

# Post-Repair Diminution in Value from Geotechnical Problems

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The focus of this article is to provide a framework for the valuation of properties damaged by geotechnical or related defects, addressing specifically the issue of residual stigma that often occurs after such properties are repaired. These techniques can also be applied to other issues such as environmental contamination and locational obsolescence. The possible uses of appraisals measuring diminution in value are also discussed, including recent case law concerning stigma damages.

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**V**aluation of properties affected by structural, geotechnical, or environmental problems are especially challenging for appraisers. Structural/ geotechnical difficulties include casualty losses caused by natural forces such as earthquakes and landslides as well as manmade problems resulting from accidental damage or construction defects. Appraisals may be required to support casualty loss deductions for income tax purposes or property tax assessment reductions, or for purposes of litigation against sellers or agents for lack of disclosure, against developers or contractors for negligence, or against any other party responsible for damage to the subject property.

In the performance of such assignments, appraisers are frequently asked to value the subject property in undamaged condition, leaving the issue of damages to be determined on the basis of repair costs provided by other experts.

Because major structural damage and geotechnical problems have an obvious impact on property value, not considering them as part of the valuation would necessarily entail a limited appraisal under the Departure Provision of the *Uniform Standards of Professional Appraisal Practice* (USPAP).

While this might be acceptable to the client, it is clear that in many cases cost to repair alone does not account for total diminution in value. In general, loss in value caused by structural or geotechnical problems has two major components:

1. *Cost to correct or repair the damage.* The nature and extent of the problem must be ascertained by a qualified professional—a structural engineer or engineering geologist, for example, who may also assume responsibility for designing an appropriate remedy.
2. *Residual loss in value after repairs are made, a concept variously known as*

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*stigma, blight, or taint.* The nature of the problem is significant, since not all defects will result in such a loss. The author's experience has been primarily in the area of localized and site-specific geotechnical problems (e.g., landslides, slope instability, subsidence, expansive soil). The same concept is obviously applicable to environmental contamination, and could also be extended to serious structural problems, which sometimes occur in conjunction with geotechnical issues.

Restrictions on future use, increased expenses of operation, compensation for loss of use, and lost profits may also be legitimate issues affecting property value, particularly in cases involving litigation.

### STIGMA-WHAT IS IT?

Stigma is defined as something that detracts from character or reputation. As it relates to real estate, stigma refers to an intangible psychological impact on value or marketability because of increased risk or future uncertainty. Disclosure requirements generally operate to ensure that all parties are aware of pertinent risk factors, and disclosure of prior damage may result in a discounted price, despite restoration of a damaged property to safe, structurally sound, and usable condition.

Buyers may reasonably fear a recurrence of the problem as well as potential difficulties obtaining financing or insurance coverage.<sup>1</sup> This is particularly true of latent defects<sup>2</sup> associated with geotechnical and structural problems, because a typical lay person does not understand sophisticated engineering, and cannot in most cases visibly examine repairs to determine their adequacy and probability of recurrence. Whether market perceptions are realistic is not necessarily important. For example, stigma may attach to a property where a previous occupant was murdered, committed suicide, or died of AIDS. Fears associated with these conditions may not always be rational, but if the market generally recognizes some penalty or discount associated with the past history of the property, then the existence of stigma and

an associated loss in value should be considered.

### Measuring diminution in value

An appraiser frequently starts with a hypothetical valuation of the affected property in undamaged condition. This is a straightforward task, which may include some or all of the three standard valuation approaches. The undamaged value of the property is important, since damages in excess of total property value will not normally be allowed. In addition, undamaged value provides a basis from which to apply percentage deductions for residual stigma, if applicable.

Estimating cost to repair is well beyond the expertise of most appraisers. A qualified engineer or geologist will generally determine the nature of the problem, and design an appropriate fix. Cost estimates might be provided by the engineer, but are more frequently obtained from specialized contractors experienced in the type of work involved.

While lacking technical expertise in this field, an appraiser should nonetheless familiarize himself or herself with the issues involved. This is particularly true if opposing sides in litigation recommend different remedies (with different costs). While the Appraisal Institute's Guide Note No. 6 to USPAP allows an appraiser to conditionally accept reports prepared by credentialed non-real estate professionals, material discrepancies between opposing sides should be reconciled if possible.

