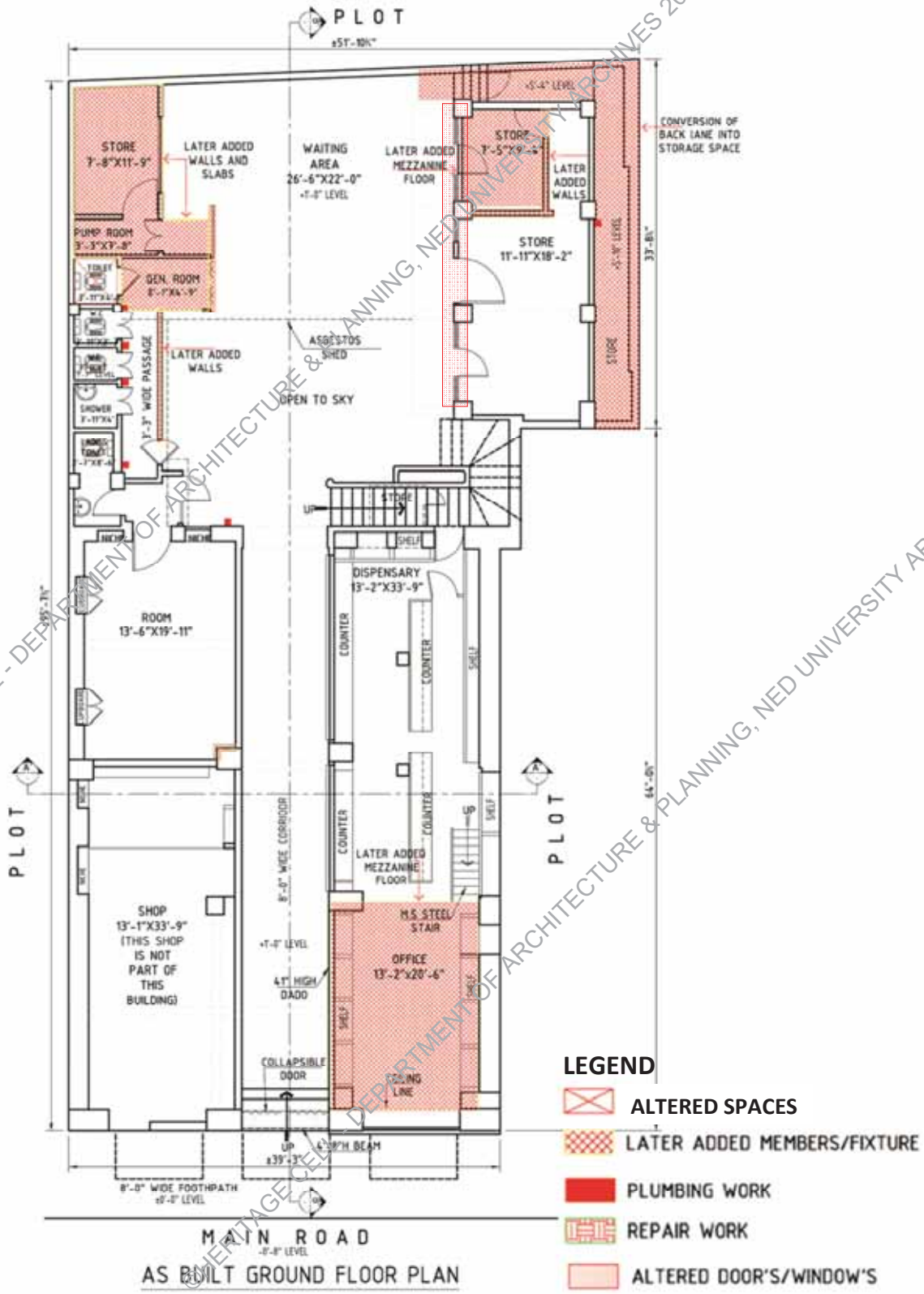
6.5- Finishes

The finished look of Hamdard Matab is not appealing at all from the interior. Seepage stains, peeled off paint and non plastered walls has given patchy appearance to the walls of the building generally. For overcoming the problem prime focus should be given for removing the seepage stains. Only after that the plaster has been repaired. Before applying the new coat of paint the previous layers of paint, accumulated over the years will be thoroughly scrapped.

Peeled off Ceiling Paint

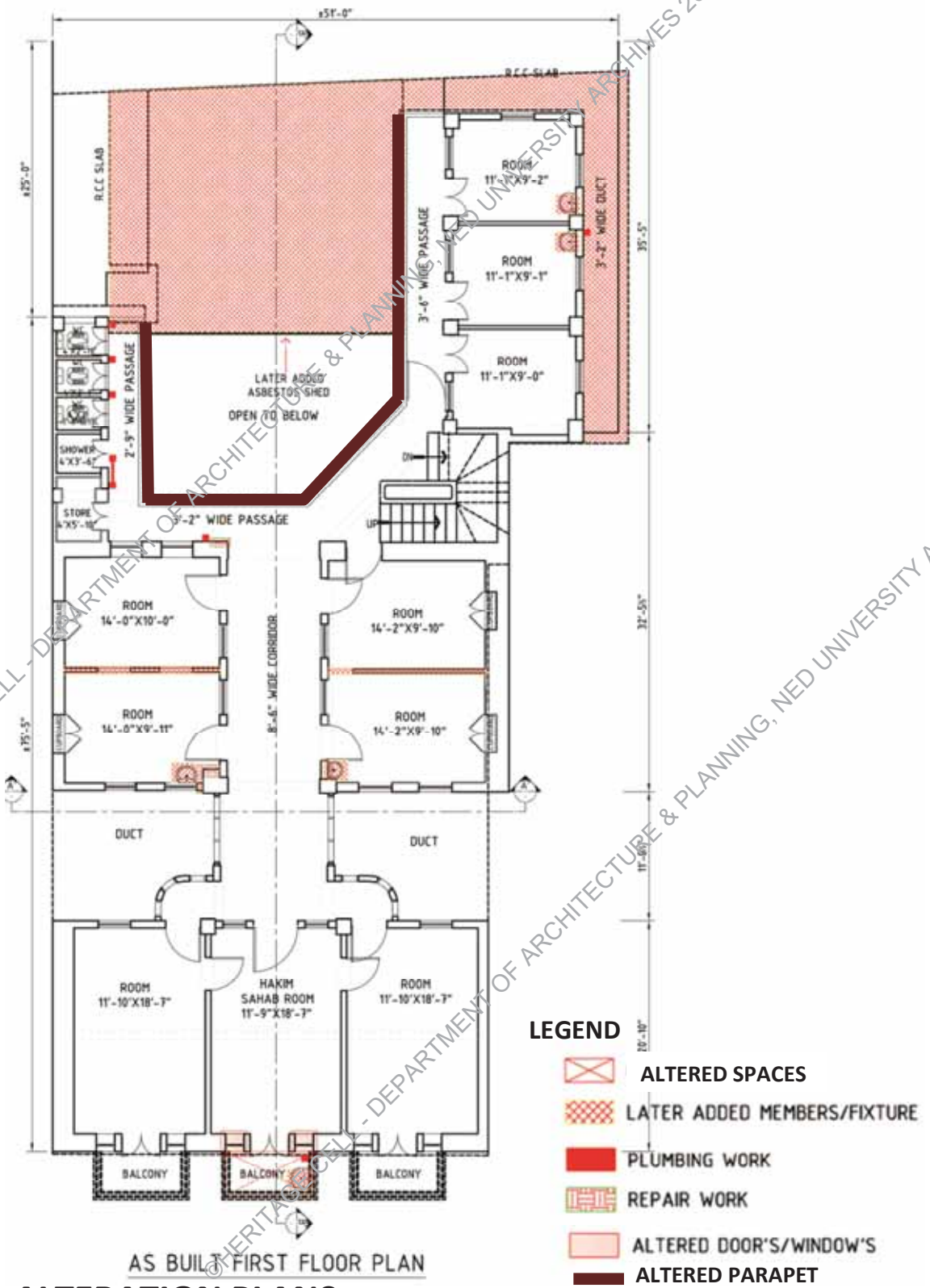
Patchy look; original mosaic dado have been covered under paint surface

