Assessment report
Historical Building
Turkish Cultural center
Wazeriyah – Baghdad – Iraq

Date of visit 26-1-2024

Prof. Dr. Mahmood Khayat

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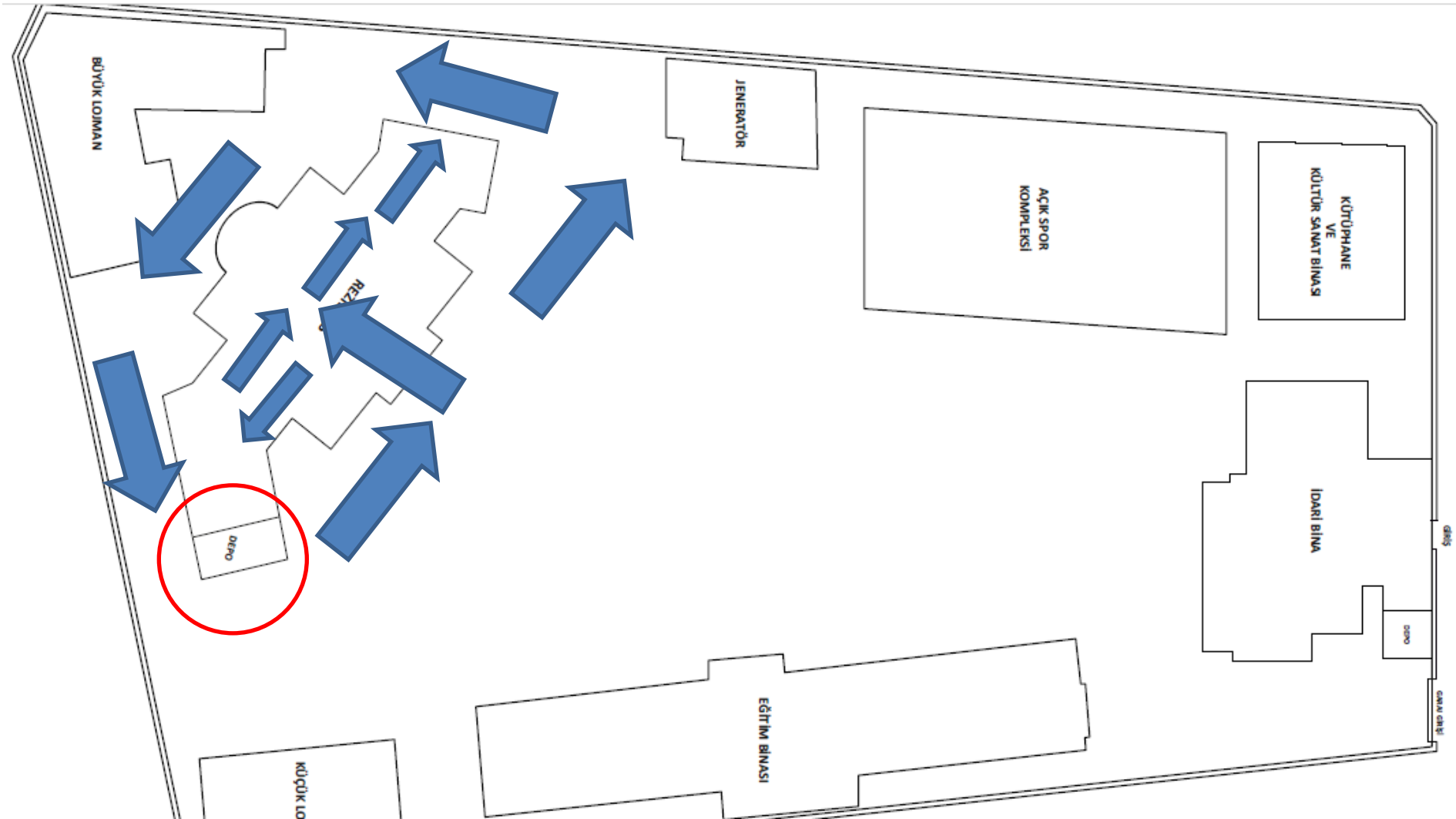
Receiving a request for a local architect expert to pay a visit and write a report regarding the historical building at the old Turkish embassy compound in Baghdad, and Reference to Dr. Omar Al Gburi kind request on 26-1-2024 a visit was made to the site where Mr. PEKDEMIR Orhan gave his kind comprehensive perspective for the upcoming works and the request for detailed report regarding the historical building at the site . The second visit dated 9-2-2024 was to brief a delegation of expert from Turkey including: Mr. YASAR Selcuk, Mr. PEKDEMIR Koray, Mr. GENCER Onur, Mr. AKYOL Ali Akin, then the following report was prepared by Mahmood Khayat on March 3rd 2024

1- Description

The structure subject to report is a typical Iraqi (Baghdadi) domestic mansion that dates to the late 1930s and early 1940s, the layout style is a very symmetrical approach that was very common at that time and was similar architecture of Cairo and Beirut at that time with very clear colonial style effects.



1-1-Façade

The façade is mostly covered with facing brick most probable at the late 1980s because this type of brick used to be produced in factory that was established especially for ABU NAWAS project and after this project was done the brick became available for people and private small projects, this factory was demolished and the production was stopped at the early 1990s, the size of the brick used for facing is 6x10x20 cm while the common size of brick used to be 8x12x24cm at the time the building was constructed while in the 1980s the size of available brick in the market was 7x12x22cm.

The façade facing brick is constructed as an independent wall with independent foundation to transfer the weight to the ground soil, the facing wall is attached to the structure of the old building and most probably hooked the old structure using metal clips to prevent sides movement, while axial load is transferred independently.

1-1-1- Façade 1

The main entrance mass is in the middle of façade 1, it is painted in white, it seems that due to seasoning and weathering the color of the brick was changed, this led to the decision of painting this part of the façade by white emulsion paint.

The entrance is raised by 3 steps, these steps are made of Turkish Marble, mostly Diyarbakir or Mugla beige, the flower beds are covered with Gray White Turkish marble most probably Afyon it is clear that the marble was added in the late 1980s or later because the traces of corrosion of the steel clamps are clear as orange stain on the face of the marble.

