

BROWARD COUNTY BUILDING SAFETY INSPECTION PROGRAM

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BROWARD COUNTY BUILDING SAFETY INSPECTION PROGRAM YEARLY SCHEDULE

- JUNE (*Preceding the specified calendar year*)
Board of Rules and Appeals obtains building data from Property Appraisers Office and forwards it to each city.
- JUNE – AUGUST
Building Officials must notify property owners whose buildings are subject to the Safety Inspection Program for the specified calendar year.
- SEPTEMBER – OCTOBER – NOVEMBER (*No later than*)
90 day period for property owners to return structural and electrical check list to the City/County
- DECEMBER through MAY (*No later than*)
180 day period of time for those buildings requiring structural or electrical repairs to complete the work.

BROWARD COUNTY BUILDING SAFETY INSPECTION PROGRAM PROGRAM SUMMARY

The 40 year and older Broward County Building Safety Inspection Program was created in 2005 and has become effective throughout Broward County in January 2006. Modeled after Miami-Dade County's program, which was established in the mid 1970s, Broward's program calls for structural and electrical safety inspections for buildings 40 years old or older and every ten years thereafter. One and two family dwellings, U.S Gov-ernment, State of Florida buildings, schools under the jurisdiction of the B.C. School Board, and buildings built on Indian Reservations are exempt from this program. Miami-Dade County's effort exempts other buildings under 2,000 square feet while the Broward County program excludes all buildings under 3,500 square feet. Both Counties have had instances of structural building failures. By having such a program in effect both counties are minimizing the possibilities of future building failure and will be better prepared for hurricane winds.

"

""Enclosed are checklists and"guidelines for buildings to be inspected for structural integrity and electrical safety.

""State licensed architects and engineers will be hired by private building owners to do the safety inspection.

""The local government has the authority to establish a fee to review the Safety Inspection Reports.

""The Building Department will review the reports submitted to verify that if the inspecting agency has deemed

""the structural and electrical systems as safe. If any deficiency is noted, the building department shall follow

""the guidelines of Policy #05-05 (copy attached).

"" Each June (preceding the specified calendar year) a list of buildings meeting the program requirements are provided to Building Officials from a database that the Board of Rules and Appeals obtains from the County Property Appraiser's Office. The program is then to be administrated by the City Building Department or the County Building Department and a notification letter is sent. (Please see Page 5.83)

""The owner of a building or structure shall then furnish within 90 days the required Safety Inspection forms to the Building Official prepared by an engineer or architect. In the event that repairs are necessary, the owner has 180 days from the date of the building inspection report in which to correct the structural and electrical deficiencies that pose an immediate threat to life safety. Repairs that are incidental and non-life threatening can be completed at a later date. ""

2. Remove the construction materials from the top of the structure and fasten down to the ground; or
3. Remove the construction materials from the job site; or
4. Store the construction materials inside an enclosed structure.

110.13.3 From June 1 to November 30 of each calendar year (the National Weather Service designated hurricane season), building materials shall be loaded on a roof no earlier than twenty (20) working days prior to the permanent installation of those materials.

110.13.4 After winds of hurricane velocity are experienced and have subsided, the Building Official shall investigate to determine if damage has occurred to buildings or other structures. The Building Official will list each structure which has suffered damage in excess of 25%.

110.13.5 No building or other structure or assembly or part thereof, which was damaged or collapsed; out of plumb or line shall be repaired or altered, or otherwise returned to its original position, without inspection and approval by the Building Official.

110.13.6 When conducting emergency damage assessments, the Building Official shall complete the Broward County Emergency Management Division Unsafe Structures Reporting Form. The reports can be faxed, emailed, or if necessary, telephoned in to the numbers prescribed on the form within forty-eight (48) hours of a building being posted as unsafe and a secondary report shall be submitted when the building is deemed safe, also within forty-eight (48) hours. The reporting form will be approved by both the Emergency Management Division and BORA.

110.13.7 Upon notification to the Building Official the owner shall retain the services of a licensed contractor who will be granted an emergency permit to secure, brace and perform any service required to make the structure safe. The contractor will be permitted to erect shoring and barricades as required to assure life safety. The Building Official will investigate to assure that the damaged structure is safe and that electrical service has been disconnected. The Building Official will then determine that the structure can be repaired or demolished per Section 105.22 of this Code.

110.13.8 Within 30 days of the Building Official's determination, either a drawing indicating the reconstruction shall be submitted for a permit per Section 105, or a permit for demolition will be issued to a licensed Demolition Contractor pursuant to Section 105.22 of this Code.

110.13.9 Physical damage occurring to meter troughs, risers and masts, weather-heads and associated electrical equipment on the exterior portion of residential structures shall be repaired by a qualified electrical contractor. Upon completion of said repairs:

110.13.9.1 Contractor shall tag the completed work with appropriate identification including Customer Name, Customer Address, brief description of repair, Contractor Name, Contractor License Number and Contractor phone number for Florida Power & Light Company (FPL) and inspecting authorities. Tag and text shall be durable and weather resistant.

110.13.9.2 FPL may, upon acknowledging the tag, reconnect the electrical service without inspection by the inspecting authorities. FPL shall take due care to ensure safety before energizing the service.

110.13.9.3 Contractor shall obtain permits after the fact within thirty days of the occurrence.

110.13.9.4 Florida Power & Light Co. shall record and submit to individual inspecting authorities a list of electrical service reconnections and locations within 30 days after the emergency or crisis conditions have subsided.

