



# CROSS-DISCIPLINARY THINKING FOR TOMORROW'S CITIES

LONDON

RIYADH

TASHKENT

## About us

Cross Works (XW) is an award-winning, cross-disciplinary design and technology practice founded in London, with regional offices in Riyadh and Tashkent. The practice develops innovative, technology-driven solutions to complex challenges across urban and natural environments, combining design excellence with advanced digital expertise to deliver impactful outcomes at every scale. Its multidisciplinary team includes architects, urban designers, city planners, computational designers, GIS specialists, software engineers, web designers and visualisers, working collaboratively across its international studios. Together, they deliver integrated solutions spanning national, regional and city-scale masterplans, mixed-use developments and architectural projects worldwide. Alongside its design consultancy, Cross Works develops bespoke software, digital twins, applications and data-driven tools for clients ranging from private sector consultancies to government agencies and ministries. By combining strategic thinking, technical innovation and creative design, the practice creates intelligent, resilient and future-focused solutions for the built environment.



# Global Approach

Cross Works has established an international presence through projects spanning the UK, Europe, the Middle East, Africa, Central Asia and South Asia, with work delivered across more than a dozen countries and permanent offices in three strategic locations. The London headquarters, based in Camden Town, serves as the practice’s founding office and remains the centre for much of its design, planning and technology expertise. Building on a sustained portfolio of work across the Kingdom of Saudi Arabia and the wider GCC region, Cross Works established its Riyadh office in 2025, strengthening its local presence and client relationships. Following the successful delivery of the New Tashkent Masterplan for the Government of Uzbekistan, alongside several major commissions across the region, Tashkent became the natural hub for the practice’s Central Asian operations. As the first British design practice to establish an office in Uzbekistan, Cross Works continues to expand its regional presence while investing in local talent, reinforcing its long-term commitment to supporting the communities and economies in which it works.



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# CROSSWORKS

## LONDON



## RIYADH



## TASHKENT





## People & Culture

At Cross Works, our culture is shaped by our people, each bringing diverse disciplines, perspectives and experiences to the business. As designers, planners, technologists and problem-solvers, working as one connected team across London, Riyadh and Tashkent, we provide a comprehensive range of services to our clients and collaborators, delivering thoughtful, integrated solutions across every stage of a project. Collaboration sits at the heart of how we work. Ideas are shared openly, curiosity is encouraged, and every project benefits from a blend of creative thinking, technical expertise, genuine care and a healthy dose of future-focused innovation. Our culture is ambitious, supportive and forward-looking, built on trust, adaptability and a shared belief that design and technology can create meaningful, lasting change. In a world where the built environment contributes significantly to global emissions and faces unprecedented challenges in the decades ahead, we are committed to delivering resilient, sustainable and people-centred outcomes that create long-term value for communities and the environment.

## Informed & Responsive

The DNA of Cross Works is founded on the belief that a cross-disciplinary collective of highly skilled, committed individuals, united by a shared vision and inspiring leadership, can be a powerful force for positive change in cities and urban environments around the world.

This philosophy shapes our approach, leading us to focus on projects with the potential to deliver meaningful social, environmental and economic impact. Our international portfolio spans West Africa, the Arabian Peninsula, South Asia, Central Asia along the Silk Road, and the British Isles, reflecting both the breadth of our expertise and the global nature of our practice. Our team is equally international, bringing together professionals from Australia, Colombia, Turkey, the UK, Eritrea, Saudi Arabia and many other countries. This diversity enriches our understanding of cultural contexts, enabling us to deliver strategic planning, architecture and technology solutions that are globally informed, locally responsive and designed to create lasting value.



## Team Leadership

The leadership structure at Cross Works is founded on clarity, collaboration and a shared commitment to excellence. Hakan Agca, Founder and CEO, defines the strategic vision for the practice and provides oversight across projects and operations in all three offices, ensuring a consistent approach to quality, innovation and long-term growth.

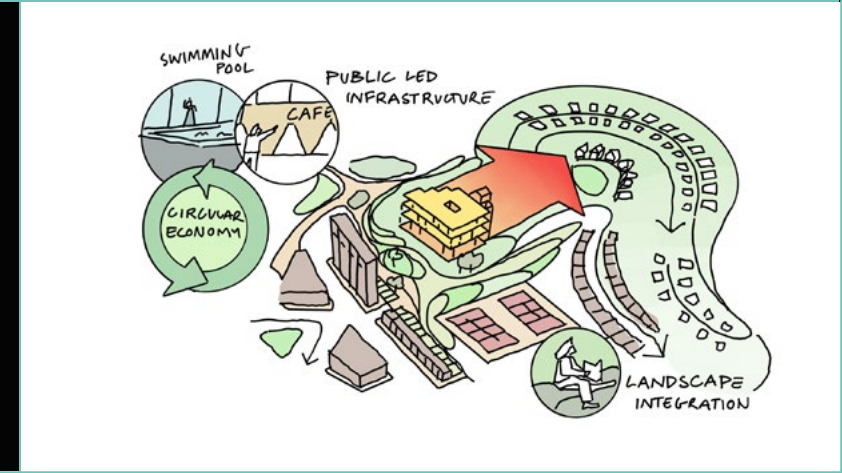
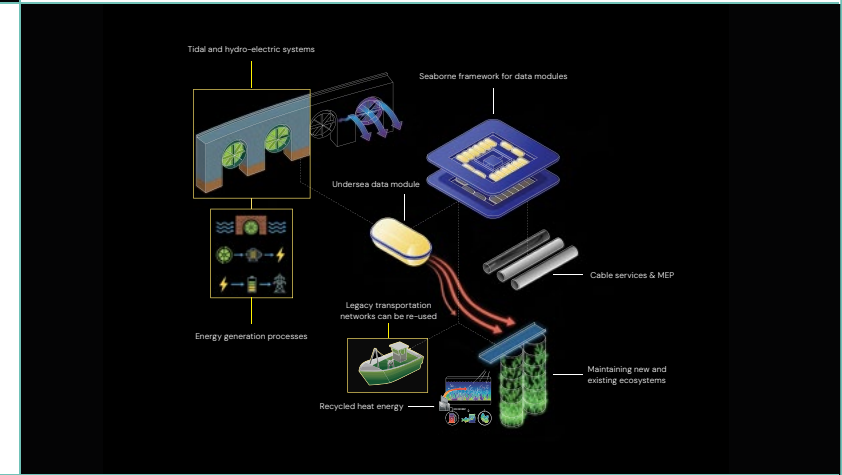
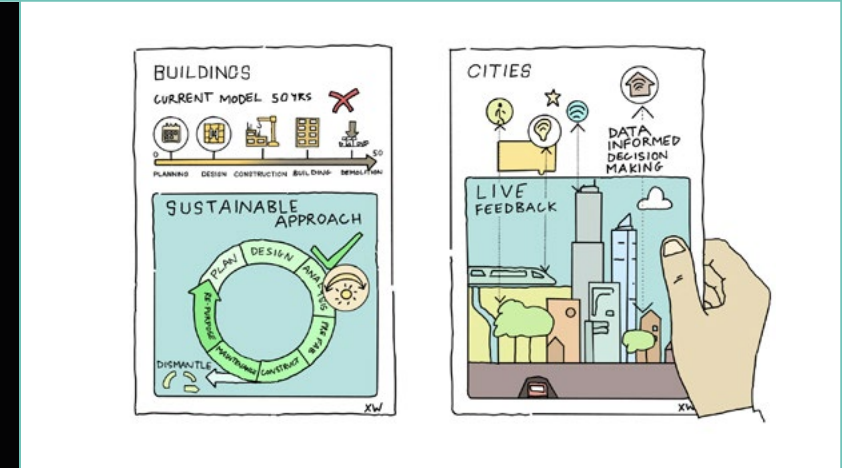
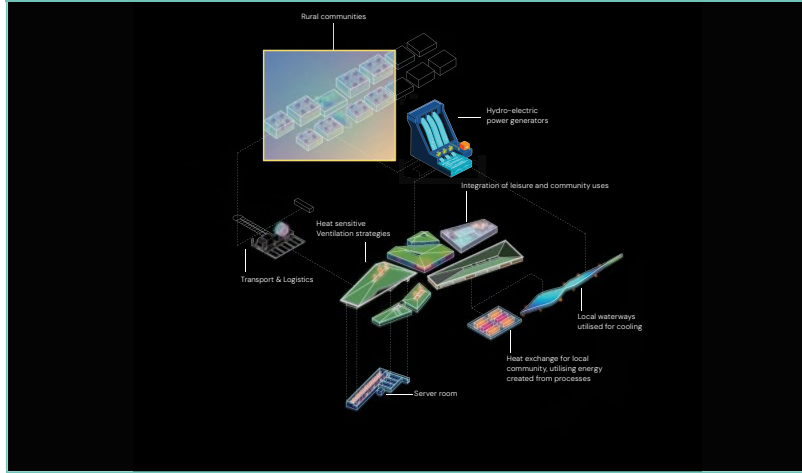
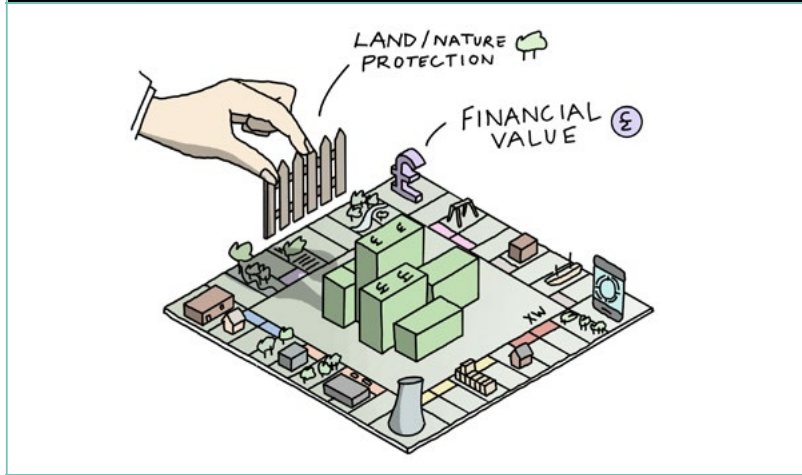
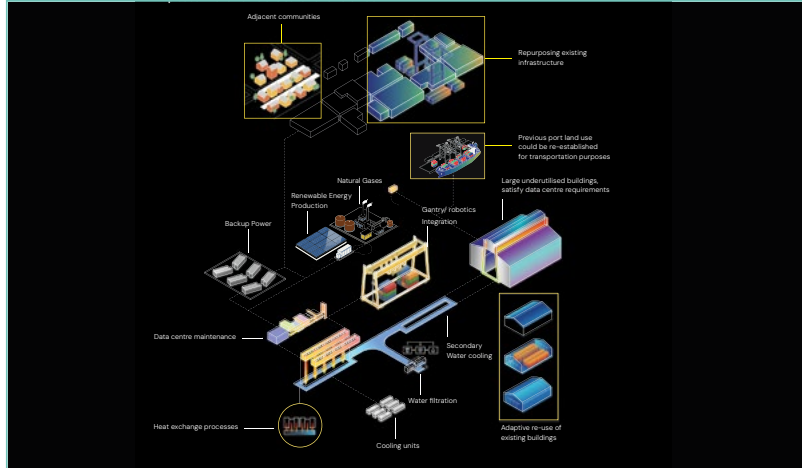
Each studio in London, Riyadh and Tashkent is led by an experienced operational lead responsible for the day-to-day management of the practice, supporting project delivery, team development and operational efficiency. Working closely with the senior team, they foster collaboration across disciplines and locations, ensuring knowledge, expertise and ideas are shared throughout the business. This connected leadership model enables Cross Works to respond effectively to complex global challenges while maintaining the highest standards of design, technical excellence and client service that have come to define every project.

