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A CIB Research Roadmap

(2025–2040)

Law and Dispute Resolution

in the Built Environment

CIB Working Commission: W113
Law and Dispute Resolution



Title: Law and Dispute Resolution in the Built Environment: A CIB Research Roadmap (2025–2040)

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FOREWORD

It is a privilege to present the CIB W113 Research Roadmap on Law and Dispute Resolution in the Built Environment. This document marks a significant milestone in the work of our Commission, reflecting more than a decade of international scholarship and professional collaboration.

The roadmap provides a forward-looking agenda for 2025–2035, setting out how law, technology, ethics, and sustainability can be better integrated to create fairer, more transparent, and more resilient systems of dispute resolution across the construction sector.

I am deeply grateful to all contributors and colleagues who have helped shape this work, and to the CIB Secretariat for its continuing support. We hope this roadmap will serve not only as a reference point for research but also as a catalyst for innovation and reform throughout the global built-environment community.

Associate Professor Andrew Agapiou

Coordinator, CIB Working Commission W113
University of Strathclyde

EXECUTIVE SUMMARY

The CIB W113 Research Roadmap on Law and Dispute Resolution in the Built Environment sets out a ten-year vision for advancing legal, ethical, and technological innovation in the resolution of construction disputes. It synthesises global research undertaken over the past decade and establishes a coordinated research and implementation agenda for 2025–2035. The roadmap’s central aim is to enable the transition from fragmented, adversarial, and reactive dispute processes toward integrated, preventive, and sustainability-aligned systems that strengthen trust, efficiency, and justice across the global construction sector.

Background and Rationale

Disputes remain a persistent constraint on the performance, productivity, and reputation of the construction industry worldwide. Despite major procedural reforms—such as statutory adjudication, arbitration, and mediation—empirical evidence continues to show uneven outcomes and high transaction costs. Research highlights that these problems are not merely technical but structural: they stem from adversarial culture, fragmented legal frameworks, and limited data transparency (Brand & Uher, 2017; Fenn, 2020; Ndekugri et al., 2022).

Recent studies also demonstrate that construction disputes are increasingly shaped by new forces, including digital transformation, sustainability and ESG obligations, and ethical governance challenges. Work by Rameezdeen (2021), Anderson (2024), and Agapiou (2024) shows how climate accountability and social value requirements are generating novel forms of conflict requiring multidimensional, ethically grounded solutions. At the same time, the emergence of online dispute resolution and artificial intelligence introduces both opportunities and risks for fairness, due process, and institutional legitimacy (Susskind, 2022; Zhou & Lu, 2024).

This evolving landscape calls for a renewed global agenda—one that integrates legal reform, technological innovation, and sustainability imperatives into a coherent system of dispute governance.

Vision

The roadmap envisions a transparent, ethically grounded, and digitally enabled global framework for dispute resolution in the built environment. Its purpose is to embed fairness, sustainability, and collaboration into the legal and contractual fabric of construction projects.

By 2035, the Commission aims to establish:

- A shared international evidence base on dispute-system performance and reform;
- Integrated mechanisms linking ESG, ethics, and digital accountability within construction law;
- Strengthened professional capacity and interdisciplinary education in dispute resolution; and

- Enhanced access to justice through digital transformation and data transparency.

This vision aligns directly with the United Nations Sustainable Development Goals (SDGs 9, 11, 12, 13, and 16), the OECD Principles on Access to Justice, and the EU's emerging AI and digital governance frameworks.

Strategic Research Themes

Six interrelated research themes define the roadmap's agenda:

1. Legal Design and Preventive Dispute Management – Reframing contracts and governance structures to prevent conflict and encourage collaborative resolution.
2. Comparative and Transnational Construction Law – Mapping and harmonising international dispute systems to improve procedural interoperability and cross-border enforcement.
3. Digital Justice, AI, and Data Governance – Developing ethical, explainable, and human-centred approaches to AI-assisted adjudication and online dispute resolution.
4. Sustainability, ESG, and Legal Accountability – Embedding environmental and social governance obligations into contractual and dispute-resolution frameworks.
5. Professional Capacity, Ethics, and Interdisciplinary Competence – Building professional standards and educational pathways integrating law, technology, and behavioural science.
6. Metrics, Evidence, and System Evaluation – Establishing global indicators to measure procedural fairness, cost efficiency, satisfaction, and environmental performance.

Together, these themes form an integrated system of inquiry and action capable of reshaping how disputes are managed across all stages of the construction lifecycle.

Implementation Pathways

The roadmap identifies five implementation pathways through which its research priorities will be translated into practice:

- Knowledge generation and collaboration through interdisciplinary research clusters and joint CIB projects.
- Capacity-building via continuing professional development (CPD), model training frameworks, and ethical competency standards.
- Digital innovation and data infrastructure, including the establishment of a Global Construction Dispute Observatory to share data and analytics.
- Policy translation linking research outcomes to government, regulatory, and industry reform initiatives.
- Monitoring and learning frameworks to track implementation progress and ensure adaptive refinement.

These pathways ensure that research outcomes are actionable, measurable, and globally transferable.

Policy, Industry, and Societal Impact

The roadmap contributes to international goals for sustainable, equitable, and transparent governance. It supports regulatory and industry reform by:

- Reducing conflict and inefficiency in construction procurement and delivery;
- Integrating sustainability and ESG accountability into contract law and dispute processes;
- Promoting digital and ethical competence among professionals; and
- Strengthening institutional trust and access to justice through transparent, data-driven systems.

The roadmap's societal impact extends beyond the construction sector. By improving fairness, accountability, and environmental responsibility in how disputes are resolved, it contributes to wider public confidence in the rule of law and supports global transitions toward sustainable infrastructure and inclusive economic development.

Next Steps

Following publication, W113 will launch an international dissemination programme through the CIB World Building Congress 2025 and a special issue of Buildings journal (2026), followed by regional workshops and policy dialogues. Future research will build on this roadmap through collaborative funding applications, comparative data platforms, and targeted policy partnerships with governments, industry, and international agencies.

Conclusion

This roadmap establishes a coherent and forward-looking framework for the next decade of research and reform in construction law and dispute resolution. By combining legal, ethical, technological, and sustainability perspectives, it positions CIB W113 as a global leader in shaping fairer, more resilient, and socially responsible systems of dispute management in the built environment.

