

Saxony-Anhalt STARK III – First Successes

Funding Programme for the Renovation of Energy
Systems in Childcare Facilities and Schools



What is STARK III?

Modernising and renovating childcare facilities and schools, saving energy and costs, looking after local authority budgets. The central innovation and investment programme, **Sachsen-Anhalt STARK III, is creating a pleasant learning environment for the children in our state – always keeping an eye on ecological and sustainable effects.**

The programme is financed using money from the European Fund for Regional Development (EFRD), the European Agricultural Fund for Rural Development (EAFRD) and from Saxony-Anhalt Land funds. As part of the **Sachsen-Anhalt STARK III** funding programme, a total of 98 childcare facilities and schools in Saxony-Anhalt have had their energy systems renovated, been modernised and fitted with innovative IT equipment since 2013. More than € 152 million have been invested. Of this, around € 70 million were EU funds, another € 24 million came from the state budget and around € 58 million were invested by the facility owners.

In this brochure we present the first successes and the effect of **STARK III**. A journalist and a photographer accompanied five selected projects in the last funding period. These examples represent all of the projects, showing what the renovation of energy systems can do.

Many **STARK III** projects were only completed at the end of 2015. This also includes the primary school in Weißenfels described here, which was converted into a passive house to set an example, and was officially handed over at the end of October 2015.

STARK III is going further in the new funding period. Find out more at:
www.starkiii.sachsen-anhalt.de



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“Cold” becomes “cool”

Evangelische Sekundarschule Haldensleben, Haldensleben (Protestant secondary school)



Costs and Finance

(As at: 30.10.2015)

Total costs	4.955.999,47 EUR
Total costs eligible for funding	4.941.116,66 EUR
Grant	3.458.781,66 EUR
EU contribution	2.878.100,02 EUR
Land contribution	580.681,64 EUR
Own funds	1.497.217,81 EUR

On the south-western fringes of Haldensleben a residential area in the industrial architectural style grew up on Süplinger Hill between 1978 and 1989 – along with, in 1979, the school building that was transferred from Börde district to Evangelische Sekundarschule Haldensleben in the trusteeship of the Johannes-Schulstiftung in 2011. It was the school building type “Erfurt”, which was widely used in the former GDR: Viewed from the air, the two wings of the building and their two connectors form an unmistakeable “H”.





Although the building had been partially renovated internally, its overall technical and energy condition was extremely problematic: crumbling facades, cracks in the joints, a damp, unused internal yard, many worn and leaking windows... All of these faults add up to an exorbitantly high energy consumption, or high energy costs. The Johannes-Schulstiftung applied to be included in the Sachsen-Anhalt STARK III programme to counter these with a fundamental school renovation with the lofty aim of becoming a “passive house”, with funding from the European Fund for Regional Development (EFRD) and funds from the State Saxony-Anhalt – and it became a model project. At the same time, it is designed to promote a new, environmentally-aware way of thinking by pupils, along the lines of the education concept “A school for life”.

