Ministry of Foreign Affairs

The Circularity in Construction Sector in Latvia Opportunities and Obstacles for Dutch Entrepreneurs

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Ministry of Foreign Affairs of the Netherlands

LATVIJAS KOKA BŪVNIECĪBAS KLASTERIS

The Circularity in Construction Sector in Latvia – Opportunities and Obstacles for Dutch Entrepreneurs

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This sector scan has been commissioned by the Ministry of Foreign Affairs of the Netherlands.

Research was conducted under the direction of the Latvian Wood Construction Cluster (in Latvian: *Latvijas koka būvniecības klasteris)*

LATVIJAS KOKA BŪVNIECĪBAS KLASTERIS

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Summary

System

There exist some opportunities but also challenges for the development of circularity in Latvia. Among the challenges are the subject of reused and recycled construction material legislation, and accounting and certification in this sector. Current Latvian legislation has allowed for the controversial interpretation of construction waste or material status and the obligations for accounting and reporting, but it does not ensure comprehensiveness. The certification capacity of materials for reuse is also not well-developed. However, waste and construction policy action plans include activities to improve these challenges. A Life-IP supported project is also planned, to develop the system itself. As an example of the improvement of digitalization, a National Building Information System is also under-way, and measures to stimulate its widespread use are planned. These identified challenges also create an opportunity for Dutch construction consulting companies to share their expertise.

Capacity and competence

An understanding of circularity in the construction sector is developing in Latvia. On a conceptual level, many understand circularity rather as reuse instead of multiple-cycle use. This results in a more narrow interpretation of activities and opportunities. The economic benefits from the future value of reusable and recyclable buildings are not estimated and utilized as arguments for circularity in construction projects. On the implementation level, a lack of knowledge is observed for different stakeholders - for example, “how to define circularity requirements in public procurement technical specifications”? At least two educational projects on circularity are planned in the near future for various construction stakeholders, but the contents are under development. Knowledge on practical solutions for decision making based on practice and data is an opportunity for Dutch specialists.

Buildings

The market volume in the construction sector in Latvia has reached 2.4 bil. EUR in 2020 with more than half in the public sector. The lowest price approach in the public procurement and unexpected substantial material cost increase in 2021 does not allow much opportunities for expensive innovations. It results in only a few projects with clear demand for circularity solutions. Riga municipality is preparing a circular construction development plan. It is intended to realize 3 construction demo projects for circularity (demolition, new building, and renovation). Hospitals have expressed their interest in circular solutions as they estimate economic benefits in regular reconstructions. Separate projects such as the building waste exchange facility by NGO Free Riga are open for development and expansion support. Some potential for circularity solutions was identified in education building renovation plans and EU obligated yearly energy-efficiency renovation volumes. However, preparation is necessary to create and define a demand for cost-effective circularity solutions. Some architects are starting to focus on circularity aspects for both the use of recycled materials and modular, demountable building design.

Building products

There are considerable traditions in Latvia regarding biomass, like modular wooden houses (mainly for exports) and secondary cellulose insulation. Some innovative materials are developed in Riga Technical University and several experimental projects realised like used tyre processing in road construction, polymer waste recycling in roof materials and others. Attempts to create high value home products from demounted wood were observed. But there are still a lot of opportunities to develop markets for circularity oriented cost effective materials and there are advantages of establishing lower cost production lines in Latvia. Some innovative Dutch products, like renting of facades for fixed time, have free niches in Latvia.

Introduction

The EU Green Deal, a major milestone for Europe, highlights the building sector as a priority area, with a focus on the need for energy efficiency in buildings and for newly-built buildings to have zero emissions, as just some examples.

The Latvian government supports these priority areas, as an adoptee of the Green Deal. In addition, the concept of circularity and the circular economy has gained traction in Latvia during recent years, and this is supported by a range of policy documents.

The many events focusing on circularity in Latvia in recent years have also served to highlight the growing popularity of the topic for local stakeholders and the public. The scope of debate, although still heavily focusing on waste management and recycling as a main theme, has broadened to include buildings and infrastructure, textiles, furniture, green procurement and other topics.

Despite official statistics which reveal that construction materials from waste disposal reach 97% in Latvia - exceeding the EU average target of 70% - most of it is low grade refilling activities, and the repeated use of different construction waste in higher value processes is rather minimal. The reasons include legislation weaknesses and lack of construction material recycling and reuse infrastructure. That gives the Dutch business an opportunity to support the development of circularity system in the construction sector of Latvia.

This study investigates the opportunities and barriers from the perspective of Dutch entrepreneurs in order to enter the Latvian market, with a particular focus on the construction sector. The study is commissioned by the Ministry of Foreign Affairs of the Netherlands and was conducted by the Latvian Wood Building Cluster with support from Oxford Research Baltics.

Illustrative background photo images in the report represent different buildings awarded as " The most sustainable building" in Latvia last years. They are not directly related to the topic in the page. Source:https://www.ibp.lv
Cover page photo source: Unsplash, author: Aaron Burson
Current page photo source: Unsplash, author: Toa Heftiba
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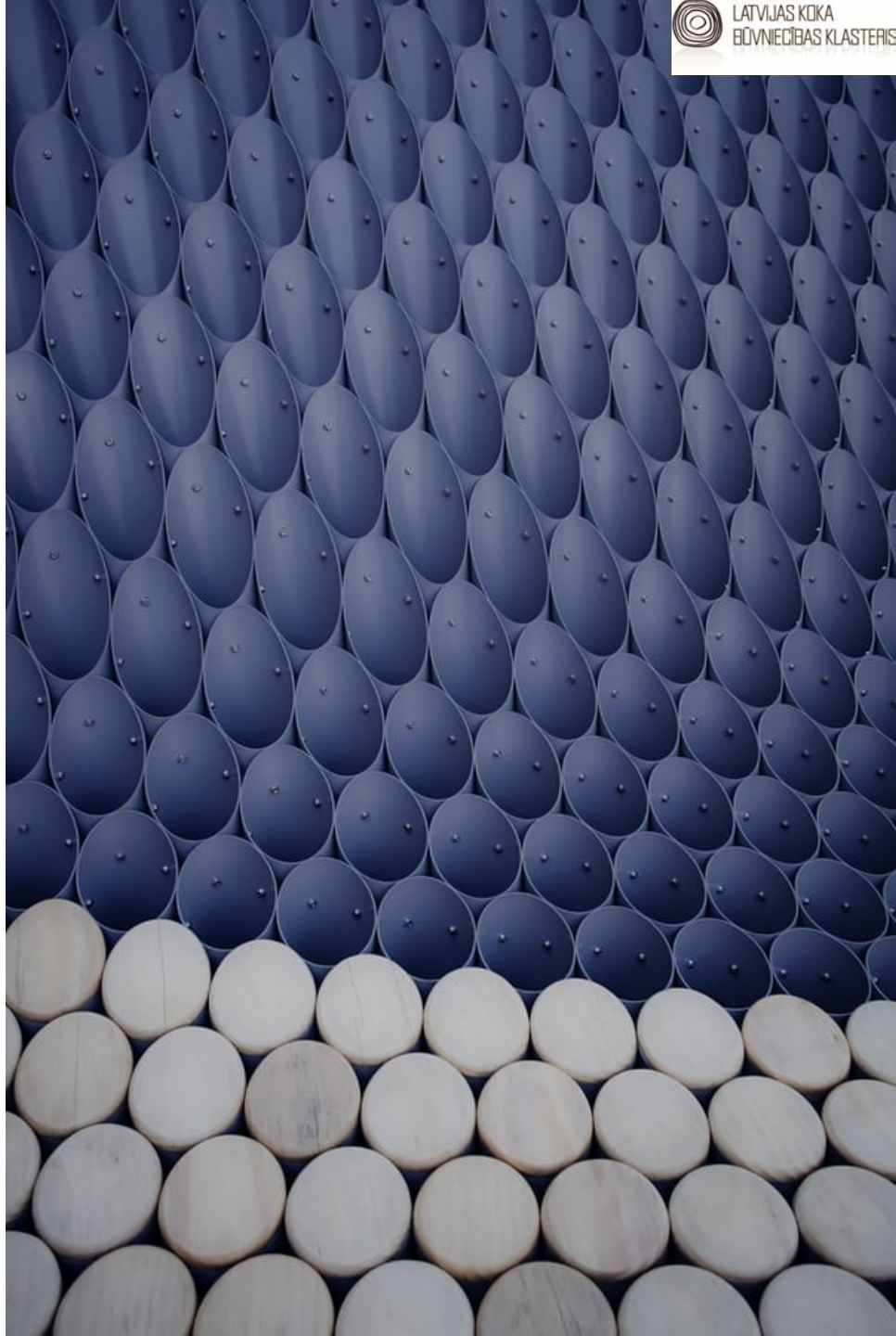


Methodology

Research questions

What are the business opportunities for Dutch entrepreneurs who operate according to circular economy principles to expand their operation and co-operation on the Latvian construction market? What methods and tools are already developed and tested that can be transferred to Latvia for mutual environmental and economic benefit?

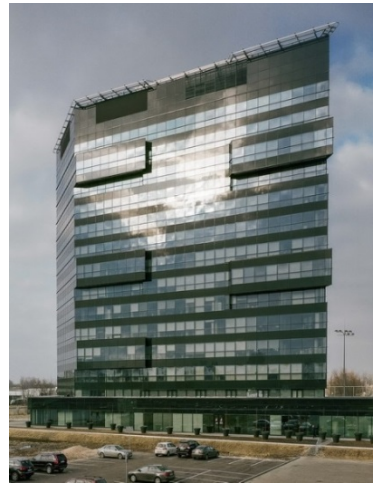
Methodology

Phase 1 of the research was to identify scope of sectors and activities related to circular construction. Three theoretical concepts were assessed. One was selected for identification of potential sectors and activities, but other – for mapping business opportunities.
Phase 2 provided a secondary analysis of construction and sustainable construction sector in Latvia covering legislation, statistical data and planning documents.
Phase 3 was focused on secondary data on circular construction in the Netherlands and Latvia – researches, articles, interviews, homepages.
Phase 4 was interviews with stakeholders. Secondary analysis resulted in quite precise information in the Netherlands, but fragmented information about Latvia. Therefore, the proportion of persons interviewed in Latvia was increased.
Phase 5 was analysis. First, barriers for circular construction development were summarised. Then results were generated from 3 perspectives – a) based on Dutch circular business structure – potential supply, b) based on theoretical framework covering all possible activities of circular construction using Arup 7S approach, and c) transformed into demand hotspots identified in Latvia.
The Appendix includes basic information on doing business in Latvia and a list of current projects in the country.

Data

Primary research information sources:
Rob Oomen (Madaster, Turntoo, Holland Circular Hotspot);
Olaf Blaauw (Consultancy Olaf Blaauw);
Gints Miķelsons (Partnership of Latvian Constructors, Latvian Sustainable Building Council);
Ieva Kalniņa (Riga Energy Agency);
Jānis Brizga (NGO Green Liberty);
Zane Ruģēna (NGO Free Riga – material exchange initiative and upcycling centre);
Marija Karīna Dambe (Nomad architects);
Zanda Vipule (Gateway & Partners).

Secondary research information sources:
- Interview results from other researches on circular construction (Mārtiņš Mālnieks, Demontaza.lv; Valerijs Stankevičs, Clean-R; Leonīds Jākobsons, Association of Building Materials Manufacturers; et al.)
- National statistics and construction sector forecasts by Ministry of Economics and research papers on investment needs in the waste sector in Latvia.
- Legislation on building waste and stakeholder comments on legislation problems.
- National development and action plans, National waste management plan 2021-2028, Building renovation long term strategy, Action Plan for the Transition to a Circular Economy 2020-2027 year et al.
- Circular economy in the Dutch construction sector, RWS, 2015 and 2020 materials; CIRCO and Holland Circular Hotspot materials and data bases; et al.
- Research papers from European Environment Agency, Elen Mcarthur Fondation, Arup



Conceptual framework

There are several conceptual approaches to circularity in the construction sector. One approach is to describe the economical perspective: circular economy offers an alternative approach to economic growth by utilizing fewer resources hence minimizing the impact on natural resources. "**Re-use**" economy is distinguished from "**multi-use**" circular economy. It is important to keep in mind this approach as there is a risk that many stakeholders in Latvia focus on the "re-use" context when discussing circularity in the construction sector.

In a report published by the **Ellen MacArthur Foundation** (Growth Within: A Circular Economy Vision for a Competitive Europe 2015), the concept rests on three core principles: preserve and enhance natural capital; optimize resource yields; minimize system risks and improve its effectiveness. This Foundation has developed specific internationally accepted approach that explores those three principles of the circular economy for **the technical (blue) and biological (green) cycles**. Many building materials are in the technical cycle, however, wood is a part of the biological cycle. This approach is valuable regarding the situation in Latvia as there is a relatively high share of historic wooden buildings and an increasing trend for wooden residential building construction.

As defined by **BSRIA**, in a circular economy, the aim is to maximize the utility of the existing infrastructure across the product value chain, where the waste from one system can be utilized as the input in another system. This can only work well when a **system's view** of large value chains with multiple stages of material input, use and recycling are considered. This system's view of large value chains itself can be stated as the first challenge in Latvia where Dutch experience could make a substantial contribution.