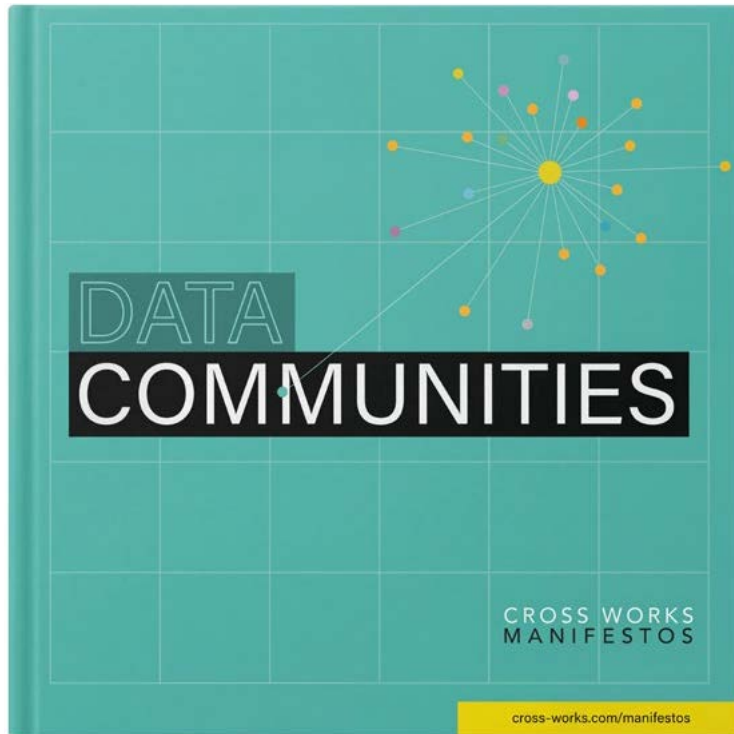


# Thought Leaders

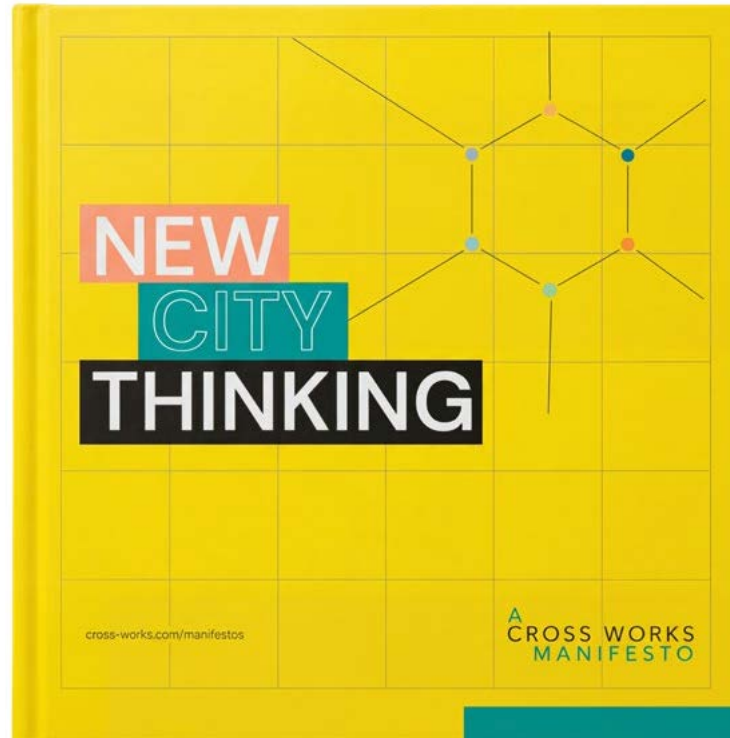
Every quarter, Cross Works publishes a new edition of the Cross Works Manifestos, a thought leadership series that explores the ideas, research and principles shaping the practice. The series provides a platform through which the practice shares its perspective on the future of the built environment, drawing upon ongoing research, emerging technologies and insights gained from delivering projects across diverse regions and sectors. Each manifesto presents a clear position on the evolving challenges facing cities and communities, while highlighting opportunities to create more resilient, sustainable and adaptable places.

Topics range from the integration of digital and data infrastructure within the urban landscape to the transformative impact of digitisation on design processes, as well as new approaches to strategic masterplanning at metropolitan scale. While each publication explores a distinct theme, they are united by a shared ambition to challenge convention, stimulate discussion and contribute to a more thoughtful, innovative and sustainable future for cities.

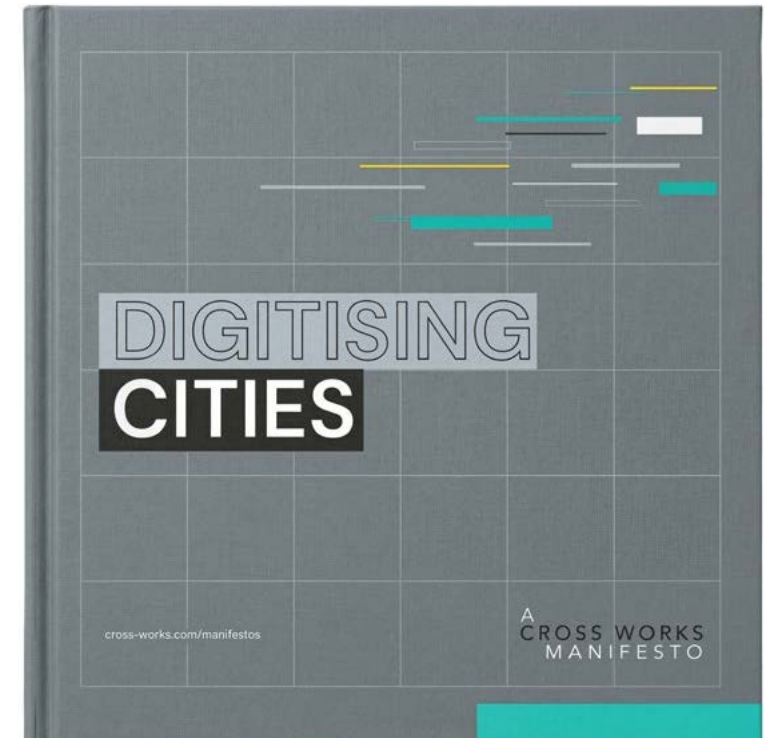




As artificial intelligence transforms society, the infrastructure behind it is reshaping cities and landscapes. This manifesto explores the role of data centres, their impact on the built and natural environment, and the importance of integrating them through thoughtful planning and design as essential components of resilient, future-ready cities.



The confidence that shaped Britain's postwar new towns, must now be updated for climate transition, demographic change, and economic transformation. This Manifesto argues that large-scale strategic planning, supported by long term, top-down vision and policy that focusses on future-proofing is crucial in order to build well at scale.



For the first time, the tools shaping our cities can model the long-term consequences of decisions before they are built. And yet, the physical outcomes of contemporary development often feel thinner, shorter-lived, and less generous than those built centuries ago. Can we better leverage these tools to help us make smarter decisions and create more liveable cities?



## Clients & Collaborators

An international network of clients, partners and collaborators of the highest calibre is central to how Cross Works delivers projects around the world. Spanning public sector organisations, private developers, government agencies, and leading design, engineering and consultancy practices, these relationships reflect the breadth and diversity of the firm's global portfolio. By bringing together a broad range of expertise, perspectives and disciplines, the practice develops integrated solutions to complex urban challenges. Open communication, shared knowledge and mutual trust enable ideas to be explored from multiple viewpoints, resulting in innovative, contextually responsive and technically robust outcomes.

These valuable partnerships allow Cross Works to operate confidently across sectors, scales and geographies, delivering sustainable, forward-thinking solutions that create meaningful value for clients, communities and the built environment.

Cross Works is equally comfortable acting as lead consultant or in a sub-consultancy role. Whether leading or supporting projects, the practice is committed to generating new ideas, driving innovation and delivering high-quality outcomes, while building long-term relationships with clients, partners and collaborators.

CLIENTS



WOODS BAGOT

GRIMSHAW

DOME+PARTNERS

Auran

SELECTED COLLABORATORS

Gillespies



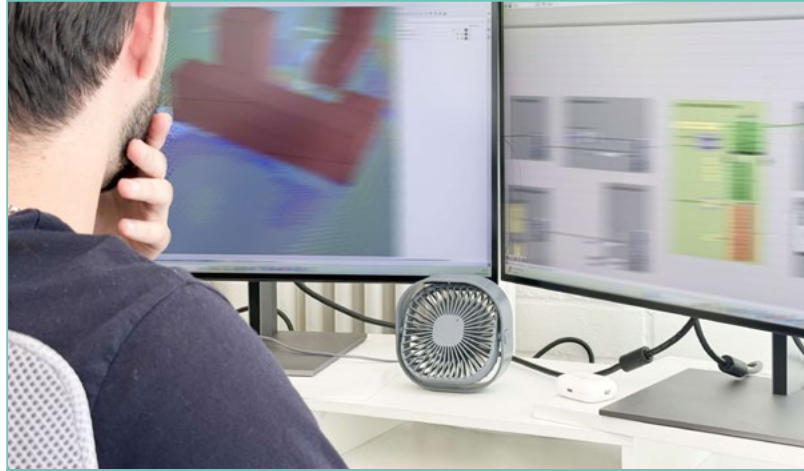
LAVA



LJ-Group

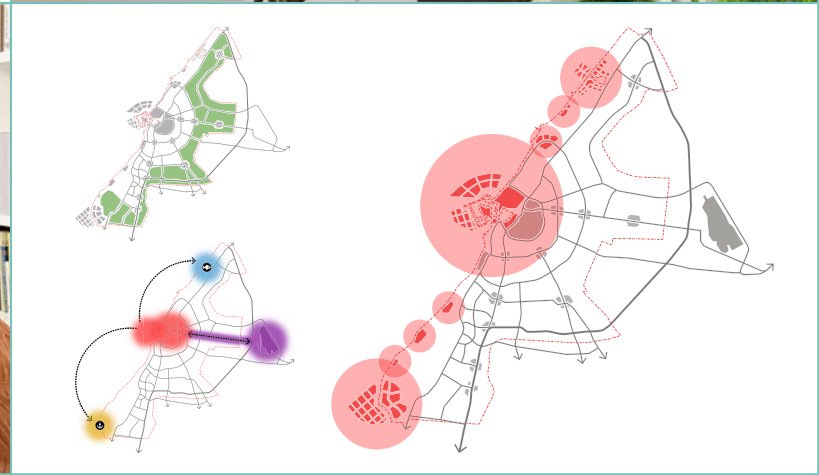
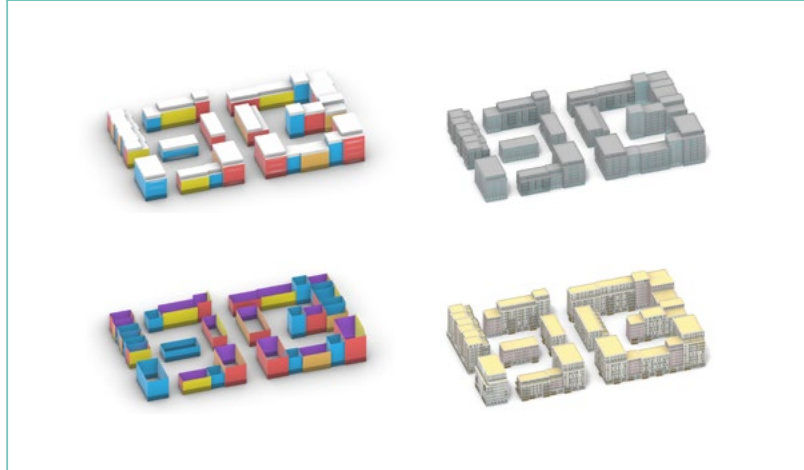
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## Cross-Disciplinary Approach

Collaboration, creativity and conscientiousness are at the heart of Cross Works. The practice works closely with clients, consultants and stakeholders to deliver thoughtful, efficient and value-driven design solutions tailored to each project's ambitions. Its cross-disciplinary collective brings together expertise from across the built environment, combining technical knowledge, creative thinking and the latest digital technologies to develop innovative, evidence-based outcomes. Every project begins with a clear understanding of the client's vision, ensuring each solution is functional, distinctive and responsive to its context rather than shaped by assumptions or preconceived styles. With experience spanning more than 25 countries and active projects across the UK, Europe, Africa, South Asia, Central Asia and the Middle East, Cross Works delivers a multitude of inter-related design and technology services that provide clients with a 'one-stop-shop' for large-scale & mega-scale projects. This international insight, combined with a strong understanding of local context, enables the practice to create resilient, enduring places that positively shape the communities they serve.



## Awards

Cross Works has been recognised by leading international architecture and design awards, reflecting the ambition, quality, and impact of its work across disciplines and geographies. These accolades highlight the strength of the practice's ideas, the rigour of its design process, and the collaborative expertise behind every project. More than measures of success, they represent the trust placed in Cross Works by clients, partners, and collaborators, while reinforcing the practice's commitment to thoughtful, future-focused design that responds to the evolving needs of cities and communities. Each recognition reflects an approach that balances innovation with practicality, creating places that are meaningful, resilient, and enduring. Most recently, the New Tashkent Masterplan was shortlisted as a finalist at the World Architecture Festival (WAF) Awards, recognised among the world's top ten masterplans of the year, and was also named winner of its category at the World Architecture News Awards, further demonstrating Cross Works' leadership in large-scale urban design and masterplanning.





## Projects Summary

The firm currently operates across three continents – Europe, Asia and Africa – with offices focussing on each region; and works with both private and public sector clients. This page provides a snapshot of a small selection of projects the firm has either led or supported on. One of the firm's greatest achievements includes winning the 2023 international competition for the New Tashkent Masterplan – a new capital city which was judged by the President of Uzbekistan – which remains one of the firm's largest ongoing projects, and is currently under construction. Cross Works has also been the masterplanner on a number of high profile mega-projects across the Kingdom of Saudi Arabia (albeit some are under strict NDA's), working under other large consultancies and providing them with specialist design and technology services. The firm has also developed software and apps for governments and large mega-developers to assist in their processes of managing masterplans, creating nation-wide addressing systems, building digital twins and portals for large stakeholder teams, as well as Cross Works own IP development with proprietary apps like In-Tent, Off-Grid, Up-Date, In-Synq and more.