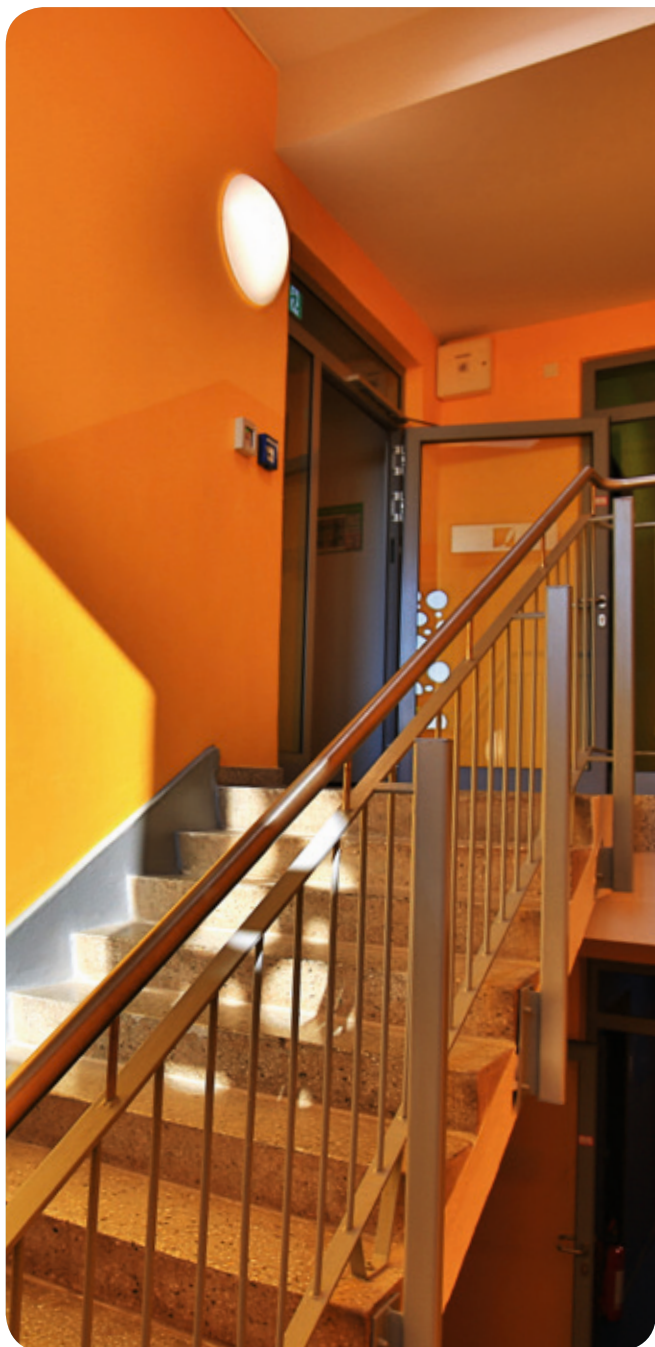
Versatile place for encounters

The result today is a school whose upper storeys are clad with water-blue shimmering polycarbonate elements, on Waldring. Lime green sunshades, some with round holes, accentuate the large windows.



But the old building is still in the apparently new building: its top floor was removed, the internal yard roofed over and the niches of the former “H” closed by building elements. The result is a low-cost compact square with an optimised façade surface, i.e. little heat loss. The whole repertoire of energy-efficient building was used to retrofit the building shell and systems engineering to the passive house standard: high-energy insulation for all façade and roof sections, triple glazing elements on the windows and internal and external doors. And: installation of 36 decentralised ventilation units with heat recover and CO₂ regulation, the remaining heat requirement





is met via the local district heating system. There is innovative LED lighting throughout the whole building. The electricity for it comes from the school's own photovoltaic system on the roof, including a power store.

So, the once “cold building” has become a “cool” one, with the highest educational and energy aspirations for currently 230, in future up to 270, pupils. Fresh colours from poppy red to dream blue shape the accessible gallery corridors and newly furnished classrooms, some equipped with interactive boards, including two computer cabinets. The light-flooded atrium with access to the library, dining hall, prayer room and conference room including stage, forms the new heart of the school, which, according to head Pia Kampelmann, has undergone another marked leap in quality thanks to the successful renovation.

Fact Check

FUNDS INVOLVED:	EFRD
INVESTMENT LOCATION:	Waldring 111, 39343 Haldensleben
APPLICANT:	Evangelische Johannes-Schulstiftung
IMPLEMENTATION PERIOD:	18.10.2013 - 18.09.2015
END OF BUILDING:	31.07.2015
OFFICIAL OPENING:	14.10.2015



The most modern building in town

Childcare facility and crèche “Güstener Spatzen”, Güsten



Costs and Finance

(As at: 30.10.2015)

Total costs	4.008.977,17 EUR
Total costs eligible for funding	3.356.588,39 EUR
Grant	2.506.736,94 EUR
EU contribution	2.387.002,57 EUR
Land contribution	119.734,37 EUR
Own funds	1.502.240,23 EUR
Stark III loan	1.471.600,00 EUR

When asked what they like best, the children can hardly be stopped: “The cave!” “The cottage!”, “The slide!”, “The blue!”. Since the “Güstener Spatzen” moved from their old childcare facility and crèche to the new one, there have been good moods all round. It was high time for a new start in terms of building.