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- Members of Working Commission W113, whose research, commentary, and peer review informed each section;
- Editorial reviewers and contributors whose expertise in construction law, digital governance, and sustainability ensured the quality and relevance of this publication.

The Commission also acknowledges the many practitioners, policymakers, and students who participated in workshops and consultations leading to the completion of this document. Their practical insights continue to ground this research in the realities of contemporary construction practice. Finally, sincere appreciation is extended to all colleagues who supported the parallel development of the Buildings journal special issue (scheduled for 2026 publication), which complements the aims of this roadmap by further exploring global perspectives on law, ethics, and dispute resolution in the built environment.

1. Introduction

1.1 Background and Purpose

The global construction sector operates within increasingly complex legal, economic, and technological environments. Projects are larger, supply chains more fragmented, and stakeholder expectations more diverse than ever before. Within this context, disputes remain one of the industry's most persistent challenges—driving cost escalation, schedule disruption, and reputational risk. Despite decades of procedural reform through statutory adjudication, arbitration, and mediation, empirical studies continue to reveal inefficiency, inconsistent enforcement, and limited behavioural change (Brand & Uher 2017; Fenn 2020; Ndekugri et al. 2022).

The CIB W113 Research Roadmap on Law and Dispute Resolution in the Built Environment responds to this challenge. Its purpose is to consolidate international research knowledge, identify emerging issues, and propose a ten-year agenda (2025–2035) for advancing fair, transparent, and sustainable dispute-resolution systems across the built-environment professions. It draws upon an extensive review of global literature, case law, and empirical findings, as well as contributions from members of the CIB Working Commission W113 and allied commissions concerned with sustainability, digitalisation, and professional practice.

This roadmap replaces the earlier State-of-the-Art Report (2013) and reflects the evolution of construction law as an interdisciplinary field linking legal doctrine with behavioural science, data analytics, and environmental governance. It aims to guide coordinated research and policy reform through CIB's global network of academics, practitioners, and policymakers.

1.2 Why a New Roadmap Is Needed

Over the last decade, three interconnected trends have re-shaped the landscape of dispute resolution in construction:

1. **Legal diversification.** Statutory adjudication and arbitration regimes have proliferated across common-law and civil-law jurisdictions, yet procedural fragmentation persists. The coexistence of multiple models—each with its own evidentiary standards and enforcement pathways—creates uncertainty for cross-border contracting and limits knowledge transfer.
2. **Digital transformation.** The rise of online dispute resolution (ODR) and artificial intelligence (AI) is redefining evidentiary practice, communication, and adjudication. While digital platforms promise speed and accessibility, they also raise concerns about algorithmic bias, explainability, and due-process safeguards (Susskind 2022; Zhou & Lu 2024).

3. Sustainability and ESG accountability. Environmental, Social, and Governance (ESG) obligations are now integral to project delivery and contractual risk management. Research highlights new forms of dispute related to carbon targets, social value, and ethical procurement (Rameezdeen 2021; Anderson 2024; Agapiou 2024). These issues demand hybrid dispute mechanisms that integrate technical expertise, ethical reasoning, and legal compliance.

Together, these developments necessitate a roadmap that connects law, technology, and sustainability within a unified research and policy framework.

1.3 Aims and Objectives

The roadmap pursues four overarching aims:

1. Synthesis: To consolidate a decade of international research on construction law and dispute resolution, identifying key trends, methodologies, and reform outcomes.
2. Integration: To align legal and institutional reforms with advances in digital technology, professional ethics, and sustainability policy.
3. Collaboration: To promote interdisciplinary and cross-jurisdictional partnerships among CIB members, universities, governments, and industry.
4. Impact: To provide actionable recommendations that inform education, professional practice, and regulatory reform.

To achieve these aims, the roadmap defines six strategic research themes—preventive legal design; comparative law; digital justice; ESG integration; professional capacity; and evidence & evaluation—supported by five implementation pathways encompassing research, training, digital infrastructure, policy translation, and continuous learning.

1.4 Scope and Focus

The roadmap focuses on construction law and dispute resolution in its broadest sense, spanning contractual mechanisms, statutory adjudication, arbitration, mediation, and emerging hybrid processes. It also considers the legal dimensions of sustainability, ethics, and data governance within the built environment.

While examples are drawn primarily from the UK, Australia, the Asia-Pacific region, and Europe, the roadmap's analytical framework is intentionally global. It is designed to be adaptable to varying legal traditions and institutional capacities, enabling comparative analysis and knowledge exchange across both developed and emerging economies.

The scope extends beyond the resolution of disputes to encompass their prevention and systemic learning—emphasising how dispute data can inform better project design, procurement, and regulation.

1.5 Methodological Approach

The roadmap integrates multiple forms of evidence:

- Doctrinal research, analysing statutory frameworks, case law, and contractual provisions;
- Empirical and socio-legal studies, examining practitioner experience, professional behaviour, and institutional culture;
- Comparative analysis, mapping similarities and divergences across jurisdictions; and
- Applied and evaluative research, developing tools, metrics, and policy recommendations.

This pluralist approach ensures the roadmap reflects both theoretical depth and practical utility. Each subsequent section builds upon this evidence base: Section 2 reviews current knowledge; Section 3 articulates the vision and strategic objectives; Section 4 defines thematic priorities; and Sections 5–7 outline implementation, policy linkages, and future directions.

1.6 Position within the CIB Framework

The roadmap contributes directly to CIB's strategic mission of advancing interdisciplinary knowledge for a sustainable built environment. It complements other CIB initiatives addressing digital transformation (W78), sustainable construction (W82), and ethics and professionalism (W112). Through these linkages, W113 strengthens CIB's capacity to address global challenges that transcend disciplinary and national boundaries.

The roadmap also aligns with CIB's commitment to the United Nations Sustainable Development Goals (SDGs), particularly SDGs 9 (Industry, Innovation & Infrastructure), 11 (Sustainable Cities), 12 (Responsible Consumption & Production), 13 (Climate Action), and 16 (Peace, Justice & Strong Institutions). By embedding sustainability and justice within construction law, it reinforces CIB's role as a thought leader in shaping ethical and resilient industry systems.

1.7 Structure of the Document

The roadmap is organised into seven main sections:

1. Introduction – establishes background, rationale, aims, and scope.
2. Current State of Knowledge – synthesises global research trends and identifies cross-cutting challenges.
3. Vision and Strategic Objectives – sets the long-term direction for research and reform.