REZIDANS
DEPO

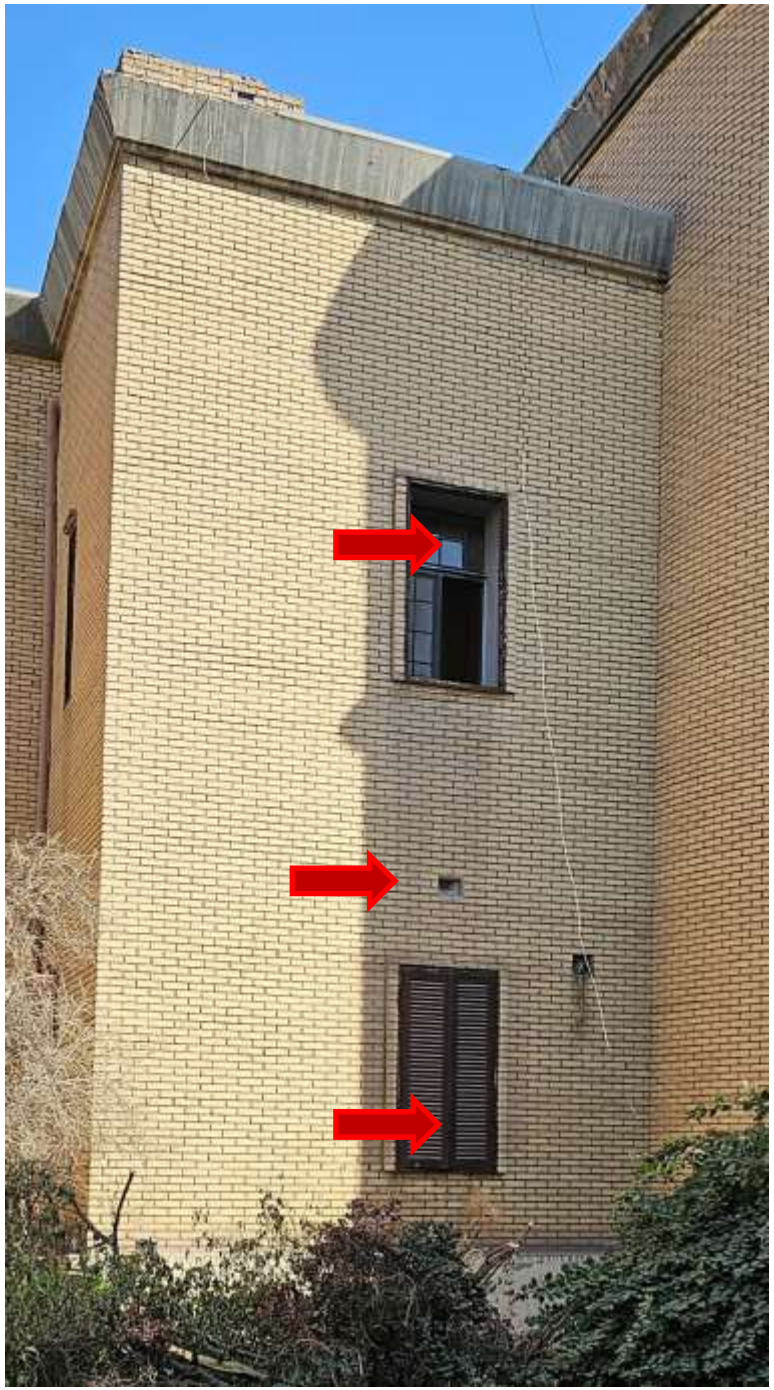
It is recommended to use:
Water jet wash
No grinding
Same color paint

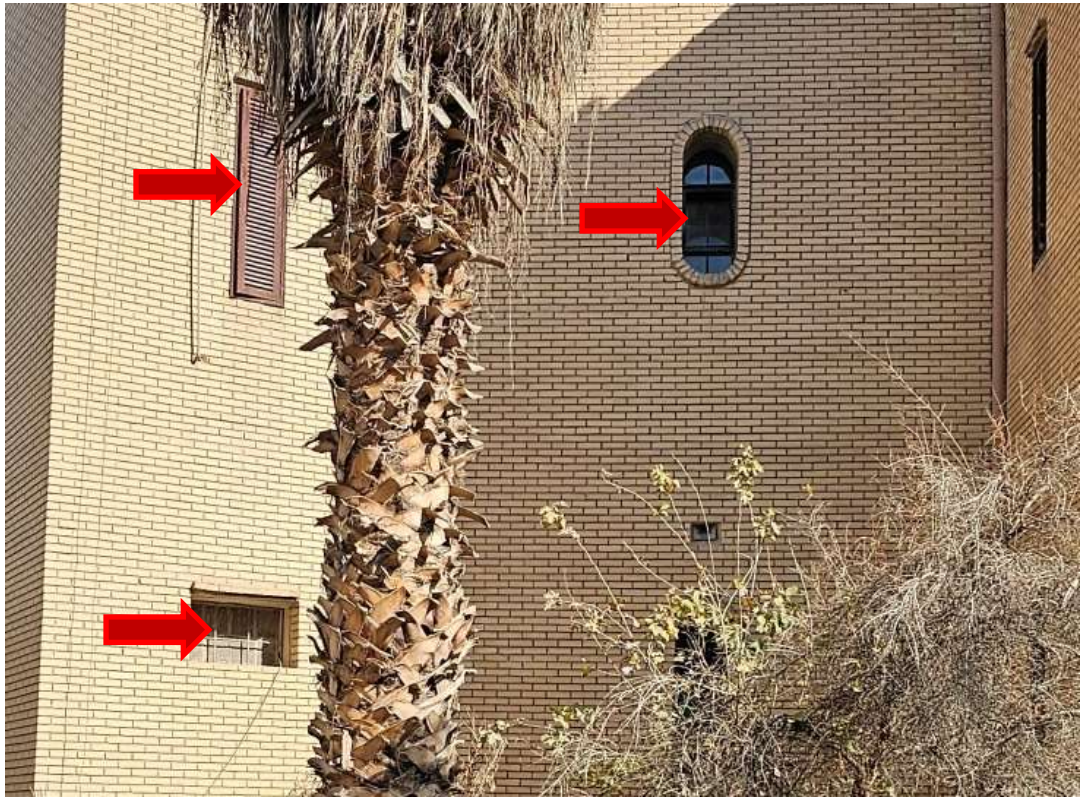
1-1-2- Façade 2

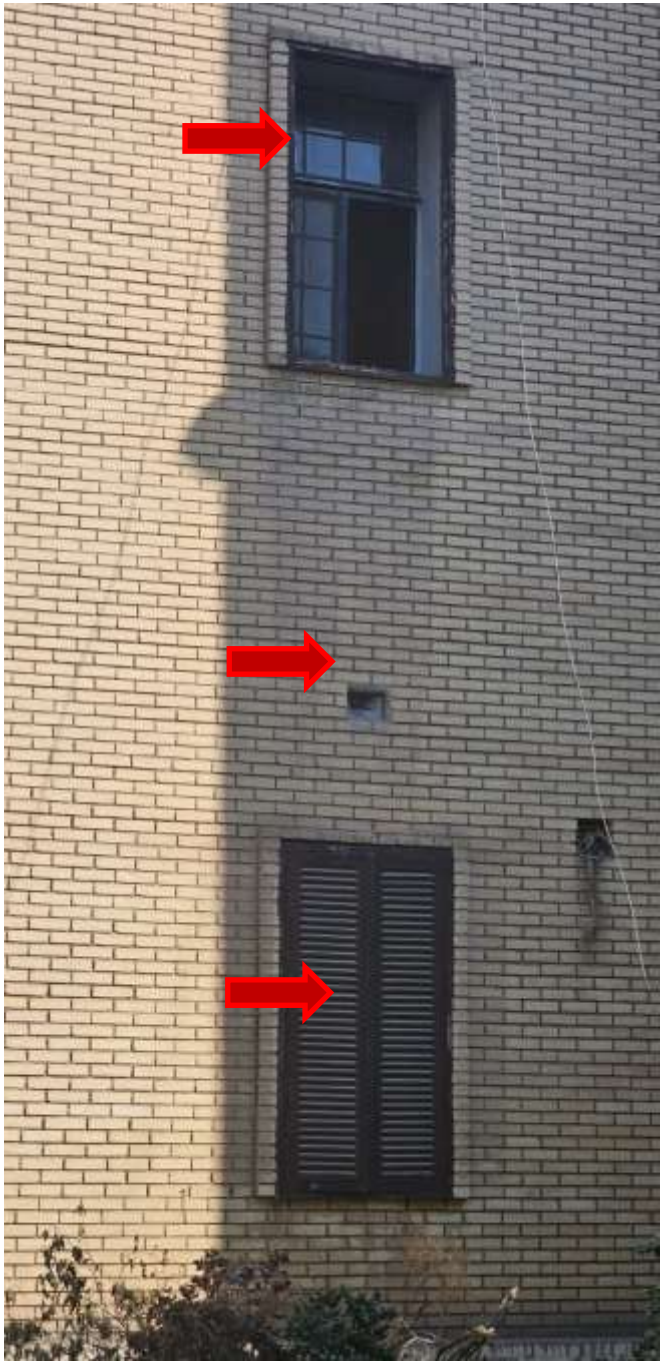
The side façade 2 is a high blank wall with few openings some new steel and plastic pipes can be noticed it is clear they were added later after the facing period, the old pipes before the time of facing with brick were covered by brick, and they can be noticed as vertical stacks on the façade

