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**Integrating education with human behavior relevant to influence of  
Coronavirus and negative emotions in a built environment  
(MICROBE)**

**Partner country report on current state of higher  
education and its relationship with humans' behaviour  
on influence of coronavirus and negative emotions in a  
built environment**

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## 1 INTRODUCTION

The purpose of this series of country reports is to obtain general philosophical, pedagogical and practical understanding on the status of higher education and its impact on minimizing the influence of coronavirus and negative emotions in a built environment by applying behavior change in partner countries. It will also provide a basis for understanding and evaluating the capabilities of partner institutions on integrated education for influence of coronavirus and negative emotions in a built environment. The results of these reports will inform a capacity building framework, which will form the basis for development of modules on influence of coronavirus and negative emotions in a built environment during the MICROBE project. The reporting approach is based on the Capacity Needs Assessment Methodology (CAPNAM) proposed by the United Nations (2013).

The report includes chapters on the following:

- Context. Provides an overview of the regulatory, socio-political, and cultural factors that shape policy on the human behavior relevant to influence of coronavirus and negative emotions in a built environment in the country in general, and education in particular.
- Scope and coverage of education policies on influence of coronavirus and negative emotions in a built environment by the Higher Education Institution (HEI). Examines the illustrative policy and planning issues relevant to integrated education on human behavior relevant to influence of coronavirus and negative emotions in a built environment.
- Description of capacity types. Evaluates the existing state of capacities of HEI in the field of integrated education on human behavior relevant to influence of coronavirus and negative emotions in a built environment. As defined by the CAPNAM analytical framework, the four types of categories are institutional, organizational, individual, and the knowledge base.

The content of this report is related to the MICROBE Project and reflects only the author's view. The National Agency and the Commission are not responsible for any use that may be made of the information it contains.

## 2 CONTEXT

*This section provides an overview of the regulatory, socio-political, and cultural factors that shape policy on the human behavior relevant to influence of coronavirus and negative emotions in a built environment in the country in general, and the education in particular.*

### 2.1 Socio-political and cultural context

What are the socio-political and cultural contexts providing the framework for educational policy planning in the field of human behavior relevant to influence of coronavirus and negative emotions in a built environment in the country? Are there any regulations, plans, etc.?



Information is presented in Vilnius Gediminas Technical University Country Report.

## **2.2 Status of education**

What is the current state in education on human behavior relevant to influence of coronavirus and negative emotions in a built environment? Is it important at your country? Please specify.

Information is presented in Vilnius Gediminas Technical University Country Report.

## **2.3 Funding**

Is funding sufficient for integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment at your country? Please specify.

Information is presented in Vilnius Gediminas Technical University Country Report.

## **2.4 Educational needs**

What are the needs in integrated education on human behavior relevant to influence of coronavirus and negative emotions in a built environment (please list up to 5 major needs at country level):

Information is presented in Vilnius Gediminas Technical University Country Report.

## **2.5 Educational gaps**

*What are the gaps in integrated education on human behavior relevant to influence of coronavirus and negative emotions in a built environment (please list up to 5 major gaps at country level):*

Information is presented in Vilnius Gediminas Technical University Country Report.

# **3 POLICIES RELEVANT TO HIGHER EDUCATION, AND THEIR RELATIONSHIP WITH HUMAN BEHAVIOUR ON INFLUENCE OF CORONAVIRUS AND NEGATIVE EMOTIONS IN A BUILT ENVIRONMENT**

*This section examines the illustrative policy and planning issues relevant to integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment. Please answer following questions.*



### 3.1 Policy and planning

Please describe policy and planning issues currently being addressed by the HEI in the field of integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment.

#### 3.1.1. Urban planning for the sustainable development

Existing urban structure of the city is the result of 700 years genesis. During centuries city suffer wars, fires, floods, pandemics, other accidents. At the beginning of the 21st century, the city is tackling the challenges of climate change, energy saving and mobility. Solving existing problems of climate change, mobility, energy and natural resources saving, fighting with urban sprawl, - Vilnius municipality focuses on preparation of two important policy documents:

- **New Master plan 2030** (<https://vilnius.lt/lt/miesto-pletra/vilniaus-miesto-savivaldybes-teritorijos-bendrojo-plano-sprendiniai/>).

After regaining independence in 1990 Vilnius has a strong focus on urban planning. From 2016 third master is under the preparation. It is planned Master plan must be approved in 2021. New plan declare Continuity, is More detailed, Calculated need and location for social infrastructure and green areas. New Master plan 2030 Vilnius urban model: a Center with post-centers; multifunctional urban structures; priority for internal development, conversion, renovation and modernization.

Attention is paid for the plot of green areas and their accessibility (Central part 8 sq.m/person with availability 800 m.; in the multistory housing areas: 2 sq.m/person with availability 200 m.). The protection of existing green areas in the soviet style multistory housing areas is planed. Pedestrians will be given priority in many parts of the city. Quite areas, low-speed zones in large housing areas are defined considering noise, air quality and transport accidents <https://judumas.vilnius.lt/informacija/automobilis-toleruojame-ar-ribojame/>, <https://maps.vilnius.lt/aplinkosauga#layers>

**Vilnius 2030 Vision** - to be a competitive city. The competition belongs on public goods : Accessibility; Excellent public transport; Very good cycling facilities; High standard of culture; Beautiful public realm: streets, squares and parks; Bars and restaurants; Clean air and affordable housing

- **Sustainable urban mobility plan SUMP** (<https://we.tl/t-e6ysm3jllw>) <https://judumas.vilnius.lt/>

Other important urban plan for Sustainable development (ear quality, noise level, satisfaction), Climate change and Energy saving is based on the conditions: that city urban development must be comprehensive, jobs will be closer to the residential areas, social - cultural and every day services infrastructure. Low emissions zones for logistics are foreseen.