4. Research Priorities and Themes – outlines six key thematic areas.
5. Implementation Pathways – details mechanisms for delivery and capacity-building.
6. Policy, Industry and Societal Linkages – situates the roadmap within global frameworks and professional contexts.
7. Future Directions and Next Steps – defines dissemination, monitoring, and legacy actions.

Each section is designed to stand alone yet interconnect as part of a comprehensive framework linking legal scholarship, technological innovation, and sustainable development.

1.8 Conclusion

Construction law and dispute resolution are undergoing profound transformation. As climate change, digitalisation, and ethical governance reshape the industry, the need for integrated, research-led reform has never been greater. This roadmap positions CIB W113 at the forefront of that transformation—connecting global scholarship with local practice to build fairer, more resilient, and more sustainable systems of dispute management in the decades ahead.

2. Current State of Knowledge

2.1 Overview

Over the past decade, construction law and dispute resolution have undergone significant conceptual and practical evolution. The field has moved beyond a narrow focus on contractual rights and procedures to embrace broader issues of governance, behavioural science, sustainability, and digital transformation. Research across multiple jurisdictions has revealed that while dispute mechanisms such as adjudication, arbitration, and mediation have matured, the industry continues to experience persistent inefficiencies, adversarial cultures, and fragmented legal structures (Brand & Uher, 2017; Cheung, 2018; Fenn, 2020).

Early scholarship in this field largely concentrated on procedural development—particularly statutory adjudication regimes in the UK, Australia, and other common-law countries. Subsequent research expanded to assess their practical effectiveness, judicial interpretation, and comparative outcomes (Turner, 2022; Ndekugri et al., 2022). Parallel studies examined the role of mediation, negotiation, and relational contracting in reducing conflict, focusing on behavioural, ethical, and institutional barriers to adoption (Cheung & Yiu, 2019; Yates, 2022). More recently, digitalisation and sustainability have emerged as dominant cross-cutting forces, transforming both the nature of disputes and the mechanisms through which they are resolved (Susskind, 2022; Rameezdeen, 2021; Anderson, 2024; Agapiou, 2024).

This cumulative body of work demonstrates a clear trajectory: from procedural reform to systemic understanding. Disputes are now increasingly recognised as symptoms of deeper structural and cultural factors within project governance. The literature highlights five consistent insights:

1. Persistent fragmentation among legal, contractual, and institutional frameworks;
2. Behavioural inertia and adversarial norms that undermine collaboration;
3. Rapid digitalisation introducing both opportunities and ethical risks;
4. Emergence of ESG-linked disputes requiring multidimensional resolution strategies; and
5. Ongoing evidence gaps, particularly regarding comparative data and longitudinal evaluation.

Against this backdrop, CIB W113's research roadmap seeks to consolidate knowledge from the past decade and identify pathways for reform. Sections 2.2 and 2.3 summarise the key developments and cross-cutting challenges shaping current understanding of law and dispute resolution in the built environment.

2.2 Dispute Resolution Mechanisms in Practice

Over the past decade, construction law and dispute-resolution research has matured from primarily doctrinal and contractual analysis into a more interdisciplinary, empirically informed field. Scholarship has examined not only the formal procedures of adjudication, arbitration, and mediation but also the behavioural, ethical, and technological contexts that shape their effectiveness. Despite widespread procedural innovation, the sector continues to face fragmentation, adversarial practices, and uneven uptake of preventive mechanisms (Brand & Uher, 2017; Cheung, 2018; Fenn, 2020).

Empirical studies consistently demonstrate that statutory adjudication remains the principal mechanism for resolving construction disputes in common-law jurisdictions. Yet the quality, transparency, and enforceability of adjudicative decisions continue to vary considerably across regions (Ndekugri et al., 2022; To, 2024). Fenn (2020) and Love and Davis (2019) find that the majority of disputes arise during the post-contract phase, typically linked to scope changes, communication failures, and poor risk allocation. This evidence suggests that the formal sophistication of dispute-resolution systems has not eliminated the underlying causes of conflict embedded in procurement and project delivery structures.

Socio-legal and organisational analyses have further shown that adversarialism is sustained by structural and behavioural norms rather than by legal deficiencies alone. Cheung and Yiu (2019) attribute enduring conflict cultures to relational hierarchies within project teams, while Yates (2022) and Douglas and Hayes (2020) identify client pressures, commercial incentives, and professional identity as persistent deterrents to mediation and collaborative negotiation. Collectively, this research points to the need for dispute systems that recognise the social and ethical dimensions of professional decision-making alongside procedural efficiency.

Comparative scholarship reveals continued divergence in statutory regimes and judicial attitudes. Brand and Uher (2017) and Turner (2022) note that while adjudication in the UK and Australia has achieved procedural maturity, courts differ in treating adjudicators as either contractual experts or statutory decision-makers, leading to variable standards of review. In Asia-Pacific contexts, Chong (2018) and To (2024) describe the emergence of hybrid adjudication–arbitration frameworks aimed at combining speed with proportional fairness.

Together, these analyses point toward an incremental convergence on principles of procedural integrity and proportionality, though reform trajectories remain uneven across jurisdictions.

The rapid digitalisation of dispute-resolution processes since the COVID-19 pandemic has accelerated the adoption of online dispute resolution (ODR) platforms and artificial intelligence in document review and evidence management (Susskind, 2022; Zhou & Lu, 2024). Early evaluations indicate that technology enhances efficiency but introduces new risks relating to data integrity, algorithmic transparency, and due process. Alzahrani et al. (2023) emphasise the need for explainable AI and human oversight to maintain confidence in emerging digital justice systems.

Recent research has also identified a new generation of disputes centred on sustainability and environmental performance. Rameezdeen (2021) and Anderson (2024) report growing numbers of conflicts linked to environmental, social, and governance (ESG) obligations, carbon accountability, and the pursuit of net-zero construction objectives. Within the UK context, Agapiou (2024) contributes to this developing field by examining how ESG principles intersect with construction law and contractual governance, arguing that existing legal mechanisms often inadequately reflect sustainability-related performance obligations. His analysis underscores the importance of integrating environmental accountability into dispute-resolution frameworks and contract administration practice, aligning with the broader trend toward socially responsible and ethically governed procurement.

