



May 23, 2008

Client: John Doe

Subject Property: 123 Main St., Anywhere, USA

Via E-mail @: John@AOL.com

Mold Inspection Narrative
Report # Doe 52308- MI-1

Time of Inspection: 1:30PM, Weather: cool, Sunny, Temperature: approx. 50 deg. F., Completion: 4:30PM.

After a visual inspection at the above residence there are considerable “*Red Flags*” of concern. Along with the visual inspection we employed the use of the following: *Tramex* and *Delmhorst* moisture meters, *Delmhorst* hygrometer, *Infrared Solutions* infrared thermal imager and associated digital visual images. At the time of this inspection the subject property was unoccupied, and all utilities energized. Interior temperatures were near 60-64 deg. F. Structurally the property is two story on level site, framed construction with enclosed front and rear porches, exterior of stucco, interior surface of lath and plaster and some areas of drywall, partial finished basement, non-conditioned crawlspaces under porches, age: 86 years. Client accepted doing (3) air spore trap impact samplings. One was executed on, the 2nd Floor, one in the Basement area, and one outside control/baseline sample. Test results will come from **EM Labs P&K on MoldREPORT** under separate cover.

From the exterior inspection, we noted considerable “*Red Flags*” of concern. Some of these concerns are interrelated by “cause and effect” issues. Several downspout turnouts are not properly set. Be sure that all downspout turnouts are directed at least 48” away from foundation with splash blocks and that surrounding grade levels are pitch sufficiently away from foundation. There is a rear abandoned basement entry stairway area, that may have interrelated “cause and effect” issues. (SEE PIC. REFERENCES ATTACHED “Exterior Issues 2.”) Improperly run downspouts and sub surface drains can have considerable impact on the foundation footings and drain tile by allowing excessive rainwater to develop high hydrostatic pressures on the foundation and footing juncture points. When this happens seepage and capillary suction will occur at the footings. There are several points where the grade level is in contact with the stucco siding. Grade level should be at least 4-6” below brick/siding, exposing the foundation. Any stone, earth, mulch or firewood in contact with the brick/siding will allow moisture deflection and absorption into the wall cavity. Suggest proper re-grading by lowering and pitching away from the structure. Caulk all breaches in the siding such as service entries and discharge lines, especially with stucco exteriors. At most of the fenestrations we noted deteriorations in the form of, paint peelings, wood jamb and sill deteriorations, and separation from stucco and radial cracks. (SEE PIC. REFERENCES ATTACHED “Exterior Issues 1. 2. & 3.”)

Cont.

We also noted cracks forming a junctures where the front and rear porch roof lines intersect the main structure. There are two critical areas where transition upper level downspouts occur. (SEE PIC. REFERENCES ATTACHED “Exterior Issues 2. & 3.”) At the rear downspout transition, there maybe concern for interrelated “cause and effect” issues. Suggest having a qualified stucco contractor review, evaluate and repair. At the left front corner of the upper main roof, we noted that an area on the overhang soffit that has severe deterioration. (SEE PIC. REFERENCES ATTACHED “Exterior Issues 1.”) We also noted that there are no soffit vents for entrance ventilation. Suggest further invasive investigation of the soffit deterioration and suggest integrating continuous soffit ventilation. Soffit ventilation must be balanced with roof ridge exit ventilation. See following notes under attic assessment.

During our assessment of the attic we noted a debris strewn attic floor, a small pile of possible asbestos *vermiculite* type insulation, poor or missing insulation coverage and no entrance soffit ventilation. There is minimal roof ridge exit venting. (SEE PIC. REFERENCES ATTACHED “Attic Issues”) Suggest a cleanup of all debris. Suggest sampling of suspect asbestos material. If results are positive, employ professional protocols for asbestos removal. Within the present attic are dual exhaust fans in the front roof dormer. These fans are remotely controls by a timer. From both the exterior and interior assessment of the roof-attic we feel that there does not appear to be enough adequate viable soffit (entrance) and roof ridge (exit) ventilation for convection airflow in this attic. (SEE PIC. REFERENCES ATTACHED “Attic Issues & Exterior Issues 1.”) The soffit rafter pockets are blocked by insulation. Suggest adding continuous soffit (entrance) ventilation with rafter pocket insulation ventilation baffles (*Provents*) and more roof ridge (exit) ventilation. Add a make-up or new layer of blown in cellulose insulation. If proper “**balanced**” soffit and ridge venting were employed, natural convection air movement will create constant air changes needed for moisture removal and create better thermal efficiency. Then the exhaust fans are no longer needed. For further information on this subject, please visit this website: http://www.ronhungarter.com/ridge_vents.html

We suggest validating these events regarding ventilation by a qualified licensed roofing contractor. Suggest contacting *Dan or Wolfgang @ D & D Installations @ 847-823-8001* or their website @ www.ddinstallations.com For additional information on proper ventilation techniques for insulation/ventilation of sloped roofs with (*Provents or Durovent & Windblock*), please visit this website: www.adoproducts.com For information on various insulations and techniques, please visit this websites: www.dwyersspecialty.com www.arcinsulation.com

There are no accesses for the attic/roof areas over the enclosed front and rear porches. Suggest these areas also be ventilated properly.

We executed comparative value surface moisture meter scans within the shower areas, on the floors around the toilets and on floors around water using appliances. No positive return values were noted.

During our interior inspection we executed comparative value moisture surface meter scans around the bottoms of accessible window and door areas. No appreciable moisture returns were noted, except at the rear Dining Room box out window and on the East side exterior wall. We then executed a thermal image scan of these suspect interior areas. We discovered several areas of interest thereof, that may be related to exterior concerns mentioned earlier. These areas revealed subtle amorphous shaped anomalies in support of the positive quantitative moisture meter returns. These anomalies are indications of deeper latent moisture issues. (SEE PIC. REFERENCES ATTACHED “Dining Room Issues 1. & 2.”) Suggest having a qualified stucco contractor review, evaluate and repair.

Since there are indications of moisture intrusions occurring, caution is advised as microbial growth potential is present. If microbial growth is found we suggest employing proper professional remediation protocols to remedy.

The other area of concern for “*Red Flags*”, is the front and rear enclosed porches. At the rear porch, we’ve noted foundation sagging and the possibility of earth to wood contact. There was no access to the crawlspace area below. At the front porch the access was tape restriction sealed for the radon test being executed. From the windowed access, we noted displaced insulation and debris on the floor. We would suggest contacting a qualified room addition contractor to review and evaluate. (SEE PIC. REFERENCES ATTACHED “Exterior Issues 2. & Subject Property views”)

Our inspection of the Basement revealed some major “*Red Flags*” of concern. We noted that some of the partition wall 2 x 4 sills are of standard fir or pine, hygrometer readings were @ +45 to 54% RH (relative humidity), and there are indications of foundation seepage that may also be in combination with capillary moisture rise. (SEE PIC. REFERENCES ATTACHED “Basement Issues 1,”) The sills should be of either metal or treated lumber (*Wolminized*). Standard sills will support microbial growth on the underside in contact with exposed concrete. Capillary moisture rise is common with older foundations, therefore, it is imperative that exterior control of rainwater be employed along with mechanical dehumidification during the summer. At the NE. rear basement corner, where the electrical service panel closet is, are some major “*Red Flags*” of concern. We noted microbial growth occurring within the closet and on the foundation wall, and interior drywall. We executed both surface and probe type moisture meter samplings. Both instruments returned positive values. The drywall comparative values were at + 100% MC (moisture content). Drywall should be at 0 to 10% maximum MC. The wood door jambs and base were at + 30% on the EMC scale (equilibrium moisture content). The threshold at which microbial growth can occur on wood starts at 14 to 16% EMC. We then executed a thermal image scan of these suspect interior areas. We discovered several areas of interest thereof, these/this area(s) are connected vertically to the areas in the Dining Room above, exterior downspout connections and possibly seepage from the abandoned rear Basement entry way. These areas revealed strong amorphous shaped anomalies in support of the positive quantitative moisture meter returns. These anomalies are indications of deeper latent moisture issues. (SEE PIC. REFERENCES ATTACHED “Basement Issues 2. & 3.”) Suggest further invasive inspections under the proper professional protocols of remediation containment, so as not to spread possible microbial contamination.

This same area has carpeting. We suggest not installing wall-to-wall carpets over un-insulated below grade concrete slabs. Carpets on these slabs are cold, thus creating a higher relative humidity within, and conducive conditions for dust mites and mold growth can follow. The microbial contamination they (carpets) can harbor, are difficult at best to thoroughly sanitize. Suggest removing carpet and installing vented hard surface flooring with area rugs for comfort. For more information on products for raised basement floors visit this website: www.DELTAFL.com

As stated at the beginning of this report, there are considerable interrelated “cause and effect” events occurring. These events, concerns and issues must all be addressed to insure moisture intrusion and subsequent microbial growth are controlled. For understanding how moisture relates and impacts structures, and for more information before any renovations or repairs are executed, try contacting:

<http://www.buildingscience.com/documents/primers/plonearticlemultipage.2006-12-05.5229931729/section-2-recommendations/view?searchterm=osb> This is excellent information.

In closing, high humidity in basements exacerbated by seepage and condensate coalescence during the humid summer months will create conditions conducive for microbial growth occurrences. This is a factor that most clients overlook. These areas should be continually kept around 35 to 45% maximum RH. during the summer. Mechanical dehumidification should be employed along with several circulating fans on low speed to “chase” moisture during the summer months. The intrinsic nature of basements is chronic dampness and darkness. This creates conditions conducive for microbial growth to proliferate if food sources are available.

It must be understood that at the time of this inspection/assessment/consultation, other areas of moisture intrusion and subsequent microbial growth can exist that are hidden and cannot be visually inspected. This inspection, point specific assessment, consultation, written or verbal, is based on a visual review of the accessible above mentioned areas and at a one-time event. This inspection/assessment/consultation does *not* constitute a WARRANTY, INSURANCE POLICY, OR GUARANTEE OF ANY KIND, and NOR DOES IT SUBSTITUTE FOR SELLERS DISCLOSURE. All structures must be continually monitored for moisture intrusion. Chronic moisture conditions are the primary reason and requirement for microbial (mold) growth to occur.

Inspected by: Kevin M. Cuyler Inspection Date: 05/23/08



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Phone: 630-220-3362 e-mail: Kevin@goaboveboard.com
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