Ambition changes in population mobility model are expected:

| Model      | 2017   | 2030   |
|------------|--------|--------|
| On foot    | 24.5 % | 29 %   |
| By bicycle | 1,5 %  | 7,5 %  |
| By cars    | 49,9 % | 33,5 % |



|                     |        |        |
|---------------------|--------|--------|
|                     |        |        |
| By public transport | 24,1 % | 30,0 % |

How to react to the COVID 19 pandemic was not foreseen in those documents. There were no practices, special guidelines for a new situation.

If people are going to work more from home, can we think of mixing sectors? How to make people happier staying at home, a specially in the Soviet multistory housing areas? How to keep social distance? How to proceed with participatory platforms, data for urban planning, maintenance, public involvement to the digital environment? This period push everybody to rethink and to upscale daily interaction with citizens to the more open and flexible manner, etc.

### 3.1.2. Highlighting redesign and greening of Vilnius public spaces.

Vilnius is an unusually green city by most standards: 34 % of the territory Vilnius is made up of forest, 4 % - agricultural land and other undeveloped land, 6 % - extensively used greeneries, 2% - water. There are different programs and funds allocated by the city to strengthen local communities, to re-development of the communal areas, for public arts in neighborhoods. It is planned to have shared city budget that will allow communities to fund some actions and redevelopments on their own. Facing the contemporary challenges city must fulfil urban policy of accessibility and multifunctionality of public spaces - within 300 m. distance to bring every citizen public or green space of sufficient quality and valuable biodiversity, to satisfy needs of different local stakeholders in there. City's main task is to maintain local identity by bringing modern quality of live and feeling of satisfaction to those who live in large modern housing areas occupied by more than 60 % of city residents. City planners must identify pedestrians and users of public transport as a priority. In urban planning it has to be considered how long take to get to the public park on foot; is school or work close enough to walk to; is public transport accessible and satisfying; do everyone has opportunity to work and recreate without commuting throughout the city center? The new urban planning scenarios and neighborhoods' renovation should be more multifunctional, secure, attractive, green, and pedestrian-friendly.

- **Green Vilnius Policy.** It intended to characterize the main goals and actions to be taken in next 10 years for specific maintenance and use of different urban landscapes, to define different methods and pool of actions for preservation, maintenance and enhance of natural value of cityscape. Goal of city is to create green infrastructure as a tool for boosting ecological capacity of the city and struggle the consequences of climate change. The green area contains 49% of Vilnius city area and requires high capacities of maintenance and essential financial investments as well as openness for public involvement ( [to be confirmed](#)).
- **Green Vilnius map** - open data about green and public realm is under design complying with Green Vilnius Policy. More and more architectural competitions are being announced looking for the best ideas on parks and public spaces design. In year 2020 - 2021 4 competitions were fulfilled and few more are underway ( [to be confirmed](#)).
- **Greening.** Huge attention is taken to the city resilience to climate change – every year city is planting new trees and bushes not only in parks and squares but along the streets in order to create shadow, collect rainwater, reduce hard coating of streets. In 2020 it was planted 2185 trees and 8000 bushes ( <https://maps.vilnius.lt/miesto-tvarkymas#layers>); ( <https://ataskaita2019.vilnius.lt/mano-vilnius-zalias/>).
- **Neighborhood Program.** Is created to enhance communities of large soviet housing estates to adopt different financial instruments and take over social and economic



ownership of refurbishment of neighborhoods built in modernism period.  
(<https://amiestas.lt/kaimyniju-programa/>).