# OUR SERVICES

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# Architecture & Urban Design

As chartered architects in the UK and qualified in many others (with locally qualified individuals in Riyadh and Tashkent), the firm is fortunate to have an international cohort of designers to tackle building projects across a variety of typologies in numerous geographies.

From single-dwelling residential projects to mixed-use commercial developments, through to design codes for entirely new towns and cities; Cross Works has had the privilege of writing the architectural design guidelines for the new capital for the government of Uzbekistan, whilst at simultaneously designing an exhibition centre on the Congo River.

The practice is uniquely experienced in the design and curation of plots, city blocks and urban quarters; whether located in an existing context or on an empty greenfield plot. Urban design is a core service and speciality of the business; having delivered projects successfully on infill plots, ex-industrial brownfield sites, urban regeneration areas, city extensions; and around heritage sites with sensitive historical assets or key transport and infrastructure hubs.



# City & Regional Masterplanning

Cross Works has had the privilege of leading a variety city-wide and regional masterplanning projects around the world from the New Tashkent Masterplan in Uzbekistan, to New Kharkhorum in Mongolia and New Benghazi in Libya; all new city developments with populations in excess of 1 million people. On these projects, Cross Works acted as lead consultant and masterplanner, overseeing a consortium of consultants and specialists, all working towards a common goal, on behalf of a government entity.

The firm has also been involved in large scaled urban development projects like NEOM & the New Murabba in the Kingdom of Saudi Arabia as well as bids, competitions and speculative visions for sites like the Nursultan Masterplan in Kazakhstan, and the Al Quoz Masterplan in Dubai, UAE, amongst many others. On these named projects Cross Works performed large-scale masterplanning and visualisation services as a sub-consultant under other international engineering / infrastructure-led agencies, providing innovative approaches and technical knowledge within the context of broader multi-disciplinary design teams.



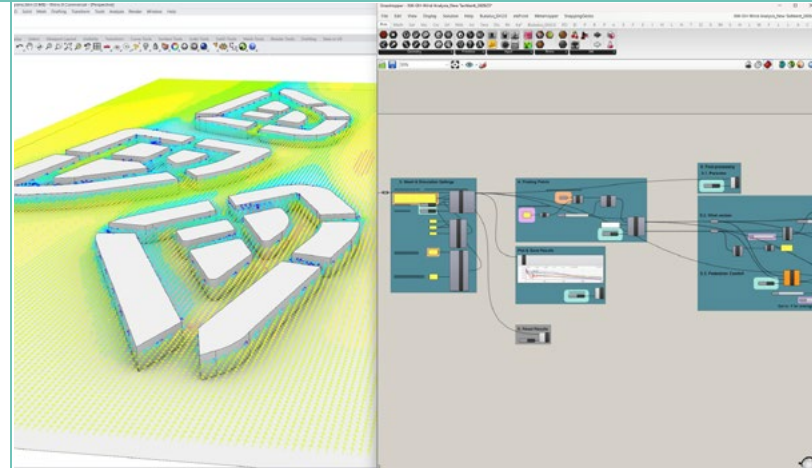
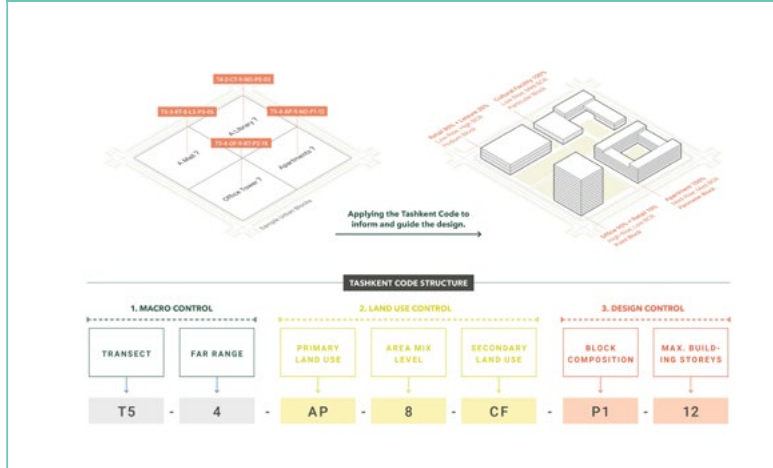
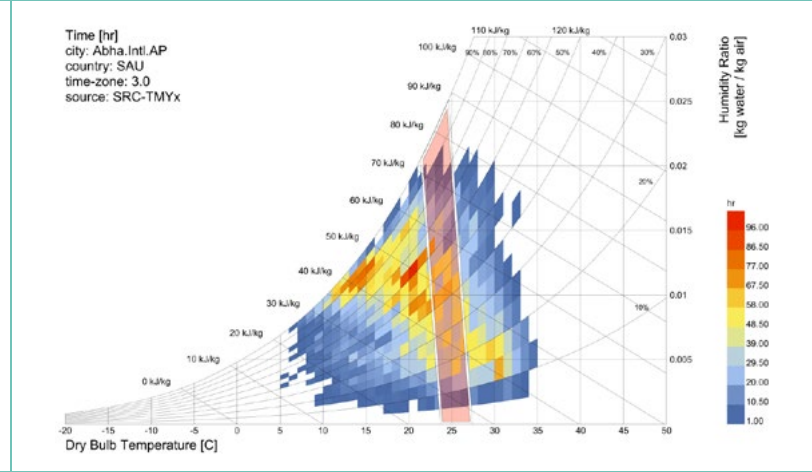
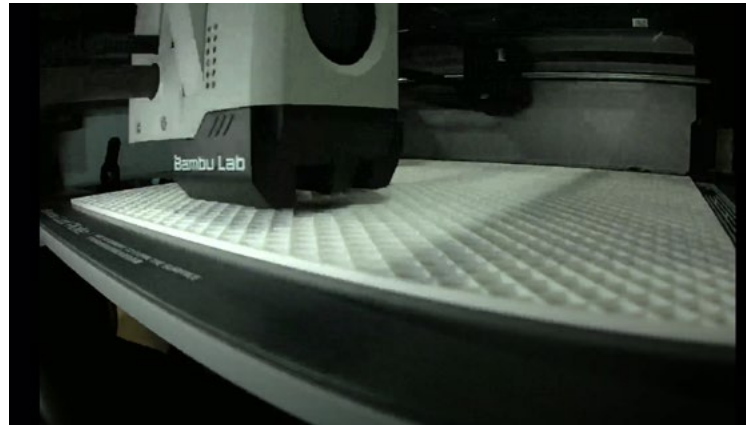


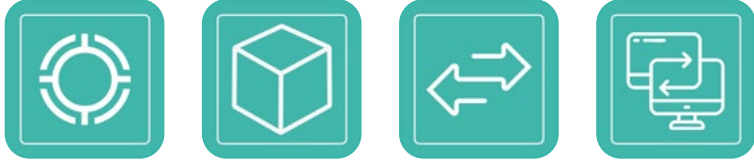
# Computational Design/Technology

Cross Works combines expertise in computational design, GIS and digital technology to deliver advanced spatial analysis, cartography and digital design services. From detailed 2D and 3D mapping to data-rich digital twins, the practice integrates urban design and masterplanning strategies with intelligent digital workflows to support informed decision-making at every stage of a project. Innovation is central to the practice's approach.

Alongside developing bespoke workflows within industry-leading software, Cross Works designs and prototypes custom digital tools for governments, developers and institutions, supporting everything from masterplan management to stakeholder and community engagement.

The practice also delivers immersive AR and VR experiences, enabling clients to explore and understand proposals before construction begins. Complementing these services are high-quality visualisation, animation, motion graphics, digital interfaces and website design, providing clear, engaging communication tools that bring complex ideas to life for clients, stakeholders and wider audiences.





# Software Engineering & Proprietary Apps

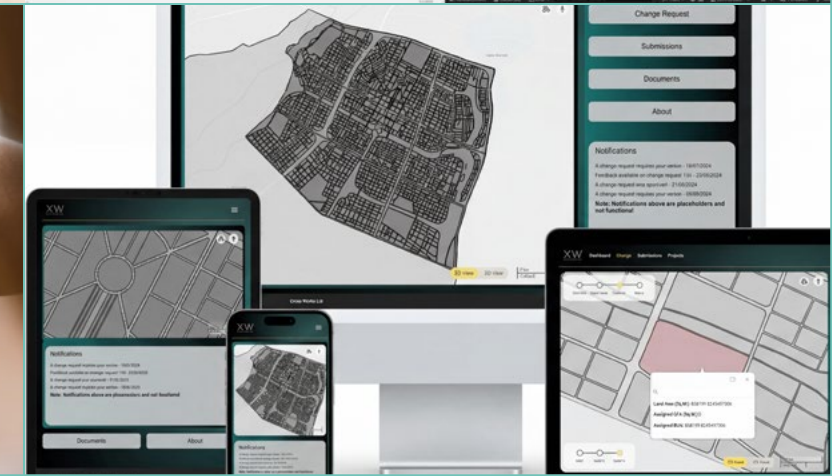
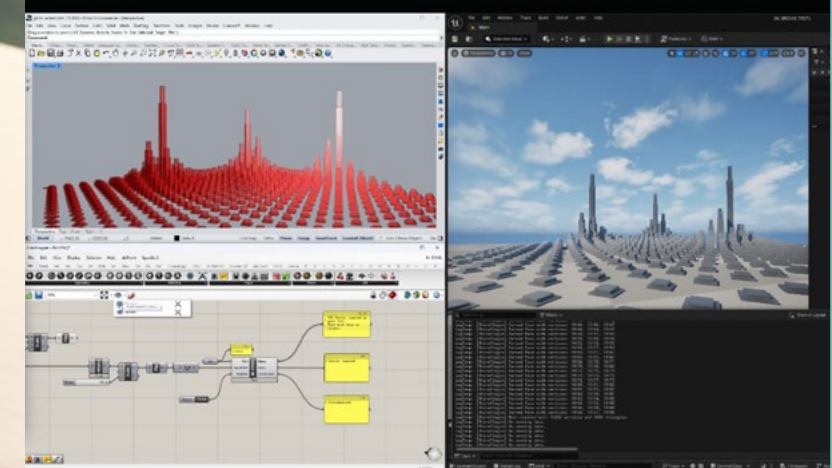
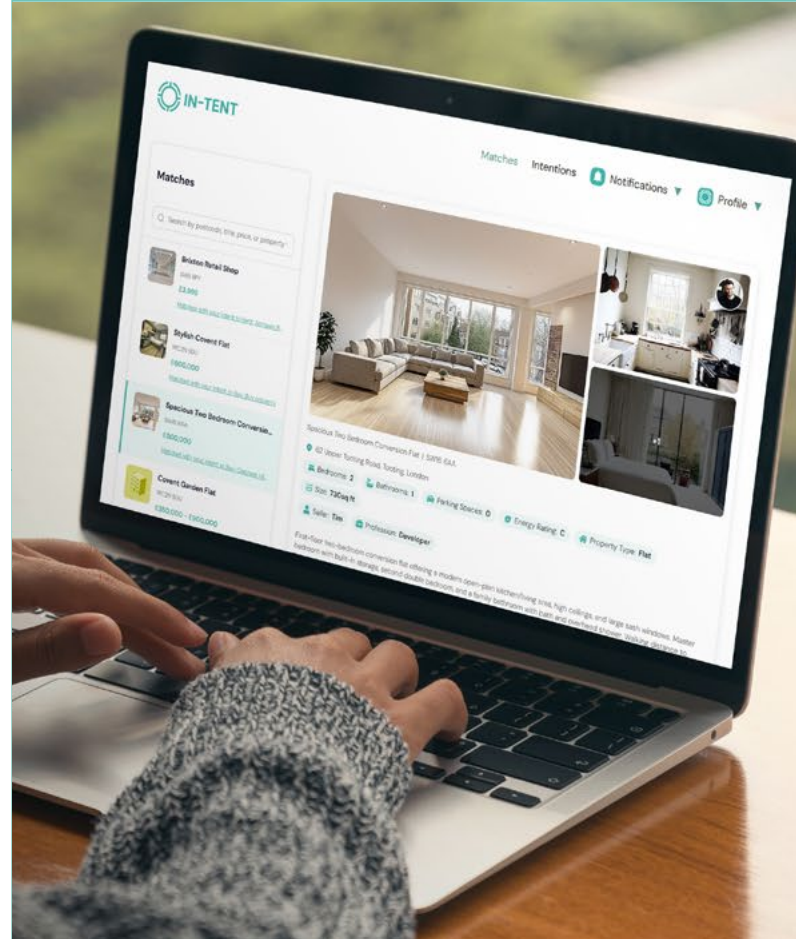
Cross Works has developed a growing portfolio of proprietary applications, each created to solve practical challenges encountered on live projects or through client-funded commissions. The company identifies recurring issues in planning, design and project delivery, developing digital tools that improve efficiency, collaboration and decision-making.

