Diminishing Diminution: A Trend in Environmental Stigma

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Of all the various detrimental conditions that affect the real-estate market, environmental contamination is certainly one of the most dynamic and complex. While events such as hurricane damage are as old as mankind, contamination issues continue to form an emerging field, as pollutants are newly identified or reevaluated, new cleanup standards are enacted, new laws and regulations are passed, and new remedial technologies emerge. Many of these issues have come forth in just the last few years and even months, and each can have a significant impact on the market's reaction to contaminated properties. For example, in the late 1980s, asbestos prevented many owners from refinancing property, resulting in some foreclosures. Today, it is nearly a nonissue with many lenders and property owners.

Ithough contamination has not enjoyed the same near exoneration, much of it is nevertheless viewed less severely now than it was until very recently. Emerging factors such as riskbased remediation, completion bonds, comfort letters, and cost cap insurance are altering perceptions of many contaminated properties. These factors, coupled with the realities of the realestate market's learning curve, generally have led to new attitudes toward environmentally contaminated properties. It is not only "location, location, location" that drives values, but also "perception, perception, perception." A new generation of buyers now seeks.and purchases contaminated real estate. The result of these new attitudes and perceptions is that value diminution is diminishing for many contaminated properties.

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The type of contamination that typically causes relatively modest concern is fuel hydrocarbons (gasoline, diesel, etc.) or oils in soil that do not threaten groundwater. As the contaminant changes or groundwater becomes involved, third-party liability may become more of an issue, and there may be increases in both regulatory interest and the amount of assessment and remediation costs. There may be a corresponding increase in the perceived level of financial risk to an owner. A still higher level of risk might be expected if a property were a source of a persistent contaminant in a drinking-water aquifer. An even higher level of risk might be perceived if the property were a Superfund site and the owner were a potentially responsible party (PRP).

Certain generalities exist concerning the values of contaminated properties. They focus upon the source, level, and impact of the contaminants; the identification and management of risk and liability; and the governmental agency status. Some of the more significant of these factors are summarized in **Exhibit 1**.

It is only in the last few years that some categories of contaminated properties have become viewed as far less risky than in the early 1990s. These emerging attitudes have been documented in market interviews conducted in 1991, and again in 1997, by Richard A. Neustein. Over 50 leading CEOs, lenders, brokers, and appraisers were interviewed. The 1991 comments were very negative, and included, "they are killers of time," "won't touch if ... contaminated," "why fight the lenders?" But, by 1997, the comments were noticeably more positive. While some parties would still have nothing to do with contaminated properties, others stated that "a No-Further Action letter means that the property is good," "they will look closely, but probably lend," and "we've had a couple of successes."

Today, many contaminated properties are viewed with much less trepidation than in the past, because of such factors as:

- Science has "caught up" with many common contamination problems.
- Remediation of many properties has become almost routine.
- Regulators now make finer distinctions that allow sites to return to productive uses.
- Prospective Purchaser Agreements, or Comfort Letters, and so on, allay some fears.
- Indemnifications by major entities continue to give comfort.

Exhibit 1. Environmental Stigma – General Valuation Traits

Properties Less Impacted	Properties More Impacted		
Not Source of Contamination	Source of Contamination		
Not Superfund Site	Superfund Site (Federal or State)		
Problem Is Fully Characterized	Problem Is Not Characterized		
No Ground Water Impact or Threat	Ground Water Impacted or Threatened		
No or Little Risk of Third-Party Liability	High Risk of Third-Party Liability		
No Drinking Water Supply Impact or Threat	Drinking Water Impact or Threat		
Approved Remedial Action Plan	No Cleanup Plan		
Completion Bond	Not Bonded and Insured		
Cost Cap and Liability Insurance in Place	No Insurance		
Indemnification by Responsible Party	No Indemnification		
Site Closure	No Site Closure		
No Further Action Letter	No Regulatory Assurances		
Prospective Purchaser Agreement	No Regulatory Assurances		
Comfort Letter	No Regulatory Assurances		
Letter of Nonresponsibility	No Letter of Nonresponsibility		
Sale to Polluter or Potential Polluter	Sale to Nonpolluter		
Value in Use	Market Value		

- New insurance products now facilitate shifting or mitigating financial risk at moderate cost.
- Property tax relief may partially offset holding costs and any corresponding value decline.
- Risk-management techniques, such as land-use controls, reduce owner's exposure.