Internal wall Paint



ALTERATION PLANS

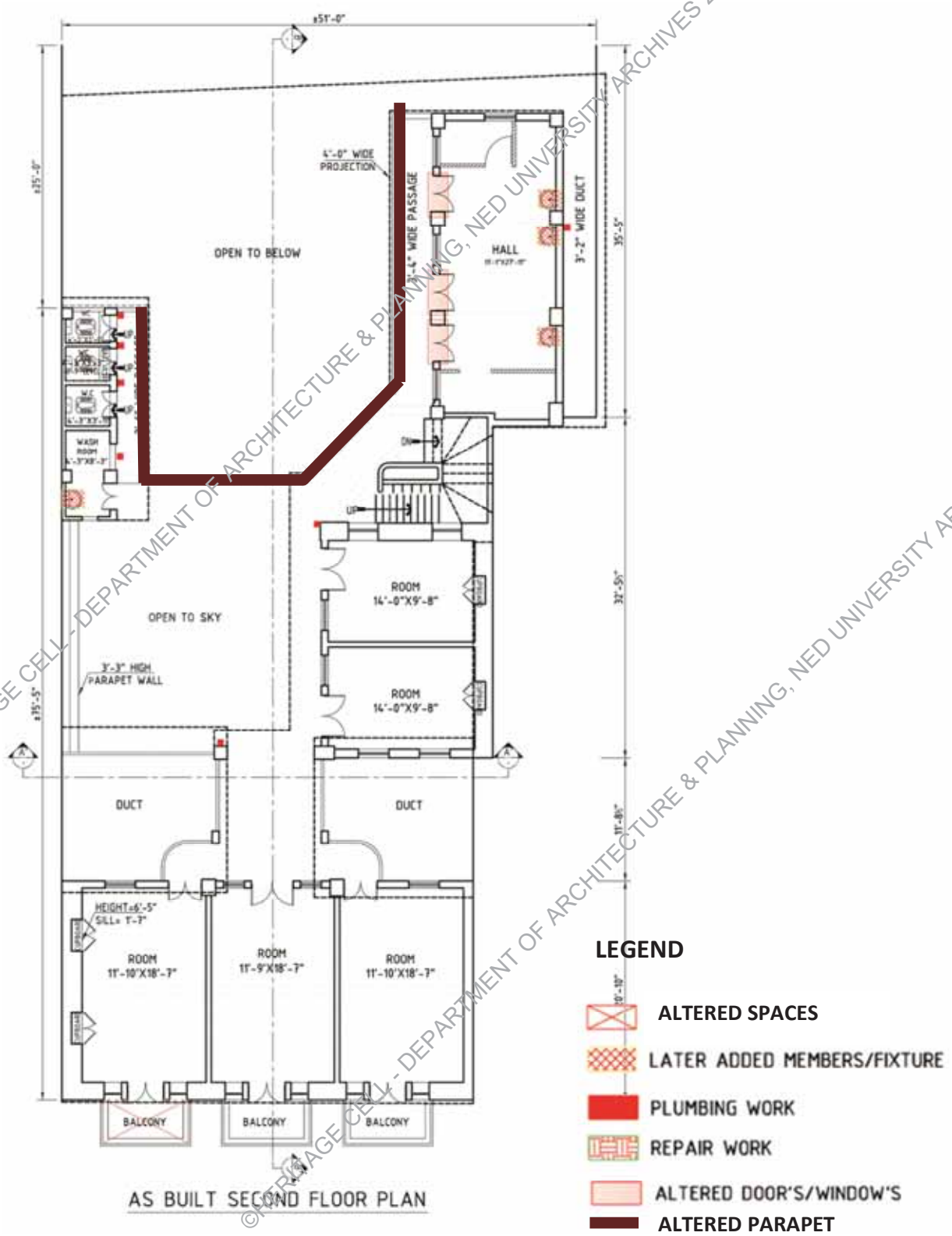
Drawing xii



AS BUILT FIRST FLOOR PLAN

ALTERATION PLANS

Drawing xiii



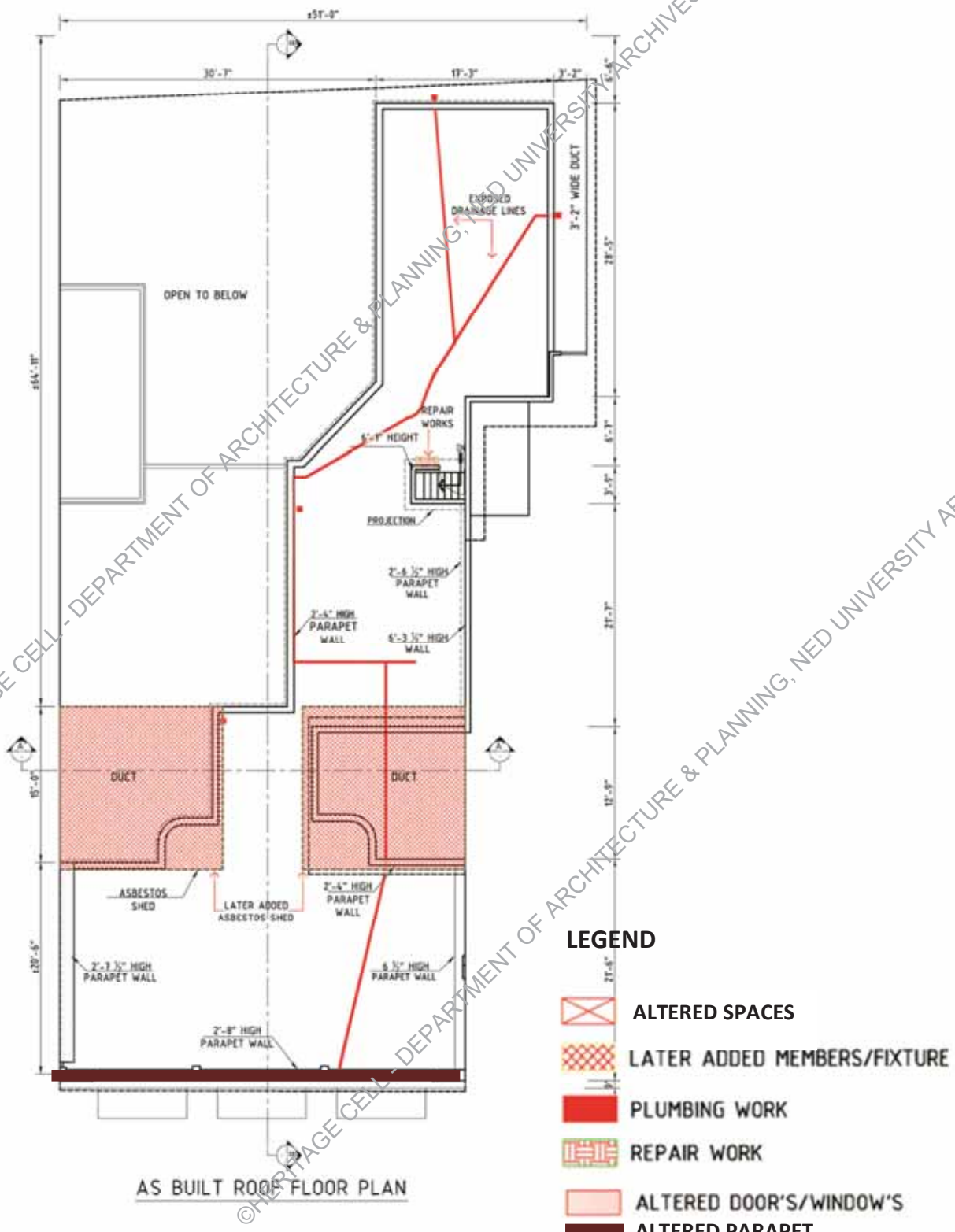
AS BUILT SECOND FLOOR PLAN

LEGEND

- ALTERED SPACES
- LATER ADDED MEMBERS/FIXTURE
- PLUMBING WORK
- REPAIR WORK
- ALTERED DOOR'S/WINDOW'S
- ALTERED PARAPET

ALTERATION PLANS

Drawing xiv



AS BUILT ROOF FLOOR PLAN

ALTERATION PLANS

Drawing xv

7- Identification of problems

7.1 Physical appearance

The problems identified on the buildings' exterior facade are the ones which affect the building in terms of its architectural features and elements and the general aesthetics of appearance. They need to be rectified at the earliest to prevent further deterioration.

7.2- Problems inside the building

The sets of problems identified here are generalized and broadly applicable for all interior spaces. In addition to these further interventions will be required in each interior space according to the usage of that particular space. After completing the detailed survey of the Hamdard Matab Building, the identified problems are as follows (Refer drawing: xvi, drawing xvii, drawing xviii and drawing xix)

7.2.1-Seepage

At the Ground Floor, the seepage observed in some storage areas and on the roof of one consultants room. While on the First Floor, the seepage ratio is quite high on the beam and ceiling. Mostly it has been detected in the corridor or adjoining areas of corridor. The Second Floor's toilet blocks and circulation space are affected by seepage.

- Installation of wash basin The major problem identified in Hamdard Matab building is the seepage. The Hamdard Matab building does not show any signs of rising damp from the ground, but at certain locations seepage stains have been observed on the external surfaces. These are mostly due to localized sources such as in areas where wash basin's drain lines have been installed. In case of areas where wash basins have been installed; added as need occurred, are a major source of water penetration into the building. As these facilities are scattered in small pockets they have not been provided with a service shaft or duct through which their water supply and drainage pipes could pass through. Thus at some places these pipes run along the outer wall, whereas at other places they are embedded inside the floor or are concealed with an exposed duct.

- Installation of fiber water tank Another cause of seepage is the leakage of water from fiber water tanks. The plumbing, in most of the cases, is faulty and leaking pipes have become a source of water penetration inside the building.

- The installation of urinal caused added plumbing pipes in Hakim Said's room balcony, although it's not in use but currently existing AC ducts has increased seepage on the floor.

- Plumbing Issues The plumbing, in most of the cases, is faulty and leaking pipes have become a major source of water penetration inside the building.

- Water Drainage There are some temporary asbestos shed over the duct area which caused water stain inside or on external surfaces due to water draining. In rainy season the water stands over the asbestos shed and ultimately on the roof of the duct, which would not drain out properly. The standing water on all horizontal surfaces causes seepage and hence damages the structural members.

7.2.2-Cracks

Cracks have been observed in different areas of all floors. There are two kinds of cracks in the building; one on structural elements and the other on masonry wall. The affected areas include the projection areas of the toilet blocks, walls, columns and beams etc. The reason of developing cracks in the building is water penetration from different sources. The major source had been the faulty drainage pipes running within the building haphazardly. Another reason includes standing rainwater on floors at various locations, which finally seeps through.

Cracks and Seepage stains on roof slab

Cracks in column

Cracks in beam

Cracks in column of interior spaces

7.2.3 Re-organization and Maintenance of Service Areas

The service areas including toilet blocks, machine room, generator room which are existing on ground floor, required immediate repairing and maintenance. Although the wet spaces come above each other but due to the defective plumbing it causes deterioration in building interior, on all floors. Besides toilets, the spaces allocated for generator room and machine room required shifting because they are directly access from the waiting room and when these machines are in use they cause severe noise pollution.

7.2.4 Underutilization of Spaces

Observation during survey of the space usage of the entire building shows that a lot of spaces in the building are either not in active use or underutilized. At some locations rooms are used for storage or as servant rooms with three or four people. On the other hand there are very small or compulsory open spaces, which are used as storage rooms, making certain spaces very congested.

7.2.5 Cleaning and Repairing of Floor

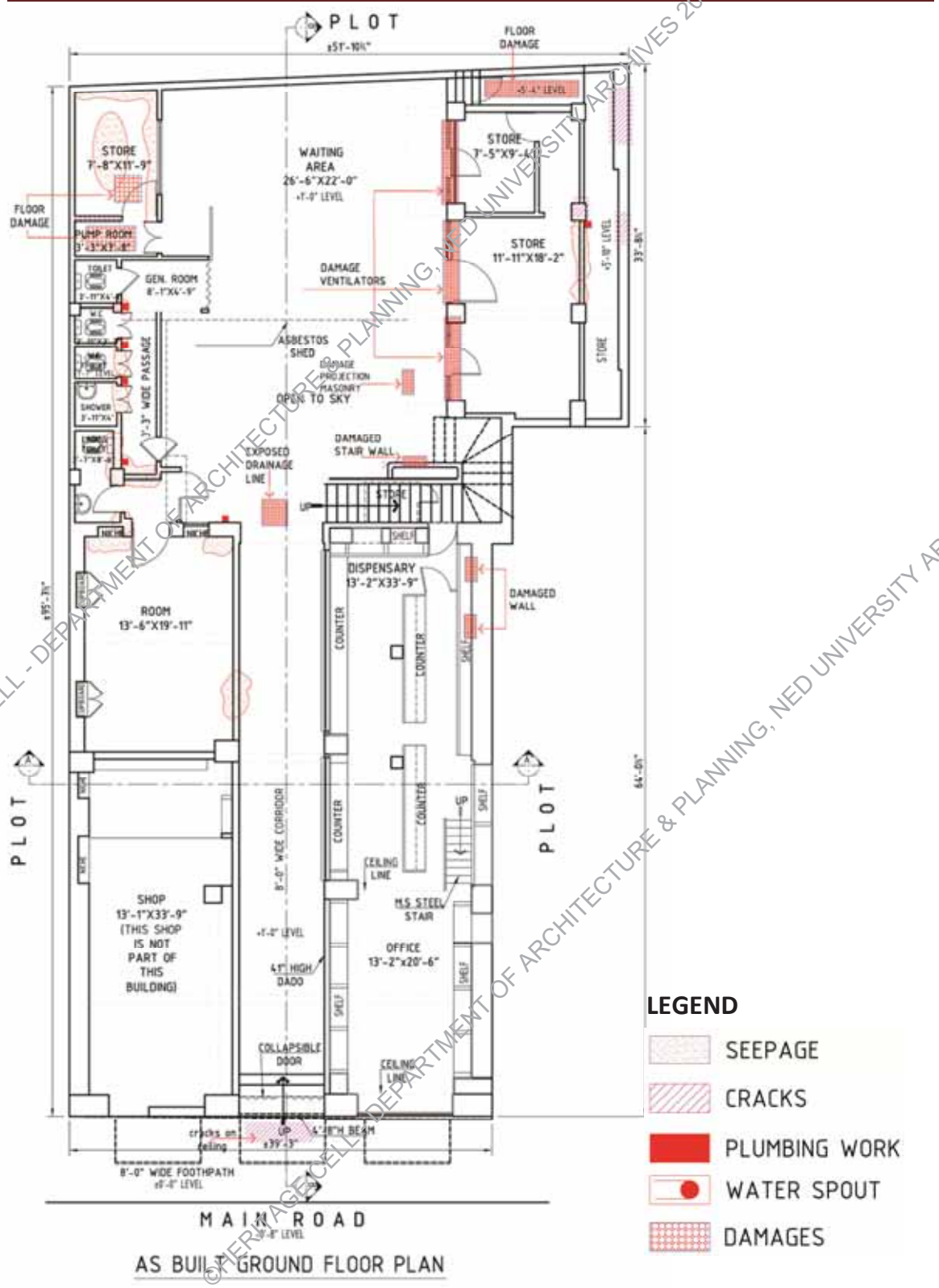
Tiled floor underneath Vinyl tiles

In terms of flooring, most of the original flooring has either been replaced or covered with another flooring type. The overlay flooring has damaged at various locations; reflecting the traces of original flooring underneath. In such cases repairing of flooring is required for giving finished look to the interiors. In addition to it pattern flooring area required proper maintenance and upkeep, in order to remain intact for longer time period. Also certain tiles of entrance lobby and waiting area, of ground floor, required replacement for overcoming the un-tidy look of the passage.