Up-Date streamlines change management across masterplanning and AEC projects, integrating with ArcGIS to manage approvals and track land-use, boundary and infrastructure changes in real time.

In-Synq, the company's open-source bridge between Rhino/Grasshopper and Unreal Engine, keeps parametric models synchronised without repetitive exporting.

Off-Grid combines offline mapping with augmented reality, enabling field teams to explore masterplans and 3D models without network connectivity.

In-Tent reimagines property transactions through geolocated buyer and seller intentions and is available on the App Store and Google Play in the UK and Saudi Arabia. Every application is developed, refined and validated through real-world deployment. Cross Works also provides brand strategy, logos and identity design and bespoke websites.

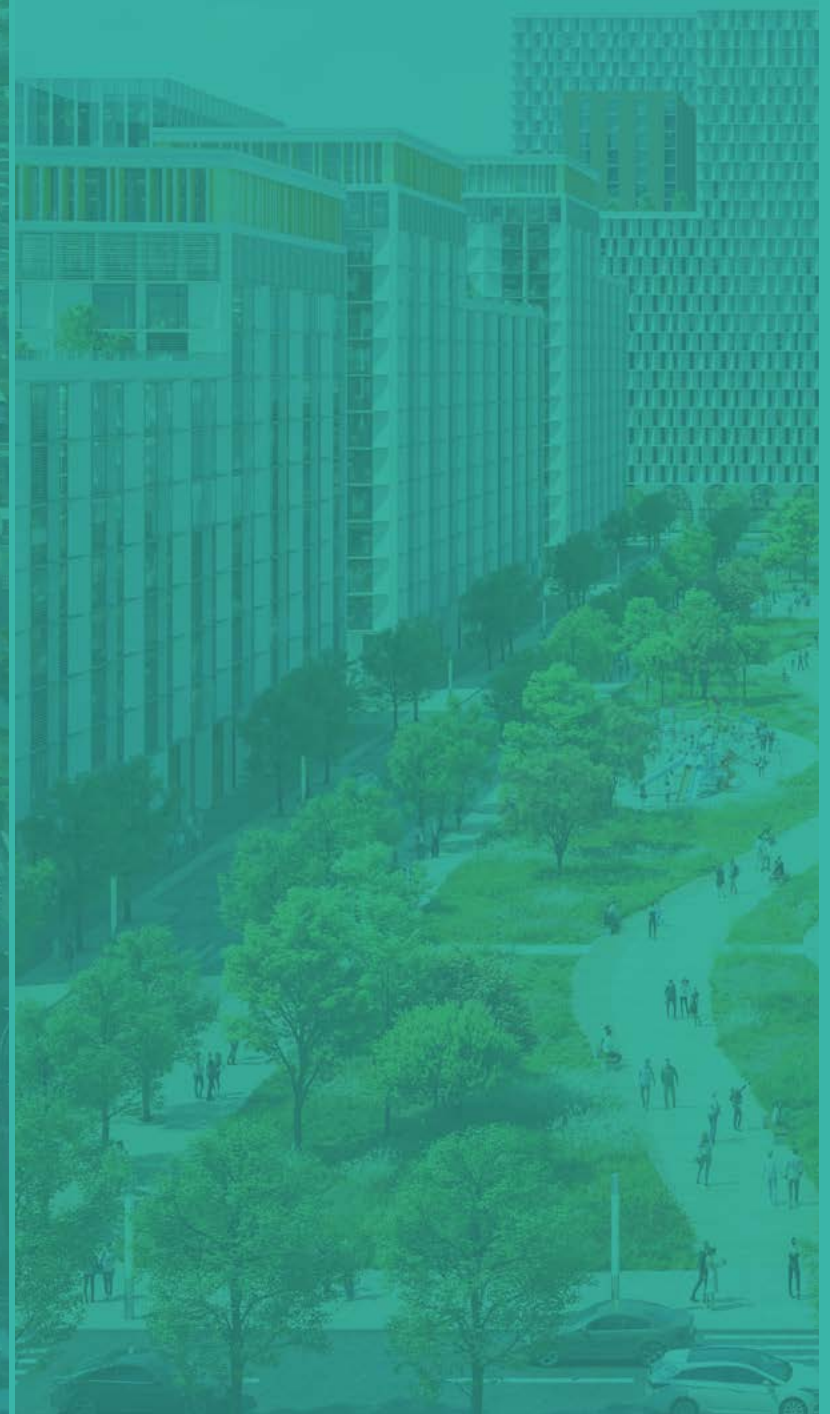




XW  
CROSS WORKS



DESIGN



# New Tashkent Concept Masterplan

## Tashkent, Uzbekistan

The New Tashkent Concept Masterplan established the strategic vision, spatial framework and for a new national capital city located immediately east of Uzbekistan's existing capital. Planned to accommodate approximately two million people across a site of around 20,000 hectares, the project represents one of the most ambitious new city initiatives under development worldwide. Cross Works led the masterplan from early visioning through to concept masterplanning - defining the urban structure, district hierarchy, infrastructure strategy, landscape framework and movement network required to support long-term managed growth. The proposal was conceived as a contemporary urban extension - relieving pressure on the existing capital while setting a benchmark for resilient, connected and liveable city-making in the region. Through close cross-disciplinary collaboration from the outset, the masterplan provided a clear foundation for future districts, investment decisions and infrastructure delivery.



NEW TASHKENT MASTERPLAN

# New Tashkent District 1 Masterplan

## Tashkent, Uzbekistan

The New Tashkent District 1 Masterplan translated the city-wide vision for New Tashkent into a focused concept framework for one of its key early districts. Cross Works was commissioned to further define District 1's role, character and development potential within the emerging urban structure. The work built directly on the strategic principles established at city scale, while exploring land use, development typologies, mobility, public realm and infrastructure integration in greater detail. The District 1 Masterplan set out a robust yet flexible masterplan framework capable of guiding future design, investment and implementation for this landmark 6,000ha district within New Tashkent. It considered how District 1 could establish a distinct identity while integrating with adjacent districts, and city-wide transport systems and accommodating an eventual population of 60,000 residents. The result was a coherent planning structure that balanced local character with the long-term growth ambitions of New Tashkent.





NEW TASHKENT MASTERPLAN - DISTRICT 1

# New Kharkhorum City Masterplan

## Mongolia

The New Kharkhorum City Masterplan established a strategic concept framework for the development of a new capital city for Mongolia. Cross Works was commissioned to prepare an adaptable masterplan across a site of approximately 32,167 hectares, planned to support an eventual population of around 1.5 million people. The proposal was shaped by the need to accommodate Mongolia's existing nomadic population whilst preparing for long-term urban growth and demographic change. Rather than imposing a fixed city model, Cross Works proposed a modular planning approach that could be expanded, adjusted and refined over time. The framework integrated movement, land use, infrastructure, landscape within a flexible urban structure designed for resilience and phased implementation. By combining adaptability with clear spatial principles, the masterplan provided a long-term platform for a future capital capable of responding to cultural, environmental and economic change.





NEW KHARKHORUM CITY MASTERPLAN

# Al Quoz Masterplan

Dubai, UAE

The Al Quoz Masterplan positioned a 2,000-hectare site in the heart of Dubai as a future-facing urban district with a target GFA of 33.9 million square metres. Cross Works served as lead masterplanner and urban designer on behalf of Al Wasl, developing a framework for one of the city's most strategic locations, positioned between Dubai's Financial District and its Tourism and Entertainment hubs. The masterplan was driven by the ambition to create a "City Lab for New Ideas", supporting Dubai's continued economic diversification and demonstrating a contemporary model of integrated urban living. The proposal brought together live, work and play environments around the "Green Thread", a continuous car-free landscape spine running through the site. This central axis incorporated retail, F&B, entertainment and active and passive recreation, creating a cohesive urban environment where innovation, community life, public realm quality and wellbeing converge.



# Barka Souq Masterplan

## Barka, Oman

The Barka Souq Masterplan established a concept masterplan and urban design framework for a strategically located 8.5-hectare site within Barka, a rapidly growing coastal city in Oman. Cross Works developed a proposal that strengthened the relationship between heritage, commerce and public life, with the historic fortress forming the cultural anchor of the site. The masterplan integrated new retail, F&B and hospitality uses while restoring and enhancing the existing souq as a key civic and commercial destination. The design celebrated Barka Fort and other heritage assets within the project area, ensuring that new development reinforced the site's historic character. At the same time, the framework promoted a more vibrant coastal lifestyle zone aligned with the ambitions of the Greater Muscat Structural Plan. The result was a balanced approach that combined cultural preservation, economic activation, public realm enhancement and long-term urban regeneration.





**BARKA SOUQ MASTERPLAN**

# Poro Lagoon Masterplan

## Albania

The Poro Lagoon Masterplan was developed as a concept masterplan and urban design framework for a strategically positioned waterfront site within coastal Albania, with the ambition of strengthening the relationship between development, Poro Lagoon's unique natural landscapes and the Adriatic Sea. Cross Works' role focused on establishing a clear masterplan structure capable of supporting new public realm, leisure, hospitality and mixed-use activity while enhancing the site's identity as an emerging coastal destination. Particular emphasis was placed on balancing development opportunity with environmental sensitivity, by integrating new neighbourhoods, hospitality assets and leisure destinations within a network of nature reserves and parklands.



# Nursultan Grand Mosque Masterplan

## Uzbekistan

The Nursultan Grand Mosque Masterplan established a mixed-use, residential-led masterplan framework around one of Kazakhstan's most significant religious landmarks. Located to the south of the capital, between Nursultan Airport and the city, the approximately 270-hectare site occupied a strategic position adjacent to the Nursultan Expo area. Cross Works developed a masterplan that organised residential neighbourhoods, community facilities, open space and supporting uses around the new mosque, the largest in Central Asia. The proposal introduced a varied mix of residential units, supported by a landscape strategy structured through canals, waterside promenades and connected public spaces. The masterplan was conceived as a self-sufficient district, capable of combining everyday liveability with a strong civic and spiritual setting, the project also reinforced the mosque's role as both landmark and neighbourhood anchor.



# Tashkent Downtown Masterplan

## Uzbekistan

The Tashkent Downtown Masterplan proposed the regeneration of a brownfield, former industrial site in central Tashkent, Cross Works developed a mixed-use urban framework across a 20-hectare site, providing approximately 325,000 sqm of floor space and supporting an estimated residential population of around 10,000 people. The proposal introduced a diverse mix of residential typologies, commercial uses, community facilities, green spaces, expanded public realm and cultural activity, supported by both active and public transport connections. The masterplan was organised into a series of branded sub-districts, including Eastern Mews, Central Park East, Central Park West, Canalside Heights, Community Quarter and The Boulevard. Each of these sub-districts supported the phasing strategy while responding to its own land-use mix, experiential offer and residential profile.



# Andijan Masterplan

## Uzbekistan

The Andijan Masterplan established a 1,000-hectare masterplan framework on the outskirts of Andijan, Uzbekistan's easternmost city. Cross Works developed the masterplan to accommodate approximately 3.5 million sqm of floor space, supporting a projected residential population of 142,000 people alongside employees, visitors and supporting transient users. The proposal distributed residential, commercial, cultural and community uses through a carefully structured neighbourhood plan, with each neighbourhood organised around a neighbourhood "civic heart". The design process placed strong emphasis on understanding the site's complex topography, natural landscape and waterways. Working closely with engineers, Cross Works considered transport infrastructure in a way that both protected environmental assets and supported long-term development viability, creating a coordinated framework for sustainable expansion.



# Almaty Masterplan

## Kazakhstan

The Almaty Masterplan set out a mixed-use masterplan for a 50-hectare brownfield site in central Almaty, Kazakhstan's largest city. Cross Works was commissioned to design a masterplan that could knit seamlessly into the existing urban fabric while responding to local authority policies, planning controls and regulatory requirements. The brief called for approximately two million sqm of mixed-use floor space, requiring a careful balance between density and liveability. The proposal combined a variety of residential typologies with community facilities, social infrastructure, commercial uses, cultural buildings and a strong landscape strategy. The open space and public realm network were designed to connect with Almaty's existing green spaces, unlocking the latent value of the industrial enclave and transforming it into a more attractive, connected and liveable district.



# New Tashkent Architectural Guidelines

## Uzbekistan

The New Tashkent Architectural Guidelines continued Cross Works' involvement in shaping New Tashkent by translating masterplan principles into clear design guidance at plot and building scale. Cross Works was appointed to prepare urban design and architectural guidelines for local authority decision-makers, architects and developers, ensuring that future proposals could support the coherence and continuity of the wider masterplan. The guidance addressed building materiality, articulation, massing, street frontage activation, facade rhythm, roofline treatment and the relationship between individual plots and the public realm. Particular attention was given to ensuring that architectural variety could be achieved within a controlled and legible urban framework. The resulting 300-page guide-lines document established a practical reference for assessing design quality, coordinating development and maintaining the intended character of New Tashkent as the city evolves.