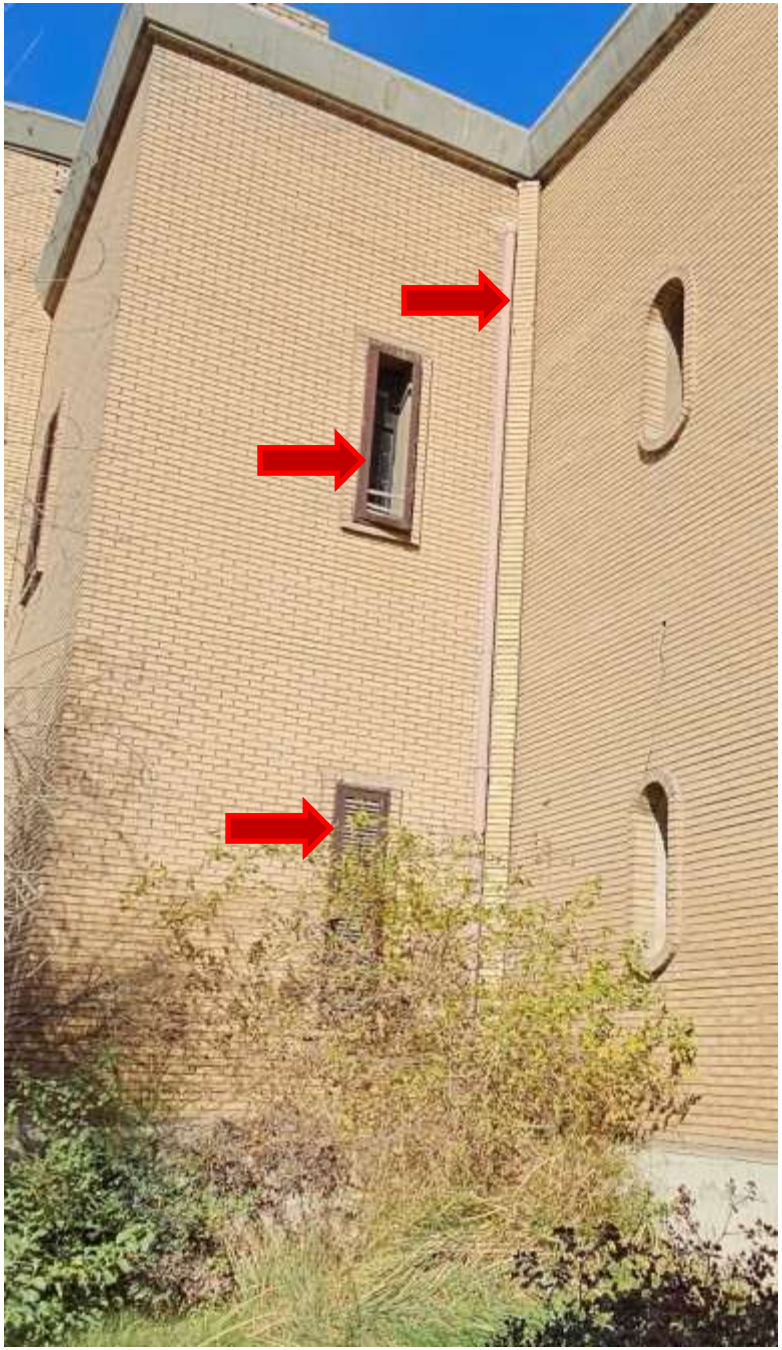
1-1-3- façade 3

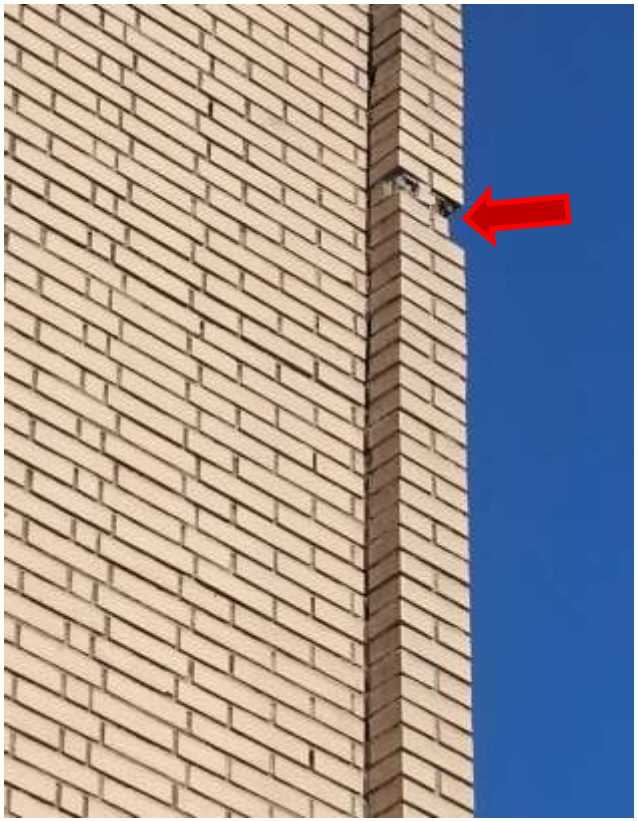
The rare entrance is in the middle of the façade number 3, some hair cracks can be noticed in the brick facing wall, it is very clear that this façade was neglected and was used for services and there is an additional mass that locks it was added later for servants and guards but still before the time of the brick facing, even the Brick facing details in this part looks poor.





