



PROPERTY INSPECTION PROFESSIONALS

March 7, 2008

Mr. Smith  
Chicago, Illinois

RE: Anywhere 111

Dear Mr. Smith:

Tomacor completed a follow up inspection at the above referenced property on March 6, 2008. The purpose of the inspection was to evaluate the premises for recent repairs which have been made since our earlier inspections in 2007 and to organize the discovered deficiencies into a matrix of 4 areas. The inspection on March 6, 2008 was also conducted comparing the completed work to what has been represented as completed in the letter from Jones c/o Washington Mutual Bank from the Brown Design Group. The Jones letter was presented to Tomacor on February 27<sup>th</sup>, 2008 as a partial rebuttal letter to Tomacor's earlier reports. This document will address the findings of the March 6 inspection for completed items and the Jones letter of February 27 (discussing observations on what is complete) and will present a list of all material deficiencies broken into 4 categories.

#### **JONES LETTER REBUTTAL**

1. Point #2 in the exterior area of the Jones letter notes that weep holes were observed etc. The installed weep holes and flashing do not meet the 2000 IRC as has been represented by the builder developer (BD). The 2000 IRC requires flashing and weep holes under section 703.8.3 and 703.7.6 above and below windows and doors including sills. The Tomacor inspector photographed every window on the first floor of the above referenced premises and flashings and weep holes were absent at all elevations and all window sills on the first floor.

This is a clear violation of the code requirement and will require the removal of **sills** and masonry to install weep holes and flashing. Tomacor estimates that this repair could exceed \$50,000. Complete the installation of the flashing and weep holes immediately per blueprint, building code and industry standard. See photo section.

2. The majority of the remaining issues for the exterior of the building in the Jones letter continue to be open and unaddressed at this time. Complete all the required repairs.
3. During the earlier Tomacor inspections, the area below the main stairway at the basement level was wooden and left open. This area was closed by 3-6-08, prohibiting inspection during the March 7<sup>th</sup> inspection.
4. The blueprint standard calls for a doubling of the floor joists under bathrooms and parallel partitions. The doubled floor joists have not been added below the tub. Tomacor is concerned about the load carrying capacity of the joists as well as any deflection which may occur in the plywood sub floor or below the ceramic tile (cracking) when the tub is loaded with water and/or a user. Complete the repairs to the blueprint specifications.
5. Most of the interior points raised within the Jones rebuttal letter remain incomplete.
6. Tomacor maintains that the supply of conditioned air to the kitchen is inadequate. Make the repair.
7. The specified high efficiency water heaters have not been installed. It is understood that the current set represents the second attempt on the part of the plumber to install the specified water heaters. The existing heaters do not meet the specification. A high efficiency (Schedule 4) water heater requires a 2 pipe assembly and a condensate line which will collect the ambient water given off during the process of combustion within the high efficiency, schedule 4 water heater. Replace the water heaters.

### **TOMACOR OBSERVATIONS 3/6/2008**

The inspector had the opportunity to visit the city of your town USA and to discuss code standards with one of their code officials. Several observations are in order.

1. Furnaces and furnace equipment must be fire and fume sealed in mechanical rooms.
2. According to M1305 of the 2000 IRC section M1305.1.1 furnaces require 6 inches of working space in front of them. This standard has not been met in the bottom floor mechanical room at the above referenced premises.
3. According to the international residential code R404.1.6 the exterior foundation walls must extend above the finished grade by 4 inches when masonry veneer is used. This standard has not been followed which will encourage the collection of

water and the growth of mold or mildew within the premises. Unfortunately, the rear patio and other areas will need to be dropped and reset in order to meet this code requirement.

4. The review of the 2000 IRC within section R703.1 states that “The exterior wall envelope shall be designed and constructed to .....prevent the accumulation of water in the wall assembly.” This standard has not been followed with the installation of the front and rear stoops at the above referenced premises. Flashing and weep holes have been installed at the bottom of the veneer wall so that the installation of poured concrete stoop and stairs against the veneer will trap moisture into the wall. The repair will require the removal of the stoops and the re-engineering of the construction detailing per code and standard. It should be noted that the rear patio area will need to be dropped per the code. Re-engineer the rear stair assembly taking this fact into account.
5. Tomacor’s review of the construction documents including the stairs for the home in question illustrate that the stairs have not been installed per blueprint standard. In addition, there was a general note written on the original blueprints noting the non compliance of the stairs. Finally, Tomacor had time to review the IRC2000 which confirms the “non compliant” note written on the stair blue print documents. A simple review of the stairs in the home will show that riser heights are significantly above 7 ¾ inches in multiple places which places them out of compliance with the blueprint and the code standard R314.2(IRC). See photo sections.
6. The structural columns used in building the home have not been permanently attached to the beams above as is required per code standard. This is a material deficiency which may lead to significant shifting, settlement or movement in the building’s structure. See photo section.
7. Within the city of your town USA, it is typical to remove the form ties at the building’s interior basement level before buyers are granted possession from the BD. Complete the repairs per the your town standard.
8. Supply and return duct work is required to be sealed according to information provided by the city of Highland Park. Any failure to seal the duct work will result in wasted energy and the potential for pulling exhaust gases back into the living environment. This is not acceptable and must be repaired. See photo section.
9. The blueprint specifications call for roof tie down components. These could not be observed in the attic area and should be installed.

