Bassoul Wissam (M.Sc)
Consultation, Planning and Supervision

[emblem]

Civil Engineering and Constructions

Professional Opinion

Residential Building in Idhna, (West Bank) Block 2, Parcel: 141

Ordered by: HaMoked: Center for the Defence of the Individual

June 30, 2013

I, the undersigned, Bassoul Wissam, was requested by Hamoked: Center for the Defence of the Individual to provide my professional opinion regarding the question detailed below, which arose in connection with the demolition of half of a residential building belonging to the ʻAwawdeh family in the village of Idhna in the West Bank, Bloc 2, Parcel (pi: Plot) 141.

The attached opinion is meant to present the professional facts regarding this residential building.

I am submitting my opinion in lieu of testifying in court and hereby declare that I am well aware of the provisions of criminal law regarding perjury in court. The legal status of this opinion, when signed by me, is equivalent to an oath given in court.

The details of my education:

1. **M.Sc. Magna Cum Laude** in structural engineering from the Faculty of Civil Engineering – Technion – Israel Institute of Technology.
2. **B.Sc.** in Civil Engineering, **with Distinction**, from the Faculty of Civil Engineering – Technion – Israel Institute of Technology.
3. **B.A**. in Geodesic Engineering, **with Distinction**, from the Faculty of Civil Engineering – Technion, Israel Institute of Technology.

Experience:

2002-2014: Director of a planning office for civil and structural engineering.

2002-2005: Faculty (lecturer) in the Faculty of Civil Engineering at the Academic College of Judea and Samaria in Ariel.

2002-2005: Structural engineer and senior consultant in the office of Yinon Engineers in Tirat Hacarmel.

2000-2002: Senior structural engineer in Meissner –Baran Ltd., involved in planning project for industry and offices (Fab 2) for Tower Semiconductor in Migdal Haemek.

1999-2000: Engineer and construction planner in Y.A. Carmel Engineers in Haifa.

1. Guiding Principles in Preparing an Expert Opinion

In order to prepare the opinion, I studied the following professional materials while referring to and comparing them.

5.1. **General specifications for construction works** – published by the Ministry of Defense, Netivot - The National Company for Transportation Infrastructure, and the Ministry of Housing (the Blue Book.)

5.2. **Israeli standards and specifications of the Standards Institution of Israel** – published by the Standards Institution of Israel (SII).

5.3. **Photographs and aerial photos of the existing building.**

5.4. **On site visual assessment of existing buildings.**

2. Preface

This opinion refers to the demolition of half the residential building of the Awawdeh family located in the village of Idhna in the West Bank in Bloc 2, Parcel 141.

Involved is a residential building of two stories with a frame of reinforced concrete. The ground floor is not occupied; it has a reinforced concrete frame, and it is enclosed by structural walls and a system of columns of reinforced concrete.

The first floor serves as a residential floor. It has a reinforced concrete frame, and it is divided by structural walls.

The existing building has two concrete roofs constructed according to a system of a ribbed ceiling stretching in one direction and filled in with cement blocks.

These roofs are molded in a monolithic form and the static scheme continues without any elements causing an interruption in the mold and/or any construction seams of any kind.

Therefore, the question of demolishing half the building requires separation prior to the demolition. This involves determining the location for executing the separation in accordance with the static scheme of the building.

3. **Examination of the question of demolishing half the building and its impact on the roof that remains after the demolition**

As I have pointed out in Paragraph 2 above, the two roofs of the existing building are molded monolithically and have a continuous engineering static scheme.

In the middle of the building there is a stairwell which serves the residential floor above (i.e., the first floor) which contains two separate units.

Additionally, should half the building be demolished, there must be no damage to the stairwell, since it will serve the remainder of the residential floor after the demolition.

As mentioned above, the existing ribbed roof of the building is monolithic and molded in one piece without any seams.

The ribbed roof is characterized by main ribs which absorb the weight and transfer it to the main beams which are hidden and to beams which span the external circumference of the building.

The plan to demolish half the building will cause damage to the continuity of the hidden beams. This will have consequences for the functioning of the remaining roof after the demolition. The demolition will require advanced reinforcement operations for the hidden beams in the remaining half of the structure so that they will continue to function properly without causing cracks and structural damage to the building.

Advanced reinforcement operations before the demolition are also necessary so that the existing roof will continue to function properly, given the change in the static scheme of the hidden beams which extend within the structure.

The part slated for demolition must be isolated and separated from the remaining part in advance in order to prevent severe construction damage and cracks to the roof of the remaining building after the demolition.

Reinforcement and separation works between the sub-building require advanced planning in order to carry out the work on site which will take about one week.

Among other things, attention must be paid to the need to carry out the demolition work in the interface between the two halves of the building by using light mechanical vehicles **rather than bulldozers and heavy machinery** in order to prevent structural damage or cracks in the roof of the building which is not slated for demolition.

4. **Examination of Option of Sealing by Inserting Material into the Building**

In accordance with the directives of Israeli standard 412, the practical additional load beyond the fixed loads in planning a residential building equals 150 kg/sq.m.

Viewing the existing building, one can see that the construction is of less than mediocre quality and the process of building was carried out without proper engineering supervision and using materials that did not receive a standards association stamp.

An additional practical load of about 150 kg/sq.m., which is the Israeli standard for residential building planning, is the maximum load that one can impose on the existing building and even much less than that for the building we are concerned with.

Therefore, a sealing operation whereby materials weighing more than 100 kg/sq.m. are inserted will cause the destruction of the roof of the building and will have a serious negative impact on the half of the building which is not slated for demolition.

The question of the existence of a continuous structural scheme in the roofs of the building will have a reciprocal impact on both parts of the building. Every load at the half and/or any other area will affect the other side and will disturb most of the elements of the beams and ribs in the roof.

5. Summary and Conclusions

5.1. This opinion deals with the question of demolishing half the existing two-story residential building in the village of Idhna

5.2. A visual review of the existing building demonstrates that the roofs of the building have been molded monolithically without seams to accommodate expansion and separation interfaces.

5.3. The demolition of half the existing building (excluding the existing central stairwell,) will cause a break in the continuous static scheme of the hidden beams which draw the loads acting on the roof of the structure.

5.4. A change in the static scheme of the hidden beams will cause a change in the torques and load disturbances in the hidden beams. This will require work to reinforce the hidden beams before the demolition because of the rupture and change in the structural scheme after the demolition is executed.

5.5. It is necessary to carry out a total separation before the demolition in order to prevent damage and structural cracks in the building elements, especially the roofs because of the continuous monolithic structural scheme.

5.6. Planning the reinforcement and separation between the two halves of the building, including advance reinforcement before the demolition requires advanced on-site preparations which take about a week, prior to the demolition.

5.7. The existing construction of the residential building is of less than mediocre quality and an additional load of more than 100 kg/sq.m. will cause cracks and serious flaws in the roof and will have a negative impact on the functioning of the rest of the elements of the structure, including the adjacent roof, all because of the monolithic nature of the roofs of the buildings and the continuity of the static scheme of the hidden beams between the two halves of the existing structure. Therefore, sealing half the building should be carefully considered given the constraints discussed above and the reciprocal influence between the two sides of the existing roofs.

Date:
June 30**, 2014**

[stamp: Bassoul Wissam,
Consultation, Planning and Supervision]

[signed]

Cell: 0523-861325, Fax: 04-6466977, Gheineh, POB 309, Email: wiseng2000@gmail.com