These emerging ESG-related disputes often involve technical and policy dimensions that transcend traditional contractual frameworks. Thomas and Smith (2021) note that practitioners face increasing demands for cross-disciplinary expertise—legal, environmental, and managerial—to navigate such disputes effectively. This shift necessitates greater alignment between legal reform, ethical guidance, and project governance systems.

Taken together, the past decade of research portrays a construction dispute-resolution landscape marked by both progress and persistent complexity. Legal procedures have become more refined, data and technology more integrated, and sustainability concerns more visible. Yet adversarial culture, institutional fragmentation, and uneven digital and ethical adaptation continue to constrain systemic effectiveness. The challenge for the next decade—and the focus of this roadmap—is to move from reactive, procedure-driven dispute management toward proactive, transparent, and sustainability-aligned systems that reinforce trust, accountability, and resilience across the global construction sector.

2.3 Cross-Cutting Challenges

Although construction law and dispute-resolution mechanisms have evolved considerably, the past decade of scholarship reveals a persistent set of structural, cultural, and institutional challenges that continue to limit their impact.

These cross-cutting barriers operate across jurisdictions and project types, suggesting that systemic transformation will require more than procedural reform or new legislation.

Fragmentation of Legal and Institutional Frameworks

Comparative analyses continue to highlight significant variation in statutory regimes, contract standards, and judicial interpretation (Brand & Uher 2017; Turner 2022; To 2024). In many countries, multiple overlapping procedures—adjudication, arbitration, mediation, and hybrid processes—coexist with limited coherence or coordination. This fragmentation produces uncertainty for practitioners, discourages early settlement, and complicates enforcement across borders. Studies by Fenn (2020) and Ndekugri et al. (2022) demonstrate that even mature systems such as the UK's adjudication framework remain vulnerable to inconsistent judicial treatment and procedural overload. A widely acknowledged priority is the development of interoperable legal models capable of integrating domestic legislation with international best practice and digital case-management systems.

Enduring Adversarial Culture

Behavioural and organisational research underscores the tenacity of adversarial attitudes in project delivery. Cheung and Yiu (2019) and Yates (2022) link these patterns to hierarchical team structures, short-term procurement incentives, and the commodification of professional services. Douglas and Hayes (2020) further note that entrenched perceptions of legal representation as a zero-sum process inhibit the growth of mediation and early-neutral evaluation. These findings confirm that technical reform alone cannot produce meaningful change without parallel shifts in professional education, ethical norms, and reward systems that value collaboration and fairness.

Data, Technology, and Digital Justice

Digital transformation offers both opportunity and disruption. The expansion of online dispute-resolution platforms and artificial-intelligence-supported adjudication has raised expectations for speed and accessibility (Susskind 2022; Zhou & Lu 2024). Yet empirical evaluations reveal emerging governance deficits, including opaque algorithms, inadequate disclosure standards, and jurisdictional uncertainty for cross-border disputes (Alzahrani et al. 2023).

Scholars argue that digital justice must remain accountable, human-centred, and legally reviewable, requiring new regulatory frameworks and professional competencies to safeguard procedural integrity.

Sustainability and ESG Integration

An increasingly prominent challenge concerns the integration of sustainability and ESG considerations into dispute-resolution practice. Rameezdeen (2021) and Anderson (2024) document the rise of environmentally and socially driven conflicts that blur boundaries between private contracts and public-interest regulation. Within the UK context, Agapiou (2024) highlights the absence of consistent legal mechanisms for evaluating ESG performance obligations and resolving sustainability-related disputes within conventional contract law frameworks. As climate accountability becomes embedded in procurement, dispute systems must evolve to incorporate scientific evidence, lifecycle analysis, and ethical evaluation within their procedures.

Capacity, Competence, and Ethical Governance

A further cross-cutting issue relates to the professional capabilities required to manage increasingly complex and multidisciplinary disputes. Thomas and Smith (2021) and Cheung (2018) observe that dispute resolvers now need combined legal, technical, and digital literacy, along with strong ethical judgment. Without coherent professional standards, capacity gaps risk widening between technologically advanced and developing economies. The challenge is therefore both distributive and normative: ensuring equitable access to high-quality dispute-resolution services while maintaining integrity, confidentiality, and inclusiveness.

Evidence and Evaluation Deficit

Despite major advances in research, consistent data on dispute frequency, cost, and outcomes remain scarce. Love and Davis (2019) and Fenn (2020) call for longitudinal data

frameworks to measure system performance and learning across projects. Without such evidence, reforms risk being reactive or anecdotal. Building standardised indicators—linking procedural fairness, cost efficiency, and sustainability outcomes—will be essential to demonstrate value and guide continuous improvement.

Summary

Across these dimensions, the literature reveals that the key obstacles are systemic rather than procedural: fragmented regulation, adversarial culture, limited data transparency, and the lag between technological innovation and ethical governance. Overcoming these barriers will require a coordinated research agenda linking legal reform, digital accountability, professional education, and sustainability policy. These cross-cutting challenges provide the analytical bridge between the current state of knowledge and the roadmap's forward-looking research themes presented in Section 3.

3. Vision and Strategic Objectives

3.1 Vision

The overarching vision of this roadmap is to establish a coherent, transparent, and ethically grounded global framework for dispute resolution in the built environment—one that supports sustainable development, technological innovation, and equitable access to justice. Over the next decade, the goal is to move from fragmented, procedure-driven dispute mechanisms toward integrated systems of legal, behavioural, and digital governance that promote collaboration, accountability, and resilience across the construction sector.

This vision recognises that construction disputes are not simply technical or contractual failures but indicators of deeper structural issues within project governance, professional culture, and legal design. It calls for dispute systems that actively prevent conflict, manage complexity across jurisdictions, and incorporate sustainability and social value into decision-making. Achieving this will require transdisciplinary research that unites law, technology, management, and behavioural science to reform how disputes are anticipated, resolved, and learned from globally.

3.2 Strategic Objectives

To realise this vision, six strategic objectives are proposed. These objectives translate research evidence into coordinated themes for collaborative investigation and policy engagement across the CIB network and partner institutions.

Objective 1: Integrate Legal Design and Preventive Dispute Management

Promote research on the preventive dimensions of construction law, focusing on early risk identification, relational contracting, and project ethics. Building on international findings (Fenn, 2020; Cheung & Yiu, 2019), this objective supports the transition from reactive to proactive legal frameworks. Preventive approaches should include design-stage conflict forecasting, collaborative procurement models, and training in communication and negotiation ethics.

