



Measuring Envelope products
and systems contributing to next
generation of healthy nearly
Zero Energy buildings

D 6.5 Innovation Consulting Actions

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and systems contributing to next
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Executive summary

Technological innovation in the construction sector is considerably difficult to implement due to several factors, including the fragmentation and complexity of the sector. Many disciplines are involved at various stages. Design and production are usually separate activities; there are many players – with a vast majority of small and medium-sized enterprises (SME); and supply chains are long and variegated. As a result, bringing the various specialists together is a difficult task, which is why many potentially effective innovative solutions never reach the market.

The H2020 MEZeroE project aims at tackling this complex issue by creating an EU distributed open innovation ecosystem for (i) developing nearly Zero Energy Building (nZEB) Enabler Envelope technology solutions; (ii) transferring knowledge; (iii) matching testing needs with existing facilities; (iv) providing monitoring in living labs; and (v) standardizing cutting-edge solutions coming from SMEs and larger industries, to foster inclusive change in the building sector, and by being accessible via a single-entry point to all users.

MEZeroE ecosystem is accessible via a single-entry point online platform which includes 9 Pilot Measurement & Verification Lines (PM&VL), 3 Open Innovation Services (OIS), a living lab (LL) building-technology match making service to enable real-world validation, and resources for training, business model development, intellectual property (IP) and knowledge management. MEZeroE fast-tracks prototypes to the market as fully characterized products.

This deliverable explores the platform's innovation consulting actions exploring requirements and constraints in relation to standardizing the application of OIS3 developed services by creating a general OIS3 application framework, which will establish internal process to follow under OIS3 for current providers as well as future providers once the platform's ownership is transferred to the Legal Entity. Individual service-based frameworks for each OIS3 sub-service have also been developed with the same objective. The main elements of the framework are to clarify how to access OIS3 services, the internal governance and operational structure, as well as the sustainability and long-term strategy of OIS3 sub-services.

This deliverable also includes the process and results of two Idea contests that were launched with project partners Focchi SpA and Pellini SpA, to test and refine OIS3 Service: Open Innovation Event Management and assess its effectiveness in attracting students and young researchers towards the MEZeroE platform. The idea contest hosts presented a real-world challenge related to sustainable building envelope products and invited students and young researchers to propose adequate solutions.

The deliverable is targeted towards all OIS3 service providers within the project, and all consortium partners interested in hosting idea contests.



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1 Introduction

1.1 Background and context

In the dynamic landscape of open innovation ecosystems, creating a structured and accessible group of consulting services that help accelerate the market entry of products developed by startups and SMEs is critical. MEZeroE's innovation consulting services are an entry point for SMEs and startups to find the expertise they need to accelerate their Go-To-Market activities.

Likewise, *Open Innovation Event Management*, one of the core offerings within the innovation consulting services, enable students and young researchers to engage with real-world innovation challenges and provide novel and unique solutions, while getting noticed by industrial organizations. It is also an opportunity for SMEs and startups with smaller budgets to find cost-effective solutions to their business challenges.

The innovation consulting framework outlines the governance, structure, and operational steps of the open innovation consulting services within MEZeroE.

This document serves as a reference guide for current and future OIS3 service providers within the MEZeroE ecosystem. It defines how each service should be structured, managed, and delivered to ensure consistent quality and long-term sustainability.



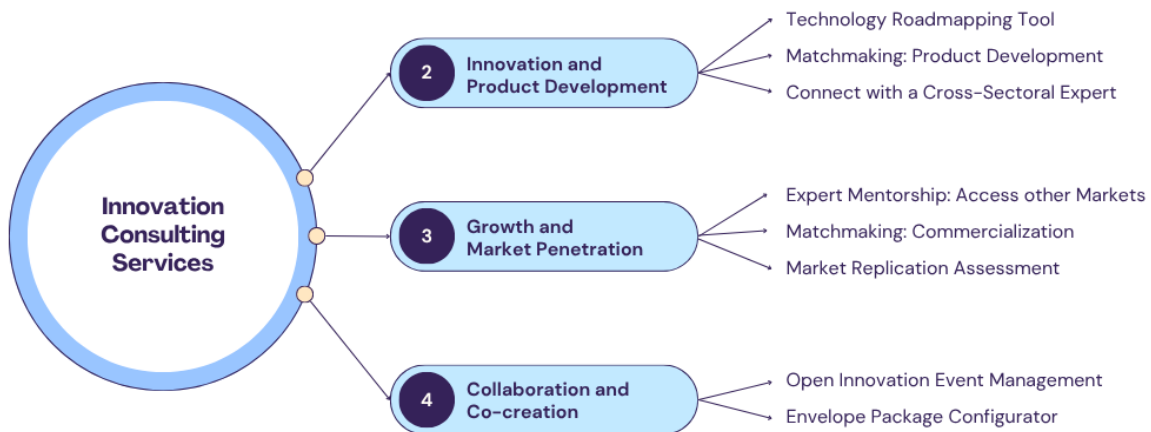
1.2 Innovation Consulting Services: Purpose and Scope

Innovation consulting services are accessible through Open Innovation Service 3 (OIS3), a suite of digitally accessible services designed to provide guidance, support, and collaboration opportunities to businesses, researchers, and young professionals within the MEZeroE ecosystem. These services act as a complementary offering to the Pilot, Measurement and Verification Lines (PMVLs) and other open innovation services available through the MEZeroE marketplace.

The primary objective of these services is to accompany users throughout the innovation process by providing structured support and specialized consulting for the development of building envelope products, thus contributing to the transition towards nearly Zero Energy Buildings (nZEBs).

1.3 Overview of OIS3 Services

Figure 1 - Overview of OIS3 Services



As can be seen in figure 1, OIS3 offers a range of tailored services, categorized under the three pillars. Each category focuses on a specific aspect of the innovation lifecycle, ensuring that users can find the right type of support based on their needs:

1. **Innovation and Product Development:** Supporting the development of new technologies, solutions, and methodologies.
2. **Growth and Market Penetration:** Helping businesses expand into new markets, explore commercialization opportunities, and build industry partnerships.
3. **Collaboration and Co-Creation:** Facilitating knowledge transfer, open innovation, and industry-academia partnerships through structured engagement models.

1.3.1 Innovation and Product Development Services

These services focus on guiding companies and researchers through structured innovation roadmaps, technology scouting, and expert mentorship, enabling them to develop cutting-edge solutions.

1.3.1.1 Technology Roadmapping Tool

Technology roadmapping is a structured methodology that helps companies and researchers map out their innovation journey, aligning technological development with market needs. It supports product development, strategic R&D planning, and commercialization pathways.

1.3.1.2 Matchmaking: Focused on Product Development

Product development-based matchmaking helps startups, SMEs, and researchers find the right industry or technology partners to co-develop products and innovations. It facilitates collaborations between technical experts, research institutions, and businesses.

1.3.1.3 Connect with a Cross-Sectoral Expert

Connecting with a cross-sectoral expert facilitates access to specialized mentors and experts from different industries to support cross-sector innovation and new product development. It helps companies leverage expertise from adjacent industries to expand their innovation potential.

1.3.2 Growth and Market Penetration Services

These services help businesses and researchers navigate commercialization, market expansion, and strategic partnerships to maximize growth opportunities.

1.3.2.1 Expert Mentorship in Accessing Other Markets

Expert mentorship in accessing other markets supports companies in expanding into new regions, particularly for businesses looking to enter the Spanish market. It provides guidance on market research, business development, and local partnerships.

1.3.2.2 Matchmaking: Focused on Commercialization

Commercialization-based matchmaking connects startups and SMEs with established businesses that can support their commercialization efforts. It helps companies find distributors, sales channels, and strategic market entry partners.

1.3.2.3 Market Replication Assessment

Market replication evaluates how new technologies and products can be adapted for different geographic regions or industry verticals. It helps companies assess commercialization barriers, regulatory requirements, and scalability potential.



1.3.3 Collaboration and Co-creation Services

These services are designed to foster open innovation, co-creation, and knowledge-sharing, enabling organizations to work together to solve industry challenges.

1.3.3.1 Open Innovation Event Management

Open Innovation Event Management helps organizations host hackathons, innovation challenges, and workshops to engage with startups, researchers, and industry experts. It supports talent attraction, problem-solving, and industry collaboration.

1.3.3.2 Envelope Package Configurator

The Envelope Package configurator assists manufacturers in digitalizing their products by providing guidelines and references for BIM (Building Information Modeling) integration. It also helps businesses prepare their products for digital design environments, ensuring compatibility with modern construction and engineering workflows.

1.4 Open Innovation Events: Idea Contests

Within the OIS3 framework, Open Innovation Events represent a practical mechanism to connect industry, academia, and young innovators through real-world challenges. One of the objectives of this deliverable is to pilot this service through the OIS3 Idea Contests, transforming it into a standardized and replicable model for future implementation within the MEZeroE ecosystem.

The pilot was selected to test and refine the service delivery process for innovation events, establishing a consistent approach that allows service providers to:

- a. Engage and collaborate effectively with students, young researchers, and early-stage innovators.
- b. Help industrial partners recognize the strategic benefits of organizing open innovation challenges.
- c. Standardize the creation of event materials such as guidelines, submission forms, landing pages, and evaluation documents.
- d. Define internal clauses and procedures for intellectual property (IP) protection.
- e. Develop low-cost digital infrastructure to host challenges and manage submissions without relying on paid external platforms.
- f. Ensure effective communication, dissemination, and participant outreach across universities and innovation networks.

This pilot implementation provides a complete end-to-end model for Idea Contests, from concept design to participant evaluation, that can be replicated by future service providers and scaled across other MEZeroE innovation events. It will form part of the MEZeroE internal framework for services.

1.5 The Objective of a Framework

The Open Innovation Consulting Framework has been developed to provide a consistent, transparent, and sustainable structure for the delivery of OIS3 services by participating service providers within the



MEZeroE ecosystem. Beyond ensuring clarity and accessibility for users, the framework serves as an internal reference system for managing, replicating, and improving service delivery over time.

The main objectives of developing this framework are:

A. Establishing a Standardized Manual for Service Delivery

- The framework acts as a detailed *operational manual* that describes how each OIS3 service is structured, delivered, and evaluated.
- It defines the process flow, roles, expected outputs, and quality standards for all participating service providers.
- This standardization ensures consistency and transparency across all innovation consulting services, regardless of who delivers them.

B. Ensuring Continuity and Knowledge Transfer

- The framework safeguards institutional knowledge in case of staff or partner turnover.
- Should a service provider leave the MEZeroE ecosystem, the framework provides all necessary guidance and documentation for onboarding a new organization to deliver the same service without interruption.
- This guarantees operational continuity, service quality, and long-term scalability of the OIS3 platform.

C. Improving Usability and Coordination Across Stakeholders

- By clearly defining who each service is for and how requests are handled, the framework reduces confusion and overlaps.
- It creates a single reference document so that all stakeholders can follow a unified approach.
- This harmonized structure facilitates coordination, decision-making, and reporting across the consortium.

D. Enabling Collaboration and Co-Creation

- The framework supports open innovation by defining structured pathways for cross-sector partnerships.
- Through standardized processes for matchmaking, mentoring, and event facilitation, it ensures that collaboration and co-creation activities are organized, traceable, and impactful.



2 Framework Overview

2.1 Introduction to the Framework

The Open Innovation Consulting Framework provides the operational backbone for delivering digitally accessible open-innovation services within the MEZeroE ecosystem. Building on the objectives outlined in Section 1.4, it translates the principles of standardization, continuity, and collaboration into a clear set of operational procedures.

By defining clear processes, governance structures, and sustainability measures, the framework ensures that all service providers operate consistently and that end users receive a uniform, high-quality experience.

The framework guarantees:

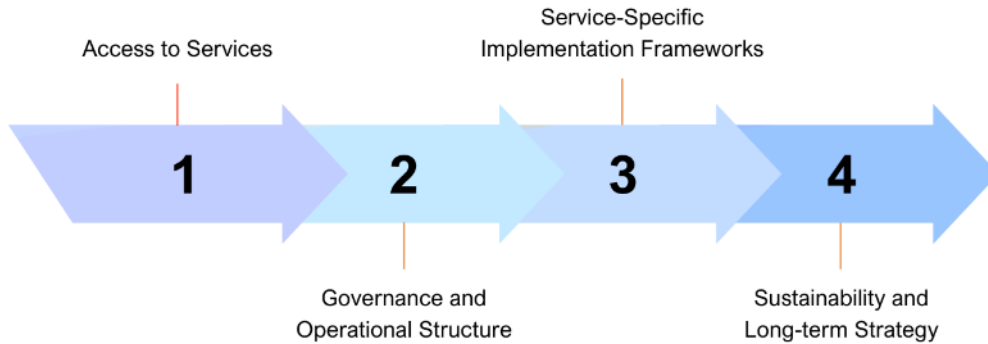
- **Clarity and Accessibility:** Users including researchers, start-ups, SMEs, and industry partners, can easily identify, request, and benefit from the services they need.
- **Efficiency and Standardization:** All service providers follow unified methods and quality criteria, ensuring reliable, high-value innovation support.
- **Governance and Oversight:** A defined governance model coordinates decision-making, assignment of requests, and quality assurance.
- **Continuity and Scalability:** Comprehensive documentation and sustainability measures allow OIS3 to remain functional, transferable, and financially viable beyond the initial project funding.

2.2 Structure of the Framework

The Framework is built around four core components that together ensure a coherent, transparent, and sustainable approach to delivering open-innovation services. As can be seen in figure 2, each component defines how service providers manage requests, coordinate delivery, and maintain quality and continuity over time.



Figure 2 - Structure of the framework



2.2.1 Access to Services

This component outlines how users access OIS3 services through the MEZeroE digital marketplace and what service providers need to understand about this process.

Users browse the marketplace to explore available services, review descriptions, and submit requests through a standard online form. Each request is first reviewed by the coordinating entity and then assigned to the most suitable service provider based on expertise and availability.

For service providers, this component ensures that:

- Service information displayed on the marketplace is accurate and up to date.
- The request and intake process are transparent and easy to follow.
- Each service follows a uniform workflow from request to delivery and follow-up.

This section includes:

- How users identify and request services.
- The role of the coordinating in reviewing and assigning requests.
- Service provider responsibilities in responding and delivering assigned services.

2.2.2 Governance and Operational Structure

This component outlines how OIS3 services are coordinated, assigned, and managed to ensure transparency, efficiency, and quality across all providers.

During the project, the coordinating entity serves as the first point of contact for service requests, reviewing submissions and assigning them to the most suitable service provider. Service providers are



responsible for delivering the assigned services according to the agreed standards and reporting progress through the MEZeroE platform.

During the project timeframe, EURAC will assume the role of coordinating entity, as coordinators of the project. After the project, governance will transition to the new legal entity managing the MEZeroE marketplace to ensure long-term continuity of service coordination.

This section includes:

- The roles of the coordinating entity, service providers, and MEZeroE platform.
- The overall structure for coordination and oversight.
- Governance transition approach for the post-project phase.

2.2.3 Service-Specific Implementation Frameworks

Each OIS3 service follows a standardized methodology to ensure consistency, transparency, and quality across all providers. This component defines how services should be structured, delivered, and documented within the MEZeroE ecosystem.

For each service, the framework outlines:

- **Objectives:** What the service is designed to achieve.
- **Process:** The main steps followed during delivery.
- **Target Users:** The primary beneficiaries of the service.
- **Lead Provider:** The organization responsible for execution.
- **Expected Outcomes:** Tangible deliverables such as reports, events, or matchmaking results.

This section includes:

- Standardized structure and format for all OIS3 services.
- Clear guidance for service providers on implementation and reporting.
- Defined quality standards and deliverable expectations.

2.2.4 Sustainability and Long-term Strategy

This component defines how OIS3 services will remain operational and financially viable beyond the project's duration. It outlines the key mechanisms for ensuring both continuity and quality of service delivery over time.

It includes:

- **Revenue Models:** Approaches for maintaining financial sustainability through transparent pricing or cost-recovery mechanisms.
- **Post-Project Management:** The structure for coordinating services once the new MEZeroE legal entity assumes responsibility.
- **Performance Monitoring and KPIs:** Indicators used to evaluate service effectiveness, provider performance, and overall impact.



This section includes:

- The general approach to pricing and revenue.
- The governance and coordination model after project completion.
- The key performance indicators (KPIs) used to monitor service continuity and quality.

2.2.5 How the components work together

The four components of the Framework function as an integrated system that connects every stage of service delivery from user access to long-term sustainability.

The access component defines how users request support through the MEZeroE marketplace. Governance ensures efficient coordination, fair assignment, and quality oversight. Service-specific frameworks standardize how each service is delivered and documented. Sustainability measures maintain financial and operational continuity beyond the project phase.

Together, these components give service providers a clear, unified structure for managing and delivering the services across the MEZeroE ecosystem

3 Framework Implementation

3.1 Accessing Innovation Consulting Services

This section describes the operational workflow that all OIS3 service providers must follow once a service request enters the MEZeroE digital marketplace. Requests move through a six-step process, from user submission to final delivery and follow-up.

3.1.1 Step-by-step Process to Request Services

3.1.1.1 Overview

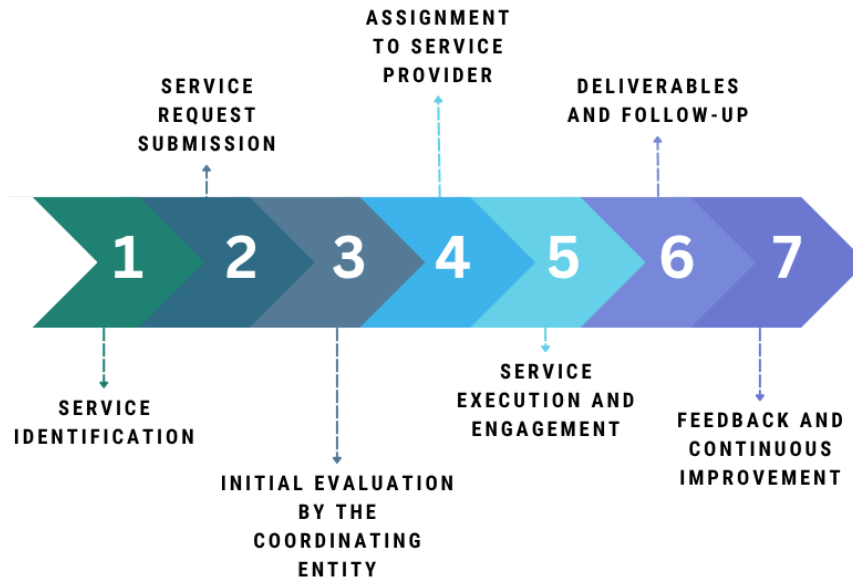
All OIS3 requests follow a standardized workflow managed by the coordinating entity as shown in figure 3:

1. User identifies the required service on the MEZeroE marketplace.
2. User submits a formal request through the online form.
3. The coordinating entity reviews and validates the request.
4. The coordinating entity assigns the request to the most suitable provider.
5. Provider executes the service and engages with the user.
6. Deliverables are submitted and follow-up actions recorded.
7. Feedback and continuous improvement

This process ensures consistent handling of every request across all providers.



Figure 3 - Step-by-step process to request services



3.1.1.2 Step 1: Service Identification

Users browse available OIS3 services under three categories:

- Innovation and Product Development
- Growth and Market Penetration
- Collaboration and Co-Creation

Providers must keep their listings complete and current so users can easily select the right option.

3.1.1.3 Step 2: Service Request Submission

Users complete the online Service Request Form including:

Organization and contact details, short description of their innovation need, desired outcomes, and relevant background.

Requests are automatically forwarded to the coordinating entity for review. Providers receive the assignment once validated.

3.1.1.4 Step 3: Initial Evaluation by the Coordinating Entity



The coordinating entity assesses requests for completeness and fit. If necessary, the user is contacted for clarification before assigning the request to an appropriate provider.

Requests that fall outside the current service catalogue may be redirected to alternative support within MEZeroE or refused.

3.1.1.5 Step 4: Assignment to the Right Service Provider

After validation, the coordinating entity assigns the request to the most suitable provider based on expertise and availability.

The provider must acknowledge receipt, confirm scope, and agree on timelines with the user before delivery begins.

A kick-off meeting or consultation may be scheduled to align expectations and define next steps.

3.1.1.6 Step 5: Service Execution and Engagement

Service providers deliver the agreed activities according to OIS3 standards. Typical formats include:

- Advisory or mentorship sessions
- Market or technology analysis and roadmapping
- Matchmaking and partner facilitation
- Workshops and co-creation events

Providers document progress and communicate regularly with both the coordinating entity and the user.

3.1.1.7 Step 6: Deliverables and Follow-up

Each service produces defined outputs to demonstrate impact, such as:

- Market research or expansion reports
- Technology roadmaps or development plans
- Matchmaking summaries and partnership leads
- Event or workshop reports

Providers submit deliverables through the MEZeroE platform for validation and collect user feedback via the standard evaluation form.

Follow-up support may be available depending on the service, ensuring that users can implement recommendations effectively.

3.1.1.8 Step 7: Feedback and Continuous Improvement

After each service is completed, all users are invited to provide feedback through a consulting services survey.



The survey collects information on overall service quality, usefulness, and the perceived impact on the user's organization or project outcomes.

Responses are analyzed centrally to identify areas for improvement and to support continuous enhancement of OIS3 services across all providers. (See Annex A: Consulting Services Survey)

3.2 Governance and Operational Structure

A clear governance structure ensures that OIS3 services are coordinated efficiently, delivered consistently, and monitored effectively across all providers. The governance framework defines the roles, responsibilities, and decision-making processes that guide service delivery during and after the project.

3.2.1 Roles and Responsibilities

The governance structure involves three main entities:

3.2.1.1 *The Coordinating Entity*

The Coordinating Entity serves as the first point of contact for all service requests and manages the overall coordination of OIS3 services.

Responsibilities:

- Receives, reviews, and validates all incoming service requests.
- Assigns requests to the most suitable service provider based on expertise and availability.
- Ensures quality control and consistency in service delivery.
- Manages communication between users and providers during service engagement.
- Monitors service progress and collects feedback for continuous improvement.

3.2.1.2 *Service Providers*

Service Providers are the organizations responsible for executing assigned OIS3 services in alignment with the agreed methodology and quality standards. Figure 4 shows the services delivered by each OIS3 service provider.

Figure 4 - Services providers in OIS3

Organization	Services Delivered
Eurac	<ul style="list-style-type: none"> • Technology Roadmapping tool
Incurvo	<ul style="list-style-type: none"> • Expert mentorship in accessing other markets • Matchmaking Focused on Product Development • Matchmaking Focused on Commercialization • Open innovation event management
R2M	<ul style="list-style-type: none"> • Connect with a cross-sectoral expert. • Market replication assessment



Polimi	<ul style="list-style-type: none"> Envelope package configurator (tool)
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3.2.1.3 MEZeroE Digital Marketplace

The MEZeroE Digital Marketplace functions as the central interface for managing OIS3 services.

Key Functions:

- Hosts all service listings and request forms.
- Facilitates request tracking, documentation, and communication between parties.
- Generates data and analytics to support continuous improvement and service impact evaluation.

3.2.2 Governance Structure During the Project

3.2.2.1 During the project timeline:

- During the project timeline, EURAC will assume the role of coordinating entity.
- The Coordinating Entity manages all incoming service requests and oversees workflow implementation.
- Service Providers execute assigned services according to expertise and agreed timelines.
- The MEZeroE Platform functions as the operational hub for submission, tracking, and documentation of all service activities.

3.2.2.2 Decision-Making Process:

- Service requests follow the standard workflow outlined in Section 3.1.
- The Coordinating Entity ensures fair and transparent assignment based on user needs and provider specialization.
- Any service-related disputes or clarifications are resolved collaboratively between the Coordinating Entity and the involved provider.
- Quality control and validation procedures are applied before final deliverable approval.

3.2.2.3 Accountability and Oversight:

- The Coordinating Entity monitors provider performance and adherence to framework standards.
- Providers must maintain documentation of service execution and share progress updates as required.
- Regular reporting and feedback collection ensure continuous alignment with project objectives and long-term service quality.



3.3 Sustainability and Long-Term Strategy

Ensuring the long-term viability of the services beyond the project timeline is a key objective of this framework. The sustainability strategy defines how services will remain operational, financially stable, and continuously improved within the MEZeroE ecosystem.

This section outlines:

- Revenue models to sustain service delivery after project funding ends.
- Post-project governance transition to maintain service operations.
- Performance tracking mechanisms to assess impact and ensure continuous improvement

3.3.1 Revenue Model

Innovation consulting services will transition to a self-sustaining financial model, ensuring that stakeholders can continue to access high-quality, innovation-driven support beyond the project phase.

3.3.1.1 Pay-per-Service Model:

Each service will have a fixed price, making it accessible while covering operational costs. Pricing will be structured based on:

- Service complexity (e.g., mentorship vs. full-scale technology roadmapping).
- Time commitment required from the service provider.
- Market value of the expertise provided.

3.3.1.2 Subsidized Access for Young Researchers and Students:

Special pricing or funding mechanisms (e.g., grants, sponsorships) may be developed to encourage participation from students and young researchers in innovation services.

3.3.1.3 Corporate and Institutional Partnerships:

Large organizations and industry consortia may sponsor service access for selected startups, SMEs, and research groups to foster collaboration and support innovation capacity building.

3.3.1.4 Innovation Event Fees:

Organizations hosting idea contests, hackathons, or matchmaking events will be required to pay a facilitation fee to support event planning and execution.

3.3.2 Post-Project Governance Model

To ensure the sustainability of the innovation consulting services beyond the project's completion, a governance transition plan will be implemented.

A new Legal entity which will own and manage the MEZeroE marketplace is currently being established. The roles and assignation of responsibilities is being assessed and the first version of the internal statutes that will govern this entity are being developed.

This new legal entity will replace Eurac as the coordinating entity and will be responsible for connecting requests with service providers.



Service providers will continue executing services based on request assignments, and the MEZeroE platform will remain the primary hub for digital service access and documentation.

3.3.3 Performance Monitoring and KPIs

To measure the success and effectiveness of innovation consulting services, key performance indicators (KPIs) will be tracked. This ensures that the framework remains impactful, scalable, and aligned with industry needs.

To monitor the performance and effectiveness of innovation consulting services, a set of indicative KPI categories is defined. These indicators form part of a flexible monitoring framework and do not represent fixed targets or baseline values. Quantitative thresholds and performance objectives will be determined during marketplace operation and adjusted over time in line with available marketing and sales resources, service maturity, and ecosystem growth dynamics. The following KPIs are considered critical for assessing performance and will be continuously monitored during platform operation

3.3.3.1 *Service Utilization Metrics:*

- Number of service requests submitted via the MEZeroE platform.
- Number of users engaging with services (students, startups, SMEs, corporations).
- Percentage of service requests successfully matched to providers.

3.3.3.2 *Innovation Impact Metrics*

- Number of new partnerships formed through matchmaking services.
- Number of market entry strategies developed via expert mentorship.
- Number of technology roadmaps successfully implemented.

3.3.3.3 *User Satisfaction and Retention*

- Percentage of users rating services as valuable.
- Percentage of users returning for additional services.
- User-reported impact (testimonials, success stories, case studies).

3.3.3.4 *Financial Sustainability Metrics*

- Revenue generated through service fees.
- Number of industry-sponsored service requests.
- Growth in participation from external stakeholders.



4 OIS 3 Service-Specific Implementation Frameworks

4.1 Overview of Service Implementation

Each OIS3 service follows a structured implementation framework to ensure efficiency, clarity, and consistency in execution. These frameworks define the step-by-step methodology for delivering each service, ensuring that users receive high-quality, standardized innovation support.

This section provides a detailed breakdown of each OIS3 service, including:

- **Introduction:** A high-level overview of the service and its purpose.
- **Objectives:** The key goals and intended impact of the service.
- **Process:** A step-by-step breakdown of how the service is executed.
- **Ideal Customers:** The primary users who benefit from the service.
- **Lead Service Provider:** The organization responsible for delivering the service.
- **Expected Outcomes and Deliverables:** The key outputs users receive upon service completion.



These implementation frameworks ensure that all providers apply a uniform approach to service delivery supporting efficient management, clear expectations, and measurable results across the OIS3 network

4.2 Service 1: Expert Mentorship in Accessing Other Markets

4.2.1 Introduction

Expanding into a new market requires localized knowledge, strategic positioning, and strong partnerships. *The Expert Mentorship in Accessing Other Markets* service helps EU-based companies outside Spain establish a business presence, navigate local regulations, and build strategic collaborations within the Spanish market.

Service providers deliver market research, business introductions, and strategic business development guidance to support successful market entry and operation in Spain.

The primary goals of this service are to:

- Provide companies with market insights, competitive analysis, and business development strategies.
- Facilitate connections with key partners, including design firms, distributors, research institutions, and local service providers.
- Assist in navigating regulatory requirements and establishing a local business presence.
- Support clients in developing a sales pipeline, marketing strategy, and project management activities.
- Ensure consistent documentation, reporting, and communication with the coordinating entity throughout the service lifecycle.



4.2.2 Process

Step 1: Initial Consultation and Requirements Definition

- Clients define their specific needs, including target market segment, required partnerships, and regulatory concerns.
- The service provider (INCURVO) assesses feasibility and refines the scope of support.

Step 2: Confidentiality and Agreement Management

- Service providers must sign NDAs and other confidentiality agreements as required by the client before any sensitive information is exchanged.
- The service provider ensures that appropriate legal frameworks are in place to enable secure discussions and protect client data.

Step 3: Market Research and Competitive Analysis (if selected)

- Industry trends and opportunities in Spain are analyzed.
- Competitor research is conducted to determine market differentiation strategies.

Step 4: Business Development and Go-To-Market Strategy (if selected)

- Development of a market entry roadmap, including:
 - Sales and marketing strategies for Spain.
 - Distribution and pricing models.
 - Regulatory and compliance considerations.

Step 5: Partner and Local Service Provider Identification (if selected)

- Targeted search for local business partners (design firms, industrial partners, distributors, legal service providers).
- Due diligence is conducted to assess suitability and strategic fit.
- Introductions are facilitated based on collaboration needs.

Step 6: Project Management Support (if selected)

- Assistance with coordination of local operations, supplier management, and ongoing business development activities.
- Regular progress tracking, reporting, and execution support.

Step 7: Final Report and Follow-Up

- Clients receive a summary report with key insights, next steps, and strategic recommendations.
- Additional follow-up mentorship may be provided for implementation support.
- Providers will notify the coordinating entity upon completion.



4.2.3 Ideal Customers

Who benefits from this service?

- EU-based SMEs and large companies looking to enter the Spanish market.
- Companies launching new products and needing a local presence or partnerships.
- Technology providers and manufacturers expanding distribution channels in Spain.
- Research-driven organizations exploring technology transfer or pilot collaboration in Spain.

4.2.4 Lead Service Provider

INCURVO: Specializing in business expansion, strategic market positioning, and commercial matchmaking.

4.2.5 Expected Outcomes and Deliverables

- Market Research and Analysis: Market and Competitor Report (Industry trends, competitive landscape, market size, and growth)
- Business Development Support: Go-To-Market Report, Marketing Plan, Sales Plan (Entry strategies, pricing, positioning)
- Partner Introductions: Company Profile Report (List of potential partners, distributors, service providers)
- Project Management Support: Monthly Management Report (Operational and business execution support)

4.2.6 Business Canvas: Expert Mentorship in accessing other markets

The Business Model Canvas in figure 5 provides a concise, visual summary of expert mentorship in accessing other markets, and shows how the service creates and delivers value within the MEZeroE ecosystem.



