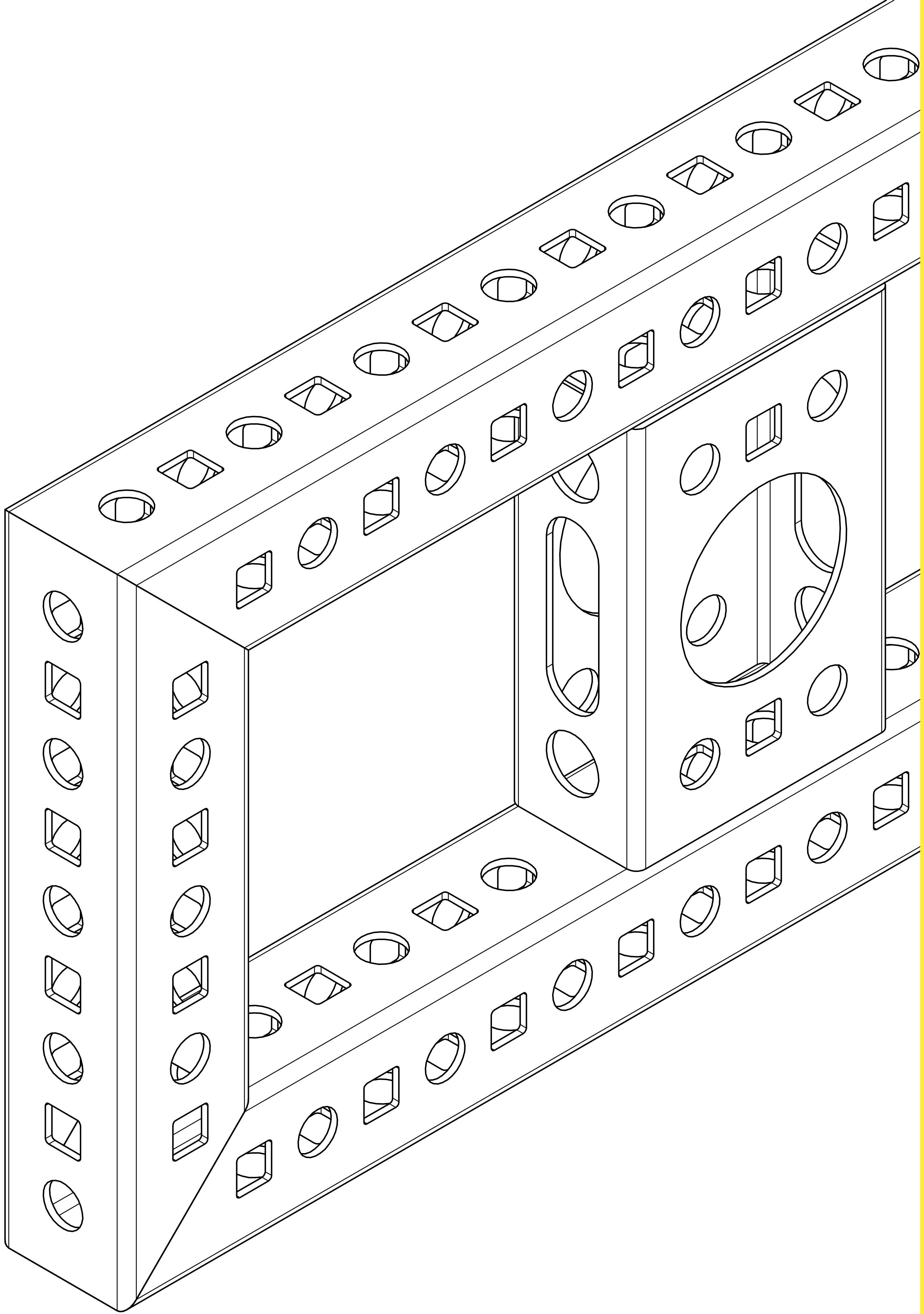
MOD 200

General Booklet

Collectif 17h25



Preface

The Collectif 17h25 is made up of the Théâtre du Châtelet (Paris, France), the Festival d'Aix-en-Provence (Aix-en-Provence, France), the Opéra de Paris (Paris, France), the Opéra de Lyon (Lyon, France) and the Théâtre Royal de La Monnaie (Brussels, Belgium). These members share the common ambition of promoting and strengthening more sustainable cultural practices through innovation and the pooling of human, technical and financial resources and means.

In 2022, Collectif 17h25 embarked on a research and development process with the aim of developing a standard for set structures. The aim of this research is to open up spaces for collective reflection and exchange between the members of the Collective in order to share their technical and craftsmanship expertise.

This *open-source* project led to the creation of MOD 200: a modular structure based on a multiple of 200 mm.

In order to enable widespread dissemination and use by other establishments, all of the collective's results are made available to as many people as possible on the Collective 17h25's website: www.collectif17h25.org

A. Origins of the Collectif 17h25

A.1 → What is the Collectif 17h25?

The Collectif 17h25 aims to be an open laboratory for reflection on contemporary issues. The Collective advocates a practice based on experimentation, knowledge sharing and pooling experiences to devise sector-specific solutions. The aim of this dynamic is to question the ways in which we create and work together in order to actively contribute to the transformation of more sustainable cultural practices.

In December 2021, the Opéra de Lyon, on its own behalf and on behalf of its partners in the Collectif 17h25, applied for funding under the Green Alternatives call for proposals, the 4th Investments for the Future programme (PIA4), now known as "France 2030". In August 2022, Collectif 17h25 was selected as part of this call for proposals to receive funding for the Standard Structures project.

The Standard structures project is based on three areas of work:

01. →

Experimenting with the construction and use of standard structures in sets, replacing dedicated structures.

02. →

Assessing the impact of widespread use of standard structures at institutional and industry level: environmental, financial, organisational, managerial and human impacts.

03. →

Sharing the results and lessons learned from the project within the performing arts sector in France and Europe, so that any interested organisation can take advantage of them.

1. LAB 4 — 9 and 10 April 2024
   Théâtre du Châtelet © Thomas Lamouroux
2. LAB 2 — 16 and 17 November 2023
   Opéra de Lyon © Nicky Bruckert
3. LAB 3 — 31 January and 1st February 2024
   Théâtre Royal de La Monnaie
   © Laurine Schott

A. Origins of the Collectif 17h25

A.2 ↓ Governance and operation

The Collectif 17h25 is structured into six committees, composed of representatives from each organisation:

01. ↓

the CODIR

Committee of Representatives of the General Management:

steers the general direction and strategic decisions.

02. ↓

the COTEC

Technical Directors Committee:

validates technical and regulatory decisions on the advice of the other committees.

03. ↓

the COREF

Technical Referents Committee:

works on research and development. It co-designs harmonised elements. It also has an internal communication and monitoring role in each venue.

04. ↓

COMACH

Machinists Committee:

ensures the operational dimension and relevance of research and development results.

05. ↓

COADMIN

Administrators' Committee:

carries out administrative and budgetary monitoring.

06. ↓

COCOM

Communication Committee:

shares research results with the sector.

A temporary committee may be set up as required for the research, for example the COCAR (Characterisation Committee), which monitored the characterisation study with the service provider.

The committees meet regularly according to a pre-established schedule and may also be called upon for additional meetings as required by the research. All members of the Collective meet in person once or twice a year in the form of a collective research laboratory, alternating between the different institutions.