BSRIA has narrowed down the focus to the built environment where some key characteristics need to be noted:

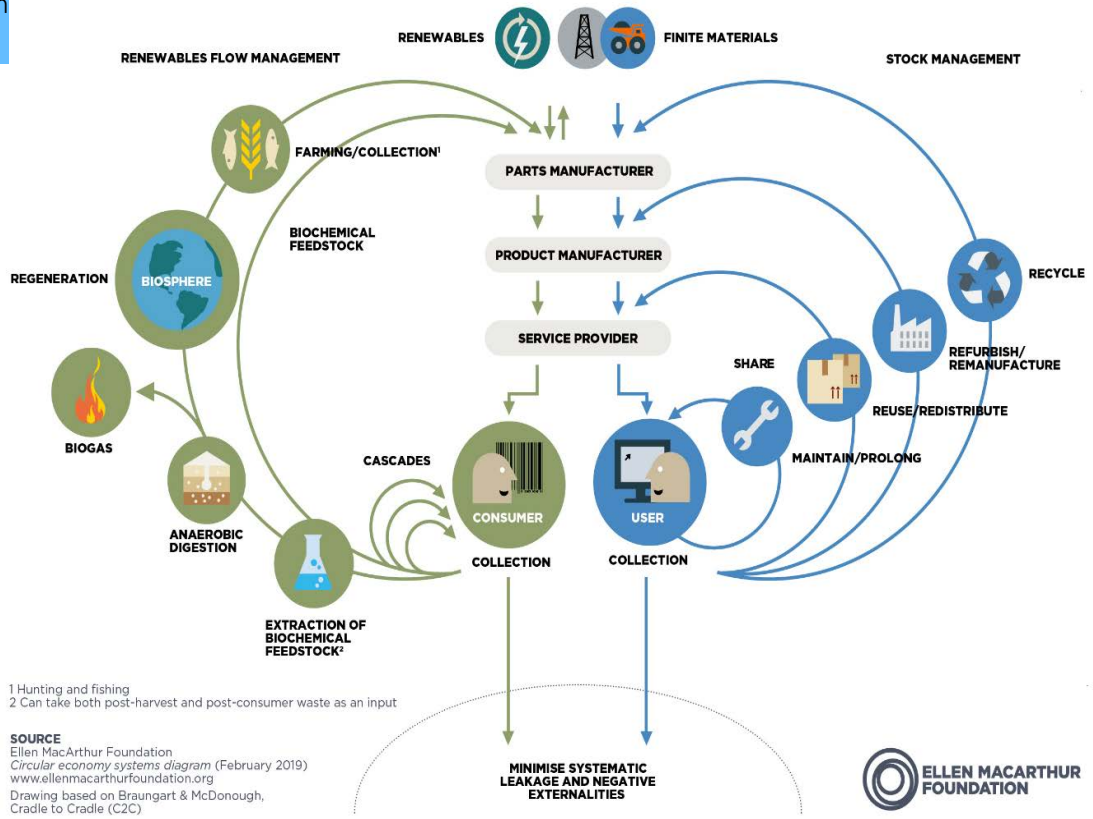
- Compared with other sectors, buildings don't typically operate on a take-make-dispose system
- Modern buildings are typically constructed for an average lifecycle of 65-70 years while the average lifecycle of most other manufactured assets is less than nine years

ARUP combined Ellen MacArthur Foundation's **ReSOLVE framework** with a **7S approach** resulting in a comprehensive framework. The 7S approach includes:

- System – system includes the structures and services that facilitate the overall functioning of the system, e.g. roads, railways, electricity, water systems, telecommunications, parks, digital infrastructure
- Structure – structure is the building's skeleton including the foundation and load-bearing elements
- Skin – skin is the façade and exterior
- Services – services are the pipes, wires, energy and heating systems
- Space – space is the solid internal fit-out including walls and floors
- Stuff – stuff is the rest of the internal fit-out including the furniture, lighting, and ICT

We used a broader theoretical circularity approach as a guideline for the depth and magnitude of potential processes in construction circularity development in Latvia. To check sectors covered in the analysis, the Ellen MacArthur Foundation approach was used. We found that energy and water circularity issues require the analysis of different business and policy areas and therefore, we excluded them from this detailed assessment. We used ARUPs combination of ReSOLVE and 7S approaches to map results found on the supply side in the Netherlands to match demand priorities in Latvia.

The continuous flow of technical and biological materials through the 'value circle'



Stakeholder mapping

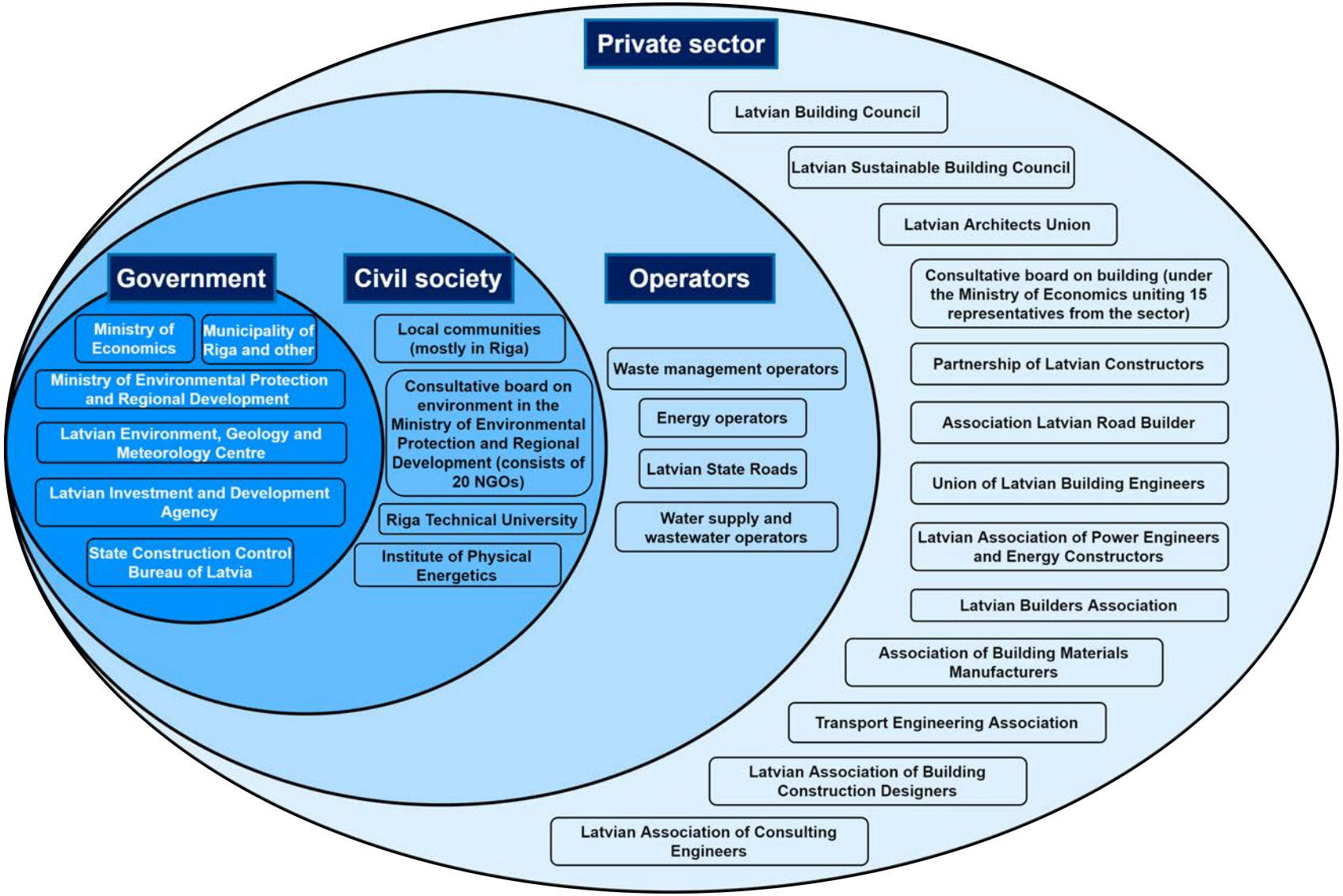
The main stakeholders in sustainable construction in Latvia are:
Ministries - responsibility for circularity in the construction sector is shared by Ministry of Economics and Ministry of Environmental Protection and Regional Development. This situation of shared responsibility slows development.

Municipality of Riga is proactive and it is developing a plan for the circularity in construction sector under the EU URGE project.

Major waste management operators like Clean-R, Eco Baltia, the Partnership of Latvian Constructors and the Latvian Sustainable Building Council promote awareness and plan activities to develop a circularity approach in the construction sector.

Some producers place more emphasis on circularity principles in their products - most of them are bio related – wood, paper, or hemp.

Riga Technical University develops innovative solutions.



Policy

National Development Plan of Latvia (2021-2027)

The plan states that “At all levels the stakeholders adhere to the principles of the circular economy”. Priority 3: Business Competitiveness and Material Well-Being includes: “An increase in living standards and individual material well-being will depend on the transition from a labor-intensive and resource-intensive economy to a knowledge- and technology-intensive economy that is also circular and a bioeconomy.” Priority 4: Quality Living Environment and Regional Development includes: “Because people create a sustainable living environment and move toward a circular economy by saving energy and sustainably using resources, the principle of "energy efficiency first" should be applied when deciding on policies and infrastructure investments.”

Strategy for Achieving Climate Neutrality 2050 (Latvia)

The strategy does not actively highlight the construction sector, however, the construction sector is mentioned among development directions regarding material efficiency, energy efficiency and renewable energy in buildings, including innovative solutions for cultural heritage and historic buildings.

National Energy and Climate Change Plan (2021-2030) - Latvia

A substantial impact on the building sector is expected from the goal “Activate building renovation, renovate within 10 years at least 500 thousand m2 of direct management buildings and reduce heat consumption in buildings to 100 kWh / m2 / year”. Building requirements of almost zero energy for all new buildings were implemented since January 2021 and 80-100 kWh/m2/year for renovated buildings.

Goals of the plan include also “the use of wood in construction has increased”.

Quantified objectives of the plan include:
1) 3% of the energy-inefficient area of direct administration buildings to have been renovated each year;
2) the average thermal energy consumption for heating < 120 kWh/m 2 per year is provided;
3) at least 2000 multi-apartment residential buildings to have been renovated and non-emission technologies to have been installed (where technically feasible and economically justified);
4) at least 7500 private houses to have undertaken measures to improve the energy efficiency of buildings included in the energy savings catalogue.

Action Plan for the Transition to a Circular Economy (2020-2027)- Latvia

The action plan tasks most related to the construction and building sector are:

- Direction of action: Improving the management of material flows and processes in priority sectors
- Sustainable use of materials in particular, wood; promotion of use in construction and improvement of construction requirements (the only policy indicator directly related to construction is “Increased share of wood and wood materials in construction sector”
- Reducing furniture waste, establishing inventories and promoting re-use and recycling
- Circular economy in the implementation of principles in urban planning - professional consultations, and training programs

Policy

Operational Program for Latvia (2021-2027) (this document is under approval)

The program prioritizes progress towards the policy goal of a "Greener Europe with low carbon emissions, promoting clean and fair energy restructuring, "green" and "blue" investments, the circular economy, adaptation to climate change and risk prevention and management." Details of investment priorities are described in the tables below - "indicative EU funding allocation".

Waste Management Plan (2021-2028) - Latvia - The construction sector target is "at least 70% by weight of non-hazardous construction and demolition waste prepared for re-use, recycling and other material recovery, including backfilling".

Planned activities most related to construction sector	Year
To develop normative acts on termination of application of waste status to construction and demolition waste	2021
Evaluate the possibilities to create an integrated recycled building materials circulation system (in synergy with the electronic construction volume monitoring system in connection with the Construction Information System)	2024
Carry out an assessment of the ban on the import of construction debris and other waste for backfilling of tanks and engineering needs for landscaping or construction	2025
Improvement of construction waste preparation for recycling / recovery processes and recycling technological processes	
Pilot project - introduction of technologies for the preparation for recycling and re-use of construction and demolition waste	
Pilot project - development of synthetic gas as a natural gas equivalent for gasification of non-recyclable waste and formulation of vitrified ash fraction in new construction products	2027
Innovative solutions for reducing construction waste (industrial symbiosis center, creation of material platform, sharing model)	2024
Pilot project to study the possibilities of processing wood waste (especially from construction, municipal waste) by adding substances synthesized from other waste items and creating new products with high added value, suitable for long-term use	2027

The main investment needs related to construction sector	mil. EUR
Most related to the construction sector:	
Improvement of processing technological processes for other waste streams (including construction waste)	10
Optimization and development of existing waste circulation and management accounting systems	2,5
Could be related to the construction sector (but mostly oriented to waste management in other sectors):	
Establishment of centres for the repair and preparation of goods for re-use (5 centres)	1,75
The technological process of the existing separately collected municipal waste sorting lines (capacity increase 100 000 t/year)	25
Materials recycling infrastructure (capacity increase 20 000 t/year)	15
Development of education competence centres in regions (5)	2,5

The most related waste prevention activities in coherence with Action Plan for the Transition to a Circular Economy 2020-2027 are:

- Support the reuse of construction materials in construction processes (inclusion in GPP, standards).
- Promote construction practices that result in low waste and as much waste as possible used in the construction process (training, inclusion of criteria in competitions for the best building, award for the most environmentally friendly construction).
- Support the re-use of topsoil and asphalt (through inclusion in GPP, standards).
- To promote the use of compost generated from biodegradable waste in the economy.

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Policy – indicative EU funding allocation for Latvia

Operational Programme for Latvia (2021-2027)

The programme includes a strategic development target “Transition to circular economy” covering an investment of 121,9 mil EUR (85% of which is EU funding) during 2021-2027. However, construction is not prioritised separately from other sectors. Some potential to incorporate circularity aspects could be also in activities related to energy efficiency renovation (EU funding around 390 mil. EUR) and green urban infrastructure development. The national work programme is not approved yet, but tables below represent indicative project volumes with EU funding (ERDF, CF, SF) that could be directly or indirectly related to circularity in the construction sector. The numbers presented in the tables are calculated based on indicative EU financing, including elasticity financing.

The data are collected from unofficial preparation documents and interviews, but substantial changes are not expected. Differences can occur if not all planned financing is used and changes in priorities are made during the implementation of the national work programme.

The first table includes activities directly oriented to the transition to circular economy. The next table summarizes renovation activities related to energy efficiency. The third table summarizes projects related to green infrastructure.

More than half of the funding in activities under the strategic development target “Transition to circular economy” is planned for public service providers and cover both soft measures and infrastructure development.

Renovation to increase energy efficiency does not include specific direct circularity requirements. However, standardized circularity solutions for energy efficiency renovation projects could be an opportunity, especially if providing some cost saving in the short or long term.

Green infrastructure development has some potential regarding circularity in construction – for example, in urban areas there could be a substantial potential for circular solutions applied to whole construction sites and surrounding areas, incorporating green infrastructure development in construction or utilisation processes.

Latvia's Recovery and Resilience Plan

The EU adopted Latvia's Recovery and Resilience plan in June, 2021 disbursing €1.8 billion in grants under the Recovery and Resilience Facility. The plan devotes 38% of its total allocation to measures that support climate objectives.

The plan includes measures to improve the energy efficiency of residential buildings - financing a large-scale renovation initiative to increase the energy efficiency of residential buildings, public buildings and businesses (248 million EUR).

The plan devotes 21% of its total allocation to measures that support the digital transition, including investments in the digitalisation of public administration, digital transformation of businesses and creating a better environment for research and innovation by facilitating Latvia's participation in the network of European Digital Innovation Hubs.

Latvia's recovery and resilience plan- investments in energy efficiency starting 2022/2023	mil. EUR
Improving energy efficiency of multi-apartment buildings and transition to renewable energy technologies	57,3
Increasing energy efficiency in business, which is planned to be implemented in the form of a combined financial instrument	80,6
Increasing energy efficiency in business, which is planned to be implemented nationally in the form of a combined financial instrument	40,0
Improving municipal buildings and infrastructure by promoting the transition to renewable energy technologies and improving energy efficiency	29,3
Improving energy efficiency of public sector buildings, including historical buildings	24,0
Improving energy efficiency of multi-apartment buildings and transition to renewable energy technologies	57,3

Some potential for circularity activities could be also in priorities: Financial fund for low cost rental housing (42,9 mil. EUR); Support for business digitalisation (40 mil. EUR); Support for new products and services (23 mil. EUR).

