

The Report

February 2025

v 1.3

This report systematises and organises the numerous construction and workmanship errors occurring in the private residential house located in Lote 2 - Casais Porto Dinheiro.

The photographic material used in this report comes from the inspection on February 4–7, 2025 as well as other material produced between 2023 and 2025, and documents the various deficiencies and problems occurring during this period.

The discrepancies were identified based on the construction project of the residential building 12146/2017, hereinafter referred to as The Project.

This report uses some material from the report made by engineer Tiago Borges [Case 1573/24 on December 11, 2024].



Serious design and workmanship flaws were discovered during the inspection. The consequences of these errors could result in serious material damage, endangering the health and even the lives of residents.



A thermal imaging camera was used to detect water and moisture in the walls.

Thermal imaging is useful for detecting water leaks because water has a different temperature than the surrounding materials. The incoming water is colder than the walls, but also the evaporating water locally lowers the temperature of the walls. This is usually the coldest area on the surface of interest. A thermal camera can detect the temperature difference and produce an image that shows the location of the leak.

The thermal imaging camera used allows the infrared image to be superimposed on the visible image, so it is easy to determine where the anomalies are.

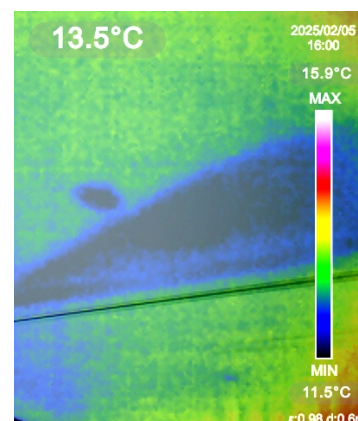


TABLE OF CONTENTS

1. THE ROOF

- 1.1. Roof profile
- 1.2. Downpipes and gutters
- 1.3. Fireplace chimney
- 1.4. Cracks and other defects

2. THE TERRACE

- 2.1. The drainage
- 2.2. The covering
- 2.3. Grouts and seals

3. THE FIRST FLOOR

- 3.1. Flooding in the stairwell
- 3.2. Defects in the balcony on the east elevation
- 3.3. Lack of ventilation in bathrooms
- 3.4. Domestic hot water circulation
- 3.5. Air conditioning defects

4. THE GROUND FLOOR

- 4.1. Flooding
- 4.2. Fireplace to chimney pipe connection
- 4.3. Water-catching contraption
- 4.4. No ventilation in bathrooms
- 4.5. Air conditioning defects

5. THE BASEMENT

- 5.1. No ventilation in bathroom
- 5.2. Moisture in walls and floors
- 5.3. Cracked floor

6. EXTERNAL WALLS

- 6.1. Cracks and stains

7. THE PATIO

- 7.1. Patio profile and drainage
- 7.2. Poor quality of work, sealing deficiencies
- 7.3. Work top next to the grill

8. THE SWIMMING POOL

- 8.1. The edge of the pool.
- 8.2. The pumping compartment

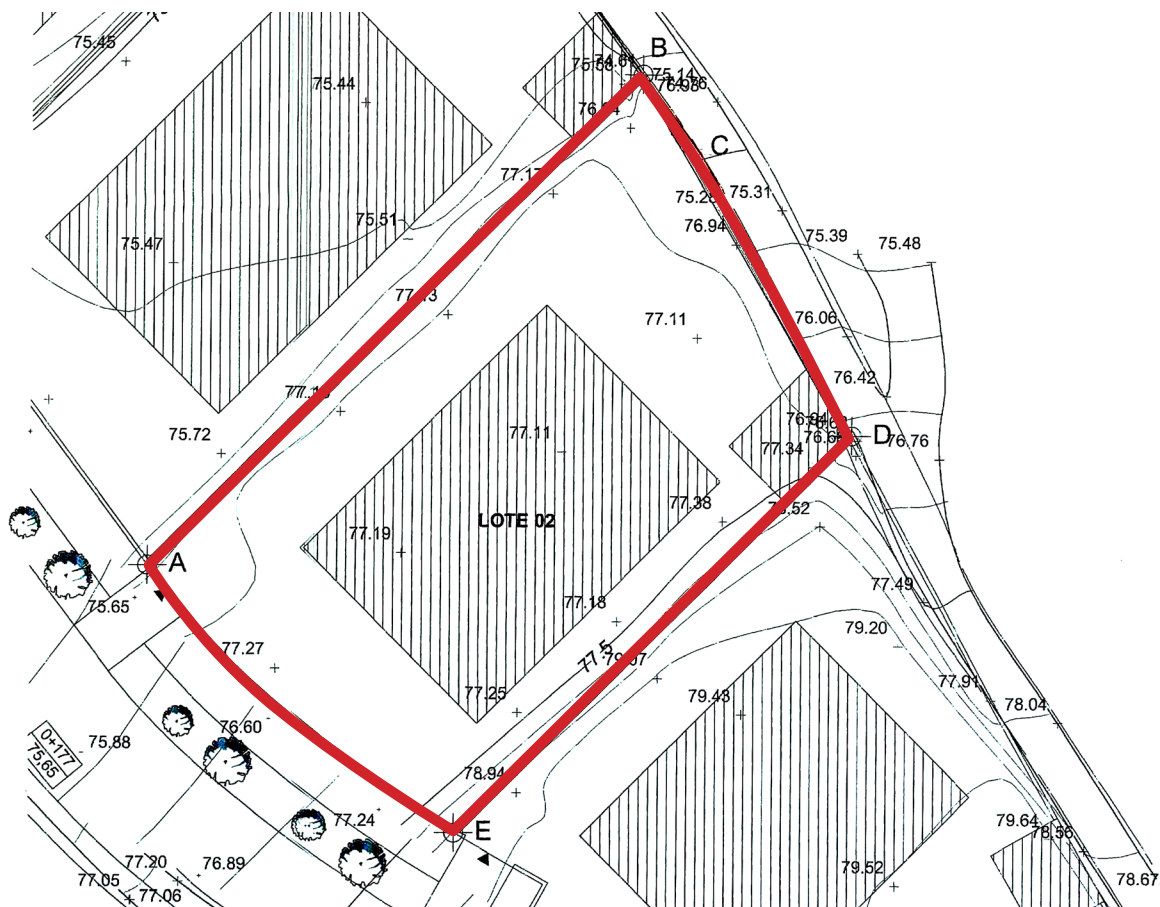
9. THE OUTBUILDING

- 9.1. Exterior
- 9.2. Interior

10. KEY PROBLEMS

- 10.1. Leakages and their consequences
- 10.2. Lack of ventilation
- 10.3. Faulty fireplace
- 10.4. Deficient or no drainage at all

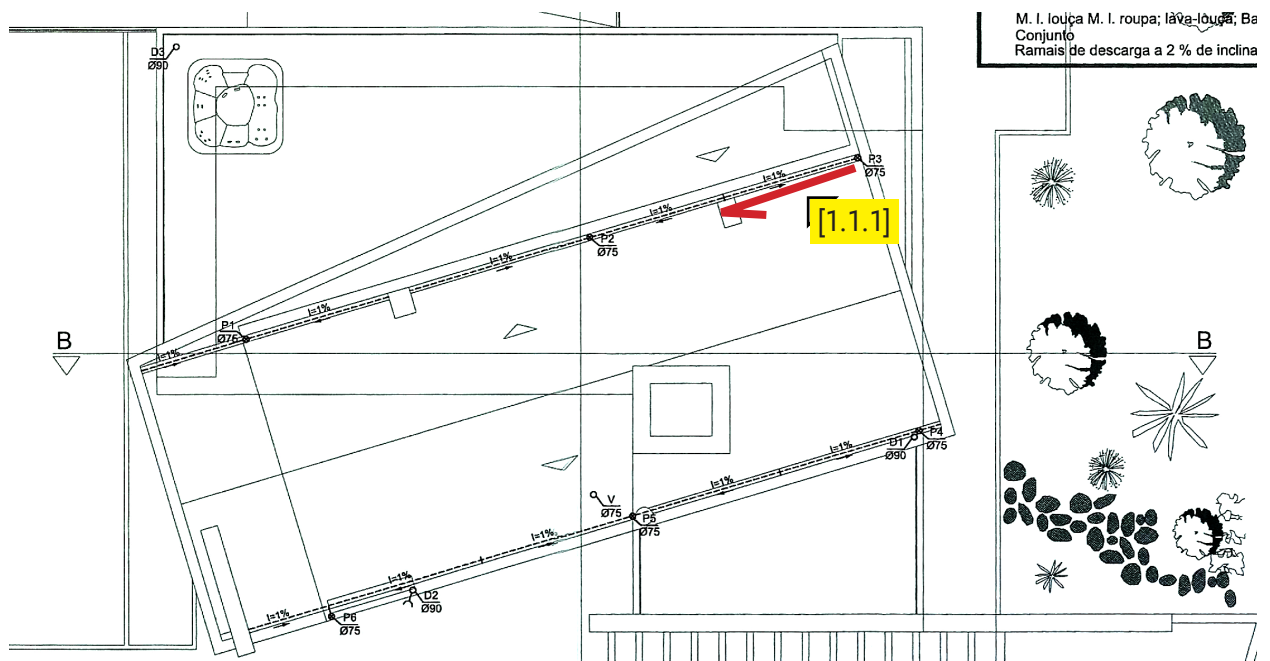
Location and general view of the house.



1. THE ROOF

1.1. Roof profile

1.1.1. Roof profiling discrepancies were detected in relation to The Project. In some cases, the roof slope is the opposite of the design. Instead of a slope of about 1% towards the drain holes, a counterslope of about 0.5% was detected, which causes water to flow away from the drain hole.

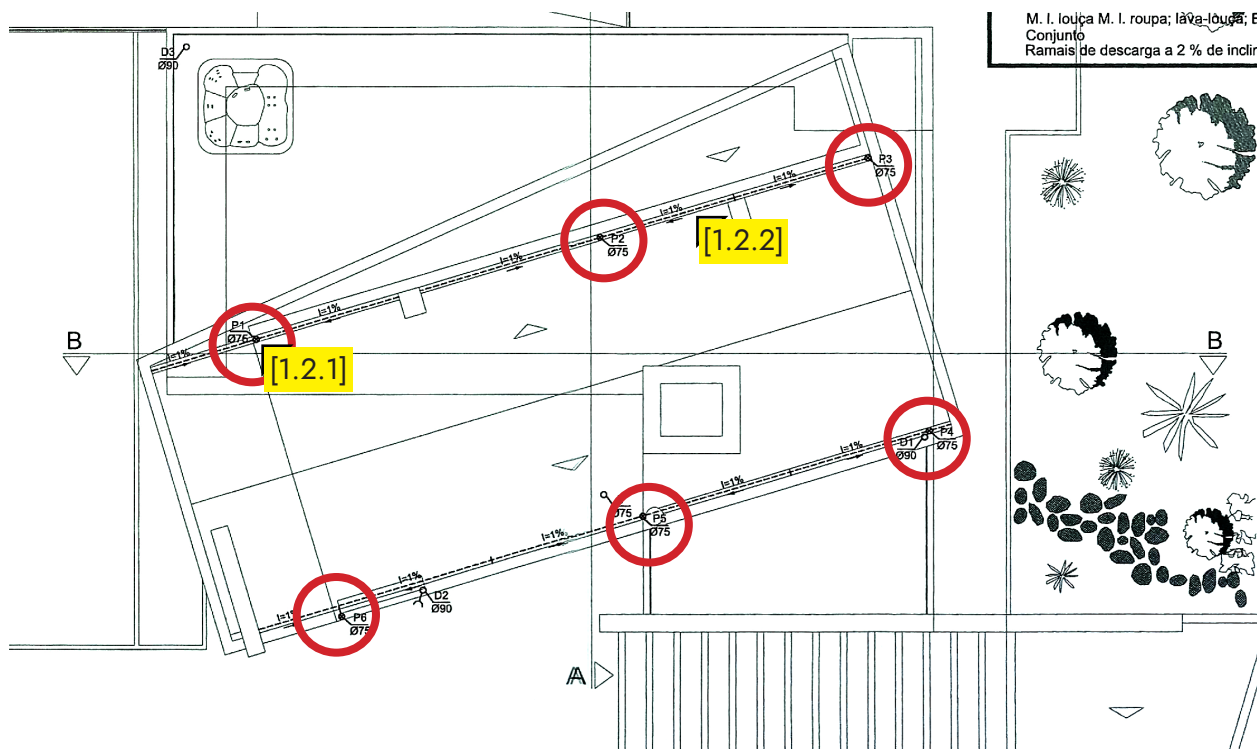


1.2. Downpipes and gutters

1.2.1. All the downpipes (P1-P4) from the roof are of insufficient diameter.

In the Project, the pipe diameter was specified as 75 mm, while in reality the pipes have a diameter of less than 50 mm (their diameter was reduced by the layers of roofing felt rolled inwards).

1.2.2. There were also no horizontal gutters (ditches) detected on the roof, which were shown in The Project.



[1.2.1]



[1.2.1]



1.2.3. The water drainage through the roof ceiling was done incorrectly, as the bare ceiling slab is visible in the drainage holes. It is only partially covered by roofing felt bent inwards.

This allows water to penetrate through cracks in the concrete and further flood the house.

1.2.4. Drainage holes should be fitted with an appropriate outlet fitting. Its apron should be welded to the roofing felt and the drain should be sealed in the downpipe.

1.2.5. The roof should also be equipped with **thru-wall overflow scuppers** that could drain excess water from the roof in the event of extremely heavy rain or clogged drainage holes.



1.3. Fireplace chimney



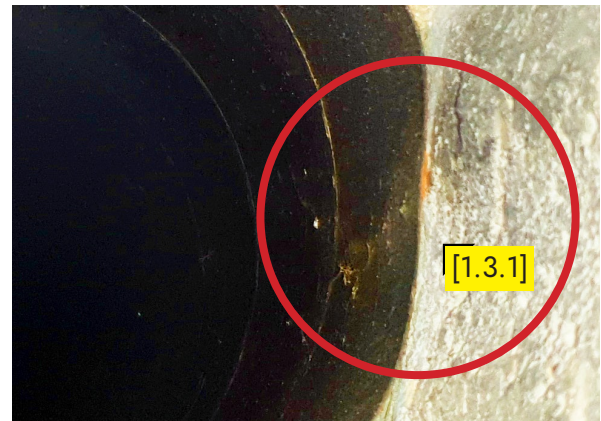
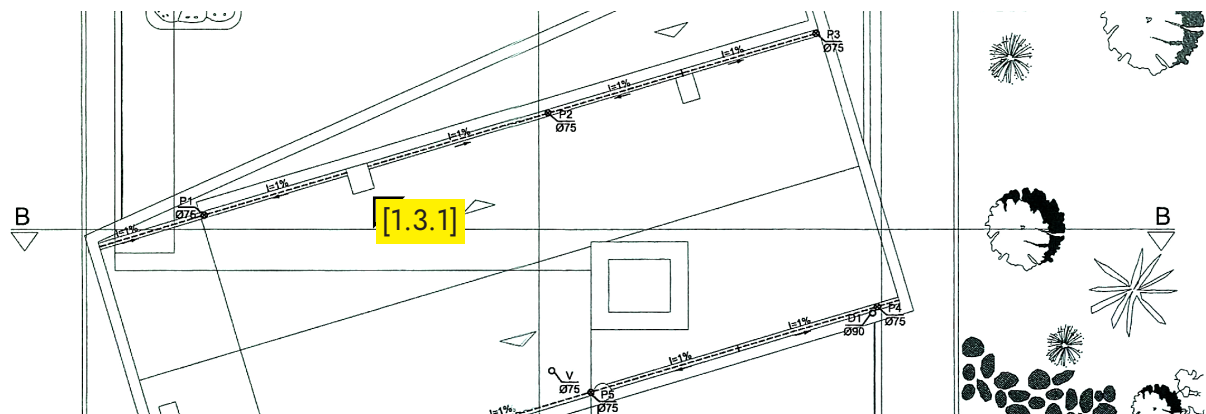
1.3.1. The chimney flue is made of spirally wound galvanized pipe (SPIRO), the use of which is prohibited for solid fuel combustion fireplaces!

There is a serious risk of thermal damage to the pipe and the release of toxic exhaust gases into living spaces



1.3.2. The chimney cap was made incorrectly. It has the form of a concrete slab mounted on 4 posts. The clearance between the cap and the chimney is created by very small gaps, thus limiting the chimney draft!

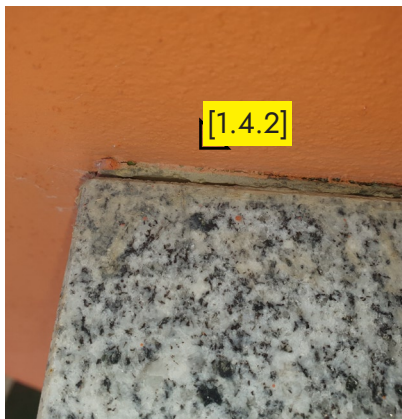
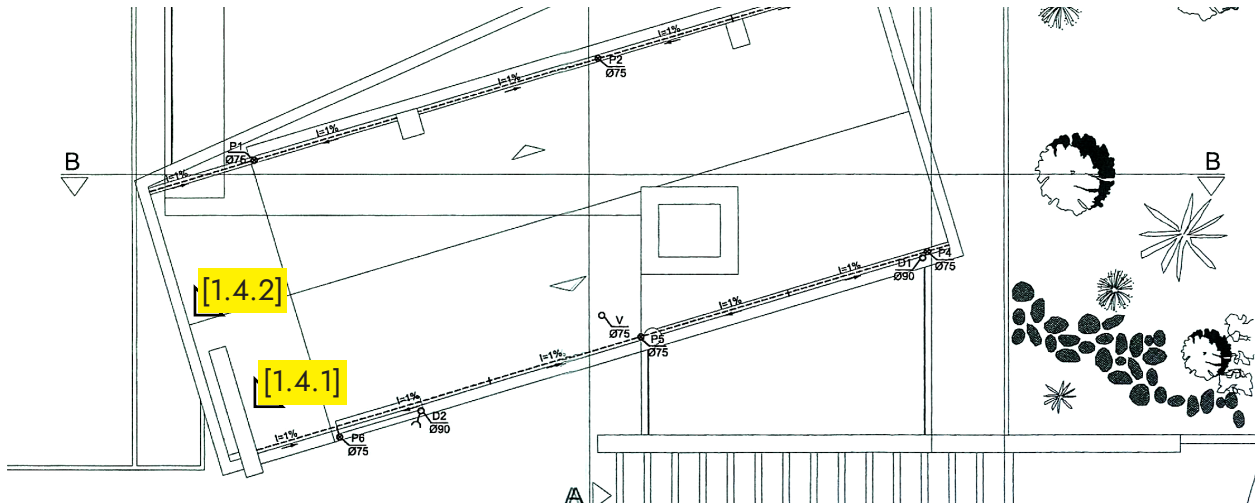
Despite little use, traces of corrosion are already visible on the pipe.