Modern forms of environmental insurance have been available only since early 1995. The premiums were high at first, but now have come down to more affordable levels. A property now may be in sured for overruns on remediation and repair costs (cost cap insurance), for liabilities to third parties, and for midnight dumping or newly found materials. There is also lender insurance. Most often, cost cap insurance is combined with long-term liability coverage in order to further mitigate risk. Additional premiums may make the insurance transferable to successors.

In the late 1980s and early 1990s, reserves for contingencies on contamination cleanups were typically based upon the "2X Formula." It was assumed that actual expenses would end up being about twice the engineers' estimate, resulting in a 100 percent contingency reserve. Today, that same amount of protection is available at a fraction of the cost through a cost cap insurance policy. Cost cap insurance often is taken out for a 100 percent cost overrun, with a 10 percent deductible. A reserve still must be set aside for the deductible, but it now is one-tenth of what the reserve once was. The premium for this kind of policy has recently been on the order of 4 to 6 percent of the face amount.

Cost cap insurance limits the risks associated with contingencies to the sum of the 4 to 6 percent insurance premium and the 10-percent deductible, or 14 to 16 percent. Thus, a relatively large reserve has been replaced by insurance. In a similar way, insurance can mitigate the costs, impacts, and risks of other elements of value decline, including third-party liability, liability to lenders, liability of lenders, and so on. Indeed, if insurance is available to mitigate an element of value decline, then the diminution is reduced accordingly.

Transfer of title does not always transfer liability. Nowhere is the effect of this felt more than in the contaminated-property market. One example of this effect took place in New Jersey several decades ago, when a major corporation sold a contaminated industrial building to another industrial user. Ownership was transferred several times after that, and the building was subsequently redeveloped into condominiums with views of Manhattan. Over time, the condo association discovered that the walls were impregnated with mercury. The contaminating company ultimately bought the condominiums for their full market value and then, in addition, paid to demolish and dispose of the building and remediate contamination.

In response to liabilities that can arise out of future changes in property use, some properties are now transferred with deed restrictions that limit future uses. However, some market participants feel that this risk-management technique is not adaptable to future changes, and that deed restrictions do not actually prevent a successor fee owner from developing a property with an alternative use (which could reactivate dormant liability concerns). Their approach is to retain fee title and, instead, lease the property on a long-term basis. This allows a responsible party to control any future use and, in that way, manage a significant element of risk that might otherwise contribute to a decline in value.

If a property has suffered a diminution in value, some losses may be further mitigated through a property tax appeal. Successful appeals lower taxes and reduce the cost of holding a property, yielding a smaller contribution to value diminution from this element of risk. Many taxpayers are filing assessment appeals because of contam-ination, and utilizing the savings toward site characterization and remediation.

AN EMERGING MARKET

These factors and strategies have prompted a new market for contaminated property. It is driven by the arbitrage on the spread between perceived risk and scientifically determined risk for a contaminated property, and by the ability to mitigate some or all of the risks. Real Estate Investment Trusts (REITs), opportunity funds, and private ventures now actively seek those properties that, absent contamination, make economic sense. They buy the property "as is, where is" and indemnify or, more recently and more accepted, pay to insure the seller. The price they offer for the property typically reflects a deduction from the normal property value for all assessment costs, the repair process, ongoing costs, and postremediation market resistance, if any.

In return for accepting the risks inherent with an unremediated property, some investors have historically reaped high returns. These profits have drawn additional participants into this market, and added to the competition for properties with contamination. If this sequence of events follows an ordinary cycle, competition will drive the speculative return down, and give a boost to values, further reducing value diminution.

One component of the speculative return is the excess profit that comes from possessing superior information during negotiation. Some contaminated-property buyers are ventures that involve environmental engineering firms and contractors, real-estate brokers, and developers, financiers, and/or venture capitalists. This new breed of buyers uses tools in order to identify and deduct for all risks inherent in buying a polluted property. They often possess superior knowledge and may have a distinct competitive advantage during negotiations.

Analytical Tools for Damaged Properties

Contaminated-property buyers consider a number of factors, costs, and allowances in order to arrive at an offer, usually by deducting them from an undamaged value. The items they deduct are all elements in the Detrimental Condition (DC) Model. The DC Model is one of four tools for analyzing various types of DCs, including contamination, isolating sources of costs, stigma, risks, and value diminution, and identifying any appropriate mitigation measures. These tools are part of a growing body of knowledge that also includes a Detrimental Conditions Seminar, sponsored by the Appraisal Institute, in Chicago. Market data that is coded by class of detrimental condition is now available from COMPS Infosystems, Inc., in San Diego.