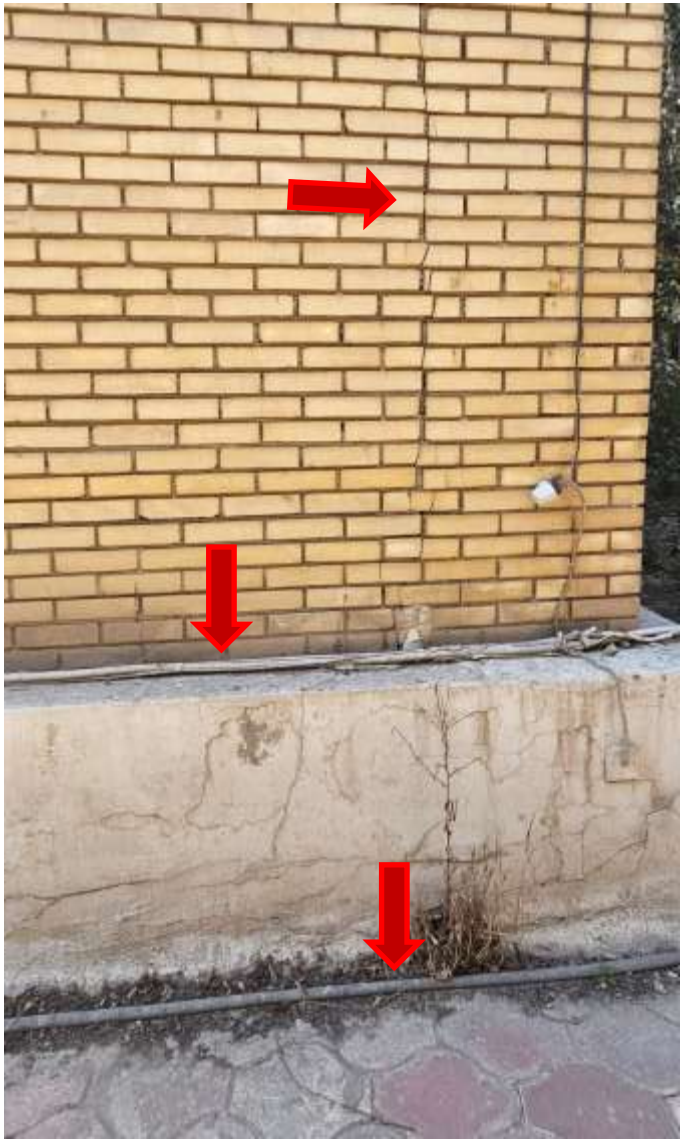






1-1-4-Façade 4

Façade number 4 covers the side facade of the main building and what can be seen is a high wall of a separated structure of the garage and the service area and the kitchen, a vertical hair crack can be noticed in the brick facing wall.



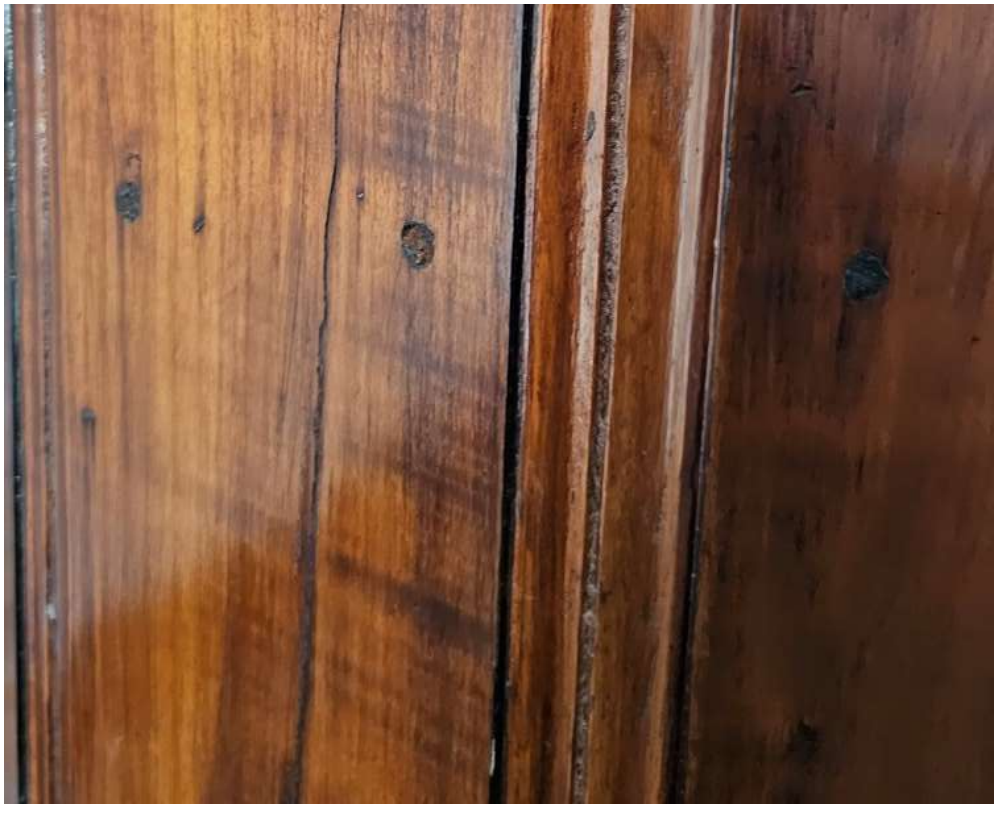
1-2- Interior

The interior layout of the house reflects the symmetrical of the 1940s house design approach in Baghdad, some features like the fire places, chandeliers, doors design, steel windows and the use of teak wood for some of the doors and the stair case refers to that era, but also traces of many modifications, changes and maintenance works can be noticed especially flooring tiles it is all new porcelain tiles, in one case the original 20x20x2cm dark red cement tiles can be noticed, but it is damaged and in a bad condition.

1-2-1- Ground floor

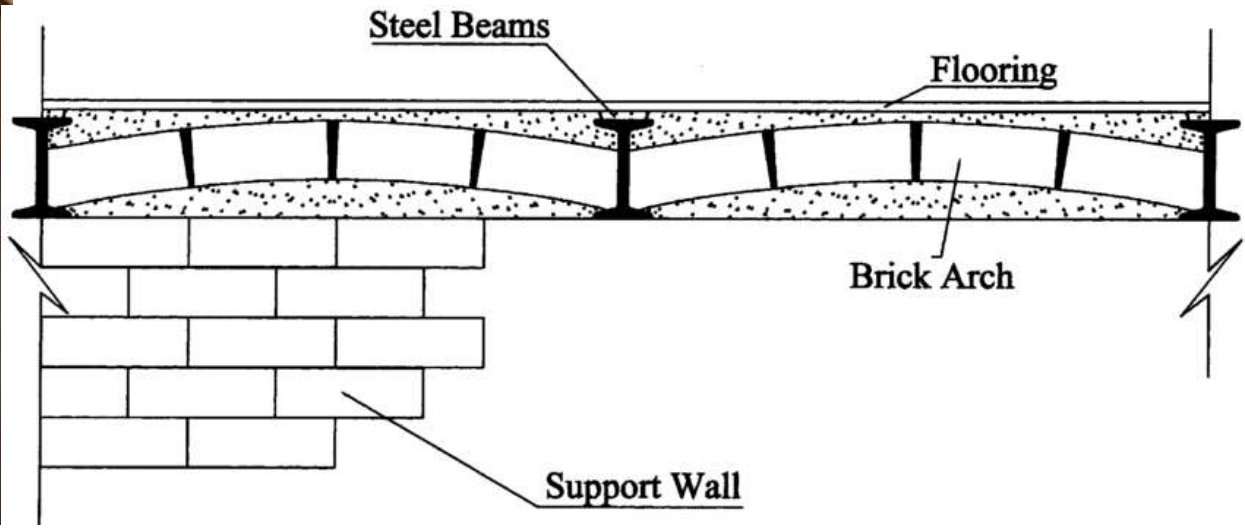
In the ground floor the symmetrical order is broken by the link with the services wing, it is clear that this wing was added in later stages, the ceiling is covered by false ceiling made of metal Hey rib and covered by gypsum which was common at the time of construction of the structure, the termite traces are clear on the walls, the fire places are at their original locations but the cover is modified during various stages, the existing 2 chandeliers at the 2 large rooms on the left and right side of the entrance hall dates back to the 1950s the other lighting fixtures are changed and dates to various times, there are traces of cracks at the right side corridor, these crack are not serious