1.4. Cracks and other defects

1.4.1. The orange attic wall is all ckracked on top, with vegetation and water penetration inside. Lack of wall copings.

1.4.2. The other roof attic walls have copings made of stone, with many defects also lack of the grout on connections, improper connection with orange plastered wall and even a wooden dowel left behind.



2. THE TERRACE

The terrace was not constructed in accordance with The Project and in violation of technology and good construction practice. Below is a long list of defects and non-conformities with The Project.

2.1. The drainage

2.1.1. The terrace drainage trough is not located in accordance with The Project.

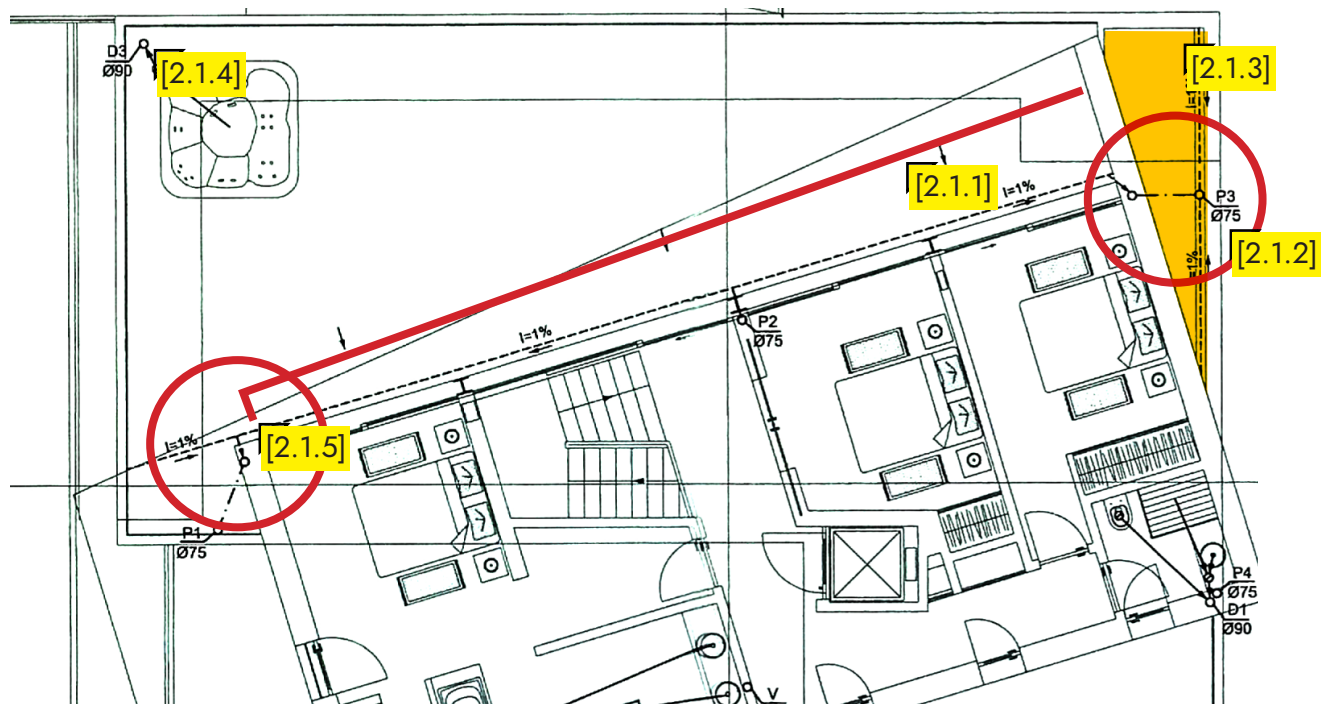
According to The Project, the terrace should have a slope towards the wall. Instead, a drainage trough was laid diagonally across the centre of the terrace surface.

Its inlet is only a few millimetres wide. The walls and the bottom of the trough are simply concrete of the screed - the trough is in no way protected by a system insert or other barrier to prevent water from seeping into the screed under the tiles.

2.1.2. The northern end of the drainage trough was not connected to drain P3 as shown on The Project. The drain marked on The Project as P3 should have a diameter of 75 mm, when in fact the diameter of the drain is 50 mm.

2.1.3. Furthermore, the drainage trough at P3 cannot serve as a support for the terrace drainage, as the part marked in orange is about 8 cm higher than the rest of the terrace!

2.1.4. The drainage for the jacuzzi pool (D3, 90 mm) was not made at all.



2.1.5. The drain on the south side should have a diameter of 75 mm, but was made with a garden hose with a diameter of less than 18 mm!

The drain has been designed in such a way that it cannot be cleaned in any way.

a) the drain channel bends at a 90° angle and the bend has been covered with tile

b) the hose in the bottom of the trough is placed with the outlet downwards, without any protection against clogging.

As a result of the owner's intervention, the contractor cut a square hole in the tile where he installed a drain grate. This did not in any way enable the drain to be cleaned because:

(a) the hole in the tile did not coincide with the drain gutter and did not provide access to the drain opening [2.1.5a]

b) the grating located on top of the opening did not protect the drain from clogging, as all debris flowed through the open trough located under the grating.

The above did not help and, after some serious flooding of the rooms below the terrace, the owner decided to remove the covering and uncover the drain.[2.1.5b].

The following was found:

(a) the only drain from the entire terrace of approx. 70 m² was an 18 mm diameter garden hose [2.1.5c].

(b) The hose is embedded in an random-shaped hole in the screed, with visible ineffective attempts to seal around it [2.1.5d]. Using an endoscopic camera inserted into the hose, it was found to be completely blocked with sandy sediment.



At this point, it should be emphasised that such an arrangement is extremely prone to failure and, given the small diameter of the drain and the very difficult access to it, impossible to maintain in proper working order. The total cross-section of the terrace drainage pipes was undersized by more than 35 times!





On the day of the inspection, a significant amount of water was found ponding on the terrace and numerous floods in the rooms below, as discussed later in the report.



Despite exposing the drain hole and many attempt to unclog it, the water stored on the terrace could not be drained.



It was necessary to mechanically remove the water from the terrace.



2.2. The covering

The terrace covering was made of ceramic/gres tiles, attached by adhesive mortar. The majority of the tiles are hollow - detached from the screed, and in places the tiles stand out clearly from the terrace plane. A significant number of joints are cracked, cracks and cavities are visible.



Total lack of expansion joints, which causes the joints between the tiles to crumble and the tiles to detach from the substrate.

A section of the terrace covering was dismantled to ascertain the quality of the work and the materials and technology used.

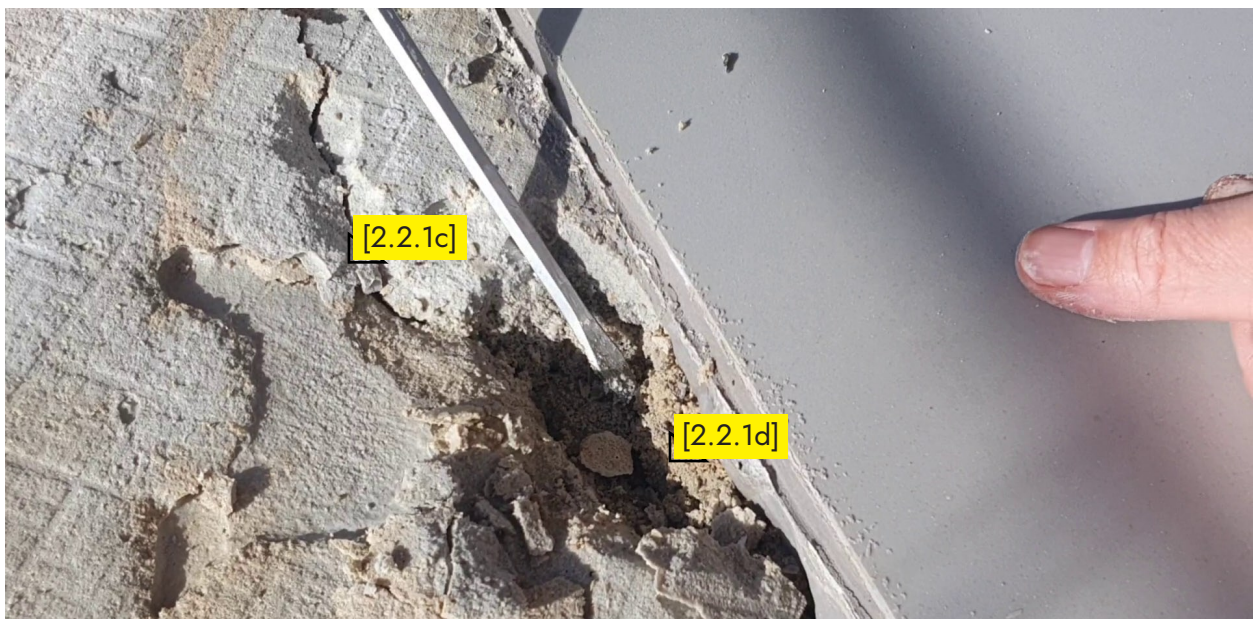
2.2.1. Defective terrace covering.

The tile was very poorly bonded to the screed and was easily removed when levered.

The adhesive mortar is not bonded to the tile over a significant area [2.2.1a]. Insufficient adhesive and voids between the adhesive layer and the tile are revealed [2.2.1b].



The adhesive layer under the tile was patchy and very cracked [2.2.1c]. The tile adhesive was very brittle and came off easily when undermined with a screwdriver [2.2.1d].



The adjacent tiles were also poorly attached to the substrate and could easily be undermined and torn off [2.2.1e].

Once the adhesive was easily removed, the xps foam layer was exposed and water appeared in the hole [2.2.1f].





No waterproofing was found to protect the screed from water penetration.
A water layer of approximately 30 mm was found in the xps insulation, directly on the floor slab [2.2.1g].



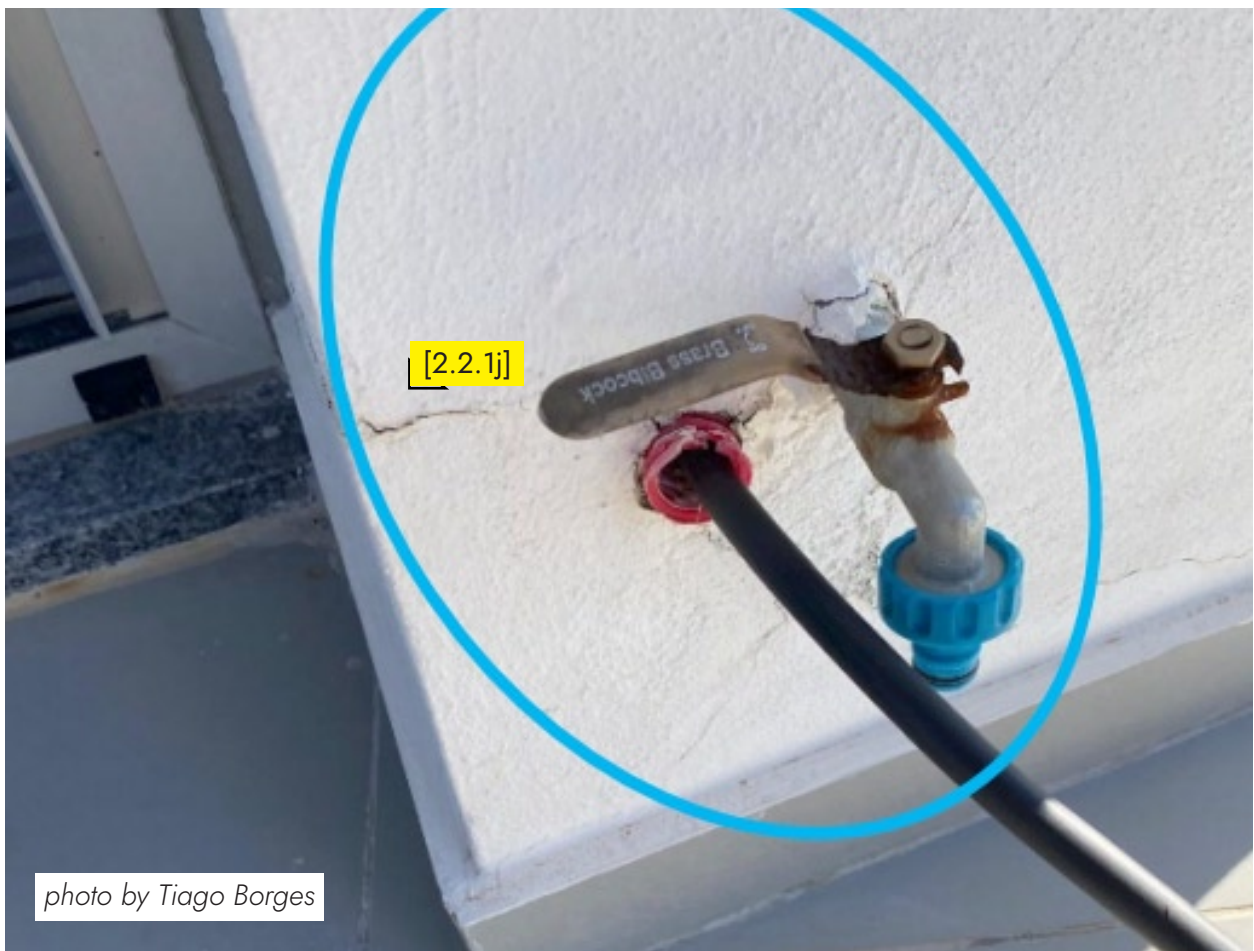
The adhesive layer was exposed elsewhere on the terrace and the situation was very similar: the mortar was very crumbly, non-cohesive and crumbled very easily in the hands. In colour and texture it resembled wet sand [2.2.1h].



Stress cracks were found in the tiles around the steel pillars of the buildings' superstructure [2.2.1i].



Stress cracks in the area of the connection between the terrace and the wall [2.2.1j].

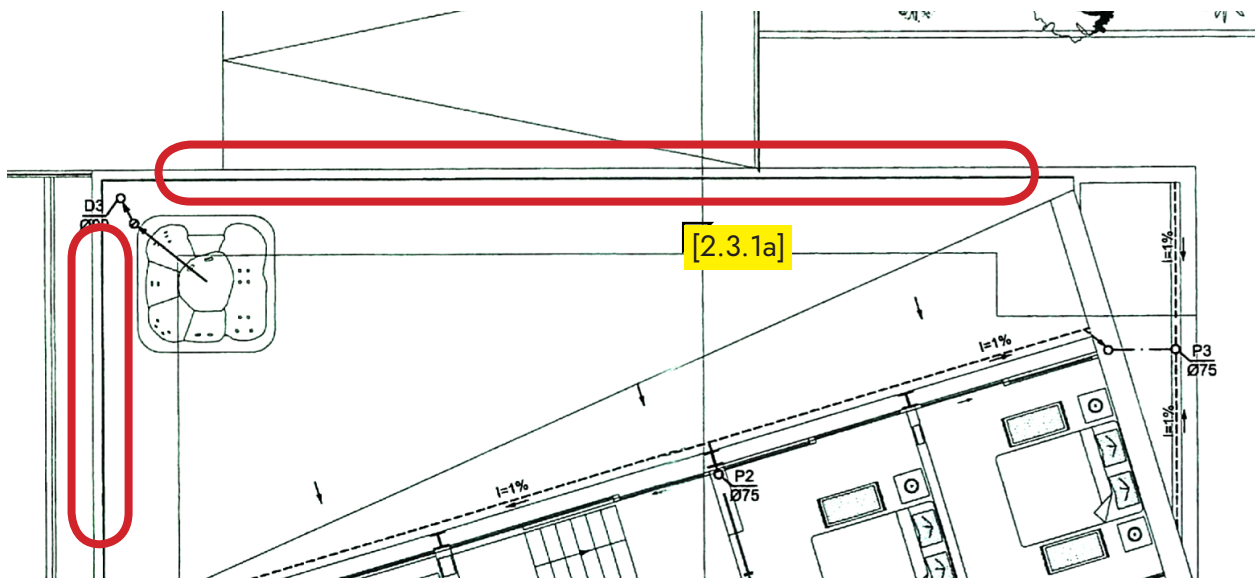


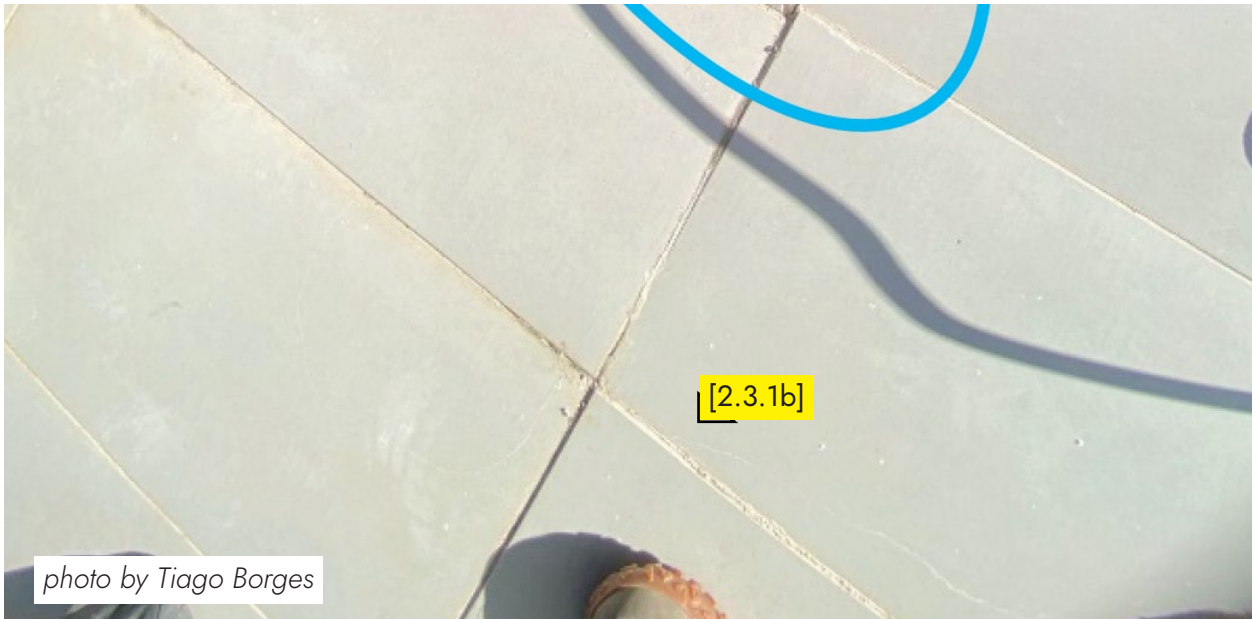
2.3. Grouts and seals

2.3.1. Numerous cavities and discolouration in the tile grouts were found on the overall terrace surface. There are many visible instances of grout erosion [2.3.1b].

