



Climate Change and its Impact on the Standard of Care for Design Professionals

by Stephan F. (Hobie) Andrews, Esquire,
and Andrew P. Selman, Esquire

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As the effects of climate change intensify—and understanding of those effects increases—impacts on the standard of care for design professionals seem inevitable. This paper identifies what the effects of climate change are and how they implicate the work of design professionals. The paper then discusses how claims against design professionals might arise for failing to adapt designs to account for the effects of climate change. It proceeds to examine what design professionals can learn from previous and current climate change litigation. The paper concludes by assessing how the standard of care for design professionals may be impacted by climate change considerations and what effect programs like the U.S. Green Building Council's RELi 2.0 might have on the standard of care.

Risks of Climate Change for Design Professionals

“Climate change” refers to long-term change in the weather patterns that have come to define climates and the broad range of effects caused by these changes.¹ When considering the “risks” of climate change, one considers these effects and their potential impact on the human population. The risks of climate change are not just hotter summers and shrinking polar ice caps; the effects of climate change are experienced year-round and all over the country. Rising sea levels, increased floods, temperature extremes, more frequent and intense storms (including hurricanes, tropical storms, and snow storms), more severe and prolonged droughts, and greater risks of wildfires are all frequently cited as well-known consequences of climate change.² Although discussions about the causes of climate change have been politicized, the frequency and severity of these events are increasing.³ Indeed, the U.S. Supreme Court has noted that “[t]he harms associated with climate change are serious and well recognized” and “the severity of [the resulting injuries] will only increase over the course of the next century.”⁴

These increased risks have design implications for the built environment. Sea level rise and increased wildfires affect where projects can prudently be situated.⁵ Increased rain and snow storms implicate not just the structural integrity of buildings during the storm, but raise flooding concerns as well. Concerns about the availability of water in connection with a project become even more acute for design professionals working in drought-prone areas. Greater temperature extremes will put greater stresses on building materials. The effects of climate change can also interact in especially pernicious ways. For example, prolonged periods of drought create a greater risk of wildfire; areas damaged by wildfire are especially prone to mudslides during heavy rains when they do come to the area.⁶

Claims against design professionals for failing to account for these contingencies in their designs—and thus failing to account for the impact of climate change—will almost certainly increase. It is therefore important to understand how these claims can arise and what can be done to protect against them.

How a Claim Related to Climate Change Might Arise

A recent article in the *Journal of the ACCL* noted that design professionals can be vulnerable to claims for failing to adapt their designs

Stephan “Hobie” Andrews is a partner with Vandeventer Black and concentrates his practice in the fields of construction law, professional liability, regulatory services, and intellectual property. He represents accountants, architects, engineers, project owners, contractors, and liability carriers in a variety of construction, professional liability, insurance coverage, employment and contract disputes, as well as in other matters. Hobie’s practice is national in scope and includes mediation, arbitration, and litigation in state and federal courts. Hobie practiced engineering for four years after earning his civil engineering degree. He served on the Board of Governors of the Virginia State Bar Construction Law Section and is a frequent lecturer on liability and risk management issues unique to architects, engineers, contractors, and accountants.

Andrew P. Selman is an associate with Vandeventer Black in its professional liability defense practice group. His practice includes representing architects and engineers in a variety of matters. Prior to joining the firm, he was a law clerk to Judge Julie E. Carnes on the U.S. Court of Appeals for the Eleventh Circuit. He received a J.D. from the University Virginia School of Law and a B.A. from Brigham Young University.

to account for the effects of climate change mainly through tort, contract, and statutory claims.⁷ That article provides a good primer on how these claims can arise and is the touchstone for the content of this section.

Tort

The basic elements of a tort claim are well known: the defendant had a duty of care to the plaintiff that the defendant breached, and that breach caused harm to the plaintiff. A design professional has a duty to exercise the same ability, skill, and care customarily used by those in the profession under similar circumstances. The question raised by climate change therefore is whether design professionals have a duty to consider the possible future risks caused by climate change and to adapt their designs accordingly.