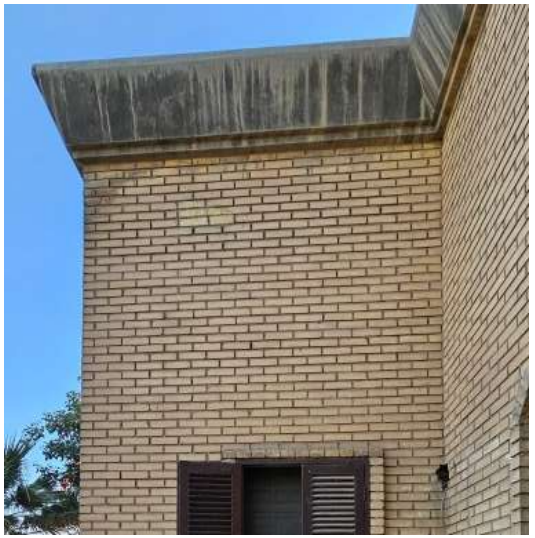


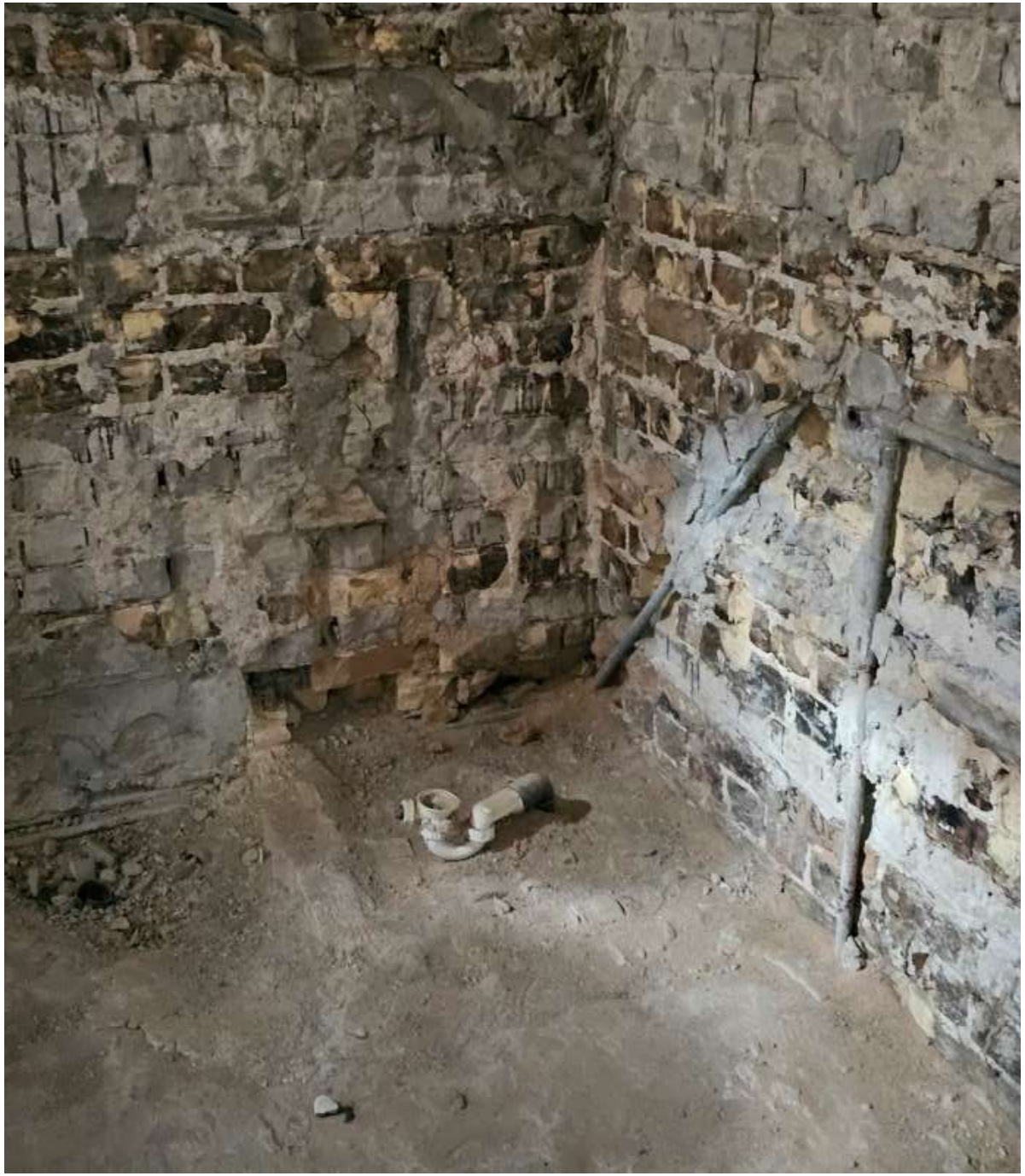


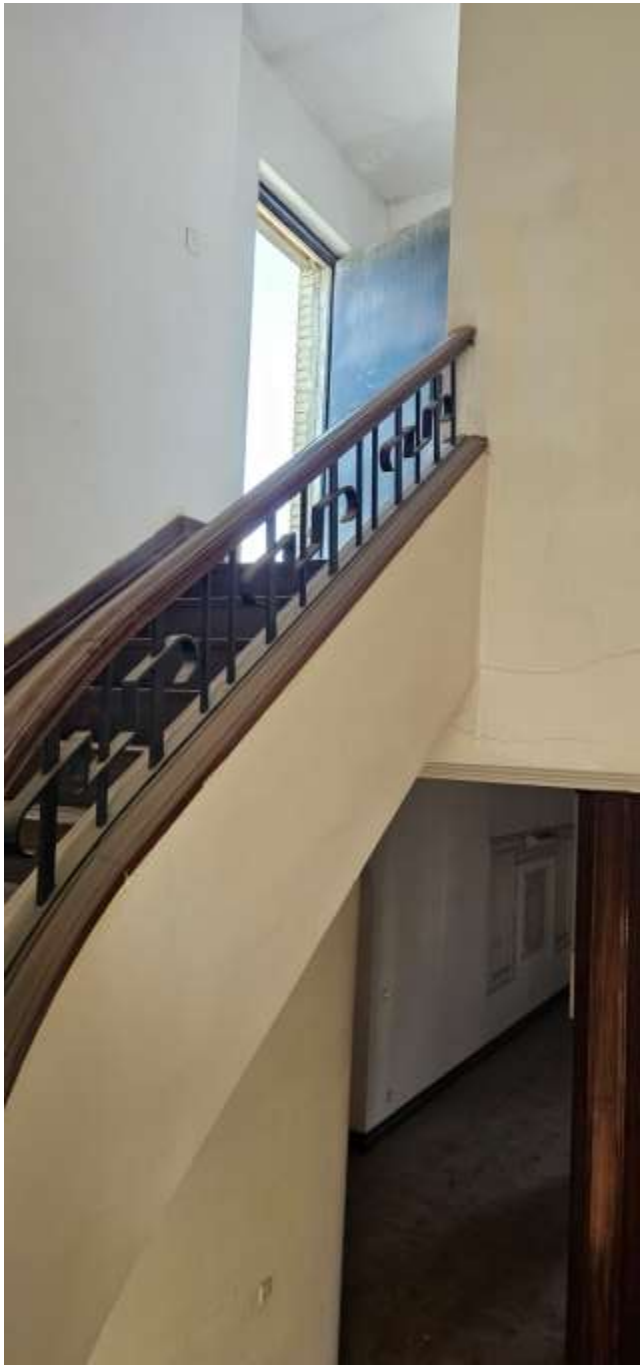
1-2-2-First floor

The first floor layout is a copy of the ground floor, without the service wing, it is a full symmetrical layout the termite traces in this floor is more than the ground floor because of the use of soft wood parquet and also the use of jack arching slab system that is made mainly from brick and jus (gypsum) where the termite can easily build its tiny tunnels, many modifications were made especially in the bath room areas some partitions were added in addition to some built-in cupboards, traces for the new and old water supply and sanitation pipes can easily noticed, the wooden fire place cover in the right wing looks like an original one.


