



MEMO

TO: Commercial Real Estate / Multifamily Industry

FROM: Don Glitz, Chair, MBA Mold Working Group
Katie Schwarting, MBA Staff Representative

RE: MBA White Paper, "Mold: Steps Toward Clarity"

On behalf of the entire MBA Mold Working Group, we would like to thank you for taking time to review the draft MBA White Paper, "Mold: Steps Toward Clarity."

The White Paper is intended to serve as an informational resource guide to mold and the effects of mold and water damage on commercial real estate. The audience is the commercial lending and servicing community.

As a note, the document is in draft form. The MBA is opening the White Paper for full industry comment; it is important to us that we encapsulate the true understanding of the history of mold, current issues, industry reactions, remediation efforts and future outlook.

Any and all comments to the MBA White Paper, "Mold: Steps Toward Clarity," must be received in the MBA offices by **Wednesday, March 23**. Please send your comments to Katie Schwarting, MBA staff at:

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We would also like to acknowledge the full MBA Mold Working Group for their commitment and extensive resources that went into completing the draft document.

Thank you.

Mold: Steps Toward Clarity

White Paper
by
Mold Working Group

Commercial Real Estate/Multifamily Finance Board of Governors
Loan Origination Committee



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PREFACE

The issues posed by dampness and mold inside buildings approaches a crossroad. In 2004, publication of “Damp Indoor Spaces and Health” by the National Academy of Sciences revealed the extent of public misperception of the health effects of exposure to mold and dampness, and the fundamental work that remains to be done to understand what impact dampness and mold may have on buildings and their occupants. At the same time, enough already is known about damp indoor spaces and mold to permit those involved with commercial real estate to understand the issues and develop effective strategies for avoiding or minimizing the risks and misperceptions associated with these conditions.

The purpose of this document is to provide the reader with an informative look at mold and damp indoor spaces: how knowledge in this area has evolved and what may be done now to effectively deal with mold and dampness. It is a basic guidance and educational document, addressed to a lending and servicing industry audience, rather than a standard, comprehensive essay or a legal treatise. Necessarily it must be something of a snapshot, because even during the period of its preparation, there have been significant, even ground-breaking, developments in research that are certain to have an impact on knowledge of these areas in both the short-term and long-term.

Because of the rapidity with which this area is evolving, the Mold Working Group anticipates the issuance of periodic supplements to this document as significant developments occur and the lending industry digests them. In the meantime, future understanding depends upon the laying of a solid foundation of knowledge. This guideline has extensive footnotes and uses appendixes to provide additional documentation supplementing the White Paper. The White Paper is a resource document that can be used by any reader for more detailed information tailored to individual transaction requirements. It is with that purpose that the Working Group has issued this first report.

The Mold Working Group

Commercial Real Estate/Multifamily Finance Board of Governors'
Loan Origination Committee
Mortgage Bankers Association

February 2005

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1. MOLD AND ITS ROLE IN COMMERCIAL REAL ESTATE

Why is mold a concern for lenders and servicers in commercial real estate?

For lenders, servicers, and others involved with securitized real estate loans, dampness and mold growth can lead to problems at several levels. These include:

- Direct damage to building or contents. Mold or dampness can damage building materials and contents requiring the owner or manager to expend funds for repairs and remediation. If these sums are substantial, a borrower's ability to repay a loan and the collateral value of the structure may be negatively affected.
- Loss of use/loss of rental value. Areas affected by significant amounts of mold or dampness may become unusable, unfit for rental, or rentable only at a reduced rate. Unaffected sections of a building may have to be closed off to effect repairs. This loss of income can have a negative impact on cash flow in addition to costs associated with remediation.
- Stigma damages. Even after a successful remediation, the stigma associated with a prior mold outbreak (picture remediation contractors going in and out of a building in "moonsuits") may reduce the market value of or ability to rent space in an affected property, with direct negative effects on collateral value or cash flow a possible result. In multi-family residential units, residents may break leases with increased frequency or demand other concessions.
- Third party liability. Occupants and users of an affected building may sue for indirect harm or injuries they believe were caused by mold. Workers compensation claims have also been filed by occupants for exposure to mold. While these suits may not ultimately result in large awards, an owner's or manager's costs to defend them are likely to be high enough to have a negative impact on income.

The existence of significant mold or dampness problems in a structure can also have more direct effects upon a lender or servicer. The presence of large amounts of mold in a structure may be a negative constraint on a lender's decision whether to foreclose and resell or continue operations. Mold concerns may also affect the refinancing options available to the borrower, leaving the lender without one possible exit strategy. For servicers, mold and dampness issues can affect operating budgets or maintenance holdbacks and make work-outs or restructuring of non-performing loans more difficult. For lenders and servicers alike, the question of whether to create and impose mold control standards on building owners and managers can be difficult and a possible basis for direct liability to those affected by mold or dampness.

Because financial impacts can arise at any time, both lenders and servicers must understand, prepare and account for mold and dampness issues throughout the life of a transaction. To do this, there first must be candid self-analysis to determine the lender's willingness to assume risks from mold or dampness, critical underwriting internally to assess possible risks of mold exposure in conjunction with knowledgeable consultants and specialists, proper vetting of borrowers and property managers, and, if appropriate, open and ongoing dialogue with owners and managers of property. Each is an important and interrelated part of successfully preventing or minimizing possible adverse impacts of dampness and mold. There is no single set of "best practices" in recognizing and coping with molds issues, but awareness

of mold and its effects is the first of a series of “smart practices” all lenders and servicers who wish to succeed in coping with this problem should adopt.

2. THE EFFECTS OF MOLD AND DAMPNES ON THE MARKETPLACE

Current state of scientific knowledge: National Academy of Sciences study

Recognizing the growing level of controversy among health officials, property occupants and others regarding the possible effects of mold and other indoor microbial growth and the growing but unreliable body of information and misinformation on mold, the Centers for Disease Control and Prevention (“CDC”) took a proactive step. It asked the Institute of Health, a wing of the National Academy of Sciences (NAS), to convene a review of available scientific literature with the following mission:

The Institute of Medicine will conduct a comprehensive review of the scientific literature regarding the relationship between damp or moldy indoor environments and the manifestation of adverse health effects, particularly respiratory and allergic symptoms. The review will focus on the non-infectious health effects of fungi, including allergens, mycotoxins, and other biologically active products. In addition, it will make recommendations or suggest guidelines for public health interventions and for future basic science, clinical and public health research in these areas.¹

The Institute convened a committee of experts in fields including public health, environmental health, building science and medicine. That committee issued its answer to CDC’s direction, a thorough study entitled “Damp Indoor Spaces and Health,” on May 24, 2004.

As candid in describing what is not known about dampness, mold and strategies for prevention of microbial growth as it is in debunking myths concerning the health effects caused by mold exposure, “Damp Indoor Spaces and Health” provides the first comprehensive delineation of what is known about these issues. It is the first effort to provide a comprehensive framework for further analysis of the interaction between damp spaces, microbes and human health. As such, it is and will remain an important analytical tool for those involved with this area for years to come, and a brief review of its major findings is equally important to guide behavior as science works to fill in the gaps discussed in the report.

“Damp Indoor Spaces and Health” and implications for health

Perhaps the most immediate impact of the NAS Report is its analysis of the scientific literature on health effects allegedly traceable to mold or microbial exposure and its conclusions as to the sufficiency of the evidence to support the burgeoning variety of alleged connections to a myriad of health claims. After noting that its conclusions do not apply to those with compromised immune systems and that mold exposure can cause symptoms in those allergic to a particular species of mold, the Committee detailed both the strengths and limitations in

¹ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 10.

science around a relationship between exposure to damp environments or mold and various ailments.²

The Committee measured the evidence for a relationship between dampness and mold health outcomes using a four level scale.

The Committee did not find any health outcomes meeting its highest level of the scale, “sufficient evidence of a causal relationship,” and that assessment will make it materially more difficult for those asserting legal claims of bodily injury based on mold exposure to proceed. At the lowest end of the scale, the Committee found insufficient or inadequate evidence to support many claims of linkage between mold and dampness and serious illness or disease; among the conditions included in this “insufficient or inadequate evidence” assessment were cancer, neuropsychiatric symptoms, reproductive diseases and rheumatologic and other immune diseases.

“Damp Indoor Spaces and Health” and the need for further research

“Damp Indoor Spaces and Health” is not simply about medical issues; it begins with the basics. It notes that the ideas of dampness and excess water inside buildings are at once both intuitive and misleading. In anecdotal reports, these terms have taken in everything from high relative humidity, condensation and water ponding to water intrusion and other situations in which excess water is present.

According to the Committee, other basic research is equally necessary. Research must be done to characterize the dampness-related emissions of mold and other microbes, of building materials themselves and their decomposition products, and their role in human health outcomes. The next step in the process would be development of information on “the microbial ecology of buildings,” which the Committee describes as “the link between dampness, different building materials, microbial growth, and microbial interactions.”³ When these questions have more precise answers, research can continue to the next level, which includes studies of the duration of moisture damage in various materials and studies of the interactions between choices of building materials, construction methods, building operation, heating equipment and air conditioning equipment and mold and microbial growth and development.

Even with all of the publicity surrounding the Committee’s conclusions concerning medical issues, its most important conclusion is the simplest. The Executive Summary of “Damp Indoor Spaces and Health” contains the following reminder to all who must deal with mold problems and provides an action plan that can be implemented immediately and reliably:

The most effective way to manage microbial contaminants, such as mold, that are the result of damp indoor environments is to eliminate or limit the conditions that foster its establishment growth.⁴

This assessment applies in any indoor environment and is a logical and scientifically reliable basis for an effective mold control program.

² See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 11.

³ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 15.

⁴ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 17.

Reactions and responses

Insurance industry

Before the year 2000, there were few mold claims, which were generally settled for a few thousand dollars. As high profile cases in Texas and California came to the attention of the public and media, public anxiety rose and legal claims increased substantially. The acceleration of cases began in 2000, and in 2001, estimates suggest that at least 10,000 “toxic mold”⁵ cases were filed in the United States and Canada, of which just over half were bad faith actions against insurance companies. The amounts required to resolve homeowner “toxic mold” claims sometimes grew to \$100,000 or more, with commercial claims in the millions.⁶ In Texas, total homeowner’s insurance legal claims involving mold grew from about \$420 million in 2000 to just over \$1 billion in 2001 and to \$2.2 billion for 227,000 claims in 2002.⁷ By mid-2003 Texas insurers estimated that they had paid out just under \$4 billion for mold claims.⁸

The combination of large awards and inconsistent judicial interpretations of policy provisions has left many insurers understandably concerned about providing any form of coverage for mold. Although statistics suggest that the average cost of remediation for a residential mold claim averages between \$25,000-35,000 and averages about \$100,000 for commercial losses, underwriting remains difficult because the size of the potential universe of legal claims remains uncertain, making computation of an adequate premium difficult, and because of difficulties associated with conducting adequate inspections or controlling the operations.⁹ Even though claims for bodily injury based upon mold coverage have not fared well in the courts, often because of the lack of credible expert testimony supporting the claimant’s position, the simple cost of defending them is significant and can be a substantial drain on an insurer’s financial resources. Finding reinsurance information or pricing for mold is difficult. Together these factors have made dampness and mold coverage a challenging product for insurers to adjust to pricing the risk.

Despite these issues, some mold coverage is available. Some personal and commercial property policies make available a separate, low mold damage sublimit – often between \$10,000 and \$25,000 – available for a relatively affordable premium. Coverage for third party liability from mold (frequently called microbial coverage) can be purchased as a part of commercial pollution liability policies, but generally only for a separate and substantial premium. Even this coverage tends to be limited – it generally does not cover first party remediation costs – and is available only after a substantial underwriting process. Most available commercial liability policies providing mold coverage do not provide separate coverage for defense costs; instead payment of legal fees and litigation costs erodes limits on a dollar-for-dollar basis.

Outside of those limited coverage types, there are no insurers providing First Party Property Damage Coverage on a standard policy or on a standalone basis. There are a few insurers who will provide higher limits of coverage by adding mold coverage to their environmental policies via an endorsement. The first problem is that this coverage does not

⁵ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 18.

⁶ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 19.

⁷ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 20.

⁸ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 21.

⁹ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 28.

apply to first party damage. The second problem is that you must purchase an environmental policy that can be expensive. The environmental policy endorsement provides generally two types of coverage for mold: Third Party Claims for On-Site Clean-Up of Pre-Existing Conditions and Third Party Claims for On-Site Clean-Up of New Conditions. This endorsement, as with other environmental coverage provided under the policy, is on a “claims made” basis, complete with retroactive dates and an available Extended Reporting Period cover. There are several notable exclusions under this endorsed cover, which would exclude coverage if certain maintenance activities were not conducted or maintained and would exclude any losses arising out of improper design or construction. These can be two very broad exclusions that could eliminate or limit the actual scope of coverage.

To obtain these types of coverage, a potential insured should expect to submit the following: (1) a detailed IAQ questionnaire; (2) proof of inspection procedures; (3) operation and maintenance plans including those for moisture control or a mold prevention plan; (4) the insured’s guidelines for assessment and remediation of mold; (5) information on prior mold claims; (6) loss runs from the insured’s property and liability insurance; and (6) in some cases, tenant lease agreements. Portfolio coverage also is available, but generally only as a part of a broader pollution liability policy with the same restrictions on coverage.

The courts

Mold litigation has generally followed two paths. The first is suits by policyholders against insurers for denial of coverage under property or liability insurance or a defense under liability policies. The second is liability actions by property owners, occupants, and others exposed to mold against individuals or businesses alleging that some negligent or wrongful act, error or omission allowed dampness or mold or both to develop.

The first class of litigation, suits against insurers for claim handling or claim denial, tends to focus on the conduct of adjusters. Lawsuits may allege that the insurer has improperly denied coverage for a mold claim. The court generally must construe policy language and determine whether the policy, whatever type it is, covers mold or dampness damages. Or, the lawsuits may focus on the decision-making process used for review of the claim made on the policy. Some issues include: whether the insurer conducted an appropriate investigation into the cause of the loss – one case describes the issue as to whether the investigation was a pretext for a decision to deny coverage already made;¹⁰ the time and manner the insurance company took to make a decision on coverage; disputes over the amount of coverage the insurance company would pay; and whether the insurance company allowed for adequate remediation to be conducted. Here, legal claims are made for breach of contract and for tort claims of “bad faith,” covenants of good faith and fair dealing¹¹ or state statute rights.¹² Some jurisdictions allow all three.

In order to prove health injury, expert testimony is offered to show causation. Expert testimony in all areas of the law has been hotly contested for accuracy and relevance. Under the standard announced by the United States Supreme court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, (“Daubert”) and since adopted by a majority of the states, the trial judge

¹⁰ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 29.

¹¹ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 30.

¹² See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 31.

acts as gatekeeper in scrutinizing expert testimony.¹³ Every expert must be able to show that the opinions they offer are sufficiently reliable to be considered as testimony. Daubert imposes several requirements on expert testimony before it may be admitted. The first is that of reliability: has the rate of error from the method used by the expert been determined and found to be small enough to make the conclusions reached using it valid? The second is repeatability: can the same results be obtained if others use the same method? The third threshold is review: has the method been peer-reviewed, that is, subjected to critical scrutiny by others in the profession and published to face examination by the scientific community?

For mold cases in jurisdictions that follow the ruling in Daubert, a judge must consider two issues before permitting an expert to testify: one, if the type of mold involved could generally cause the type of injury claimed; two, has the plaintiff had a sufficient amount of exposure (inhalation, ingestion) to cause the specific injury plaintiff claims. Daubert set a high standard for a plaintiff to be able to offer expert testimony in mold cases. The lack of credible scientific evidence that links mold to particular illnesses has caused many personal injury claims to fail in trial court or be reversed on appeal.¹⁴ It is difficult to prove a certain level of mold exposure in an indoor space rises to the level of harmful, since there is no medical or scientific based standard for mold levels.¹⁵ This in turn makes it hard to establish the scientific or medical causal connection between mold exposure and health effects. Also, plaintiffs' claims have covered wide and varied health problems, with symptoms that can be attributable to other explanations.

Federal agency responses

To date, the response of Federal environmental agencies to mold have been mixed, with a trend toward suggestion or guidance rather than actual standards or regulations.

The United States Environmental Protection Agency ("EPA") has not classified mold as a hazardous substance for purposes of any environmental statute it administers and has not focused on mold as a substance to be regulated. Instead, EPA looked at mold as part of the larger issue of indoor air quality, and consistent with this approach has conducted surveys and literature studies.¹⁶ EPA did focus on design of ventilation systems in what it calls "high performance" buildings and schools. These include "IAQ Design Tools for Schools" and "I-BEAM,"¹⁷ an interactive software package designed to assist building managers and operators in ensuring adequate air quality in new and existing structures. EPA's initial guidance document, *Mold Remediation in Schools and Commercial Buildings*,¹⁸ remains available from the agency, and has been kept current through revisions.

Of the governmental offices, the United States Department of Housing and Urban Development ("HUD") has developed the most active requirements with respect to mold, although its activities are limited to the residential area. In June 2004, HUD began distributing a new form that notifies HUD prospective purchasers of single-family homes of the dangers of radon gas and mold.¹⁸ HUD's recommendation that mold contamination be placed on a par with

¹³ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 34.

¹⁴ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 35.

¹⁵ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 36.

¹⁶ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 37.

¹⁷ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 38.

¹⁸ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 42.

radon in residential homes has caused a huge controversy. While HUD's new policy does not apply to commercial transactions, the determination that mold and radon cause a similar amount of risk to humans gives mold an elevated status that current studies suggest is not warranted.¹⁹

To date, federally chartered mortgage and lending institutions Fannie Mae, Freddie Mac and Ginnie Mae, have not established limits or standards for mold contamination or remediation. They do encourage borrowers to have a thorough Operations and Maintenance Plan ("O&M Plan") on properties where mold may be an issue.²⁰

Private industry organizations

One organization that is moving forward to offer a standard on inspections for mold is the American Society for Testing and Materials ("ASTM"). Over a year ago, the ASTM Environmental Assessment Committee created a task group charged with developing inspection guidelines for visible mold and water damage in commercial buildings, including multifamily properties.²¹ The inspection form is expected to be a separate document, which can be used by itself or in conjunction with other property review options, like the ASTM Phase I Environmental Site Assessment ("Phase I") or Property Condition Assessment ("PCA").

Several organizations have provided information that is currently available for purchase. The National Multi-Housing Council ("NMHC") and National Apartment Association ("NAA") published a document of "best practices" for apartment owners and managers to "manage mold growth and moisture problems on their properties."²² The document covers how to develop maintenance procedures and practices for apartment buildings around mold and moisture problems, including training, routine maintenance, remediation and clean up process, documentation of a potential problem, and communication with residence.²³ To complement the document, NMHC has a "virtual mold kit" and NAA has a "Mold Action Kit," also available for purchase. The National Association of Homebuilders ("NAHB") offers a report on the health effects of indoor mold.²⁴ NAHB gathered scientific and medical experts to review the scientific literature currently available and assess if there is a reliable and reasonable scientific basis ... [for] a causal link between indoor molds and any medically recognized human ailment."²⁵

Capital markets - rating organizations

Rating agencies offer investors an opinion of the relative risks inherent in commercial mortgage-backed securities ("CMBS"). The assessment of various environmental conditions are a subset of the risk evaluation process, as the presence of negative environmental conditions can severely impact the value of commercial real estate and the liabilities of all involved parties.

19 See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 43.
 20 See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 44.
 21 See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 45.
 22 See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 46.
 23 See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 47.
 24 See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 48.
 25 See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 49.