Figure 5 - Business Canvas: Expert mentorship in accessing other markets

Expert mentorship in accessing other markets canvas				
Key Partners <ul style="list-style-type: none"> Local authorities in Spain Law firms, IP firms, notaries, consulting firms, and other service providers in Spain Market research and analysis firms MEZeroE web-based platform 	Key Activities <ul style="list-style-type: none"> Market research and analysis Introductions to local partners Business development support Project management support 	Value Propositions <ul style="list-style-type: none"> Helps EU-based organizations outside of Spain enter the Spanish market with support from local authorities, business development, and local presence establishment Offers individual activities, allowing clients to choose specific areas of support they need Provides tailored solutions based on client's exact requirements 	Customer Relationship <ul style="list-style-type: none"> Consultative approach to understand client's exact requirements Ongoing communication throughout execution Reporting on progress and results 	Customer Segments <ul style="list-style-type: none"> nZEB Enabler Envelope Solutions (nEESs) manufacturers seeking enter the spanish market
Key Resources <ul style="list-style-type: none"> Experts in Spanish market Access to market research and analysis tools and databases Service listed on MEZeroE web-based platform 			Channel <ul style="list-style-type: none"> MEZeroE web-based platform Direct communication with clients 	
Cost Structure <ul style="list-style-type: none"> Employee salaries and benefits Market research and analysis tools and databases Marketing and communication costs 			Revenue Stream <ul style="list-style-type: none"> Transaction-based, hourly price of expert. 	

4.3 Service 2: Cross-Sectoral Expert Connect

4.3.1 Introduction

Innovation often requires collaborating across industries to develop cutting-edge solutions. The Cross-Sectoral Expert Connect service helps EU-based companies of all sizes find expert support in complementary industries, such as IoT, software, and nanomaterials.

Through this service, providers help companies to:

- Find industry experts and mentors outside their core sector to support product and service development.



- Identify cross-sector applications for their technology, opening new market opportunities.
- Engage with partners within the MEZeroE ecosystem to accelerate innovation.

The primary goals of this service are to:

- Connect companies with experts and partners from different industries.
- Facilitate cross-sector matchmaking and knowledge exchange.
- Identify new markets and applications for a company's existing product, material, or technology.
- Support companies in positioning their products in alternative sectors.

4.3.2 Process

Step 1: Data Collection and Needs Assessment

- The client provides details on whether they are offering an asset or looking for support.
- The service provider (R2M) helps define the scope:
 - If the client is offering an asset, they provide:
 - Asset description (technical specifications, TRL level, applications).
 - Preliminary cooperation conditions (cost, licensing, usage terms).
 - If the client is seeking support, they define:
 - Gaps and challenges that need to be addressed.
 - Potential industries or technologies that could provide solutions.

Step 2: Confidentiality and Agreement Management

- Service providers must sign NDAs and other confidentiality agreements as required by the client before any sensitive information is exchanged.
- The service provider ensures that appropriate legal frameworks are in place to enable secure discussions and protect client data.

Step 3: Market and Expert Research

- The service provider identifies potential experts, companies, and partners inside and outside the MEZeroE ecosystem.
- Research includes:
 - Alternative sectors where the asset could be positioned.
 - Expert recommendations for bridging technical gaps.
 - Existing online platforms or communities that could facilitate collaboration.

Step 4: Matchmaking and Publication on MEZeroE Platform

- The client's offer or request is published on the MEZeroE platform to reach potential partners.
- The service provider suggests potential collaborators or expert mentors.

Step 5: Facilitating Connections and Establishing Collaboration

- The service provider shortlists and introduces potential partners.
- If applicable, meetings are arranged to explore collaboration opportunities.
- Support is provided in establishing agreements, pricing models, and project terms.



Step 6: Deliverable and Follow-Up

- A final report is provided, summarizing:
 - List of identified partners and experts.
 - Opportunities for collaboration.
 - Potential new market applications.
- Additional follow-up support is available for successful matchmaking.
- Providers will notify the coordinating entity upon completion.

4.3.3 Ideal Customers

Who benefits from this service?

- Companies developing products that require expertise from another industry (e.g., integrating IoT into construction materials).
- Organizations looking to enter new markets by identifying cross-sector applications.
- Manufacturers interested in integrating innovative materials, technologies, or solutions into their building envelope products.
- SMEs and research teams seeking expert validation or technology-transfer opportunities.

4.3.4 Lead Service Provider

R2M: Specializing in cross-sector innovation, business development, and technology scouting.

4.3.5 Expected Outcomes and Deliverables

- Expert and Partner Identification: List of potential collaborators with expertise descriptions.
- Market Expansion Report: Recommendations for entering adjacent markets.
- Matchmaking Support: Facilitation of introductions and strategic partnerships.
- Publication on MEZeroE Platform: Visibility within the innovation ecosystem.

4.3.6 Business Canvas: Connect with a Cross-sectoral Expert

The Business Model Canvas in figure 6 provides a concise, visual summary of the service related to connecting with a cross-sectoral expert, and shows how the service creates and delivers value within the MEZeroE ecosystem.



Figure 6 - Business canvas: Connect with a cross-sectoral Expert

Connect with a Cross-sectoral Expert canvas				
Key Partners <ul style="list-style-type: none"> Experts and mentors in various industries and sectors MEZeroE web-based platform 	Key Activities <ul style="list-style-type: none"> Data gathering and analysis Facilitate connections Continuous engagement with clients and experts 	Value Propositions <ul style="list-style-type: none"> Connect companies with specific mentors and experts to help them develop cross-sectoral products and services Support the identification of proximity with sectors that could use the developed material, product or technology, thus opening new market opportunities 	Customer Relationship <ul style="list-style-type: none"> Personalized approach to meet the individual needs of each client Strong customer service and support throughout the entire process 	Customer Segments <ul style="list-style-type: none"> EU-based companies of all sizes seeking expert support to create cross-sectoral products and services for nZEB Enabler Envelopes Experts from IOT, software and nanomaterials.
	Key Resources <ul style="list-style-type: none"> Network of experts Skilled and knowledgeable staff to execute service Service listed on MEZeroE web-based platform 		Channel <ul style="list-style-type: none"> MEZeroE web-based platform Direct communication with clients 	
Cost Structure <ul style="list-style-type: none"> Employee salaries and benefits Market research and analysis tools and databases Marketing and communication costs 			Revenue Stream <ul style="list-style-type: none"> Transaction-based, hourly price of expert. 	

4.4 Service 3: Matchmaking Focused on Product Development

4.4.1 Introduction

Many startups and SMEs develop promising prototypes or concepts but lack the resources, expertise, or industry connections to turn them into fully developed products. *The Matchmaking: Focused on Product Development* service helps organizations find strategic partners for co-development and innovation.

Through this service, providers support companies seeking to:

- Connect with research centers, universities, SMEs, or industrial partners for product development.
- Find technology experts and laboratories to support R&D.
- Secure co-development opportunities through open innovation collaboration.

This service primarily targets startups and SMEs that require external expertise and resources, rather than large industrial organizations that already possess in-house development capacity.

Objectives

- Identify and connect organizations with suitable development partners.
- Facilitate collaborative partnerships through open innovation matchmaking.
- Support companies in managing confidentiality agreements and partnership agreements.
- Provide structured matchmaking sessions with vetted potential partners.

4.4.2 Process

Step 1: Data Collection and Requirements Definition

- Clients provide business details, project scope, and development goals.
- They specify:
 - Industry sector (Construction, Nanomaterials, IoT, Digital Industry).
 - Country preference for partnership.
 - Type of partner needed (SME, Large Company, Research Center, Laboratory, etc.).
- Clients submit technical descriptions of their project and required expertise.

Step 2: Confidentiality and Agreement Management

- Service providers must sign NDAs and other confidentiality agreements as required by the client before any sensitive information is exchanged.
- The service provider ensures that appropriate legal frameworks are in place to enable secure discussions and protect client data.

Step 3: Partner Research and Outreach

- The service provider identifies potential partners based on the client's requirements.
- Outreach is conducted, including:
 - Background research on potential partner companies.
 - Contacting selected organizations to assess interest.
- All partners are vetted to ensure compatibility before introduction.



Step 4: Matchmaking and Introductory Meetings

- Shortlisted partner companies are presented to the client in a 1-page matchmaking report.
- Meetings are arranged between potential partners.
- The service provider facilitates initial discussions to ensure alignment.

Step 5: Follow-Up and Collaboration Support

- If multiple meetings are required, the service provider coordinates follow-ups.
- Once a formal agreement is in place, the service ends, but additional consultation may be available.
- Providers will notify the coordinating entity upon completion.

4.4.3 Ideal Customers

Who benefits from this service?

- Startups and SMEs needing technical or business partners for co-development.
- Companies with prototypes or concepts that require industrial partnerships, research support, or lab testing.
- Organizations looking to expand their innovation capacity through external collaborations.
- Research-driven SMEs or spin-offs seeking validation partners for product development.

4.4.4 Lead Service Provider

Incurvo: Specializing in product development matchmaking and strategic industry partnerships.

4.4.5 Expected Outcomes and Deliverables

- Matchmaking Report: A list of vetted potential partners, including their expertise and contact details.
- Facilitated Partner Introductions: Organized matchmaking meetings.
- Confidentiality and NDA Management: Ensuring secure knowledge exchange.
- Follow-Up Support: Assistance with additional discussions or collaboration structuring.

4.4.6 Business Canvas: Matchmaking focused on Product Development

The Business Model Canvas in figure 7 provides a concise, visual summary of matchmaking in product development, and shows how the service creates and delivers value within the MEZeroE ecosystem.



Figure 7 - Matchmaking focused on product development

Matchmaking focused on product development canvas				
Key Partners <ul style="list-style-type: none"> nZEB Enabler Envelope Solutions (nEESs) manufacturers MEZeroE web-based platform Organizations interested in co-creating products and services. 	Key Activities <ul style="list-style-type: none"> Evaluation of client requirements. Outreach to potential partner companies Management of all NDAs Creation of all documents required for the execution 	Value Propositions <ul style="list-style-type: none"> Matchmaking services for start-ups and SMEs interested in open-innovation-based collaboration for product development. Independent vetting of potential partner companies. Presence at first introductory meeting. Support with preparing agreements and NDAs 	Customer Relationship <ul style="list-style-type: none"> Service providers work closely with client and provide personalized matchmaking services. Strong customer service and support throughout the entire process 	Customer Segments <ul style="list-style-type: none"> EU-based companies of all sizes seeking partners to co-create products related to nZEB Enabler Envelope Solutions (nEESs)
	Key Resources <ul style="list-style-type: none"> Network companies interested in open-innovation based collaboration Service listed on MEZeroE web-based platform 		Channel <ul style="list-style-type: none"> MEZeroE web-based platform Direct communication with clients 	
Cost Structure <ul style="list-style-type: none"> Employee salaries and benefits Market research and analysis tools and databases Marketing and communication costs 			Revenue Stream <ul style="list-style-type: none"> Transaction-based, hourly price of expert. 	

4.5 Service 4: Matchmaking Focused on Product Commercialization

4.5.1 Introduction

Many startups and SMEs develop innovative products but struggle to commercialize them due to limited distribution networks, industry partnerships, or market access. The *Matchmaking: Focused on Product Commercialization* service connects businesses with established SMEs, industrial partners, and distributors who can help them scale and enter new markets.

This service is specifically designed for startups and SMEs that require external commercial partnerships and market access support, rather than large industrial organizations with existing distribution networks.

Objectives

- Help companies find the right commercialization partners within their target markets.
- Facilitate strategic alliances to commercialize products through existing networks.
- Manage legal and confidentiality processes to ensure secure collaboration.
- Support cross-border commercialization by connecting businesses in different countries.

4.5.2 Process

Step 1: Data Collection and Requirements Definition

- Clients provide detailed input on:
 - Business and product details (certification, market authorization, etc.).
 - Preferred countries and distribution models (master distribution, online, retail, regional).
 - Required expertise in a commercial partner (distribution channels, market specialization, etc.).

Step 2: Confidentiality and Agreement Management

- Service providers must sign NDAs and other confidentiality agreements as required by the client before any sensitive information is exchanged.
- The service provider ensures that appropriate legal frameworks are in place to enable secure discussions and protect client data.

Step 3: Partner Research and Outreach

- The service provider identifies and evaluates potential partners that match the client's requirements.
- Targeted business outreach is conducted to assess interest in collaboration.
- The provider conducts preliminary due diligence to minimize risks.

Step 4: Matchmaking and Partner Introductions

- A matchmaking report is delivered, containing one-page profiles of potential partners, including:
 - Company details and business profile.
 - Expertise in commercialization and distribution.
 - Interest in collaboration and next steps.
- The service provider organizes introductory meetings between the client and potential partners.



Step 5: Follow-Up and Final Deliverables

- After initial introductions, the service provider facilitates follow-up discussions if needed.
- The final deliverable includes:
 - Summary report with matched partners.
 - Meeting reports and next-step recommendations.
- Providers will notify the coordinating entity upon completion.

4.5.3 Ideal Customers

Who benefits from this service?

- EU-based startups and SMEs seeking distributors, commercial partners, or market entry opportunities.
- Companies with certified products ready for commercialization in a new country.
- Businesses looking to enter a commercial partnership rather than subcontracting.
- Research-based SMEs or startups aiming to transition prototypes into market-ready products.

4.5.4 Lead Service Provider

- Incurvo: Specializing in market entry, business matchmaking, and commercialization strategy.

4.5.5 Expected Outcomes and Deliverables

- Matchmaking Report: A list of vetted commercialization partners, including company profiles.
- Confidentiality and NDA Management: Secure handling of agreements before introductions.
- Facilitated Partner Introductions: Arranged matchmaking meetings with potential distributors.
- Final Commercialization Report: Summary of outcomes, meeting reports, and next-step recommendations.

4.5.6 Business Canvas: Matchmaking focused on Product Commercialization

The Business Model Canvas in figure 8 provides a concise, visual summary of matchmaking in product commercialization, and shows how the service creates and delivers value within the MEZeroE ecosystem.



Figure 8 - Matchmaking focused on product commercialization

Matchmaking focused on product commercialization canvas				
Key Partners <ul style="list-style-type: none"> nZEB Enabler Envelope Solutions (nEESs) manufacturers MEZeroE web-based platform Organizations with products, requiring distribution Organizations with strong distribution networks requiring products 	Key Activities <ul style="list-style-type: none"> Evaluation of client requirements. Outreach to potential partner companies Management of all NDAs Creation of all documents required for the execution 	Value Propositions <ul style="list-style-type: none"> Matchmaking services for start-ups and SMEs interested in open-innovation-based collaboration for product commercialization. Independent vetting of potential partner companies. Presence at first introductory meeting. Support with preparing agreements and NDAs 	Customer Relationship <ul style="list-style-type: none"> Service providers work closely with client and provide personalized matchmaking services. Strong customer service and support throughout the entire process 	Customer Segments <ul style="list-style-type: none"> nZEB Enabler Envelope Solutions (nEESs) manufacturers seeking partners to commercialize their products by partnering with partner with strong distribution network EU-based companies of all sizes with strong distribution networks seeking to partner with organizations that have innovative products but no distribution
	Key Resources <ul style="list-style-type: none"> Network companies interested in open-innovation based collaboration Service listed on MEZeroE web-based platform 		Channel <ul style="list-style-type: none"> MEZeroE web-based platform Direct communication with clients 	
Cost Structure <ul style="list-style-type: none"> Employee salaries and benefits Market research and analysis tools and databases Marketing and communication costs 			Revenue Stream <ul style="list-style-type: none"> Transaction-based, hourly price of expert. 	

4.6 Service 5: Innovation Services and Tools – Technology Roadmapping

4.6.1 Introduction

Developing innovative products requires strategic planning, partner alignment, and structured execution. The Technology Roadmapping service provides a methodological tool that helps companies:

- Define their innovation goals and technology needs.
- Identify strategic partners for co-development.
- Plan and track product development milestones using structured methodologies.

This service is designed for EU-based startups, SMEs, and industrial organizations seeking structured innovation planning and tracking support, particularly when internal resources are limited.

Objectives

- Help companies identify key technological needs and market expectations.
- Guide businesses through structured technology roadmapping methodologies.
- Enable companies to find partners for innovation projects.
- Support businesses in tracking their innovation development process using agile tools.

4.6.2 Process

Step 1: Initial Consultation and Needs Assessment

- Companies provide basic input on innovation targets through an easy-to-fill document.
- Service provider conducts interviews and questionnaires to:
 - Define the company's innovation priorities and R&D capabilities.
 - Understand market trends and potential competitive advantages.

Step 2: Confidentiality and Agreement Management

- Service providers must sign NDAs and other confidentiality agreements as required by the client before any sensitive information is exchanged.
- The service provider ensures that appropriate legal frameworks are in place to enable secure discussions and protect client data.

Step 3: Technology Roadmap Development (Customizable Packages)

The roadmapping process includes different methodological tools, depending on the client's needs:

- Quality Function Deployment (QFD) (Optional)
 - Helps companies translate customer needs into engineering and product development features.
 - Used to determine what customers value most in new innovations.
- Idea Radar (Optional)
 - Identifies viable technology investments or partners.



- Provides a structured selection process for choosing between alternative development paths.
- Innovation Compass (Optional)
 - A marketing strategy tool that helps companies position their new product.
- Technology Tracker (Optional)
 - A project management tool that combines a Gantt Chart and agile methodology.
 - Helps companies track project progress, milestones, and communication between teams.

Step 4: Execution and Implementation

- If selected, the Technology Tracker tool is configured and introduced to the client for R&D tracking.
- The service provider conducts follow-ups, provides technical consultation, and supports the client through implementation, maintaining alignment with the agreed roadmap.

Step 5: Final Report and Recommendations

- The company receives a comprehensive report, summarizing:
 - Technology roadmap and recommended innovation path.
 - Market positioning strategy (if Innovation Compass was selected).
 - Partner recommendations (if Idea Radar was used).
 - Agile project tracking setup (if Technology Tracker was implemented).
- Follow-up consultation is available to support implementation.
- Providers will notify the coordinating entity upon completion.

4.6.3 Ideal Customers

Who benefits from this service?

- Startups and SMEs needing structured tools to plan and execute innovation projects.
- Larger industrial companies looking to enter new markets or develop new product lines faster.
- Organizations seeking expert input to identify technology investments and market positioning strategies.
- Research-driven organizations or consortium partners seeking methodological support for R&D roadmapping.

4.6.4 Lead Service Provider

Eurac: Specializing in technology strategy, R&D development, and innovation tracking tools.

4.6.5 Expected Outcomes and Deliverables

- Technology Roadmap Report: Strategic guide on product development.
- Quality Function Deployment Summary (if selected): Engineering feature assessment.
- Idea Radar Analysis (if selected): Alternative investment and partnership map.



- Innovation Compass Report (if selected): Marketing and commercialization strategy.
- Technology Tracker Setup (if selected): Agile project roadmap and tracking tools.

4.6.6 Business Canvas: Technology Roadmapping

The Business Model Canvas in figure 9 provides a concise, visual summary of the technology roadmapping tool, and shows how the tool creates and delivers value within the MEZeroE ecosystem.

Figure 9 - Business canvas: Technology roadmapping

Technology roadmapping tool canvas				
Key Partners <ul style="list-style-type: none"> • nZEB Enabler Envelope Solutions (nEESs) manufacturers • MEZeroE web-based platform 	Key Activities <ul style="list-style-type: none"> • Evaluation of client requirements. • Idea radar activity • innovation compass activity • technology tracking activity 	Value Propositions <ul style="list-style-type: none"> • Enables companies to develop innovative products and find partners to handle innovation projects • Provides a methodological tool for technology roadmapping • Offers an all-in-one approach to the technology roadmapping process 	Customer Relationship <ul style="list-style-type: none"> • Personalized and consultative approach • Strong customer service and support throughout the entire process 	Customer Segments <ul style="list-style-type: none"> • nZEB Enabler Envelope Solutions (nEESs) manufacturers of all sizes
	Key Resources <ul style="list-style-type: none"> • Technology roadmapping methodology • Service listed on MEZeroE web-based platform 		Channel <ul style="list-style-type: none"> • MEZeroE web-based platform • Direct communication with clients 	
Cost Structure <ul style="list-style-type: none"> • Employee salaries and benefits • Market research and analysis tools and databases • Marketing and communication costs • Technology and software tools 			Revenue Stream <ul style="list-style-type: none"> • Transaction-based, hourly price of expert. 	

4.7 Service 6: Market Replication Assessment

4.7.1 Introduction

Many startups and SMEs develop innovative products but struggle to apply or deploy them in the market due to market barriers or commercialization challenges. The Market Replication Assessment service helps businesses evaluate the potential for commercialization and replication of a product or service that has been developed but has not yet been deployed.

This service assists companies in:

- Defining a commercialization plan for innovative products.
- Refining the value proposition to enter new markets.
- Developing preliminary business models and assessing commercialization feasibility.
- Identifying market risks, barriers, and customer validation strategies.

This service primarily supports startups and SMEs that require external assistance in assessing commercial readiness and replication potential.

Objectives

- Help businesses define a clear market entry plan.
- Support the identification of customer segments and commercialization channels.
- Provide an initial business model and value proposition assessment.
- Use KPIs to monitor commercial and technical performance.

4.7.2 Process

Step 1: Data Collection and Initial Assessment

- The client provides a technical description of the innovative solution, including:
 - Technology Readiness Level (TRL), prototypes, samples, or pre-market tests.
 - Any previous commercialization efforts or market engagement.
 - Identified market barriers and challenges.
 - Geographical or sectoral markets to be considered.
- The service provider reviews the inputs and identifies the best market replication approach.

Step 2: Confidentiality and Agreement Management

- Service providers must sign NDAs and other confidentiality agreements as required by the client before any sensitive information is exchanged.
- The service provider ensures that appropriate legal frameworks are in place to enable secure discussions and protect client data.

Step 3: Value Proposition Development

- A detailed SWOT analysis is conducted to refine the product's positioning.
- The service provider helps structure a strong value proposition based on:
 - Unique selling points of the innovation.
 - Customer pain points and demand validation.
 - Potential differentiation strategies.

Step 4: Preliminary Business Model and Market Strategy



- Development of a preliminary business model, covering:
 - Key market segments.
 - Distribution channels and sales models.
 - Competitive positioning and pricing strategy.
- If needed, the client is introduced to business experts for additional insights.

Step 5: Market and Risk Analysis

- Identification of geographical or sectorial markets for replication.
- Risk and barrier assessment, including:
 - Regulatory or financial challenges.
 - Adoption barriers within the industry.
- If required, the service provider revises the market selection strategy based on risk assessment results.

Step 6: Action Plan for Market Entry

- A step-by-step strategy is defined for entering the selected market(s), covering:
 - Required actions and next steps.
 - Partnership or distribution model recommendations.
 - Testing or demonstration activities (if applicable).

Step 7: Final Report and Follow-Up

- The client receives a comprehensive summary report, including:
 - Market replication assessment results.
 - Recommended strategy for commercialization.
 - Implementation roadmap.
- If necessary, follow-up consultations are available to assist execution.
- Providers will notify the coordinating entity upon completion.

4.7.3 Ideal Customers

Who benefits from this service?

- Startups and SMEs with demonstrated innovations that have not yet been deployed in the market.
- Companies facing market entry barriers due to regulation, funding, or adoption challenges.
- Businesses seeking structured commercialization support to refine their business model.
- Research organizations or start-ups needing feasibility support before scaling innovation to market.

4.7.4 Lead Service Provider

R2M: Specializing in market analysis, commercialization strategy, and innovation deployment.

4.7.5 Expected Outcomes and Deliverables

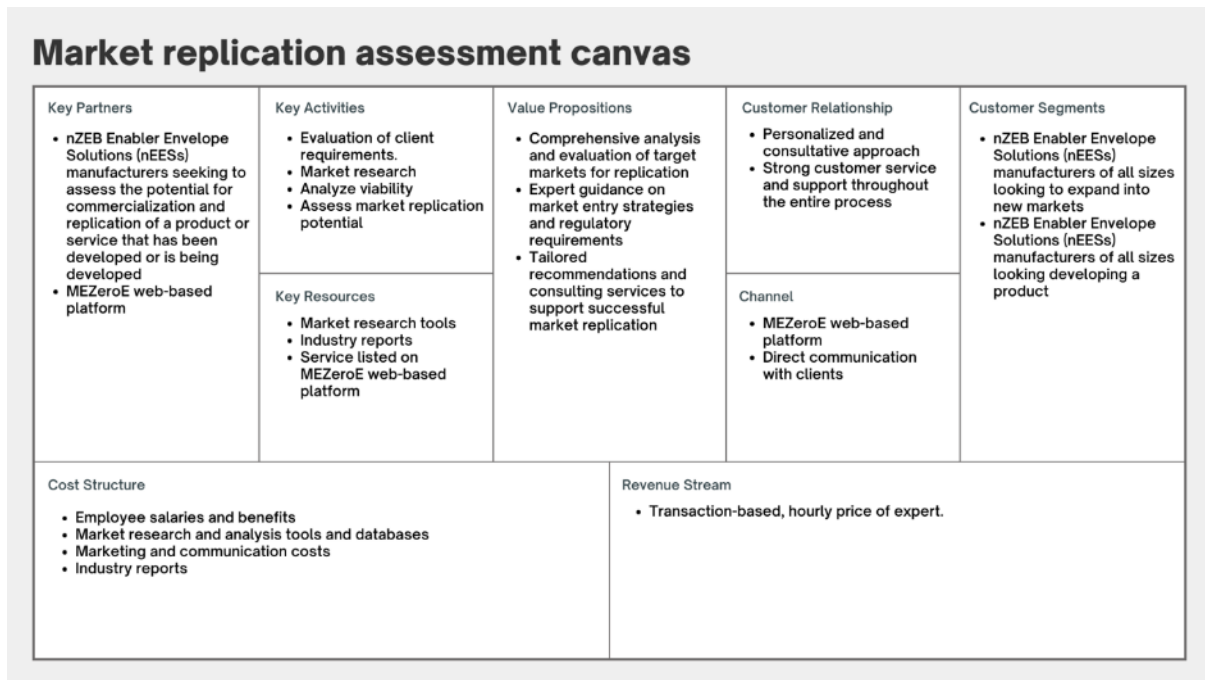
- Value Proposition Report: Assessment of product positioning and competitive differentiation.
- Preliminary Business Model and Market Strategy Report: Definition of customer segments and commercialization channels.
- Market and Risk Analysis Report: Insights on market potential and barriers.
- Market Entry Action Plan: A step-by-step guide to launching the product.



4.7.6 Business Canvas: Market Replication Assessment

The Business Model Canvas in figure 10 provides a concise, visual summary of the market replication assessment, and shows how the service creates and delivers value within the MEZeroE ecosystem.

Figure 10 - Business canvas: Market replication assessment



4.8 Service 7: Open Innovation Event management

4.8.1 Introduction

Large companies often struggle to engage with startups, students, and external innovators in a meaningful way. The Open Innovation Event Management service helps industrial organizations create structured, impactful innovation events such as hackathons, competitions, and workshops.

This service allows large EU-based industrial organizations to:

- Engage with startups, SMEs, students, and researchers through structured innovation events.
- Identify and attract new talent, solutions, and partnerships.
- Foster collaboration through open innovation frameworks.

This service is specifically aimed at large organizations and corporate partners seeking to organize high-impact open innovation events with full logistical and operational support.

Objectives

- Help organizations design and execute hackathons, challenges, and workshops.
- Provide marketing and outreach support to attract participants.
- Manage event logistics, candidate selection, and content creation.
- Deliver post-event follow-ups to ensure actionable outcomes.

4.8.2 Process

Step 1: Client Input and Event Requirements

- The organization provides basic administrative details, including:
 - Business information, address, VAT number.
 - Designation of a company representative.
 - Signed service agreement.
- The company defines:
 - Industry focus (Construction, Renewable Energy, IoT, Digital Industry).
 - Event type (Workshop, Competition, Hackathon, Conference).
 - Innovation goals (Description of expected outcomes in 500 words).
 - Key stakeholders (Partners, sponsors, participants).
 - Success criteria and KPIs (Number of participants, quality of solutions).
 - Event hosting method (Physical, digital, hybrid).
 - Reward structure (Monetary prize, employment opportunities, contracts).

Step 2: Confidentiality and Agreement Management

- Service providers must sign NDAs and other confidentiality agreements as required by the client before any sensitive information is exchanged.
- The service provider ensures that appropriate legal frameworks are in place to enable secure discussions and protect client data.

Step 3: Event Development and Planning

- The service provider (INCURVO and R2M) creates:
 - Event structure and content tailored to the organization's goals.
 - Promotional strategy (ads, social media, digital marketing).



- Selection criteria for participants.
- Event setup on the chosen platform (physical venue or digital event site).
- The service provider handles the creation of all required documents, including:
 - Event guidelines.
 - Application and participation forms.
 - Legal disclaimers and agreements.

Step 4: Event Promotion and Candidate Selection

- The event is promoted through targeted digital marketing strategies.
- Applications are reviewed, and selected participants are notified.
- If necessary, pre-event workshops or webinars are hosted to prepare participants.

Step 5: Event Execution and Engagement

- The service provider ensures smooth event execution, including:
 - Participant coordination.
 - Moderator or facilitator support.
 - Real-time communication and Q&A sessions.
- Events can be hosted physically or digitally, depending on the organization's preference.

Step 6: Post-Event Follow-Up and Reporting

- The company receives a detailed report summarizing:
 - Event results and participation statistics.
 - Key outcomes, winning solutions, and next steps.
 - Participant feedback and improvement recommendations.
- If required, the service provider supports ongoing engagement with selected participants (e.g., hiring, pilot projects, further collaboration).
- Providers will notify the coordinating entity upon completion.

4.8.3 Ideal Customers

Who benefits from this service?

- Large EU-based industrial organizations interested in engaging with startups, researchers, and external innovators.
- Companies looking to attract new talent and solutions through structured open innovation events.
- Organizations wanting to identify potential collaboration partners in emerging technology fields.
- Industry associations or clusters seeking to host innovation events.
- Research entities seeking to host innovation events.

4.8.4 Lead Service Provider

Incurvo and R2M: Specializing in open innovation events, startup engagement, and talent scouting.

4.8.5 Expected Outcomes & Deliverables

- Event Structure Plan: Fully developed program, content, and schedule.



- Marketing and Promotion Strategy: Digital campaigns, participant outreach.
- Candidate Selection and Management: Structured application review process.
- Event Execution and Moderation: End-to-end event coordination.
- Final Event Report: Summary of participation, outcomes, and next steps.

4.8.6 Business Canvas: Open Innovation Event Management

The Business Model Canvas in figure 11 provides a concise, visual summary of the open innovations events service, and shows how it creates and delivers value within the MEZeroE ecosystem.

Figure 11 - Business canvas: Open innovation events

Open innovation events canvas				
Key Partners <ul style="list-style-type: none"> • Large nZEB Enabler Envelope Solutions (nEESs) manufacturers seeking to host challenges, hackathons and other events • SME, Startups and other members of the community interested in participating in open innovation events hosted by Large nZEB Enabler Envelope Solutions (nEESs) manufacturers • MEZeroE web-based platform 	Key Activities <ul style="list-style-type: none"> • Event planning and management • Content creation and promotion • Candidate selection and management • Documentation and reporting 	Value Propositions <ul style="list-style-type: none"> • Creation and management of open innovation-based events such as hackathons and workshops • Engagement with communities and attraction of talent in the form of start-ups and young SMEs • Problem-solving approach for specific issues of the parent company • Support in all areas of open innovation events. 	Customer Relationship <ul style="list-style-type: none"> • Personalized and consultative approach • Strong customer service and support throughout the entire process 	Customer Segments <ul style="list-style-type: none"> • Large nZEB Enabler Envelope Solutions (nEESs) manufacturers seeking to host challenges, hackathons and other events
Cost Structure <ul style="list-style-type: none"> • Employee salaries and benefits • Marketing and communication costs • Event planning tools fees • Event publishing sites fee 		Revenue Stream <ul style="list-style-type: none"> • Transaction-based, hourly price of expert. 		



4.9 Service 8: Envelope Package Configurator

4.9.1 Introduction

In an increasingly digitalized construction industry, BIM (Building Information Modeling) integration is crucial for manufacturers looking to enhance product accessibility, testing, and market visibility. The Envelope Package Configurator service provides EU-based manufacturers with the minimum required digitalized product data necessary for integration into BIM workflows.

This service is designed to support manufacturers of nZEB Enabler Envelope Solutions (nEESs) by ensuring their product datasets meet standardized digitalization requirements for:

- Marketing and communication.
- Testing and monitoring within Pilot Measurement and Verification Labs (PM&VLs).
- Certification processes.
- Installation, operation, and maintenance workflows.

This service does not develop complete BIM objects but provides validated guidelines, templates, examples to support the manufacturer's independent digitalization efforts.