The connection between the terrace surface and the balustrade is cracked or absent in many places. This creates the possibility of water penetrating into the balustrade attachment points and further erosion. Numerous vegetation can be seen nestled in the cracks [2.3.1a].

The connection between the balustrade and the terrace should be both watertight flexible.

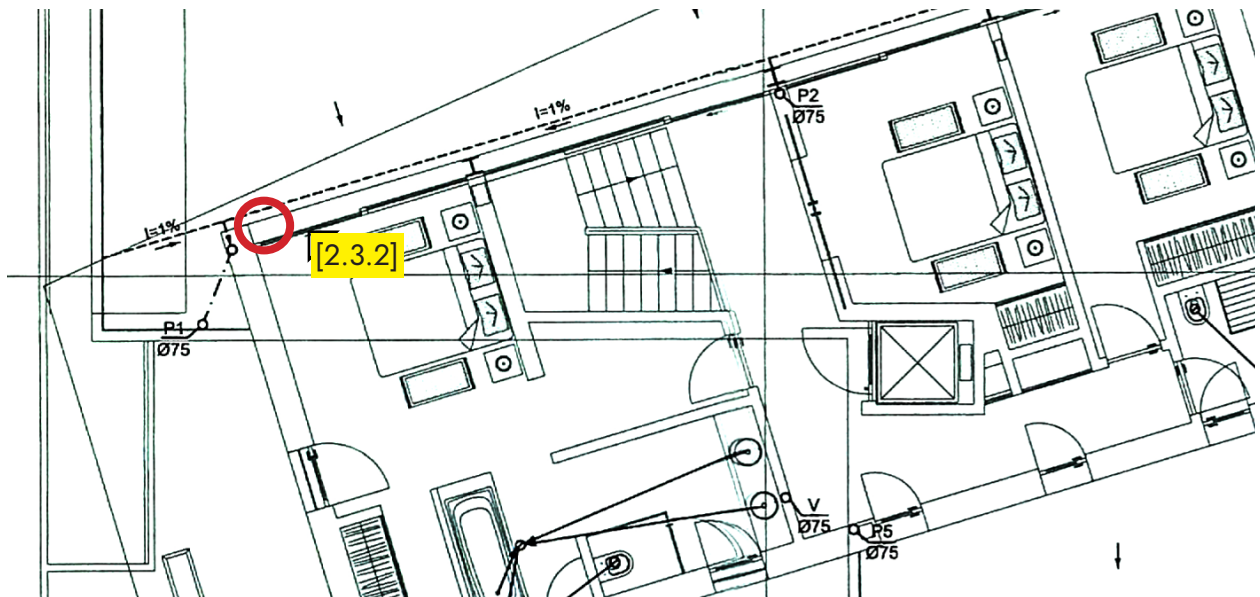




2.3.2. Terrace window sills.

Terrace window parapets have the wrong slope (slope towards the window) [2.3.1a].

This causes water that runs down the panes to be directed to the window and flow into the masonry through gaps in the seal. Visible traces of fungus in the corners. [2.3.1b].



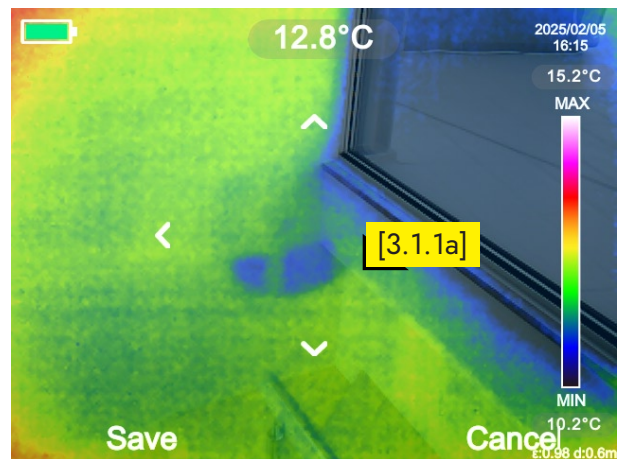
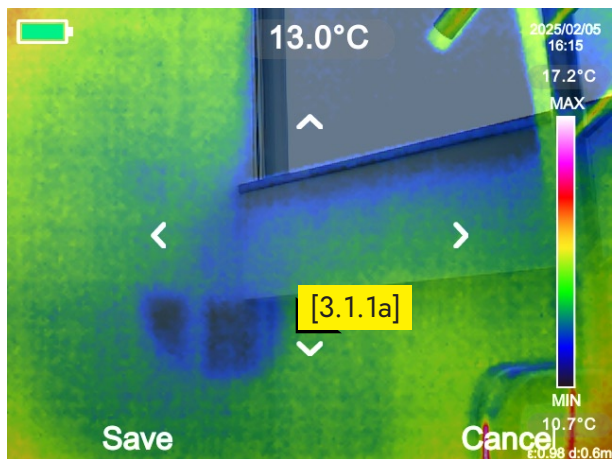
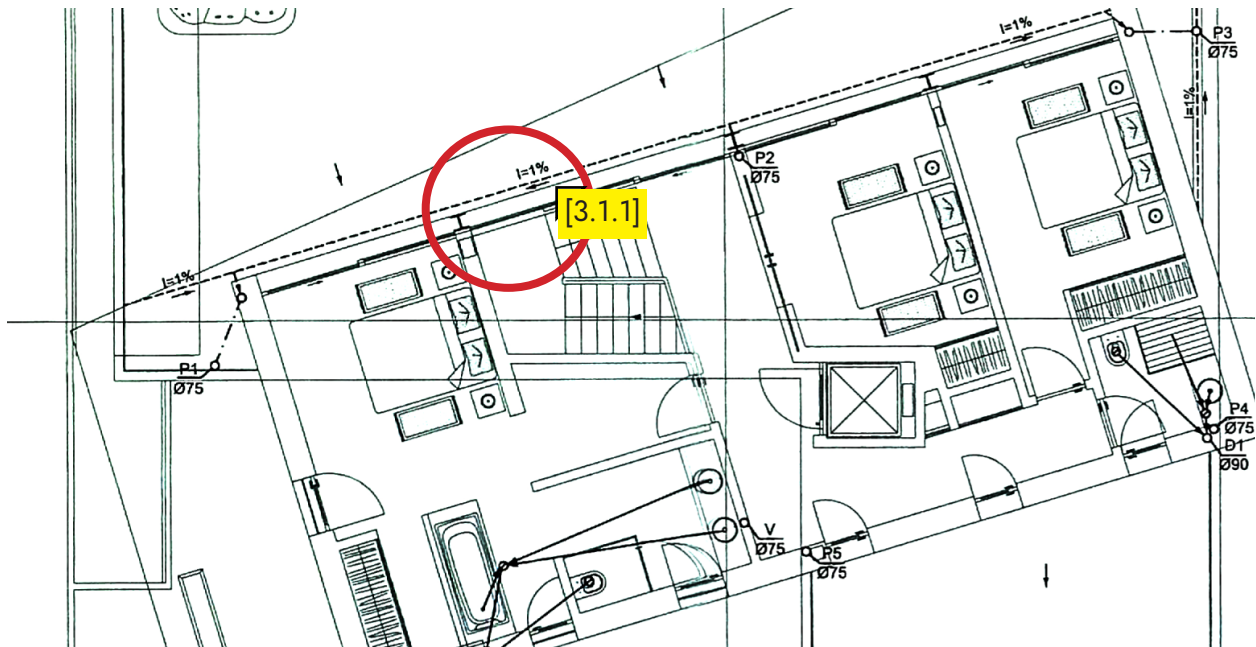
3. THE FIRST FLOOR

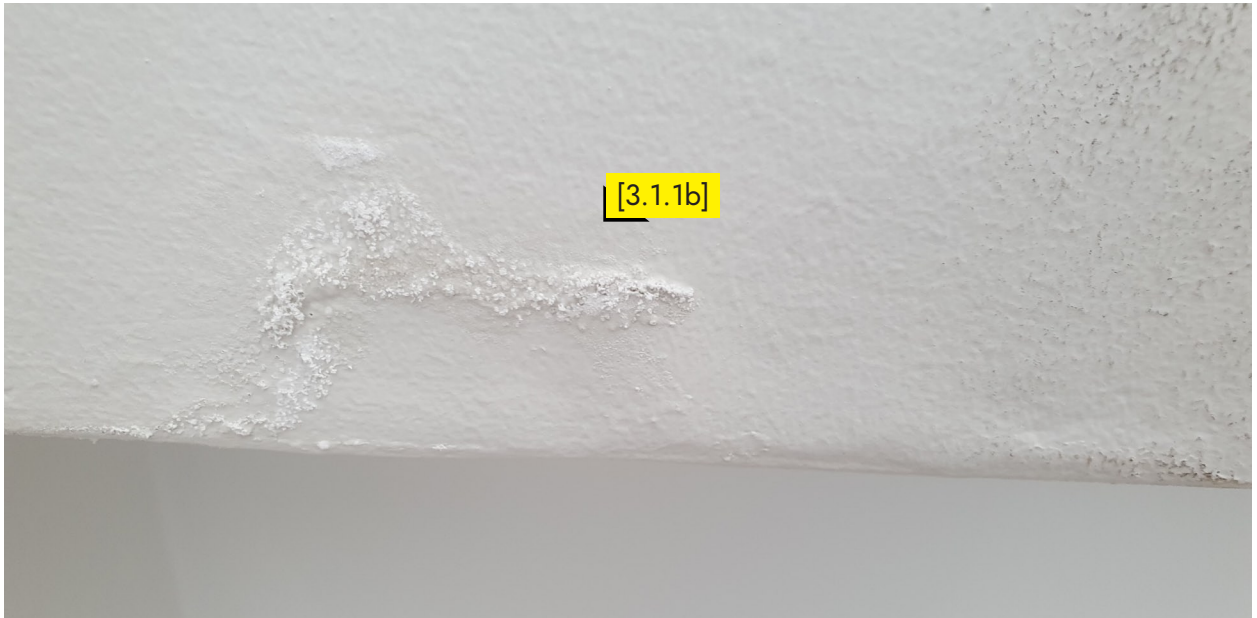
Construction defects such as leaks and cracks were detected on the first floor. There are also a number of conceptual errors that make it difficult or impossible to use the facilities.

3.1. Flooding in the stairwell

3.1.1. Water in the stairwell wall.

Using a thermal imaging camera, dampness was detected in the west wall of the stairwell [3.1.1a]. Discolouration, cracks, paint chipping and plaster degradation can be seen in the area where the terrace floor slab meets the wall [3.1.1b].



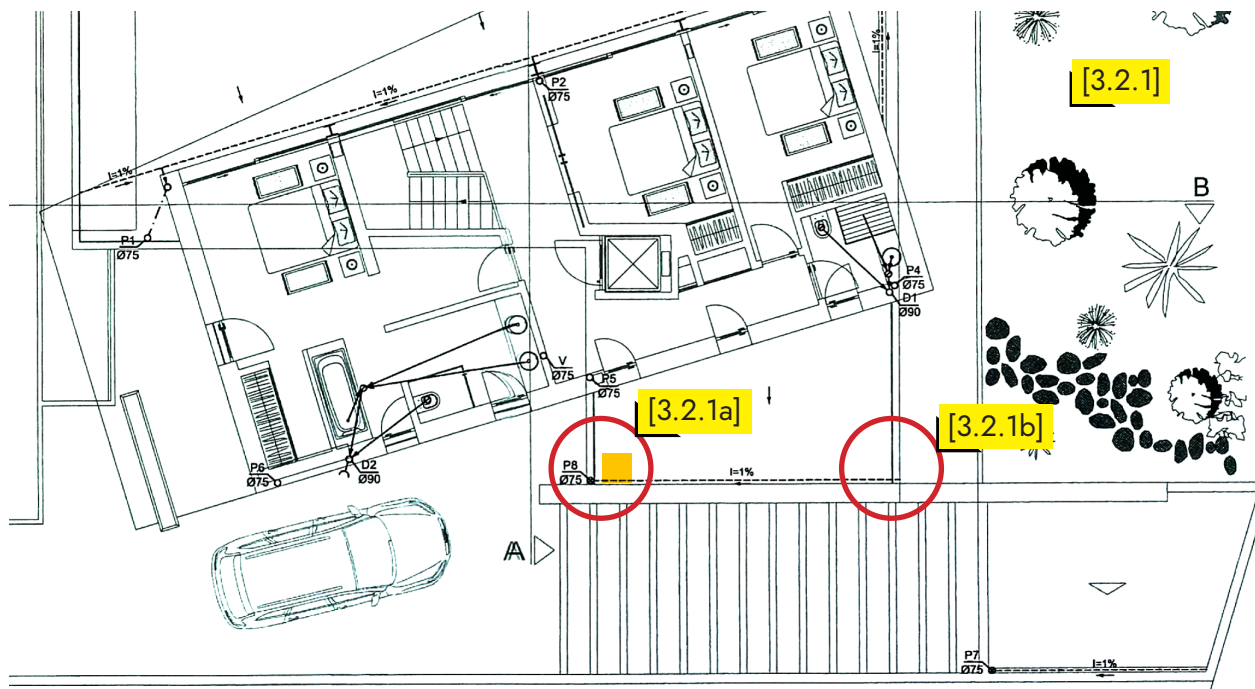


3.2. Defects in the balcony on the east elevation

3.1.1. Improperly constructed rainwater drainage from balcony.

The diameter of the P8 drain pipe is 50 mm whereas by The Project it should be 75 mm. In addition, the P8 drain has been placed behind the chimney of the grill located on the patio below. This location of the drain results in the accumulation of debris and plant elements and makes cleaning the drain much more difficult. It should be mentioned that the grill chimney (highlighted in orange) is not present in The Project. [3.2.1a].

Cracks in the masonry fence of the balcony [3.1.1b].



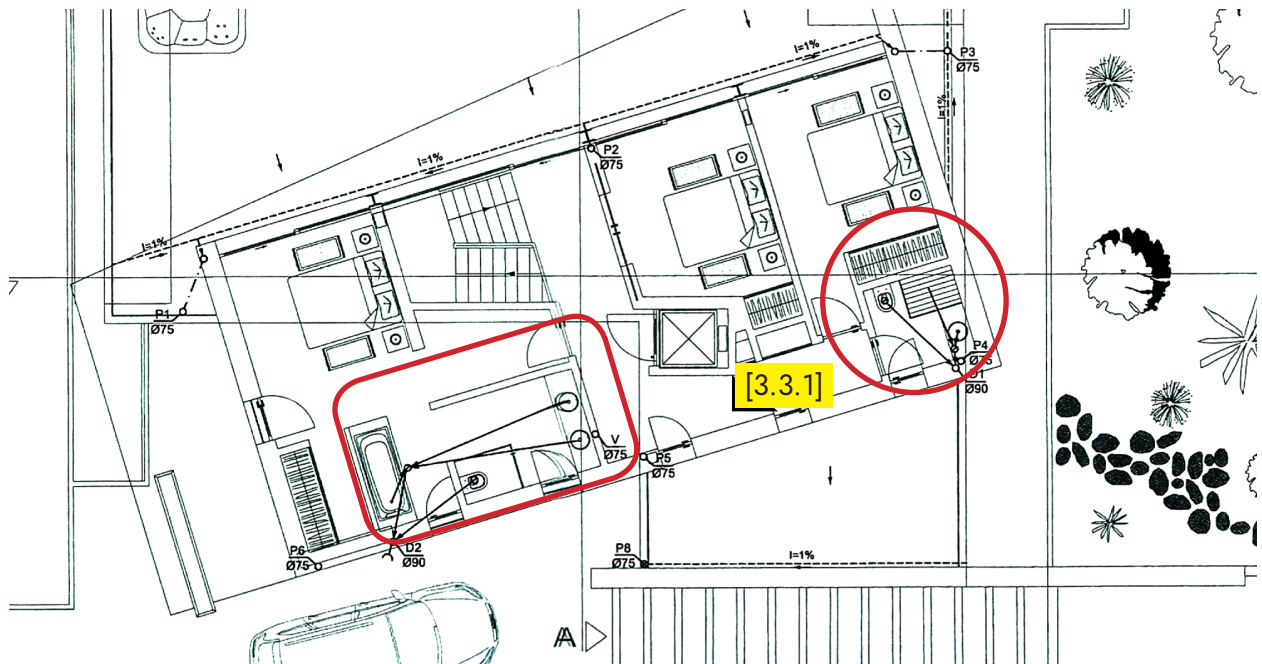
3.3. Lack of ventilation in bathrooms

3.3.1. Neither of the two bathrooms on the first floor has ventilation ducts.

This is particularly important for the south-facing bathroom, which is one room with the bedroom.

All odours and dampness will be allowed to enter the living areas and soak the the clothes in the open wardrobe located near by.

The opinion that this is not required when windows are open is not true, as this would mean that during cold or rainy weather, residents would be forced face the weather elements to provide ventilation.