# Baobab Mall

## Kinshasa, DRC

Baobab Mall formed part of the wider Baobab Complex in Kinshasa, Democratic Republic of the Congo. Cross Works was commissioned to design the mixed-use complex from pre-concept through to schematic design, delivering the work in BIM and coordinating with an on-site executive architect to ensure constructability within the local supply chain. The approximately 85,000 sqm development combined retail, office and residential uses, creating a first-of-its-kind destination for the capital. The design objective was to establish a safe, secure, shaded and genuinely mixed-use environment that integrated local landscape character and prioritised the use of locally sourced materials where possible. The concept centred on the reintroduction of the Baobab tree, specifically *Adansonia digitata*, as a cultural and environmental motif, informing the branding of Baobab Mall, Baobab Workspaces and Baobab Residences.



# Immorse Pavilion

Lubumbashi, DRC

The Immorse Pavilion was developed as a compact sales pavilion in Lubumbashi, Democratic Republic of the Congo, supporting visitor engagement and prospective buyer enquiries on site. Cross Works led the project from pre-concept through to schematic design, shaping a functional and visually coherent environment for reception, display, meetings and essential back-of-house support. The scope included briefing support, site and context analysis, massing and layout testing, circulation studies and the development of a clear functional plan. Climate-responsive principles, structural logic and indicative servicing strategies were considered from the outset to support buildability, comfort and operational efficiency. At schematic level, Cross Works produced coordinated plans, sections and elevations, alongside an outline envelope strategy, façade approach and indicative material and landscape intent – providing a basis for early cost planning and local authority submissions.



# Trehan Iris Broadway Greno West

Delhi, India

Trehan Iris Broadway Greno West was developed as a 700,000 sq ft mixed-use scheme in Noida Extension, east of Delhi. Cross Works led the full schematic design stage, covering architectural design development, interior design and landscape design through to submission to the local government. The development was conceived as a benchmark destination and landmark, combining a hotel tower, office tower and seven-level podium containing retail, F&B, entertainment, a cinema and banquet hall. The scheme also incorporated rooftop gardens, pools and an iconic central atrium, creating a layered urban destination with strong public and commercial appeal. The project was delivered as a collaborative BIM process, integrating architecture, structure, MEP and landscape design to translate design intent into locally viable construction information. It established a coordinated basis for approvals, construction documentation and further detailed design stages.



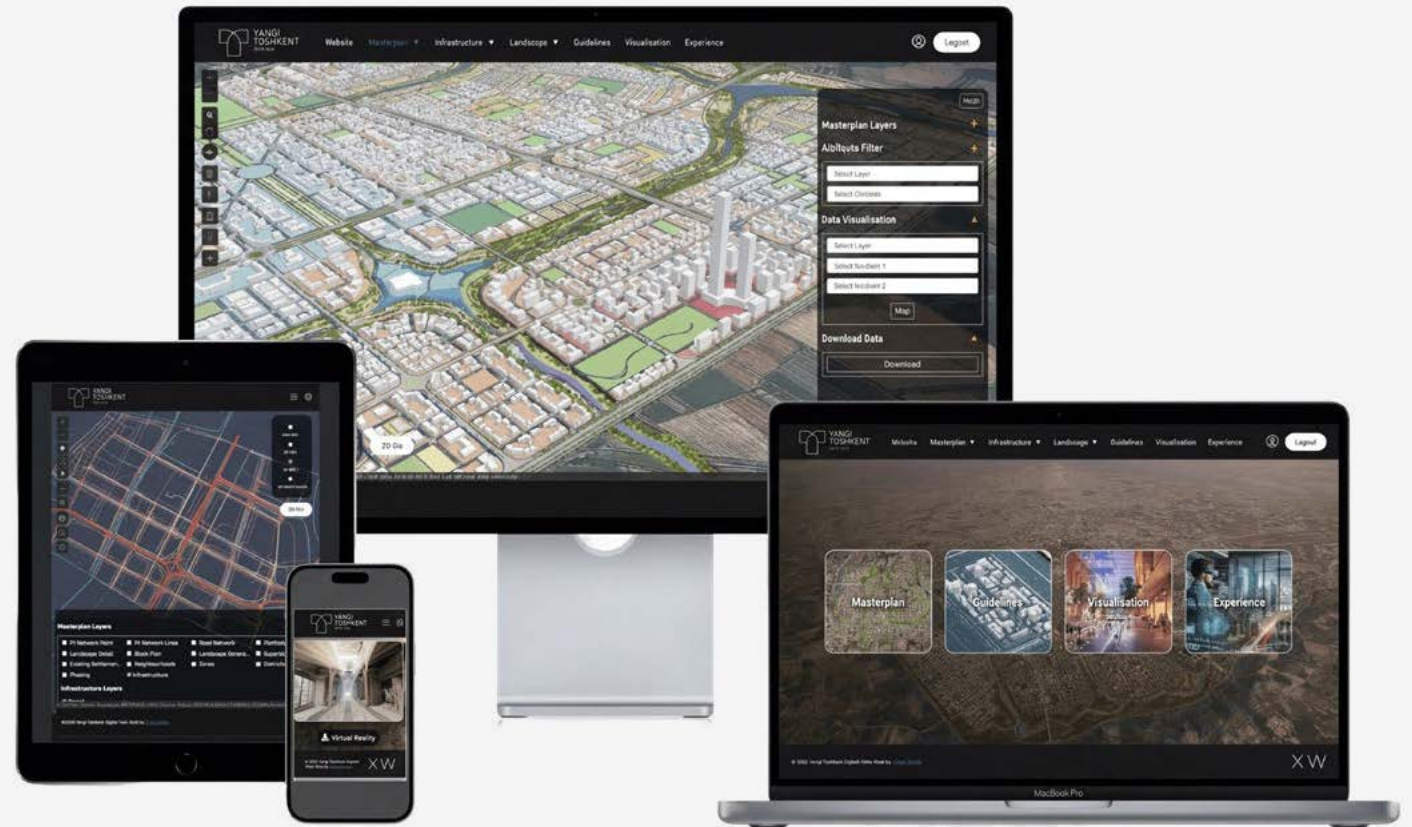


# TECHNOLOGY

# New Tashkent Digital Twin

## Digital Twin

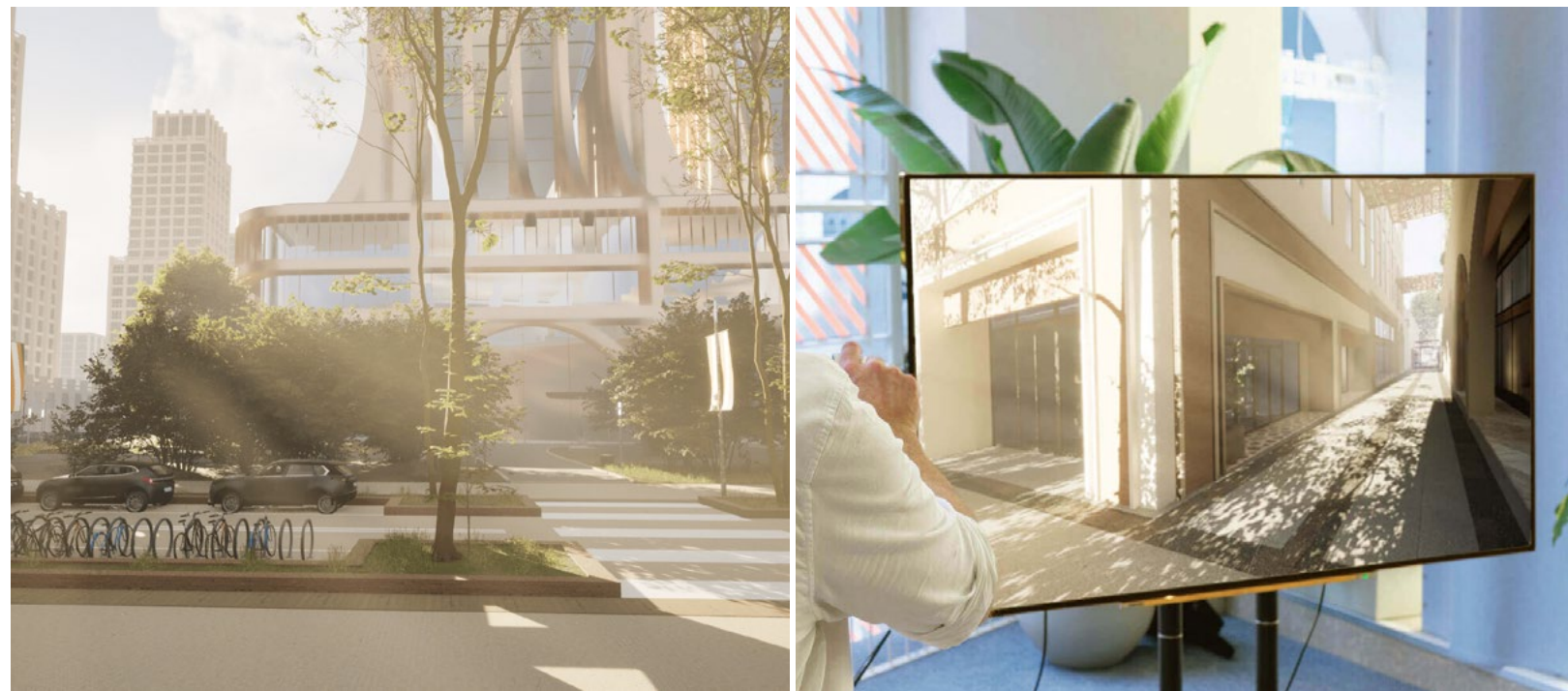
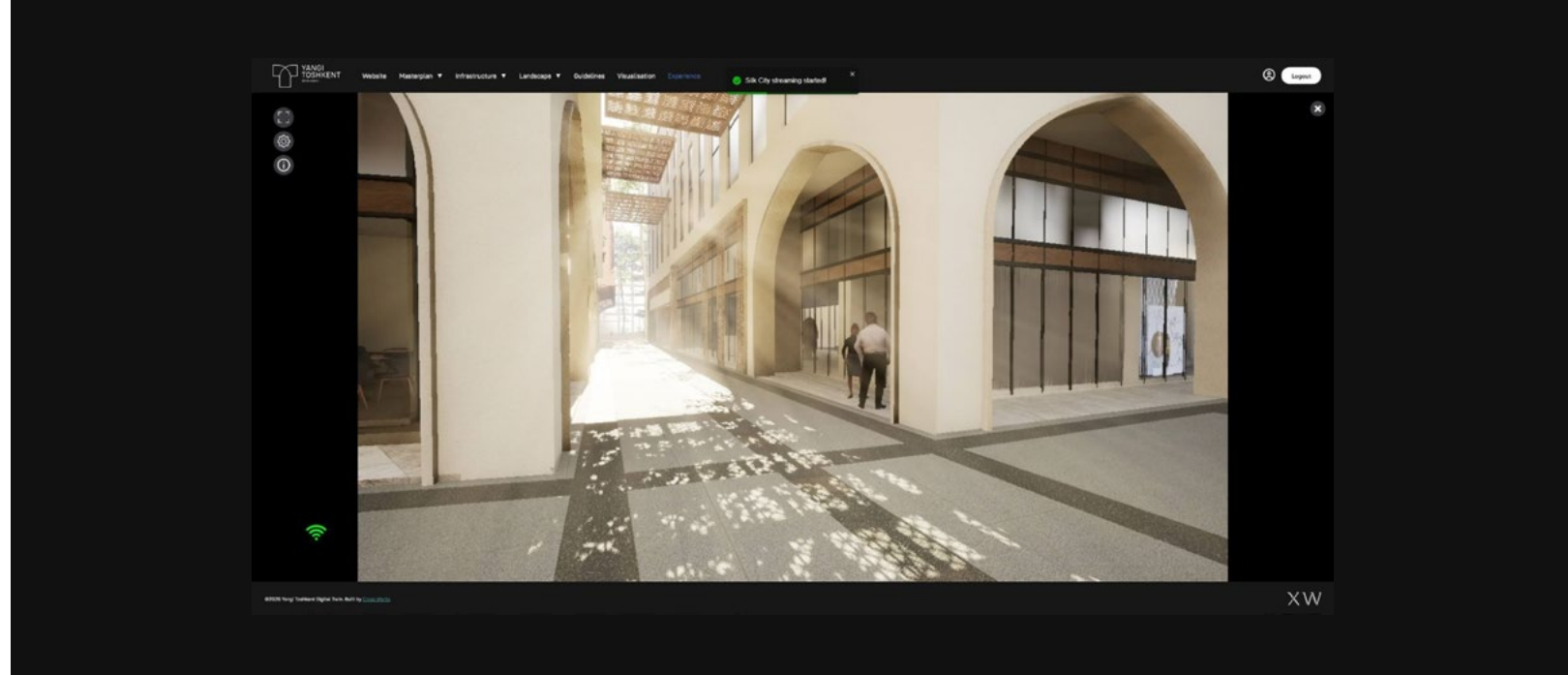
The New Tashkent Digital Twin is a geospatial and interactive visualisation platform designed to communicate the planning, design and future vision of the new city. Cross Works developed the platform to integrate multiple stages of the masterplan, from early concepts through to detailed proposals, infrastructure, landscape and urban design guidelines, creating a comprehensive multi-layered experience for stakeholders and public audiences. The platform includes 2D and in-app 3D map views, responsive layouts for desktops, tablets and phones, timeline playback, layer filters, model uploads and basic charting tools. It also supports deeper GIS and BIM integration, enabling advanced filtering, analytics and access to online 3D environments through pixel streaming. Fully connected to the city's GIS portal, the twin allows non-sensitive layers to be shared publicly, helping citizens engage with the development of New Tashkent in a more transparent and accessible way.



