

Urban Ecosystem-based Adaptation

GREEN WALLS AND GREEN ROOFS

BUILDING RESILIENT CITIES AND ADAPTING TO CLIMATE CHANGE



Context and rationale

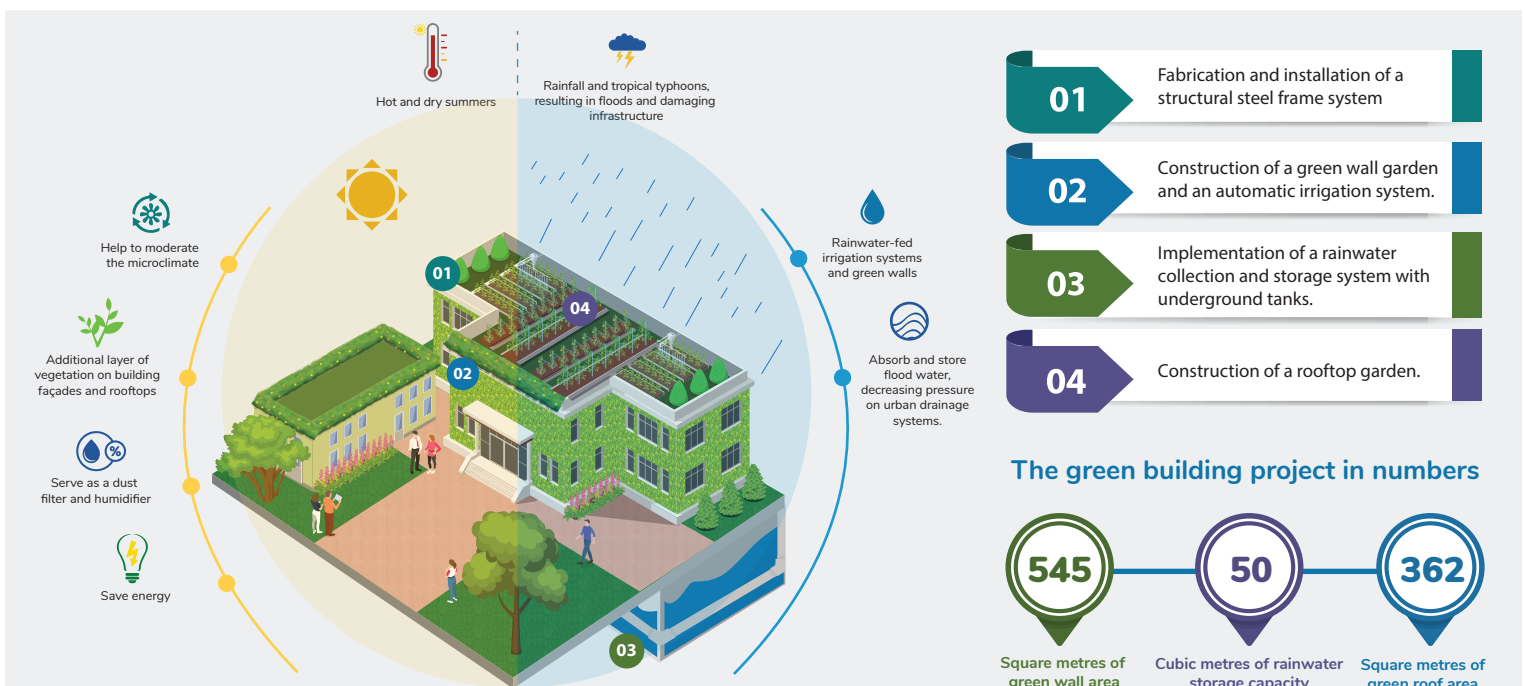
Located in the centre of Viet Nam, Dong Hoi city is the economic, social, and cultural capital of Quang Binh province. The city is particularly vulnerable to climate change due to a variety of factors. These include the province's topographical features, the city's geographical location, its complex economic assets, and rapid urbanization.

In particular, the increased intensity and frequency of storms, floods, and droughts have severely damaged infrastructure, affecting both production and people's well-being. Rising sea levels and prolonged high temperatures are also threatening

the city. Adapting to the impacts of climate change is therefore a vital aspect of urban planning and construction.

In this context, the project "Support to Viet Nam for the Implementation of the Paris Agreement" (VN-SIPA) is supporting a green wall and green roof measure in Dong Hoi as an integral part of ecosystem-based adaptation (EbA). The project aims to reduce flood water during heavy rainfall, mitigate local heat stress, and contribute to energy efficiency through cooling buildings.