Steel Beams
Flooring
Brick Arch
Support Wall





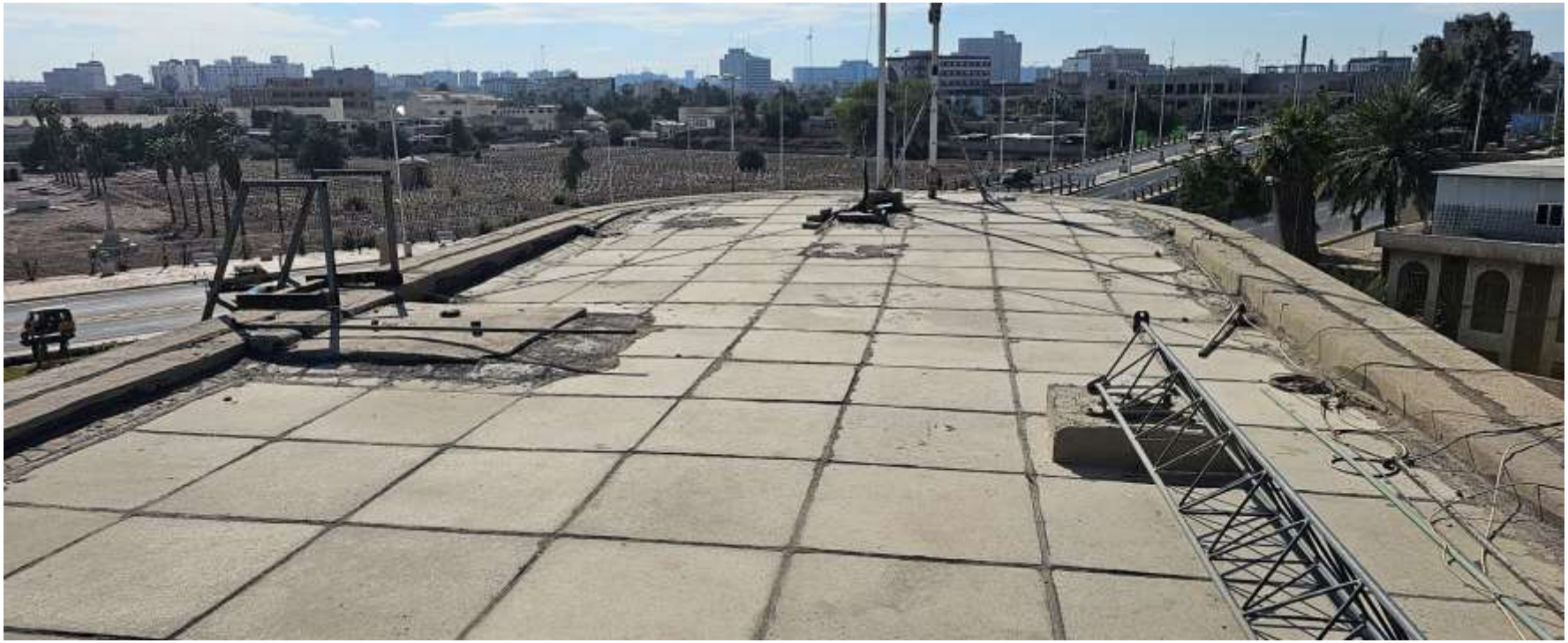




1-2-3-Penthouse and Roof

The penthouse is small form the inside, the structural system is very clear because there is no false ceiling, the traces of the I beams are very clear, from the outside the roof is extended forming a shaded area, from the outside there is a hey rib false ceiling covering the structure but this one is finished with a very smooth cement rendering that was common in the late 1980s.

The roofing system is made from 80x80x4cm concrete slabs it is called locally (STAIGER) , this roofing system became common at the late 1950s and early 1960s, and it is clear that there was a replacement for the roofing tiling and the slopes were changed even after the facing of the façade with brick work, the old cast iron storm water pipes are covered with brick while there are exposed PVC pipes

No traces for damp can be seen from inside because of the false ceiling



1-3-Structure

The structure is common load bearing walls that support jack arching slabs the was common in Baghdad starting from the early 1020s till the late 1960s where the reinforced concrete slabs replaced the jack arching, the structure looks stable with no serious damages except for some crack due temperature, weathering and mild common settlement, and also the addition of the facing brick work wall that was added later most probably at the early 1990s, the facing wall is an attached 15-20 cm thick semi -independent wall supported by the original structure.

