



Climate action in church buildings

Evaluation of climate action concepts of Catholic and Protestant parishes in Germany

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Project information

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Project leader

Forschungsstätte der Evangelischen Studiengemeinschaft e.V.

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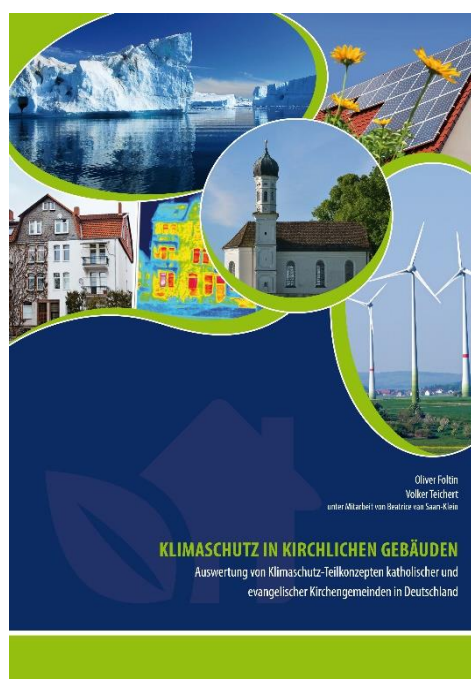
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Evaluation of climate action concepts for churches

Protecting the climate – preserving creation: A handbook for the energy retrofitting of church buildings provides support.

At a glance

Prior to the project, interested parishes were lacking a basis on which to assess the energy efficiency of their properties and to plan their actions for improvement. Over the course of the project, the research centre of the Protestant church – the “Forschungsstätte der Evangelischen Studiengemeinschaft e.V.”, FEST – thus developed a handbook to serve as a benchmark and guideline for decision-makers to take action. The handbook consists of an analysis of climate action concepts for buildings of Catholic and Protestant parishes across Germany. As such, FEST can be credited for having done ground-breaking work. The project was funded by the National Climate Initiative (NCI).



Cover of the handbook



Ecclesiastical contribution to climate action

The contribution of the Catholic and Protestant churches to climate action is more than just a matter of efficient housekeeping. Rather, both denominations would like to see themselves as serving as a model and as upholding the preservation of creation. The responsibility of industrialised countries to contribute to climate action likewise plays an important role.

For any given parish, this effort to contribute usually means identifying emission savings potentials in the context of the everyday operations at their own parish. Yet, for this they cannot look to the prevailing bylaws or recommendations on building energy efficiency, as these do not, or at least not fully, apply to church buildings. In addition, the energy retrofitting of most church buildings is subject to bylaws and regulations that apply to heritage buildings, which adds another layer of complexity to the task.

What were the project goals?

The aim of the project was to evaluate climate action concepts for buildings of Catholic and Protestant parishes, and to compile these in a catalogue of experiences and measures. The compilation was to then serve as a reference guide for the people in charge in determining which climate action measures to implement for existing church buildings.

Reliable data as a basis for action

In order to best take consideration of the building types and usage forms that are typically church-owned, the FEST research institute compiled a knowledge base. By the end of 2012, it assessed a total of 27 church climate action concepts for buildings that had been developed with NCI funding. These concepts included the evaluation of about 1,500 buildings owned by parishes – such as churches, parish halls, parish houses and kindergartens – for their energy-efficiency status. The concepts also included

recommendations for climate action measures, both those that require investment and those that do not.

Using this data, the project then performed a meta-analysis of these 27 concepts, likewise based on the typical usage patterns of these buildings, and offered motivational and decision-making support. Essentially, this served to motivate the people or committees in charge, such as the church council, environmental officers or administrative staff, in their actions.

The handbook: comparative values and experience reports

The analysis of the existing climate action concepts was done by experienced energy consultants and culminated in a 40-page handbook. Among other things, it contains a summary of the energy saving potentials, differentiated according to church building type. Another section determines the average energy consumption according to building type, which can serve as a guideline. The handbook also features recommendations for retrofitting measures as well as a report on the experiences of previous recipients of funding for a climate action concept for their church buildings.

