ENERGIMAC
Soluções de Climatização e Desenfumagem, Lda.

roda

Refurbishment strategies from roda for

- Lighting
- Ventilation
- Smoke and heat extraction
- Heating

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Skylight refurbishment:

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- Plastic skylight refurbishment

Replacing plastic lighting elements after:

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- Hailstone damage
- Storm damage

with

- New lighting elements
- Natural ventilators to improve ventilation
- Weather-shielded ventilation systems

Complete refurbishment:

- Ventilation
- Heating
- Daylight
- Smoke and heat extraction systems

REFURBISHMENT AND REPAIRS

If you are faced with such challenges, the task often calls for more than just restoring the building to its original condition. Modernisation and adapting to new operating conditions and the increased demands associated with this also have to be taken into account. Issues of cost reduction and increases in productivity play a major role.

In the course of roof refurbishment it is often possible to repair or renew the skylights and thus the building's ventilation and smoke and heat extraction equipment so that these are brought up to today's technical standards.

Refurbishment and repairs are important parts of maintaining industrial buildings and associated fixtures and fittings.

- Reduced heating costs through better insulation
- Adjustment of venting and ventilation systems
- Adjusting the areas exposed to light to actual needs
- Up-to-date fire protection from heat and smoke extractors
- Modified heating with lower heating needs or new sources of energy

roda provides solutions for every area

Our specialist engineers will look at your problem on site and work out an appropriately tailor-made solution for you.

We have experience from thousands of such projects and are able to provide you with references from renowned clients.

We are with you all the way – From on-site analysis to final acceptance.

Only when you are satisfied, are we content!

Complete skylight refurbishment by roda – The one-stop solution

For skylight refurbishment, roda's complete service is available to you: From on-site survey to final acceptance. Whether the work you need doing is due to leaks, a lack of daylight, unduly high energy loss or a change of use, a roda specialist engineer will survey the task on site. A refurbishment plan is then worked out in accordance with your wishes, taking into account the following basic requirements:

- More or fewer daylight entry points in the roof
- Natural ventilation required
- Smoke and heat extraction integrated
- Better U-values for energy savings
- Possible statutory conditions

The solution is subsequently tailored to all of these requirements.

The challenge:

- Refurbishment of partially leaking reinforced glass skylights
- 50% reduction in skylight surface area
- Improved natural ventilation
- Better insulation, because heating costs too high
- Modern smoke and heat extraction

The roda solution:

- Take out and dispose of the panels of reinforced glass
- Protect the rung construction against corrosion
- Flash one side of the skylights with insulating board
- Flash the other side of the skylights with polycarbonate triple seamed panels (U-value 2.6)
- Install roda's Phoenix double flaps with pneumatic control system

Other buildings facing the same or similar problems:

BEFORE

Single-skinned glass skylight (U-value: 5W/m²/K) with unsealed glazing. Reverse side: Weathered roof sealing with poor insulation and single-skinned slat ventilators.

Weather-beaten, defective glass skylight without insulation, ventilation or smoke/heat extraction.

Defect glass skylight with ridge ventilator not insulated – corroded, no smoke/heat extraction function.

AFTER

Polycarbonate double seamed panel glazing (U-value 2.4W/m²/K). Reverse side clad and sealed with pinched seam aluminium panels. Universal ventilation / smoke and heat extraction louvers, insulated and with modern controls.

New build using a barrel skylight made of multi-seamed panels on an existing mounting frame with integrated universal ventilation and smoke/heat extraction systems and controls.

New build of polycarbonate multi-seamed panels after overhauling the rung construction with new cover frames. Ventilation and smoke/heat extraction separately.

Other buildings facing the same or similar problems:

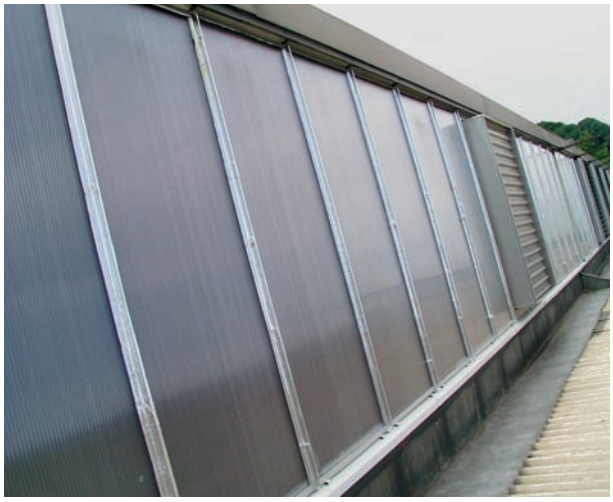
BEFORE

Corroded, simple shed-roof style glazing with loose ventilation flaps, no longer usable.