An appraiser should also examine any cost estimates carefully to make sure that all costs are included that will restore a property to its undamaged condition immediately before the loss occurred. A foundation contractor, for example, will probably not be responsible for cosmetic repairs, which are usually necessary in such cases. These are legitimate expenses that should be included as part of total repair costs, including replacement of landscaping and site improvements, which are often destroyed in connection with major foundation repairs. If replacement of a previously depreciated component (e.g., a roof) is required, an appropriate depreciation deduction

*Loss in value caused by structural or geotechnical problems must take into account cost to repair the damages and residual loss in value after repairs.*

1 Larry S. Levy, "Landslides: Implications on the Appraisal Process," *The Real Estate Appraiser and Analyst* (Spring 1986): 6-8.

2. A latent defect is hidden or concealed, "one which could not be discovered by reasonable and customary observation or inpection"; see *Black's Law Dictionary*, 6th ed. (St. Paul, Minnesota: West Publishing Co., 1990), 883.

can be made to ensure that damages are calculated fairly and equitably. Measurement of residual loss in value, or stigma, best employs the use of case studies. Case study properties would ideally have experienced a problem similar to the subject's, been repaired, and subsequently sold. Locating such properties is often difficult and time consuming, and requires an appraiser to explore a number of somewhat nontraditional data sources. Alternative valuation techniques proposed for use in the appraisal of contaminated properties might also be employed, including regression analysis and contingent valuation methodology.<sup>3</sup>

In California, the Landslide Hazard Identification Project has mapped a number of recently known slides in urban areas, along with assessments of landslide susceptibility in undeveloped terrain, but does not include all geotechnical problems, particularly those not caused by landslides. Because natural disasters frequently receive some media coverage, local newspapers are a good source for identifying potential case study properties. City planning and engineering departments usually have knowledge of localized conditions, and attorneys, brokers, and geotechnical consultants may also provide useful leads.

Case study properties need not be in the same area as the subject property, and data limitations usually necessitate searching a broad geographical area. While the circumstances surrounding the loss in value may be similar, properties selected for case studies are in many cases not directly comparable to the subject. Having located a suitable property, an appraiser should learn as much as possible about the history of the property, including the nature of past structural or geotechnical problems and the type of repairs performed.

Useful information about residual loss in value is sometimes provided in the form of anecdotal evidence from the parties to the transaction. The seller or agent, for example, might provide valuable insight about market reaction to an affected property, and whether the property sold for less than undamaged market value or experienced a longer marketing time because of its history or reputation.

In negotiating a settlement with a builder in the case of defective construction, the property owner may receive compensation over and above the cost of repairs to cover any additional loss in value.

Empirical data are preferable, and are often available from examining sales of comparable properties that do not have a history of structural or geotechnical problems. Because single-family residential properties tend to be most often affected by such difficulties, an adjustment grid similar to that used in the Uniform Residential Appraisal Report (URAR) form may be useful in determining whether a case study property has suffered a residual loss in value (see Figure 1).

In selecting comparables, an appraiser should be sensitive to the proximity of comparables to the affected property. The sale of an adjacent property, for example, might not provide a reliable measure of possible stigma relative to the case study property, since its proximity might cause it to suffer a reputation loss as well, even without a history of similar problems. If similar problems are fairly widespread throughout an area, any comparables from the same locale might be tainted to some degree; interviews with market participants are critical in making this determination.

In lieu of case study properties that were repaired before sale, it is possible to select for study a property that actually sold in damaged condition, without repairs. These should be approached with caution, however. Simply adding expected repair costs to the sale price and deducting this from undamaged value will not necessarily give a good read on residual stigma. The purchaser of a damaged property is frequently an engineer or contractor who has a better understanding of the problem than a typical buyer, and may be able to accomplish repairs at a lower cost. This type of buyer may also expect an entrepreneurial reward (possibly offsetting the lower repair cost), which would be separate and distinct from any residual loss in value.

Income properties might be analyzed using similar comparison techniques, though as a practical matter suitable case studies are usually harder to find, and the

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3. James A. Chalmers and Scott A. Roehr, "Issues in the Valuation of Contaminated Property," *The Appraisal Journal* (January 1993):35-39.