What did the project achieve?

Those responsible for church buildings can use the handbook when planning climate action measures, including those that do not require an initial investment. The handbook provides benchmark energy values for the different types of buildings, evaluates proposed measures and potential savings according to church building type, and summarises the results of surveys conducted by the project on concrete measures and perspectives on the basis of the climate action concepts for buildings that 27 parishes had prepared so far.



Overall, the guide covers the fields of building retrofitting, including insulation, heat generation, electricity consumption and the use of renewable energies. With it, parishes can perform comparisons on their own, in turn enabling them to develop their own action plan.

What happened next?

The German-only brochure on climate action in church buildings – entitled “Klimaschutz in kirchlichen Gebäuden – Auswertung von Klimaschutz-Teilkonzepten katholischer und evangelischer Kirchengemeinden in Deutschland” – can be ordered from the FEST.

Contribution to climate action

The handbook provides those responsible at churches with a guide for determining the as-is state of the energy efficiency of their buildings on the basis of average values. From this, they can devise measures, both those that require financial investments and those that do not, that can lead to significant energy savings and thus carbon emissions reductions. Thus, the handbook is intended to motivate other parishes to take up the energy retrofitting of their buildings.

Lessons learned

The handbook helps in particular the people in charge of buildings at different levels of the Catholic and Protestant churches. These include, among others, those responsible in the parishes (church council, building custodians and sacristans) and those working in the ecclesiastical administration, from parish to diocese (such as construction and property management units). In addition, the handbook serves environmental officers of the dioceses and regional church federations as well as all other interested parties from the churches.

Climate action concepts for buildings as the basis for energy retrofits

A survey of the funding recipients showed that many perceive climate action concepts as generally meaningful. The concepts provided important positive impulses and raised awareness for energy efficiency and climate action in the parishes. Therefore, the concepts serve their purpose – they are considered when planning building renovations or are incorporated into maintenance plans.

Measures requiring initial investments

The results of the synopsis of climate action concepts for churches, as presented in the following, offer a first orientation to energy savings potentials in the buildings. Recommendations are different for the different building types and usage patterns.

Church buildings

The replacement of light bulbs, the insulation of exterior walls and roofs, the installation of a new heating system, the insulation of the interior as well as the renewal of windows and doors is recommended for the church buildings, many of which are listed buildings. The measures financially pay back only after a long time and show, the replacement of light bulbs excepting, savings potentials in the range of 10 to 25 percent.

Listed buildings

For other heritage-protected buildings, such as community centres, the climate action concepts recommend the replacement of light bulbs, the insulation of the interior walls and the installation of a new heating system. In the case of most parish halls and rectories, however, it is typically sufficient to replace the heating pumps, rather the entire heating system. In contrast, the internal wall insulation is very costly, whereby it takes much longer to amortise.



Non-listed Buildings (built after 1945)

For buildings erected after 1945, the handbook recommends redoing the exterior insulation of the building envelope and replacing the windows.

Kindergartens

Kindergartens can benefit most from the following measures: the replacement of light bulbs; the insulation of the outer walls and roofs; the installation of a new heating system; the insulation of cellar ceilings, top floor ceilings, roof trusses and interior walls; as well as the replacement of windows and doors.

Measures that do not require investments

Targeted room temperature monitoring or control and, if necessary, a temperature decrease for permanently heated churches, alongside the use of heated seat cushions in smaller churches, can also save energy and thus reduce carbon emissions. CO₂ emissions can also be reduced by purchasing certified green electricity, as is already practiced by some parishes.

Climate action needs your initiative

Since its launch in 2008, the National Climate Initiative (NCI) of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) has been supporting numerous projects that contribute to the reduction of greenhouse gas emissions. Funding has been given to a broad range of activities, from developing long-term strategies to providing practical assistance and investment aid. With a focus on advancing climate action on the ground, the Initiative benefits consumers, municipalities, businesses and educational institutions.

Legal information

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