

Renoveerimismaraton, OPEN Lab ja DRIVE0 projektid ja sealsed esimesed tegevused

Targo Kalamees
Tallinna Tehnikaülikool



DRIVE0 – Driving decarbonization of the EU building stock by enhancing a consumer centred and locally based **circular renovation process**



oPEN Lab – Open innovation living labs for Positive Energy Neighbourhoods

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LIFE IP BuildEST ehk renoveerimismaraton – Pursuing national climate ambition through renovation of Estonian building stock and developing its long-term resilience

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A2.1

Alusandmete korje renoveerimisvajaduse kaardistamiseks ja tervikrenoveerimise spetsiifiliste tehniliste lahenduste väljatöötamiseks.



- A2.1.1 Andmete kogumine tüüpiliste kahjustuste ja kasutusea kohta
 - Tüüpilised eramud, ridaelamud, korterelamud (millel hetkel puuduvad renoveerimislahendused), avaliku sektori mitteeluhooned, ajaloolise väärtusega hooned (mälestised, miljööväärtuslikud).
- A2.1.2 Hoone audit, ekspertiis ja uuring. Piirdetarindite ja materjalide omaduste mõõtmine
 - 20 eramut (tehniline seisukord, materjaliomadused ja renoveerimisvajadus);
 - 20 korterelamut miljööväärtuslikest piirkondadest / muinsuskaitsealadest (ajaloolise väärtuse kvantifitseerimine);
 - 20 ahiküttega hoonet (õhurõhuerinevus ja tehniline valmisolek meh. vent. paigaldamiseks).

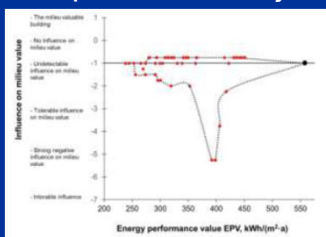
Hoone lühikirjeldus				
DH 1: ≤1920	DH 2: 1921-1940	DH 3: 1941-1970	DH 4: 1971-1990	DH 5: ≥1991

C2.1

Hoonetüübi põhiste renoveerimislahenduste väljatöötamine



- C2.1.1 Väikemajad: Tarindite ja sõlmed soojustamine; efektiivsed tehnosüsteemid ja energiaallikad, energiavajaduse minimeerimine, taastuvenergiaallikate maksimeerimine.
- C2.1.2 Korterelamud: Poorbetoon ja puitkarkass. Linna funktsionaalsuse parandamine
- C2.1.3 Mitteelamud: 20 renoveerimistud mitteeluhoone sisekliima ja energiakasutus
- C2.1.4 Miljööväärtuslikud ja mälestised: tervikrenoveerimise rakendamine, valine lisasoojustamine ilma ilmet kahjustamata (puit, müüritis; 5 olulist sõlme), väärtuslike detailide energiatõhususe parandamine (10 detaili), korduvkasutamise, jäätmete minimeerimine, seepoolne lisasoojustamine (puit, kivi), otsustusmaatriks.



C2.2

Tehaselise renoveerimise arendamine ja “digimine”

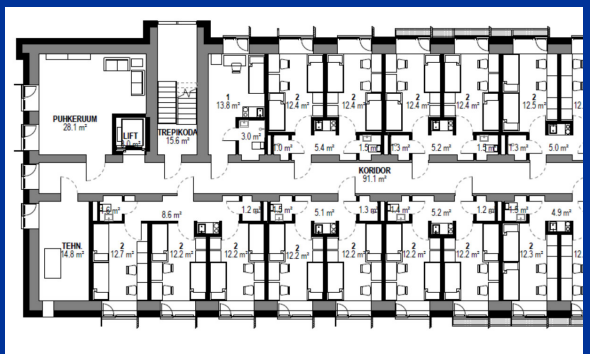
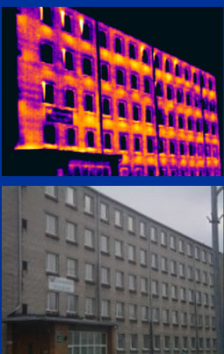
- C2.2.1 Seniste renoveerimsilahenduste edasiarendus.
- C2.2.2 Hoone geomeetria (laserskaneeringust hoonemudelisse / *from scan to BIM*)
- C2.2.3 BIM elementide kataloogi väljatöötamine tehaseliseks renoveerimiseks
- C2.2.4 Tööprojekti koostamise automatiseerimine
- C2.2.5 Sujuv suhtlus BIM-i ja energiatõhususe tarkvara vahel



C3.1

Avalike hoonete näidisrenoveerimised

- C3.1.1 Tehaselise renoveerimise parim praktika – **Nõmme tee 5, Tallinn**



C3.1

Avalike hoonete näidisrenoveerimised

- C3.1.1 Tehaselise renoveerimise parim praktika – Nõmme tee 5, Tallinn
- C3.1.2 Avaliku ajaloolise hoone "A" klassi energatõhusus – Jüri 12 Võru



