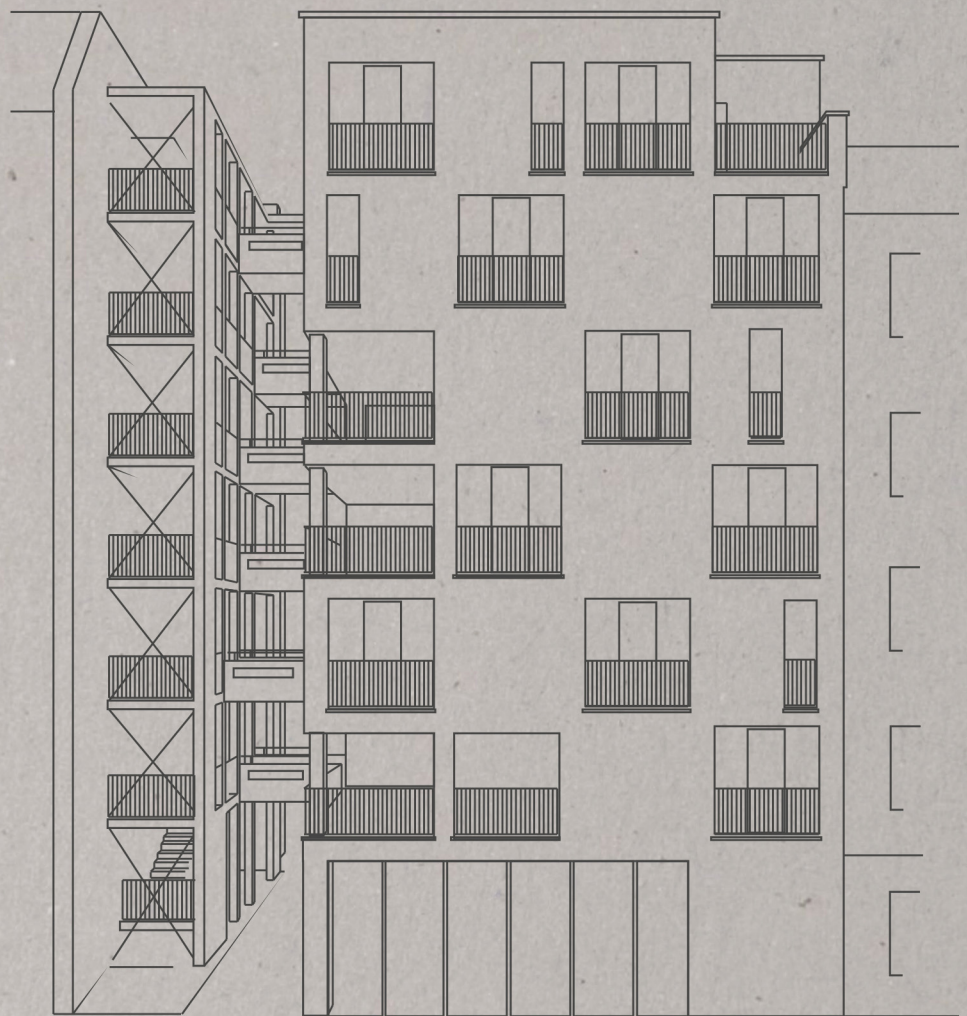


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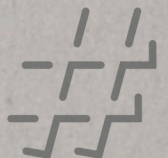
Book

Hybrid Timber Building

Mixed construction methods
as carbon storage



ff publishers



Circular Sports Complex Bredius in Muiden

The Bredius sports complex is an ensemble of sports hall and sports park. The high volume and a canopy with delicate supports express the different scale levels in terms of use, sports experience, and functionality.

The sports hall is located between all sports fields in the heart of the park, which enables an optimal sports experience. It is built on two floors, with space for changing rooms and a canteen at the bottom of the plinth hall, and is organized to serve both indoor and outdoor athletes. On the ground floor, a bright demarcation intuitively guides the users of the sports hall and outdoor sports facilities for hockey and football to

architectural canopy is also functional. The architectural canopy provides shelter from the sun to the underlying functions, namely the meeting space, the meeting rooms, the gym area of the sports hall, and the teachers' and administrators' area. It also offers protection from the rain, so that even in bad weather you can enjoy a panoramic view of the various outdoor soccer and field hockey pitches.

The aspect of the circular economy was part of the design process from the outset. This included finding a specific aesthetic that serves and expresses circular design: The sports hall was deliberately designed so that it can be easily dismantled and reassembled. This allows products and materials to be separated and reused as a product or, if that is not possible or desirable, as a raw material for new products. In addition, preference has been given to healthy, non-toxic materials that are suitable for high quality downcycling after initial use and after all forms of reuse, and for which good, reliable origins have been considered.

