AON

Reliable by Design:

The New Risk Playbook for Digital Infrastructure

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Executive Summary

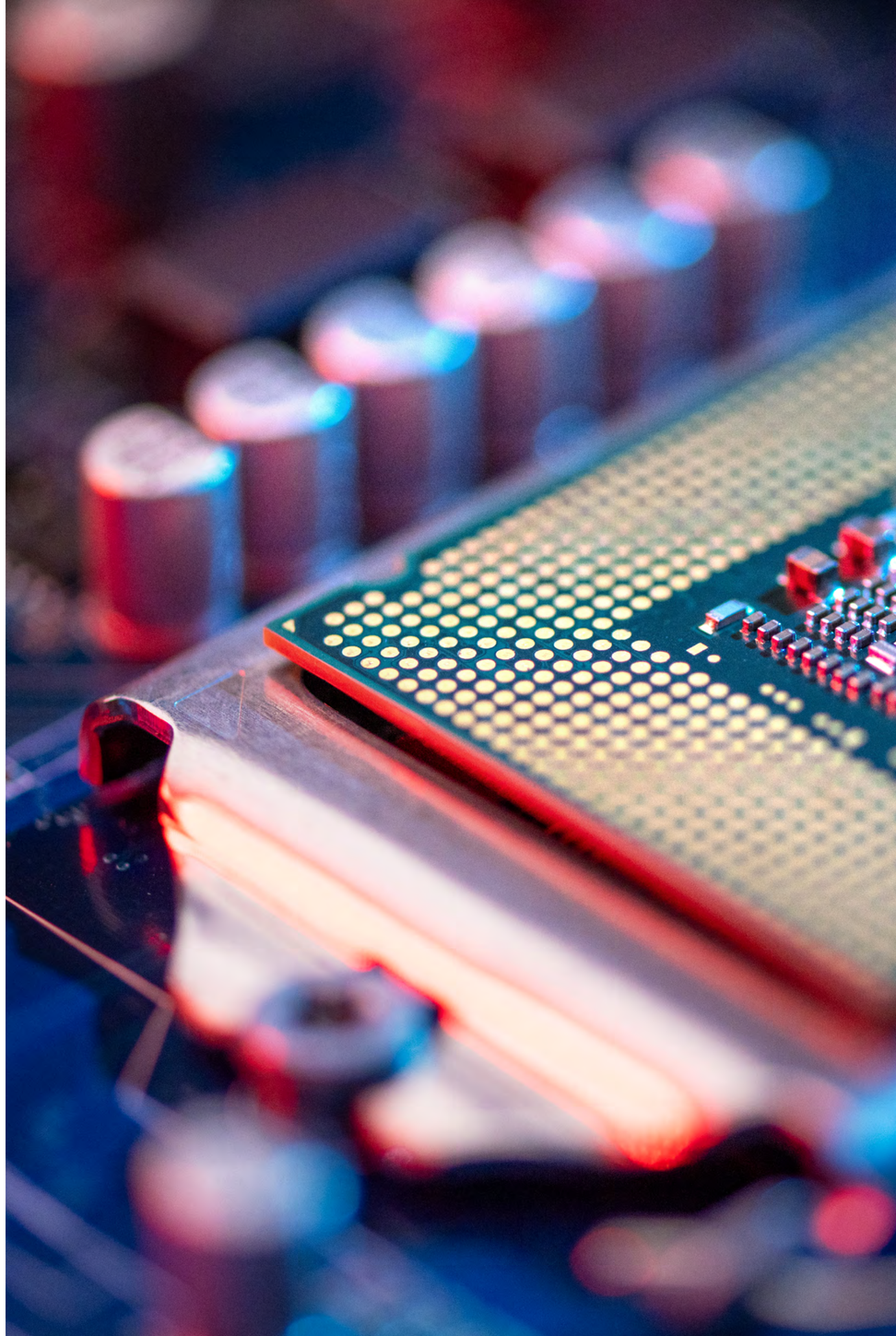
Data centers have become critical global infrastructure. They underpin AI, cloud computing, financial systems, healthcare, government services and energy networks. What has changed is not demand alone, but the scale, speed and concentration of investment now embedded in these projects.

As digital infrastructure evolves from single facilities into multi building campuses and global portfolios, traditional approaches to risk no longer hold. Considering and mitigating risk after the design is complete and construction is underway creates avoidable friction — in financing, delivery, renewal outcomes and long term resilience.

For digital infrastructure risk is shaped early.

The decisions that determine whether a data center can attract capital, remain insurable as it scales and perform credibly under stress are being made before insurance is placed — during site selection, power strategy, campus layout, phasing and transition planning. Once these decisions are locked in, the range of available outcomes narrows.

This playbook, and the Reliable by Design approach, reflect a move away from reactive risk transfer toward intentional design and capital led resilience.



From Insurance Placement to Design Discipline

For decades, insurance has been treated as a downstream transaction. That model no longer works at today's scale. Modern digital infrastructure concentrates unprecedented value, depends on constrained power and complex supply chains, and operates with limited tolerance for failure.

When risk is addressed too late, the impact is rarely theoretical. That impact appears as:

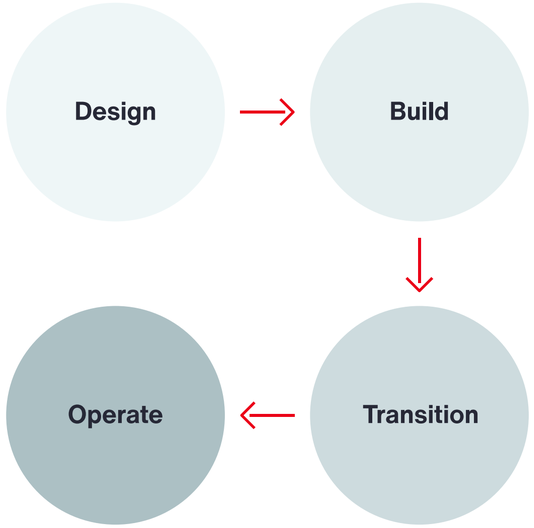
- Delayed or constrained financing
- Last minute design changes
- Reduced insurance capacity
- Volatile insurance renewal outcomes
- Extended downtime or recovery uncertainty

Reliable by Design reframes risk as a design and capital discipline, not a back end procurement exercise. It asks a different question:

Has this asset been designed to remain viable — with lenders, insurers, customers and regulators — when something goes wrong?