Policy – indicative EU funding allocation (pending approval)

Operational Programme for Latvia (2021-2027) Strategic development target "Transition to circular economy" under priority "Environment protection and development" (Cohesion Fund financed)

Nr.	Activity	The main actions supported	EU funding support intensity, %	Beneficiaries of funding	Indicative volume of projects, mil.EUR
2.2.2.1.	Waste recycling and regeneration, sorting	Increasing the capacity of waste recycling and regeneration facilities and providing new capacity (especially for municipal waste and biodegradable waste; recycling of plastics (non-packaging), textiles and packaging)	Public service providers - 85%, other merchants - up to 50%	Enterprises, incl. public service providers	75,0
2.2.2.2.	Separate collection of waste	Extension of the separate waste collection system to new groups of materials - biodegradable waste, textiles, municipal hazardous waste, furniture, etc., by investing in the development of infrastructure, as well as the modernization of sorting lines and technologies	up to 50%	Municipalities, enterprises incl. municipality enterprises	8,0
2.2.2.3.	Sewage sludge recycling	Increasing the capacity of waste processing and recovery, including biogas plants, and providing new capacity for the processing of sewage sludge as nutrients	85%	Public service providers, merchants	28,8
2.2.2.4.	Implementation of circular economy principles	Implementation of circular economy principles in production and services: 1) developing secondary and closed material cycle technology and rational use of raw materials and resources; 2) promoting the transition to the use of reusable and environmentally friendly raw materials in production technological solutions ("safe by design"); 3) introducing eco-design principles in the production of goods and the use of materials and packaging; 4) reducing the capacity of packaging materials and increasing recyclability and durability (reuse, development of goods repair services); 5) the development of innovative circulation business models through the introduction of eco-efficient technologies and eco-innovations and the promotion of industrial symbiosis.	Up to 50%	Merchants (SME, large)	20,0
2.2.2.5.	Respecialization of municipal waste landfills	Adaptation, retraining or conversion of existing landfills into other waste management activities, as well as local waste reduction, development of goods repair services, preparation of waste for recycling and measures to promote the circular economy	85%	Public service providers	14,7

Source: esfondi.lv and interviews. Volume of the projects are calculated from EU funding and support intensity

Operational Programme for Latvia (2021-2027) Strategic development target "Transition to circular economy" under priority "Climate change mitigation and adaptation" (ERDF financed)

Nr.	Activity	The main actions supported	EU funding support intensity, %	Beneficiaries of funding	Indicative volume of projects, mil.EUR
2.1.1.1.	Increasing energy efficiency in residential buildings, incl. developing the ESCO market (in apartment, private and small apartment complexes)	Energy efficiency improvement measures in residential buildings; promoting resource efficiency to reduce heat consumption	Credit with 49% covered if energy efficiency targets achieved	Residential building owners (both natural and legal persons)	147,9 (EU funding volume)
2.1.1.2.	Use of RES and increase of energy efficiency in industry and merchants	Modernization of industrial production capacities by installing more energy-efficient production and by-process production equipment; arrangement of production buildings and territories, including replacement of internal and external engineering networks and engineering systems in the production territory with more energy efficient ones	Financial instrument with capital discount	Merchants	37 (EU funding volume)
2.1.1.3.	Use of RES and increase of energy efficiency in local and individual heating and cooling	Improving energy efficiency and promoting the use of RES in centralised district heating, local district heating and individual heating; Introduction of RES technologies in refrigeration	Financial instrument with capital discount	Individuals, merchants, municipal capital companies	48,1 (EU funding volume)
2.1.1.4.	Increasing energy efficiency in state-owned public buildings	Measures to improve energy efficiency, smart energy management and the use of renewable energy sources in state-owned buildings.	85% / līdz 50%	Public building managers and users	126,7
2.1.1.6.	Increasing the energy efficiency of municipal buildings	Renovation of municipal buildings to increase energy efficiency, energy certification of buildings and construction works to increase energy efficiency, incl. intelligent building management technologies for more efficient building energy consumption management, energy production equipment using renewable energy resources. Support is also provided for the purchase of air quality improvement equipment, environmentally friendly long-term management solutions for energy saving or production from renewable resources.	85%	Municipalities, their institutions, municipal capital companies, public private capital companies	31,1
2.1.1.7.	Optimization of public institutions infrastructure	Construction plan development, construction plan expertise, construction works (both reconstruction and new building), territory improvement works, purchase of territory improvement elements, construction supervision, project management.	85%	SJSC "State Real Estate"	13,1
2.1.1.8.	Measures to promote energy efficiency in culture infrastructure	Measures to improve the energy efficiency and ventilation system of culture infrastructure; Renovation works of cultural and historical buildings, which are necessary to improve the energy efficiency of the building. Intelligent engineering systems and building management system installation systems.	85%	State joint stock company or state capital company	34,8

Source: esfondi.lv and interviews. Volume of the projects are calculated from EU funding and support intensity

Operational Programme for Latvia (2021-2027) Strategic development target "Improvement of nature protection and biodiversity, green infrastructure, especially in urban environment, and pollution reduction" under priority "Environment protection and development" (ERDF financed)

Nr.	Activity	The main actions supported	EU funding support intensity, %	Beneficiaries of funding	Indicative volume of projects, mil.EUR
2.2.3.2.	Measures to promote environmental education for public awareness and skills development	Training, education, counseling and information measures for skills development, retraining, awareness raising and influencing attitudes, consumption and behavioral patterns in relation to the environment, in particular the circular economy, nature and climate. Creation and expansion of informative materials and expositions.	85%	Nature Protection Board, State Regional Development Agency	1,5
2.2.3.5.	Measures to reduce air pollution in municipalities	Implementation of air pollution abatement measures in accordance with action programs for the improvement of urban air quality.	85%	Municipalities	6,0
2.2.3.6.	Improvement of individual heating systems for households	Replacement of combustion equipment in household sector buildings, individual heat supply buildings, where no other energy efficiency improvement measures will be taken, giving priority to support in those areas where air pollution standards have been exceeded. Support should also be provided for connection to district heating systems, if economically and technically possible.	85%	Private, NGO	14,6

Source: esfondi.lv and interviews. Volume of the projects are calculated from EU funding and support intensity

Legislation and regulations

The **definition of construction waste** in legislation and the interpretation options for regulations pose a principal problem for circularity development. Materials not used in construction anymore become “waste”. At this moment, materials may not be used in any activity except waste management. Getting materials back to market turns into an administrative and technological burden. Definitions of responsibilities are not clear as well. The questionnaire of construction departments in municipalities and other stakeholders, run by waste operator Clean-R, reveals that the interpretation of those regulations varies significantly among responsible public sector representatives. Regulations are expected to be improved in the near future and the Dutch experience could contribute to this.

Sections below, developed by Gateway Partners Baltics, describes **current legislation specifics** in Latvia.

The **Law on Waste Management** stipulates that construction waste is a part of industrial waste. Regulations of the Cabinet of Ministers No. 529 stipulate all the building regulations, including the procedure for accounting of construction waste and their shipments, mostly indicating that when submitting documents to the building board it is necessary to include an explanatory description indicating the method of demolition of the building, engineering networks to be dismantled, construction waste management, their volume and the place of processing or disposal.

The Cabinet of Ministers Regulation No. 529 states that "**construction waste shall be managed in accordance with regulatory enactments** in the field of waste management." Among other things, if waste will be generated during construction, then it is necessary to submit information on the construction plan, as well as indicate how the construction waste generated during construction works will be managed, how large it will be and where the waste processing or disposal site will take place. Accordingly, when information on the completion of construction works is submitted, it is necessary to submit information on the waste manager and the activities performed by them.

According to the Cabinet of Ministers regulations No. 199 “The procedure for accounting of construction waste and its shipments”, **all construction waste generated in the production process**, which does not apply to natural persons, **must be registered in the BRAPUS system**. Cabinet Regulation No. 199 stipulates that the producer or manager (merchant) of construction waste shall ensure the registration of construction waste in a special journal in paper form or in electronic form. The users of the system are construction waste carriers, thus stipulating that as soon as construction waste is transported, it is necessary to report on it. Registration takes place in the BRAPUS system, which is managed by the "Latvian Environment, Geology and Meteorology Center". The BRAPUS system was established in 2014 to provide an overview of the construction waste flow and to create a systematic overview of the industry.

However, in the process of harmonization of construction documentation, it is not clear whether the specified waste manager has a registered waste management permit, thus it is not necessary to report on the generated and recycled volume, and **the regulation does not provide for the submission of a recycling certificate.**
Ideas for improvement of regulations include:

- it is necessary to strengthen the controlling functions of construction boards, as well as to determine the responsibility of the construction supervisor and the builder for the observance of the process. In order to exclude the recycling of construction waste on the construction site without an appropriate permit, it is necessary to determine the daily documentation of all activities in the accounting journal or systems.

Improvements already made include **the termination of the application of waste status to wood chip materials obtained from construction waste** and activities planned in the national waste management plan to “To develop normative acts on termination of application of waste status to construction and demolition waste” (2021). Now it is permissible to produce and use construction products from certain waste materials, recognizing that construction standards need to be improved.

Green public procurement

Characteristics of the sector

In order to ensure environmentally friendly construction for the public sector, the European Union has developed **Green Public Procurement (GPP) guidelines**, which are recommended for the construction sector in Latvia. In 2020 the guidelines for GPP in construction were prepared by the Ministry of Environmental Protection and Regional Development, but application of those **are not mandatory yet in Latvia**.

GPP in the construction sector reached 413 million EUR in 2020. It was 61% of all GPP value (2019). Other construction related sectors covered only 1% of GPP value. Recent years indicate stable upward dynamics.

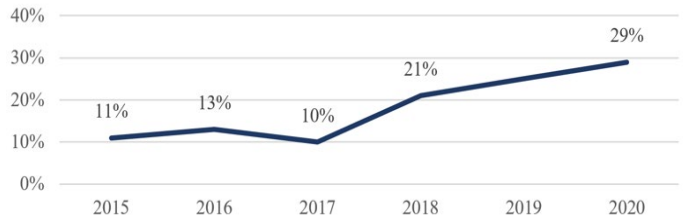
Problems and challenges

- **Many cases indicate only minor improvements within Green Public Procurement**, such as the installation of LED lamps.
- The share of GPP cases in public procurement of architectural services is two times smaller than in construction (64 from 1161 services provided in 2019).

Possible solutions and planned initiatives

- The “Partnership of Latvian Constructors” calls for a clearer definition of green criteria in this area, as well as for the establishment of a monitoring of the procurement of "green" buildings.
- Increasing emphasis on “green” solutions in the design stage.
- **Improvement of GPP criteria to reflect better circularity aspects is planned** in the circular economy development LIFE IP project.

Proportion of GPP in public construction procurements (by the sum of contract prices)



Developed GPP requirements and criteria for construction related goods and services:

Design, construction and management of office buildings

Road design, construction and maintenance

Water heaters for heat production

Sinks, taps, shower heads and their accessories

Toilets and urinals

Furniture

Wall panels

Also related:

Leisure and sports infrastructure

Electricity

Sewage infrastructure

Horticultural products and services

Economical instruments

The use of economic instruments is based on the "polluter pays" principle. The main tools in Latvia are a **Differentiated Natural Resource (DNR) tax**. A significant increase in tax rates took place in 2014: the Natural resource tax was increased by 20-25% for the extraction of mineral resources, packaging and environmentally harmful goods. In 2019, a further increase of the tax was implemented for the extraction of sand and sand-gravel. The **tax rate for waste disposal** has also been raised and will continue to rise. The rate for municipal waste disposal in 2016 was only € 12 per ton, but increased to € 50 / t in 2020. In 2020, the tax for hazardous waste disposal was increased to 60 € / t. These measures are aimed at reducing waste, improving closed material cycles in production and recycling. The gradual increase in the DRN, together with the increase in waste disposal tariffs, has contributed to an increase in the recovery rate from 5% in 2005 to around 35% in 2019. However, the OECD Environmental Performance Review for Latvia concludes that **the existing economic instruments are not yet sufficiently stimulating to encourage compliance with the waste hierarchy** and a more active move towards a circular economy. Tax for sand was increased in 2020 from 0.21 to 0.36 EUR/m^3.

Research and development

Since 2015, research and innovation in Latvia have been developed in five areas of smart specialization:

- Knowledge-intensive bioeconomy;
- Biomedicine, medical technologies, biopharmaceuticals and biotechnologies;
- Information and communication technologies;
- Smart energy;
- Smart materials, technologies and engineering systems

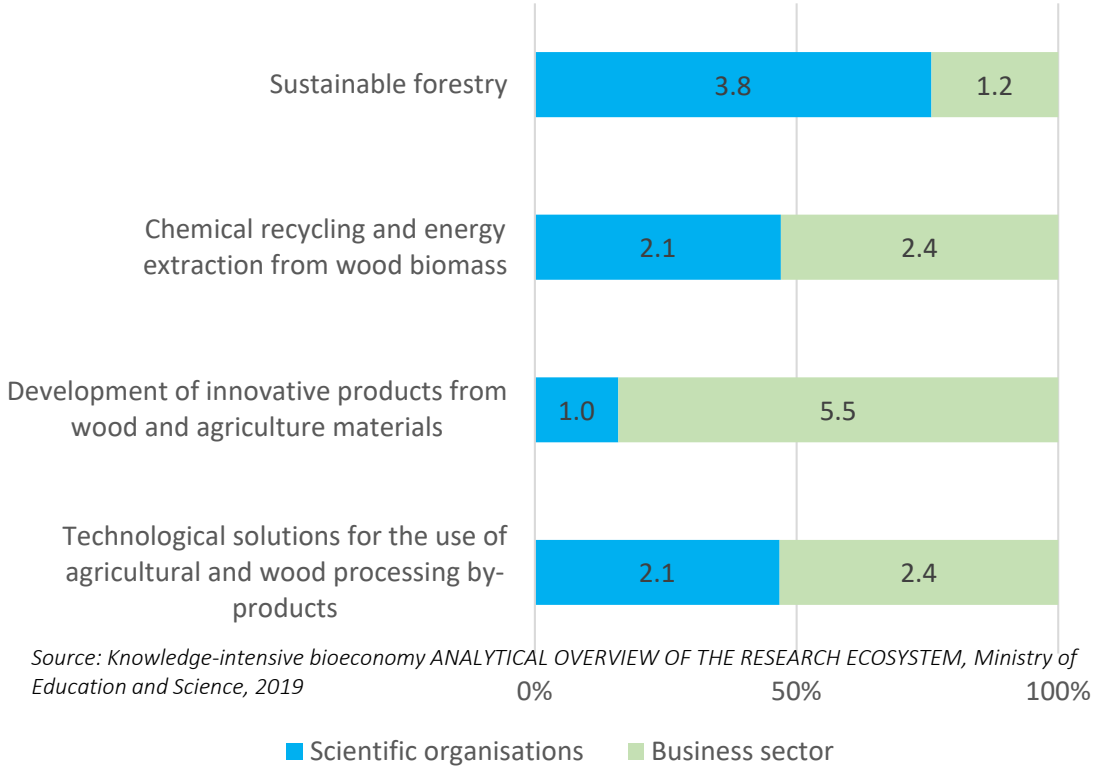
"**Knowledge-intensive bioeconomy**" and "**Intelligent Energy**" - are directly related and have a high potential to contribute to

- resource efficiency in various sectors of the economy,
- green technologies,
- eco-innovation and higher value-added products and services,
- research and solutions to the principles of the circular economy,
- as well as product life cycle research, resource monitoring and forecasting.

Substantial research potential is in **Riga Technical University** which participates in the ERASMUS+ project **"Circular economy in wooden building construction"** since 2020 (35 from 211 thous. EUR) and there are other activities and innovations developed, like gypsum plasterboard and path polystyrol recycling.

SIA Balticfloc runs LIFE_PHIPP project since 2017 that will demonstrate the environmental benefits and cost effectiveness of a new type of building insulation material made of **recycled paper and hemp** fiber.