Original Floor

7.2.6 Electrical Works

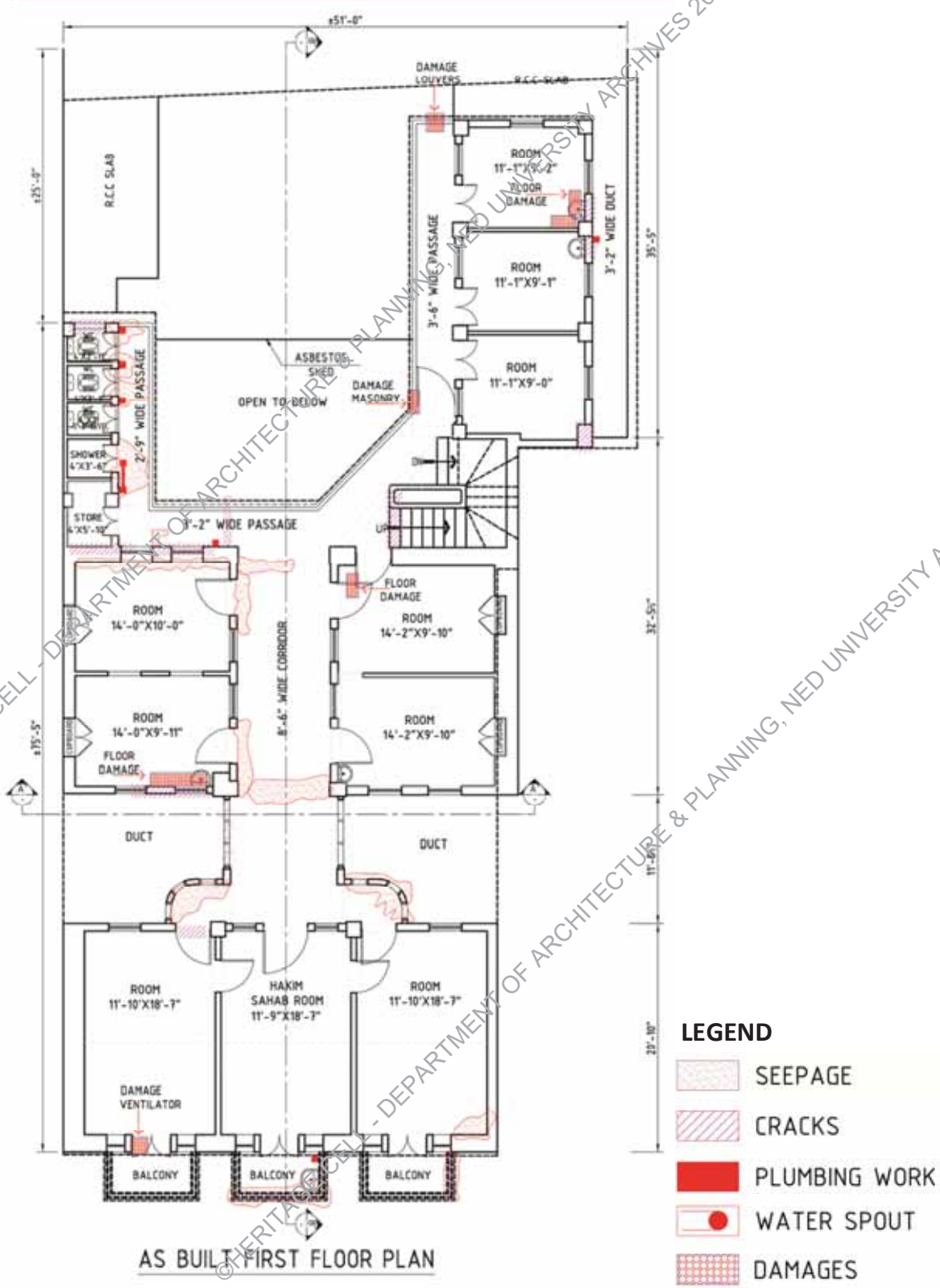
All electrical fittings (fans, lights, etc.) at present have exposed wiring. In order to make these aesthetically a part of the interior scheme, proper measures to make it concealed wiring need to be worked out. Parallel to it, the problem of hanging wires also needs to be addressed in proper manner.