**FIGURE 1 Case Study Analysis**

	CASE STUDY		COMPARABLE NO. 1		COMPARABLE NO. 2		COMPARABLE NO. 3		COMPARABLE NO. 4	
	Proximity to subject	Three Blocks	Two Blocks	Two Blocks	Two Blocks	Two Blocks	Two Blocks	Two Blocks	One Block	
Sales price	\$190,000	\$267,500	\$240,000	\$256,000	\$230,000	\$256,000	\$230,000	\$256,000	\$230,000	
Price/gross living area (GLA)	\$61	\$86	\$77	\$82	\$74	\$82	\$74	\$82	\$74	
Data source	Buyer/Public Record	MLS/Public Record	MLS/Public Record	MLS/Public Record	MLS/Public Record	MLS/Public Record	MLS/Public Record	MLS/Public Record	MLS/Public Record	
<b>ADJUSTMENTS</b>	<b>DESCRIPTION</b>	<b>ADJUSTMENT</b>	<b>DESCRIPTION</b>	<b>ADJUSTMENT</b>	<b>DESCRIPTION</b>	<b>ADJUSTMENT</b>	<b>DESCRIPTION</b>	<b>ADJUSTMENT</b>	<b>DESCRIPTION</b>	<b>ADJUSTMENT</b>
Sales or financing concessions	\$152K Conventional	\$214K Conventional	\$216K Conventional	\$204.8K Conventional	\$207K Conventional	\$204.8K Conventional	\$207K Conventional	\$204.8K Conventional	\$207K Conventional	
Date of sale/time	Recorded 09-86	Recorded 07-86	Recorded 11-86	Recorded 08-86	Recorded 05-86	Recorded 08-86	Recorded 05-86	Recorded 08-86	Recorded 05-86	
Location	Good	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	
Usable site/view	6,800/Good	6,600/similar	7,029/slightly int.	7,000/similar	7,000/similar	7,000/similar	7,000/similar	7,000/similar	7,000/similar	
Design and appeal	Good	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	
Construction quality	Good	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	
Age	1978	1977	1978	1977	1977	1977	1977	1977	1977	
Condition	Good	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	
Above grade	Total	Total	Total	Total	Total	Total	Total	Total	Total	
Room count	BR 4 Baths 2.5	BR 4 Baths 2.5	BR 4 Baths 2.5	BR 4 Baths 2.5	BR 4 Baths 2.5	BR 4 Baths 2.5	BR 4 Baths 2.5	BR 4 Baths 2.5	BR 4 Baths 2.5	
GLA	3,127 SF	3,127 SF	3,127 SF	3,127 SF	3,127 SF	3,127 SF	3,127 SF	3,127 SF	3,127 SF	
Basement & finished rooms below grade	None	None	None	None	None	None	None	None	None	
Functional utility	Good	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	
Heating/cooling	FAU/none	FAU/none	FAU/central	FAU/central	FAU/none	FAU/central	FAU/none	FAU/none	FAU/none	
Garage/carport	G-3	G-3	G-3	G-3	G-3	G-3	G-3	G-3	G-3	
Porch, patio, pool, site improvements	Spa	None	None	None	None	None	None	None	None	
Special energy-efficient items	Site improvements	Superior	Similar	Similar	Similar	Similar	Similar	Similar	Similar	
Fireplace(s)	None	Interior upgrades	Interior upgrades	Interior upgrades	Interior upgrades	Interior upgrades	Interior upgrades	Interior upgrades	Interior upgrades	
Other (e.g. kitchen equip., remodeling)	None	None	None	None	None	None	None	None	None	
Net adj. (total)	2	2	2	2	2	2	2	2	2	
Indicated value for subject	Built-ins	Built-ins	Built-ins	Built-ins	Built-ins	Built-ins	Built-ins	Built-ins	Built-ins	
		-10,000	-3,500	-3,500	-3,500	-3,500	-3,500	-3,500	-3,500	
		\$257,500	\$236,500	\$236,500	\$247,500	\$236,500	\$247,500	\$236,500	\$247,500	

Sales price of case study property \$190,000  
 Adjusted range without stigma \$236,500 to \$257,500  
 Indicated discount range for stigma 19.7% to 26.2%

results may be less conclusive. Key issues for an appraiser are to determine whether rent levels, occupancy, operating expenses, or rates of capitalization and discount are affected by the history of the property.<sup>4</sup>

**Factors affecting stigma**

Residual loss in value is clearly affected by the nature and severity of the underlying problem. For example, a leaking roof or similar patent defect would probably not result in a value loss other than the cost of repairs, while a severe landslide that requires foundation replacement might result in a significant loss over and above simple repair cost. Other distinctions are more subtle. For example, would a home built on expansive soil requiring epoxy injection to repair a cracked slab suffer a residual loss similar to a landslide-damaged home requiring a much more expensive caisson and grade beam substructure? Market data are not always conclusive.

