

Architecture in the Aftermath of Disasters

JURY REPORT



International Union of Architects

International single stage ideas competition

Architecture in the Aftermath of Disasters

Towards Sustainable and Community-Based Reconstruction
in Post-Earthquake Morocco



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JURY SESSION

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I. INTRODUCTION

I.1 General Information

The International Single Stage Ideas Competition titled Architecture in the Aftermath of Disasters - Towards Sustainable and Community-Based Reconstruction in Post-Earthquake Morocco focused on the 2023 earthquake in Morocco, exploring how architecture can respond to both the immediate and long-term needs of affected communities.

This initiative invited young architects to imagine new forms of architectural intervention in the aftermath of disaster, raising awareness of the complex interconnection between natural and human-made crises and calls for visionary proposals that can heal, protect, and regenerate.

Participants were encouraged to understand disaster not only as a moment of destruction but as part of a broader cycle—before, during, and after a crisis. In this expanded timeframe, architecture becomes a platform for strategic foresight: mitigating vulnerability, preserving memory and identity, and facilitating recovery that leads to greater social, environmental, and cultural resilience.

I.2 The goals of the project

To find innovative proposals for architectural interventions that respond to the earthquake's impacts while envisioning sustainable futures.

To find solutions that rethink architectural agency across multiple scales and timeframes—from emergency shelter to territorial planning, from rebuilding local life to reimagining regional networks of care, infrastructure, and exchange.

To find design strategies that directly address local needs while offering scalable, transferable models for resilience.

To find context-sensitive and future-oriented solutions, grounded in an understanding of local realities and aligned with broader global challenges.

I.3 Type of competition and eligibility

The competition was open to young architects, either as individuals or teams, from around the world. All participants must have been under the age of 40 (born after 11th March 1986.). The team leader(s) of the proposal must be qualified to use the title of architect in their country of origin or residence.

I.4 Legal Framework and UIA endorsement

This international single stage ideas competition for young architects was organised by the UIA Natural and Human Disasters Work Programme (UIA NHD WP) with the expert support of the Order of Architects of Morocco, and conducted in accordance with UNESCO Standard Regulations for International Competitions in Architecture and Town planning and the UIA best practice recommendations (see UIA Competition Guide for Design Competitions in Architecture and Related Fields). The competition manager, responsible for the organization and conduct of the competition, is Nikolas Patsavos, Architect, Region II. NHD WP Co-Chair.

I.1.5 International Jury



Patrick Coulombel
Chairman – Architect, France
(UIA Representative)



Salma Samar Damluji
Jury member – Professor, UK-Iraq



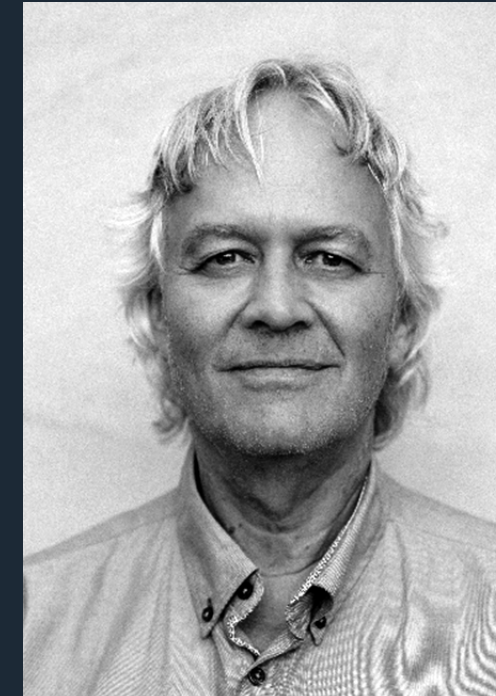
William Higgins
Jury member – Architect, USA



Ghada Farouk Hassan
Jury member – Professor, Egypt



Ayşen Ciravoğlu
Jury member – Professor, Turkey (UIA
Representative – NHD WP member)



Ron Wickman
Alternate Jury member – Architect,
Canada (NHD WP member)

II.2 First Round

In the first round, 11 projects were dismissed for one, more or all of the following reasons:

- not clearly related to the competition brief
- inadequate reference to the site and cultural context
- not adequately developed beyond the planning-programmatic scale

The following projects were dismissed at the first evaluation round:

- no.6-6994168a43a9c
- no.12-698f117021132
- no.16-69a738c366341
- no.23-69afc6d19d7d0
- no.26-6994963ad126d
- no.31-699d9fdff21fc
- no.33-69aa6bab69cbf
- no.36-69b184471c258
- no.41-692ff05eebbe5
- no.45-69b086b018a90
- no.46-69afc68257d5a

II.3 Second Round

In the second round 11 projects were dismissed for one, more or all of the following reasons:

- lacking in resilient and sustainable aspects
- limited adherence to local social and cultural context

The following projects were dismissed at the second evaluation round:

- no.13-69466ea0c5bcd
- no.14-695d53036b7cb
- no.19-69680f6c23fc1
- no.20-69b096cc10d76
- no.24-695aaa8791f87
- no.25-696bbe2072a24
- no.32-6992f526006ec
- no.34-69ad569a2d0b6
- no.37-6959f9cc12619
- no.38-691779b2f1194
- no.39-69a530a9b180d

II.4 Confirmation Round

Before discussing the shortlisted projects, the Jury undertook a control round and made some minor readjustments of classification, the results of which are integrated in the previous description. In addition to the common control round all Jury members were given time to individually focus on the 11 remaining projects.

Following this, the Jury members collectively discussed and unanimously decided to dismiss the following entry:

- no.27-693d3de161f69

The Entry was dismissed as the Jury found there was limited information on the innovative aspects of the proposed structure in reference to the competition brief, questions and criteria.

The following 10 entries were then confirmed as shortlisted:

- no.8-691829057d448
- no.11-6997043dde7c2
- no.15-69af1b752d1a1
- no.17-69425bfac3115
- no.21-69b0be44700d7
- no.22-69171427c8701
- no.28-69b0034c1edd2
- no.35-699382ef3a073
- no.40-691a9aa8c80d2
- no.44-693e4fcd64631

II.5 Shortlisted projects

The 10 shortlisted projects were more thoroughly analysed and the Jury discussed the qualities of the projects in respect of the criteria set in the brief.

The Jury then classified the shortlisted projects in two groups:

Middle group 5 proposals:

- no.8-691829057d448
- no.22-69171427c8701
- no.35-699382ef3a073
- no.40-691a9aa8c80d2
- no.44-693e4fcd64631

Upper group 5 proposals:

- no.11-6997043dde7c2
- no.15-69af1b752d1a1
- no.17-69425bfac3115
- no.21-69b0be44700d7
- no.28-69b0034c1edd2

The Jury then ranked the shortlisted proposals in the upper group, awarded the five prizes, and decided to grant honourable mentions to all the projects in the middle group.

First Prize: no.21-69b0be44700d7
Second Prize: no.11-6997043dde7c2
Third Prize: no.28-69b0034c1edd2
Fourth Prize: no.17-69425bfac3115
Fifth Prize: no.15-69af1b752d1a1

Honourable mentions:

- no.8-691829057d448
- no.22-69171427c8701
- no.35-699382ef3a073
- no.40-691a9aa8c80d2
- no.44-693e4fcd64631

The ranking list was approved and signed by the Jury. At the end of the session, the Jury formulated general remarks and recommendations.

II.6 Prizes and mentions

The total prize money available was € 15,000.

Five prizes were, as announced in the brief, awarded by the Jury.
The following sums will be paid to the competition prize winners:

First Prize: € 5,000
Second Prize: € 4,000
Third Prize: € 3,000
Fourth Prize: € 2,000
Fifth Prize: € 1,000

The prizes will be delivered within 30 days after the announcement of the winners.
Winners and competitors awarded an Honourable Mention will receive a certificate.

II.7 General remarks and recommendations of the Jury

The Jury would like to express its appreciation to the International Union of Architects (UIA) and to the Natural and Human Disasters WP for the organisation of the competition Architecture in the Aftermath of Disasters. This initiative raised awareness amongst young architects globally as to the impact of such devastation on communities like Izlloulen, Morocco, and highlighted the key role that architects can serve in rebuilding and reenergising community life.

In this context, post-disaster reconstruction – whether natural or inflicted through uricide exacerbated by conflict and war – confronts architects with the need to rethink the ethical role of architecture. Design and building strategies can only develop through engagement with the community, learning from their culture and environmental landscape, and aligning with the spatial context in order to regenerate livelihoods.

With these considerations in mind, the Jury was challenged to evaluate the presentations based on territorial and social context, innovation, sustainable solutions, social engagement, and their capacity to improve the lives of affected citizens. Most importantly, we looked for design methodologies that, although specific to this site and this moment in time, could still provide a universal perspective on how we, as architects, can design in the spirit of creating a better living environment for all, no matter where we live in the world.

The process of selecting the winning projects involved multiple stages of filtering, carefully guided by how well participants adhered to the competition's criteria. Once this baseline assessment was established, the final ranking was determined by a sharp focus on the strength of the concept, the power of innovation, and the degree to which the projects fulfilled the competition's demands while respecting the local context.

With these thoughts in mind, the competition proved highly successful, and the Jury would also like to extend its thanks to all competitors. Although centred on a specific locale, it was profoundly significant in fostering resilience and sustainability on a global scale. Its strength lay not only in a localized response, but in its universal approach and methodology, providing a model for how architects can address environmental and social challenges.

Importantly, the competition also showcased the deep engagement of young architects with pressing environmental and social issues, highlighting the importance of human-centred design as a driving force in their thinking.

First Prize:

The first prize stood out from the outset of the Jury's deliberations for its strong and innovative design methodology, capable of addressing both the wider community context and the individual human scale, while expressing a deep understanding of culture and place in Douar Izlloulen. Rooted in the vernacular and environmental specificity of the site, the proposal draws from local crafts, the cultural landscape, and active social engagement to develop a coherent and compelling strategy for reconstruction.

Its strength lies in the integration of zoning and land-use strategies with a community-oriented housing approach that makes consistent use of local materials, techniques, and skills. In doing so, the project frames rebuilding as a social act that strengthens cohesion and supports future livelihoods, demonstrating a strong community focus, an appropriate urban scale, and a sensitive response to context.

The proposal is further distinguished by its innovative "Magic Weaving" concept, which combines low-tech seismic retrofit systems with community-driven construction processes, enabling rapid, affordable, and culturally grounded recovery. This approach is reinforced by a clear multi-scalar vision, ranging from immediate house reinforcement to the creation of a village public core and, ultimately, a resilient network of connected settlements.

Altogether, the project offers a thoughtful, integrated, and transferable model for community-based reconstruction, with strong potential for long-term resilience in remote, disaster-affected regions.

Second Prize:

The second prize, “Izlloulen Resilient Village”, is distinguished by its deep contextual understanding of the site and its careful reinterpretation of local traditions through innovative and resilient strategies. Grounded in a thorough study of climatic conditions, topography, environmental risks, and erosion, the project proposes a balanced approach that combines rammed earth construction with sustainable technologies for energy and water management, preserving cultural identity and local craftsmanship while enhancing structural safety, environmental performance, and adaptability.

The proposal outlines a comprehensive and realistic vision for a resilient village, addressing both territorial and social contexts through a community-centred design methodology aimed at improving the lives of affected citizens, including those with disabilities, and supported by a strong environmental focus and well-considered seismic strategies.