Investments in research and innovation projects in some thematic niches of the bioeconomy 2014-2018, mil. EUR



Source: Knowledge-intensive bioeconomy ANALYTICAL OVERVIEW OF THE RESEARCH ECOSYSTEM, Ministry of Education and Science, 2019

Certification

Energy efficiency certificates

The vast majority of voluntary energy-efficient buildings are apartment buildings. This to some extent is determined by the availability of EU funding for house renovations. Sales and rentals still account for less than 2% of all reasons for energy certification of buildings – no buildings were certified for 2020. The explanation for this could be both the ignorance of the owners and the lack of a mechanism for inspections and sanctions.

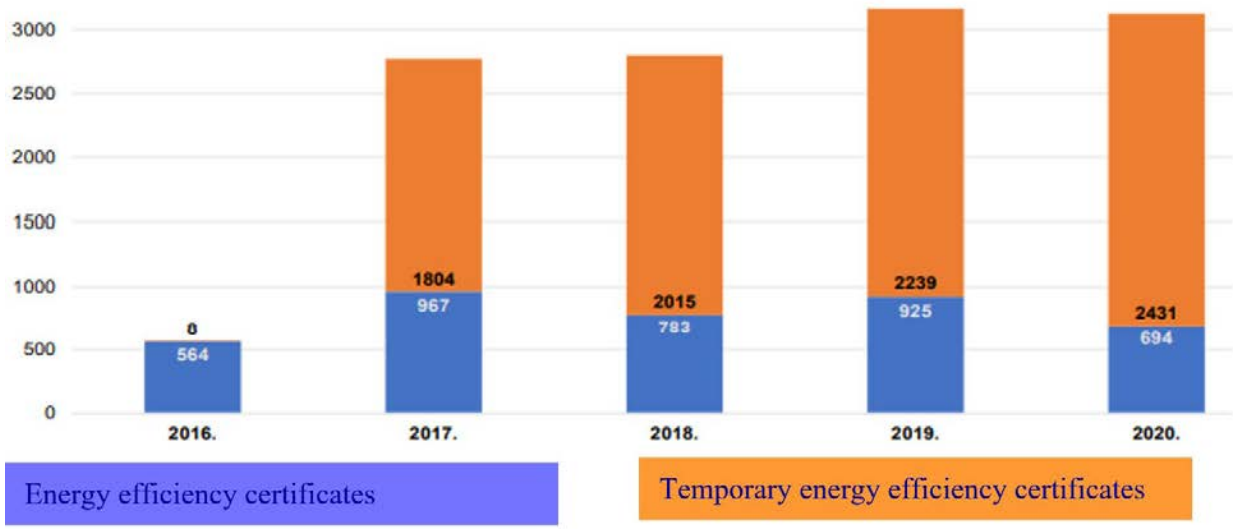
BREEAM, LEED, DGMB certification

The Latvian Sustainable Building Council has been instrumental in providing the local market with a set of sustainable building criteria for new commercial developments (buildings) – an adapted version of British Research Establishment's Environmental Assessment Method (BREEAM). Currently there are about 100 buildings certified, in the process or preparing for certification in one of the certification systems.

Further developments

The Latvian version of BREEAM certification is planned to be improved with circularity aspects. There are also recommendations to use elements from sustainable building certification systems to improve the Green Public Procurement system.

. Number of valid energy efficiency certificates



Source: Building Information System, 10.01.2021.

Circularity development projects

Partnerships

The following **memoranda of cooperation were signed in 2020: improvement of the sustainable construction waste management system, purposeful implementation of the circular economy plan in construction**, termination of illegal activities of merchants, efficient use of natural resources, use of secondary raw materials and efficient management of construction waste by Partnership of Latvian Constructors, Ministry of Environmental Protection and Regional Development, Ministry of Economics, State Environmental Service, Latvian Association of Waste Management Companies, Union of Local Governments of Latvia, and Latvian Association of Building Materials Producers.

The main priorities are:

- **there is a need to regulate the construction waste management market**, including more active control and restriction of illegal activities of entrepreneurs;
- **more precise and decisive action is needed for the transition to a circular economy;**
- **more active work is needed on innovative solutions for more efficient recycling of construction waste;**
- more active educational work is needed, encouraging public awareness of construction waste and it's correct and appropriate management.

The project “Development of common guidelines and public education on the proper management of construction waste and the use of materials derived from recycled construction waste as valuable resources and raw materials in construction” is running from 2020 to 2022.

Life-IP project

Within the framework of the Life-IP sub-program "Circular Economy and Quality of Life" project, a new Latvian building materials circulation system is planned. The system plans to include circularity monitoring within the existing national Building Information System and material certification system. There is also an idea to develop guidelines for the application of international sustainable construction systems (BREEAM/LEED) in public procurement. The project is driven by Partnership of Latvian Constructors in cooperation with other stakeholders.

URGE project

Riga municipality is participating in an URGE project under the URBACT III 2014 program **with Utrecht as a leading partner**. **A circular construction development plan for Riga is being developed** in the project. Three circularity demonstration projects are planned in the beginning: for construction of new buildings, for renovation and for demolition activities.

Summary of policy priorities

Priority actions to develop green construction in Latvia according to Gints Miķelsons (Latvian Sustainable Building Council/ Parnership of Latvian Constructors)

Ministry of Economics:

- Energy efficiency programs in buildings (EU funds 2027)
- Plan of activities for the promotion of public wooden buildings
- Air quality construction standards

Ministry of Environmental Protection and Regional Development:

- Green public procurement and mandatory criteria for green construction & monitoring in IT systems
- Revision of the construction industry GHG calculation model

Sectoral NGO:

- BREEAM in Use training/certification
- Life IP (recycled building materials system / green building materials register)
- Guidelines for Sustainable Building Systems

Circularity in construction- status and perspectives*

General characteristics of material flows and resource productivity in Latvia

Latvia's natural resources are mainly forest resources, agricultural land, waters for the production of fishery and aquaculture products, peat, dolomite, limestone and other minerals suitable for construction. Most other resources and materials, mainly metals and fossil fuels, are imported. **Products derived from biomass (mostly wood) in Latvia proportionally make up the largest part of production and consumption by type of material**, and their share is much higher than in other countries. Biomass accounts for 68% of domestically sourced material, 61% of direct material consumption, 58% of domestic material consumption and 70% of exported materials.The value of the indicator used in assessing the progress of the circular economy - resource productivity - shows that **the use of natural resources in the Latvian economy is not efficient enough** and the decoupling of the consumption of material resources from economic development has not been achieved. Resource productivity fluctuates around € 0.9 / kg, while the EU average is € 2 / kg. Its growth rates in Latvia lag behind the EU average. **However, the level of consumption of material resources in the country is increasing** - the average consumption of resources per capita per year fluctuates around 12 tons of natural resources, which is on average as in the EU (13 t / capita).

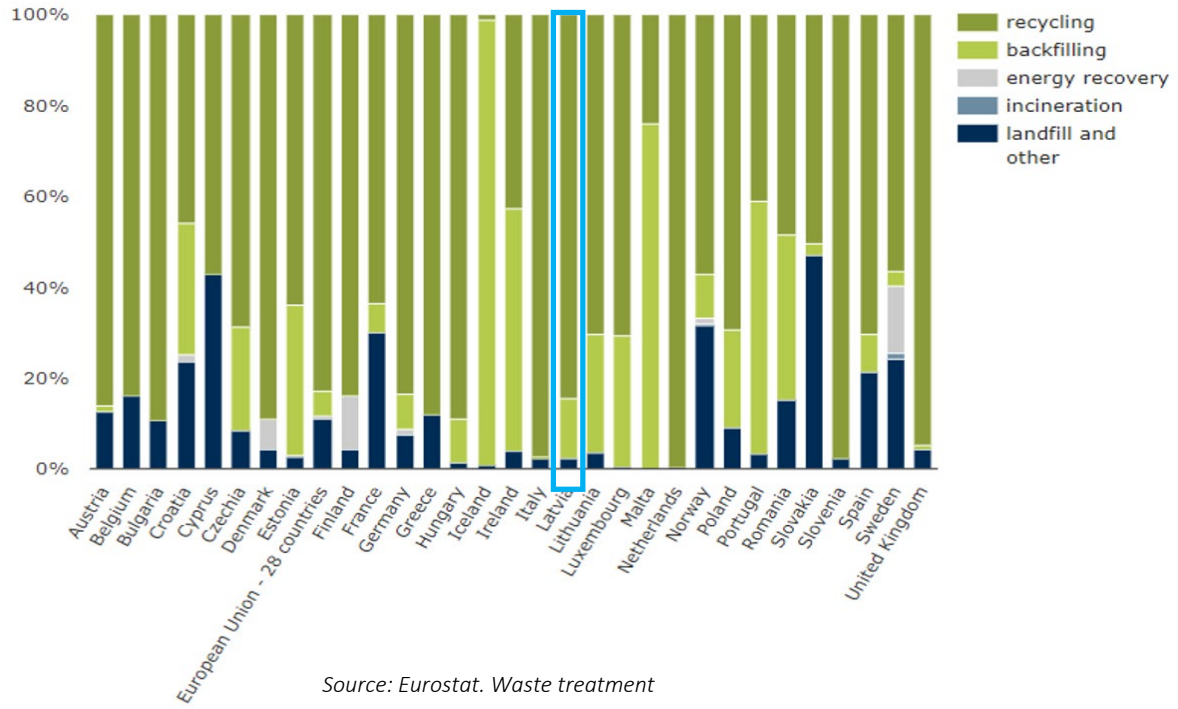
Construction waste management statistics

According to EU policy, **Latvia must ensure that 70% of the amount of construction and demolition waste generated during the year must be reused, recycled, or the materials contained in the waste are recovered**. In Latvia, 97% of construction mineral waste is recovered - 85% is recycled and 14.6% is used for backfilling activities. Assessing the composition of the collected construction waste, 70% of the collected waste was mixed construction waste and inert materials - 20% in 2019.

Those data place Latvia in relatively good achievement in EU however, those data are criticised as incomplete due to accounting system specifics.

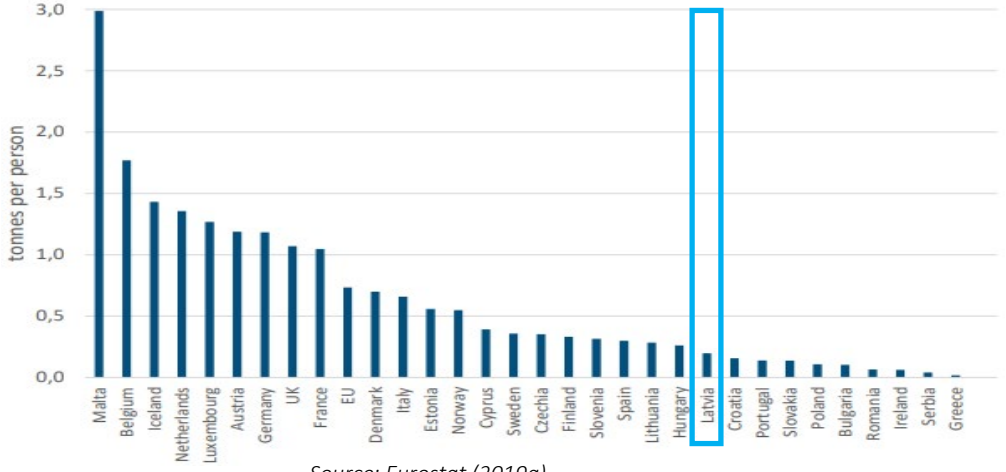
Sources of information provided: Action Plan for the Transition to a Circular Economy 2020-2027 and Waste Management Plan (2021-2028). Comments on interpretation of statistics – interviews and other sources.

Treatment of the mineral part of Construction and Demolition Waste (% of treated waste) in European countries in 2016



Source: Eurostat. Waste treatment

Generation of construction and demolition waste per person in the EU



Source: Eurostat (2019a)

Characteristics of circularity in the construction sector - Latvia

Current activities include for example, in the construction of roads, the removed asphalt surface is used in the composition of the restored road surface. **Construction materials are purchased to the extent that no residues occur** and only finishing materials that may be required by the customer during the warranty period are left. As construction companies do not specialize in one specific technological process, but participate in the implementation of various construction projects, they do not work with large warehouses of raw materials, which would allow more efficient use of construction materials. **Companies buy used equipment and specialized machinery**; purchase several unified tools to be able to provide repair options for as long as possible, but those data are not accounted for separately.

Circularity potential and forecasts in construction sector

According to the national **Action Plan for the Transition to a Circular Economy 2020-2027**, **the greatest potential for re-use in the construction industry** is not in the categories related to mineral waste, but it **is in wood and metal building materials**. It is possible to reuse solid wood elements, beams, floorboards, doors and other wooden elements, as well as various metal constructions and metal sheets. It is also possible to reuse various building insulation materials, windows, roof tiles and cladding, as well as plumbing and carpets. However, **most of the problems for the reuse of these materials are caused by a careless dismantling process**, which damages the structures, as well as a complicated process of determining the structural load-bearing capacity, strength and quality assurance of the recovered materials for future use. Therefore, metal structures are recycled, but the rest, including wood waste, ends up in landfills.

The table on the right describes construction waste management forecasts included in the Waste Management Plan (2021-2028). Data description includes that «The forecast of the amount of construction waste generated and managed (recycled, recovered and disposed of) is based on the assumption that the existing construction waste management system will continue to develop without significant impact of policy instruments. The forecasts assume that the amount of construction waste generated is equal to the amount collected. The amount of recovered and stored waste is equal to zero, therefore it is not shown in the table». As there are no other official forecast data on construction waste management amounts, future amounts are quite unclear. **Some studies suggest that realistic current construction waste amount generated is 400 thousand tons per year**.

Forecasts of the amount and management of non-hazardous construction waste in 2020-2035, tons

Year	Increase, %	Collected	Recycled	Prepared for recycling and regeneration	Landfilled in waste polygons	Landfilled differently
				regeneracijai		
2020	0	287 821	164 233	127 529	2 835	17670
2021	0	287 821	164 233	127 529	2 835	17670
2022	-15	244 648	139 598	108 400	2 410	15019
2023	-5	232 416	132 619	102 980	2 289	14268
2024	6	246 361	140 576	109 159	2 426	15124
2025	7	263 606	150 416	116 800	2 596	16183
2026	4	274 150	156 433	121 472	2 700	16830
2027	5	287 857	164 254	127 545	2 835	17672
2028	1	290 736	165 897	128 821	2 864	17849
2029	-3	282 014	160 920	124 956	2 778	17313
2030	1	284 834	162 529	126 206	2 805	17486
2031	6	301 924	172 281	133 778	2 974	18536
2032	7	323 059	184 340	143 143	3 182	19833
2033	4	335 981	191 714	148 868	3 309	20626
2034	5	352 780	201 300	156 312	3 475	21658
2035	1	356 308	203 313	157 875	3 509	21874

Source: Waste Management Plan (2021-2028) based on research from SIA "Geo Consultants"

General economic description and forecasts for the construction sector in Latvia*

Historical construction volumes in Latvia

The market volume in the construction sector in Latvia has reached 2.4 bil. EUR in 2020. 37% was the construction of residential and non-residential buildings and 23% was the construction of new residential and non-residential buildings.