Objectives

- Ensure manufacturers have the minimum standardized dataset for digitalized product integration.
- Help companies evaluate their BIM readiness and provide structured digitalization support.
- Provide guidelines and interactive tools for product digitalization.
- Offer examples of BIM object structures developed within the MEZeroE ecosystem.

4.9.2 Process

Step 1: Client Input and Initial Assessment

- The client provides details on:
 - Construction segments their product belongs to (e.g., cladding systems, insulation, glazing, solar energy systems).
 - Intended use case (marketing, testing, certification, installation, or maintenance).

Step 2: Confidentiality and Agreement Management

- Service providers must sign NDAs and other confidentiality agreements as required by the client before any sensitive information is exchanged.
- The service provider ensures that appropriate legal frameworks are in place to enable secure discussions and protect client data.

Step 3: BIM Readiness Assessment

- The client completes the BIM readiness level questionnaire via the MEZeroE platform.
- The questionnaire evaluates the company's existing digitalization status and generates an initial visualization of results.
- If further analysis is needed, MEZeroE partners provide a detailed BIM readiness report within one week.

Step 4: Accessing the BIM Package Configurator



- The client uses the BIM Package Configurator tool on the MEZeroE Virtual Marketplace to:
 - Visualize and download a list of required digital features for their product type.
 - Identify the minimum necessary data for BIM integration.

Step 5: Tailored Digitalization Strategy

- The service provider analyzes:
 - The client's BIM readiness questionnaire results.
 - The filtered requirements generated by the BIM Package Configurator tool.
- Based on this analysis, the client receives:
 - Guidelines for creating BIM-compatible product data.
 - Recommendations for structuring digital product information.
 - BIM object examples for reference.

Step 6: Implementation and Digitalization Plan

- The client can independently proceed with the digitalization plan or opt for additional consulting support from MEZeroE partners.
- The BIM digitalization process can be completed in phases, allowing manufacturers to adapt to ongoing product developments.

Step 7: Final Report and Continuous Support

- The client receives:
 - A structured summary report outlining the suggested digitalization steps.
 - Interactive online features to guide BIM integration.
- If needed, the client can collaborate with a project manager specializing in marketing and digitalization to oversee the integration process.
- Providers will notify the coordinating entity upon completion.

4.9.3 Ideal Customers

Who benefits from this service?

- EU-based manufacturers seeking to digitally integrate their products into BIM workflows.
- Companies producing nZEB Enabler Envelope Solutions (nEESs).
- Manufacturers needing structured guidance on BIM-compatible datasets.
- Organizations aiming to enhance product visibility and integration in digital marketplaces and certifications workflows.

4.9.4 Lead Service Provider

Polimi: Specializing in BIM methodology, digital product integration, and standardization frameworks.

4.9.5 Expected Outcomes and Deliverables

- BIM Readiness Report: Analysis of the company's current digitalization level.
- BIM Package Configurator Tool Results: List of required digital features for product datasets.
- Guidelines for BIM Object Creation: Step-by-step recommendations for structuring BIM-compatible product data.
- Reference BIM Object Examples: Provided through the MEZeroE Virtual Marketplace.

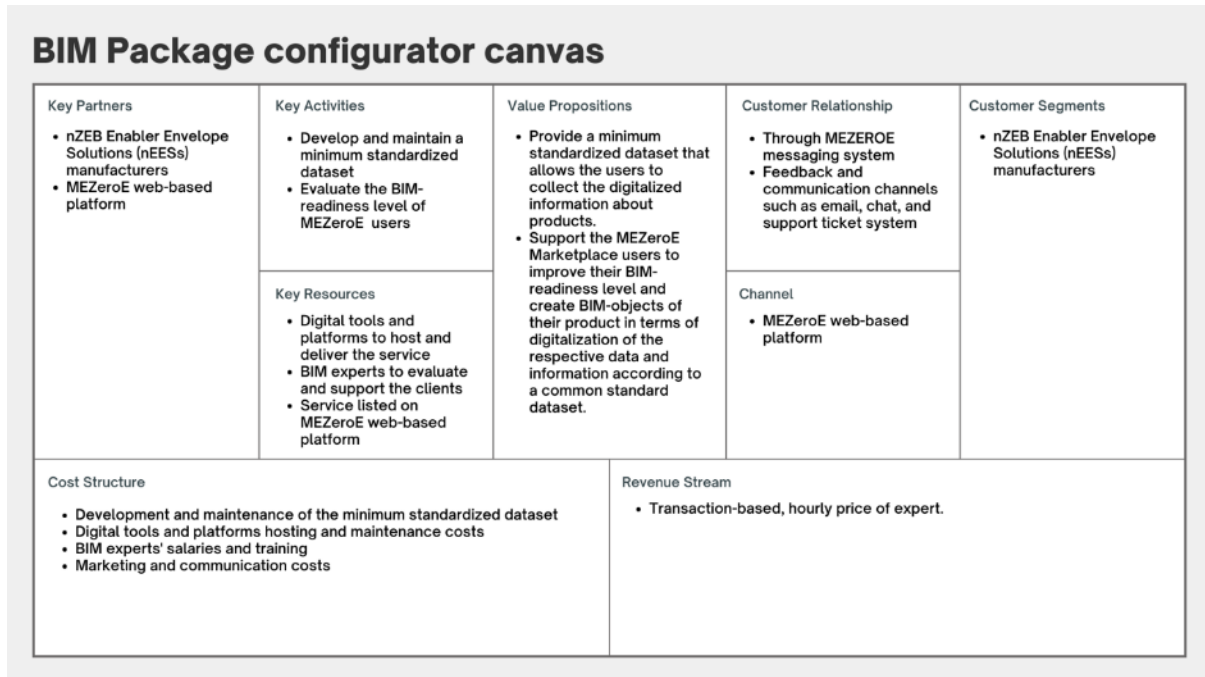


- Implementation Roadmap: Suggested plan for phased digitalization of product data.

4.9.6 Business Canvas: BIM Package Configurator

The Business Model Canvas in figure 12 provides a concise, visual summary of BIM package configurator, and shows how it creates and delivers value within the MEZeroE ecosystem.

Figure 12 - Business canvas: BIM package configurator



Open Innovation Event: Pilot Implementation Through the OIS3 Idea Contest

As part of the OIS3 framework implementation, an open innovation event has been organized during the project timeline to test and refine one of the key services: *Open Innovation Event Management* (Service 3.8). This event will serve as a pilot initiative to assess the effectiveness of idea contests as a tool for engaging students, young researchers, and startups within the MEZeroE marketplace and OIS3 services.

The event will be structured as an idea contest, where participants will tackle a real-world challenge related to sustainable building envelope solutions, in line with MEZeroE's mission to accelerate the market adoption of next-generation nearly Zero Energy Buildings (nZEB) technologies.

4.10 Objectives of the OIS3 Idea Contest

- Engage students, young researchers, and early-stage startups in the MEZeroE ecosystem.
- Promote realistic and applicable ideas that align with MEZeroE's mission.
- Generate visual materials (renders/drawings) that can be used for outreach and social media engagement.
- Provide industry recognition and incentives through cash prizes, diplomas, or exposure.
- Test and refine the Open Innovation Event Management service within the OIS3 framework.

4.11 Introduction to the Idea Contest

The Innovation Consulting Idea Contest is a structured open innovation challenge designed to engage students and young researchers in the development of sustainable and innovative solutions for the European building stock. As part of the MEZeroE ecosystem, this competition will provide a platform for fresh ideas that align with the broader mission of accelerating the adoption of nearly Zero Energy Building (nZEB) solutions.

The contest aims to encourage creative yet feasible solutions that can be widely applied to large-scale buildings in Europe. Participants will be required to submit drawings and/or renders that effectively communicate their ideas. These submissions should focus on solutions that enhance energy efficiency, sustainability, or digital integration within the building envelope.

4.12 Contest Documentation and Submission setup

A full suite of supporting materials and digital tools was created to ensure transparency, ease of participation, and low administrative overhead. This section outlines all preparatory documents, digital resources, and submission mechanisms developed to facilitate the two OIS3 Idea Contests.

4.12.1 Applicant Guidelines

Two comprehensive guideline documents were prepared. One for each challenge, to ensure applicants clearly understood all participation details. These included:

- The MotionShade Challenge Guide for Applicants (See Appendix B)
- The Multifunctional Façade Guide for Applicants (See Appendix C)



4.12.2 Submission Form

A standardized form was created to collect consistent participant information and the written component of each proposal. This document required participants to provide:

- Participant information
- Contest related information: Concept description, technical feasibility, sustainability impact.
- Terms: Acceptance that the work is original, and acceptance of IP-related clauses as per the guidelines.

(See Appendix F: The MotionShade Façade Challenge Submission Form, and Appendix G: The Multifunctional Façade Challenge Submission Form)

4.12.3 Google Form Submission Portal

To streamline data collection and avoid the cost of commercial submission platforms, a Google Form was developed and used as the central submission interface. The form allowed participants to upload their files directly, ensuring data uniformity and ease of tracking.

Key features included:

- Integrated upload fields for ZIP or PDF files.
- Automatic timestamping of each submission.
- Connection to a back-end Google Sheet used for tracking participant details and submission IDs.

The Google Form acted as the bridge between participants and the automated Apps Script described in Section 5.3.4.

(See Appendix H: The MotionShade Façade Challenge Google Form, and Appendix I: The Multifunctional Façade Challenge Google Form)

4.12.4 Google Apps Script

Once the form was submitted, an integrated Google Apps Script was created to automatically:

- Assign each submission a unique identification number based on the order of arrival.
- Convert the uploaded files into a ZIP package named with the corresponding submission number.
- Send a confirmation email to the submitted and automatically notify the organizing team each time a submission was received.

This automation ensured transparency, consistency, and traceability in the submission process, while remaining cost-efficient within the project's budget constraints.

4.12.4.1 Foreground IP: Google App Script

The Google App Script is developed and is currently owned by Incurvo. This intellectual property (IP) will be transferred to the Legal Entity managing the MEZeroE single-entry point once it is established, ensuring long-term sustainability and replicability of the submission system.



4.12.5 Landing Pages for Publication

Dedicated landing pages were published on both the MEZeroE Marketplace and Incurvo websites. Each page included:

- An overview of the contest purpose and objectives.
- Access links to download the guidelines and application form.
- The direct submission link to the Google Form portal.

These landing pages served as the official entry point for all participants and ensured unified communication across project partners.

(See Appendix D: The MotionShade Façade Challenge Landing Page, and Appendix E: The Multifunctional Façade Landing Page)

4.12.6 Challenge Flyer with QR Codes

To support university outreach, a concise PDF flyer was designed and shared across academic and professional networks. It included:

- A summary of the contest's theme, eligibility, and rewards.
- Two QR codes: one linking to the guidelines/application form, and another linking to the submission portal.
- Clear calls to action for participation and contact details for support.

(See Appendix J: The MotionShade Façade Flyer, and Appendix K: The Multifunctional Façade Challenge Flyer)

4.12.7 Evaluation Form

A standardized evaluation template was created and shared with jury members after contest closure. Each form included:

- MEZeroE and Challenge logos.
- Challenge title, participant name, and submission ID.
- Weighted scoring sections for innovation, feasibility, sustainability, and presentation.
- A space for qualitative feedback and the final evaluation result (Winner, Runner-Up, Shortlisted, or Not Selected).

(See Appendix L: Idea Contest Evaluation Form)

4.12.8 Support Email

For participant support, a dedicated email address: mezeroeproject@gmail.com was created to handle inquiries and communication throughout the submission and evaluation stages.

4.13 Communication and Promotion Channels

To reach a diverse and international audience, the contest was disseminated through a combination of academic institutions, innovation platforms, and professional networks. The outreach strategy focused



on universities with strong architectural and engineering programs, as well as online communities dedicated to design, sustainability, and open innovation.

4.13.1 MEZeroE Consortium Universities

The MEZeroE consortium includes four leading European universities with strong expertise in architecture, engineering and building-related technologies. These institutions were the first dissemination targets due to their direct involvement in the project and their access to student and researcher communities. Sharing the challenge through these universities ensured early visibility and strong alignment with the project's objectives.

1. Politecnico de Milano
2. Cracow University of Technology
3. Denmark Technical University
4. University of Innsbruck

4.13.2 Other Universities

Figure 13 shows the universities that were contacted individually as part of a broader outreach campaign aimed at attracting participants from different countries. Institutions were selected based on the strength of their programs in architecture and engineering. Each university was contacted directly via email, and information about the contest, submission guidelines, and promotional materials was shared with the relevant departments. This targeted dissemination approach helped increase visibility and encouraged participation across multiple countries.

Figure 13 - Universities contacted to participate in the Idea Challenge

Name	Department	Country	Contact Details
TU Berlin	Architecture	Germany	christine.neumeisterdegrulich@tu-berlin.de
TU Berlin	Civil Engineering	Germany	gdbauing@bau.tu-berlin.de
KTH Sweden	Engineering	Sweden	dirocco@math.kth.se
KTH Sweden	Architecture	Sweden	bjorn.berggren@abe.kth.se
EPFL Switzerland	Archi & Engin.	Switzerland	silvia.aguilera@epfl.ch
ETH Zurich	Architecture	Switzerland	andres.herzog@arch.ethz.ch
ETH Zurich	Engineering	Switzerland	koch@stab.baug.ethz.ch
University of Parma	Innovation Office	Italy	elena.boni@unipr.it
University of Parma	Engineering	Italy	giuliana.morini@unipr.it
University of Parma	Architecture	Italy	roberto.menozzi@unipr.it
Roma Tre University	Engineering	Italy	didattica.Ingegneriacivil_einformatica_tecnologie_aeronautiche@uniroma3.it
Roma Tre University	Architecture	Italy	direttore.architettura@uniroma3.it
IUAV Venecia	Architecture	Italy	massimiliano.condotta@iuav.it
University of Pavia	Engineering	Italy	luca.perreggini@unipv.it
University of Bologna	Architecture	Italy	da.dipartimento@pec.unibo.it
University of Bologna	Engineering	Italy	dicam.didattica@unibo.it
University of Torino	Challenges	Italy	clik@polito.it
Star Florence Design S.	General	Italy	star@florencedesignschool.com
Free Uni of Bolzano	Design	Italy	andrea.caser@unibz.it
University of Perugia	Engineering	Italy	dipartimento.ing1@unipg.it
UPC Catalonia	Architecture	Spain	director.pa@upc.edu
UPC Catalonia	Civil Engineering	Spain	usdi.camins@upc.edu
UPM Madrid	Civil Engineering	Spain	Alicia.rosado@upm.es
University of Alicante	Architectural Cons.	Spain	dcarq@ua.es



University of Alicante	Civil Engineering	Spain	Dic@ua.es
University of Granada	Architecture	Spain	Form
University of Granada	Civil Engineering	Spain	Form
BES La Salle	Architecture	Spain	noelia.perez@salle.url.edu
Uni. Castilla La Mancha	Civil Engineering	Spain	dep.ingenieriacivil@uclm.es
Uni. Castilla La Mancha	Architecture	Spain	arquitectura.to@uclm.es
University of Cadiz	Engineering	Spain	Form
EHU Pais Vasco	Engineering	Spain	gie.international@ehu.eus
EHU Pais Vasco	Architecture	Spain	sec-director.etsa@ehu.eus

4.13.3 Innovation and challenges websites

To further expand the reach of the Idea Contest beyond academic institutions, the challenge was also promoted through international innovation and competition-focused websites. These platforms publish global calls for ideas, design competitions, and student opportunities, making them an effective channel to engage creative communities, young professionals, and early-stage innovators. Sharing the contest on these websites helped increase visibility and attract participants who actively seek design, architecture, and innovation challenges. Figure 14 shows the list of websites contacted.

Figure 14 - Innovation websites contacted to host the challenges

Website	Description
Studentcompetitions.com	Global portal that aggregates competitions for students across design, engineering, business, and innovation fields.
masterchallenge.me	Platform that showcases creative and technical challenges aimed at students, designers, and young innovators.
Blogdeconcursos.com	Spanish-language hub listing open calls, contests, and competitions across multiple industries.
Archdaily.com	The world's most visited architecture website, featuring projects, competitions, and design-related opportunities.
Competitionline.com	A leading European platform that publishes architecture competitions, tenders, and design contests.
Bauwelt.de	Influential German architecture magazine that also features calls for competitions and professional opportunities.
wettbewerbe-aktuell.de	Well-known German database focused specifically on architecture competitions and design tenders.
Bustler.net	Global architecture and design competition website showcasing international calls and events.
Archdiaries.com	Curated architecture platform highlighting design competitions, academic opportunities, and studio projects.
Theglobalscholarship.org	An international listing site for scholarships and student opportunities, including design and innovation competitions.

4.14 Evaluation and Follow-up Process

All submissions were evaluated according to standardized criteria (see Section 5.6.5) by a Review Panel composed of representatives from one of the contest sponsors and a Eurac. Each submission was assigned a unique identifier to ensure anonymity and fairness during evaluation.

To standardize the scoring process, a digital evaluation form was created. Each form included:



- The MEZeroE and Challenge logos
- The Challenge name
- The Participant or Team name
- The Submission number
- The Overall evaluation score and category-based ratings
- A Final result (Winner, Runner-up, Shortlisted, or Not Selected)
- A Short qualitative comment from evaluators

After evaluations were completed, participants were notified of their results via email. Winners and runners-up (see sections 6.22 and 7.22) were awarded certificates. Winners also received a 1000€ cash prize.

(See Appendix M: The MotionShade Contest Evaluations, and Appendix N: The Multifunctional Façade Evaluations)

4.15 Contest Participation and Evaluation Framework

This section defines the participation requirements, submission format, and evaluation criteria applied across all OIS3 Idea Contests. It provides a standardized framework ensuring that every participant, regardless of background or location, is evaluated fairly and transparently. The guidelines below outline how participants were expected to present and describe their ideas, the formats accepted for submission, and the criteria used by the evaluation panel to assess the submissions.

4.15.1 Visual Representation Guidelines

Visual representation is a key component of the Innovation Consulting Idea Contest, ensuring that proposed innovations are clearly communicated and can be easily understood by both technical and non-technical audiences. The objectives of visual representation are:

- **Enhance Idea Clarity:** A well-illustrated concept allows evaluators to grasp the technical feasibility and application of the idea more effectively.
- **Showcase Creativity:** Visuals help participants demonstrate the aesthetic and functional aspects of their innovation.
- **Strengthen Public Engagement:** High-quality visuals make it easier to promote winning ideas across social media, industry publications, and MEZeroE outreach efforts, amplifying visibility for participants.
- **Facilitate Industry Adoption:** Companies and stakeholders are more likely to engage with ideas that are presented in a visually compelling and professional manner.

Participants are encouraged to keep visuals simple yet clear, ensuring they effectively convey the core aspects of their proposed innovation.

4.15.2 Accepted Visual Formats

Drawings, Sketches, Renders, AI-Generated Images, Video Renders, etc. Anything that can showcase an idea clearly. Participants are encouraged to be as creative as possible.



4.15.3 Submission Criteria

Participants must submit a visual and descriptive representation of their idea, ensuring the concept is clearly conveyed and technically reasonable. Submissions must include:

- **1-3 Visual representations** of the proposed idea (free format: sketch, render, AI-Generated, technical diagram, etc.).
- **Concept Description (Max 300 words):** Explain the concept, idea and impact on user experience.
- **Technical Feasibility (Max 300 words):** Outline how the concept could be implemented with current or emerging technologies.
- **Sustainability Impact (Max 300 words):** Outline how the design can contribute to energy efficiency or environmental quality

4.15.4 Timeline

Both Idea contests were structured with sufficient time for participant submissions, review, and public engagement. The timeline can be seen in figure 15.

Figure 15 - Idea contest timeline

Phase	Dates
Finalize requirements with Pellini and Focchi	June 20 th 2025
Communications activities	July 1 st 2025
Contest Launch – Submissions Open	July 8 th 2025
Submission Deadline	10 th October 2025 at 23:59
Evaluation and Jury Review	October 14 th 2025
Winner Announcement & Awards	October 17 th 2025

4.15.5 Evaluation Criteria

Figure 16 shows the criteria that are used for evaluating submissions:

Figure 16 - Evaluation criteria

1 – Poor 2 – Fair 3 – Good 4 – Very Good 5 – Excellent		
Evaluation Criteria	Weight	Scoring Guide (1-5)
Innovation and Creativity	30%	<p>How novel and forward-thinking is the idea?</p> <ol style="list-style-type: none"> 1. The idea is generic, lacks originality. 2. Some new elements, but mostly existing concepts. 3. A moderately creative concept with some innovative features. 4. A strong, well-developed innovative approach. 5. Highly original and groundbreaking, offers significant innovation.
Feasibility	20%	<p>Can this idea be implemented with realistic resources and current technologies?</p> <ol style="list-style-type: none"> 1. The idea is highly impractical or unrealistic. 2. Major technical or cost barriers prevent real-world application.



		<ol style="list-style-type: none"> 3. Some feasibility concerns but could be developed with adjustments. 4. Technically feasible with reasonable industry adaptation. 5. Fully feasible, scalable, and ready for real-world application.
Impact on Sustainability	20%	<p>How well does the solution contribute to energy efficiency and sustainability goals?</p> <ol style="list-style-type: none"> 1. Limited or no sustainability impact. 2. Some sustainability considerations but not well-integrated. 3. Moderate sustainability benefits, with potential improvements. 4. Strong sustainability focus with measurable benefits. 5. Excellent sustainability impact, contributing significantly to nZEB and environmental goals.
Presentation and Clarity	30%	<p>How well is the idea communicated through drawings/renders and the written description?</p> <ol style="list-style-type: none"> 1. Poorly explained, unclear visuals, lacks structure. 2. Some key elements missing, difficult to understand. 3. Generally clear, but some areas need refinement. 4. Well-structured, good visuals, and detailed explanation. 5. Exceptionally clear, professional, and visually engaging.

Final Scoring and Selection Process

- Each submission will receive a total score out of 100 based on the weighted evaluation criteria.
- In the case of a tie, priority will be given to the most innovative and feasible solution.
- The highest-scoring entries will be shortlisted for final review and selection by the jury.

This evaluation method ensures that submissions are fairly assessed based on their originality, feasibility, sustainability impact, and clarity of presentation.



The MotionShade Contest with Pellini SpA

The MotionShade Idea Contest, in collaboration with Pellini SpA, invites students to explore how design can influence the way we experience light indoors.

Participants are asked to create unique perforation patterns for MotionShade, a solar shading technology that uses micro-perforated films embedded within glass to manage sunlight. These patterns control light, minimize glare, and enhance comfort, all while preserving a view of the outside world.

Rather than focusing on technical construction, this challenge centers on artistic expression and user experience. Participants should focus on designs that:

- Shape light in aesthetically or emotionally meaningful ways
- Promote visual comfort while maintaining transparency
- Improve how individuals feel in a space: more at ease, more focused, more relaxed

This is not an engineering task. Participants won't need to prototype anything. Submissions can be made using any visual format, such as hand sketches, digital illustrations, 3D visualizations, AI-generated imagery, or collages.

4.15.6 Understanding MotionShade

MotionShade is an innovative shading product developed by Pellini SpA. It uses ultra-thin, micro-perforated film, placed within insulating glass units, to manage daylight while allowing occupants to maintain a view outside.

Unlike standard blinds, MotionShade doesn't block light completely. Instead, it filters light through custom-designed patterns of microscopic holes. This creates soft shadows, reduces heat and glare, and enhances both visual and emotional comfort indoors.

Key benefits include:

- Minimizes harsh light without losing connection to the outdoors
- Allows for artistic and symbolic patterns that influence atmosphere
- Improves energy efficiency by reducing the need for artificial light and cooling

These micro-perforated films can be fully customized with different design patterns, making each application both functional and expressive. The challenge is an opportunity to imagine what those patterns could be.

4.15.7 Challenge Theme

"Designing Perforation Patterns That Enhance Indoor Light and Wellbeing"

Entrants will design original patterns suitable for MotionShade films. These designs should consider how the pattern interacts with natural light, and how it changes the look and feel of a space throughout the day.

Effective submissions will:



- Present an original, purposeful pattern with visual or symbolic meaning
- Demonstrate how the design affects light and mood in a space
- Propose a use case where the design could improve comfort (e.g. schools, hospitals, residences, workplaces)

The design may be calming or energizing, abstract or symbolic. Inspiration might come from nature, geometry, rhythm, stories, or cultural influences.

4.15.8 Examples of Feasible Ideas

- A visual rhythm that changes with the sun's movement
- A pattern rooted in cultural symbols to create a meaningful atmosphere
- A dynamic layout for collaborative spaces like classrooms or studios

The aim is to show the imagined outcome and user impact through compelling visuals and descriptions.

4.15.9 Review Panels

A review panel formed by experts from Pellini and senior researchers from Eurac reviewed and scored the submissions:

The MotionShade Challenge Review Panel

- Giovanni Gennaro, Technical Advisor, Pellini.
- Giacomo Recagni, Design Engineer, Pellini.
- Sergio Semeraro, Marketing Director, Pellini.
- Giuseppe Demichele, Senior Researcher, Eurac.
- Francesco Babich, Senior Researcher, Eurac.

4.15.10 Prizes and Opportunities

The prizes and opportunities for the challenge are:

- Winners: 1000€ cash and a certificate
- Runners-up: certificate

In addition, participants whose work receives particularly high evaluations may be:

- Invited to collaborate with the host companies for further development of their design
- Offered an internship or project opportunity to bring their idea closer to real-world application

These opportunities are optional and will be based on Pellini's interest in selected entries. All finalists will receive public recognition across the MEZeroE platform.

4.15.11 Intellectual Property

All participants will retain full intellectual property rights to their submitted ideas.



By submitting an entry, participants agree to grant MEZeroE, Pellini, and Incurvo, a non-exclusive, royalty-free license to showcase, publish, or display their work for the purposes of:

- Promoting the contest
- Sharing results through exhibitions, social media, or publications
- Highlighting innovation within the MEZeroE and Pellini communities

If Pellini or another MEZeroE partner wishes to develop a submission further, this will be done through a separate agreement directly with the participant.

4.15.12 Submission Guidelines

To participate in the Idea Contest, participants must submit a structured proposal that effectively communicates their concept, feasibility, sustainability impact, and scalability. Submissions should be concise, visually engaging, and clearly structured, aligning with the evaluation criteria.

Participants must submit the following:

Concept Description (300 words maximum)

A clear explanation of the idea and its purpose, including:

- What inspired the design?
- Where and how might it be used?
- How does it enhance occupant comfort, wellbeing, or visual performance?

Feasibility (300 words maximum)

A short explanation of how the pattern could realistically be applied to MotionShade using existing or emerging perforation technologies. This does not require technical drawings, just a thoughtful reflection on practical use.

Sustainability Impact (300 words maximum)

A brief description of how the design could help reduce glare, heat gain, or dependency on artificial lighting, contributing to energy efficiency or environmental quality.

Visual Submission (4 images OR 3 images + 1 video)

- 1-2 images that show the perforation pattern
- 1-2 images or mockup that shows how it might appear in a space
- Accepted formats: JPG, PNG, or PDF (max size: 10MB)
- May be hand-drawn, digitally created, AI-generated, or rendered. All creative formats are welcome.

4.15.13 Submission Deadline and Where to Submit

- Deadline: October 10, 2025
- Submission Portal: Using the [Online Form](#)



Late or incomplete submissions will not be considered. Participants will receive an email confirmation after submitting.

4.15.14 Additional notes for Submissions

- Team Submissions Allowed: Up to 3 members per team.
- Multiple Entries: Each participant/team may submit one entry only.
- Plagiarism Policy: All work must be original; plagiarism will result in disqualification.
- Intellectual Property: Participants retain the rights to their ideas but allow MEZeroE to showcase the submissions for research and outreach purposes, including MEZeroE and consortium partner websites and their social media channels.

4.16 Contest Results

The results of the MotionShade Challenge are presented below. This section summarizes participation demographics, scoring outcomes, and the final selection of winners and runners-up

4.16.1 Participation Demographics

A total of 8 valid submissions were received through the MEZeroE digital form between June 16th and the 10th of October 2025.

- 50% of entries submitted as individual participants, and 50% submitted as a team.
- Countries of participants:
 - Italy: 2 submissions
 - Poland: 1 submission
 - Russia: 1 submission
 - Canada: 1 submission
 - Bangladesh: 1 submission
 - Dominican Republic: 1 submission
 - USA: 1 submission

(See Appendix O: The MotionShade Contest Candidate Image Submissions)

4.16.2 Winners and Runners-up

Figure 17 shows the entries that were selected as winners and runners-up based on total scoring and jury deliberation.

Figure 17 - Winners and runners-up for the Motionshade Contest

Award	ID	Name	University & Country	Score
Winner	MS-009	Giacomo C., Andrea C.	Politecnico di Milano, Italy	4.8
Runner-up	MS-008	Gulyaev K., Shmakov P.	Moscow State University of Civil Engineering, Russia	3.8



4.16.3 Full Scoring Table

All participants were evaluated using the same criteria. Table 18 lists each submission in the order of reception, as assigned automatically through the Google Apps Script during the contest.

Figure 18- Full scoring table for the Motionshade Contest

ID	Name	University	Score				Total
			I&C	F	S	P	
MS-004	Marcelina C., Malwina S.	Wroclaw University of Sci. & Tech, Poland.	2	2	2	2	2
MS-005	Masoud V., Andreas K., Ashutosh B.	Concordia University, Canada	2	2	2	4	2.4
MS-006	Chiara B., Mohammad S.	Politecnico di Milano, Italy	3	1	1	1	1.6
MS-007	Pronay Saha	Dhaka University of Eng. & Tech, Bangladesh	2	1	2	2	1.7
MS-008	Gulyaev K., Shmakov P.	Moscow State University of Civil Engineering, Russia	3	5	3	4	3.8
MS-009	Giacomo C., Andrea C.	Politecnico di Milano, Italy	5	5	5	4	4.8
MS-011	Ari Nadrich	Columbia University, USA	3	3	3	2	2.8
MS-012	Carolyn Y., Roa P.	Universidad Autónoma de Santo Domingo, Dominican Republic	2	3	1	2	2.1

I&C: Innovation and Creativity, **F:** Feasibility, **S:** Sustainability, **P:** Presentation



The Multifunctional Façade Contest with Focchi SpA

The Multifunctional Façade Idea Contest, in collaboration with Focchi SpA, invites students to explore how the building envelope can become a dynamic, intelligent system that actively contributes to energy efficiency and indoor comfort.

Participants are asked to design a multifunctional façade system that integrates smart technologies such as IoT sensors, sun-shading elements, BIPV, and embedded heating/cooling systems. The objective is to rethink façades, that can do more than just shield the building. They can sense, interact, and optimize.

Rather than focusing on technical construction, this challenge centers on artistic expression and user experience. Participants should focus on designs that:

- Integrate smart systems to monitor and react to environmental conditions
- Support energy efficiency and user comfort through intelligent responses
- Offer visual and functional clarity while hosting complex functionality

This is not an engineering task. Participants won't need to prototype anything. Submissions can be made using any visual format, such as hand sketches, digital illustrations, 3D visualizations, AI-generated imagery, or collages.

4.16.4 Understanding Multifunctional Façade Systems

A multifunctional façade system combines physical components with embedded technologies to create a responsive outer layer of the building. These facades go beyond traditional façades that provide passive protection and focus on aesthetics. They become active systems that manage light, temperature, airflow, and energy.

Key features of multifunctional façades include:

- Smart Integration: Sensors and actuators adjust systems in real time based on external/internal conditions
- Energy Production: BIPV and other technologies allow the façade to generate electricity
- Climate Control: Embedded heating/cooling components optimize indoor comfort
- Adaptive Shading: The façade responds dynamically to sun, weather, or occupancy

This contest is an opportunity to imagine how design, modularity, and smart systems can work together to transform the building skin into a living, intelligent interface between humans and their environment.

4.16.5 Challenge Theme

"Modular Façades that Sense, Interact, and Optimize"

Entrants will design an original façade system that embodies the principles of intelligence, adaptability, and sustainability. The goal is to demonstrate how integrated technologies can elevate the role of the façade from passive envelope to active system.