The four analytical tools for detrimental conditions are seen in **Exhibit 2**.

Detrimental Condition Model

When a detrimental condition affects a property, the value of the property varies accordingly. There are up to six basic elements of value change that can result from a detrimental condition, which are illustrated in the following diagram of the Detrimental Condition Model. Each class of DC has a distinct graphic pattern that centers upon the timing, inclusion, exclusion, and impact of these six elements (see **Exhibit 3**).

The first step in analyzing any DC is to value the property as if it were unaffected by the DC. This is the Class I Condition in the Bell Chart and also encompasses benign conditions. It is depicted as Point A on the DC Model diagram. Upon the occurrence or discovery of a DC, value may fall to Point B. Some DCs require an investigation or assessment, such as conducting a soils or engineering study. The value during this period is usually the lowest, as potential buyers would likely require a very significant discount to entice them to purchase a property where the extent of damage is uncharacterized. Upon the completion and approval of any needed studies, value generally increases to Point C. If repairs are required, the value will usually increase to Point D upon their completion. Point E reflects the value of the property after considering the present value of any ongoing conditions or costs, such as continuing oversight or maintenance; additional financing or insurance; alterations to the property's highest and best use; and any other restrictions. In some situations, market resistance remains even after any required repairs are completed. This is indicated as Point F in the DC Model diagram. It reflects the resistance of some buyers toward purchasing a property that has sustained a particular

Exhibit 2. Analytical tools for Detrimental Conditions

Tool

Detrimental Condition (DC) Model

The Bell Chart (Ten classifications of detrimental conditions)

Z-Factors (Stigma, mitigation, and risk management)

Detrimental Condition Valuation Formulas

Intended Use

A framework for organizing analysis of how value is affected when a DC strikes a property. In its diagram form, below, the DC Model is an aid to conceptualizing the many factors that may affect value.

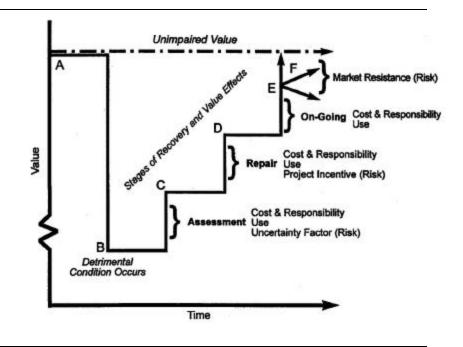
Organizes all DCs into ten classes (DC-I through DC-X). Each class includes detrimental conditions that share such common attributes as sequences of events, cost patterns, timing, and permanence. The ten DC classes encompass hundreds of DCs that range from nonphysical matters to catastrophic destruction. The Bell Chart depicts typical DC Models for each DC Class.

Organizes the various sources of stigma into 26 types that are cross-indexed to the ten classes of DCs. It enables the identifying and defining of the components of problems or issues that might contribute to value decline, and likely methods of solving the problems or mitigating the issues.

A set of formulas for estimating value, including any costs or diminution in value, for each class of detrimental condition. The formula for each class includes the terms that ordinarily account for the issues posed by that class of DC.

class of DC or type damage. Market resistance arises where there remains a question as to the adequacy of the repairs, market perceptions, fear of future related issues arising, or, simply, the trouble of owning a property with a history of being damaged.

Exhibit 3. Detrimental Condition Model



THE BELL CHART

As the Bell Chart sets forth, all DCs may be placed into one of ten standard categories. Each category or group has distinct valuation attributes that correspond with the diminution in value caused by those conditions. This classification is important not only to organize a very long list of complex situations, but also to avoid the error of measuring the effects of one DC by utilizing data from another category that may have altogether different valuation characteristics (see **Exhibit 4**).

Z-FACTORS

The Z-Factors chart is a risk management tool that details the 26 types of stigma associated with real-estate damages. Z factors specifically address the negative mental perceptions about damaged properties. By isolating the specific form of stigma associated with an issue, a clearer understanding emerges as to what mitigation steps may be taken to reduce or even eliminate it.

As used in the Z-Factors chart, stigma is defined as the realestate market's reaction to negative issues or mental perceptions, exclusive of physical damages, and repair costs, if any.