Why the Lifecycle Matters

Risk in digital infrastructure does not sit in one phase. It accumulates across the lifecycle:

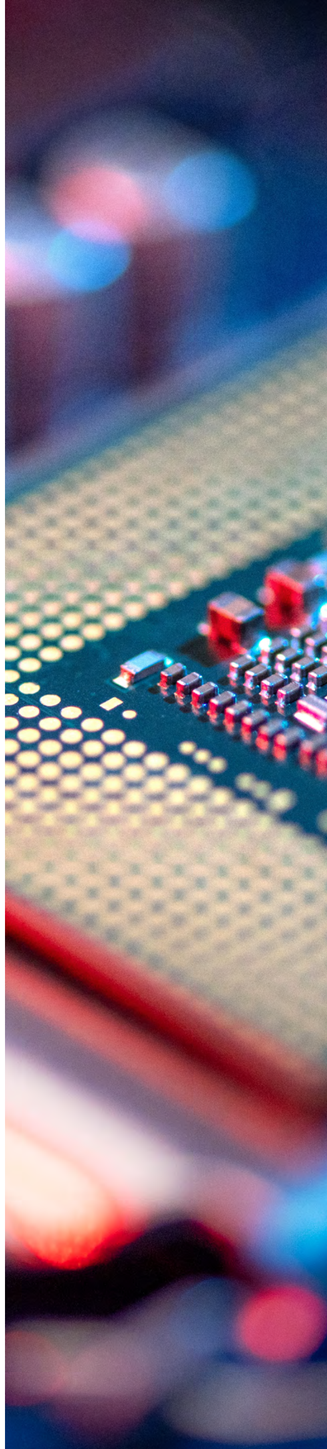


The most severe failures often occur at the seams — particularly during transition, when phased construction, commissioning under pressure and construction-to-operations can all take place at the same time. At this point, responsibilities shift, systems are live but not fully stabilized and recovery assumptions are most vulnerable.

Transition is the least understood and most under-managed phase of the lifecycle. It is the period where construction and operations overlap: assets are energized, customers may be connected, redundancy is incomplete and tolerance for failure is at its lowest. Decisions made, or deferred, during transition frequently determine whether early incidents remain contained or escalate into material loss.

Yet most organizations still assess risk through a fragmented lens: design teams focus on engineering efficiency, construction teams on schedule and cost, operators on uptime and service levels, and insurance teams on placement and renewal. Each perspective is rational in isolation. If not looked at together, they create blind spots.

A lifecycle view is therefore not a conceptual overlay. It is a practical necessity. Reliable by Design treats the lifecycle as a single, continuous system, explicitly accounting for transition, recognizing that reliability is either reinforced or compromised long before steady state operations begin.



The Three Questions Companies Must Answer

Across this lifecycle, leadership teams are ultimately solving for three questions:

1. **Is it bankable?**
   Is the asset designed in a way that enables maximum insurability and therefore the ability to meet lender requirements? Can it recover from a loss event and continue to meet its financial obligations?
2. **Is it insurable at scale?**
   Will adequate insurance capacity be available? Will terms, conditions and renewal outcomes remain stable as the campus or portfolio grows?
3. **Is it resilient?**
   Is the digital infrastructure located to avoid most catastrophic losses and recover quickly and predictably when disruption occurs — protecting uptime, trust and long term value?

These outcomes are interconnected. Weakness in one quickly undermines the others.

Making Trade-Offs Explicit

Every data center project involves trade-offs: speed to market versus most resilient design, density versus design flexibility, scale versus asset aggregation management. In today's rapidly evolving landscape, these trade-offs are unavoidable — and they must be addressed deliberately.

Problems arise not because trade-offs exist, but because they are often made unintentionally, across silos and under time pressure. Their consequences tend to surface later, when constraints emerge — in capital markets, insurance negotiations or operations.

Reliable by Design brings discipline by making these trade offs explicit and evaluating them early, before options narrow.

Beyond Digital Infrastructure

While digital infrastructure is the most visible example of this shift, the implications extend further. Any capital intensive, mission critical asset now faces the same reality: risk decisions are inseparable from design, financing and long term performance.

Digital infrastructure is simply where this future arrived first.

Aon's Role: Connecting Risk, Design and All Forms of Capital

Aon's role is to bring clarity to uncertainty — helping organizations connect design decisions, capital requirements and resilience outcomes across the full lifecycle.

Through our global Risk Capital capabilities, Aon works with clients to translate engineering and operational choices into a capital strategy that can be financed and insured as digital infrastructure assets scale. In practice, this means helping stakeholders:

- Engage early, before site selection and critical design decisions are locked in.
- Align insurance requirements to realistic maximum foreseeable loss (MFL), rather than theoretical total insured value (TIV).
- Design campuses that insurers and reinsurers view as well compartmentalized portfolios of risk, rather than single, highly correlated exposures.
- Structure programs that combine traditional insurance with captives, reinsurance, parametric covers and capital market-linked capacity where appropriate.

By integrating risk engineering, analytics, risk capital market insight and recovery expertise, Aon helps clients access increased capacity from all relevant pools of capital — including insurance and reinsurance to private credit, banks, infrastructure debt and equity — in a way that aligns with how risk is underwritten and priced.

The outcome is not only the placement of insurance. It is a risk aligned capital stack that supports very large limit requirements, reduces closing friction and remains resilient as campuses and portfolios scale.

The Bottom Line

The digital infrastructure that will define the next decade will not just be the largest or the fastest.

It will be Reliable by Design:

- Designed to attract capital
- Designed to remain insurable
- Designed to operate without interruption and recover under stress
- Designed to scale with confidence

This report sets out the new risk playbook required to make that possible.

1

From Insurance Placement to Design Discipline

How Risk Moved Upstream

Consideration of risk in data center development has typically followed a familiar pattern. Assets were designed, sites selected, power secured and construction commenced. Insurance was addressed later — once facilities were in late-stage pre-construction, values were known and operational profiles were clear. Risk transfer was treated as a downstream activity, largely separate from design and capital decisions.

That model no longer works.

Today's data centers are no longer discrete facilities. They are capital intensive, mission critical systems, developed at unprecedented speed and scale, often as multi building campuses embedded within complex power, digital ecosystems and regulatory frameworks. As a result, the consequences of early decisions extend well beyond engineering outcomes. They shape financing certainty, delivery timelines, insurability and long term resilience.

Risk significance has moved upstream.