Central to answering this question is considering the foreseeability of the harm.⁸ While tort law generally does not attach liability for harms that were not foreseeable, the effects of climate change are increasingly foreseeable. This is especially the case with rising sea levels in coastal areas, for example.⁹ So, even if some effects of climate change are not foreseeable in some locales, others certainly are. And, even if a particular weather event has not actually happened in the past (such as flooding above a certain depth in a certain area), such an event might still be foreseeable for the purposes of satisfying this element of a tort claim.¹⁰ Given the importance of foreseeability in the tort context, it is also important to note that satisfying contractual standards and requirements does not absolve the design professional from a duty to nevertheless account for the effects of climate change in a design if the risk of harm from those effects is foreseeable.¹¹

Similarly, while adhering to applicable codes and following industry customs typically goes hand-in-hand with satisfying the standard of care for design professionals, such efforts may not be enough when it comes to defending a tort claim arising out of the effects of climate change.¹² For example, many building codes in the United States are based on historical data and do not account for future risks related to climate change, such as sea level rise.¹³ Similarly, compliance with common industry practice may not be sufficient when the work of design professionals does not account for the effects of climate change, especially when ways to mitigate or avoid the safety risks caused by these effects are well known and available.¹⁴

In some states, design professionals can avoid some tort claims for negligence under the economic loss rule. For example, in Virginia, a plaintiff may not recover purely economic losses under a theory of common law tort negligence against a party with whom the plaintiff had no contract.¹⁵ It might not be wise for design professionals to rely on this protection, however. Harms arising out of the risks associated with climate change are likely to include more than purely economic losses. As a Maryland court noted, whether a party has a duty in tort to a party that it does not have a contract with “should depend upon the risk generated by the negligent conduct, rather than upon the fortuitous circumstance of the nature of the resultant damage.”¹⁶ There is real risk to life and property when designs fail to account for the effects of climate change, so defenses to tort claims commonly relied on by design professionals may not be available.

Contract

Even if a contract for design services does not explicitly require that the design professional adapt a design to take into account the effects of climate change, there are other elements found in most design contracts that can still result in liability in a breach of contract claim.¹⁷ One such element is the standard of care provision, which typically creates a contractual obligation on the part of the design professional to perform the work using the same care and skill as other members of the profession practicing in the same locality under similar circumstances.¹⁸ Thus, in a locale where design professionals adapt their designs to deal with the effects of climate change—such as designers in a coastal area accounting for a rise in sea levels—a design professional is obligated to make the same adjustments to comply with the standard of care; failing to do so is a breach of contract.¹⁹

Another way contractual liability for designing to address climate change effects can arise is if the scope of the work is sufficiently broad to include responsibilities that implicate aspects of the project that may be susceptible to the effects of climate change.²⁰ Contract provisions that might obligate the design professional to, for example, personally visit the site, recommend additional testing, work with government authorities for permits, or contribute to environmental impact assessments introduce into the design professional's scope of work responsibilities that create a need to consider the effects of climate change.²¹

Finally, an indemnification provision that requires the design professional to indemnify the project owner for personal injury or

property damage suffered by third parties as a result of the design professional's failure to perform services under the contract in accordance with the applicable standard of care is another way that design professionals can find themselves liable for failing to account for the effects of climate change in their designs.²²

Statutes and Regulations

Statutes and regulations provide an additional avenue through which claims can be made against design professionals for failing to consider the effects of climate change in their designs.²³ Some examples of how this sort of claim might be made against design professionals are discussed in the following section.

Examples of Litigation Arising out of Climate Change

A sampling of some of the litigation arising out of climate change reveals that design professionals do not appear to be the immediate target of lawsuits over adaptation issues. This is partially because much of the climate change-related litigation seen so far has been against fossil fuel companies for *causing* climate change.²⁴ This theory of liability does not implicate the work typically done by most design professionals. Similarly, municipalities are often the named defendants in lawsuits to demand or challenge adaptation measures that address the effects of climate change.²⁵ These are not suits in which the design professional failed to address climate change impacts at all. (But it is easy to imagine how suits against design professionals might follow.)