- **Create Vilnius Program.** Program is dedicated to enhance creativity of society, promotion of arts and cultural activities in neighborhoods and public spaces all around the city. Up to 20 creative projects financed annually amounting up to 500 000 EUR (<https://vilnius.lt/lt/kuriu-vilniu/>), (<https://maps.vilnius.lt/laisvalaikis#layers>).
- **Urban gardening Regulations.** It will allow the citizens to redesign city public spaces (newly design and renovated ones) according to community needs to have their own Community garden within the proximity of their living place. Until the recent times the city was not active in promoting ecological agriculture though today, we have first move towards the drawing up regulations and guidelines to cover the use of urban agriculture. Vilnius City Municipality, while rehabilitating new green spaces, closely cooperates with local communities, which are involved in each step of the process right through to completion. New regulations will lead to possibility to design a part of these spaces as community gardens or to accommodate various forms of urban agriculture in tightly urbanized areas of large housing estates. According to today's needs to encourage initiatives of local allotment gardens for people to garden for their personal needs, settled among the housing development (to be confirmed).
- **Walkable city.** The city of Vilnius, to encourage Vilnius residents to walk or to travel by public transport as much as possible, creates a joint network of walking trails. Twenty-four leisure trails, sixteen everyday walking trails and one hundred kilometers trail around Vilnius are planned. The trails have educational and recreational value; they connect natural sites. Walking is a good alternative to the usual journeys made by car and one of affordable tools even in quarantine circumstances. (<https://vilniuskojoms.lt/#/en>) .City is coming more friendly for pedestrians and cyclists, more walkable streets in the central part of the city are planned. Recommendations of streets and public spaces suitability for universal use has been adopted. Design code for streets is under development currently. (<https://vilnius.lt/lt/2021/01/26/pokyciu-planai-naujamiestyje-eismas-letes-gatves-taps-patogesnes-pestiesiems>); <https://vilnius.lt/lt/savivaldybe/miesto-ukis-ir-transportas/susisiekimo-pesciomis-projektu-rekomendacijos/> .
- **Green islands.** During COVID 19, - 100 small squares was planned under the Vilnius City Municipality project "Green Islands". When the quarantine bolts were finally loosened, residents of many Vilnius districts found 52 new places to revive neighborhood relations. Program is continuing, new small squares (islands) are being developed. City is planting more plants around installed islands. More active local involvement is planed – city is planning to invite residence to compliment those islands with plants by themselves and to encourage locals to adopt this micro infrastructure. (<https://vilnius.lt/lt/2020/07/22/zaliosios-saleles-urbanistine-inovacija-vilniaus-daugiabuciu-rajonuose/> ) (<https://maps.vilnius.lt/laisvalaikis#layers>) .
- **Vilnius between leaders for digital services and access to digital democracy and open data.** COVID 19 Quarantine make us to move all services, participatory platforms, data for urban planning, maintenance, public involvement to the digital environment. This period push everybody to rethink and to upscale daily interaction with citizens to the more open and flexible manner.  
For sampler, now applying for open cafe permission electronically is simple and convenient ([https://paslaugos.vilnius.lt/service-list/Leidimo-prekiauti-\(teikti-paslaugas\)-lauko-kavineje-isdavimas](https://paslaugos.vilnius.lt/service-list/Leidimo-prekiauti-(teikti-paslaugas)-lauko-kavineje-isdavimas)).





- **Ecological education.** Vilnius city Municipality is providing support and promoting ecological initiatives via annual grant scheme, e.g., urban gardening, promotion of bike sharing, car sharing, greening of public spaces etc.  
Municipality is actively working with programs, related in particular with ecological sustainability: The program of environmental education for municipal institutions (schools, day-care centers, youth organizations, NGO's etc.) Every year the tender for the best environmental project is announced. The main three themes – waste management, creation of green educational spaces (Urban gardening, environmental quality ( <http://www.aplinka.vilnius.lt/lt/>).
- **Open cafes.** Starting in 2020 when COVID 19 pandemic restrictions were released Vilnius announced freedom for outdoor cafes. Actions taken were directed towards creating easier conditions for outdoor cafes – tax cuts, more space for cafes in public parks, squares, and plazas. Based on the results, in 2021 Vilnius issued a new e – service for restaurants and cafes to apply for permissions. New system works on the background of competitive selection tool and GIS map, is open to public, catering companies save funds on technical design. Applying electronically for getting permits to arrange cafe on the open areas is simple and convenient <https://mapsdev.vilnius.lt/kavines#layers>; [https://paslaugos.vilnius.lt/service-list/Leidimo-prekiauti-\(teikti-paslaugas\)-lauko-kavineje-isdavimas](https://paslaugos.vilnius.lt/service-list/Leidimo-prekiauti-(teikti-paslaugas)-lauko-kavineje-isdavimas).

### 3.1.3. Access to the information and knowledge technics.

The government of Vilnius municipality is using smart solutions for the management of city's challenges and engagement of inhabitants in the decision-making process. Today about 100 web based e-services are provided for residents and businesses: licenses, archive certificates, different type of permissions, applications for youth projects, permission for protected green pruning, etc. ( [http://www.vilnius.lt/lit/E\\_paslaugos/691](http://www.vilnius.lt/lit/E_paslaugos/691) ).

Vilnius city public access to the spatial and open data portal, which provides an opportunity to more easily access, view, visualize and download information of interest to you (public and social services, urban planning, districts, administration and etc.). You also have the ability to evaluate and analyze data by viewing information on an interactive map. GIS open data website publishes (with the possibility to view and download) public GIS data of Vilnius municipality. Data can be downloaded in csv, kml, shp formats ( <https://maps.vilnius.lt/>).

Public 3D map of Vilnius helps planners and the public. Vilnius authorities have built a detailed 3D map of the city which is of great use to urban planners, but also an entertaining way to explore the city. The map, which was put online 2020 year, is primarily intended for city planners and architects to visualize new projects and assess their impact on existing urban structures. Vilniaus Planas (Vilnius Plan), the municipal agency that designed the map, made 72 flights over the city and took 30,000 high-resolution orthographic images to generate the model. Thanks to the map, city planners have been able to assess construction proposals more independently, while before they had to rely on visualizations provided by developers.

This immediately allows to see how the structure would fit its environment and whether it would block views and sunlight for the neighbors. The map ( <https://3d.vilnius.lt/> ) received an award from the international geographic information system software developer Esri, which commended it as an innovative and unique solution, according to the municipality.

Vilnius municipality invited citizens of Vilnius and all those who want to contribute to the increase of cyber security of Vilnius city and promise to follow the established rules, to





participate in the program of responsible disclosure of cyber security gaps of Vilnius city municipality administration.

„Hack me if You can“ program <https://vilnius.lt/lt/vilnius-2in/kibernetinis-saugumas/> enables a person, without violating the applicable legal acts, to identify cyber security vulnerabilities free of charge, to report them to the Vilnius City Municipality administration, and to share information with others after eliminating them.