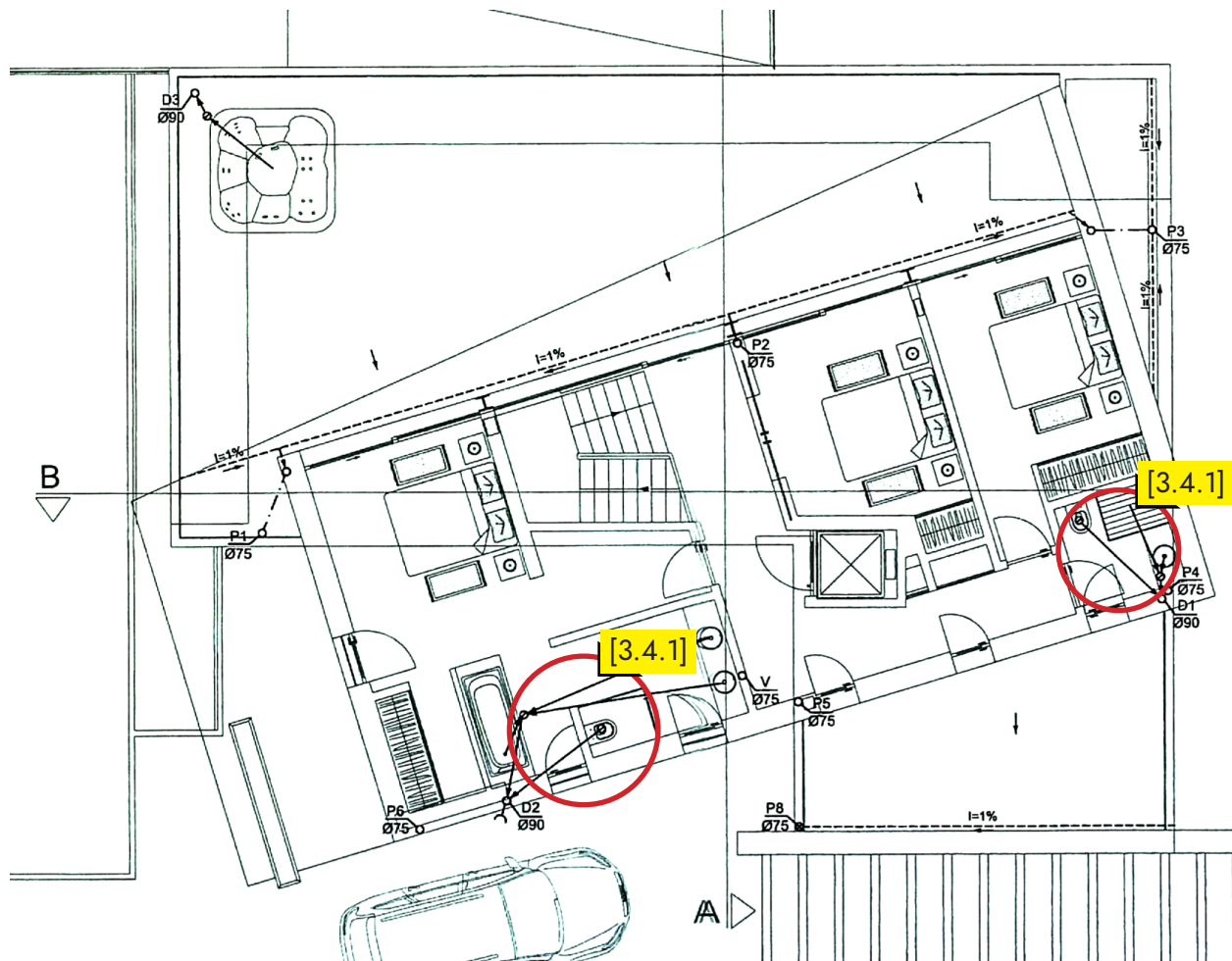
3.4. Domestic hot water circulation

A hot water circulation system is installed in the building. It consists of a circulation pump and a timer switch, the contacts of which are located at the bathroom doors. The circulation pump, for a set period of time, moves water from the hot water tank to the pipes and back to the tank.

The idea is to ensure that, in remote parts of the building, hot water pours as soon as the tap is opened.

The problem is that this does not work that way.

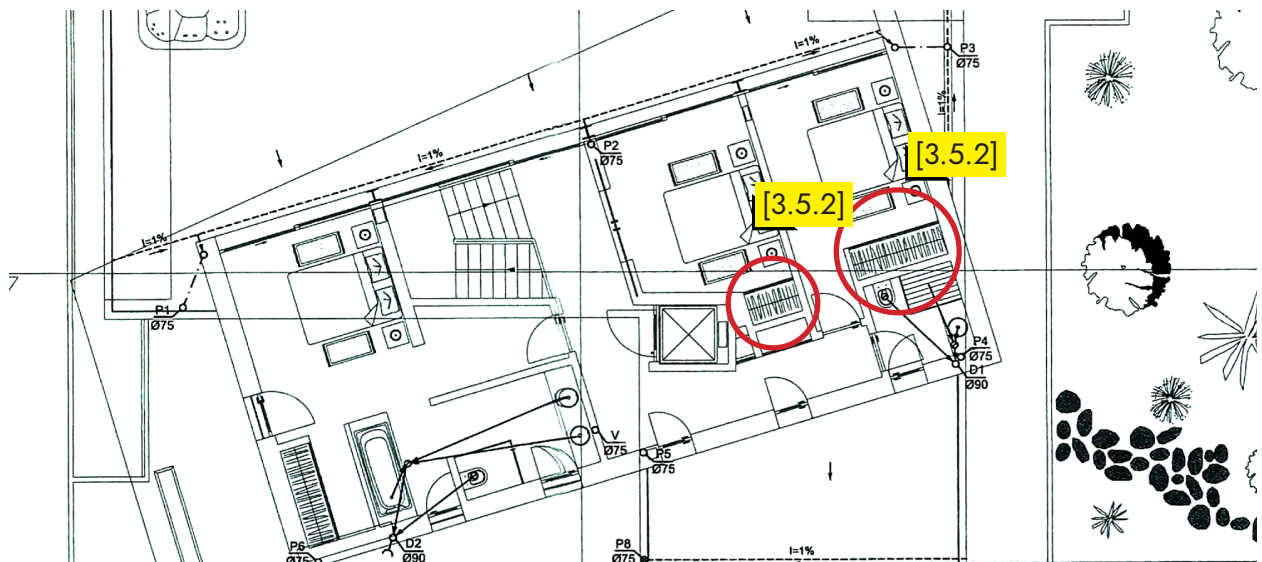
In the upstairs bathrooms [3.4.1], hot water does not appear until about 4 minutes after turning on the tap. This causes a wait and wastes a considerable amount of water, which uselessly flows down the drain during this time.



3.5. Air conditioning defects

3.4.1. On the first floor, three air-conditioning systems were installed built-in in the walls, the false ceiling and in the wardrobes. None of them has an inspection opening to access the junction box. In the event of a malfunction or the need to make adjustments, it will be necessary to drill a hole in the wall or dismantle the wardrobe.

3.4.2. In the two bedrooms on the north side of the house, the air conditioners have air intakes hidden in lockable wardrobes. For this reason, it is impossible to use them properly. For the air conditioner to work effectively, the wardrobe doors must be open.



4. THE GROUND FLOOR

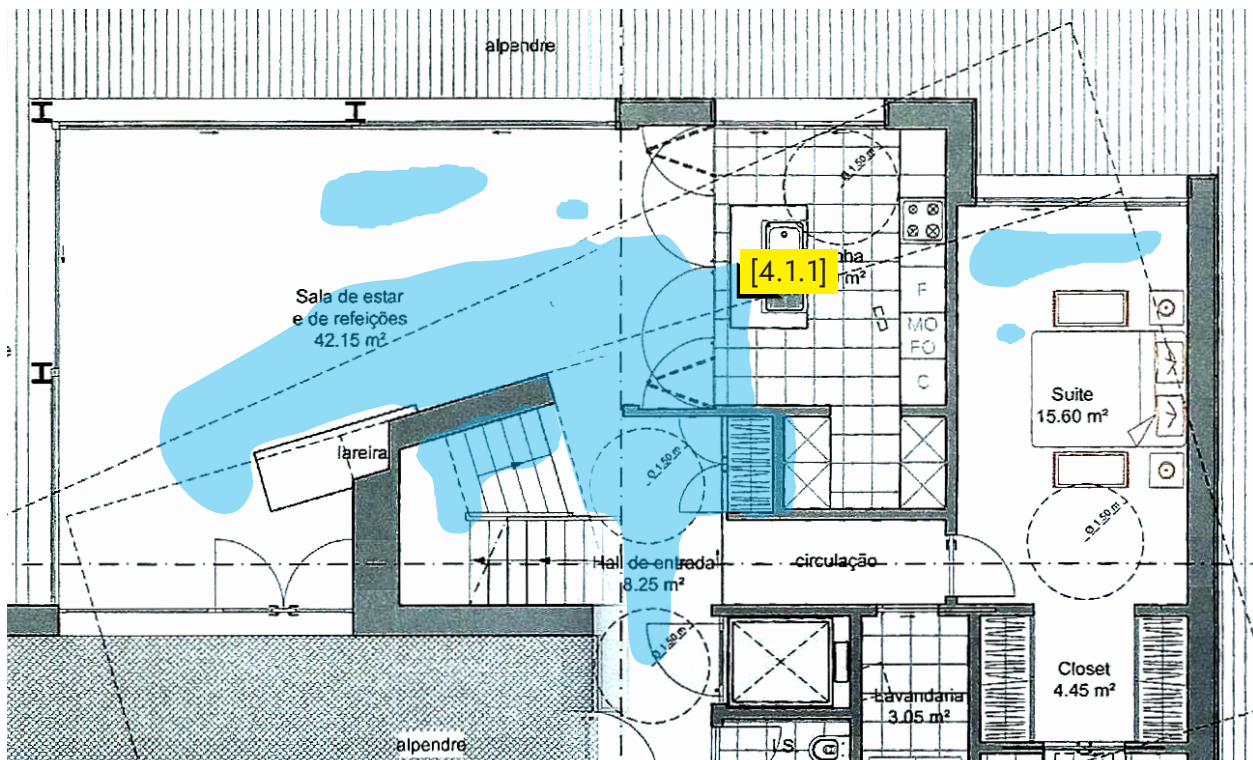
The biggest problem on the ground floor is flooding from rainwater leaking in many places from the terrace. The consequence of these leaks is the degradation of the ceiling, walls, furniture and furnishings, as well as the growth of mould and fungi that are harmful to human health. Another major problem is the chimney system of the fireplace, which is made in an extremely incorrect way, endangering the health and life of the residents. Unusual contraptions and fittings installed by the contractor during construction were also revealed, indicating that he was aware of the problems and tried to hide them from the buyer.

4.1. Flooding

The living room, kitchen and hallway have been flooded by rainwater several times since 2023. This always happened after heavy rainfall, when water collected on the terrace above. Despite all the drains from the terrace being unblocked, rainwater still seeped into the house. The owner has numerous photographs and videos documenting the flooding of the house at various times.

4.1.1. Flooded area.

The following are the extent of the flooding that occurred in January and February 2025. The presence of water in the building's structure and equipment was determined by direct visual inspection, images from the endoscopic camera and images obtained from a thermal imaging camera. The projection below shows the areas affected by flooding including floors, walls, ceilings, furniture, wardrobe and light fixtures.



4.1.2. The livingroom, kitchen and the corridor.

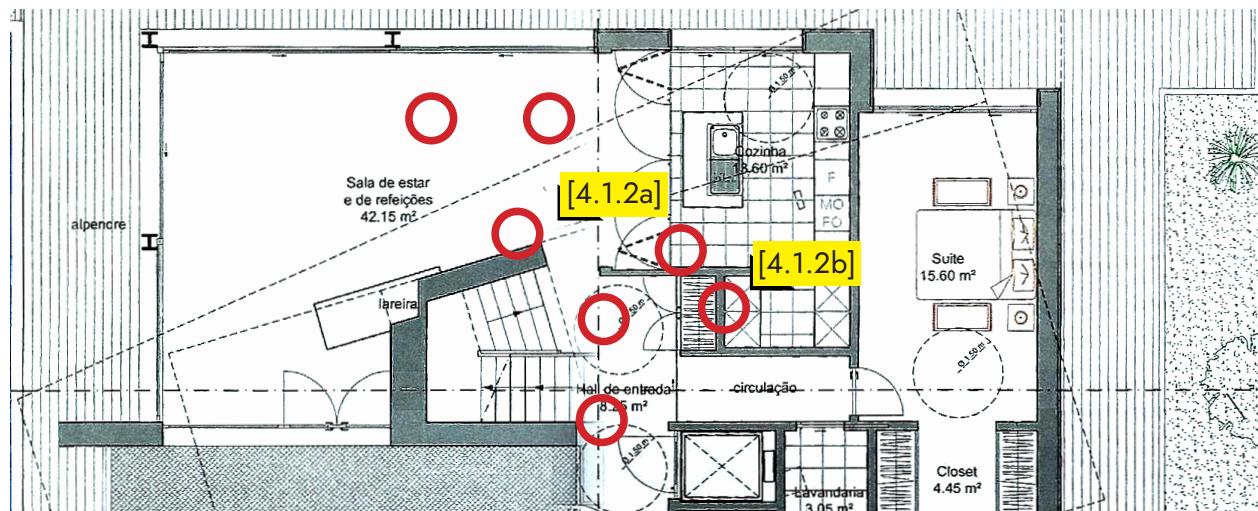
A consequence of the leaking terrace is the repeated flooding of the kitchen and living room with rainwater. On a number of occasions, water was observed dripping down the stone wall in the middle of the living room, water dripping from lamps suspended above the table, water dripping from light fittings on the ceiling [4.1.2a].

The sliding doors dividing the kitchen from the living room have been soaked in water, as a result of which they have bulged and do not move in the slide [4.1.2b].

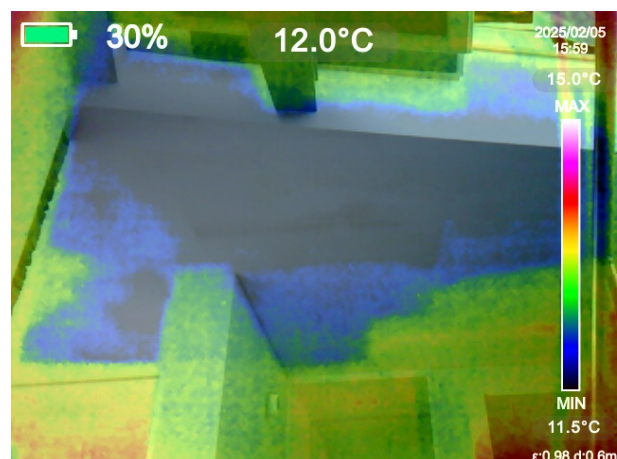
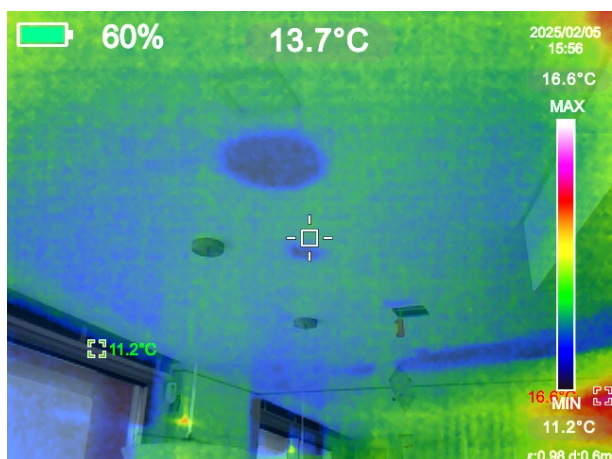
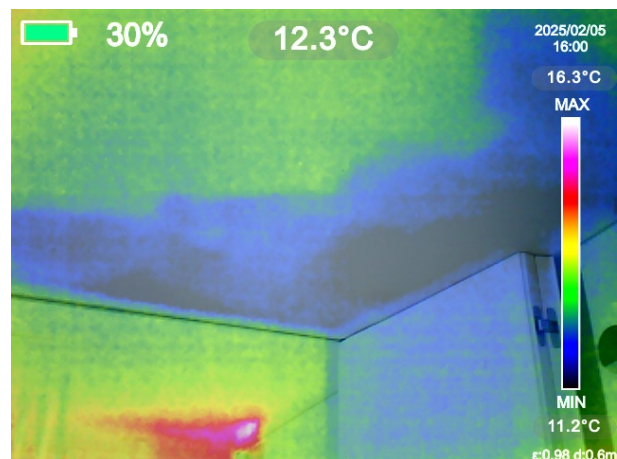
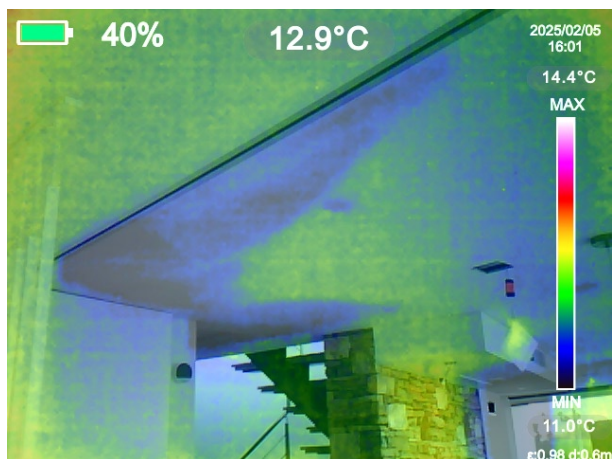
There were regular electrical failures as the water in the building structure caused the differential circuit breaker to trip.



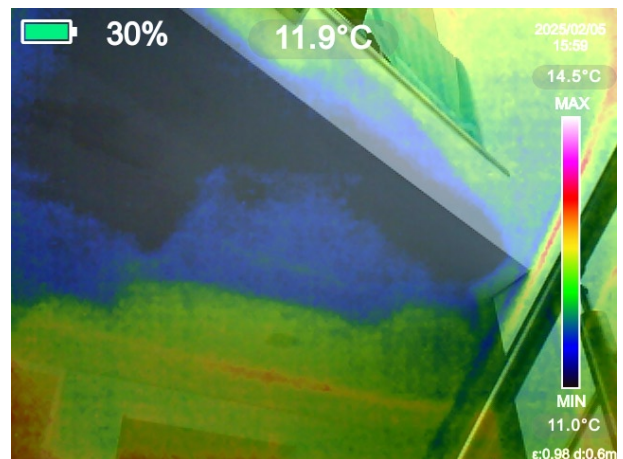
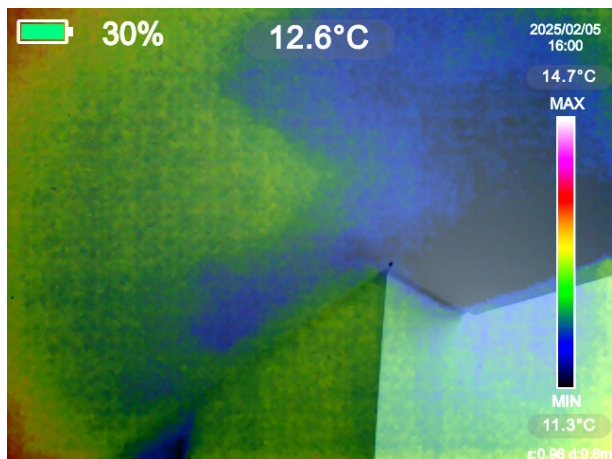
There is a distinct smell of mould in the space above the suspended ceiling!



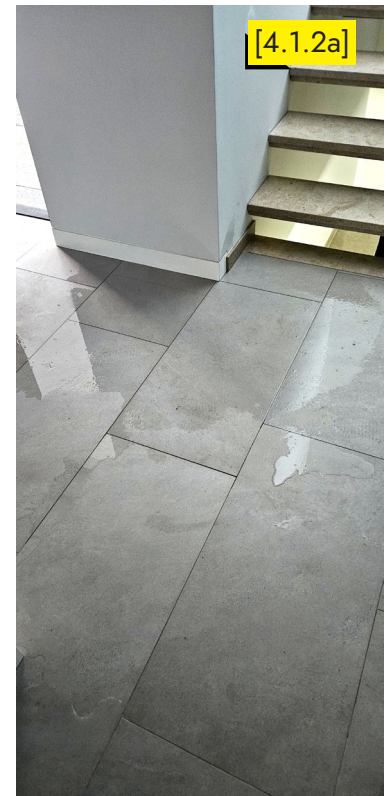
Thermal images showing water residues in the ceiling and walls.