An external coordinator supports the Collectif 17h25 with service design methodology to facilitate the innovation and collective intelligence process.

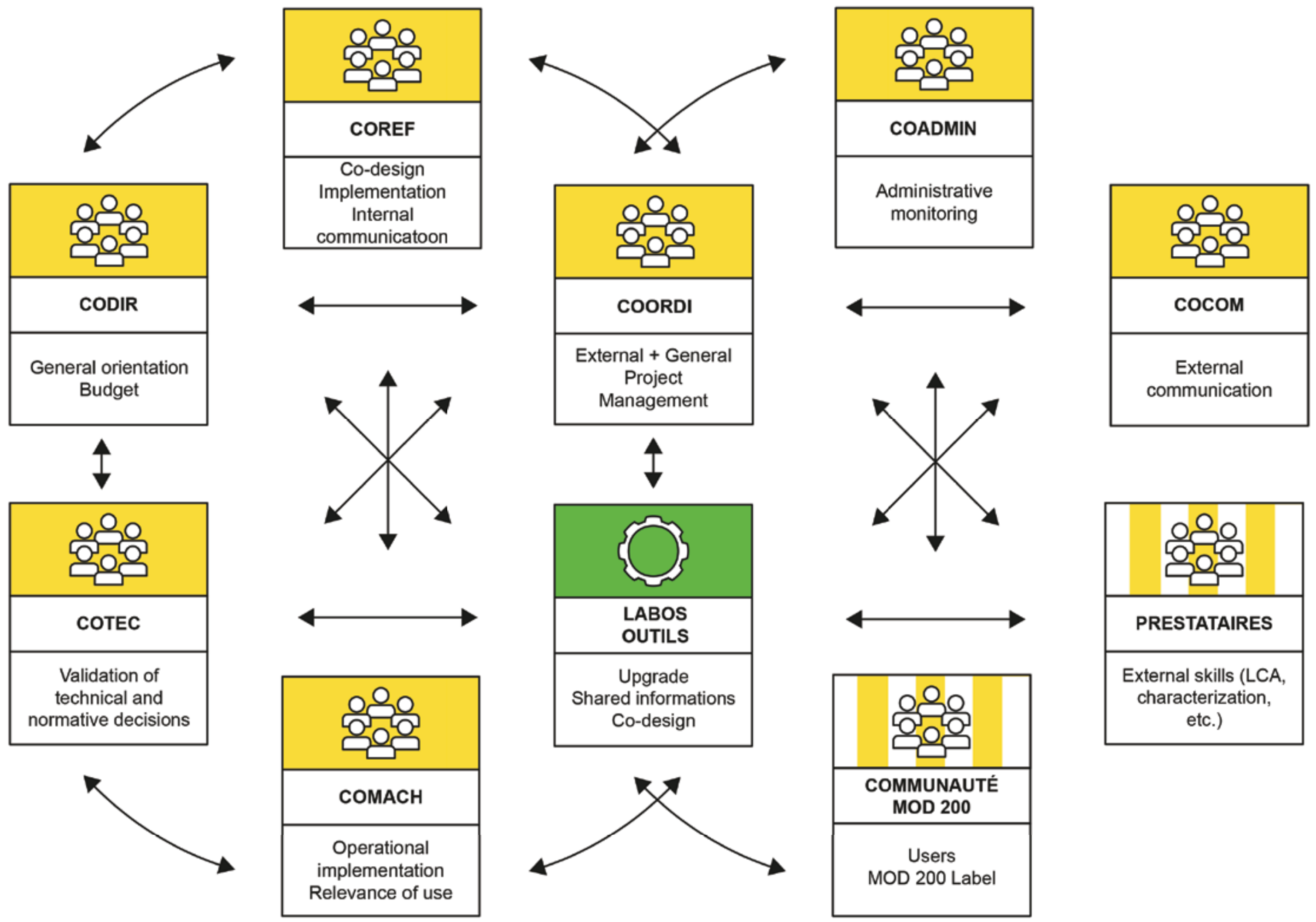


Diagram of the Collectif 17h25 ©Laurine Schott

A. Origins of the Collectif 17h25

A.3 ↘ Method

Taking a cross-disciplinary approach, the service design method involves drawing on the ideas, expertise and skills of all members of the Collective to design a user-oriented solution tailored to the needs of the sector. In addition to coordination focused on organization and monitoring, it structures collective intelligence. It translates challenges into visual representations (graphic tools, diagrams, prototypes) and makes ideas concrete, testable, and shareable to facilitate collaborative design and innovation.

This approach is based on four pillars:

01. ↘

Active participation of all members, who are involved in each stage of the co-design process.

02. ↘

Respect for the diversity of viewpoints, in order to develop solutions that can be adopted by all users.

03. ↘

Interaction and cooperation, organised through collaborative working methods that facilitate dialogue and the sharing of experiences.

04. ↘

Shared guidelines and rules to structure discussions and guarantee the outcome of the process.

1. LAB 6 — 16 and 17 December 2025, Festival d'Aix en Provence © Christelle Calmettes
2. LAB 5 — 2 and 3 October 2024, Opéra Bastille © Elena Bauer

The results of the study can be viewed here: mod200.collectif17h25.org

This LCA has not been critically reviewed (by an independent third party), so the communication of these results is a self-declaration. The communication of these analysis results is the sole responsibility of Collectif 17h25.

B. The "Standard structures" project

B.1 → Behind the scenes: dedicated structures vs standard structures?

Most of the technical elements used in set construction are traditionally custom-made for each production. The principle of the Standard Structures project is to minimise single-use structures, known as dedicated structures, and maximise the use of reusable standard structures.

Standardising set structures helps to reduce the carbon footprint, resource consumption and energy costs associated with the production, transport and storage of sets.

A life cycle assessment (LCA) was carried out during the project to evaluate the environmental relevance of design choices and compare the use of dedicated structures with that of standardised structures.

> Life cycle assessment (LCA) is the most advanced tool for comprehensive, multi-criteria assessment of environmental impacts. This standardised method measures the quantifiable effects of products or services on the environment.
> Source: "Qu'est-ce que l'ACV ? ADEME, 2018 "

The LCA (Life cycle assessment) established that, from an environmental perspective, standardised structures have less overall impact than structures designed specifically for a production, provided they are used at least twice, both in the short and long term.

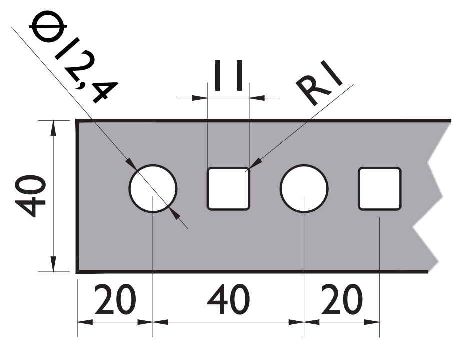
However, vigilance remains essential. While the standardisation of technical set elements is necessary, it is not sufficient to reduce the impact of the performing arts sector in line with the Paris Agreements. It must be considered as one component of a set of solutions aimed at reducing consumption, to be implemented in a complementary manner.

In terms of artistic issue, the transition from dedicated set structures to standardised structures does not alter the aesthetics of the set in any way. The scenographic rendering remains identical without any compromise on creative choices. By relying on a standard technical base, artistic teams also gain flexibility to adapt and transform sets during the course of their work.