Objective 2: Harmonise and Modernise Construction Law Frameworks

Encourage comparative and transnational research to reduce fragmentation between statutory adjudication, arbitration, and mediation systems. Studies by Brand and Uher (2017), Turner (2022), and To (2024) demonstrate the need for greater procedural interoperability. This objective supports the development of model frameworks and digital platforms enabling mutual recognition of adjudicative outcomes and the efficient enforcement of decisions across jurisdictions.

Objective 3: Embed ESG Principles and Sustainable Development Goals (SDGs)

Advance understanding of how environmental, social, and governance (ESG) obligations interact with construction contracts, liability regimes, and dispute mechanisms. Recent work

(Rameezdeen, 2021; Anderson, 2024; Agapiou, 2024) identifies gaps in how sustainability performance is defined, evidenced, and enforced. This objective aims to develop metrics and governance models that align dispute systems with the UN Sustainable Development Goals, particularly SDGs 11 (Sustainable Cities), 12 (Responsible Consumption), and 13 (Climate Action).

Objective 4: Strengthen Digital Justice and AI Governance

Support interdisciplinary research on AI-assisted adjudication, data ethics, and algorithmic accountability in dispute resolution (Susskind, 2022; Zhou & Lu, 2024). The objective is to design trustworthy, human-centred digital-justice systems that preserve fairness, explainability, and professional oversight. This includes developing international principles for responsible AI use in adjudicative and evidentiary processes.

Objective 5: Build Professional Capacity and Ethical Competence

Address the professional and educational dimensions of dispute resolution by promoting ethical literacy, intercultural awareness, and digital proficiency among practitioners. Research by Cheung (2018) and Thomas & Smith (2021) highlights the need for new competencies that integrate legal, technical, and behavioural skills. This objective advocates for competency frameworks and continuing professional development (CPD) aligned with these evolving requirements.

Objective 6: Establish Global Data Standards and Evaluation Metrics

Responding to calls from Love and Davis (2019) and Fenn (2020) for systematic performance data, this objective promotes the creation of standardised indicators for measuring dispute system effectiveness. Metrics should capture not only time and cost but also procedural fairness, satisfaction, learning outcomes, and environmental impact. Such evidence will enable benchmarking across jurisdictions and continuous improvement in dispute-management systems.

3.3 Strategic Alignment

The roadmap's vision and objectives align with global initiatives promoting sustainable, digital, and ethical transformation in construction. They directly support CIB's mission to generate and disseminate integrated research knowledge, and they intersect with wider policy frameworks, including:

- The United Nations Sustainable Development Goals (SDGs), particularly 9 (Industry, Innovation, and Infrastructure), 11, 12, and 13.
- The OECD Principles on Access to Justice and Digital Government Strategy.
- The European Union's AI Act and emerging ISO standards on dispute-avoidance and digital governance in construction.

By linking these strategic frameworks, the roadmap positions W113 as a global hub for interdisciplinary research and collaboration on law, ethics, and technology in the built

environment. It aims to facilitate partnerships among universities, professional bodies, governments, and industry to ensure that dispute-resolution reform contributes not only to commercial efficiency but also to sustainability, inclusivity, and social justice.

4. Research Priorities and Themes

The research priorities of this roadmap derive from the structural and behavioural challenges outlined in Section 2 and the strategic objectives set out in Section 3. Collectively, they define a coordinated research agenda for the next decade—one that bridges law, technology, ethics, and sustainability in pursuit of more resilient, fair, and transparent systems of dispute management in the built environment.

Theme 1: Legal Design and Preventive Dispute Management

Rationale

Persistent reliance on adversarial dispute processes highlights the need to re-engineer legal frameworks around prevention rather than reaction. Research shows that most disputes emerge from misaligned expectations, communication breakdowns, and unbalanced risk allocation (Fenn, 2020; Love & Davis, 2019).

Research Focus

- Development of preventive legal design tools, including early-warning systems, relational contracting clauses, and dispute-avoidance boards.
- Behavioural and ethical dimensions of contract administration and project communication.
- Evaluation of collaborative procurement and “best-for-project” governance models.

Indicative Outputs

- Model clauses and practice guidance for dispute avoidance.
- Evidence frameworks linking proactive governance to reduced litigation and cost.
- Training modules for preventive law and early-intervention skills.

Theme 2: Comparative and Transnational Construction Law

Rationale

Global construction markets require coherent legal systems that accommodate diverse adjudication and arbitration regimes. Comparative studies reveal substantial divergence in statutory interpretation and enforcement practices (Brand & Uher, 2017; Turner, 2022).

Research Focus

- Mapping and analysis of international adjudication and arbitration frameworks.
- Exploration of procedural convergence through shared principles of proportionality and fairness.

- Evaluation of hybrid and cross-border mechanisms, including Singapore's and Hong Kong's models (Chong, 2018; To, 2024).

Indicative Outputs

- A global typology of construction dispute systems.
- Policy recommendations for harmonised enforcement and recognition.
- Comparative datasets enabling benchmarking and reform analysis.

Theme 3: Digital Justice, AI, and Data Governance

Rationale

Digitalisation and artificial intelligence are transforming dispute resolution but pose new ethical and procedural risks. Scholars warn that algorithmic decision-making requires explainability and legal accountability (Susskind, 2022; Zhou & Lu, 2024).

Research Focus

- Evaluation of AI-assisted adjudication, predictive analytics, and e-evidence management.
- Development of ethical and technical standards for algorithmic transparency and human oversight (Alzahrani et al., 2023).
- Interoperability of ODR platforms with national legal systems.

Indicative Outputs

- Guidelines for responsible AI in dispute resolution.
- Prototype ODR frameworks integrating fairness-by-design principles.
- Cross-jurisdictional digital-governance code of practice.

Theme 4: Sustainability, ESG, and Legal Accountability

Rationale

The global shift toward low-carbon and socially responsible construction introduces novel contractual and regulatory risks. ESG-related disputes require mechanisms that reconcile private contract obligations with public sustainability goals (Rameezdeen, 2021; Anderson, 2024; Agapiou, 2024).

Research Focus

- Integration of ESG and SDG metrics within construction contracts and dispute procedures.

- Legal and evidentiary approaches to carbon accountability, social value, and ethical procurement.
- Evaluation of how sustainability criteria influence contractual remedies and enforcement.