Its strength lies in an integrated masterplan that brings together agricultural infrastructure, water management, and erosion control within a coherent spatial framework responsive to climate conditions. The design introduces a generous volumetric typology embedded within terrace farming, organised around a social core for housing units, and inspired by vernacular solutions that incorporate urban voids to mitigate seismic risks.

Altogether, the project presents a scalable, community-centred model for resilient reconstruction, supporting long-term social, environmental, and economic recovery after disasters.

Third Prize:

The third prize, “SUR”, demonstrates remarkable potential through its concept of regeneration, framing disaster as a process of rebirth supported by a deep understanding of the local context. The project proposes adaptive design solutions that enhance resilience, enabling communities to rebuild in ways that are both restorative and forward-looking, while strengthening their capacity for more resilient and adaptable environments.

The proposal is clearly and sensitively illustrated, appearing to emerge from the earth, and combines technical and environmental innovation with a strong focus on residents’ needs. Its design strategy integrates nature into the post-disaster process and prioritises repair over replacement, favouring flexible and adaptable building approaches.

A key strength lies in the creation of an earth-regenerating workshop that accommodates local crafts, supporting livelihoods and reinforcing cultural identity. This is complemented by a diverse range of housing typologies responding to different social needs, alongside a commitment to the continuity of traditional architecture through timber-framed structures with compressed earth blocks, enhancing seismic resilience.

The project is further commended for its attention to rebuilding community infrastructure and for the clear articulation of different building prototypes. Altogether, it presents a thoughtful and grounded approach to post-disaster recovery, with ideas that are both practical and buildable.

Fourth Prize:

The fourth prize, “CORE-NECT”, enhances post-disaster resilience through a network of public focal points organised around a central “core”, including spaces such as the Religion and Social Life Centre, supporting the touiza tradition of mutual aid. The project effectively combines macro-scale planning with a strong community focus.

Innovation is evident in the resilient energy infrastructure, which integrates solar power production with the restoration of the traditional seguia water network, promoting efficient irrigation and local resource independence.

The proposal demonstrates a sensitive approach to cluster planning, with flexible living units that respect the continuity of the cultural landscape, alongside strategies for consolidating structures and local economic infrastructure. Altogether, it presents a clear and well-researched approach to post-disaster recovery.

Fifth Prize:

The fifth prize, “Radix Rubra”, is commended for its focus on the revitalisation of craftsmanship and collective engagement in rebuilding with the landscape, addressing both ecological and cultural resilience within an urban–rural framework. Rooted in the memory of Morocco’s red landscape, the project proposes a strategy of “transformation without rupture”, using the existing fabric as a living ground for new growth.

The proposal demonstrates a strong sense of urbanism and an organic approach to spatial organisation, integrating contemporary structural and ecological strategies with local traditions. Particular attention is given to seismic resilience, in line with the requirements of the competition.

Altogether, the project presents a thoughtful and grounded approach to renewal, combining cultural continuity, environmental awareness, and community-based reconstruction. Honourable mentions:

The Honourable Mentions were selected for their alignment with the competition’s objectives and for offering considered responses to the challenges of post-disaster reconstruction. The projects demonstrate a good level of analysis and a consistent effort to engage with local climatic, cultural, and traditional conditions.

Several proposals explore the use of traditional materials—particularly earth-based construction—combined with modular or phased approaches to reconstruction, alongside retrofit strategies that involve community participation. A clear attention to construction processes and local techniques is evident, often supported by broader, macro-scale considerations.

The Jury noted the presence of a communal dimension in a number of entries, as well as a generally coherent approach to spatial organisation. The quality of drawings and renderings contributed to the clarity of the proposals, effectively illustrating construction methods and design intentions.

Overall, these projects present solid and thoughtful approaches, with a clear sensitivity to context and constructive engagement with the themes of the competition.

III. International participation

III.1 Number of submissions per region:

Region I – 5

Region II – 16

Region III – 2

Region IV – 12

Region V – 10

Total submissions: 45

III.2 Awarded Entries

International Union of Architects International single stage ideas competition					
Architecture in the Aftermath of Disasters Towards Sustainable and Community-Based Reconstruction in Post-Earthquake Morocco					
Prize/ Award	ID number	Authors Country	Authors	Collaborators Country	Collaborators
First Prize	69b0be44700d7	Vietnam	Tran Huu Khoa	Vietnam	
Second Prize	6997043dde7c2	Cameroon	YAKANA BALIABA PATRICK, NDE KEULEK SIDOINE BAUDREL, TSAFACK DONFACK LIZETTE MARLAINE	Cameroon	NTAKAM TONGEUMBO STYVE WILSON
Third Prize	69b0034c1edd2	Turkey	OĞUZHAN SAFA YAĞCILAR	Turkey	
Fourth Prize	69425bfac3115	Turkey	ASUDE GÜNDOĞDU, Sefa Cengiz Okan	Turkey	
Fifth Prize	69af1b752d1a1	Turkey	Uğur Özkalaycı, Müge Uysal, Şevval Tatar	Turkey	
Honourable Mention	691829057d448	Iran	Mahdi Bayat	Iran	Zahra lak
Honourable Mention	69171427c8701	Egypt	Esraa Elazab, Ahmed Hassan	Egypt	
Honourable Mention	699382ef3a073	Argentina	Agustin Camicha		
		Spain	Alejandro Rodriguez Silva		
		Spain	Fatima Gomez Rodriguez		
Honourable Mention	691a9aa8c80d2	Vietnam	Dang Le Nhu Ngoc, Tran Khoa Thanh		
Honourable Mention	693e4fcd64631	Vietnam	Dao Duy Tung, Duong Ngoc Huy, Pham Nguyen Tung Chi		

Second Prize

Entry no.11-6997043dde7c2

Team leader: Patrick Yakana Baliaba

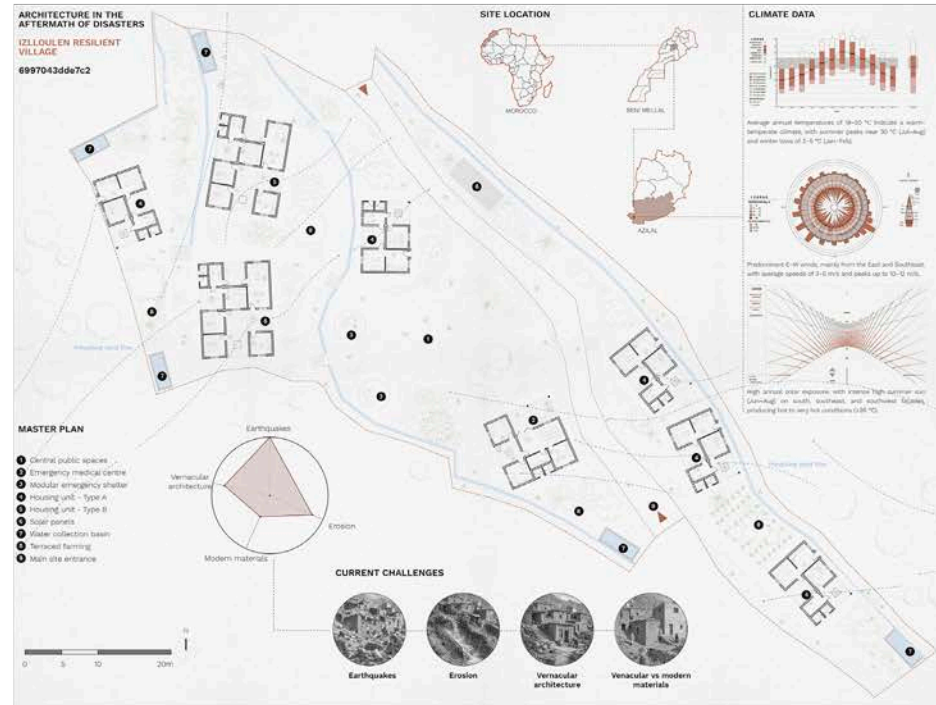
Co-Authors: Sidoine Baudrel Nde Keulek,

Lizette Marlaine Tsafack Donfack

Collaborator: Styve Wilson Ntakam

Tongeumbo

Country: Cameroon



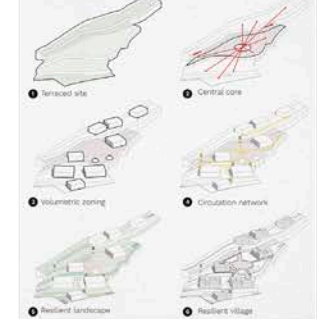
IZLLOULEN RESILIENT VILLAGE

Suspended in the majestic mountains of the Moroccan High Atlas, Izloulou is a village whose centuries-old balance was violently fractured by the 2023 earthquake. Today, this wounded community faces major existential challenges. Beyond the post-seismic trauma and the constant threat of soil erosion that gnaws at the landscape, the village finds itself torn by a profound conflict: how to embrace the safety requirements of modernity while preserving the soul and identity of its vernacular architecture?

To heal these wounds and reconcile these opposing forces, the project 'Izloulou Resilient Village' unfolds like a protective embrace. The spatial layout is structured around a vibrant central core, conceived as the true social lung of the community. This unifying nucleus recreates the lost places of gathering and offers a response to the identity dilemma, reinterpreting the essence of ancestral Berber agoras to integrate them harmoniously into a contemporary dynamic of use.

From this nerve center, the master plan extends like a living organism where each line reflects a strategy of resilience. The topography is first stabilized through rigorous erosion control, creating a smoothed foundation that dictates a network of fluid, efficient, and secure circulation paths. At the same time, the design of urban voids integrates seismic risk squares and alleysways are dimensioned to function as protective refuge zones. Finally, driven by sustainable infrastructure harnessing solar and wind energy, this master plan shapes an autonomous and benevolent environment, offering residents the freedom to root themselves serenely toward the future.

CONCEPTUAL DEVELOPMENT



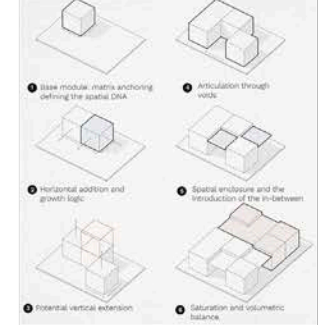
IZLLOULEN RESILIENT HOUSE

The 2023 earthquake tragically exposed the vulnerability of Izloulou's vernacular housing model. The absence of structural tie beams and the rigidity of the ancestral walls yielded under the violence of the tremors, revealing the limits of a constructive heritage in the face of the forces of the earth. From that moment onward, reconstruction imposes a delicate reflection: how to design a dwelling that guarantees the absolute safety of its occupants without erasing the centuries-old architectural identity of the High Atlas?

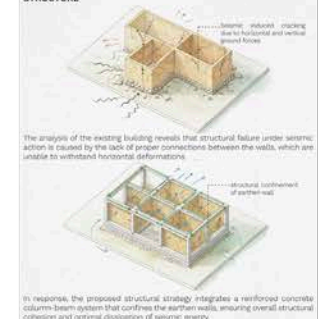
To meet this challenge, the resilient house stands as a protective sanctuary, judiciously preserving the cultural soul of the village. The cornerstone of this design rests on the integration of an independent seismic-resistant structural frame. This robust framework, the true backbone of the building, frees the interior space to give rise to flexible and evolving units. Organically adapting to the growth of households or to the integration of vital equipment, each module accompanies the transformations of the community and reflects the living dynamics of the door.