The primary supporting structure of the three-story sports hall is made of steel and timber. The mixed-elastic sports floor, specially designed for the Bredius sports hall, has a base layer made of recycled material from old sports floors. For the changing and showering areas, an existing demountable wall system was converted into a completely new wall partition system that is fully demountable, waterproof, and visibly round.

The degree of circularity was quantified by the RPR-tool of the circular consultant Rendement, so all decisions could be compared to the deviation from an Absolute Circularity. This Absolute Circularity means, that quantity and quality before and after use remain equal.



Circular sports complex Bredius is the new home base of SC Muiden. It forms the scenic entrance to Muiden and the Krijgsman.

find their way around the building. By introducing vast internal windows over the full length of the gym area on the first floor, viewing lines were established that restore that connection to meeting room, terrace, and outdoor sports.

The architectural canopy is deliberately raised to a high level which allows for a maximum sports experience between all sports fields for indoor and outdoor sports. It became an attractive connecting space for both meeting people and experiencing the ongoing sports. In addition to its urban and architectural relevance, the



The sports hall has the maximum dimensions so that matches for indoor hockey and football, for example, can be played.

The canopy provides shelter from the sun and from the rain, so that you can stay dry and have a view of the various outdoor sports fields for football and hockey.



Facts and figures

ADDRESS **Maxisweg 20, 1398 BT Muiden, The Netherlands**
 ARCHITECTURE **Lichtstad architecten** www.lichtstadarchitecten.nl
 GENERAL CONTRACTOR **Rots Bouw**
 STRUCTURAL ENGINEERING **JVZ ingenieurs** www.jvz.nl
 CIRCULAR CONSULTANT **Rendemint** www.rendemint.nl
 SPORTS CONSULTANT **Odin Wenting Bouwadvies**
 ACOUSTICS **Tig Akoestiek**
 INSTALLATIONS **Breman Utiliteit**
 INTERIOR WALLS **Intermontage**
 MANAGEMENT **Bert Vossebelt, Samenwerkende Ingenieurs**
 SPORTS FLOOR **Herculan**
 TIMBER CONSTRUCTION COMPANY **LDC Wood** www.ldcwood.com
 CLIENT **Municipality of Gooise Meren**
 PHOTOS **BASEphotography** www.basephotography.nl
 PROCUREMENT PROCEDURE **Design & Build competition**
 GROSS FLOOR AREA **3,400 m²**

Timetable

COMPETITION **September 2020** DECISION **May 2021** OPENING **January 2023**

Certificates and standards

PRP Rendemint circularity

Construction and materials

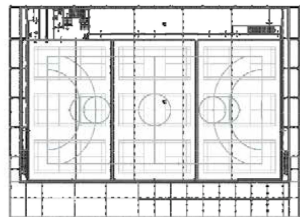
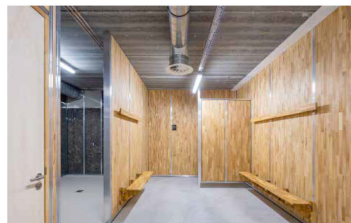
BASIC CONSTRUCTION **steel and concrete** FLOORS **timber and concrete**
 INTERIOR WALLS **wood and glass** FAÇADE **steel and wood** ROOF **steel and wood**

Wood

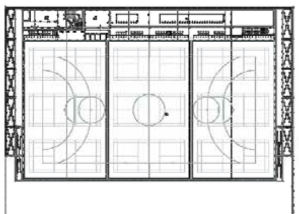
Rubberwood for interior walls; larch for exterior wood construction; spruce for façade

Other sustainability aspects and TBE

Demountable interior walls of wood and glass in shower rooms without glue or sealant; new elastic sports floor made from recycled material of old sports floors; recycling of old system wall panels



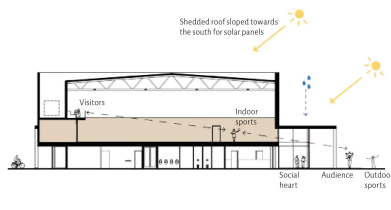
First floor



Second floor



Ground floor



Concept section

The Bredius Gymnasium is located in the heart of the park, between all the sports fields, for an optimal sports experience.

The architectural canopy provides shelter from the sun to the underlying functions, namely the meeting space, the meeting rooms, the gym area of the sports hall and the teachers' & administrators' area.

Changing room and showering area convert an existing demountable wall system into a completely new partition wall system.

The primary construction combines wood with steel and concrete.