Vilnius is between leaders for digital services, access to digital democracy and open data. European Data Portal research among other cities Vilnius was evaluated. Report says: "Cities covered in this report include Dublin, Florence, Gdansk, Ghent, Helsinki, Lisbon, Thessaloniki and Vilnius. All these cities have Open Data strategies and portals in place, which are not stand-alone initiatives but are embedded in broader digital or Smart City strategies. „Open data policy is a strong part of daily life (<https://atviras.vilnius.lt/tinklarastis/irasas/european-data-portal-miestu-analizes>)

Innovation and Technology Group is working to produce digital innovations aimed at smart development of Lithuania 's capital. There are quite a few great examples of that, and freshly launched portal „OPEN INNOVATION - OPEN ALGORITHM - OPEN DATA“ is the most recent of them. What 's the idea? This portal not only provides easy access to all open data related to Vilnius, but as well shares all the information about the city 's projects, or projects developed by the third parties, implemented using open data. Thus, it helps IT specialists to develop new digital solutions, as they can find dozens of open data and as well – already developed systems codes and digital tools, all to be used free of charge. And Vilnius 'population is provided with high-quality data and statistics that help to take information-based, smart decisions regarding various aspects of their lives. And this solution is offered to be implemented to other municipalities of Lithuania, free of charge and with the help of highly skilled Vilnius Innovation and Technology Group team. This innovation, based on culture of openness, collaboration and sharing, directly adds to a more sustainable urban development, and could be replicated in other cities and countries, too (<https://api.vilnius.lt/>).

Through ROCK project (2017 -2020) Vilnius city administration went step further for intellectual city. By using Multimodal Biometric Method emotions where collected from 10 sensors analyzing the emotional, affective and physiological states, arousal and valence (MAPS) of passersby, is a quantitative and qualitative understanding of people's feelings. For evaluation of the quality of services additional sensors were installed in the City hall, on the public beaches. Citizens emotions (happiness index) are incorporated as indicator in Vilnius 2IN STRATEGY (<https://vilnius.lt/lt/vilnius-2in/>).

During COVID19 Quarantine, the Sensors showed the dominance of negative emotions. City administration was very active to inform citizens about health security, purchase masks and other equipment needed, and developed a support plan for pandemic victims. After a partial release it positive emotions rose higher, but boredom prevailed. Therefore it was decided to organize various cultural and business events (cafes in open spaces, concerts in the Old Town, Films at the airport, etc.). When the lock down ended, the mood of the population returned to average and dramatically fell down during the second lock down in December 2020. To perform with neuro analytic data and it's protection requirements takes specific knowledge. Strong technological and scientific partners from VGTU help to implement such experiments.

#### **3.1.4. Institutional capacity for the Corona 19 period 2020 03 – 2020 05.**



Vilnius as metropolis city took a leading role in coping with COVID 19 crisis situation in region. Vilnius City Emergency Center has been established for immediate reaction to the crisis situation, coordination and prompt actions (<https://vilnius.lt/lt/category/rock-projektas/>). From 2020 03 12 - all educational institutions (including kindergartens, schools and universities) where closed. All events and activities stopped; cinemas, sports clubs and other recreational or entertainment venues were closed.

The e-learning platform for Vilnius teachers was launched. The course was designed to introduce to virtual learning environments and learn how to create own content in Google Classroom and Microsoft Teams learning environments.

From 2020 03 13 - all the municipal management activities launched on line (Regular Mayor Meetings, City Council meeting, staff communication, city e-services, open data, many public services). The use of internet grows up 5- 7 times. City entertains, communicates, works on line. 2020 03 18 - Through the efforts of municipality, three planned drive-in Corona virus testing stations start operating in Vilnius city. 2 ME UR were allocated from the city budget to buy lung ventilators and protective masks, other measures to cope with pandemic.

Vilnius municipality involve regions to make a plan for the third step in the fight against the COVID-19 virus. An algorithm was developed to determine the order in which medical institutions in Vilnius would be opened to patients in need of intensive care, with the establishment of a new temporary hospital with 2 000 beds at the last stage, if needed.

UAV (unmanned aerial vehicle) used as citizens information tool. Nonstop residents' behavior monitoring and information from the air was carried out during the daylight by 6 long distance UAV in 100 most visited public spaces in Vilnius. By another 7 UAVs we are broadcasting playful audio messages recorded by famous people, throwing leaflets urging the people to draw attention to the important conditions during quarantine and a request to protect the health of all of us. 4 UAVs have been prepared to test the drone delivery of medicines and other light consignments, which will be carried out if necessary.

City administration proclaimed recommendations for residents how to protect from viruses (special video for people who do not speak in Lithuanian language) <https://vilnius.lt/en/2020/03/13/recommendations-to-residents-how-to-protect-yourself-from-viruses/> New website [www.karantinas.lt](http://www.karantinas.lt) was created for ideas and activities collection what to do at home - for children, teenagers, adults and seniors, as well as thanks to doctors. Platform "Let's talk" was launched. People had possibility online to express opinions about the urban projects. "Go Vilnius" launched platform "Meet a local online". The purpose of this platform is to assist the expats with the following issues: 1) translating/interpreting communication with public authorities on COVID-19 related issues, 2) answering questions related to COVID-19.

2020 04 16 - Vilnius city council decision: during the period of national quarantine to exempt from the property and land taxes businesses whose activities were suspended. "Open café" movement started when City council decided to exempt outdoor restaurants from the duty, which they pay for the city, for the allowances to implement outdoor services. Also, all the duties which were already paid to Vilnius city budget will be returned for the businesses, implementing outdoor trading activities like flowers, souvenirs and crafts pavilions.