In 1975 a “Kinderkombination für die Kinder der Werktätigen der Deutschen Reichsbahn” [Children’s Combine for Children of the Workers of the East German Railways] opened in Güsten, a two-storey GDR building that was showing signs of wear and tear after almost forty years of intensive use: energy problems, insufficient insulation, old wiring. This resulted in high operating costs, also fire-safety deficits and no disabled access. The list was long. **Sachsen-Anhalt STARK III** opened up the opportunity for a building with a combination of childcare facility and crèche in the passive house standard, financed with funds from the European Agricultural Fund for Rural Development

(EAFRD) Because there is no shortage of children in Güsten, the centre of today’s combined municipality of Saale-Wipper. For the future they are relying on “Education and Communication”, a guiding principle that can bring about optimum solutions with its integrated approach – as the model project proves.

Par excellence

Extensive documentation of faults and damage took the project to renovate the old building ad absurdum. A new building location was found on the site of an old, disused farmhouse right next to the Güsten primary and secondary school. Today, this site is home to the most modern building in town, behind the bright clinker façade and colourful façade boards of which is a completely thermally insulated building in the passive house standard. Inside the compact two-storey building, there is a light-flooded atrium. With its seat stairs, it is the centre of the integrated “nursery of movement”, with enclosed and open area and group rooms with short, accessible paths for around 200 children. Even here, the building for big and small, with its sunshine yellow and apple green painted thick





pipes that weave their way across the ceiling, reveals the special standard: controlled ventilation, which ensures 85% heat recovery and, at the same time, an even fresh air supply. Furthermore, the thermal energy of the sun is used via a solar system on the roof to heat water, support the heating and as the power from the heat pump of the ground collector laid under the building. A photovoltaic system also generates electricity. At all times, child-friendly displays show the yields from solar energy, giving food for thought. The corridors contain daylight and motion-controlled LED lighting. Highly-efficient T16 linear luminaires and staggered acoustic sails have been used in the group rooms. Together with the well-thought-out colour concept or the inviting play and outdoor area including its slide, an educational and technical model building par excellence has been built in Güsten.

Fact Check

FUNDS INVOLVED:	EAFRD
INVESTMENT LOCATION:	Hallesche Straße 2, 39439 Güsten
APPLICANT:	Verbandsgemeinde Saale-Wipper
IMPLEMENTATION PERIOD:	27.06.2013 - 30.06.2015
END OF BUILDING:	27.04.2015
OFFICIAL OPENING:	27.04.2015



For fresh air and clear heads

Primary school and crèche “Am Regenstein”, Blankenburg (Harz)



Costs and Finance

(As at: 30.10.2015)

Total costs	5.668.780,60 EUR
Total costs eligible for funding	5.668.780,60 EUR
Grant	3.968.146,42 EUR
Land contribution	3.968.146,62 EUR
Stark III loan	2.353.575,89 EUR

The green light was given to the project of an innovative school building, including a crèche, in Blankenburg in September 2012 when the funding notification for Sachsen-Anhalt STARK III arrived. There was great joy among the 200 pupils at the “Am Regenstein” primary school. Because the planned “Renovation in passive house standard” would send out an important message in the “Regenstein” neighbourhood. The large residential estate was built using the prefabricated construction method in the 1960s to the 1980s to the north of the old town and has been gradually renovated in recent years.





The old building from 1979 in the widespread “Erfurt” school building type, was worn, its energy balance was more than bad, the building was crumbling, teaching conditions difficult– the signs that a lot of renovation was needed were obvious: badly-fitting windows, peeling paint, broken concrete windowsills, in addition to wetting damage on the façade, crumbling plaster, a damp, cold, mossy internal yard and a bleak schoolyard... A preliminary examination revealed much higher costs for a high-quality renovation and expansion of the energy system in the old school that was too big, including remedying functional deficits, than the costs of a new building. This concept was assessed as worthy of funding and was implemented.