Some cases nevertheless shed light on some issues design professionals may face in litigation arising out of the impact of climate change. A tactic some concerned with the effects of climate change are taking is making “failure to adapt” claims under statutes such as the Clean Water Act (CWA), the Resource Conservation & Recovery Act (RCRA), state air and water codes, and the National Environmental Policy Act.²⁶ For example, the Conservation Law Foundation (CLF) sued ExxonMobil, Inc., under the CWA, alleging that because ExxonMobil failed to consider imminent increases in rainfall, severity of storms, and sea levels in its management of an oil terminal facility, it did not meet the regulatory standard of building, maintaining, and inspecting the facility in accordance with “good engineering practice.”²⁷ The U.S. District Court for the District of Massachusetts found that CLF had standing to make such a claim against ExxonMobil for present and imminent storm-related risks because of the substantial risk that severe weather could cause the terminal to release pollutants in an amount greater than it was allowed under its CWA permit.²⁸ While design professionals were not named directly in this suit, their work is certainly implicated in the way this lawsuit is framed.

Claims of this nature depend on the risk from climate change (i.e., increased risk of damage from more frequent and severe storms) damaging the project so that there is a risk of pollution or some other harm that falls within the purview of the applicable statute. So, in a garden-variety residential real estate project, for example, the design professionals involved in the project would not face as great of a risk of liability under these theories as design professionals working on a project that will store hazardous waste.

Perhaps a more common context that may implicate design professionals is seen in *Norwalk Harbor Keeper v. U.S. Department of Transportation*.²⁹ In this case, a conservation group challenged a decision to replace a fixed bridge with a movable bridge because the project did not consider a fixed-bridge solution as part of the resiliency analysis. The group argued this was problematic because the project would use federal funds that were intended in part to address the effects of climate change by promoting resiliency in infrastructure design.³⁰ The group argued that the movable bridge design was not resilient because it is more vulnerable to the effects of climate change than the fixed bridge:

[T]he safety of critical infrastructure, including railway bridges, is likely to be increasingly compromised due to climate change. Climate change is expected to cause more frequent extreme weather events, including very high and low temperatures, which poses safety issues for travelers on a moveable bridge. For railways, high temperatures could cause rail tracks to expand and buckle. This could cause significant issues for the alignment of the rail lines on a moveable bridge, which are constantly split and rejoined as the bridge moves.³¹

While the alleged requirement to consider resiliency in the design in this case came from stipulations associated with the provision of the funds used to complete the project, a design professional could nevertheless face a claim based on a similar theory—failure to consider or use a resilient design—when the duty to consider resiliency comes from a contract, tort, or statute.

In *Cole v. Collier*, inmates in a Texas state prison brought a class action suit seeking relief from conditions in the prison that created an unconstitutional risk of heat-related illnesses for the inmates in a particular housing unit.³² The prison's housing area as a whole was not air conditioned, so prison officials implemented several mitigation measures, including providing ice water, cool-down showers, fans, a relaxed dress code, open windows, and increased access to other areas with air conditioning, but the plaintiffs argued that these measures were not enough.³³ Despite the mitigation measures, there was a measurable increase in the number of heat-related deaths during heat waves.³⁴ A federal judge granted a preliminary injunction that ordered the prison to take actions to provide relief to individuals prone to heat-related illness, including lowering the temperature in the housing units that housed those inmates and installing window screens "with gauges that block insects" in the housing units.³⁵ The court's decision was based in part on its taking judicial notice of the fact that, because of climate change, "heat waves will become more frequent, more severe, and more prolonged."³⁶

To be sure, this case turns on an interpretation of Eighth Amendment protections, and so the general public does not have a constitutional right to the same treatment. However, that some inmates essentially are constitutionally entitled to air conditioning in the circumstances found in this case would probably be a laughable notion only a generation or two ago. This is a clear example of the effects of climate change altering the scope of duties that one party owes to another in a way that implicates building design. This case is also noteworthy in that this design issue is not concerned with the integrity of the structure in the face of extreme weather, but concerned the "occupant experience." Such considerations take on an increased importance in the face of climate change, as discussed in the following section.

