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# Steps for implementation of the Green buildings certification system in Moldova

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UNDP MD, Ministry of Economy and Infrastructure with the support of Romania Green Building Council (RoGBC) and the Construction University Bucharest (UTCB) joined forces in order to develop **comprehensive tools** for the transition of the **Republic of Moldova towards sustainability**.



ROMANIA  
GREEN  
BUILDING  
COUNCIL



# TOOLS to facilitate transition towards sustainability

These tools developed under the GREEN Code umbrella were designed considering the **local climate, environmental issues**, the **social and economic** situation identified locally and nationally. The GREEN Code comprises of **3 complementary tools**, as follows:

1. Local legislation on the **prevention and reduction of pollution** during the construction stage, in Chisinau;
2. Code of Practice in construction: **CP A.04.02 „The design of green buildings“** and **CP B.01.01 „Urban design guide in accordance with the principles of environmental protection“**;
3. **National voluntary certification system "Green Code: Design and Construction"**.

# Why?

- **Moldova is one of the few European countries with little instruments** that encourage transition towards sustainability.
- **Green buildings are an essential component** of any sustainable development plan, regardless of the scale to which it applies.
- **Adjusting to the European standards** involves environmental and sustainable development commitments.
- The development of a GREEN Code is a first important step that shows to the EU authorities the level of **growing maturity and responsibility** and has the potential to prepare the way to EU inclusion.
- The **construction industry is emerging due to the higher housing demand**, however the current legislation must be updated and strengthened in order to have a positive impact on the existing and future building market.
- **People need healthier, energy efficient homes** with less burden on the natural resources and the environment.

# Environmental factors

- soil erosion - each year the soil erosion increases by an average of 1% and the annual losses of fertile soil are estimated at 26 million tons.
- groundwater pollution and the low quality of the drinking water - a widespread phenomenon and its poor management results in a continuous deterioration of its quality. In rural areas the majority of the population uses drinking water from wells and only 17% of families use centralized power supplies, poor quality water has a direct impact on the health of the population, causing morbidity and generating additional expenditures for the state budget and economy as a whole.
- degradation of biodiversity
- Inefficient management of household and industrial waste
- Persistent Organic Pollutants (POP)
- environmental/ air pollution during the construction stage;
- diseases caused by the inadequate quality of the indoor environment.

# Benefits for public authorities

- **Reducing greenhouse gas** emissions by using low carbon materials and solutions;
- Local production of **energy from renewable sources** (solar, wind, geothermal etc.), reduction of dependence on fossil fuels;
- Stimulating the **local economy** through the use of local construction materials and local labor;
- **Optimised waste management practices** during construction and operation of the buildings with lower cost on medium and long term;
- Encouragement of **urban regeneration practices** with focus on revitalization of industrial sites across the city;
- Lower loads on utility networks through **energy efficiency and water management** (gray water processing and reuse, stormwater collection and reuse, local brown water purification, sustainable irrigation, etc.)
- **Intergenerational equity** through the use of abundant or renewable building materials;



**BENEFITS OF  
GREEN BUILDING**

# Benefits for developer/owner

- **Optimized design and construction costs:** there has always been a general trend of reducing design and construction costs associated with green buildings, as regulations in constructions around the world are becoming stricter, the chains of supply for environmentally friendly materials and technologies is maturing and the industry is becoming more skilled at providing sustainable solutions for buildings;
- **Increase in rental rates for buildings by up to 24.9%** compared to conventional buildings, designed according to the Code Green. The 2014 DLA Piper report suggests that 38% of participants in the survey they identified the preservation or increase of the right value the main benefit of sustainable real estate, followed by reputation (18%) and reduction of energy costs (15%).

## **Buildings designed and built according to the Green Code:**

- have a very good quality / cost ratio;
- have better occupancy levels compared to buildings conventional;
- the perceived value is higher, the sale price / rents being higher picked up ;
- involves lower or possibly comparable investment risks with conventional buildings;
- contributes to the improvement of corporate responsibility policies;

# Benefits for the final occupant

- **superior quality of the indoor environment** by the presence of superior indices natural lighting, healthier spaces with compound emissions reduced toxic volatile organics in rooms and thermal comfort;
- **health and productivity at work:** according to several studies, employee productivity benefits exceed 10 times the energy savings resulting from the occupation of a green building, resulting in essential benefits for companies;
- **improved working atmosphere and increased comfort;**
- **lower operating costs:** cost effectiveness has been demonstrated by the fact that they have low energy and water consumption as well as lower costs of long-term operation and maintenance. Usually only savings energy exceed in a reasonable period of recovery any primary costs associated with their design and construction;
- In the case of housing: **lower utility bills and higher resale value.**



# Financial implications

## 3% to 10% premium investment in hard cost

- As experienced by the evolution of other markets, **the cost** of green design and execution **will drop as the number of green buildings will rise.**
- The trend of **declining costs** associated with **increased experience in green building** construction has been experienced all over the world.
- As demonstrated by RoGBC, in the case of the GREEN Homes certification standard, **a national green building standard** is proved to **better foster the transition towards sustainability** in stages that consider the local market conditions from social, environmental and economic parameters.