The rating agencies also take note of the insurance industry's specific exclusions of mold insurance coverage. The exclusions have placed an even greater importance on the Phase I and PCA reports required of loans that are intended for securitization. As a guideline, rating agencies have minimum expectations for the evaluation of mold in the site assessment process. The scope of the Phase I and/or PCA required by CMBS issuers should include the requirement for a specific visual mold inspection component. The scope should also include the requirement that mold inspection results, as well as specific recommendations for further investigation, remediation and/or monitoring if mold problems are identified, should be part of the consultant's written report results. If evidence of mold is discovered, then mold remediation should be completed before securitization. If remediation is to be completed post securitization, rating agencies will typically require additional credit enhancement in the transaction, with the expectation that clean-up costs be reserved at 125% to 150% of the estimated costs, with the reserve posted either in cash or a letter of credit from a rated provider.

Rating agencies also expect issuers to stay abreast of changes in EPA and other governmental standards and ASTM guidelines regarding the identification and remediation of mold-related environmental problems. Rating agencies recommend, in addition to the Phase I evaluation, insurance protection, if reasonably available through insurance carriers who are appropriately rated, and recommend properties incorporating a mold prevention and maintenance plan ("MPMP").²⁶

3. MANAGING MOLD AND THE RISKS IT PRESENTS

The hazards posed by mold, both real and perceived, are amenable to treatment using the techniques of risk management, the process by which an individual or a business assesses its aversion to all risk generally or to certain risks specifically; measures the magnitude and likelihood of occurrence of particular risks; and then devises actions or strategies of coping with those risks. The process of risk management involves a considerable amount of ongoing assessment and self-reflection; a business with high tolerance to certain forms of risk may experience those risks and find that: a) an acceptable level of risk is present, b) the risks are less likely to occur than previously believed or c) strategies exist to successfully avoid or transfer the risk.

Identification and assessment

The risk management process of identification and risk assessment involves a number of significant decisions. The corporate internal assessment of risk threshold will vary from one business to another, but here are three points to keep in mind.

The first premise, no matter how averse a business is to risk, is that there is some possibility of a mold problem in any building or structure, and in any geographical area.²⁷ Thus, any risk assessment will start from the premise that mold or dampness issues can arise anywhere and cannot be ignored.

²⁶ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 52.

²⁷ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 53.

The second premise for any evaluation of mold and dampness risk is that mold doesn't have one life span, it can arise at any time during the life of a property and if the mold is removed, but the problem is not properly fixed, then the mold will continue to reappear. Therefore, a business should consider the importance of oversight and management to detect and fully deal with on-going mold risks.

The third premise for any mold analysis is that all parties involved, from those making the assessment to those who will be dealing with mold and dampness problems, will need to maintain a constant proactive approach, a level of training and education to recognize the problems and the capability to effectively communicate and deal with the issue. A business that is unwilling to start from these premises is less likely to be successful in dealing with mold and dampness related risks.

Methods for avoidance or reduction of mold-related risks

There are well-recognized methods for successfully avoiding, reducing or transferring mold and dampness risk, each of which has a role to play in the creation of a successful risk management plan for mold. In reviewing these approaches, the reader should be aware that no listing of prevention or remediation schemes is exhaustive. What follows is a set of options that should be viewed as examples, rather than as a single standard for mitigating mold risk. Businesses and lenders can use what follows as opportunities for mold prevention, reduction and/or remediation.

New construction

The fight against dampness and mold begins at the moment the first sketch for a new structure is put on paper. Many experts who speak on mold-related issues emphasize the importance of architecture and engineering in constructing a new building. Advanced planning may help mitigate future issues and it is possible to create a strategy for new construction that minimizes the possible development of future mold problems. Education and training of key construction staff is also an important component of successfully avoiding mold and water damage. When building a new structure or starting some types of major renovation, repair or remodeling projects of an existing structure, consider the following key steps:

Selection of professionals.
Contract design and terms.
Selection of contractors.
Design and engineering.
Materials and construction techniques.
Inspection.

Existing buildings and facilities

Preventing water leaks from occurring makes mold development less likely. Thus, preventative maintenance is the first and most important part of any MPMP.

Preventative maintenance begins with inspections, and the MPMP may consider including regular inspections of the property. In some instances, monthly inspections are appropriate; in others, the proper interval may be quarterly or annually. In each situation, the inspections should be comprehensive and properly documented.

Increased inspection intervals may be appropriate after identifying problem areas that exist in the structure or after significant challenges such as hurricanes or seismic events. As with routine inspections, these should be well documented, regardless of whether the findings are positive or negative. In developing a site-specific inspection protocol for inclusion in an MPMP consider the following:

Automated control systems.
Building envelope.
Cooling towers and air conditioning equipment.
Crawl spaces.
Dryer exhaust systems.
Furnaces, boilers, heaters and stoves.
Grouting and sealants.
Humidity control.
Landscaping and grading.
Moisture-generating appliances.
Plumbing, pipe and sprinkler systems.
Roofing, gutters, drain spouts and flashing.
Vents and ductwork.

Getting help

While it is true that many mold issues can be resolved by common sense and thinking ahead, the variety of factors that can be considered and the number of places where mold can be an issue in a building suggest that establishing an advance relationship with a competent mold professional may be appropriate in many circumstances. Many lenders, developers, managers and servicers are well acquainted with the need for consulting with environmental professionals and, access to knowledge about mold before a need arises can be very beneficial.

As with other professional relationships, whether to retain mold professionals in advance or engage a mold professional if a problem arises, is a business decision. Selection of a mold professional is no different in concept from selection of an architect or engineer; ability, experience and price all play a role in the decision. Also to be taken into account is the professional's willingness to provide services tailored to one's particular needs. It is suggested that references be requested and, to the extent that state licensing boards or regulatory bodies provide information on complaints or disciplinary action, these may be checked. Once the professional is selected, the terms of the relationship can be agreed upon and set down in writing. These may include the scope of work to be performed, price, and an agreed upon limitation as to the range of the professional's discretion to address an issue without prior consultation or discussion.

Transfer of mold risks: obligations of building tenants

Risk transfer is the process by which the person or business that presently is designated to bear the costs or likelihood of a problem associated with a particular risk or problem shifts some or all of that responsibility to another. It is common in commercial real estate to associate risk transfer with insurance, but there exist other methods for risk transfer which can be used effectively.

The first method for transfer of mold risks is through contractual indemnification or some form of contractually mandated reserve or holdback. Contractual indemnification provisions are commonly used in a variety of contexts, including those in which a borrower agrees to indemnify a lender for the lender's liability for environmental problems on a piece of real estate on which it has made a loan. These can be accompanied by a holdback of loan proceeds sufficient to fund any remediation that may prove necessary. A combination of indemnification and reserve/holdback can be used to address borrower or tenant related mold issues.

Other contractual limitations may also be used to shift or limit mold risks that may be caused by tenants or borrowers. These include contractual provisions that limit permissible uses on the property, require any build-out to be done to particular standards, and mandate that tenants or borrowers create a MPMP for their portion of the premises and share inspection reports and remediation information with the owner, manager, lender or servicer. Lease provisions may make mold remediation the tenant's sole responsibility; may establish preventative maintenance requirements such as keeping the premises clean and free from excessive moisture; or require reporting any indication of mold, leaks or dampness. The lease may also establish use requirements such as limits on the number of plants in the unit or parameters for operation of heating and air conditioning equipment. Finally leases and loan documents may provide for any reasonable inspection by owners, property managers, lenders and servicers and give them the right to intervene to correct, at tenant or borrower cost, any mold problems or any conditions that might lead to mold problems that they find.

Education can play a key role in the process of transferring mold risks. The tenant or borrower who understands the problems associated with mold and dampness and the practical steps that one can take to prevent mold development is far more likely to cooperate and voluntarily take the necessary steps to create and implement a working MPMP. Thus, education of tenants on mold and how to prevent its development, particularly in multi-family residential units, can be an important step in limiting later problems.

An active effort to educate tenants and borrowers about mold hazards is a suggested part of any successful MPMP. When coupled with effective and enforceable documentation setting forth tenant obligations with respect to mold, these efforts are likely to play a significant part in preventing development of mold.

Remediation

Step one: eliminate the moisture.

Step two: isolating the outbreak.

There may be some situations where further air sampling for mold contamination is warranted. Among these are:

- to determine whether or not a ventilation system has been contaminated;
- as part of a medical evaluation if residents contend they are experiencing symptoms allegedly related to fungal exposure;
- to determine if mold is present when visual inspection or bulk sampling is inconclusive;
- to document that remediation efforts were successful at removing contamination especially if litigation is involved or threatened; and/or

- if required by contract or loan documents or to provide necessary assurance to prospective lenders or purchasers.

If and when any type of environmental sampling is done, one may consider the importance of hiring a Certified Industrial Hygienist or other persons similarly qualified and that an accredited laboratory performs the analysis. The American Industrial Hygiene Association (AIHA) accredits laboratories for microbial analysis through the Environmental Microbiology Laboratory Accreditation Program. Scrupulous adherence to proper procedures, preservation of material for split or later sampling, chain of custody records and similar steps are particularly important in cases where litigation or enforcement proceedings may be underway or threatened.

Step three: conducting the remediation. Whether or not additional sampling is necessary, the next step in the process is to conduct remediation. Serious property damage and continuous mold growth may persist if water damage restoration is not done or done improperly. One industry resource, the Institute of Inspection, Cleaning and Restoration Certification (IICRC) S500, provides detailed information about all aspects of a water damage restoration project in a safe and effective manner.²⁸

During remediation at any level, questions often arise as to whether material can be cleaned and reused or discarded. Guidance is available on this point.

According to the EPA, as a general rule of thumb, non-porous and semi-porous materials like metal, glass, plastic, wood and concrete can be cleaned and reused if structurally sound. Remediation is accomplished by repeatedly wiping all affected surfaces with a high quality detergent solution, scrubbing as needed, until all visible signs of mold are removed. The process is completed by rinsing the area with clean water, but in some circumstances, a disinfectant may be used to complete the rinsing process. If a disinfectant is used, allow the area to dry overnight; if not dry the area immediately. It is suggested that water not remain on the treated surface more than 24 to 48 hours to prevent the conditions necessary for mold to redevelop.

Porous materials, including ceiling tiles, insulation, wallboard, carpeting, furnishings, drapes and clothing, are more difficult. In some cases, it is possible to clean them (it may be possible to wash or dry clean clothing, drapes, curtains or slip covers, for example), but if cleaning is not possible, porous material may need to be discarded in such a way as to prevent the mold from contaminating other non-affected material.

Step four: when is remediation complete? There is no exact answer to this question.²⁹ EPA advises that the clean-up process is complete when the source of water or moisture has been removed and/or fixed completely, and when the mold is completely removed.

The human side of mold risk

Training, communication and documentation can play a vital role in effective proactive remediation efforts to combat mold issues. A discussion of each of these topics, as part of any MPMP, is encouraged. Also, during the planning and implementation of a remediation, all three play a role in an effective process. It is suggested that lenders and servicers during a review of

²⁸ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 61.

²⁹ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 65.

a borrower's MPMP look for education and training references. Carefully considered plans for training, documentation and communication suggest that the borrower is willing to be equally careful in confronting mold risks as they arise.

Training

Communication

Documentation

Litigation avoidance

Risk management techniques are an effective tool for addressing risks posed by dampness and mold because they provide a framework by which possible problems can be discovered and addressed. Lenders can apply the same analysis to ascertain their willingness to take on loans that pose mold or dampness risks or as an underwriting tool to determine whether a prospective borrower has taken steps to deal with mold. Properly used and properly updated as necessary, both borrowers and lenders will benefit from proper management of mold risks in the short and long term.

4. LOOKING AHEAD

"Damp Indoor Spaces and Health," the groundbreaking effort to classify what is and is not known about mold and dampness, revealed how little reliable quantitative information is available on these subjects. To that end, federal and several state legislatures have begun to examine mold-related questions and request that additional research be conducted to ascertain the role mold plays in indoor spaces. There is a growing commerce of products, devices and technology designed to help deal with mold and dampness. Although it remains too early to determine the exact direction each is taking, trends can be seen and the beginnings of a real response discerned. The reaction of legislatures, the insurance industry, and scientific, technical and engineering firms to better understand mold and the effects of mold, are all opportunities for greater public education and knowledge.

Legislative action

There has been some legislative action involving mold and information, disclosure and research at the federal and state levels.

At the federal level, on March 13, 2003, Representative John Conyers of Michigan introduced bill H.R. 1268, formally entitled the United States Toxic Mold Safety and Protection Act of 2003 (Conyers Bill).³⁰ The Conyers Bill would have affected both commercial and residential business, most specifically public housing, residential and multifamily structures. The legislation sought to provide for the EPA to develop guidelines for mold prevention, inspection, testing and remediation for indoor mold growth and study the health effects of indoor mold. It would have required landlords to give mold disclosures when leasing rental property

³⁰ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 67.

and to conduct annual indoor inspections of the property and give notices of the results. The Conyers Bill also wanted to require the Department of Housing and Urban Development (HUD) to establish model construction standards and techniques for mold prevention in new buildings. HUD, along with the EPA and the National Institutes of Health, were to sponsor public education programs on mold. Finally, the bill would have required the Federal Emergency Management Agency (FEMA) to create a mold insurance program along the lines of the flood insurance program it presently administers. Although the Conyers Bill had over 30 co-sponsors, and was referred to several committees, no action was taken by any of them. With the end of the 108th Congress, the bill would have to be reintroduced for there to be any consideration or approval by Congress.

At the state level, several legislative initiatives have been introduced. California passed the most comprehensive legislation requiring the development of uniform standards for mold and for disclosure of mold in commercial and residential property transactions, as well as for creation of education materials and a determination by the California Department of Health Services on permissible mold exposure limits.³¹ While the legislation was passed on October 7, 2001, it has not been implemented due to a lack of funding. Texas and Louisiana have regulated the property review, requiring licenses for mold assessors and persons conducting mold remediation services.³² Montana passed a Mold Disclosure Act in 2003 permitting, but not requiring, a party to a real estate transaction to provide a mold disclosure statement.³³ Maryland's legislature created a Task Force on Indoor Air Quality to study the health risks to workers from mold in office building HVAC systems and to make recommendations to mitigate indoor air quality health risks.³⁴

In other states, including Arizona, Connecticut, Florida, Georgia, Illinois, Kentucky, Massachusetts, Michigan, New York, Oklahoma, Pennsylvania, and Rhode Island, legislatures have considered bills addressing mold regulation. These proposed bills have focused on several key areas:

- scientific and health research, involving studies of the effects of mold on individuals in an indoor environment, which may include permissible exposure levels to mold;
- regulation of mold assessment and remediation contractors, including licensure, continuing education standards and financial responsibility requirements;
- educational programs, requiring educational materials or training; and/or
- disclosure requirements or standards in real estate transactions, for tenants, homeowners, lessees and with emphasis on residences.

Results of these legislative initiatives have been mixed. Legislation to regulate mold assessment firms and remediation contractors generally has received support, while legislation mandating disclosures has received a more cautious reception. The diverse state of mold legislation, one with widely differing standards for regulation, disclosure, testing and remediation, will have some impact on lenders. As the states continue to propose their own standards, the lending process may become more cumbersome and driven by state specific requirements. Because of this, lenders and servicers may want to monitor each state legislature

³¹ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 68.

³² See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 69.

³³ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 70.

³⁴ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 71.

where their property resides to ensure that there has been full compliance with all applicable laws and regulations.

Mold and dampness technology

Mold and moisture detection techniques

As the mold assessment and remediation field expands, so do new technologies to improve and ease how mold assessments are conducted. There are currently no technologies that can definitively find and identify hidden mold (i.e., mold behind walls). There are, however, technologies which assist in the identification of elevated moisture levels or water-damaged building materials. And, as previously noted, identifying the source of the moisture is the first step of a mold assessment.

Materials technology

Because mold requires cellulose and other organic materials to grow, an obvious attack on mold development is through materials that deny mold the nutrition it needs or which kill the mold as it develops.

For years, wood was pressure treated with chromated copper arsenate (“CCA”) to protect it from termites and fungus. Because CCA contained arsenic, a known carcinogen, EPA banned use of CCA-treated wood as of January 2004 except in certain very limited applications. New substances have become available to replace CCA and the search remains underway to find other chemicals which can retard or deter mold growth without themselves posing a health hazard.

A second approach has been to coat or treat building products to prevent mold infestation. These can take the form of surface or barrier treatments applied to any exposed surface of the material, integral treatments or barrier treatments. Surface treatments generally are applied as a part of the production process and often are colored to indicate their presence. The advantage of a surface treatment is that requires no handling in the field. Its disadvantage is that retains its effectiveness only as long as the barrier is not breached. Mistreatment on the job site can render such treatments ineffective.³⁵ Integral treatments introduce a fungicide into the material during production; pressure treated wood is an example. Here the primary issue is one of cost and whether a consumer is willing to trade fear of exposure to mold for fear of exposure to the fungicide.³⁶ Finally, there are penetrating barriers which contain chemicals that protect the materials surface and which diffuse into it if water is introduced, thereby providing additional protection.³⁷ Some of these can be applied at the time of construction, presumably after any chance of damage to the barrier is over.

Another method of preventing mold development is to use materials which do not provide the nutrients mold need to grow. Products such as glass-fiber reinforced concrete, precast concrete, fiber reinforced polymers, epoxy concretes, and so-called paperless wallboard, which is wrapped with fiberglass rather than paper, claim to limit the growth of mold

³⁵ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 78.

³⁶ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 79.

³⁷ See “Mold: Steps Toward Clarity,” MBA White Paper, Footnote 80.

on wallboard materials.³⁸ Here the issue is cost and availability. In the meantime, manufacturers of traditional building products have accelerated the pace at which they are producing mold-resistant materials.

In light of the emerging field of mold assessment of remediation, new technologies to assist the assessor and remediator are constantly being introduced in the marketplace. In this unregulated industry it is buyer beware. Contractor and product liability must be taken into consideration if using unqualified products. Arming yourself with information and knowledge enables the user to integrate these new technologies to ease the assessment and remediation process.

Although the future looks bright for new mold technologies, at this point the same cannot be said for new insurance products addressing mold risks. Uncertainties associated with mold claims, differing interpretation of standard policy provisions and the continuing lack of standards for exposure and remediation combine to make insurers extremely reluctant to provide mold or microbial coverage except as a part of a separately negotiated environmental liability policy. Shock verdicts on homeowner's claims also reverberate through commercial insurers.

5. CONCLUSION

The Executive Summary serves as a brief overview of the myriad of issues involved in understanding mold and water damage. To gain further insight and information on the effects of mold on commercial real estate, industry reactions, managing mold risks and looking toward future solutions, please read the full White Paper. Again, the White Paper is meant to serve as additional guidance and resource to enable the reader to make informed decisions, based on individual situations, business models and transaction requirements.

³⁸ See "Mold: Steps Toward Clarity," MBA White Paper, Footnote 81.

WHITE PAPER

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1 1. A BRIEF HISTORY OF AN EVOLVING PROBLEM: MOLD AND ITS ROLE IN
2 COMMERCIAL REAL ESTATE

3 a. What is mold?³⁹

4 Mold, the name commonly given to forms of microscopic fungi which reproduce by the
5 creation of spores, is among the most ancient forms of life on this planet. There are thousands
6 of different types of mold and they exist in and out of doors, in all climates and temperatures
7 throughout the world. We see mold growth as a colored blemish or area, frequently green, blue,
8 gray, brown or white and sometimes powdery or fuzzy in appearance, on surfaces where
9 conditions are favorable for its growth. We smell odors from actively growing mold colonies
10 which we describe as earthy, musty moldy or mildew-like. We talk about bread mold, mildew
11 and penicillin, without fully recognizing that each is a different form or species of mold.

12 Molds break down dead organic material and return the resulting simpler organic
13 compounds back into the environment; this process can be found at work in nature by
14 examining a compost heap or by turning over a pile of dead leaves on the ground in the forest.
15 Each of these situations also demonstrates the conditions molds need to flourish: a source of
16 organic nutrients ranging from bread to cellulose and almost everything in between, water or
17 dampness, and sufficient warmth for the mold to grow. Because molds exist everywhere and
18 because mold spores can travel freely, any place where organic materials for nourishment,
19 sufficient water or dampness and enough warmth are available is a possible place for a mold
20 colony to develop.