Claims made in the wake of Superstorm Sandy provide insight into issues that will arise as such storms become more frequent. In *Pietroangelo v. S & E Customize It Auto Corp.*, the plaintiff sued a car repair shop for flood damage that his car suffered during the storm.³⁷ Although this factual scenario does not implicate the liability of design professionals, the court made several observations about some of the legal issues that climate change is raising. The court noted that many believe that Sandy was caused by climate change, which in turn has been caused by human activity; under those circumstances, the court mused over whether the "act of nature" defense asserted by the insurance company can still be available in that case.³⁸ The court further observed that insurance payout requirements are different depending on whether a storm is classified as a hurricane and that Sandy was not considered a hurricane by the time it made landfall.³⁹ The court then colorfully noted: "whatever Sandy is labeled does not really matter if you suffered a loss. However, this issue will become one the courts will have to deal with along with whether damage was 'flood damage' or 'wind blown water damage' or some other source and other niceties of the world of insurance coverage."⁴⁰ While these observations do not implicate issues unique to design professionals, they do highlight how climate change is complicating issues and terms that may previously have been more straightforward.

One issue that design professionals will likely *not* face is liability for vague harms in the far-distant future. For example, in its suit against ExxonMobil, CFL did not have standing to sue for injuries related to climate change, like sea level rise, that would occur 30 or 70 years in the future.⁴¹ As discussed above, however, this might not limit a claim against a design professional from a specific client who alleges a breach of contract and who can point to a concrete harm, even if the risk of that harm might not be immediate.

Climate Change and the Standard of Care for Design Professionals

Even if no flood of litigation against design professionals for failing to account for climate change in their design is signaling that such considerations are now part of the standard of care, it is reasonable to believe that they will be soon, if they are not already. Considering how sustainability considerations have largely made their way into the standard of care for design professionals provides precedent for such a broad conceptual consideration becoming part of the standard of care. Over time, sustainability considerations found their way into standard form contracts and aspirational statements by professional organizations serving design professionals.⁴² Once there, these considerations become part of the design professional's contractual obligations and can be used by courts to inform their determination as to the applicable standard of care.⁴³

Resiliency considerations may follow a similar pattern. Indeed, given the general public's awareness of climate change, the urgency to

adapt in some locales, and the potential damages to life and property for failing to adapt, resiliency considerations may become a more integral component of the standard of care more quickly than sustainability considerations have. One need only consider the risks of harm associated with building too close to a flood plain to understand why this is the case.

One possible mechanism for resiliency to make its way into industry standard contracts is through a resiliency exhibit that can be attached to standard agreement documents. The American Institute of Architects (AIA) introduced such an exhibit for sustainable projects, E204, in 2017.⁴⁴ As explained by the AIA:

E204 establishes a comprehensive process for identifying, developing, and assigning responsibility for the sustainable design and construction elements for the project. The E204 process includes identification of the sustainable objective and development of a sustainability plan through an architect-led workshop. The sustainability plan outlines measures necessary to achieve the sustainability plan and allocates responsibility for each of the measures to the project participant in the best position to perform it. In addition, the plan includes other critical information such as the testing and implementation strategies necessary to achieve the sustainable objective. With the owner's approval, the architect further develops the sustainability plan requirements as the design progresses.⁴⁵

Providing for a resiliency objective to be incorporated into a project in this way allows flexibility among the stakeholders in the project for allocating responsibility while providing a framework to ensure that the project's resiliency objectives are still met.