# New Tashkent Immersive Experience

## Unreal Engine Online Interactive Environments

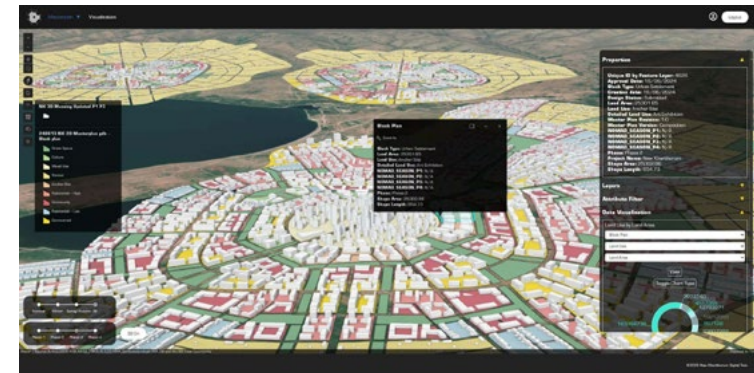
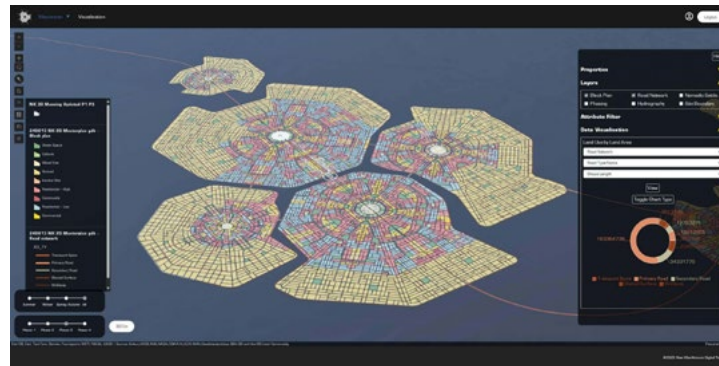
The New Tashkent Immersive Experience was developed as part of the District 1 Detailed Masterplan, providing an interactive way to explore the future city through high-fidelity digital environments. Cross Works created three distinct Unreal Engine environments, available for desktop and VR, broadening accessibility by allowing users to experience the environments without relying on high-end hardware. Beyond conventional 3D visualisation, the experience enables real-time navigation through proposed districts, infrastructure, landscapes and public spaces. Integrated with the New Tashkent Digital Twin, the platform connects immersive visualisation with live geospatial data, allowing planning information to be explored dynamically. By combining real-world datasets with interactive spatial storytelling, the experience transformed the masterplan into a more engaging, accessible and communicative tool for decision-makers, stakeholders and the public.



# New Kharkhorum Digital Twin

## Digital Twin

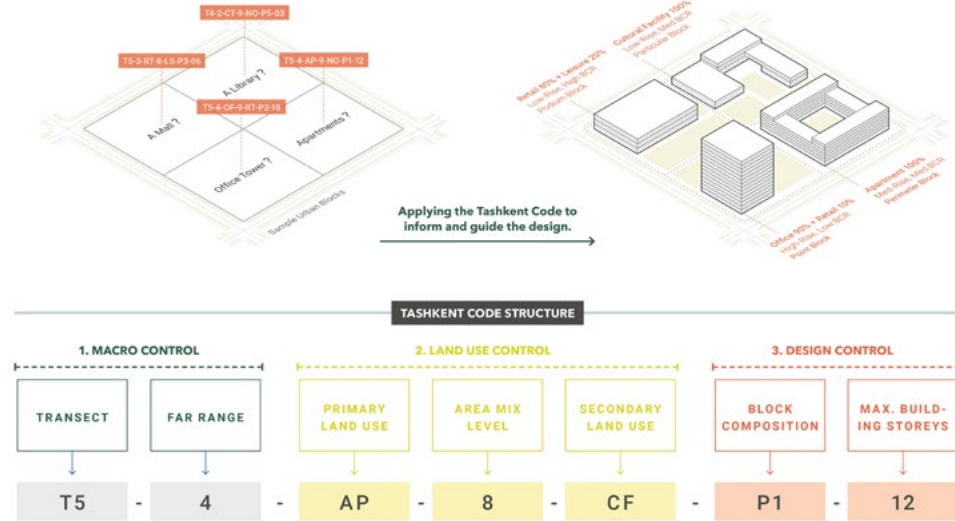
The New Kharkhorum Digital Twin is an advanced geospatial platform designed to visualise the city's masterplan in both 2D and 3D. Built within a custom GIS portal, the platform enables users to explore the proposed urban framework, infrastructure networks and modular planning principles that underpin the future city. Cross Works developed the twin to support planners, stakeholders and public audiences in understanding a complex masterplan through interactive mapping, data layers and visual tools. A key innovation is its seasonal analysis capability, which illustrates how nomadic settlements adapt throughout the year. Attributed geometry dynamically adjusts to reflect these seasonal transitions, providing valuable insight into the relationship between future urban growth, cultural practices and Mongolia's environmental conditions. By combining geospatial intelligence, interactive visualisation and culturally specific analysis, the Digital Twin provides a powerful platform for engagement and decision-making.



# Tashkent Code

## Algorithm Design & Implementation

X-Code, also known as the Tashkent Code, is an advanced urban coding framework developed for the New Tashkent project and designed to be adaptable to other contexts. The system expands on traditional transect urbanism by introducing a granular three-part classification structure covering macro control, land-use control and design control. These groups define parameters such as transect, FAR range, primary use, secondary use, block composition and maximum height. This structure enables both procedural generation of city blocks and reverse attribution from manually designed plans, bridging between urban design intent and data-driven implementation. Cross Works implemented the code in CityEngine and Grasshopper, allowing for automated city generation, GIS-ready attributes and integration with cadastral systems. The framework provides a practical tool for managing urban complexity, ensuring that growth can be tested, regulated and adapted across different city districts.

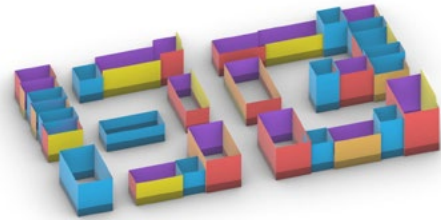
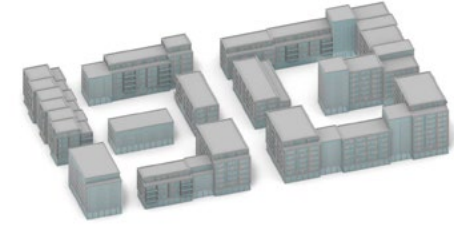
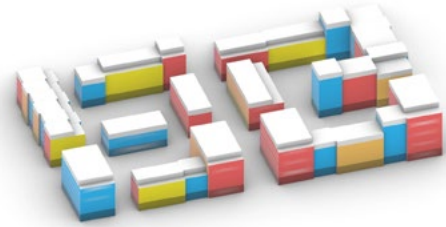


# Procedural Facade Generation

## Digital Twin

The New Kharkhorum Digital Twin is an advanced geospatial platform designed to visualise the city's masterplan in both 2D and 3D, integrating real-time data and interactive features. Built within a custom GIS portal, it enables seamless exploration of the proposed urban framework, infrastructure, and modular design principles.

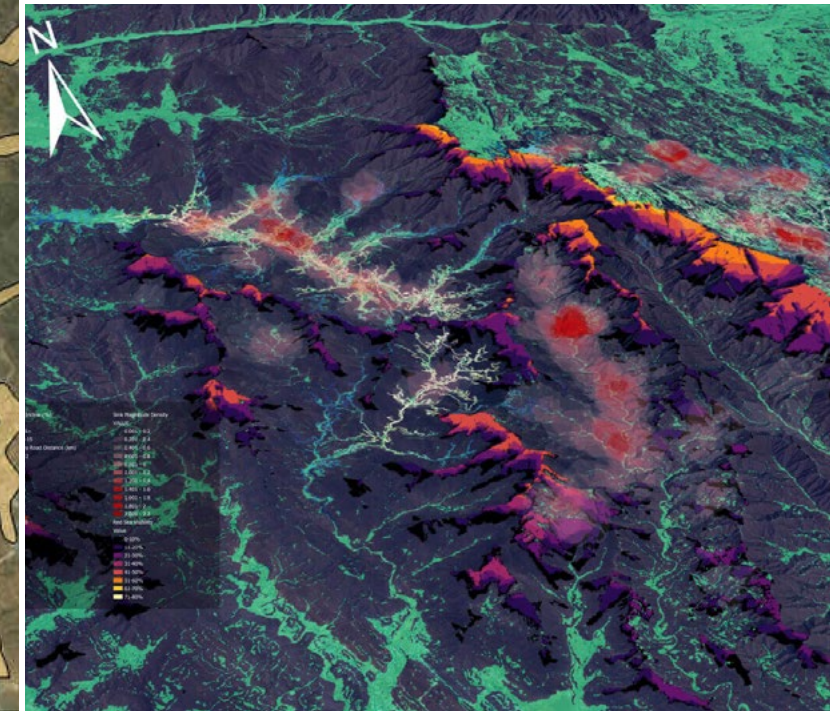
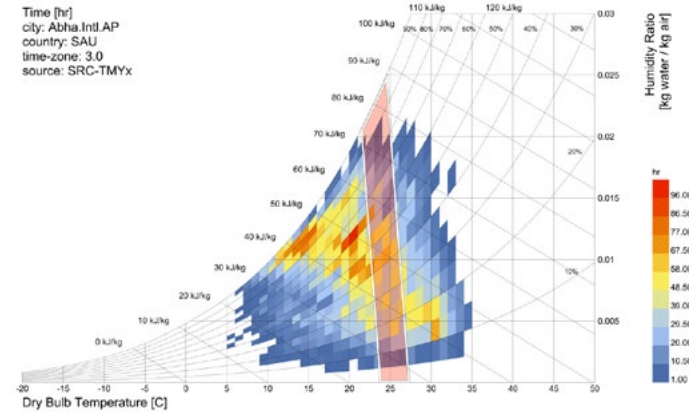
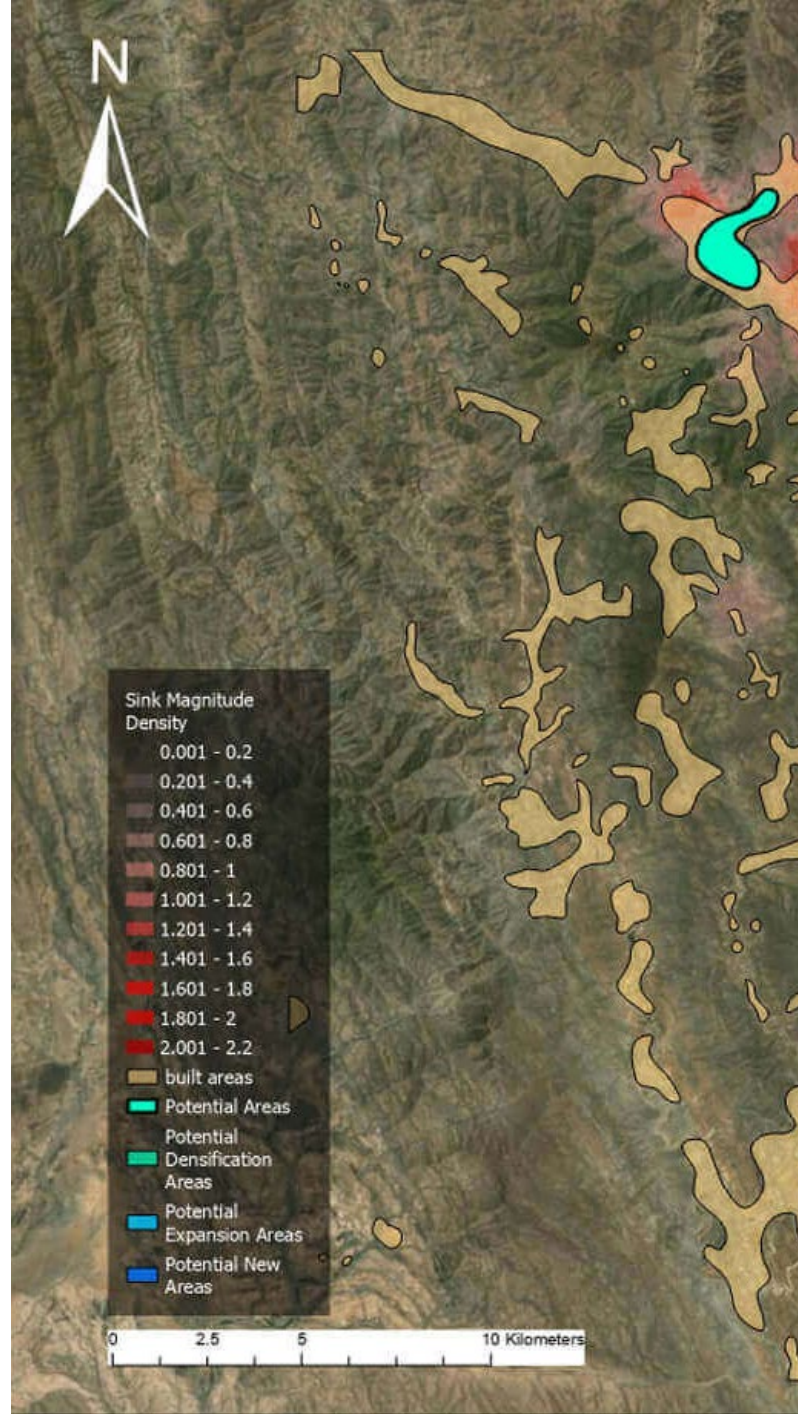
A key innovation is its seasonal analysis capability, which illustrates how nomadic settlements adapt throughout the year. The system's attributed geometry dynamically adjusts to reflect these transitions, offering valuable insights into the relationship between urban growth and Mongolia's unique cultural and environmental conditions. By merging geospatial intelligence with interactive visualisation, the twin serves as a powerful tool for planners, stakeholders, and the public to engage with the future of New Kharkhorum.