Effective submissions will:



- Clearly illustrate how different technologies (e.g., sensors, shading, BIPV) work together
- Consider both environmental performance and user experience
- Show how modular components enable maintenance, upgrades, and flexibility
- Provide a visual concept that explains the façade's layers and logic

The design may be inspired by nature, geometry, architectural concepts, or cultural influences. What matters is that the façade is multifunctional and innovative.

4.16.6 Examples of Feasible Ideas

- Modular panels with embedded solar cells and shading fins that reorient based on sun angle
- A kinetic façade with moving elements that respond to wind flow, reducing heat load and enhancing comfort
- AI-generated patterns that optimize glare reduction while maintaining visual harmony

The aim is to show the imagined outcome and user impact through compelling visuals and descriptions.

4.16.7 Review Panel

A review panel formed by experts from Focchi and senior researchers from Eurac reviewed and scored the submissions:

The Multifunctional Façade Challenge Review Panel

- Laura Vandi, Innovation Manager, Focchi.
- Paolo Ermeti, Head of Design, Focchi.
- Sara Magnani, Engineering Energy Specialist, Focchi.
- Riccardo Pinotti, Senior Researcher, Eurac.
- Francesco Babich, Senior Researcher, Eurac.

4.16.8 Prizes and Opportunities

The prizes and opportunities for the challenge are:

- Winners: 1000€ cash and a certificate
- Runners-up: certificate

In addition, participants whose work receives particularly high evaluations may be:

- Invited to collaborate with the host companies for further development of their design
- Offered an internship or project opportunity to bring their idea closer to real-world application

These opportunities are optional and will be based on Focchi's interest in selected entries. All finalists will receive public recognition across the MEZeroE platform.



4.16.9 Intellectual Property

All participants will retain full intellectual property rights to their submitted ideas.

By submitting an entry, participants agree to grant MEZeroE, Focchi, and Incurvo, a non-exclusive, royalty-free license to showcase, publish, or display their work for the purposes of:

- Promoting the contest
- Sharing results through exhibitions, social media, or publications
- Highlighting innovation within the MEZeroE and Focchi communities

If Focchi or another MEZeroE partner wishes to develop a submission further, this will be done through a separate agreement directly with the participant.

4.16.10 Submission Guidelines

To participate in the Idea Contest, participants must submit a structured proposal that effectively communicates their concept, feasibility, sustainability impact, and scalability. Submissions should be concise, visually engaging, and clearly structured, aligning with the evaluation criteria.

Participants must submit the following:

Concept Description (300 words maximum)

A clear explanation of the idea and its purpose, including:

- What inspired the design?
- Where and how might it be used?
- How does it enhance occupant comfort, wellbeing, or visual performance?

Feasibility (300 words maximum)

A short explanation of how the concept could work using existing or emerging technologies. This does not require technical drawings, just a thoughtful reflection on practical use.

Sustainability Impact (300 words maximum)

A brief description of how the design could reduce heating and cooling demand, produce clean energy, minimize the need for artificial lighting, improve occupant comfort through IoT, etc.

Visual Submission (4 images OR 3 images + 1 video)

- 1-2 images that show the idea
- 1-2 images or mockup that shows how it might appear in a space
- Accepted formats: JPG, PNG, or PDF (max size: 10MB)
- May be hand-drawn, digitally created, AI-generated, or rendered. All creative formats are welcome.



4.16.11 Submission Deadline and Where to Submit

- Deadline: October 10, 2025
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Late or incomplete submissions will not be considered. Participants will receive an email confirmation after submitting.

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- Team Submissions Allowed: Up to 3 members per team.
- Multiple Entries: Each participant/team may submit one entry only.
- Plagiarism Policy: All work must be original; plagiarism will result in disqualification.
- Intellectual Property: Participants retain the rights to their ideas but allow MEZeroE to showcase the submissions for research and outreach purposes, including MEZeroE and consortium partner websites and their social media channels.

4.17 Contest Results

The results of the Multifunctional Façade Idea Contest are presented below. This section summarizes participation demographics, scoring outcomes, and the final selection of winners and runners-up

4.17.1 Participation Demographics

A total of 14 valid submissions were received through the MEZeroE digital form between June 16th and the 10th of October 2025.

- 76.5% of entries submitted as individual participants, and 23.5% submitted as a team.
- Countries of participants:
 - Italy: 3 submissions
 - France: 1 submission
 - Spain: 1 submission
 - Canada: 1 submission
 - Greece: 1 submission
 - Ireland: 1 submission
 - Poland: 1 submission
 - India: 2 submissions
 - Colombia: 1 submission
 - Bangladesh: 1 submission
 - USA: 1 submission

(See Appendix P: The Multifunctional Façade Contest Candidate Image Submissions)



4.17.2 Winners and Runners-up

Figure 19 shows the entries that were selected as winners, runners-up, and honorable mention based on total scoring and jury deliberation.

Figure 19 - Winners, runners-up, and honorable mentions for the Multifunctional Facade Contest

Award	ID	Name	University & Country	Score
Winner	MZ-016	Kacper Krzystof	Wrocław University of Sci. & Tech, Poland	3.5
Runner-up	MZ-007	Ali Jahanirahaei Arezou Zehtabi	Politecnico di Torino, Italy	3.5
Runner-up	MZ-020	Arezou Farshi	Politecnico di Milano, Italy	3.5
Honorable Mention	MZ-012	Katie Fitzgerald	MTU cork, Ireland	3.4

4.17.3 Full Scoring Table

All participants were evaluated using the same criteria. Table 20 lists each submission in the order of reception, as assigned automatically through the Google Apps Script during the contest.

Figure 20 - Full scoring table for the Multifunctional Facade Contest

ID	Name	University & Country	Score				Total
			I&C	F	S	P	
MZ-006	Nicolas Beffre	ESTP, France	3	3	2	3	2.8
MZ-007	Ali Jahanirahaei Arezou Zehtabi	Politecnico di Torino, Italy	2	5	3	4	3.5
MZ-008	Masoud Valinejad	Concordia University, Canada	2	4	4	3	3.2
MZ-009	Sophia Pampouki	University of Thessaly, Greece	2	4	2	2	2.6
MZ-011	Chiara B. Seyed M.	Politecnico di Milano, Italy	2	4	2	4	3
MZ-012	Katie Fitzgerald	MTU cork, Ireland	4	4	4	1	3.4
MZ-013	Jathusha Thiru.	University of Moratuwa, India	5	2	2	4	3.3
MZ-014	Cesar Arias	Universidad de América, Colombia	5	3	2	1	3
MZ-015	Raman Kumar	Khalsa College of Eng. & Tech, India	5	1	4	4	3.4
MZ-016	Kacper Krzystof	Wrocław University of Sci. & Tech, Poland	5	2	3	4	3.5
MZ-017	Miguel Mosquera	University of Coruña, Spain	1	5	1	4	2.8
MZ-018	Pronay Saha	Dhaka Uni. of Eng. & Tech, Bangladesh	4	2	4	4	3.4
MZ-019	Forrest Eagar	University of Arkansas, USA	1	5	1	3	2.6
MZ-020	Arezou Farshi	Politecnico di Milano, Italy	4	3	2	5	3.5

I&C: Innovation and Creativity, **F:** Feasibility, **S:** Sustainability, **P:** Presentation



Conclusion

The OIS3 Innovation Consulting Framework establishes a comprehensive, structured, and replicable system for delivering innovation consulting services within the MEZeroE ecosystem. It brings together eight distinct services, ranging from expert mentorship, technology roadmapping, cross-sectoral matchmaking, and market replication analysis to open innovation event management and BIM-related digitalization support. By developing detailed, service-specific implementation frameworks, the project ensures that each offering can be delivered consistently, transparently, and sustainably by current and future service providers. This dual-layered structure, the overarching OIS3 framework and the individual service frameworks, creates a unified, operational guide that supports long-term scalability beyond the MEZeroE project lifetime.

A core objective of OIS3 is to bridge the gap between research, industry, and emerging talent. The inclusion of students and young researchers is crucial to fostering a continuous pipeline of fresh ideas and innovative thinking in the nZEB and sustainable building envelope sectors. To test this dimension of the framework, the project piloted the Open Innovation Event Management service through two international idea contests. These contests served as a live validation mechanism for understanding how to design, promote, and deliver innovation events aimed at engaging young talent while aligning with industry needs.

The pilot events produced several key insights for future implementation. First, the ability to attract participants from numerous countries, despite having no dedicated marketing or promotional budget, demonstrates that well-structured challenges, combined with targeted outreach to universities and innovation platforms, can generate strong international interest. Second, the quality of submissions received in both contests confirms the value of structured guidelines, clear communication materials, and a standardized submission and evaluation process. Third, the contests provided practical lessons on communication workflows, IP management, documentation standards, and the operational requirements needed to host innovation events without relying on paid platforms, an important consideration for long-term sustainability.

Both contests were successful in achieving their goals: they generated high-quality proposals, engaged a broad demographic of students and early-career professionals, and demonstrated that OIS3 can operate as a functional, demand-driven component of the MEZeroE marketplace. These results validate the relevance, usability, and practicality of the OIS3 framework, particularly in its role supporting open innovation and industry engagement.

Overall, the implementation of the OIS3 Innovation Consulting Framework marks a significant evolution in MEZeroE's capacity to support collaborative, market-oriented innovation. By combining structured consulting services with real-world engagement mechanisms, the framework positions MEZeroE as a long-term hub for sustainable innovation. With continuous refinement, the standardized processes, tools, and lessons captured here will enable future service providers to seamlessly deliver OIS3 offerings, ensuring that innovative ideas across Europe can move more efficiently from concept to market.



Appendix

4.18 Appendix A: Consulting Services Survey

CONSULTING SERVICES SURVEY

Please fill in the following survey to help us understand how we can improve.

1. Overall, how satisfied are you with your MEZeroE experience?

- 1, Very Unsatisfied.
- 2, Unsatisfied
- 3, Satisfied
- 4, Fairly Satisfied
- 5, Very Satisfied

Comments:

2. How satisfied are you with the value received for your investment?

- 1, Very Unsatisfied.
- 2, Unsatisfied
- 3, Satisfied
- 4, Fairly Satisfied
- 5, Very Satisfied

Comments:



3. To what extent has the MEZeroE platform reduced the time and effort required to find suitable expertise for measurement and verification?

- No reduction
- 1-24%
- 25-49%
- 50-74%
- +75%

Comments:



MEZeroE Idea Contest

The MotionShade Challenge
Sponsored by Pellini SpA

Guide for Applicants

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1. Introduction

The Innovation Consulting Idea Contest is a structured open innovation challenge designed to engage students and young researchers in the development of sustainable and innovative solutions for the European building stock. As part of the MEZeroE ecosystem, this competition will provide a platform for fresh ideas that align with the broader mission of accelerating the adoption of nearly Zero Energy Building (nZEB) solutions.

The contest aims to encourage creative yet feasible solutions that can be widely applied to large-scale buildings in Europe. Participants will be required to submit drawings and/or renders that effectively communicate their ideas. These submissions should focus on solutions that enhance energy efficiency, sustainability, or digital integration within the building envelope.

2. The Value of Visual Representation

Visual representation is a key component of the Innovation Consulting Idea Contest, ensuring that proposed innovations are clearly communicated and can be easily understood by both technical and non-technical audiences. By visual representation, we aim to:

- **Enhance Idea Clarity:** A well-illustrated concept allows evaluators to grasp the technical feasibility and application of the idea more effectively.
- **Showcase Creativity:** Visuals help participants demonstrate the aesthetic and functional aspects of their innovation.
- **Strengthen Public Engagement:** High-quality visuals make it easier to promote winning ideas across social media, industry publications, and MEZeroE outreach efforts, amplifying visibility for participants.
- **Facilitate Industry Adoption:** Companies and stakeholders are more likely to engage with ideas that are presented in a visually compelling and professional manner.

Participants are encouraged to keep visuals simple yet clear, ensuring they effectively convey the core aspects of their proposed innovation.

Visuals that can be used

Drawings, Sketches, Renders, AI-Generated Images, Video Renders, etc. Anything that can showcase your idea clearly. We encourage participants to be as creative as possible.



3. Objectives of the Event

The objectives of the Idea Contest are to:

- Engage students and young researchers in sustainable building envelope innovation.
- Promote realistic and applicable ideas that align with MEZeroE's mission.
- Generate visual materials (renders/drawings) that can be used for outreach and social media engagement.
- Provide industry recognition and incentives through cash prizes, diplomas, or exposure.
- Test and refine the Open Innovation Event Management service within the OIS3 framework.

4. The MotionShade Challenge with Pellini SpA

The MotionShade Idea Contest, in collaboration with Pellini SpA, invites students to explore how design can influence the way we experience light indoors.

Participants are asked to create unique perforation patterns for MotionShade, a solar shading technology that uses micro-perforated films embedded within glass to manage sunlight. These patterns control light, minimize glare, and enhance comfort, all while preserving a view of the outside world.

Rather than focusing on technical construction, this challenge centers on artistic expression and user experience. Participants should focus on designs that:

- Shape light in aesthetically or emotionally meaningful ways
- Promote visual comfort while maintaining transparency
- Improve how individuals feel in a space, more at ease, more focused, more relaxed

This is not an engineering task. You won't need to prototype anything. Submissions can be made using any visual format, such as hand sketches, digital illustrations, 3D visualizations, AI-generated imagery, or collages.

5. Understanding Motion Shade

MotionShade is an innovative shading product developed by Pellini SpA, a partner in the MEZeroE project. It uses ultra-thin, micro-perforated film, placed within insulating glass units, to manage daylight while allowing occupants to maintain a view outside. Unlike standard blinds, MotionShade doesn't block light completely. Instead, it filters light through custom-designed patterns of microscopic holes. This creates soft shadows, reduces heat and glare, and enhances both visual and emotional comfort indoors.



Key benefits include:

- Minimizes harsh light without losing connection to the outdoors
- Allows for artistic and symbolic patterns that influence atmosphere
- Improves energy efficiency by reducing the need for artificial light and cooling

These micro-perforated films can be fully customized with different design patterns, making each application both functional and expressive. The challenge is your opportunity to imagine what those patterns could be.

6. Challenge Theme

"Designing Perforation Patterns That Enhance Indoor Light and Wellbeing"

Entrants will design original patterns suitable for MotionShade films. These designs should consider how the pattern interacts with natural light, and how it changes the look and feel of a space throughout the day.

Effective submissions will:

- Present an original, purposeful pattern with visual or symbolic meaning
- Demonstrate how the design affects light and mood in a space
- Propose a use case where the design could improve comfort (e.g. schools, hospitals, residences, workplaces).

The design may be calming or energizing, abstract or symbolic. Inspiration might come from nature, geometry, rhythm, stories, or cultural influences.

7. Who can Participate

- Students or young researchers
- Teams of students or young researchers (max 3 people)
- One submission per team/person

You must be either a current university student (Bachelor's, Master's, Doctoral, or Postgraduate Diploma level), or have completed your most recent degree or diploma within the past 2 years.

Please note: You will have to upload proof of this (transcript, certificate, enrollment form, etc.) and include it in your .zip file.



8. Submission Criteria

Participants must submit a visual and descriptive representation of their idea, ensuring the concept is clearly conveyed and technically reasonable. Submissions must include:

- 1-3 Visual representations of the proposed pattern and/or final product (free format: sketch, render, AI-Generated, technical diagram, etc.).
- Concept Description (Max 300 words): Explain the concept, idea and impact on user experience.
- Technical Feasibility (Max 300 words): Outline how the concept could be implemented with current or emerging technologies.
- Sustainability Impact (Max 300 words): Outline how the design can contribute to energy efficiency or environmental quality.

9. Examples of Feasible Ideas

- A visual rhythm that changes with the sun's movement
- A pattern rooted in cultural symbols to create a meaningful atmosphere
- A dynamic layout for collaborative spaces like classrooms or studios

The aim is to show the imagined outcome and user impact through compelling visuals and descriptions.

10. Timeline

The contest will be open for submissions between the **8th of July** and **10th of October at 23:59. GMT+1.**

Phase Dates

Phase	Dates
Contest Launch – Submissions Open	July 8th
Submission Deadline	October 10 th , 23:59 GMT+1
Evaluation & Jury Review	October 14th
Winner Announcement & Awards	October 17 th

11. Winner Announcements and Awards

The award ceremony will be held on October 17th, and all participants will be informed of decisions by email.



12. Evaluation Criteria

Evaluation criteria will include:

1 – Poor | 2 – Fair | 3 – Good | 4 – Very Good | 5 – Excellent

Evaluation Criteria	Description	Scoring Guide (1-5)
Innovation & Creativity (30%)	How novel and forward-thinking is the idea?	<p>1: The idea is generic, lacks originality.</p> <p>2: Some new elements, but mostly existing concepts.</p> <p>3: A moderately creative concept with some innovative features.</p> <p>4: A strong, well-developed innovative approach.</p> <p>5: Highly original and groundbreaking, offers significant innovation.</p>
Feasibility (30%)	Can this idea be implemented with realistic resources and current technologies?	<p>1: The idea is highly impractical or unrealistic.</p> <p>2: Major technical or cost barriers prevent real-world application.</p> <p>3: Some feasibility concerns but could be developed with adjustments.</p> <p>4: Technically feasible with reasonable industry adaptation.</p> <p>5: Fully feasible, scalable, and ready for real-world application.</p>
Impact on Sustainability (20%)	How well does the solution contribute to energy efficiency and sustainability goals?	<p>1: Limited or no sustainability impact.</p> <p>2: Some sustainability considerations but not well-integrated.</p> <p>3: Moderate sustainability benefits, with potential improvements.</p> <p>4: Strong sustainability focus with measurable benefits.</p> <p>5: Excellent sustainability impact, contributing significantly to nZEB and environmental goals.</p>
Presentation & Clarity (20%)	How well is the idea communicated through drawings/renders	<p>1: Poorly explained, unclear visuals, lacks structure.</p> <p>2: Some key elements missing, difficult to understand.</p> <p>3: Generally clear, but some areas need refinement.</p>



	and the written description?	4: Well-structured, good visuals, and detailed explanation. 5: Exceptionally clear, professional, and visually engaging.
--	------------------------------	---

Final Scoring and Selection Process

- Each submission will receive a total score out of 100 based on the weighted evaluation criteria.
- In the case of a tie, priority will be given to the most innovative and feasible solution.
- The highest-scoring entries will be shortlisted for final review and selection by the jury.

This evaluation method ensures that submissions are fairly assessed based on their originality, feasibility, sustainability impact, and clarity of presentation.

13. Prizes and Opportunities

The winner of the contest will receive a €1,000 cash prize, awarded by Pellini SpA. In addition, participants whose work receives particularly high evaluations may be:

- Invited to collaborate with Pellini for further development of their design
- Offered an internship or project opportunity to bring their idea closer to real-world application

These opportunities are optional and will be based on the industrial partner's interest in selected entries. All finalists will receive public recognition across the MEZeroE platform.

14. Intellectual Property

Each participant shall retain full ownership of the intellectual property rights to their submitted ideas until the conclusion of the contest. By submitting an entry, participants grant MEZeroE and Pellini S.p.A. a non-exclusive, royalty-free, worldwide license to use, reproduce, display, publish, and communicate their submission for the following purposes:

- Promotion and dissemination of the contest and its results.
- Exhibition through public events, websites, social media, reports, or publications.
- Demonstration of innovation within the MEZeroE and Pellini communities.



For the awarded idea(s), participants agree that Pellini S.p.A. shall have the right to acquire full ownership of the idea upon award confirmation. Ownership transfer will be formalized through a separate agreement, under which the participant will assign all rights, title, and interest in and to the awarded idea to Pellini S.p.A., subject to fair recognition of the participant's contribution as set forth in the contest regulations.

In the absence of such an agreement, participants will retain ownership of their ideas. Participants acknowledge that submitting an idea does not impose any obligation on MEZeroE or Pellini S.p.A. to exhibit, share, develop, or commercialize submissions.

15. Submission Guidelines for Participants

To participate in the Idea Contest, participants must submit a structured proposal that effectively communicates their concept, feasibility, sustainability impact, and scalability. Submissions should be concise, visually engaging, and clearly structured, aligning with the evaluation criteria.

Participants must submit using the MEZeroE Idea Contest submission form. The following sections will be filled out in the form:

Concept Description (300 words maximum)

A clear explanation of the idea and its purpose, including:

- What inspired the design?
- Where and how might it be used?
- How does it enhance occupant comfort, wellbeing, or visual performance?

Feasibility (300 words maximum)

A short explanation of how the pattern could realistically be applied to MotionShade using existing or emerging perforation technologies. This does not require technical drawings, just a thoughtful reflection on practical use.

Sustainability Impact (300 words maximum)

A brief description of how the design could help reduce glare, heat gain, or dependency on artificial lighting, contributing to energy efficiency or environmental quality.

Visual Submission (4 images OR 3 images + 1 video)

- 1-2 images that show the perforation pattern
- 1-2 images or mockup that shows how it might appear in a space
- Accepted formats: JPG, PNG, or PDF (max size: 10MB)



- May be hand-drawn, digitally created, AI-generated, or rendered, all creative formats are welcome.

16. Submission Deadline and Where to Submit

- Deadline: October 10, 2025, 23:59 GMT+1
- Submission: Using the form available in this link.
- What to submit: Participants will submit the submission form, visuals, and proof of university enrollment (or other) as a single .zip file

Late or incomplete submissions will not be considered. Participants will receive an email confirmation after submitting.

17. Additional Notes

- Team Submissions Allowed: Up to 3 members per team.
- Multiple Entries: Each participant/team may submit one entry only.
- Plagiarism Policy: All work must be original; plagiarism will result in disqualification.
- Intellectual Property: Participants retain the rights to their ideas but allow MEZeroE to showcase the submissions for research and outreach purposes, including MEZeroE and consortium partner websites and their social media channels.



MEZeroE Idea Contest

The Multifunctional Façade Challenge Sponsored by Focchi SpA

Guide for Applicants

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1. Introduction

The Innovation Consulting Idea Contest is a structured open innovation challenge designed to engage students and young researchers in the development of sustainable and innovative solutions for the European building stock. As part of the MEZeroE ecosystem, this competition will provide a platform for fresh ideas that align with the broader mission of accelerating the adoption of nearly Zero Energy Building (nZEB) solutions.

The contest aims to encourage creative yet feasible solutions that can be widely applied to large-scale buildings in Europe. Participants will be required to submit drawings and/or renders that effectively communicate their ideas. These submissions should focus on solutions that enhance energy efficiency, sustainability, or digital integration within the building envelope.

2. The Value of Visual Representation

Visual representation is a key component of the Innovation Consulting Idea Contest, ensuring that proposed innovations are clearly communicated and can be easily understood by both technical and non-technical audiences. By visual representation, we aim to:

- **Enhance Idea Clarity:** A well-illustrated concept allows evaluators to grasp the technical feasibility and application of the idea more effectively.
- **Showcase Creativity:** Visuals help participants demonstrate the aesthetic and functional aspects of their innovation.
- **Strengthen Public Engagement:** High-quality visuals make it easier to promote winning ideas across social media, industry publications, and MEZeroE outreach efforts, amplifying visibility for participants.
- **Facilitate Industry Adoption:** Companies and stakeholders are more likely to engage with ideas that are presented in a visually compelling and professional manner.

Participants are encouraged to keep visuals simple yet clear, ensuring they effectively convey the core aspects of their proposed innovation.

Visuals that can be used

Drawings, Sketches, Renders, AI-Generated Images, Video Renders, etc. Anything that can showcase your idea clearly. We encourage participants to be as creative as possible.



3. Objectives of the Event

The objectives of the Idea Contest are to:

- Engage students and young researchers in sustainable building envelope innovation.
- Promote realistic and applicable ideas that align with MEZeroE's mission.
- Generate visual materials (renders/drawings) that can be used for outreach and social media engagement.
- Provide industry recognition and incentives through cash prizes, diplomas, or exposure.
- Test and refine the Open Innovation Event Management service within the OIS3 framework.

4. The Multifunctional Façade Challenge with Focchi SpA

The Multifunctional Façade Idea Contest, in collaboration with Focchi SpA, invites students to explore how the building envelope can become a dynamic, intelligent system that actively contributes to energy efficiency and indoor comfort.

Participants are asked to design a multifunctional façade system that integrates smart technologies such as IoT sensors, sun-shading elements, BIPV, and embedded heating/cooling systems. The objective is to rethink façades, that can do more than just shield the building. They can sense, interact, and optimize.

Rather than focusing on technical construction, this challenge centers on artistic expression and user experience. Participants should focus on designs that:

- Integrate smart systems to monitor and react to environmental conditions
- Support energy efficiency and user comfort through intelligent responses
- Offer visual and functional clarity while hosting complex functionality

This is not an engineering task. You won't need to prototype anything. Submissions can be made using any visual format, such as hand sketches, digital illustrations, 3D visualizations, AI-generated imagery, or collages.

5. Understanding Multifunctional Façade Systems

A multifunctional façade system combines physical components with embedded technologies to create a responsive outer layer of the building. These facades go beyond traditional façades that provide passive protection and focus on aesthetics. They become active systems that manage light, temperature, airflow, and energy.

Key features of multifunctional façades include:



- Smart Integration: Sensors and actuators adjust systems in real time based on external/internal conditions
- Energy Production: BIPV and other technologies allow the façade to generate electricity
- Climate Control: Embedded heating/cooling components optimize indoor comfort
- Adaptive Shading: The façade responds dynamically to sun, weather, or occupancy

This contest is your opportunity to imagine how design, modularity, and smart systems can work together to transform the building skin into a living, intelligent interface between humans and their environment.

6. Challenge Theme

"Modular Façades that Sense, Interact, and Optimize"

Entrants will design an original façade system that embodies the principles of intelligence, adaptability, and sustainability. The goal is to demonstrate how integrated technologies can elevate the role of the façade from passive envelope to active system.

Effective submissions will:

- Clearly illustrate how different technologies (e.g., sensors, shading, BIPV) work together
- Consider both environmental performance and user experience
- Show how modular components enable maintenance, upgrades, and flexibility
- Provide a visual concept that explains the façade's layers and logic

The design may be inspired by nature, geometry, architectural concepts, or cultural influences. What matters is that your façade is multifunctional and innovative.

7. Who can Participate

- Students or young researchers
- Teams of students or young researchers (max 3 people)
- One submission per team/person

You must be either a current university student (Bachelor's, Master's, Doctoral, or Postgraduate Diploma level), or have completed your most recent degree or diploma within the past 2 years.



Please note: You will have to upload proof of this (transcript, certificate, enrollment form, etc.) and include it in your .zip file.

8. Submission Criteria

Participants must submit a visual and descriptive representation of their idea, ensuring the concept is clearly conveyed and technically reasonable. Submissions must include:

- 1-3 Visual representations of the proposed pattern and/or final product (free format: sketch, render, AI-Generated, technical diagram, etc.).
- Concept Description (Max 300 words): Explain the concept, idea and impact on user experience.
- Technical Feasibility (Max 300 words): Outline how the concept could be implemented with current or emerging technologies.
- Sustainability Impact (Max 300 words): Outline how the design can contribute to energy efficiency or environmental quality.

9. Examples of Feasible Ideas

- Modular panels with embedded solar cells and shading fins that reorient based on sun angle
- A kinetic façade with moving elements that respond to wind flow, reducing heat load and enhancing comfort
- AI-generated patterns that optimize glare reduction while maintaining visual harmony

The aim is to show the imagined outcome and user impact through compelling visuals and descriptions.

10. Timeline

The contest will be open for submissions between the **8th of July** and **10th of October at 23:59. GMT+1.**

Phase Dates

Phase	Dates
Contest Launch – Submissions Open	July 8th
Submission Deadline	October 10 th , 23:59 GMT+1
Evaluation and Jury Review	October 14th
Winner Announcement & Awards	October 17 th

11. Winner Announcements and Awards



The MEZeroE Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953157

The award ceremony will be held on October 17th, and all participants will be informed of decisions by email.

12. Evaluation Criteria

Evaluation criteria will include:

1 – Poor | 2 – Fair | 3 – Good | 4 – Very Good | 5 – Excellent

Evaluation Criteria	Description	Scoring Guide (1-5)
Innovation & Creativity (30%)	How novel and forward-thinking is the idea?	1: The idea is generic, lacks originality. 2: Some new elements, but mostly existing concepts. 3: A moderately creative concept with some innovative features. 4: A strong, well-developed innovative approach. 5: Highly original and groundbreaking, offers significant innovation.
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Presentation & Clarity (20%)	How well is the idea communicated	1: Poorly explained, unclear visuals, lacks structure. 2: Some key elements missing, difficult to



	through drawings/renders and the written description?	understand. 3: Generally clear, but some areas need refinement. 4: Well-structured, good visuals, and detailed explanation. 5: Exceptionally clear, professional, and visually engaging.
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Final Scoring and Selection Process

- Each submission will receive a total score out of 100 based on the weighted evaluation criteria.
- In the case of a tie, priority will be given to the most innovative and feasible solution.
- The highest-scoring entries will be shortlisted for final review and selection by the jury.

This evaluation method ensures that submissions are fairly assessed based on their originality, feasibility, sustainability impact, and clarity of presentation.

13. Prizes and Opportunities

The winner of the contest will receive a €1,000 cash prize, awarded by Focchi SpA. In addition, participants whose work receives particularly high evaluations may be:

- Invited to collaborate with Focchi for further development of their design
- Offered an internship or project opportunity to bring their idea closer to real-world application

These opportunities are optional and will be based on the industrial partner's interest in selected entries. All finalists will receive public recognition across the MEZeroE platform.

14. Intellectual Property

Each participant shall retain full ownership of the intellectual property rights to their submitted ideas until the conclusion of the contest. By submitting an entry, participants grant MEZeroE and Focchi S.p.A. a non-exclusive, royalty-free, worldwide license to use, reproduce, display, publish, and communicate their submission for the following purposes:

- Promotion and dissemination of the contest and its results.



- Exhibition through public events, websites, social media, reports, or publications.
- Demonstration of innovation within the MEZeroE and Focchi communities.

For the awarded idea(s), participants agree that Focchi S.p.A. shall have the right to acquire full ownership of the idea upon award confirmation. Ownership transfer will be formalized through a separate agreement, under which the participant will assign all rights, title, and interest in and to the awarded idea to Focchi S.p.A., subject to fair recognition of the participant's contribution as set forth in the contest regulations.

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Participants must submit use the MEZeroE Idea Contest submission form.

The following sections will be filled out in the form:

Concept Description (300 words maximum)

A clear explanation of the idea and its purpose, including:

- What inspired the design?
- Where and how might it be used?
- How does it interact with occupants, produce energy, reduce heating and cooling demand, etc.? (The façade does not need to do all these things. Participants should choose 1-3 clear attributes)

Feasibility (300 words maximum)

A short explanation of how the concept could work using existing or emerging technologies. This does not require technical drawings, just a thoughtful reflection on practical use.

Sustainability Impact (300 words maximum)

A brief description of how the design could reduce heating and cooling demand, produce clean energy, minimize the need for artificial lighting, improve occupant comfort through IoT, etc.



Visual Submission (4 images OR 3 images + 1 video)

- 1-2 images that show the perforation pattern
- 1-2 images or mockup that shows how it might appear in a space
- Accepted formats: JPG, PNG, or PDF (max size: 10MB)
- May be hand-drawn, digitally created, AI-generated, or rendered, all creative formats are welcome.

16. Submission Deadline and Where to Submit

- Deadline: October 10, 2025, 23:59 GMT+1
- Submission: Using the form available in this link.
- What to submit: Participants will submit the submission form, visuals, and proof of university enrollment (or other) as a single .zip file

17. Additional Notes

- Team Submissions Allowed: Up to 3 members per team.
- Multiple Entries: Each participant/team may submit one entry only.
- Plagiarism Policy: All work must be original; plagiarism will result in disqualification.
- Intellectual Property: Participants retain the rights to their ideas but allow MEZeroE to showcase the submissions for research and outreach purposes, including MEZeroE and consortium partner websites and their social media channels.



The MotionShade Challenge

Sponsored by Pellini SpA

The Challenge

The goal is to design a perforation pattern that transforms how natural light enters indoor spaces, blending art, comfort, and sustainability. Your idea could change users feel and interact with spaces such as classrooms, hospitals, offices, or homes.

We're not looking for a technical marvel. Just visualize your modular idea clearly, through sketches, renders, diagrams, or any creative format.