**"If you can not measure it,  
you can not improve it"**

- Lord William Thompson  
Kelvin-

# Voluntary certification s

Green Code Design & Construction is a national green building standard.

It includes a matrix of best practices that applies to new construction, major refurbishments, renovations and retrofits for both single and multi-family residences, commercial and industrial buildings.

Aims to become a credible, environmental label for the built environment.

## GREEN CODE DESIGN & CONSTRUCȚIE REPUBLICA MOLDOVA

SISTEM NAȚIONAL DE  
CERTIFICARE PENTRU CLĂDIRI



August 2020  
Varianta Pilot

# Green building certification categories and criteria

## Energy Optimisation

- Reduction of energy use and carbon emissions
- Energy Monitoring and sensors
- Energy efficient transportation systems
- Energy efficient equipment
- Renewable Energy production

## Indoor Environmental Quality, Health and Wellbeing

- Tobacco Smoke Control
- Daylighting
- Quality Views
- Acoustic Performance
- Interior Lighting
- Low VOC Emitting Materials
- Biophilic Design
- Urban Farming - Food production
- Accessibility
- Impact of refrigerants



## Water Optimisation

- Water consumption
- Water monitoring
- Water efficient landscaping
- Water quality

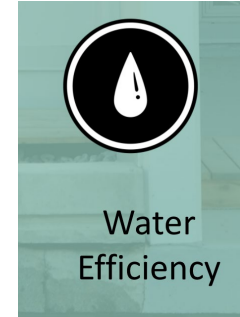
## Location and Mobility

- Access to public transit
- Bicycle Facilities
- Access to amenities
- Smart development
- Heat Island Effect
- Enhancing site ecology and biodiversity

## Building Circularity - Materials and Waste

- Natural Materials
- Local/Regional Materials
- Life cycle impacts – LCA
- Responsible sourcing of materials
- Designing for durability and resilience
- Fire resistant materials
- Operational waste

## Innovation





Designed to build, not to smoke.

# HEMPCRETE

A 3D diagram of a rectangular hempcrete block with various properties labeled by lines pointing to it:

- Strong, Lightweight & Breathable
- Energy Efficient
- Incredible Insulation
- Naturally Non-toxic
- Lasts 100's of Years
- Flame, Water & Pest Resistant
- Hemp + Lime + Water

**CARBON NEGATIVE**

ED#MED  
FR.COM/EDUCATIONNOTMEDICATION



# Voluntary certification system

- administered by Green City Lab and adopted by the industry on a voluntary basis such as the case of the majority of green building certification systems across the world.
- The voluntary approach is adopted at global level in the majority of situations with enforcement from public authorities (BREEAM in the UK). While use of the BREEAM assessment method is voluntary, obtaining a BREEAM rating can help to pave the way to planning approval, and is a mandatory requirement for many London-based Local Planning Authorities (LPAs).
- Also, Romanian public authorities in three municipalities such as Cluj, Timișoara and Iași encourage the use of green buildings certification systems by adopting local policy to reduce the building taxes up to 50% on a performance sliding scale approach.
- In the case of the GREEN Homes certification a few banks such as Alpha Bank and Raiffeisen Bank offer preferred financing to buyers of GREEN Homes certified homes (houses and apartments) in a joint innovative program named Green Mortgage.

# A.04.02

NORMATIVE METODICO-ORGANIZATORICE

**CP A.04.02:2020**

**Proiectarea clădirilor și construcțiilor  
Proiectarea clădirilor ecologice**

EDIȚIE OFICIALĂ

MINISTERUL ECONOMIEI ȘI A INFRASTRUCTURII A MOLDOVEI

CHIȘINĂU 2020

# B.01.01

URBANISM ȘI AMENAJAREA TERITORIULUI

**CP B.01.01:2020**

**Sistematizarea teritoriului și a localităților  
Ghid de proiectare urbană în concordanță cu  
principiile de protecție a mediului**

EDIȚIE OFICIALĂ

MINISTERUL ECONOMIEI ȘI A INFRASTRUCTURII A MOLDOVEI

CHIȘINĂU 2020

# The design of green buildings practical code

- Will support designers in developing projects with lower **environmental footprint**, respectively healthier and more sustainable constructions.
- is intended for the **preparation of project documentation for new buildings**, but is also applicable for existing buildings undergoing major **rehabilitation and modernization**.
- is applicable to the design of Single Family Homes and Multifamily buildings, but also to the design of groups of buildings connected to each other, either by seismic joints or by a unitary management concept condominium type.
- includes a **matrix of good design practices that applies to all buildings**, except to architectural monuments.
- **Considers recommendations from national industry experts**, competent authorities in the field of construction and other specialists involved in the process including civil society, collected in the consultation phase.