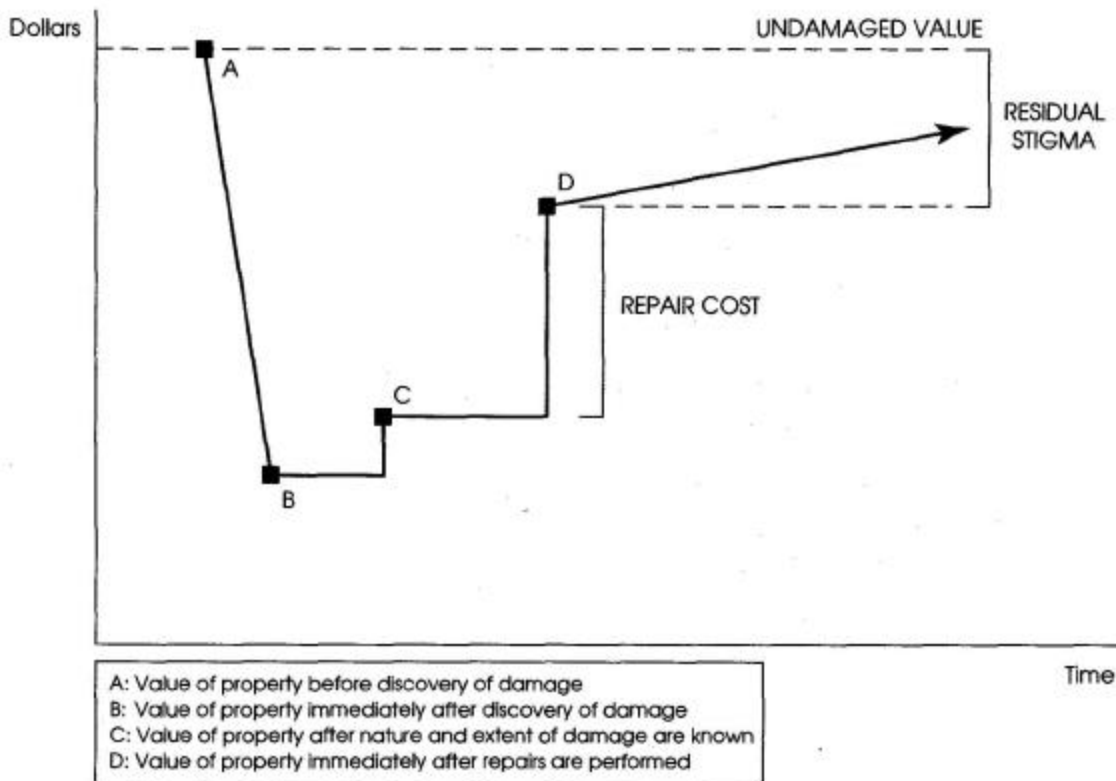
Other factors external to the property might also affect the magnitude of stigma perceived in the market.

**Passage of time**

Diminution in value tends to be greatest immediately after the loss or damage is identified, before the nature and extent of the difficulty is fully known. Even after the problem is understood, a "motivational discount" may be appropriate, an incentive for a prospective buyer to acquire a property in damaged condition.<sup>5</sup> After completion of repairs, stigma will often diminish over time as the market becomes more confident that the original problem will not recur.<sup>6</sup> The theoretical relationship of value to time is shown in Figure 2.

As an example, the author is familiar with a large tract of homes, three of which were constructed on expansive fill, resulting in slab cracks and associated structural problems. One of these was repurchased by the builder, repaired, and subsequently resold a year later at a significant discount of nearly 20%. An adjacent home with a similar history sold at about the same time, except that repairs had been made six years before the sale; indicated discount for stigma was less than 10%, suggesting that while the market still recognized some risk, the probability of recurrence was

**FIGURE 2 Theoretical Relationship: Value to Time**



4. Bill Mundy, "Stigma and Value," *The Appraisal Journal* (January 1992): 12-13. 5.

5. Levy, 6

6. Bill Mundy, "The Impact of Hazardous Materials on Property Value," *The Appraisal Journal* (April 1992): 158-159.

perceived to be lessening over time. The market value of a stigmatized property may or may not equal undamaged market value at some time in the future.