Thermal images showing water residues in the ceiling and walls.



Rainwater flooding on November 2023



Rainwater flooding on January 2025



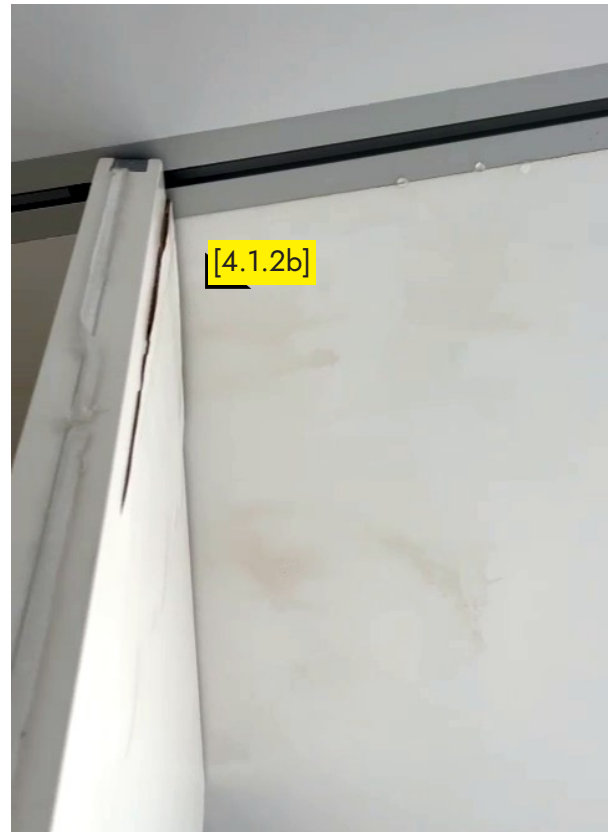
Stains on the kitchen ceiling.



Stains on the corridor ceiling.



Bulged sliding doors in the kitchen.



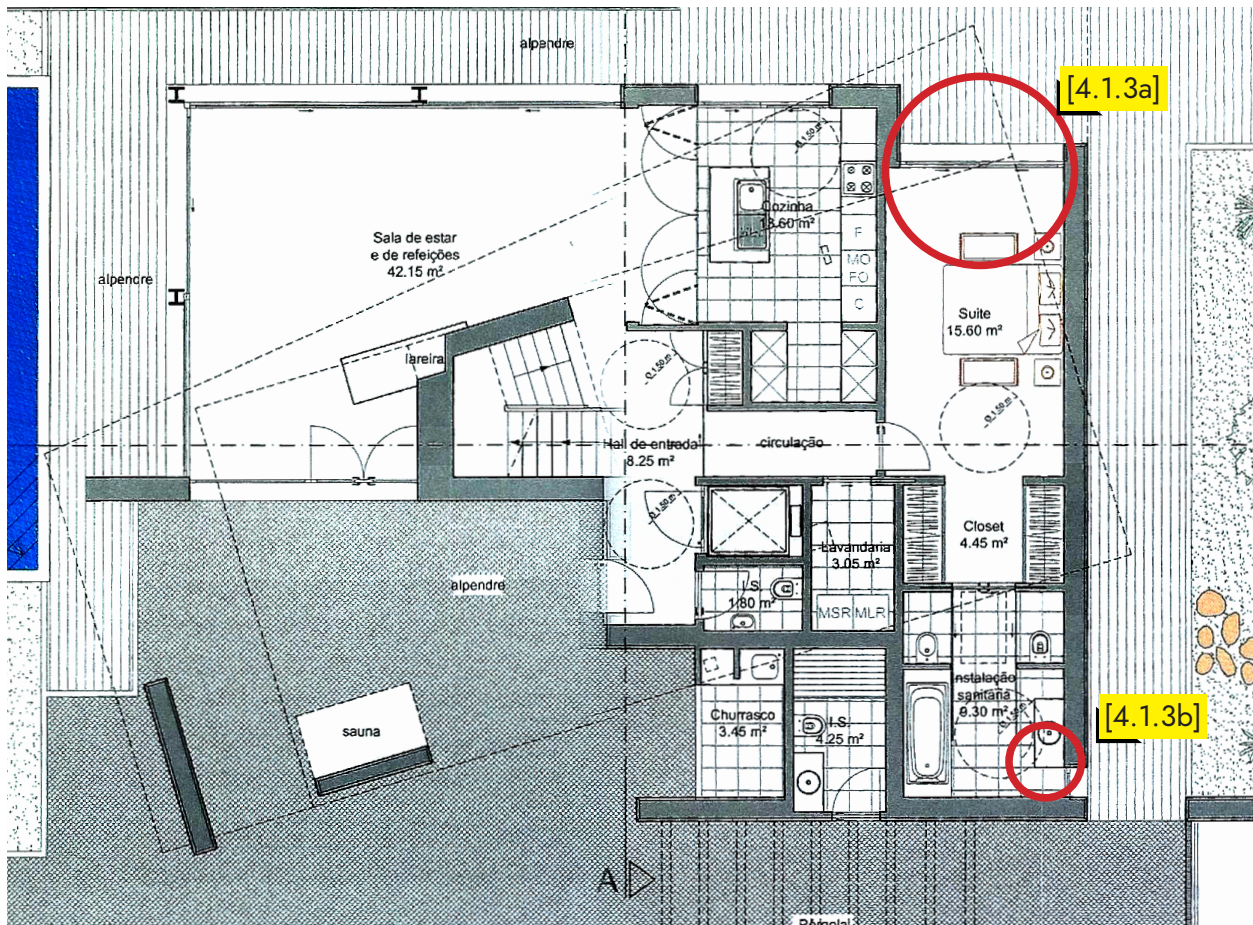
4.1.3. The bedroom and the bathroom.

Moisture was found in the suspended ceiling of the bedroom during the inspection. Numerous mould colonies were detected on the ceiling and in the recess for the roller blinds [4.1.3a].

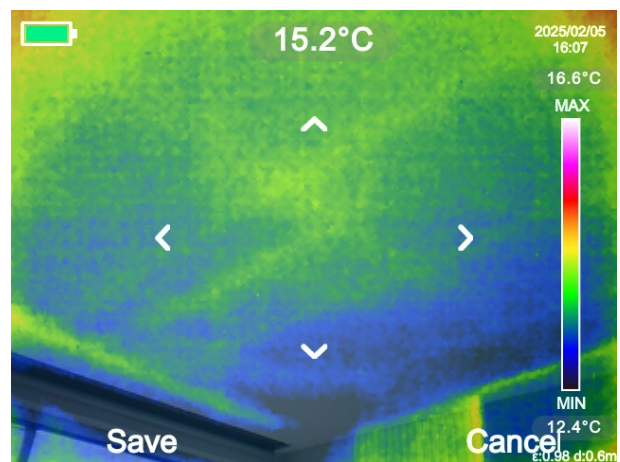
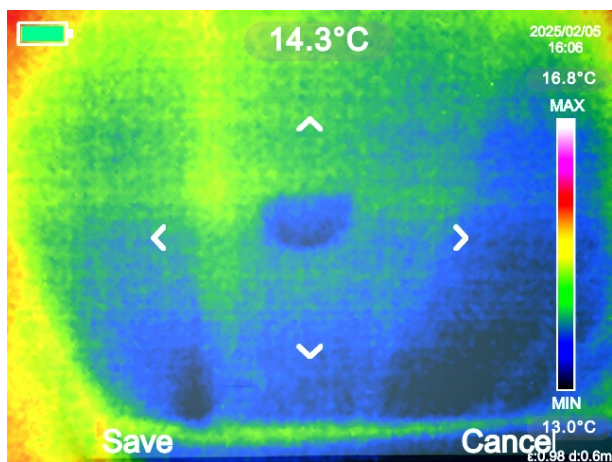
In the bathroom adjacent to this bedroom, there were repeated leaks on the ceiling and water collecting on the floor during rains. [4.1.2b].



There is a distinct musty smell throughout the bedroom!



Thermal images showing water residues in the ceiling.



Endoscopic image of the suspended ceiling surface. Mould colonies are visible.



Leaks in the nearby bathroom



4.2. Fireplace to chimney pipe connection



4.2.1. The fireplace was connected to the flue via a flexible flue pipe!

This type of pipe is not approved for flue gas from solid fuel burners, where the flue gas temperature is not controlled and can reach up to 350 °C.

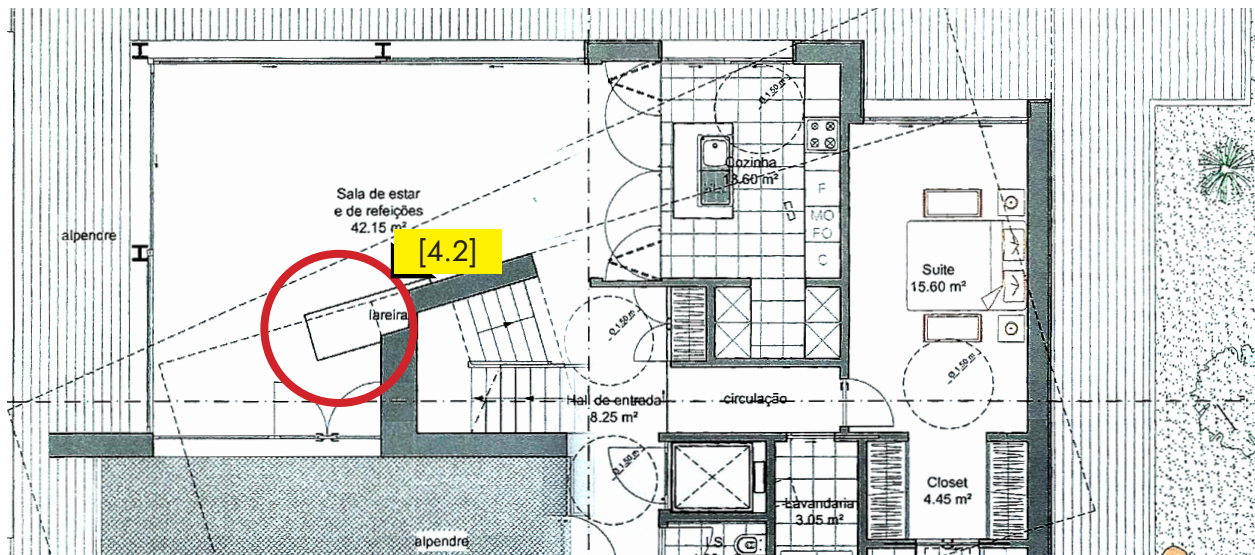


Using a fireplace connected in this way is a danger for the health and life of the people in the house!

4.2.2. The fireplace cladding has not been thermally insulated on the inside - the plasterboard should be protected from the heat on the inside.

4.2.3. The fireplace cladding has two small hot air outlets in the form of grilles above the firebox, however, there is no air inlet, which should be located below the firebox. The inlet supposed to have the area comparable with the outlet. This arrangement does not ensure adequate air circulation inside the cladding and may lead to overheating.

Above, in the suspended ceiling area, the flue pipe passes in close proximity to the electrical cables. Such negligence can lead to insulation melting, fire and even electric shock!



4.3. Water-catching contraption

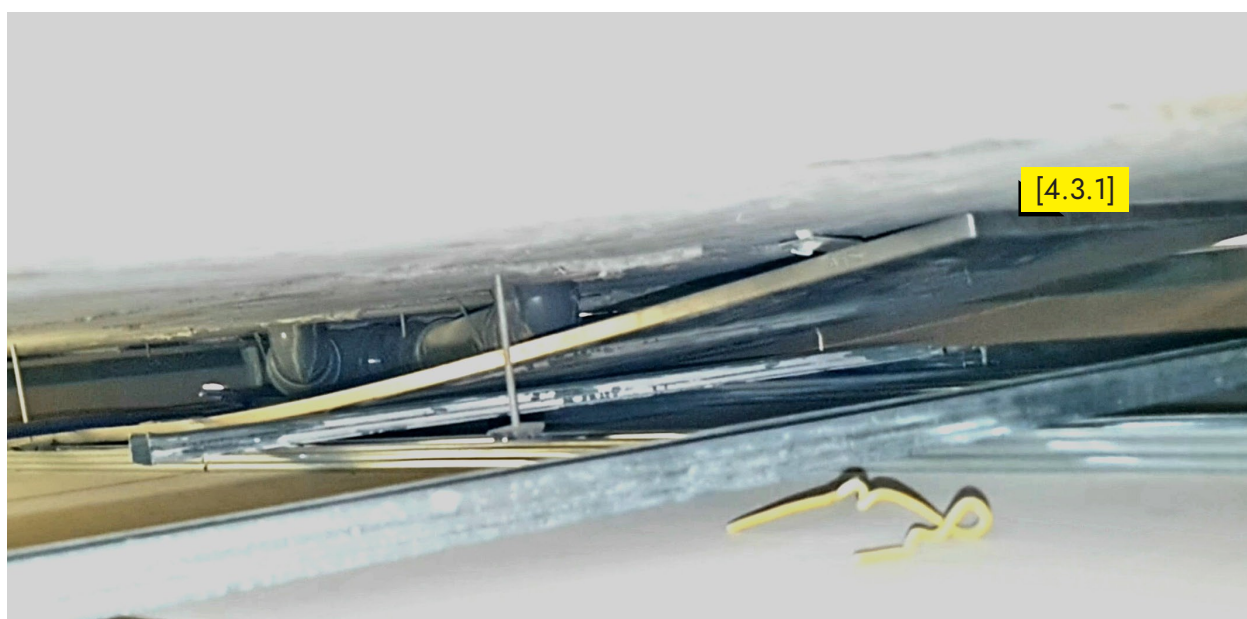
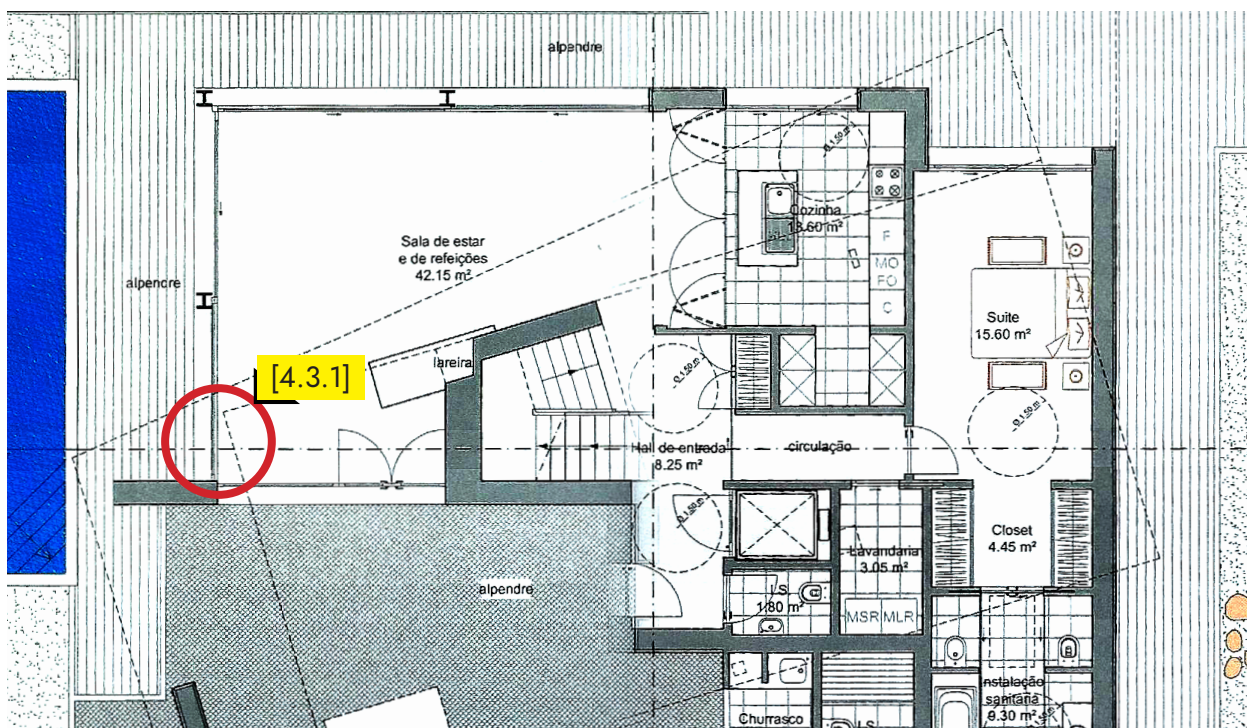
4.3.1. In the south-east corner of the living room, a specific structure was detected hidden above the false ceiling. It consists of a metal tray partly suspended from the ceiling and partly lying on the frame of the suspended ceiling.

The tray is located underneath where the roof and terrace drainage pipes pass through the terrace ceiling. There are clear signs of staining on the pipes [4.3.2].

Presumably this is a device to catch leaks from the terrace that the contractor could not deal with. Instead of sealing the penetrations through the ceiling and fixing the problem, a leak masking device was installed.



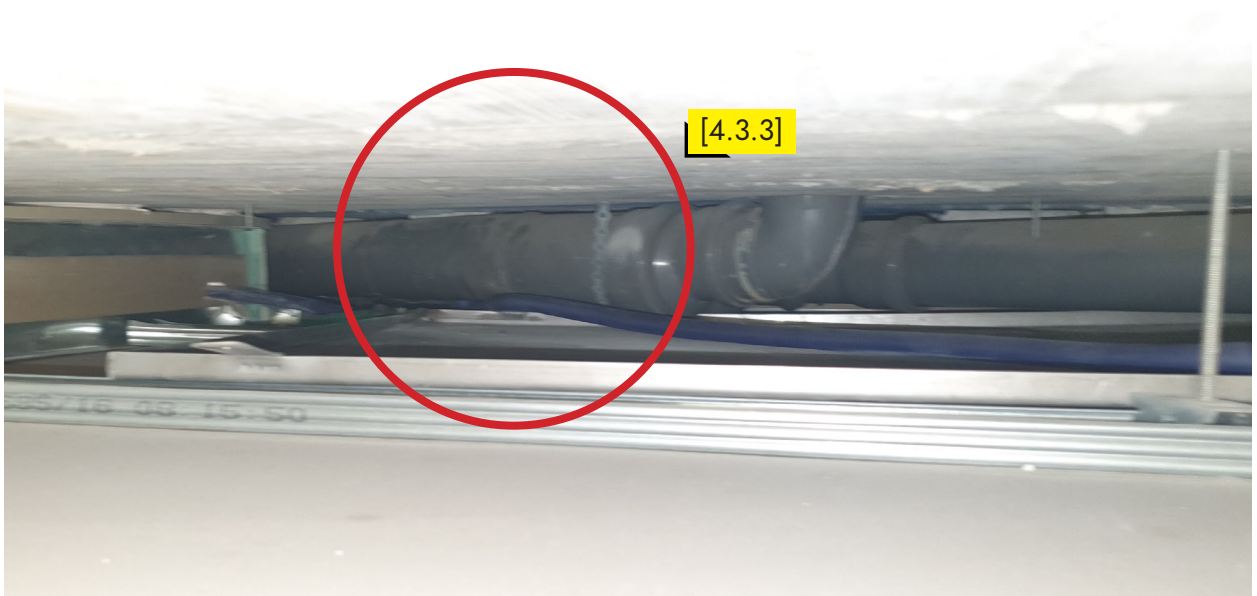
This is an unprecedented, non-technological solution and should not be used in housing.