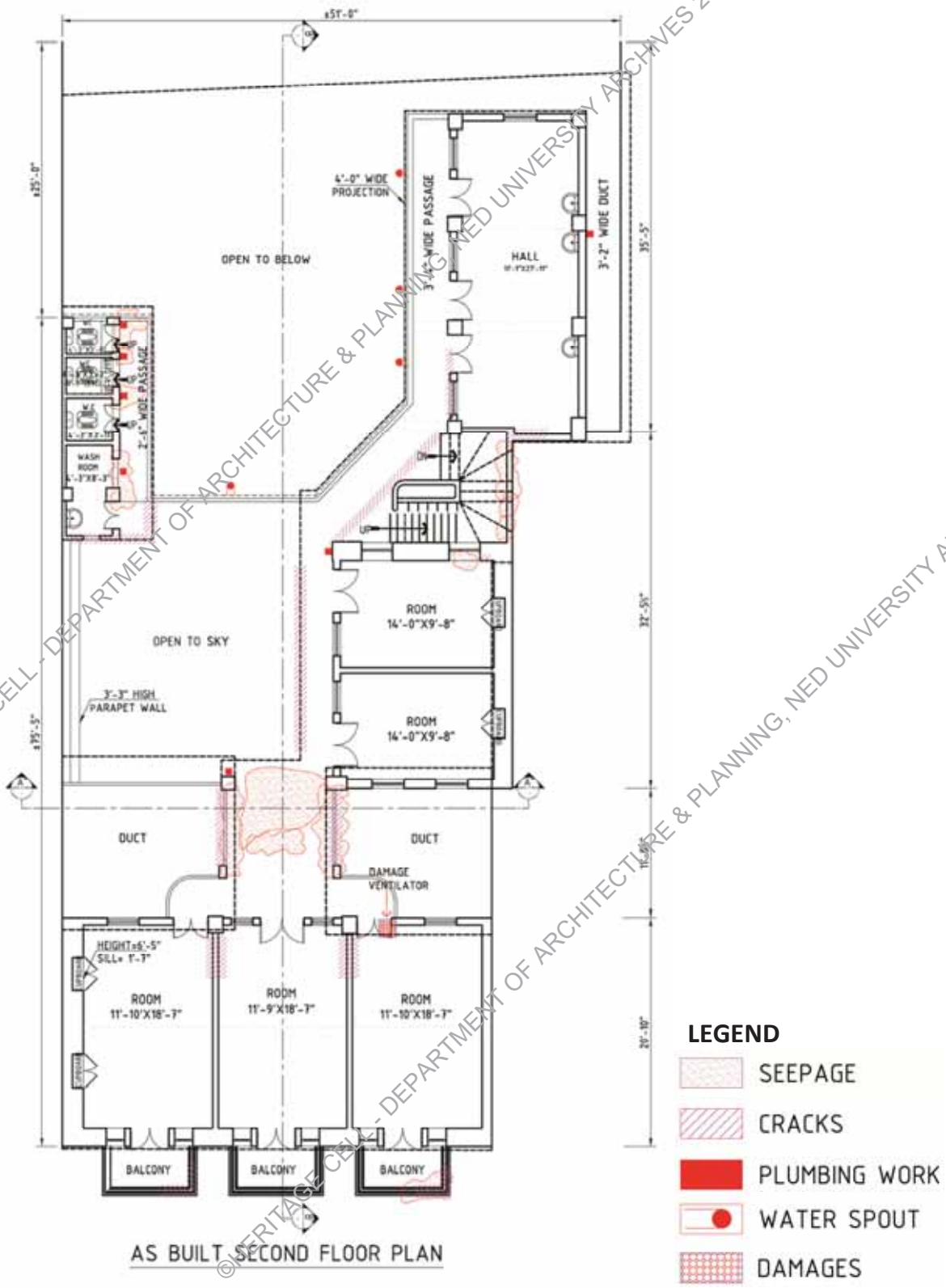
AS BUILT GROUND FLOOR PLAN

PROBLEM PLANS

Drawing xvi



AS BUILT FIRST FLOOR PLAN

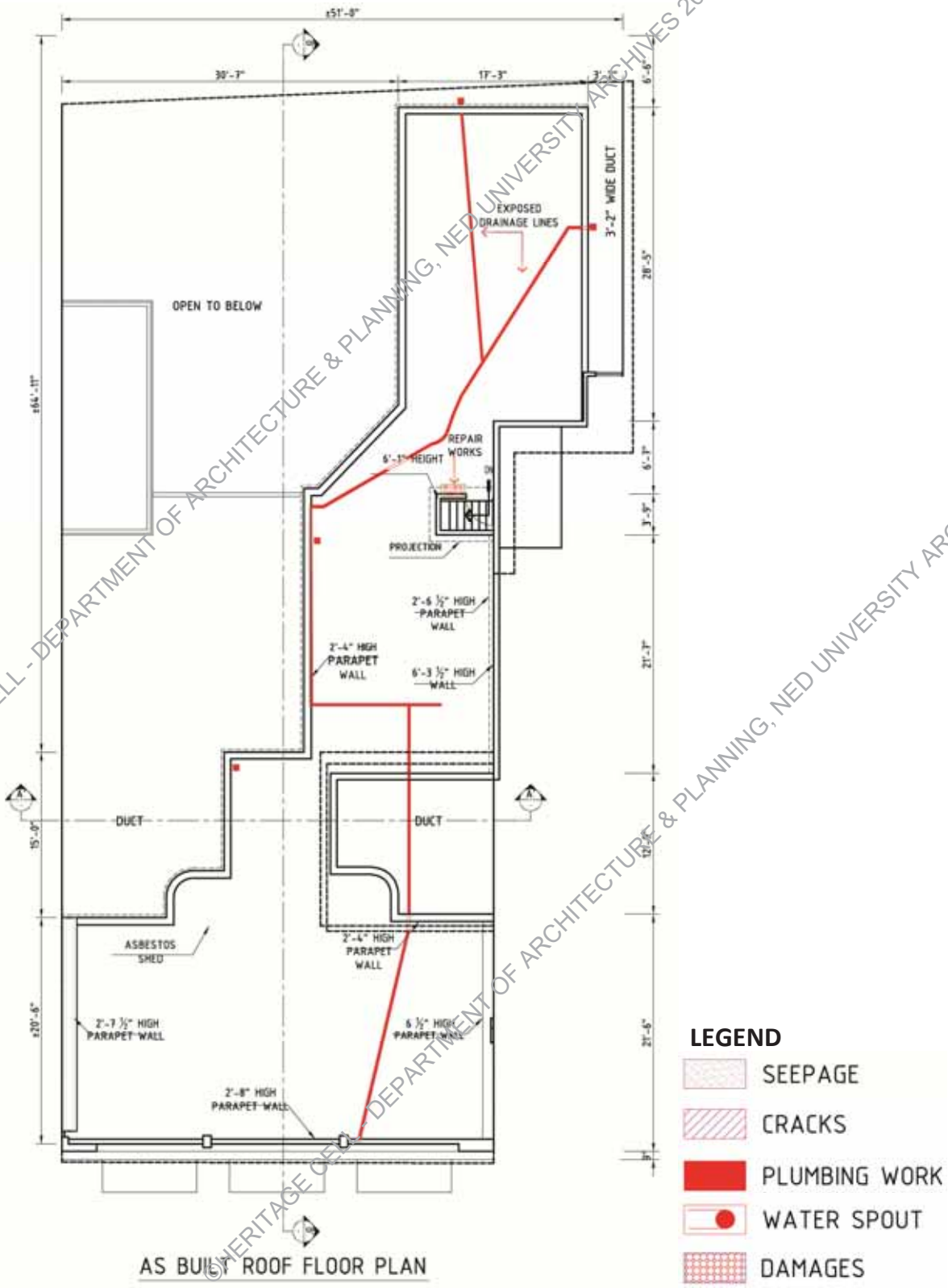


LEGEND

- SEEPAGE
- CRACKS
- PLUMBING WORK
- WATER SPOUT
- DAMAGES

PROBLEM PLANS

Drawing xviii



AS BUILT ROOF FLOOR PLAN

PROBLEM PLANS

Drawing xix

8-Proposal for Restoration

Looking at the present trends and practices adopted for restoration projects undertaken in the city, it is evident that very little consideration is given to the technical aspects of restoration. Many a times, interventions are done, which in the long run prove harmful to the original materials and general fabric of the building. For buildings like Hamdard Matab, which has its own significance and association with a famous personality, a comprehensive restoration proposal needs to be developed. Such a plan should be formulated in accordance with the standards of conservation and restoration followed worldwide.

Before going to the proposal of restoration of Hamdard Matab, it is necessary to identify the requirements of spaces for end-users in order to make the building more functional. These are listed as follows

Ground Floor Requirements:

- At least one consultant room
- Proper storage spaces
- Organized waiting area with proper roofing system
- Planned machine room and generator room with their own requirements.

First Floor Requirements:

- At least three consultant rooms, including a room for a lady consultant
- Converting under-utilized rooms into appropriate functional spaces.

Second Floor Requirements:

- Under-utilized spaces of this floor should be converted into more appropriate usage.

Parallel to it is considered important to highlight the causes of deterioration of the building, and should solve these problems at first. The inappropriate approach towards installing series of wash basins along with their drain lines and standing water at certain places has caused major seepage problem within the building, and these are still at work. A proper plumbing plan will be designed and installed; shifting the drain pipes into the existing duct spaces; so that the ducts can be utilized efficiently. This would eradicate the root cause of most of the problems identified on the buildings' interior.

For maintenance of toilet block, it is needed that appropriate measures should be undertaken for solving the faulty plumbing. For solving it either a duct can be introduced passing all the plumbing pipes through it. Placement of machine room and generator room should also be incorporated, considering factors of easy access, ventilation, sound proofing and maintenance.

Following are the proposals for the restoration of Hamdard Matab Building.

8.1-The uplift and restoration of the facade

The restoration of Hamdard Matab required to be done to uplift the exterior facade and to prevent further deterioration. This includes the removal of paint, cleaning and repair of the stone masonry and architectural features, removal of additional elements from balconies and the consolidation of structural members.

8.1.1-Replacement of hoardings and signage

The disproportionate hoardings and signages need to be replaced with the appropriate size and more attractive signages, so that they do not harm the outer appearance of the building. In addition to this, building façade should follow the same vocabulary of design and architectural features at lower level which is running throughout the facade.

8.1.2-Removal of Paints

The facade of the stone masonry is completely painted with grey paint. This layer of paint will have to be removed by gentle scrubbing and washing, to bring out the original colour of stone. The surface should be cleaned and the original material should be exposed to acknowledge the design with its appearance.

8.1.3 Repair of Stone masonry and architectural features.

The stone facade has cornice bands along the parapet, brackets underneath the balconies and decorative pilasters in between balconies. The cornices show severe deterioration in the form of cracks as well as disintegrated or detached portions, especially at the top level. It is due to damage caused by water penetration in slabs of upper floors. Once the screeding treatment of the slabs is done and the problem of water penetration is dealt with, the damaged cornices should be repaired with a strong cement plaster. The soiling patterns under the cornices suggest that the water instead of dripping off the cornice washes over the surface of the walls. Thus the damaged drip course of cornices also needs to be repaired.

The building façade requires treatment of filling open mortar joints. For this first a thorough and gentle scrapping of paint is to be done. If any loose mortar is found it should be brushed off, and then open joints should later be repaired with lime or gypsum mortar. Any pieces of damages stone blocks, as seen on the top corners at parapet level, might be replaced with similar stone.

8.1.4-Cleaning of Stone Façade

Considering the location, Hamdard Matab is situated on a busy road which has heavy vehicular traffic; busses and other public transport. After the removal of paint layer the condition of a original stone will have to be reviewed after whichit will be decided if the stone requires any cleaning. In case it does, the following steps will be undertaken. In the first stage of cleaning all dry and loose dirt particles will have to be brushed off with wire brush. After this, general washing of the entire façade will have to be done with mild soap and distilled water. Only after this initial cleaning, the more stubbornly adhering dirt patches, such as black crust formations etc. will be treated. For a detailed, recommended process of stone façade cleaning, please refer to **"Appendix I"** of this report.

8.1.5-Maintanace of balconies

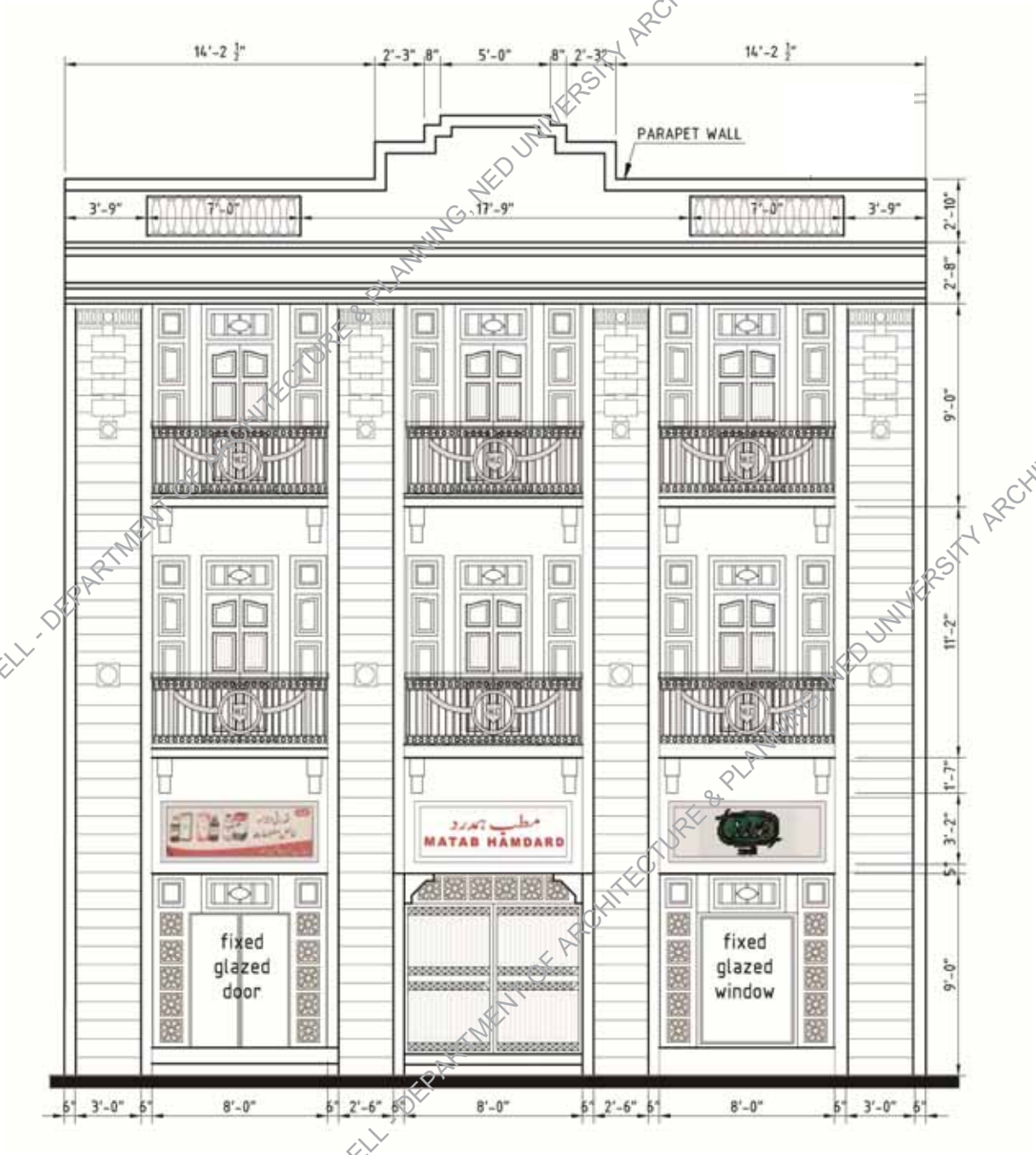
The balconies are the most outstanding element of the facade of Hamdard Matab building. It is suggested that all balconies be restored to their original form. Closed balconies should be opened and utilized as balconies; so that the building could be viewed in its original totality. The temporary sheets should be removed to bring the balconies back to their original condition. The wrought iron bars and hand rails should be scrapped and cleaned, repaired for any damaged segments and finally painted and polished.

8.1.6-Reconstruction of Parapet Wall

The new parapet constructed using C.C blocks needs to be removed and the original form of parapet should be restored using the original patterned blocks. For this purpose existing evidence found in the courtyard facing parapets of the building, should be used to replicate the original motif in its right proportion and detail.

8.2 Proposed Option for Elevation

Considering the above mentioned points, different options are developed for the proposed elevation of Hamdard Matab. Out of these proposals, one option will be finalized after discussions with concerned authorities. Detailed BOQ and working drawings will be developed only for the chosen option for execution or implementation.



FRONT ELEVATION PROPOSAL

8.3-Interior decor and uplift

The proposal for interior restoration includes the basic repair of the services which are necessary for the maintenance and upkeep of the structure, and general interior of the building. In addition to these, further interventions will be required in each interior space according to the usage of that particular space. These detailed interventions will be developed separately for each space according to the usage plan.