Some might argue that if a residual loss or stigma will eventually disappear, then such a loss should be viewed as temporary and therefore not compensable. As Levy points out, however,<sup>7</sup> market value (and diminution thereof) is measured at a specific point in time. The fact that a real loss has occurred is more important than the speculative presumption that the owner may eventually recover the full value of the property (i.e., a property sold before the end of an anticipated recovery period will realize a loss in value, notwithstanding the fact that residual stigma may cease to affect value at some time in the future).

#### **Market conditions**

Adverse influences tend to be maximized in weak markets (excess supply), and minimized during strong markets (excess demand). For example, a single-family home adjacent to a freeway or other nuisance may be penalized 10% during a "normal" market (supply/demand balance), only 5% during a strong market, and perhaps as much as 20% during a weak market. Evidence suggests that stigma and other disclosure issues may follow a similar pattern, making it important to examine prevailing market conditions of case study properties as they relate to the valuation date of the subject.

#### **Indemnification**

Cases occur where a seller is willing to guaranty the structural integrity of a repaired property for a period of time after the sale is consummated, typically when a builder purchases a defective home and resells the property after making repairs. The financial strength of the guarantor is certainly an issue to be considered, although experience indicates that this does not always reduce the residual loss suffered on the sale, particularly with respect to singlefamily residential transactions.

#### **Media exposure**

Natural disasters frequently receive extensive media coverage. Heightened public

awareness may persist long after affected properties are repaired. As a result, properties damaged in a highly publicized event may suffer a greater or more lingering residual loss than others that may not have received as much media attention.

### **Application of stigma damages**

#### **Casualty loss deductions**

Casualty loss deductions for income tax purposes are generally based on the difference between the fair market value of a damaged property immediately before and after the occurrence, based on "competent appraisal."<sup>8</sup> The possibility of residual stigma is obviously a significant consideration, though it is important to distinguish between stigma specifically affecting a damaged property and a general market decline that may occur along with the casualty—the former would be deductible, the latter would not. In any case, diminution in value for casualty losses is limited to the property's adjusted basis, which may well be less than either actual damage or undamaged market value.<sup>9</sup>

Evidence suggests that acceptance of stigma damages by the Internal Revenue Service, as a component of casualty loss tends to be somewhat inconsistent. Published guidelines are rather minimal, noting only that "economic obsolescence attributable to adverse buyer resistance . . . is inadequate to prove a deductible casualty loss where it represents a hypothetically calculated loss" and that "a decline in market value caused by adverse buyer resistance which arises shortly after a casualty, and which is short lived, cannot establish a deductible casualty loss where it represents a mere fluctuation in value."<sup>10</sup> The importance of case studies as supporting market data cannot be overemphasized. Casualty losses in many cases generate a petition for property tax reassessment as well; procedures for appealing tax assessments vary among counties and other governing agencies.

#### **Civil litigation**

Though widely accepted in personal property damage cases, courts have generally been reluctant to recognize residual stigma

*Diminution in value tends to be greatest immediately after the loss or damage is identified, before the nature and extent of the difficulty is fully known.*

7. Levy, 8-9.

8. Treasury Reg. 1.165-7(a)(2) (Washington, D.C.: Government Printing Office, December 1977).

9. Treasury Reg. 1.165-7(b)(1) (Washington, D.C.: Government Printing Office, December 1977).

10. Rev. Rul. 66-242, 1966-2 C.B. 56.

in cases involving injury to real property, despite heightened awareness of the stigma issue in the environmental realm. The rationale for this is the so-called "lesser of rule," which originated over a century ago and was first articulated in California in 1908.<sup>11</sup> As originally stated, this rule indicated that damages should be computed as the lesser of cost to repair or the value of the property before the injury, a concept that was reiterated in a number of subsequent cases. The lesser of rule was restated in 1977,<sup>12</sup> limiting property damages to the lesser of diminution in value, or the cost of repairing the injury and restoring the premises to their original condition.