Movement School Concept

Today, even from a distance, bright red and orange on discreet grey show that the future of education has started in the north of Blankenburg. A compact new building with just these façade colours has replaced the previous building. It opens up level to the ground with a large glass surface of multifunction rooms with



a canteen and an extensive schoolyard, with its variety of inviting play equipment, which ideally support the educational concept of the “movement school”.

The two-winged building, connected by an administrative and catering section, has three storeys, in the split-level principle, with offset storeys, built on a slope in an east-west direction. On the western side it is therefore built into the ground, and only two storeys can be seen, with the wide bands of windows typical of the whole building. Together with its solar thermal heat gain, they are just as much part of the





energy passive house concept using district heating as the compact structure, the triple-glazed thermally insulated windows, thermal insulation in the walls and floors and the innovative ventilation and heating control. Sensors for room climate, presence and window opening ensure an optimised provision and use of energy. As a result, the operating and energy costs are reduced to a minimum.

Everything in the building is new, including the built-in furniture in the light-flooded bright classrooms and crèche rooms with windows onto the corridor, the coloured light shafts that let the sun's rays right into the building, built-in technology for the prospective use of notebooks, tablets and interactive boards– and the CO₂ traffic lights in every room. They register the CO₂ content in a way that all the children can understand. If it is too high, the light turns red and the ventilation is switched on to change back to green: for fresh air and clear heads in Blankenburg's prime educational building of the future.

Fact Check

INVESTMENT LOCATION:	Karl-Zerbst-Straße 29, 38889 Blankenburg (Harz)
APPLICANT:	Stadt Blankenburg (Harz)
IMPLEMENTATION PERIOD:	17.12.2013 - 31.08.2015
END OF BUILDING:	26.06.2015
OFFICIAL OPENING:	30.06.2015



Saxony-Anhalt STARK III

Building of the future with a great atmosphere

Secondary school “Drei Türme”, Hohenmölsen



Costs and Finance

(As at: 30.10.2015)

Total costs	7.297.191,56 EUR
Total costs eligible for funding	6.630.435,88 EUR
Grant	4.178.846,14 EUR
EU contribution	4.178.846,14 EUR
Own funds	3.118.345,42 EUR
Stark III loan	2.222.700,00 EUR

In the winter, ice crystals glistened on the north-facing internal walls of Hohenmölsen secondary school, even though the heating was turned on full. It was definitely a spectacle of building physics, but it was hardly conducive to learning in these rooms. Conditions like this hardly seemed to go with the well-maintained appearance of the school's façade, a model construction from 1961 in a residential area of the same period. But in addition to the exorbitant energy costs – caused by a thin building shell, badly-fitting windows and a permeable roof – the electrical system was still original to the building. Fire safety, too, no longer complied with current requirements. The entire building was showing its age.





Efficient Energy Use

Twenty months of intensive building activity later, a model building has appeared in Hohenmölsen following the renovation of the energy system in the previous school building. Respect for the fabric of the building that could be retained resulted in a subtle reconstruction that retained the original character in a U-shape: the three-storey main building with rows of windows, now protected against sunlight with modern yellow and orange awnings, and a glazed entrance in the old position, strong colours on the walls and floor in the columned foyer now bear witness to the changing times and pleasant temperatures. “It feels good,” says head Frank Keck, who believes that the renovation has implemented both the goals of energy renovation with much lower running costs and a more efficient use of energy from the neighbouring district heating and those of the educational concept, including his room programme: in other words, to make school into an environment that is geared to work and prepares for work and encourages per-

formance. Behind a thermally insulated façade and triple-glazed windows, the storeys, each in a different colour, are now specialist rooms with a total of 18 interactive boards, including projectors, and two computer cabinets. In one wing of the building the sports hall has been renovated, six new classrooms have been built in the new wing opposite, including a teaching kitchen for domestic science, and the big, multifunctional hall with a canteen. The entire building complex is accessible to those disabled, including ramps in the schoolyard. And next to the schoolyard, in the foreseeable future - there will be a “green classroom” that can de-





monstrate the connections between nature, the climate and energy in its very own way by using a greenhouse.