The main market volume of new residential and non-residential buildings in Latvia was for two or more apartment buildings (22%), office buildings (18%), industry buildings and warehouses (18%).

Market volume of residential and non-residential buildings in Latvia

Source: calculated from CSB data

Construction forecasts in Latvia

The forecasts obtained in 2021 indicate that the **volume** of construction in 2021 compared to 2020 will increase by +6.6%, continuing to grow in 2022 +7.1%. Between 2023 and 2025, growth is projected to continue at a relatively steady pace between 6.5% and 4.9**%. The construction of residential buildings is expected to grow faster than in the nonresidential segment**. Construction growth forecast is 5.9% in 2021 and 6% in 2022. In the period 2023-2025, growth could accelerate to 8.2% on average.

The obtained forecasts indicate that **construction costs** in 2021 compared to 2020 will increase by a record high of +6.6%, reaching the highest increase in the last nine years. In case of an unfavorable global situation (logistical problems, high market demand, non-increase of producer capacity, etc.), an increase of 11.4% could also be achieved. Those data do not include the unexpected rise of energy costs in the end of 2021. In the period from 2022 to 2025, the increase in construction costs will decrease, however, in 2022 the increase is still projected at 5.5% - significantly higher than in the pre-pandemic period. 2023-2025 Over the period 2007-2013, cost growth is expected to return to the average level of the last decade, with an average annual increase of 3.3% per year, which is lower than in 2018 and 2019.

In the field of **construction resources**, a significant increase in costs in 2021 is expected for construction materials, which is estimated at 7.1% annually, in 2022 an increase of 4.5%, but in the following years until 2025 on average by 3.1% per year.

The steady increase in **workers' wages** is forecast to be equal to the previous five-year period, increasing by 7.1% in 2021 and by 7.4% in 2022. In the coming years, growth is likely to decline and is estimated at an average of 6.5% per year.

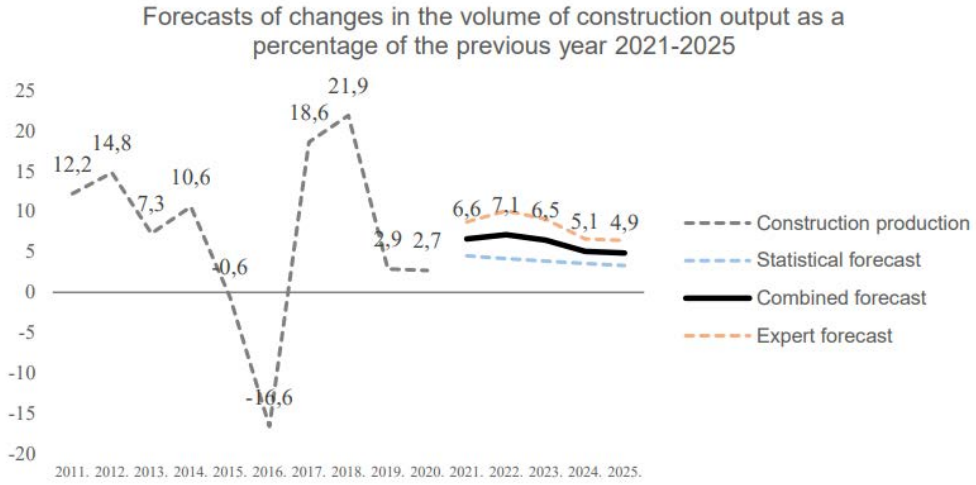
Based on the information collected and dynamic assessments from 2020 to 2021, the construction industry shows some **overheating risks**, but these risks are substantially lower than in 2006 and the 2008. If at the end of 2021 the significant short-term jumps in the costs of timber and metal products decrease, then the dynamics for 2022 is expected to reduce the risk of overheating of construction, and a similar trend will continue until 2025.

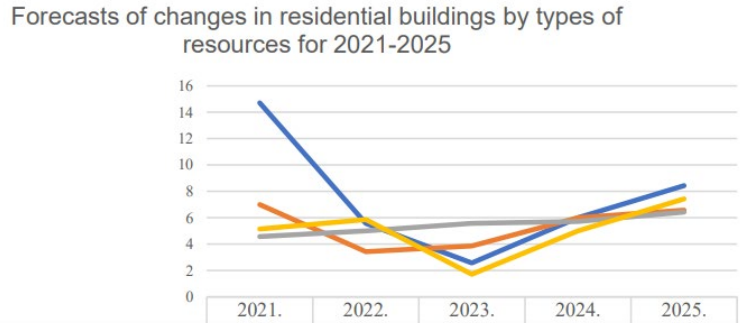
The **shadow economy** control measures have a moderate impact on construction labor costs. The biggest impact of the anti-shadow measures is the introduction of an electronic working time accounting system and the setting of a minimum wage in the construction sector. Measures to combat the shadow economy have a negligible effect on the cost of building materials.

COVID-19 has had a mediocre impact on the cost of building materials, but the impact on labor costs can be assessed as weak. The greatest impact of COVID-19 on the cost of building materials is seen by the building construction sub-sector, while the greatest impact on labor costs is seen by experts in the building materials trade.

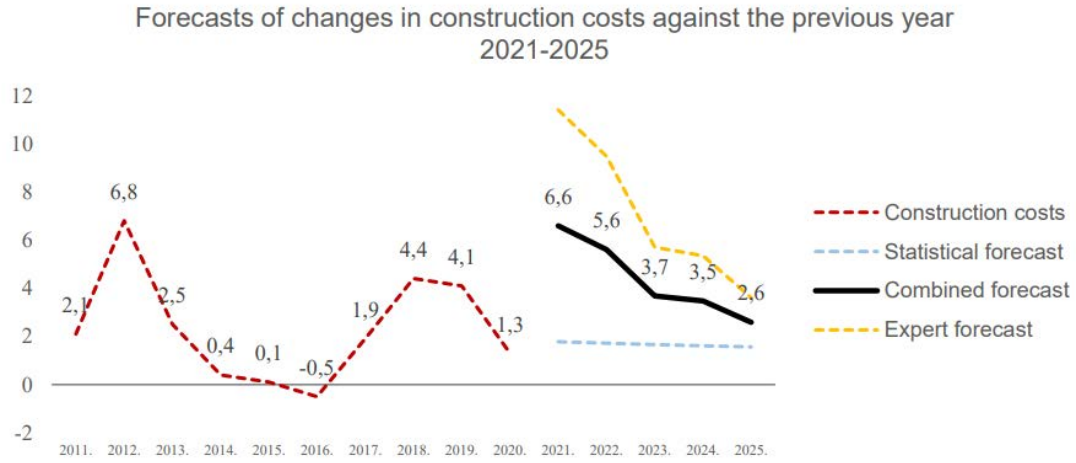
**Source for informatin on forecasts: Research on projected changes in labor and construction material costs in the construction sector in Latvia in 2021-2025, Ministry of Economics*

Forecast data on the construction sector in Latvia





	2021.	2022.	2023.	2024.	2025.
Changes in construction material costs	14,71	5,57	2,57	6,00	8,43
Changes in workers' wage costs	7,00	3,43	3,86	6,00	6,57
Changes in maintenance and operating costs of machinery and equipment	4,57	5,00	5,57	5,71	6,43
Architectural and engineering services; technical testing and analysis	5,14	5,86	1,71	5,00	7,43

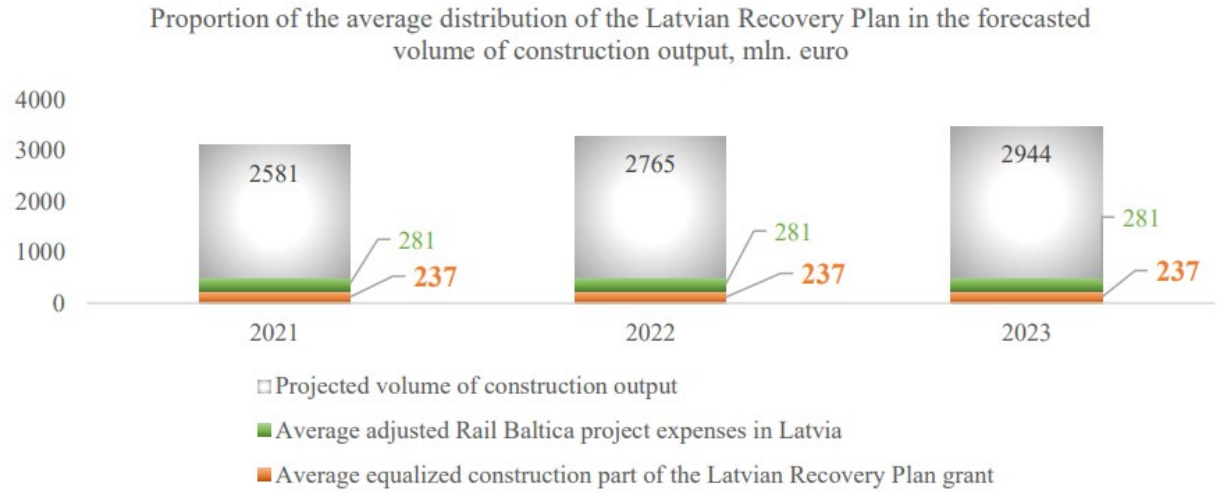


Source: Research on projected changes in labor and construction material costs in the construction sector in Latvia in 2021-2025, Ministry of Economics

EU funding in the construction sector (incl. the Rail Baltica Project)*

It is possible to assess the importance of **EU fund projects in the total volume of construction output**, which in the period from 2016 has reached its highest level of 534 million EUR - if we look at the total expenditure on construction-related projects implemented only by public institutions, and 906 million EUR if the total expenditures of both public and private institutions on construction-related projects are considered. **Current data 2019-2020 points to the contribution of European Union funds in the construction sector in the range of 600-700 million EUR**. A topical issue in this context is the **European Recovery Fund support grant to Latvia, which was submitted for 1.82 billion-** 65% of which is intended for the construction of infrastructure objects, therefore it can be attributed to support for the construction sector. This support is for the period up to 2026, so it can be assumed that this amount will be spread over about 5 years, averaging 237 million EUR per year. Based on the actual volume of construction output in 2020, this amount would make up 9.8% of the total volume of construction. Applying it to the volume of construction output projected in the study, this amount would make up about one tenth of the industry's projected turnover, which is a marginal factor influencing the growth of the total industry.

A similar significant cash flow object in the industry is the **EU Rail Baltica project connecting the Baltic states with a high-speed EU rail system**. Based on the study "Rail Baltica Global Project Cost Benefit Analysis" conducted by the research company "Ernst & Young", **the expenditures in the territory of Latvia are estimated at 1.968 bil. EUR in the construction period 2019-2026**. The average adjusted amount is 281 million EUR per year, which is also about one tenth of the projected turnover of the construction industry. However, actual distribution will depend on different aspects of practical implementation.



Source: Research on projected changes in labor and construction material costs in the construction sector in Latvia in 2021-2025, Ministry of Economics

Intentions of public procurement* (up-coming tenders in construction – Latvia)

The Ministry of Economics regularly questions public institutions on approved construction projects and their intentions for the next few years. Information is gathered from municipalities and relevant ministries. Data includes EU and non-EU funded projects. In reality, several projects might be postponed and some construction agreements can be started that do not yet appear in the stated intentions. However, **the data indicated represents the general distribution and volumes of expected construction in the public sector.**

The volume of identified projects is 1637 mil. EUR in 2022 and 1320 mil. EUR in 2023. A major part is non-residential buildings (842 and 648 mil. EUR, respectively), followed by civil engineering (629 and 653 mil. EUR, respectively). Residential buildings do not exceed 10%.

Medical or healthcare facilities (132 and 90 mil. EUR respectively) **can be considered as the most attractive market segment- some of hospitals have expressed a wish for circular construction solutions** as they renovate buildings regularly and see a potential for economic benefits. Projects include a new infectiology and lung disease clinic within the so-called **RAKUS complex**, and adaptation of 10 other hospitals in order to meet epidemiological conditions.

Theoretically, schools, universities and research buildings (152 and 81 mil. EUR) could have higher interest in circularity solutions for indirect educational purposes. Almost one fourth of schools in Latvia participate in the international Eco-school program. However, the additional promotion of circularity solutions could be needed, and the crucial role of budget allocation is mianly managed by municipalities, often driven by cost optimisation principles.

Approved projects and intentions in public procurement (mil. EUR)

Building type	2022					2023				
	State budet	Municipality budget	EU Funds	Other	Total	State budet	Municipality budget	EU Funds	Other	Total
Residential buildings	**36**	**25**	**64**	**40**	**166**	**0**	**0**	**12**	**7**	**20**
one-apartment houses	0	0	0	0	**0**	0	0	0	0	**0**
two-apartment houses	0	0	0	0	**0**	0	0	0	0	**0**
three and more apartment houses	36	25	64	40	**166**	0	0	12	7	**20**
Non - residential buildings	**203**	**103**	**278**	**258**	**842**	**159**	**64**	**284**	**141**	**648**
hotels and similar buildings	6	1	0	1	**8**	0	2	0	2	**4**
office buildings	17	3	4	10	**35**	8	2	2	12	**24**
wholesale and retail buildings	0	0	0	0	**0**	0	0	0	0	**0**
traffic and communication buildings	15	0	86	21	**122**	30	0	164	29	**223**
industrial production buildings and warehouses	8	1	47	59	**115**	2	1	17	37	**56**
buildings for entertainment events	5	7	9	18	**39**	6	4	4	4	**18**
sports buildings	12	6	10	36	**64**	11	4	2	9	**26**
museums and libraries	13	2	1	8	**24**	0	2	3	1	**5**
schools, universities and research buildings	15	58	32	48	**152**	5	20	24	33	**81**
medical or healthcare facilities	20	12	74	25	**132**	9	14	55	12	**90**
non-residential farm buildings	0	0	1	1	**2**	0	0	0	0	**0**
other non - residential buildings	90	2	12	29	**133**	88	2	8	0	**99**
Various municipal buildings	1	12	3	2	**17**	0	13	6	3	**22**
Civil engineering	**116**	**91**	**165**	**258**	**629**	**160**	**96**	**168**	**229**	**653**
roads, streets, roads, airfield runways and rail tracks	67	68	81	85	**301**	74	73	59	60	**266**
bridges, overpasses, tunnels and underground roads	10	11	1	1	**22**	11	11	2	0	**24**
ports and dams	3	2	13	39	**57**	0	0	2	42	**43**
main pipelines, main communication and power transmission lines	0	0	11	111	**122**	0	0	10	100	**110**
local pipelines and cables	0	1	2	0	**3**	0	2	7	0	**9**
complex construction in industrial production enterprises	0	0	0	0	**1**	0	0	0	0	**0**
other civil engineering works	36	9	56	21	**122**	75	9	89	27	**199**
cultural and historical engineering structures	0	0	0	0	**0**	0	0	0	1	**1**
Total	**355**	**220**	**507**	**555**	**1637**	**318**	**161**	**464**	**377**	**1320**