This rule, it seems, has been used to negate the impact of stigma damages in many real property damage cases, despite at least one case suggesting curative cost and diminution in value as alternative remedies, either of which might be appropriate in a given situation.<sup>13</sup> Courts in California have found creative ways around the dilemma posed by a strict application of the lesser of rule, however, noting two court cases allowing property owners to recover repair costs exceeding diminution in value, where the owners had a "personal reason" for wanting to restore their property to an undamaged condition.<sup>14</sup>

A recent California case affirmed a trial court judgment awarding both cost of repair and stigma damages, but without specifically ruling on the defendant/appellant's objection to an apparent contradiction of the lesser of rule;<sup>15</sup> a review is pending before the California Supreme Court. Stigma damages were also awarded in the environmental case of *Bixby Ranch Company v. Spectrol Electronics Corporation*, which is currently under appeal to the California Court of Appeal. Appellate courts in at least two states (Colorado<sup>16</sup> and Wyoming<sup>17</sup>) have specifically recognized loss in value from stigma caused by geotechnical and related problems, both in cases involving liti

gation against builders for construction defects. The concept of stigma has also been articulated in cases involving utility companies and the impact of high-voltage power lines on adjacent property, although recognition of value diminution from transmission lines varies from state to state.

It is generally the intent of the law to make the plaintiff whole, awarding as a measure of damages "the amount which will compensate for all the detriment proximately caused thereby, whether it could have been anticipated or not."<sup>18</sup> Proposals have been advanced to modify the general lesser of rule to allow recovery of the lesser of diminution in value or repair cost plus residual depreciation,<sup>19</sup> although wording in the *Mozzetti* case (which is frequently cited) would seem to allow for recovery of stigma damage if costs of repair alone are insufficient to restore a damaged property to its "original condition." In any event, residual stigma, if justified by an analysis of relevant market data, is clearly an equitable component of damages in some cases, and should reasonably be considered by the appraiser.

## CONCLUSION

The concept of stigma has received attention over the past several years in the academic discussion of environmental issues, although the same market forces commonly affect properties damaged by structural or geotechnical problems associated with natural disasters, construction defects, and the like. Stigma is considered a residual loss after completion of necessary repairs, reflecting an intangible diminution in value as a result of increased risk or uncertainty regarding future events.

Case studies involving sales of previously damaged properties provide a reliable method of evaluating stigma, even if case study properties are not locationally or physically comparable to the subject. Stigma is commonly measured as a

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11. *Salstrom v Orleans Bar Gold Mining Company*, 153 Cal. 551, 96 P. 292 (1908).

12. *Mozzetti v. City of Brisbane*, 67 Cal.App.3d 565, 136 Cal.Rptr. 751 (1977).

13. *Raven's Cove Townhomes v. Knappe Development*, 114 Cal.App.3d 783, 171 Cal.Rptr. 334 (1981).

14. *Heninger v. Dunn*, 101 Cal.App.3d 858, 162 Cal.Rptr. 104 (1980); and *Orndorff v Christiana Community Builders*, 217 Cal.App.3d 683, 266 Cal.Rptr. 193 (1990).

15. *Salka v. Dean Homes of Beverly Hills*, 23 Cal.App.4th 952, 22 Cal.Rptr.2d 902 (1993). 16. *McAlonan v. U.S. Home Corp.*, 724 P2d 78 (Colo. App. 1986).

17. *Anderson v. Bauer*, 681 P2d 1316 (Wyo. 1984). 18. California Civil Code Section 3333.

19. Charles L. Stott, "Stigma Damages: The Case for Recovery in Condominium Construction Defect Litigation," 25 California Western Law Review, 367 (1989).

percentage of the undamaged value of the case study property, and applied to the hypothetical undamaged value of the subject. Factors that should be considered in reconciling case studies include the nature and severity of the damage, the length of time between completion of repairs and the sale, market conditions, indemnification, and the extent of public awareness due to media coverage.

Measurement of stigma damages is most often required to support income tax deductions or property reassessments associated with a casualty loss, or for litigation against parties responsible for damage to the subject property, or responsible for failing to disclose such damage. Appraisers valuing properties for lending purposes should also be aware of potential stigma that might affect properties with a history of geotechnical problems.

Because stigma is a relatively new concept, tax and case law is currently somewhat unclear as to applicability. The key distinction in supporting casualty losses for income tax purposes is to distinguish between a general market decline and one specific to the damaged property. In the area of civil litigation, the prevailing version of the lesser of rule, limiting damages involving injury to real property to the lesser of cost to repair or diminution in value, has been used in arguments to reject the notion of stigma as an equitable component of damages, although some courts have properly upheld the validity of stigma damages. In any event, residual stigma attributed to structural or geotechnical problems, if justified by an analysis of market data, is clearly relevant in some cases, and should reasonably be considered by appraisers when appropriate.