RELI 2.0

In response to the perceived need to pay increased attention to resiliency in design, the U.S. Green Building Council released RELi 2.0 in December 2018.⁴⁶ As described in its introduction:

The RELi™ 2.0 Rating System (RELi 2.0) is a holistic, resilience-based rating system that combines innovative design criteria with the latest in integrative design processes for next-generation neighborhoods, buildings, homes and infrastructure.

By selectively bundling existing sustainable and regenerative guidelines—including many credits drawn from LEED®—with RELi's groundbreaking credits for emergency preparedness, adaptation, and community vitality, RELi 2.0 is the most comprehensive certification rating system currently available for socially and environmentally resilient design and construction.

The need for resilient design is urgent. Societies and structures must anticipate weather extremes, economic disruption and resource depletion. Our well-being depends on the cooperative interaction of all elements at work in our lives: social, economic and environmental. The RELi 2.0 criteria include acute hazard preparation and adaptation strategies along with chronic risk mitigation at the building and neighborhood scale.

Similar to LEED and other certifications, RELi is based on a point system, with different levels of certification available depending on the number of points a project earns: Certified (300–349 points); Silver (350–449 points); Gold (450–599 points); and Platinum (600–800 points). RELi also includes 15 mandatory requirements that are not assigned point values.

Requirements and available points are spread across eight different categories:

- **Panoramic Approach (PA):** As the name of this category suggests, this category takes a broad view of the project as a whole and addresses requirements in the project's planning and study phases. The requirements and credits include studies for short-term hazard preparedness and mitigation, improved project integration with surrounding infrastructure, long-term adaptability and redundancy, and the implementation of multiple ecologically-based design and planning frameworks. Credits are also given for establishing a sustainability and resiliency management system, conducting business and community impact case analyses, and fully engaging underutilized resources and byproducts. The sustainability elements of this category incorporate several requirements from LEED v4.
- **Hazard preparedness, short-term hazard preparedness, Mitigation + Adaptation (HP):** Intended to ensure the safety of occupants during short-term emergency situations (96 hours, or four days). Accordingly, the requirements address the implementation of emergency planning for common hazardous events in the area and access to first aid, emergency supplies, water, food, and communications. Available additional credits include enhanced planning and access to emergency supplies, as well as providing additional emergency provisions for the community or for a longer time frame.

- **Hazard Mitigation + Adaptation (HA):** Addresses the risks created by increased natural phenomena. Requirements include not building within the 500-year floodplain; designing to protect the building from outages in the power grid; designing for passive heating and cooling; and making designs safer from extreme weather, wildfires, and earthquakes, such as by including tornado shelters in the designs. Credits in this category are generally earned by taking these design considerations a step further, such as designing for passive lighting or to protect transit system infrastructure or public areas like parks.
- **Community Cohesion, Social + Economic Vitality (CV):** Intended to improve net quality of life in and around the project by mitigating negative impacts of the project. This sets out requirements for stakeholder input and addresses design features such as walkability or the inclusion of public and community spaces. Many of the requirements and credits borrow from the Envision™ Sustainable Infrastructure Rating System.⁴⁷
- **Productivity, Health + Diversity (PH):** Addresses the health and well-being of the building occupants and the surrounding environment. The requirements call for improved indoor environmental quality and protecting land with a high ecological value or that is designated as prime farmland. Available credits include designing the project in a way that facilitates and promotes physical activity (e.g., stair dimensions that encourage use, bicycling infrastructure, etc.), reducing non-point source pollution, protecting/restoring areas designated as wetlands or other bodies of water, and protecting/restoring species and habitats.
- **Energy, Water + On-site Food Production (EW):** Addresses efficient use of energy, water, and landscaping in the project. The requirements set minimum standards for water and energy efficiency, call for resilient landscaping, and are intended to improve ability to function during short-term energy shortages. Credits encourage rainwater harvesting, edible landscaping, wind harvesting, natural cooling, daylight harvesting, and reducing pollutants and emissions. This category borrows some credits from LEED v4.
- **Materials + Artifacts (MA):** Calls for the project to maintain standards of material effectiveness that maximize durability, adaptability, recycling, reuse, or remanufacturing; use safer, non-toxic infrastructure materials; use legally logged wood from ecologically managed forests; reduce net energy and carbon output; divert waste from landfills; and reduce excavated soils taken from the site.
- **Applied Creativity (AC):** Intended to award points for exceptional performance in creative thinking and innovative techniques. These are similar to the LEED Innovation and Design Credits. Credits in this category must be pre-approved by the RELI Certification Team.