B. The "Standard structures" project

B.2 ↓ The MOD 200

With this in mind, Collectif 17h25 has developed a standard modular technical structure called MOD 200, which consists of:



- ↘ MOD 200 profile — 40x40 mm, 2 mm thick, with Ø12.4 mm round holes and 11 mm square holes
- ↘ a reference grid based on a multiple of 200 mm
- ↘ a catalogue of construction elements and accessories available with the profile according to the grid

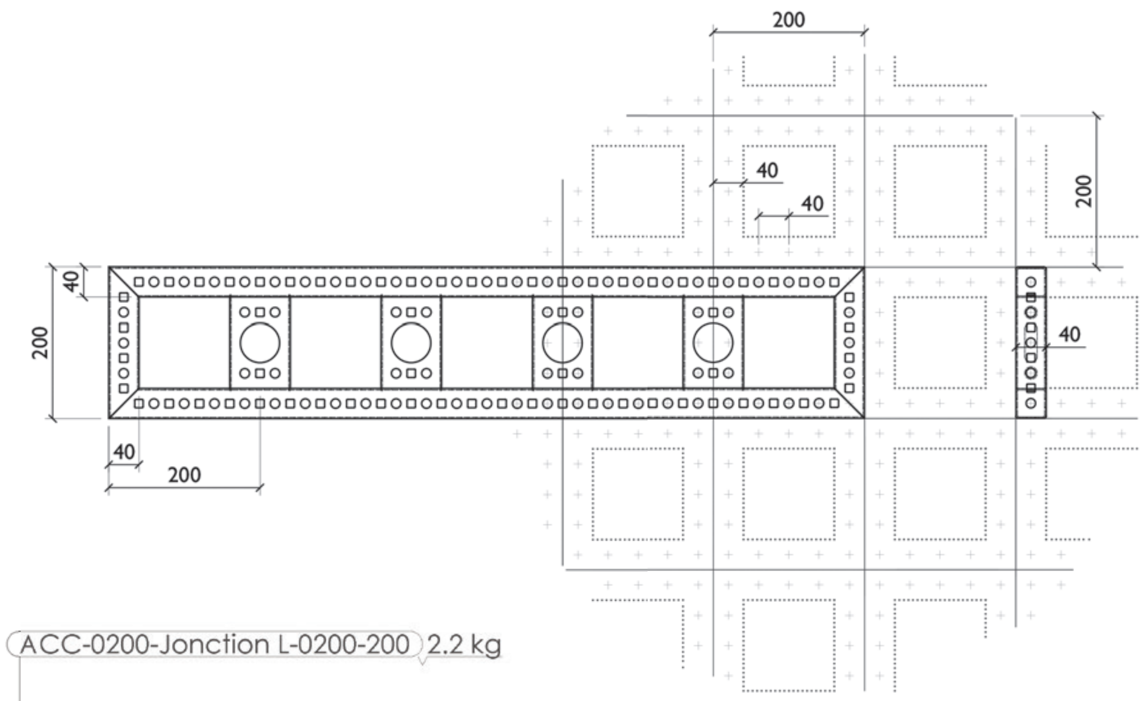
This common dimension of 200 mm makes the elements compatible with each other. The base profile is a square steel tube with 40 mm sides and a thickness of 2 mm, pierced by a grid of 12.4 mm round holes alternating with 11 mm square holes. The system is also based on a structural thickness and an assembly sub-frame every 40 mm, with regular "accessory" holes for connectors, accessories or fasteners.

In order to guarantee the modularity and interchangeability of the assembly, MOD 200 elements must not undergo any permanent modifications.

The scenario envisaged for sectoral implementation consists of equipping each vennue with an average stock of MOD 200 structures. This stock enables the technical part of the sets to be assembled on site, so that only the artistic elements — the "skins" — need to be transported during tours.

The benefits are environmental, economic and organisational. The MOD 200 system significantly reduces CO_2 emissions by reducing the volumes transported, creates a pool of reusable structures that can be shared between productions, and improves collaboration between partners.

1.