C3.1

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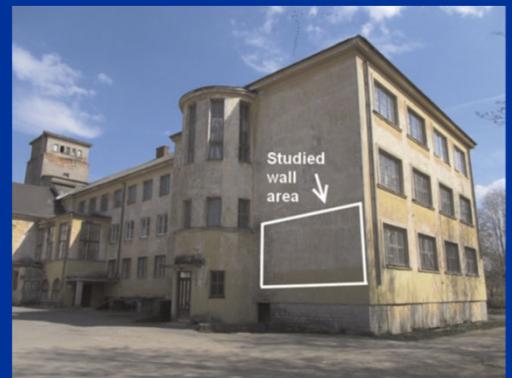
- C3.1.1 Tehaselise renoveerimise parim praktika – Nõmme tee 5, Tallinn
- C3.1.2 Avaliku ajaloolise hoone "A" klassi energatõhusus – Jüri 12 Võru
- C3.1.3 Kliimamuutuste kindel renoveerimine – Lahe 8, Haapsalu (täiendav rahastus)



C3.1

Avalike hoonete näidisrenoveerimised

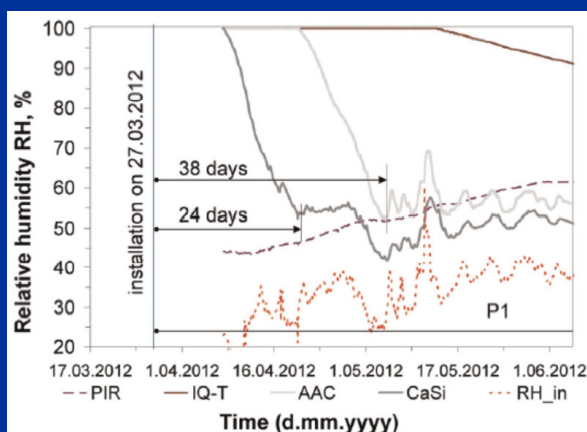
- C3.1.1 Tehaselise renoveerimise parim praktika – Nõmme tee 5, Tallinn
- C3.1.2 Avaliku ajaloolise hoone "A" klassi energatõhusus – Jüri 12 Võru
- C3.1.3 Kliimamuutuste kindel renoveerimine – Lahe 8, Haapsalu
- C3.1.4 Avalike hoone energiatõhususe parandamise parim praktika –
10 hoonet komponentide taseme,
mis tagavad "A", "B", ("C") enegriatõhususe
 - Nutivalmidus,
 - Pikaajaline kliimakindlus,
 - Ressursitõhusus,
 - Ringmajandus renoveerimises,
 - Seestpoolne lisasoojustamine,
 - jne. (10 × 50 000€)



D2.1

Renoveerimislahenduste kasutamise jälgimine

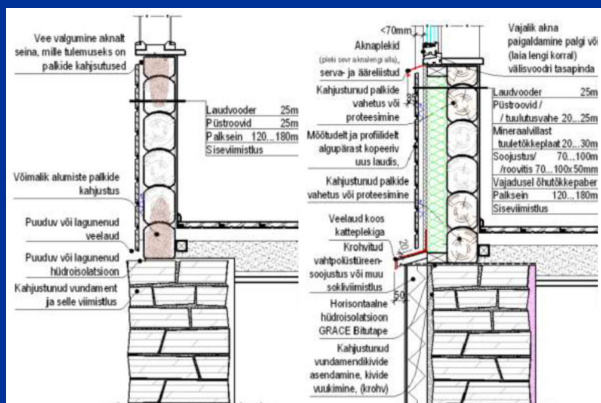
- D2.1.1 Hoonespõhised renoveerimislahendused (projekt- ja ehitus dokumentatsiooni, mõõtmiste ja eksperthinnangu alusel, tegeliku toimivuse hindamiseks)
- D2.1.2 Tehaseline rekonstrueerimine (energia- ja protsessiefektiivsuse saavutamine)



E2.1

Renoveerimise infokaardid hoone omanikele

- E2.1.1 Eramu omanikud ("iserenoveerijad") (projekt- ja ehitus dokumentatsiooni, mõõtmiste ja eksperthinnangu alusel, tegeliku toimivuse hindamiseks)
- E2.1.2 Korterelamute kliimakindla renoveerimise tehnilise juhend (energia- ja protsessiefektiivsuse saavutamine)



≥30 infokaarti

- Eramu tehnilise seisukorra hindamine
- Hoone niiskusturvalisuse ja sisekliima hindamine
- Puitseina (karkass, palk) väline renoveerimine
- Puitseina (karkass, palk) sisene renoveerimine
- Tellisseina väline renoveerimine
- Tellisseina sisene renoveerimine
- Pööningukorruse renoveerimine
- Katuse (lame, viil) renoveerimine
- Akende renoveerimine
- Põranda (plaat, tuulduv) renoveerimine
- Keldri renoveerimine
- Ventilatsiooni- ja küttesüsteemi ning soojusallika renoveerimine
- PV-paneelide paigaldus ja elektrivajaduse minimeerimine
- Sõlmed: sokkel, akna liited, räästas, parapet jne
- Eelurikuse suurendamine renoveerimisel