Space between slab and suspended ceiling surface. Stains streaks are visible.



4.3.3. The drain pipe is bent upwards (counter-sloping), which is not acceptable. This causes dirt to settle in this area and stagnant water in the pipe. The drainage pipes used here are designed to work with a slope.



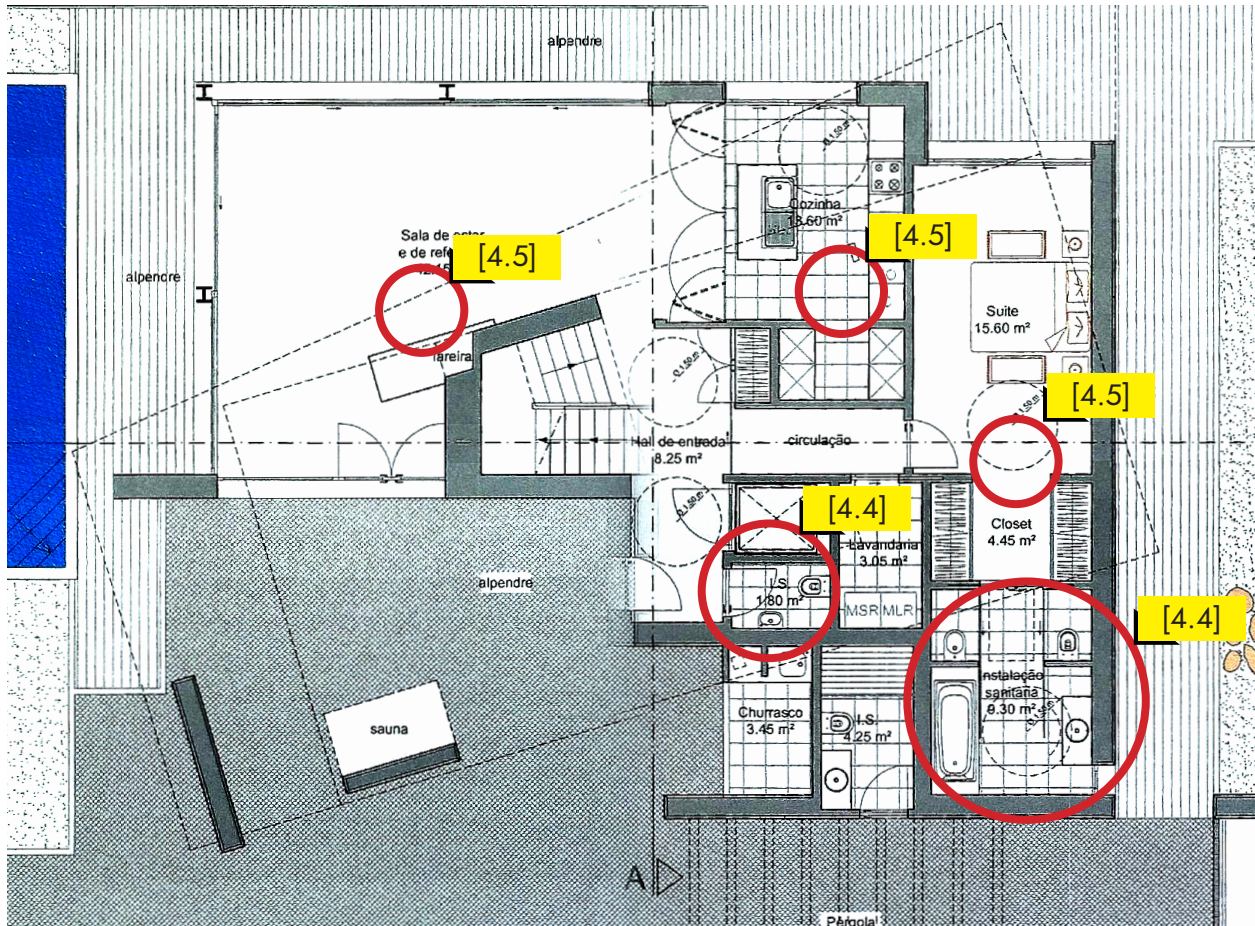
4.4. No ventilation in bathrooms

Neither of the two bathrooms on the ground floor has ventilation ducts.

This is particularly important for the bathroom, which has wide opening for the bedroom.

All odours and dampness will be allowed to enter the living areas and soak the the clothes in the open wardrobe located near by.

The opinion that this is not required when windows are open is not true, as this would mean that during cold or rainy weather, residents would be forced face the weather elements to provide ventilation.

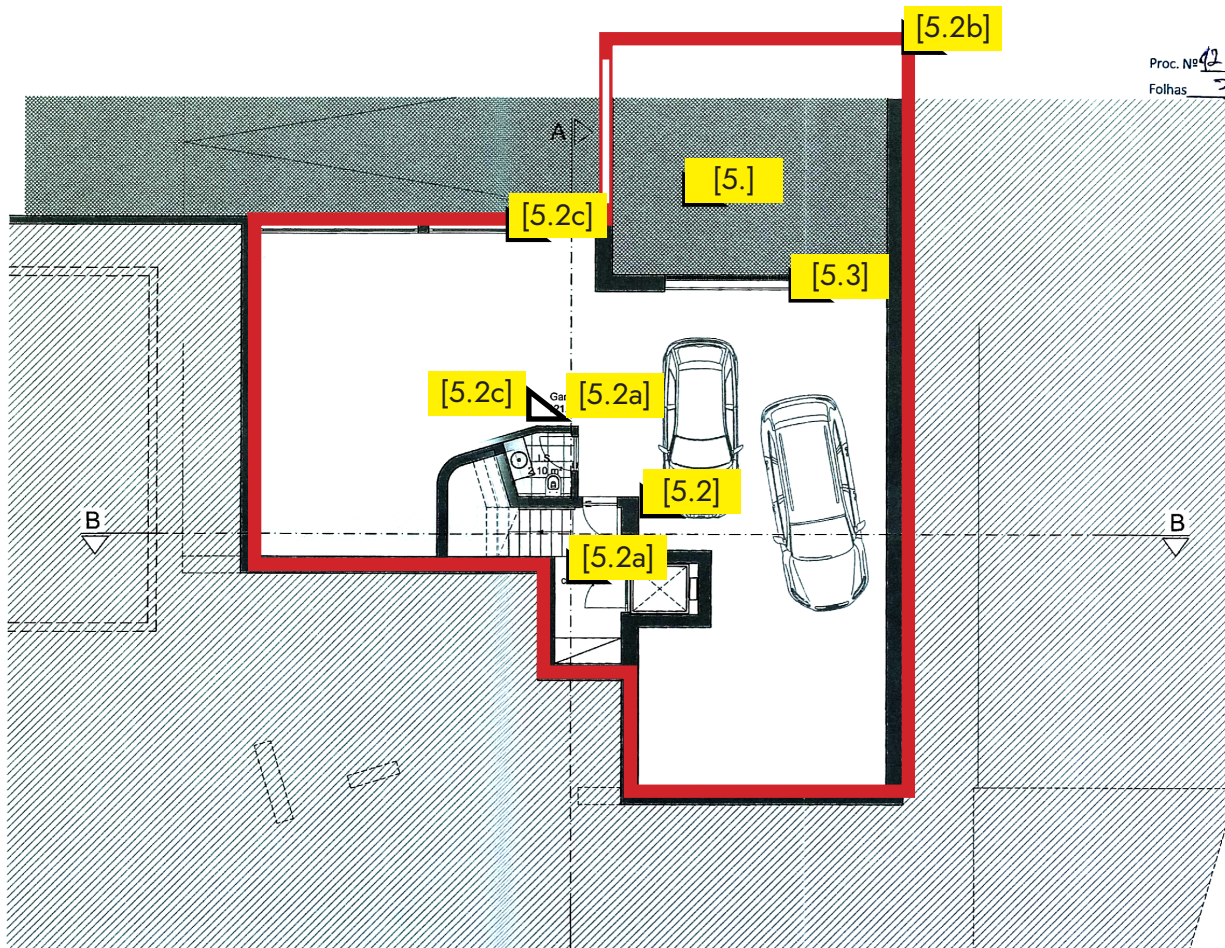


4.5. Air conditioning defects

As on the floor above, on the ground floor, there is air-conditioning system were installed built-in in the walls, the false ceiling and in the wardrobes. None of them has an inspection opening to access the junction box. In the event of a malfunction or the need to make adjustments, it will be necessary to drill a hole in the wall or dismantle the wardrobe.

5. THE BASEMENT

The actual shape and size of the basement differs from that shown on The Project. The basement is enlarged by the area marked on the drawing.



5.1. No ventilation in bathroom

As the other bathrooms in the house, also the basement bathroom has no ventilation ducts. The basement bathroom also has the shower, so the amount of moist could be substantial. This bathroom does not even have a window to let the fresh air in and let the moisture out. There is no ventilation at all.

5.2. Moisture in walls and floors

The main problem in the basement is dampness. There are stains on the floor, damp patches on the walls – mainly in the corners. Poor horizontal damp protection of the floor and walls thus capillary seepage through the walls are responsible for this dampness.



To hide the dampness on the walls, they were covered with polystyrene boards and painted [5.2c]. This solution does not solve the problem. It only traps moisture in the wall, which promotes further wall degradation and the growth of fungi and mould, the spores of which are harmful to health!

There are also damp patches on the ceiling [5.2d].

All of the above despite the high-capacity industrial dehumidifier installed by the owner and running daily.





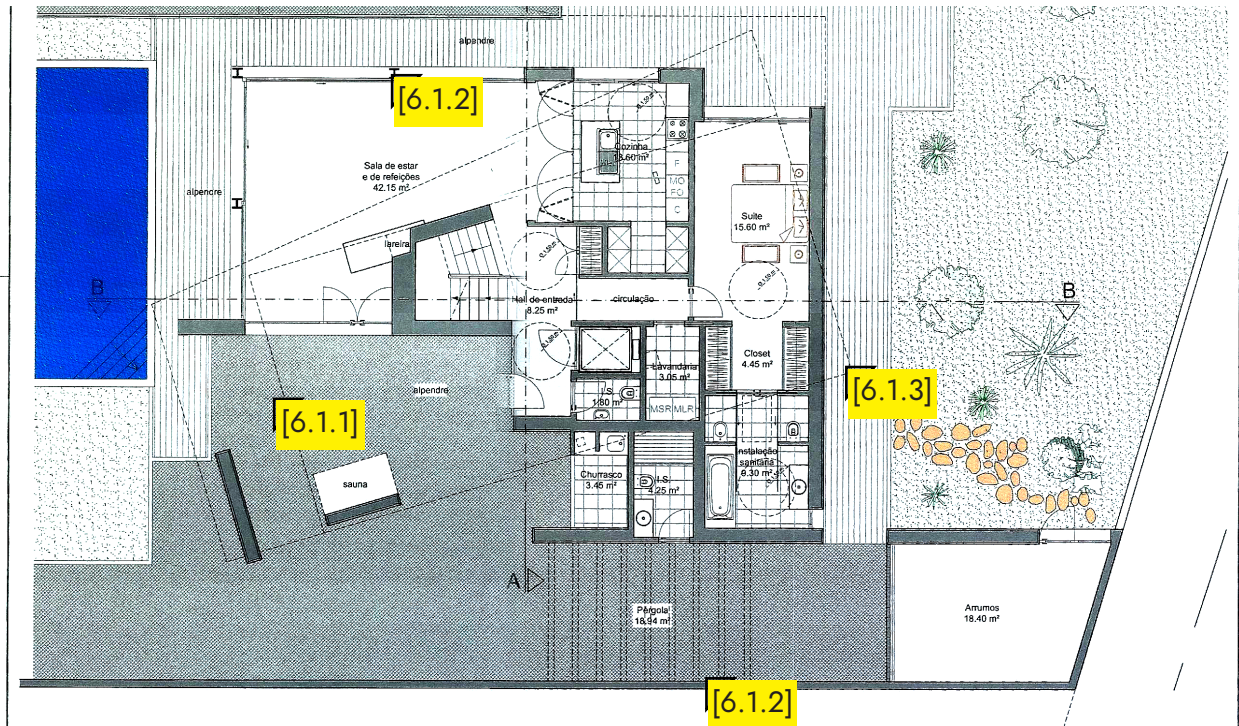
5.3. Cracked floor

The concrete screed is cracked in many places. Moisture stains can be seen in the cracks.



6. EXTERNAL WALLS

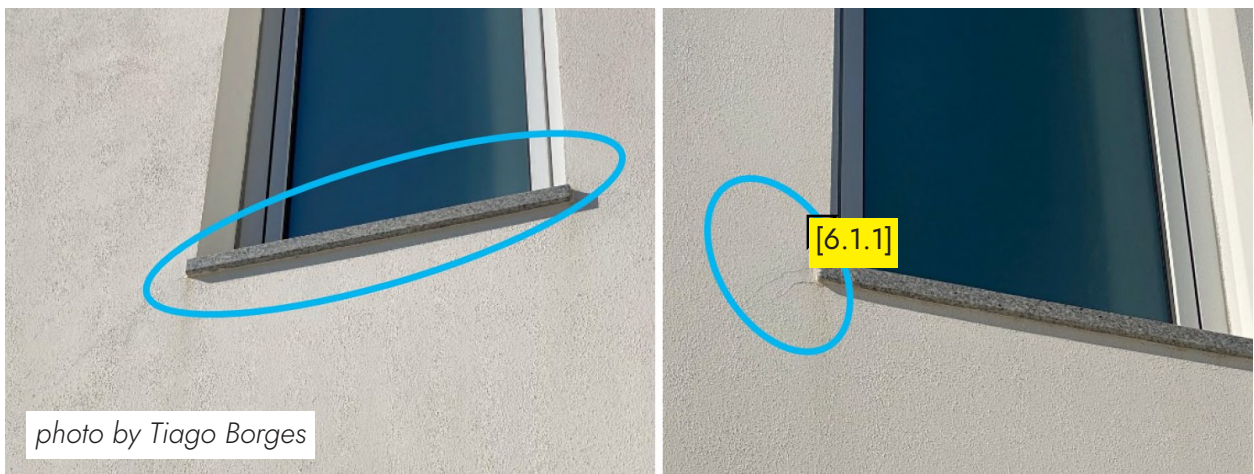
External walls have defects in design and workmanship, resulting in cracking and damp patches. Walls and fences have no copings. Plasters and paints appear to be of poor quality.



6.1. Cracks and stains

6.1.1. Cracks in the façade around the window openings.

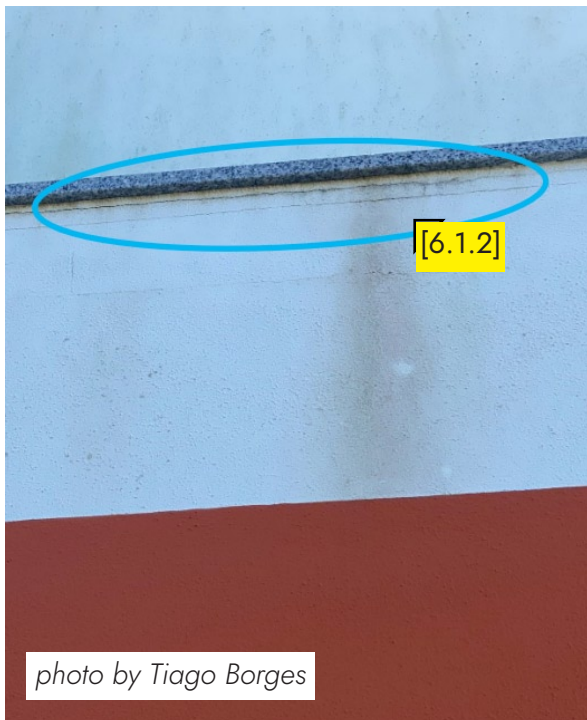
The main cause of their formation is the lack of diagonal reinforcement in the plaster layer.



The stone copings and window sills do not have throating (drip channels), thus the water flows along the walls and soak it. There are a lot of evidence of water penetrating house walls and fence walls.

6.1.2. Cracks below top of walls and masonry.

Caused by water penetration due to missing or poorly executed copings, wall settlement and stresses arising at the boundary between different materials.



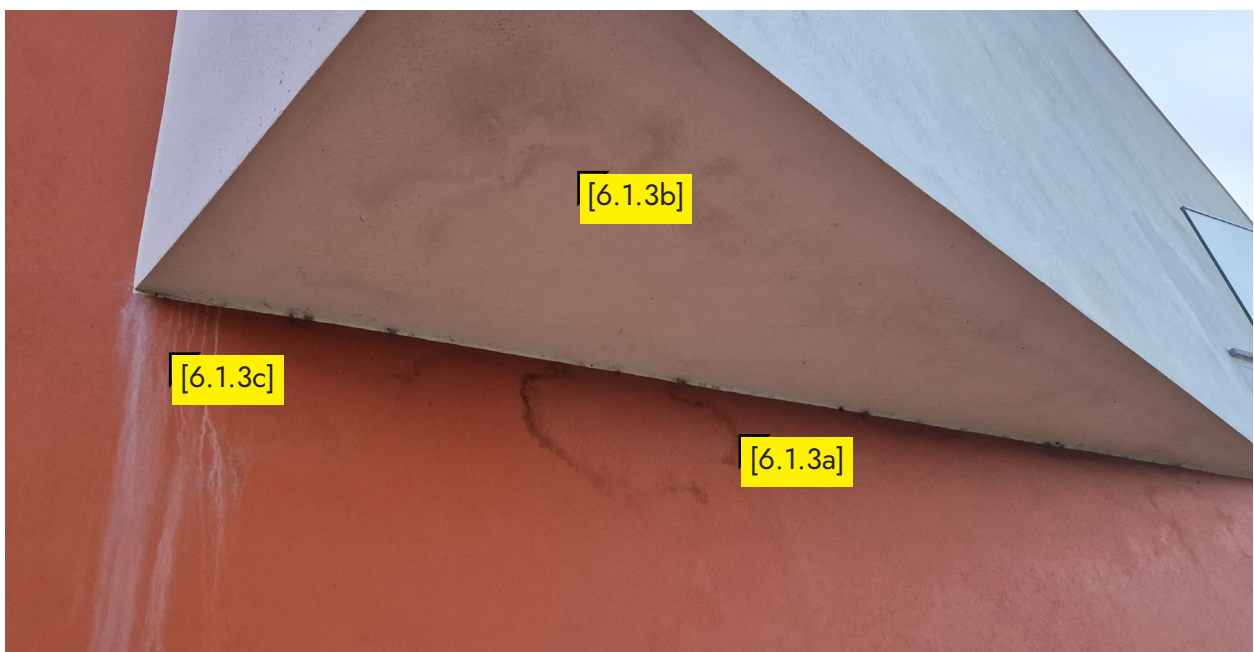
6.1.3. Discolouration and staining on the facade.