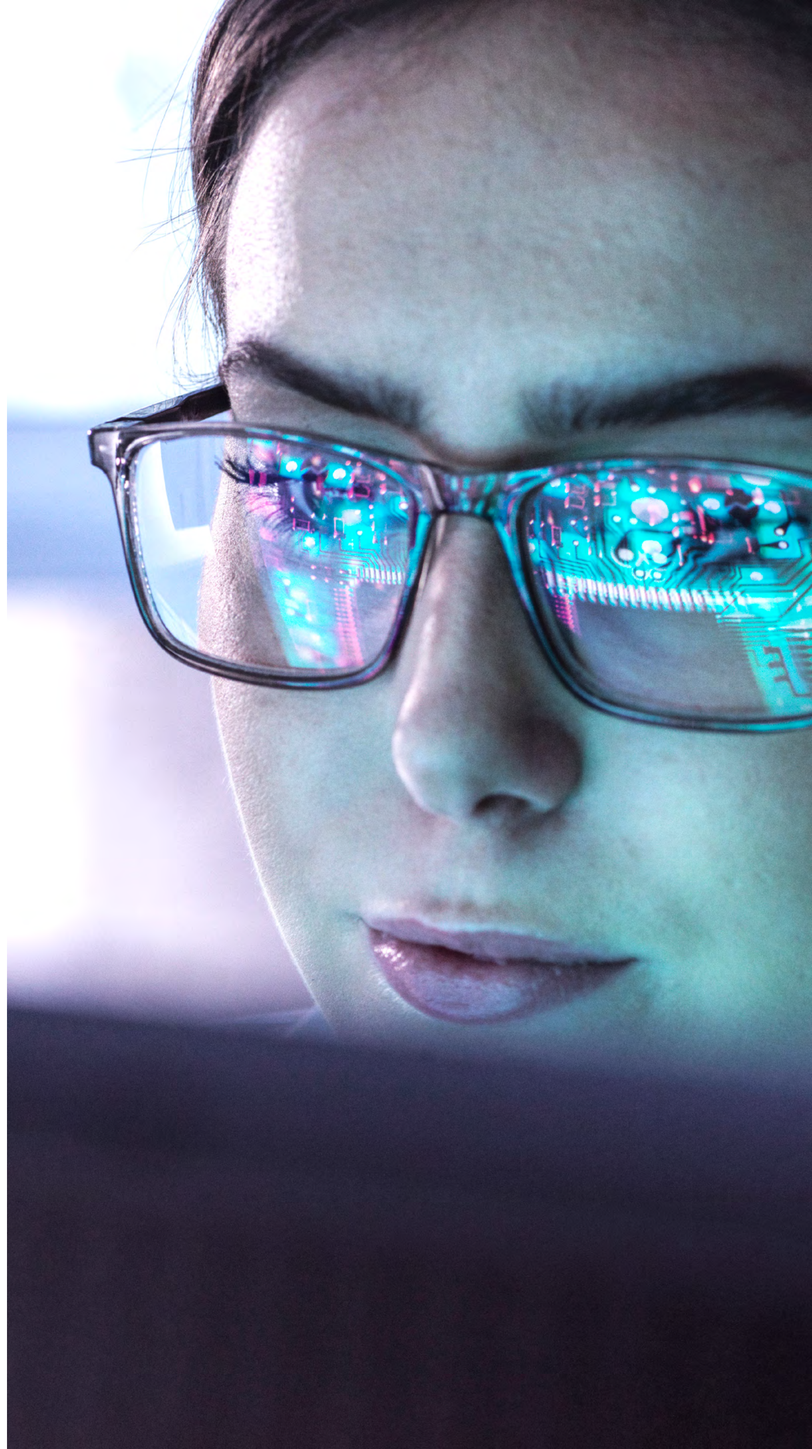
The decisions that now determine whether a data center can be financed, insured and operated with confidence should be made before design is finalized and long before insurance is placed. Site selection determines climate exposure and aggregation risk. Power strategy defines severity and downtime scenarios. Campus layout influences maximum foreseeable loss and recovery pathways. Construction methodology and phasing shape transition risk and the durability of insurance capacity.

When these decisions are made without a risk lens, the impact is rarely theoretical. It shows up as constrained insurance capacity late in the process, lender concern around recovery assumptions, redesign under time pressure, delayed delivery or volatile renewal outcomes once operations scale.

This shift is not a passing phase. It reflects a structural change in how risk, capital and design intersect, and a commitment to building the expertise required to keep pace as digital infrastructure continues to evolve.

At its core is a simple reality: It is difficult to eliminate risk once it has been built in. In modern digital infrastructure, risk is created or controlled through design choices. Once locked in, those choices define the range of outcomes available to insurers, lenders, boards and operators.

The implication for leadership teams is clear. Risk is no longer an insurance problem to be solved at placement. It is a design discipline that must be addressed at the point of decision.



