File No. CA 006-95

L. Kamerman)
Mining and Lands Commissioner)

Thursday, the 21st day
of December, 1995.

THE CONSERVATION AUTHORITIES ACT

IN THE MATTER OF

An appeal to the Minister under subsection 28(5) of the **Conservation Authorities Act** against the refusal to grant permission for the alterations to an existing building on Part Block PPP, Registered Plan 83, Township of Uxbridge.

B E T W E E N :

SAM KYRIAZIS

Appellant

- and -

LAKE SIMCOE REGION CONSERVATION AUTHORITY

Respondent

O R D E R

WHEREAS the appeal bearing file number CA 006-95 was received by this tribunal on the 8th day of May, 1995;

AND WHEREAS a consent to dismiss the appeal bearing file number CA 006-95 with the conditions that no opening in the exterior wall of the existing building on Part Block PPP, Registered Plan 83, Township of Uxbridge, be permitted below 6" above the proposed grade elevation and that there would be no order as to costs, dated the 6th day of December, 1995, was executed and filed by Orazio T. Baggio, agent on behalf of the Appellant;

AND WHEREAS in correspondence dated the 7th day of December, 1995, Kenneth C. Hill, Counsel for the Respondent, advised the tribunal that the respondent would not oppose the granting of the appeal through an order of the Commissioner and furthermore waived their right to a hearing on this issue;

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UPON READING the materials filed in support of an Order granting the appeal bearing file number CA 006-95;

1. THIS TRIBUNAL ORDERS that this appeal is allowed subject to the condition that no opening in the rear exterior wall of the existing building on Part Block PPP, Registered Plan 83, Township of Uxbridge, be permitted below 6" above the proposed grade elevation.

2. THIS TRIBUNAL FURTHER ORDERS that no costs shall be payable by either party to this appeal.

DATED this 21st day of December, 1995.

Original signed by L. Kamerman

L. Kamerman
MINING AND LANDS COMMISSIONER

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Appellant

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R E A S O N S

This appeal represents the second brought to the tribunal by Mr. Kyriazis concerning this property. The first appeal bears tribunal file CA 002-94 which was dismissed by Order of the tribunal dated August 26, 1994.

It would be useful to reproduce those facts not in dispute on the first appeal:

Facts not in Dispute:

The site is located at 38 Brock Street West in downtown Uxbridge. The authority of the LSRCA over the site is found generally in Ontario Regulation 179/80, with the site being contained within the

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lands described in Schedule 10 of Ontario Regulation 534/91. For purposes of determination of flood level elevations, the regional storm is Hurricane Hazel.

The site is set out on Sheet No. 6 of the Flood Plain and Fill Regulation Line Mapping, Uxbridge, having a scale of 1:2000, prepared by Marshall Macklin Monaghan Limited, dated December, 1979 and revised July, 1985 (Ex. 1) (the "map"). Located within the flood lines of Uxbridge Stream, shown entering the map from the south, it is downstream of the confluence of two tributaries described as the Mill and Electric Light Ponds.

Under regional storm conditions, the two tributaries exceed the capacity of the culvert which crosses under Brock Street and the building located at 34 Brock Street. Brock Street is overtopped by over one metre and the buildings are inundated.

Mr. Kyriazis' building has a one storey facade on Brock Street. The surrounding grade drops sharply through the depth of the building, so that from the back which faces Pond Street, basements of properties neighbouring Mr. Kyriazis' which are fully below grade on Brock Street are at ground level. These neighbouring properties, which were presented in Mr. Kyriazis' evidence, all have either doors at basement ground level, or a combination of doors, and garage doors or windows.

The grade behind 34 Brock Street is the one exception to this. There is a mound of earth located at the rear of the property which forms a ramp which extends part way up the outside basement wall. This ramp of earth drops away sharply to the east, where there is a shoe repair and shoe store, located at 36 and 38 Brock Street, respectively. The difference in grade is held by a retaining wall. To the west, the earth drops off more gradually. The surface of the land behind Mr. Kyriazis' building is not paved. There are stairs at the rear of the building and a door which permits entry into the main level. There are no windows at the rear of the building.