6.1.3a This is a possible exudation of water accumulated on the ceiling from a leaking terrace.

6.1.3b Stains from rainwater running off the walls. The water from the rain streaming down onto the horizontal surface instead of dripping off the edge of the wall.

6.1.3c Staining from rainwater washing out plaster/paint. Possible site of leaking water accumulated on the ceiling from leaking terrace covering.

The greenery and fungus in the north is either faulty plaster or a lack of a fungicide and algacide, the use of which is currently standard in the building industry.

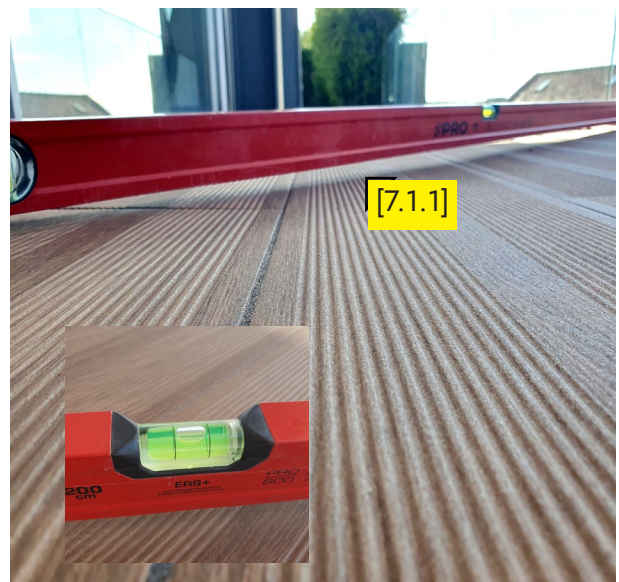
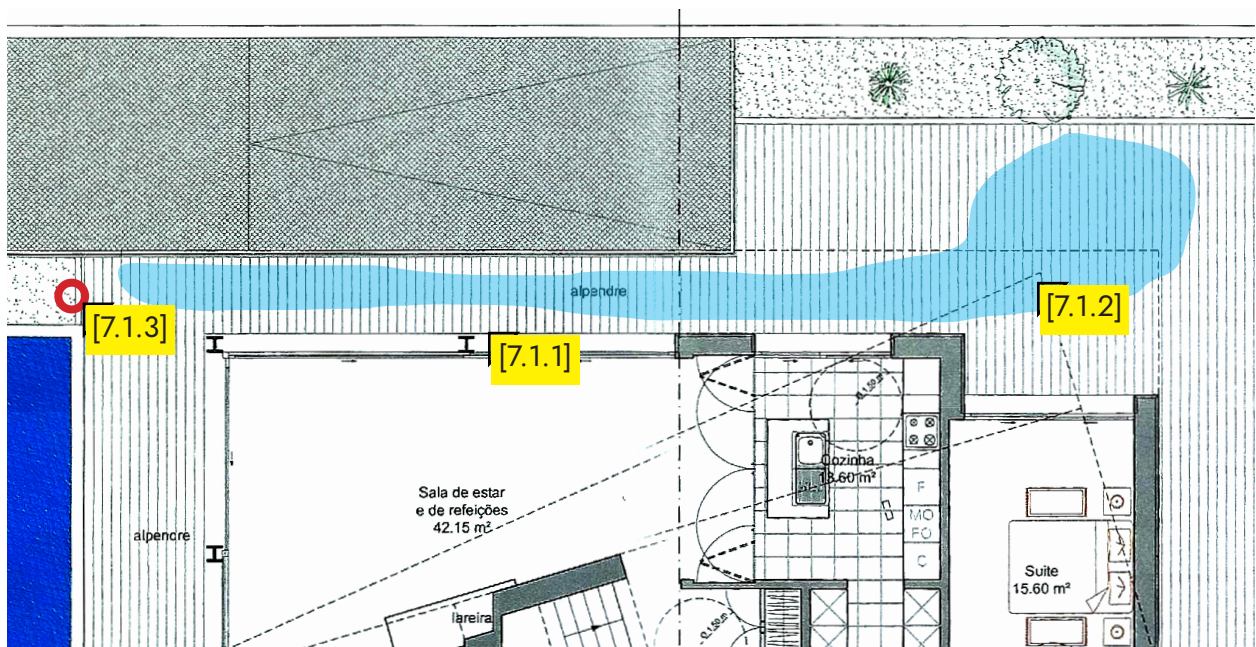


7. THE PATIO

The patio drainage is inadequate. Tiling work has been carried out negligently, copings and window seals are missing.

7.1. Patio profile and drainage

Patio surface on wrong profile – it forms a trough, there is no slope [7.1.1]. As a result, rainwater floods the patio in large puddles [7.1.2]. Excess water running off the patio is not drained anywhere. Therefore, the water has washed out a hole in the lawn [7.1.3], through which it runs off, washing up on the edges of the patio and the pool and on into the area of the underground pool pumping station room.



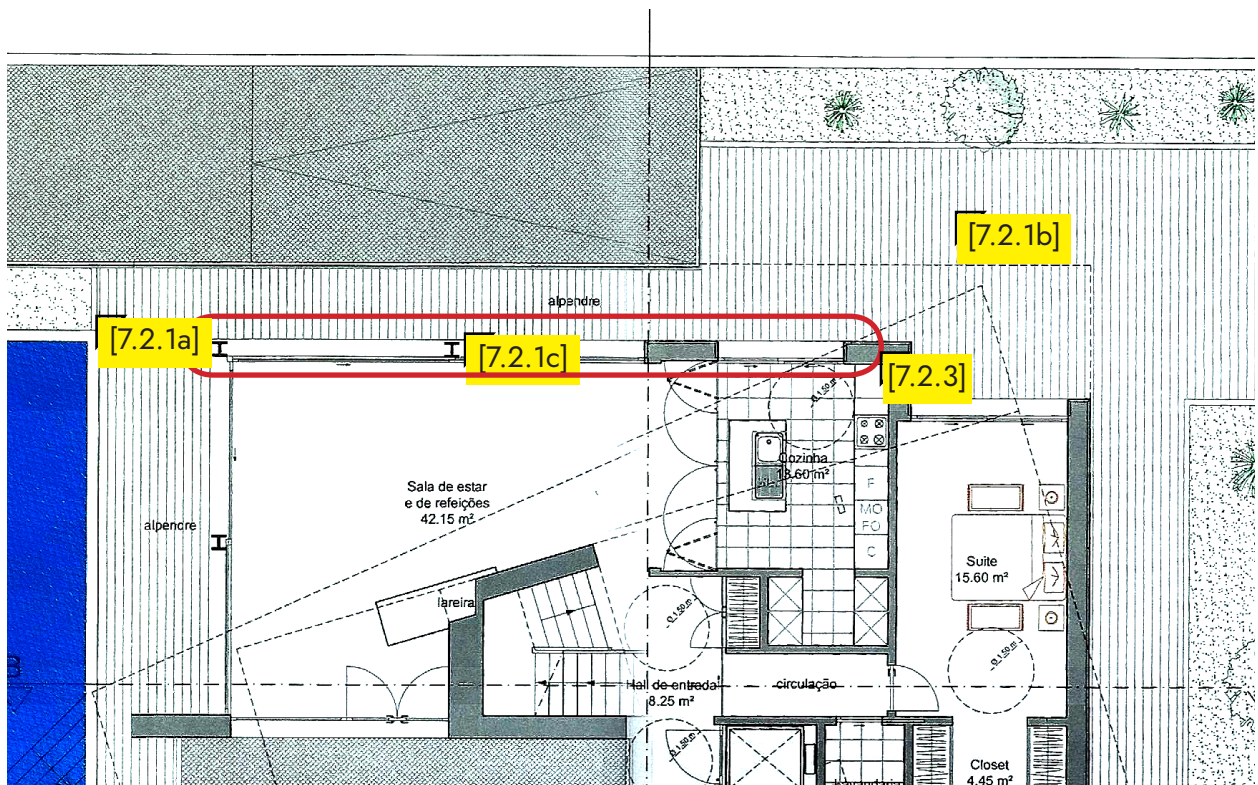


7.2. Poor quality of work, sealing deficiencies

Grout is chipping all over the patio and water is seeping into the adhesive layer. Some tiles are falling off. [7.2.1a] Tile cracks are visible on the structural pillars [7.2.1b]. There are also visible signs of corrosion around the pillars [7.2.1b]. Water stains are visible on the walls of the building [7.2.2].



7.2.3 The sealing of the window openings is done extremely carelessly and in an extremely damaging way. Sealing is missing in all areas where the window drains are located! Thus, all the water that runs off the surface of the windows is introduced directly between the wall and the tiles!



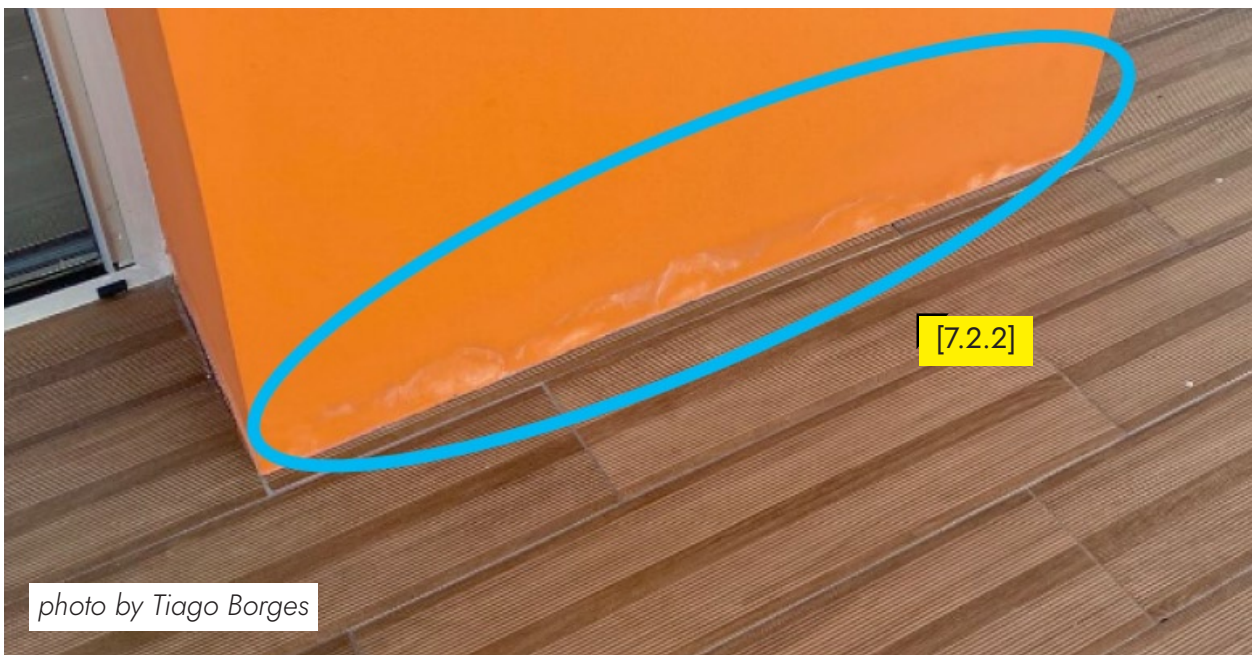
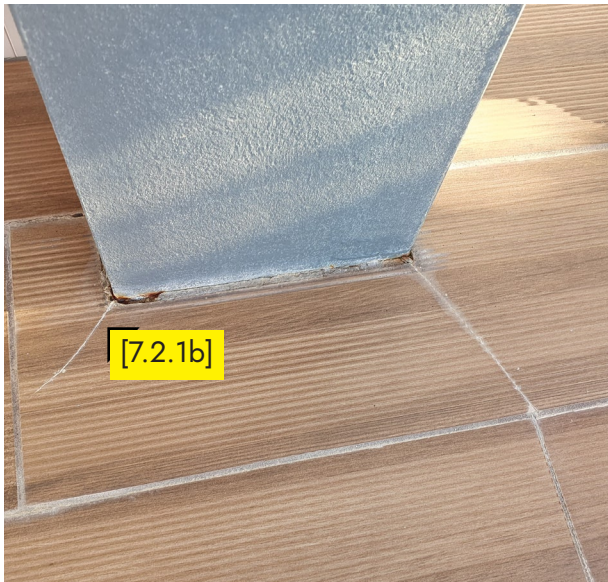


photo by Tiago Borges

7.2.3. Extreme negligence in sealing the patio windows.

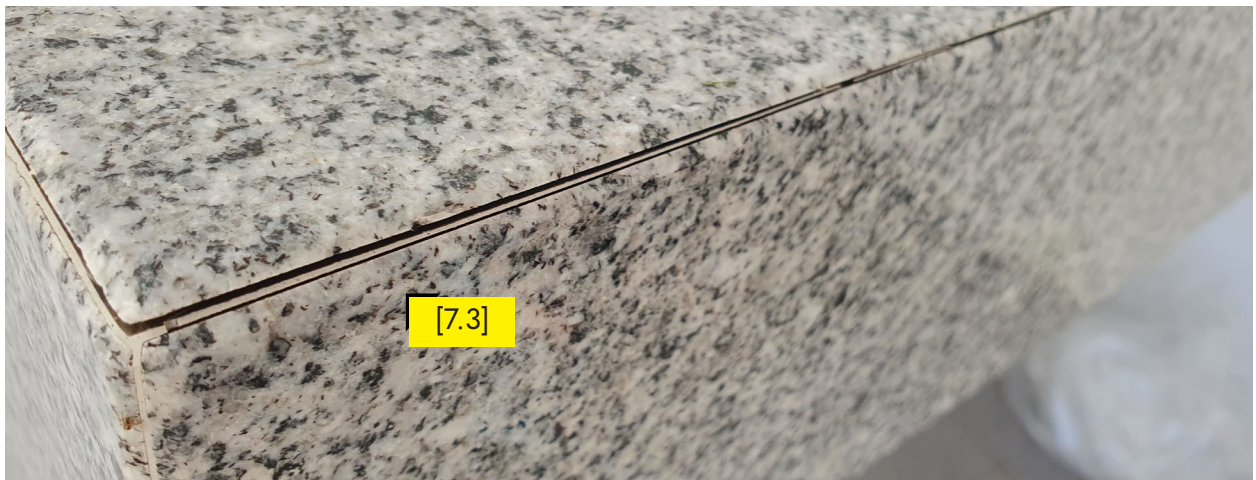
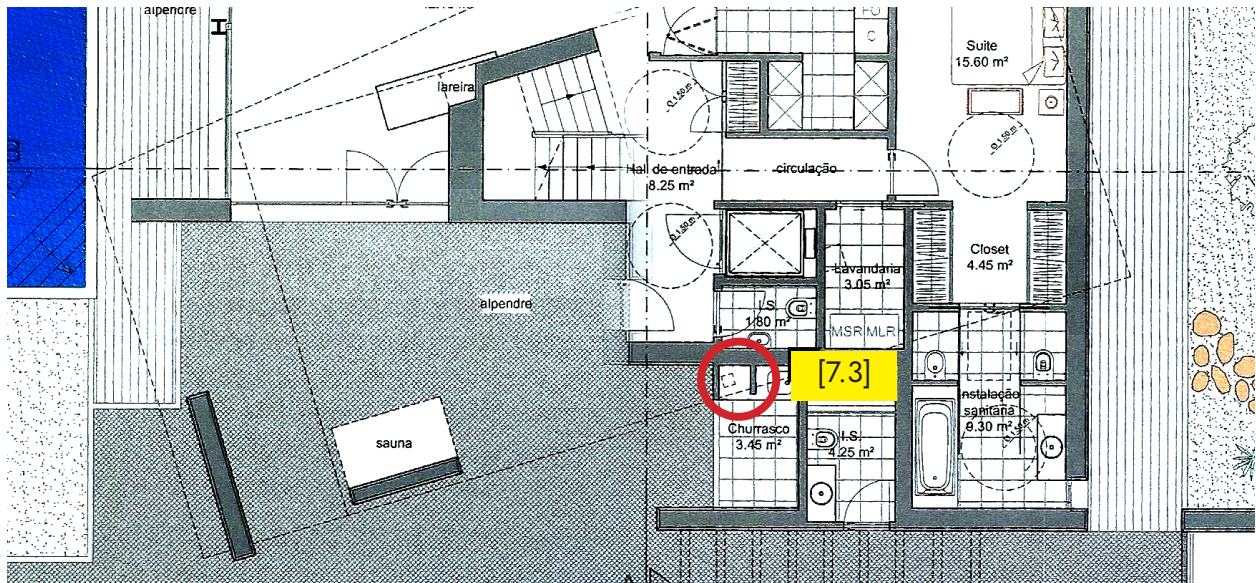


7.3. Work top next to the grill

The kitchen worktop located on the patio is made of granite. Large cracks are visible at its joints. There is a concern that the front piece will fall off completely.



