

# Exeter Town Offices

## Introduction

This two-story brick building is currently being used for the Town of Exeter's municipal offices. There are two floors above grade currently being used as business and assembly occupancies. The unfinished basement contains mechanical, electrical and building storage.

Applicable codes:     International Building Code 2000 (IBC)  
                              Life Safety Code 2003

The goal of the Building and Life Safety codes is to save lives by:

- Providing 2 exit paths for each floor level and for larger spaces where people can gather.
- Protecting these exit paths from fire to permit more time for egress out of the building.
- Protecting these exit paths from smoke so that occupants are not overcome as they egress out.

If this facility were a new structure being designed today the code would require 2 separate exits from each floor. An exit is defined as an enclosed space that provides a protected path of travel by using fire resistant construction to an exit discharge point. Exits are typically exterior doors at grade and enclosed stair shafts. An exit is required to be enclosed with fire resistant construction because this construction will resist the passage of smoke and/or fire into the enclosure for a pre-determined period of time allowing the occupants enough time to egress out of the building. A second egress option is required in the event fire and/or smoke is blocking one exit option, thus the reasoning for having 2.

## Current conditions

The Town Offices building is currently configured in such a way that the main lobby is the only means of egress for nearly the entire first and second floors. Only occupants of the Public Meeting room on the second floor have a second egress option and it is up some steps, out a window and down a fire escape. This is allowed by code as a second exit but it currently does not meet the remoteness requirements of the code for an exit of the entire floor. (Exits are too close to each other). Occupants in portions of the first floor have to pass through a maze of other spaces to have a second egress option. If a fire were to compromise the lobby on either floor the occupants would be in great peril. Exit enclosures are not allowed to have openings into them other than exterior openings and those necessary for exit access. Therefore storage closets and restrooms cannot open into exits. Elevators are not allowed to open into exit enclosures. In the existing building each of these currently are compromises to safety.

## Options

The existing Town Office would require complete reconfiguration to meet the requirements of the code. Due to the historic nature of the building this may be undesirable and other options should be sought which would achieve the objectives of the code. Options include:

- A. Protect existing single exit by separation from other spaces.
- B. Provide smoke detection and alarm to give occupants early notice of a fire to increase the time they have to exit.
- C. Provide smoke evacuation from existing lobby/stair to further protect occupants while they exit.
- D. Provide a sprinkler system to limit the possibility of a fire.
- E. Construct an enclosed rear egress stair at exterior of the building to serve as a second exit for first and second levels.

### A. Protect existing single exit:

- 1. Remove the storage closet door at the bottom of the stairs on the first floor and install a new door into the storage closet from the employee break room.
- 2. Install closers and magnetic hold opens (as desired) on all doors into lobby/stair spaces on first and second floors.
- 3. Verify all doors into lobby/stair spaces are solid wood or rated doors.
- 4. Replace all glass in doors into lobby/stair spaces with wire glass or fire glass as required by code, or delete where not needed.
- 5. Verify and repair all walls of exit enclosure to be equivalent to 1-hour fire rated construction.
- 6. Install smoke curtains at lobby elevator doors.
- 7. Enclose basement stair with fire rated enclosure and door at stair bottom to protect the lobby/stairs above from potential fire in basement.
- 8. Verify and repair condition of floor assembly above basement at the lobby/stair to provide no less than 1-hour fire rated protection from basement.
- 9. Remove combustible fixtures and materials from lobby/stair at both levels.
- 10. Provide class A finish materials in lobby/stair.

### B. Provide smoke detection:

Install smoke/heat detection throughout the entire building including the basement and attic spaces. This, in conjunction with a fire alarm system, will provide early warning of a potential fire hazard allowing occupants to start their egress earlier during a fire event.

C. Provide smoke evacuation:

As part of mechanical system upgrades, configure an exhaust system to evacuate smoke from the lobby/stair and provide fresh air upon detection of smoke. This is a substantial benefit to exiting the second level, as smoke can gather very quickly in that space. Having the smoke mechanically removed will greatly increase occupant's ability to safely egress.

D. Provide automatic sprinkler system:

Install automatic sprinkler system in the entire building, which would greatly reduce the possibility of any potential fire from spreading.

E. Construct enclosed second exit:

As stated previously the code requires 2 exits from each floor. The code also requires 2 exits from assembly spaces with more than 50 occupants such as the public meeting room on the second floor.

The construction of a second stair enclosure at the rear of the building would provide a true second exit from the public meeting room that would be much safer for people who are not physically able to use a fire escape.

This second stair would also serve as the second required exit for the first floor. To achieve this the receptionist will need to be relocated and the town clerk windows will require fire shutters to be installed over them. The existing reception area walls would need to be equivalent to 1-hour fire rated construction. The existing exit door could be designed into a new stair enclosure but more office space would be lost in order to gain access. If this option is selected, note that some fire wall requirements may not be required if fire sprinklers are added.

The basement level essentially is an un-occupied space. Though not ideal, exiting exits meet code intent assuming that the stair is enclosed with a fire rated enclosure and door at the bottom.

## ADA

An attempt at ADA compliance was done in the past and for the most part is sufficient. There are some door swing and push/pull clearance issues still existing. These issues may be able to be solved by adding lever locks and power door operators in some cases. Reconfiguration of some spaces will be required for full compliance. If the space remains largely un-renovated the local authority having jurisdiction may not require ADA compliance. However, a major renovation will require ADA compliance.

## **Recommendations**

It will be difficult to make this building meet code completely without a major renovation that would dramatically change the historical value of the building. Therefore recommendations are based on the assumption that the local authority having jurisdiction will work with the Town of Exeter to find a balanced approach between improving life safety and building code deficiencies while maintaining the existing building configuration and historical value.

The critical need is to improve the safety of the existing single exit since providing a functional second stair is not reasonably possible with the existing building configuration.

1. SMRT recommends that all of the items in A, B and C be implemented.
2. Items D and E are optional but should be considered in consultation with the local authority having jurisdiction.