1-3-1-Foundation

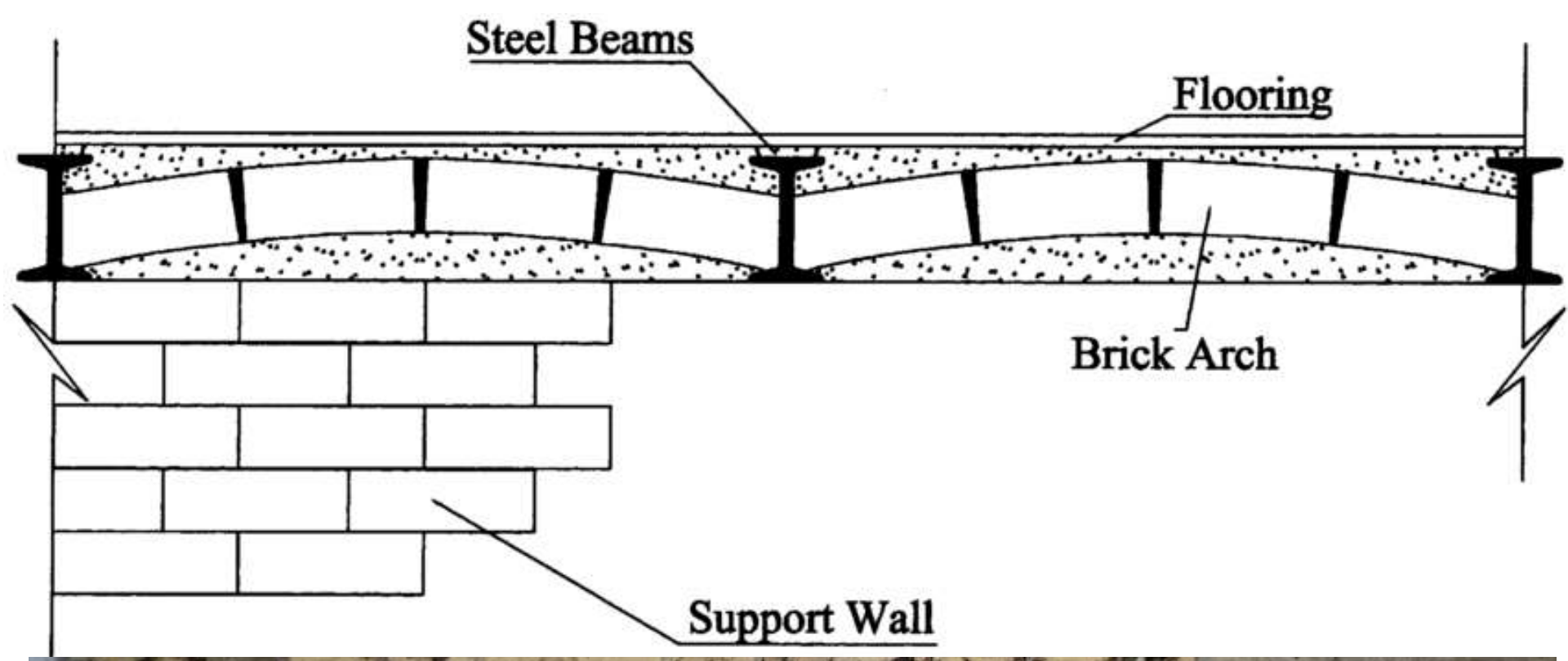
The foundation is a strip type with staggered brickwork base until reaching the width of 48cm which is the width of the walls, at one of the inspection pits a concrete damp proof course can be noticed, this layer is called locally (PADLO), it is a plain concrete layer where sulfates salts resistant cement is used in addition to adding porosity reduction agent (called locally SIKA) in the other pit, this layer was not was not visible, in other walls where the interior layer was stripped of the use of 2 types of brick was noticed the yellow (backed clay) brick and a grey one (most probably sand brick which was available at the time of construction, this type of brick is known for determining damp movement within the structure .

1-3-2-Structural Walls

3 types of structural walls were detected; the firs type is the old structural wall at foundation level at the external inspection pit and the 48 cm thick walls at ground floor and first floor levels where the finishes stripped off, the size of brick is bigger than the other 2 types and the grey color brick is used, the second type of walls are the ones constructed at the additional service wing that looks it is constructed later where the walls thickness is 36 or 24 cm thick and the brick size is smaller, the third type of walls is the one used for the foundation of the facing wall that can be noticed in the external inspection pit, the size of brick is 7x22x12 it was constructed at the time of the addition of the facing brick at late 1990s or early 1990s, no serious defects were detected, there were only casual masonry structure cracks due to temperature, seasoning and normal settlement.

1-3-3- floor slabs

Slabs are made by using jack arching system using common brick, local gypsum, and steel I section beams it is very common to notice some cracks in such a masonry roofing system due to expansion and contraction and also the traces of the I beams may be very clear on the plaster finish as it is noticed looking at the pent house slab even it is casual to notice some cracks in the ceiling plaster finish and the walls especially parallel to the I beams, to cover the traces of these phenomenon in such structure especially in luxury structures it was common to use a false ceiling using metal hey rib and gypsum plaster finish it was used to called (SAKF BAGHDADI), no serious defects were detected because the slabs are fully covered by false ceiling.


Steel Beams
Flooring
Brick Arch
Support Wall

1-3-2- Façade facing wall

It is clear that the façade wall was constructed in a later stage at the late 1980s or early 1990s, the size of this brick is smaller than standard brick used for construction in Iraq, it is 6x20x10cm, no serious cracks were detected in this facing wall other than one at façade no. 4 that is continuous from the ground till the parapet

1-3-4-Partitions

Some partitions (none load bearing) can be noticed in the structure especially in the wet areas and the service areas where multiple changes and additions in various stages can be noticed, it highly recommended to detect these areas carefully because jack arching slab system steel I beams may face some corrosion cases taking into consideration that gypsum is the mortar material that can itself be affected by damp or water, or may enhance corrosion when the gypsum catches water.

1-4- Doors, and windows

Internal doors are made of timber (wood) there are 3 types of doors, the first type is the old hard wood (teak wood) that needs to be preserved , the second type is old soft wood doors mainly they were used at the side rooms, they are severely damaged by termite or damp because they were used in wet areas, the third type are the ones added in later stages they are made of soft wood but colored o look like teak, they need to be replaced, while the external doors are made of steel especially the balcony doors they are made of old window section and glass and need to be well preserved, while exit doors especially in the ground floor they are added later, they can be kept and maintained or replaced.

All windows are made of steel using old steel window section, the central part windows for both floors are the old original ones that needs to be maintained and some sealing details to be used, while the windows of the service wing have the same look of the original ones but there are some missing details that are used in the windows of the central area

Wooden shutters do exist on most of the windows, some of them are damaged and others are missing, it needs to be well maintained and the missing ones be replaced

1-5- Roofing system

The roofing system is made from 80x80x4cm concrete slabs it is called locally (STAIGER) , this roofing system became common at the late 1950s and early 1960s, these tiles are the final layer, beneath it there additional layers it may vary from case to case, basically the jack arching slab is covered by a layer of bituminous felt then layer of hard bitumen that acts as a damp proofing layer, on top of it a sloping layer is added which can be (5-15 cm) sand or fine sand and earth mixture the slopes are 1

% towards the storm water drainage pipes, on top of it the layer of the 80x80x4 cm concrete tiles are laid as per the slopes, the joints are filled with bituminous sealant (locally called MASTIK), it is clear that the roofing system was maintained many times and the slopes were changed, and plastic drainage pipes were added, no serious defect was noticed from inside. The inside false ceiling did not show any damp or water traces, but this does not mean that the brick and gypsum mortar of the jack arching slab is not wet and has not cached water.

2- Defects and remedy suggestions

Some architectural defects were noticed, and some minor structural defects were also traced as per the following

2-1- Façade brick

The major architecture defect is the change of color because of weathering, it is not recommended to use any chemical material or grinding, it is recommend to use special detergents and rinsing with under pressure water.

The painted in white area can be easily rinsed with under pressure water, then it can be painted with emulsion paint with a color similar to the yellow brick color

The major structural defect in the façade brick is the one at façade 4 where a continuous from the ground to the parapet crack can be noticed, the can be treated by injecting special grout using fine anchoring nails.

The exposed pipes at the facades can be hidden by covering with brick, the same dimension and color 2cm thick facing brick that can be found in the local market, it can be fixed on a layer of hey rib or cement board.

Many missing brick pieces in various locations can be noticed, these pieces can be replaced using the same dimension and color 2cm thick facing brick that can be found in the local market.

Mall brick maintenance was noticed, it was in the central balcony on top of the main entrance where the missing pieces of brick were replaced with cement mortar filling then it was painted in yellow the same color of the façade brick.

2-2- Walkways

It was understood that all the walkways will be replaced, this is a right decision, it is recommended to add a river course-gravel layer (GALMOOD) underneath the walkways flooring layers to work as a filtration layer that prevents the walkways from salty ground water, and using sulfate salts resistance cement in concrete and mortar mixtures

2-3- Water supply and sanitation

It was noticed that there were many changes in the water supply and sanitation network, and it is assumed that all will be replaced taking into consideration the following

-All exposed pipes to be galvanized steel pipes that can stand Baghdad hot whether

-All covered pipes can be PPR ones

-It is recommended not to lay any water supply pipe under flooring tiles it can be suspended between the slab and the existing false ceiling

-In case it is needed to cross the walls it is recommended to use the already existing pipe outlet, the old unused pipes can easily be removed and replaced with new ones at the same opening and prevent making new openings and causing less damage to the structure.