E2.2

Spetsialistilt spetsialistile koolitused ja juhendid

- E2.2.1 Töötoad, seminarid ehitsinsenerile, arhitektile, muinsuskaitse spetsialistile
- E2.2.2 Renoveerimislahendute kvaliteedikontrolli juhised (10 infokaarti)
- E2.2.3 Tehaselise renoveerimise parima praktika juhend



≥10 infokaarti

- Tehnosüsteemide kasutuselevõtu- ja vastuvõtuprotokollid
- Piirdetarindite soojuskaotuse minimeerimine projekteerimisel
- Ehitustööde kontroll soojuskadude ja külmasildade minimeerimiseks
- Õhupidava piirdetarindi projekteerimine
- Õhupidavuse tagamise kvaliteedikontroll
- Akende ja uste paigaldus
- Päikesekollektorite projekteerimise põhimõtted ja paigaldus
- Päikesepaneelide projekteerimispõhimõtted ja paigaldus
- ...

A2.1 Data acquisition for developing specific technical solutions for deep renovations

A2.1.1 - Data acquisition about typical failures and service life performance of characteristic non-renovated buildings

A2.1.2 - On-site survey and performance of typical non-renovated buildings. Measurement of properties of building envelope and materials for characteristic non-renovated buildings



31.12.2023 Report on on-site survey and performance of typical non-renovated buildings and typical failures, material properties, and service life performance of characteristic non-renovated buildings

31.12.2021 Survey plan established

30.06.2022 Preliminary data acquisition carried out

31.08.2023 On-site surveys carried out

C2.1 Development of technical building type specific renovation solutions

C2.1.1 - Development of renovation solutions for detached and terraced houses

C2.1.2 - Development of existing renovation solutions for apartment buildings

C2.1.3 - Development of renovation solutions for non-residential buildings

C2.1.4 - Development of renovation solutions for buildings with heritage and historic values



30.06.2026 Design solutions for renovation

30.04.2026 Report on indoor climate, energy performance, different service

C2.2 Advancement of prefabricated renovation solutions by digitalization of workflows and improvement of service

C2.2.1 - Further development of existing renovation solutions for industrial renovation

C2.2.2 - From scan to BIM processes and workflows

C2.2.3 - Developing BIM construction element catalogue for industrialized and renovation solutions

C2.2.4 - Developing design automation for the detailed design of renovation solutions

C2.2.5 - Seamless communication between BIM and energy performance software



30.06.2026 Report: Advancement of prefabricated renovation solutions by digitalization of workflows and improvement of service

31.08.2023 BIM elements made available and introduced to companies

30.06.2026 Design protocol implemented for seamless information exchange for prefabricated renovation

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D2.1 Monitoring market uptake and quality of technical renovation solutions

D2.1.1 - Monitoring of technical building type specific renovation

D2.1.2 - Monitoring of offsite prefabricated industrial renovation



31.12.2023 Monitoring report on technical adequacy of the technical solutions applied in grant funded renovations carried out between 2015-2021

30.06.2026 Monitoring report on utilization of renovation solutions developed by BUILDEST

30.06.2026 Monitoring report of performance of case projects (C2.2)

30.06.2026 At least 25 fact sheets on renovation market uptake and technical quality

31.12.2028 Monitoring report on technical quality of implementation of renovation solutions developed by BUILDEST

31.12.2028 Recommendations to Construction Vocational Assessment programs, to improve the technical renovation solutions, to education and training programs about the need to improve awareness raising

E2.1 Developing renovation info-charts and robust guidelines for building owners

E2.1.1 - Producing renovation info-charts for owners of detached houses

E2.1.2 - Development of climate-resilient technical renovation guidelines for apartment buildings



30.06.2026 Guideline for climate-proofing renovation solutions of apartment buildings

31.12.2027 Renovation info-charts for detached buildings (25)

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E2.2 Specialist to specialist knowledge exchange: guidelines and a set of processes for engineers, architects and heritage specialists

E1.1.1 - Training workshops: BULDEST toolset for engineers, architects and conservation specialists

E1.1.2 - Development of quality control guidelines of the building type specific renovation works

E1.1.2 - Developing a best practice guideline for prefabricated offsite industrial renovations



31.12.2024 Best practice guideline for prefabricated offsite industrial renovations

31.12.2025 A guide to guarantee the performance and management of the interaction of different service systems and energy sources, ensuring the designed performance of the technical systems, and optimizing the solutions according to the actual use of the building

31.12.2025 A protocol for service system's performance commissioning for renovated buildings

30.06.2026 Digital prototype of a modular timber frame (bio-based) apartment building extension system for 2 types of building

31.12.2027 ≥10 Info charts about quality control of buildings

31.12.2025 Easy to understand and use too to assess LCC and investment cost of renovation measures of non-residential buildings

30.06.2026 ≥30 training workshops carried out

31.12.2027 ≥50 (summarized with the ones above) training workshops carried out

VÕTA KINDLASTI ÜHENDUST:

targo.kalamees@ttu.ee

+372 56 284 007