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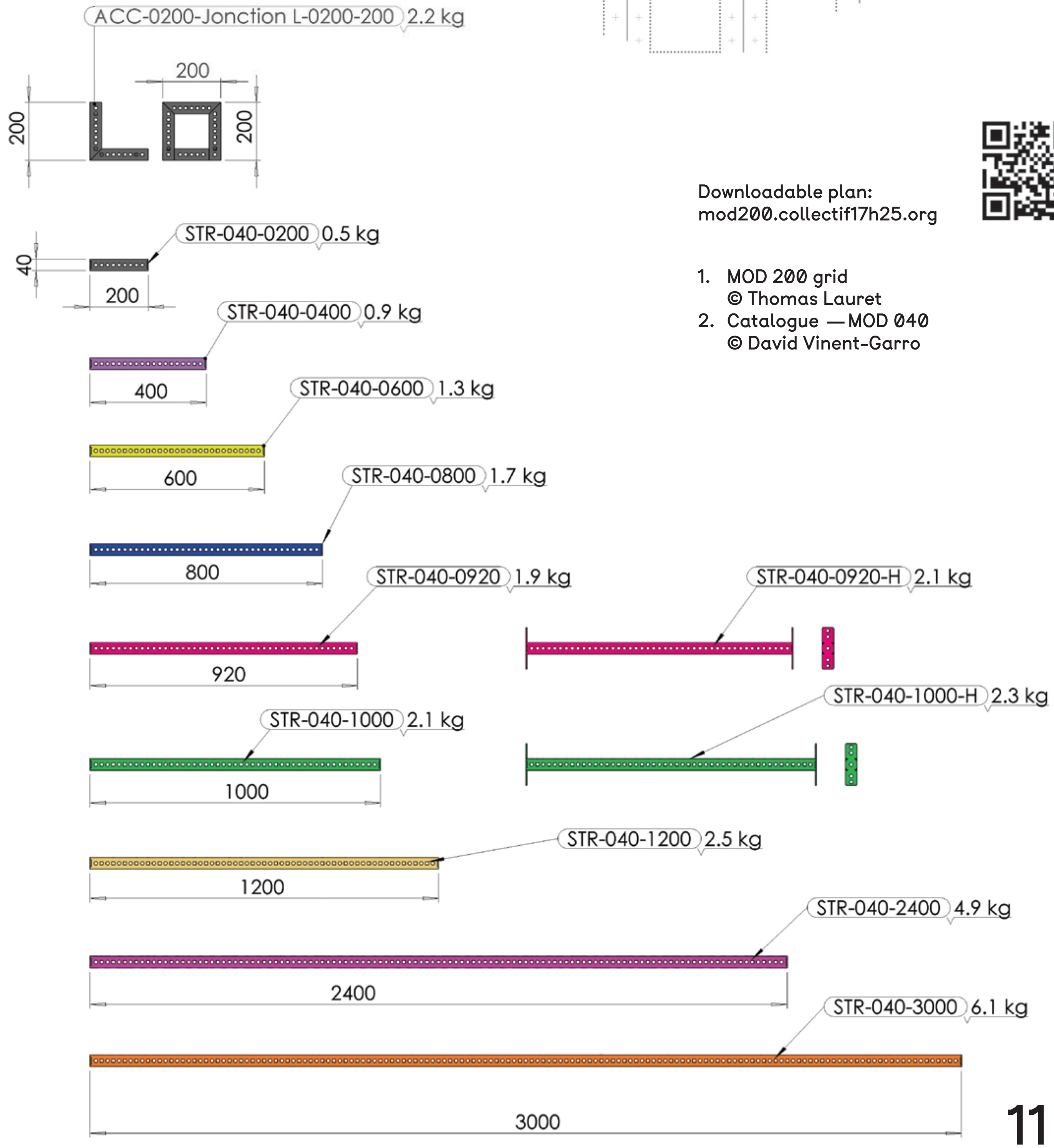
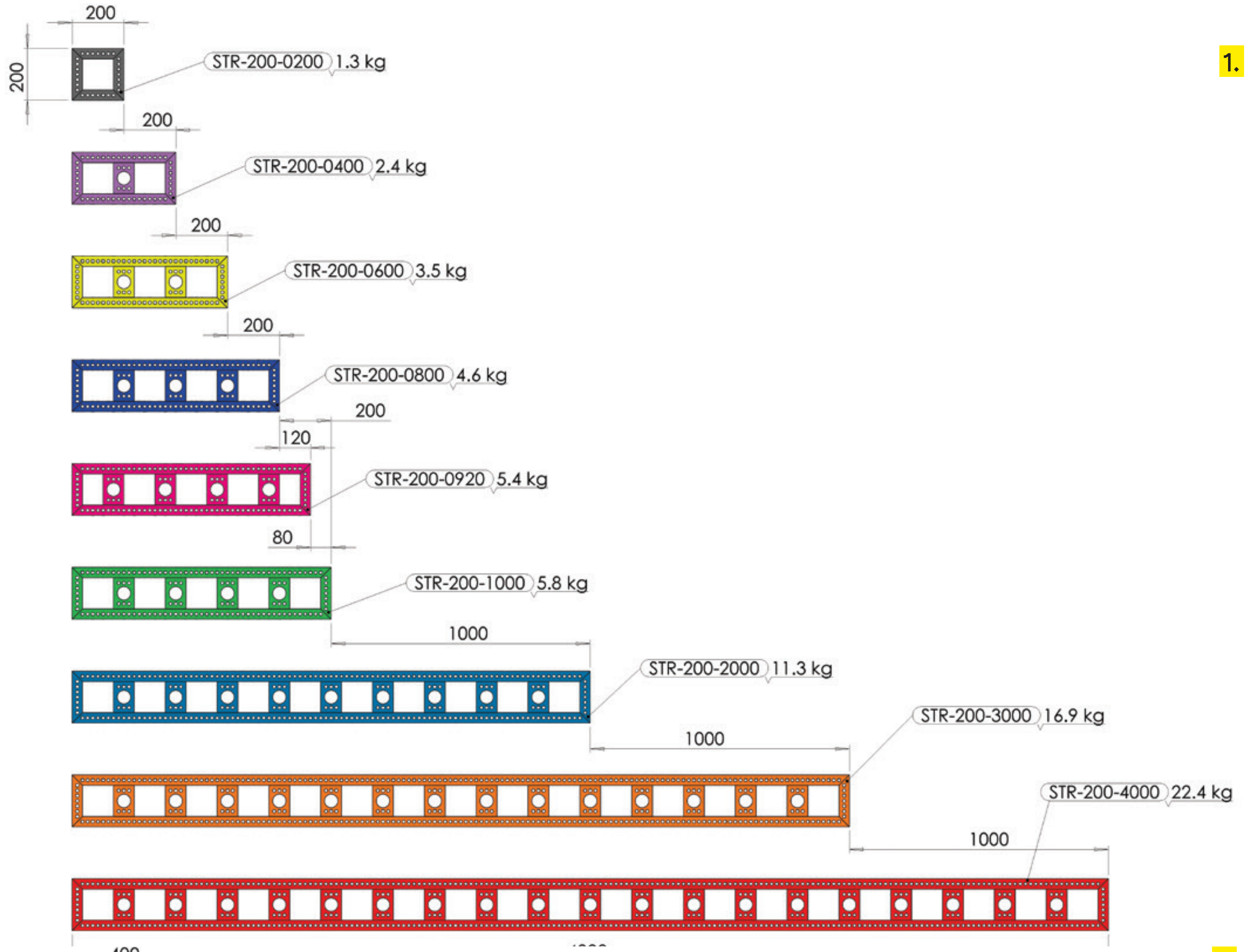
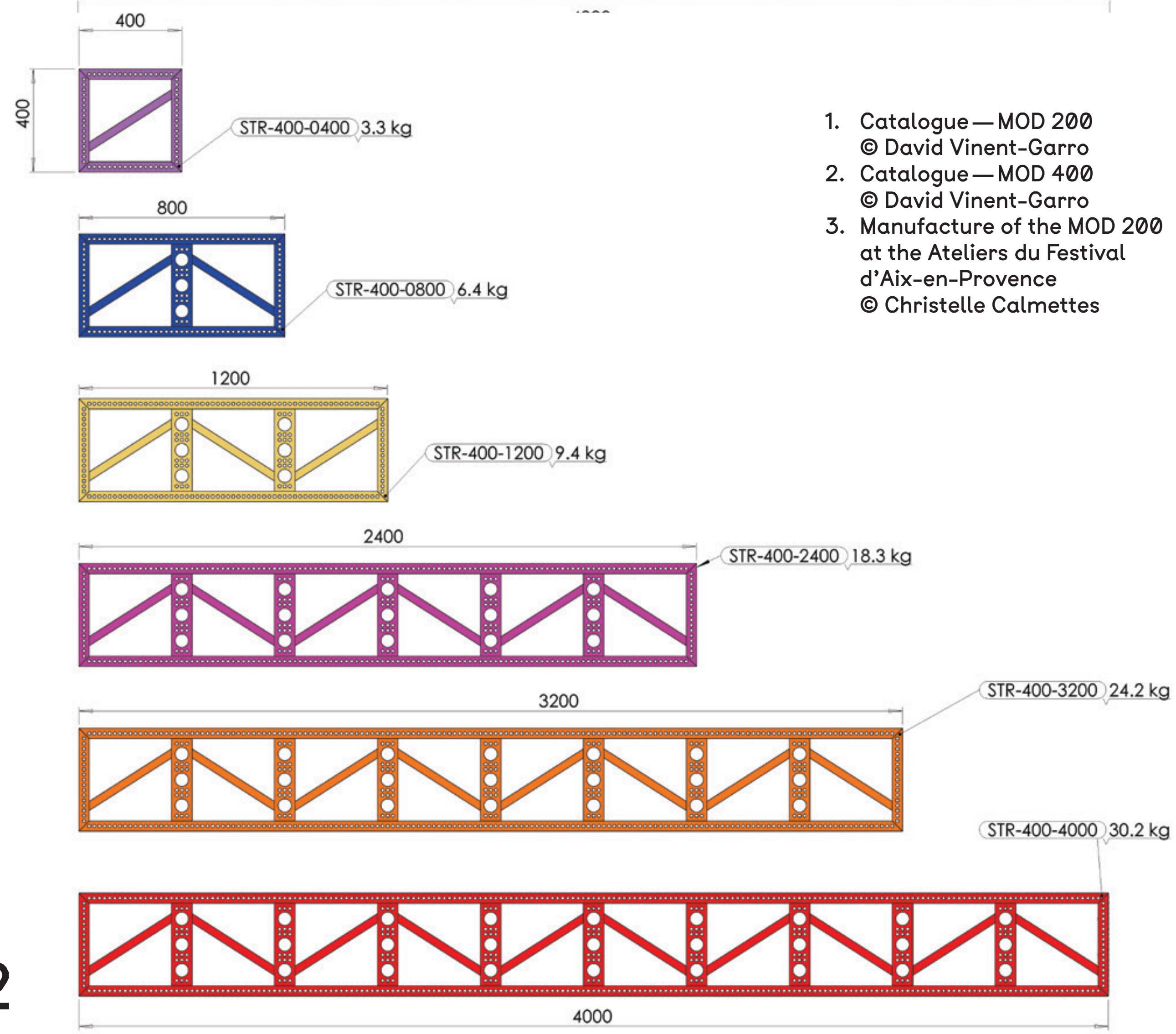


