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EXAMPLE FIVE – Property Survey Extract

GENERAL GEOTECHNICAL/SEISMIC INFORMATION:

Geotechnical Information

From an examination of the official "Mappa Geologica della Toscana", which classifies Tuscan soil types, the estate's terrain appears to be essentially comprised of clayey, limy soil, conglomerates and sandstone.

More specific information on the nature of the areas is found by examining the Municipal Structural Plans (PSC) of ********** and *****.

Municipality of **********:

From an examination of the "Geomorphological Hazards Map" taken from **********'s Municipal Structural Plan (PSC), the property terrain which falls in this municipality is classified as follows:

Terrain on which **Borgo ********* and **Podere ****** have been built:

- Lithoid soil, mostly unbroken and structured on inclines of less than 10%

- Lithoid soil, mostly unbroken and structured on inclines of between 10% and 50%

Terrain on which **Podere ******* have been built:

- Clayey silty and detrital soil composed mostly of clay and structured on inclines of between 5% and 15%

In the immediate vicinity:

- Clayey silty and detrital soil composed mostly of clay and structured on inclines greater than 15%

- Lithoid soil, mostly unbroken and structured on inclines of less than 10%

- Lithoid soil, mostly unbroken and structured on inclines of between 10% and 50%

Terrain with no buildings essentially composed as follows**:**

- Lithoid soil, mostly unbroken and structured on inclines of less than 10%

- Lithoid soil, mostly unbroken and structured on inclines of between 10% and 50%

Some isolated sections are instead classified as follows:

- Clayey silty and detrital soil composed mostly of clay and structured on inclines of less than 5%

- Clayey silty and detrital soil composed mostly of clay and structured on inclines of between 5% and 15%

- Clayey silty and detrital soil composed mostly of clay and structured on inclines of greater than 15%

There is a small active landslip 150 metres from the public road (sheet 82 - small portion of parcels 36-38-35). This will require some monitoring but does not pose any considerable risk as the closest building is 500 metres away.

There are also three small embankment areas that are not cause for concern as the areas are not active.

Comune of *****:

From an examination of the "Geomorphological Hazards Map" taken from *****'s Municipal Structural Plan (PSC), the property terrain which falls in this municipality is classified as follows:

Terrain on which the **Castel ****** buildings have been built:

- Clayey silty and detrital soil composed mostly of clay and structured on inclines of greater than 15%

Terrain on which the ******** buildings have been built:

- Clayey silty and detrital soil mostly composed of clay and structured on inclines of greater than 15%

Terrain with no buildings essentially composed as follows**:**

- Clayey silty and detrital soil composed mostly of clay and structured on inclines of between 5% and 15%

Earthquake classification

The area comprising the estate is classified as an area subject to risk of seismic activity at level 3s (the entire Italian territory is divided into seismic risk areas ranging from 1 to 3). This 3s classification is halfway between 2 (medium risk) and 3 (low risk).

This classification is a general classification in accordance with the current earthquake regulations.

Future rebuilding works will require specific geological investigations/analyses, based on the nature of the works to be carried out.

STRUCTURES OF THE PROPERTY AND GENERAL STATE/CONDITION OF MAINTENANCE:

Please note: these searches are limited to technical inspections which do not involve any invasive checks which could damage the property.

BUILDINGS IN THE COMUNE OF ********:**

- Borgo ********:**

The main weight-bearing structure of the building is comprised of stone and brick masonry, with facades in part exposed stone and in part plaster.

The inter-floor horizontal structures are comprised of wooden beams and joists with brick tiles or brick-vaulted ceilings for some of the ground-floor rooms.

Some ceilings have recently been rebuilt with the wooden structures being replaced by steel girders and brick or brick and cement blocks.

Some of the Villa ceilings have been reinforced with the addition of steel girders alongside the original wooden beams.

The sloping terracotta-tiled roof has a wooden weight-bearing structure.