Objectives

- Involve students in the future of building envelope design
- Inspire beautiful, functional, and sustainable shading concepts.
- Use visuals to inspire and communicate ideas
- Offer cash prizes, public exposure, and industry opportunities

About your Design

Your design should:

- Shape light in a meaningful and creative way
- Promote comfort, focus, or relaxation indoors
- Be usable in real spaces (schools, hospitals, offices, homes)

Submissions Criteria:

Each entry must include:

- A Completed submission form
- 1–3 Visuals: sketches, renders, technical illustrations, etc. (Format accepted: JPG, PNG, or PDF. Max file size 10MB)

Timeline

- **Submissions Open: July 8, 2025**



- **Submission Deadline:** October 10, 2025 – 23:59 (GMT+1)
- **Jury Review and Evaluation:** October 14, 2025
- **Winners Announced:** October 17, 2025

Prizes

- €1,000 cash prize
- Potential collaboration with Pellini SpA
- Public recognition on the MEZeroE platform

Who Can Participate?

- Students or young researchers*
- Teams of students or young researchers (max 3 people)
- One submission per team/person

How to Participate

1. Download the full Guidelines & Submission Form below
2. Prepare your visual files
3. Submit before the deadline via using the link below.

Sponsors

1. [Pellini SpA](#)
2. [MEZeroE Project](#)

[Download Application Guidelines and Submission Form](#)

If you have any questions, get in touch with us here: mezeroeproject@gmail.com



The Multifunctional Façade Challenge

Sponsored by Focchi SpA

The Challenge

The goal is to design a multifunctional façade system that integrates smart technologies, such as IoT sensors, sun-shading, BIPV, or embedded heating/cooling systems. Your concept should enhance sustainability, comfort, and performance by responding intelligently to environmental conditions.

We're not looking for a technical marvel. Just visualize your idea clearly, through sketches, renders, diagrams, or any creative format.

Objectives

- Involve students in the future of intelligent building envelopes
- Promote energy efficient, responsive façade designs
- Use visuals to inspire and communicate ideas
- Offer cash prizes, public exposure, and industry opportunities

About your Design

Your design should:

- Enable smart systems that interact with climate or occupants
- Work across different building types
- Prioritize modularity, sustainability, and performance
- Demonstrate how façades can contribute to smarter, more comfortable buildings

Submissions may include frame systems, panel-based designs, interlocking elements, or innovative reuse concepts.

Submissions Criteria:

Each entry must include:

- A Completed submission form



- 1–3 Visuals: sketches, renders, technical illustrations, etc. (Format accepted: JPG, PNG, or PDF. Max file size 10MB)

Timeline

- **Submissions Open:** July 8, 2025
- **Submission Deadline:** October 10, 2025 – 23:59 (GMT+1)
- **Jury Review and Evaluation:** October 14, 2025
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- €1,000 cash prize
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1. Download the full Guidelines & Submission Form below
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Sponsors

1. [Focchi SpA](#)
2. [MEZeroE Project](#)

[Download Application Guidelines and Submission Form](#)

If you have any questions, get in touch with us here: mezeroeproject@gmail.com



4.23 Appendix F: The MotionShade Facade Challenge Submission Form

The MotionShade Challenge Submission Form

Sponsored by Pellini SpA

Participant Details

Full Name:

Email Address:

University/Institution (If applicable):

Country:

Are you submitting as a team? Yes/No

If yes, enter names of all team members:



Concept Description (300 words maximum)

Please explain the concept, idea, and impact on user experience.

Technical Feasibility (300 words maximum)

Outline how the concept could be implemented with current or emerging technologies.



Sustainability Impact (300 words maximum)

Outline how the design can contribute to energy efficiency or environmental quality.

Visual Submission

You must include a **.zip folder** with the following:

- 1–2 images that show your modular facade concept
- 1–2 mockups of how it could appear on a building
- (Optional) 1 short video (mp4) showing use or transformation
- File types: **JPG, PNG, PDF** (Max size: 10MB total)
- Formats accepted: hand-drawn, digitally created, AI-generated, or 3D rendered

Final Checklist:

- I confirm this is original work
- I have read the challenge guidelines
- I accept all IP-related requirements as mentioned in the guidelines



4.24 Appendix G: The Multifunctional Facade Challenge Submission Form

The Multifunctional Facade Challenge Submission Form

Sponsored by Focchi SpA

Participant Details

Full Name:

Email Address:

University/Institution (If applicable):

Country:

Are you submitting as a team? Yes/No

If yes, enter names of all team members:



Concept Description (300 words maximum)

Please explain the concept, idea, and impact on user experience.

Technical Feasibility (300 words maximum)

Outline how the concept could be implemented with current or emerging technologies.



Sustainability Impact (300 words maximum)

Outline how the design can contribute to energy efficiency or environmental quality.

Visual Submission

You must include a **.zip folder** with the following:

- 1–2 images that show your modular facade concept
- 1–2 mockups of how it could appear on a building
- (Optional) 1 short video (mp4) showing use or transformation
- File types: **JPG, PNG, PDF** (Max size: 10MB total)
- Formats accepted: hand-drawn, digitally created, AI-generated, or 3D rendered

Final Checklist:

- I confirm this is original work
- I have read the challenge guidelines
- I accept all IP-related requirements as mentioned in the guidelines



4.25 Appendix H: The MotionShade Challenge Google Form

The MotionShade Challenge - Submission

This form is for registering your entry and uploading your submission file.

Please complete all required fields and upload a .zip file containing your submission form and visuals (max 10MB).

⚠️ Only one submission per person or team is allowed. If you submit more than once, your previous entry will be disqualified, and only the latest one will be considered. If multiple entries are found from the same person or team, they may all be disqualified.

The deadline for submissions is **October 10, 2024 at 23:59 (GMT+1)**.

Thank you for participating, and good luck!

Email *

Valid email
.....

This form is collecting emails. [Change settings](#)

Q1. Full name *

If applying as a team, only write the name of one team member. Enter the rest of team members in Q6.

Short answer text
.....

Q2. University/ Institution *

Write the name of your University or Institution below.

You must be either a current university student (Bachelor's, Master's, Doctoral, or Postgraduate Diploma level), or have completed your most recent degree or diploma within the past 2 years.

Please note: You will have to upload proof of this (transcript, certificate, enrollment form, etc.) and include it in your .zip file.

Short answer text
.....

Q3. Country *

Short answer text
.....

Q4. Are you submitting as a team? *

1. Yes
2. No



Q5. Enter Team Member Names (If applicable)

Long answer text
.....

Upload your .zip file *

Upload ONE .zip file containing your submission form and all associated files.

 Add file

 [View folder](#)

I confirm that this submission is original and has not been copied or plagiarized. *

Yes

I have read the official challenge guidelines and agree to all terms, including the intellectual property (IP) requirements. *

Yes

I understand that if I do not follow all instructions or fail to complete the submission steps as outlined, my entry may be disqualified. *

Yes

I have uploaded the submission form, visuals, and proof of university/institution. *

Yes



4.26 Appendix I: The Multifunctional Façade Challenge Google Form

The Multifunctional Façade Challenge - Submission

B I U ↻ ✕

This form is for registering your entry and uploading your submission file.

Please complete all required fields and upload a .zip file containing your submission form and visuals (max 10MB).

⚠ Only one submission per person or team is allowed. If you submit more than once, your previous entry will be disqualified, and only the latest one will be considered. If multiple entries are found from the same person or team, they may all be disqualified.

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Thank you for participating, and good luck!

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Q1. Full name *

If applying as a team, only write the name of one team member. Enter the rest of team members in Q6.

Short answer text
.....

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Write the name of your University or Institution below.

You must be either a current university student (Bachelor's, Master's, Doctoral, or Postgraduate Diploma level), or have completed your most recent degree or diploma within the past 2 years.

Please note: You will have to upload proof of this (transcript, certificate, enrollment form, etc.) and include it in your .zip file.

Short answer text
.....

Q3. Country *

Short answer text
.....



Q4. Are you submitting as a team? *

1. Yes
2. No

Q5. Enter Team Member Names (If applicable)

Long answer text
.....

Upload your .zip file *

Upload ONE .zip file containing your submission form and all associated files.

 Add file

 View folder

I confirm that this submission is original and has not been copied or plagiarized. *

Yes

I have read the official challenge guidelines and agree to all terms, including the intellectual property (IP) requirements. *

Yes

I understand that if I do not follow all instructions or fail to complete the submission steps as outlined, my entry may be disqualified. *

Yes

I have uploaded the submission form, visuals, and proof of university/institution. *

Yes



4.27 Appendix J: The MotionShade Challenge Flyer

The MotionShade Challenge

Sponsored by Pellini SpA

The Challenge

The goal is to design a perforation pattern that transforms how natural light enters indoor spaces, blending art, comfort, and sustainability. Your idea could change users feel and interact with spaces such as classrooms, hospitals, offices, or homes.

We're not looking for a technical marvel. Just visualize your modular idea clearly, through sketches, renders, diagrams, or any creative format.

Objectives

- Involve students in the future of building envelope design
- Inspire beautiful, functional, and sustainable shading concepts.
- Use visuals to inspire and communicate ideas
- Offer cash prizes, public exposure, and industry opportunities

About your Design

Your design should:

- Shape light in a meaningful and creative way
- Promote comfort, focus, or relaxation indoors
- Be usable in real spaces (schools, hospitals, offices, homes)

Submissions Criteria:

Each entry must include:

- A Completed submission form
- 1–3 Visuals: sketches, renders, technical illustrations, etc. (Format accepted: JPG, PNG, or PDF. Max file size 10MB)

Timeline

- **Submissions Open:** July 8, 2025
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Who Can Participate?

- Students or young researchers*
- Teams of students or young researchers (max 3 people)
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4. Download the full Guidelines & Submission Form below
5. Prepare your visual files
6. Submit before the deadline via using the link below.

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Submit your Application Here



If you have any questions, get in touch with us here: mezeroeproject@gmail.com

* You must be either a current university student (Bachelor's, Master's, Doctoral, or Postgraduate Diploma level), or have completed your most recent degree or diploma within the past 2 years. You will have to upload proof of this (transcript, certificate, enrollment form, etc.)



The Multifunctional Façade Challenge

Sponsored by Focchi SpA

The Challenge

The goal is to design a multifunctional façade system that integrates smart technologies, such as IoT sensors, sun-shading, BIPV, or embedded heating/cooling systems. Your concept should enhance sustainability, comfort, and performance by responding intelligently to environmental conditions.

We're not looking for a technical marvel. Just visualize your idea clearly, through sketches, renders, diagrams, or any creative format.

Objectives

- Involve students in the future of intelligent building envelopes
- Promote energy efficient, responsive façade designs
- Use visuals to inspire and communicate ideas
- Offer cash prizes, public exposure, and industry opportunities

About your Design

Your design should:

- Enable smart systems that interact with climate or occupants
- Work across different building types
- Prioritize modularity, sustainability, and performance
- Demonstrate how façades can contribute to smarter, more comfortable buildings

Submissions may include frame systems, panel-based designs, interlocking elements, or innovative reuse concepts.



Submissions Criteria:

Each entry must include:

- A Completed submission form
- 1–3 Visuals: sketches, renders, technical illustrations, etc. (Format accepted: JPG, PNG, or PDF. Max file size 10MB)

Timeline

- **Submissions Open:** July 8, 2025
- **Submission Deadline:** October 10, 2025 – 23:59 (GMT+1)
- **Jury Review and Evaluation:** October 14, 2025
- **Winners Announced:** October 17, 2025

Prizes

- €1,000 cash prize
- Potential collaboration with Focchi SpA
- Public recognition on the MEZeroE platform

Who Can Participate?

- Students or young researchers*
- Teams of students or young researchers (max 3 people)
- One submission per team/person

How to Participate

4. Download the full Guidelines & Submission Form below
5. Prepare your visual files
6. Submit before the deadline via using the link below.



**Download Application
Guidelines and
Submission Form**



**Submit your Application
Here**



If you have any questions, get in touch with us here: mezeroeproject@gmail.com

* You must be either a current university student (Bachelor's, Master's, Doctoral, or Postgraduate Diploma level), or have completed your most recent degree or diploma within the past 2 years. You will have to upload proof of this (transcript, certificate, enrollment form, etc.)



4.29 Appendix L: Idea Contest Evaluation Form

The Idea Contest Evaluation Form

Name of Challenge:

Name of Evaluator and Organization:

Name of Candidate/Team:

1 – Poor | 2 – Fair | 3 – Good | 4 – Very Good | 5 – Excellent

Evaluation Criteria	Weight	Scoring Guide (1-5)	Score
Innovation and Creativity	30%	<p>How novel and forward-thinking is the idea?</p> <ul style="list-style-type: none"> The idea is generic, lacks originality. (1) Some new elements, but mostly existing concepts. (2) A moderately creative concept with some innovative features. (3) A strong, well-developed innovative approach. (4) Highly original and groundbreaking, offers significant innovation. (5) 	Score:
Feasibility	20%	<p>Can this idea be implemented with realistic resources and current technologies?</p> <ul style="list-style-type: none"> The idea is highly impractical or unrealistic. (1) Major technical or cost barriers prevent real-world application. (2) Some feasibility concerns but could be developed with adjustments. (3) Technically feasible with reasonable industry adaptation. (4) Fully feasible, scalable, and ready for real-world application. (5) 	Score:
Impact on Sustainability	20%	<p>How well does the solution contribute to energy efficiency and sustainability goals?</p> <ul style="list-style-type: none"> Limited or no sustainability impact. (1) Some sustainability considerations but not well-integrated. (2) Moderate sustainability benefits, with potential improvements. (3) Strong sustainability focus with measurable benefits. (4) Excellent sustainability impact, contributing significantly to nZEB and environmental goals. (5) 	Score:



Presentation and Clarity	30%	How well is the idea communicated through drawings/renders and the written description? <ul style="list-style-type: none"> • Poorly explained, unclear visuals, lacks structure. (1) • Some key elements missing, difficult to understand. (2) • Generally clear, but some areas need refinement. (3) • Well-structured, good visuals, and detailed explanation. (4) • Exceptionally clear, professional, and visually engaging. (5) 	Score:
TOTAL			Score:



4.30 Appendix M: MotionShade Contest Evaluations

4.30.1 Appendix M1: Evaluation MS-004

The MotionShade Challenge

Evaluation Form

Thank you for participating in the MotionShade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Marcelina Ciesielska and Malwina Sobeczko

Result: Winner Runner-up Not Selected

Score: 2/5

Jury Comment:

The candidate presented an idea that falls outside the scope of the challenge. The proposed concept focuses on a perforated metal façade system, while the brief specifically required the development of a micro-perforated plastic film to be integrated within insulating glass units (IGUs). Although the proposal demonstrates a solid architectural vision and technical feasibility, it does not align with the material constraints or application context of the MotionShade system. For this reason, despite its aesthetic and conceptual value, the idea cannot be considered consistent with the objectives of the challenge.



The MotionShade Challenge

Evaluation Form

Thank you for participating in the MotionShade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Masoud Valinejadshoubi, Andreas K. Athienitis and Ashutosh Bagchi

Result: Winner Runner-up Not Selected

Score: 2.4/5

Jury Comment:

The candidates presented an idea that cannot be applied to the MotionShade system. The challenge did not refer to the possibility of a curved facade, nor did it require reimagining the kind of solar shading.



The MotionShade Challenge

Evaluation Form

Thank you for participating in the MotionShade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Chiara Berti and Seyed Mohammad Seyed

Result: Result: Winner Runner-up Not Selected

Score: 1.6/5

Jury Comment:

Although we appreciated the innovative approach, the candidates went off topic. The focus of the challenge was on a plastic thin film to be micro-perforated, not a segmented venetian blind system.



The MotionShade Challenge

Evaluation Form

Thank you for participating in the MotionShade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Pronay Saha

Result: Winner Runner-up Not Selected

Score: 1.7/5

Jury Comment:

The candidate presented an idea that falls outside the scope of this challenge. The proposal does not address the concept of a perforated microfilm, nor does it consider the feasibility of using the microfilm to recreate the traditional palm-leaf hand fan.



The MotionShade Challenge

Evaluation Form

Thank you for participating in the MotionShade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Gulyaev Kirill and Shmakov Pavel

Result: Winner Runner-up Not Selected

Score: 3.8/5

Jury Comment:

The solution demonstrated a good understanding of perforation possibilities and a concrete exploration of techniques adaptable to plastic materials, highlighting potential feasibility. Particularly interesting is the functional distribution of the pattern, which combines privacy, solar control and light quality within a single surface, although the high hole density could compromise the performance of the solar shading. Overall, the project merges artistic sensitivity with attention to comfort, standing out for its evocative and experimental approach. For these reasons, the jury awards this proposal an Honorable mention.



The MotionShade Challenge

Evaluation Form

Thank you for participating in the MotionShade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Giacomo Caccia and Andrea Canato

Result: Result: Winner Runner-up Not Selected

Score: 4.8/5

Jury Comment:

The Ryūsui proposal stands out for its balance of aesthetic quality, technical feasibility, and meaningful integration of sustainability principles. The concept translates a natural phenomenon into a refined and poetic design, maintaining both functional purpose and emotional resonance. Its biomimetic inspiration is not merely decorative but thoughtfully applied to enhance well-being, visual comfort, and energy performance.

From a technical perspective, the proposal demonstrates a solid understanding of current manufacturing processes and their scalability, ensuring realistic implementation within the MotionShade framework. The sustainability impact is articulated with clarity and depth, addressing energy efficiency, comfort, and psychological benefits in a coherent manner.

Overall, Ryūsui exemplifies a holistic and human-centered approach to design — elegant, feasible, and forward-looking — making it a deserving winner of this challenge.



The MotionShade Challenge

Evaluation Form

Thank you for participating in the MotionShade Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Ari Nadrich

Result: Result: Winner Runner-up Not Selected

Score: 2.8/5

Jury Comment:

The proposal draws inspiration from the Mashrabiyya, effectively balancing cooling needs and natural daylight. The concept is versatile and could be applied in both residential and tertiary contexts, such as libraries or hotel lobbies. However, the idea presents significant feasibility challenges, as the large, perforated areas would make production and implementation difficult in real-world applications. Overall, while the project shows an interesting conceptual direction and aesthetic value, it lacks practicality and scalability for realistic use within the MotionShade context.



The MotionShade Challenge

Evaluation Form

Thank you for participating in the MotionShade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Carolyn Yafreysi Roa Pérez

Result: Result: Winner Runner-up Not Selected

Score: 2.1/5

Jury Comment:

The concept is visually coherent but lacks originality compared to existing micro-perforation patterns commonly used in architecture. While the reference to natural ripples adds aesthetic value, it does not introduce real innovation in terms of function or shading performance. Moreover, although the proposal is theoretically compatible with current perforation technologies, the geometric complexity of the concentric pattern may limit its feasibility in large-scale or high-precision manufacturing. Overall, the concept is elegant and consistent, but not particularly distinctive or groundbreaking.



4.31 Appendix N: Multifunctional Façade Contest Evaluations

4.31.1 Appendix N1: Evaluation MZ-006

The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Nicolas Beffre

Result: Result: Winner Runner-up Honorable Mention Not Selected

Score: 2.8/5

Jury Comment:

The project presents a reasonably clear and coherent idea, with some creative elements; however, overall innovation remains moderate. Feasibility is fair but would benefit from further technical refinement. Sustainability aspects appear underdeveloped, leaving room for stronger environmental integration and measurable impact



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Ali Jahanirahaei and Arezou Zehtabi

Result: Result: Result: Winner Runner-up Honorable Mention Not Selected

Score: 3.5/5

Jury Comment:

The proposal is well-presented, clear, and technically solid, demonstrating strong feasibility and an effective overall structure. However, the concept lacks originality and does not introduce a significantly new perspective, which limits its innovative value. The project shows moderate attention to sustainability aspects, with room for deeper integration of energy efficiency principles. Overall, a competent and well-communicated submission with potential for further creative development.



4.31.3 Appendix N3: Evaluation MZ-008

The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Masoud Valinejad, Andreas K. Athienitis and Ashutosh Bagchi

Result: Winner Runner-up Honorable Mention Not Selected

Score: 3.2/5

Jury Comment:

The project is technically solid and demonstrates good feasibility with a clear focus on sustainability performance. However, the concept itself lacks originality and relies on conventional ideas. The presentation is generally clear but could be refined to better highlight the project's strengths and innovative potential.



4.31.4 Appendix N4: Evaluation MZ-009

The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Sophia Pampouki

Result: Winner Runner-up Honorable Mention Not Selected

Score: 2.6/5

Jury Comment:

The proposal demonstrates solid technical feasibility but offers limited originality and sustainability integration. The concept relies on familiar solutions without a clear innovative angle, and the presentation lacks clarity, which affects the overall communication of the project's potential, especially for the language barrier.



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Chiara Berti and Mohammed Seyedi

Result: Winner Runner-up Honorable Mention Not Selected

Score: 3/5

Jury Comment:

The proposal is clearly presented and technically feasible, showing a solid grasp of implementation aspects. However, the concept lacks originality and only partially addresses sustainability goals. Overall, it is a well-structured submission that would benefit from a stronger innovative focus and deeper integration of environmental considerations.



4.31.6 Appendix N6: Evaluation MZ-012

The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Katie Fitzgerald

Result: Winner Runner-up Honorable Mention Not Selected

Score: 3.4/5

Jury Comment:

The project presents a strong and innovative concept that is both feasible and well-aligned with sustainability goals. However, the overall presentation is weak, lacking clarity and sufficient visual or textual explanation, which limits the communication of an otherwise promising idea. A special mention goes to the project's thoughtful consideration of water storage, which addresses an important and often overlooked aspect of sustainability.



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Jathusha Thirukkumaran

Result: Winner Runner-up Honorable Mention Not Selected

Score: 3.3/5

Jury Comment:

The proposal stands out for its highly original and forward-thinking concept, demonstrating strong creative vision. However, its practical feasibility and sustainability integration appear limited at this stage, requiring further technical development. The presentation is clear and engaging, effectively communicating the core idea despite the project's implementation challenges.



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Cesar Arias

Result: Winner Runner-up Honorable Mention Not Selected

Score: 3/5

Jury Comment:

The concept is highly original and demonstrates remarkable creativity, introducing a truly innovative approach. However, the presentation is unclear, limiting the understanding of its potential. While feasibility appears moderate, the sustainability dimension is underdeveloped and would benefit from stronger alignment with environmental objectives.



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Raman Kumar

Result: Winner Runner-up Honorable Mention Not Selected

Score: 3.4/5

Jury Comment:

The project showcases a highly original and imaginative concept, supported by strong sustainability awareness and a clear, engaging presentation. However, the proposal currently lacks practical feasibility and addresses a very specific technical context, which makes it challenging to fully assess its real-world applicability without specialized expertise.



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Kacper Krzysztof Klaus

Result: Winner Runner-up Honorable Mention Not Selected

Score: 3.5/5

Jury Comment:

The winning proposal stands out for its creativity and originality, introducing an interesting concept with strong potential for future development. While its feasibility may present challenges at this stage, the idea demonstrates clear vision and ambition, supported by a solid presentation and a balanced approach to sustainability and aesthetic requirements. The project's innovative character and conceptual strength make it a deserving winner.



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Miguel Mosquera

Result: Winner Runner-up Honorable Mention Not Selected

Score: 2.8/5

Jury Comment:

The project is clearly presented and demonstrates strong technical feasibility, showing a realistic and well-structured approach. However, the concept itself lacks innovation and has minimal connection to sustainability goals, limiting its overall impact. While effectively communicated, the proposal would benefit from a more original and environmentally conscious vision.



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Pronay Saha

Result: Winner Runner-up Honorable Mention Not Selected

Score: 3.4/5

Jury Comment:

The project presents a beautiful and well-articulated idea with a strong and commendable concept, demonstrating clear creative depth and sustainability awareness. The proposal is visually convincing and well communicated; however, its practical feasibility appears limited, as the solution would be challenging to scale up for widespread application. Overall, an inspiring and thoughtful design with significant conceptual value.



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Forrest Eagar

Result: Winner Runner-up Honorable Mention Not Selected

Score: 2.6/5

Jury Comment:

The proposal presents a technically feasible solution, but the concept itself lacks originality and does not effectively address sustainability goals. While the idea is presented clearly, the overall approach does not demonstrate a strong innovative or environmental impact. The project would benefit from a more original and integrated design, especially in terms of sustainability.



The Multifunctional Façade Challenge

Evaluation Form

Thank you for participating in the Multifunctional Façade Challenge. This evaluation form summarizes your overall result and jury feedback. The comments below reflect how your idea performed against the main evaluation criteria and provide insights for further development.

Participant(s) Name(s): Arezou Farshi

Result: Winner Runner-up Honorable Mention Not Selected

Score: 3.5/5

Jury Comment:

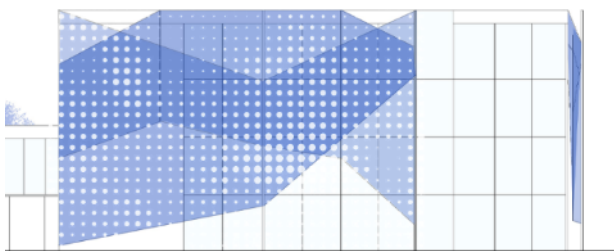
The project presents a well-developed and visually compelling concept with strong creative depth and a clear design narrative. Its innovative approach is highly relevant and timely for the real-world application of façade systems. However, further development is needed regarding the integration of sensors, as their current implementation appears costly and less sustainable. Overall, an impressive and well-communicated proposal that demonstrates both vision and technical potential, deserving of its high ranking.



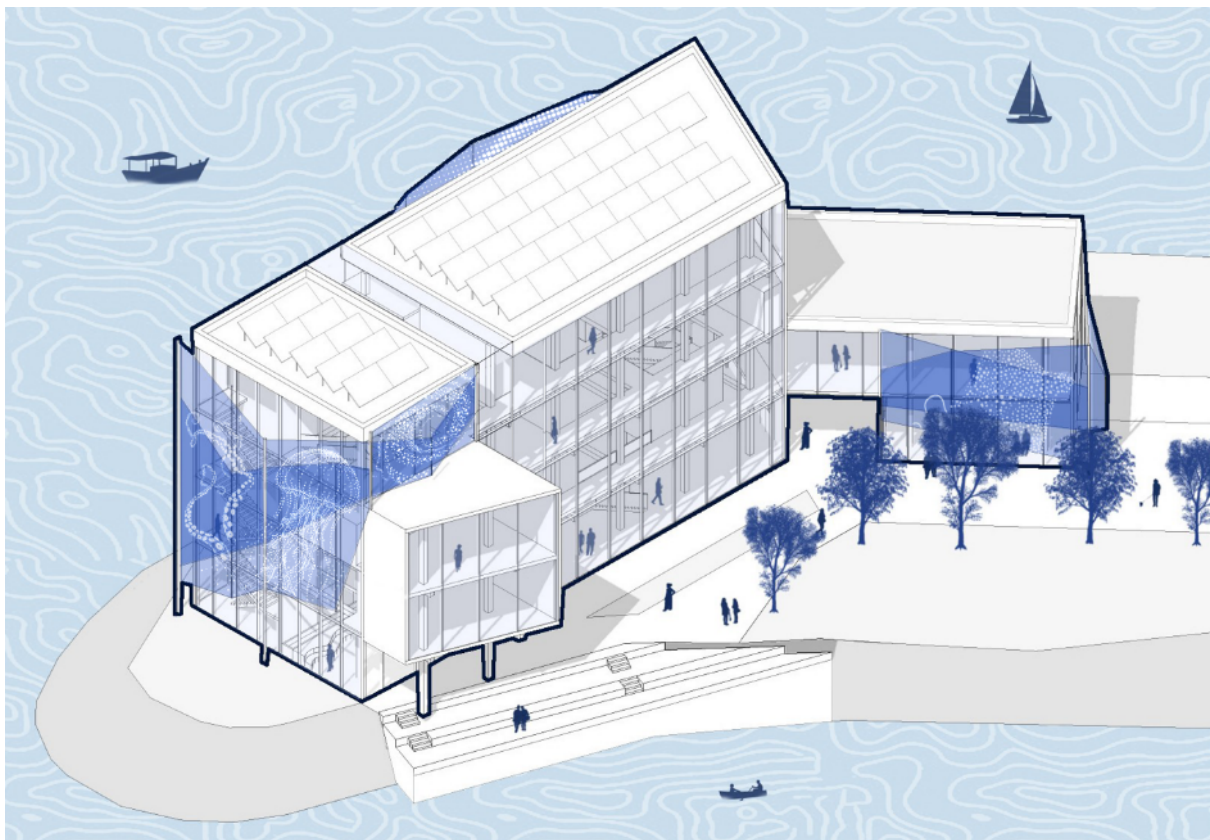
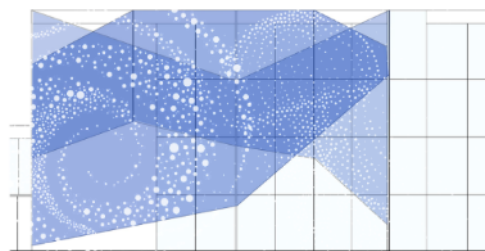
4.32 Appendix O: MotionShade Contest Candidate Image Submissions

4.32.1 Appendix O1: Images MS-004

FROM SIMPLE IDEA
of perforation



TO MORE COMPLICATED
related to the theme
of the building

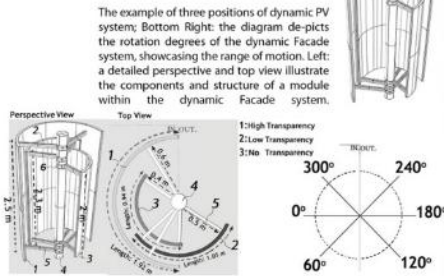




4.32.2 Appendix O2: Images MS-005

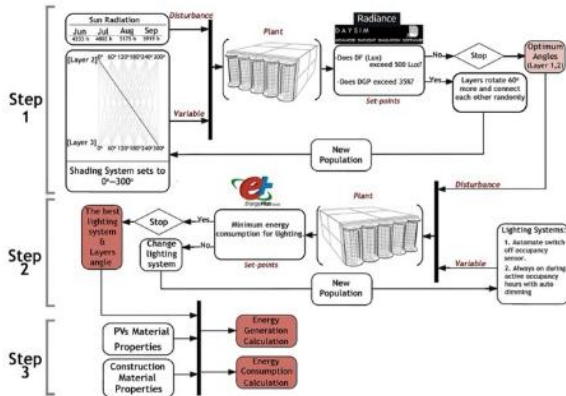
Parametric MotionShade Façade

This design integrates a micro-perforated film pattern within prefabricated façade modules, inspired by solar paths and validated by daylight simulations. The gradient perforation filters high-angle sunlight while preserving transparency, creating interiors with imperceptible glare ($DGP \leq 0.35$) and stable daylight autonomy. Research simulations demonstrated 52–73% reductions in summer cooling and lighting energy use, confirming both comfort and efficiency. Prefabricated modular panels allow rapid installation, reduced construction waste, and scalable adaptation across building types. The façade enhances wellbeing, productivity, and circadian health by providing natural, glare-free light while maintaining outdoor views. With potential extension to semi-transparent PV films, the system can also generate renewable electricity, making it a holistic solution.

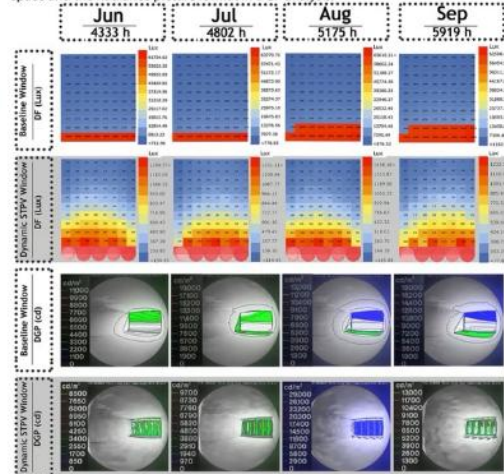


Parametric MotionShade Façade

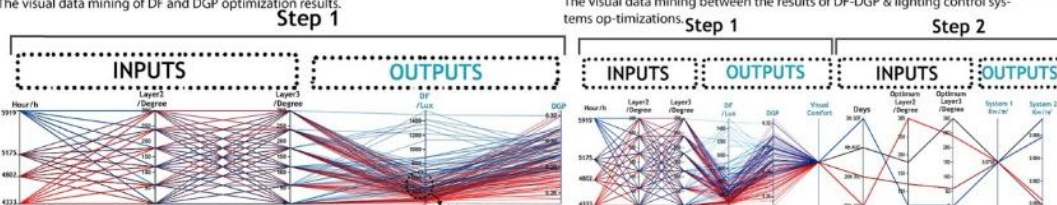
A visual representation of the constant feedback loop during the optimization processes.