In continuity with this vision, the materiality of the structure celebrates a harmonious balance between safety engineering and traditional craftsmanship in order to confront the harshness of the mountain climate. The building is anchored on a solid stone plinth, a natural barrier against moisture, while the rammed earth infill walls envelop the interiors in optimal thermal comfort. Crowned by a lightweight roof structure dissipating seismic energy, the architecture relies on a simple assembly process, free of heavy machinery. From the anchoring of the foundations to the erection of the structural frame, and then to the completion of the raw earth, this participatory approach enables the inhabitants to reclaim their reconstruction, forging inhabitable homes resolutely oriented toward the future.

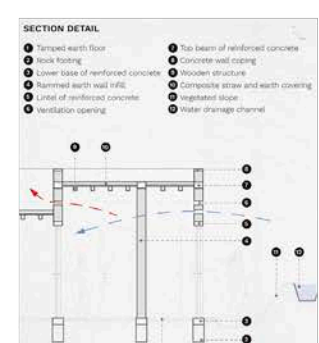
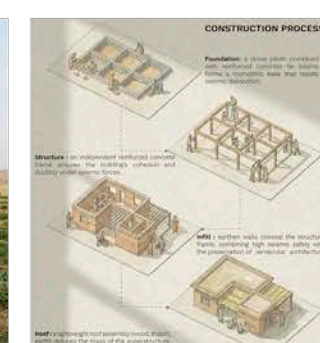
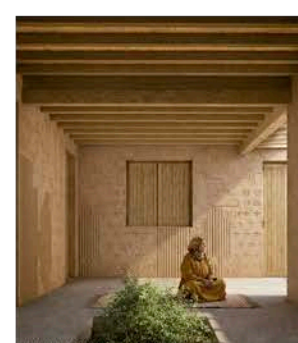
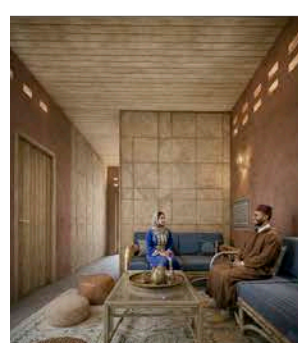
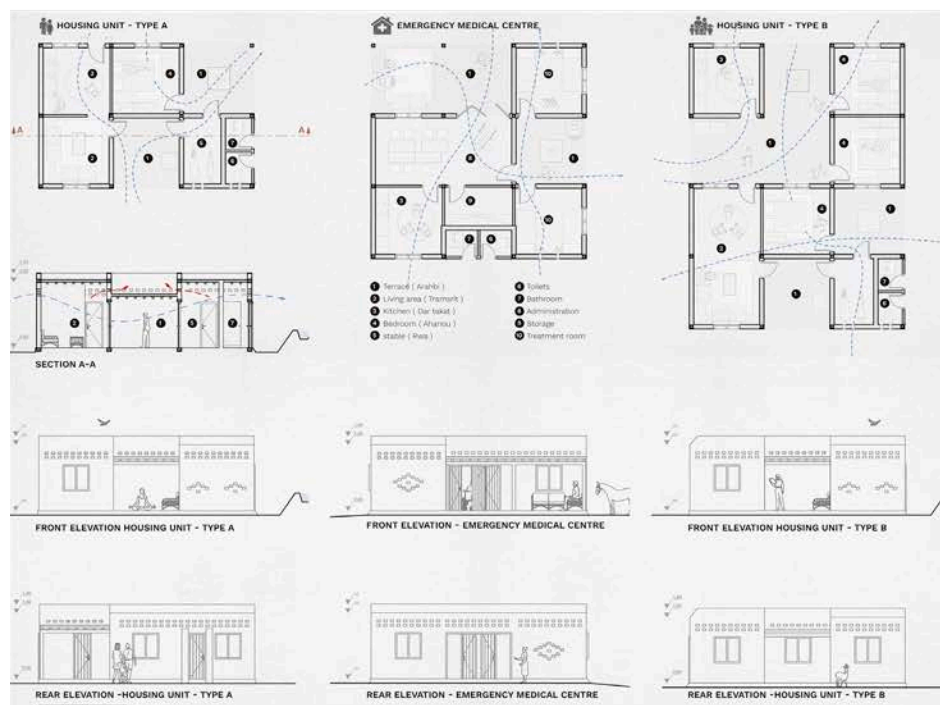
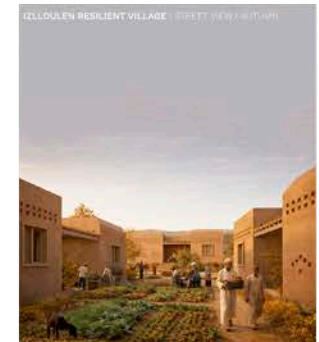
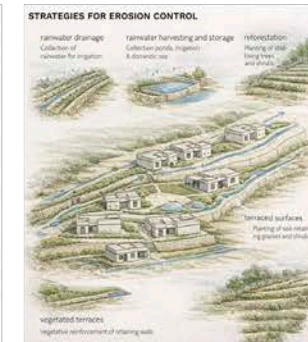
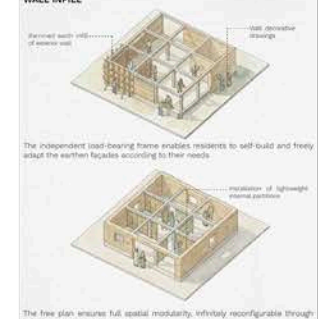
CONCEPTUAL DEVELOPMENT



STRUCTURE



WALL INFILL



Third Prize

Entry no.28-69b0034c1edd2
 Team leader: Oğuzhan Safa Yağcılar
 Country: Turkey

ARCHITECTURE IN THE AFTERMATH OF DISASTERS
SÜR 69b0034c1edd2

TERRA-COTTA WORKSHOP
CARPENTER
METAL WORKSHOP
RUG-CARPET-LEATHER WORKSHOP
MUKHTAR & CLINIC
BOTH-WAY BAZAAR
ONE-WAY BAZAAR

MUSJID
 Instead of a single central mosque, small musjids are distributed across the terraces. They follow the rhythm of daily prayer, allowing farmers to access spiritual spaces near their fields. These spaces also serve as resting and gathering points.

BAZAAR & FAIRGROUNDS
 Local market spaces allow agricultural products to be exchanged and sold. These markets strengthen the village economy while creating social spaces where production, trade, and daily life meet.

DISTRIBUTION HEAD
 A distribution hub collects agricultural products and redistributes them to nearby villages. Drone-based delivery systems, operated by young residents connect traditional production with new technologies.

VILLAGE ART GALLERY
 Art is embedded throughout the village rather than in a single building. Woven textiles provide facade shading, earthen wall patterns reflect local craftsmanship, and handmade pottery stores crops. The village becomes an open-air gallery within a living economic cycle.

EARTH REGENERATION WORKSHOP
 The village reflects Morocco's vernacular architecture built with sun-dried earth blocks, thick walls, and flat roofs. The proposal preserves these spatial and material qualities while maintaining natural earth tones.

R&D UNIT
 The center links the village to the outside world through technology developed by young residents. Research focuses on drones supporting agricultural distribution to nearby villages and the local economy.

The proposal preserves these spatial and material qualities while maintaining natural earth tones. Repair, reinforcement, and reconstruction with compatible materials allow the village's architectural identity to continue after the earthquake.



ARCHITECTURE IN THE AFTERMATH OF DISASTERS
SÜR 69b0034c1edd2

"Sür" represents the invisible force that reactivates life after disaster. After the earthquake, the project interprets the void not as absence but as a threshold where life circulates again. Rather than rebuilding only on the surface, regeneration begins through an infrastructural layer that reconnects the village with its landscape, production systems, and collective memory. The proposal frames reconstruction as a process of rebirth emerging from the ground itself.

STRUCTURAL RENEWAL METHODS
 After the earthquake, buildings are assessed by damage level and either preserved, strengthened, transformed, or rebuilt. Timber frames with compressed earth blocks provide seismic resilience while preserving traditional construction.

%5-20 DAMAGED **%20-50 DAMAGED** **%50-70 DAMAGED** **%70-100 DAMAGED**

HOUSING
 Housing typologies respond to different social needs. Some houses place animal shelters below and living spaces above. Others are single-level homes designed for elderly and disabled residents. Extended family houses provide flexible interior spaces for children. Temporary housing is also planned for seasonal workers to support agricultural activities in the village. Since water is

TERRACE'S ROLLER-PATHWAY RASFER METHOD
AGED & DISABLED FRIENDLY HOUSING
TEMPORARY-LABORER HOUSING
EXTENDED FAMILY HOUSING
BARN-BASED HOUSE

OVERHEAD POWER NETWORK
LOCAL REACHABLE PLUMBING
DISABLED-FRIENDLY PATHWAY
SATELLITE RECEIVER
FLYING PLUMBING - VEIN SYSTEM

MASTER PLAN
 1:1000

Terraces are revitalized through diversified crops. Earthen shelters support farming activities. Open fields and greenhouses enable climate-adaptive production, transforming the village into a regional agricultural hub.

INFRASTRUCTURE - VEIN SYSTEM
 A gravity-based water system irrigates the terraces. Rainwater is stored in main reservoirs and distributed to smaller terrace tanks. Overflow moves to lower terraces, while water filtering through earth retaining walls is also captured. Inspired by a vascular system, the network efficiently distributes water across the landscape.

MARTYRS' CEMETERY
 The cemetery functions as a place of remembrance and belonging, reinforcing collective memory and continuity within the community.

Fourth Prize

Entry no.17-69425bfac3115
 Team leader: Asude Gündoğdu
 Additional team leader: Sefa Cengiz Okan
 Country: Turkey

CORE-NECT Architecture in the Aftermath of Disasters
 #69425bfac3115

"Assembling the core, connecting the fabric"

1. IZLOULIEN - GENERAL CONTEXT & MACRO TRANSPORTATION

Douar Izloulien, located in the High Atlas Mountains, is 110 km from Marrakech and 210 km from Beni Mellal via the Ait Hkīm and Ait Yūd roads on the RN09. It is situated at the intersection of the Marrakech-Safi, Beni Mellal-Khénifra, and Drba-Talcaūt regions.

2. IZLOULIEN - CONNECTIONS WITH SURROUNDING DOUARS

Izloulien is surrounded by the douars of Aguemam, Adkenfou, Igdamen, and Isoual. The road leading to Ait Oualine, where agricultural terraces are located in the northwest, is in better condition compared to other roads. The presence of many settlements along the axis creates a basis for social interaction between the douars.

3. IZLOULIEN - INTERNAL CONNECTIONS

The axis connecting the Noufā, N'Quamass, and main Izloulien layers forms the spine of the settlement. This spine is integrated with narrow streets between buildings, access roads to the educational center and narrow paths along the agricultural terraces. This organic network, articulated with the topography, is the fundamental element defining the texture of the settlement.