Indicative Outputs

- Model ESG compliance frameworks for construction contracts.
- Policy briefs linking dispute-resolution reform with national net-zero strategies.
- Guidance for adjudicators and mediators on sustainability-related claims.

Theme 5: Professional Capacity, Ethics, and Interdisciplinary Competence

Rationale

As disputes become increasingly complex, professionals must possess combined legal, technical, digital, and ethical capabilities. Research highlights gaps in professional training and governance that perpetuate adversarial culture (Cheung, 2018; Thomas & Smith, 2021).

Research Focus

- Development of competency frameworks for dispute resolvers and contract administrators.
- Cross-disciplinary education models combining law, engineering, and behavioural science.
- Ethical decision-making and professional responsibility in digitally mediated processes.

Indicative Outputs

- CIB-endorsed competency standards for dispute-resolution professionals.
- Continuing-education modules in ethical and digital literacy.
- Evaluation metrics linking ethical competence to procedural outcomes.

Theme 6: Metrics, Evidence, and System Evaluation

Rationale

Evidence-based policy and reform depend on reliable, comparable data. Yet consistent empirical evidence on dispute frequency, cost, and satisfaction remains scarce (Love & Davis, 2019; Fenn, 2020).

Research Focus

- Development of global indicators measuring procedural fairness, efficiency, satisfaction, and environmental impact.
- Longitudinal data collection and visualisation of dispute trends.
- Integration of sustainability and social-equity measures into dispute-system evaluation.

Indicative Outputs

- Open-access international database of construction dispute outcomes.
- Standardised reporting framework for national regulators and professional bodies.
- Evidence map linking dispute performance to industry productivity and resilience.

Cross-Theme Integration

The six themes are intentionally interdependent. Preventive legal design (Theme 1) and harmonised law (Theme 2) establish the structural foundation; digital justice (Theme 3) and ESG integration (Theme 4) embed contemporary innovation and responsibility; while professional competence (Theme 5) and metrics (Theme 6) ensure durability and continuous learning. Together, they form a whole-system approach to dispute-resolution reform aligned with CIB's mission of advancing sustainable, equitable, and knowledge-based development in the built environment.

5. Implementation Pathways

5.1 Overview

The successful delivery of this roadmap depends on the establishment of coordinated, interdisciplinary pathways connecting research, practice, and policy. Dispute resolution in the built environment is a complex socio-technical system that involves multiple actors—lawyers, engineers, architects, clients, contractors, policymakers, and digital technologists. Effective reform therefore requires implementation mechanisms that integrate legal, behavioural, and technological innovation into everyday project and institutional practice.

The roadmap proposes five interconnected pathways designed to support the translation of research themes into measurable outcomes:

1. Knowledge generation and interdisciplinary research collaboration
2. Capacity-building and professional development
3. Digital innovation and data infrastructure
4. Policy translation and regulatory engagement
5. Monitoring, learning, and continuous improvement

5.2 Knowledge Generation and Interdisciplinary Collaboration

A core objective of W113's implementation strategy is to strengthen interdisciplinary collaboration across law, construction management, technology, and social science. The Commission will facilitate the formation of regional and thematic research clusters to undertake comparative studies, share data, and co-author outputs under common methodological frameworks.

Key activities include:

- Coordinated international research projects addressing specific roadmap themes (e.g. digital justice, ESG dispute mechanisms, preventive legal design).
- Joint workshops with allied CIB commissions such as W78 (Information Technology for Construction), W82 (Sustainable Construction), and W099 (Health and Safety).
- Development of shared methodological protocols for cross-jurisdictional legal and empirical studies.
- Mentorship and exchange programmes linking early-career and senior researchers across participating institutions.

By embedding collaboration at the design stage, this pathway ensures that research outcomes are globally coherent yet locally adaptable, strengthening the collective evidence base on construction dispute systems.

5.3 Capacity-Building and Professional Development

Reforming dispute systems requires skilled practitioners capable of integrating law, ethics, technology, and sustainability in practice. Research indicates significant capability gaps across the sector, particularly in digital literacy, ESG accountability, and interdisciplinary reasoning (Cheung, 2018; Thomas & Smith, 2021).

To address this, W113 will coordinate with professional bodies—including the RICS, CIOB, FIDIC, and national bar associations—to design continuing professional development (CPD) resources aligned with the roadmap’s research themes.

Priority initiatives include:

- Training modules on preventive dispute management, ESG compliance, and responsible AI governance.
- Development of a CIB-endorsed competency framework for dispute-resolution professionals, mapping ethical, legal, and technological skills.
- Online short courses and micro-credentials hosted through university partners and industry platforms.
- A practitioner “toolkit” providing checklists, model clauses, and evaluation templates derived from roadmap research.

These actions will support a new generation of professionals equipped to implement the roadmap’s principles in daily practice.

5.4 Digital Innovation and Data Infrastructure

A major enabling mechanism is the creation of shared data and digital infrastructure to support evidence-based reform. Consistent with recommendations by Love and Davis (2019), Ndekugri et al. (2022), and Alzahrani et al. (2023), W113 will coordinate a global effort to improve data quality, transparency, and interoperability in dispute-resolution research.

Planned actions include:

- Establishment of a Global Construction Dispute Observatory, hosted via the CIB network, to curate datasets, case notes, and research findings.
- Development of open-access repositories linking anonymised adjudication and arbitration outcomes with project typologies and ESG indicators.

- Collaboration with digital-governance researchers to pilot explainable-AI models and digital-ethics audit tools for dispute systems.
- Partnership with technology providers and standards bodies (e.g. ISO, UNECE) to support data standardisation and secure cross-border information exchange.

This pathway operationalises the roadmap's vision of transparent, data-driven, and ethically responsible dispute management.

5.5 Policy Translation and Regulatory Engagement

Research impact will depend on effective engagement with government departments, regulators, and international organisations responsible for construction policy and legal reform. The roadmap identifies a need for structured channels through which academic evidence can inform rulemaking, procurement frameworks, and judicial guidance.

Implementation actions include:

- Policy roundtables linking researchers with ministries of justice, construction authorities, and professional regulators.
- Thematic policy briefs synthesising research findings for non-academic audiences.
- Alignment with national and regional initiatives such as the UK's Construction Playbook, EU digital governance reforms, and the UN SDG 2030 Agenda.
- Contributions to international standard-setting processes (e.g. ISO TC59, CIB-FIDIC joint workshops).