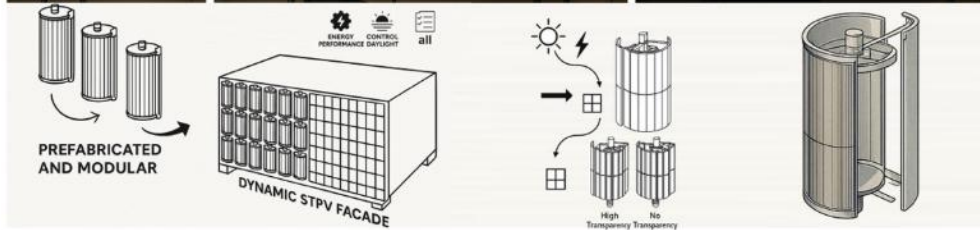
Above: (Top View) The ratio of the daylight illumination at points on the work plane in DF analysis. Below: (Perspective) The viewpoints chosen in interior office room space and the Radiance picture format in DGP analysis.



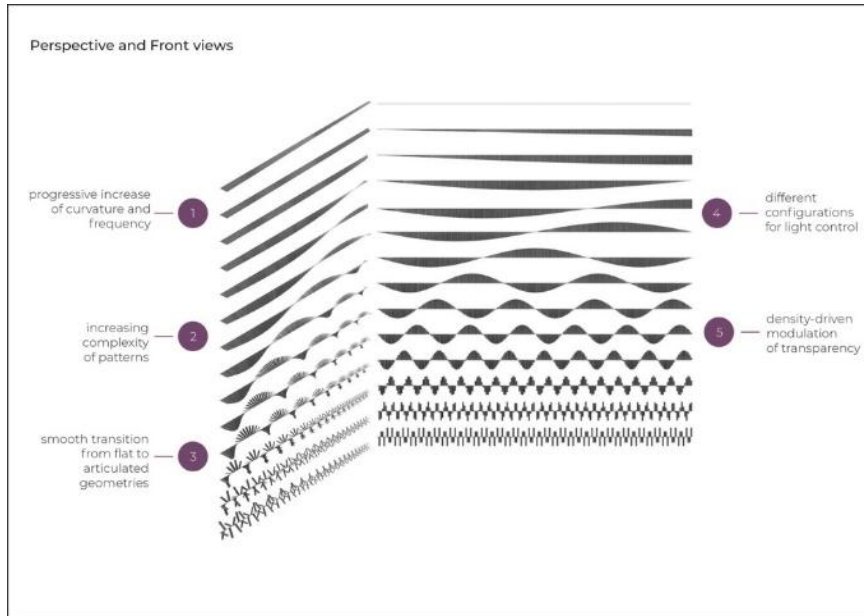
The visual data mining of DF and DGP optimization results.



Parametric MotionShade Façade



4.32.3 Appendix O3: Images MS-006



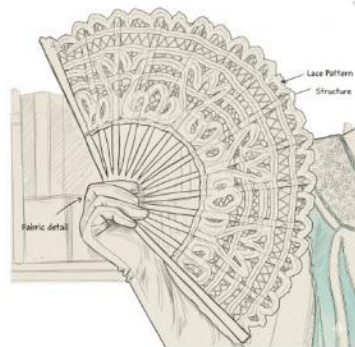


4.32.4 Appendix O4: Images MS-007

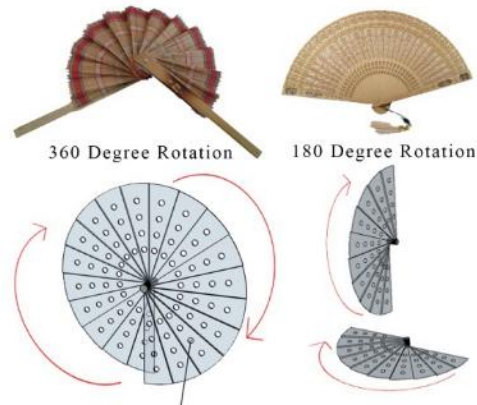
PHENOTYPIC SHADING MODULE

Inspired from **Palm leaf Hand fan.**

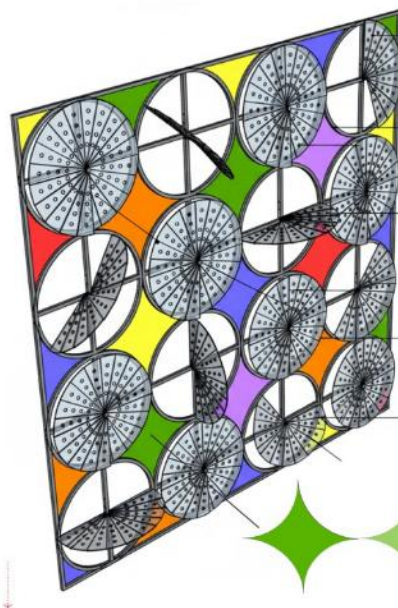
A timeless element of craftsmanship embedded in the cultural significance of Bangladesh and many tropical regions. Traditionally used for cooling purpose in a passive way, when they have no electricity in home.



The Module changes its pattern according to Outer environment like air flow and sun angle through IOT system. Also controll manually according user's preferences



Pinhole is used for air flow. Air molecule will be more cooler when passing through this hole for bottleneck effect.



180 degree rotation-Vertical and Horizontal perforated modular panel. Made with BIPV

Circular frame to hide all the wired connect of IOT sensor for controlling and monitoring

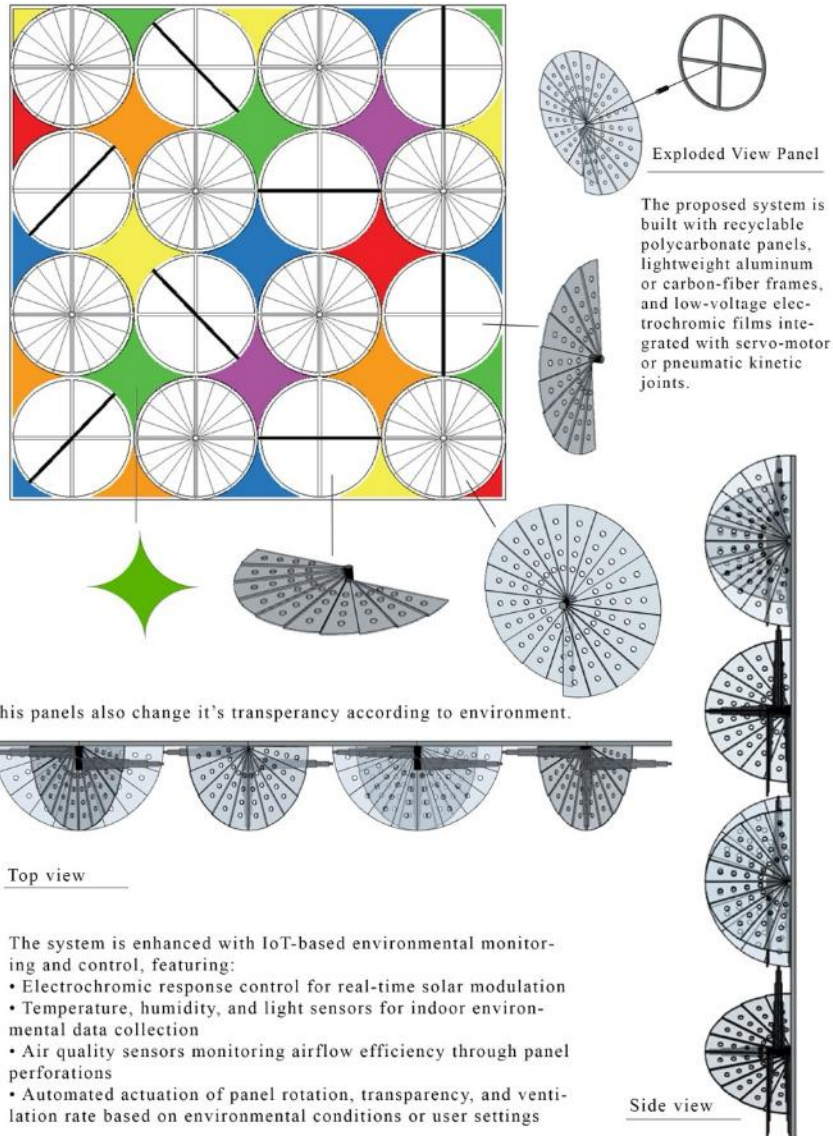
In Horizontal Orientation.

360 degree rotation-Vertical and Horizontal perforated modular panel. Made with BIPV

In Vertical Orientation - Changes with sun angle and wind flow.

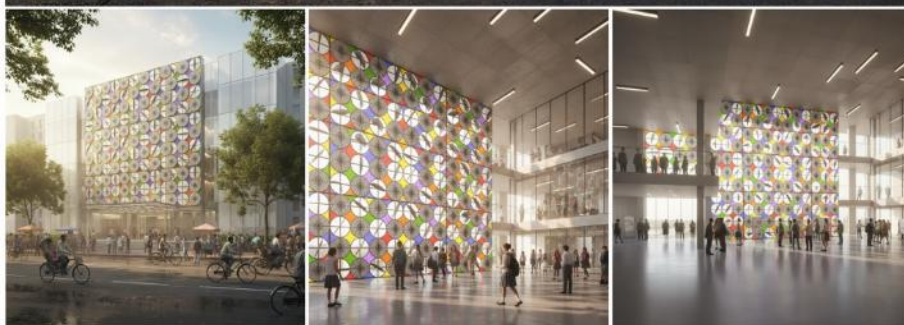
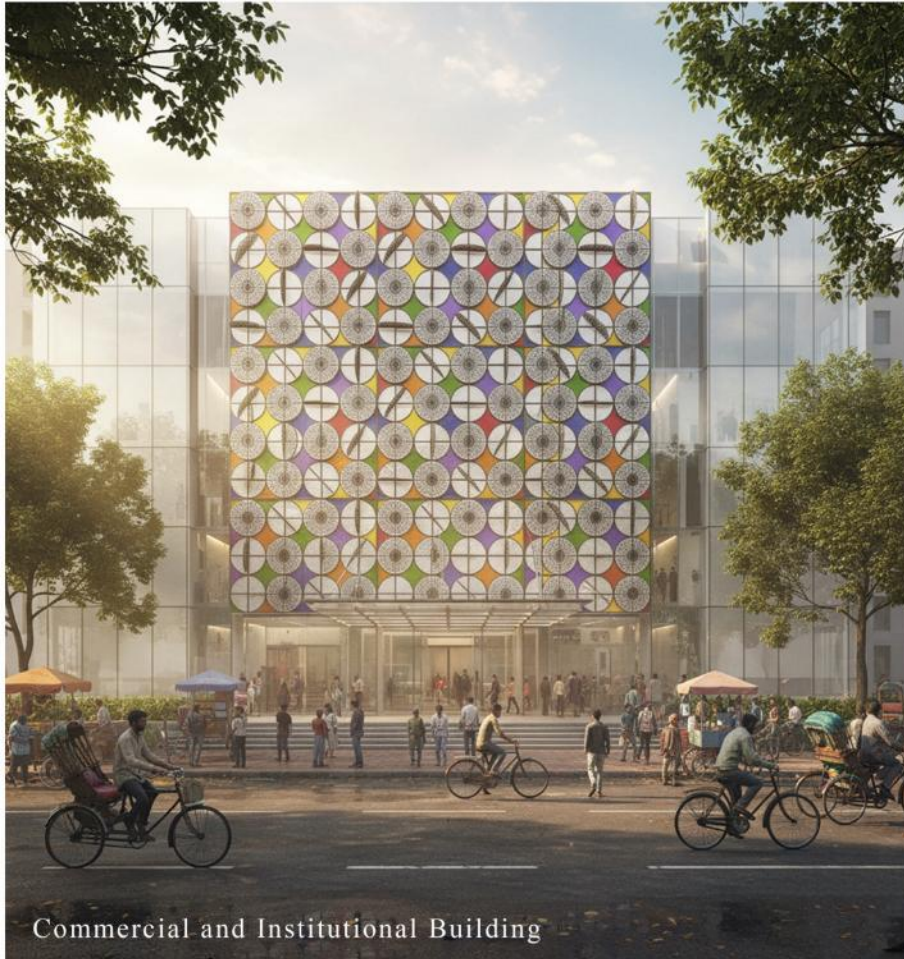
Colored Electrochromic Polycarbonate panel that changes its Opacity according to outer environment.

PHENOTYPIC SHADING MODULE



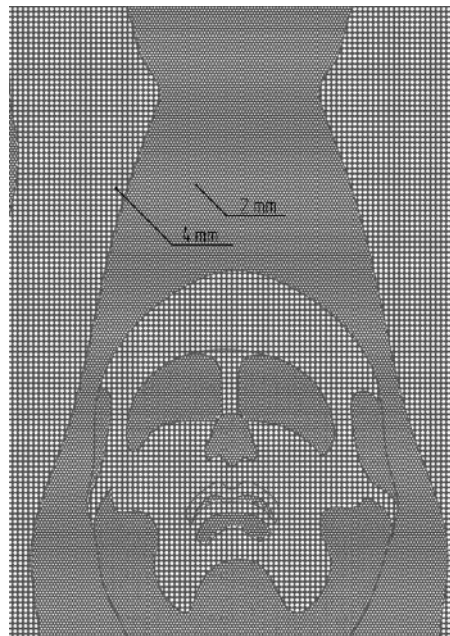
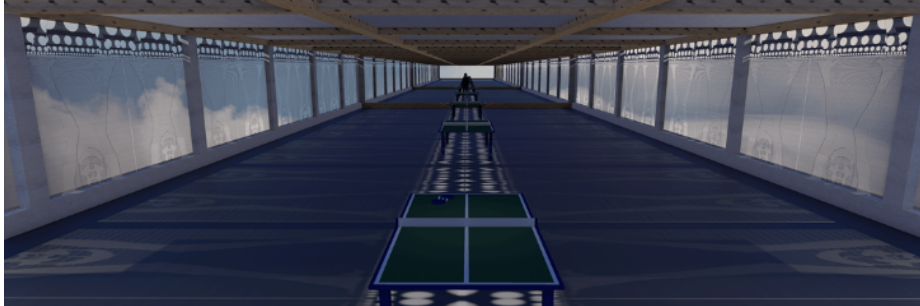
The system is enhanced with IoT-based environmental monitoring and control, featuring:

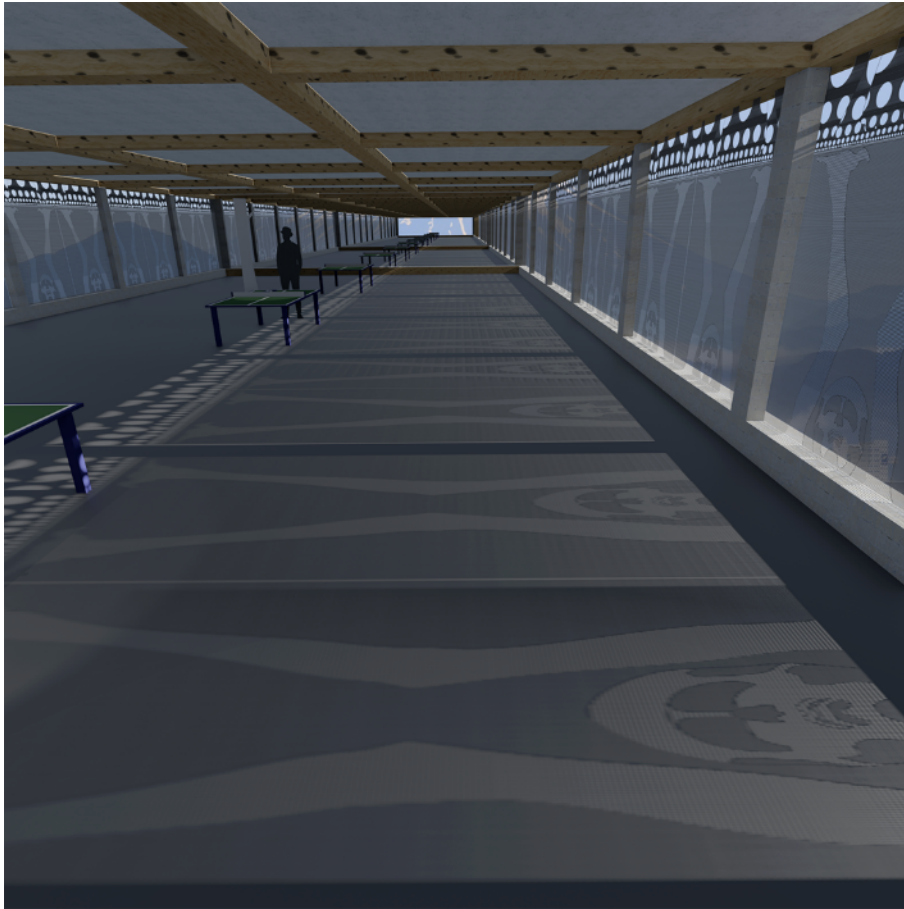
- Electrochromic response control for real-time solar modulation
- Temperature, humidity, and light sensors for indoor environmental data collection
- Air quality sensors monitoring airflow efficiency through panel perforations
- Automated actuation of panel rotation, transparency, and ventilation rate based on environmental conditions or user settings



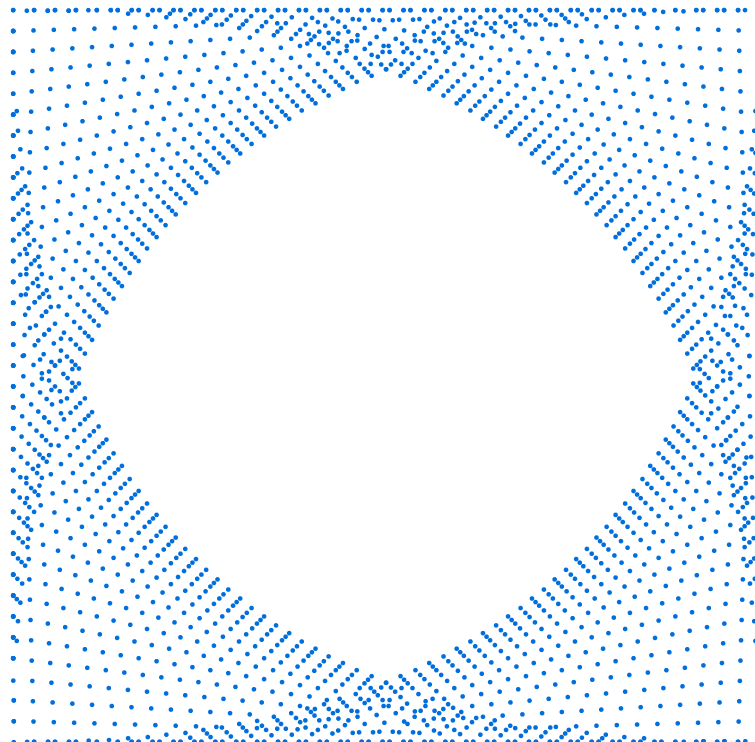


4.32.5 Appendix O5: Images MS-008



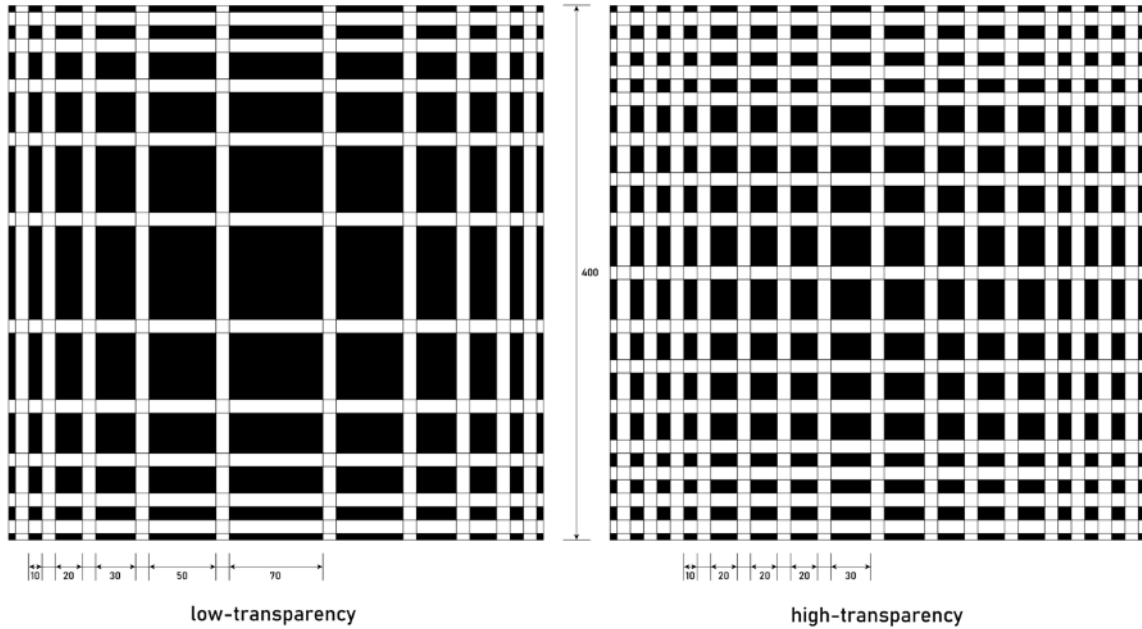


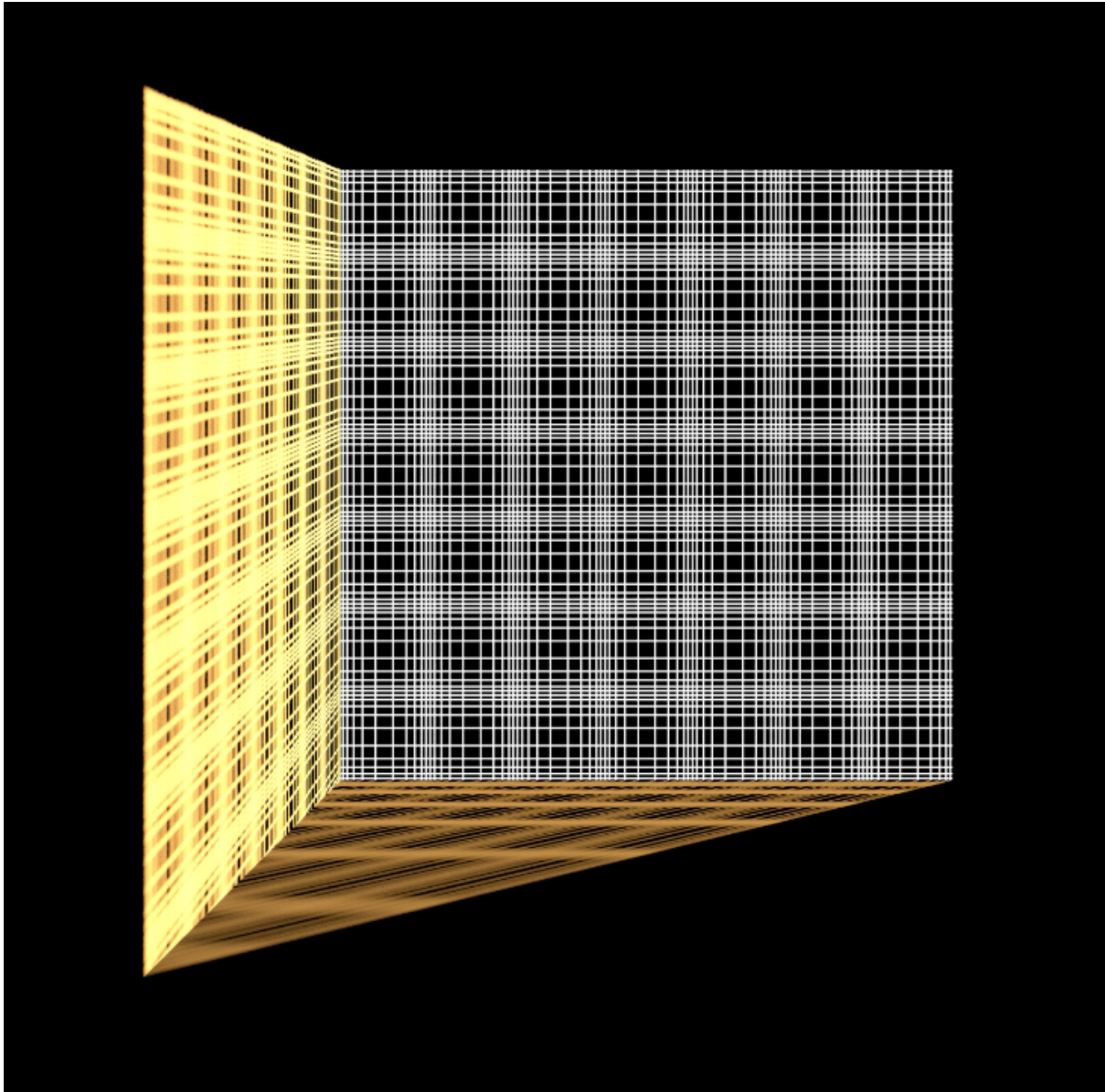
4.32.6 Appendix O6: Images MS-009



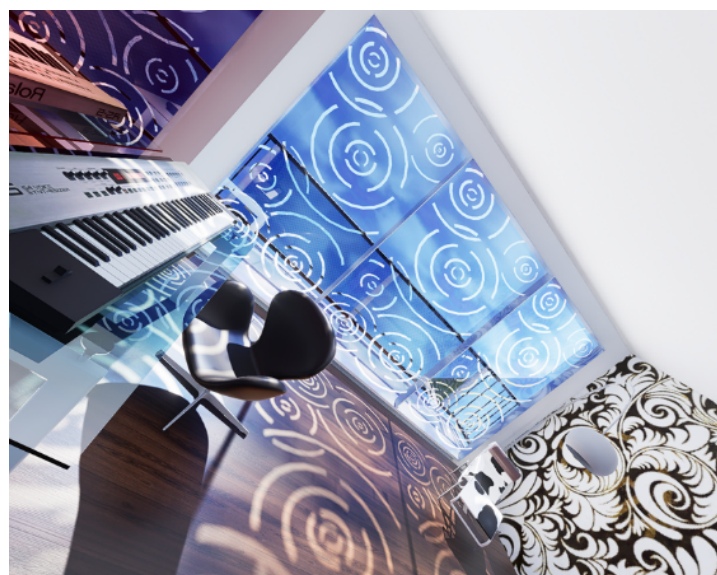


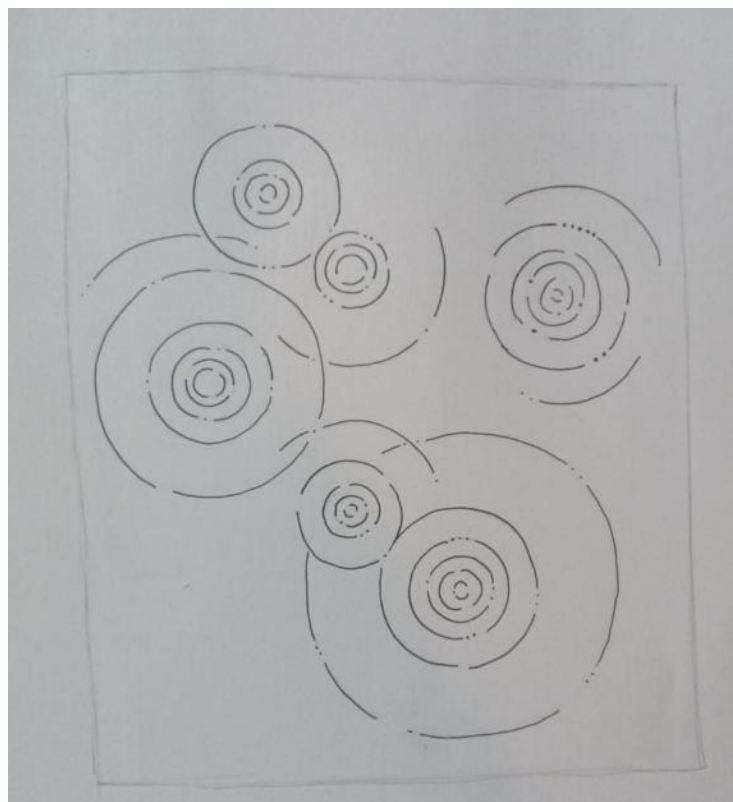
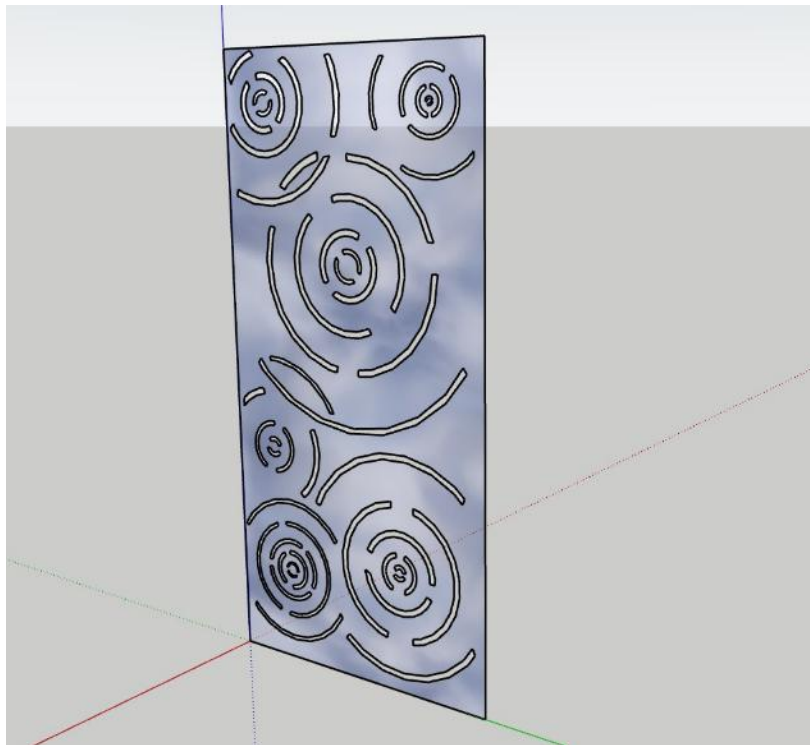
4.32.7 Appendix O7: Images MS-011