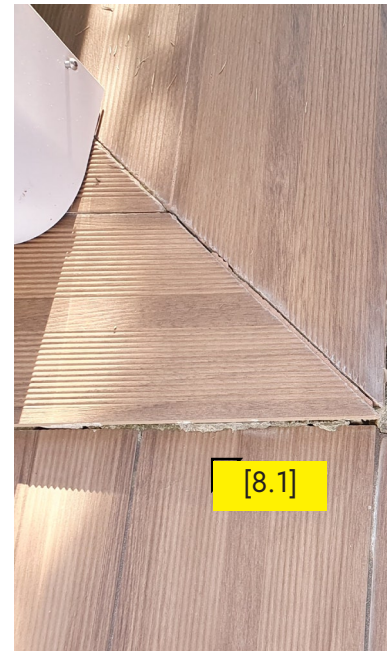
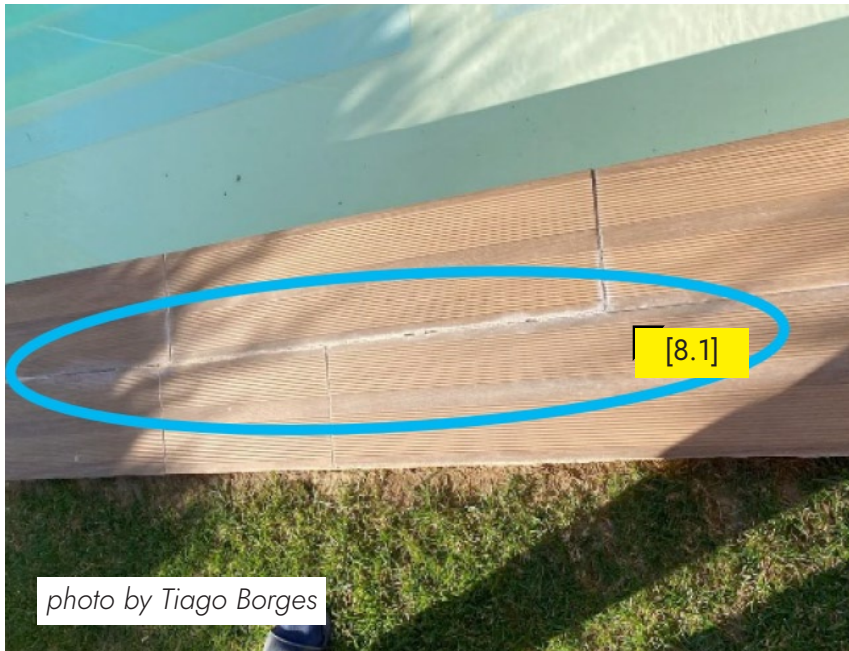
The granite pieces are very heavy and have sharp edges. If they fall off, they could seriously injure the person using the countertop.



8. THE SWIMMING POOL

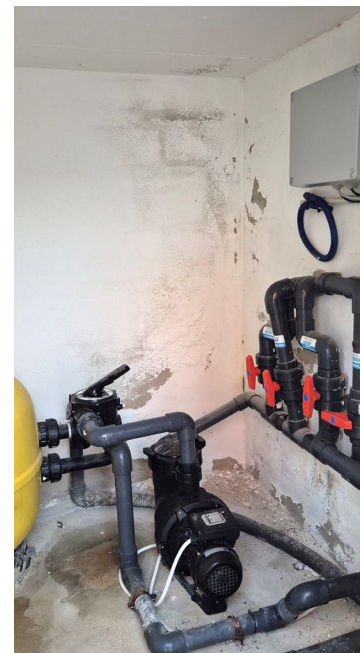
8.1. The edge of the pool.

The edge of the pool is tiled in the same way as the patio. The same mistakes as on the patio are repeated - the tiles are coming off, the joints are chipped.



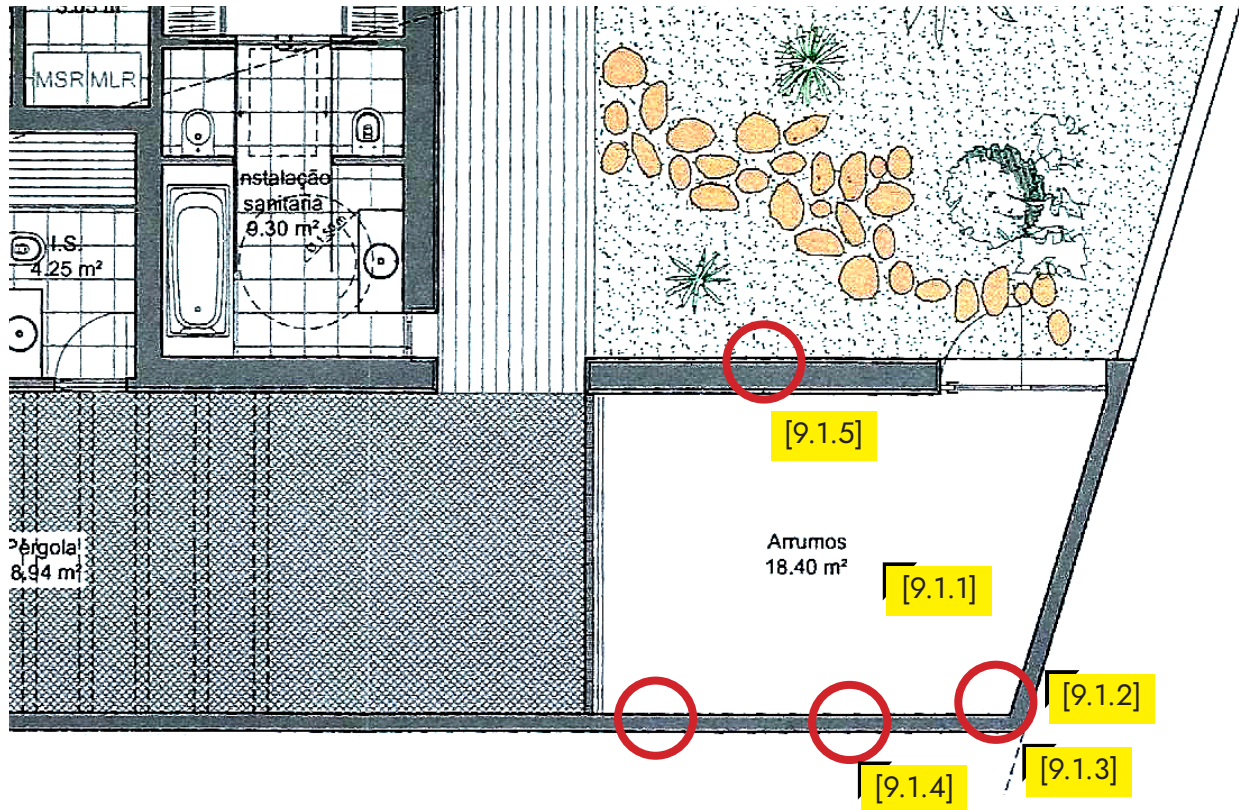
8.2. The pumping compartment

In the pool pumping compartment, the walls are damp and cracks are showing on the walls and ceiling. Plaster and paint are falling off the walls.



9. OUTBUILDING

A small house is built next to the house. It is connected to the main house by a concrete pergola. A number of anomalies were discovered in this building, such as rainwater leaks from the roof, dampness in the walls, cracks in the attic copings and roofing errors.



9.1. Exterior

9.1.1. Improperly welded roofing felt. The visible strip without mineral sprinkling is the overlap for welding and should be welded across the width.



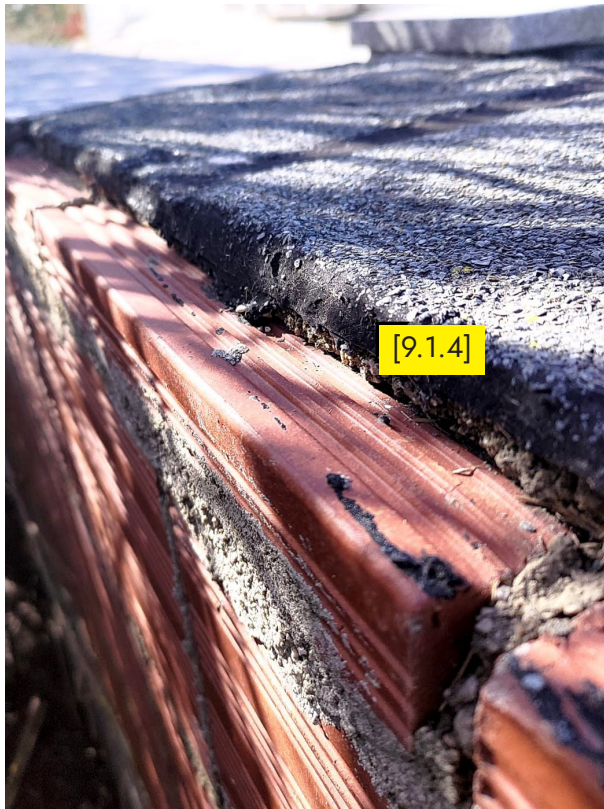
9.1.2. Cracks at the connection of the attic to the walls of the pergola and the house.



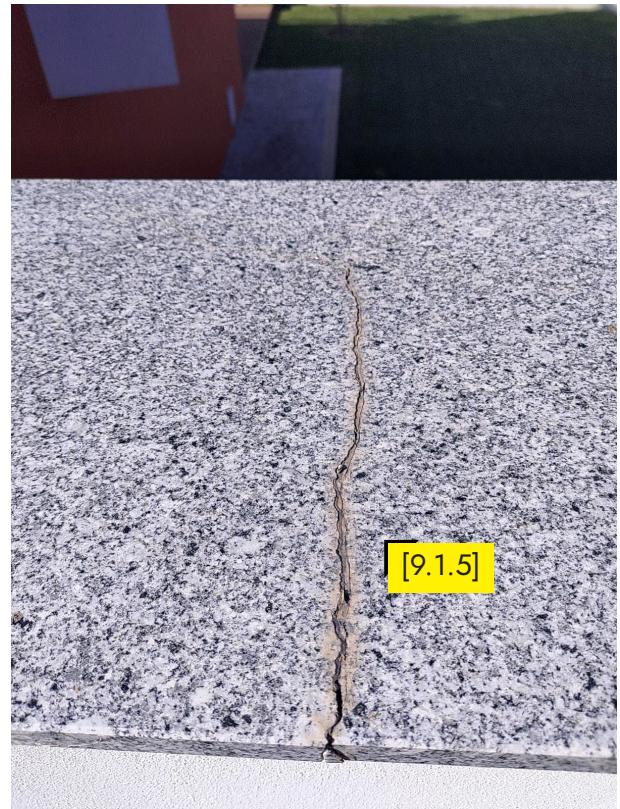
9.1.3. Lack of capping on the wall on the east side, roofing felt not properly welded.



9.1.4. Lack of proper capping on the wall on the east side, unprotected areas where water penetrates the wall.



9.1.5. Cracks on the stonework on the attic wall.



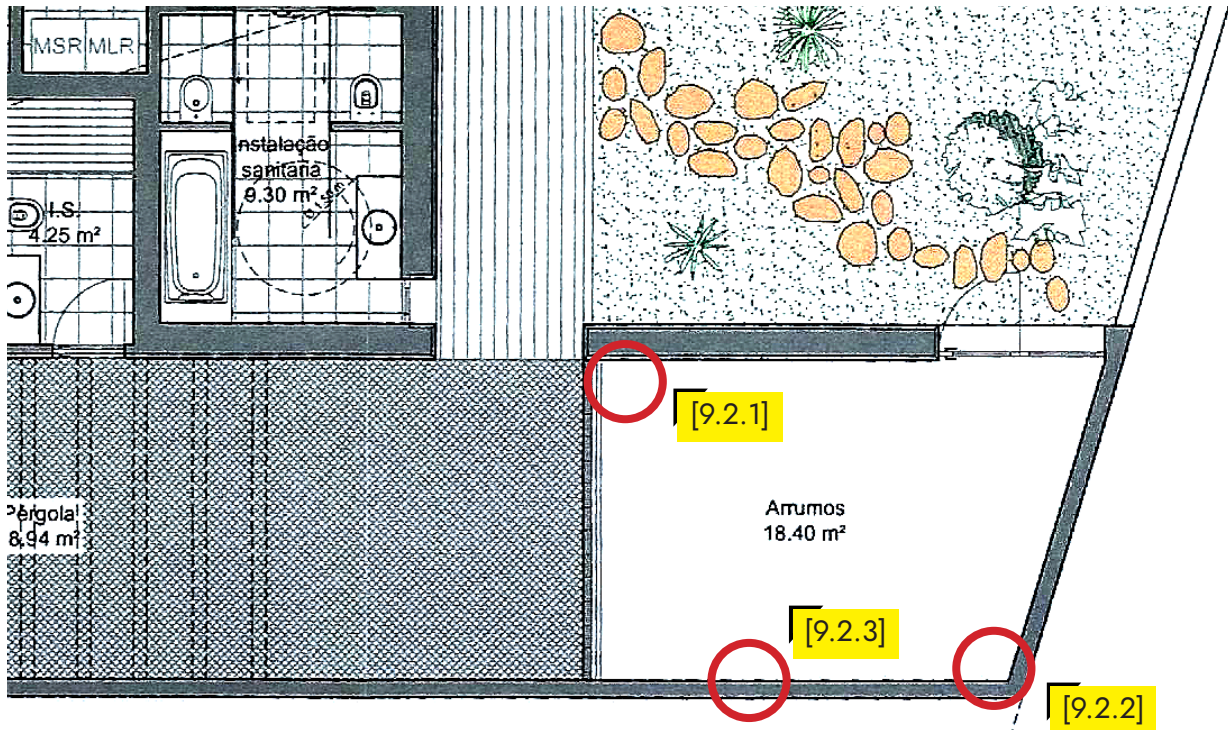
9.1.6. Complete lack of plaster and waterproofing on the east wall.

9.1.7. Cracks in the north-east corner.



9.2. Interior

The humidity is high throughout the room and there is a distinct smell of mould. Furniture and furnishings left here are covered in mould and mildew. The covers of the garden furniture have an unpleasant musty smell.



9.2.1. Visible signs of flooding - the rainwater is penetrating from the roof. Fungus and mould developing on the walls and ceiling.



9.2.2. Damp patches on the walls. Green algae growth in plaster.



9.2.3. Crumbling plaster, soggy paint coming off.



10.

KEY PROBLEMS

The inspection carried out revealed a significant number of technical problems occurring in the house. Some of these problems need to be addressed immediately as they contribute to the structural deterioration of the building or pose a risk to the safety of the occupants.

10.1. Leakages and their consequences

As a result of numerous leaks, rainwater enters the house. This causes the walls and ceilings to become saturated. The water causes the plasterboard to bulge, which will lead to irreversible degradation. The stone of which the basement staircase is made has become saturated with water, resulting in long-lasting stains. Continuous dampness causes plaster to crumble and fall off. Evaporation of water from soggy walls and ceilings raises the humidity in the rooms.



These factors stimulate the growth of fungi and moulds in hard-to-reach spaces (for example, between the ceiling and the false ceiling). Their spores then persist in the air, which is very harmful to human health and can cause allergies and serious illnesses (e.g. aspergillosis, asthma and many others).

As a result of the flooding, a significant amount of furnishings and furniture were damaged, including a large kitchen door, kitchen worktop, wardrobe in the hallway, carpets, pendant lamp fixture in the dining room. In addition, the roller blind in the ground floor bedroom was covered in mould.

10.2. Lack of ventilation

Excluding the mechanical kitchen hood above the cooker, there is no effectively functioning ventilation throughout the house.

This is particularly important for bathrooms, where a large amount of water vapour is generated. This vapour spreads through the rooms and causes further dampening of the furnishings. This supports the growth of mould with all the consequences described above. In addition, unpleasant odours from the toilets spread throughout the house.

As mentioned earlier – the opinion that ventilation ducts in bathrooms are not required when windows are available to open is not true, as this would mean that during cold or rainy weather, residents would be forced face the weather elements to provide ventilation.

The relevant building standard *Portuguesa Standard NP 1037-1 2002* defines the ventilation of living spaces and, in particular, the conditions under which windows can be considered part of the ventilation system.

10.3. Faulty fireplace

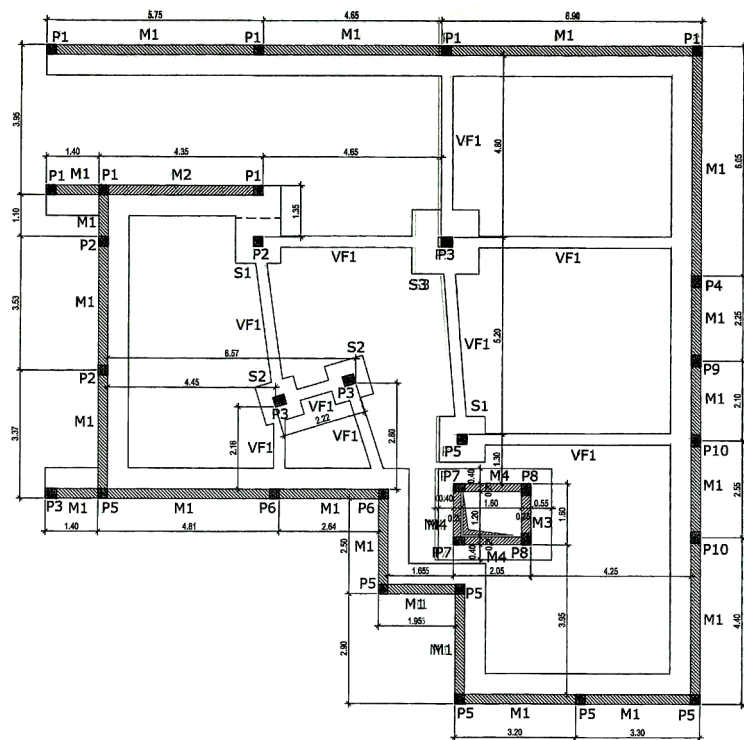
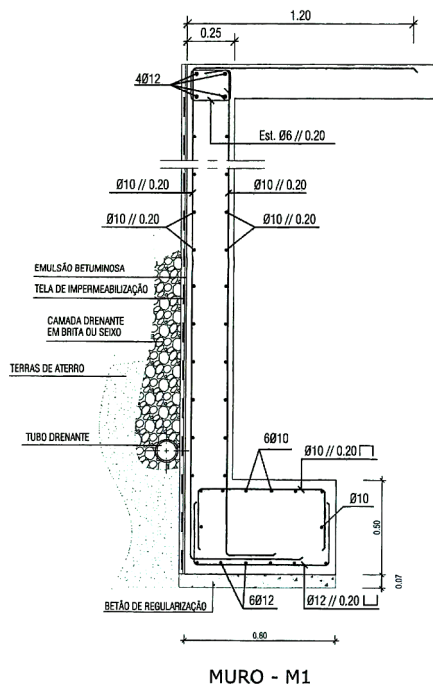
The fireplace has been built extremely wrong, in breach of many building regulations.

In its current form, it should absolutely be taken out of service!



Using a fireplace in present form and state is a danger for the health and life of the people in the house!

It is likely that the perimeter drainage around the house was not built as envisaged in The Project. The large amount of dampness in the basement walls and floor seems to confirm this. No drainage outlets were found during the inspection - neither in the manholes nor outside within the stone slope on the northern boundary of the plot.



End of the report.