110.13.10 During the emergency period, as proclaimed by the Governor, the Building Official may accept inspection reports as outlined in Section 110.11 Special Inspector, for structural portions, including qualified Engineers or Architects for electrical, mechanical and plumbing inspections.

110.13.11 During the emergency period, as proclaimed by the Governor, the Building Official may at his or her option allow an Architect or an Engineer, or their duly authorized representative to perform required re-roofing inspections. The Architect or Engineer shall submit sealed inspection reports to the Building Official.

110.14 Storm Shutter Placement during Hurricane Season.

110.14.1 After the termination of such periods of time that had been designated by the National Weather Service as being a hurricane watch or warning, hurricane protective devices installed on occupied buildings which impede required egress or required light and ventilation shall be removed within 15 days.

110.15 Building Safety Inspection Program. BORA has established a building safety inspection program for buildings and structures that have been in existence for a period of 40 years or longer. BORA by written policy shall establish the guidelines and criteria which will be the minimum requirements for the Building Safety Inspection Program. The Building Official shall enforce the building safety inspection Program. U. S. Government buildings, State of Florida buildings, buildings built on Indian Reservations, Schools buildings under the jurisdiction of the Broward County School Board, and One and Two Family Dwellings are exempt from this program.

Exceptions:

All single family residences, duplexes and minor structures defined as buildings or structure in any occupancy group having a gross floor area less than 3,500 square feet.

In order to implement the new Building Safety Inspection Program in an orderly manner to clear a backlog of buildings needing inspection, implementation shall proceed as follows:

1. 40 year or older buildings of 11,000 square feet or more – compliance in calendar year 2006
2. 40 year or older buildings 7,000 square feet or more – compliance no later than calendar year 2007
3. 40 year or older building 5,500 square feet or more – compliance no later than calendar year 2008
4. 40 year or older buildings 4,650 square feet or more – compliance no later than calendar year 2009
5. 40 year or older buildings 3,800 square feet or more – compliance no later than calendar year 2010
6. 40 year or older buildings 3,500 square feet or more – compliance no later than calendar year 2011

Subsequent building inspections shall be required at ten (10) year intervals -Section 110.15 Effective January 1, 2006, regardless of when the inspection report for same is finalized or filed. Any buildings or structures not otherwise excluded as set forth herein shall be inspected at the same time as the initial 40 year inspection of the building and shall be re-inspected in accordance with the schedule for the building.

SECTION 111

CERTIFICATES OF OCCUPANCY AND COMPLETION

111.1 Certificate of Occupancy

111.1.1 Use and Occupancy. No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or nature or use or portion thereof shall be made until the Building Official has issued a Certificate of Occupancy there for as provided herein. Said certificate shall not be issued until all required electrical, gas, mechanical, plumbing and fire protection systems, and provisions of FFPC have been inspected for compliance with the technical codes and other applicable laws and ordinances and released by the Building Official. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this Code or of other ordinances of the jurisdiction.

Exception: Certificates of occupancy are not required for work exempt from permits under Section 105.2.

111.2 Certificate Issued. Upon completion of construction of a building or structure and installation of electrical, fire protection, gas, mechanical and plumbing systems in accordance with the technical codes, reviewed plans and/or specifications, and after the Building Official or his or her duly authorized representative finds no violations of the provisions of this Code or other laws that are enforced by the governmental AHJ, and after the final inspection, the Building Official shall issue a Certificate of Occupancy that contains the following:

1. The building permit number.
2. The address of the structure.
3. The name and address of the owner.
4. A description of that portion of the structure for which the certificate is issued.

5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this Code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.
6. For buildings and structures in flood hazard areas, a statement that documentation of the as-built lowest floor elevation has been provided and is retained in the records of the department of building safety.
7. The name of the Building Official.
8. The edition of the code under which the permit was issued.
9. The use and occupancy, in accordance with the provisions of FBC Building Chapter 3.
10. The type of construction as defined in FBC Building Chapter 6.
11. The design occupant load and the number of persons for each floor, and the allowable load live or dead per square foot for each floor in accordance with the provisions of this Code.
12. If an automatic sprinkler system is provided, whether the sprinkler system is required.
13. Any special stipulations and conditions of the building permit.

111.3 Temporary/Partial Certificate of Occupancy.

111.3.1 The Building Official is authorized to issue a Temporary Certificate of Occupancy before the completion of the entire work covered by the permit, provided that such portion or portions shall be occupied safely providing the building to be occupied has, to the satisfaction of the Building Official, met all the code provisions related to sanitary facilities, electric service, means of egress, fire resistive separation, structural adequacy, and life safety requirements as found in the FBC, Fire Protection Provisions of this Code and FFPC for the use of a building for a period of up to ninety days.

111.3.2 The Temporary Certificate of Occupancy may be issued for a period to 90 days and up to an additional 90 days if a request is made in writing to the Building Official prior to the expiration of the initial Temporary Certificate of Occupancy but under no circumstances can any Temporary Certificate of Occupancy exceed 180 days. In the event the Temporary Certificate of Occupancy has expired, the electric service may be disconnected, upon written notice by Certified Mail or hand delivery to the owner or tenant and a copy forwarded to the Public Service Corporation or agency providing service to the building or structure, pursuant to Section 112.2 of this Code. The building shall not be occupied until a new certificate of occupancy is obtained.

111.3.3 Partial Certificate of Occupancy. A Partial Certificate of Occupancy may be issued by the Building Official for portions of a building providing such portions comply with the requirements for a Certificate of Occupancy, and the portions of the building are isolated from the portions in which construction activities are continuous. Areas not included in the Partial Certificate of Occupancy shall

Subject: Broward County Board of Rules and Appeals – Building Safety Inspection Program

Section 110.15 of the Broward County Administrative Provisions of the Florida Building Code has established a Building Safety Inspection Program.