# Urban design practical code

Applies to the elaboration of urban planning documentation:

- PUG (General Urban Plan);
- PUZ (Zonal Urban Plan);
- PUD (Detailed Urban Plan).

and is addressed to all technical specialists involved in this process.

- will support specialists in developing projects focused on a healthier and more sustainable environment.
- has been designed as a guide for the preparation of urbanism documentation and cannot be applied to the design of a single building or small objectives which does not fall into the field of PUG, PUZ or PUD.
- refers to the **elaboration of urban planning documentation for urban complexes** that are to be built from scratch on a previously undeveloped site or site previously developed, which requires extensive replanning.
- is also applicable to the elaboration of complex rehabilitation / adjustment projects existing urban requirements to the current requirements.

# Local policy for pollution prevention during construction stage in Chişinău.

## HOTĂRĂRE

### **privind aprobarea Regulamentului privind respectarea condițiilor de protecția mediului în timpul executării lucrărilor de construcții în Municipiul Chişinău**

Consiliul Municipal Chişinău, întrunit în şedința ordinară din data de \_\_\_\_\_;

Având în vedere inițiativa Primarului Municipiului Chişinău prin expunerea de motive la proiectul de hotărâre;

Având în vedere avizul favorabil întocmit de Direcția Asistență Juridică a Consiliului Municipal Chişinău;

Având în vedere avizul favorabil întocmit de Direcția generală Economie, reforme și relații patrimoniale a Consiliului Municipal Chişinău;

Având în vedere avizul favorabil întocmit de Comisia de Protecția Mediului, Turism și Agricultură a Consiliului Municipal Chişinău;

Având în vedere amendamentul propus, aprobat în unanimitate și consemnat în procesul verbal de şedința *privind modificarea punctului 1 din Capitolul III din Regulamentul privind respectarea condițiilor de protecția mediului în timpul executării lucrărilor de construcții în municipiul Chişinău în sensul eliminării diferențelor între cuantumul amenzilor pentru persoane fizice și cele juridice, astfel:*

*“a) nerespectarea prevederilor menționate la Capitolul II, alin (1), lit. b), c) cu amendă de la 10 unități convenționale la 50 de unități convenționale pentru persoane fizice și juridice;*

*b) nerespectarea prevederilor menționate la Capitolul II, alin (2), (4), (5), (6), (7) cu amendă de la 30 unități convenționale la 50 de unități convenționale pentru persoane fizice și juridice;*

*b) nerespectarea prevederilor menționate la Capitolul II, alin (3) cu amenda de 50 de unități convenționale pentru persoane fizice și persoane juridice.”*

Având în vedere nota de fundamentare \_\_\_\_\_ întocmită de către Direcția Generală Arhitectură, Urbanism și relații funciare, Inspectoratul de Protecție a Mediului;

Având în vedere

Având în vedere prevederile Legii nr.1515 din 16.06.1993 privind protecția mediului înconjurător, cu modificările și completările ulterioare;

Având în vedere prevederile Legea nr.1422 din 17.12.1997 cu privire la protecția aerului atmosferic, cu modificările și completările ulterioare;

Având în vedere valorile Concentrațiilor maxime admisibile (CMA) pentru parametrii aerului atmosferic investigați și influența lor negativă asupra sănătății umane și mediului

# What does the local policy focuses on?

**Air quality: 17 measures**

**Noise: 4 measures**

**Waste management: 7 measures**

**Water and soil quality: 10 measures**

Sanctions in case less than 80% measures implemented.

- of at least 15 of the 17 measures, at choice, for the category “Air quality”, about 88% of the total measures;
- of at least 3 of the 4 measures, at choice, for the category “Noise, vibrations and communication with citizens”, 75% of the total measures;
- of at least 6 of the 7 measures, at choice, for the category “Waste Management”, about 87% of the total measures (point 1 is mandatory);
- of at least 8 of the 10 measures, at choice, for the category “Water and soil quality”, 80% of the total measures;



# Next steps

## **Voluntary certification system:**

Green City Lab will manage the following:

- buildings and communities certification.
- education and accreditation of specialists.

→ Develop an education system to support the market transformation including the active professionals targeted. During the pilot stage partner educational platform can be used (eg. RoGBC Green Building Professional Platform);

→ Identify the first pilot stage projects;

→ Develop benchmarking and monitor implementation;

→ Continue development after the pilot performance results and impact were achieved.

**Practical codes:** pending approval

**Local legislation:** pending approval