CLARIFICATIONS AND NOTES:

1.Villa

With regards to the building as a whole, the cracks found do not show signs of developing. The minor cracks present are considered normal for a structure of this kind; many of the cracks found are in areas where wooden structural elements are placed, and which by nature undergo a certain amount of bending and flexing, often causing these kinds of fissures in the stonework. (photo 1)

The roof structure, modified over the years, shows signs of water penetration, but no damage to the wooden structures. (photos 2-3)

However, considering the age of the structure, it would be a good idea, in the event of any restructuring work (e.g. laying of insulation, etc), to replace many of the joists, in order to bear the weight of any additional loads.

Recent renovation work including the new lift shaft and renovation of the second-floor bathrooms has been carried out in this building. The cracks described above can be attributed to movement in the original structure caused by the work carried out.

When modified, masonry structures tend to automatically recover their equilibrium and stability. However, these adjustments inevitably lead to the formation of cracks and fissures.

The terrace accessed from the sauna room will need to be reinforced/rebuilt as it is unstable.

2.Offices/underlying storerooms

The first floor of the building housing offices and storerooms is in good condition; even the wooden structures of the unfinished/rustic section, which do not show any signs of humidity or structural damage.

The storerooms under the offices are in part sunken and have vaulted ceilings. Considerable water seepage and humidity is evident in some areas positioned against the earth, with the risk of possible deterioration of materials which could in turn compromise the stability of the ceilings, which already show some, albeit modest, cracks. Work must therefore be done to fix this water penetration (replace Villa courtyard drains, and potentially construct a perimeter drain channel on the courtyard side). (photo 4)

3.Six apartments

This part of the building is also generally free of cracks, while some ceilings, where renovation work and modifications have been carried out above, have undergone bending/flexing due to the subsequent increase in weight. In these cases, it would be advisable to replace certain structural elements, especially those affected by humidity (caused by leaks from the bathroom drainage). (photo 5)

4.W*ine cellar*

The wine cellars have brick walls and brick barrel-vaulted ceilings in good condition, considering that this is an underground structure and therefore situated in a damp environment.

No evidence of present or past cracks was found. (photo 6)

5.Frantoio (olive press)

The brick vaulted ceilings are in good condition.

No evidence of present or past cracks was found.

6.Villa pool

The pool does not show signs of structural problems: there are some minor cracks in the base, probably due to the annual emptying and refilling of the pool.

These cracks do not compromise the structural stability of the pool but can instead compromise the water resistance/surface seal (photo 7). This problem could be resolved with the application of a heat-welded PVC coating or by means of complete plastering and repainting of the internal surfaces with suitable material.

……..section missing ……..

BUILDINGS IN COMUNE OF *****:**

- Podere *******

The main weight-bearing structure of these buildings is comprised of stone and brick masonry, with exposed stone and brick facades.

The inter-floor horizontal structures are made of wooden beams and joists with brick tiles.

The pitched roof has a wooden weight-bearing structure and is finished with terracotta tiles.

CLARIFICATIONS AND NOTES:

Section A

There are no evident signs of serious structural instability. The cracks around the main beams of the roof, probably due to contraction and deformation of the wood, are entirely normal for buildings of this kind.

(photos 25-26)

Section B

Recent restructuring work has been carried out on the ground floor, with the shifting of certain internal weight-bearing walls. No evidence of subsidence was found.

Two bathrooms have recently been constructed in the central section on the first floor. The increase in load on the wooden floor has led to a natural warping in the floor structure and a series of horizontal cracks along the walls of the new bathrooms on the first floor, and a partial break in the terracotta ceiling blocks on the ground floor.

This warping of the floor was not however prevented by the addition of the steel beam-reinforcements, most likely installed at the time the renovation works were carried out. (photos 27-28)

Section C

This single-level building is positioned on a ridge. A sizeable extension was added at the side of the original section sometime around the 1980-1990's.

The evident and sizeable cracks found are likely due to shifting of the land, caused by the increased load following the aforementioned extension works. This hypothesis is supported by the fact that these cracks appear to have stopped evolving around 15 years ago.

In this instance, both the building's structure and foundations need considerable renovation work. (photos 29-33)

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Section A

The main weight-bearing structure of the buildings is comprised of stone and brick masonry, with exposed stone and brick facades.

The inter-floor horizontal structures are comprised of concrete joists and bricks, with plastering of the underlying surfaces.