The procedures established herein are the basic guidelines for the Building Safety Inspection program.

The requirements contained in the Florida Building Code, covering the maintenance of buildings, shall apply to all buildings and/or structures now existing or hereafter erected. All buildings and/or structures and all parts thereof shall be maintained in a safe condition, and all devices or safeguards that are required by the Florida Building Code shall be maintained in good working order. Electrical wiring, apparatus and equipment, and installations for light heat or power and low voltage systems as are required and/or regulated by the Building Code, now existing or hereinafter installed, shall be maintained in a safe condition and all devices and safeguards maintained in good working order.

These guidelines shall not be construed as permitting the removal or non-maintenance of any existing devices or safeguards unless authorized by the Building Official.

Building Safety Inspection of buildings / structures and components:

For the purpose of these guidelines, Building Safety Inspection shall be construed to mean the requirement for specific inspection of existing buildings and structures and furnishing the Building Official with a written report of such inspection as prescribed herein.

A (1). Inspection procedures shall conform, in general, to the minimum inspection procedural guidelines as issued by the Board of Rules and Appeals. This inspection is for the sole purpose of identifying structural and electrical deficiencies of the building or structure that pose immediate threat to life safety. This inspection is not to determine if the condition of an existing building is in compliance with the current edition of the Florida Existing Building Code or the National Electrical Code.

(2). Such inspection shall be for the purpose of determining the structural & electrical condition of the building or structure to the extent reasonably possible of any part, material or assembly of a building or structure which affects the safety of such building or structure and/or which supports any dead or designed live load, and the general condition of its electrical systems pursuant to the Building Code.

(3). The inspecting professional shall have a right of entry into all areas he/she deems necessary to comply with the program.

(4). The Building Official shall ensure that the owner(s) (or their duly authorized representative(s)) of all buildings requiring inspection under these guidelines file the necessary documentation to confirm compliance with the guidelines set forth herein.

B (1). All buildings, except single-family residences, duplexes and minor buildings or structures as defined in (C), shall be recertified in the manner described below where such buildings or structures have been in existence for forty (40) years or longer, as determined by the Building Official, who shall at such time issue a Notice of Required Inspection to the building owner.

(2). Subsequent Building Safety Inspections shall be required at ten (10) year intervals from the date of the 40th anniversary of existence of buildings or structures regardless of when the inspection report for same is finalized or filed. Any buildings or structures not otherwise excluded as set forth herein shall be inspected at the same time as the initial Safety Inspection of the building and shall be re-inspected in accordance with the schedule for the building. Buildings that the original Safety Inspection dates are specified in the exception to 110.15 (2011 and earlier) shall have the 10 year re-inspections scheduled starting 10 years following the date schedule shown in the exceptions to 110.15.

(3). In the event a building is determined to be structurally and electrically safe under the conditions set forth herein, and such building or structure is less than forty (40) years of age, a Building Safety Inspection shall not be required for a minimum of ten (10) years from that time, or age forty (40), whichever is the longer period of time.

C. Minor buildings or structures shall, for the purpose of this subsection, be defined as buildings or structures in any occupancy group having a gross area of 3,500 sq. ft. or less. Any building or structure which houses, covers, stores or maintains any support features, materials or equipment necessary for the operation of all or part of the primary structure, or operation of any feature located upon the real property, shall not be considered a minor building and shall be subject to inspection as otherwise set forth herein. Also included in the Safety Inspection Program are elevated decks, docks, parking garages and guardrails.

D (1). The owner of a building or structure subject to Building Safety Inspection shall furnish, or cause to be furnished, within ninety (90) days of Notice of Required Building Safety Inspection, the Broward County Board of Rules and Appeals Building Safety Inspection Certification Form to the Building Official, prepared by a Professional Engineer or Architect registered in the State of Florida, certifying that each such building or structure is structurally and electrically safe, or has been made structurally and electrically safe for the specified use for continued occupancy, in conformity with the minimum inspection procedural guidelines as issued by the Board of Rules and Appeals.

(2). Such written report shall bear the date, seal and signature of the certifying Engineer or Architect.

(3). Such Engineer or Architect shall undertake such assignments only where qualified by training and experience in the specific technical field involved in the inspection and report.

(4). Such report shall indicate the manner and type of inspection forming the basis for the report and description of any matters identified as requiring remedial action.

(5). In the event that repairs or modifications are found to be necessary resulting from the Building Safety Inspection Report, the owner shall have a total of 180 days from the date of the Building Safety Inspection Report, unless otherwise specified by the Building Official in accordance with Florida Building Code Section 110.15(Broward County Administrative Code), in which to correct the structural and electrical deficiencies. Once the corrections have been completed a Professional Engineer, or Registered

Architect shall re-inspect the areas noted on the original report and shall provide the building owner a signed and sealed letter stating the corrections have all been completed. The building owner shall submit that letter to the Building Official. For deficiencies that cannot be corrected within 180 days, the time frame may be extended when a time frame is specified by the Professional Engineer or Registered Architect and approved by the Building Official. Such extension shall be contingent on maintaining an active building permit as specified in Florida Building Code Section 115015 (Broward County Administrative Code).

E (1). In the event an owner fails to submit the Building Safety Inspection Program report the governing authority shall elect the choice of either a Special Magistrate or Code Enforcement Board as set forth under Florida Statutes Sec. 162, et. al., to conduct a hearing to address such failure. In the event an owner fails to comply with repair or modification requirements as determined from the Building Safety Inspection Report as set forth herein the structure may be deemed to be unsafe and unfit for occupation. Such findings shall be reviewed by the Building Official and may be sent to the Special Magistrate, Code Enforcement Board or Unsafe Structures Board, as appropriate.

* The Florida Existing Building Code will specify whether the repairs or modification can be made under the code in effect when the building was originally permitted or the code currently in effect.

GENERAL CONSIDERATIONS

SCOPE OF STRUCTURAL INSPECTION

The fundamental purpose of the required inspection and report is to confirm in reasonable fashion that the building or structure under consideration is safe for continued use under the present occupancy. As implied by the title of this document, this is a recommended procedure, and under no circumstances are these minimum recommendations intended to supplant proper professional judgment.

Such inspection shall be for the purpose of determining the general structural condition of the building or structure to the extent reasonably possible of any part, material or assembly of a building or structure which affects the safety of such building or structure and/or which supports any dead or designed live load, and the general condition of its electrical systems pursuant to the Building Code.

In general, unless there is obvious overloading, or significant deterioration of important structure elements there is little need to verify the original design. It is obvious that this has been "time tested" if still offering satisfactory performance. Rather, it is of importance that the effects of time with respect to deterioration of the original construction materials be evaluated. It will rarely be possible to visually examine all concealed construction, nor should such be generally necessary. However, a sufficient number of typical structure members should be examined to permit reasonable conclusions to be drawn.

Visual Examination will, in most cases, be considered adequate when executed systematically. The visual examination must be conducted throughout all habitable and non-habitable areas of the building, as deemed necessary by the inspecting professional to establish compliance. Surface imperfections such as cracks, distortion, sagging, excessive deflections, significant misalignment, signs of leakage, and peeling of finishes should be viewed critically as indications of possible difficulty.

Testing Procedures and quantitative analysis will not generally be required for structural members or systems except for such cases where visual examination has revealed such need, or where apparent loading conditions may be critical.

Manual Procedures such as chipping small areas of concrete and surface finishes for closer examinations are encouraged in preference to sampling and/or testing where visual examination alone is deemed insufficient. Generally, unfinished areas of buildings such as utility spaces, maintenance areas, stairwells and elevator shafts should be utilized for such purposes. In some cases, to be held to a minimum, ceilings or other construction finishes may have to be opened for selective examination of critical structural elements. In that event, such locations should be carefully located to be least disruptive most easily repaired, and held to a minimum. In an event, a sufficient number of structural members must be examined to afford reasonable assurance that such are representative of the total structure.

Evaluating an existing structure for the effect of time, must take into account two, basic considerations; movement of structural components with respect to each other, and deterioration of materials.

With respect to the former, volume change considerations, principally from ambient temperature changes, and possible long time deflections, are likely to be most significant. Foundation movements will frequently be of importance, usually settlement, although upward movement due to expansive soils actually may occur. However, it is infrequent in this area. Older buildings on spread footings may exhibit continual, even recent settlements if founded on deep unconsolidated fine grained or cohesive soils or from subterranean losses or movements from several possible causes.

With very little qualification, such as rather rare chemically reactive conditions, deterioration of building materials can only occur in the presence of moisture, largely to metals and their natural tendency to return to the oxide state in the corrosive process.

In this marine climate, highly aggressive conditions exist year round. For most of the year, outside relative humidity may frequently be about 90 or 95%, while within air-conditioned buildings, relative humidity will normally be about 35 to 60%. Under these conditions moisture vapor pressures ranging from about 1/3 to 1/2 pounds per square inch will exist much of the time. Moisture vapor will migrate to lower pressure areas. Common building materials such as stucco, masonry and even concrete, are permeable even with these slight pressures. Since most of our local construction does not use vapor barriers, condensation will take place within the enclosed walls of the building. As a result, deterioration is most likely adjacent to exterior walls, or wherever else moisture or direct leakage has been permitted to penetrate the building shell.

Structural deterioration will always require repair. The type of repair, however, will depend on the importance of the member in the structural system and degree of deterioration. Cosmetic type repairs may suffice in certain non-sensitive members such as tie beams and columns, provided that the remaining sound material is sufficient for the required function. For members carrying assigned gravity or other loads, cosmetic type repairs will only be permitted if it can be demonstrated by rational analysis that the remaining material, if protected from further deterioration can still perform its assigned function at acceptable stress levels. Failing that, adequate repairs or reinforcement will be considered mandatory.

Written Reports shall be required attesting to each required inspection. Each such report shall note the location of the structure, description of type of construction, and general magnitude of the structure, the existence of drawings and location thereof, history of the structure to the extent reasonably known, and description of the type and manner of the inspection, noting problem areas and recommending repairs, if required to maintain structural integrity.

FOUNDATION:

If all of the supporting subterranean materials were completely uniform beneath a structure, with no significant variations in grain size, density, moisture content or other mechanical properties; and if dead load pressures were completely uniform, settlements would probably be uniform and of little practical consequence. In the real world, however, neither is likely. Significant deviations from either of these two idealism are likely to result in unequal vertical movements.

Monolithic masonry, generally incapable of accepting such movements will crack. Such cracks are most likely to occur at corners, and large openings. Since, in most cases, differential shears are involved, cracks will typically be diagonal.

Small movements, in themselves, are most likely to be structurally important only if long term leakage through fine cracks may have resulted in deterioration. In the event of large movements, continuous structural elements such as floor and roof systems must be evaluated for possible fracture or loss of bearing.

Pile foundations are, in general, less likely to exhibit such difficulties. Where such does occur, special investigation will be required.

ROOFING SYSTEMS:

Sloping roofs, usually having clay or cement tiles, are of concern in the event that the covered membrane may have deteriorated, or that the tiles may have become loose. Large deflections, if merely resulting from deteriorated rafters or joists will be of greater importance. Valley Flashing, and Base Flashing at roof penetration will also be matters of concern.

Flat roofs with built up membrane roofs will be similarly critical with respect to deflection considerations. Additionally, since they will generally be approaching expected life limits at the age when building recertification is required, careful examination is important. Blisters, wrinkling, alligatoring, and loss of gravel are usually signs of difficulty. Punctures or loss of adhesion of base flashing, coupled with loose counterflashing will also signify possible problems. Wind blown gravel, if excessive, and the possibility of other debris, may result in pounding, which if permitted, may become critical.

MASONRY BEARING WALLS

Random cracking, or if discernible, definitive patterns of cracking, will of course, be of interest. Bulging, sagging, or other signs of misalignment may also indicate related problems in other structural elements. Masonry walls where commonly constructed of either concrete masonry units or scored clay tile, may have been constructed with either reinforced concrete columns tie beams, or lintels.

Steel bar joists are, of course, sensitive to corrosion. Most critical locations will be web member welds, especially near supports, where shear stresses are high possible failure may be sudden, and without warning.

Cold formed steel joists, usually of relatively light gage steel, are likely to be critically sensitive to corrosion, and are highly dependent upon at least normal lateral support to carry designed loads. Bridging and the floor or roof system itself, if in good condition, will serve the purpose.

Wood joists and rafters are most often in difficult from "dry rot", or the presence of termites. The former (a misnomer) is most often prevalent in the presence of sustained moisture or lack of adequate ventilation. A member may usually be deemed in acceptable condition if a sharp pointed tool will penetrate no more than about one eighth of an inch under moderate hand pressure. Sagging floors will most often indicate problem areas. Gypsum roof decks will usually perform satisfactorily except in the presence of moisture. Disintegration of the material and the foam-board may result from sustained leakage. Anchorage of the supporting bulb tees against uplift may also be of importance, with significant deterioration. Floor and roof systems of cast in place concrete with self centering reinforcing, such as paper backed mesh and rib-lath, may be critical with respect to corrosion of the unprotected reinforcing. Loss of uplift anchorage on roof decks will also be important if significant deterioration has taken place, in the event that dead loads are otherwise inadequate for that purpose.

STEEL FRAMING SYSTEM

Corrosion, obviously enough, will be the determining factor in the deterioration of structural steel. Most likely suspect areas will be fasteners, welds, and the interface area where bearings are embedded in masonry. Column bases may often be suspect in areas where flooding has been experienced, especially if salt water has been involved.

Thin cracks may indicate only minor corrosion, requiring minor patching. Extensive spalling may indicate a much more serious condition requiring further investigation.

Of most probable importance will be the vertical and horizontal cracks where masonry units abut tie columns, or other frame elements such as floor slabs. Of interest here is the observation that although the raw materials of which these masonry materials are made may have much the same mechanical properties as the reinforced concrete framing, their actual behavior in the structure, however, is likely to differ with respect to volume change resulting from moisture content, and variations in ambient thermal conditions.

Moisture vapor penetration, sometimes abetted by salt laden aggregate and corroding rebars, will usually be the most common cause of deterioration. Tie columns are rarely structurally sensitive, and a fair amount of deterioration may be tolerated before structural impairment becomes important. Usually, if rebar loss is such that the remaining steel area is still about 0.0075 of the concrete area, structural repair will not be necessary. Cosmetic type repair involving cleaning, and patching to effectively seal the member, may often suffice. A similar approach may not be unreasonable for tie beams, provided they are not also serving as lintels. In that event, a rudimentary analysis of load capability using the remaining actual rebar area, may be required.

FLOOR AND ROOF SYSTEMS

Cast in place reinforced concrete slabs and/or beams and joists may often show problems due to corroding rebars resulting from cracks or merely inadequate protecting cover of concrete. Patching procedures will usually suffice where such damage has not been extensive. Where corrosion and spalling has been extensive in structurally critical areas, competent analysis with respect to remaining structural capacity, relative to actual supported loads, will be necessary. Type and extent of repair will be dependent upon the results of such investigation.

Precast members may present similar deterioration conditions. End support conditions may be important. Adequacy of bearing, indications of end shear problems, and restraint conditions are important, and should be evaluated in at least a few typical locations.

CONCRETE FRAMING SYSTEMS

Concrete deterioration will, in most cases be similarly related to rebar corrosion possibly abetted by the presence of salt-water aggregate or excessively permeable concrete. In this respect, honeycomb areas may contribute adversely to the rate of deterioration. Columns are frequently most suspect. Extensive honeycomb is most prevalent at the base of columns, where fresh concrete was permitted to segregate, dropping into form boxes. This type of problem has been known to be compounded in areas where flooding has occurred, especially involving salt water.

In spall areas, chipping away a few small loose samples of concrete may be very revealing. Especially, since loose material will have to be removed even for cosmetic type repairs, anyway. Fairly reliable

quantitative conclusions may be drawn with respect to the quality of the concrete. Even though our cement and local aggregate are essentially derived from the same sources, cement will have a characteristically dark grayish brown color in contrast to the almost white aggregate. A typically white, almost alabaster like coloration will usually indicate reasonably good overall strength. The original gradation of aggregate can be seen through a magnifying glass. Depending upon the structural importance of the specific location, this type of examination may obviate the need for further testing if a value of 2000 psi to 2500 psi is sufficient for required strength, in the event that visual inspection indicates good quality for the factors mentioned.

