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INTANGIBLE CULTURAL HERITAGE AS A CATALYST FOR SUSTAINABLE HISTORIC PRESERVATION AND URBAN REGENERATION

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This article examines how intangible cultural heritage (ICH)—living knowledge, skills, and social practices —can contribute to sustainability-oriented historic preservation and urban regeneration by sustaining the territorial capital of places. The argument is developed through a qualitative, comparative case-study approach that synthesizes documentary sources (including National Park Service materials), published architectural and urban surveys, and prior scholarly accounts to trace how ICH is expressed in tangible form and mobilized in design and planning decisions. Two cases illustrate the claim across scales: a preservation–architecture design/build studio at Fort Pulaski National Monument (Georgia, USA), and the regeneration of Birmingham's Jewellery Quarter (England, UK), where intangible industrial heritage and local industrial linkage support maker-based enterprises within a walkable historic fabric. Rather than presenting post-occupancy performance measurement, the analysis evaluates sustainability relevance through documented design strategies (e.g., climate-responsive vernacular precedents, material and craft logics) and district-level evidence of continuity in productive practices and social infrastructure. The paper concludes that sustainability frameworks in historic contexts are strengthened when cultural and environmental analyses are conducted in parallel, treating heritage not as a constraint but as an active resource for resilient, identity-supporting change.

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INTRODUCTION

Sustainability has long been understood as a framework linking environmental responsibility, social well-being, and long-term continuity of human settlements [Brundtland, 2002]. In preservation practice, this broad understanding has often been translated into concern for material conservation, adaptive reuse, embodied energy, and the reduction of demolition-related waste [Tomlan, 2015]. Yet the sustainability of historic places does not depend on buildings alone. It also depends on the continued circulation of knowledge, skills, routines, symbolic meanings, and social practices that enable historic environments to remain legible, usable, and valuable across generations.

Conventional preservation doctrine has been shaped by material authenticity and physical stewardship, as reflected in landmark conservation documents such as the Venice Charter and the Secretary of the Interior's standards [International Council on Monuments and Sites, 1964, Weeks and Grimmer, 1995]. These frameworks remain foundational, but the subsequent recognition of intangible cultural heritage by UNESCO widened the field by making clear that communities also inherit practices, expressions, and know-how that are inseparable from the places in which they are enacted [UNESCO, 2003]. This expansion matters because many historic environments persist not merely because they are protected as objects, but because they continue to host practices that justify maintenance, investment, and collective attachment.

Parallel debates in sustainable design and green preservation have argued that older places can offer climate-responsive lessons, durable construction logics, and lower-impact patterns of adaptation [Jackson, n.d., NTHPNCPTT, 2008, Park, 1998, USGBC, 2009]. More philosophical accounts of sustainability in the built environment likewise emphasize durability, life-cycle thinking, and long temporal horizons in architectural judgment
[Gil-Martín et al., 2012]. However, the preservation literature still too often treats cultural continuity and environmental performance as separate questions. The result is a practical blind spot: districts may be materially rehabilitated while losing the living practices that once animated them, or they may be culturally celebrated without a clear account of how heritage knowledge can contribute to environmental adaptation and economic resilience.

This article addresses that gap by arguing that ICH functions as a form of territorial capital. Territorial capital refers to the bundle of localized material and immaterial assets that shape development potential, including social relations, accumulated knowledge, institutional capacity, and inherited spatial form [Perucca, 2014]. When intangible heritage is understood in this way, it becomes possible to see how preservation and regeneration can reinforce one another. Historic districts retain value not only through conserved fabric but also through the continued performance of situated knowledge and the local governance arrangements that protect it against displacement pressures [Schragger, 2009]. Earlier work has suggested that ICH can make preservation and postindustrial regeneration more sustainable, but the mechanisms through which that occurs require fuller elaboration [Kapp, 2019].

The article develops this argument through two comparative cases. The first case, Fort Pulaski National Monument, shows how a preservation–architecture studio can mobilize climate-responsive building intelligence, historical interpretation, and craft learning as part of sustainability-oriented design education [NPS, 2015]. The second case, Birmingham's Jewellery Quarter, demonstrates how a historic industrial district can support regeneration by retaining productive memory, specialized skills, and micro-enterprise ecosystems within a walkable urban fabric [Cattell et al., 2002, Robinson, 2014]. Together, the cases show that sustainability in historic contexts is strengthened when planners, preservationists, and designers treat intangible heritage as an active resource rather than as an afterthought.

The paper pursues three questions:

1. How does intangible cultural heritage become legible in the built environment and in planning or design decisions?
2. Through what mechanisms can ICH strengthen sustainable preservation and urban regeneration?
3. What policy and design implications follow when cultural and environmental analysis are treated as mutually constitutive?

THEORETICAL FRAMEWORK

From material conservation to living heritage

Historic preservation has historically centered on physical fabric, monumentality, and the care of inherited structures [International Council on Monuments and Sites, 1964, Tomlan, 2015, Weeks and Grimmer, 1995]. Such frameworks remain indispensable because buildings, districts, and landscapes provide the spatial basis through which heritage is experienced and transmitted. At the same time, preservation theory has gradually widened to acknowledge that place significance often depends on living practices, memories, and ordinary routines rather than on fabric alone [Stipe et al., 2008, Tomlan, 2015]. UNESCO's formulation of ICH formalized this shift by identifying oral traditions, performing arts, social practices, rituals, and craft skills as part of the heritage field [UNESCO, 2003].

This broadened view does not displace material preservation; it complements it. Buildings without the practices that once gave them meaning may remain visually intact yet socially empty. Conversely, traditions detached from place can lose their institutional and spatial anchors. The key issue is therefore not whether heritage is tangible or intangible, but how the two co-produce one another. Historic places are continually made and remade through the interaction of built form, technical knowledge, and social use.

Sustainability as cultural–environmental co-analysis

Sustainable development discourse stresses intergenerational responsibility and long-term human flourishing [Brundtland, 2002]. In the built environment, this principle has often been operationalized through energy efficiency frameworks, certification systems, and performance metrics [USGBC, 2009]. Preservation advocates have rightly responded that conserving existing buildings can itself be environmentally responsible, especially when reuse avoids demolition and when older construction embodies durable materials and climate-responsive knowledge [NTHPNCPTT, 2008, Park, 1998]. McHarg's ecological planning tradition reinforces this point by insisting that design should emerge from reading environmental processes rather than imposing abstract form upon them [McHarg, 1969].

Yet environmental performance is not the only dimension of sustainability. Heritage becomes sustainable when it can be maintained, interpreted, inhabited, and economically supported over time. This requires attention to durability not merely as a property of materials, but as a property of institutions, practices, and skill systems [Gil-Martín et al., 2012]. A historic district may conserve masonry and street alignments, but if the local knowledge needed to repair, adapt, and animate that district disappears, long-term resilience is weakened. Sustainability in historic settings is therefore best understood as a cultural–environmental condition in which ecological fit, social continuity, and practical stewardship reinforce each other.

ICH as territorial capital

The concept of territorial capital provides an especially useful bridge between cultural heritage and local development. Territorial capital includes the localized resources that make places distinctive and productive, among them infrastructure, institutions, networks, identities, and tacit knowledge [Perucca, 2014]. It follows that ICH can be interpreted not only as a cultural asset but also as a development resource that shapes adaptive capacity and economic resilience.

This perspective is particularly relevant in cities facing mobile capital, regulatory competition, and pressure toward placeless redevelopment [Schragger, 2009]. Local craft traditions, production memory, and embedded social networks can stabilize urban economies by supporting enterprises that are difficult to delocalize completely. Historic industrial districts often exemplify this phenomenon. Urban form, workshop typologies, apprenticeship traditions, and localized trust relations together create conditions in which the district's value exceeds the sum of its buildings. Comparative planning histories also show that urban form itself can encode long-lasting responses to landscape, mobility, and production [Chusid and Stock, 2020, Tolley, 1972]. In this sense, ICH is not merely symbolic; it can help maintain the local capacities that make regeneration meaningful and durable.

RESEARCH DESIGN AND METHOD

Comparative case strategy

The article adopts a qualitative comparative case-study design. This approach is appropriate because the research question concerns mechanisms, meanings, and contextual translation rather than causal estimation through statistical inference. The two cases were selected for theoretical contrast and analytical complementarity. Fort Pulaski represents a heritage site in which preservation, design education, and environmental interpretation intersect at the scale of a monument and studio intervention [NPS, 2015]. Birmingham's Jewellery Quarter represents a historic urban district in which industrial heritage, micro-enterprise, and regeneration policy intersect at the district scale [Cattell et al., 2002, Robinson, 2014].

The cases differ in geography, institutional setting, and urban scale, but they are comparable in one crucial respect: both show how intangible knowledge becomes materially consequential. At Fort Pulaski, this occurs through design pedagogy, climatic reasoning, and interpretation of historic construction logics. In the Jewellery Quarter, it occurs through craft production, workshop culture, and the retention of local economic linkages.

Sources

The evidentiary base consists of the documentary and scholarly corpus supplied for this study. It includes preservation doctrine and heritage frameworks [International Council on Monuments and Sites, 1964, UNESCO, 2003, Weeks and Grimmer, 1995], sustainability and green design materials [Jackson, n.d.] [NTHPNCPTT, 2008, Park, 1998, USGBC, 2009], broader heritage and preservation scholarship [Stipe et al., 2008, Tomlan, 2015, Kapp, 2019], urban and planning literature on territorial capital and local regulation [Perucca, 2014, Schragger, 2009], historical and architectural surveys [Cattell et al., 2002, NPS, 2015, Tolley, 1972], and sources addressing design education, work structure, and small-enterprise conditions [Embaby, 2014, Royal Society for the Encouragement of Arts, Manufactures and Commerce, 2017] [Taylor et al., 2017]. The corpus also includes one scientific production article outside the core heritage field [Leimgruber et al., 1995]; it is retained for completeness because it was part of the supplied bibliography, but

it does not materially drive the substantive interpretation.

Because the study synthesizes already-available documents rather than newly collected interviews or measurements, reproducibility depends on an explicit analytical protocol rather than on statistical replication. The method is therefore designed to be auditable.

Analytical protocol

The analysis proceeded in four steps: First, each source was coded for one or more of the following categories: heritage value, environmental knowledge, material practice, institutional support, local economic linkage, and continuity over time. Second, the two cases were examined for instances in which intangible knowledge could be shown to affect tangible outcomes. Examples included climate-responsive design reasoning, workshop typologies that support ongoing production, educational practices that transmit conservation logic, and policy conditions that protect small-scale making. Third, those observations were organized into a mechanism-based framework linking ICH to sustainability outcomes. Fourth, the two cases were compared to identify convergences and scale-specific differences. Table 1 summarizes the analytical framework.

Table 1: Analytical framework linking ICH to sustainable preservation and regeneration

Dimension	**Operational indicator**	**Sustainability relevance**
Knowledge transmission	Evidence of craft, maintenance, environmental, or interpretive know-how passed across actors or generations	Supports adaptive reuse, repair capacity, and continuity of place-based competence
Social practice	Repeated collective routines, working practices, or institutionalized heritage behaviors	Reinforces stewardship, identity, and public legitimacy
Spatial translation	Observable embedding of intangible knowledge in buildings, districts, or design proposals	Links living heritage to tangible form and long-term usability
Economic embeddedness	Presence of local production linkages, micro-enterprises, or district-specific value chains	Strengthens resilience against placeless redevelopment and supports local livelihoods
Institutional mediation	Educational, regulatory, or heritage-management structures that sustain practices	Improves durability of preservation and regeneration outcomes

Limits of inference

The article does not claim post-occupancy measurement of energy performance or econometric proof of local growth effects. Its contribution is analytical: it identifies and demonstrates plausible mechanisms through

which ICH strengthens sustainability-oriented preservation and regeneration. The value of the method lies in transparent case logic, explicit coding criteria, and careful use of documentary evidence.

CASE 1: FORT PULASKI AND THE PEDAGOGY OF CLIMATE-RESPONSIVE PRESERVATION

Fort Pulaski National Monument provides a useful case for examining how ICH can inform preservation thinking within design education and site interpretation. As a protected historic site, Fort Pulaski is conventionally understood through its military history, architectural materiality, and federal stewardship [NPS, 2015]. Yet the case also reveals a less obvious layer of heritage: the practical knowledge through which building systems, environmental response, and interpretive design can be understood and transmitted.

Heritage-oriented design studios have been recognized as important laboratories for connecting conservation with contemporary design reasoning [Embaby, 2014]. In this context, the educational process matters because it allows students and practitioners to learn from existing buildings rather than merely about them. A preservation–architecture design/build studio situated in relation to Fort Pulaski can mobilize three forms of ICH.

The first is environmental intelligence. Historic structures and landscapes often embody accumulated knowledge of wind, sun, moisture, ventilation, and material aging. Such place-reading resonates with ecological planning traditions in which design emerges from careful interpretation of natural processes [McHarg, 1969]. It also aligns with green preservation arguments that older places frequently contain useful precedents for passive performance and low-impact adaptation [Jackson, n.d., Park, 1998]. When students analyze a site such as Fort Pulaski, they do more than document walls or openings; they reconstruct a logic of environmental fit.

The second is craft and maintenance knowledge. Preservation is sustainable only when there is capacity to inspect, repair, and adapt inherited structures without undermining their significance. The Secretary of the Interior's standards and the Venice Charter both imply disciplined attention to material compatibility, legibility of intervention, and respect for historical character [International Council on Monuments and Sites, 1964, Weeks and Grimmer, 1995]. Such principles are not self-executing. They rely on tacit judgment, procedural knowledge, and trained interpretation. In a studio setting, this knowledge becomes teachable through drawing, making, testing, and critique. The pedagogical value of heritage thus lies not merely in documenting what exists, but in enabling future practitioners to carry forward a culture of repair.

The third is interpretive continuity. Sustainability frameworks in preservation have increasingly stressed that heritage conservation should support long-term community relevance rather than static display [NTHPNCPTT, 2008, Tomlan, 2015]. At Fort Pulaski, interpretive design can translate site history into contemporary public understanding while preserving the environmental and spatial intelligence embedded in the monument's fabric. This kind of work helps convert preservation from a defensive activity into a constructive one. Rather than asking only how to protect a historic object, the design process asks how to sustain a historically informed relationship between place, climate, and use.

A common objection is that such claims risk romanticizing old buildings as automatically sustainable. That criticism is warranted if environmental performance is assumed rather than evaluated. The argument here is more modest and more defensible. Historic fabric should not be exempt from scrutiny, and green assessment tools remain useful [USGBC, 2009]. But performance-oriented thinking should also recognize that older structures may contain durable material logics and adaptive possibilities that standardized new-build frameworks do not fully capture [Gil-Martín et al., 2012]. The preservation value of Fort Pulaski therefore lies not only in its monumentality, but also in its capacity to teach how environmental reasoning, construction

knowledge, and heritage meaning can be held together within a single pedagogical and design framework.

In this sense, ICH operates as an enabling layer within the site. It strengthens sustainability not because intangible knowledge substitutes for technical evaluation, but because it enriches the set of variables that preservation practice considers relevant. The result is a thicker understanding of what sustainable intervention means in a historic setting.

CASE 2: BIRMINGHAM'S JEWELLERY QUARTER AND THE REGENERATION OF PRODUCTIVE HERITAGE

Birmingham's Jewellery Quarter illustrates the role of ICH in district-scale regeneration. The area is significant not only because of its building stock, workshops, and street pattern, but because those physical elements historically supported a distinctive productive culture. Architectural survey work documents the district's manufacturing premises and the close relationship between typology and industrial activity [Cattell et al., 2002]. The district's significance, however, exceeds architecture in a narrow sense. Its real strength lies in the interaction between built form, specialized skill, and dense local linkage.

Industrial heritage is often most vulnerable when regeneration strategies prioritize image over production. Historic quarters can be aesthetically valorized yet economically hollowed out, becoming places of consumption rather than places of making. The Jewellery Quarter presents a more complex possibility. Accounts associated with the University of Birmingham and cultural heritage leadership emphasize the continuing importance of craft identity and production memory in the district's ongoing development [Robinson, 2014]. This is crucial because the district's intangible heritage is not reducible to nostalgia. It includes competencies, workshop routines, supplier networks, reputational economies, and occupational identities that depend on proximity.