Exhibit 4. The Bell Chart – The Ten Classifications of Detrimental Conditions

	Class	Detrimental Conditions	Analysis	Result	
1	No Detrimental Condition (DC) or Benign Condition	Any DC If No Impact Sakes Arrangement at Market (# Over Market & or # Under N) Sale-Leasteset Lend Contect Build-to-Sut/Tenant Purchase Trents of Condemnation/Audion First Right-of-Rebussi/Double Escrow	There are hundreds of Detrimental Conditions (DCs) that may impect properly values. The analysis of properly damages starts with the DC Model, which illustrates the array of related saues. All six elements of the DC.	DCs have a variety of impacts which, upon analysis, vary on a case-by-case basis. No DC or Berlan	
11	Non-Market Premium	Special Buyer Motivation Assemblage/Expansion Redevelopment Project Feng Shui Short-Term Windfall	Model should be considered in every analysis. This can yield a variety of valuation patterns based upon the inclusion, exclusion and timing of each element.	Cre-Time Persium	
Ш	Market Condition	Economy/Supply & Demand Recession/Depression Lease Option/Rolling Option Exercise of Option/Takedown	Detrimental Condition Model	Mechant Cyrcles American	
IV	Temporary Condition	Distress Sale*/Tragedy** Bulk-Portiolio Sale*Business Inc. High Vacancy/Temp. Easement Deferred Maintenance/Legal * Bartinpty/Probate-Estate-Soot Sale US Mannat/REO-Probate REO-POINTC ***Chite Scans/Accident/Stessa/May/Fin	Unimpaired Value Value With DC	Recovering Services S	
٧	Imposed Condition	Neighboring Issue* Eminent Domain/Bond/Tax Deed Restricton/Ground Lease Leasehold/Leased Fee Physical Deprecision/Historical Serge-Power-Nature Hestitich Tegel Use/JattiMf/Trafic-Migot Noise	A: Unimpaired Value B: DC Cours or (Piscovered C: Aussesment Stage Cost & Responsibility Use Uncontainty Factor (Risk) D: Repair Stage Cost & Responsibility Use Project Incord-se (Risk)	Permanent B Doctring Value Constitute Maceum	
VI	Building Construction Condition	Construction Defect Building Code Violations Poor Workmanship/Leaks ADA Non-Compliance Functional Depreciation	E: Cn-Going Stage Cost & Resignon-shifty Use F: Market Resistance (Risk) Damages are benchmarked against the Unimpalted Value. It determining the impact on value. It	A C Con-Stage Residu	
VII	Soil or Geotechnical Construction Condition	Soil Construction Drainage/Tunneling Foundation/Cut & Fill Retaining Wall or Slope Grading/Soil Compaction	is critical that a distinction be made between the DC and unrelated issues. For example, market conditions may be responsible for a change in value that is unrelated to the condition being studied.	Two Stage Residu	
VIII	Environmental Condition	Soil Contamination Building Contamination Hydrocarbons/Metals/Solvents Asbestos/Radioactive Ground Water/Landfill/LUST	The impact of DCs on property values is ultimately an empirical question that requires the application of one or more of the three traditional approaches to value: 1. The Sales Comparison	Three-Stage Received	
IX	Natural Condition	Natural Disasters Natural Habitat Flood/Earthquake/Volcano Tomado/Landslide/Soil Types Infestation/Sulfates/Wetlands	Approach utilizing market data with and without the DC. 2. The Income Capitalization Approach utilizing income and risk factors with and without the DC. 3. The Cost Approach utilizing	No value	
x	Incurable Condition	Applicable to many DCs in severe situations where a complete loss or net liability exists:	data with and without the costs and losses associated with a DC. The DC Model, coupled with the three approaches to value, provides the fundamental framework for the analysis of DCs.		

The Z factors are organized according to whether a particular element of stigma is based upon physical or intangible damage, and whether the damage affects the subject property, the neighborhood, or both. One class of DC may be associated with several types of

stigma. Similarly, a particular type of stigma may be associated with several classes of detrimental condition. The Z-Factors chart helps to organize this analysis (see **Exhibit 5**).