Thousands of volunteers have come together. Providing support for doctors and medical staff entrepreneurs rose around EUR 600,000 through online communication. Volunteers took care of senior citizens by helping them with shopping. Vilnius Public Health Bureau prepares recommendations for on how to properly wear various types of protective equipment: face masks, respirators or other means and protect yourself and others. Telecommunications companies provided resources to coordinate the joint effort. They are “hunting down” fake news, applying one’s IT or language skills or any other personal abilities. Larger businesses extended an offer of free internet services to all medical facilities. Distilleries and chemical plants produced disinfectants.

Cultural activities in Vilnius for improving the emotional situation:

- By Iconic sites illumination Vilnius express its solidarity with Italy, which is mourning the loss of thousands of corona virus victims.
- City administration together with the telecommunications company Telia has found a technological solution, to see blooming sakuras online at [www.karantinas.lt/sakuros](http://www.karantinas.lt/sakuros)
- Initiative “Extramural Vilnius” offers to join virtual activities. Extramural Vilnius magazine reached various Lithuanian cities, full of stories about less heard Vilnius places, events, and personalities.
- Vilnius Old Town Renewal Agency produced virtual educational stories about Vilnius cultural heritage launched online instead of real walks “Cultural Heritage during Lunch”. During the first month of the quarantine (March 16, 2020 – April 16) Cycle of 3 video stories about Radziwiłł Family (in Lithuanian) was prepared. The stories are suitable for schoolchildren and for all who are interested in Vilnius heritage. 1st story is about Vilnius – City of Baroque. <http://www.vsaa.lt/index.php/virtual-educational-stories/>
- “Cinema drive - in”. A private initiative invited people to watch the film from the car. The initiative started with a single screen and 180 parking spaces.

### 3.1.5. Real estate policy in other countries and cities: responses and challenges

COVID-19 disrupted the normal flow of life in the United States, with state and local governments issuing orders to stay at home and allowing only essential businesses and services to stay open. Communities across the country were affected. With no vaccines or medical treatments available, social distancing interventions were a necessary move to contain the virus, but they also meant crushing economic costs to businesses and people. Among the direct impacts are job losses, reduced hours and incomes, food and housing insecurity, and permanently closed businesses. Even ordered to stay at home, people still can go out for outdoor exercise. In their effort to give residents spaces for safe exercising (and commuting) in view of the two-meter social distancing recommendation, several cities, including New York City, have banned vehicular traffic from certain streets leaving them exclusively to pedestrians and bikers. New Yorkers were offered about 11 kilometres of open streets in and around parks. Recently the city announced new plans to add 160 more kilometres, add additional bike lanes and widen sidewalks in May. Similar measures have been introduced in Seattle, Oakland and San Francisco [1].

Some experts even suggest that telework becoming a new normal will make living in a large city less desirable and people, no longer attached to their old offices, will prefer less populous, and thus more affordable, places. Politico, a political journalism company, published an article titled “The Death of the City”, which argues: “For the first time since the earliest cities emerged in the Fertile Crescent some 6,000 years ago, concentrated urban centers no longer have a monopoly on the economic and cultural connections that make civilizations tick forward” [2]. In an attempt to make tenants, and sometimes landlords, less burdened, many countries have introduced changes in their real estate policies [3]:



- The United States is a country where state and local authorities are in charge of many decisions, and evictions have been temporarily prohibited in at least 34 states. The federal government also prohibited evictions from a property with a federally backed mortgage loan or federally subsidized housing for a term of 120 days. Citigroup, JPMorgan Chase, and other major mortgage lenders suspended mortgage payments. Construction has been suspended on all projects in some U.S. states, with a few exceptions, medical facilities among them.
- Some countries in Europe are providing temporary mortgage relief, have suspended evictions or both, France, Germany, Italy, and the U.K. among them. Mortgage and rent payments have been suspended both for commercial and residential tenants in various European countries. France, Italy, and other countries have suspended construction. Official tax reliefs have been granted to retailers in Europe, while banks have been urged to be lenient and refrain from foreclosures for late payments.
- Some countries in Asia, Singapore among them, are thinking of new laws to grant six-month protection to commercial tenants who cannot pay rent. Some Asian landlords have offered temporary rental rebates and rent discounts.

Tenants, owners and other entities have been offered a range of support measures around the world. These include a freeze of rent increases, rent reductions, suspended evictions, rent payment subsidies, and rental contract extensions for tenants; deferred taxes, suspended foreclosures, assisted bank lending, mortgage forbearing, and mortgage payment support for owners; and, in general, emergency shelter, support for construction industry and utility bill payment support [4].

In response to COVID-19, countries introduced a range of crisis-response measures in their housing policies, such as suspended or limited rent payments, tax reliefs for mortgage borrowers, suspended evictions or extra rules regulating landlord-tenant relations, eased macroprudential policy settings, expanded public capital spending on affordable housing supply, increased housing allowances, and relaxed land-use restrictions. Maintained for a long period, these measures may discourage from the expansion and maintenance of the housing stock, and put barriers restricting mobility, both labour and residential, in the longer term. Financial and economic resilience may also suffer [4].