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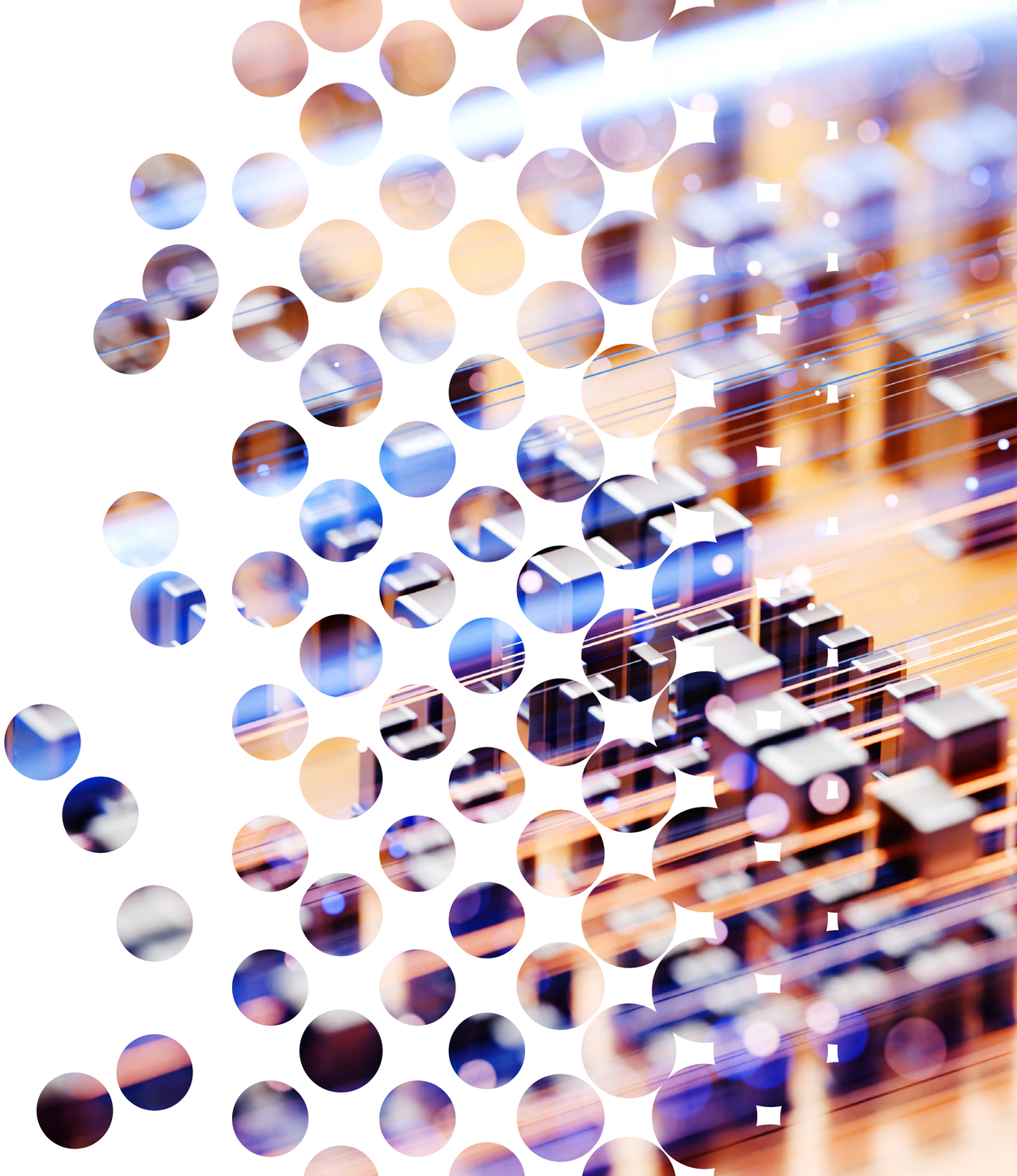
Why Scale Changed Everything



Concentration, Aggregation and Capital Intensity

Scale has always mattered in infrastructure because value, function and risk are inherently concentrated. What has changed is the degree to which capital, systems and dependency are now embedded within a single site — and the speed at which that concentration is deployed.

Digital infrastructure has evolved rapidly from single facility assets into campus scale developments and global portfolios, often exceeding traditional thresholds for insured value, power density and operational dependency. In many cases, multiple buildings share common power sources, cooling infrastructure, control systems and operational teams. From a risk perspective, this creates a level of aggregation that insurance and financing assumptions were not designed to absorb. As a result, traditional insurance capacity isn't sufficient to support the values at risk. This is why creating capacity — through disciplined reinsurance and by attracting new capacity from capital markets, which can be deployed quickly and at scale — is key.

Aggregation is not simply an insurance issue. It is a balance sheet issue.

A single event — whether fire, power failure, cyber incident or natural catastrophe — can now impact multiple assets simultaneously, amplifying severity, extending downtime and concentrating loss in ways that challenge recovery assumptions. At the same time, lenders increasingly require full value protection across construction and operational phases, creating tension between financing requirements and what is insurable.

This tension now drives financing and insurance outcomes:

- Full value lender expectations versus maximum foreseeable loss logic.
- Campus growth ambitions versus insurer aggregation tolerance.
- Speed to market versus resilience under stress.

As projects scale, these tensions do not disappear. They compound.

What may be insurable and financeable at the level of a single facility can quickly become fragile as campuses expand and portfolios grow. Insurance capacity becomes harder to secure. Wording becomes more restrictive. Renewal outcomes become less predictable. Capital providers may begin to question recovery assumptions that were previously taken for granted.

Importantly, these outcomes are rarely driven by one catastrophic decision. They are the cumulative result of many early choices, each rational in isolation, but collectively creating a risk profile that is difficult to unwind.

> Scale has changed the nature of the problem. Risk is no longer defined by isolated events. It is shaped by how concentrated systems behave under stress.

Understanding and managing that concentration — across design, construction, transition and operation — is now central to sustainable growth in the data center sector.

3

Reliable by Design: The New Playbook

Treating Risk as a Growth and Capital Lever

The shift in scale and timing demands a new approach. At Aon, this approach is called Reliable by Design.

Reliable by Design is the discipline of making early stage design, power, construction and operating decisions that are intended to perform under stress, not just under normal conditions. It recognizes that reliability is not an operational afterthought or an insurance outcome. It is a characteristic that must be intentionally designed into assets from the outset.

This reframes the central question business leaders must ask.

Instead of asking: **“Can this asset be insured?”**

Reliable by Design asks: **“Has this asset been designed to remain viable — with insurers, lenders, customers and regulators — when something goes wrong?”**

That distinction matters.

An asset can often be insured in the short term, even if its underlying risk profile is fragile. But as scale increases and complexity grows, fragility may lead to constrained capacity, challenging renewals, higher cost of risk and reduced confidence from capital providers. Reliable by Design seeks to avoid the pitfalls by addressing risk before it becomes embedded.

In practice, for large campuses (TIVs of $10–25+ billion) credibility is ultimately tested in the capital stack. Lenders and investors need confidence that the campus can:

- Secure meaningful, durable insurance and reinsurance capacity.
- Recover from a realistic MFL event without jeopardizing ability to continue to service debt.
- Operate within insurance and rating agency constraints as it scales.

Aon works with clients to bring its perspective on risk into early design, site selection and phasing decisions — allowing limits and structures to be developed from all available sources of capital, rather than discovering the constraint at financial close or renewal.

Importantly, this is not about avoiding risk. It is not about slowing projects down or limiting ambition. It is about enabling speed and scale with confidence.

Reliable by Design treats risk as a growth and capital lever:

- It improves financing options by strengthening recovery assumptions.
- It preserves insurability by aligning design decisions with underwriting tolerance.
- It enhances resilience by prioritizing severity reduction and recovery speed.

In practice, this requires a lifecycle view.

Risk does not sit neatly within a single phase of a data center’s life. It accumulates across design, build, transition and operation, often breaking at the seams between phases — most markedly during transition — where responsibility shifts and assumptions are tested. Reliable by Design provides a framework to manage those seams deliberately, rather than reactively.

Most importantly, it provides leadership teams with a way to make trade offs explicit. Speed, cost, resilience and insurability are no longer competing objectives managed in isolation. They become integrated design choices, evaluated through their impact on capital confidence and long term performance.