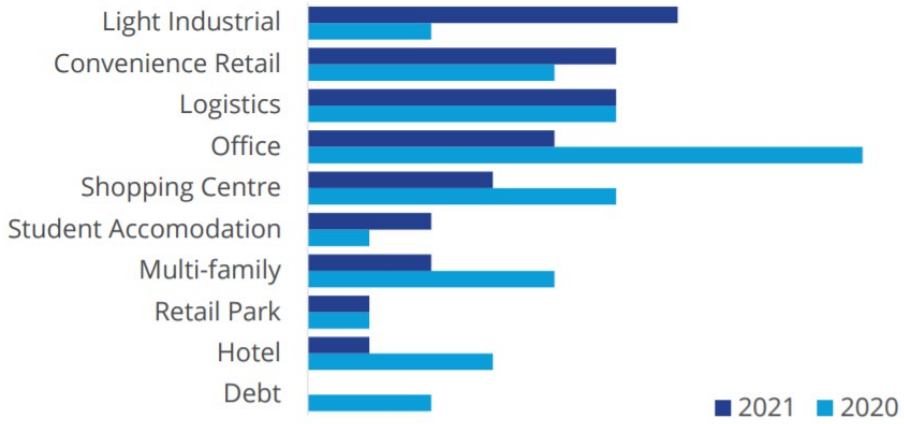
Source: Data was prepared and sent by the Ministry of Economics which compiled intentions reported by municipalities and ministries and also includes projects not supported by EU funding

Investor mood and market trends*

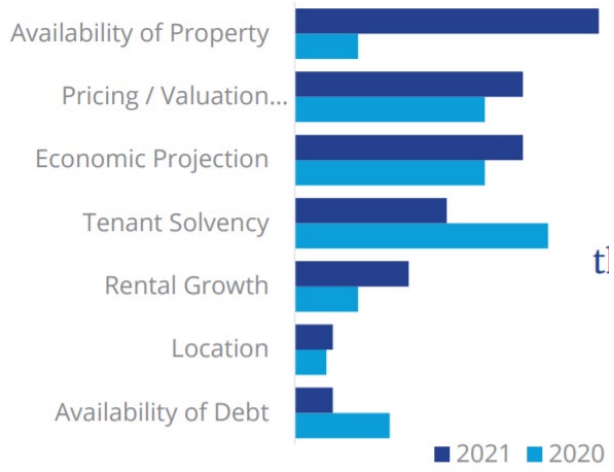
Trends and forecasts

- Following the overall trend in Europe, investors are expected to continue the hunt for industrial assets in all three Baltic States due to favorable market fundamentals.
- Capital availability will persuade investors to look for new opportunities.
- Investor sentiment towards buying and not selling will continue to have an impact on supply, and consequently also on yields.
- Industrial (as well as office) yields have the potential to compress further. Being less affected by the pandemic, industrial assets are in particularly high investor demand. Offices with fewer strong tenants and long WALT might be acquired for even lower yields than before.
- Lack of attractive high-grade investment objects will keep a significant part of investments directed to development projects.

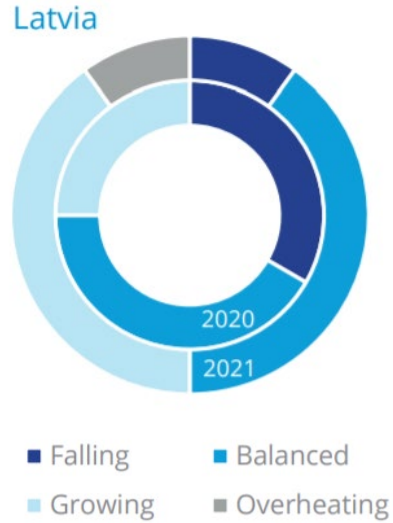
How interested are investors in these asset classes? (Baltic market together)



What are the biggest challenges to real estate markets going forward in the next 12 months? (Baltic market together)



Investors' sentiment in 2020 and 2021



Source: all data on this page is extracted from investor survey results– round 3; Investment market overview 1HY 2021; Property Snapshot Q3 | 2021, Colliers Baltics, 2021

Obstacles in implementing circularity in the construction sector

The main circular economy barriers and challenges identified in Latvia:

The «Action Plan for the Transition to a Circular Economy 2020-2027» summarizes the most important barriers in circular economy development:

- Lack of cross-sectoral coordination, and lack of influential driving force for the development of circular economy ideas in Latvia;
- Sectoral strategies are developed without considering and insufficiently integrating the objectives of smart development into natural resource management and changing production and consumption patterns.
- Insufficient use of economic and other instruments to influence consumption.
- Insufficient understanding and support for social innovation and dissemination of good practice.
- Public attitude towards consumption - it is difficult for the population to change habits and start sorting waste, in addition, there is insufficient availability of infrastructure.
- Unbalanced use of environmental and natural capital.
- Lack of control: non-compliance of the actual operation with the capacity indicated in the documents.

In the business sector and innovation development in Latvia, the main challenges mentioned in various evaluations are the insufficient amount of public and private sector investment in research and development and weak cooperation between science and the business sector. There is also the lack of understanding of the role of research, development and innovation in creating competitive advantages and increasing productivity. Low production productivity in Latvia, compared to the EU average, directly affects resource productivity, which is an indicator of the circular economy. Nevertheless, businesses are interested in reducing their production costs and are doing so, Latvian SMEs are in the top ten at EU level in terms of implementing resource efficiency measures.

The main circularity barriers identified in the EU for the construction and demolition waste sectors:

What?	Why?	Potential
Price competition with virgin alternatives	Stakeholders tend to favour cheaper and credible solutions, and virgin ([a]) minerals are in many cases cheaper than secondary materials due to the latter's processing costs	A competitive secondary materials market would create demand for both quantity and quality of waste material, thus directly increasing circularity
Confidence in quality and structural properties of secondary materials (traceability)	Stakeholders tend to choose virgin materials that are quality assured through warranties and standards	Engaging in the development of standards for secondary raw materials would increase the trust in their properties and quality
Hazardous substances content	Polluted materials are not suitable for recycling, and removal of the hazardous content is costly	Develop technology for efficient removal of hazardous substances and eliminate use of hazardous materials in new construction
Lack of sufficient and reliable data on (historical) buildings	The composition of material streams from demolition activities cannot always be predicted	Pre-demolition audits and, in the future, material passports help register the type and volume of materials in the existing building stock

Source: https://www.eea.europa.eu/publications/construction-and-demolition-waste-challenges

Barriers and challenges in implementing circularity in the construction sector (continued)

The main barriers and challenges identified in Latvia regarding whole circular economy, and those identified in EU wide research regarding construction waste, are relevant also to the circularity in construction sector in Latvia. However, in the context of this study, we outline additional aspects described below.

Knowledge and understanding of circularity in building sector is weak
The incorporation of circularity in national and municipal planning documents raises general awareness and provides insights into the needed scope of activities. But in general, the circularity concept is perceived as simply re-use opportunities, instead of a multi-cycle approach, and a systematic broader view on circularity is generally lacking.

Unclear legislation and certification
The major problem for material reuse in the construction sector in Latvia is the definition of construction waste in the legislation, that may not be used again after it is named as "waste". Recent research shows that building officials in different municipalities interpret legislation rules related to the possibilities of waste reuse in different ways. There is also not enough certification capacity available for used materials to allow them to return to the construction sector. **The construction business in Latvia is not so interested in the more active reuse of materials until those problems are solved.**

National data on building waste
The current national system of building waste accounting is not comprehensive and therefore, it is of limited use.

Lowest price principle
Circularity options that are more expensive are hindered by the favoured lowest-price approach in public purchases and by a shadow economy that makes pressure on quality. **Green public procurement is growing relatively rapidly, but it mostly covers minor improvements**, like LED bulbs. Almost nobody wants to cover the higher costs for circularity options in construction, and the future value of reusability is not a common real estate assessment tool yet.

Construction sector is national but with international labour
The construction business in Latvia has developed in a national manner historically. Import volumes in Latvia (57 mil EUR in 2019) are 2 times smaller than in Lithuania and 4 times smaller than in Estonia. Export from Latvia exceeds import 6 times. During recent years, a new tendency was observed due to the shortage of labour: foreign workforce was attracted, including cheaper specialists from Ukraine through companies in other EU countries where jurisdiction is more favorable for outside-EU labour.

Results – from the Dutch market perspective

Dutch Examples and Latvian market opportunities

▶ *Complex and collaborative solutions for whole building and sites – the Dutch market has the competencies and capabilities to deliver these solutions*

Dutch examples:

- Modulo upcycle center Almere
- Venlocity hall
- Park 2020-industrial park
- Blue city - circular incubator
- C-Beta circular business centre
- CIRCL- circular pavillion
- RAU Architects - Liander office
- Rothuizen Architects – Circular youth clinic

Latvian market:

There are no convincing demonstration buildings in Latvia representing a deep utilization of circular economy solutions. The majority of awarded buildings and the best public buildings are focused more on energy efficiency and alternative energy. **There are few indications in the private market on the demand for new buildings wholly based on a circular economy approach**. **The production of wood buildings is quite developed with about 100 producers in Latvia**, but a large share is produced for exports. Thus, the potential for demand relies on public purchases. The development of recent years indicate that part of the largest municipalities could develop 1-3 such buildings each 5 years as a political demonstration tool.

Another niche identified is **complex industrial systems** resulting in a higher production/usage volumes of circular materials and processes.

Opportunities:

- If circularity would be chosen as a part of demonstration approach in the public sector, it could result in 20-100 public buildings in 2030, but this process is more likely to start after 2027.

- Latflora Ltd is planning to develop a green industrial area for climate neutral development in 2022-2023. Among existing wind electricity generation projects, one can highlight the "Kaigu peat site", where production development of high value innovative bioeconomy products is planned.
- Liepaja municipality has the ambition to develop the former metallurgy site (202 ha) as the greenest industrial park in Europe, but it the site is mostly oriented to energy solutions.

▶ *Sites for used building material storage and exchange (Dutch examples and Latvian market opportunities)*

Dutch examples:

- CIRCL- circular pavilion
- Modulo Milieustraten

Latvian market:

In September 2020, **the environmental services company "Clean R" opened a construction waste sorting and recycling center called "Nomales".** At the opening ceremony, a memorandum of cooperation was signed by the company, industry and public authorities on the effective implementation of circularity in the construction and demolition waste segment**. The center accepts different types of construction waste, which is further sorted and recycled into different fractions** such as soil, rubble and wood. The aim of sorting and recycling is to increase the reuse of materials in line with sustainable policy objectives. **Everyone can drop off their construction waste at the center and purchase materials made from sorted and recycled construction waste**. The NGO "Free Riga" runs an upcycle center in the former premises of Riga Technical University. The main activities are chemicals utilization, such as paints, which involve multidisciplinary collaboration. "Free Riga" has rented premises (15 000m^2) for 25 years and plans to develop a «Life quality design institute» there and attract various tenants. They are open for innovative ideas and investments.

Opportunities:

- The NGO "Free Riga" upcycle centre is open for support and cooperation for expansion and optimization of material flows and innovative circular design ideas.
- The main waste operators are developing building waste material storage, exchange and processing capacities, but innovative approaches for engagement of building operators and the private sector could be demanded soon.
- The demand for flexible and modular recycling sites is expected to grow, providing an opportunity for the rental of services such as "Modulo Milieustraten".

Dutch Examples and Latvian market opportunities

▶ *Ready houses*

Dutch examples:

- Studio HUP Circular building system - a minimal ecological footprint, portable and remountable houses
- Circular office design – Vepa
- M-Homes, Nijmegen
- Unbrick, Ede

Latvian market:

There are no identified ready house suppliers in the Latvian market that could offer substantial circularity in their products. As the closest example, one could name ready wooden houses. In total, it is estimated that there are about 100 wooden house producers in Latvia. Ready-made wooden houses are mostly exported, and this segment indicates rather high competition rates. Niche products are also in development, such as very small houses.

Opportunities:

- Current ready-made wooden house solutions could be modified with complex circularity solutions and sophisticated future value assessments, to add value to the products.

▶ *Social housing – technical and financial long term solutions*

▶ Dutch example:

- Drenthe Woont Circulair, in which six consortia in the 'Drentse Proeftuin' are working on and experimenting with developing a circular social rental home.

Latvian market:

Statistically, social houses constitute only 0.4% of the stock, which is 20 times less than the average in the EU. This is related to different interpretations of the definition – only houses for low-income people are accounted for. However, along with the European interpretation of the term, municipally-owned residential houses represent a low proportion, and new ones are built in small amounts. Despite this, municipalities continue to perform the maintenance of multi dwelling houses where residents have privatized dwellings after the end of Soviet period. **Most of those Soviet buildings are in very poor condition due to the end-of-life cycle. Recovery funding includes a plan to support low-cost rental housing. This could potentially support the social housing sector in Latvia. Latvia's Recovery and Resilience Plan includes a financial fund for low-cost rental housing (42,9 mil. EUR) that could stimulate this sector in Latvia**.

Opportunities:

- Separate circularity **solutions with** high economical future value, for renovation projects supported by the state, municipalities and EU funding. Additional support could be obtained from funding schemes like ESCO or a standardised offer for projects supported under Latvia's Recovery and Resilience Plan .

▶ *Particular spaces in the building*

Dutch examples:

- Vallei en Veluwe – Circular renovation of the boardroom
- Cepezed, The Temporary Court
- Circular office design – Vepa

Latvian market:

There are very few examples of particular spaces organised within circular construction, mostly outdoor space solutions.

Opportunities:

- Ready solution proposals for the temporary location of specific buildings that are going to be renovated, available when demanded.

▶ *Recycled and recyclable materials*

- Schagen Infra is a company active in ground, road and hydraulic engineering using the highest possible percentage of recycled material in their products
- Smartchrusher – recovered cementstone reused directly CO2-free in the production of new concrete
- Mobile factory – building bricks from natural disaster rubble

There are several materials developed or under development in production. Recycled cellulose insulation is offered by several producers and moderately acknowledged in the market over the last 20 years. Some other construction-related products are produced from waste wood fibres. Used tires processing in playgrounds and testing in road construction is present. As well as some experimental projects like textiles conversion to insulation materials by waste operator Eco Baltia and the production of roof materials from sand –PET composite were realised. But those solutions had problems to ensure unchanged quality and technical specifications for the necessary certification of the materials. Lowest price principle dominates the public construction sector in Latvia. Recycled materials tend to be more expensive, especially imported ones, resulting in low market share. Regarding reusage of demolished building materials, current recycling includes wood and metal reuse and recycling as well as concrete, typically used for filling like elsewhere across Europe. Construction waste sorting equipment currently is owned by one of the leading waste management operators in Latvia, Clean-R.

Opportunities:

- High energy efficiency insulation solutions for historic wooden houses remains a challenge
- Appropriate treatment and preparation technologies of construction waste to ensure quality requirements for further use in construction
- Establishment of recycled materials production lines in the regions of Latvia with lower cost but high management and competence quality ensured by Dutch competence and experience.
- Expertise in future value detection for recyclable materials and solutions.

▶ *Recycled and recyclable products*

Dutch examples:

- Solarge – Recyclable, lightweight solar panels incl. From bumpers and garden seats
- Circular viaduct – Rijkswaterstaat, Van Hattum en Blankevoort, Consolis Spanbeton
- Reuse of system walls – Inter-fitting
- Glass Constructions – Kingspan Light + Air
- Jansen by ODS-in the 'facade as a service' concept
- Circular facades – Kloeckner Metals ODS Nederland
- Facade 'as-a-service' – Alkondor
- Bolidt Plastic Applications makes floor material, ship decks and wearing courses for roads and outdoor areas. The company participated in a CIRCO Track as part of their broader approach to making their operations more sustainable.