8.3.1-Structural repair

The building needs some structural repairs according to the state of deterioration it is in at present. A couple of beams columns and slabs are in a heavily deteriorated state. These will have to be tested in detail for durability, by a structural consultant and repaired/reinforced according to his recommendations.

In addition to the damaged beams and columns, the clear cover of ceiling has also disintegrated and fallen off at several locations, especially from balcony's slab. This disintegration of clear cover is due to the damages done by water penetration through the roof/ ceiling slab. Once the slab is treated for water proofing, necessary repair of clear cover will be done according to the structural engineer's recommendations.

8.3.2- Repair of Damaged Plaster and Paint on Walls

The plaster has disintegrated or detached from some walls and ceiling due to penetration of moisture inside the building. Mostly, waiting area on first floor and consultants rooms are affected seriously. Plaster of these damaged areas will have to be repaired. The repair plaster should have the same composition as the original plaster. For this purpose a sample of the original plaster will be collected from the site and sent to laboratory for examination, to determine its composition and material content.

After the plaster has been repaired, the walls will be painted. Before applying the new coat of paint, the previous layer of paint, accumulated over the years will be thoroughly scrapped.

8.3.3- Repair of doors, windows and ventilators

The existing doors and windows are made of wood; they need to be cleaned and repaired where necessary. Some ventilators are made of cement jalis or wooden louvers; they require maintenance works. All broken wooden louvers and jalis will be replaced with same kind of material and colour. The wood work will be cleaned/scrapped of all paint layers and polished will clear varnish.

8.3.4 Replacing of Asbestos covering from waiting area

Presently the waiting area of ground floor has asbestos covering, which makes the space non-utilizable in monsoon season. Also the continuous disposal of garbage from adjacent buildings, create unhygienic conditions in the area. For this reason it is proposed that asbestos covering should be removed from the waiting area; and proposed solutions for controlling the garbage nuisance from adjacent buildings are recommended for an option.

8.3.5 Restoring Original Parapet Wall

As mentioned earlier that parapet walls, existing inside the building, are filled with cement mortar. It is proposed that they should be restored, by carefully chiselling out the cement mortar and restoring the original jail work.

8.3.6 Cleaning and Repair of Floor

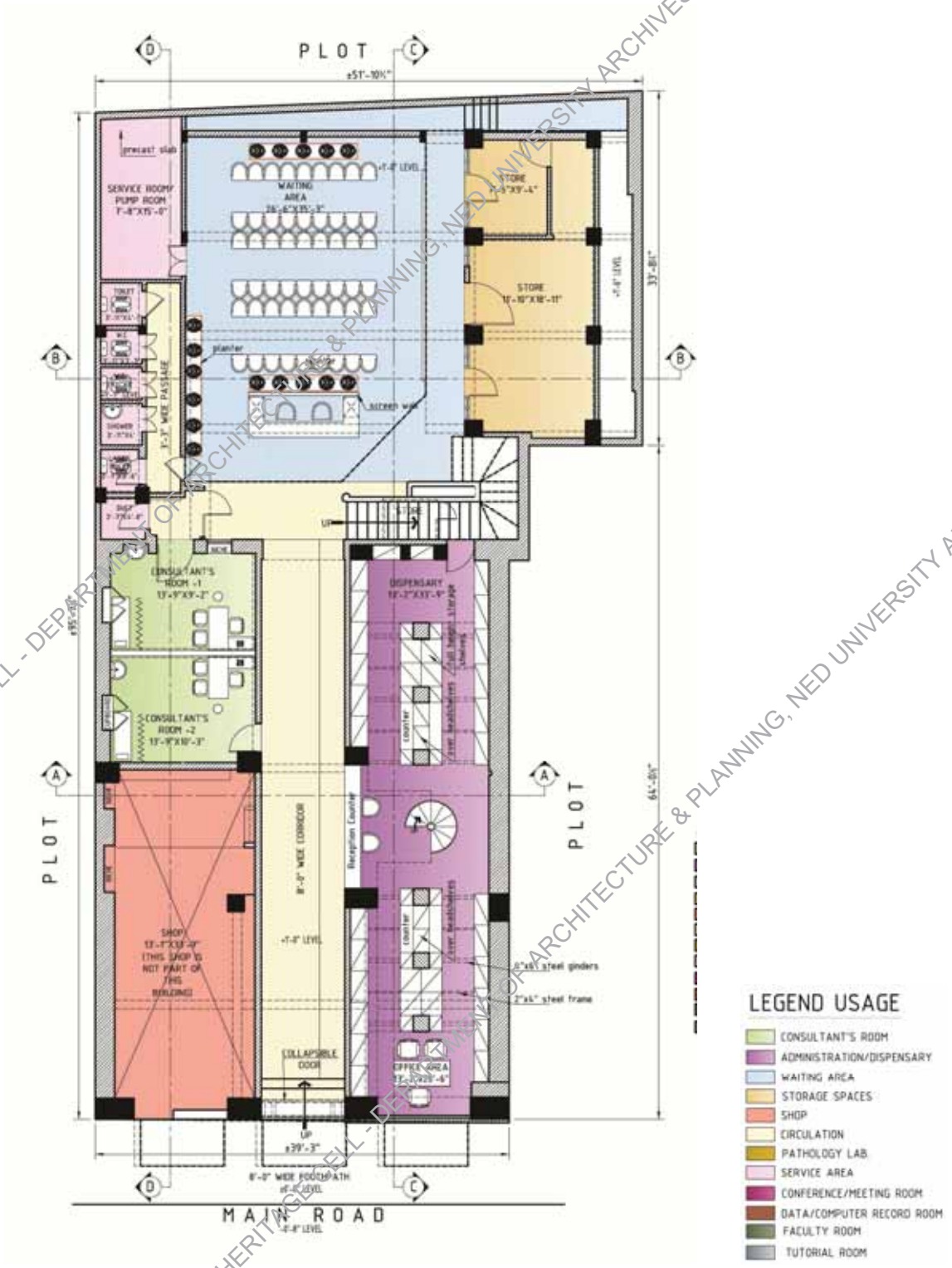
Flooring of the building is at present in a poor state of maintenance. The original flooring is replaced with vinyl tiles at various places. In addition to this some portions of the floor are also damaged and would require repairing. Patterned flooring on the first floor, needs to be clean and polished. In places where original flooring is still present underneath the new flooring; it is recommended to remove new flooring from these areas and after analysing the situation, old flooring should be restored.

8.3.7 Electrical Works

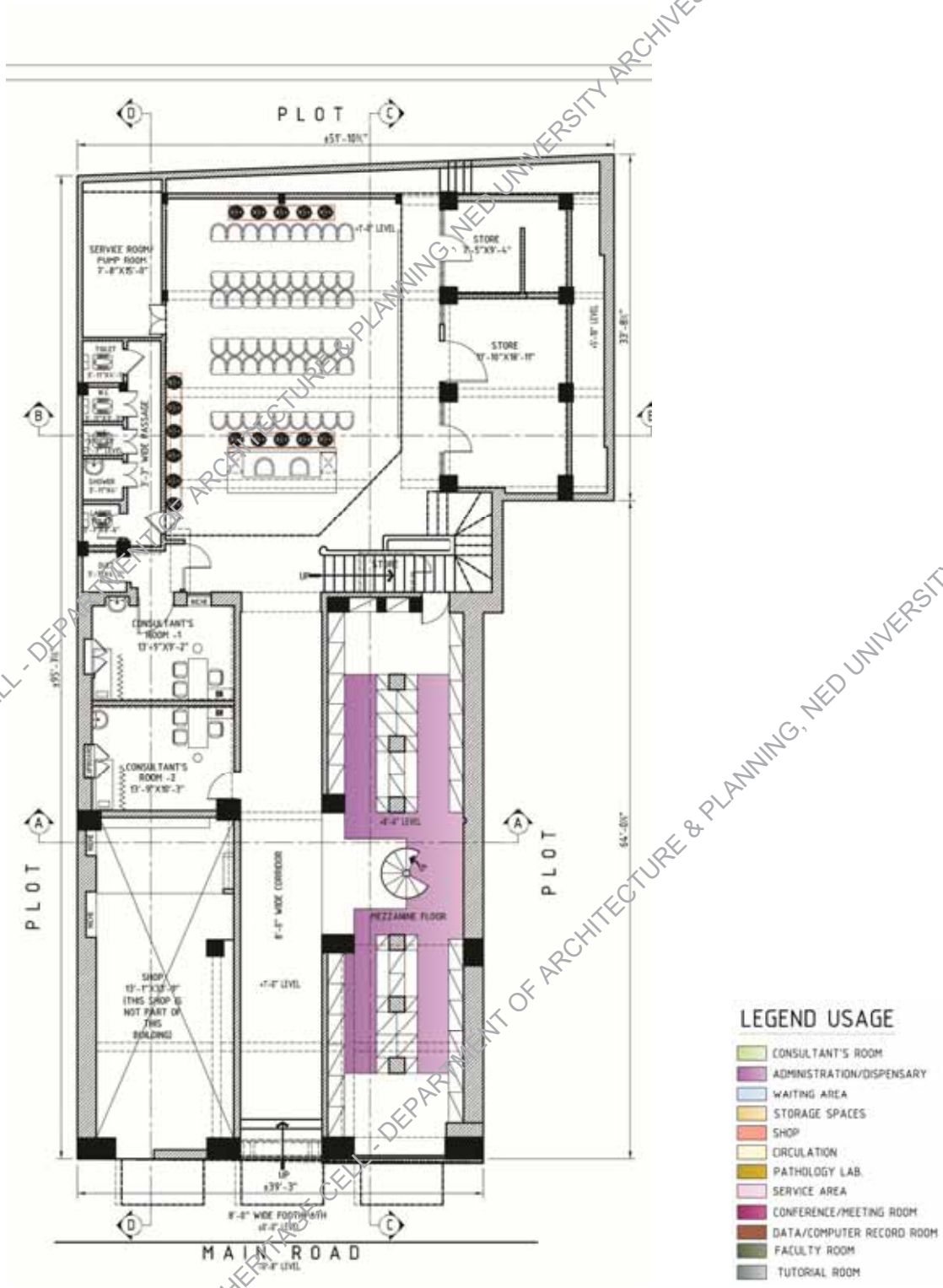
For electrical works, a comprehensive electrical plan needs to be proposed or planned that accommodates the present as well as the future requirements of electrical fittings. These should be worked out on basis of the usage and layout of each space, in consulting with appointed electrical engineer.