The inclined roof has a weight-bearing structure comprised of concrete joists and large perforated blocks and is finished with terracotta tiles.

CLARIFICATIONS AND NOTES:

The recent restructuring involved the total renovation of the roof and all floors. The roof structure is comprised of concrete joists and large perforated blocks supported by some brick walls placed under the joists, which serve to distribute the load directly onto the attic floor. The structure as it is, despite being in good condition and recently renovated, would not withstand any seismic activity. (photos 34-35)

The structure as a whole does not show any evident signs of structural instability. Considerable cracks are evident only along one wall of the first floor, above the ground-floor kitchen, and there are also some minor cracks on the ground floor. These cracks can also be attributed to a slight shifting subsequent to the renovation works, and caused by the increase in weight and greater rigidity of the new floors with respect to the original wooden structure. (photos 36-37)

The structure appears however to have recovered its equilibrium and "settled".

The roof will need to be reinforced in order to comply with the current earthquake regulations.

Section B

The main weight-bearing structure of this single-level building divided into three apartments is comprised of stone and brick masonry, with exposed stone and brick facades.

The inclined roof has a wooden weight-bearing structure and is covered with terracotta tiles.

CLARIFICATIONS AND NOTES:

The building is positioned on a slope and the façade shows signs of the changes made to the original structure. More evident are the windows that have been filled in and the addition of new windows in the façade overlooking the valley. The combination of these building works has surely contributed to shifting over time and this is shown by the presence of fissures and cracks which are at any rate now "stable".

A considerable crack is however present in the last apartment, where the perimeter wall appears in part to have sunk. This movement has caused the formation of serious cracks in the masonry, floors, and partitioning in this area. (photos 38-40)

The cause could be a result of the land sinking, or subsidence in the structure itself, with a loss of contact between certain stone structural elements, subsequent to the disintegration of the mortar. Both the structure and foundations will however need to be reinforced.

This building is for tourist-accommodation use and therefore needs to comply with the current fire-safety standards (REI30). The wooden ceiling structures will need to undergo fire-proofing procedures where necessary (e.g. fire-retardant paint, false ceilings, etc.) in order to comply with these regulations.

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The main weight-bearing structure of the buildings is comprised of stone and brick masonry, with exposed-stone facades.

The inter-floor horizontal structures are made of wooden beams and joists with brick tiles.

The inclined roof has a wooden weight-bearing structure and is covered with terracotta tiles.

There is a terrace on the roof of section B of the building.

CLARIFICATIONS AND NOTES:

Section A

No serious cracks were found in this building. There is however a horizontal crack in the wall of the west corner, indicating that this corner has sunk. This detachment is probably caused by subsidence of the land as a result of water penetration. There is a damp patch on the external wall, indication of a leak or water seepage.

The west corner and underlying foundations will need reinforcing. (photos 41-42)

Section B

The building does not show any significant sign of structural instability or subsidence in progress. The stonework is in good condition and the recent renovation works have not caused any movement or damage.

Evidence is found only of some cracks along secondary walls constructed recently above the wooden floors and due to the bending of these floors.

This building is for tourist-accommodation use and therefore needs to comply with the current fire-safety standards (REI30). The wooden ceiling structures will need to undergo fire-proofing procedures where necessary (e.g. fire-retardant paint, false ceilings, etc.) in order to comply with these regulations.

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Derelict buildings

CLARIFICATIONS AND NOTES:

The collapsed sections, in addition to very evident cracks, lead to the conclusion that the structures comprising this complex are considerably impaired. Complete demolition of the existing structures will need to be considered if these buildings are to be recuperated. (photos 43-44)

- ******** Warehouses**

The structures are comprised of concrete pillars and steel trusses.

CLARIFICATIONS AND NOTES:

No structural problems were identified.

The asbestos cement roofs will need to be kept under constant supervision. Suitable measures (e.g. painting or coating with other materials) will need to be undertaken as soon as the roofs show signs of deterioration. As a last resort, the asbestos cement roofs will need to be completely replaced and the material disposed of in accordance with the law.

SURVEYOR

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