Hohenmölsen secondary school is now a building of the future with a great atmosphere for learning for life, the biggest in the Burgen rural district, 349 pupils study here. The funds for the renovation came from the **Sachsen-Anhalt STARK III** programme, funded from the European Agricultural Fund for Rural Development (EAFRD). Wisely invested money in a region still characterised by migration.

Fact Check

FUNDS INVOLVED	EAFRD
INVESTMENT LOCATION:	Erich-Weinert-Straße 18, 06679 Hohenmölsen
APPLICANT	Burgenlandkreis
IMPLEMENTATION PERIOD:	04.06.2013 - 31.12.2014
END OF BUILDING:	31.12.2014
OFFICIAL OPENING:	18.02.2015





Saxony-Anhalt STARK III

Changing world in late Victorian school

Primary school „Bergschule“ and crèche, Weißenfels

Costs and Finance

(As at: 30.10.2015)

Total costs	6.410.500,15 EUR
Total costs eligible for funding	5.985.754,66 EUR
Grant	4.190.028,19 EUR
EU contribution	3.330.437,67 EUR
Own funds	859.590,59 EUR
Stark III loan	2.209.502,62 EUR

More than 100 years ago, a neo-gothic school complex made of the typical red bricks was built at a high level on the right-hand bank of the Saale in Weißenfels. One of the buildings, the former girls' school from 1899, is now Weißenfels's "Bergschule" primary school, including a crèche area. With its rich details, it is a listed building. The draughty building was known as the "windy palace". The conventional natural gas heating could not adequately heat the tall rooms with their badly fitting windows and cold corridors. And what was cursed as a "fridge" in winter, was felt to be an "oven" in the summer. Difficult energy conditions that were the starting point for the idea to bring the old Victorian building up to passive house standard, funded with money from the Sachsen-Anhalt STARK III programme with funds from the European Fund for Regional Development (EFRD).





Optimum Learning Situation

Today the school is freshly renovated. The red clinker façade shines cleanly in the sunlight, new windows, entrance doors and a redesigned, accessible yard bear witness to this. Signs that innovative, highly efficient energy technology has been used here, incorporating renewable energies, for example, in the school garden there are two tall silver chimneys sticking out of the ground: the outside/exhaust air towers are part of the ventilation system, that allows the used air to escape and fresh air be conducted into the building in a controlled way. As a closed system, in the heating period a passive house benefits from the “waste heat” from people and technology, which is kept in the building by means of internal insulation with a calcium-silicate basis. “Bergschule” also uses geothermal energy. This is achieved by earth probes at a depth of 100 metres. An electric brine/water heat pump emits warmth for heating in winter and cools in the summer. Heating surfaces on the ceilings, which also insulate noise, heat or cool the classrooms from

above, as required. Underfloor heating has been installed only in the basement, with the children’s kitchen, as well as the design, exercise and Kneipp room. Sophisticated automation technology monitors the balance with temperature sensors, CO₂ alarms in every room and ventilation “traffic lights” in the corridor. Electricity for the technical equipment comes from the photovoltaic installation on the roof. Automatically controlled, efficient LED lighting ensures a pleasant light atmosphere in the entire school building.





The standard before and after the energy renovation are worlds apart, which will drastically minimise energy consumption – there is no doubt about that. For the children at “Bergschule” as a school to promote literacy and their crèche, which follows the Kneipp principle, there are now optimum learning and living conditions on the four floors. All of the rooms are accessible, with a built-in lift, and also open up the opportunity to learn inclusively, even in small groups. The old building has retained its original architectural character. “Bergschule” is considered to be a prototype for projects in similar school buildings. After the first winter we will be certain what the listed building can do as a passive house.

Fact Check

FUNDS INVOLVED	EFRD
INVESTMENT LOCATION:	Promenade 39, 306667 Weißenfels
APPLICANT	Stadt Weißenfels
IMPLEMENTATION PERIOD:	11.02.2014 - 31.10.2015
END OF BUILDING:	30.09.2015
OFFICIAL OPENING:	30.10.2015



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