

**BRIDGEPORT CHARTER TOWNSHIP  
REHABILITATION CONSTRUCTION REQUIREMENTS  
STRUCTURES DAMAGED BY FIRE**

**ZONING - NON-CONFORMING BUILDING RESTORATION 23.02B - CONTINUANCE OF ANY NON-CONFORMING USE OF ANY BUILDING MORE THAN FIFTY (50) PERCENT DESTROYED BY FIRE, EXPLOSION, ACT OF GOD, ACT OF THE PUBLIC ENEMY IS PROHIBITED.**

**ZONING - CONFORMING BUILDING RESTORATION**

**A given rehabilitation project will most likely go through several stages. The preliminary evaluation process involves the designer ( architect or engineer) in surveying the prospective building. The fire resistance of existing building materials and construction systems is identified; potential problems are noted for closer study. The final evaluation phase includes: developing design solutions to upgrade the fire resistance of building elements, if necessary; preparing working drawings and specifications; and the securing of the necessary code approvals.**

- A preliminary evaluation should begin with a building survey to determine the existing materials, the general arrangement of the structure and the use of the occupied spaces, and the details of construction. The designer (engineer or architect) needs to know what is there before a decision can be reached about what to keep and what to remove during the rehabilitation process.
  - This preliminary evaluation should be as detailed as necessary to make initial plans.
    - The fire-related properties need to be determined from the applicable building or rehabilitation code.
    - The materials and assemblies existing in the building then need to be evaluated for these properties.
  
- A work sheet is shown below to facilitate the preliminary evaluation.
  - Two possible sources of information helpful in the preliminary evaluation are the original building plans and the building code in effect at the time of original construction.
  - Plans may be on file with the local building department or in the offices of the original designers (e.g., architect, engineer) or their successors.
  - If plans are available, verify that the building was actually constructed as called for in the plans, as well as incorporate any later alterations or changes to the building. (Earlier editions of the local building code should be on file with the building official). The code in effect at the time of construction will contain fire performance criteria. While this is no guarantee that the required performance was actually provided, it does give the architect or engineer some guidance as to the level of performance which may be expected. Under some code administration and enforcement systems, the code in effect at the time of construction also defines the level of performance that must be provided at the time of rehabilitation.

Figure 1 illustrates one method for organizing preliminary field notes. Space is provided for the materials, dimensions, and condition of the principal building elements. Each floor of the structure should be visited and the appropriate information obtained. In practice, there will often be identical materials and

construction on every floor, but the exception may be of vital importance. **A schematic diagram should be prepared of each floor showing the layout of exits and hallways and indicating where each element described in the field notes fits into the structure as a whole.** The location of stairways and elevators should be clearly marked on the drawings. All exterior means of escape (e.g., fire escapes) should be identified.\* The following notes explain the entries in Figure 1.

- **Exterior Bearing Walls:** The field investigator should note how the floor/ceiling assemblies are supported at the exterior of the building. If columns are incorporated in the exterior walls, the walls may be considered non-bearing.
- **Interior Bearing Walls:** It may be difficult to determine whether or not an interior wall is load bearing, but the field investigator should attempt to make this determination. At a later stage of the rehabilitation process, this question will need to be determined exactly. Therefore, the field notes should be as accurate as possible.
- **Exterior Non-Bearing Walls:** It is important to indicate on the drawings where any openings are located as well as the materials and construction of all doors or shutters. The drawings should indicate the presence of wired glass, its thickness and framing, and identify the materials used for windows and door frames. The protection of openings adjacent to exterior means of escape (e.g., exterior stairs, fire escapes) is particularly important. The ground floor drawing should locate the building on the property and indicate the precise distances to adjacent buildings.

The field investigator should note the exact location from which observations are recorded. For instance, if a hole is found through a stairwell wall which allows a cataloguing of the construction details, the field investigation notes should reflect the location of the find. At the preliminary stage it is not necessary to core every wall; the interior details of construction can usually be determined at some location.

- **Structural Frame:** There may or may not be a complete skeletal frame, but usually there are columns, beams, trusses, or other like elements. The dimensions and spacing of the structural elements should be measured and indicated on the drawings. The structural material and cover or protective materials should be identified wherever possible. The thickness of the cover materials should be determined to an accuracy of  $\pm 1/4$  inch. The preliminary field survey usually relies on accidental openings in the cover materials rather than a systematic coring technique.
- **Floor/Ceiling Structural Systems:** The span between supports should be measured. A sketch of the cross-section of the system should be made. If there is no location where accidental damage has opened the floor/ceiling construction to visual inspection, it is necessary to make such an opening. An evaluation of the fire resistance of a floor/ceiling assembly requires detailed knowledge of the materials and their arrangement.
- **Roofs:** The preliminary field survey of the roof system is initially concerned with watertightness. However, once it is apparent that the roof is sound for ordinary use and can be retained in the rehabilitated building, it becomes necessary to evaluate the fire performance. The field investigator must measure the thickness and identify the types of materials which have been used. Be aware that there may be several layers of roof materials.
- **Doors:** - The latch should engage and the door should fit tightly in the frame. The

hinges should be in good condition. If glass is used in the doors, it should be identified as either plain glass or wired glass mounted in either a wood or steel frame.

**FIGURE 1 PRELIMINARY EVALUATION FIELD NOTES**

| Building Element                          |   | Materials | Thickness | Condition | Notes |
|---|---|-----------|-----------|-----------|-------|
| Exterior Bearing Walls                    |   |           |           |           |       |
| Interior Bearing Walls                    |   |           |           |           |       |
| Exterior Non-Bearing Walls                |   |           |           |           |       |
| Interior Non-Bearing Walls or Partitions: | A |           |           |           |       |
|   | B |           |           |           |       |
| Structural Frame:                         |   |           |           |           |       |
| Columns                                   |   |           |           |           |       |
| Beams                                     |   |           |           |           |       |
| Other                                     |   |           |           |           |       |
| Floor/Ceiling Structural System Spanning  |   |           |           |           |       |
| Roofs                                     |   |           |           |           |       |
| Doors (including frame and hardware):     |   |           |           |           |       |
| a) Enclosed vertical exitway              |   |           |           |           |       |
| b) Enclosed horizontal exitway            |   |           |           |           |       |
| c) Other                                  |   |           |           |           |       |

- **Condition:** The method of attaching the various layers and facings to one another or to the supporting structural element should be noted under the appropriate building element.

- **Detailed, sealed engineered drawings which identify each location of structural damage (charred or burnt roof, floor or wall frame members) and a detail showing the method for repair is required. All work, including foundation must meet the requirements of the current Michigan Building/Residential Code.**

- **Structures which suffered damaged of more than 50%, must have the entire structure brought to current Michigan Building/Residential Code Standards.**

- A copy of the engineer's preliminary evaluation report must accompany the sealed drawings and building application.

- Electrical wiring not being replaced will be required to have the insulation integrity tested. Such insulation testing will be done in the presence and at the discretion and direction of the electrical inspector.

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