8.4 Proposed Options for Plans

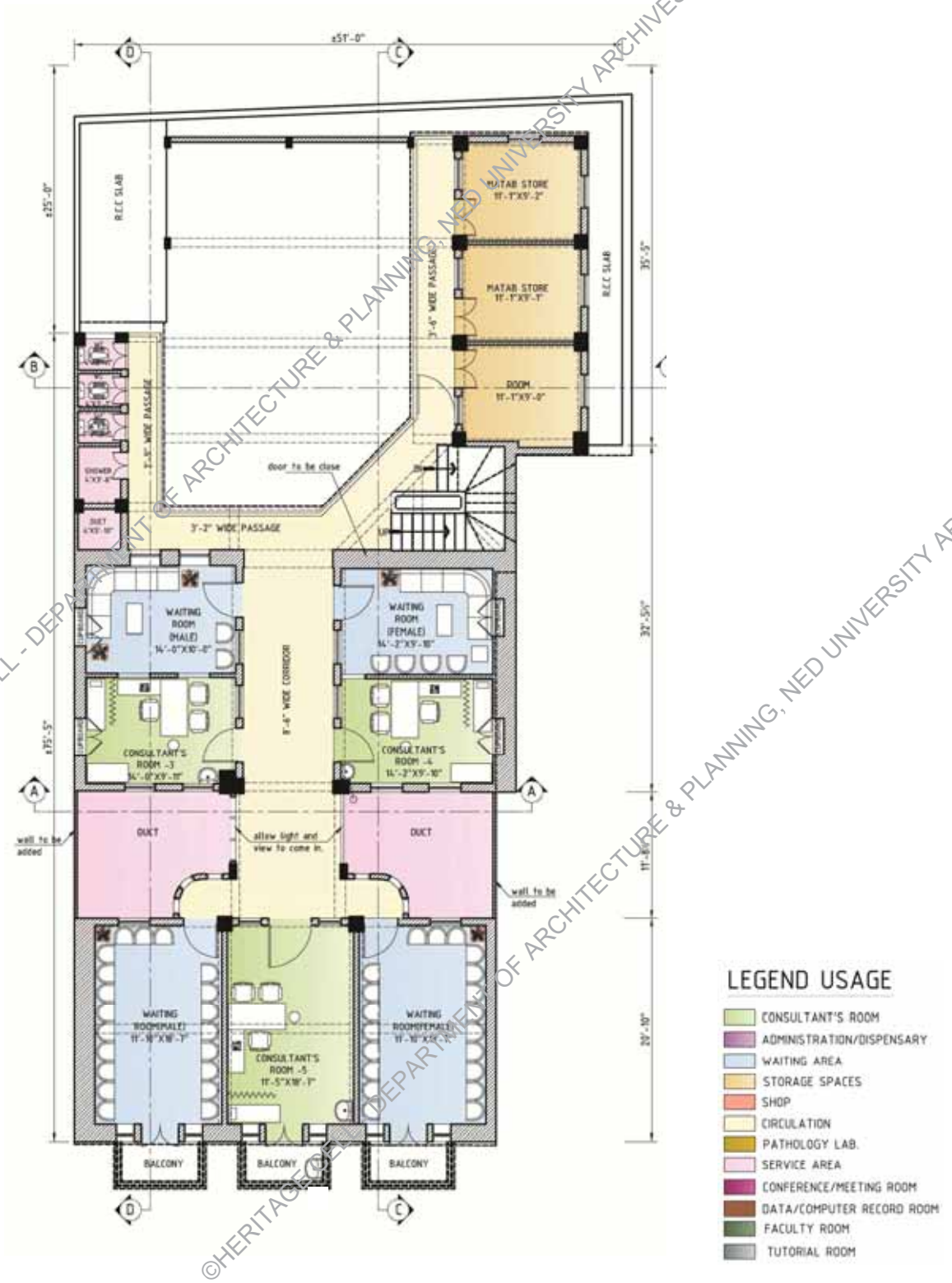
Evaluating the above mentioned points, following options have been devised. The options not only covered the functional distribution of spaces but offers accommodation of new functions within the building. Apart from that, for controlling garbage disposal, options for vertical extension of back side boundary wall are proposed. These proposals are supported with necessary sectional details. From the given options, one option is to be finalized after discussion with concerned authorities. Further details and BOQs will be worked out for the selected option.