21 b. How did mold become an issue of public concern?

22 Although it had been recognized for many years that molds can trigger allergic or similar
23 reactions in sensitive individuals, and that some forms of mold produce potentially toxic
24 chemicals known as mycotoxins, until the early 1990s molds were generally considered to be
25 more of a problem for mothers to check bread for and janitors to clean up than a serious or
26 pervasive risk to health or buildings. However, the situation changed by 1994.

27 In 1993, physicians in Cleveland, Ohio, noticed that over a short period of time, children
28 from a single neighborhood began to suffer from dangerous bleeding inside their lungs, a
29 condition known as acute idiopathic pulmonary hemorrhage or AIPH. In an effort to find a cause
30 for what appeared to be a sharply delineated outbreak of AIPH, physicians and public health
31 officials soon discovered that stachybotris and aspergillus mold, each of which was known to
32 produce mycotoxins heavily infested the homes in which each of the victims lived. Finding no
33 other apparent common factors that could account for the common illness among the children,

³⁹ Much of the material in this section is drawn from publications of the Texas Department of Health, particularly "Protecting Your Home From Mold." This document is available at http://www.tdh.state.tx.us/beh/iaq/protecting_your_home_from_mold.html.

1 the researchers simply concluded that the outbreak of AIPH was associated with exposure to
2 mold and the toxic chemicals it produced (“the Cleveland study”).⁴⁰

3 Although the researchers did not state that mold exposure had caused the AIPH and
4 later would retract even their claim of association between mold exposure and AIPH, the
5 publication of these findings changed mold from an annoyance to a publicly recognized “toxic
6 condition” associated with serious medical problems.⁴¹ Because the study came from the
7 Centers for Disease Control and Prevention (“CDC”), it gave the issue a greater sense of
8 urgency than it might otherwise have caused. It certainly put mold-related conditions in a
9 spotlight that had never been seen before outside of an allergist’s office.

10 The Cleveland study strongly influenced public perception of mold and its possible
11 impact on health. Perception then led to litigation, particularly as homeowners’ insurers
12 declined to pay for mold remediation projects. Lawsuits against homeowners’ insurers, and to a
13 lesser extent home builders and subcontractors, resulted in a number of large jury verdicts,
14 which increased the publicity surrounding mold. (The fact that many of those verdicts were
15 reduced or reversed on appeal did not receive a similar level of publicity.) Inevitably, the
16 public’s concern about mold in single-family residential spaces carried over to other indoor
17 spaces, including those in multi-family residential structures and commercial buildings such as
18 offices, schools, hotels and health care facilities.

19 c. Why is mold a concern for lenders and servicers in commercial real estate?

20 Because mold spores can travel freely, they are just as likely to be found inside
21 commercial spaces as they are in a family home. Commercial spaces contain the same factors
22 necessary for growth of mold – organic materials, moisture or dampness, and warmth – that
23 exist in private residences. It is common to find mold spores in the air inside commercial
24 buildings, and on most surfaces, including walls and furnishings. Unless the spores have an
25 opportunity to land on a favorable surface and begin to grow, they cause little concern by
26 themselves. Routine cleaning and maintenance of the facility and furnishings generally helps to
27 keep levels of these molds low and minimizes the likelihood of active mold growth.

28 Concern greatly increases, however, when there is significant amounts of active mold
29 growth, a situation that is most likely to develop when there are excessive levels of moisture or
30 water damage, which occurred by an ongoing water leak, a flood, water intrusion (as from a
31 leaky roof or foundation), residual moisture or even high levels of humidity or dampness inside a
32 structure. High levels of moisture or water damage may be a result of a single event or may
33 develop slowly over time. Active mold colonies produce spores, which can travel and create
34 new regions of mold in other areas of the structure, where the proper growth conditions exist,
35 exacerbating the problem.

36 Dampness and mold growth can themselves cause the breakdown of organic structural
37 materials such as insulation, wall board, wood and cellulose, as well as building contents

⁴⁰ See Centers for Disease Control, “Acute pulmonary hemorrhage/hemosiderosis among infants – Cleveland, January 1993 – November 1994,” 43 MORBIDITY AND MORTALITY WEEKLY REVIEW 881 (1994); Centers for Disease Control, “Update: acute pulmonary hemorrhage/hemosiderosis among infants – Cleveland, 1993-1996,” 46 MORBIDITY AND MORTALITY WEEKLY REVIEW 33 (1997), “the Cleveland study”.

⁴¹ See Centers for Disease Control, “Update: acute pulmonary hemorrhage/hemosiderosis among infants – Cleveland, 1993-1999,” 49 MORBIDITY AND MORTALITY WEEKLY REVIEW 180 (March 10, 2000).

1 ranging from furniture to important files and records. In time, unchecked or undiscovered mold
2 growth can cause damage to structural elements and render a building uninhabitable. The
3 presence of mold and mold spores in the air inside a building can also have a negative impact
4 on indoor air quality⁴² and may create aesthetic issues for those who must work there.

5 For lenders, servicers, and others involved with securitized real estate loans, dampness
6 and mold growth can lead to problems at several levels. These include:

- 7 • Direct damage to building or contents. Mold or dampness can damage building
8 materials and contents requiring the owner or manager to expend funds for
9 repairs and remediation. If these sums are substantial, a borrower's ability to
10 repay a loan and the collateral value of the structure may be negatively affected.
- 11 • Loss of use/loss of rental value. Areas affected by significant amounts of mold or
12 dampness may become unusable, unfit for rental, or rentable only at a reduced
13 rate. Unaffected sections of a building may have to be closed off to effect
14 repairs. This loss of income can have a negative impact on cash flow in addition
15 to costs associated with remediation.
- 16 • Stigma damages. Even after a successful remediation, the stigma associated
17 with a prior mold outbreak (picture remediation contractors going in and out of a
18 building in "moonsuits") may reduce the market value of or ability to rent space in
19 an affected property, with direct negative effects on collateral value or cash flow
20 a possible result. In multi-family residential units, residents may break leases
21 with increased frequency or demand other concessions.
- 22 • Third party liability. Occupants and users of an affected building may sue for
23 indirect harm or injuries they believe were caused by mold. Workers
24 compensation claims have also been filed by occupants for exposure to mold.
25 While these suits may not ultimately result in large awards, an owner's or
26 manager's costs to defend them are likely to be high enough to have a negative
27 impact on income.

28 The existence of significant mold or dampness problems in a structure can also have
29 more direct effects upon a lender or servicer. The presence of large amounts of mold in a
30 structure may be a negative constraint on a lender's decision whether to foreclose and resell or
31 continue operations. Mold concerns may also affect the refinancing options available to the
32 borrower, leaving the lender without one possible exit strategy. For servicers, mold and
33 dampness issues can affect operating budgets or maintenance holdbacks and make work-outs
34 or restructuring of non-performing loans more difficult. For lenders and servicers alike, the
35 question of whether to create and impose mold control standards on building owners and
36 managers can be difficult and a possible basis for direct liability to those affected by mold or
37 dampness.

38 Because financial impacts can arise at any time, both lenders and servicers must
39 understand, prepare and account for mold and dampness issues throughout the life of a
40 transaction. To do this, there first must be candid self-analysis to determine the lender's
41 willingness to assume risks from mold or dampness, critical underwriting internally to assess
42 possible risks of mold exposure in conjunction with knowledgeable consultants and specialists,
43 proper vetting of borrowers and property managers, and, if appropriate, open and ongoing
44 dialogue with owners and managers of property. Each is an important and interrelated part of

⁴² Also referenced as "IAQ" in this White Paper

1 successfully preventing or minimizing possible adverse impacts of dampness and mold. There
2 is no single set of “best practices” in recognizing and coping with molds issues, but awareness
3 of mold and its effects is the first of a series of “smart practices” all lenders and servicers who
4 wish to succeed in coping with this problem should adopt.

5 d. Does mold have more of an impact on certain kinds of property or in certain
6 areas?

7 Although it must be emphasized that no geographic area or type of structure is immune
8 from mold or dampness, it is nonetheless true that exposure to mold varies geographically and
9 according to type of structure. From a geographic standpoint, California, Texas, Florida and
10 Hawaii appear generally to have higher incidence of reported mold in commercial structures,
11 although again, it should be stressed that mold outbreaks can occur anywhere. With respect to
12 building type, data collected over the last twelve months suggests that multifamily housing and
13 affordable housing projects, healthcare facilities, including hospitals, nursing homes and
14 assisted living facilities, and hospitality facilities including hotels, motels and resorts pose the
15 highest risk.

16 Concerns arise over multifamily, healthcare and hospitality facilities more frequently for
17 several reasons.⁴³ First, opportunities for a mold or dampness problem increase when there is
18 a high turnover in occupancy, as often is the case in these classes of property. These classes
19 of property also have uses and structural characteristics – many individually controlled HVAC
20 systems, appliances and plumbing systems, for examples – that make dampness and mold
21 more likely to occur. Facilities such as healthcare and hospitality are also expected to provide
22 sections of the property that are a sterile environment, which has expensive management and
23 maintenance responsibilities. Because these property types are associated with one’s health
24 and residence, they have generated more mold claims and lawsuits. Accordingly, special care
25 should be given to mold-related issues in loans or transactions involving these types of
26 structures.

27 On the other hand, other commercial property types generally pose less concern. Retail,
28 warehouse, light industrial and heavy industrial facilities typically do not present mold hazards at
29 a level found in multifamily, healthcare and hospitality facilities. In all industrial categories,
30 however, concerns have begun to arise over workers’ compensation losses tied to mold
31 exposure, especially from workers involved in mold remediation or clean-up efforts. The extent
32 to which workers’ compensation claims based upon mold exposure will grow remains unknown,
33 but they represent another uncertainty that must be accounted for in the mold equation.

34 e. Perception or reality?

35 As the public reaction to the Cleveland study demonstrates, and as the industry has
36 learned from its experiences with other environmental issues, the public’s perception, which
37 may be influenced by a lack of knowledge, fear, and misinformation, guides the debate and
38 response to questions involving damp indoor spaces and mold. Perception is often a more
39 formidable force than reality.

⁴³ Schools are also closely scrutinized for mold concerns, but fall outside the scope of the paper discussions, since they are not included in the definition of commercial property.

1 For lenders, servicers and others in the commercial real estate industry, the
2 predominance of perception over reality is both a challenge and an opportunity. The “value” of
3 a piece of property is a reflection of the marketplace’s – i.e., the public’s perception of what
4 willing buyers would pay and willing sellers would take for it – the role of fear and misperception
5 in evaluating mold becomes important. At the same time, a lender or servicer with a superior
6 understanding of how to evaluate the real effects of dampness or mold on a piece of property
7 may be in a position to properly assess the risk, determine the actual underlying collateral value
8 and find opportunities for profit.

9 Because issues associated with dampness and mold can arise at any time over the life
10 of a loan, often without obvious warning, lenders and servicers must understand the real nature
11 of the problem and be alert to avoid falling prey to misperception. By developing a real
12 understanding and by being ready with a plan, which anticipates problems and offers solutions,
13 mold and dampness concerns can be overcome.

1 2. THE EFFECTS OF MOLD AND DAMPNES ON THE MARKETPLACE

2 a. Introduction

3 The current marketplace's reaction to mold can be described as inconsistent. Some in
4 the medical field have tried to link exposure to mold and dampness to an ever-growing array of
5 medical conditions ranging from allergic reactions to neuropsychiatric symptoms, often without
6 any reliable support from credible tests or studies.⁴⁴ Most insurance companies have retreated
7 from providing coverage for mold-related losses of any kind, prompting social, legislative and
8 even political reaction.⁴⁵ High profile litigation involving homeowners and commercial entities
9 made headlines as juries returned large verdicts.⁴⁶ There were few, if any, reliable standards or
10 metrics against which to measure the magnitude of a mold presence and even fewer ways to
11 measure the possible impacts of mold inside a building.

12 Concern within the scientific community had also grown significantly. When the CDC
13 published a follow-up report, which determined that the 1993 outbreak of ALPH in Cleveland
14 should not be linked to mold exposure, there was a substantial wave of controversy and debate
15 in response.⁴⁷ Even though that debate did not make the front pages of popular journals,
16 charges and counter-charges flew concerning the motivation for and the accuracy of CDC's
17 change of position.

18 b. Current state of scientific knowledge: National Academy of Sciences study

19 Recognizing the growing level of controversy among health officials, property occupants
20 and others regarding the possible effects of mold and other indoor microbial growth and the
21 growing but unreliable body of information and misinformation on mold, the CDC took a
22 proactive step. It asked the Institute of Health, a wing of the National Academy of Sciences
23 (NAS), to convene a review of available scientific literature with the following mission:

24 The Institute of Medicine will conduct a comprehensive review of the scientific
25 literature regarding the relationship between damp or moldy indoor environments
26 and the manifestation of adverse health effects, particularly respiratory and
27 allergic symptoms. The review will focus on the non-infectious health effects of
28 fungi, including allergens, mycotoxins, and other biologically active products. In
29 addition, it will make recommendations or suggest guidelines for public health
30 interventions and for future basic science, clinical and public health research in
31 these areas.⁴⁸

32 The Institute convened a committee of experts in fields including public health, environmental
33 health, building science and medicine. That committee issued its answer to CDC's direction, a
34 thorough study entitled "Damp Indoor Spaces and Health," on May 24, 2004.

⁴⁴ Ranging from memory loss to amnesia and motor skills problems.

⁴⁵ Some insurance coverage is still currently available, see discussion below. However, by March 2003, most of the exclusions/limitations were already filed in most states.

⁴⁶ See, e.g., *Allison v. Fire Ins. Exch.*, 98 S.W.3d 227 (Tex. App. – Austin 2002, pet. dismissed by agreement).

⁴⁷ See Centers for Disease Control, "Update: acute pulmonary hemorrhage/hemosiderosis among infants – Cleveland, 1993-1999," 49 MORBIDITY AND MORTALITY WEEKLY REVIEW 180 (March 10, 2000).

⁴⁸ See The National Academy of Sciences, "Damp Indoor Spaces and Health" (2004), Executive Summary, page 1-2.

1 As candid in describing what is not known about dampness, mold and strategies for
 2 prevention of microbial growth as it is in debunking myths concerning the health effects caused
 3 by mold exposure, “Damp Indoor Spaces and Health” provides the first comprehensive
 4 delineation of what is known about these issues. It is the first effort to provide a comprehensive
 5 framework for further analysis of the interaction between damp spaces, microbes and human
 6 health. As such, it is and will remain an important analytical tool for those involved with this
 7 area for years to come, and a brief review of its major findings is equally important to guide
 8 behavior as science works to fill in the gaps discussed in the report.

9 i. “Damp Indoor Spaces and Health” and implications for health

10 Perhaps the most immediate impact of the NAS Report is its analysis of the scientific
 11 literature on health effects allegedly traceable to mold or microbial exposure and its conclusions
 12 as to the sufficiency of the evidence to support the burgeoning variety of alleged connections to
 13 a myriad of health claims. After noting that its conclusions do not apply to those with
 14 compromised immune systems and that mold exposure can cause symptoms in those allergic to
 15 a particular species of mold, the Committee detailed both the strengths and limitations in
 16 science around a relationship between exposure to damp environments or mold and various
 17 ailments.⁴⁹

18 The Committee measured the evidence for a relationship between dampness and mold
 19 health outcomes using a four level scale:

- 20 • “Sufficient evidence of a causal relationship,” in which enough scientifically valid
 21 and reliable evidence exists to demonstrate a causal relationship between
 22 exposure to mold or dampness and a particular medical condition.
- 23 • “Sufficient evidence of an association,” in which an association between the
 24 agent (dampness or mold exposure) and the health outcome or effect has been
 25 observed in studies in which chance, bias and confounding variables can be
 26 ruled out with reasonable certainty.
- 27 • “Limited or suggestive evidence of an association,” the Committee’s criterion for
 28 situations where there is some evidence of linkage between exposure to
 29 dampness or mold and the outcome but chance, bias and confounding variables
 30 in the evidence cannot be ruled out.
- 31 • “Inadequate or insufficient evidence to determine whether an association exists,”
 32 for situations where there is no evidence to support the link between exposure to
 33 mold or dampness, or what evidence there is lacks scientific reliability.⁵⁰

34 The Committee did not find any health outcomes meeting its highest level of the scale,
 35 “sufficient evidence of a causal relationship,” and that assessment will make it materially more
 36 difficult for those asserting legal claims of bodily injury based on mold exposure to proceed. At
 37 the lowest end of the scale, the Committee found insufficient or inadequate evidence to support
 38 many claims of linkage between mold and dampness and serious illness or disease; among the
 39 conditions included in this “insufficient or inadequate evidence” assessment were cancer,
 40 neuropsychiatric symptoms, reproductive diseases and rheumatologic and other immune
 41 diseases.

⁴⁹ The Tables documenting the Committee’s findings are set forth in full in Appendix B.
⁵⁰ See “Damp Indoor Spaces and Health” (2004), Executive Summary, page 7.

1 A number of factors support the Committee's assessments. First, most evidence linking
2 mold exposure to illness or some other health outcome rests upon case reports, in which a
3 physician notices that the outcome arises after a particular occurrence of apparent exposure.
4 Such reports are viewed epidemiologically (and legally) as hypotheses rather than conclusions.
5 Second, too often claims of mold-related illness rest merely upon the alleged presence of a
6 darkened area or other physical evidence resembling mold in the area where the person lives.
7 Since the mere presence of an area that may resemble mold or mildew is not enough to infer
8 exposure to a toxin, the studies that jump from the existence of a suspected moldy patch to
9 causation are not scientifically valid. In more general terms, the Committee's findings are an
10 implied statement that existing scientific and medical research on mold-related health outcomes
11 simply is not rigorous enough to support the conclusions being drawn.

12 In a legal environment where the alleged health effects of mold exposure have seemed
13 to grow with every lawsuit, the importance of the Committee's findings in deterring or limiting
14 claims by allegedly injured persons and limiting claims for damages or extensive remediation
15 because of perceived health risks cannot be exaggerated. The fact that the Committee found
16 insufficient evidence to support a link between mold exposure and blood in the nose and airway
17 in healthy infants is exceptionally significant, as it provides independent confirmation for the
18 CDC's prior change of position on the subject.⁵¹

19 On the other hand, the significance of these conclusions has tended to mask the
20 Committee's remaining recommendations, which recommended further scientific study and
21 suggest appropriate means for limiting development of mold, while research turns subjective
22 impressions about the severity of a mold problem or the need for remediation into objective
23 standards and criteria. Chapter 6 of the report relies upon studies conducted by the American
24 Society for Testing and Materials, Environmental Protection Agency, and the City of New York
25 Department of Health as guidance for determining when remediation should occur and what
26 should be done. The Committee's citation of these reports as a reliable basis for assessing
27 when remediation is necessary will also help to rebut the claims of those who have argued that
28 more stringent remediation standards are necessary.

29 ii. "Damp Indoor Spaces and Health" and the need for further research

30 "Damp Indoor Spaces and Health" is not simply about medical issues; it begins with the
31 basics. It notes that the ideas of dampness and excess water inside buildings are at once both
32 intuitive and misleading. In anecdotal reports, these terms have taken in everything from high
33 relative humidity, condensation and water ponding to water intrusion and other situations in
34 which excess water is present.

35 Because dampness itself may have adverse health effects and cause deterioration of
36 building materials along with other unknown consequences, the first research step becomes
37 developing standard definitions of dampness, metrics and dampness-assessment protocols. As
38 the Committee noted, "Precise, agreed upon definitions will allow important information to be
39 gathered about the determinants of dampness problems in buildings and the mechanisms by
40 which dampness and dampness-related effects and exposures affect occupant health."⁵² In
41 other words, a common language and common units of measurement are a necessary

⁵¹ Medically known as acute idiopathic pulmonary hemorrhage – when a healthy infant child shows signs of bleeding in the airway and respiratory distress.