In the ongoing COVID-19 crisis, cities are the first line of response. Measures are introduced nationally, but each city is a key to their implementation. They also act as laboratories of innovative and bottom-up recovery strategies. The shift towards green, inclusive and smart cities was already in progress before COVID-19, but the pandemic has sped up this trend. In our efforts to build back better cities, this policy note offers 10 key lessons learned from the crisis [5]:

1. Various countries suffered different impacts from COVID-19, but policy responses were often very similar across the world. It is important to customise approaches with local situation and the needs of local people in mind.
2. The health crisis has hit economic and social life hard with various cities suffering different consequences. Their recovery options and possibilities depend on their openness to trade, labour market structure and industrial composition.
3. A shift from the emphasis on increasing mobility towards expanded accessibility was already happening, but this rediscovery of proximity offers an opportunity to speed up the process by looking at urban design and planning and public spaces from a new angle.



4. The pandemic laid bare striking inequality across places and people, and this inequality was particularly glaring in large cities, where vulnerable groups such as the elderly, women, the poor, and migrants have been disproportionately affected.
5. Urban density is not the key factor in this health problem—the quality of urbanisation and structural inequalities are. Thus, tighter clustering will likely continue to be a source of benefits rather than concern;
6. A shift towards digital life, especially prominent and of great significance during the pandemic, will become entrenched as part of a “new normal”, although remote work possibilities vary both within and across countries.
7. As people are becoming more environmentally aware, thanks to the “Greta effect” and “Zoom effect”, circular economy and clean mobility have become more acceptable goals for transition, both socially and politically.
8. Governance has also been affected by COVID-19, due to changing trust in authorities, especially local politicians. In some countries people trust them more, but less in others.
9. Resilience needs more emphasis, as the disrupting effects of COVID-19 show. To achieve resilience, cities need to prepare for future shocks better by setting guidelines what persons have to take action, what their actions should be, at what scale measures should be applied and how to proceed in case of a crisis.
10. Strategy, policy, planning, and budget need an overhaul, and global agendas such as the Sendai Framework, the SDGs, and the New Urban Agenda can help with this aim.

After the initial short-term responses to manage the crisis, including local service delivery, workplace and commuting, social distancing, vulnerable groups, citizen engagement, support to business and other aspects, cities now have turned to long-term recovery strategies aiming to become greener, smarter and more inclusive ones [5]:

- Moving towards recovery, cities have taken many inclusive measures to address structural inequality and close the gap. Their measures include support to vulnerable households, construction and renovation of affordable housing, and local business support and employment.
- Looking forward to the future after COVID-19, many cities are already planning and making investments to ensure economic recovery is accompanied by environmental sustainability with a focus on energy efficiency and green modes of urban mobility.
- As digitalisation has been one of the key emergency responses to the pandemic, many cities are adopting smart city tools and making their use a more permanent aspect, at the same time monitoring the risk of spreading infection and staying alert. As cultural resources, municipal services, information, and participation are moving online, the virtual space is becoming more and more integral.

Even when the COVID-19 pandemic is over, COVID-19 will likely stay with us. The pandemic is a public health emergency with attempts to protect the health of people and limit the spread of disease. At the same time, the pandemic and its aftermath is prompting cities to look for new ways to deliver services, plan spaces and resume economic growth. In the context of the COVID-19 pandemic, 33 latest city strategies to achieve long-term recovery and ensure resilience to future shocks are summarised as broad categories of inclusive recovery and green recovery [6]:

- Inclusive recovery. Social inequality has existed before, but the COVID-19 crisis puts an additional emphasis on the importance to address this issue. The crisis has revealed shortages of affordable housing for low-income people and families, as well as the risks of infection the inadequate housing poses in lacking communities. For that purpose, many cities launched public policy or investment initiatives with an aim to address the





shortage of affordable and adequate housing and make disadvantaged residential areas better.

- Green recovery. As communities start recovering from COVID-19, cities will have many opportunities to emphasise ecological solutions in their economies, which, in addition to pathways to new jobs and long-term local economic growth, can also bring lower CO2 emissions, make communities better prepared for climate related risks (e.g. heatwaves or flooding) in the future, and improve urban environments (e.g. higher biodiversity, lower air pollution). As one city after another across the globe imposed lockdowns, car traffic significantly dropped in most cases, which, in turn, led to cleaner air and lower CO2 emissions. Regions with lockdowns saw a 50-75% decrease in road traffic flows and major cities experienced drops in rush-hour traffic congestion as high as up to 95%.

During the pandemic cities are upgrading various urban solutions to achieve maximum energy efficiency and reduce energy costs in their buildings after COVID-19. Experience shows that investment in energy efficiency and retrofitting not only reduces emissions but can also drive economic activity and job creation in the construction sector [7]. Urban density and urban form (compact or sprawl) are the advantages that could be used by all levels of government towards green urban economies with climate-resilient and low-carbon urban infrastructure. Designing and construction of green buildings and streets, renewable energy production and procurement, where feasible, and other similar solutions of spatial and land use planning with future in mind would help to achieve the goal [6].

The COVID-19 and the related pandemic caused serious disruptions in the construction industry hurting the housing sector. Households were also suddenly struggling with income shortages hitting their ability to pay for shelter. In response, governments introduced many different protection and support measures for tenants, mortgage-holders, lenders and builders [8]. To visualise the fallout of the crisis in the construction industry better, [8] looks at web-search data. Having then reviewed the measures taken by governments, OECD [8] concludes that, in addition to benefits, some of those relief measures might create inadvertent inefficiencies and make housing supply less responsive to the evolving needs of society and changing demand; hence, the measures have to be phased out as planned. Recent empirical findings led [8] to a conclusion that immediate rescue measures should transition gradually to recovery-oriented policy settings that can support the development of sustainable, inclusive and efficient housing markets.