This is the new risk playbook.

Not insurance as a transaction. Not resilience as an aspiration. But reliability as a designed outcome — embedded early, reinforced through the lifecycle and preserved as assets scale.

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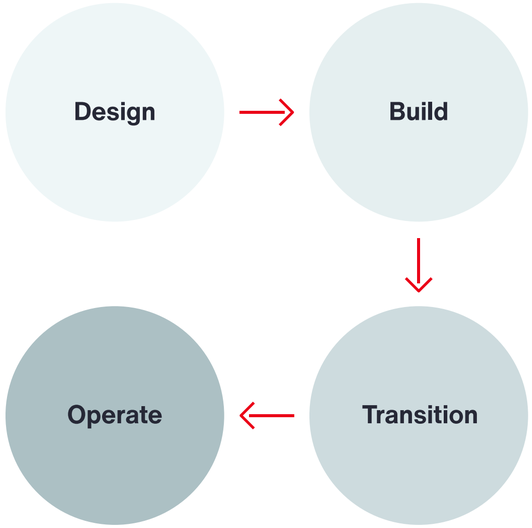
Why the Lifecycle Matters



Risk in digital infrastructure does not sit in only one phase. It accumulates across the lifecycle, often invisibly, and frequently peaks at the seams — where responsibility shifts, assumptions are tested and speed of construction collides with complexity.

Yet most organizations still assess risk through a fragmented lens. Design teams focus on engineering efficiency, construction teams on schedule and cost, operators on uptime and service levels, and insurance teams on placement and renewal. Each perspective is rational in isolation, but that isolation creates blind spots.

A lifecycle view is not a conceptual overlay. It is a practical necessity.

Design: Where Outcomes are Set

The most consequential risk decisions are made long before a site is operational.

Design determines exposure to climate and natural catastrophe risk. Power strategy defines both downtime severity and recovery pathways. Campus layout influences aggregation, fire spread potential and maximum foreseeable loss. Equipment density and site compartmentation affect not just loss probability, but loss severity and time to recovery.

At this stage, risk is inexpensive to influence but costly to ignore.

Decisions taken in design lock in assumptions that will later underpin financing, insurance capacity and operational resilience. Once construction begins, many of these assumptions become structurally embedded — difficult or impossible to unwind without delay, redesign or compromise.

Reliable by Design begins here: making design choices with explicit awareness of how they will perform under stress, not just under normal conditions.

Build: Where Complexity Accelerates

Construction introduces scale, speed and interdependency.

Phased delivery, parallel trades, compressed schedules and supply chain pressure create conditions where small deviations can cascade into material disruption. As projects grow larger and more complex, construction risk increasingly overlaps with future operational risk, particularly where live data halls sit adjacent to active build zones.

This is also where gaps between engineering intent and insurability often emerge.

If risk considerations have not been integrated early, lenders and insurers may raise concerns late in the build process — around aggregation, commissioning risk or transition exposure — when time and optionality are limited. The result is often last-minute mitigation, constrained capacity or acceptance of terms that reduce long-term flexibility.

A lifecycle approach treats construction not as a standalone phase, but as a bridge between design assumptions and operational reality.

Transition:
The Most Under-Managed Phase

The transition from construction to operations is consistently the most underinsured and least deliberately governed phase of the lifecycle.

Commissioning under pressure, power on testing, phased handover and overlap between construction and operation create a unique risk profile: high asset values, incomplete redundancy and limited tolerance for failure. At the same time, responsibility often shifts across teams, contracts and governance structures.

This is where severity hides.

Many of the most disruptive events occur not during steady-state operations, but during transition — when systems are live, but not yet fully stabilized. Yet traditional insurance structures and risk reviews often treat this phase as an administrative boundary rather than consider the potential for new or increased risk.

Reliable by Design makes transition risk explicit, recognizing it as a critical moment where resilience is either proven or compromised.

Operate:
Where Trust is Tested

Operation is where reliability becomes visible — to customers, regulators, investors and boards.

Here, the focus shifts from prevention to performance under stress. Redundancy matters, but recovery speed matters more. Downtime is not just a financial event; it is a reputational one, with direct implications for customer trust, contract renewals and long term valuation.

Crucially, operational risk outcomes are shaped by everything that came before. Design choices determine recovery pathways. Construction decisions affect failure modes. Transition quality influences stability. By the time a facility is operating at scale, the room to materially change risk can be limited.

A lifecycle view therefore aligns risk management with reality: Operations do not create risk, they reveal it.

For leadership teams, this means reliability must be governed end-to-end, not handed off at the finish line.

5

Is it Bankable?

Risk Through the Capital Lens

For capital providers, risk is not an abstract concept. It is assessed through one overriding question:

Will this asset continue to perform, and service its obligations, after a loss event?

> Finance of data centers is therefore not defined by headline returns or growth projections alone. It is defined by recovery certainty.

What Insurers Actually Underwrite

Insurance markets and capital providers do not consider the likelihood of loss in isolation. They underwrite the impact of loss.

They assess:

- How severe a plausible loss could be.
- How long recovery would take.
- Whether cash flow can be sustained during disruption.
- Whether insurance and contractual protections align with these assumptions.

This is why traditional approaches that focus solely on total insured value or nominal coverage limits often fall short. Insuring to the total value may be unnecessary and, for large campuses or mega projects, may not be possible. What matters is not how much insurance exists on paper, but how it responds in practice — and whether recovery timelines align with financing structures.

Design decisions directly influence these outcomes.

Power architecture determines outage duration. Site layout and compartmentalization affect loss containment. Phasing strategies shape exposure during construction and expansion. Transition planning influences whether commissioning incidents escalate into material financial events.

When these factors are not considered early, capital confidence erodes — often late in the process, when affordable alternatives are limited.

The Role of DSU, MFL and Recovery Assumptions

In modern digital infrastrucutre financing, delay and disruption are often more material than physical damage.

Delay in Start Up (DSU) tolerance, maximum foreseeable loss (MFL) logic and recovery assumptions increasingly drive underwriting and lender scrutiny. These are not abstract metrics. They are proxies for how resilient the asset is under stress.

Reliable by Design aligns these assumptions with reality.

By integrating risk thinking into design and construction decisions, organizations can shape recovery profiles that stand up to underwriting scrutiny and lender expectations — reducing the likelihood of financing friction, covenant pressure or last minute restructuring.

Bankability is Designed, Not Negotiated

A recurring pattern is the attempt to resolve the bankability of a project at the point of financing. Additional insurance layers, increased contractual complexity or capital structure adjustments are often considered to comply with lenders requirements.