CLIMATE ANALYSIS

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temp (°C)	10.5	12.5	15.5	19.5	24.5	29.5	33.5	36.5	34.5	29.5	24.5	18.5
Humidity (%)	75	70	65	60	55	50	45	40	45	50	55	60
Wind Speed (km/h)	15	18	22	25	28	30	32	30	28	25	22	18
Solar Radiation (kWh/m²)	120	140	160	180	200	220	240	250	230	200	170	140

PROGRAM OF REQUIREMENTS

Category	Item	Area (m²)
Artisan Hub	Artisan Cooperative House	200
	Artisan Workshop	150
	Artisan Storage	100
	Artisan Office	50
Religious Hub	Mosque	150
	Prayer Room	100
	Religious Office	50
	Religious Storage	50
Social Life Center	Community Hub	200
	Community Office	100
	Community Storage	100
	Community Office	50
Educational Hub	Classrooms	200
	Library	100
	Staff Room	50
	Reception	50
Infrastructural & Technical	Water Storage	100
	Electrical Storage	100
	Water Tank	50
	Emergency Storage	50

Program and Design:

The Izloulien settlement presents a layered profile shaped by seismic risks and structural deficiencies. The designed needs program aims to preserve Berber culture and increase post-disaster resilience at the local level.

Social and Cultural Continuity: The project aims to address the damage and loss of social life caused by the 2023 earthquake. In the village, the designed "Religion Hub" and "Social Life Center" units are envisioned to serve as public focal points supporting the "talach" mutual aid system.

Economic Development and Tourism: The village's panoramic location and culture are considered a potential asset for sustainable development. The "Artisan Hub" aims to preserve women's craft heritage, while the "Tourism Hub" transforms this potential into a model providing income to the local community.

Education and Health Accessibility: Due to the difficulty in accessing the existing school, the goal is to relocate the education unit to a central location. The aim is to repurpose the vacated structure as an "Emergency and Agricultural Storage Facility," transforming it into a unit serving all three parts of the village.

Technical Infrastructure and Resilience: The "Infrastructural Hub" units are planned to support traditional irrigation systems, efficiently store agricultural crops and equipment, and enhance disaster response capacity.

Repair of Existing Fabric and Structural Strengthening: It is proposed that damaged structures be repaired and strengthened using local materials, such as stone and earth, in accordance with their original form.

SITE SETTLEMENT DIAGRAMS

1. Existing Conditions

Currently, the douars internal transportation network consists of dirt roads. The main transportation axis connecting Noufā, N'Quamass, and the main Izloulien layers divides the project area into two main zones and branches into two further sections. These two zones sit gradually in accordance with the topography, while a secondary minor path running through the area supports circulation.

2. Morphological Continuity and Social Hubs

It is proposed that the existing residential fabric located in the north of the area be continued with morphological continuity along the axis that divides the region in two. As a result of this settlement strategy, the functions that constitute the "CORE" units of the project and support local development are placed in the center of the area. Through the "CONNECT" network designed between these focal points, the aim is to transform the fragmented structure into a holistic social network and to revitalize the settlement with the CORE-NECT vision.

3. Parceling and Mass Arrangement

The focal points of the project area were divided into functional units in accordance with the defined requirement program, and a parceling scheme was designed accordingly. In this process, each building mass was positioned based on the square meter requirements in the program, the orientation towards the view, and its relationship with the traditional texture of the douar.

4. Social Spine and Public Centers

The main axis of the design enhances social interaction with public focal points such as the Mosque, Majlis, and Tourist Square. Access to the educational and storage units is integrated with the main circulation scheme, but is provided via a semi-public threshold defined by garden walls and entrance gates. Shaded mezzanine areas are created in these focal points with local vegetation, and physical continuity and spatial integrity between the buildings are ensured by the eaves systems at ground level.

SITE PLAN SCALE: 1/1000

AXONOMETRIC DIAGRAM OF IZLOULIEN

Public Pathway

CORE-NECT Architecture in the Aftermath of Disasters
 #69425bfac3115

"Assembling the core, connecting the fabric"

DOUAR IZLOULIEN WEST SILHOUETTE SCALE: 1/1000

"Educational Hub"

"Artisan Hub"

GROUND LEVEL PLAN SCALE: 1/500

SECOND FLOOR PLANS

MODULAR LIVING UNITS

The design approach, which combines traditional living units with a modular system, offers different housing alternatives that support the morphological continuity of the settlement. The aim is to create a flexible settlement scheme that integrates into the douar texture, with compact typologies compatible with gardens and narrow spaces, obtained by combining units in different ways.

SQUARES-UNIT DIAGRAMS

SECTIONS SCALE: 1/500

THE SEGUA NETWORK

The Segua water line, led by the mountain, reaches the social units and agricultural terraces along the slope. The structures store the rainwater collected from their terraces in their own cisterns for garden use. Water exceeding the cistern capacity is transferred to the Segua network via drainage lines and stored.

RESILIENT ENERGY INFRASTRUCTURE

The settlement's energy infrastructure is designed through an integrated service component. Segua to minimize generation and maintenance costs. Energy generated is provided by solar panels installed on public buildings due to high costs, and then distributed to the douar via the grid. The network is a lowest-resistance that ensures energy continuity in the post-disaster period.

STRUCTURAL TECTONICS: LOCAL SEISMIC UPGRADES

SEISMIC BUFFER: NATURAL FIBER ISOLATION

EXISTING: Shared Wall & Founding Wall
 PROPOSED: Seismic Independence & Wood Buffer

INTERNAL TIMBER LACING

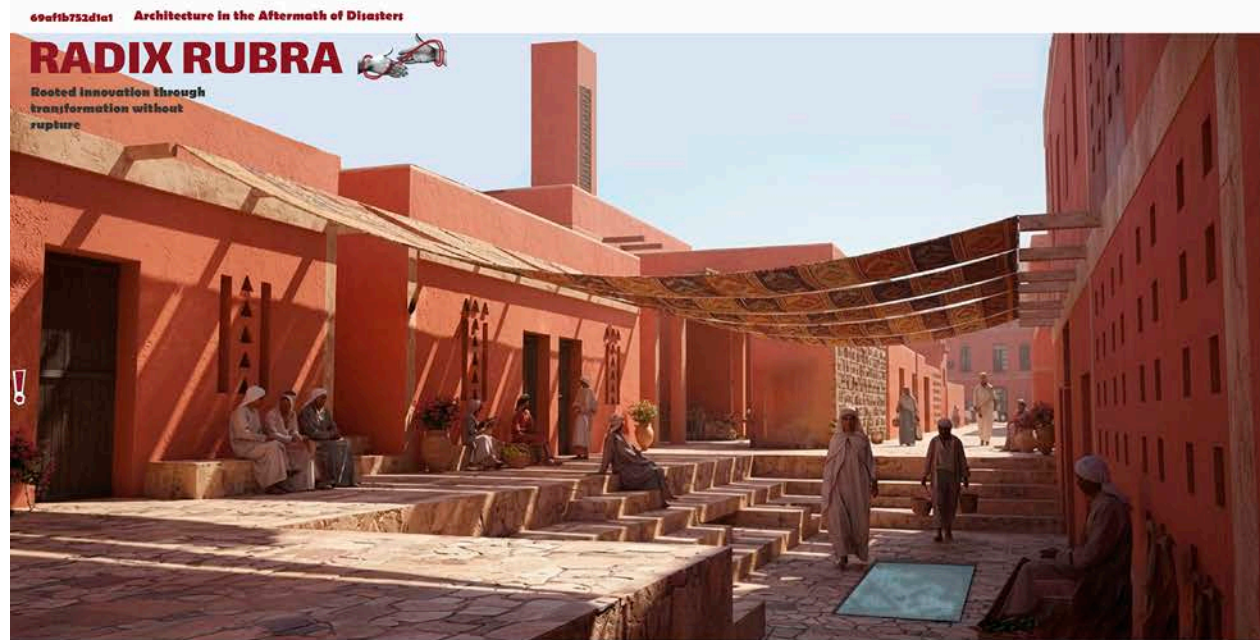
EXISTING: Brick Masonry Failure
 PROPOSED: Ductile Behavior with Timber Lacing

INTERLOCKING CORNER JOINT

EXISTING: Corner Separation & Disintegration
 PROPOSED: Interlocking Timber Corner Integrity

Fifth Prize

Entry no.15-69af1b752d1a1
 Team leader: Uğur Özkalaycı
 Additional team leader: Müge Uysal
 Co-Author: Şevval Tatar
 Country: Turkey



PROBLEM
 Physical Damage
 Climate Stress
 Lost Traditions
 Rural Unemployment

STRATEGY

This project emerges from the memory of the red landscape in Morocco's oasis villages. Rather than erasing the existing village fabric, it reads its layers and allows the new settlement to grow from its roots. The past is treated not as a remnant, but as a living ground. The new does not break from the old; it continues its rhythms, traces, and spatial memory while clearly expressing its own time. This approach represents a rebirth that makes roots visible by balancing preservation and transformation. Transcending a mere conceptual intention, this rebirth draws its strength directly from the physical and climatic realities of the site. By utilizing the thermal mass of traditional adobe and the shading morphology of its interlocking narrow streets, the design offers a passive and sustainable response to the harsh desert climate. The historic 'regia' water channels and terraced farming plots that give life to the region are envisioned not merely as landscape elements, but as active infrastructures driving the socio-economic engine of the new settlement. Ultimately, by revitalizing Morocco's local craftsmanship and land-based culture of collective labor (mecca) through a contemporary spatial organization, this intervention establishes a mechanism for both ecological and cultural resilience.

The Vernacular Reference **Contemporary Interpretation**

01 Understanding the Historical Fabric.

02 Root and Reeling into the Old Village

03 Analysing Voids and Creating Small Places

04 Concentric Zoning: From Public Square to Productive Lands

Site Plan Scale: 1/500

A) Using the structurally sound existing buildings as housing.

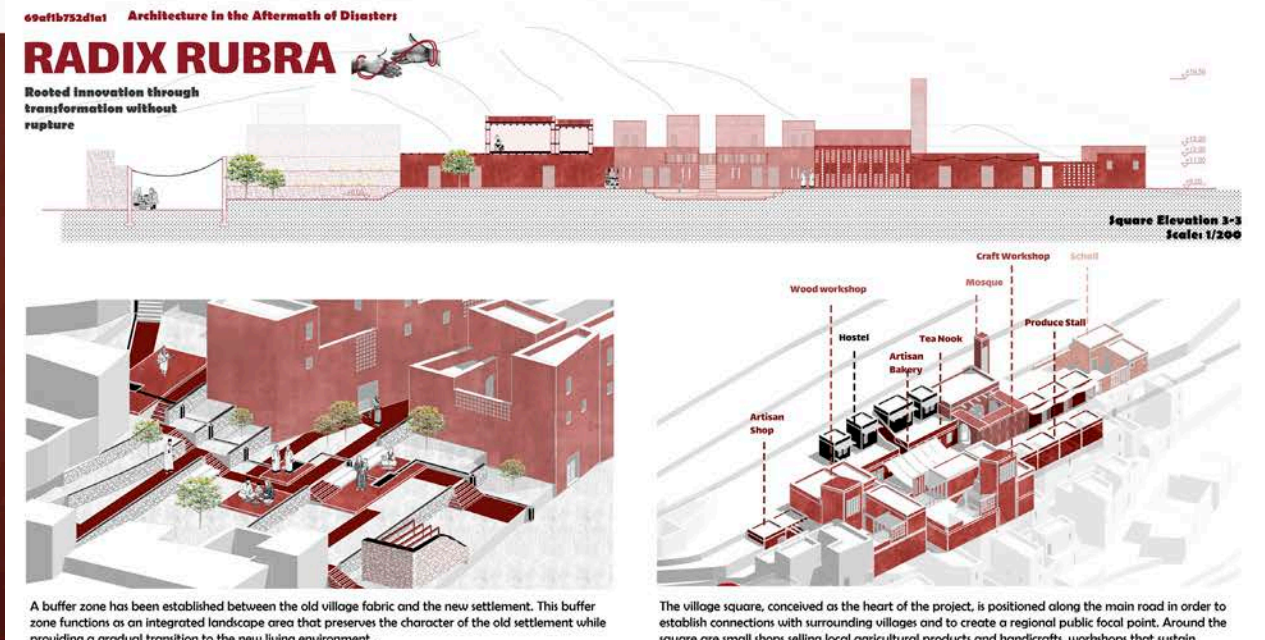
B) The partially damaged structures were reinforced with wooden beams creating.