While some of the categories described above are more obviously addressed to the immediate impacts of climate change on the built environment, each requirement or optional credit is based on the idea that the environment is changing and seeks to preserve the safety and well-being of people from as many potential threats as can be reasonably designed for. Considering this, it seems likely that at least some of the design elements set out in RELI will find their way into the design professionals' standard of care.

An obvious candidate is the requirement to avoid building within the 500-year floodplain: "Avoid areas within 500-year floodplain. Statistically, the traditional 100-year floodplain has been found vulnerable to extreme events and sea level rise. Even in areas with prolonged drought, storm events, when they occur, are more intense, making the 500-year floodplain level appropriate for underwriting."⁴⁸ *Cole* (the Texas prison case discussed above) suggests that requirements beyond just protecting structural integrity might eventually become required considerations, such as the requirement to provide passive thermal lighting, heating, and cooling strategies to "moderate the indoor building temperatures...at times of grid-supplied power and/or fuel outages, heat waves, shelter-in-place emergencies and other extreme events when local self-reliance is critical."⁴⁹ The standard of care might also encompass an obligation to consider water efficiency or reclamation procedures in areas where drought is increasingly prevalent.

Because resilient design focuses on climate change impacts beyond just the obvious and immediate threats to structures, might a design professional breach the standard of care for failing to include space for a neighborhood garden or a dedicated recycling area in designs?⁵⁰ For not making a community walkable enough?⁵¹ While today's design professional would consider the requirement for such considerations to arise out of owner requests or contractual requirements, tomorrow's design professional may need to consider such design features as an element of the standard of care, regardless of what the contract may call for.

Conclusion

To be sure, it may still be awhile until making design considerations such as those set out in RELi are definitively in the standard of care. Nevertheless, these trends suggest a greater onus on the design professional to be proactive about considering the effects of climate change in designs.⁵² While design professionals might get help eventually in the form of updated code requirements that explicitly take into account the effects of climate change, this is one area where it is prudent to proactively increase efforts to address a rising challenge. Though the formulation of the standard of care has not changed and may never change—design professionals will probably never have to *guarantee* that something is hurricane proof as part of the standard of care, for example—the environmental factors that must be considered to meet the standard of care appear to be changing and becoming more important.⁵³

Endnotes

¹ National Aeronautics and Space Administration, "About Climate Change," <https://climate.nasa.gov/resources/about-climate-change> (last visited April 22, 2019).

² National Aeronautics and Space Administration, "How Climate is Changing," <https://climate.nasa.gov/effects/> (last visited April 22, 2019).

³ A recent study reported that there is a 99.9999% chance that humans are the cause of global warming. Doyle Rice, "99.9999 percent chance we're the cause of global warming," study says, *USA Today*, Feb. 27, 2019, <https://www.usatoday.com/story/news/nation/2019/02/26/global-warming-99-9999-percent-chance-humans-cause/2994043002/>.

⁴ *Massachusetts v. EPA*, 549 U.S. 497, 521, 522–23 (2007).

⁵ Maxine Burkett, "Duty and Breach in an Era of Uncertainty: Local Government Liability for Failure to Adapt to Climate Change," 20 *Geo. Mason L. Rev.* 775, 776 and n.10 (2013).

⁶ Doyle Rice, "Series of storms to pummel California with rain, snow, wind; flooding, mudslides possible," *USA Today*, Jan. 15, 2019, <https://www.usatoday.com/story/news/nation/2019/01/14/california-storms-rain-snow-wind-floods-mudslides-expected/2571505002/>.