There were two witnesses at the original hearing; Mr. Kyriazis, the appellant, and Dan Frank, Regulations Officer with the Lake Simcoe Region Conservation Authority (the "LSRCA"). No engineering evidence was adduced by a qualified engineer.

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Mr. Frank's evidence received and considered by the tribunal includes, at pages 6 and 7 of its August 26, 1994 Order:

> . . . that installing doors and windows in the basement would cause flooding of the lower level. Where the depth of flooding is greater than one metre on any wall, the LSRCA requires an engineering report to show that the wall and floor could withstand the hydrostatic pressures of flooding.
>
> The policies of the LSRCA for proposed alterations to existing buildings require that all opening be above the regional storm elevation. Mr. Frank stated that it is impossible to meet the policies with this structure, given the extreme depths of flooding.
>
> . . . . .
>
> If constructed openings to this structure are permitted below the regional storm level, the LSRCA is concerned that the building will be exposed to more frequent instances of flooding and that the depth of flooding will increase. Without an opening to the basement level, less flood waters will enter into the lower level than would be the case with the installation of doors and a window. Mr. Frank stated that he could not see any possible changes which could be made to the proposal which would provide a solution and permit some sort of alteration, owing to the extreme flood depths.

The tribunal found at pages 11 and 12 of its August 26, 1994 Order:

> The tribunal finds that the appeal must fail as it is currently formulated. Although Mr. Kyriazis is prepared to omit all openings except one door on the basement level, the absence of an engineering report providing favourable hydrostatic analysis is significant. Without evidence of the inherent stability of the existing rear wall, or of the proposed reinforced wall, very serious consequences could result from a complete failure of the wall to hold in a severe flood event.
>
> The requirement of the Township of Uxbridge that Mr. Kyriazis remove the earth ramp to the rear of his property has severe consequences for its continuing use. Without rear access much of the inside of the building becomes inaccessible. Ideally, the Township should make good on its intention to create an open channel, thus lowering existing flood levels, before Mr. Kyriazis

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> should be required to remove the earth at the rear of his property. This avenue should be more fully explored, focusing on the resulting flood level elevations to adjoining properties such as that of Mr. Kyriazis.
>
> In the absence of further action on the part of the Township, and conditional on a favourable hydrostatic analysis from an engineer, the tribunal would be prepared to grant a prospective appeal should certain additional changes be made. The most important change would be that there can be only one opening at the rear of the building, being a basement level entrance constructed to withstand severe hydrostatic pressure caused by flooding. While there was no evidence at the hearing on this issue as to what may exist in the marketplace, it should be clear that neither the presence of glass nor a hollow door would be sufficient. There should be no other openings on the rear face of the building. The feasibility of this will depend on whether or not skylights can be safely installed to provide adequate lighting. Finally, it must be proved that zoning for the building is such that only commercial and no residential uses will be possible.

Pursuant to a hearing before the LSRCA Executive Committee held March 31, 1995, Mr. Kyriazis was advised in writing on April 27, 1995, that approval not be granted for construction and alterations of the existing building. The reasons for the refusal were as follows:

> The Conservation Authorities Act requires that you be given written reasons for the refusal of an application. At The Executive Committee meeting, the plan by Gregory Design Group Inc. was presented again with the application proposing construction of two doors and a window into the existing basement which has no openings. The plan and application were accompanied by a report and presentation by Mr. O.T. Baggio, P.Eng. Mr. Baggio indicated that the basement will currently flood once outside water levels exceed 1 metre. The proposed plan for glass doors would allow flooding upon flood elevations reaching the door sill elevation and lowest floor of the building. Therefore, the proposed new openings into the basement will increase the frequency of flooding into the basement approximately one metre lower than the existing condition. The Authority requires that there be no increase in flood frequency to this site.