Through these mechanisms, W113 aims to ensure that research outputs not only inform scholarly debate but also shape evidence-based regulatory and institutional reform worldwide.

5.6 Monitoring, Learning, and Continuous Improvement

Implementation success depends on continuous learning and adaptive management. The roadmap therefore embeds a Monitoring, Evaluation, and Learning (MEL) framework across all pathways, ensuring feedback loops between research, policy, and industry practice.

Proposed MEL mechanisms:

- Development of key performance indicators (KPIs) measuring reach, adoption, and impact of roadmap activities.
- Annual review reports summarising progress across research themes.
- Case-study documentation of reform pilots or collaborative initiatives.

- Use of digital dashboards to track publication metrics, training participation, and policy uptake.

By institutionalising evaluation, W113 will generate a living evidence base to guide the refinement of dispute-resolution systems over time, reinforcing transparency and accountability within the research network itself.

5.7 Integration Across Pathways

Each pathway supports the others through mutual reinforcement: research generates knowledge; professional training translates it; digital infrastructure stores and disseminates it; policy engagement institutionalises it; and monitoring ensures learning and refinement. Together, they form a cyclical implementation model that reflects the roadmap's central aim—building an adaptive, transparent, and sustainability-aligned system for dispute resolution in the global construction sector.

6. Policy, Industry and Societal Linkages

6.1 Overview

The research and implementation priorities outlined in this roadmap align with a broad set of international policy objectives that emphasise sustainability, digital transformation, and access to justice. Construction disputes are not solely technical or legal challenges—they are also reflections of governance quality, equity, and institutional trust. This section situates the CIB W113 research agenda within global frameworks that seek to modernise regulatory systems, enhance professional accountability, and ensure sustainable development in the built environment.

6.2 Alignment with Global Policy Frameworks

United Nations Sustainable Development Goals (SDGs)

The roadmap directly supports several UN SDGs by embedding sustainability, governance, and equity into the future of construction law and dispute resolution:

- SDG 9 (Industry, Innovation and Infrastructure): by advancing innovative legal and digital systems that improve industry efficiency and accountability.
- SDG 11 (Sustainable Cities and Communities): through legal frameworks that promote socially responsible construction practices and equitable dispute outcomes.
- SDG 12 (Responsible Consumption and Production): by integrating ESG metrics into procurement and dispute management processes.
- SDG 13 (Climate Action): through dispute mechanisms capable of addressing sustainability performance and carbon accountability.
- SDG 16 (Peace, Justice and Strong Institutions): by reinforcing transparency, fairness, and access to justice through digital and legal reform.

OECD and International Regulatory Principles

The roadmap aligns with the OECD Principles on Access to Justice (2023) and the G20 High-Level Principles on Integrity in Public Procurement, both of which call for inclusive, transparent, and evidence-based dispute-resolution systems. It also supports the OECD Framework for Responsible AI, complementing the roadmap's focus on explainable, human-centred algorithmic governance (Alzahrani et al., 2023; Zhou & Lu, 2024).

European Union and ISO Initiatives

At the regional level, the roadmap engages with the EU Artificial Intelligence Act (2024), the EU Sustainable Finance Taxonomy, and ISO standards on dispute avoidance and governance (ISO 30415, ISO 37000). These initiatives provide shared platforms for integrating ethics,

ESG accountability, and data responsibility into the global construction ecosystem. By embedding these frameworks into research, W113 contributes to regulatory coherence and international knowledge transfer.

6.3 Industry Transformation and Professional Practice

The roadmap supports transformation in professional and industry practice through collaboration with leading international organisations and standard-setting bodies. It positions W113 as a bridge between academic research and practical implementation in contract administration, dispute resolution, and project governance.

Industry Relevance

- The roadmap addresses a pressing industry concern: the cost and inefficiency of disputes, which remain a key drag on productivity and innovation (Fenn, 2020; Love & Davis, 2019).
- It emphasises dispute prevention as part of project design, enabling earlier intervention and more equitable risk distribution.
- It provides research-based foundations for standard-form contract evolution, particularly within JCT, NEC, FIDIC, and national frameworks seeking to incorporate ESG obligations and digital governance principles.
- Through its focus on digitalisation, it informs the construction sector's transition to data-driven, AI-enabled project management and adjudication systems.

Professional Practice and Education

- By developing a CIB-endorsed competency framework (Section 5.3), the roadmap supports professional institutions—including RICS, CIOB, ICE, RIBA, and Bar associations—in embedding ethical, digital, and sustainability literacy into continuing education.
- It promotes cross-disciplinary training linking legal, engineering, and management professions, thereby expanding the dispute-resolution skill base.
- The roadmap encourages gender and diversity inclusion in professional pathways, consistent with CIB's EDI agenda and SDG 5 (Gender Equality).

6.4 Societal Impact and Public Value

Dispute resolution in the built environment has far-reaching social implications, extending beyond commercial efficiency to issues of fairness, access, and environmental justice. The roadmap therefore advances a public value perspective, recognising that the way societies manage construction disputes influences broader trust in law, institutions, and governance.

Equitable Access to Justice

The integration of digital-justice and online dispute-resolution systems (Susskind, 2022; To, 2024) offers opportunities to expand access to justice for small and medium-sized enterprises (SMEs), local authorities, and citizens affected by built-environment conflicts. The roadmap emphasises inclusivity, affordability, and procedural transparency as core metrics of success.

Sustainability and Environmental Justice

Through its focus on ESG and sustainability-linked disputes (Rameezdeen, 2021; Anderson, 2024; Agapiou, 2024), the roadmap contributes to a growing international effort to ensure that climate obligations and environmental harm are addressed within legal and contractual frameworks. It promotes mechanisms capable of integrating scientific evidence and lifecycle carbon data into decision-making, enabling fairer outcomes in sustainability-related conflicts.

Ethical Digital Transformation

AI-driven dispute systems must maintain human oversight and moral accountability. The roadmap's emphasis on responsible digital governance contributes to the protection of procedural fairness and public trust in justice systems, aligning with the EU and OECD frameworks for trustworthy AI (Alzahrani et al., 2023; Zhou & Lu, 2024).