-It is recommended to remove all the layer that covers the first floor slab at the wet areas and in case an opening in the slab is required it has to be by removing a piece of brick and be away of the steel I beams.

2-4- Storm water pipes

It was noticed that there are some steel pipes where traces of corrosion are very clear it is recommended that these pipes be replaced with new ones and to be covered by facing brick.

2-5- Windows

It is recommended to remove all the old glass and the glass fixing past, the strip off the old layers of paint by sand blasting, then paint the window steel sections with, proper primers, anti-corrosion layer then the required paint.
All the existing wooden shutters (PANJOOR) needs to be properly maintained and the missing ones to be properly replaced.





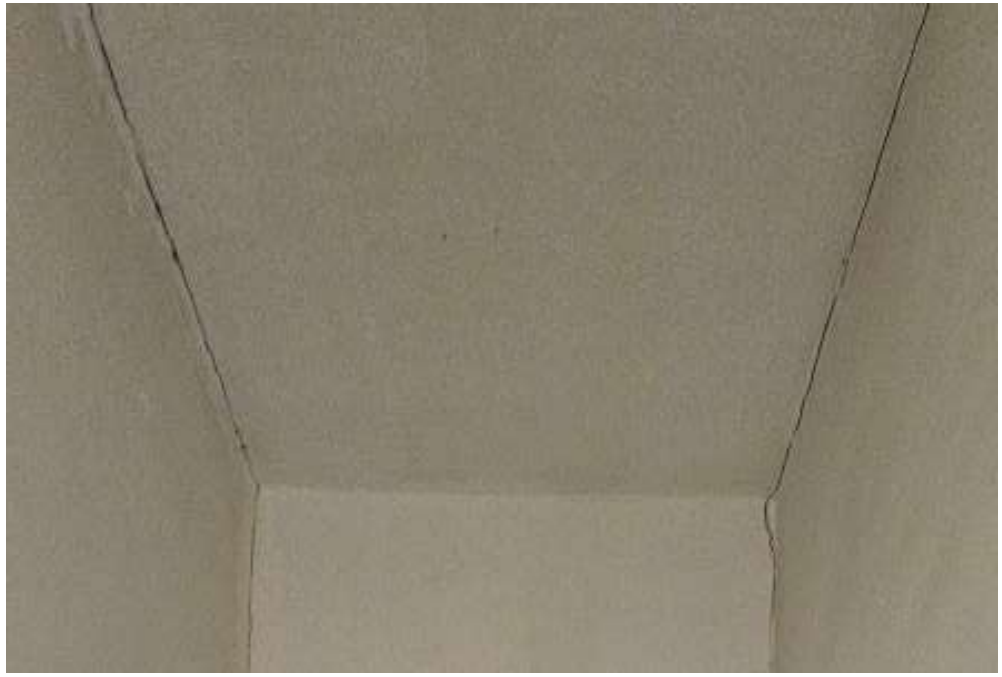
2-6- Parapet

The parapet was added most probably at the time of the brick facing at the late 1980s or early 1909s, the structure is a light weight angle iron, that supports a layer of galvanized metal hey rib, then the hey rib was rendered with cement plaster on top of it a very fine sand and cement mixture layer was added to look like a very smooth fair face cement

Many defects in the cement layer were detected, it is almost completely damaged it was noticed the angle iron layer is less damaged, only few members were affected by corrosion, it is suggested to remove the hey rib and cement layer, maintain the structure, fix a new layer of hey rib then render it with cement mortar and add the final smooth surface cement that is called locally (TALLES), asking the people on site they advised that skilled craftsmanship for this task still can be found in Baghdad

2-7- False ceiling

There are no noticed damages in the false ceiling, except for one location at the right side corridor in the ground floor that can be easily maintained, the major concern is that of the termite, it is assumed that this void between the slab and the false ceiling is used by the termite, it is recommended that a retarded (at least for 6 months effect) anti termite chemical to be sprayed. In case it was decided to use the void between the false ceiling and the slab for serviced (AC pipes, water supply pipes, sanitation pipes and electrical conduits, it is recommended to create inspection opening



2-8- Foundation

The foundations can be detected from 3 views (the 2 inspection pits and the wall at the rare garage no serious cracks were detected neither vertical that indicates loading failure nor horizontal that indicates soil failure, and differential settlement, there are some minor non continuous hair cracks that are common in masonry, the major issue that needs especial care is the raise of ground water in the exposed areas like the garage wall were the effect of salts movement is clear and the efflorescence phenomenon is very clear, this can be treated or prevented by letting wet parts of the structure stay wet and the dry parts stay dry, the additional brick facade facing foundation walls functioned very well to prevent the structure walls from pealing that may cause damages for the structure as it is very clear in the garage near the ground and beneath damp proof course.

It is recommended to construct a (10-15cm) concrete wall to cover the lower part of the wall beneath the damp proof course.

It is recommended the balance of the soil beneath the foundation not be disturbed in order to maintain the balance of load distribution, in case there is a need for any type of continuous trenches that goes parallel to the wall of the structure to be a way of the walls at least twice the depth of the foundations in the case of this structure it should be more 3 m away from the wall.

2-9- Roofing system

The roofing system looks OK from outside and the slopes looks function and takes the water to storm water to the storm water pipes, and the bituminous sealant is recently maintained, but it is not clear whether there is any water gathered beneath, it is recommended to create an inspection opening by breaking one of the tiles and check whether the leveling sand is dry or wet or saturated in that case the right recommendations can be given but for sure there is no serious defect, and it can be easily maintained

2-11- Termite

Termite treatment is outside the concerns of this report, and it is the concerns of the specialists, but from structural point of view it is not recommended to dig deep trenches inside the building and near the walls from the outside, it is recommended to go with the drilling option from the inside and from the outside if there is a need for trenches it can be 3m away from the walls.

Especial treatment of retarded chemicals that may stay active for at least 6 months should be used for treating the false ceiling void and the walls gypsum plastering, in case there was a decision to strip of the gypsum plaster it is recommended to use cement plaster, the termite cannot make tunnels through cement and also it is recommended to use mat oil paint instead of emollition paint because the termite cannot make holes in the thin oil paint layer.

3-Conclusion and general notes

As a conclusion, the structure which is subject of this study is a stable structure that has some minor defects that does not need any major intervention; it can be fixed by following casual treatment and remedy procedures.

It is recommended to:

1- Cause minimum damage to the existing walls
2- Any modification or additional partitions in the first floor, that goes parallel to the I beams it should be moved to be directly on the I beam not in the slab brick
3- The false ceiling void for passing services
4- Use course aggregate layers and nylon for beneath any slab or trench or walk to minimize the effect of salty ground water
5- Use salts resistant cement for parts that is in touch of the ground
6- Do not use any kind of soft wood, HDF is a termite resistant material
7- Remove any source of cellulose it is the basic food of termite
8- No use of oil based petrochemicals as an anti-termite material, because at the first season it will kill the insects but also dissolve the timber compound and let it fresh cellulose.

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