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Mr. Baggio, P.Eng. wrote to the tribunal on October 11, 1994, pointing out problems with allowing the building to remain in its current state. At pages 3 through 5 he states:

> The Ontario Building Code specifies at Part 9.15.4.1 Table 9.15.4.A that:
>
> Unit masonry 190 mm (7.5") i.e. 8" nominal block wall which is laterally supported at top can sustain a backfill level of 1.3 metres (3'-11").
>
> The rear wall supports soil of 5'-6" at rear ramp which exceeds the Code allowable retaining height of 3'-11". At the stair the retaining height is approximately 10'-0" which is almost 3 times the allowable Code retaining height. The ramp itself is therefore overstressing the wall and the backfill at the stair is causing extreme overstress to the wall.
>
> . . . . .
>
> Even with this added stability factor which is not taken into account by the Ontario Building Code Tabled values for earth height of retention, the computer analysis indicates that the wall fails on the tensile side by being overstressed by 100% from load from the ramp fill . . .
>
> Computer analysis of the stair fill area gives results of 400% overstress on the compression face and 1000% overstress in the tension face of the wall.
>
> The above indicates that the stair must be removed from rear wall and that fill must be reduced to meet Ontario Code requirements for structural safety.
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> . . . . .
>
> We have computed the thickness of masonry basement wall to withstand a full Regional Flood with sealed basement space to be 2'-6" thick, this represents four times existing wall thickness.
>
> . . . . .
>
> With the above results it can be summarised that any level of water above 4'-6" will collapse the walls towards the inside of the building with the catastrophic result of bringing the upper structure down with the collapse of the foundation walls.

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The added openings will protect the structure from collapse. The added openings will reduce the risk of loss of life.

The added openings will reduce the total cost of damage by restricting loss only to basement level contents and not to further major structural damage.

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The issue of window opening and door type material can be reasoned and resolved as follows:

The rear stair and ramped fill must be removed to reduce wall pressure and since openings are required the new door to the basement will provide the required openings and access to the building from the rear.

The proposed door was referred in the Order to be solid and flood proof, this is obviously in conflict with allowing water in to balance the hydrostatic pressure inside to match the external hydrostatic pressure from floodwater outside.

Since it is difficult to provide a door that open on demand with the rise in the water level and the basement cannot be left open for reason of security to the building and to prevent animals and vermin from entering, then a door with glass that will break with the rising water and resulting pressure would be the solution.

A solid door could be used that can remain closed plus windows that will break with the rising water pressure, provided the windows are not set so high that marginal water will not break them.

The best solution would be a metal or wood door frame with glass infill . . . and low set windows with sills 1'-6" above grade and with large glass panels which will offer low resistance to the water pressure and therefore break.

Conclusion:

The existing building does not meet Ontario Building Code Requirements because the basement walls are presently overstressed

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> by the ramp fill, and the stair fill, both must be removed to make the building conform. The walls definitely do not meet code requirements if loads from flood waters are considered.
>
> The existing walls of the enclosed basement are not capable of sustaining a minor flood water level without collapsing the major part of the building itself. Openings are therefore required to allow water to enter basement level and equalize inner and outer water pressure.
>
> The requirement for water entry to basement requires that the rear opening or openings be such as to fracture and break with rising water pressure and that such openings allow a large volume of water into the basement to equalize the wall pressure inside and out.

In a letter to the tribunal dated August 16, 1995, Kenneth C. Hill, counsel for the LSRCA advises as follows:

> The Authority's staff engineer has reviewed the submissions of Mr. Baggio, Mr. Kyriazis's engineer and I believe there is agreement between them that the building, as presently constructed, is prone to damage due to flooding. The damage could occur in two ways. There is a danger that the walls could collapse if subjected to the pressures of four feet or more of flood water or the floor of the building could heave and crack if substantially lower flood levels are experienced. Mr. Baggio has recommended that openings be established in the building to permit flooding in order to equalize water pressure inside and outside the building during a flood event. The Authority's engineer, Mr. Hogenbirk, suggests that the risk of damage to the floor could also be minimized by the installation of relief drains.
>
> Mr. Kyriazis' proposal creates a potential for additional internal property damage due to flooding and for that reason the Conservation Authority would advise against the proposal. It would seem to be wiser to take steps to strengthen and flood proof the structure, however the Authority recognizes that it has no power to require Mr. Kyriazis to take such steps.
>
> Because of the existing danger of flood damage to the entire structure, the Conservation Authority has instructed me that, in