Downloadable plan:
mod200.collectif17h25.org

1. MOD 200 grid
   © Thomas Lauret
2. Catalogue — MOD 040
   © David Vinent-Garro





1. Catalogue — MOD 200
© David Vincent-Garro
2. Catalogue — MOD 400
© David Vincent-Garro
3. Manufacture of the MOD 200
at the Ateliers du Festival
d’Aix-en-Provence
© Christelle Calmettes

B. The "Standard structures" project

B.3 ↘ The *Creative* Commons licence

With a view to developing the sector, MOD 200 elements are published under a *Creative Commons* CC BY-NC-ND 4.0 licence.

This licence allows anyone to freely copy, share and distribute these elements on any type of medium and for any use.

Warning: Any organisation wishing to implement MOD 200 is entirely responsible for its use. It must ensure that it refers to the MOD 200 — Technical booklet. This technical booklet was designed by Collectif 17h25. It must be used in accordance with the technical and safety regulations applicable to removable structures within the framework of the “manufacturing and implementation process”. The Collectif 17h25 cannot be held liable for any and all direct or indirect, material, immaterial or financial damages resulting from a defect in the design, manufacture, installation or maintenance of the demountable structures, particularly towards third parties under the terms and conditions provided for by applicable case law.

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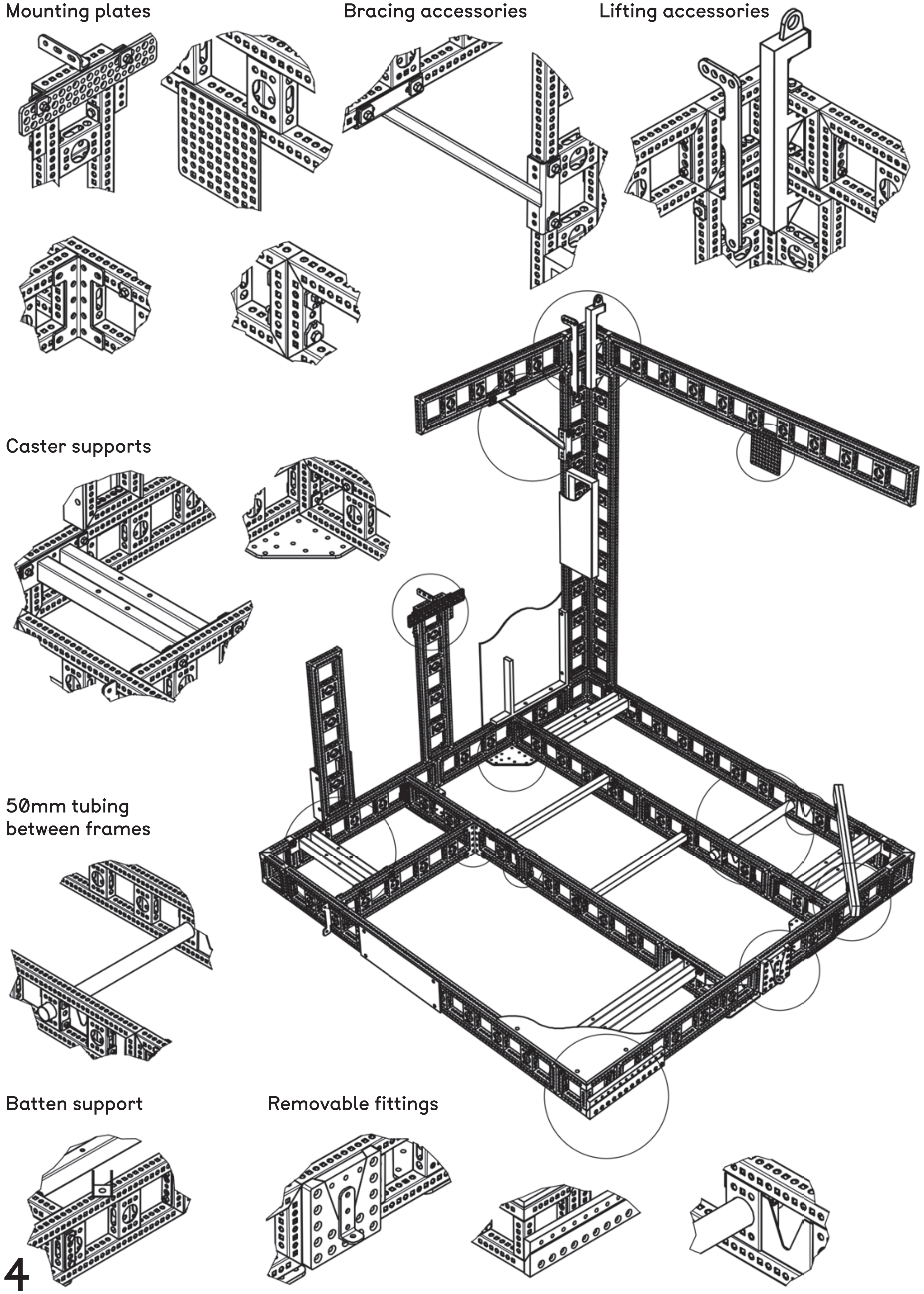
- ↘ Not add restrictions — It is prohibited to impose legal or technical limitations that would prevent others from using these elements under the same rules.

MOD 200: Examples of Accessories 1/10



C. Construction examples

C.1 → Opéra National de Paris

***Eugène Oneguine*, 2026**
8% of the set made with MOD 200

In *Eugène Oneguine*, 8% of the set is made from MOD 200 elements. The Paris Opera was the last to participate in the application's test phase and was able to benefit from feedback from the venues that had tested it beforehand, both in terms of logic and assembly method.