C) The partially damaged structures were stabilized using steel tension systems.

D) The partially ruined structures were reinforced with wooden bracing and transformed into observation points.

E) Proposed to reuse the stone of the completely destroyed structures.

Section 1-1 Scale: 1/200



Controlled Livestock Routing

By strategically placing the barn units, this circulation network consolidates livestock entry and exit routes along specific axes, protecting the pedestrian fabric of the village.

+9.00 Plan Scale 1/500

Wooden Tie Beam Strengthening System for Adobe Buildings

The Zaouia Nexus
 Reinterpreting the traditional Moroccan complex, this space acts as the socio-economic and cultural heart of the new settlement.

The Contemporary Ksar
 Reinterpreting the dense fabric of traditional Moroccan settlements with a modern approach, these housing clusters shade the narrow streets while exploring the wind to provide natural cross-ventilation.

Terraced Farming Plots
 Irrigated by traditional 'regia' channels, these productive green terraces outside the village reconnect both ecologically and socio-economically through the cultivation of argan, dates, and other local crops.

Section 2-2 Scale: 1/200

IV.2 Honourable mentions

Entry no.8-691829057d448

Team leader: Mahdi Bayat

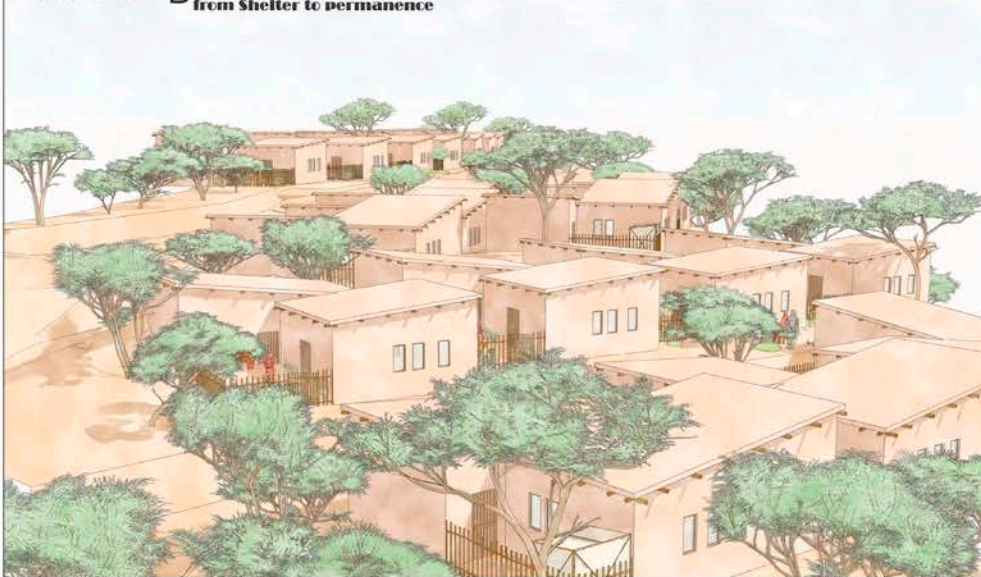
Collaborator: Zahra Lak

Country: Iran

User Identification Number : 691829057d448
Architecture in the Aftermath of Disasters Towards Sustainable and Community-Based Reconstruction in Post-Earthquake Morocco

RESURGE

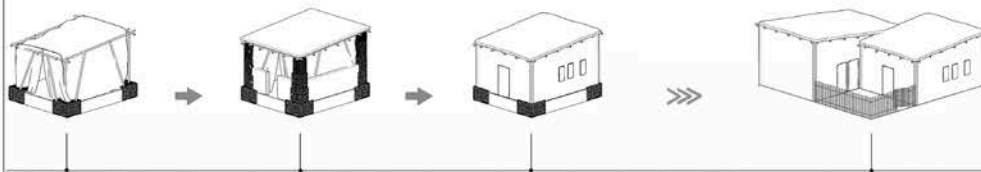
from Shelter to permanence



This project proposes a three-phase housing strategy that allows communities to rebuild progressively after disaster. Designed to be constructed by residents themselves, the system relies on local materials and simple building techniques rooted in vernacular knowledge.

Its modular logic enables incremental growth and replication across the village, transforming emergency shelter into a permanent and expandable settlement framework. By integrating community participation with locally sourced materials, the proposal establishes a resilient and context-responsive housing system.

This project proposes a prefabricated housing system based on local materials and incremental construction. Designed to evolve in three phases, the unit transforms from an emergency shelter into a permanent home through active participation of residents. The system is modular, expandable within the village fabric, and structurally responsive to seismic conditions.




Phase 1 Immediate Shelter (First Week After Earthquake)
Self-built emergency shelter constructed by residents using a lightweight timber post-and-beam structure and fabric enclosure. Designed for rapid assembly, minimum costs, and immediate protection during the first days after the disaster.


Phase 2 Transitional Structure (Weeks 1-2 After Earthquake)
Residents begin constructing permanent structural elements using stacked cobble gables filled with local stones. These stone-filled gable columns form the primary vertical structure, while stone-filled stone walls are built between them, gradually replacing the initial fabric enclosure.

Phase 3 Enclosure and Weather Protection (Months 1-2 After Earthquake)
Stone walls and the roof are fully enclosed and protected with a traditional earth-and-straw plaster. Doors and windows are installed, improving thermal comfort, privacy, and long-term habitability.


Phase 4 Self-Built Permanent Home
Through an incremental process, residents expand the house by adding bedrooms and a stable, using simple construction techniques and local materials. The system is accessible, adaptable, and replicable in diverse post-disaster rural settings.




Structural Details Diagram - Fabric Structure With Timber Beams
Structural timber beams are anchored to a gabion foundation. A fabric membrane is stretched over the timber frame, providing rapid, low-cost enclosure while establishing the structural grid for future development.



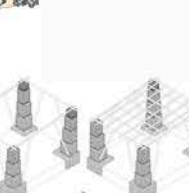
Structural Details Diagram - Gable Columns and Walls Integrated with Fabric Structure
The structure of the initial transitional fabric structure is progressively replaced by stone-filled gable columns filled with stone. Interconnected between the gable stones with built from local materials define the spatial structure, illustrating the phased development of the village.




Structural Details Diagram - Fabric Phase Application in Walls and Built Enclosure
In the final phase, the building works to deal with a layer of locally sourced earth (cob) plaster applied to both walls and roof surfaces. This earth layer enhances the thermal performance of the structure, improves air-tightness by filling voids, and contributes to climate requirements. In addition, the use of indigenous materials reinforces the visual identity and contextual integration of the structure within its rural setting.



Structural Construction Diagram
The diagram illustrates the structural logic of the designed unit through a hybrid construction system. A fabric layer is anchored to the foundation from the primary beams, through which stone columns are fixed to the main load-bearing elements. Stone-filled gable columns are then placed individually on the foundation, making a participatory construction process. Solid walls are constructed between the columns and rest on the same three-layer, which functions as thermal and moisture insulation. The system is completed with a mud-and-straw finish, reinforcing the use of local materials and techniques.



Construction Diagram of Stone-Filled Gable Columns
This diagram illustrates the construction process of gable columns and highlights the active involvement of local villagers in building their homes.



Structural Details Diagram of Stone-Filled Gable Columns: Gable Construction Method
This diagram illustrates the method of constructing and installing individual gable columns, which collectively form the primary structural columns of the building system. The assembly process allows the volume to be constructed incrementally while maintaining structural stability and alignment.

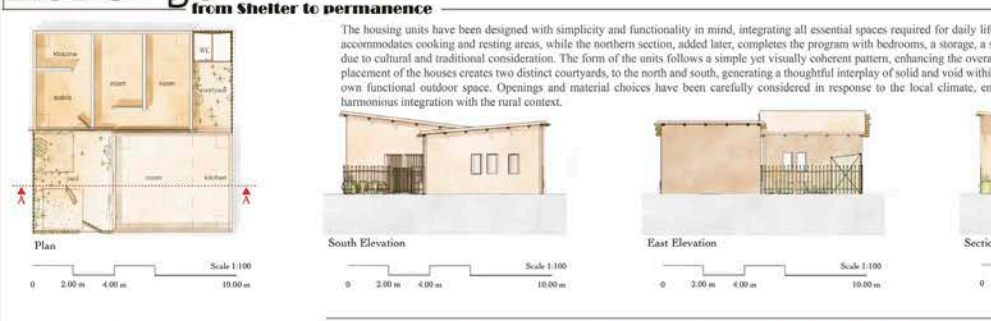
Gable Columns Installation and Timber Beams Connection Diagram
The diagram illustrates a phased construction process for the first stage: a fabric structure provides an initial shelter. After this temporary enclosure is established, residents incrementally construct their permanent homes. Stone-filled gable columns are stacked to form gable columns, followed by the addition of interior joists and beams to complete the structure. All stages are constructed by the residents themselves, using local materials and simple building methods.

Poster No 1

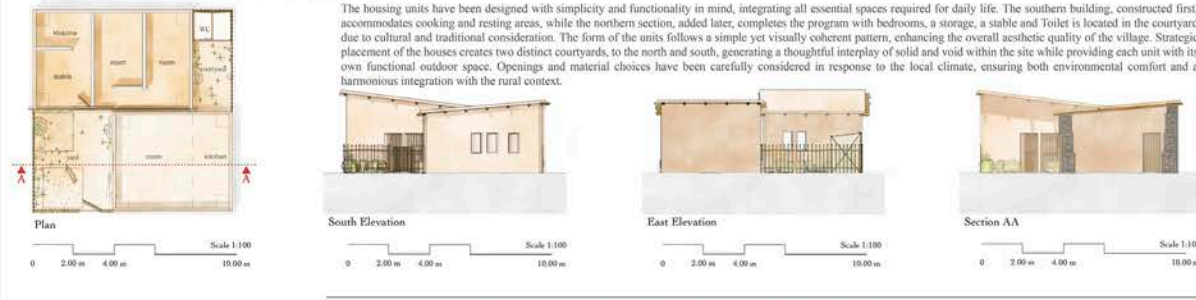
User Identification Number : 691829057d448
Architecture in the Aftermath of Disasters Towards Sustainable and Community-Based Reconstruction in Post-Earthquake Morocco

RESURGE


from Shelter to permanence



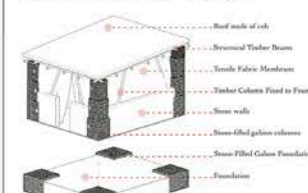
The housing units have been designed with simplicity and functionality in mind, integrating all essential spaces required for daily life. The southern building, constructed first, accommodates cooking and resting areas, while the northern section, added later, completes the program with bedrooms, a storage, a stable and Toilet is located in the courtyard due to cultural and traditional consideration. The form of the units follows a simple yet visually coherent pattern, enhancing the overall aesthetic quality of the village. Strategic placement of the houses creates two distinct courtyards, to the north and south, generating a thoughtful interplay of solid and void within the site while providing each unit with its own functional outdoor space. Openings and material choices have been carefully considered in response to the local climate, ensuring both environmental comfort and a harmonious integration with the rural context.