Exhibit 5. Z-Factors - Stigma, Mitigation, and Risk Management

Typical DC Class		Type Stigma		Definition	Examples	Summary of Mitigation issues	
e in Neighbort		IV,V	A	Off-Site Intengible Perceived Issue	No off-site intangible issue, but reasons or rumors exist	Rumors of future down- zoning in area	Verification of Rumors
	Intangible	IV	В	intangible Temporary External Depreciation	A short-term negative event in the neighborhood	Crime scene in the neighborhood	Postpone Sale Time
		٧	С	Intangible Permanent External Depreciation	A long term intangible neighborhood nuisance	Adjacent property down-zoned	Barriers & Buffers
		III	D	Economic Obsolescence	The negative effects of the real estate market cycle	Recession	Long-Term Leases Prior to Decline
	Physical	IV,V	E	Off-Site Physical Perceived Issue	No off-eite physical issue, but reasons or rumors exist	Rumors of a new arport	Verification of Rumons
		٧	F	Physical Permanent External Depreciation	A long term physical issue in the neighborhood	Airport proximity	Buffering Barriers Sound Proofing
		IV,V	G	Physical Encroachment	A physical engreachment from neighbor's property	Neighbor's fence encroaches on property	Encroachment Removed Compensation
		IV,V	н	Blight	Neglect and deterioration in the neighborhood	Ghetto .	Area Redevelopment
		IV	1	Physical Temporary External Depreciation	A short term physical neighborhood nussance	Street repairs	Postpone Sale Time
Damage to Subject Property	intangible	IV,V	J	On-Site Intengible Perceived lesue	No on-eite intangible issue, but rumor or reason exists	"Haunted house"	New Facade Cosmetics, Rent vs. Se
		IV	к	On-Site Intangible Taint	A negative event has occurred on the site	Crime scene on the premises	New Facade Cosmetics, Rent vs. Se
		٧	L	On-Site Intengible Permanent Issue	A long-term negative intangible issue on-size	Property down-zoned	Grand-fathering Variances
		IV	м	On-Site Intengible Temporary Issue	An on-site short-term intangible issue	Bankruptoy Distress Sale	Renting Short Term Lease Concessions
		IV. V	м	Intangible Third-Party Liability	A potential lawsuit from an issue on site	Sued by neighbors for noise from property	Buy Adjoining Property Indemnify
	Physical	IV,V	0	On-Site Physical Perceived Issue	No on-site physical issue, but reasons or rumors exist	Pre-condemnation	Rent Short Term Lease Concessions
		IV,VI	Р	On-Site Physical Temporary Condition	An on-site physical issue that can be corrected	Leaking roof	Repairs Remediation
		IV,V	a	Physical Depreciation	The aging of a property over sme	An old house	Renovation Remodel
		IV,V	R	Functional Depreciation	Outdated physical layout	Large inefficient offices suites	Layout Alterations
		IV	s	Deferred Maintenance	Neglect of proper up-keep & maintenance	Shabby carpet and paint	Repairs Renovation
		V-IX	т	On-Site Physical Permanent Condition	A physical issue on-site that is permanent & unrepairable	Sols stabilized but improvements titled	Rent vs Sell Owner-Occupied
		IV-IX	U	Physical Third-Party Liability	Problem affects neighbors which prompts lawsuit	Contamination plume migrates of site	Buy Adjoining Property Indemnify
		VI-IX	٧	Non Characterization	Problem exists, but damage not yet assessed	Environmental Phase I indicates problems	Commission Further Studies
		VI-IX	w	Project Incentive	Repeirs, related costs & financial incentive to do work	"Fixer-upper"	Cost Cap Insurance Rent Until Repaired
		VI-IX	x	On-Going leave	Post repair, present value of on-going costs, or HSBU	Increased insurance, financing costs	Site Closure Bond or insure
		VI-IX	Y	Residual Condition	Post repair, but a condition remains	Full repair of defects not economically feasible	Indemnify Cross Collateral Rent vs Sell
		VI-IX	z	Market Resistance	Post-repair reluctance to buy property due to it's history		Cost Cap Insurance Letter of Non- Responsibility

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DETRIMENTAL CONDITION VALUATION FORMULAS

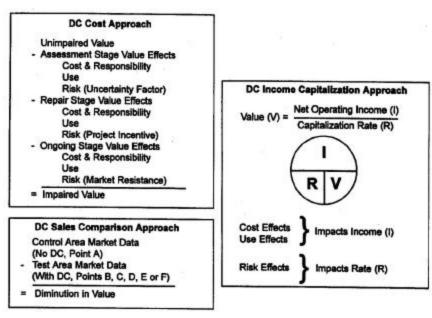
When encountering any DC, the analysis should include its classification, and consideration of all six elements within the DC Model. Once the DC has been properly classified, relevant market data may be researched and applied, utilizing these formulas. These formulas outline the specific issues and relationships that correlate to the DC Model. The benefit of these formulas is that they itemize the primary components that cause a diminution in value. The categorization of DCs and the accompanying formulas provide thorough, consistent, and proven methodologies in the study of detrimental conditions (see **Exhibit 6**).