# Hilltop Masterplan, KSA

## Geospatial Analysis / Gap Analysis

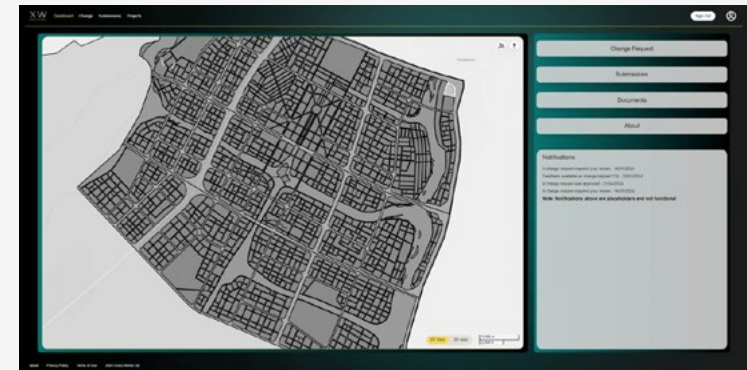
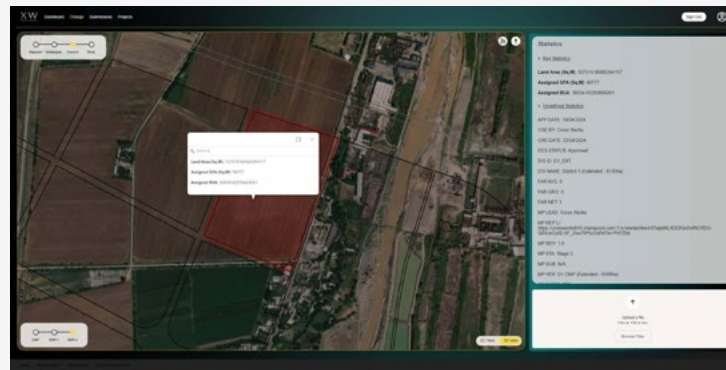
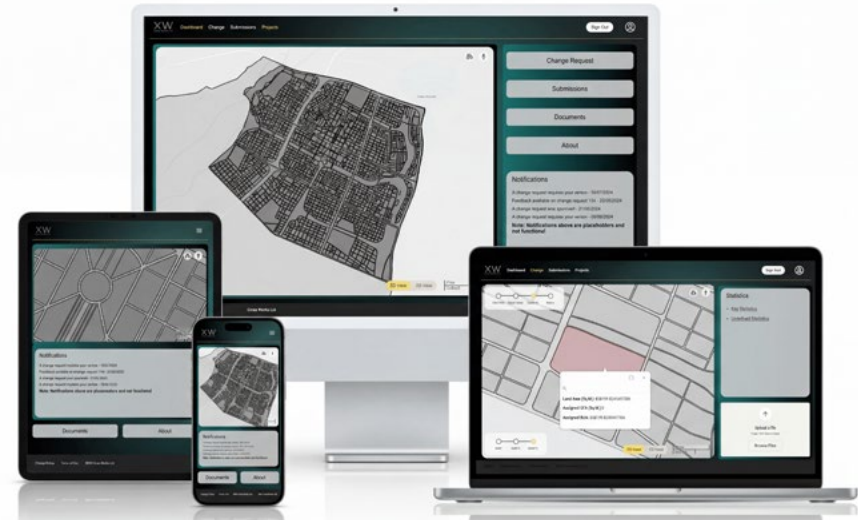
The Hilltop Masterplan analysis focused on a mountainous region in southern Saudi Arabia, home to the country's highest peaks. Cross Works undertook geospatial analysis to assess development suitability and support six masterplans in progress across the wider area. The study evaluated topography, slope, existing built areas, rainfall, road networks, connectivity, water bodies, flood susceptibility and visibility towards the Red Sea. These datasets were combined to identify areas with potential for densification, expansion and new development, while highlighting locations where environmental or infrastructure constraints required a more cautious approach. The analysis built on previous studies and incorporated updated spatial datasets and advanced GIS methodologies to improve the reliability of the findings. The outcome supported a more sustainable approach to urban growth in a complex terrain where development potential must be carefully balanced with landscape sensitivity.



# Up-Date

## Change Management App

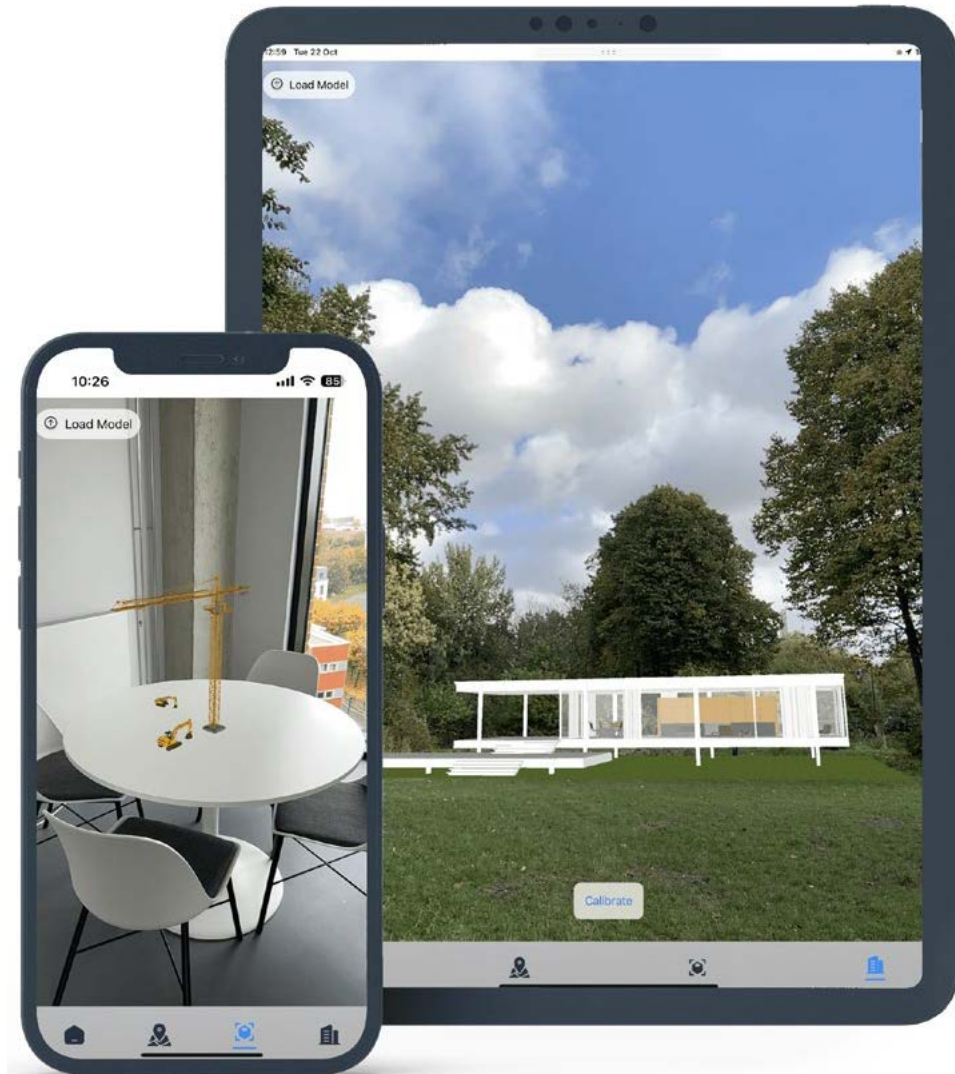
Up-Date is a change management software platform originally developed for a major Middle Eastern client to streamline approval, modification and oversight processes across masterplanning and AEC projects. The system was initially tailored to the needs of a large-scale development before being adapted for broader use in complex urban planning environments. It was designed to reduce bureaucratic friction by giving project teams a clearer way to track design changes, manage approvals, coordinate stakeholders and maintain visibility across evolving project information. The platform integrates with ArcGIS, enabling live geospatial data handling and providing GIS tools for land-use changes, boundary adjustments and infrastructure updates. By combining geospatial intelligence with structured workflow management, Up-Date improves decision-making efficiency, reduces coordination risk and supports smoother communication between clients, consultants, authorities and delivery teams.



# Off-Grid

## GPS-Enabled Offline Masterplan visualisation with AR

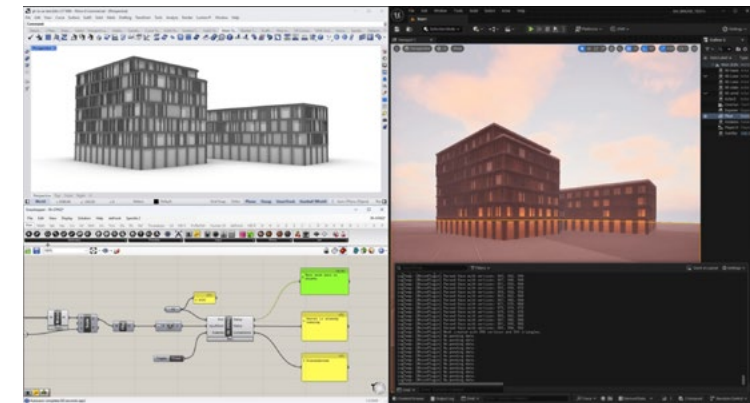
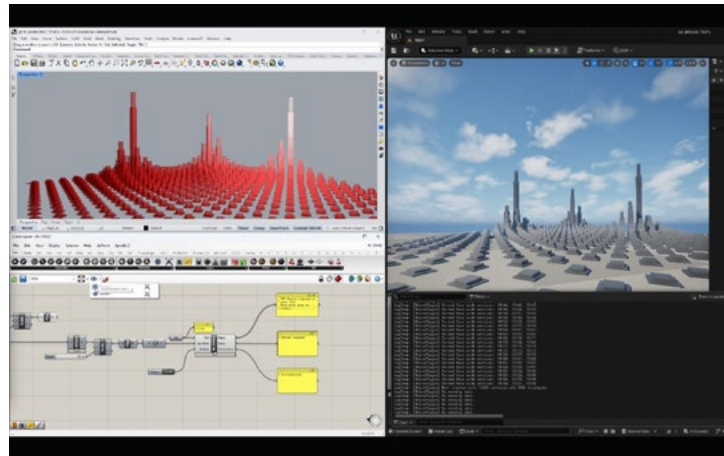
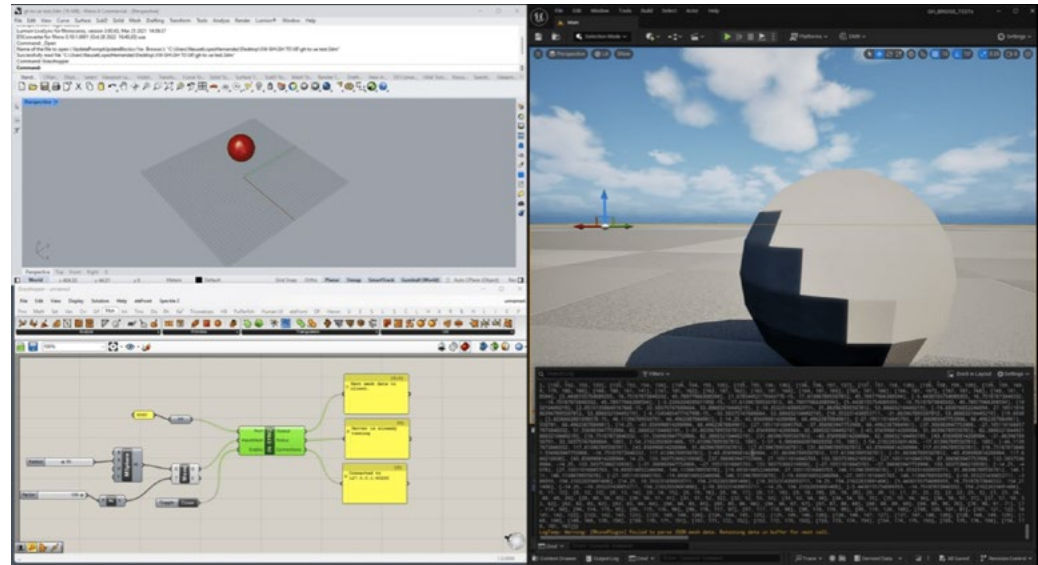
Off-Grid is an iOS application designed for professionals working in remote or signal-deprived environments, enabling geospatial data to be explored without an active internet connection. The app supports offline maps through .mmpk files, real-time GPS tracking and detailed attribute access for points of interest, making it suitable for fieldwork, masterplanning and large-scale project visualisation. Cross Works developed the platform to bridge the gap between complex spatial data and real-world site conditions, giving users access to reliable information while on location. The app also includes augmented reality capabilities, allowing masterplans and 3D models to be viewed either in Tabletop AR mode or geolocated within real-world environments through World AR mode. Designed for intuitive offline navigation and immersive data interaction, Off-Grid supports better site understanding, coordination and decision-making.