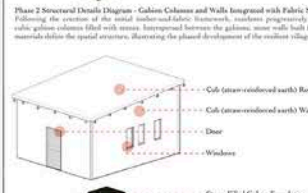
Plan Scale 1:100
South Elevation Scale 1:100
East Elevation Scale 1:100
Section AA Scale 1:100



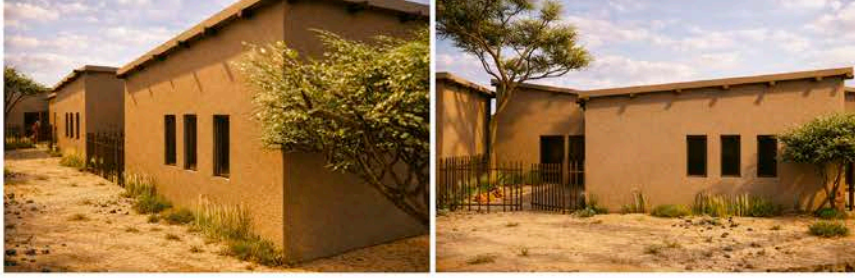
Phase 1 Structural Details Diagram - Fabric Structure With Timber Beams
Structural timber beams are anchored to a gabion foundation. A fabric membrane is stretched over the timber frame, providing rapid, low-cost enclosure while establishing the structural grid for future development.



Phase 2 Structural Details Diagram - Gable Columns and Walls Integrated with Fabric Structure
The structure of the initial transitional fabric structure is progressively replaced by stone-filled gable columns filled with stone. Interconnected between the gable stones with built from local materials define the spatial structure, illustrating the phased development of the village.



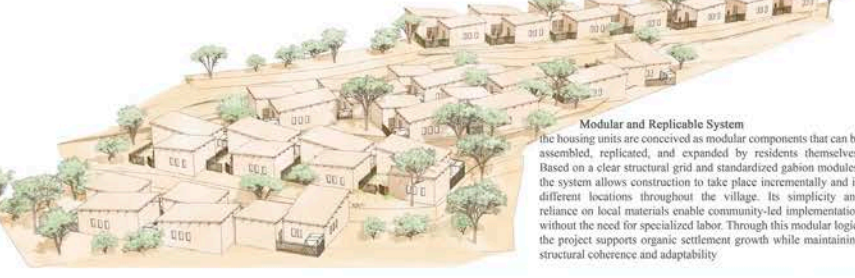
Phase 3 Structural Details Diagram - Fabric Phase Application in Walls and Built Enclosure
In the final phase, the building works to deal with a layer of locally sourced earth (cob) plaster applied to both walls and roof surfaces. This earth layer enhances the thermal performance of the structure, improves air-tightness by filling voids, and contributes to climate requirements. In addition, the use of indigenous materials reinforces the visual identity and contextual integration of the structure within its rural setting.



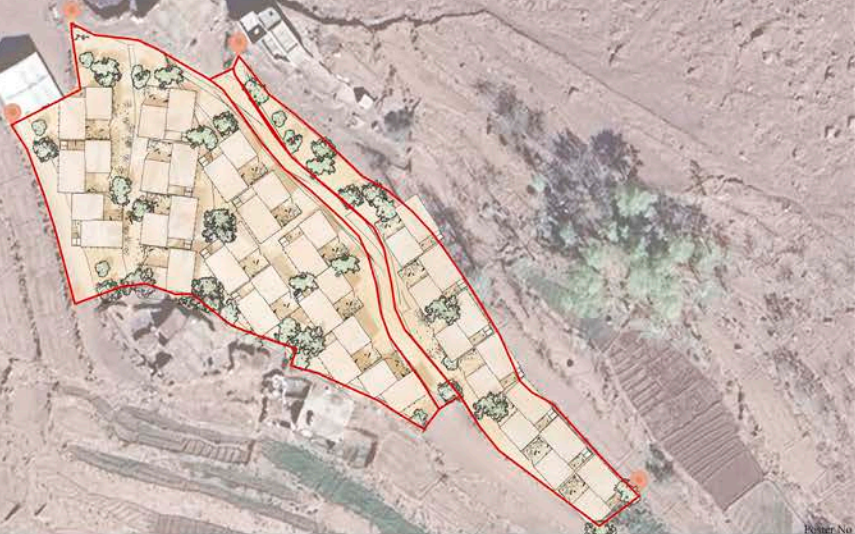
Phase 01 — Emergency Fabric Shelter
In the immediate post-disaster phase, the unit functions as a lightweight fabric shelter for temporary accommodation. Timber beams and diagonal bracing members are anchored to a gabion foundation. A fabric membrane is stretched over the timber frame, providing rapid, low-cost enclosure while establishing the structural grid for future development.

Phase 02 — Construction of Gabion Columns
Once residents are settled, they begin constructing the permanent structural system. Gabion modules are fabricated as cubic units in predefined dimensions. The first gabion is placed on the foundation and filled with stone; subsequent gabions are stacked above, filled, and mechanically connected to the lower units until the desired height is achieved. These stacked stone-filled gabions form the primary structural columns. Between them, stone masonry walls are built and additional timber beams are integrated for reinforcement. During this phase, the fabric shelter remains operational while the permanent structure gradually consolidates.

Phase 03 — Transition to Permanent Housing
To convert the unit into a permanent dwelling, a second volume is constructed by residents following the same structural logic. Exterior walls are finished with cob plaster, improving thermal performance and reinforcing the vernacular identity of the architecture.



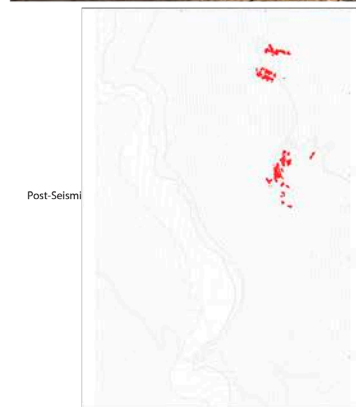
Modular and Replicable System
The housing units are conceived as modular components that can be assembled, replicated, and expanded by residents themselves. Based on a clear structural grid and standardized gabion modules, the system allows construction to take place incrementally and in different locations throughout the village. Its simplicity and reliance on local materials enable community-led implementation without the need for specialized labor. Through this modular logic, the project supports organic settlement growth while maintaining structural coherence and adaptability.



Poster No 2

Entry no.35-699382ef3a073
 Team leader: Agustin Camicha
 Country: Argentina
 Additional team leader: Alejandro Rodriguez Silva
 Country: Spain
 Co-Author: Fatima Gomez Rodriguez
 Country: Spain

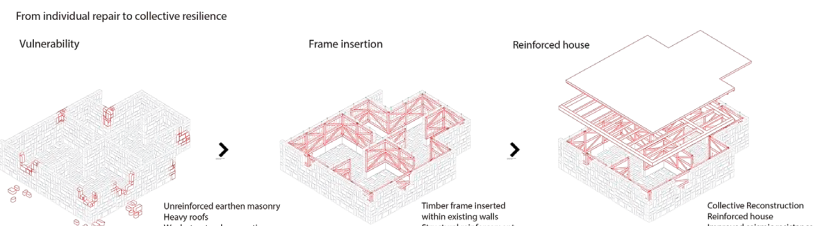
699382ef3a073
 Architecture in the aftermath of disasters



From Fragility to Resilience
 Following the 2023 earthquake, the village of Izoulene faces the challenge of rebuilding its fragile masonry fabric while preserving its social structure, productive landscape, and vernacular identity. Rather than replacing the existing settlement, the project proposes a strategy of precise and incremental interventions that reinforce what already exists.

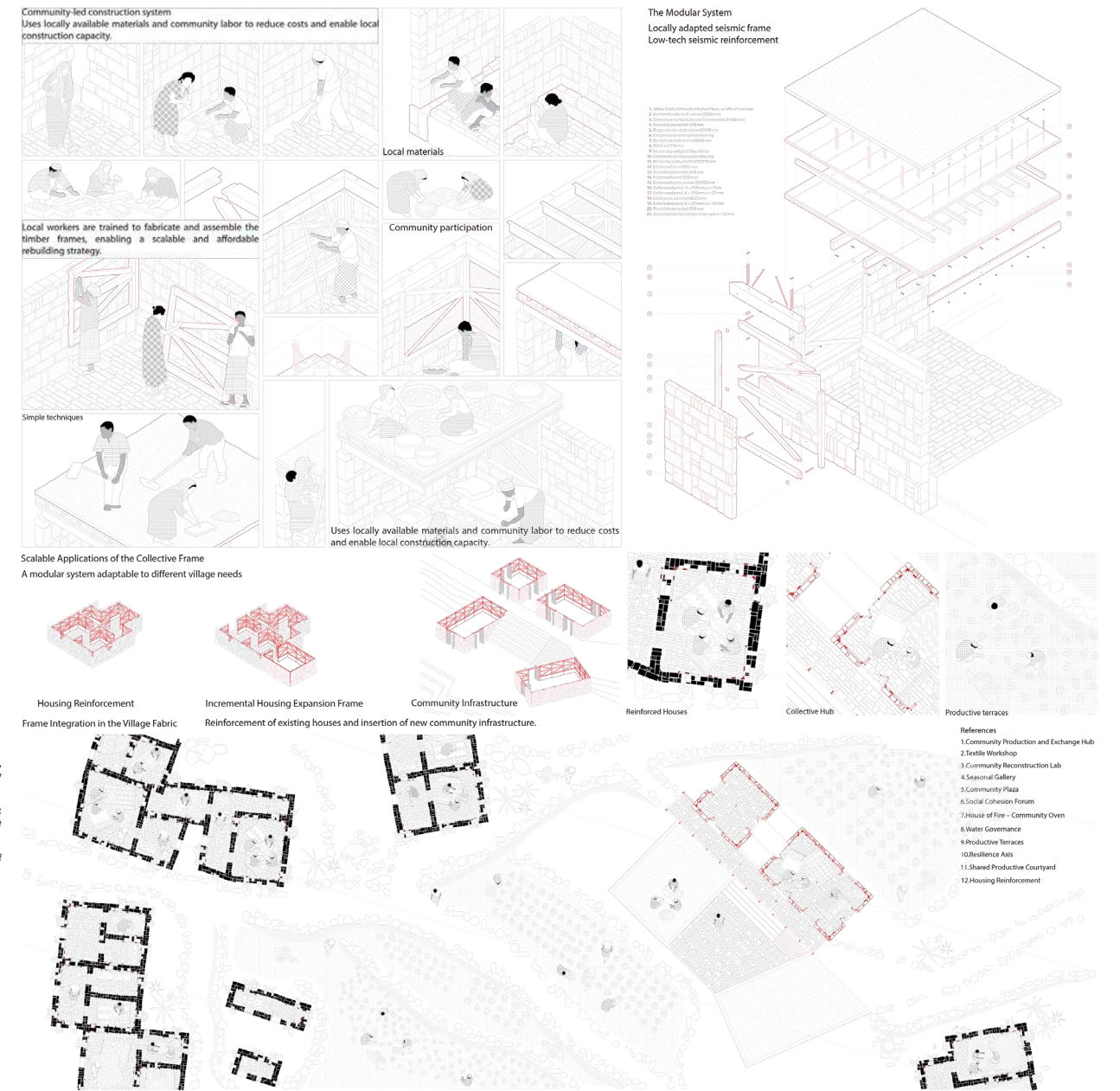
A simple modular timber frame is inserted within damaged houses, transforming fragile masonry into a safer and more resilient structure. This system works as an independent structural skeleton that reduces seismic vulnerability while allowing the use of local materials and traditional construction techniques. Designed for low-tech assembly, the frame can be built collectively using community labor and locally available resources.