While these options have a role, they are ultimately compensatory. They seek to address risk after it has already been created.

Reliable by Design takes a different approach.

It recognizes that the ability to finance assets is established through design choices that reduce severity and improve recovery certainty. When these choices are made early, financing becomes smoother, insurance capacity more available and durable, and capital more confident.

In this sense, risk is not a constraint on growth. Understanding risk is a precondition for sustainable capital deployment.

Why this Matters Beyond Digital Infrastructure

The logic underpinning the ability to finance digital infrastructure increasingly applies across other capital intensive sectors. As assets become more concentrated, more interconnected and more mission critical, capital providers are applying the same lens: resilience, recovery and credibility under stress.

Digital infrastructure is simply where this is currently being experienced most acutely.

Reliable by Design therefore offers more than a sector specific framework. It provides a repeatable approach for aligning risk decisions with capital confidence in a world where volatility is increasingly the norm.

6

Is it Insurable at Scale?

Capacity Durability and Renewal Predictability

Insurability is often treated as a binary outcome: An asset is either insured, or it is not. In modern digital infrastructure, this framing is increasingly misleading.

The more relevant issue is not whether a project can be insured at a point in time, but whether it can remain insurable as it scales, evolves and absorbs stress over multiple renewal cycles.

> Insurability, like resilience, is not static. It weakens, or strengthens, based on decisions made long before renewal discussions begin.

Why Insurability Erodes Over Time

Many data center projects begin their operational life with adequate insurance at competitive terms. Problems tend to emerge later, as campuses expand, portfolios grow and complexity accumulates.

This erosion is rarely driven by a single event. Instead, it reflects a pattern of incremental risk accumulation:

- Additional buildings increase aggregation at a single site.
- Higher power density amplifies severity and recovery uncertainty.
- Phased construction creates overlapping risk profiles.
- Portfolio expansion concentrates exposure across regions or utilities.

Over time, these factors challenge traditional underwriting assumptions. Capacity becomes harder to assemble. Insurers seek tighter terms or lower limits. Renewal outcomes become less predictable.

From the outside, this can appear sudden. In reality, the conditions for instability were set years earlier.

The Insurability Curve

Insurability behaves more like a curve than a switch.

At lower levels of scale and complexity, traditional insurance structures can absorb growth without material friction. As scale increases, however, each incremental expansion may put more pressure on capacity, pricing and coverage terms. Without deliberate intervention, assets eventually reach a point where renewal can be difficult and present a strategic risk.

This is the moment many organizations first encounter the limits of an insurance first mindset.

Efforts to restore insurability late — by adding layers, restructuring towers or renegotiating coverage terms under time pressure — often address symptoms rather than causes. Capacity may be secured in the short term, but they do not alter the underlying risk profile driving insurer behavior.

Reliable by Design addresses the curve earlier.

Designing For Capacity Durability

Capacity durability is shaped by the same design and lifecycle decisions that determine financing options.

Campus layout influences aggregation tolerance. Compartmentalization affects loss severity and containment. Power and cooling architecture shape downtime scenarios. Transition planning determines whether commissioning incidents escalate into material losses.

When these elements are aligned with underwriting tolerance from the outset, insurability becomes more stable over time. Capacity evolves alongside the asset, rather than lagging behind it. Renewal discussions shift from reactive negotiation to informed planning.

In this sense, well-managed renewals become a strategic asset.

They assist to reduce pricing volatility. They support capital confidence. They allow leadership teams to focus on growth rather than intensive renewal discussions.

Insurability as a Governance Issue

Sustained insurability is not achieved through insurance placement alone. It requires governance.

This includes:

- Clear visibility of aggregation and accumulation across campuses and portfolios.
- Explicit alignment between design decisions and underwriting assumptions.
- Ongoing dialogue between risk, operations, finance and insurance teams.
- A forward view of how today's decisions affect future renewal outcomes.

Reliable by Design provides a framework for this governance by making insurability an explicit design and growth consideration, rather than an annual transactional exercise.

In doing so, it reframes insurance from a constraint to be managed into a capability that enables scale. This means renewals become planned — early, deliberately and with a clear view of accumulation.

7

Is it Resilient?

Uptime, Recovery and Trust

Resilience is often discussed in terms of prevention: avoiding incidents, eliminating failure points and building redundancy into systems. Prevention matters, but it is not sufficient.

In digital infrastructure, resilience is ultimately revealed not by whether something fails, but by how quickly and predictably the system recovers.

This distinction is critical, and frequently misunderstood.

From Redundancy to Recovery

Redundancy reduces the likelihood of disruption. Recovery determines the impact of disruption.

Highly redundant systems can still experience severe outcomes if recovery pathways are unclear, untested or misaligned with operational reality. Conversely, assets designed with clear recovery logic can absorb shocks more effectively, even when failures occur.

For operators, customers and boards, this difference is decisive. Downtime is not measured in theoretical probabilities; it is experienced in minutes, hours and days — and judged by the speed of restoration and transparency of response.

Reliable by Design therefore places recovery at the center of resilience.

Why Severity Matters More Than Frequency

Most disruptive data center events are low frequency. Their impact, however, is high.

Fire, power failure, cyber incidents and extreme weather events do not need to occur often to materially affect enterprise value. When they do occur, they test not just infrastructure, but organizational preparedness, governance, reputation and trust.

This is why severity, not frequency, increasingly drives board level concern.

Severity is shaped by design choices: compartmentalization, power architecture, system interdependencies and transition planning. It is influenced by the readiness of teams to coordinate, respond and recover under pressure.

Once again, these outcomes are largely determined before operations begin.

Transition Risk as a Resilience Blind Spot

The period when resilience is most vulnerable is often the one that receives the least attention: transition.

Overlap between construction and operation, phased commissioning and power-on testing create conditions where asset values are high, systems are live and tolerance for failure is low. Yet governance structures and insurance arrangements are often least explicit at this stage.

Many of the most severe operational disruptions originate here — not during steady state operations.

Reliable by Design treats transition as a distinct resilience condition, requiring deliberate planning, clear accountability and alignment between operational readiness and risk transfer.

Resilience as Trust

For digital infrastructure, resilience extends beyond technical performance. It underpins reputation and trust.

Customers trust operators to deliver continuous service. Investors trust management teams to protect long term value. Regulators trust that critical infrastructure will perform under stress.

When resilience fails, trust erodes quickly — and is slow to rebuild.

This is why resilience cannot be addressed as an operational issue alone. It is a strategic outcome, only achievable when directly connected to capital confidence, insurability and growth credibility.

Designing Resilience into the System

Reliable by Design integrates resilience across the lifecycle:

- Design choices that reduce disruption severity and improve recovery.
- Construction and transition planning that anticipate failure modes.
- Operational governance that prioritizes preparedness and response.
- Insurance structures that align financial recovery with operational reality.

The result is not zero risk, generally an unrealistic goal, but predictable performance under stress. Resilience should be measured in recovery time and customer impact, not only through design redundancy.

In an increasingly volatile world, that predictability is what differentiates assets that merely operate from those that endure.

8

The Non Negotiable Trade-Offs

Where Leadership Decisions Shape Risk Outcomes

Every data center project involves trade-offs. What has changed is not the existence of those trade-offs, but their materiality.

At today's scale, trade-offs that were once manageable may become structural constraints. Decisions that prioritize speed, density or capital efficiency without equal consideration of resilience and insurability may increase risk and reshape the range of outcomes available to the organization over time.

Reliable by Design does not eliminate trade-offs. It forces them into the open.

Speed to Market Versus Resilience

Speed is a competitive imperative. Demand for compute capacity, customer commitments and capital deployment pressures leave little room for delay. Yet speed achieved without resilience often proves illusory.

Compressed timelines increase exposure to design shortcuts, supply chain substitution and commissioning under pressure. They reduce the margin for error at precisely the moment asset values are highest and systems are least forgiving.

The result is a familiar pattern: projects delivered quickly, followed by extended stabilization, insurance friction or constrained renewal outcomes.

Reliable by Design reframes speed not as time to completion, but as time to stable operation. Resilience does not slow delivery; it reduces the likelihood that delivery must be revisited.

Full Value Financing Versus Insurable Reality

Capital providers increasingly require full value protection across construction and operational phases. This expectation reflects legitimate concerns around recovery and downside protection. However, at campus scale, full value requirements can exceed what traditional insurance markets are willing or able to support without material conditions.

This creates a structural tension:

- Financing assumptions that demand certainty.
- Insurance markets that price and apply limits based on severity and aggregation.

When this tension is not addressed early, it surfaces late — often during placement or at renewal — as constrained capacity, restrictive coverage terms or increased reliance on balance sheet retention.

Reliable by Design addresses this tension upstream by aligning design and phasing decisions with realistic recovery scenarios. By reducing severity and clarifying causes and potential outcomes of losses, organizations can narrow the gap between financing expectations and what can be insured, rather than attempting to bridge it through increasingly complex and expensive risk transfer structures after the fact.

Campus Growth versus Aggregation Control

Campus expansion delivers economies of scale, operational efficiency and strategic advantage. It also concentrates risk.

Shared power sources, cooling infrastructure and control systems amplify aggregation. A single failure can impact multiple buildings simultaneously, transforming what would once have been a contained incident into a portfolio level event.

Aggregation is not inherently negative. It becomes problematic when it is unmeasured, unmanaged or misunderstood.

Reliable by Design treats aggregation as a design variable, not an insurance afterthought. Layout, risk separation and infrastructure segmentation become tools for controlling severity — and for preserving insurability and resilience as campuses grow.

Density and AI Load Versus Power and Cooling Constraints

Rising compute density, driven by AI workloads, intensifies power demand and thermal risk. These pressures test not only engineering limits, but recovery assumptions.

High density environments reduce tolerance for disruption. Power or cooling failures propagate faster and recover more slowly. In these conditions, traditional redundancy assumptions may not hold.

This trade off is particularly acute because it sits at the intersection of technology ambition and physical constraint. Decisions to increase density are often made to meet strategic demand, while the resilience implications emerge later.

Reliable by Design forces density decisions to be evaluated alongside failure modes and recovery pathways, ensuring that ambition is matched by credible resilience.

Making Trade-Offs Explicit

The common failure across these tensions is not intent, but visibility.

Trade-offs are made informally, across silos and under time pressure. Their cumulative impact is recognized only when constraints emerge — in financing, insurance or operations.

Reliable by Design introduces discipline by making trade offs explicit and evaluating them against three enduring questions:

- Does this decision preserve bankability?
- Does it sustain insurability at scale?
- Does it strengthen resilience under stress?

Where the answer is no, leaders are given a choice — not a surprise. Trade-offs should be documented and owned — especially where speed, density and recovery pull in different directions.

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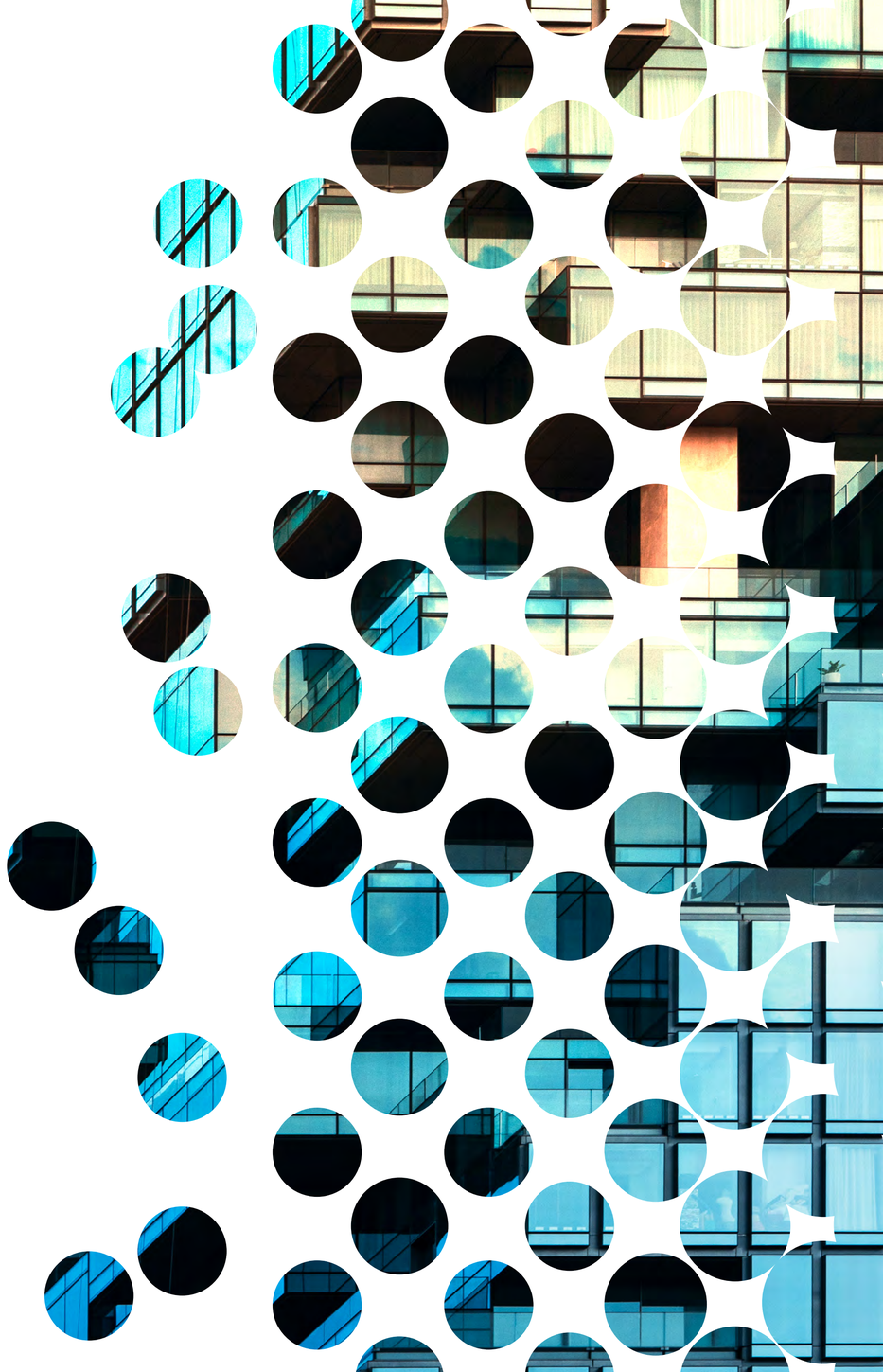
Transition Risk: The Persistent Blind Spot



Why Most Failures Don’t Occur Where Expected

If there is one phase of the data center lifecycle that consistently escapes deliberate risk management, it is transition.

Transition sits between construction and operations. It is often treated as an administrative boundary rather than a distinct risk state. In reality, it combines the most challenging characteristics of both phases: high asset values, live systems, incomplete redundancy and limited tolerance for disruption.

This is where severity hides.

Why Transition is Different

During transition, systems are live but not yet fully stabilized. Commissioning and power on testing occur under intense time pressure. Construction activity may continue alongside operational environments. Responsibilities shift across teams, contracts and governance structures.

At the same time, insurance arrangements often lag this reality. Policies may be structured for “construction” or “operation,” with transition treated as a gray area. Assumptions about coverage, responsibility and recovery are frequently untested.

This combination creates a unique exposure profile, one that traditional risk frameworks struggle to address.

Common Failure Patterns

Across the market, several patterns occur:

- Commissioning incidents escalate into material outages.
- Minor construction events trigger disproportionate downtime in operational portions of campus.
- Power or cooling failures propagate across partially operational campuses.
- Insurance response is delayed or contested due to phase ambiguity.

These events are rarely catastrophic in isolation. Their impact is driven by timing — occurring when systems are live, customers are connected and tolerance for failure is lowest.

Why Transition Risk Persists

Transition risk persists because it sits between ownership domains when projects require the collaboration of multiple parties to deliver.

Design teams have largely moved on. Construction teams remain focused on completion. Operations teams are preparing to assume control. Risk and insurance teams may still view the handover as a milestone on a schedule rather than a condition to be managed.

In this environment, often no single group fully “owns” transition risk and so it remains under addressed.

Reliable by Design resolves this by treating transition as a first class phase of the lifecycle, with explicit governance, risk assessment and alignment between operational readiness and risk transfer.

Designing for Transition, not Just Handover

Managing transition risk does not require the elimination of complexity. It requires anticipating it.

This includes:

- Recognizing transition as a period of elevated severity.
- Aligning commissioning plans with insurance assumptions.
- Clarifying responsibility and escalation pathways.
- Testing recovery scenarios before customers are fully exposed.

When transition is designed deliberately, incidents still occur but they are less likely to escalate into material events.

Why this Matters for Long Term Resilience

Many organizations assess resilience based on steady state operations. Yet some of the most consequential disruptions occur before steady state is ever reached.

Failures during transition shape future outcomes. They influence insurer confidence, renewal terms and risk appetite. They can lead to costly delays and subsequent contractual penalties, and they set precedents that persist long after the immediate issue is resolved.

In this sense, transition risk is not a temporary concern. It is a determinant of long term resilience and insurability.

Alternatively, in a large campus it is likely that part of the operation is running while other areas of the campus are still under construction. This can create competing insurance programs resulting in coverage problems if the entire campus isn’t treated under a single risk financing program.

Reliable by Design recognizes that how assets enter operation matters as much as how they operate thereafter.

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Conclusion

The New Risk Playbook

The transformation of data centers into critical global infrastructure has fundamentally changed how companies should approach risk.

Scale, speed and concentration have reached a point where traditional approaches — treating insurance as a downstream procurement activity and resilience as an operational concern — are no longer sufficient. Decisions that now determine whether digital infrastructure can attract capital, remain insurable and sustain trust should be made at the earliest stages of design, development and growth.

This report has shown that risk is no longer something to be transferred after it has been created. It must be considered upfront, in the design stage, with choices made early.

This playbook advocates for a Reliable by Design approach to navigate this reality.

It reframes risk not as a constraint on ambition, but as a consideration to achieve speed, scale and confidence. Bankability, insurability and resilience are not separate objectives to be optimized independently. They are interconnected outcomes of the same design, governance and lifecycle decisions.

The organizations most likely to succeed over the next decade will not simply be those that build the fastest or scale the largest in isolation. They will be those that design assets to perform credibly under stress — for insurers, lenders, customers, regulators and society.

In an increasingly volatile world, reliability is no longer optional. It is the price of participation.

Aon is uniquely positioned to help deliver that outcome. By working across the insurance, reinsurance and capital markets we help digital infrastructure owners and developers:

- Align design with insurability, reducing MFL and unlocking deeper insurance and reinsurance capacity.
- Structure integrated risk finance solutions that make additional capacity available to supplement constrained traditional insurance towers.
- Negotiate realistic insurance provisions in loan and financing documents that reflect what the market can deliver.
- Access diverse capital providers – from private credit and banks to infrastructure investors and securitization markets – with a coherent, risk aligned story to increase available capacity.

In a world where insurance has become one of the constraints on growth, Aon's ability to connect risk decisions to all forms of capital is a strategic advantage for digital infrastructure stakeholders.

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