Corroded glass skylight with single-skinned glazing, without ventilation or smoke/heat extraction.

Defective single-skinned glass skylight with ventilation attachments, without smoke/heat extraction.

AFTER



Insulated polycarbonate glazing on the existing rung construction, with integrated universal ventilation / smoke/heat extraction louver system and controls.

Completely rebuilt as an aluminium rung construction, painted and with integrated ventilation / smoke/heat extraction louver system and controls.

Polycarbonate multi-seamed panels as a rung construction (U-value: 1.8W/m²/K) on existing rung sub-structure with universal ventilation / smoke/heat extraction louver system and controls.

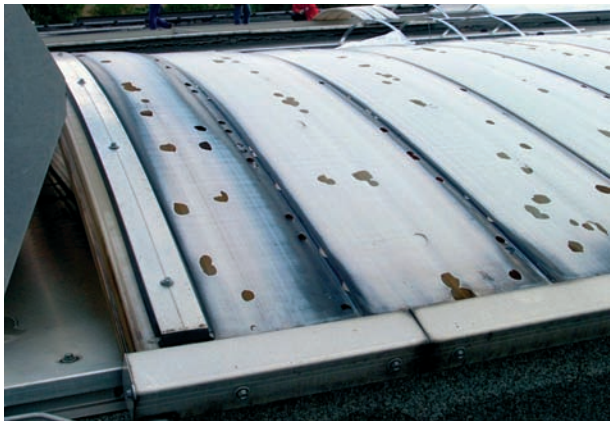
Curved skylight – Weathering – Hailstone damage

As a result of environmental effects and changing weather conditions, such as hail, older skylight and heat and smoke extraction systems sometimes become 'blind', i.e. they lose transparency and impact strength and can even be damaged in severe hail storms. This danger can be counteracted by using newer materials with appropriate coatings.
Polycarbonate as a multi-layer material or solid board is largely impact resistant and, depending on material combination, resistant to hailstone damage as well.

roda refurbishes skylights and smoke/heat extraction systems of all makes, bringing them up to the technological standards of today!

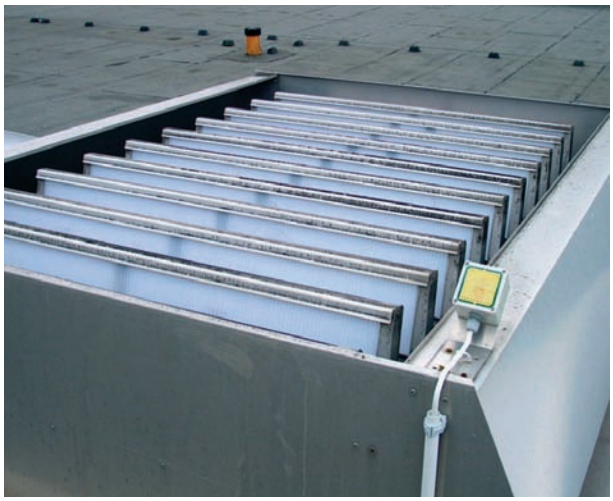
The challenge:

Replacement of skylights badly damaged by hailstones
Replacement of ventilator slats



The roda solution:

Dismantle the frameless skylight strip
Fit a roda Eurolight skylight system with aluminium rung construction onto the existing sub-structure using an adapter flange
Replace the multi-purpose ventilation / smoke/heat extraction unit's damaged plastic slats



Other buildings facing the same or similar problems:

BEFORE

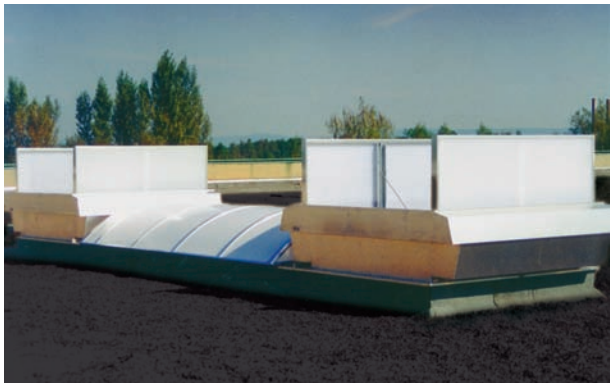
Frameless skylight strip destroyed by hailstones, with single-hipped ventilation flaps.