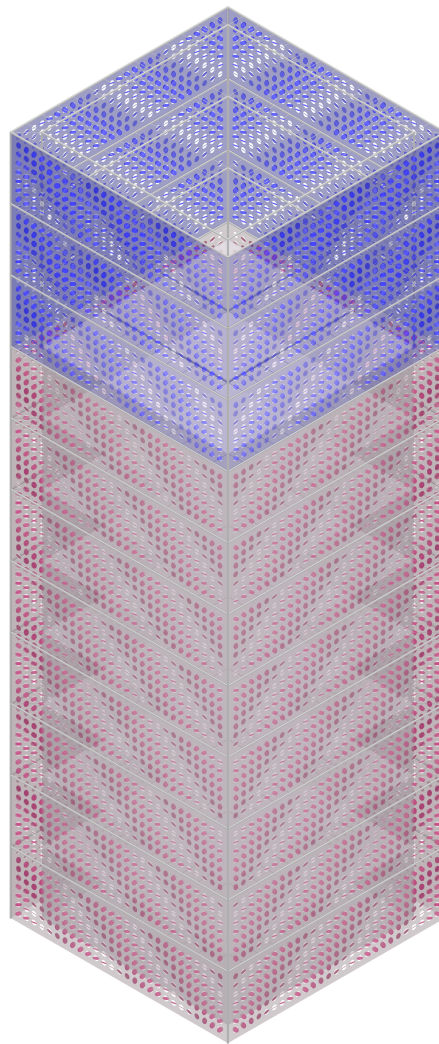
4.32.8 Appendix O8: Images MS-012





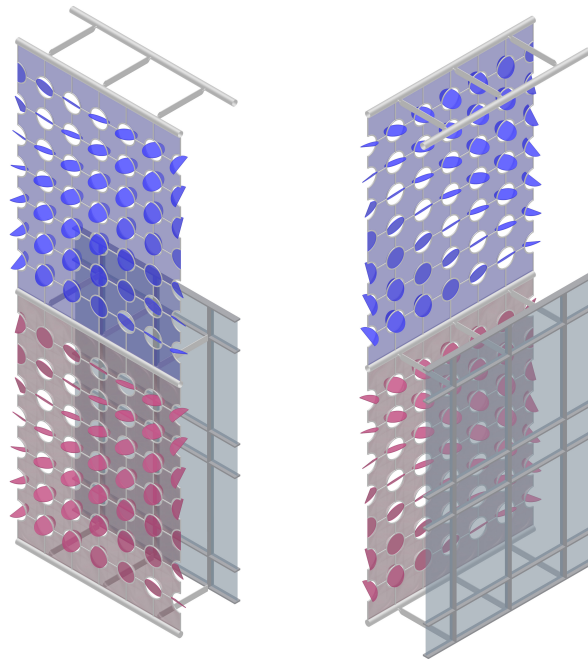
4.33 Appendix P: Multifunctional Facade Contest Candidate Image Submissions

4.33.1 Appendix P1: Images MZ-006



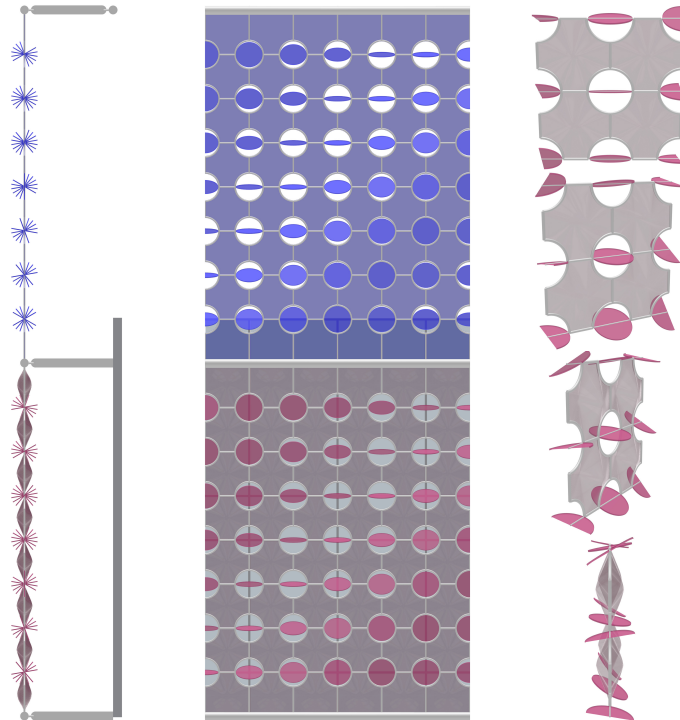
APPLIED CONCEPT
AXONOMETRY





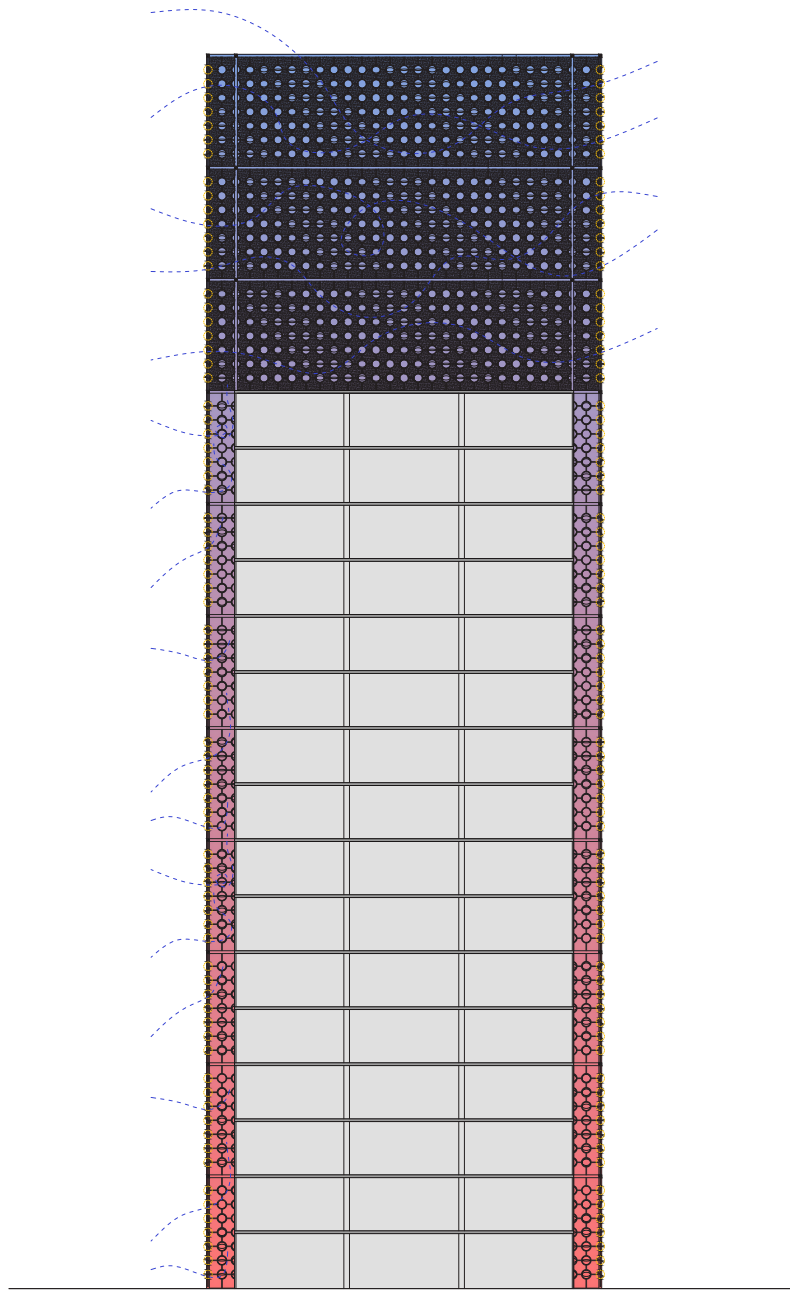
DOUBLE SKIN
ISOMETRY





ZOOM
DETAILS



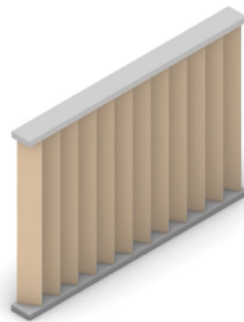
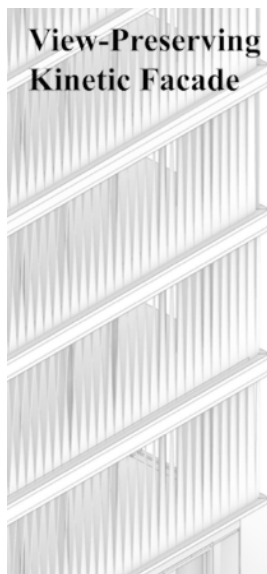
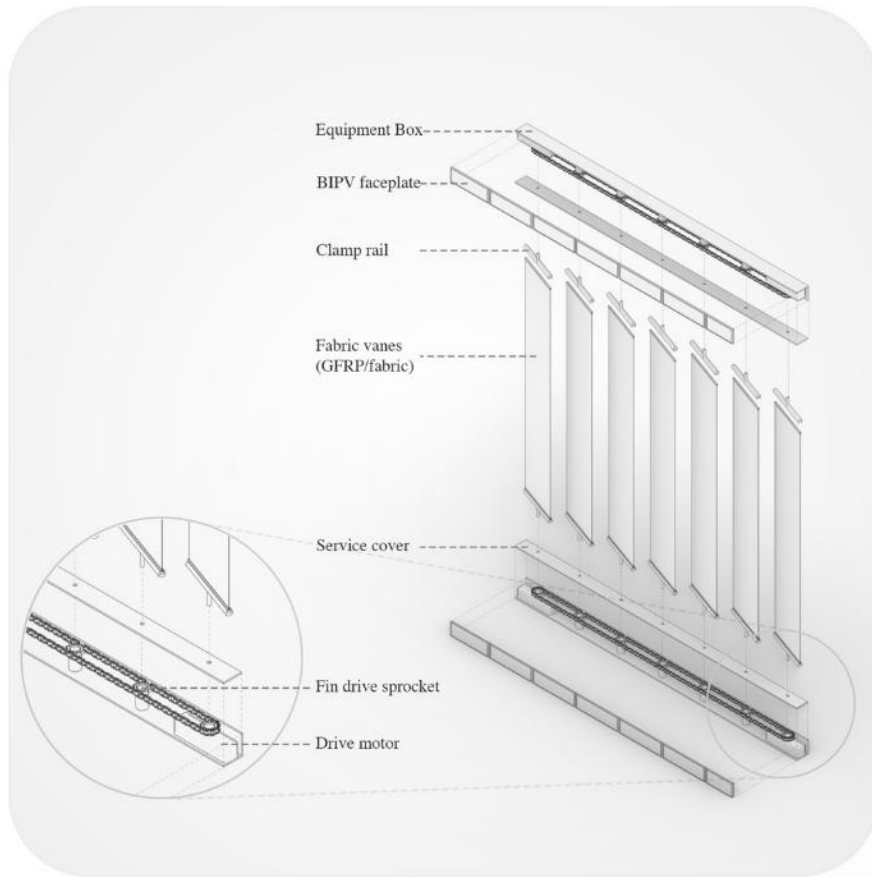


FLUX MOVEMENT
SECTION



4.33.2 Appendix P2: Images MZ-007

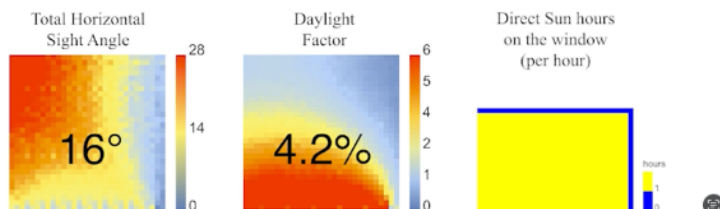




**Winter
21st January (Torino)**

This animation shows how the twisting fins are set hour by hour. For each frame we evaluate three KPIs: Direct Sun on the window (hours of beam on the glazing), Daylight Factor on the workplace, and Total Horizontal Sight Angle from the eye position. The controller searches for top and bottom rotation angles that, in summer, minimize beam hours on the glass while keeping $DF \geq 2\%$ and $HSA \geq 14^\circ$. In winter it admits solar gains whenever those daylight and view thresholds are still met, with a glare cap. The twist keeps the upper zone more closed and the lower zone more open, which blocks low-sun glare yet preserves oblique view and soft daylight. Schedules are computed with Ladybug tools using local sun position and facade orientation.

10:00



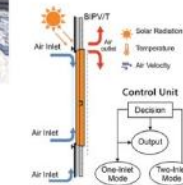
4.33.3 Appendix P3: Images MZ-008



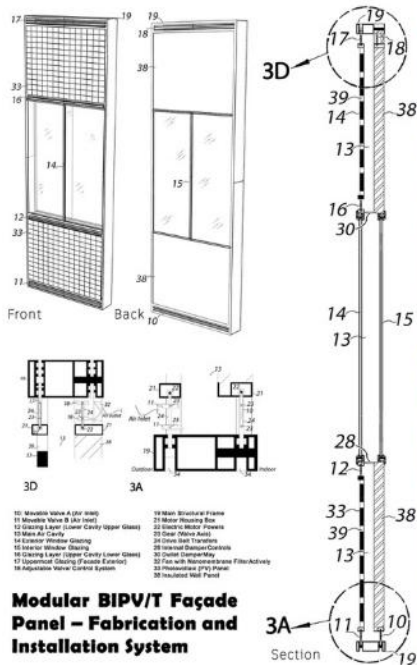
Adaptive Multi-Inlet BIPV/T Modular Façade System

A smart, sensing façade solution that adapts in real-time to improve energy efficiency and indoor comfort.

This façade integrates photovoltaic modules, thermal air channels, and smart dampers that adaptively switch between different airflow modes based on environmental inputs. It demonstrates up to 35% energy savings in real-world conditions.

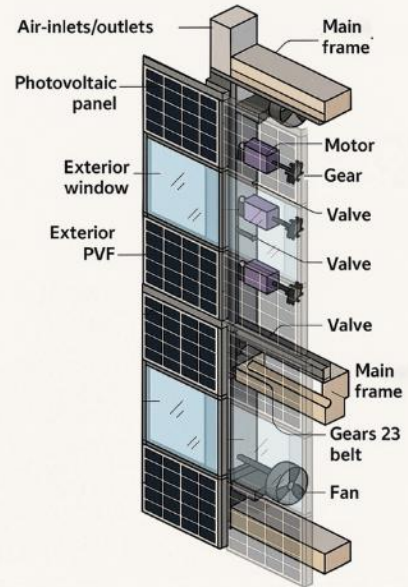


Up to 25% Increase in Energy Performance
Real-Time Adaptive Switching Between One-Inlet and Two-Inlet Modes

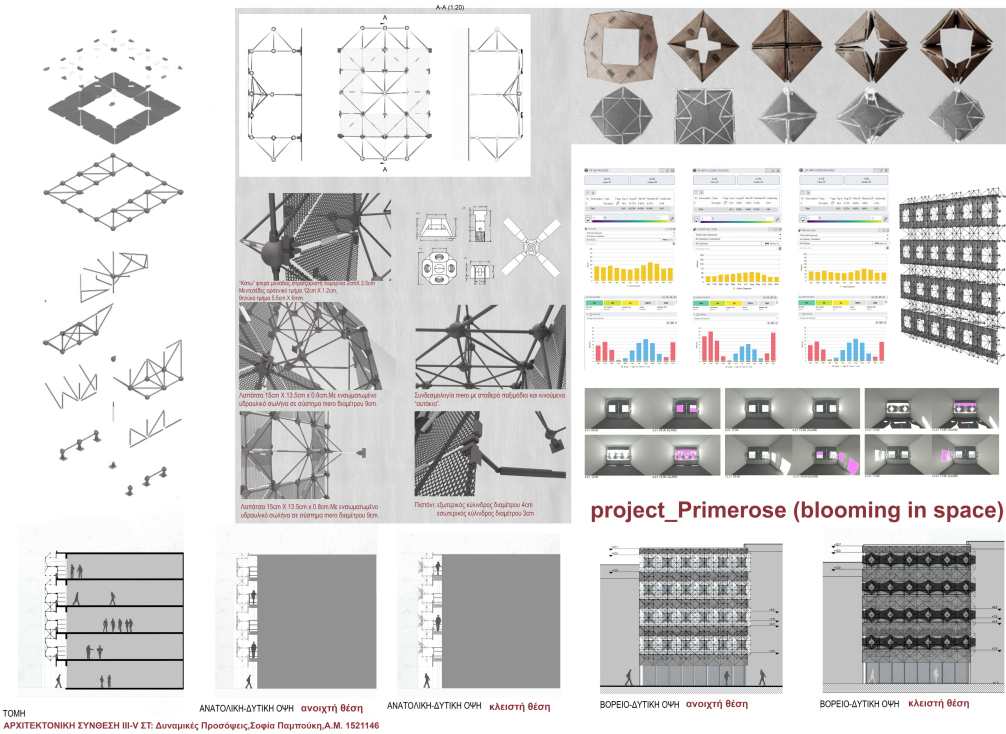




Smart Modular Façade with Switchable Inlets and Integrated BIPV/T for Dynamic Building Performance

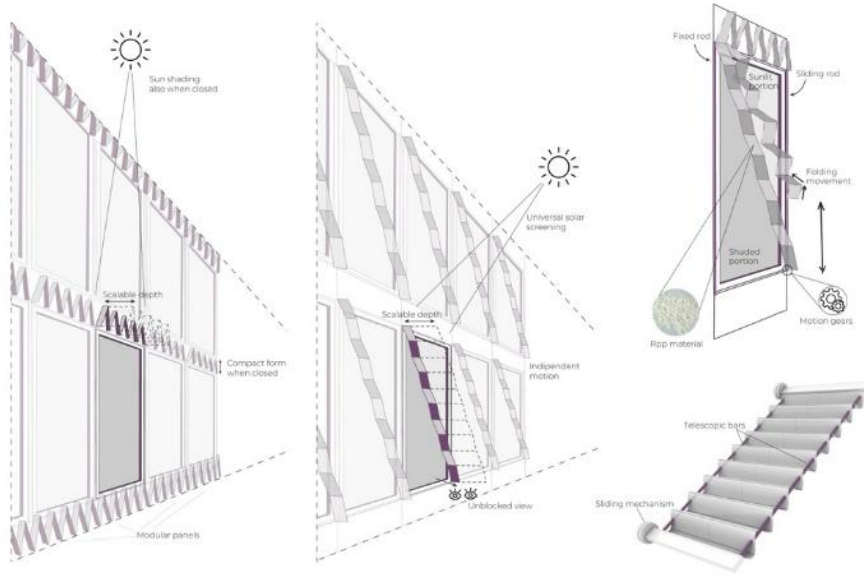


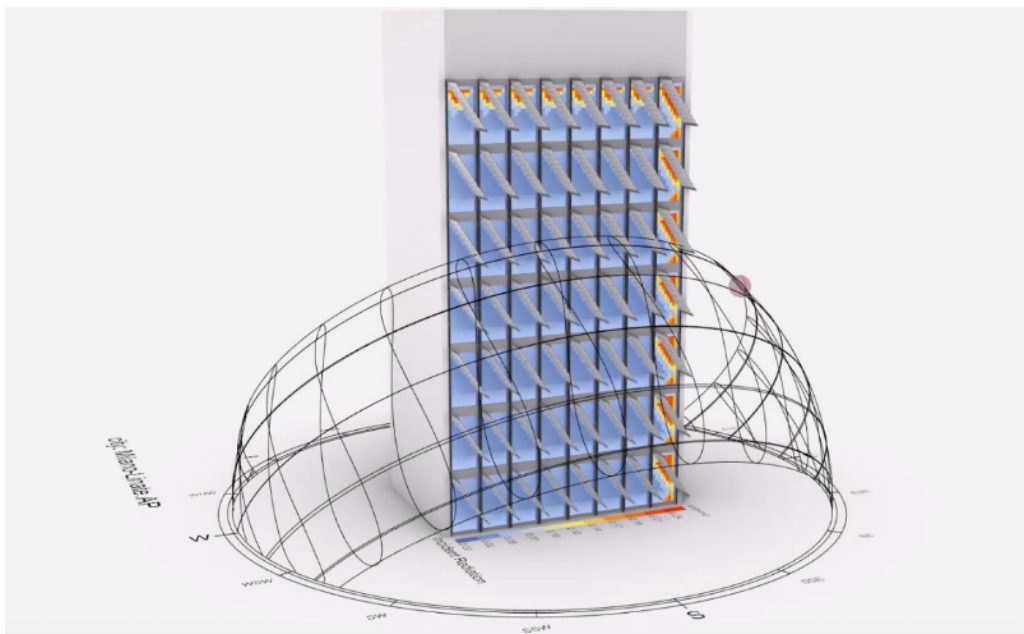
4.33.4 Appendix P4: Images MZ-009



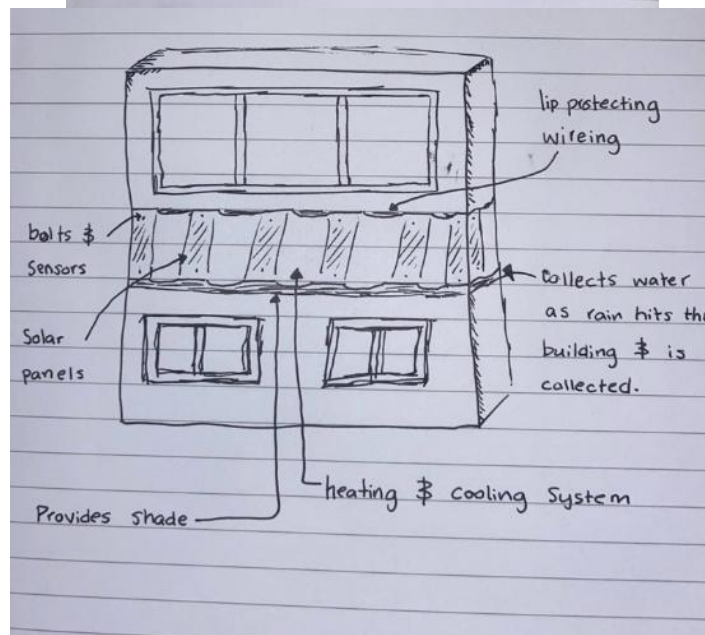
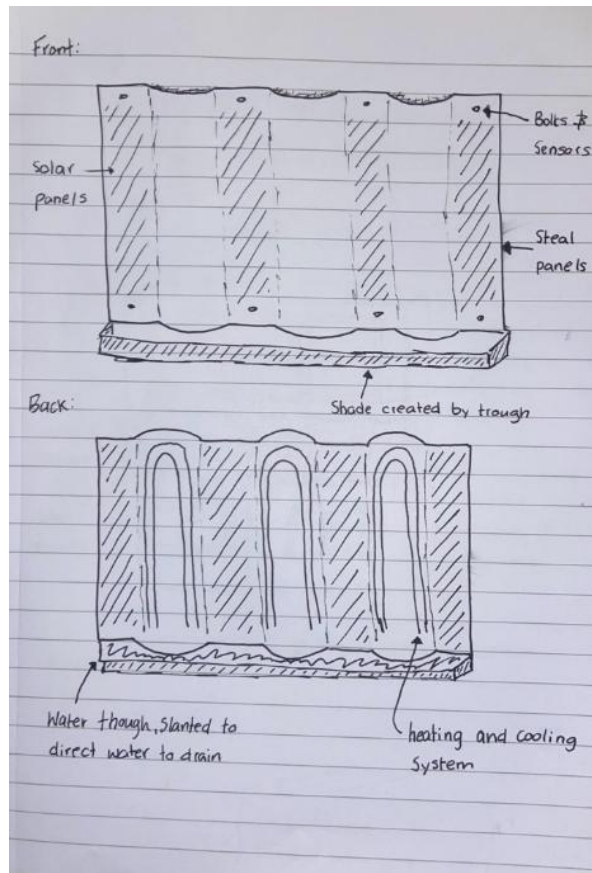
The MEZeroE Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953157

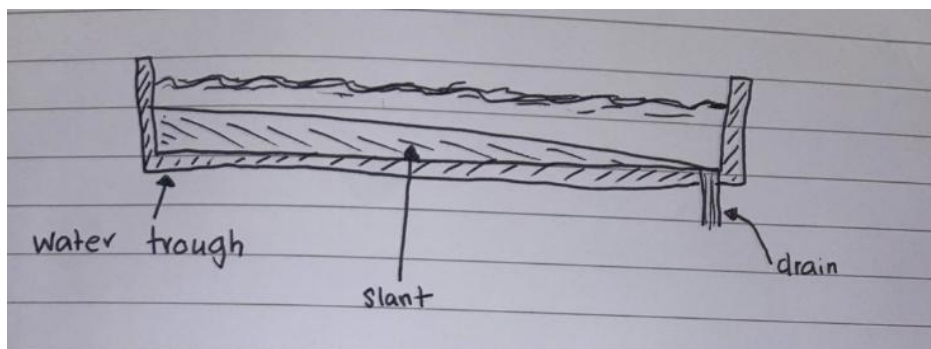
4.33.5 Appendix P5: Images MZ-011





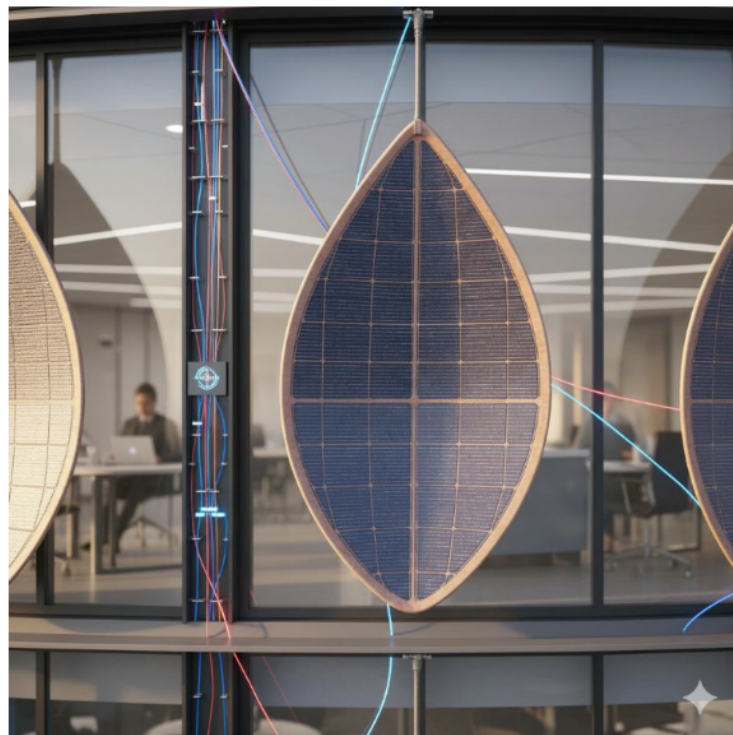
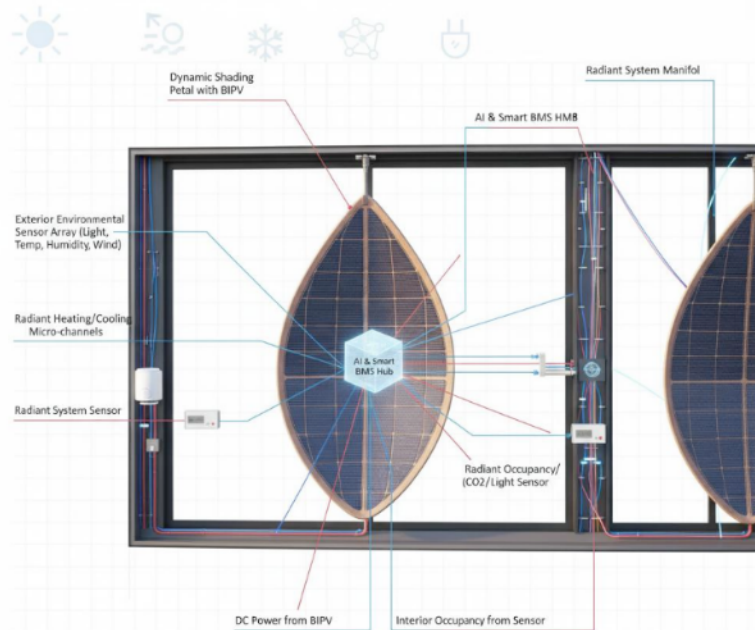
4.33.6 Appendix P6: Images MZ-012





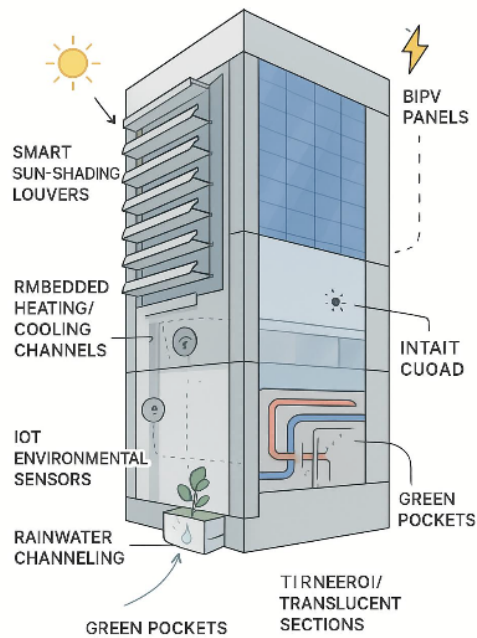
4.33.7 Appendix P7: Images MZ-013

SYSTEM ARCHITECTURE: ADAPTIVE BLOOM FACADE Intelligent Integration for Optimal Performance





ADAPTIVE ECO-FAÇADE



4.33.8 Appendix P8: Evaluation MZ-014

Stepped Spiral

With Solar Thermal Energy

A façade that integrates reflective parabolic dish collectors on each level to capture and convert sunlight into thermal energy.

Reflective parabolic dishes capturing sunlight for thermal power.

Architecture as an active system for energy collection.

Applied Concepts

Reflection

Origin Sunbeam Receiver

Reflective object

Polished surfaces redirect solar rays, turning the building into an optical device that manipulates light and heat.

Ellipse

Concave surface

Symbol of concentration, where geometry directs solar energy to a common focal point for maximum efficiency.

Stepping

A cascading façade ensures unobstructed solar capture on every level while creating useful terraces.

Am Sunbeam Pm

Note: For optimal performance and full solar capture throughout the day, it is proposed to implement two stepped bars arranged in a mirror effect, so that one façade captures the rays that the other mass cannot reach.

The "stepped spiral" façade integrates a solar thermal system into a stepped design that ensures each level receives direct sunlight without casting shadows on the others. In this way, the envelope functions as an energy device that provides efficiency, thermal comfort, and a sustainable identity to a large-scale residential project.

Stepped Spiral

Operation and application

A stepped façade is proposed, integrating parabolic dish collectors on each level to capture sunlight efficiently. The stepped design prevents shading or interference between modules, turning the façade into an active, energy-harvesting surface.

Energy collector

Parabolic dish collectors concentrate sunlight onto a central receiver, converting intense thermal energy into usable heat.

For the operation and energy collection of this system, a stepped façade is proposed, integrating one or more parabolic dish collectors on each level of the stepped structure. This configuration allows every module to receive direct sunlight efficiently. The stepped design ensures that no dish obstructs another's exposure to solar radiation, preventing interference in light capture and maintaining optimal performance throughout the day.

Sensor operation

Solar Energy

Receiver

Reflective surface

Dish collector

- The parabolic dish has a reflective surface shaped like a parabola.
- It concentrates sunlight onto a single focal point.
- A receiver at the focus absorbs and retains heat efficiently.
- A thermal fluid inside the receiver captures and transfers the heat.
- The fluid reaches temperatures between 400 °C and 1,000 °C.
- Heat is converted into mechanical or electrical energy via a Stirling engine or heat exchanger.
- A dual-axis tracking system keeps the dish aligned with the sun all day.
- This setup ensures high efficiency in capturing and converting solar thermal energy.

Energy Collector

Residential units



Stepped Spiral

A 33-story residential tower is proposed as a model of sustainable design, featuring a stepped solar façade that integrates thermal energy collection on every level. With about 20 apartments per floor, it envisions architecture that transforms sunlight into comfort and efficiency.

Solar Power Capacity
This stepped façade can generate approximately 4,060 kWh of solar thermal energy, capable of supplying around 1,000 apartments at minimal consumption levels, while maintaining an energy reserve of 500 kWh for stability and storage.

Optimized Design
Its ascending stepped configuration ensures that each level captures direct sunlight without interference, while also enhancing cross-ventilation and passive cooling throughout the building.

Compact Collectors
Another eight 10-meter collectors deliver energy to nearly 320 families, complementing the system with modular efficiency adaptable to façade geometry.

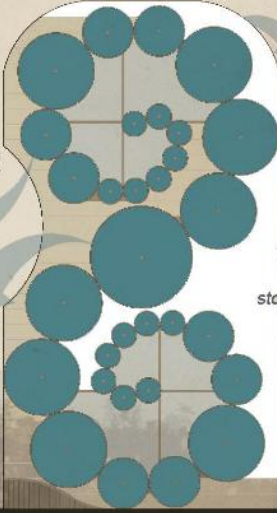
Main Solar Collector
A 20-meter parabolic cylindrical collector crowns the system, providing enough thermal energy to supply about 80 families, acting as the tower's central powerhouse.

This project demonstrates how architecture can evolve into an active system that captures, transforms, and optimizes natural energy. By integrating form, technology, and environmental awareness, it envisions a new model of sustainable design for large-scale living.