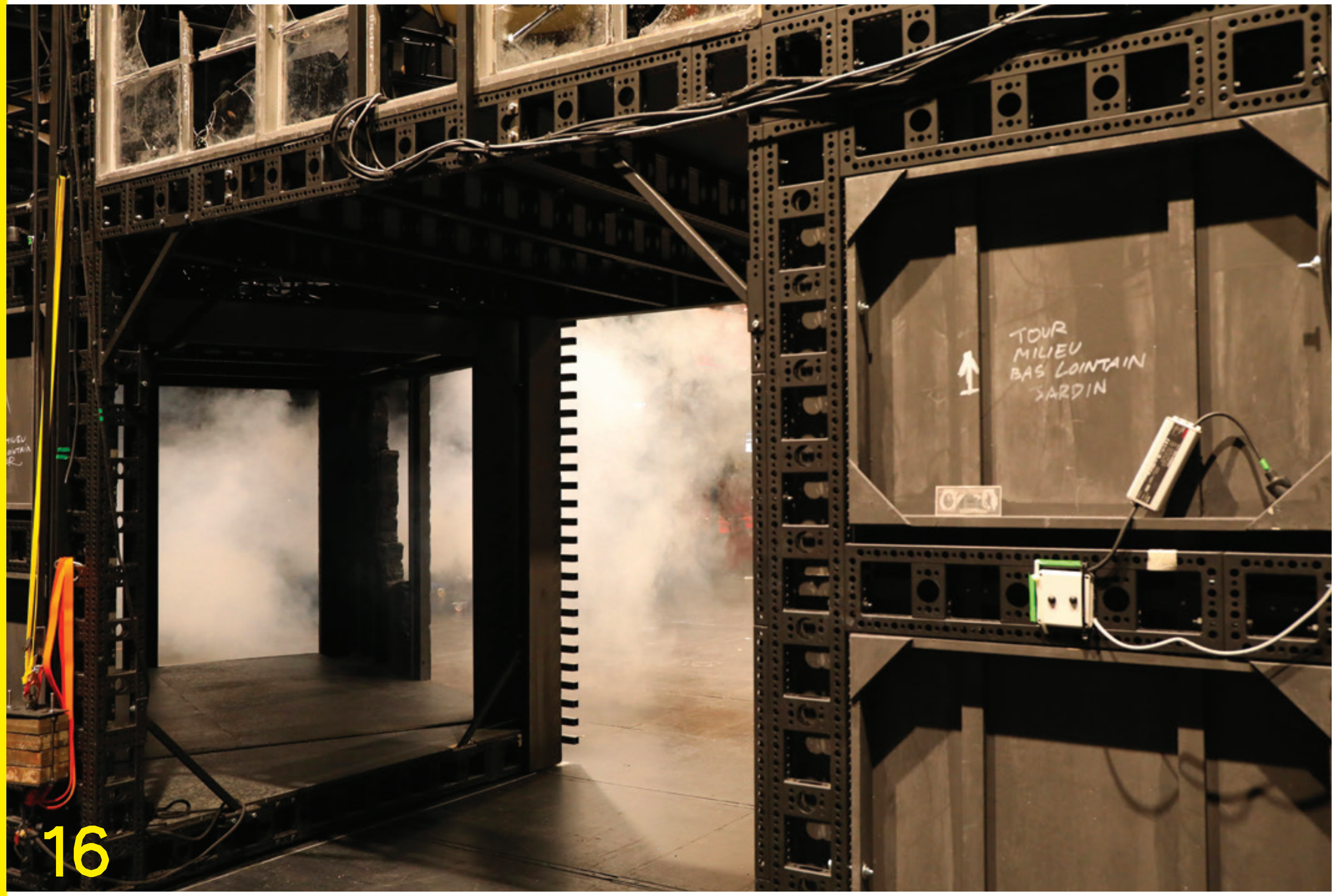
This stage highlights the importance in the process of sharing experience between venues in order to advance the MOD 200 system more quickly.

→ Side walls built with MOD 200 — *Eugène Onéguine*, Opéra National de paris ©Jean José Morra
→ *Eugène Onéguine*, Opéra National de paris © Elena Bauer

***L'Histoire du Soldat*, 2024**
70% of the set made with MOD 200

In the production of *L'Histoire du Soldat* at the Théâtre du Châtelet, 70% of the set was made with MOD 200. The elements are visible, their aesthetics having been integrated into the scenographic design.

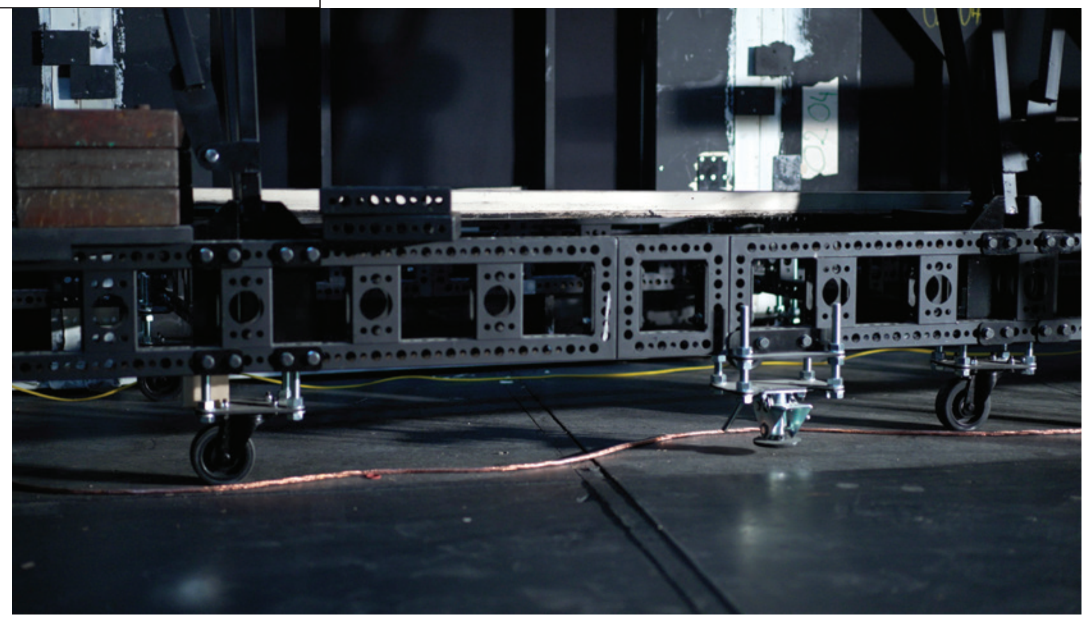
→ *L'histoire du soldat*, Théâtre du Châtelet © Thomas Amouroux
→ The Back of the Set — *L'histoire du soldat*, Théâtre du Châtelet © Laurine Schott



***Hamlet*, 2024**
10% of the set made with MOD 200

The elements built for *L'Histoire du Soldat* were then reused in a second production, *Hamlet*, representing approximately 10% of the set design.

→ *Hamlet/Fantômes*, Théâtre du Châtelet ©Thomas Amouroux
→ Carts made from MOD 200, *Hamlet/Fantômes*, Théâtre du Châtelet ©Thomas Amouroux