⁵² See "Damp Indoor Spaces and Health" (2004), Executive Summary, page 4.

1 precondition for further meaningful scientific research results. And since the availability of
2 moisture generally is the key factor in determining indoor mold growth, finding a uniform unit of
3 measure for moisture provides the critical first step in quantifying the conditions under which
4 mold and microbes grow.

5 According to the Committee, other basic research is equally necessary. Research must
6 be done to characterize the dampness-related emissions of mold and other microbes, of
7 building materials themselves and their decomposition products, and their role in human health
8 outcomes. The next step in the process would be development of information on “the microbial
9 ecology of buildings,” which the Committee describes as “the link between dampness, different
10 building materials, microbial growth, and microbial interactions.”⁵³ When these questions have
11 more precise answers, research can continue to the next level, which includes studies of the
12 duration of moisture damage in various materials and studies of the interactions between
13 choices of building materials, construction methods, building operation, heating equipment and
14 air conditioning equipment and mold and microbial growth and development.

15 If the Committee’s assessment of the need for basic scientific research on issues
16 relating to dampness and the basic characteristics of mold and microbes is broad, so, too, is its
17 assessment of the need for basic toxicological research focused on establishing reliable models
18 for human exposure and a dose response curve for human health effects from mold exposure.⁵⁴
19 This research must run the gamut from establishing biomarkers for exposure to fungal or
20 microbial agents to large-scale epidemiological studies for evaluating causal effects associated
21 with exposure to these agents. When completed, it will provide the first quantitative explanation
22 of how these diverse factors interact with each other.

23 Even with all of the publicity surrounding the Committee’s conclusions concerning
24 medical issues, its most important conclusion is the simplest. The Executive Summary of
25 “Damp Indoor Spaces and Health” contains the following reminder to all who must deal with
26 mold problems and provides an action plan that can be implemented immediately and reliably:

27 The most effective way to manage microbial contaminants, such as mold, that
28 are the result of damp indoor environments is to eliminate or limit the conditions
29 that foster its establishment growth.⁵⁵

30 This assessment applies in any indoor environment and is a logical and scientifically reliable
31 basis for an effective mold control program.

32 “Damp Indoor Spaces and Health” may be as important for what it says is not known as
33 what it says is known. Nonetheless, by its comprehensive effort to understand and demystify
34 mold and microbial contamination and because of its sponsor, the Committee’s report is the first
35 comprehensive and scientifically based effort to understand this problem. As such, it is and will
36 be the basis on which scientific research and standards are developed in this area in the future.

37

⁵³ *Id.*, at 5.

⁵⁴ A dose-response curve is a semi-quantitative measurement of the health effects that follow from ingestion of a given dose of any substance. For example, taking two acetaminophen tablets may make a headache go away, while taking a hundred reliably causes liver failure.

⁵⁵ See “Damp Indoor Spaces and Health” (2004), Executive Summary, page 10.

1 c. Reactions and Responses

2 Before the year 2000, there were few mold claims, which were generally settled for a few
 3 thousand dollars. As high profile cases in Texas and California came to the attention of the
 4 public and media, public anxiety rose and legal claims increased substantially. The acceleration
 5 of cases began in 2000, and in 2001, estimates suggest that at least 10,000 “toxic mold”⁵⁶
 6 cases were filed in the United States and Canada, of which just over half were bad faith actions
 7 against insurance companies. The amounts required to resolve homeowner “toxic mold” claims
 8 sometimes grew to \$100,000 or more, with commercial claims in the millions.⁵⁷ In Texas, total
 9 homeowner’s insurance legal claims involving mold grew from about \$420 million in 2000 to just
 10 over \$1 billion in 2001 and to \$2.2 billion for 227,000 claims in 2002.⁵⁸ By mid-2003 Texas
 11 insurers estimated that they had paid out just under \$4 billion for mold claims.⁵⁹

12 i. Insurance industry

13 Insurance companies’ reaction to the problem resulted in new policy provisions to limit or
 14 exclude coverage for mold. In responding to legal claims under commercial general liability
 15 policies, insurers whose policies do not contain specific exclusions for mold, tend to rely upon
 16 the absolute pollution exclusion, which was developed during the last wave of environmental
 17 and toxic litigation. The focus of litigation on mold and the pollution exclusion has been on
 18 whether mold is a pollutant and whether the existence of mold, the presence of mold spores or
 19 emissions inside a home or other structure constitutes the “release” of a pollutant triggering the
 20 pollution exclusion. Courts’ interpretations have been mixed.

21 As litigation against builders, contractors, architects and engineers over alleged design
 22 or construction defects proliferates, there is likely to be more litigation focusing on insurance
 23 coverage and whether the “business risk” exclusions in commercial liability policies exclude
 24 coverage when defective design or construction result in dampness or mold intrusion.⁶⁰ The
 25 interface between construction defect litigation and insurance policies is complicated and highly
 26 fact specific, with courts in different states drawing radically different conclusions from similar
 27 policy language.⁶¹ The addition of mold to this already complex area is only likely to make the
 28 intricate situation worse.

⁵⁶ “Toxic mold” is used in quotes because rarely were the cases brought to court actually settled based on mold claims themselves. See section on “The Courts,” *below*.

⁵⁷ Information on lawsuit filings nationwide comes from industry sources such as the International Risk Management Institute, “Mold and Fungi Insurance Claims” (August 2004), available at <http://www.irmi.com/Expert/Articles/2004/Zalma08.aspx>.

⁵⁸ Information on Texas mold claims comes from the Texas Department of Insurance and is available on line at <http://www.tdi.state.tx.us/commish/mold.html>. The total losses reported by Texas Department of Insurance included claims where mold is known or alleged.

⁵⁹ “Mold Claims in Texas,” available at http://www.tcais.org/insurance/mold_facts.php, and Capozzi, “Mold claims growing in number and size – Up Front,” RISK AND INSURANCE, March 2002.

⁶⁰ “Business risk” exclusions address claims for repairs or replacement of the insured’s own work product. Insurers include them in liability policies so as not to become the guarantors of their insureds’ failure to meet contractual specifications or warranties. See, e.g., *Weedo v. Stone-E-Brick, Inc.*, 81 N.J. 233, 405 A.2d 788 (1979).

⁶¹ Compare, e.g., *Grinnell Mut. Reins. Co. v. Lynne*, 686 N.W.2d 118 (N.D. 2004), with *Roger R. Proulx & Co. v. Crest-liners, Inc.*, 98 Cal. App. 4th 182, 119 Cal. Rptr. 2d 442 (2d Dist. 2002).

1 With respect to most property policies, whether insuring against all risks of loss or
 2 “special perils,” the current, standard all risk policy for most insurers excludes coverage for loss
 3 or damage caused by or resulting from rust, corrosion, fungus, decay, deterioration, latent
 4 defect, any property/characteristic that causes the insured property to damage or destroy itself,
 5 or dampness or dryness of the atmosphere.

6 As with liability policies, much depends upon policy language and the disposition of the
 7 court hearing the matter. It is generally settled that mold may be a cause of loss or a form of
 8 damage resulting from a covered loss occurrence, and whether coverage exists often depends
 9 upon which characterization applies.⁶² The key provisions in many policies are clauses that
 10 exclude coverage for “loss by mold.” Does it mean, as some cases hold, that there is no
 11 coverage if mold is involved⁶³ or does it mean that if mold develops as a result of a covered
 12 cause of loss, there is coverage?⁶⁴ Or does it mean that even if there is mold present and it
 13 causes another condition which leads to damage, that there is coverage?⁶⁵ Because
 14 homeowners’ policies and commercial property policies use similar or identical language far
 15 more often than personal and commercial liability policies do, particularly in exclusions relating
 16 to mold, the construction of a policy covering a single cottage or bungalow may have
 17 repercussions reaching the largest commercial policies.

18 The combination of large awards and inconsistent judicial interpretations of policy
 19 provisions has left many insurers understandably concerned about providing any form of
 20 coverage for mold. Although statistics suggest that the average cost of remediation for a
 21 residential mold claim averages between \$25,000-35,000 and averages about \$100,000 for
 22 commercial losses, underwriting remains difficult because the size of the potential universe of
 23 legal claims remains uncertain, making computation of an adequate premium difficult, and
 24 because of difficulties associated with conducting adequate inspections or controlling the
 25 operations.⁶⁶ Even though claims for bodily injury based upon mold coverage have not fared
 26 well in the courts, often because of the lack of credible expert testimony supporting the
 27 claimant’s position, the simple cost of defending them is significant and can be a substantial
 28 drain on an insurer’s financial resources. Finding reinsurance information or pricing for mold is
 29 difficult. Together these factors have made dampness and mold coverage a challenging
 30 product for insurers to adjust to pricing the risk.

31 Today, more than 43 states have accepted and approved mold exclusions for insurance
 32 policies sold in their states, as insurers have attempted to limit their exposure for mold losses
 33 prospectively. The march toward broader exclusions and sharper disputes between insurers
 34 and policyholders continues.

35 Despite these issues, some mold coverage is available. Some personal and
 36 commercial property policies make available a separate, low mold damage sublimit – often
 37 between \$10,000 and \$25,000 – available for a relatively affordable premium. Coverage for
 38 third party liability from mold (frequently called microbial coverage) can be purchased as a part

⁶² See, e.g., *Liristis v. American Family Mut. Ins. Co.*, 204 Ariz. 140, 61 P.3d 22 (2002); *DeLaurentis v. United States Automobile Ass’n*, ___ S.W.3d ___ (Tex. App. – Houston [14th Dist.], February 26, 2004).

⁶³ See generally *Burditt v. West American Ins. Co.*, 86 F.3d 475 (5th Cir. 1996).

⁶⁴ *DeLaurentis, above*. This is the position of the Insurance Services Office, writer of most commonly used insurance forms.

⁶⁵ See, *Bruce Oakley Inc. v. Farmland Mut. Ins. Co.*, 245 F.3d 1027 (8th Cir. 2001)(heat from mold that damaged other goods was cause of loss rather than mold itself, and hence not excluded).

⁶⁶ See material cited at note 19, *above*.

1 of commercial pollution liability policies, but generally only for a separate and substantial
2 premium. Even this coverage tends to be limited – it generally does not cover first party
3 remediation costs – and is available only after a substantial underwriting process. Most
4 available commercial liability policies providing mold coverage do not provide separate
5 coverage for defense costs; instead payment of legal fees and litigation costs erodes limits on a
6 dollar-for-dollar basis. Outside of those limited coverage types, there are no insurers providing
7 First Party Property Damage Coverage on a standard policy or on a standalone basis.

8 There are a few insurers who will provide higher limits of coverage by adding mold
9 coverage to their environmental policies via an endorsement. The first problem is that this
10 coverage does not apply to first party damage. The second problem is that you must purchase
11 an environmental policy that can be expensive. The environmental policy endorsement
12 provides generally two types of coverage for mold: Third Party Claims for On-Site Clean-Up of
13 Pre-Existing Conditions and Third Party Claims for On-Site Clean-Up of New Conditions. This
14 endorsement, as with other environmental coverage provided under the policy, is on a “claims
15 made” basis, complete with retroactive dates and an available Extended Reporting Period
16 cover. There are several notable exclusions under this endorsed cover, which would exclude
17 coverage if certain maintenance activities were not conducted or maintained and would exclude
18 any losses arising out of improper design or construction. These can be two very broad
19 exclusions that could eliminate or limit the actual scope of coverage.

20 To obtain these types of coverage, a potential insured should expect to submit the
21 following: (1) a detailed IAQ questionnaire; (2) proof of inspection procedures; (3) operation and
22 maintenance plans including those for moisture control or a mold prevention plan; (4) the
23 insured’s guidelines for assessment and remediation of mold; (5) information on prior mold
24 claims; (6) loss runs from the insured’s property and liability insurance; and (6) in some cases,
25 tenant lease agreements. Portfolio coverage also is available, but generally only as a part of a
26 broader pollution liability policy with the same restrictions on coverage.

27 ii. The courts

28 Litigation over mold has generally followed two paths. The first is suits by policyholders
29 against insurers for denial of coverage under property or liability insurance or a defense under
30 liability policies. The second is liability actions by property owners, occupants, and others
31 exposed to mold against individuals or businesses alleging that some negligent or wrongful act,
32 error or omission allowed dampness or mold or both to develop.

33 The first class of litigation, suits against insurers for claim handling or claim denial, tends
34 to focus on the conduct of adjusters. Lawsuits may allege that the insurer has improperly
35 denied coverage for a mold claim. The court generally must construe policy language and
36 determine whether the policy, whatever type it is, covers mold or dampness damages. Or, the
37 lawsuits may focus on the decision-making process used for review of the claim made on the
38 policy. Some issues include: whether the insurer conducted an appropriate investigation into
39 the cause of the loss – one case describes the issue as to whether the investigation was a
40 pretext for a decision to deny coverage already made;⁶⁷ the time and manner the insurance
41 company took to make a decision on coverage; disputes over the amount of coverage the
42 insurance company would pay; and whether the insurance company allowed for adequate
43 remediation to be conducted. Here, legal claims are made for breach of contract and for tort

⁶⁷ See, e.g., *State Farm Mut. Auto. Ins. Co. v. Traver*, 980 S.W.2d 625 (Tex. 1998).

1 claims of “bad faith,” covenants of good faith and fair dealing⁶⁸ or state statute rights.⁶⁹ Some
2 jurisdictions allow all three.

3 Tort actions by owners, occupants, and others exposed to mold against individuals or
4 businesses over mold or dampness have taken a number of different courses. Theories against
5 property owners, management companies or landlords have centered on negligent failures to
6 prevent or remediate water damage or mold outbreaks. With contractors, engineers and
7 architects, claimants generally have alleged negligent design, construction defects or improper
8 selection of products or materials.⁷⁰ Product manufacturers and suppliers face claims for
9 designing or manufacturing products susceptible to water damage or mold. Repair and
10 remediation contractors as well as owners, homeowner and condominium owners associations,
11 landlords and property management companies also face claims for defective remediation or
12 maintenance. There also have been claims by property purchasers against sellers for failure to
13 disclose moisture or mold problems or for violations of “representations and warranties”
14 concerning moisture and mold in sale documents.⁷¹

15 Because claims for contractual relief and tort actions for negligent errors, acts and
16 omissions each can involve claims of mold exposure to individuals (many claims against
17 insurers allege that the policyholder was forced to return to mold infested premises because of a
18 refusal to remediate or improper remediation), courts frequently must confront the question of
19 whether exposure to mold causes health injury. In order to prove health injury, expert testimony
20 is offered to show causation. Expert testimony in all areas of the law has been hotly contested
21 for accuracy and relevance.

22 Under the standard announced by the United States Supreme court in *Daubert v. Merrell*
23 *Dow Pharmaceuticals, Inc.*, (“Daubert”) and since adopted by a majority of the states, the trial
24 judge acts as gatekeeper in scrutinizing expert testimony.⁷² Every expert must be able to show
25 that the opinions they offer are sufficiently reliable to be considered as testimony. *Daubert*
26 imposes several requirements on expert testimony before it may be admitted. The first is that of
27 reliability: has the rate of error from the method used by the expert been determined and found
28 to be small enough to make the conclusions reached using it valid? The second is repeatability:
29 can the same results be obtained if others use the same method? The third threshold is review:
30 has the method been peer-reviewed, that is, subjected to critical scrutiny by others in the
31 profession and published to face examination by the scientific community?

32 For mold cases in jurisdictions that follow the ruling in *Daubert*, a judge must consider
33 two issues before permitting an expert to testify: one, if the type of mold involved could generally
34 cause the type of injury claimed; two, has the plaintiff had a sufficient amount of exposure
35 (inhalation, ingestion) to cause the specific injury plaintiff claims. *Daubert* set a high standard
36 for a plaintiff to be able to offer expert testimony in mold cases. The lack of credible scientific
37 evidence that links mold to particular illnesses has caused many personal injury claims to fail in
38 trial court or be reversed on appeal.⁷³ It is difficult to prove a certain level of mold exposure in

⁶⁸ See, e.g., *Traver, supra*, n. 25. See also *Textron Financial Corp. v. National Union Fire Ins. Co. of Pittsburgh, Pa.*, 118 Cal. App. 4th, 13 Cal. Rptr. 3d 586 (4th Dist. 2004).

⁶⁹ See, e.g., Fla. Stat. Ann. § 624.155; see also *Old Republic National Title Ins. Co. v. HomeAmerica Credit, Inc.*, 844 So.2d 818 (Fla. 5th DCA 2003).

⁷⁰ See, e.g., *Engle Homes, Inc. v. Jones*, 870 So.2d 908 (Fla. 4th DCA 2004).

⁷¹ See, e.g., *Anderson v. USAA Cas. Ins. Co.*, 221 F.R.D. 250 (D.D.C. 2004).

⁷² 509 U.S. 579 (1993).

⁷³ See *Allison v. Fire Ins. Exch.*, above, n.2.

1 an indoor space rises to the level of harmful, since there is no medical or scientific based
 2 standard for mold levels.⁷⁴ This in turn makes it hard to establish the scientific or medical
 3 causal connection between mold exposure and health effects. Also, plaintiffs' claims have
 4 covered wide and varied health problems, with symptoms that can be attributable to other
 5 explanations.

6 Litigation expenses and expert costs in such litigation can be extremely high. However,
 7 the stigma or consequential damages, such as a loss of rents associated with a mold claim, can
 8 have a worse overall effect than an adverse judgment. Borrowers will continue to bring mold
 9 related lawsuits and even if the borrower's claims are eventually defeated in court, each
 10 situation must be fully reviewed by any lender, at significant costs in time and expenses.

11 iii. Federal agency responses

12 To date, the response of Federal environmental agencies to mold have been mixed, with
 13 a trend toward suggestion or guidance rather than actual standards or regulations.

14 The United States Environmental Protection Agency ("EPA") has not classified mold as a
 15 hazardous substance for purposes of any environmental statute it administers and has not
 16 focused on mold as a substance to be regulated. Instead, EPA looked at mold as part of the
 17 larger issue of indoor air quality, and consistent with this approach has conducted surveys and
 18 literature studies.⁷⁵ EPA did focus on design of ventilation systems in what it calls "high
 19 performance" buildings and schools. These include "IAQ Design Tools for Schools" and "I-
 20 BEAM,"⁷⁶ an interactive software package designed to assist building managers and operators
 21 in ensuring adequate air quality in new and existing structures. EPA's initial guidance
 22 document, *Mold Remediation in Schools and Commercial Buildings*,⁷⁷ remains available from the
 23 agency, and has been kept current through revisions.

24 Occupational Safety and Health Administration ("OSHA") presently has "no specific
 25 standards" for mold or fungi.⁷⁷ OSHA has taken no steps in this area since its 1994 rulemaking
 26 proposal, which attempted to create a comprehensive standard for indoor air quality, with
 27 permissible levels for everything from second-hand tobacco smoke to Legionnaire's disease.⁷⁸
 28 The 1994 rulemaking proposal refers to many different substances adversely affecting indoor air
 29 quality, but makes only passing reference to molds and mycotoxins, possibly reflecting the lack
 30 of general awareness of issues relating to mold and dampness prior to the Cleveland study.
 31 OSHA never proposed a rule in the wake of the Cleveland study and its only official standards
 32 on air quality are its two standards relating to ventilation in industrial workplaces and
 33 construction sites.⁷⁹ Action from OSHA appears unlikely at any point in the foreseeable future,
 34 in the absence of a legislative directive.

35 Of the governmental offices, the United States Department of Housing and Urban
 36 Development ("HUD") has developed the most active requirements with respect to mold,

⁷⁴ See discussion on this point in "Damp Indoor Spaces and Health," *above*.

⁷⁵ See, e.g., "Building Assessment and Survey Evaluation ['BASE']," available at <http://www.epa.gov/iaq/largebldgs/>.

⁷⁶ I-BEAM is short for IAQ Building Education and Assessment Model.