APPLICATION OF DETRIMENTAL CONDITION ANALYSIS TOOLS TO ENVIRONMENTAL CONTAMINATION

The Bell Chart identifies environmental contamination as a Class VIII Detrimental Condition. As such, it incorporates all of the elements of the Detrimental Condition Model:

- Investigation or assessment costs
- Repair of remediation process
- Ongoing costs
- Market resistance

Exhibit 6. Detrimental Condition Valuation Formulas



These issues may be even further dissected by utilizing the Z factors. Out of the 26 forms of stigma, there are ten that are relevant to environmental contamination, three in the neighborhood (F, G, and I) and seven for the subject property (T through Z In the neighborhood, adjacent properties (properties that are not contaminated, yet are near one that is) may be affected by stigmas F or G, depending on whether the issue is permanent or temporary. Usually, it is a matter of waiting until the contamination is fully characterized and remediated until this stigma is removed. If the contamination is permanent, the passage of time often provides the assurance that it is not likely to impact adjacent properties.

Contaminated nonsource properties (properties that contaminated but not associated with the source of contaminants) have suffered an encroachment and may be affected by stigma G. Generally, owners of these properties are not liable for remediation, so the damage can be mitigated once the contaminants are removed. Source properties (properties on which the contaminants were emitted) are potentially impacted by stigmas T Types T and Y refer to situations in which the through Z. contaminants are fully or partially permanent, such as when they are capped and left in place. Even if a property suffers a diminution in value if sold, the site or building still may have the same utility as if not damaged. In this situation, the rental structure may be unaffected. In addition to other mitigation strategies, it may be preferable to rent the property rather than sell it.

Stigma U refers to third-party liability if the plume migrates off site to an adjoining property. This stigma may be mitigated if the adjacent property is purchased, or if the owner is indemnified or insured against any related costs.

Stigma V relates to situations in which the contamination is not characterized; this stigma is eliminated when, upon the completion of further studies, the extent of contamination is known.

Stigma W relates to the project incentive, or the discount or incentive required to entice a buyer into purchasing a property in a damaged condition. This is a concept similar to a buyer purchasing a fixer-upper with the expectation of saving money for assuming the trouble of making repairs. If a contaminated property is sold by someone who accepts the full responsibility and costs of remediation, this stigma could be significantly reduced or eliminated.

Indemnifications and insurance are tools for mitigating this type of stigma. In addition, there are now environmental firms that will provide a fixed-cost quote and provide a bonded guarantee that the remediation costs will not exceed a stated amount. These costs have historically been prone to significant escalation, so having full control over them can significantly reduce this type of stigma.

Stigma X refers to ongoing issues, such as continued monitoring, alterations to the "highest and best use," and so on. This stigma may be reduced or eliminated through indemnification, or the setting aside of a reserve- that covers the present value of these future costs. Finally, Stigma Z reflects the postremediation stigma that may be associated with the market's concerns about issues that may resurface in the future that were undetected or unknown during the remediation process. While it is rare for governmental agencies to reopen a site after a site closure letter is issued, it can and does happen. In some situations and in some markets, this is simply not a concern. In markets where this is viewed as a legitimate concern, this stigma may be mitigated or perhaps even eliminated through indemnification or insurance.

Using the Z factors, contamination has been classified and the related types of stigma identified. By isolating the specific forms of stigma, and addressing each one individually, it becomes apparent that much can be done to reduce, or even eliminate their negative impacts and cause the corresponding value diminution to decline.

CONCLUSION

While contaminated real property still poses significant concerns, various factors have resulted in diminishing value diminution from environmental stigmas. These include attitude shifts within the market, ad vanced valuation methodologies, and emerging risk-management techniques. The market's fear of unconfined financial liability that once drove much of the adverse reactions toward contaminated properties is being replaced by a more studied approach that identifies, then solves or mitigates, the problems. The advent of modern environmental insurance products has helped to mitigate the stigmas related to project incentives, ongoing costs, contingencies, residual conditions, and market resistance. Coupled with a higher comfort level of site closure letters, letters of nonresponsibility, indemnification, bonds, and insurance, the market now reacts more favorably toward many contaminated properties than it did just a few years ago.