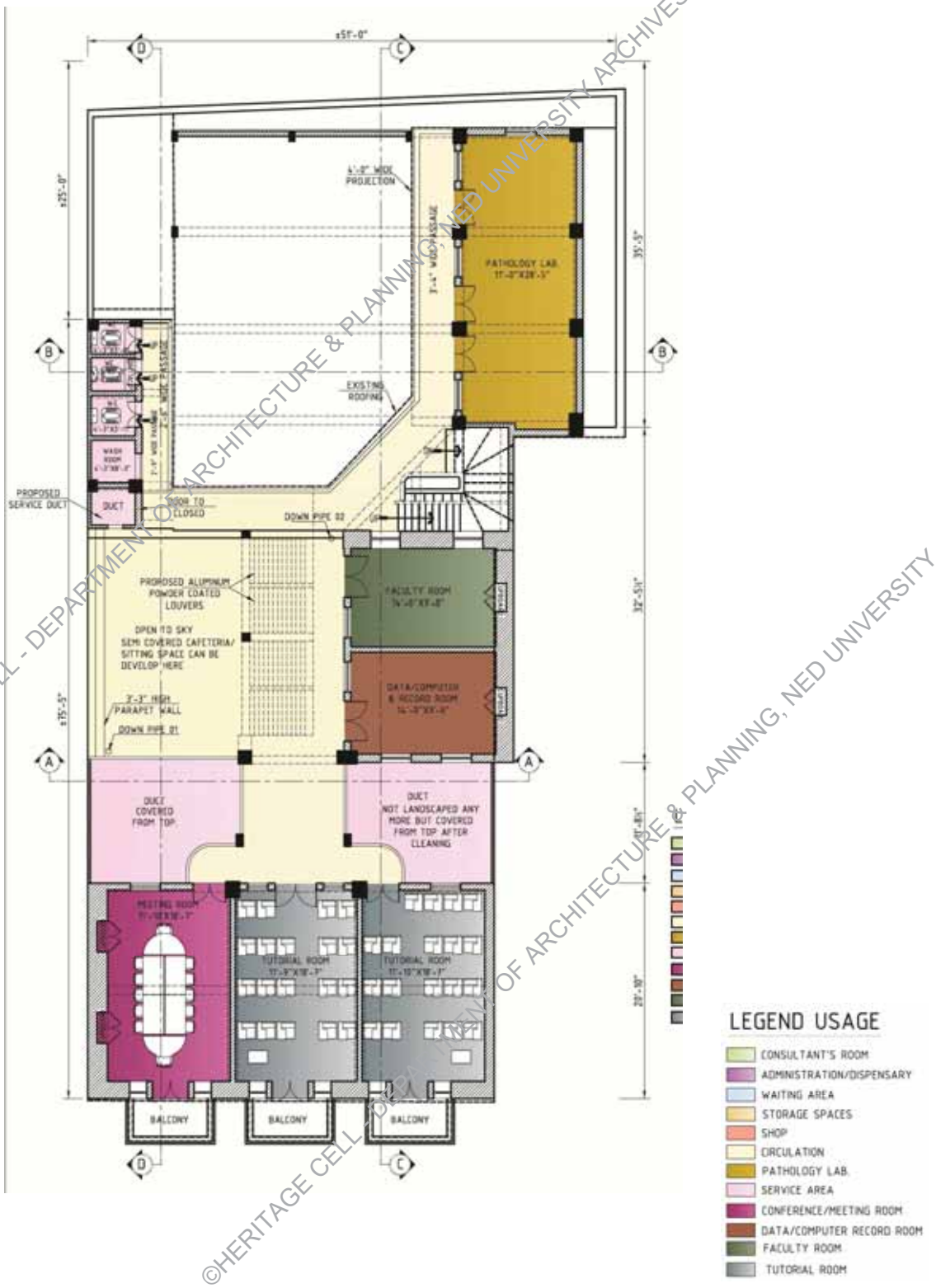
GROUND FLOOR PROPOSAL



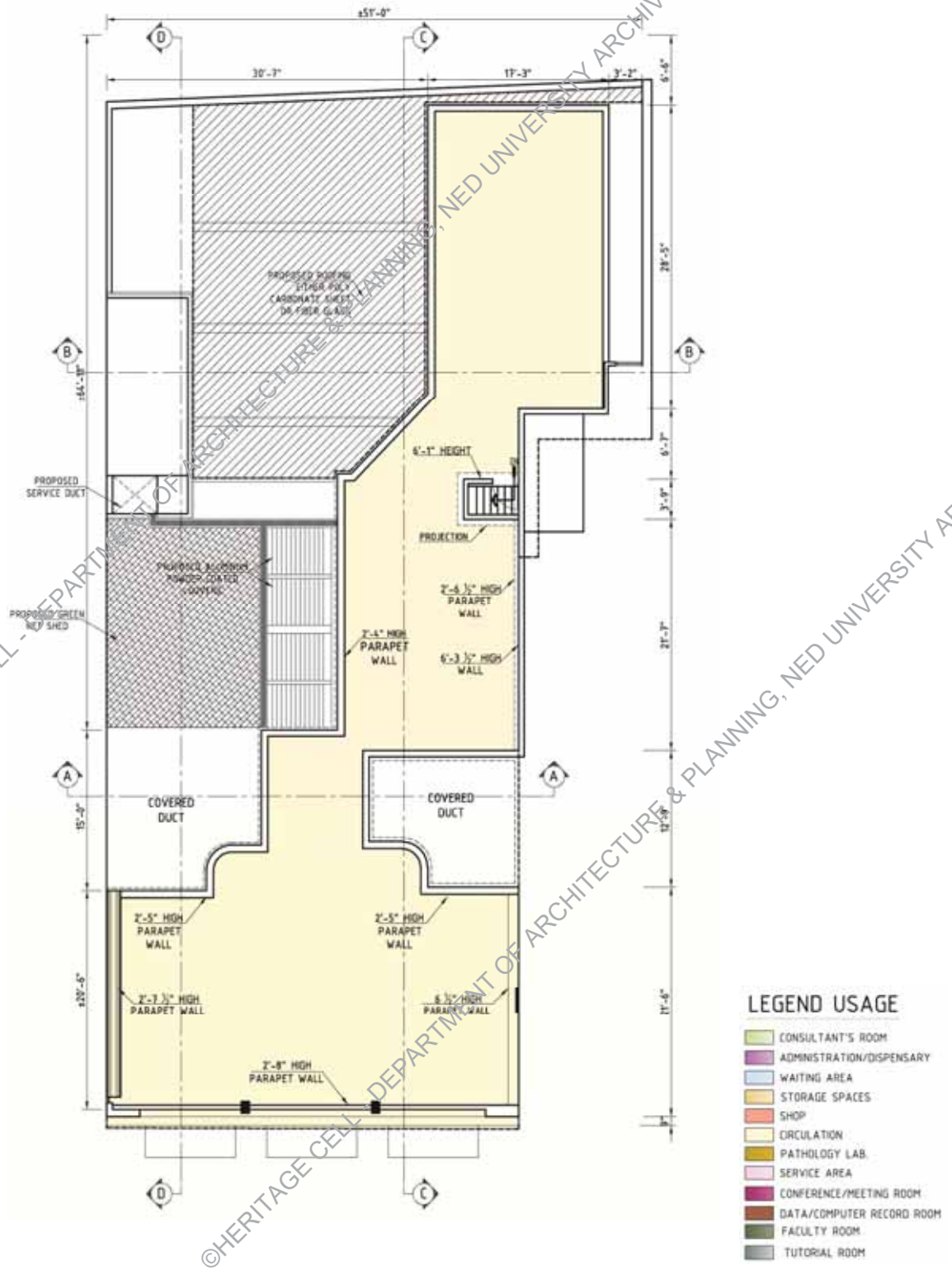
MEZZANINE FLOOR PROPOSAL



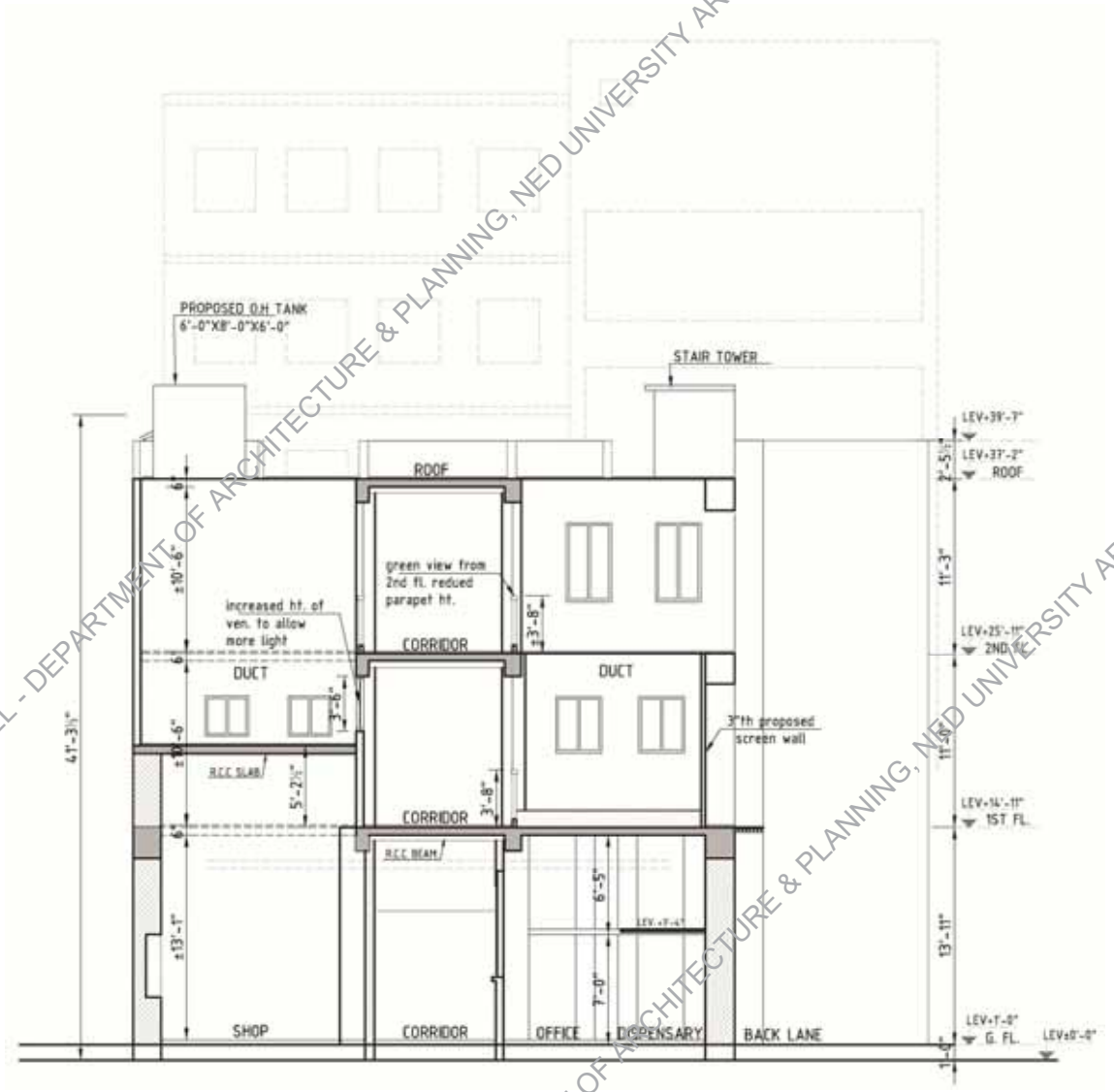
FIRST FLOOR PROPOSAL



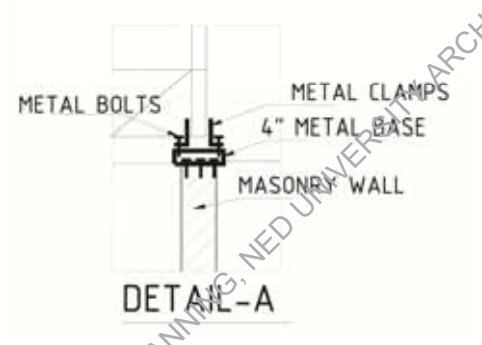
SECOND FLOOR PROPOSAL

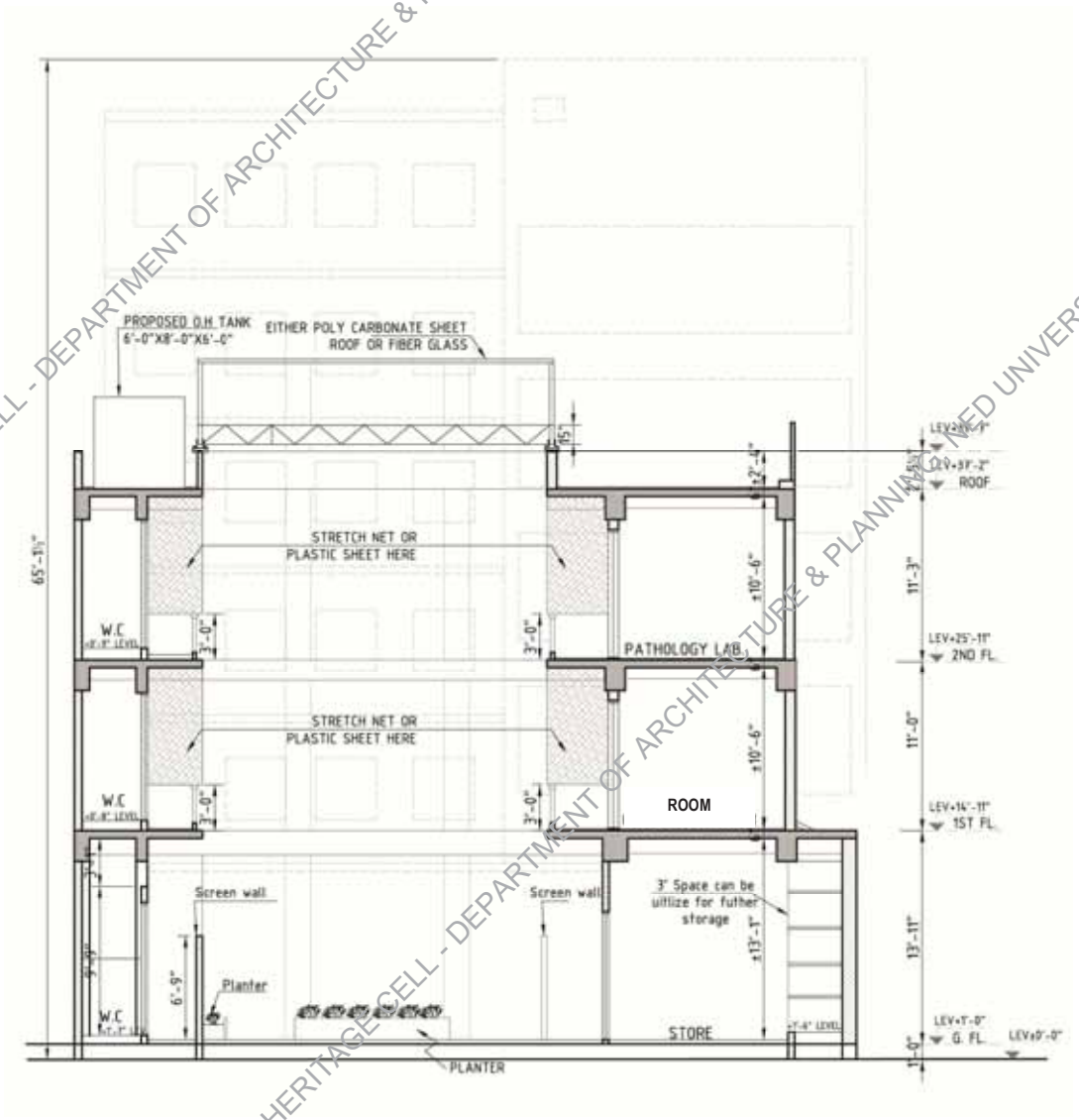


ROOF PROPOSAL



SECTION A-A





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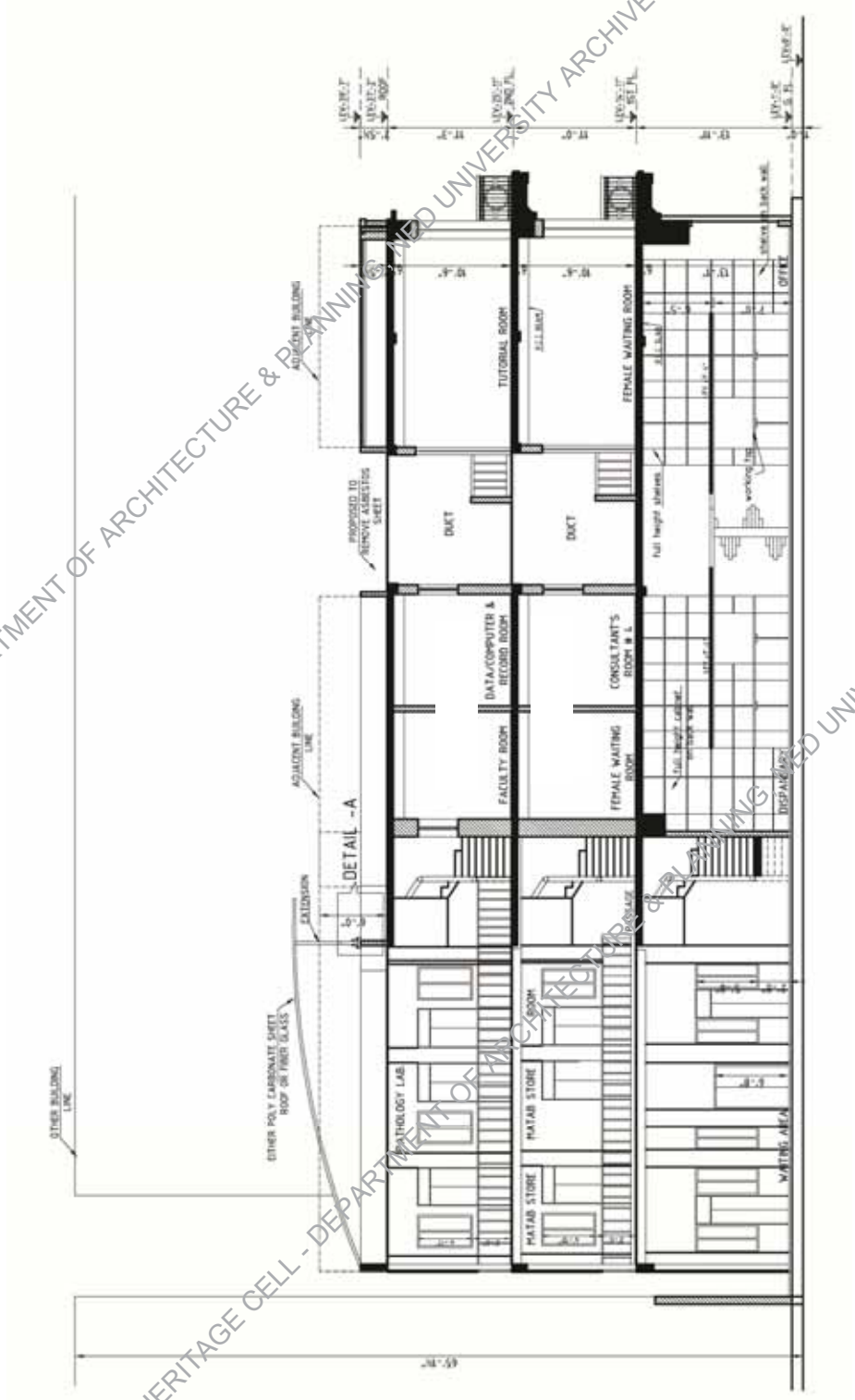
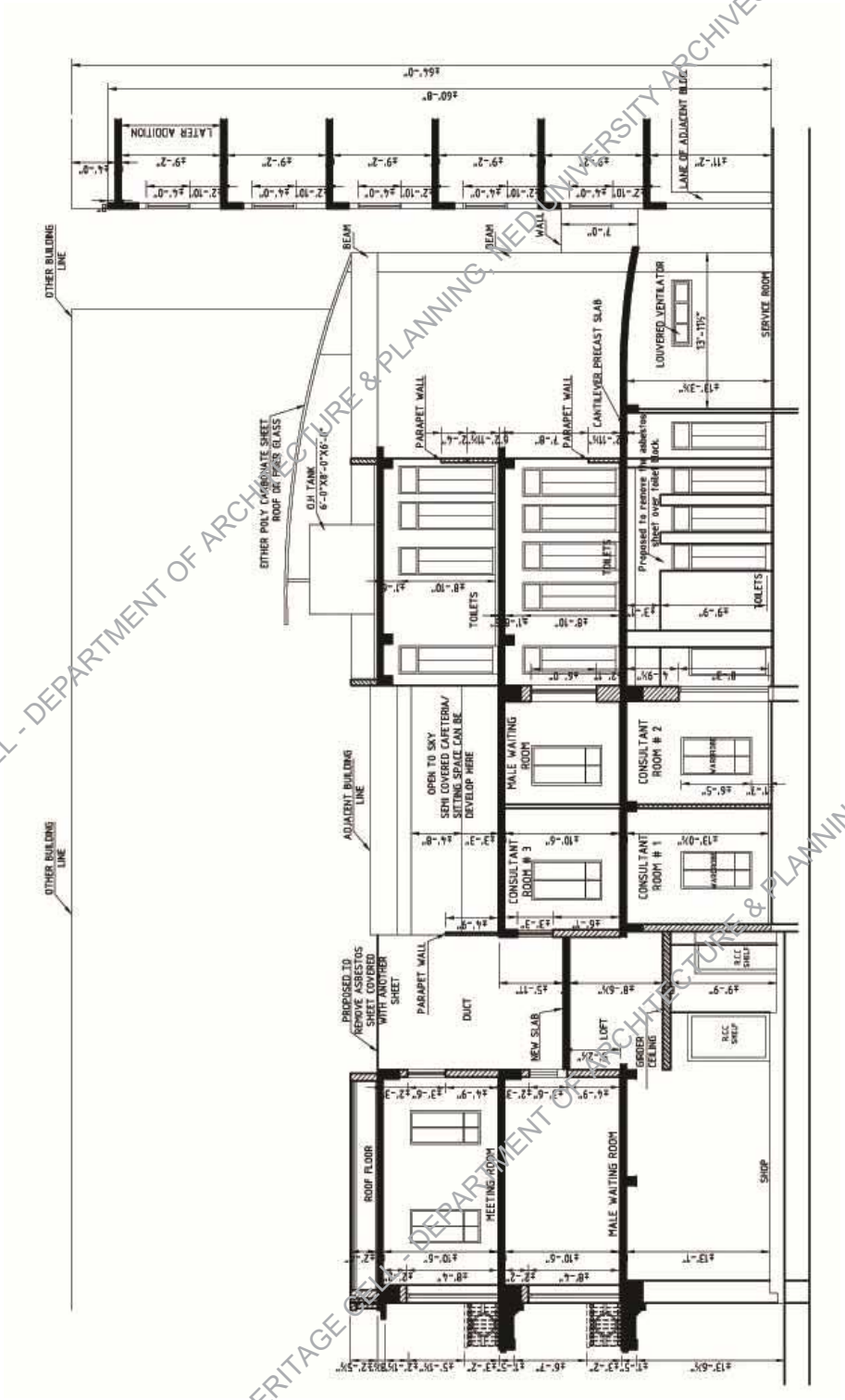
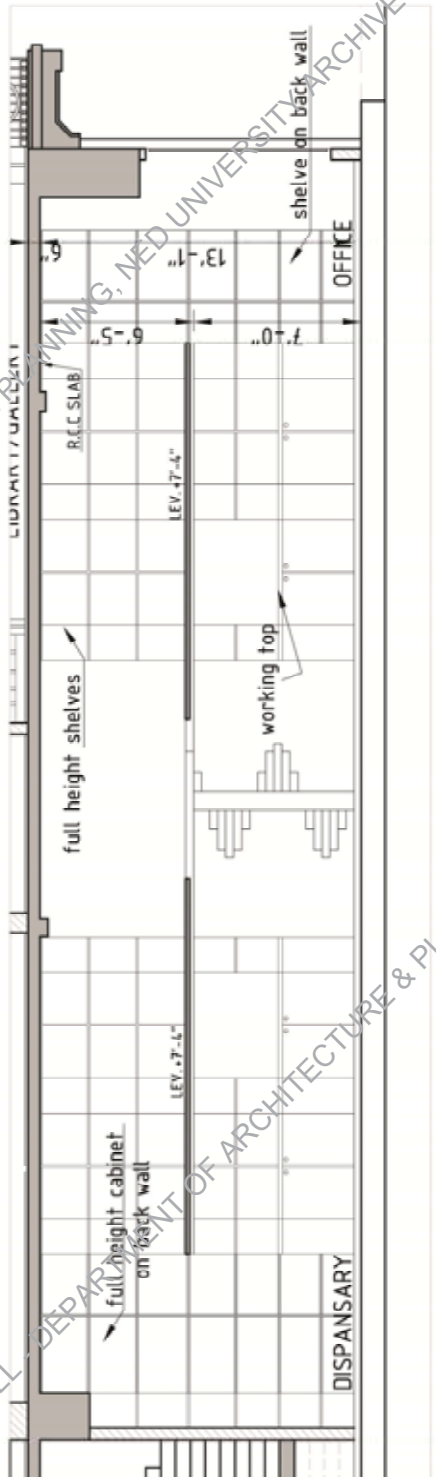


SECTION C-C



SECTION D-D



SECTION THROUGH DISPENSARY

SECTION THROUGH DISPENSARY

APPENDIX I

CLEANING OF STONE FAÇADE

The stone façades of the buildings show dirt accumulation as well as black crust formations at various locations. To clean the entire façades, chemical cleaning by the following process is recommended.

Proposed method for cleaning of stone:

Step 1:

- Gently brushing off all loose particles; sand, dust, etc. Removal of loose fragments as well as dislodged pieces of stone should also be done at this stage. The location of particles that are of substantial size can be mapped and marked on site or photographs.

Step 2:

- Temporary filling or repairing of the open mortar joints and decayed pointing is to be done before starting wet cleaning.

Step 3:

- Gently spray distilled water on the surface of masonry (starting from upper parts). Scrub with sponge dipped in mild soap. Drain off with spray of distilled water. Let the masonry dry off. If black patches of dirt or black crust are still observed then clean only these parts with Ab-57 jelly, in the following way.

Step 4:

- Cleaning of soiling and black crust with Ab-57 jelly. If the biofilm is wet, it will be allowed to dry first. Dried bio-film will be brushed and the surface applied with solvent jelly Ab-57. The jelly has a pH of around 7.5 and the following composition.

Composition of Ab-57 jelly:
Add:
2.5 gr. desogen mixed in 2.5 ml. of water
2.5 gr. of ammonia bicarbonate in 100 ml. water
15 gr. of carboxymethyll-cellulose in 100 ml. of water
Mix the three to get 50 ml of jelly.

The solvent jelly is applied to the areas to be cleaned, with a brush. The area is then covered with a sheet of polythene and left for a few hours. It is then cleaned by a sponge, dipped in distilled water.

If algae persist in certain spots, these can be treated with biocide treatment. This is done with a solution of 10% benzyl chloride or 2% zefiran in water. But this should be done after the necessary repair works.

Step 5:
Repair work, where deemed necessary should be undertaken after cleaning with gel and before biocide treatment. The lime mortar used in all repair works must be prepared according to the specifications given in Appendix II.

- Re-pointing and filling of gaps with permanent lime mortar
- All horizontal surfaces of windowsills and cornices to be sealed, by covering the whole surface with a layer of lime mortar. Once the surfaces are sealed the water will drip over the edges of these surfaces. These areas should be regularly monitored and repaired whenever required.

Step 6:
If any traces of salts have penetrated inside the building, they will start to appear on surface in the form of efflorescence once the masonry is dry. These can be cleaned by paper pulp technique. This should be done after the problem of dampness penetration has been dealt with. First the building will be aired and allowed to dry completely. Salt deposits/ salt crusts or efflorescence that appear on surface after drying, can be simply brushed off. The remaining salts can be cleaned with paper pulp technique. In this method, paper sheets wetted with distilled water, are applied on areas that have crystallized salts. The paper is left to absorb all soluble salts, and then taken off.

APPENDIX II:

LIME MORTAR TREATMENTS

Lime mortar treatments are to be done for damaged or decayed mortar joints, as well as for re-pointing and filling of gaps in masonry. It can also be applied as a protective layer on horizontal surfaces, for prevention against further deterioration. Lime mortar of specified composition should be used for this purpose.

It is observed that for previous re-pointing treatments, use of cement mortar was employed. It is an established fact that use of cement with stone, results in damage and eventual disintegration of the stone, specially in the presence of moisture. However, removal of cement pointing is not recommended here. As the cement mortar adheres strongly with stone, if taken out forcibly, it may result in damaging the edges of the stone masonry blocks. Only loose cement mortar may be removed by scrapping. After a thorough cleaning of the loose mortar, all open joints and gaps in joints should be re-pointed with lime mortar. Loose stone fragments can also be consolidated by grouting with lime mortar.

Preparation of lime mortar for repair: The lime mortar to be used for repair works should have higher porosity and water absorption, whereas less density and strength than that of stone. According to a research done on repair plasters of historic buildings in Karachi by Yasmin Cheema, it was found that these were lime plasters of a high water absorption capacity and porosity, and low density. Their binder-aggregate ratio was also different from the ones normally used. Generally, binder and aggregate ratio in mortar is 1:2 or 1:3. Whereas, laboratory tests of old plaster samples of British period repair lime mortar, show lime (binder): sand (aggregate) ratio of 3:1. This lime mortar has better cohesive properties, thus recommended for used in all repair works.

The lime mortar prepared for repair of joints, filling of gaps, and protective coating of horizontal surfaces should either have a ratio of 3:1 (lime : sand) or it should be 1:3 (lime : aggregate) in which two parts of the aggregate should be of crushed limestone of the same type as used in the construction of the building. This mortar should have higher porosity and water absorption capacity, whereas less density and strength, than that of stone used in the building.

In addition to this the mortar samples collected form the site should also be sent for an analysis of their composition and properties and the repair mortar prepared in accordance to the findings.

Bibliography

1. Clark, Kate (2001) Informed Conservation, London, English Heritage
2. Hamdard Matab web site