⁷⁷ See <http://www.osha.gov/SLTC/molds/standards.html>.

⁷⁸ 59 Fed. Reg. 15968.

⁷⁹ 29 C.F.R. § 1910.94 and § 1910.57, respectively.

1 although its activities are limited to the residential area. In June 2004, HUD began distributing a
 2 new form that notifies HUD prospective purchasers of single-family homes of the dangers of
 3 radon gas and mold.⁸⁰ HUD's recommendation that mold contamination be placed on a par with
 4 radon in residential homes has caused a huge controversy. While HUD's new policy does not
 5 apply to commercial transactions, the determination that mold and radon cause a similar
 6 amount of risk to humans gives mold an elevated status that current studies suggest is not
 7 warranted.⁸¹

8 To date, federally chartered mortgage and lending institutions Fannie Mae, Freddie Mac
 9 and Ginnie Mae, have not established limits or standards for mold contamination or remediation.
 10 They do encourage borrowers to have a thorough Operations and Maintenance Plan ("O&M
 11 Plan") on properties where mold may be an issue.⁸²

12 iv. Private industry organizations

13 Private organizations have thus far have predominately worked to understand the issues
 14 surrounding mold. To conduct a website search for mold information would result in millions of
 15 possible data sources. Many organizations are looking at simply providing better information for
 16 their clients and are not offering actual standards.

17 One organization that is moving forward to offer a standard on inspections for mold is
 18 the American Society for Testing and Materials ("ASTM"). Over a year ago, the ASTM
 19 Environmental Assessment Committee created a task group charged with developing inspection
 20 guidelines for visible mold and water damage in commercial buildings, including multifamily
 21 properties.⁸³ The inspection form is expected to be a separate document, which can be used by
 22 itself or in conjunction with other property review options, like the ASTM Phase I Environmental
 23 Site Assessment ("Phase I") or Property Condition Assessment ("PCA").

24 Several organizations have provided information that is currently available for purchase.
 25 The National Multi-Housing Council ("NMHC") and National Apartment Association ("NAA")
 26 published a document of "best practices" for apartment owners and managers to "manage mold
 27 growth and moisture problems on their properties."⁸⁴ The document covers how to develop
 28 maintenance procedures and practices for apartment buildings around mold and moisture
 29 problems, including training, routine maintenance, remediation and clean up process,
 30 documentation of a potential problem, and communication with residence.⁸⁵ To complement the
 31 document, NMHC has a "virtual mold kit" and NAA has a "Mold Action Kit," also available for
 32 purchase. The National Association of Homebuilders ("NAHB") offers a report on the health

⁸⁰ See, Form HUD-9548-E, "Radon Gas and Mold Notice and Release Agreement" – during the sale of a residential property subject to HUD's oversight, the prospective purchaser receives a form that states the potential health problems of mold and radon gas and requires the execution of a release of liability for HUD, the contractor and the sales agent for any possible mold or radon gas on the property.

⁸¹ See discussion on health in "Damp Indoor Spaces and Health." *Above*.

⁸² Freddie Mac has established a four point requirement for their multifamily program: professional inspections; a moisture management plan; increased servicer scrutiny during the annual inspections; and special inspections by qualified professionals until the issue is resolved.

⁸³ ASTM E50.02 Task Group on Mold.

⁸⁴ See, National Multi Housing Counsel and National Apartment Association, press release: "NMHC/NAA Publish Operations & Maintenance Plan for Mold/Moisture Control," on website at <http://www.nmhc.org/Content/ServeContent.cfm?ContentItemID=2251>, January 16, 2002.

⁸⁵ *Id.*

1 effects of indoor mold.⁸⁶ NAHB gathered scientific and medical experts to review the scientific
 2 literature currently available and assess if there is a reliable and reasonable scientific basis ...
 3 [for] a causal link between indoor molds and any medically recognized human ailment.”⁸⁷

4 The National Institute of Building Sciences (“NIBS”), a federal-private partnership, was
 5 formed to create new research and technology initiatives, to review current industry standards
 6 required for reasonable professional practice, covering such areas as asbestos clean up and
 7 lead paint, as well as drafting base standards where none currently exist. NIBS’ objective with
 8 mold is the creation of a series of guidance documents aimed at fostering a deeper industry-
 9 wide understanding of mold-related real estate issues that could eventually lead to industry
 10 standards or regulations on mold.

11 Other organizations have indirectly discussed mold. The American Council of
 12 Governmental Industrial Hygienists, which has issued exposure standards for numerous
 13 substances, to date has not issued a standard for mold exposure (Time Weighted Average),⁸⁸
 14 although it, like others in the field, are extremely active in trying to develop appropriate and
 15 realistic standards for exposure to damp spaces, mold and mycotoxins. The American National
 16 Standards Institute (“ANSI”) has issued indoor air quality standards, but these are phrased in
 17 terms of adequacy of ventilation and the ability to remove particulates from industrial activities –
 18 e.g., grinding wheel and similar particulates – rather than mold.⁸⁹

19 v. Capital markets - rating organizations

20 Rating agencies offer investors an opinion of the relative risks inherent in commercial
 21 mortgage-backed securities (“CMBS”). The assessment of various environmental conditions
 22 are a subset of the risk evaluation process, as the presence of negative environmental
 23 conditions can severely impact the value of commercial real estate and the liabilities of all
 24 involved parties.

25 In the case of mold, the total or partial closure of a property would likely have a serious
 26 impact on cash flow, thus resulting in diminished yield payments to bond investors.
 27 Remediation costs, litigation expenses, or the potential damage to the marketability of a
 28 property may also negatively impact net cash flow. The rating agencies also take note of the
 29 insurance industry’s specific exclusions of mold insurance coverage.

30 The exclusions have placed an even greater importance on the Phase I and PCA reports
 31 required of loans that are intended for securitization. As a guideline, rating agencies have
 32 minimum expectations for the evaluation of mold in the site assessment process. The scope of
 33 the Phase I and/or PCA required by CMBS issuers should include the requirement for a specific
 34 visual mold inspection component. The scope should also include the requirement that mold
 35 inspection results, as well as specific recommendations for further investigation, remediation
 36 and/or monitoring if mold problems are identified, should be part of the consultant’s written

⁸⁶ See, National Association of Home Builders, “Scientific Literature Review of Mold: A Report on the Health Effects of Indoor Mold.”

⁸⁷ See, <http://www.nahb.org/generic.aspx?sectionID=205&genericContentID=14147>.

⁸⁸ Time Weighted Average (TWA) is the time-weighted average concentration for a conventional 8-hour workday and 40-hour workweek. This is the concentration to which it is believed nearly all workers may be repeatedly exposed, day after day, without adverse health effects.

⁸⁹ See, e.g., ANSI Standard 62-2001, cited and relied upon by OSHA in establishing industrial air quality standards.

1 report results. If evidence of mold is discovered, then mold remediation should be completed
2 before securitization. If remediation is to be completed post securitization, rating agencies will
3 typically require additional credit enhancement in the transaction, with the expectation that
4 clean-up costs be reserved at 125% to 150% of the estimated costs, with the reserve posted
5 either in cash or a letter of credit from a rated provider.

6 Rating agencies also expect issuers to stay abreast of changes in EPA and other
7 governmental standards and ASTM guidelines regarding the identification and remediation of
8 mold-related environmental problems. Rating agencies recommend, in addition to the Phase I
9 evaluation, insurance protection, if reasonably available through insurance carriers who are
10 appropriately rated, and recommend properties incorporating a mold prevention and
11 maintenance plan (“MPMP”).⁹⁰

⁹⁰ MPMP is also sometimes referred to as an Operations and Maintenance Plan (“O&M Plan”).

1 3. MANAGING MOLD AND THE RISKS IT PRESENTS

2 a. Introduction

3 The hazards posed by mold, both real and perceived, are amenable to treatment using
4 the techniques of risk management, the process by which an individual or a business assesses
5 its aversion to all risk generally or to certain risks specifically; measures the magnitude and
6 likelihood of occurrence of particular risks; and then devises actions or strategies of coping with
7 those risks. The process of risk management involves a considerable amount of ongoing
8 assessment and self-reflection; a business with high tolerance to certain forms of risk may
9 experience those risks and find that: a) an acceptable level of risk is present, b) the risks are
10 less likely to occur than previously believed or c) strategies exist to successfully avoid or
11 transfer the risk.

12 This section focuses on the risk management process from the standpoint of the
13 business that is exposed to the risk directly, which typically would be the borrower or the
14 property manager. This process is equally important for lenders and servicers because it offers
15 suggestions as to what a borrower can do to address mold-related problems. The borrower
16 who uses mold-smart design and construction techniques or has a comprehensive MPMP will
17 be assessed differently, for risk concerns, by a lender. Understanding risk management
18 analysis for mold is important for a servicer because they may suddenly find themselves in a
19 position of having to deal with a mold problem or having to force a borrower to take steps to
20 actively mitigate a mold problem in order to protect the property. Risk management analysis
21 therefore can be relevant for all involved in the commercial loan process.

22 All risk management processes follow the same general pattern. The first step is to
23 identify the risks and assess their frequency and severity. Second, the party conducting the
24 assessment will come to a decision on a threshold severity or frequency (or both) of risks it may
25 be willing to accept. Next is to assess possible actions that can be taken with respect to the
26 risk, that is, whether to avoid, reduce, transfer or retain it. Once the assessment is completed,
27 a plan to implement the results of the assessment can be developed and implemented. At all
28 points, the assessment, planning and implementation process should be the subject of ongoing
29 modification and rethinking to determine whether the plan in place is too much or too little to
30 meet the risks at hand.

31 b. Identification and assessment

32 The risk management process of identification and risk assessment involves a number
33 of significant decisions. The corporate internal assessment of risk threshold will vary from one
34 business to another, but here are three points to keep in mind.

35 The first premise, no matter how averse a business is to risk, is that there is some
36 possibility of a mold problem in any building or structure, and in any geographical area.⁹¹ Thus,
37 any risk assessment will start from the premise that mold or dampness issues can arise
38 anywhere and cannot be ignored.

⁹¹ See discussion on this point in “Does mold have more of an impact on certain kinds of property or in certain areas?” *Above*.

1 The second premise for any evaluation of mold and dampness risk is that mold doesn't
2 have one life span, it can arise at any time during the life of a property and if the mold is
3 removed, but the problem is not properly fixed, then the mold will continue to reappear.
4 Therefore, a business should consider the importance of oversight and management to detect
5 and fully deal with on-going mold risks.

6 The third premise for any mold analysis is that all parties involved, from those making
7 the assessment to those who will be dealing with mold and dampness problems, will need to
8 maintain a constant proactive approach, a level of training and education to recognize the
9 problems and the capability to effectively communicate and deal with the issue. A business that
10 is unwilling to start from these premises is less likely to be successful in dealing with mold and
11 dampness related risks.

12 c. Methods for avoidance or reduction of mold-related risks

13 There are well-recognized methods for successfully avoiding, reducing or transferring
14 mold and dampness risk, each of which has a role to play in the creation of a successful risk
15 management plan for mold. In reviewing these approaches, the reader should be aware that no
16 listing of prevention or remediation schemes is exhaustive. What follows is a set of options that
17 should be viewed as examples, rather than as a single standard for mitigating mold risk.
18 Businesses and lenders can use what follows as opportunities for mold prevention, reduction
19 and/or remediation.

20 i. New construction

21 The fight against dampness and mold begins at the moment the first sketch for a new
22 structure is put on paper. Many experts who speak on mold-related issues emphasize the
23 importance of architecture and engineering in constructing a new building. Advanced planning
24 may help mitigate future issues and it is possible to create a strategy for new construction that
25 minimizes the possible development of future mold problems. Education and training of key
26 construction staff is also an important component of successfully avoiding mold and water
27 damage. The steps discussed in this section may be considered for use in a new structure, and
28 may also apply to some renovation, repair or remodeling projects of an existing structure.

29 *Selection of professionals.* Building professionals have been selected for many reasons
30 ranging from aesthetic appeal to cost, but in a world where design flaws may lead to poor indoor
31 air quality and eventual mold growth, choice of design and engineering professionals who
32 understand and appreciate the need to provide a sound structure and good indoor air quality is
33 a helpful first step to avoiding the long term costs of a mold problem.

34 To facilitate a better chance for avoidance of mold or moisture problems, the selection
35 criteria for architects, engineers, contractors and other professionals will make mold-
36 preventative design a priority. For example, specifications, request for purchase (RFP) and
37 bidding criteria each may include the importance of mold to the owner, developer or lender. If
38 your risk assessment determines that a property may have higher mold risk, then experience
39 with mold-related issues should be evaluated and references checked. With on-line databases,
40 it is even possible to obtain some knowledge as to whether the professionals have been
41 involved in past litigation over mold. Insurance and bonds can also be checked; actual policies
42 should be reviewed because certificates of insurance rarely provide substantive information
43 concerning applicable policy terms and exclusions.

1 *Contract design and terms.* Most owners, developers and lenders are used to standard
2 form contract documents such as the American Institute of Architects (AIA) standard owner-
3 architect and/or owner-contractor contract, which take into account numerous different
4 contingencies. Similar attention can be given to mold-related issues in scope of work forms,
5 contract or subcontract documentation, critical path or other scheduling and in warranties.
6 Scope of work forms can specify the importance of preventing mold problems from developing.
7 Contract forms may provide incentives for mold-smart construction and disincentives for errors,
8 acts and omissions likely to result in mold development (ranging from failure to complete the
9 roofing or the building envelope on time to storage methods for materials that will be placed
10 inside the project to lack of a sufficiently trained labor force, among others).⁹² Sequencing
11 issues can also be addressed so that later operations do not allow water penetration in areas
12 previously sealed.

13 *Selection of contractors.* Similar considerations may govern the selection of contractors.
14 Experience with mold-related issues and the materials and techniques to be used in the
15 construction process can be verified, including the on-site management and sources of labor.
16 The general contractor's choice of subcontractors may also prove important, their references
17 and credentials likewise may be reviewed. The contractor's choice of storage areas for
18 materials may be checked to ensure materials, especially those that provide nutrients for mold.
19 Advance discussions concerning possible problem areas, workforce issues and storage of
20 materials may help prevent questions and issues later. Also, it is suggested that schedules be
21 flexible enough to allow for unforeseen circumstances, the need for remediation to be
22 performed, or new materials to be brought to the site. Creating a process for communication of
23 concerns and problems is a central part of the relationship with all contractors.

24 *Design and engineering.* Mold conscious construction begins literally from the ground
25 up. Designs of roofs, grading and skin that prevent moisture intrusion, selection of materials
26 that deny mold the nutrients it needs to grow, and placement of equipment, pipes and drains so
27 that they are easily accessible to inspection and repair are all among the measures that can be
28 taken "on the front end" to help prevent later problems. HVAC and ventilation design may be a
29 priority, as adequate air circulation is an important deterrent to mold growth. Keep in mind any
30 possible build outs for tenants will complicate the design process or introduce additional
31 opportunities for water intrusion, and may warrant inspection and review prior to completion.

32 *Materials and construction techniques.* Mold conscious design and proper construction
33 techniques work together to help prevent water damage and mold. Continuous proper
34 supervision during the construction process helps to ensure that the construction process itself
35 does not cause mold problems. As an example, untreated lumber, installed in a structure after
36 being allowed to sit out in the rain, brings the moisture in and retains it inside the structure as
37 the building is completed. Mold may then develop on the lumber itself and spread from there.
38 Gaps in roofing or a building envelope during construction can also allow for water intrusion.

39 *Inspection.* It is useful to pick an inspector where there is a comfort level among the
40 parties. Consider the inspector's experience and knowledge about evaluating mold-related
41 problems, as applicable in a given situation. It may be beneficial for the inspectors to have the
42 authority to stop work or cause errors to be corrected immediately, so as to avoid later

⁹² The use of staff leasing organizations to reinforce work forces should also be considered in developing contract language, because workers from such labor pools tend to lack training in mold-related techniques.

1 problems. If the inspector has a broader authority, then the work force on the job site should be
 2 informed that the inspector's decisions will be enforced. Increased inspections for water
 3 intrusion may be warranted after any significant rainfall or storm, as well as at key points during
 4 the construction process.

5 ii. Existing buildings and facilities

6 Preventing water leaks from occurring makes mold development less likely. Thus,
 7 preventative maintenance is the first and most important part of any MPMP.

8 Preventative maintenance begins with inspections, and the MPMP may consider
 9 including regular inspections of the property. In some instances, monthly inspections are
 10 appropriate; in others, the proper interval may be quarterly or annually. In each situation, the
 11 inspections should be comprehensive and properly documented.

12 All multifamily and commercial properties should be comprehensively inspected for mold
 13 based on the borrower's loan documents timetable or at least as often as a site inspection is
 14 required. This may include a review of any leases, and a written reminder to any tenants of
 15 their contractual obligations; visual inspection for mold, water stains or other evidence of
 16 dampness problems; and inspections for signs of water intrusion along roof lines, window joints,
 17 drains and supply lines, sprinkler systems and all areas below grade, including sump pumps.
 18 Include attention to planters, floor drains,⁹³ uninsulated piping, swimming pools and fountains.
 19 All inspections, findings and remediation measures should be documented.⁹⁴

20 Increased inspection intervals may be appropriate after identifying problem areas that
 21 exist in the structure or after significant challenges such as hurricanes or seismic events. As
 22 with routine inspections, these should be well documented, regardless of whether the findings
 23 are positive or negative. In developing a site-specific inspection protocol for inclusion in an
 24 MPMP consider the following:

25 *Automated control systems.* Many modern buildings have computer controlled climate
 26 control systems, which operate using an array of sensors and automated programs so that
 27 equipment rooms and control rooms rarely are continuously occupied. These systems can be
 28 tested periodically and the reader may consider adding an alarm system that will alert
 29 maintenance personnel to higher humidity levels. Access to control systems and other
 30 elements that generate moisture can be set up to only allow access by permit, creating some
 31 method for building management to be alerted when work on these systems is underway and
 32 complete.

33 *Building envelope.* Building exteriors can be a complex system of concrete, wood,
 34 plastic, glass, metal and masonry, with grout, glazing, caulk and glues, each with a different
 35 propensity to shrink, break down, decompose, or crack. Each interface between materials in
 36 the exterior envelope is a possible avenue for entry of water, and so periodic inspections of the
 37 entire envelope are suggested. Also, certain forms of building materials can pose special
 38 problems. Maintaining awareness of what materials have been used in a building and then

⁹³ Optional floor drain questions: Are they properly connected and sealed? Where do they
 discharge?

⁹⁴ See discussion on this point in "The human side of mold risk retention – training, communication,
 and documentation." *Below.*

1 monitoring any on-going problems that arise will help limit possible mold problems. The
2 frequency for these inspections will vary depending upon the type, age and condition of the
3 building materials, but a full inspection of the entire envelope from ground to roof can be
4 included in any MPMP.

5 *Cooling towers and air conditioning equipment.* Elements of an air conditioning system
6 are a potential source for dampness and mold contamination, and thus one may decide to
7 check each element of the system carefully to ensure that water is not leaking or building up
8 improperly. With cooling tower systems, one can inspect for leaks, overflows and the
9 cleanliness of the water. All connections, particularly roof connections can be inspected for
10 integrity and any rust can be removed, followed by painting the sealed area.

11 A similar protocol works with air conditioning systems that serve individual suites or
12 units. All pipes and connections, particularly those inside a unit, may be regularly checked and
13 repaired as necessary. Drip pans can be checked to ensure that they are dry and that the drain
14 is fully functional and adequate in size to carry off any moisture that may develop. Filters
15 replaced regularly and insulation checked to ensure it is not allowing condensation to build up
16 will also help prevent mold.