⁷ Elena Mihaly, et al., "Legal Liability of Design Professionals for Failure to Adapt to Climate Change," 12 *J. Am. Coll. Constr. Law.* 89, 90–91 (2018).

⁸ Mihaly, et al., *supra* note 7 at 95.

⁹ James Wilkins, "Is Sea Level Rise "Foreseeable"? Does It Matter?," 26 *J. Land Use & Envtl. L.* 437, 484 (2011).

¹⁰ Mihaly, et al., *supra* note 7 at 95.

¹¹ *Id.*

¹² *Id.* at 93-95.

¹³ *Id.* at 94.

¹⁴ *Id.* at 94–95. To illustrate this point, the article points to the well-known case of *The T.J. Hooper*. In that case, a tugboat could have avoided a storm that caused damage had it been equipped with a radio to receive weather reports. On-board radios were still uncommon, but the court nevertheless rejected compliance with industry custom as a defense to liability. *Id.* at 94.

¹⁵ See *Filak v. George*, 267 Va. 612, 618, 594 S.E.2d 610, 613 (2004).

¹⁶ *Council of Co-Owners Atlantis Condo., Inc. v. Whiting-Turner Contracting Co.*, 308 Md. 18, 35, 517 A.2d 336, 345 (1986) (citing with approval decisions from Indiana and Florida).

¹⁷ Mihaly, et al., *supra* note 7 at 99.

¹⁸ *Id.* at 99–100. In discussing how contract liability arises, the article considered the contract language of the Engineers Joint Contract Documents Committee (EJCDC) document E-500, *Agreement Between Owner and Engineer for Professional Services* (2014); The American Institute for Architects (AIA) Document B103–2017, *Standard Form of Agreement Between Owner and Architect for a Complex Project* (2017); and ConsensusDocs 240, *Standard Agreement Between Owner and Design Professional* (2017) standard form agreements.

¹⁹ *Id.*

²⁰ *Id.* at 100–102.

²¹ *Id.* at 101.

²² *Id.* at 102.

²³ *Id.* at 103–104.

²⁴ E.g., *Mayor & City Council of Baltimore v. BP P.L.C.*, No. 1:18-cv-02357 (D. Md. July 31, 2018); *Rhode Island v. Chevron Corp.* No. 1:18-cv-00395 (D. R.I. July 13, 2018). Both of these actions were originally filed in state court and removed to federal court.

²⁵ E.g., *Complaint in Intervention*, No. 12024400 (S.D. Fla. June 25, 2013) (intervenor suit to block consent decree between Miami-Dade County and EPA because the consent decree failed to address impacts of climate change); *Petition for Review and Complaint*, No. CL18002289-00 (Va. Cir. Ct. May 17, 2018) (challenge to denial of rezoning application that was denied because developer failed to account for sea level rise in stormwater analysis).

²⁶ Dena P. Alder, “Turning the Tide in Coastal and Riverine Energy Infrastructure Adaptation: Can an Emerging Wave of Litigation Advance Preparation for Climate Change?,” 4 *Oil & Gas, Nat. Resources & Energy J.* 1, 2 (2018).

²⁷ Mihaly, et al., *supra* note 7 at 103–104.

²⁸ Alder, *supra* note 26 at 6.

²⁹ *Complaint for Declaratory and Injunctive Relief, Norwalk Harbor Keeper, et al. v. U.S. Dep’t of Trans.*, No. 3:18-cv-00091 (D. Conn. Jan. 17, 2018).

³⁰ See *Complaint*, *supra* note 29 at ¶¶ 69–72.

³¹ *Id.* at ¶ 91.

³² *Cole v. Collier*, No. 4:14-cv-1698, 2017 WL 3049540, at *1 (S.D. Tex. July 19, 2017).

³³ *Id.* at *21–*26.

³⁴ *Id.* at *11.