Latvian market:

There are some examples of recycled products partially related to construction, such as furniture produced from PET waste.

Opportunities:

- Innovative solutions such as "facade as a service" for an agreed period.

▶ *Dismantling buildings*

Dutch examples:

- New Horizon. The company extracts building materials and products from buildings so that they can be fully reused in a new project

Latvian market:

Most of the valuable parts are dismantled by building operators. Few companies are specialized in wood material dismantling and reprocessing in high value products. In most cases, however, material extraction is too expensive due to chemical additives and other technological aspects.

Opportunities:

- There is no market potential identified, until the development of recycling capacities and a certification system for recycled building materials will be in place. Afterwards, highly qualified solutions for sophisticated demolition could be in-demand.

▶ *Material certification and accounting management systems*

Dutch examples:

▶ BIM design tool that is increasingly used: Building Information Model	▶ Madaster – material passport Platform CB'23 - Guidelines

Latvian market:

The definition of construction waste is controversial in Latvian legislation. The re-use of materials in construction requires certification documentation according to legislation. But there is no system, certification bodies, nor competences to implement that in practice. **The most ambitious initiative in Latvia is the development of a new building materials chain system under the Life IP financed project.** The project aims to develop a construction materials chain system within the next five years, including principles, processes and guidelines on how construction waste from construction sites is collected, sorted and recycled to produce construction materials. The project involves a range of industry stakeholders, such as the Latvian Association of Architects, the Latvian Association of Building Material Producers, and the State Construction Control Bureau of Latvia. **The project aims to develop a circular system that is understood by all stakeholders, can be monitored and managed, and has an incentive system that motivates stakeholders to remain involved in the circular system. The project is planned to be financed in the range of 10-20 million EUR.** After the signing of the contract, the active implementation phase is planned to start in January 2022**. A Digital Building Information Modelation tool** (State Construction Control Bureau) is under development with active promotion amongst constructors, with a plan to make it mandatory from 2025 (https://www.em.gov.lv/lv/buvniecibas-digitalizacija). A version of a LCC-Life Cycle Cost calculator has been developed under the Ministry of Environmental Protection and Regional Development (https://www.varam.gov.lv/lv/buvniecibas-dzivescikla-izmaksu-lcc-aprekina-kalkulators).

Opportunities:

- ▶ Consulting for solutions of material flow accounting system
- ▶ Consulting for certification system for re-used and recycled materials and products
- ▶ Building Modelling System being developed in Latvia should be examined if the best practise from building material passports should be incorporated

▶ *Management of cooperation*

Dutch examples:

- There are 43 green deals among different stakeholders in the Dutch building sector
- BREEAM improvement with circularity aspects

Latvian market:

There is one green deal in Latvia relating to circular buildings. The "Riga Energy Agency" is implementing a project called "URGE" for the transition to a circular economy in construction. Within this framework, **an Integrated Action Plan for the Implementation of the Circular Economy in the Construction Sector of Riga City Municipality is being developed, which includes innovative solutions for the integration of circular economy principles in all stages of the building construction or renovation cycle.** The aim is to ensure the sustainability of construction by reducing resource consumption, waste, CO2 emissions, construction and operating costs and increasing resource efficiency. The project aims to achieve this through a switch to renewable materials and raw materials, the use of flexible, adaptive and regenerative design principles, etc. The total project budget is 748 500 euros, and the implementation period is September 2019 – August 2022.

Opportunities:

- Management of partnership organization to set up green deals in the construction sector
- BREEAM improvement with circularity aspects

▶ *Living labs or trial sites*

Dutch examples:

- A clear vision on (circular) building in relation to vacant buildings and the financing of construction was considered to have the highest priority by the majority of the stakeholders. Knowledge is important to further develop the circular economy, in both material chains and in the more general sense. The proposal or stakeholders is to build up this knowledge and to disseminate it through 'trial sites' or 'Living Labs'.

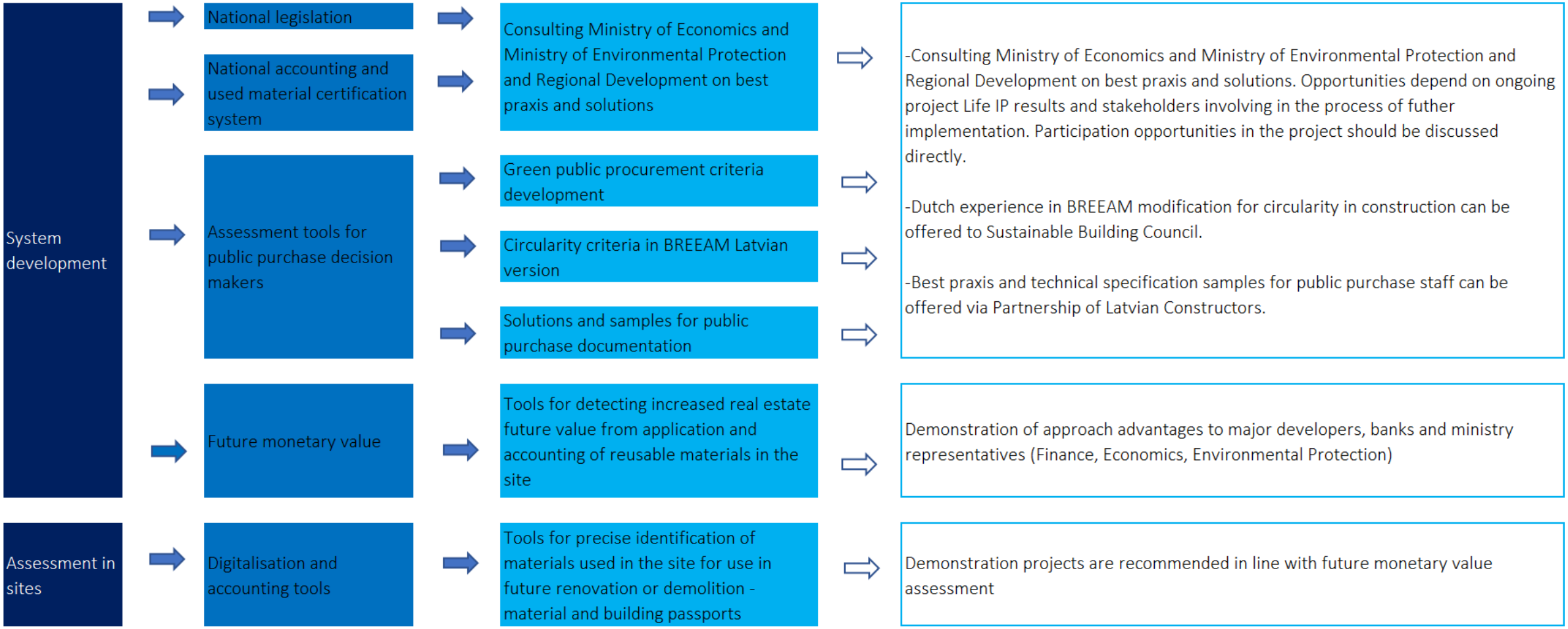
Latvian market:

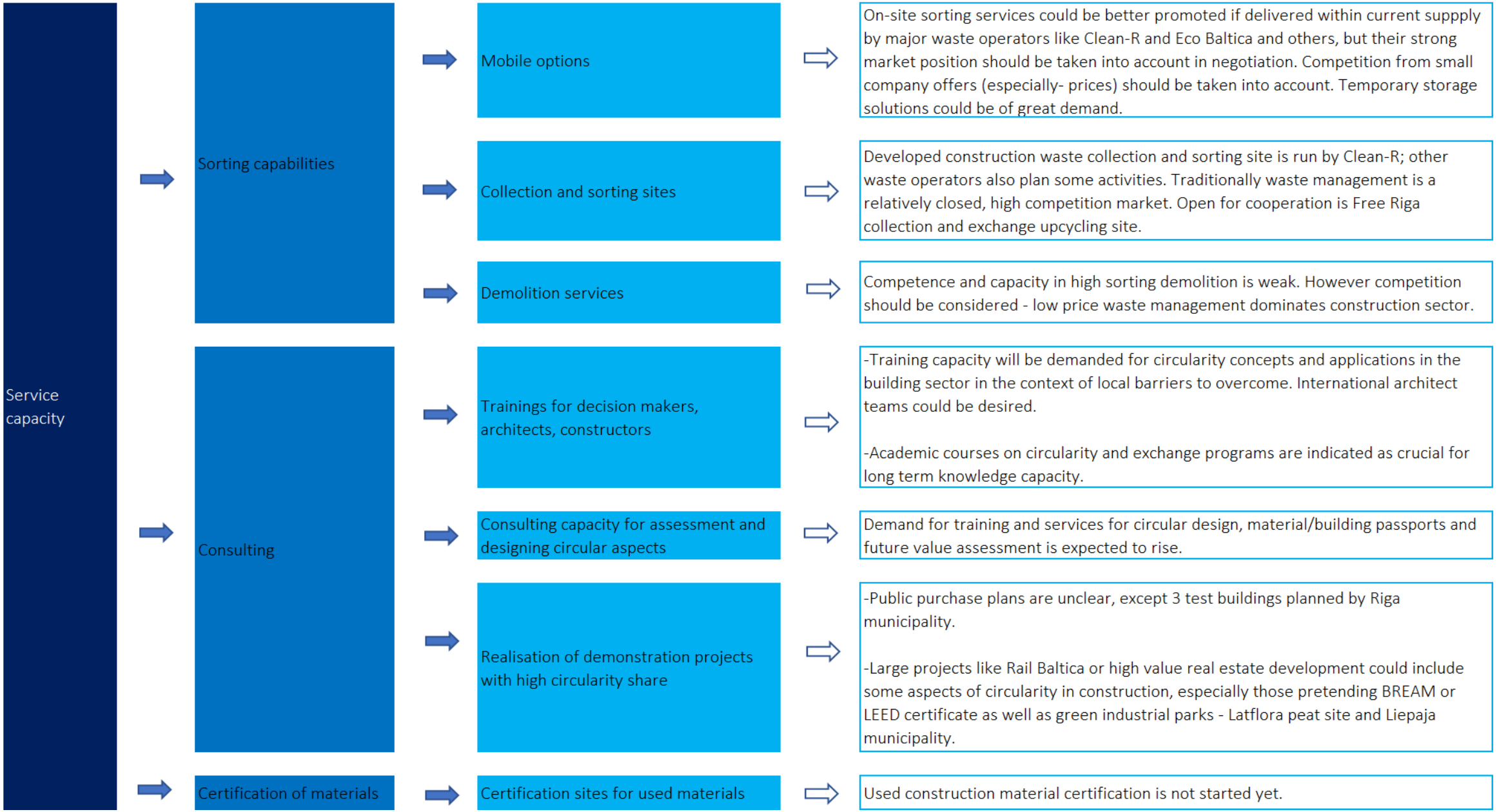
There are different research and development projects implemented in cooperation of academics and the construction business sector, however no complex testing sites oriented to circular building were in use.

Opportunities:

- Management of living labs and data processing for system development in cooperation with building operators and Riga Technical University specialists. But no complex testing sites oriented to circular building were in use.

Results: Latvian demand perspective




Service capacity
Sorting capabilities
Mobile options
On-site sorting services could be better promoted if delivered within current suppply by major waste operators like Clean-R and Eco Baltica and others, but their strong market position should be taken into account in negotiation. Competition from small company offers (especially- prices) should be taken into account. Temporary storage solutions could be of great demand.
Collection and sorting sites
Developed construction waste collection and sorting site is run by Clean-R; other waste operators also plan some activities. Traditionally waste management is a relatively closed, high competition market. Open for cooperation is Free Riga collection and exchange upcycling site.
Demolition services
Competence and capacity in high sorting demolition is weak. However competition should be considered - low price waste management dominates construction sector.
Consulting
Trainings for decision makers, architects, constructors
-Training capacity will be demanded for circularity concepts and applications in the building sector in the context of local barriers to overcome. International architect teams could be desired.
-Academic courses on circularity and exchange programs are indicated as crucial for long term knowledge capacity.
Consulting capacity for assessment and designing circular aspects
Demand for training and services for circular design, material/building passports and future value assessment is expected to rise.
Realisation of demonstration projects with high circularity share
-Public purchase plans are unclear, except 3 test buildings planned by Riga municipality.
-Large projects like Rail Baltica or high value real estate development could include some aspects of circularity in construction, especially those pretending BREAM or LEED certificate as well as green industrial parks - Latflora peat site and Liepaja municipality.
Certification of materials
Certification sites for used materials
Used construction material certification is not started yet.

Production development	Innovative circularity improvements in Latvian production sites or establishment of new sites	Wood based production like application of lignin replacing bitumen in asphalt, usage of cellulose fibres in cement applications	-Cement producers are advanced and should be negotiated directly for cooperation. -Road industry opens for innovations with used tyres pilot project. -Wood building cluster could be introduced with innovative solutions to identify cooperation potential. -Hemp building product producers could be supported for expansion and export. -Commercialisation opportunities can be offered to Riga Technical University for inventions, like gypsum plasterboard and path polystyrols recycling.
Product sales	Innovative circularity based products and building showcases	Renting business model and prefabricated products, complex solutions for special cases	-Facade renting business is a free niche. -Prefabrication is developed in wood panel house production that could be used for exchange of experience and development of innovations. Local experience could be useful for development of prefabricated building parts sector. -Riga municipality is preparing development plan for circularity in construction. For near future 3 test sites are assumed, but not specific objects selected yet - for renovation, for demolition and for new building. -Large hospitals use to make regular renovations and has expressed interest on material reduction. This is an opportunity for multicycle circularity solutions. -0.4-1.2% of building stock should be renovated to meet EU energy efficiency requirements. This is challenging volume for Latvia and standartised affordable circularity solutions, especially for Soviet time block buildings, could be an opportunity.