# In-Synq

## Rhino/Grasshopper – Unreal Engine live bridge

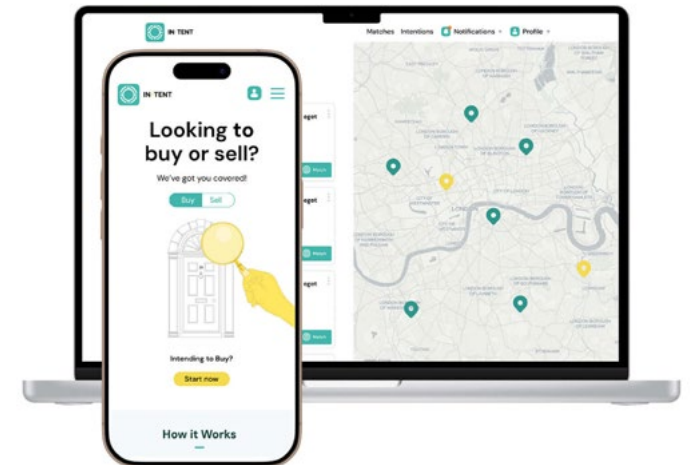
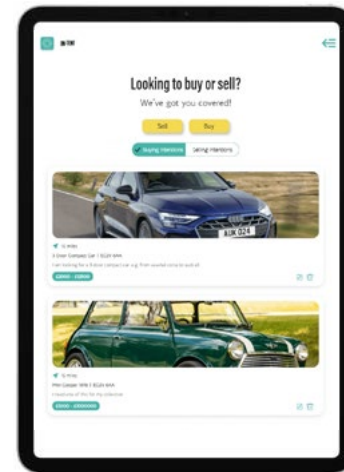
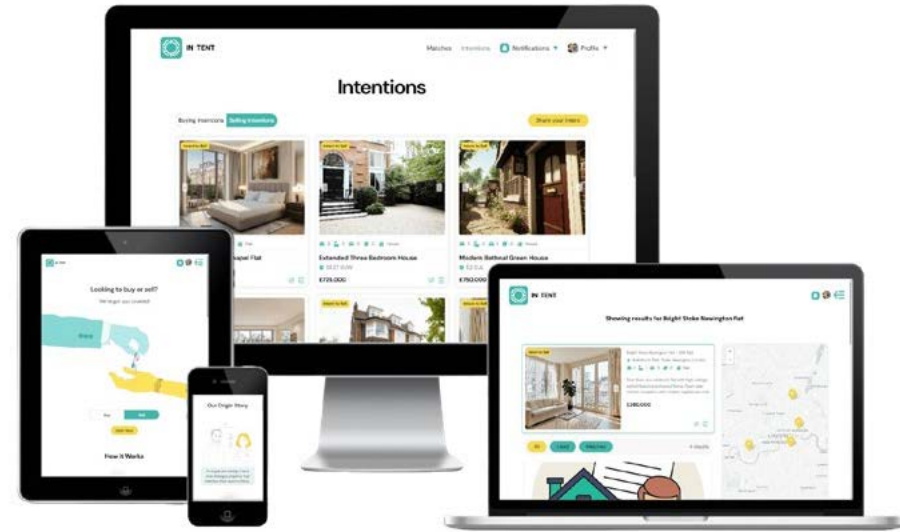
In-Synq is an open-source project designed to connect Rhino and Grasshopper with Unreal Engine, enabling real-time synchronisation of parametric design information. The tool removes the need for repeated baking, exporting and manual transfer between platforms, helping architects, designers and engineers streamline design-to-visualisation workflows. Cross Works developed the project as a community-driven initiative intended to make advanced interoperability tools more accessible to wider audiences. The system uses WebSocket and cache-file-based communication to support live data exchange, procedural updates and multi-user collaboration within Unreal Engine. It is designed to accommodate different geometry types and evolving design parameters, allowing spatial ideas to be tested and visualised more fluidly. In-Synq supports faster iteration, improved coordination and more immersive representation of design intent.



# In-Tent

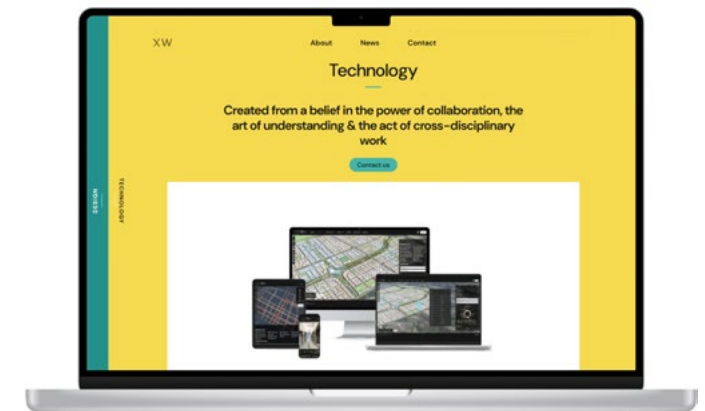
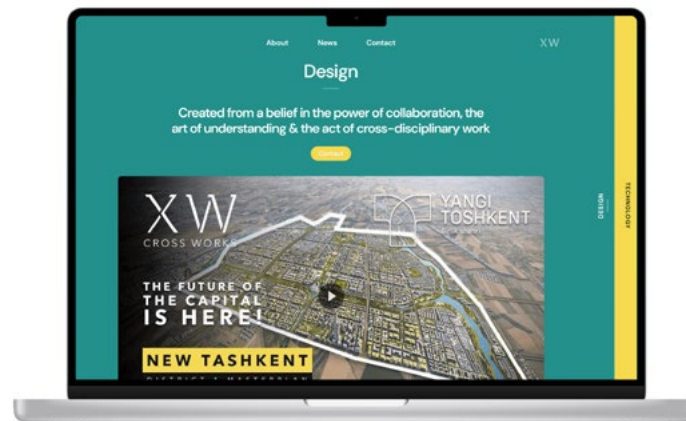
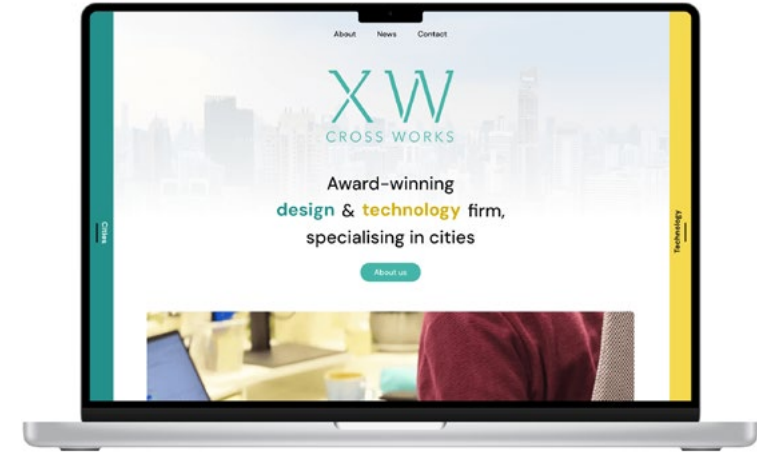
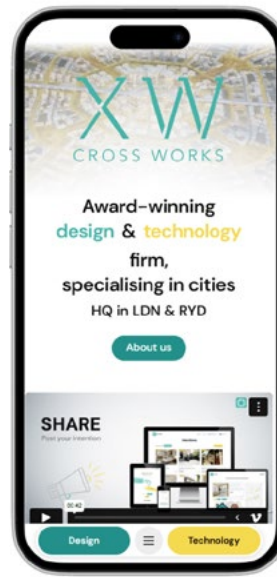
## Matchmaking Real Estate Market App

In-Tent is a web application designed to create a more balanced marketplace by enabling both buyers and sellers to post geolocated intents. Rather than relying only on conventional listings, the platform allows users to identify what people want to buy or sell in a specific location, revealing localised demand and supply through an interactive map. Cross Works developed the proof of concept to demonstrate how intent-based discovery could support more relevant, direct and efficient connections between users. The app currently supports real estate, vehicles and musical instruments, showing how the model can be adapted across different product types. A fully functional proof of concept has been completed, with placeholder intents used to demonstrate the system and prepare the project for a second funding phase. Built with scalability in mind, the platform is intended to support seamless geolocation-based visualisation, flexible listing categories and efficient handling of growing datasets.



# Cross Works Website

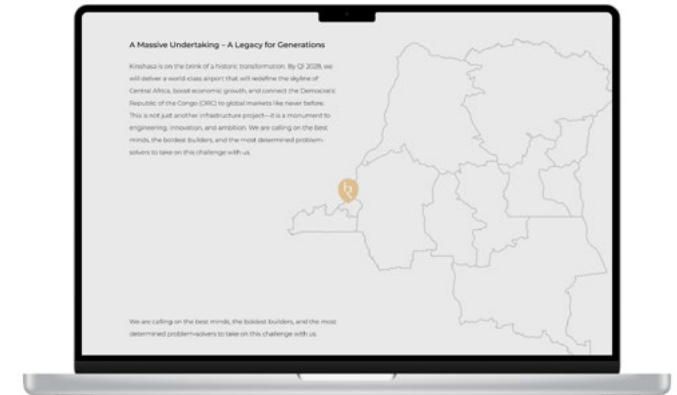
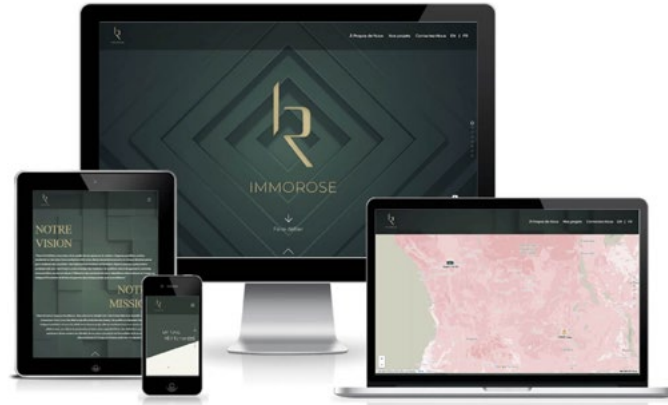
The Cross Works website presents the company as a cross-disciplinary design and technology practice headquartered in London and Riyadh. It communicates the breadth of the studio's work across architecture, urban planning, technology, GIS, software development, visualisation and strategic design. The platform is structured to showcase projects, research and tools that operate across multiple scales, from national masterplans and city-wide strategies to mixed-use developments, digital twins and bespoke software ecosystems. Rather than functioning as a conventional portfolio, the website creates an interactive digital experience that reflects the company's hybrid practice model. The site presents Cross Works as a team of architects, planners, technologists, designers, GIS specialists and software engineers working together to address real-world urban challenges through design thinking, digital innovation and practical delivery.



# Web Design

## Immorse, Infrarose, Bedales,

The Web Design work for INFRAROSE supports the company's infrastructure development activities and its role in the expansion of Aéroport International de N'Djili in Kinshasa, the largest airport in Central Africa. Acting as digital partner for both the company and the airport expansion project, Cross Works is delivering a suite of digital tools that strengthen communication, operations and stakeholder engagement. The scope includes the development of the INFRAROSE corporate website and a dedicated digital platform for the airport expansion, providing clear and dynamic communication around the project's progress, purpose and wider significance. Cross Works is also implementing digital signatures, virtual business cards, secure digital communications and interactive digital cartography. Together, these tools create a more professional, accessible and coordinated digital presence for INFRAROSE.





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### SOCIAL MEDIA