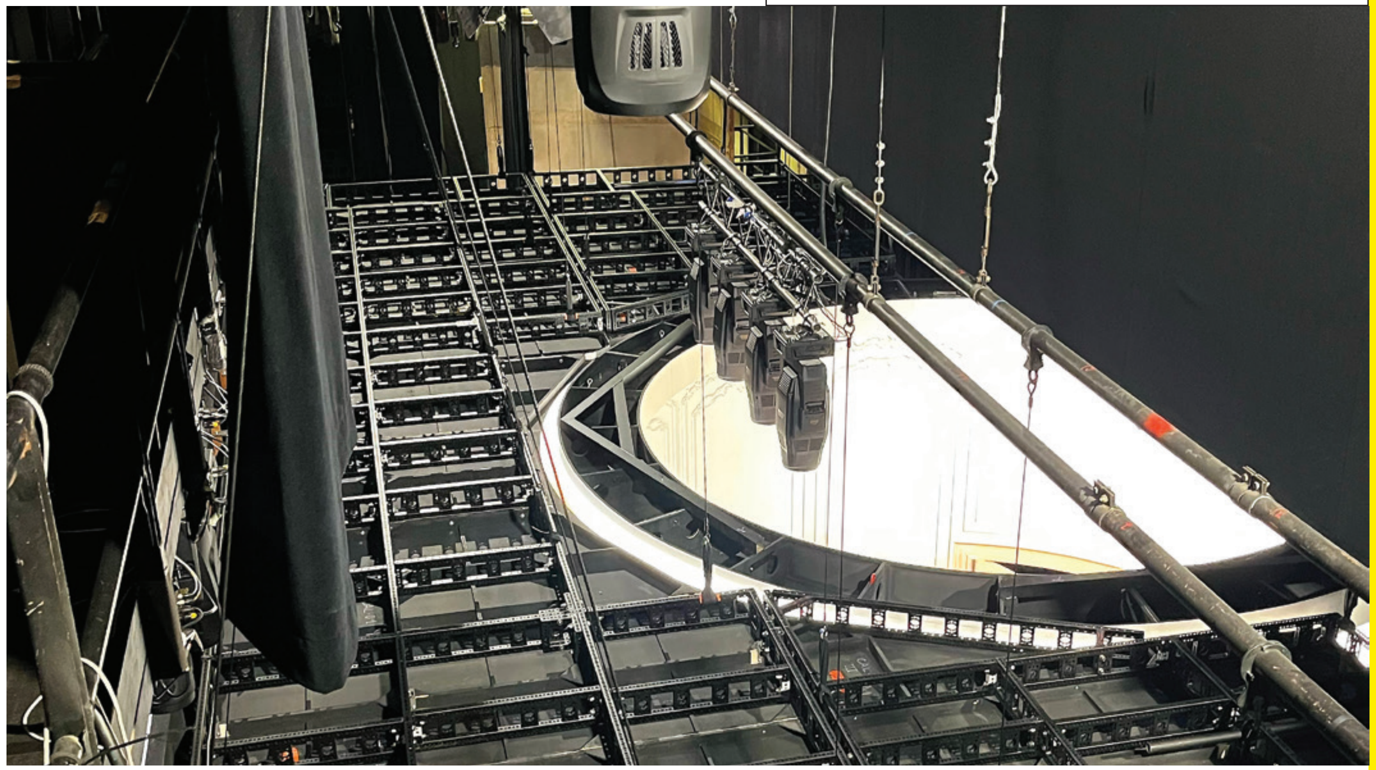
C. Construction examples

C.3 ↘ Festival d’Aix en Provence

***La Calisto*, 2025**
40% of the set built using MOD 200

In *La Calisto*, 40% of the set is made from MOD 200 elements. These make up the entire ceiling structure and meet lifting requirements.

The set design shows that it is possible to use MOD 200 to create circular shapes from rectangular elements, with no visible difference between the model and the final result on stage. The circular elements are made from dedicated structures assembled with MOD 200..



→ Ceiling — *La Calisto*, Festival d’Aix en Provence 2025 © Laurine Schott
→ *La Calisto* — Festival d’Aix-en-Provence 2025 © Monika Rittershaus

C. Construction examples

C.3 ↘ Festival d’Aix en Provence

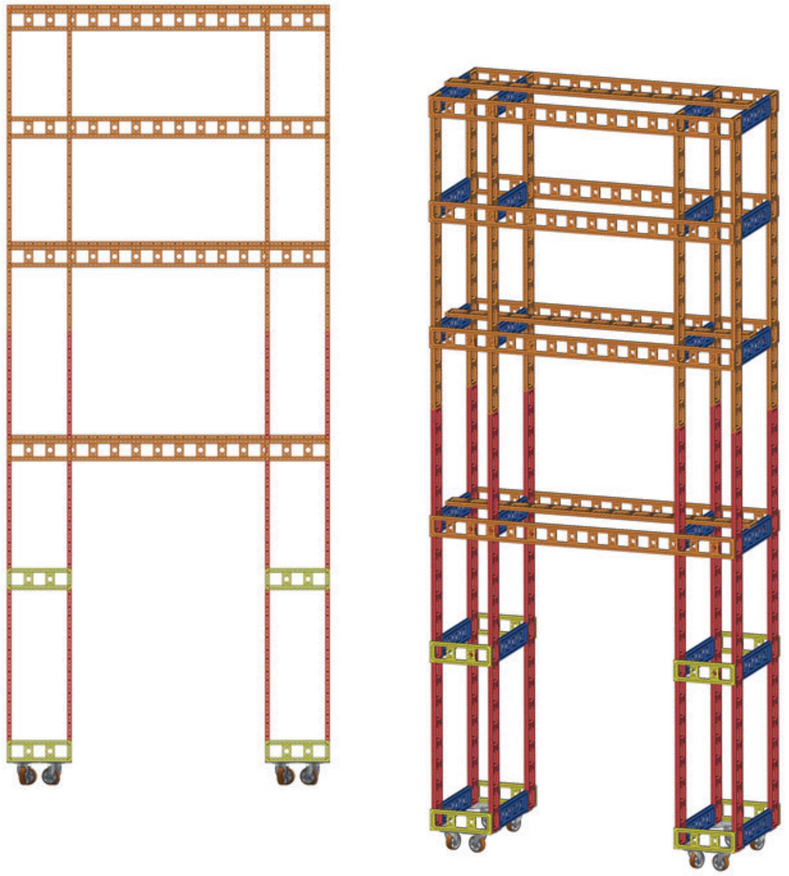
***Don Giovanni*, 2025**
20% of the set made with MOD 200

In Don Giovanni, 400 mm MOD 200 trusses are hybridised with dedicated structures.

→ *Don Giovanni,* Festival d’Aix en Provence © Monika Rittershaus
→ Hybrid structure in MOD 200 and dedicated structure — *Don Giovanni,* Festival d’Aix en Provence © David Vinent-Garro

C. Construction examples

C.4 → Festival d'Aix-en-Provence and Opéra National de Lyon co-production



***Louise*, 2025**
40% of the set made using MOD 200

In *Louise*, the rolling structural elements supporting the MOD 200 walls of the set design are made from MOD 200. 40% of the set is made from MOD 200 elements.

→ Tower in MOD 200 — *Louise*, Festival d'Aix-en-Provence and Opéra National de Lyon co-production © David Vinent-Garro
→ *Louise*, Festival d'Aix-en-Provence and Opéra National de Lyon co-production © Monika Rittershaus

C. Construction examples

C.5 ↓ Théâtre Royal de la Monnaie

***Fanny and Alexander*, 2024**
30% of the set made from MOD 200

In *Fanny and Alexander*, the stage-right and stage-left walls covered with mirrors are made of MOD 200 elements, representing 30% of the set. The MOD 200 elements were reused spontaneously by the teams to create a stage trapdoor for the production of *Falstaff*.

Familiarisation with MOD 200 and optimisation of the assembly method have enabled the teams to take ownership of the system, paving the way for significant development potential once the adaptation phase is complete.

→ Wall in MOD 200 — *Fanny and Alexander*, La Monnaie, 2024 © Laurine Schott
→ *Fanny and Alexander* La Monnaie, 2024 © Bauss

D. Scenario for the future

After three years of developing the MOD 200 system, the Collectif 17h25 wishes to continue this work and roll it out on a larger scale. The ambition is now to disseminate the project's achievements and gradually involve stakeholders in the performing arts sector in the development of MOD 200, in line with the objectives of ecological transition and sustainability.