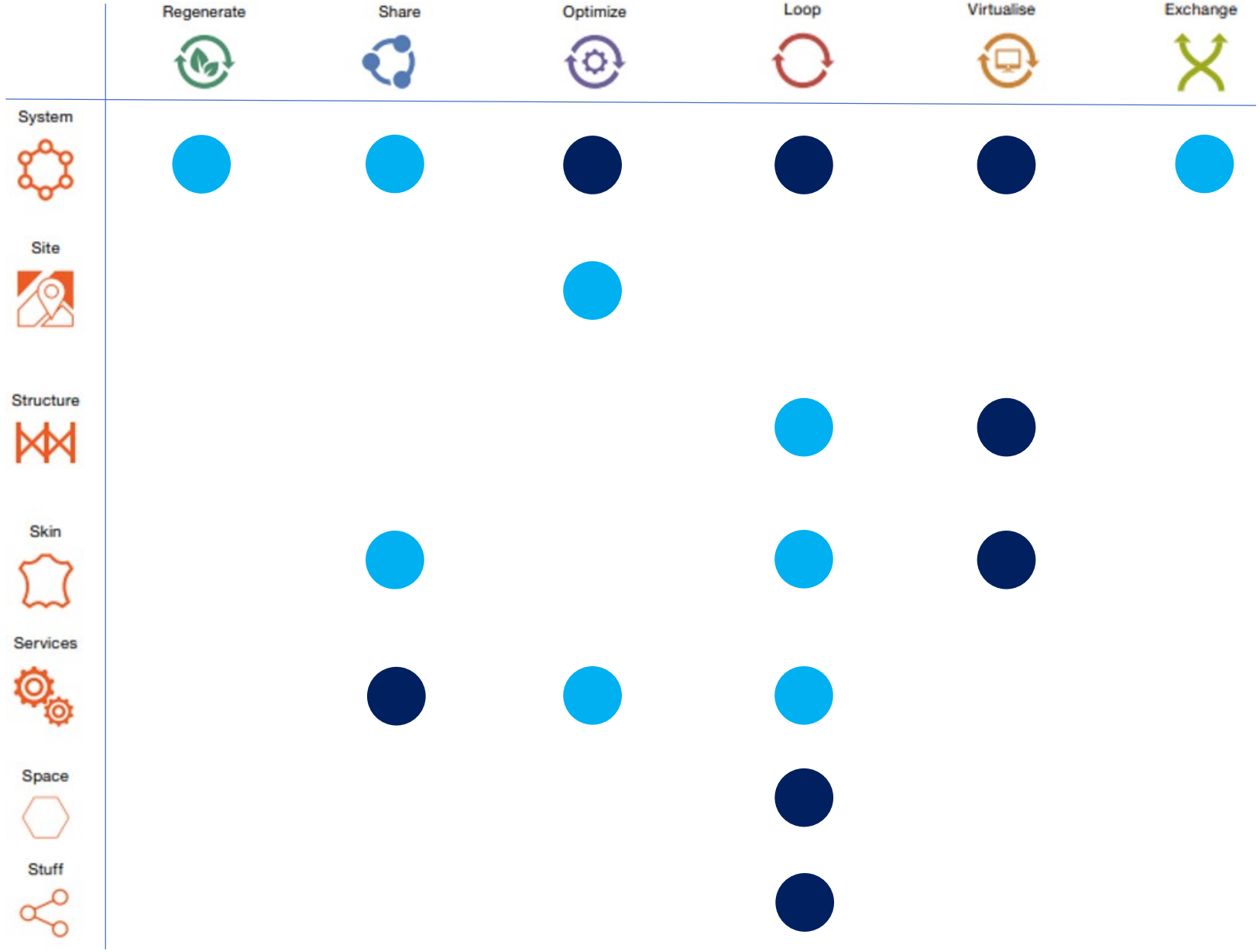
Summary of opportunities: mapping results in a theoretical framework

A sophisticated concept including different aspects of circularity in the built sector was developed by ARUP using the Ellen MacArthur Foundation's ReSOLVE framework and 7S framework to explore and contextualise practical applications in the built environment (Circular Economy in the Built Environment, ARUP, 2016).

We used this framework to map Dutch business opportunities in the circular construction sector in Latvia within the next 5 years.

The results should not be interpreted as a perfect mapping, as they are a general description of our findings. There could be other specific Dutch products and services with good opportunities not included in the map.

A description of mapping aspects is included in the next page.



Good opportunity with demand identified and low competition

Potential opportunity with unclear demand yet or competition in place

System

System includes the structures and services that facilitate the overall functioning of the system, e.g. roads, railways, electricity, water and waste water systems, telecommunications, parks, schools, digital infrastructure

Site

Site is the fixed location of the building

Structure

Structure is the building's skeleton including the foundation and load-bearing elements

Skin

Skin is the façade and exterior

Services

Services are the pipes, wires, energy and heating systems

Space

Space is the solid internal fit-out including walls and floors

Stuff

Stuff is the rest of the internal fit-out including the furniture, lighting, and ICT.

Regenerate	Regenerating and restoring natural capital	Safeguarding, restoring and increasing the resilience of ecosystems Returning valuable biological nutrients safely to the biosphere
Share	Maximising asset utilisation	Pooling the usage of assets Reusing assets
Optimise	Optimising system performance	Prolonging an asset's life Decreasing resource usage Implementing reverse logistics
Loop	Keeping products and materials in cycles, prioritising inner loops	Remanufacturing and refurbishing products and components Recycling materials
Virtualise	Displacing resource use with virtual use	Replacing physical products and services with virtual services Replacing physical with virtual locations Delivering services remotely
Exchange	Selecting resources and technology wisely	Replacing with renewable energy and material sources Using alternative material inputs Replacing traditional solutions with advanced technology Replacing product-centric delivery models with new service-centric ones

Source: Circular Economy in the Built Environment, ARUP, 2016

Summary of opportunities: mapping the results in a theoretical framework

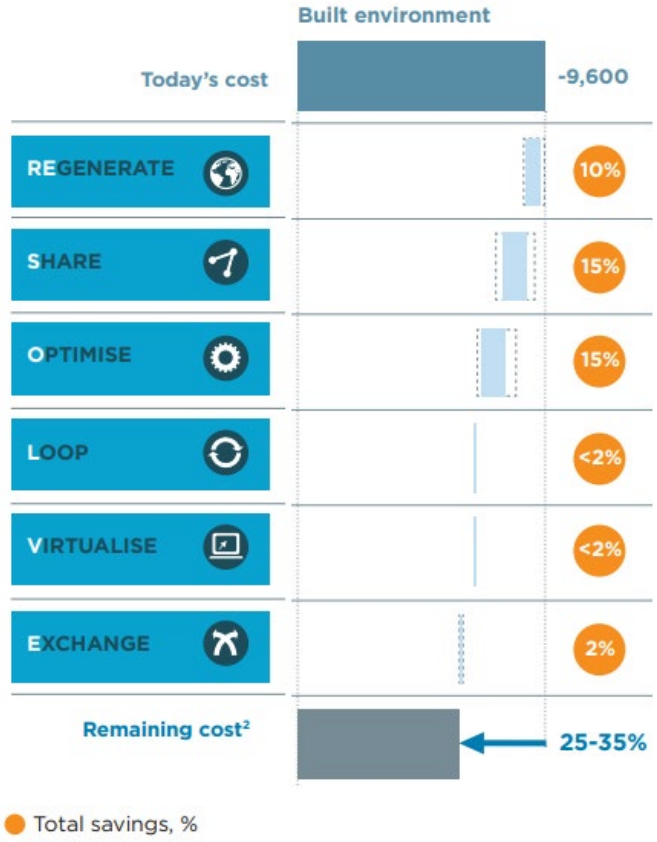
We recommend to take into account the economical perspectives of customers in the interpretation of mapping in the previous page.

Estimates based on an EU average level, reveal that optimisation, sharing and regeneration could result in the highest cost savings for real estate owners and users (picture on the right).

Despite “loop” activities which could be traditionally perceived as the core of circularity in Latvia, market demand could grow faster in other sections with a higher cost-saving potential.

The competitive advantage of cooperation proposals could be a clear indication of future savings and extra income.

Cost reduction potential in the built environment: total annual cash-out costs per household; EU average 2012, €, Improvement potential for 2050



Note that this is not a forecast of how costs will develop. It is an assessment of how costs could develop if Europe aggressively went after this agenda, and if all improvements were captured as cost savings. The total savings are less than the sum of the savings of the separate levers due to overlap

Source: Growth within: A circular economy vision for a competitive Europe, Ellen MacArthur Foundation, the McKinsey Center for Business and Environment, 2015

Doing business in Latvia

1. Legal form of the company

Prior to establishing an enterprise, it is essential to assess and choose the most appropriate type of an undertaking in terms of law and economics. This choice will affect not only the amount of necessary equity capital, but also the legal status of the enterprise and other business-related issues.

2. Incorporation documents

At the very beginning, it is necessary to adopt a Decision on foundation. The Decision on foundation could be equivalent to a Memorandum of Association in Western European countries.
Secondly, the Articles of Association should be drafted. According to Latvian Commercial Law, Articles of Association is the most important document for a company`s internal organization perspective which should be in line with the Decision on foundation and following records in the Commercial Register.
It is necessary to pay the equity capital. The minimum equity capital is 2850 EUR and it is not required to pay the entire equity capital at the moment of registration; the remaining sum can be paid within one year. Usually, the founders open a temporary bank account in order to pay the equity capital. At this stage, banks frequently ask questions related to the business and expected money flow in the account.

3. Contacts

Enterprise Register of Latvia:

Phone
67 031 703

E-mail
pasts@ur.gov.lv

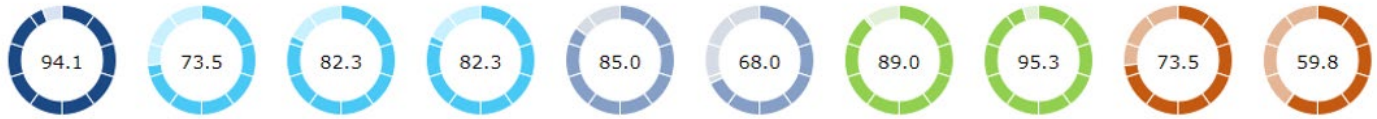
Pērses iela 2
Rīga, LV-1011

https://www.ur.gov.lv/

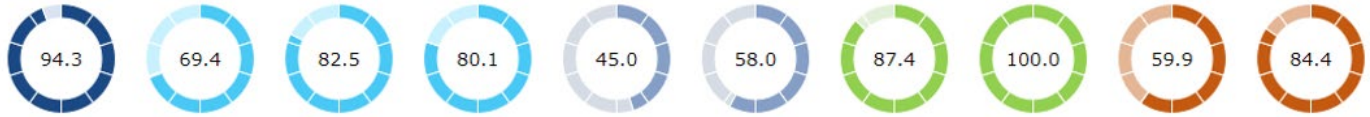
	Limited Liability Company (LLC)	Joint stock company (JSC)	Representative office
Latvian name	Sabiedrība ar ierobežotu atbildību (SIA)	Akciju sabiedrība (AS)	Pārstāvniecība
Corporate tax rate on annual net profits	0.2	0.2	Not available for trading
Minimum paid up share capital	EUR 2,800	EUR 35,000	None

3.General comparison of business in Latvia and Netherlands

Topic Scores (0-100) - Latvia



Topic Scores (0-100) - Netherlands



Source: doingbusiness.org

Contacts of important stakeholders in Latvia

Stakeholder	Contact person	Position	Phone	Mail	Web
The Ministry of Environmental Protection and Regional Development	Rudīte Vesere	Head of Environmental Quality and Waste Management Division	+371 67026464	rudite.vesere@varam.gov.lv	https://www.varam.gov.lv/
State Construction Control Bureau of Latvia under the Ministry of Economics	Svetlana Mjakuškina	Director	+371 67013350	svetlana.mjakuskina@bvkb.gov.lv	https://www.bvkb.gov.lv/
Riga Energy Agency under Municipality of Riga	Ieva Kalniņa	Snior project manager	+371 67012444	ikalnina89@riga.lv	https://rea.riga.lv/
Partnership of Latvian Constructors	Gints Miķelsons	Chairman of the Board	+371 25733 544	gints.mikelsons@latvijasbuvnieki.lv	https://www.latvijasbuvnieki.lv/
Latvian Sustainable Building Council	Gints Miķelsons	Chairman of the Board	+371 26467400	info@ibp.lv	https://www.ibp.lv/
Association of Building Materials Manufacturers	Leonīds Jākobsons	Chairman of the Board	+371 67273800	leonids.jakobsons@bra.lv	https://www.bra.lv/
Clean-R, waste management operator	Valerijs Stankevičs	Executive director	+371 67111001	kc@cleanr.lv	https://cleanr.lv/
Eco Baltia, waste management operator	Māris Simanovičs	Chairman of the Board	+371 67409 828	info@ecobaltia.lv	https://www.ecobaltia.lv/

Source: doingbusiness.org

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https://www.netherlandsandyou.nl/your-country-and-the-netherlands/latvia

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https://www.netherlandsandyou.nl/your-country-and-the-netherlands/estonia

Appendix: Upcoming construction projects in Latvia (part 1 of 2)

Focused on circular construction	
New building demo project	Riga municipality is preparing a local action plan for circularity in the construction sector. The plan includes three demo construction projects to explore possibilities and opportunities for promotion of circularity in the construction sector. The first demo project is located at 11 Ziepju street, in Riga.
Demolition demo project	
Renovation demo project	
Green projects	
Liepaja industrial park	Liepaja municipality has the ambition to develop a former metallurgy site (202 ha) as the greenest industrial park in Europe.
Latflora Ltd is planning to develop green industrial area	Latflora Ltd is planning to develop green industrial area for climate neutral development in 2022-2023. Wind electricity generation is planned on the "Kaigu peat site", and production development of high-value innovative bioeconomy products is also planned at 93 Brivibas street, in Liepaja.
Free Riga Life quality design institute	The municipality of Riga and the NGO "Free Riga" are developing premises where Riga Technical University was located (15 000 m^2). There is an upcycle and exchange center for used repair materials developed already, and an international innovation platform is intended as the concept for further development. It is located at 36 Viskalu street, in Riga.
Mega projects	
Rail Baltica	The total costs of the project are projected 3 bil. EUR until 2030. Circularity aspects are uncertain according to public information.
Road construction	State roads long term strategy for 2040 has just been approved and it includes 1000 km of high-speed roads; Riga bypass (540 mil. EUR until 2030) and other activities.
Energy efficiency improvement in residential buildings	JSC Development Finance Institution "**Altum" will run EU funding projects** under the measure of the national plan: «2.1.1.1. Increasing energy efficiency in residential buildings, incl. developing the ESCO market (in apartment, private and small apartment complexes)». **Calls will be open at the end of 2022. It is planned to support the renovation of 13 450 buildings until 2029.**

Appendix: Upcoming construction projects in Latvia (announced building intentions) – part 2 of 2

Hospitals	
Paula Stradina University Hospital	Major hospital reconstruction multi-million EUR project in several buildings. Some tenders are open currently. 13 Pilsoņu street, Riga.
Former Liepaja children hospital	Reconstruction. Liepaja municipality. 9 Liepu street, Liepaja.
Health center	Reconstruction. Riga municipality. 14 Apuzes street, Riga.
Health center	New construction. Liepaja municipality. 25 Jūrmalas street, Liepaja.
Education	
Viski College	Reconstruction. Daugavpils municipality. Višķu tehnikums, Višķu pagasts.
Sigulda school	New construction. Sigulda municipality.
Ogre school	Reconstruction. Ogre municipality. 2 Suntazu street, Ogre.
Salaspils school	New construction. Salaspils municipality. 2a Rubenu street, Salaspils.
Marupe school Atstari	New construction. Marupe municipality.
Kekava school Plavniekkalna	Reconstruction. Kekava municipality. 20 Plavniekkalna street, Katlakalns.
Talsi Christian school	Reconstruction. Talsi municipality. 1 Justina Grota street, Talsi.
Other	
Liepaja prison	New construction. Liepaja municipality. 148 mil.EUR. Tender process open currently.
Lidl retail chain	The first 15 stores were open in October 2021, and more stores are planned. Focus on sustainable construction.
Multifunctional social center	Reconstruction. Kuldiga municipality. 14 Liepajas street, Kuldiga.
Daugava sports stadium	Reconstruction. Riga municipality. 1 Augstiela street, Riga.

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