Beyond structural repair, the proposal reconnects housing, craft production, and agricultural terraces through a new collective hub and a network of shared spaces. Roof terraces become productive landscapes, public spaces reactivate social life, and workshops support local textile production.



Collective frame
 A community-built modular system for post-seismic reconstruction

699382ef3a073
 Architecture in the aftermath of disasters



Entry no.40-691a9aa8c80d2
 Team leader: Dang Le Nhu Ngoc
 Additional team leader: Tran Khoa Thanh
 Country: Viet Nam



THE ATLAS LOOM

Woven Resilience in Post-Disaster Morocco



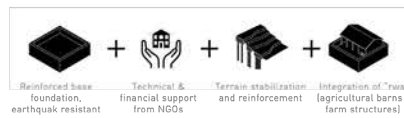
"Mud cannot be expected to last much longer than that"
 WILLIAM J. R. CURTIS - Berber Collective Dwellings of the Northwestern Sahara

Architecture is no longer a quest for eternal present within static "spaces," but a living entity evolving through "time" to adapt to unpredictable scenarios. The form of intervention has shifted from occupying lands to managing resources and forecasting material structures across all stages: before, during, and after a disaster. This philosophy is profoundly applied to the reconstruction of Izioulen village following the 2023 earthquake.

The aftermath of the catastrophe left the village facing a dual breakage: the collapse of physical architecture and the fracturing of human social structures. Drawing inspiration from the traditional weaving structures of the Berber people in the High Atlas, the "Weaving" strategy interlaces micro-spatial pockets into the village to simultaneously regenerate three pillars: Economic, Social, and Ecological. Serving as a foundational "loom," the project transforms passive relief into long-term community autonomy through a set of rules based on temporal forecasting.

MIRCO SCALE

At the Micro Scale: The 30/70 Hybrid Structure The proposal introduces a 30/70 hybrid system. The 30% "Survival Core" is constructed with external support from NGOs, providing a fortified, earthquake-resistant ground floor that stabilizes the terrain. This essential foundation protects human life and integrates traditional stables (Rwa) to safeguard vital agricultural assets. The remaining 70% above—the "Flexible Core"—is built by the villagers themselves using indigenous rammed earth (fabas), local timber, and stone. Guided by Taich (traditional communal labor practices), this participatory process heals social trauma and restores local architectural agency.



VILLAGE SCALE

For the village itself, the reconstruction is organized according to the Warp and Weft logic: The Warp (The Healing Axis): Creates "Weave Eye" anchor points (Central Hubs) following a 3m setback between modules. These act as seismic joints while serving as micro-economic spaces where the culture of weaving is revived, preserving the craft's heritage. The Weft (The Rhythm of Life): Housing modules follow the natural contours and the land, acting as "stitches" compressed into the topography to stabilize terraces and prevent erosion.

The intersections of these axes form public squares equipped with communal kitchens and power/water supply points, rebuilding community cohesion. Intervene throughout the entire system are restored traditional irrigation channels (Isguial), distributing collected water to the terraced fields below.

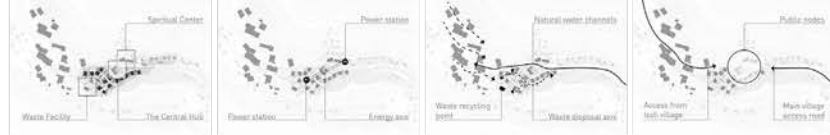
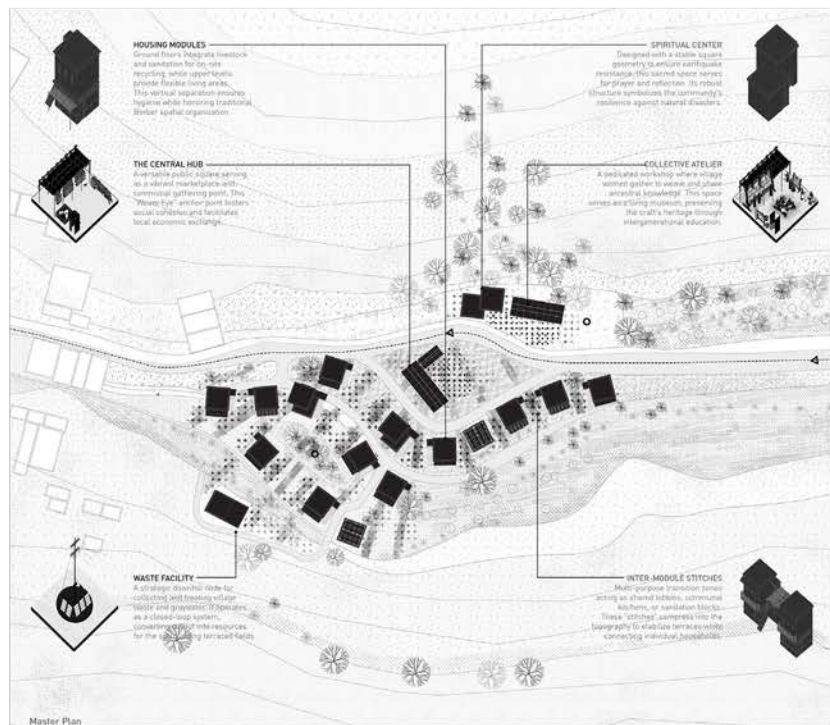


TERRITORIAL SCALE

At the Territorial Scale: The Warp and Weft The project identifies the "Warp" as a strategic inter-village transport network. Along this axis, "Nodal Points" (Social Hubs) are established midway between villages. In daily life, these serve as rest stops and rotating "Mobile Souks" for agricultural exchange; during disasters, they transform into first-aid stations and fortified shelters, ensuring communication points remain open between settlements.



By evaluating resources through the units of both "Time" and "Space," the project pro-

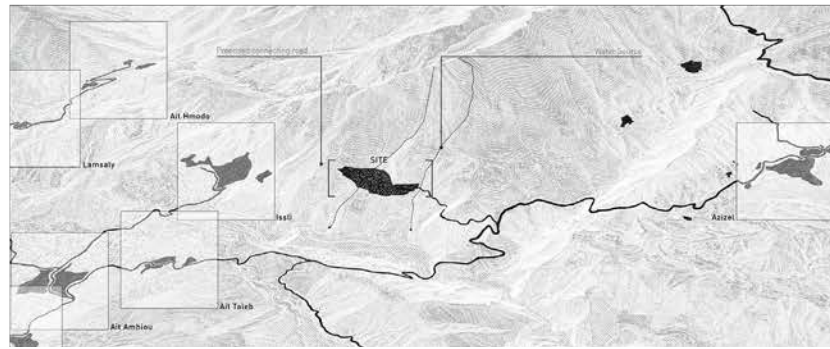


ZONING STRATEGY
A vertically organized layout integrating 15-18 households with communal hubs, stabilized by terraced landscapes, and tiered from spiritual workshops (uphill) to waste management (downhill).

WATER AND ENERGY RESOURCES
Contour ditches collect water to centralized households for irrigation and domestic use. The existing solar power system ensures emergency energy and operates the weaving workshops (downhill).

AGROECOSYSTEM VILLAGE
An ecological village integrating ground-floor livestock farming for on-site waste recycling. The ditch system harnesses natural water, creating a closed-loop cycle for sustainable cultivation.

PUBLIC HUBS AND CRAFT HERITAGE
Centralized public nodes and weaving spaces preserve and promote traditional crafts while fostering community cohesion. This system creates a cultural exchange network, ensuring the sustainable preservation of local identity.

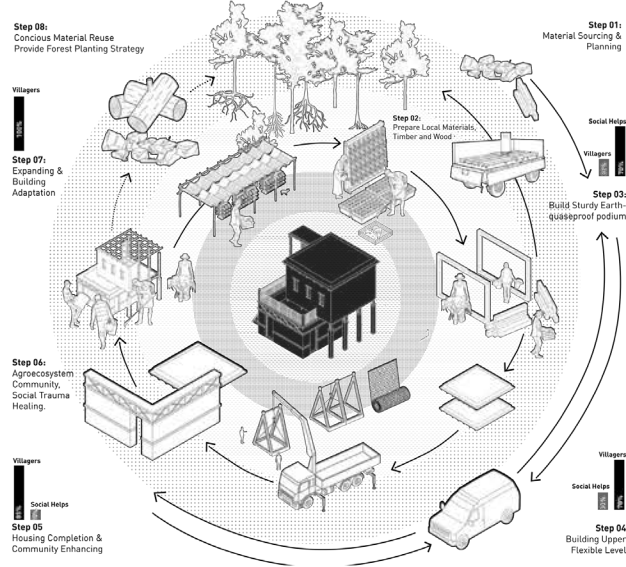


BUILDING PROCESS

1. Social Intervention: The "Survival Core" (Steps 1-3)
After locals source initial materials, NGOs step in to construct a solid foundation and ground floor, contributing up to 80% of the effort. Villagers build the upper 70%—the "Flexible Core"—using native rammed earth (fabas), wood, and stone. Guided by Taich (traditional communal labor), this hands-on process restores architectural self-determination and helps heal social trauma after the disaster.

2. Community Transition: The "Flexible Core" (Steps 4-5)
Once the foundation is secure, the community takes over, contributing up to 80% of the effort. Villagers build the upper 70%—the "Flexible Core"—using native rammed earth (fabas), wood, and stone. Guided by Taich (traditional communal labor), this hands-on process restores architectural self-determination and helps heal social trauma after the disaster.

3. Recovery and Circularity (Steps 6-8)
The project then expands to a "Warp and Weft" planning scale. Housing modules follow contour lines (Weft) to stabilize terraced fields and prevent erosion, while 3-meter setback spaces (Warp) act as Central Hubs to revive the local weaving economy. By Steps 7 and 8, external aid completely ceases (100% local effort). Residents adapt their homes and implement forest replanting strategies for sustainable material reuse, closing the eco-architectural loop.



MATERIAL EVALUATION

Wool, fabric, straw
Animal fur, fabric, straw, dried grass, and similar materials can be easily found within a radius of approximately 500 meters from the local surroundings of the residents. These resources are readily available in the immediate area, often as by-products of everyday agricultural or domestic activities. As a result, accessing and collecting them typically requires no more than a single day, making them highly practical and convenient materials for local use.

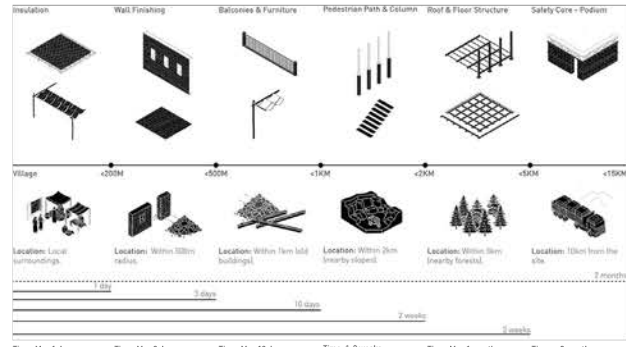
Rammed Earth
Rammed earth materials can be found within a radius of approximately 500 meters from the local area. Because the soil is readily available nearby, it can be sourced, prepared, and transported for use within no more than three days, making it a relatively accessible and practical material for construction in the community.