As COVID-19 was spreading, the pandemic hit the real estate sector around the globe. With countries scrambling to contain the virus, work in construction sites in many places stopped completely or to some extent, leading to loss of income and revenue for households and enterprises alike. Because of that various segments of the property market faced gloomy prospects to different degrees, as some countries introduced stricter lockdowns than others and at different times, and the public health crisis was also of different severity. The housing sector suffered a particularly serious blow, but governments were quick to introduce a wide range of measures to mitigate the adverse effect of the crisis on lenders, borrowers, builders and tenants. Among them are measures that aim to preserve near-term affordability. If maintained for an extended period, however, they may discourage businesses from the expansion and maintenance of the housing stock, and because of that, in the longer term, residential and labour mobility may suffer. Economic and financial resilience is another area that may be undermined. Kept up for too long these measures—most, if not all, meant to be temporary—can cause difficulties with achieving a robust recovery. They can also make the housing market less responsive to the evolving needs of society. As emergency support measures went into force, eviction procedures were suspended, mortgage and rent payments deferred for a time, and utility payments in some cases postponed. During lockdowns, most



national as well as local governments introduced certain measures to provide shelter for the homeless [4].

To facilitate the recovery of homebuilding and ensure that the supply of housing matches evolving demand and the needs of society better, land-use restrictions need to be eased. Greater benefits can be achieved if such reforms are part of an integrated spatial planning framework spanning various hierarchies and government sectors. The reforms should promote housing construction, make housing more affordable, as well as improve neighbourhoods and avoid excessive differences in the access to social infrastructure, transportation systems and public services across different urban areas. Another benefit of the promotion of new residential construction is that a requirement for new buildings to comply with certain environmental standards could speed up the move towards low-carbon economy. The COVID-19 crisis may lead to lasting interrelated changes in housing demand and work organisation that could be accommodated by facilitating construction and redevelopment. Living in lower-density areas and working remotely could be new preferences. Urban-rural divergences then would slow down or even be reversed relieving the current demand pressures in very dense areas. A growing uptake of remote work with flexible workplace would also mean that some office spaces in city centres would be free for conversion to residential units, if land use permits the change. Such shifts could help reduce the gap between regional home prices and, in turn, residential segregation [4].

European Bank of Reconstruction support Barcelona's activities after Covid (<https://www.eib.org/en/stories/covid-19-urban-planning>) Barcelona has a vision, that the new spaces will let residents get around quickly and safely while doing business more easily:

- Pedestrians will be given priority in many parts of the city
- Low-speed zones will limit vehicles to 10 kilometres an hour
- Nurseries, schools, sports centres, a library and a care home will be built or renovated
- All new buildings will be designed to have nearly zero emissions
- New bus lines and bicycle lanes will persuade people to keep their cars off city roads and reduce emissions
- A tree-planting programme is being accelerated.
- The city will become more resilient to climate change, while helping people follow social-distancing guidelines.

## References:

- [1] Hamidi, S.; Porter, K.M.P. How Cities Are Taking Action on COVID-19. *Planning Magazine*. American Planning Association. 2020. Available online: <https://www.planning.org/planning/2020/jul/how-cities-are-taking-action-on-covid-19/> (accessed 10 11 2020).
- [2] Barth, B. Increased Remote Work Could Mean Big Changes for Cities. *Planning Magazine*. American Planning Association. 2021. Available online: <https://www.planning.org/planning/2021/winter/increased-remote-work-could-mean-big-changes-for-cities/> (accessed 20 01 2021).
- [3] LaSalle, J. L. COVID-19 global real estate implications: Paper II. *JLL Research report*. 2020. Available online: <https://www.us.jll.com/en/trends-and-insights/research/covid-19-global-real-estate-implications#download> (accessed 15 01 2021).
- [4] Cournède, B.; Ziemann, V.; De Pace, F. Impact of COVID-19 on Housing: how can policies support a healthy recovery? OECD Economics Department. 2020. Available online: <https://oecd-decoscope.blog/2020/08/03/impact-of-covid-19-on-housing-how-can-policies-support-a-healthy-recovery/?print=print> (accessed 10 01 2021).
- [5] Akhmouch, A.; Taylor, A. Cities policy responses. *OECD*, 2020, p. 97. Available online: [https://read.oecd-ilibrary.org/view/?ref=126\\_126769-yen45847kf&title=Coronavirus-COVID-19-Cities-Policy-Responses](https://read.oecd-ilibrary.org/view/?ref=126_126769-yen45847kf&title=Coronavirus-COVID-19-Cities-Policy-Responses) (accessed 15 01 2021).
- [6] OECD. Cities Policy Responses. 2020. 97 pages. Available online: [https://read.oecd-ilibrary.org/view/?ref=126\\_126769-yen45847kf&title=Coronavirus-COVID-19-Cities-Policy-Responses](https://read.oecd-ilibrary.org/view/?ref=126_126769-yen45847kf&title=Coronavirus-COVID-19-Cities-Policy-Responses) (accessed 15 01 2021).