> these unusual circumstances, if Mr. Kyriazis insists on proceeding with his proposal, the Authority would not oppose an Order of the Mining and Lands Commissioner granting the permission he is seeking. The Authority would propose, however, that such permission be subject to a condition consistent with permitting the building to flood in order to protect existing walls and floor but minimizing the frequency of flooding. It may be that Mr. Hogenbirk and Mr. Baggio can agree as to this elevation.

In a letter to the tribunal and Mr. Kyriazis dated December 4, 1995, Mr. Hill states as follows:

> We have now been advised in writing by Mr. O.T. Baggio, the engineer representing Mr. Kyriazis, that the minimum elevation for openings in the building which would minimize the frequency of flooding, while permitting the building to flood in order to protect the existing structure, is 6" above the proposed grade elevation. Therefore, as indicated in my letter to Mr. Baggio of November 10, 1995, a copy of which was provided to each of you, my clients instructions are that it would not oppose an Order of the Commissioner permitting the proposed construction to proceed subject only to the condition that no opening in the exterior wall of the structure will be permitted below 6" above the proposed grade elevation.

Findings:

The facts which gave rise to this second appeal are unique and have not materially changed from the first appeal. Only the quality of the evidence has changed, namely that of a qualified engineer, which has shed additional light on the situation. The result is that it has become apparent that a dangerous situation will be created by the removal of the fill ramp, as required by the municipality. This is compounded by recommendations by the tribunal in its initial order which are without basis in proper engineering techniques.

The required removal of the fill will cause structural instability of the building in flood conditions less than those encountered in the regional storm. It should be noted that this property is subject to extreme flood conditions, with the regional storm flood elevation being 268.8 metres. The crown of the street in front of the second floor of the building (one storey from the front) is 263.6 metres. Therefore, the entire building will be under flood waters in a regional storm.

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The LSRCA has indicated that it will not oppose the granting of the appeal, although it is apparent from its policies that it is unable to consent to an Order. The basis of this appears to be that the proposed construction and renovation by Mr. Kyriazis would increase flooding in the building. Undoubtedly, this is true.

The tribunal is faced, in the unusual circumstances of this case, with balancing increased potential for flooding with the risk of structural collapse of a building. Factors which have an impact on the decision it faces include that this is not a residential building, where people could be caught unaware in the middle of the night by rising flood waters. The building itself will be exposed to potential flooding from Pond Street when flood waters reach that level, so that there does not appear to be potential to preclude flooding of the building entirely. Yet, by the time the flood waters have reached flood levels on Pond Street, there is a very real threat that the building will have collapsed from the hydrostatic pressures of flood waters in the rear. There is no evidence that allowing the renovation and construction applied for will increase flooding the surrounding area and buildings. The only risk to be weighed is that faced by the building owned by Mr. Kyriazis.

It is clear that preventing risk of collapse of a building with attendent risk to loss of life should take precedence over preventing increased flood levels within the structure. It is an unusual choice, hopefully one that conservation authorities and the tribunal will not be called on to make often. Nonetheless, on the facts of this case, and in the absence of opposition from the LSRCA, the tribunal finds that it would be in the best interests of safety to allow the appeal.

This case should not be taken as a precedent beyond the limited circumstances presented by the facts. There is an existing structure which, due to changes required by the municipality, will be structurally unsafe in flood conditions. Had this been a vacant lot, the tribunal can think of no argument to pursuade it to allow construction in conditions of such extreme flooding as will be faced here.

Conclusions:

The appeal will be allowed, subject to the condition that no opening in the rear exterior wall of the existing building be permitted below 6" above the proposed grade elevation.