Frameless plastic skylight destroyed by heat and wind, with colouring showing the signs of age.

Single-skinned, loose glass skylight, painted with shading paint, with ventilation flaps for fair weather ventilation.

AFTER

roda Eurolight skylight run as an aluminium rung construction with ventilation / heat/smoke extraction units in aluminium section-build format and rainproof controls.



New build with roda Eurolight skylight with aluminium rung construction and MegaPhoenix multi-purpose ventilator for natural, weather-shielded ventilation and heat/smoke extraction in case of fire.

New build as a framework skylight with sun protection and multi-purpose ventilation via roda MZP for fair weather ventilation, weather-shielded ventilation and smoke/heat extraction in the event of fire.

Smoke/heat extractors – Domelights – Natural ventilators

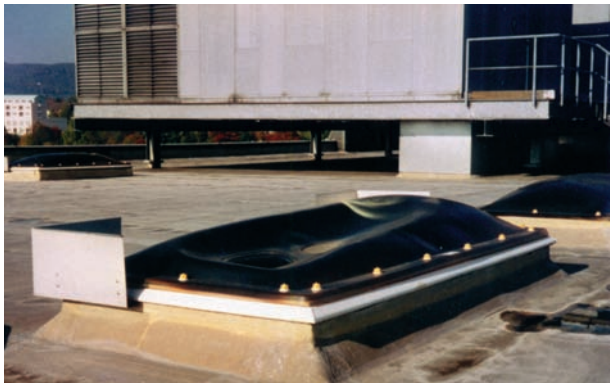
Changes of use in production operations can place new, additional requirements on smoke and heat extraction systems. The issue of natural ventilation may need to be taken more significantly into account. Lighting problems may create new demands, or statutory provisions may now need to be fulfilled for the first time.

The challenge:

- Increased natural ventilation is required in specific production zones
- Controlled lighting / glare effect on screens
- Upgrading the building's smoke/heat extraction fire protection to latest technical standards
- Repair or replacement of existing systems

The roda solution:

- Multi-purpose ventilation with increased ventilation area over problem zones e.g. in a hardening shop
- Replacement of damaged equipment
- Use of anti-glare mesh to reduce glare
- Leading edge heat/smoke extraction and ventilation
- A control system focussed on the previous problems



Other buildings facing the same or similar problems:

BEFORE

Roof hoods made leaky and 'blind' by ageing and weathering, plus defective controls.

Roof hoods deformed and badly damaged by high levels of rising heat, with largely ineffective ventilation cross-section and adverse wind-flow effect.

Improvised natural ventilation with anti-insect grills in a foodstuffs operation.

AFTER

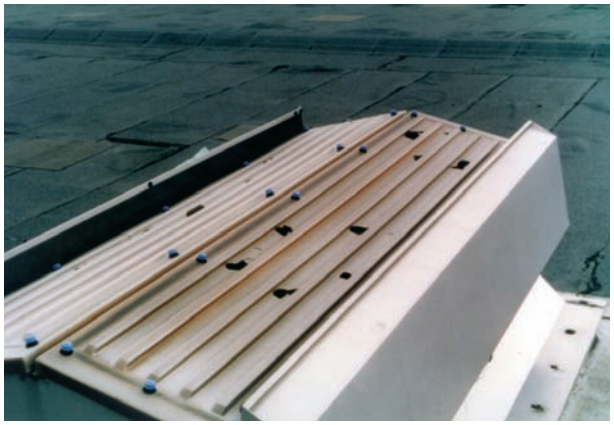
New build as an aluminium frame construction with roda Phoenix double flap ventilator for natural ventilation and smoke/heat extraction.

Replaced with roda Phoenix and MegaPhoenix double flap ventilators for a larger ventilation area in good weather and effective ventilation in the rain, plus smoke/heat extraction in the event of fire.

Replaced with roda MegaPhoenix multi-purpose ventilator with integrated anti-insect grills for simple maintenance.

Other buildings facing the same or similar problems:

BEFORE

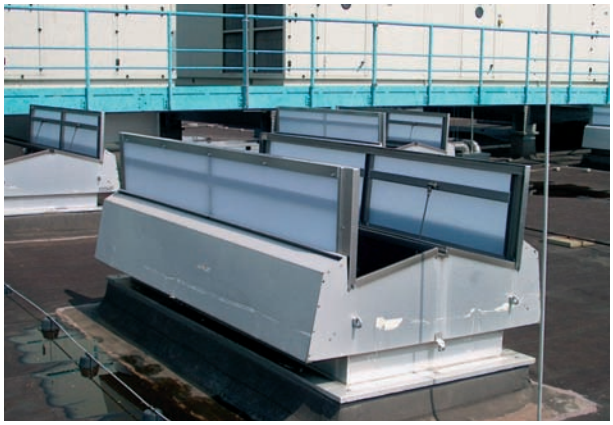


Natural ventilators with plastic hoods made 'blind' by heat and badly damaged by hail.

Plastic roof hoods, discoloured through ageing and the effects of the environment.

Plastic roof light elements, badly damaged by storms.

AFTER



Roof hoods replaced with polycarbonate roof hoods on an aluminium construction.

Replaced with weather-resistant polycarbonate multi-seamed hoods while retaining the control system.

Replaced with roda Phoenix double-flap ventilator in aluminium section construction with locking mechanism in open and shut state.

Ventilation – Heating – Daylight – Smoke/heat extraction

Partial building refurbishments and entire changes of use provide an opportunity to bring ventilation, heating, natural lighting and preventative fire protection systems up to the level required for the new working environment and to upgrade heating equipment cost-effectively to the latest technical standard.
It makes sense to incorporate preventative fire protection at the same time, e.g. with a combination of natural ventilation systems with simultaneous smoke and heat extraction function.

roda has the solutions to these problems!

As part of the refurbishment of a workshop hall at Jenoptik in Jena, for example, all of the following systems were brought up to the latest technical standard – and all, of course, in the most cost-efficient way!

- The ventilation systems were adapted to the client's specific problems
- The heating systems were converted to direct gas-fired radiant heating units
- The daylight illumination was improved by using skylights
- The fire protection system was fitted with smoke and heat extractors

BEFORE:

Central ventilation
Steam-heated warm air heating
Artificial light
No smoke extraction in the event of fire

AFTER:

Flexible localised ventilation
Radiant heating – direct gas-fired
Natural daylight
Heat/smoke extraction system combined with natural ventilation

The true benefits came from the extremely modest investment required and the low running costs:

- Natural ventilation
- Radiant heating
- Daylight components
- Smoke/heat extraction systems
- no air circulation costs
- very low energy costs
- savings on electrical lighting costs
- increased safety in case of fire

By combining natural ventilation with fire-safety smoke/heat extraction units two problems are solved at the same time.

The complete roda solution for ventilation, heating, lighting and fire protection through smoke and heat extraction

Ventilation

Mechanical, localised ventilation of individual production areas with single and double installations of roda's roof-mounted Isovent fresh air supply units. Fitted on the frame of a run of skylights near the ridge of the roof together with Multijet natural vents for weather-shielded venting and smoke/heat extraction in the event of fire. This is combined with universal Smokejet ventilation and smoke/heat extraction louver system with polycarbonate slats to let in daylight.

Lighting – ventilation – heat/smoke extraction

roda Eurolight skylight for illuminating industrial premises with natural daylight, mounted near the ridge of the roof. Combined with universal Smokejet louvers and multi-purpose Multijet ventilators for weather-shielded, natural ventilation and smoke/heat extraction.

Installed on a rodafix steel frame and sealed into the steel, profiled sheet roof construction.

Radiant heating

roda gas radiant heating installed in compact form as a ring system. Zonal version with zonal control system. 80-120kW systems in 2-tier configuration using economical re-circulation technology. Optimum energy consumption from long-wave radiation utilising sensory temperature and an increased sense of warmth.

Increased radiant intensity from a radiant colour in the bottom section of the heating beam pipes.

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