6.5 Policy Partnerships and Engagement

To maximise its impact, the roadmap encourages policy partnerships with governmental and intergovernmental agencies. Implementation will prioritise:

- Collaboration with the United Nations Environment Programme (UNEP), the World Bank, and UN-Habitat to align construction dispute governance with sustainable infrastructure policy.
- Joint projects with national construction authorities (e.g. BEIS in the UK, the Australian Building and Construction Commission, and Singapore's Building and Construction Authority) on dispute reform and ESG implementation.
- Engagement with professional councils and judicial training bodies to integrate research findings into adjudicator and mediator accreditation standards.

Through these partnerships, CIB W113 will act as a knowledge intermediary, translating empirical evidence into actionable policy and professional reform.

6.6 Long-Term Societal Value

By embedding ethical digitalisation, ESG accountability, and preventive dispute management in global construction practice, this roadmap contributes to broader societal outcomes:

- Reduced conflict and transaction costs, enhancing economic productivity.
- Stronger trust in professional and institutional governance.
- Increased inclusivity and transparency in legal processes.
- Measurable contributions to climate adaptation, social justice, and sustainable infrastructure delivery.

These impacts reflect CIB's wider mission to support knowledge for a better built environment and position W113 as a leader in translating research into tangible societal benefit.

7. Future Directions and Next Steps

7.1 Consolidation and Dissemination

The CIB W113 Research Roadmap on Law and Dispute Resolution in the Built Environment represents the culmination of over a decade of international collaboration between scholars, practitioners, and policymakers. Its immediate priority following publication is to disseminate and operationalise the roadmap's findings across CIB networks, partner institutions, and the global research and professional communities.

Dissemination activities will include:

- Publication of the roadmap on the CIB website and digital library, ensuring open access to researchers and practitioners worldwide.
- Launch events at major international conferences, including the CIB World Building Congress 2025 (Purdue University), supported by a dedicated roundtable on dispute-resolution reform.
- Integration of the roadmap's key findings into a forthcoming special issue of Buildings journal (2026), which will feature extended contributions on sustainability, ESG, and dispute system design.
- Targeted outreach through professional bodies (CIOB, RICS, RIBA, ICE, FIDIC) and government agencies to promote uptake of the roadmap's recommendations in policy and practice.

These dissemination channels will ensure that the roadmap serves as both a scholarly reference and a practical framework for reform.

7.2 Strengthening the W113 Research Network

The next phase of work will focus on consolidating W113 as a global hub for interdisciplinary research on law, technology, and dispute resolution. Building on its established network, the Commission will formalise collaboration through thematic clusters corresponding to the six research themes outlined in Section 4.

Planned initiatives include:

- Regional research nodes in Europe, Asia-Pacific, Africa, and the Americas, each focusing on regional priorities such as digital adjudication, sustainability-linked disputes, and access to justice.
- A W113 Collaborative Research Portal to share case studies, datasets, and methodologies across institutions.

- Periodic CIB W113 Research Symposia hosted in partnership with universities and professional associations, enabling cross-pollination between academic and practice-based communities.
- Development of a “Research-to-Practice Partnership Framework” that links CIB researchers with industry projects, pilot reforms, and policy reviews.

This distributed model of engagement will enable continuous learning, enhance diversity within the network, and ensure the roadmap’s sustained relevance.

7.3 Partnerships with Industry and Policy Stakeholders

Long-term implementation of the roadmap depends on strategic partnerships that bridge academia, industry, and policy. W113 will pursue memoranda of understanding (MoUs) and cooperative frameworks with organisations that can advance its objectives, including:

- International Organisations: UN-Habitat, UNEP, the World Bank, and OECD—to align dispute-resolution reform with global infrastructure governance.
- Industry Partners: FIDIC, BDP, Arup, and major construction contractors to pilot ESG-aligned contract management and digital dispute-resolution tools.
- Professional Institutions: CIOB, RICS, ICE, RIBA, Law Society, and Bar Councils—to embed roadmap principles in accreditation and professional development standards.
- National Governments: Ministries of Justice, Infrastructure, and the Built Environment (UK, Australia, Singapore, and the EU) to integrate findings into construction law reform agendas.

Through these alliances, W113 will support the creation of evidence-based policy and innovation ecosystems that link research outputs directly to regulatory and professional reform.

7.4 Future Research and Funding Opportunities

The roadmap identifies multiple high-impact avenues for future research and funding collaboration. Priority areas include:

- Digital Dispute Systems and AI Governance: Development of interdisciplinary research proposals addressing algorithmic transparency, explainable AI, and human-machine interaction in adjudication.
- Sustainability and Legal Accountability: Projects linking ESG performance metrics to legal remedies, enforcement, and procurement reform.
- Comparative Law and Transnational Governance: Studies mapping the harmonisation of dispute mechanisms across emerging economies and regional trade blocs.

- Empirical Data Infrastructure: Establishment of global databases and analytics platforms through the CIB network to capture dispute frequency, cost, and sustainability outcomes.

These topics align with key funding priorities of agencies such as the UKRI (EPSRC and AHRC), the European Commission's Horizon Europe, and the Australian Research Council (ARC). The roadmap will serve as a foundation for coordinated multi-institutional grant proposals over the 2025–2030 period.

7.5 Monitoring and Review

To maintain accountability and ensure continued relevance, W113 will adopt a Monitoring, Evaluation, and Learning (MEL) framework aligned with CIB's reporting structure.

Key milestones include:

- 2025–2026: Roadmap publication, dissemination, and establishment of regional research nodes.
- 2026–2028: Delivery of the Buildings journal special issue and development of the Global Construction Dispute Observatory (Section 5.4).
- 2028–2030: Evaluation of roadmap implementation, synthesis of outcomes, and preparation of an updated State of Knowledge report for CIB Council review.

Each milestone will include performance indicators on research output, policy engagement, industry uptake, and professional training, ensuring measurable progress toward the roadmap's strategic objectives.

7.6 Legacy and Long-Term Impact

The long-term legacy of this roadmap will be its contribution to the institutionalisation of responsible, sustainable, and data-driven dispute resolution within global construction practice. By integrating legal reform, ESG accountability, digital governance, and professional ethics, the roadmap lays the foundation for:

- More transparent and equitable construction markets;
- Reduction in dispute frequency and associated project costs;
- Stronger ethical governance and institutional trust;
- Enhanced alignment between construction law and global sustainability commitments.

The CIB W113 Working Commission thus aims not merely to reform legal procedures but to transform the culture of conflict management in the built environment—embedding fairness, innovation, and sustainability as central principles of the construction ecosystem.

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