³⁵ *Id.* at *46. Windows had originally included insect-resistant mesh, but the inmates removed or cut those screens, so those screens were replaced with stainless steel screens; the holes between the wires in the steel screens were larger and allowed insects to come through. *Id.* at *37.

³⁶ *Id.* at *31 and n. 27.

³⁷ *Pietrangelo v. S & E Customize It Auto Corp.* 2013 N.Y. Misc. LEXIS 2421 (N.Y. Civ. Ct. May 22, 2013).

³⁸ *Id.* at ***9–***10.

³⁹ *Id.* at ***12.

⁴⁰ *Id.* at ***12–***13.

⁴¹ Alder, *supra* note 26 at 6.

⁴² Mary Anne Wolf, “Fluctuating Standard of Care: Impact of Industry Advancements on Risk Exposure,” *Proceedings of the 57th Annual Meeting of Invited Attorneys*, 8–9 (2018); see also, Patrick J. O’Connor, Jr., “Legal Considerations in Sustainable Design and Construction,” 5 *J. Am. Coll. Constr. Law* 137 (2018).

⁴³ See *Taylor, Thon, Thompson & Peterson v. Cannaday*, 230 Mont. 151, 155, 749 P.2d 63, 65 (1988) (finding that the AIA handbook was

admissible as evidence of the standard of care but that a deviation from its regulations is not negligence *per se*); see, also, *Robinson v. Washington Metro. Area Transit Auth.*, 774 F.3d 33, 39 (D.C. Cir. 2014) (“[A]lthough internal agency manuals...may provide evidence bearing on the standard of care, they do not, on their own, establish the national standard.”); *Ruffiner v. Material Serv. Corp.*, 116 Ill.2d 53, 58, 506 N.E.2d 581, 584 (1987) (“Evidence of standards promulgated by industry, trade, or regulatory groups or agencies may be admissible to aid the trier of fact in determining the standard of care in a negligence action.”).

⁴⁴ Mike Koger, “A decade of sustainability: How AIA Contract Documents have evolved,” American Institute of Architects (May 17, 2017), <https://www.aia.org/articles/87801-a-decade-of-sustainability-how-aia-contract-:46>.

⁴⁵ *Id.*

⁴⁶ <https://www.usgbc.org/resources/reli-20-rating-guidelines-resilient-design-and-construction>. RELi has been managed by the USGBC since 2017. RELi was first developed by the Institute for Market Transformation to Sustainability and a network of professionals, experts, and graduate students. The history of the RELi program is briefly explained in its introduction.

⁴⁷ “Envision is a framework that includes 64 sustainability and resilience indicators, called ‘credits’, organized around five categories: Quality of Life, Leadership, Resource Allocation, Natural World, and Climate and Resilience. These collectively address areas of human wellbeing, mobility, community development, collaboration, planning, economy, materials, energy, water, siting, conservation, ecology, emissions, and resilience. These indicators collectively become the foundation of what constitutes sustainability in infrastructure.” Institute for Sustainable Infrastructure, “How It Works,” <https://sustainableinfrastructure.org/how-it-works/> (last visited April 22, 2019).

⁴⁸ HA Req. 1.0.

⁴⁹ HA Credit 3.0.

⁵⁰ EW Credit 1.0; MA Req. 1.0.

⁵¹ CV Credit 2.0.

⁵² See Darren A. Prum, “Green Building Liability: Considering the Applicable Standard of Care and Strategies for Establishing a Different Level of Agreement,” 8 *Hastings, Bus. L.J.* 33, 33–34 (2012) (“[A]nyone involved [in a project] needs to take an active role to make sure their written agreement will call for the correct and appropriate standard of care so that the risks associated with the currently undefined common law outcome do not become an emergent risk from a project gone wrong.”). While this caution was directed at green building projects, design professionals should consider this admonition applicable to them as well in the context of resiliency and accounting for the effects of climate change.

⁵³ Wolf, *supra* note 42 at 12.