These dynamics can be interpreted through territorial capital. A district's development potential does not arise solely from transport access or property value; it also depends on localized assets that are difficult to reproduce elsewhere [Perucca, 2014]. In the Jewellery Quarter, such assets include inherited workshop morphologies, fine-grained parcelization, mixed-use adaptability, and long-standing making cultures. These conditions help explain why small enterprises and makers can remain viable in historic urban fabric. Evidence on micro-businesses reinforces the broader relevance of this point by showing the structural importance of very small firms to local economies [Royal Society for the Encouragement of Arts, Manufactures and Commerce, 2017]. Likewise, debates on modern working practices remind us that the quality and organization of work matter for long-term economic sustainability [Taylor et al., 2017].

From a regeneration perspective, the district's walkability and dense fabric are especially significant. These characteristics lower transaction costs, facilitate face-to-face exchange, and preserve the visibility of production within everyday urban life. Such conditions are often lost in redevelopment models driven by large-footprint investment or sectorally isolated zoning. Schragger's discussion of local economic regulation is useful here because it clarifies how municipal and district-level choices shape whether local assets are protected or displaced under pressure from mobile capital [Schragger, 2009]. A district such as the Jewellery Quarter remains resilient not simply because it is historic, but because institutions and policies can recognize its distinct local logic.

Historical regional context also matters. The wider West Midlands experience, including planned overspill and restructuring associated with places such as Telford New Town, demonstrates how industrial geography and urban growth strategies can redistribute economic activity across space [Tolley, 1972]. Against this background, the persistence of production in the Jewellery Quarter appears even more significant. Rather than being swept aside by generalized modernization, the district retains a hybrid identity in which heritage

supports contemporary economic practice. Comparative planning scholarship on place formation similarly reminds us that urban form can preserve historically layered relationships among infrastructure, settlement, and productive function [Chusid and Stock, 2020].

The sustainability contribution of ICH in the Jewellery Quarter therefore operates through several channels. First, craft knowledge supports ongoing productive use of historic premises, reducing the risk that conservation yields only museum-like stasis. Second, localized reputation and skill networks encourage economic embeddedness. Third, the district's living identity strengthens stewardship because stakeholders perceive preservation as compatible with work rather than opposed to it. Fourth, the continued presence of making culture offers a socially richer model of regeneration than purely consumption-driven heritage branding.

This interpretation does not imply that all tensions disappear. Historic districts remain exposed to real estate pressure, functional obsolescence, and changing labor markets. Yet the case shows that regeneration is more robust when it protects not only buildings, but also the practices that justify those buildings' continued occupation. Intangible industrial heritage, in other words, is not an embellishment to urban policy; it is part of the district's developmental infrastructure.

CROSS-CASE SYNTHESIS

Despite their differences, the two cases reveal a common structure. In each, intangible heritage contributes to sustainability by mediating between inherited form and contemporary adaptation. Table 2 summarizes the comparison.

Table 2: Cross-case comparison

Analytical issue	**Fort Pulaski**	**Jewellery Quarter**
Primary heritage setting	Monument/site and design studio context	Historic urban industrial district
Core intangible resource	Climate-responsive reasoning, craft judgment, interpretive pedagogy	Craft production knowledge, workshop culture, enterprise networks
Main tangible translation	Design/build decisions and preservation-oriented site analysis	Continued productive use of historic buildings and district morphology
Institutional support	Heritage management and educational mediation	Local regulation, business ecology, and heritage advocacy
Sustainability pathway	Better integration of environmental understanding with conservation practice	Stronger economic embeddedness and socially grounded regeneration
Principal risk if ICH is ignored	Technically narrow preservation lacking educational and adaptive depth	Visual conservation without productive continuity or local livelihoods

Three broader findings emerge: First, ICH provides adaptive knowledge. At Fort Pulaski, the relevant knowledge concerns how to read climate, materials, and historical construction logic in ways that shape intervention. In the Jewellery Quarter, it concerns how craft, production, and spatial organization co-evolve. In both settings, sustainability improves when such knowledge is treated as operational rather than merely commemorative. Second, ICH stabilizes stewardship. Heritage care is more durable when communities, students, workers, and institutions can inhabit preservation as a living practice. Preservation scholarship has long emphasized the ethical dimension of caring for inherited environments [Stipe et al., 2008, Tomlan, 2015]. The cases show that this ethic becomes practically effective when linked to skills and routines that can be

reproduced over time. Third, ICH strengthens local resilience by making heritage economically and socially useful. This point is especially visible in the Jewellery Quarter, but it is also latent in Fort Pulaski through education and public interpretation. Heritage that contributes to work, learning, and local identity is more likely to attract sustained support than heritage framed only as a cost or restriction.

DISCUSSION

Why ICH matters for sustainable preservation

The central implication of the analysis is that sustainability in historic places cannot be reduced to energy performance, embodied carbon, or visual conservation alone. These metrics matter, but they do not exhaust the problem. A historically significant place is sustainable when it remains capable of adaptation without losing the knowledge systems that make adaptation intelligent. This is why the relationship between ICH and built form should be treated as constitutive rather than supplementary.

This interpretation builds on, but also extends, existing debates on green preservation [NTHPNCPTT, 2008, Park, 1998]. Those debates have convincingly argued that older buildings can be environmentally responsible assets. The present analysis adds that such responsibility often depends on living knowledge: how to repair rather than replace, how to interpret environmental conditions, how to maintain workshop-based production, and how to sustain local attachment. In this sense, ICH is part of the hidden infrastructure of preservation.

The argument also contributes to debates on future heritage and durability. Long-term performance in the built environment is not only a matter of materials and technologies; it is also a matter of whether societies maintain the cultural and institutional capacity to care for what they build [Gil-Martín et al., 2012]. Historic preservation becomes more forward-looking when it recognizes that living practices are themselves part of what must be sustained.

Policy and practice implications

Several implications follow for preservation and regeneration practice: First, heritage assessment should explicitly document intangible assets alongside fabric. This includes craft routines, production memory, maintenance expertise, and place-based cultural practices. The UNESCO framework already legitimizes such an approach [UNESCO, 2003]; what is needed is more systematic operationalization within planning and preservation workflows. Second, adaptive reuse and district regeneration should be evaluated not only by architectural quality or property uplift, but also by their effects on local knowledge ecologies. A project that conserves facades while displacing workshops or eroding craft networks may satisfy superficial heritage goals while undermining long-term sustainability. Third, preservation education should treat design studios and field-based learning as mechanisms of transmission. Heritage pedagogy is not merely descriptive; it reproduces the competence through which future conservation will occur [Embaby, 2014]. Sites such as Fort Pulaski are therefore valuable not only for their historical content but also for their instructional capacity. Fourth, local policy should support the economic conditions under which ICH remains viable. In productive historic districts, this may involve zoning flexibility, small-workshop retention, support for micro-businesses, and regulatory recognition of district-specific value [Schragger, 2009, Taylor et al., 2017]. Such strategies help prevent the reduction of historic quarters to aesthetic commodities.

Limitations

This study is interpretive and mechanism-oriented. It does not provide longitudinal performance measurement, comparative cost analysis, or spatial-econometric testing. Future work could extend the framework by combining documentary analysis with field observation, interviews, or post-occupancy assessment. The study also retained the supplied bibliography in full, including one source outside the substantive heritage field [Leimgruber et al., 1995]; while that item did not shape the core findings, its inclusion reflects fidelity to the provided corpus.

CONCLUSION

Historic preservation and urban regeneration are often discussed as separate agendas: one oriented to protecting inherited fabric, the other to enabling contemporary change. This article has argued that intangible cultural heritage offers a bridge between them. By transmitting environmental reasoning, craft knowledge, interpretive capacity, and localized economic practices, ICH helps historic places remain usable, meaningful, and resilient over time.

The comparative analysis of Fort Pulaski and Birmingham's Jewellery Quarter shows that the sustainability of historic environments depends not only on what is physically retained, but also on what is socially and practically carried forward. In one case, ICH strengthens preservation through pedagogy, climatic interpretation, and a culture of repair. In the other, it supports regeneration through making, embedded enterprise, and district identity. Across both, the same lesson emerges: heritage is most sustainable when tangible and intangible resources are understood together as territorial capital [Perucca, 2014, Kapp, 2019].

The broader consequence is conceptual as well as practical. Preservation should no longer be framed as a conservative brake on development, nor regeneration as a process that merely repackages the past for new investment. When cultural and environmental analyses are conducted in parallel, historic places can be treated as living systems whose accumulated knowledge is part of their adaptive capacity. Under those conditions, heritage ceases to be a constraint on sustainable change and becomes one of its most durable foundations.

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