WINDOWS

Window condition is of considerable importance with respect to two considerations. Continued leakage may have resulted in other adjacent damage and deteriorating anchorage may result in loss of the entire unit in the event of severe wind storms short of hurricane velocity. Perimeter sealant, glazing, seals, and latches should be examined with a view toward deterioration of materials and anchorage of units for inward as well as outward (section) pressures, most importantly in high buildings.

WOOD FRAMING

Older wood framed structures, especially of the industrial type, are of concern in that long term deflections may have opened important joints, even in the absence of deterioration. Corrosion of ferrous fasteners will in most cases be obvious enough. Dry rot must be considered suspect in all sealed areas where ventilation has been inhibited, and at bearings and at fasteners. Here too, penetration with a pointed tool greater than about one eighth inch with moderate hand pressure, will indicate the possibility of further difficulty.

LOADING

It is of importance to note that even in the absence of any observable deterioration, loading conditions must be viewed with caution. Recognizing that there will generally be no need to verify the original design, since it will have already been "time tested", this premise has validity only if loading patterns and conditions remain **unchanged**. Any material change in type and/or magnitude or loading in older buildings should be viewed as sufficient jurisdiction to examine load carrying capability of the affected structural system.

SCOPE OF ELECTRICAL INSPECTION

The purpose of the required inspection and report is to confirm with reasonable fashion that the building or structure and all habitable and non-habitable areas, as deemed necessary by the inspecting professional to establish compliance, are safe for continued use under present occupancy. As mentioned before, this is a recommended procedure, and under no circumstances are these minimum recommendations intended to supplant proper professional judgement.

ELECTRIC SERVICE

A description of the type of service supplying the building or structure must be provided, stating the size of amperage, if three (3) phase or single (1) phase, and if the system is protected by fuses or breakers. Proper grounding of the service should also be in good standing. The meter and electric rooms should have sufficient clearance for equipment and for the serviceman to perform both work and inspections. Gutters and electrical panels should all be in good condition throughout the entire building or structure.

BRANCH CIRCUITS

Branch circuits in the building must all be identified and an evaluation of the conductors must be performed. There should also exist proper grounding for equipment used in the building, such as an emergency generator, or elevator motor.

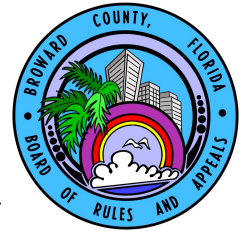
CONDUIT RACEWAYS

All types of wiring methods present in the building must be detailed and individually inspected. The evaluation of each type of conduit and cable, if applicable, must be done individually. The conduits in the building should be free from erosion, and checked for considerable dents in the conduits that may be prone to cause a short. The conductors and cables in these conduits should be chafe free, and their currents not over the rated amount.

EMERGENCY LIGHTING

Exit signs lighting and emergency lighting, along with a functional fire alarm system must all be in good working condition.

STRUCTURAL SAFETY INSPECTION REPORT FORM



Inspection Firm or Individual Name: _____

Address: _____

Telephone Number: _____

Inspection Commenced Date: _____ Inspection Completed Date: _____

No Repairs Required

Repairs are required as outlined in the attached inspection report

Licensed Professional,

Engineer/Architect Name: _____

License Number: _____

I am qualified to practice in the discipline in which I am hereby signing,

Signature _____ Date: _____



This report has been based upon the minimum inspection guidelines for building safety inspection as listed in the Broward County Board of Rules and Appeals' Policy #05-05. To the best of my knowledge and ability, this report represents an accurate appraisal of the present condition of the structure, based upon careful evaluation of observed conditions, to the extent reasonably possible

DESCRIPTION OF STRUCTURE

a. Name on Title:

b. Street Address:

c. Legal Description:

d. Owner's Name:

e. Owner's Mailing Address:

f. Folio Number of Property on which Building is Located:

g. Building Code Occupancy Classification:

h. Present Use:

i. General Description, Type of Construction:

Square Footage:

Number of Stories:

j. Special Features:

k. Addition Comments:

I. Additions to original structure:

2. PRESENT CONDITION OF STRUCTURE

a. General alignment (Note: good, fair, poor, explain if significant):

1. Bulging:

2. Settlement:

3. Deflections:

4. Expansion:

5. Contraction:

b. Portion showing distress (Note, beams, columns, structural walls, floor, roofs, other):

c. Surface conditions – describe general conditions of finishes, noting cracking, spalling, peeling, signs of moisture penetration and stains:

d. Cracks – note location in significant members. Identify crack size as HAIRLINE if barely discernible; FINE if less than 1 mm in width; MEDIUM if between 1 and 2 mm width; WIDE if over 2 mm:

e. General extent of deterioration – cracking or spalling of concrete or masonry, oxidation of metals; rot or borer attack in wood:

f. Previous patching or repairs:

g. Nature of present loading indicate residential, commercial, other estimate magnitude:

3. INSPECTIONS

a. Date of notice of required inspection:

b. Date(s) of actual inspection:

c. Name and qualifications of individual submitting report:

d. Description of laboratory or other formal testing, if required, rather than manual or visual procedures:

e. Structural repair-note appropriate line:

1. None required:

2. Required (describe and indicate acceptance):

4. SUPPORTING DATA

a. _____ sheet written data

b. _____ photographs

c. _____ drawings or sketches

5. MASONRY BEARING WALL = Indicate good, fair, poor on appropriate lines:
a. Concrete masonry units:
b. Clay tile or terra cotta units:
c. Reinforced concrete tie columns:
d. Reinforced concrete tie beams:
e. Lintel:
f. Other type bond beams:
g. Masonry finishes -exterior:
1. Stucco:
2. Veneer:
3. Paint only:
4. Other (describe):
h. Masonry finishes - interior:
1. Vapor barrier:
2. Furring and plaster:
3. Paneling:
4. Paint only:
5. Other (describe):
i. Cracks:
1. Location – note beams, columns, other:
2. Description:
j. Spalling:
1. Location – note beams, columns, other:
2. Description:
k. Rebar corrosion-check appropriate line:
1. None visible:
2. Minor-patching will suffice:
3. Significant-but patching will suffice:

4. Significant-structural repairs required:
I. Samples chipped out for examination in spall areas:
1. No:
2. Yes – describe color, texture, aggregate, general quality:

6. FLOOR AND ROOF SYSTEM
a. Roof:
1. Describe (flat, slope, type roofing, type roof deck, condition):
2. Note water tanks, cooling towers, air conditioning equipment, signs, other heavy equipment and condition of support:
3. Note types of drains and scuppers and condition:
b. Floor system(s):
1. Describe (type of system framing, material, spans, condition):
c. Inspection – note exposed areas available for inspection, and where it was found necessary to open ceilings, etc. for inspection of typical framing members:

7. STEEL FRAMING SYSTEM
a. Description:

b. Exposed Steel- describe condition of paint and degree of corrosion:
c. Concrete or other fireproofing – note any cracking or spalling and note where any covering was removed for inspection:
d. Elevator sheave beams and connections, and machine floor beams – note condition:

8. CONCRETE FRAMING SYSTEM
a. Full description of structural system:
b. Cracking:
1. Not significant:
2. Location and description of members affected and type cracking:
c. General condition:
d. Rebar corrosion – check appropriate line:
1. None visible:
2. Location and description of members affected and type cracking:
3. Significant but patching will suffice:
4. Significant – structural repairs required (describe):
e. Samples chipped out in spall areas:
1. No:
2. Yes, describe color, texture, aggregate, general quality:

9. WINDOWS

a. Type (Wood, steel, aluminum, jalousie, single hung, double hung, casement, awning, pivoted, fixed, other):

b. Anchorage- type and condition of fasteners and latches:

c. Sealant – type of condition of perimeter sealant and at mullions:

d. Interiors seals – type and condition at operable vents:

e. General condition:

10. WOOD FRAMING

a. Type – fully describe if mill construction, light construction, major spans, trusses:

b. Note metal fitting i.e., angles, plates, bolts, split pintles, other, and note condition:

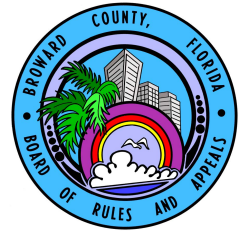
c. Joints – note if well fitted and still closed:

d. Drainage – note accumulations of moisture:

e. Ventilation – note any concealed spaces not ventilated:

f. Note any concealed spaces opened for inspection:

ELECTRICAL SAFETY INSPECTION REPORT FORM



Inspection Firm or Individual Name: _____

Address: _____

Telephone Number: _____

Inspection Commenced Date: _____ Inspection Completed Date: _____

No Repairs Required

Repairs are required as outlined in the attached inspection report

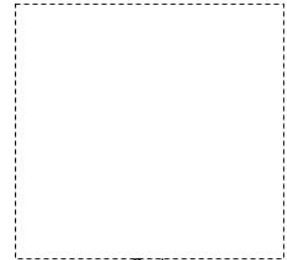
Licensed Professional,

Engineer/Architect Name: _____

License Number: _____

I am qualified to practice in the discipline in which I am hereby signing,

Signature _____ Date: _____



This report has been based upon the minimum inspection guidelines for building safety inspection as listed in the Broward County Board of Rules and Appeals' Policy #05-05. To the best of my knowledge and ability, this report represents an accurate appraisal of the present condition of the electrical system, based upon careful evaluation of observed conditions, to the extent reasonably possible

DESCRIPTION OF STRUCTURE

a. Name on Title:

b. Street Address:

c. Legal Description:

d. Owner's Name:

e. Owner's Mailing Address:

f. Folio Number of Property on which Building is Located:

g. Building Code Occupancy Classification:

h. Present Use:

i. General Description, Type of Construction:

Square Footage:

Number of Stories:

j. Special Features:

k. Additional Comments:

**MINIMUM GUIDELINES AND INFORMATION FOR RECERTIFICATION OF ELECTRICAL
SYSTEMS OF FORTY (40) YEAR STRUCTURES**

1. ELECTRIC SERVICE

- | | | | |
|---------------|-------------|--------------|--------------|
| 1. Size: | Amperage | Fuses | Breakers |
| 2. Phase: | Three Phase | Single Phase | Needs Repair |
| 3. Condition: | Good | Fair | |

Comments:

2. METER AND ELECTRIC ROOM

- | | | | |
|----------------|------|------|---------------------|
| 1. Clearances: | Good | Fair | Requires Correction |
|----------------|------|------|---------------------|

Comments:

3. GUTTERS

- | | | |
|----------------|------|-----------------|
| Location: | Good | Requires Repair |
| Taps and Fill: | Good | Requires Repair |

Comments:

4. ELECTRICAL PANELS

Location: Good Needs Repair

1. Panel #()

Good Needs Repair

2. Panel #()

Good Needs Repair

3. Panel #()

Good Needs Repair

4. Panel #()

Good Needs Repair

5. Panel #()

Good Needs Repair

Comments:

5. BRANCH CIRCUITS:

1. Identified: Yes Must be identified

2. Conductors: Good Deteriorated Must be replaced

Comments:

6. GROUNDING SERVICE:

Good

Repairs Required

Comments:

7. GROUNDING OF EQUIPMENT:

Good

Repairs Required

Comments:

8. SERVICE CONDUITS/RACEWAYS:

Good

Repairs Required

Comments:

9. SERVICE CONDUCTOR AND CABLES:

Good

Repairs Required

Comments:

10. TYPES OF WIRING METHODS:

Conduit Raceways:	Good	Repairs Required
Conduit PVC:	Good	Repairs Required
NM Cable:	Good	Repairs Required
BX Cable:	Good	Repairs Required

11. FEEDER CONDUCTORS:

Good	Repairs Required
------	------------------

Comments:

12. EMERGENCY LIGHTING:

Good	Repairs Required
------	------------------

Comments:

13. BUILDING EGRESS ILLUMINATION:

Good	Repairs Required
------	------------------

Comments:

14. FIRE ALARM SYSTEM:

Good

Repairs Required

Comments:

15. SMOKE DETECTORS:

Good

Repairs Required

Comments:

16. EXIT LIGHTS:

Good

Repairs Required

Comments:

17. EMERGENCY GENERATOR:

Good

Repairs Required

Comments:

18. WIRING IN OPEN OR UNDER COVER PARKING GARAGE AREAS:

Good

Repairs Required

Comments:

19. OPEN OR UNDERCOVER PARKING GARAGE AREAS AND EGRESS ILLUMINATION:

Good

Repairs Required

Comments:

20. SWIMMING POOL WIRING:

Good

Repairs Required

Comments:

21. WIRING TO MECHANICAL EQUIPMENT:

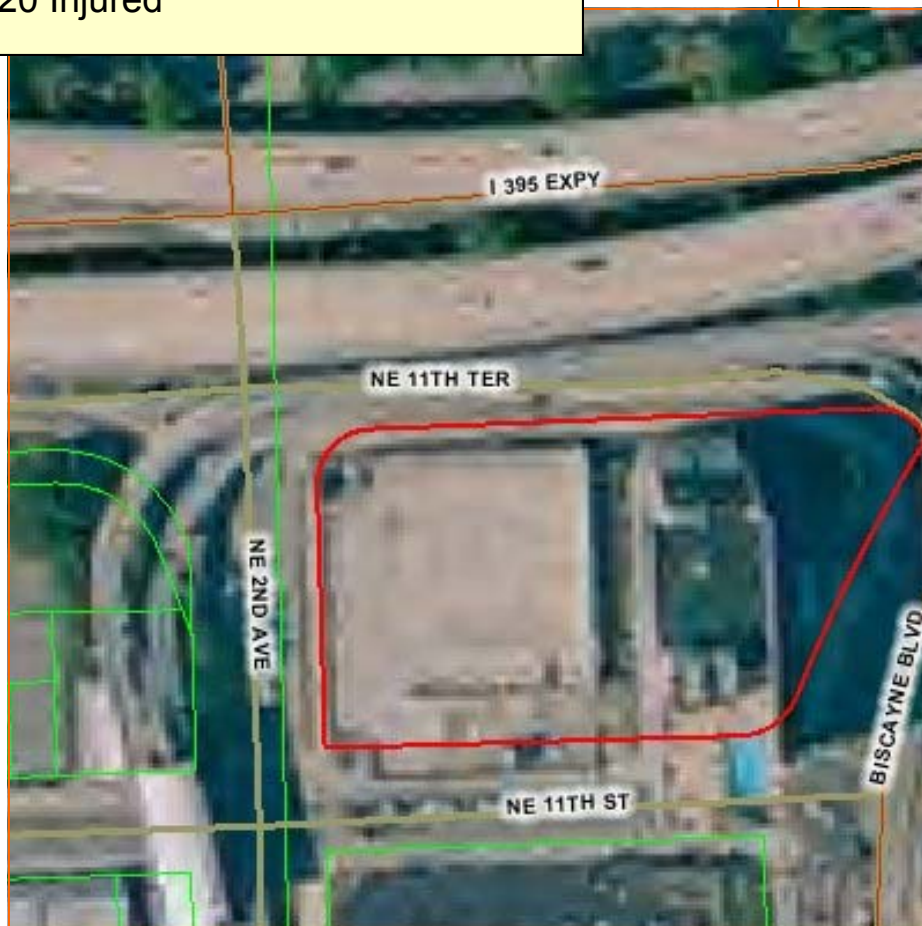
Good

Repairs Required

Comments:

22. ADDITIONAL COMMENTS:

Federal Drug Administration Regional Office
Downtown Miami
Garage collapsed in August 1974
7 dead - 20 Injured





1996
4111 South Ocean Drive,
Hollywood, Fl.
Balcony Collapse



2006
4564 El Mar Dr.
Lauderdale by the Sea, Fl.
Balcony Collapse






Wilma's revenge

A second-story balcony on a beachfront condo in Lauderdale-By-The-Sea collapsed on Tuesday morning forcing at least five people to evacuate. Broward County authorities said the apartments affected were not occupied and no one was injured. As you can see with the blue roof tarp, the building had already been damaged by last year's Hurricane Wilma.

(NBC 6)

Apr 18, 2006

Related Content

 [Balcony collapse forces 5 from units at LBTS condo](#)

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