Damaged Wood
Reclaimed wood can be found within a radius of approximately 5 kilometers from the site. As a result, materials are typically sourced from existing buildings, discarded structures, or leftover construction elements in the surrounding area. With some time needed for searching, collecting, and selecting suitable pieces, the process of gathering reclaimed wood would generally take no more than ten days.

Stone
Stone from the Atlas Mountains can be found within a radius of approximately 5 kilometers from the site. As a locally available natural resource, these stones can be gathered from nearby slopes and rocky outcrops. Allowing time for extraction, selection, and transportation, the process of gathering stone would generally take no more than two weeks.

Atlas Cedar Wood
Atlas cedar timber can be found within a radius of approximately 10 kilometers from the site. Because it is not locally available in surrounding forested areas, considering the time required for locating suitable trees, harvesting, and basic processing of raw wood, the entire process of collecting and preparing Atlas cedar wood generally takes no more than one month.

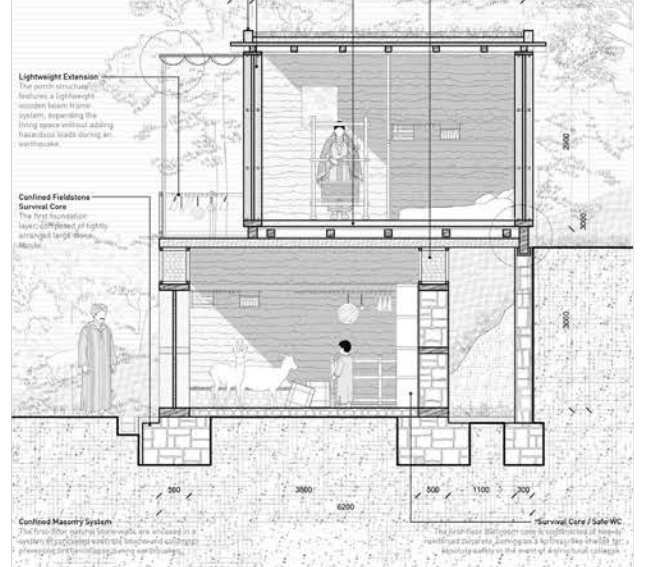
Gabion Wall
Steel used for constructing gabion walls is sourced from the farthest distance among the listed materials, estimated to be around 10 kilometers from the site. Because it is not locally available like natural materials, it must be transported using mechanical vehicles. Taking into account the processes of procurement, delivery, and on-site preparation, obtaining and transporting the steel could take more than two months.



Reinforced Rammed Earth Wall
The exterior Rammed Earth walls are made of rammed earth reinforced with 8.0mm diameter galvanized steel mesh (200mm spacing) for thermal insulation and increasing ductility to withstand lateral loads during an earthquake.

Flexible Joint Detail
A flexible deformation joint connecting the exterior Rammed Earth walls to the interior stone walls, creating a 300mm gap to distribute lateral loads from the exterior floor above to the foundation.

Transition Beam Plane
A wooden beam system atop the brick foundation stone walls, creating a 300mm gap to distribute lateral loads from the exterior floor above to the foundation.



Reinforced Masonry System
The first floor masonry system is reinforced with vertical and horizontal steel reinforcement bars to prevent structural failure during earthquakes.

Reinforced Rammed Earth Wall
The exterior Rammed Earth walls are reinforced with 8.0mm diameter galvanized steel mesh (200mm spacing) for thermal insulation and increasing ductility to withstand lateral loads during an earthquake.

Lightweight Extension
The second structure features a lightweight wooden beam system, ensuring structural stability during seismic events. This design allows for easy expansion and contraction of the structure.

Confined Fieldstone Survival Core
Layered construction of fieldstone masonry with vertical steel reinforcement bars.

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Architecture in the Aftermath of Disasters THE KASBAH WITHIN

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Context

- Earthquakes:** Morocco lies in a seismically vulnerable region of Morocco. The 2023 earthquake exposed fragile housing and infrastructure, reminding communities that future seismic risks remain real and must shape resilient architectural responses.
- Climate:** Located in the Atlas Mountains, Kasbah experiences strong sun, cold winters, and occasional heavy snow. Architecture must buffer temperature extremes, reduce heat loss, and create protective spaces that shelter daily life.
- Livelihoods:** Many young residents migrate to major cities for work, leaving income loss and a gradually reducing local labor force. Villages face aging populations and weakened capacity for local production and construction.
- Amazigh Culture:** The Amazigh communities hold a rich heritage of language, craft, and mountain traditions that anchor identity. Increasing exposure to mass culture risks diluting local identity and everyday practices.

Zoning

Infrastructure & Resilience: Infrastructure is a critical element for community resilience. This plan identifies key infrastructure elements and their locations, ensuring they are resilient to seismic risks and climate change. Key elements include:

- Water supply
- Electricity
- Waste management
- Transportation
- Healthcare
- Education
- Community centers

Village Network: The village network is a key element of community resilience. This plan identifies key network elements and their locations, ensuring they are resilient to seismic risks and climate change. Key elements include:

- Water supply
- Electricity
- Waste management
- Transportation
- Healthcare
- Education
- Community centers

Existing Village

The current state of Kasbah village after the earthquake needs to be assessed in terms of the extent of damage and the viable interior and exterior public spaces in order to develop spatial strategies that optimize the labor, cost, and time of the local people.

Proposal

City's reconstruction method will be used to ensure that people can easily access and resource that homes themselves.

Strategy

- Human first: Safe Module**
Simple seismic-resistant modules provide immediate protection after disasters while allowing for future expansion, ensuring families can rebuild stable homes without complex construction systems.
- Reuse: Damaged Structure & Ruins Material**
Collapsed structures and local stone are reused as building material. This approach reduces waste, lowers reconstruction costs, and preserves the continuity and identity embedded in the village fabric.
- Co-Design & Co-Management**
Residents participate directly in planning, building, and maintaining the settlement. Shared decision-making strengthens local ownership, fosters cultural compatibility, and supports long-term management after reconstruction.
- Incremental: Housing & Public spaces**
The settlement develops gradually through expandable housing clusters connected by shared courtyards and public spaces, allowing the village to adapt organically to changing needs and resources over time.

Spatial Strategy: Shared Resources and Expandable Living

Both tangible and intangible resources are shared. Housing clusters are organized around shared courtyards where water, knowledge, and social life are exchanged. Homes are allowed to expand gradually, supporting changing family needs while strengthening community connections and maximizing efficient land use within the mountainous terrain.

Temporal Strategy: Seasonal and Event-Based Spaces

Spaces are designed to adapt over time and respond to seasonal rhythms. Courtyards and shared platforms support daily activities, agricultural cycles, markets, and social events. As the village grows, these spaces evolve, accommodating new functions and larger gatherings while preserving the flexibility needed for long-term community development and resilience.

SAFE module

Home	Home	Home	Home
Courtyard	Storage	Farm	Market
Workshop	Market	Market	Market
Market	Market	Market	Market

Masterplan

WATER SOURCE

FIELDS

WATER SOURCE

FIELDS

Legends

- Electric Line
- Safe Module's Structure
- Others Function (Resident's Decision)
- Kitchen - Safe Module's Structure
- Storage's Private House - Safe Module's Structure
- Mosque
- Mosque's Yard
- Open Public Space
- Souvenir Shop
- Villager's Storage
- Handcraft Workshop
- Expanded Spaces
- Shared Space (4 To 6 Core Unit Families - Closed Yard)
- Small Private Yard - For Women
- Best Private Yard - For Women Handcraft

Timeline

1st year: Stabilization and Emergency Support
 Damaged areas are stabilized and essential repair begins. Safehouse modules are installed to protect residents from seismic risks, while emergency backup points provide accessible storage for tools, materials, and disaster-response supplies.

5 years: Reconstruction and Infrastructure
 Reconstruction expands beyond emergency relief toward long-term settlement recovery. Damaged neighborhoods are rebuilt and new housing clusters appear around shared courtyards. Renewable energy systems, material production yards, and improved paths organize village infrastructure, supporting agriculture, crafts, and everyday community life.

10 years: Organic Village Growth
 After 5 years, the village develops into a vibrant and interconnected settlement. Housing clusters grow organically while inter-cluster structures strengthen spatial continuity. Shared public spaces, workshops, and markets support economic activity, enabling the community to evolve gradually while preserving Amazigh cultural identity and adapting to future environmental challenges.

Architecture in the Aftermath of Disasters THE KASBAH WITHIN

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Module S.A.F.E.

1. Reinforced Concrete Structural System
 2. Earthen Floor
 3. Lightweight Roofing
 4. Compressed Earth Brick (CEB)
 5. Exterior Wall
 6. Interior CEB Wall reinforced with horizontal tie beams

Safe Module 1: Bedroom
 Provides a secure sleeping quarters, ensuring protection during seismic events while maintaining cultural authenticity.

Safe Module 2: Living room
 Provides a central living area, facilitating social interaction and daily activities within the household compound.

Safe Module 3: Kitchen & WC
 Access to both preparation, clean water, and sanitation, ensuring health and hygiene during reconstruction.

Module Structure

New House Develop

- Phase 1: Young Family house**
2m x 2.5m, 1 SAFE module
- Phase 2: Expansion**
4m x 2.5m, 2 SAFE modules
- Phase 3: Multi-Complex**
6m x 2.5m, 3 SAFE modules
- Phase 4: Grid Division**
8m x 2.5m, 4 SAFE modules
- Phase 5: Cluster**
10m x 2.5m, 5 SAFE modules

Old Structure Adapt

Old Structure Retrofit
 Insert within existing houses, the module supports existing walls, providing immediate seismic support while preserving the original structure and spatial layout.

Old Structure Expansion
 Placed beside existing houses, the module expands living space, improves safety and daily comfort, while subtly supporting and reinforcing existing on-aging structures.

Inter-Cluster Modules
 Among communities traditionally share resources and support each other. Expanding SAFE modules into cluster spaces, strengthening connections, and reinforcing the culture. The network improves disaster resilience while strengthening cooperation and everyday collective life.

Shared Spaces

- Small Shared Space** (8-10m²): Family courtyard, Private space
- Medium Shared Space** (15-20m²): Common yard between families, Shared outdoor space
- Large Shared Space** (>30m²): Village events, Religion users, Public space
- Courtyard Shared Space**: Traffic space, Daily uses, Public space
- Roof Shared Space**: Common yard between families, Agriculture uses, Daily uses, Shared outdoor space

Structure Solution

Ring beams & bracing
 Continuous ring beams tie walls into single loop. Bracing system stabilizes corners and openings, distribute seismic forces, and prevent wall separation during earthquakes.

Interlocking CEBs
 Interlocking CEBs form precise dry joints with minimal mortar. Mechanical interlock improves wall integrity and allows the structure to act as a unified mass.

Lightweight Roofing
 Timber beams support clay tiles with a thin clay layer, forming a lightweight, flexible roof that reduces seismic load and allows controlled movement during earthquakes.

Water Courtyard Public Space

Cluster Shared Space

Inside each home, inside each courtyard, a living fortress emerges - the Kasbah within.