Design and benefits of the green building project in Dong Hoi



Public Service Management Unit Building, 68 Ngo Quyen street, Dong Hoi city, Quang Binh province

Benefits of urban Ecosystem-based Adaptation (EbA)

Minimize risk and vulnerability

- Reduced heat gain due to solar radiation
- Reduced greenhouse gases through increased energy efficiency
- Increased ability to control storm water
- Fewer urban heat islands

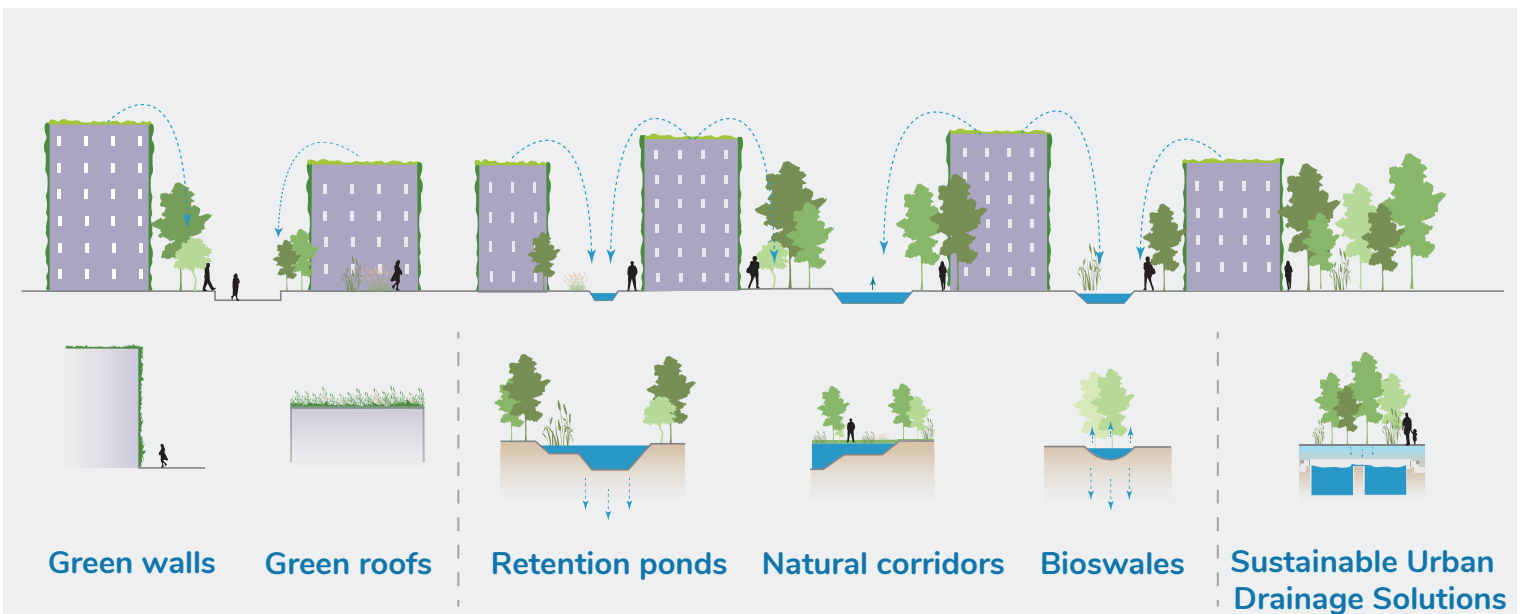
Ecological services

- Enhanced biodiversity and increased aesthetics
- Reduced scattering of solar radiation to surrounding spaces
- Creation of urban green spaces, reduction of noise and environmental pollution
- Enhanced awareness for community and relevant stakeholder about EbA

Elements of Ecosystem-based Adaptation in Dong Hoi

The VN-SIPA project is supporting in Dong Hoi the development of urban Ecosystem-based Adaptation (EbA) with policy advice, capacity development and the implementation of EbA measures which contribute to rain water capture and storage, mitigation of heat islands and air

purification. The following measures are supported in Dong Hoi: natural corridors, water retention ponds, bioswales, green walls and green roofs, and sustainable urban drainage solutions (SuDS).



What is Ecosystem-based Adaptation?

Ecosystem-based adaptation (EbA) is commonly understood as the use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change (Convention on Biological Diversity, 2009).

It has been proven in many parts of the world to bring various additional co-benefits compared with grey adaptation measures; such as restoring local ecosystem services and increasing people's well-being.

Published by **Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH**
Registered offices Bonn and Eschborn, Germany

Photo credits/sources:
©Nguyen Chien
Illustration by Mercury
GIZ is responsible for the content of this publication.

October 2022
Project "Support to Viet Nam for the Implementation of the Paris Agreement" (VN-SIPA)
More information on the project:
<https://www.giz.de/en/worldwide/78598.html>

Contact **SIPA Office**
No.14 Thuy Khue, Tay Ho
Unit 031, 3rd Floor
Hanoi, Viet Nam
+842432373110
Email: office.sipa@giz.de
www.giz.de/vietnam



on the basis of a decision by the German Bundestag



The findings, interpretations, illustrations and conclusions expressed in this document are based on information gathered by GIZ, partners and contributors under the framework of the "Support to Viet Nam for the Implementation of the Paris Agreement" Project (VN-SIPA). The project is funded through the International Climate Initiative (IKI). The IKI is implemented by the German Federal Ministry of Economic Affairs and Climate Action (BMWK) in close cooperation with the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and the Federal Foreign Office. GIZ does not, however, guarantee the accuracy or completeness of information, illustrations in this document, and cannot be held responsible for any errors, omissions or losses which result from its use.