- [7] Dechezlepretre, A.; Kozluk, T.; Elgouacem, A.; Kruse, T. COVID-19 and the low-carbon transition: Impacts and possible policy responses. 2020. Available online: <http://www.oecd.org/coronavirus/policy-responses/covid-19-and-the-low-carbon-transition-impacts-and-possible-policy-responses-749738fc/> (accessed 12 01 2021).
- [8] OECD (2020b). Housing amid Covid-19: Policy responses and challenges. *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris. <https://doi.org/10.1787/cfdc08a8-en>

### 3.2 Gaps in policy and planning

Please describe other, if any, policy issues that are not currently being handled by the HEI but should be considered.

*N.B. The responses to these questions do NOT require describing each policy and planning issue but only the identification of the type of issues being addressed and those not being addressed. The questions are only meant to understand the scope of coverage of important issues by the HEI.*

Recent crisis has revealed gaps in urban development, has encouraged changes in to all development scenarios, has focused on “greening” meanings from nature to sustainable development and sociocultural life, upscaling daily interaction with citizens to the more open and flexible manner.

Nevertheless, there were no special practices or guidelines adopted to a contemporary circumstance of quarantine and post-quarantine situation. New scenarios and models of behavior in public areas have to be created. Some issues remain undiscovered yet:

- If people are going to work more from home, can we think of mixing sectors?
- How to make people happier staying at home in large housing estates?
- How to ensure need for social distance in buildings and public spaces?
- What is the role of urban sprawl?
- How better proceed with participatory platforms, data for urban planning, maintenance, public involvement to the digital environment?
- Etc.



#### **4 CAPACITY TYPES (Universities answer all points. Italy and Bulgaria give answers optionally)**

*This section aims at assessment of the existing state of capacities in the HEI for integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment. As defined by the CAPNAM analytical framework, the four types of categories are institutional, organizational, individual, and the knowledge base.*

Not applicable

##### **4.1 Institutional capacities**

*This part describes the institutional capacities at HEI level. Please answer following questions.*

1. Please provide brief presentation of the HEI.
2. Please describe general model of studies according to different levels (bachelor, master, PhD).
3. Please provide key facts and figures about the HEI:
  - 3.1. Number of students:
  - 3.2. Number of academic staff:
  - 3.3. Student/Academic staff ratio:
  - 3.4. Number of Faculties (please specify):
  - 3.5. Number of graduates:
  - 3.6. Number of study programmes:
  - 3.7. Number of international academic partners:
  - 3.8. International rankings of the HEI (if any):
4. Please describe main education and research areas of the HEI.
5. Is there any strategic priorities given to integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment at HEI level? Please specify.
6. What are the needs at HEI in integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment (please list up to five major needs):
7. What are the gaps at HEI in integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment (please list up to five major gaps):



## 4.2 Organisational capacities

*This part describes the organisational capacities pertinent to integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment at HEI. Please answer following questions.*

1. Is integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment sufficiently included in the curricula of HEI? Please specify according to different levels (bachelor, master, PhD):

1.1. Study programme level (Please list relevant study programmes):

1.2. Study subject level (Please list relevant study subjects/modules):

1.3. Study topic level (Please list relevant study topics):

2. Is funding sufficient for integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment at HEI? Please specify.

3. What are the needs at HEI in integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment related to organisation of study process (please list up to five major needs):

6. Please list up to five major gaps in integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment related to organisation of study process:

## 4.3 Individual capacities: Staff skills

*This part describes the individual staff capacities pertinent to integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment at HEI. Please answer following questions.*

1. How many academic staff works at your unit? (which implements the project):

2. Is there sufficient number of teachers who specialise in integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment? How many?

2.1. At university level:

2.2. At your unit/department:



3. Is there sufficient number of researchers who specialise in human behaviour relevant to influence of coronavirus and negative emotions in a built environment? How many?
  - 3.1. At university level:
  - 3.2. At your unit/department:
4. Please describe the current state of the staff training in HEI. Is it sufficient?
5. Please describe the current state of the staff training on human behaviour relevant to influence of coronavirus and negative emotions in a built environment. Is it sufficient?
6. Does the academic staff have flexibility in designing its own skill development plans or does it have to follow a centrally determined package?
7. Is there staff stability, or does it suffer from high turnover among such professionals?
8. What staff skills are required for integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment (please list up to five major needs):
9. Please list up to five major gaps in integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment related to staff skills:

#### **4.4 Access to Information, Knowledge and Technology**

*Access to information, knowledge and technology is becoming increasingly critical for sustaining long-term growth and development of education. It relates to the capacity to enable academic staff and students to mobilize, access and use information and knowledge, including access to and effective use of internet. Please answer following questions.*

1. Do students and teachers have access to the novel educational resources on human behaviour relevant to influence of coronavirus and negative emotions in a built environment? Please specify:
  - 1.1. Printed learning materials in national language:
  - 1.2. Printed learning materials in English or other languages:
  - 1.3. Online learning materials (open-source videos, simulators (calculators and software), case studies, text material) in national language:
  - 1.4. Online learning materials (open-source videos, simulators (calculators and software), case studies, text material) in English or other language:
2. Does HEI use MOODLE for educational purposes?



3. Does HEI use computer-based intelligent systems, MOOCs, computer learning systems, big data mining for educational purposes? Please specify:
4. Does HEI use software for integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment? Please specify:
5. What Information/Knowledge/Technology is required for integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment (please list up to five major needs):
6. Please list up to five major gaps in access to information, knowledge and technology pertinent to integrated education on human behaviour relevant to influence of coronavirus and negative emotions in a built environment: