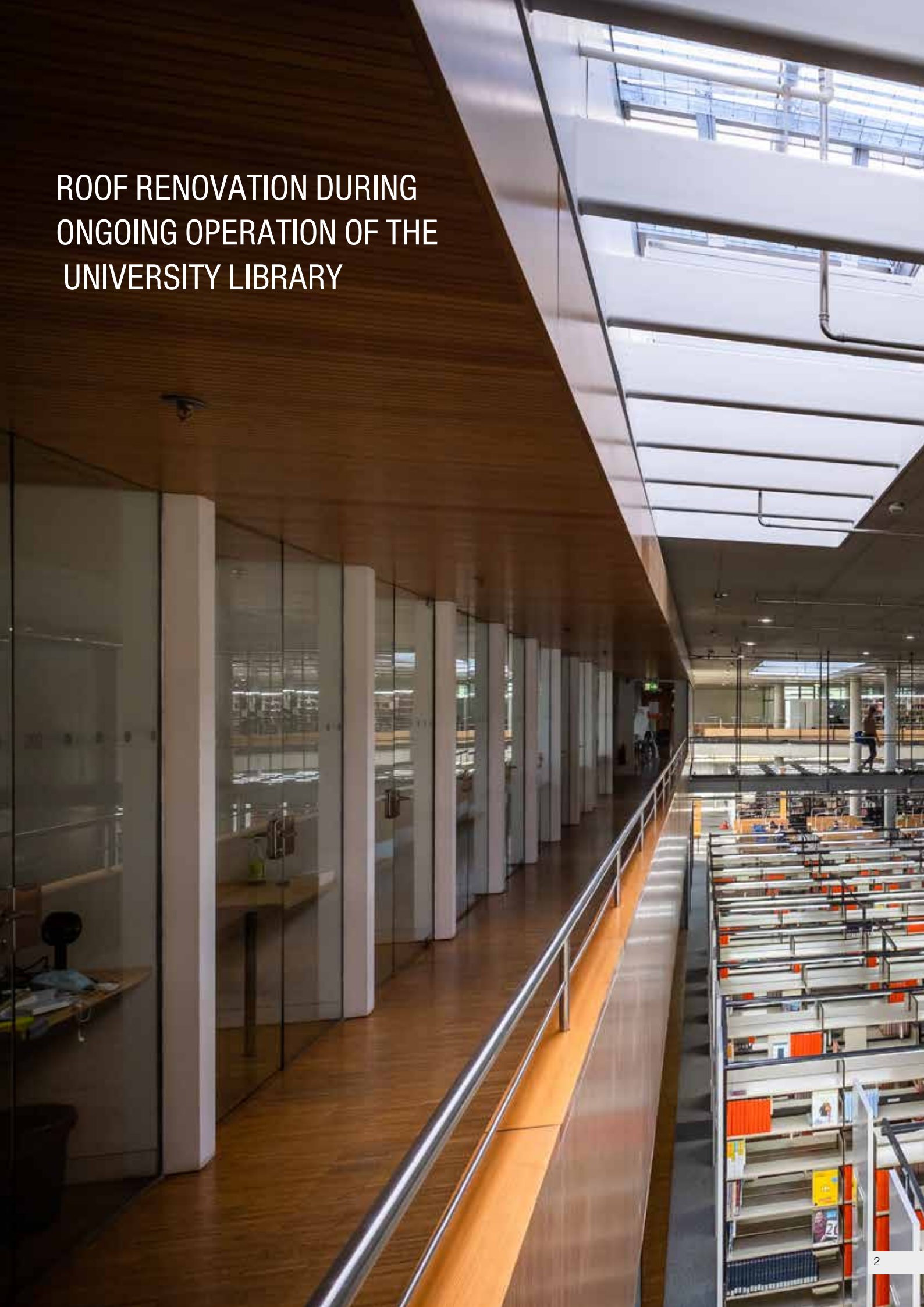




REFERENCES

UNIVERSITY LIBRARY MAGDEBURG

ROOF RENOVATION DURING ONGOING OPERATION OF THE UNIVERSITY LIBRARY



1.2 million media contents are waiting to be discovered by students and interested parties at Magdeburg University Library. To provide a pleasant atmosphere for the average of 194,000 visitors per year, the library needs sufficient fresh air and daylight. These two components were created by a comprehensive renovation while the university library was still in operation. The second largest library in Saxony-Anhalt was opened in 2003 and is located on the campus of Otto von Guericke University in Magdeburg near the Elbe River. At the university, thousands of people come together every day to pursue the vision "Reimagining the world together". But the positive working and learning atmosphere in the university library had been affected by leaking skylights for several years.

BRIEF DESCRIPTION

Location: Magdeburg University Library
Project: Renovation
Period: Mid-August to beginning of October
Object installed: 26 double flap ventilators type Phoenix with fall-through protection, hail resistance class HR5, glazing version Softlite



Dipl.-Ing (FH) Sandra Hahn-Meyer,
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„There had been some dripping through the old ventilation system. This was unsatisfactory, therefore renovation was necessary. Despite the necessary renovation work, the operation of the university library had to be maintained. roda made this possible with a quick replacement of elements and a trouble-free execution of the renovation work. The project managers as well as technicians reacted very quickly and flexibly to unforeseen events. The execution was organised perfectly, allowing for a quick completion of the job. And the result convinces us. The rooms seem much friendlier now. Certain areas that were dark before are also illuminated with daylight now. The library is now perceived much more positively again.”

RENOVATION DURING ONGOING OPERATION

The renovation was carried out during the examination period in the non-lecture time, under the condition that teaching and research would not be impaired. In order to keep the library running, only the area under the openings where the element was replaced was closed off. A time frame of one day was planned for each opening, so that only a few library shelves were blocked off for one day at a time. One of the reasons why this worked so well was that with the roda solution, the existing control unit of the old system could still be used.

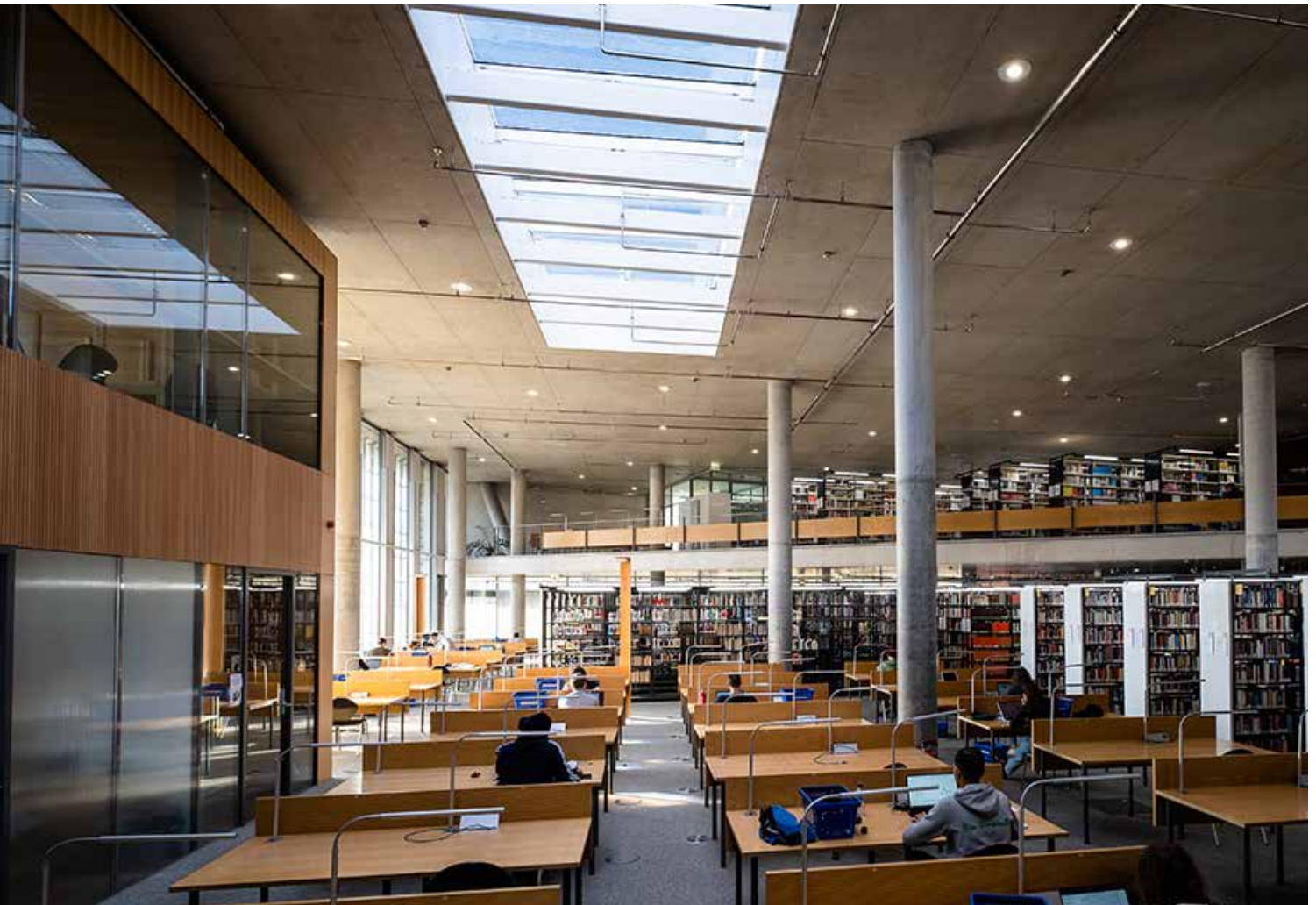
This way, the control unit could be maintained completely, including the feedback control. The existing power lines were also to be used in future, in order to keep the efforts as low as possible. Therefore, the 24V motors from roda were assembled in a way so that they do not draw too many amperes while at the same time considering the power loss in a 24V power grid. In addition, voltage modules were installed in the SHEV control central to increase the output power.



Before: Louvre Ventilator



roda solution: Double flap ventilator type PHOENIX



THE RODA SYSTEM

The particular challenge of the renovation was to find a solution that is convincing in the long term due to its long life as well as practical in its implementation. Therefore, the decision was made for the double flap ventilator type PHOENIX, which can be manufactured with millimetre precision and is therefore ideally suited for renovations.

The old problematic louvre ventilators were replaced by 26 roda double flap ventilators measuring 3000 x 1500 mm. The systems were placed on the on-site base systems without the need for a complete replacement of the base and thus an opening of the roof cladding.

Technically, the roda double flap ventilators offer thermally separated cowls, a rain sensor and position sensors for monitoring the flaps. Part of the roda solution was also the configuration of the motors. To avoid having to make any changes to the control system, the motors were configured in such a way that smaller drives with two amperes instead of four amperes were used. This allows the on-site control system to read the signals one-to-one and control the 24V electric drives. In addition, the systems offer fall-through protection tested according to GS-Bau 18, so that safe working on the roof for assembly, maintenance and renovation work is guaranteed in the long term.



With 117m² of light-flooded total area and Softlite glazing, the library is illuminated without glare and with the best possible daylight. Soft transitions create the perfect learning and working atmosphere. The glazing consists of polycarbonate multi-skin sheets with hail resistance class HW5, the highest hail protection class for plastic glazing for hailstones up to the size of a hen's egg.



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PHOENIX AND MEGAPHOENIX



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SMOKEJET AND MULTIJET



SMOKE CURTAINS



LOUVER WINDOWS



DAYLIGHT TECHNOLOGY



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VENTILATION



SMOKE AND HEAT
EXHAUST VENTILATION



RENOVATION



MIROTEC GLASS AND
METAL CONSTRUCTIONS



LAMILUX DAYLIGHT SYSTEMS

The technical data listed in this brochure correspond to the current status at the time of printing and are subject to change. Our technical data refer to calculations, supplier information or have been determined by an independent testing institute in the course of a test in accordance with the applicable standards. The heat transfer coefficients for our plastic glazing were calculated using the "method of the finite elements" with reference values according to DIN EN 673 for insulating glass. In doing so, the temperature difference of 15 K between the outer surfaces of the material was defined, taking into account practical experience and the specific characteristics of the plastic. The functional values refer only to test pieces in the dimensions intended for the test. No further guarantee for technical values is given. This applies in particular to changed installation situations or if subsequent measurements are made on the building site.



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