The major challenge identified in order to amplify the environmental benefits of the MOD 200 system is that of scaling up. While the adoption of MOD 200 by a venue, as a substitute for dedicated structures, already allows for a reduction in impact in the short term, the full effectiveness of the system depends on its widespread use across the sector. The ultimate goal of this widespread use is to eliminate the transport of technical performance structures during tours by relying on regional stocks.

The strong interaction between the five opera houses of Collectif 17h25 and the rest of the sector, through co-productions and tours, among other things, will facilitate experimentation and the gradual adoption of MOD 200 by a growing number of players.

However, this ramp-up will require a transition period, during which MOD 200 structures will continue to circulate between venues. It is therefore essential to reduce the duration of this transition phase as much as possible to ensure the environmental validity of the project. At this stage, the deployment prospects are envisaged over a 10 to 15 year horizon, a period that will need to be reassessed and adjusted in consultation with stakeholders in the sector wishing to commit to this approach.

Accelerating this transition relies on several complementary levels. At the organisational level, the first challenge is to ensure the short-term sustainability of the organisation and momentum established within the Collectif 17h25 with centralised management to guarantee the continuity, consistency and momentum of the project. The second objective is to build a sustainable, committed and participatory professional community. Sharing feedback, disseminating best practices, training and acculturating stakeholders are key drivers of development. In the longer term, the approach aims to foster a common culture based on shared standards, proven practices and a network of stakeholders capable of collectively supporting and renewing the project.

At the operational level, maintaining an approach based on co-production between the venues is a key level. Co-production projects are identified as the main tools for testing, validating and disseminating the system. They enable the MOD 200 system to be tested in real-life situations, through concrete productions, and credible demonstrators to be produced. Demonstration through example and practice are essential for removing obstacles, convincing and onboarding new players.

To support these organisational and operational issues, the development of common and scalable tools is necessary. This includes creating a shared platform integrating a common library, an online resource and dissemination space, as well as appropriate management solutions for stock tracking and the circulation of items.

The MOD 200 project is now moving towards gradual, collective deployment across the sector, using a participatory and operational approach. Based on co-production, structured management and shared tools, this dynamic should enable to generalise the uses, shorten the transition phase and maximise the environmental benefits of the system for the creative industry.

E. FAQ

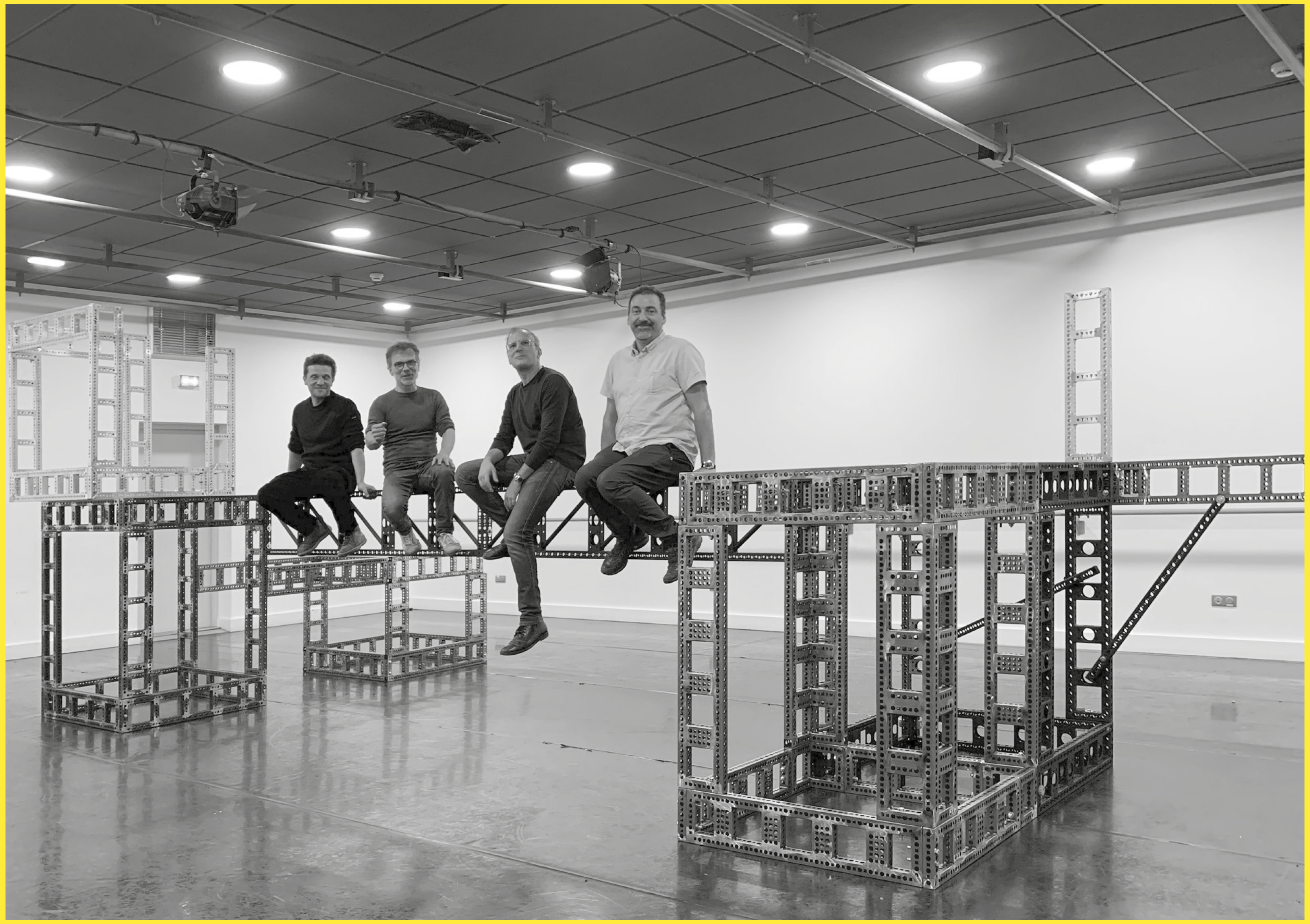
▶ Question 1
Is it possible to combine dedicated structures and MOD 200?
A: Yes, it is entirely possible to assemble both types of structures; this is a collaborative effort with the Technical Department.

▶ Question 2
Does MOD 200 preserve my creative freedom?
A: Yes, MOD 200 is a way of creating the structural part of a set and has been designed to come as close as possible to the artistic vision.

▶ Question 3
What if the performance venue does not have a construction workshop?
A: It is not necessary to have your own construction workshops to work with MOD 200. Venues without workshops subcontract to external companies or metalworkers to build MOD 200s. In addition, the MOD 200 structure is licensed under *Creative Commons* CC BY-NC-ND 4.0 and therefore accessible to all.

▶ Question 4
What if the venue does not have a MOD 200?
A: The venue can turn to other organisations to borrow/rent MOD 200s or have them built, as they will always be useful in the future.

▶ Question 5
Should I be concerned about integrating MOD 200 into my creations?
R: The involvement of MOD 200 in the creative process depends on each individual's assessment and willingness.



MOD 200

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Printing : CCI

Booklet, French version