17 *Crawl spaces.* These can be inspected for standing water, rising groundwater,
18 dampness and leaking pipes. If any water or dampness is found, it is suggested that the water
19 be removed immediately and its source located to prevent any spread. In addition to checking
20 for standing water, inspect crawl spaces for the integrity of the moisture barrier, operation of
21 sump pumps and the integrity of pest control devices. Below grade walls can also be checked
22 for signs of moisture or dampness, and, if present, drains on exterior walls may be checked for
23 proper operation.

24 *Dryer exhaust systems.* These systems can play an important role. Exhaust fans and
25 systems could be examined to ensure proper operation and that exhaust is not be pumped into
26 crawl spaces or attics. In the case of multi-family residences, extra care may be warranted with
27 the appliances, not only because of the number of appliances but because the likelihood that
28 leaks will go unreported increases.

29 *Furnaces, boilers, heaters and stoves.* Furnaces, boilers, heaters and stoves may use
30 water and generate steam. Checks on these devices can include regular examination and
31 maintenance of gaskets, water treatment systems, and inspections of the pipes and the boiler
32 breeching system for corrosion.

33 *Grouting and sealants.* In areas such as lavatories, tiled showers or at joints in counters
34 where water is present, one may conduct periodic inspections to ensure the integrity of grout
35 and sealant to prevent moisture from getting into wall spaces.

36 *Humidity control.* Humidity is optimum when maintained below 60%. Levels can be
37 checked periodically, particularly where restaurants, health clubs, pools, commercial laundry
38 operations or fountains are present. Where humidity levels rise above 60% in a building, one
39 might consider operating the HVAC continuously.

40 *Landscaping and grading.* Exterior grading and landscaping can be inspected to ensure
41 that it is not sloped in such a way as to allow moisture or run-off to accumulate or pond against
42 the outer walls of the building. Mulch and soil is best if not placed against the building above

1 the original grade line, which generally is determined by the level of the exterior moisture
2 coating or barrier. Watch for irrigation systems that spray water against the building.

3 *Moisture-generating appliances.* These include the obvious and some appliances that
4 are less obvious. A regular inspection and maintenance program for refrigerators, dishwashers,
5 washers, humidifiers, icemakers, hot water tanks, drinking fountains, water filters and treatment
6 systems, hot tubs, pools, spas, fountains and planters can be established. All may be inspected
7 periodically for leaks, tightness of piping and connections, and operation of drains, grease traps,
8 steam traps and supply lines. Equipment vibration and movement can be monitored; equipment
9 kept level is most favorable. Plastic drainpipes can be checked for brittleness and cracks
10 periodically, especially around joints and sharp turns. Consideration may be given to installation
11 of pans or waterproof liners under these appliances with drains sufficient to remove a volume of
12 water greater than the supply.

13 *Plumbing, pipe and sprinkler systems.* Proactive maintenance of plumbing and piping
14 systems may mitigate mold and dampness. Drain lines can be checked for proper operation
15 and flow. All water pipes can be checked periodically for corrosion, deterioration or electrolysis
16 from the use of dissimilar materials. Connections can also be checked to ensure tightness.
17 Pipe supports, which are an integral part of the plumbing system, may be checked to ensure
18 that none have been removed or altered and that those present are functioning properly.
19 Sprinkler systems can be tested periodically.

20 *Roofing, gutters, drain spouts and flashing.* The roof, gutters, skylights, davits, roofing
21 connections, rooftop equipment and drains can be inspected for proper operation, leaks,
22 blockage or failure. Attics may be inspected for water leaks and compromised pest control
23 devices. Repair roofs that allow water to pond as soon as possible. Roof drains can be
24 checked to ensure they are clear of leaves, construction debris, trash, and animal debris.

25 Because the activities of workers and contractors can cause damage to roofing material,
26 one may want to monitor any roof maintenance or repair. The roof's condition may be a
27 discussion point with the contractors and workers in advance of any operations. Completed
28 work can be inspected immediately upon conclusion.

29 *Vents and ductwork.* Air vents can be checked periodically to see if they are open and
30 functional and cleaned to ensure that mold or other microbial build-up has not occurred. Vent
31 filters may be replaced or cleaned regularly to ensure proper airflow.

32 iii. Getting help

33 While it is true that many mold issues can be resolved by common sense and thinking
34 ahead, the variety of factors that can be considered and the number of places where mold can
35 be an issue in a building suggest that establishing an advance relationship with a competent
36 mold professional may be appropriate in many circumstances. Many lenders, developers,
37 managers and servicers are well acquainted with the need for consulting with environmental
38 professionals and, access to knowledge about mold before a need arises can be very beneficial.

39 As with other professional relationships, whether to retain mold professionals in advance
40 or engage a mold professional if a problem arises, is a business decision. Selection of a mold
41 professional is no different in concept from selection of an architect or engineer; ability,
42 experience and price all play a role in the decision. Also to be taken into account is the

1 professional's willingness to provide services tailored to one's particular needs. It is suggested
2 that references be requested and, to the extent that state licensing boards or regulatory bodies
3 provide information on complaints or disciplinary action, these may be checked. Once the
4 professional is selected, the terms of the relationship can be agreed upon and set down in
5 writing. These may include the scope of work to be performed, price, and an agreed upon
6 limitation as to the range of the professional's discretion to address an issue without prior
7 consultation or discussion.

8 d. Transfer of mold risks: obligations of building tenants

9 Risk transfer is the process by which the person or business that presently is designated
10 to bear the costs or likelihood of a problem associated with a particular risk or problem shifts
11 some or all of that responsibility to another. It is common in commercial real estate to associate
12 risk transfer with insurance, but there exist other methods for risk transfer which can be used
13 effectively.

14 The first method for transfer of mold risks is through contractual indemnification or some
15 form of contractually mandated reserve or holdback. Contractual indemnification provisions are
16 commonly used in a variety of contexts, including those in which a borrower agrees to indemnify
17 a lender for the lender's liability for environmental problems on a piece of real estate on which it
18 has made a loan. These can be accompanied by a holdback of loan proceeds sufficient to fund
19 any remediation that may prove necessary. A combination of indemnification and
20 reserve/holdback can be used to address borrower or tenant related mold issues.

21 Other contractual limitations may also be used to shift or limit mold risks that may be
22 caused by tenants or borrowers. These include contractual provisions that limit permissible
23 uses on the property, require any build-out to be done to particular standards, and mandate that
24 tenants or borrowers create a MPMP for their portion of the premises and share inspection
25 reports and remediation information with the owner, manager, lender or servicer. Lease
26 provisions may make mold remediation the tenant's sole responsibility; may establish
27 preventative maintenance requirements such as keeping the premises clean and free from
28 excessive moisture; or require reporting any indication of mold, leaks or dampness. The lease
29 may also establish use requirements such as limits on the number of plants in the unit or
30 parameters for operation of heating and air conditioning equipment. Finally leases and loan
31 documents may provide for any reasonable inspection by owners, property managers, lenders
32 and servicers and give them the right to intervene to correct, at tenant or borrower cost, any
33 mold problems or any conditions that might lead to mold problems that they find.

34 Education can play a key role in the process of transferring mold risks. The tenant or
35 borrower who understands the problems associated with mold and dampness and the practical
36 steps that one can take to prevent mold development is far more likely to cooperate and
37 voluntarily take the necessary steps to create and implement a working MPMP. Thus,
38 education of tenants on mold and how to prevent its development, particularly in multi-family
39 residential units, can be an important step in limiting later problems.

40 An active effort to educate tenants and borrowers about mold hazards is a suggested
41 part of any successful MPMP. When coupled with effective and enforceable documentation
42 setting forth tenant obligations with respect to mold, these efforts are likely to play a significant
43 part in preventing development of mold.

1 e. Remediation

2 This section discusses remediation strategies and offers options for the remediation
3 process. Again, however, it should be noted that the variety of situations that may develop is
4 impossible for this White Paper to predict in advance. What follows should therefore be viewed
5 as a non-exhaustive description of some suggested steps, rather than a comprehensive or
6 mandatory list to follow.

7 i. Step one: eliminate the moisture.

8 The most important step in dealing with a mold or water damage problem is prompt
9 discovery and timely response. Mold is a living organism. The longer it is active the more it will
10 grow. Therefore, early detection and response is important to containing a mold problem.

11 As the CDC study stated and as common sense suggests, the only way to truly stop
12 mold growth is to cut off its source of moisture.⁹⁵ Thus, when an outbreak of mold is found, the
13 first effort is generally to remove the water that is present and prevent additional water from
14 entering the area. As this is being accomplished, the rest of the remediation plan can be
15 developed.

16 ii. Step two: isolating the outbreak.

17 As the effort to cut off the moisture source goes forward, an assessment of whether or
18 not there is mold growth and the extent of any growth is helpful. Start with a visual assessment
19 for mold. The assessment begins with identification of the source of the moisture problem (e.g.,
20 plumbing leaks or an improperly cycling HVAC system) and the extent of visible mold
21 contamination. Visible mold may represent as little as ten percent of the total mold actually
22 present; therefore, a visual inspection may require going well beyond visible surfaces. A look at
23 ceilings, wallboards, the areas behind wallboards and inside wall or crawl spaces, ductwork and
24 a thorough inspection of HVAC systems will help assess the extent of any mold growth. Use of
25 smell in potentially affected areas may provide evidence of additional invisible infestation.

26 Instruments may aid in a visual inspection. Using a boroscope to view spaces in
27 ductwork or behind walls or the emerging technology of infrared detectors to locate areas of
28 higher temperature that are the product of mold metabolism can be helpful. Possibly the most
29 valuable complement to visual inspection is the moisture meter. These can be used to measure
30 moisture content in a variety of building materials, including areas where mold might be
31 undetectable to visual inspection. Moisture meters can also be used to monitor the process of
32 drying damaged buildings.

33 Careful and thorough visual inspection, accompanied by the judicious use of existing
34 tools, often is enough to isolate the extent of a mold infestation without further testing.

35 If additional sampling is necessary, there can be additional costs and time involved. It
36 may be possible for an owner or manager to conduct the sampling in-house or to conduct its

⁹⁵ See discussion on this point in "Why is mold a concern for lenders and servicers in commercial real estate?" *Above*.

1 own remediation, however professional consultation may be advisable. Many factors enter into
2 this decision.

3 First, as the EPA and City of New York guidelines make clear, environmental sampling is
4 not a prerequisite for remediation.⁹⁶ First, generally it is not necessary to determine which kind
5 of mold is present in order to start remediation. Second, microbial sampling techniques are
6 insensitive and do not always give accurate measurements. Third, as noted in the CDC study
7 discussed earlier in this paper, there are no accepted standards for mold sampling in indoor
8 environments or for determining what exposure levels are unhealthy.⁹⁷ There are not standards
9 for what levels of mold constitute a threshold; therefore, the most common practice is to
10 compare outdoor mold levels to indoor sampled mold levels in the affected area. Fourth,
11 because mold and microbes are everywhere, there is a strong risk that what will be found is not
12 an accurate picture of what is actually occurring.

13 Next, as discussed earlier, is the question of which professional to choose.⁹⁸ As was the
14 case in the early days of environmental “experts” on the Comprehensive Environmental
15 Response, Compensation, and Liability Act (CERCLA) or Underground Storage Tanks (USTs),
16 some environmental “professionals” recommended a wide variety of environmental sampling,
17 much of which may not be necessary. Given the costs that may be involved, careful evaluation
18 of professionals to assist in the sampling and remediation process becomes especially
19 important. The methods remain the same; evaluation of experience, references and approach
20 are vital. Dialogue with the professional and careful development of a sampling plan is equally
21 important.

22 There may be some situations where further air sampling for mold contamination is
23 warranted. Among these are:

- 24 • to determine whether or not a ventilation system has been contaminated;
- 25 • as part of a medical evaluation if residents contend they are experiencing
26 symptoms allegedly related to fungal exposure;
- 27 • to determine if mold is present when visual inspection or bulk sampling is
28 inconclusive;
- 29 • to document that remediation efforts were successful at removing contamination
30 especially if litigation is involved or threatened; and/or
- 31 • if required by contract or loan documents or to provide necessary assurance to
32 prospective lenders or purchasers.

33 There is a wide array of sampling techniques, including air flow devices, sometimes
34 known as “spore trappers,” in which pumps are used to pass air over collection devices which
35 trap particles of mold for later examination and analysis; vacuum sampling, in which areas are
36 sampled by means of a vacuum drawing air through a filter paper to which mold particles cling;
37 and tape teases, in which mold particles are removed from a surface using clear tape. Other
38 methods may include use of sterile swabs, which can be applied to a surface (generally one
39 square inch) and then rubbed onto sterile agar plates which in turn are cultured in a laboratory.
40 Swab tests are effective in determining the kinds of mold present, but can be misleading as to
41 the amount of mold present over larger areas because of the possibility that the area in which

⁹⁶ See Appendix B for further information on these sources.

⁹⁷ See discussion on this point in ““Damp Indoor Spaces and Health” and Health.” *Above*.

⁹⁸ See discussion on this point in “Selection of professionals.” *Above*.

1 the sample was taken had germinating spores. It also is possible to do aggressive sampling, in
2 which surfaces are disturbed during the sampling process, but that process may also provide
3 inaccurate results. Finally there is an option for bulk sampling, in which a portion of the material
4 with visible growth on it is removed for testing. While the actual method for sample removal
5 may vary, it is important that it be performed by qualified personnel.

6 If and when any type of environmental sampling is done, one may consider the
7 importance of hiring a Certified Industrial Hygienist or other persons similarly qualified and that
8 an accredited laboratory performs the analysis. The American Industrial Hygiene Association
9 (AIHA) accredits laboratories for microbial analysis through the Environmental Microbiology
10 Laboratory Accreditation Program. Scrupulous adherence to proper procedures, preservation of
11 material for split or later sampling, chain of custody records and similar steps are particularly
12 important in cases where litigation or enforcement proceedings may be underway or threatened.

13 iii. Step three: conducting the remediation.

14 Whether or not additional sampling is necessary, the next step in the process is to
15 conduct remediation. Serious property damage and continuous mold growth may persist if
16 water damage restoration is not done or done improperly. One industry resource, the Institute
17 of Inspection, Cleaning and Restoration Certification (IICRC) S500, provides detailed
18 information about all aspects of a water damage restoration project in a safe and effective
19 manner.⁹⁹

20 Similar to the design or sampling phases, selection of a properly trained and qualified
21 remediation contractor may be a factor in the success of any remediation effort. As a reminder,
22 selection may take into account the experience, costs involved, references and the
23 sophistication of the project. Some mold may be remediated with an in-house staff, without
24 resorting to difficult and possibly expensive techniques and external resources, but knowing
25 where to draw the line between self-directed remediation and the hiring of a contractor may be
26 difficult. Factors that may have an effect on this decision include the size and area designated,
27 the need for advanced techniques to conduct the remediation and whether the project is being
28 done as a proactive or reactive measure. Lenders and servicers may wish to establish
29 guidelines or even delineate affirmative standards when borrowers shall obtain outside
30 assistance in remediation projects.

31 Perhaps the best starting point for determining the scope of and personnel to be
32 involved in a remediation process is the size of the affected area.¹⁰⁰ As an example, the New
33 York City Guidelines divide remediation procedures into five levels based on the extent of the
34 mold growth.¹⁰¹

- 35 • *Level I* – Small, isolated areas (ten square feet or less) such as ceiling tiles or
36 small areas on walls. This kind of remediation can be performed by building
37 maintenance personnel with proper training in procedures and hazards
38 associated with mold. OSHA provides information for when respiratory
39 protection should be provided to workers and at this level, it is not necessary to

⁹⁹ See Appendix B for more information.

¹⁰⁰ The figures which follow are derived not from the visible mold alone but from the total extent of the infestation.

¹⁰¹ See Appendix B for further information on these guidelines.

1 erect containment barriers or to evacuate adjoining spaces except for sensitive
2 individuals. It is suggested that appropriate procedures for dust suppression and
3 sealed debris removal are followed, and the areas used by workers for access
4 are thoroughly mopped down and vacuumed using a HEPA filtered machine.

- 5 • *Level II* – Mid sized isolated areas (10 to 30 square feet) such as individual
6 wallboard panels. Here too remediation can be performed by building
7 maintenance personnel who have received proper training. As in Level One,
8 OSHA offers information on when workers should receive respiratory equipment,
9 but it is not necessary to vacate spaces except where work is being done. Unlike
10 Level I remediation, in Level II situations, containment barriers may need to be
11 erected. Debris disposal and area clean-up are similar in scope and method to
12 Level I clean-ups.
- 13 • *Level III* – Large Isolated Areas (30 – 100 square feet) such as several wallboard
14 panels. Beginning with Level III of remediation, consideration whether to hire a
15 trained professional, with experience in microbial remediation, to consult and
16 provide project oversight may be a factor. As with lower level remediation, all
17 workers are properly trained and, as suitable, provided with respiratory
18 equipment meeting OSHA standards, as well as gloves and eye protection.
19 Containment measures for the work space and for adjacent areas are often
20 mandatory, and the space where remediation is underway as well as adjacent
21 areas should be vacated. Dust suppression methods such as misting surfaces
22 are recommended. Particular care may be paid to cleaning up access areas. If
23 remediation will generate substantial amounts of dust or mold concentration is
24 substantial, blanket as opposed to patchy coverage, Level IV procedures may be
25 more appropriate.
- 26 • *Level IV* – Extensive contamination greater than 100 contiguous square feet in a
27 single area. Level IV remediation often suggests supervision by qualified
28 professionals. Because of the extent and severity of the contamination, training
29 of personnel is especially important. In Level IV remediation, all personnel may
30 require wearing full-face respirators with HEPA cartridges, gloves and disposable
31 protective clothing covering head and shoes. The work area, including
32 ventilation ducts and grills, fixtures and any other openings, should be completely
33 isolated, with entry and exit only through an airlock and decontamination room.
34 An exhaust fan with a HEPA filter can be used to generate negative pressure in
35 the work area.¹⁰² While it is not necessary, evacuation of people in adjoining
36 workspaces is advisable, especially those who are susceptible to mold exposure.
37 Disposal of mold-contaminated materials proceeds as with other levels, but the
38 air lock and decontamination rooms may need careful cleaning and
39 decontamination. Air monitoring should be conducted before persons are
40 allowed to return.
- 41 • *Level V* – HVAC remediation. Level V is reserved for mold remediation in HVAC
42 systems. It is strongly suggested that any such remediation is supervised by
43 qualified personnel who have experience in such remediation projects, unless the
44 infestation demonstrably is small and isolated.

¹⁰² Negative pressurization in the work area prevents mold and mold contaminated dust from escaping the work area. Whenever there is a breach, intentional or inadvertent, the lower air pressure inside the work area causes outside air to flow in preventing escape of particles.

1 During remediation at any level, questions often arise as to whether material can be
2 cleaned and reused or discarded. Guidance is available on this point.

3 According to the EPA, as a general rule of thumb, non-porous and semi-porous
4 materials like metal, glass, plastic, wood and concrete can be cleaned and reused if structurally
5 sound. Remediation is accomplished by repeatedly wiping all affected surfaces with a high
6 quality detergent solution, scrubbing as needed, until all visible signs of mold are removed. The
7 process is completed by rinsing the area with clean water, but in some circumstances, a
8 disinfectant may be used to complete the rinsing process. If a disinfectant is used, allow the
9 area to dry overnight; if not dry the area immediately. It is suggested that water not remain on
10 the treated surface more than 24 to 48 hours to prevent the conditions necessary for mold to
11 redevelop.

12 Porous materials, including ceiling tiles, insulation, wallboard, carpeting, furnishings,
13 drapes and clothing, are more difficult. In some cases, it is possible to clean them (it may be
14 possible to wash or dry clean clothing, drapes, curtains or slip covers, for example), but if
15 cleaning is not possible, porous material may need to be discarded in such a way as to prevent
16 the mold from contaminating other non-affected material.

17 iv. Step four: when is remediation complete?

18 There is no exact answer to this question.¹⁰³ EPA advises that the clean-up process is
19 complete when the source of water or moisture has been removed and/or fixed completely, and
20 when the mold is completely removed. Common sense and professional judgment both play a
21 role in assessing whether mold is “completely” removed; as a reference point, signs of mold
22 growth or water damage, mold-damaged material and moldy odors are no longer present. If
23 post-remediation sampling is conducted, post-remediation mold levels for indoor air equate with
24 outside air quality in the vicinity. Results will vary from remediation to remediation.

25 f. The human side of mold risk

26 Training, communication and documentation can play a vital role in effective proactive
27 remediation efforts to combat mold issues. A discussion of each of these topics, as part of any
28 MPMP, is encouraged. Also, during the planning and implementation of a remediation, all three
29 play a role in an effective process. It is suggested that lenders and servicers during a review of
30 a borrower’s MPMP look for education and training references. Carefully considered plans for
31 training, documentation and communication suggest that the borrower is willing to be equally
32 careful in confronting mold risks as they arise.

33 i. Training

34 Training to meet mold risks is a great tool for controlling them, and taking time to ensure
35 that all employees are trained in dealing with mold will enable them to execute the appropriate
36 steps to respond to any mold problems.

37 Training for low to mid-level building employees may start with an understanding of what
38 it takes for mold to grow and the importance of detecting and isolating moisture intrusion and
39 releases. As a part of their training these employees can be taught to recognize the areas

¹⁰³ See discussion on this point in ““Damp Indoor Spaces and Health” and Health.” *Above*.

1 where water or dampness problems can develop in the structure and encouraged to look for
2 other areas where problems can arise. Their training may include the basics of safety around a
3 mold outbreak and the vital importance of promptly notifying management of moisture intrusion
4 or visible mold. Communicating in advance to employees the importance of abiding by
5 corporate policies concerning mold and of all elements of the MPMP can assist in proactive
6 treatment. Following the OSHA model requiring periodic retraining and weekly workplace
7 meetings appears advisable.

8 Because Level I and II remediations can be conducted by in-house staff, training of
9 employees may also include proper remediation methods and, as necessary, an understanding
10 of when to stop remediation and advise management that professionals are needed. This area
11 of training can encompass worker safety, including proper use of protective equipment and
12 proper methods for disposal of contaminated material.¹⁰⁴ Training can encompass both line
13 workers and extend to management. Training of higher level employees also may include an
14 understanding of what it takes for mold to grow, the importance of proper communication, and of
15 elements of the MPMP in place. It is suggested that management is trained in the importance
16 of prompt response to mold issues. Experience from litigation arising out of other environmental
17 issues strongly suggests that willful neglect by management – i.e., turning a blind eye to
18 evidence of problems – can be the source of liability and a basis for punitive damages.
19 Accordingly, it is important that management and executive level employees be engaged in
20 mold issues from the beginning and ready to respond quickly if a problem is noticed.

21 Therefore, a proactive step is to develop training programs and materials at all levels,
22 which are evaluated by a professional prior to implementation and updated periodically to
23 ensure that information and methods being used are timely and appropriate.

24 It is too much for a single paper to anticipate the proper training programs in every
25 situation, but lenders and servicers can take into account the level of emphasis placed on
26 training by the borrower.

27 ii. Communication

28 Communication at all levels and both to and from each party associated with the
29 property – tenants, property manager, borrower, lender, servicer – help create an atmosphere of
30 inclusion, knowledge and forthright information sharing.

31 Typically, communication concerning moisture and mold will flow inward first, from
32 occupant to management. It is suggested that occupants, tenants and employees are positively
33 encouraged to report leaks, water intrusion, excessive dampness and perceived mold
34 outbreaks. Some of these reports will turn out to be false or of negligible importance, but the
35 early detection of water intrusion and dampness is a key element and a few early false warnings
36 may be better than a missed or late reporting. Encouragement and the means to communicate
37 through proper internal channels can be included in any MPMP.

38 Once mold growth is discovered and depending on the extent of remediation required,
39 there are several steps to consider. First, appoint a knowledgeable individual as a liaison with
40 whom the occupants can communicate and ask questions. It is a good idea that the liaison has

¹⁰⁴ There have been several workers compensation claims from mold remediation workers.

1 a basic knowledge of mold, thorough knowledge of the extent of the contamination and what is
2 being done about it, as well as references to web pages and other resources, which occupants
3 can use for confirmation of the information being provided. Because medical questions may
4 arise, it may be appropriate to have an industrial hygienist, physician or similar professional on
5 call to respond promptly. Second, providing regular updates to all who may occupy the property
6 is appropriate. The information may include a discussion on the extent of the outbreak, what is
7 being done to remediate it, the progress of remediation, and, if necessary, why containment
8 areas have been established or protective equipment is being used. Third, after large
9 remediation efforts with significant containment areas or visual sights of workers wearing
10 protective suits, it probably is advisable to retain an outside professional to conduct sampling
11 after the remediation, whose results may be made available to occupants to provide
12 reassurance that the area is safe. In some areas, public health officials may be available and
13 willing to confirm that test results are accurate or that mold remediation has been completed
14 successfully.

15 Whether to describe symptoms of mold exposure in communicating with tenants is a
16 particularly tricky question. A case involving the allegedly improper spraying of chlordane inside
17 an apartment complex illustrates the potential risks here. In advising residents that the spraying
18 had occurred, the Texas Department of Agriculture, whose department was responsible for
19 supervision of pesticide use and misuse also advised the residents of symptoms associated
20 with chlordane exposure, including sleeplessness, anxiety, loss of appetite and other similarly
21 amorphous conditions. This did lead to lawsuits by plaintiffs with symptoms described by the
22 Texas Department of Agriculture, all conditions that could be attributed to other reasons than
23 just chlordane.

24 Probably the best solution to this problem is to avoid making any affirmative disclosure
25 of symptoms in information relating to the remediation. Instead, it probably is better to let this
26 self-selection process play itself out by directing occupants to see their own physicians if they
27 feel they are experiencing symptoms related to mold exposure. While this is not an option free
28 from risk – not every physician will be cognizant of the most recent information on health issues
29 associated with mold, for example – letting those who feel the need go to see their own
30 physician is an effective way to reduce concerns. Those who do so cannot say that they have
31 been coerced or that their concerns have been downplayed, and generally, to the extent that a
32 person has a relationship with a health care provider, getting concerns out into the open is an
33 effective way of resolving them.

34 An often overlooked point in environmental response and remediation is that remediation
35 itself is communication to all who can see it. It is good to have an appearance of
36 professionalism and accordingly, one may consider where workers will enter and leave the
37 remediation area; what equipment will be present and visible; and any workplace neatness
38 issues, including prompt removal of debris and policing of the area on a daily basis. Simple
39 techniques like requiring tidiness go far to give reassurance that the remediation is being
40 conducted in a professional manner.

41 Finally, there is the question of communicating with the media as it is likely that the
42 media will find out about major remediation projects. The goal in dealing with media
43 representatives on any environmental issues is not to squelch the story, but to make it into a
44 non-story, that is, to make the situation sufficiently routine or uninteresting that there is no
45 follow-up story. While successful communication with the media could be, and already is, the
46 subject of many books, techniques involved in successful communication with the media are

1 easily summarized. First, establish a press liaison, usually the same person that coordinates
2 communication with occupants. All communication should go through this liaison and all others
3 involved in the project, including contractors and professionals, should decline comment and
4 refer questioners to the liaison. Second, be honest and polite, but controlled: “Yes, there is a
5 remediation underway. Yes, we have advised occupants. Yes, it is being conducted according
6 to sound environmental standards. The protective equipment and enclosures are to ensure
7 worker safety in the immediate area and to prevent dust and particles from spreading so as to
8 negate the purpose of the clean-up, not because there is any greater danger. The material is
9 being disposed of properly. We are working with trained professionals on the project. Before
10 we complete our work we will test the level of mold in the area.” Statements like this delivered
11 uniformly and clearly most often are the best antidote to sensationalism and misinformation.
12 Third, presume that everything is “on the record;” do not give “off-the-record” comments,
13 historical context briefings or other similar statements. Stick to the basic message and do not
14 go beyond it.

15 iii. Documentation

16 Documentation of an MPMP has two purposes, defensive and corroborative. The
17 defensive purpose is important; keeping proper and complete records may be used as a
18 defense to later claims of infestation or illness. The corroborative use of records may be less
19 obvious, but is every bit as important: at the time of a property transaction, having records to
20 show that an MPMP is in place and being executed and that any problems have been
21 successfully and fully resolved will assist in resolving any concerns over possible mold problems
22 in the structure. Lenders may want to consider the depth and breadth of a borrower’s MPMP
23 documentation as a part of their underwriting process, particularly in loans secured by structures
24 at high risk for mold infestation.

25 It is important to document every phase of an MPMP, starting with the MPMP itself. It is
26 suggested that workers are trained in the importance of proper and contemporaneous
27 documentation and record keeping to ensure the integrity of information over a long period of
28 time. Moreover, since mold often involves visual evidence having a camera on hand to
29 photograph or record digitally reported contamination or intrusion can be an important defense
30 to later claims of “widespread” infestation later.

31 A second aspect of documentation to consider is a periodic complete video inspection of
32 an entire unit or suite. Just as homeowner’s insurers have long recommended periodic
33 photographic inventories, having a record of conditions in a space before occupancy and after
34 departure can go a long way to deter later claims. Also, carefully preserve any routine sampling
35 data, whenever done.

36 Keep a thorough record of any remediation work, including any sampling or testing
37 performed. “Before” and “after” photographic evidence of a successful remediation also is
38 important.

39 Document retention is a more difficult question with mold records. Generally, one should
40 understand and follow record keeping processes to meet legal requirements, such as statutes of
41 limitation or IRS dictates. Because mold-related records may play a role in a transaction
42 involving the structure long after a statute of limitations has run and because later medical
43 research may show a link between mold exposure and latent medical conditions, it is prudent to
44 retain mold-related records indefinitely and to transfer copies as part of any change of

1 ownership. Because retention of paper documents and electronic data is presently under
2 increased scrutiny by courts, it is suggested that this issue is reviewed internally and with
3 outside counsel as a part of a comprehensive document retention program.

4 iv. Litigation avoidance

5 Each of the steps just discussed is an important part of avoiding the risk of litigation over
6 mold issues, because each demonstrates a commitment to prudent operations and to retaining
7 evidence which can be used to defeat a claim based upon dampness or mold infestation.
8 Together they constitute a palpable deterrent to those who might be tempted to take advantage
9 of an unfortunate situation. Paper and procedures are not enough by themselves to be the
10 most effective deterrent to litigation. The human factor is also important.

11 Previous portions of this paper have discussed the self-selection process by which
12 individuals, some for legitimate reasons, others not, can come to believe that they have been
13 injured by exposure to mold or dampness. While a few will proceed straight to filing a lawsuit,
14 most will voice some kind of complaint first. Dealing with those complaints properly is a key part
15 of deterring litigation.

16 It has been well said that one of the primary reasons people file lawsuits is because they
17 do not feel their claims have been substantively addressed. Accordingly, any occupant who
18 lodges a complaint about mold or dampness should be treated seriously and with courtesy.
19 Keeping a written record of the complaint and taking steps to address it promptly are significant.
20 The complainant may be kept informed of progress and, if appropriate, be shown how the
21 complaint is being addressed. Some form of document showing how the complaint has been
22 handled can be prepared and delivered to the complainant, and some form of acknowledgement
23 of receipt executed. In most cases, this will be sufficient to resolve matters.

24 A more difficult situation can arise when the complainant contends that exposure to
25 conditions in the building have resulted in medical problems or issues. It may be tempting to
26 dismiss such claims, but exactly the opposite approach is called for. As with those who feel that
27 they have developed symptoms during a remediation, it probably is better not to provide
28 corroboration that any particular symptoms can be associated with exposure to mold. Instead,
29 the better course probably is to direct the individual to seek medical advice while conducting any
30 investigation that may be appropriate. If the investigation does reveal mold in the area, it may
31 be appropriate to consider whether air sampling is appropriate as a precaution and as an
32 implicit deterrent to later claims.

33 Whenever a claim is made, once there has been proper resolution, finish with full closure
34 of the issue. Some individuals become tempted to see how far they can push an
35 owner/manager/landlord into providing concessions. A desire to avoid litigation should not
36 become an opportunity for an occupant to take unfair advantage. Reasonable resolution of
37 complaints always is appropriate, and generally all that is required.

38 g. Conclusion

39 Risk management techniques are an effective tool for addressing risks posed by
40 dampness and mold because they provide a framework by which possible problems can be
41 discovered and addressed. Lenders can apply the same analysis to ascertain their willingness
42 to take on loans that pose mold or dampness risks or as an underwriting tool to determine

- 1 whether a prospective borrower has taken steps to deal with mold. Properly used and properly
- 2 updated as necessary, both borrowers and lenders will benefit from proper management of
- 3 mold risks in the short and long term.

1 4. LOOKING AHEAD

2 "Damp Indoor Spaces and Health," the groundbreaking effort to classify what is and is
3 not known about mold and dampness, revealed how little reliable quantitative information is
4 available on these subjects. To that end, federal and several state legislatures have begun to
5 examine mold-related questions and request that additional research be conducted to ascertain
6 the role mold plays in indoor spaces. There is a growing commerce of products, devices and
7 technology designed to help deal with mold and dampness. Although it remains too early to
8 determine the exact direction each is taking, trends can be seen and the beginnings of a real
9 response discerned. The reaction of legislatures, the insurance industry, and scientific,
10 technical and engineering firms to better understand mold and the effects of mold, are all
11 opportunities for greater public education and knowledge.

12 a. Legislative action

13 There has been some legislative action involving mold and information, disclosure and
14 research at the federal and state levels.

15 At the federal level, on March 13, 2003, Representative John Conyers of Michigan
16 introduced bill H.R. 1268, formally entitled the United States Toxic Mold Safety and Protection
17 Act of 2003 (Conyers Bill).¹⁰⁵ The Conyers Bill would have affected both commercial and
18 residential business, most specifically public housing, residential and multifamily structures.
19 The legislation sought to provide for the EPA to develop guidelines for mold prevention,
20 inspection, testing and remediation for indoor mold growth and study the health effects of indoor
21 mold. It would have required landlords to give mold disclosures when leasing rental property
22 and to conduct annual indoor inspections of the property and give notices of the results. The
23 Conyers Bill also wanted to require the Department of Housing and Urban Development (HUD)
24 to establish model construction standards and techniques for mold prevention in new buildings.
25 HUD, along with the EPA and the National Institutes of Health, were to sponsor public education
26 programs on mold. Finally, the bill would have required the Federal Emergency Management
27 Agency (FEMA) to create a mold insurance program along the lines of the flood insurance
28 program it presently administers. Although the Conyers Bill had over 30 co-sponsors, and was
29 referred to several committees, no action was taken by any of them. With the end of the 108th
30 Congress, the bill would have to be reintroduced for there to be any consideration or approval
31 by Congress.

32 At the state level, several legislative initiatives have been introduced. California passed
33 the most comprehensive legislation requiring the development of uniform standards for mold
34 and for disclosure of mold in commercial and residential property transactions, as well as for
35 creation of education materials and a determination by the California Department of Health
36 Services on permissible mold exposure limits.¹⁰⁶ While the legislation was passed on October
37 7, 2001, it has not been implemented due to a lack of funding. Texas and Louisiana have
38 regulated the property review, requiring licenses for mold assessors and persons conducting
39 mold remediation services.¹⁰⁷ Montana passed a Mold Disclosure Act in 2003 permitting, but

¹⁰⁵ The bill is also known as the Conyers Bill or the Melina Bill.

¹⁰⁶ Toxic Mold Prevention Act (Senate Bill 732).

¹⁰⁷ Texas Mold Licensing Law (2003), effective September 1, 2003. Louisiana: Licenses persons who perform mold assessment and mold remediation services (HB 1328 – Act 880), effective July 2, 2003.

1 not requiring, a party to a real estate transaction to provide a mold disclosure statement.¹⁰⁸
 2 Maryland's legislature created a Task Force on Indoor Air Quality to study the health risks to
 3 workers from mold in office building HVAC systems and to make recommendations to mitigate
 4 indoor air quality health risks.¹⁰⁹

5 In other states, including Arizona, Connecticut, Florida, Georgia, Illinois, Kentucky,
 6 Massachusetts, Michigan, New York, Oklahoma, Pennsylvania, and Rhode Island, legislatures
 7 have considered bills addressing mold regulation. These proposed bills have focused on
 8 several key areas:

- 9 • scientific and health research, involving studies of the effects of mold on
 10 individuals in an indoor environment, which may include permissible exposure
 11 levels to mold;
- 12 • regulation of mold assessment and remediation contractors, including licensure,
 13 continuing education standards and financial responsibility requirements;
- 14 • educational programs, requiring educational materials or training; and/or
 15 • disclosure requirements or standards in real estate transactions, for tenants,
 16 homeowners, lessees and with emphasis on residences.

17 Results of these legislative initiatives have been mixed. Legislation to regulate mold
 18 assessment firms and remediation contractors generally has received support, while legislation
 19 mandating disclosures has received a more cautious reception. The diverse state of mold
 20 legislation, one with widely differing standards for regulation, disclosure, testing and
 21 remediation, will have some impact on lenders. As the states continue to propose their own
 22 standards, the lending process may become more cumbersome and driven by state specific
 23 requirements. Because of this, lenders and servicers may want to monitor each state legislature
 24 where their property resides to ensure that there has been full compliance with all applicable
 25 laws and regulations.

26 b. Mold and dampness technology

27 Even a cursory review of what turns up on a web-browser search for new scientific
 28 developments related to mold and dampness reveals a growing array of technology, products
 29 and services that address mold and dampness issues, which generally fall into two choices: (1)
 30 mold and moisture detection techniques or (2) materials technology. What follows is a brief
 31 overview of trends in mold and dampness technology which is not intended to be either a
 32 comprehensive review of the strengths and weaknesses of the methods discussed or an
 33 endorsement of any particular technology. This area is evolving quickly so careful evaluation of
 34 what works best in any particular situation is important.

35 i. Mold and moisture detection techniques

36 As the mold assessment and remediation field expands, so do new technologies to
 37 improve and ease how mold assessments are conducted. There are currently no technologies
 38 that can definitively find and identify hidden mold (i.e., mold behind walls). There are, however,
 39 technologies which assist in the identification of elevated moisture levels or water-damaged

¹⁰⁸ HB 536, effective May 5, 2003.

¹⁰⁹ SB 283, effective July 1, 2001.

1 building materials. And, as previously noted, identifying the source of the moisture is the first
2 step of a mold assessment.

3 Mold detection techniques have also received media attention including stories on the
4 use of mold-sniffing dogs to detect the presence of chemicals emitted by mold.¹¹⁰ Mold dogs,
5 as these animals have come to be known, follow in the footsteps of drug-sniffing and explosive-
6 sniffing dogs, both of which are widely used by law enforcement officials, and both of which
7 have come to be generally accepted as a reliable means of detection. Mold sniffing dogs
8 undergo a rigorous training process and work with handlers to locate possible mold infestations
9 in homes and businesses.¹¹¹ According to their proponents, mold dogs offer several
10 advantages. First, their sense of smell is far more sensitive than commercially available mold
11 detectors. Second, dogs may be able to locate the highest concentration of mold odors,
12 eliminating or minimizing the need to conduct extensive drilling or exploratory operations.
13 Finally, dogs can conduct searches in crawl spaces and other areas that cannot be reached by
14 other detection methods.

15 Technology associated with hygrometers, transducers and moisture meters, each of
16 which can be used to detect moisture or humidity, has improved to the point that non-invasive
17 through-the-wall measurement of dampness in tile, wood, wallboard and cement is possible. It
18 also has become possible to use such devices as an alarm to provide warning if moisture or
19 humidity levels rise inappropriately.

20 Moisture meters are the technology currently utilized to identify water-damaged
21 materials. This affordable and portable tool is easy to use and requires little training. Pinless
22 radio frequency (RF) type meters allow the user to survey building materials by scanning the
23 wall. However, the meter can produce false readings due to interference from metal (e.g., studs,
24 nails, pipes) within the wall cavity. The pin-type meter provides a measure of the extent of water
25 damage in specific locations. However, the penetrating pins can cause surface damage. For
26 both types of meters there are no reference standards for normal moisture content in building
27 materials. In addition, the normal amount of moisture varies between different building
28 materials. Therefore, baseline readings are required for each specific building material being
29 assessed.

30 An up and coming approach to water damage assessments is the use of infrared
31 thermography. The principles of infrared imaging are based on the fact that all objects emit
32 infrared radiation. The level of radiation increases directly as temperature increases. Infrared
33 imaging equipment provides real-time presentation of temperature patterns that are being
34 emitted by an object. Warm spots may indicate the presence of mold, which produces heat as it
35 metabolizes nutrients. Cool spots on a surface may indicate the presence of a crack where
36 water has penetrated. These patterns are displayed as video images in either black and white
37 or color.¹¹²

¹¹⁰ CNN featured mold dogs in a story on its "Science" segment on April 23, 2004. See "For These Working Dogs, Mold is Gold," available at <http://www.cnn.com/2004/TECH/science/04/20/mold.dogs/>.

¹¹¹ One provider of mold dog services states that mold dogs receive over 600 hours of training in which they learn to discriminate between normal household scents and those associated with mold. See <http://www.labrsultsllc.com/training.php>. Another states that is dogs receive 1000 hours of training. See note 50, *supra*.

¹¹² See <http://www.stocktoninfrared.com/pulpwork.htm>

1 This technology does however, have substantial limitations. One, there are limitations on
2 the type of materials that can be observed with thermography. (e.g., while wallboard images can
3 clearly show the temperature differentials, ceramic tile and glass have an insulating effect,
4 insulating the surface from evaporative cooling, thereby creating difficulty in identifying
5 temperature patterns.) In addition, outdoor investigations tend to be much more difficult due to
6 more sources of heating and cooling effects, the many layers of materials in the walls and roof,
7 and atmospheric conditions such as wind, humidity or solar reflection and solar loading, which
8 can skew or limit results.¹¹³ High resolution is imperative to getting clearer and more accurate
9 images, as 320 x 240 pixels are recommended. This portable equipment cost ranges from
10 \$10,000 to \$60,000 and extensive user training is required.

11 Future technology includes the use of radar as part of a moisture infiltration assessment.
12 Scientists at Georgia Tech Research Institute (GTRI) are conducting research to find ways to
13 view mold behind wallboard using millimeter-wave, extremely high-resolution radar.
14 Researchers intend to examine the effectiveness of these techniques in detecting mold in other
15 indoor building materials, including ceiling tiles typically used in commercial structures.
16 Ultimately, the researchers hope to produce a small, handheld prototype unit – something akin
17 to a stud finder – to lay the technical foundation for a commercial product that contractors could
18 purchase for about \$1,000 to \$2,000 and easily learn to use. Scientists envision a system that
19 would map mold behind a wall. If dampness is indicated by the radar-based device then a
20 contractor could know more precisely where to probe for damage.¹¹⁴

21 The Air Conditioning and Refrigeration Technology Institute and the Department of
22 Housing and Urban Development Healthy Homes Initiative have funded a two-year study to
23 determine whether radar, x-rays or gamma rays can be used to detect mold behind walls and
24 partitions. Each process relies upon the fact that mold reflects this electromagnetic radiation
25 beamed at it by these devices differently from uninfected wallboard and other materials. This
26 difference can be detected using available technology and the results can be used to locate
27 concentrations of mold without the need for random drilling and examination into walls. This
28 study, which is expected to be completed in 2005, aims at developing an affordable (\$1,000-
29 \$2,000) device that can be used in the same way as a stud finder.

30 Evolution of existing sniffer technology also continues. Efforts are underway to make
31 existing devices more sensitive and discriminating. The field, called machine olfaction or
32 electronic nose technology is in its infancy, but is moving ahead rapidly. Mold detection is a
33 recognized subdiscipline in this field.¹¹⁵

34 ii. Materials technology

35 Because mold requires cellulose and other organic materials to grow, an obvious attack
36 on mold development is through materials that deny mold the nutrition it needs or which kill the
37 mold as it develops.

38 For years, wood was pressure treated with chromated copper arsenate (“CCA”) to
39 protect it from termites and fungus. Because CCA contained arsenic, a known carcinogen, EPA

¹¹³ See http://www.irinfo.org/tip_of_week_2003.html.

¹¹⁴ See <http://www.gatech.edu>.

¹¹⁵ See, e.g., T. Pearce, S. Schiffman, T. Nagle & J. Gardner, “Environmental Monitoring” in HANDBOOK OF MACHINE OLEFACTION: ELECTRONIC NOSE TECHNOLOGY, part 17 (2003).

1 banned use of CCA-treated wood as of January 2004 except in certain very limited applications.
2 New substances have become available to replace CCA and the search remains underway to
3 find other chemicals which can retard or deter mold growth without themselves posing a health
4 hazard.

5 A second approach has been to coat or treat building products to prevent mold
6 infestation. These can take the form of surface or barrier treatments applied to any exposed
7 surface of the material, integral treatments or barrier treatments. Surface treatments generally
8 are applied as a part of the production process and often are colored to indicate their presence.
9 The advantage of a surface treatment is that requires no handling in the field. Its disadvantage
10 is that retains its effectiveness only as long as the barrier is not breached. Mistreatment on the
11 job site can render such treatments ineffective.¹¹⁶ Integral treatments introduce a fungicide into
12 the material during production; pressure treated wood is an example. Here the primary issue is
13 one of cost and whether a consumer is willing to trade fear of exposure to mold for fear of
14 exposure to the fungicide.¹¹⁷ Finally, there are penetrating barriers which contain chemicals that
15 protect the materials surface and which diffuse into it if water is introduced, thereby providing
16 additional protection.¹¹⁸ Some of these can be applied at the time of construction, presumably
17 after any chance of damage to the barrier is over.

18 Another method of preventing mold development is to use materials which do not
19 provide the nutrients mold need to grow. Products such as glass-fiber reinforced concrete,
20 precast concrete, fiber reinforced polymers, epoxy concretes, and so-called paperless
21 wallboard, which is wrapped with fiberglass rather than paper, claim to limit the growth of mold
22 on wallboard materials.¹¹⁹ Here the issue is cost and availability. In the meantime,
23 manufacturers of traditional building products have accelerated the pace at which they are
24 producing mold-resistant materials.

25 While the use of moisture-resistant gypsum panels can help minimize the chances for
26 mold to grow, new panels are only one part of an overall strategy to control moisture on the job
27 site. Building materials must be protected from exposure to water or moisture during storage
28 and construction. Only by combining sound design, installation, inspection and maintenance
29 practices can this be accomplished.

30 In light of the emerging field of mold assessment of remediation, new technologies to
31 assist the assessor and remediator are constantly being introduced in the marketplace. In this
32 unregulated industry it is buyer beware. Contractor and product liability must be taken into
33 consideration if using unqualified products. Arming yourself with information and knowledge
34 enables the user to integrate these new technologies to ease the assessment and remediation
35 process.

36 c. Mold and insurance

37 Although the future looks bright for new mold technologies, at this point the same cannot
38 be said for new insurance products addressing mold risks. Uncertainties associated with mold

¹¹⁶ See Ross, "New Treatments Aiding in Fight Against Ancient Fungus," available at
http://www.apawood.org/level_b.cfm?content=pub_ewj_0402_mold.

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ See <http://www.bizjournals.com/sanantonio/stories/2002/03/25/focus4.html?page=1>.

1 claims, differing interpretation of standard policy provisions and the continuing lack of standards
2 for exposure and remediation combine to make insurers extremely reluctant to provide mold or
3 microbial coverage except as a part of a separately negotiated environmental liability policy.
4 Shock verdicts on homeowner's claims also reverberate through commercial insurers.

5 i. Claim activity

6 An interesting scenario to consider is the impact of the insertions of exclusions and
7 limitations on mold and mold related claims on commercial insurance policies in the near future.
8 Given the fact that most all insurers providing property and liability coverage have introduced
9 mold exclusions and/or low limits for this coverage, will the level of claims activity trail off or
10 continue to escalate the way they have over the past four years?
11

12 Some industry observers believe that as a result of the limitations and exclusions being
13 included in property and casualty insurance policies, the claims will shift away from the
14 insurance industry. Lenders, Servicers, Property Managers, Contractors (Building, General and
15 Trade) and even Trustees, other potential "deep pocket" defendants, may bear the brunt of this
16 general lack of coverage in addition to isolated potential sources of coverage under professional
17 liability coverage and environmental policies. The Mortgage Banking industry in total and all
18 those who service it are potential targets for litigation should legitimate sources of insurance
19 coverage continue to disappear.
20

21 Some believe that claimants will target other insurance policy types, including the
22 insurance agents' and brokers' Professional Liability Coverage. In fact professional liability
23 insurers are inserting mold exclusions or re-evaluating the exclusions currently included in their
24 policies for potential re-write. Some claims experts believe that payouts under these
25 professional liability policies may begin as soon as 2005.
26

27 The majority of standard non-professional liability policies have introduced exclusions
28 and other limitations which will force claimants to seek coverage elsewhere, so another
29 insurance area at risk is the agent's/broker's Errors and Omissions coverage (E&O).¹²⁰ E&O
30 coverage is speculative as an option for claimant's recovery.
31

32 The movement of claimants to these potential targets will not necessarily decrease the
33 level of claims occurring and may instead just redirect a portion of claims to other sources of
34 potential negligence.

35 ii. Mold insurance products

36 Tentative efforts by the insurance industry have begun to find new insurance products
37 and overcome the lack of coverage. It has been suggested that first-party and liability insurance
38 providing mold coverage could be underwritten at acceptable rates for structures using only
39 mold-resistant materials. Another concept is to provide diminution-in-value ("DIV") coverage for
40 structures being sold. Such a policy would cover the reduction in a structure's value to a buyer
41 or lender after a sale, loan or other similar transaction if mold contamination were discovered in

¹²⁰ Please review the "Mold Claims Chart" created by American Risk Management Resources Network, LLC, which shows the movement towards claims on the agent's/broker's Errors and Omissions coverage at link: <http://www.erraonline.org/domino.pdf>.

1 a building which had been properly maintained and inspected prior to the sale. For such a
2 concept to work, proper documentation and effective inspection clearly would be necessary.

3 Another form of coverage is available on new construction over 50,000 square feet. This
4 endorsed environmental policy, Real Estate Environmental Liability Insurance (REEL), will
5 provide “third party” losses arising from the “release of pollutants including fungus and/or
6 mold”...but no first party coverage is included under this policy from fungus and/or mold. The
7 environmental policy, by virtue of this endorsement, provides coverage, under a single contract,
8 protecting the interests of the lender, contractor and owner. The positives of a single contract
9 protecting the interests of all three provide a continuity of coverage that is unbroken from the
10 developer to the ultimate owner as the policy is assignable to the ultimate owner. Limits are
11 available from \$10MM to \$25MM and the policy term is 3-10 years. The minimum one time
12 single premium and self-insured retention (deductible) is \$100,000. Coverage is contingent on
13 required loss engineering programs pre-funded in the premium costs. Rates range from \$.70 to
14 \$2.00 per square foot and vary from risk to risk.

15
16 The lack of coverage in professional liability policies may spur the growth of “mold
17 endorsed” environmental policies, purchased by commercial clients who are concerned about
18 their individual exposures to loss. The premium cost will be high, but the potential for a large
19 claim loss potentially in the future may offset this deterrent and give rise to an increased
20 demand for new environmental products. This action hopefully will bring additional insurers into
21 the market and begin pushing the premiums down to a more competitive level.

22 The most that can be said at this time about insurance for mold is that the market is
23 adjusting. The situation appears roughly analogous to what existed in the mid-1980s as both
24 insurers and policyholders adjust to a situation that may not seriously have been contemplated
25 as being within the purview of many policies – CERCLA liability then and mold liability now. In
26 each case, the market’s initial reaction was to retract through stricter exclusions or other
27 limitations on coverage. As time went on, however, and it became clearer that the costs
28 associated with remediation would not be as staggering as had been predicted, standards and
29 protocols for environmental investigation evolved, regulatory agencies developed realistic
30 standards for remediation and the insurance market softened and coverage became available.

31 Much the same process is at work with mold, and it is hoped that the NAS study will
32 mark the jumping-off point for a viable mold insurance market. In the meantime, the march of
33 technology will do much to make risks associated with mold and dampness more palatable to
34 insurers even without a deeper understanding of the medical issues at work.

1 5. CONCLUSION

2 In this document, the MBA Mold Working Group has attempted to present an overview of
3 an area that has seized the attention of regulators, those involved in commercial real estate and
4 the public. At this time, misperception of mold and the risks it poses remains widespread, and
5 industry's first task in developing a coherent approach to mold issues is to dispel the myths and
6 misperceptions associated with the subject of dampness and mold. To this end, "Damp Indoor
7 Spaces and Health," the National Academy of Sciences study is a beacon toward understanding
8 and providing a proper assessment of the situation as it really exists. When coupled with a
9 process for dealing with mold, like a MPMP, it can be seen that a framework does exist for
10 rational decision-making about mold issues. The next step is to take advantage of the
11 opportunities this framework offers, while continuing to develop knowledge in this area.

APPENDIX – A

Mold Resources

Resources and Information:

While there are no definitive guidelines or standards for mold in place at this time, trade associations, state and federal government agencies and environmental consultants have developed a great deal of information concerning identifying and remediating existing mold.

Government Agencies

- The U.S. Environmental Protection Agency (EPA) *Mold Remediation in Schools and Commercial Buildings* (www.epa.gov/iaq/molds/mold_remediation.html) publication is a similar document for use in schools and commercial buildings, including residential buildings.
- EPA article on *A Brief Guide to Mold, Moisture and Your Home* (<http://www.epa.gov/iaq/molds/index.html>)
- EPA also gathered general information on the basics of mold at www.epa.gov/iaq/molds/moldresources.html and a list of *Mold Prevention Tips* at <http://www.epa.gov/iaq/molds/prevention.html>
- Centers for Disease Control article *State of the Science on Molds and Human Health* at www.cdc.gov/nceh/airpollution/mold/
- Occupational Safety and Health Administration (OSHA), *A Brief Guide to Mold in the Workplace* (<http://www.osha.gov/dts/shib/shib101003.html>), released in October 2003, provides recommendations for the prevention of mold growth and describes measures designed to protect the health of building occupants and workers involved in mold cleanup and prevention.
- U.S. Department of Labor (OSHA) has a list of various articles on Mold, including *Mold, Toxic Molds, and Indoor Air Quality and Fungal contamination in public buildings: A guide to recognition and management* (www.osha.gov/SLTC/molds/).
- The Fannie Mae brochure, *What Every Multifamily Lender Should Know about Mold* outlines the best strategies to proactively manage mold growth through preventive maintenance and proper response once a problem has occurred.
- The Freddie Mac materials, *Multifamily: Moisture Management Plan Handbook*, offers tools to help owners and managers comply with Freddie Mac's requirements for mold and moisture management and mitigation.

State Level Links

- The New York City Department of Health and Mental Hygiene *Guidelines on Assessment and Remediation of Fungi in Indoor Environments (NY City Guidelines)* (www.ci.nyc.ny.us/html/doh/html/epi/moldrpt1.html) were the first published guidelines to specifically address mold contamination in residential buildings. Developed in response to mold growth problems in many New York City buildings during the 1990's, the *NY City Guidelines* contains information related to: potential health effects, environmental assessment, remediation, and hazard communication.
- California article on *The Condominium Owners' Guide to Mold* at www.cmhc-schl.gc.ca/en/burema/gesein/abhose/abhose_ce44.cfm
- California article on *Health Effects of Toxin-Producing Indoor Molds in California* at www.dhs.ca.gov/ehib/ehib2/toxin_producing.html
- California Department of Health Services Indoor Air Quality Info Sheet, *Mold in My Home: What Do I Do?* (<http://www.cal-iaq.org/mold0107.htm>)

Professional organizational guidance - industry organizations and trade associations

- American Industrial Hygiene Association (AIHA) offers a glossary of terms involving mold at www.aiha.org/governmentalaffairs-pr/html/mold-glossary.htm
- The National Multi Housing Council (NMHC) *Operation & Maintenance Plan for Mold and Moisture Control in Apartment Properties* identifies "best practices" and concrete steps apartment owners and managers can use to manage mold growth and moisture problems on their properties. This document is available to NMHC Members at www.nmhc.org.
- National Association of Home Builders (www.nahb.org) has mold tips for assessment, prevention, clean up at <http://www.moldtips.com/> and a published document for purchase called *Scientific Literature Review of Mold*
- The Institute of Inspection, Cleaning and Restoration Certification (IICRC) *S500 Standard for Professional Water Damage Restoration*. The document may be purchased at <http://www.iicrc.org/pdf/buydocs.pdf>.
- The Institute of Inspection, Cleaning and Restoration Certification (IICRC) *S520 Standard and Reference Guide for Professional Mold Remediation*, may be purchased at <http://www.iicrc.org/pdf/buydocs.pdf>.
- American Conference of Governmental Industrial Hygienists, *Bioaerosols: Assessment and Control* may be purchased at http://www.acgih.org/store/Product_Detail.cfm?id=349.

Other – Legislation, Litigation, Regulation, Science, Insurance

- Mold Updates (www.moldupdate.com) offers a little bit of everything on mold.

APPENDIX – B

“Damp Indoor Spaces and Health” – Scientific Findings¹²¹

*TABLE ONE: Summary of Findings Regarding Association Between Health Outcomes and Exposure to **Damp Indoor Environments***

Sufficient Evidence of an Association¹²²

Upper respiratory (nasal and throat) tract symptoms Cough	Wheeze Asthma symptoms in sensitized persons
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Limited or Suggestive Evidence of an Association¹²³

Dyspnea (shortness of breath) Lower respiratory illness in otherwise healthy children	Asthma development
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Inadequate or Insufficient Evidence to Determine Whether an Association Exists

Airflow obstruction (in otherwise healthy persons) Mucous membrane irritation syndrome Chronic obstructive pulmonary disease Inhalation fevers (non-occupational exposures) Lower respiratory illness in otherwise healthy adults Acute idiopathic pulmonary hemorrhage in infants	Skin symptoms Gastrointestinal tract problems Fatigue Neuropsychiatric symptoms Cancer Reproductive effects Rheumatologic and other immune diseases
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¹²¹ See “Damp Indoor Spaces and Health” (2004), Executive Summary, page 7.

¹²² “Sufficient evidence of an association” means that an association between the agent (dampness or mold exposure) and the health outcome or effect has been observed in studies in which chance, bias and confounding variables can be ruled out with reasonable certainty.

¹²³ The Committee used this category for situations where the evidence suggests an association, but chance, bias and confounding variables cannot be ruled out.

TABLE TWO: Summary of Findings Regarding Association Between Health Outcomes and *the Presence of Mold or Other Agents* in Damp Indoor Environments

Sufficient Evidence of an Association

Upper respiratory (nasal and throat) tract symptoms Cough Hypersensitivity pneumonitis in susceptible people	Wheeze Asthma symptoms in sensitized persons
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Limited or Suggestive Evidence of An Association

Lower respiratory illness in otherwise healthy children

Inadequate or Insufficient Evidence to Determine Whether and Association Exists

Dyspnea (shortness of breath) Asthma development Airflow obstruction (in otherwise healthy persons) Mucous membrane irritation syndrome Chronic obstructive pulmonary disease Inhalation fevers (non-occupational exposures) Lower respiratory illness in otherwise healthy adults Acute idiopathic pulmonary hemorrhage in infants	Skin symptoms Gastrointestinal tract problems Fatigue Neuropsychiatric symptoms Cancer Reproductive effects Rheumatologic and other immune diseases
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