## **DEFICIENCIES RESOLVED FROM TOMACOR’S INSPECTIONS**

1. The wooden supports for the front turret area have been installed.

2. The top jamb of the primary garage has been repaired.
3. The crack in the masonry over the primary garage has been repaired.
4. The city of your town stated that a fire code material is not required above a furnace in a large mechanical room such as the basement when there are no floor or wall penetrations of the ceiling above and that the furnace installation meets all other standards. The area above the basement furnace appears to be adequate for fire code purposes.

## **DEFICIENCIES BY CATEGORIES**

The following list of deficiencies has been arranged into four categories. These categories should help in the understanding of how these deficiencies relate to the construction of the new home at 824 Broadview in Highland Park.

### **A. Material damage to the building created by the builder.**

1. The air conditioning suction line has been damaged and requires replacement for the system to perform.
2. The entry stoop was cracked during construction and has not been removed and replaced to a professional standard, as is required. Replace the stoop as soon as possible.

### **B. Construction completed or not professionally completed to code.**

1. The asphalt driveway should not pond water. It should be installed "so as to not create a (tripping) hazard." Official and Code Review IRC2000 R40.3.
2. The masonry chimney is required to have adequate and professional support, so as to not be hazardous. Official and Code Review of IRC2000 R1001.1. See also- Chapters 3, 4 and 6.
3. The blue print specifies and 8 in. variation between the building grade and the top of the foundation. This will prevent water infiltration and mold. Drop the grade down. Review IRC2000 R404.1.6.
4. The home's stairs do not meet the blue print's standard or the Highland Park standard and are unprofessionally installed at the building's interior. Review the IRC2000- Section R314.2 for the appropriate specifications regarding these stairs. Replace the stairs at all locations.

5. The installation of the heating and air conditioning systems in the second floor mechanical room represent a fire and dangerous fume hazard. The duct work and dry wall are not sealed and were left open to the attic.
6. High efficiency water heaters (Schedule 4) are required to be installed per the construction documents. This detail has not been undertaken. In addition, the your town building code specifies the amount of combustion air and make-up air required for the water heaters (M1702.1). Should the amount of air be inadequate, it is possible that the oxygen will be depleted in the room, causing the dangerous production of carbon monoxide. Any carbon monoxide production could immediately be sucked into the open return air plenum of the furnace, which could cause a poisoning of the building's occupants.

The specification for a "high efficiency" or Schedule 4 water heater is clear and specific. The equipment has not been installed, creating a life safety hazard for the workman and for anyone who takes possession of this home. The International Residential Code 2000 (IRC 2000) is supported in this standard by the National Fire Protection Association, who produces the National Fuel Gas Code. Review the IRC 2000 section M1402.3.

7. A set of wooden stairs has been used to connect the living space to the garage. These stairs are typically concrete, a point noted in the Custom Home specification package. These stairs are inconsistent in their riser heights, representing a building code violation, which should be corrected immediately. Change the stairs.
8. The front and rear stoop have been poured against the masonry veneer wall, trapping water in the wall, while preventing the water from exiting at the weepholes and flashing detailing, as is required. The front and rear stoops need to be removed and these sections of the house need to be redesigned in order to receive the stoops so that the masonry wall can function and allow the release of trapped water.

This detail is spelled out in the IRC2000, Section R703.1- "The exterior wall envelope shall be designed and constructed...to prevent the accumulation of water in the wall assembly." The accumulation of water can lead to mold and mildew problem within the home. This is a problem that should not be accepted. Remove the stoops and reengineer the exterior of the house, as is required. It should be noted that the rear patio area will need to be dropped down in order to meet the Highland Park building code. Any engineering of the stoops should take this fact into account.

9. This masonry veneer home is required to exhibit flashing and weep holes at multiple locations. Many of the required locations have not received the flashing and weep holes. This is true in some cases, over windows and doors. In addition, flashing and weep holes were not seen below any of the first floor windows or door **sills**, as is required. This omission or error will necessitate the removing of multiple stone sills and masonry components. Complete this required repair immediately.

A review of the IRC2000, exterior section #4, specifies the need for weep holes and flashings under paragraphs 703.7.6 and 703.8. It is noted that weep holes “are to be above all flashing.” It is also noted that the flashing is required to “extend to the surface of the wall” in order to prevent water entering the envelope. This standard has not been met. These code sections of the IRC2000 specifically reference masonry sills, as requiring flashing and weep holes. In order to meet this standard, many of the sills and bricks above and below windows and doors will need to be removed and reinstalled to a professional standard.

10. A review of the IRC2000, under section R404.1.6, requires that the exterior foundation wall must extend above grade by a minimum of 4 inches with masonry veneer construction. This requirement has been skipped by the building or the developer, rendering the home water vulnerable. The specific problem was noted more at the rear of the house than in other areas, yet the deficiency must be corrected around the entire perimeter of the home where it is notable.
11. The IRC2000 section M1305.1.1 require that gas appliances need a 6 in. clearance in front of them. This standard has not been met and has created a fire hazard in the basement furnace area. Reconfigure the construction detailing in this area, so as to meet the code standard.
12. The Tomacor inspector completed a conversation with the code official from your town where the home inspector learned that concrete foundation form ties are to be removed from the surface of the foundation walls. This typically involves grinding the form ties down. These details have not been completed. Make the necessary repairs as soon as possible.

### **C. Defects in workmanship or installations that make the system or home defective.**

1. Install the sod and complete the landscaping.
2. The masonry chimney is required to have adequate and professional support, so as to not be hazardous. These structures are defective. Code Review of IRC2000 R1001.1. Chapters 3, 4 and 6 will explain the problem. This error will be expensive to repair.

3. Basement cold pour is not professionally installed and has no warranty receipt. The repair is defective.
4. “J” bolts with flat washers and nuts installed every 6 feet and adequate fastenings at corners is required.
5. The blue print specifies an 8 in. variation between the building grade and the top of the foundation. This will prevent water infiltration and mold.
6. The exterior system is defective. Drop the grade down. See also IRC2000-Section R404.1.6.
7. The home’s stairs do not meet the blue print’s standard or the your town standard and are unprofessionally installed at the building’s interior.

Review the IRC2000- Section R314.2 for the appropriate specifications regarding these stairs. The stair component is defective.

8. The installation of the heating and air conditioning systems in the second floor mechanical room represent a fire and dangerous fume hazard. The duct work and dry wall are not sealed. Review section M1601.3.1. of the IRC2000 for the standard.
9. The air conditioning suction line has been damaged and requires replacement for the A.C. system to perform. This system is defective.
10. High efficiency water heaters (Schedule 4) are required to be installed per the construction documents. This detail has not been undertaken. In addition, the your town building code specifies the amount of combustion air and make-up air required for the water heaters (M1702.1). Should the amount of air be inadequate, it is possible that the oxygen will be depleted in the room, causing the dangerous production of carbon monoxide. Any carbon monoxide production could immediately be taken into the open seams of the return air plenum of the furnace, which could cause a poisoning of the building’s occupants. The specification for a “high efficiency” or Schedule 4 water heater is clear and specific. The equipment has not been installed, creating a life safety hazard for the workman and for anyone who takes possession of this home. The International Residential Code 2000 (IRC 2000) is supported in its standard by the National Fire Protection Association, who produces the National Fuel Gas Code. Review the IRC 2000 section M1402.3
11. During the installation of the entry concrete, materials were splattered against the masonry surface, requiring clean up. This repair was not initiated. See photos.

12. The entry stoop was cracked during construction and has not been removed and replaced to a professional standard, as is required. Replace the stoop as soon as possible. See photos.
13. The front and rear stoop have been poured against the masonry veneer wall, trapping water in the wall, while preventing the water from exiting at the weepholes and flashing detailing, as is required. The front and rear stoops need to be removed and these sections of the house need to be redesigned in order to receive the stoops so that the masonry wall can function and allow the release of trapped water.

This detail is spelled out in the IRC2000, Section R703.1- “The exterior wall envelope shall be designed and constructed...to prevent the accumulation of water in the wall assembly.” The accumulation of water can lead to mold and mildew problem within the home. This is a problem that should not be accepted. Remove the stoops and reengineer the exterior of the house, as is required. It should be noted that the rear patio area will need to be dropped down in order to meet the Highland Park building code. Any engineering of the stoops should take this fact into account. See photos.

14. This masonry veneer home is required to receive flashing and weep holes at multiple locations. Many of the required locations have not received the flashing and weep holes. This is true in some cases, over windows and at other points. In addition, flashing and weep holes were not seen below any of the first floor windows or door **sills**, as is required.

This omission or error will necessitate the removing of most stone sills and masonry window components. Complete this required repair immediately. A review of the IRC2000, exterior section #4, specifies the need for weep holes and flashings under paragraphs 703.7.6 and 703.8. It is noted that weep holes “are to be above all flashing.” It is also noted that the flashing is required to “extend to the surface of the wall” in order to prevent water into the envelope. This standard has not been met. These code sections of the IRC2000 specifically reference masonry sills, as requiring flashing and weep holes. In order to meet this standard, many of the sills and bricks above and below windows and doors will need to be removed and reinstalled to a professional standard.

15. A review of the IRC2000, under section R404.1.6, requires that the exterior foundation wall must extend above grade by a minimum of 4 inches when using masonry veneer construction. This requirement has been skipped by the builder or the developer, rendering the home water vulnerable. The specific problem was noted more at the rear of the house than in other areas, yet the deficiency must be corrected around the entire perimeter of the home where it is notable. See photos.

16. The IRC2000 section M1305.1.1 requires that gas appliances need a 6 in. working space in front of them. This standard has not been met and has created a fire hazard in the basement furnace area. Reconfigure the construction detailing in this area, so as to meet the code standard. See photos.
17. Tomacor has discovered that the concrete floor in the basement mechanical room has not been professionally tiled, as is the standard. The builder has begun the tiling yet it remains incomplete. Complete the tiling.

**D. Construction details that are substantially incomplete according to the plans, specification, construction documents and contracts.**

1. The house is required to be constructed in a good workman-like manor, free of all defects. Make the repairs.
2. The asphalt and concrete driveway should not pond water. It should be installed “so as to not create a hazard.” Review Code IRC2000 R40.3.
3. The soffit ventilation was not constant with the blue print. Continuous ventilation is required.
4. The home’s stairs do not meet the blue print’s standard or the your town standard and are unprofessionally installed at the building’s interior. Review the IRC2000- Section R314.2 for the appropriate specifications regarding these stairs. Replace all the stairs now.
5. High efficiency water heaters (Schedule 4) are required to be installed per the construction documents. This detail has not been undertaken. In addition, the your town building code specifies the amount of combustion air and make-up air required for the water heaters (M1702.1).

Should the amount of air be inadequate, it is possible that the oxygen will be depleted in the room, causing the dangerous production of carbon monoxide. Any carbon monoxide production could immediately be sucked into the open return air plenum of the furnace, which could cause a poisoning of the building’s occupants. The specification for a “high efficiency” or Schedule 4 water heater is clear and specific. The equipment has not been installed, creating a life safety hazard for the workman and for anyone who takes possession of this home. The International Residential Code 2000 (IRC 2000) is supported in its standard by the National Fire Protection Association, who produces the National Fuel Gas Code. Review the IRC 2000 section M1402.3.

6. A set of wooden stairs has been used to connect the living space to the garage. These stairs are typically concrete, a point noted in the Blackberry Custom Home specification material, and these stairs are inconsistent in their riser heights, representing a building code violation, which should be corrected immediately.

## **Conclusion**

In conclusion, additional defects have been noted in the home which reduces the quality of its presentation on multiple fronts. In addition, other inspections have been completed which shed light on the quality and condition of the building. Review them as soon as possible. Tomacor's inspections have revealed a large number of significant deficiencies in the home which need to be corrected immediately. It is Tomacor's opinion that several of the deficiencies noted such as the stairs and the installation of the water heaters represent clear and specific hazards associated with any homebuyers well being. In addition, conditions are adequate for other problems which could be of a life safety nature. This is true regarding the installation of the stoop and rear patio as well as the drive in parking area out front. Recurrent collection of snow, rainwater or ice in these areas will send water, water vapor or condensate into the house when the conditions are aligned for the water infiltration. Water infiltration produces mold which is not acceptable in this new home environment.

It is Tomacor's opinion that unless or until the hazardous deficiencies are addressed that the home should be considered uninhabitable. It is critical that repairs in the home begin immediately and that general contractor initiatives at both the interior and exterior of the home be completed in a professional and thorough way. All work must proceed according to code and professional standard. Please review the photographic section. If you have any questions please call Tomacor, Inc.

Sincerely,

Thomas A. Corbett, President  
Tomacor, Inc.