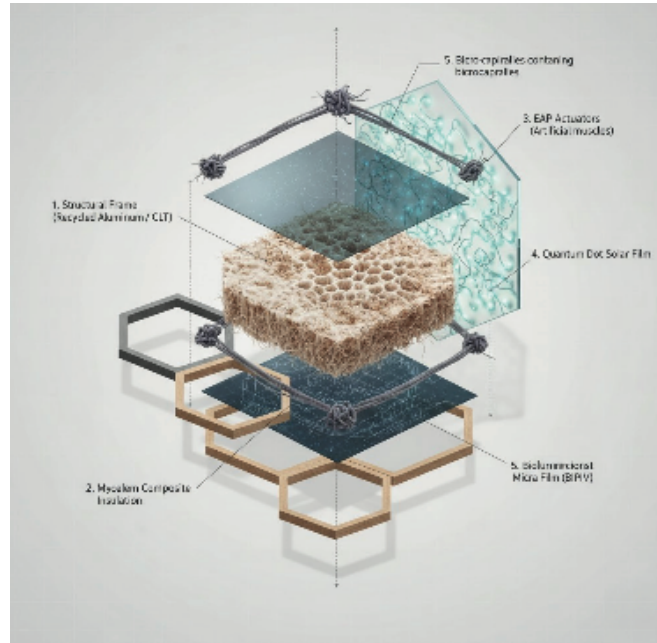
Mid-Level Collectors
Eight 15-meter collectors distribute energy efficiently across the mid-sections of the façade, generating sufficient power for approximately 480 families, balancing scale and performance.

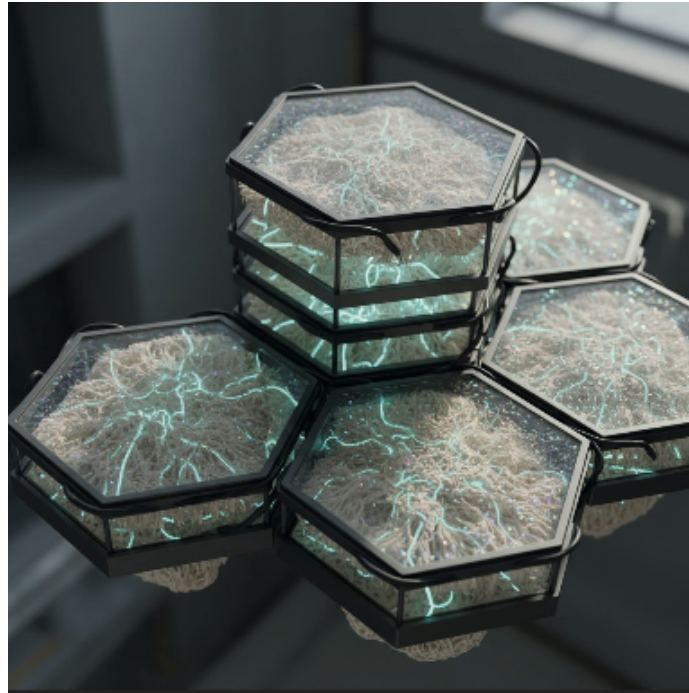
100.07
33
stories high

Supplementary Units
Finally, fourteen 5-meter collectors cover smaller zones of the façade, contributing energy for about 280 families, ensuring a consistent and distributed energy supply across all levels.

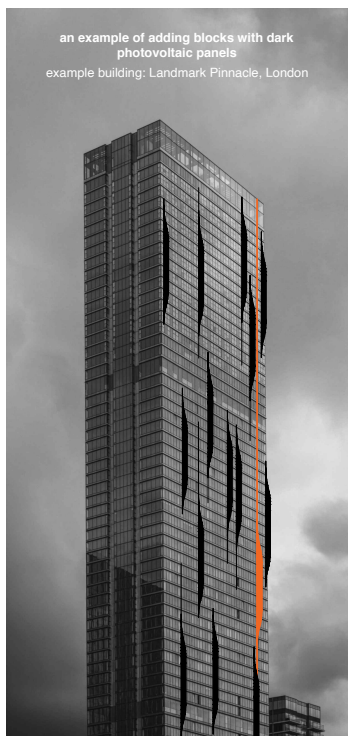
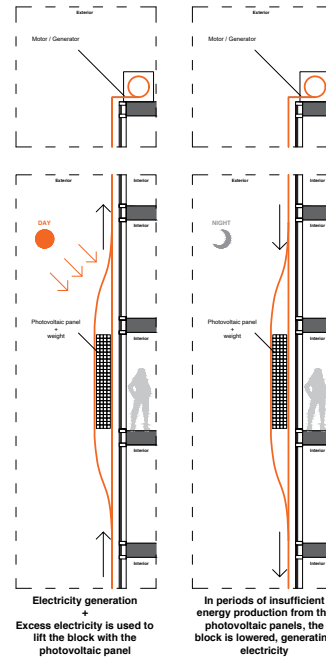
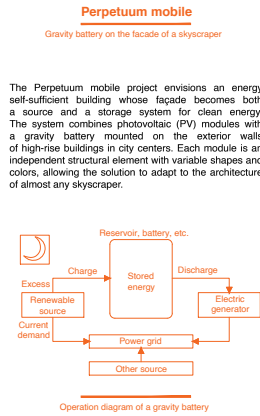
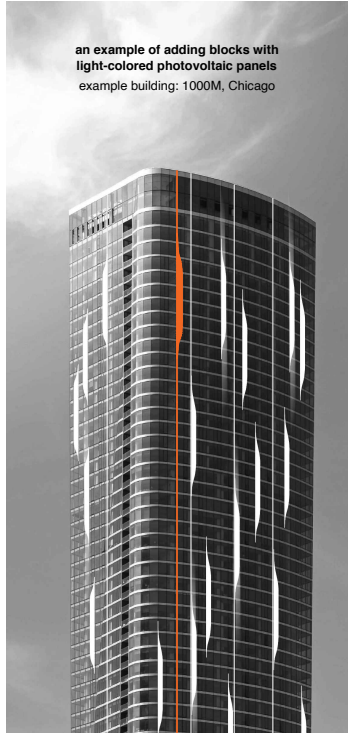



4.33.9 Appendix P9: Images MZ-015





4.33.10 Appendix P10: Images MZ-016



Feasibility
The Perpetuum mobile concept is based on technologies that are already available or under active development. Photovoltaic modules can use thin-film perovskite cells - lightweight, flexible, and efficient even under diffuse light - making installation possible on less sun-exposed facades.
The gravity battery offers a simple and scalable energy storage solution. Using durable cables, guides, and electromagnetic brakes allows for the safe vertical movement of multi-ton blocks. The mechanism can be integrated into the building facade, with its operation managed by IoT algorithms that optimize charging and discharging cycles based on PV generation and energy demand.
The system is modular and can be installed on various types of skyscrapers without significant structural modifications. Demonstration projects of such batteries already exist, confirming the feasibility of the concept. By combining existing PV technologies, the basic principles of gravity, and smart energy management, Perpetuum mobile can be implemented with current technical resources, representing a practical step toward energy-autonomous cities.

Sustainability impact
The Perpetuum mobile system strongly supports sustainability goals by reducing CO₂ emissions and improving the energy efficiency of buildings. Integrating PV panels with a gravity battery enables the production and storage of energy without fossil fuels or chemical storage systems.
As a result, the building becomes a local micro-source of renewable energy, reducing the load on urban grids and minimizing transmission losses. The panels also act as a thermal barrier - limiting wall overheating in summer and heat loss in winter - thereby reducing the need for air conditioning and heating.
IoT sensors enable intelligent energy flow management, real-time performance monitoring, and adaptive control based on weather conditions. The project also improves occupant comfort through more stable indoor temperatures and reduced thermal fluctuations.
In the long term, Perpetuum mobile could contribute to the creation of interconnected urban energy networks, where multiple buildings share renewable energy, where architecture itself becomes an active part of ecological transformation.



4.33.11 Appendix P11: Images MZ-017

Hybrid Ventilated Prefabricated Façade

One of the major challenges that the construction sector faces today is its cost. Architecture plays an essential role in human life, providing spaces for living and development. After an intense real estate boom over the past few decades, and an unprecedented technological advancement in materials and construction techniques, **the existing building stock has deteriorated** while individual **access to quality housing has significantly declined**. The key factor that can address both cost and accessibility lies in the exponential **industrialization not merely of materials, but of the construction systems that compose them**.

The project proposes an **industrializable construction solution** applicable to **new buildings**, but primarily intended for **rehabilitation purposes**. The most substantial **residential blocks built during the 1970s, 1980s, and 1990s** present numerous material pathologies that hinder energy efficiency and occupant comfort, yet they **constitute the majority of the existing building stock**. Instead of opting for complete demolition, or for façade cladding with sandwich panels—which, while improving thermal transmittance, preserve the underlying structural and material issues—the proposal introduces a **new approach**.

By **preserving the existing structural framework** of these buildings, **prefabricated and versatile façade modules** are designed to adapt to their geometry and constraints. These are **airtight, fully equipped façade units, ready to be installed** and used immediately after the interior refurbishment of the building. Through the constructive design of these modules, **passive energy efficiency strategies** have also been incorporated, introducing the concept of an **intelligent hybrid ventilated façade**. The industrialization of these modular systems not only reduces the costs associated with scaffolding, masonry, time, and occupational risks, but also contributes to creating more accessible and affordable architecture.



1 Hybrid Ventilated Prefabricated Façade - Miguel Mosquera Garcia

What is the design intent?



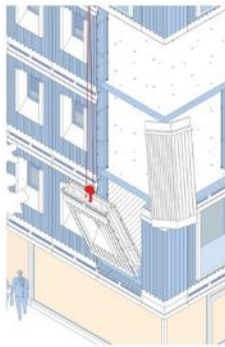
Given the technological progress in the construction sector and in building materials, it can be said that **common buildings without heritage value**, built during the last decades, have become **materially outdated** compared to the new constructions that can be achieved today. As an alternative to complete demolitions, preserving the structure of these buildings allows for a **reimagining of their relationship with the exterior, their urban presence, and an improvement of their living conditions**.

2 Hybrid Ventilated Prefabricated Façade - Miguel Mosquera Garcia

Opting for the prefabrication of complete enclosure systems not only means **reducing costs and therefore lowering housing prices**, but also represents the **first step toward making large-scale urban building renovation more accessible**. The concept functions as a **puzzle** that addresses common challenges: the corner, the solid panel, a panel with a window, one with a long window, one with a double window, the corner of a cantilever, and the roof edge. Since it is conceived as a puzzle and interior needs are ever-changing, **the façade composition is as variable as the human activities it serves**. Thus, although the illustration shows a residential building, the same system could be used to compose an office building, a hotel, or a school.

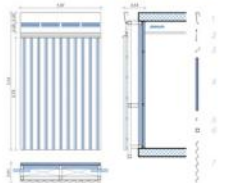
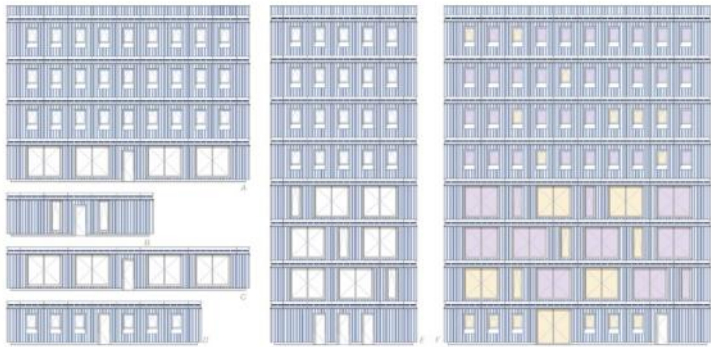
Operation of the Construction System



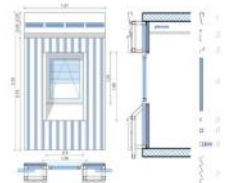


4 The assembly procedure given that the components are prefabricated, **saves time and cost**. The subsequent fabrication of the facade and their transportation to the site is the most complex part of the process. Once on site technicians **fit the facade suspended** from the exterior structure itself and position them on the edge of the slab, using external anchors, metal lugs, or metal plates previously installed on the slabs. The cladding panels are connected to the building's main structure with **spines**. Although the situation shows a concrete structure, the same procedure would

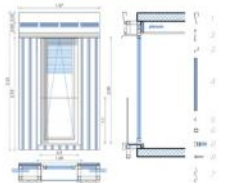
The versatility of the prefabricated panels, as fully individualized and high-quality cladding elements, corresponds to the **wide range of combinations that can be made with them**. On the right, different possibilities open to imagination are presented, such as: **A** Office building, **B** Public institutions, **C** Park or temporary exhibition hall, **D** Temporary classrooms or site hut, **E** Residential tower, **F** Hotel or residential tower. Given the extensive range of profiled sheets designed by KINGSPAN TECZONE, the facade effects and possibilities are very broad and are not limited to this particular design. >



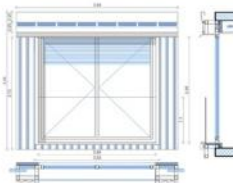
a) Single closed module: closed module used both for closing and for length adjustments of the facade. Manufactured based on the KINGSPAN Model 71886-5 grid range.



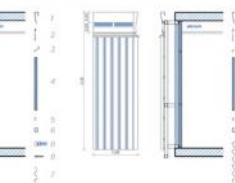
b) Single window module: same module but with an integrated wooden window. The beveled window allows a more direct view of the street at height.



c) Single large window module: same module, but with an integrated large wooden window. The module incorporates a glass railing as a protective element.



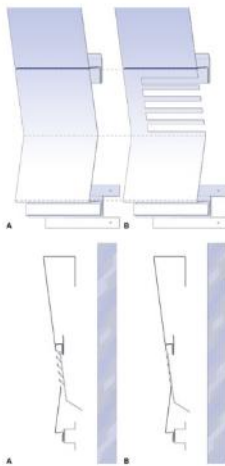
d) Double large window module: double of a module, with an integrated large wooden window for high lighting requirements. The module incorporates a glass railing as a protective element.



e) Single corner module: the same as the module a) on a 45° symmetry and shorter to optimize the length of the facade.

3 Hybrid Ventilated Prefabricated Façade - Miguel Mosquera García

Feasibility of the Construction System

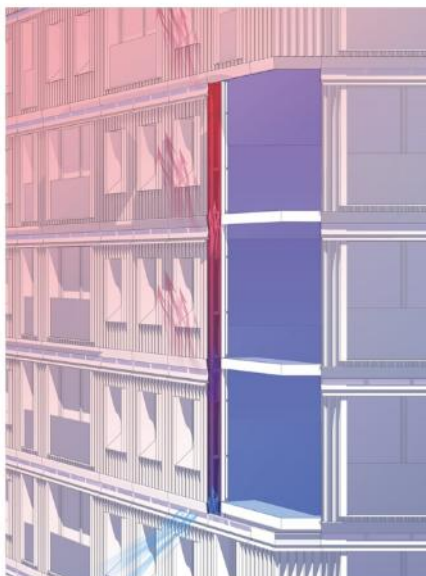


4 The **KINGSPAN IBEO-250 BASE** allows functions on the **and profile for the profiled metal sheets** that compose the facade, providing both structural cohesion and aesthetic coherence. Beyond its technical role, it establishes **rhythmic transitions** between the different building heights, creating a visual continuity that articulates the relationship between the architectural volumes in doing so, it fosters a direct and perceptible **dialogue** between the facade system and the surrounding **urban environment**, reinforcing the expressive unity of the architectural composition.

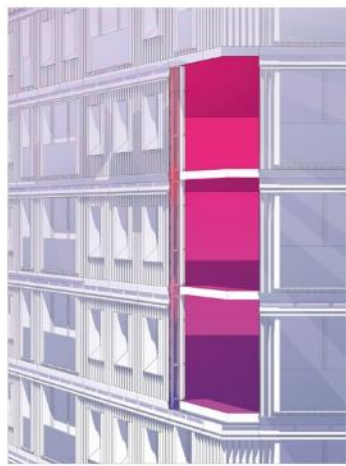
5 If the **KINGSPAN IBEO-250 BASE** is provided with **longitudinal perforations covered by a mechanical closure system** actuated by **thermal sensors**, the facade gains the capacity to **respond dynamically to temperature variations**, in the way it is possible to regulate the controlled release or retention of warm air, improving both thermal comfort and energy efficiency. As a result, the facade operates as a true **hybrid ventilated system**, adapting its behavior to the climatic conditions in real time and enhancing the building's overall environmental performance.

During the warm season, the **thermal sensors** integrated into the facade detect elevated temperatures within the air cavity of the prefabricated panels. Through **mechanical openings** governed by an **electronic building automation system** that continuously monitors and responds to these sensors, the **facade is able to initiate a controlled temperature reduction** by regulating the **expulsion of hot air**. As the warm air rises through the facade, the automated system allows its gradual release at the upper levels, while simultaneously venting the intake of cooler air through the lower ones. This conscious air exchange generates a natural passive airflow driven by active technological means, enhancing both thermal comfort and energy performance. In this way, the facade not only reacts intelligently to climatic variations but also contributes to the overall sustainability of the building. >

4 Hybrid Ventilated Prefabricated Façade - Miguel Mosquera García



Climatic behavior of the Construction System



6 During the temperate and cold seasons, the system operates in the opposite manner. In temperate periods, temperature fluctuations occur throughout the day, making the, the time of year when the facade behaves in a fully hybrid and responsive way. During spring, the high temperatures and strong solar radiation demand effective solar protection. Therefore, the airflow system is automatically actuated, and the facade performs as a ventilated one. If night-time outdoor temperatures drop, the system closes again, retaining its airtight and insulated condition. Conversely, during winter, the facade functions as a non-ventilated enclosure, efficiently absorbing the thermal energy generated by active radiation within the air cavity. This smart roof significantly reduces the building's internal thermal losses, improving its overall energy efficiency and maintaining a more stable and comfortable indoor environment.



The MEZEROE Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953157

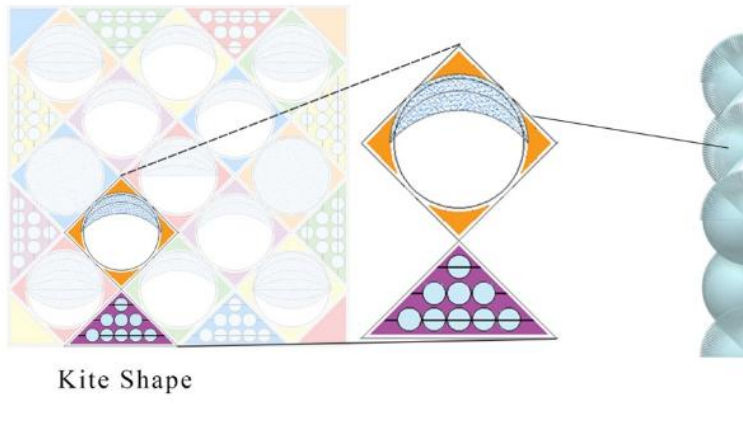
4.33.12 Appendix P12: Images MZ-018

GEN (+) PHENOTYPIC MEMBRANE

Inspired from **Traditional Rickshaw hood Opening mechanism and Kite shape.**

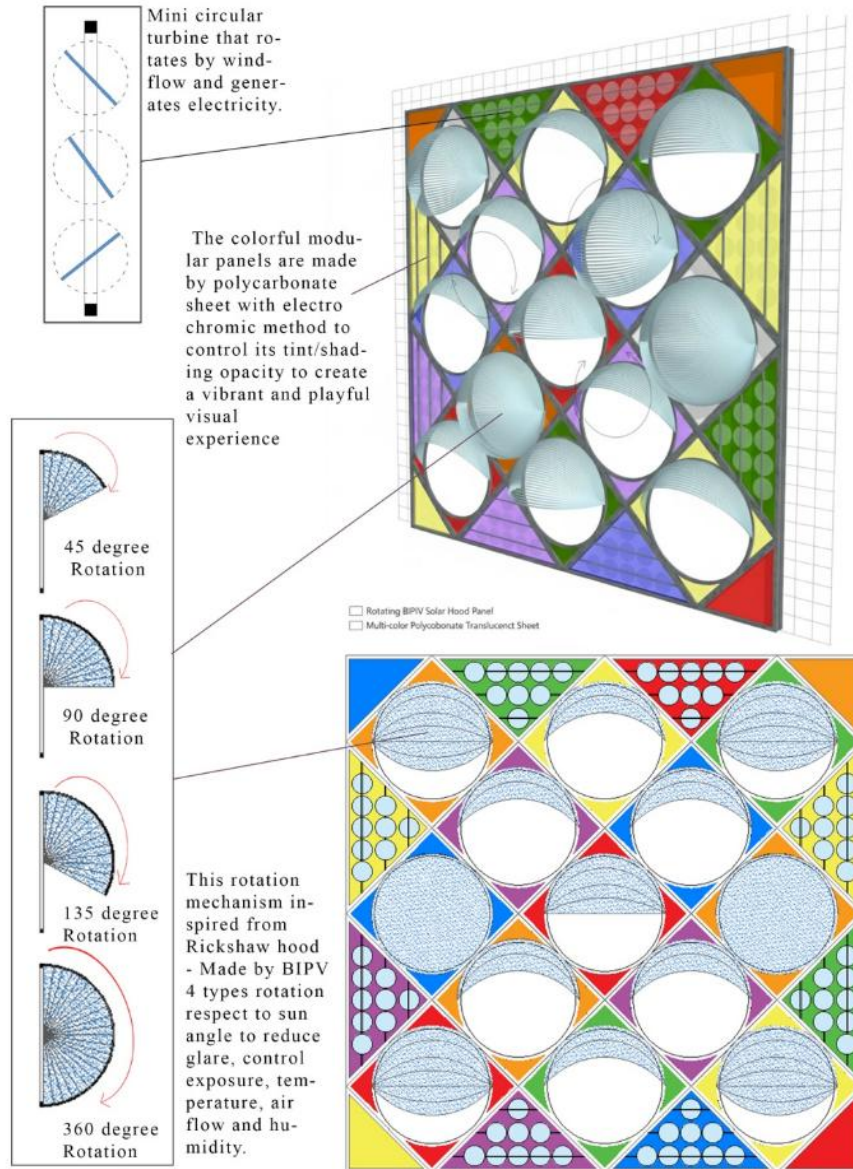


The core design of the modular façade is ingeniously inspired by the traditional rickshaw hood mechanism prevalent in Dhaka, Bangladesh.

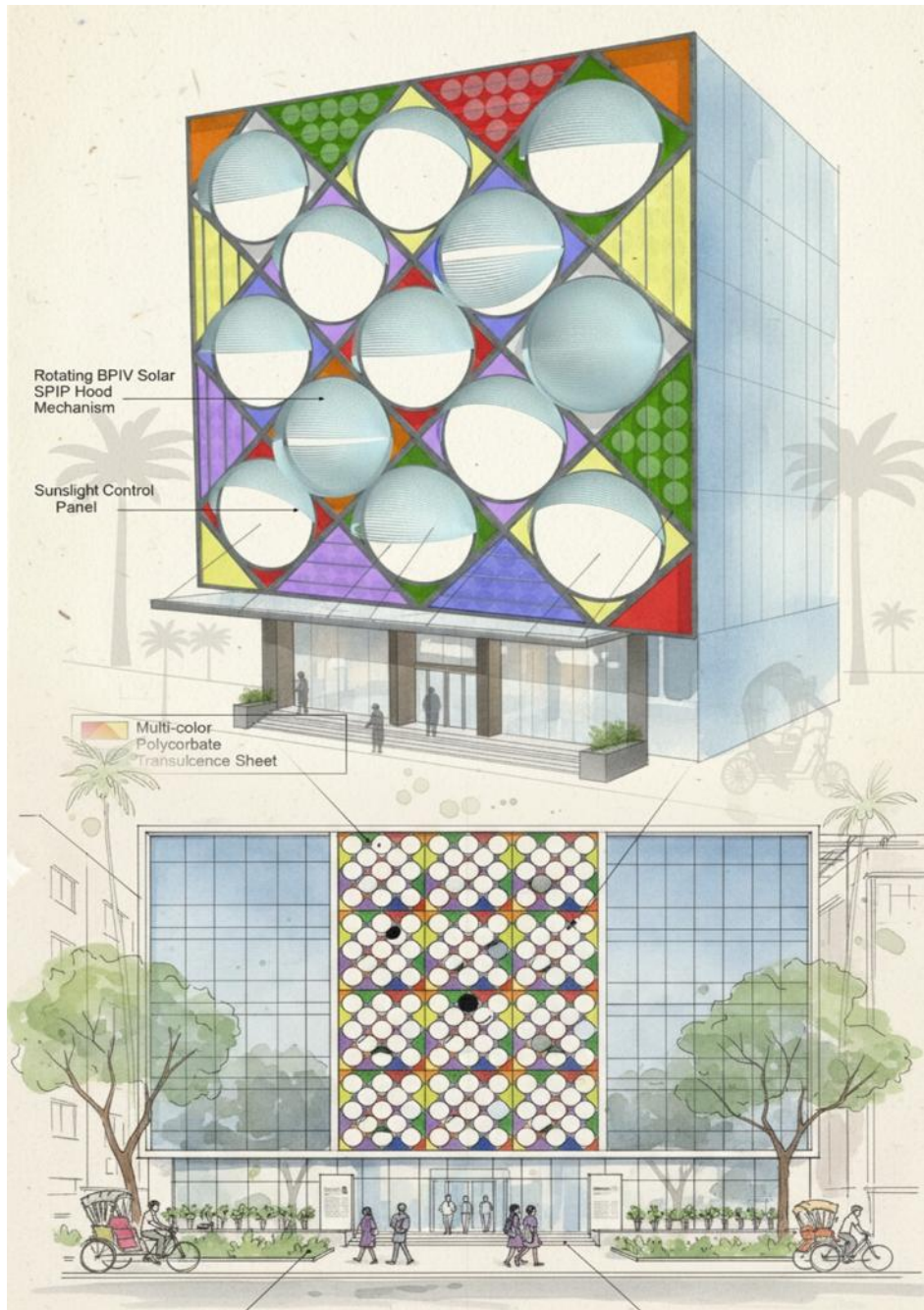


Kite Shape

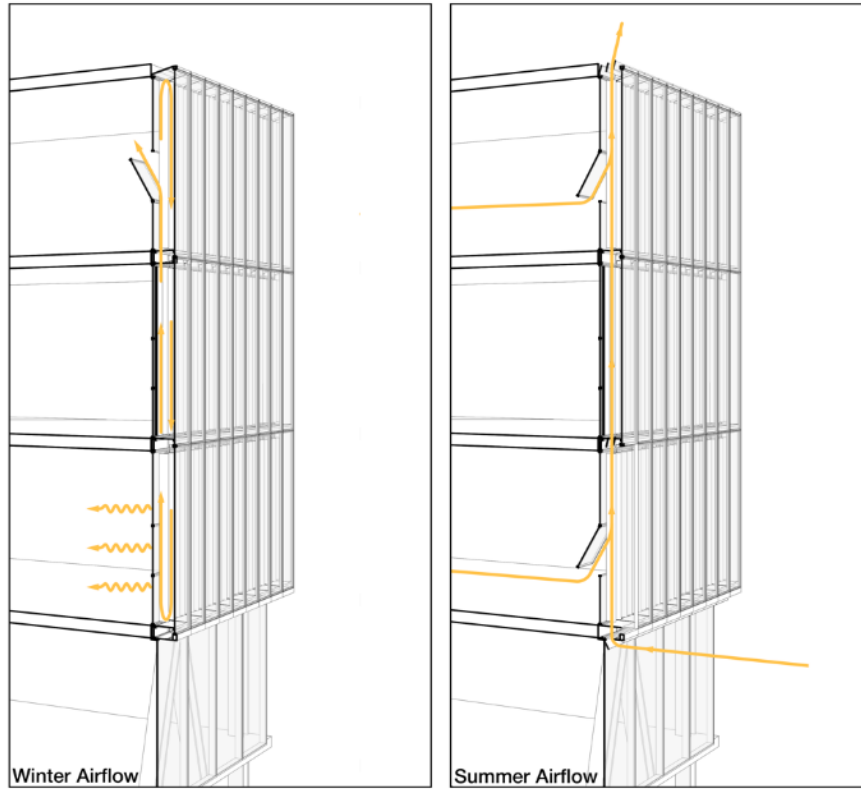
GEN (+) PHENOTYPIC MEMBRANE

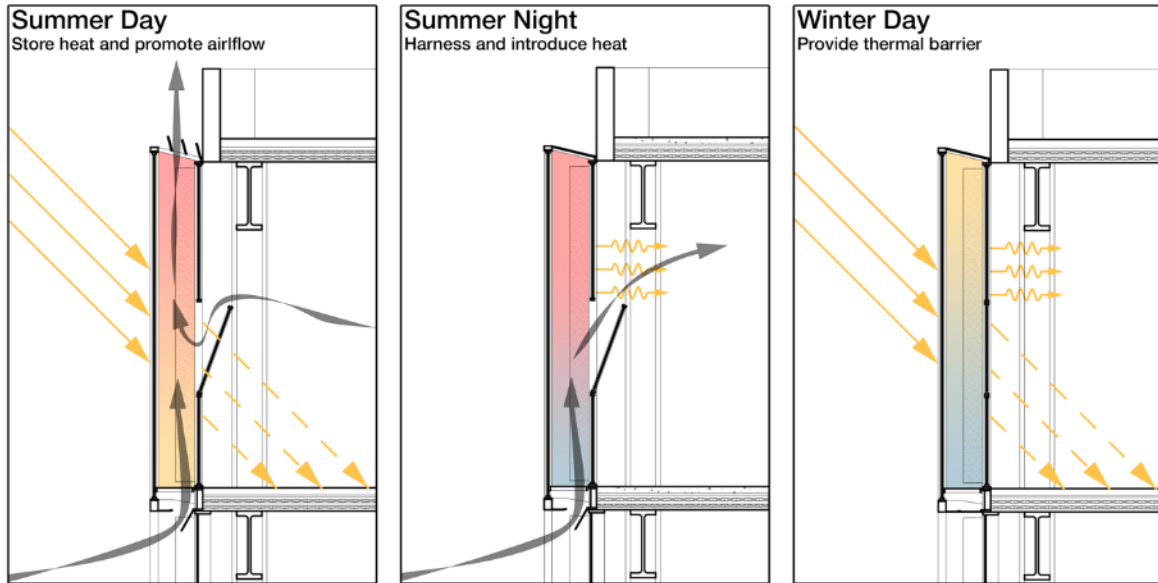




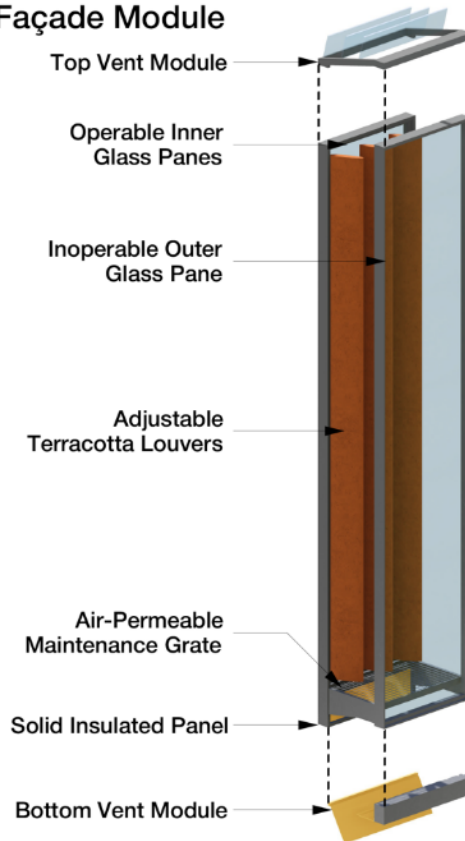


4.33.13 Appendix P13: Images MZ-019






Thermal Mass/Solar Chimney Façade Module



4.33.14 Appendix P14: Images MZ-020

Intelligent Façade Platform: Lifecycle Optimization via Federated Learning, Blockchain, and Digital Twins
 (A Scalable Platform for Multi-Fault Detection and Design Feedback in Prefabricated Envelopes)
(In progress)



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