NewTREND

NEW Integrated Methodology and **T**ools for **R**etrofit Design Towards a Next Generation of **EN**ergy Efficient and Sustainable Buildings and **D**istricts

Overview

Stam Srl

Horizon 2020 Research and Innovation Framework Programme
H2020-EeB-2015 Innovation Action

NewTREND

New integrated methodology and Tools for Retrofit design towards a next generation of Energy efficient and sustainable buildings and Districts

H2020 Project: EEB - Innovative design tools for refurbishing of buildings at district level
Project budget: 5,730,513 € (EC contribution: 4,715,618 €)
Project duration: 36 months (Sept 15 to Aug 18)
Project Coordination: Integrated Environmental Solutions (UK)

newtrend-project.eu

NewTREND

IES

ABUD
ADVANCED BUILDING & URBAN DESIGN

dr. jakob energy research

iiSBE ITALIA R&D

REGENERA
energy&environment

IES

ABUD

JER

iiSBE Italia R&D

Regenera Levante

Granlund
Less energy gives more

cpu

UCD DUBLIN

UNIVERSITY OF APPLIED SCIENCES MUNICH

London Business School

Granlund Oy

University College Cork
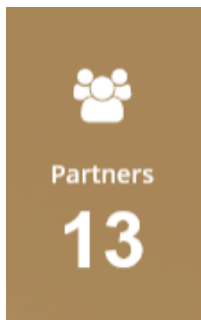
University College Dublin

MUAS

LBS

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MASTERING EXCELLENCE

Ajuntament de SantCugat

UNIVERSITÀ POLITECNICA DELLE MARCHE

STAM

SantCugat

UNIVPM

Partners
13

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NewTREND

Countries
7

Partners

IES (UK)

ABUD (HU)

JER (DE)

iiSBE ITALIA R&D (IT)

REGENERA (ES)

GRANLUND (FI)

UC CORK (IE)

UC DUBLIN (IE)

MUAS (DE)

LBS (UK)

STAM (IT)

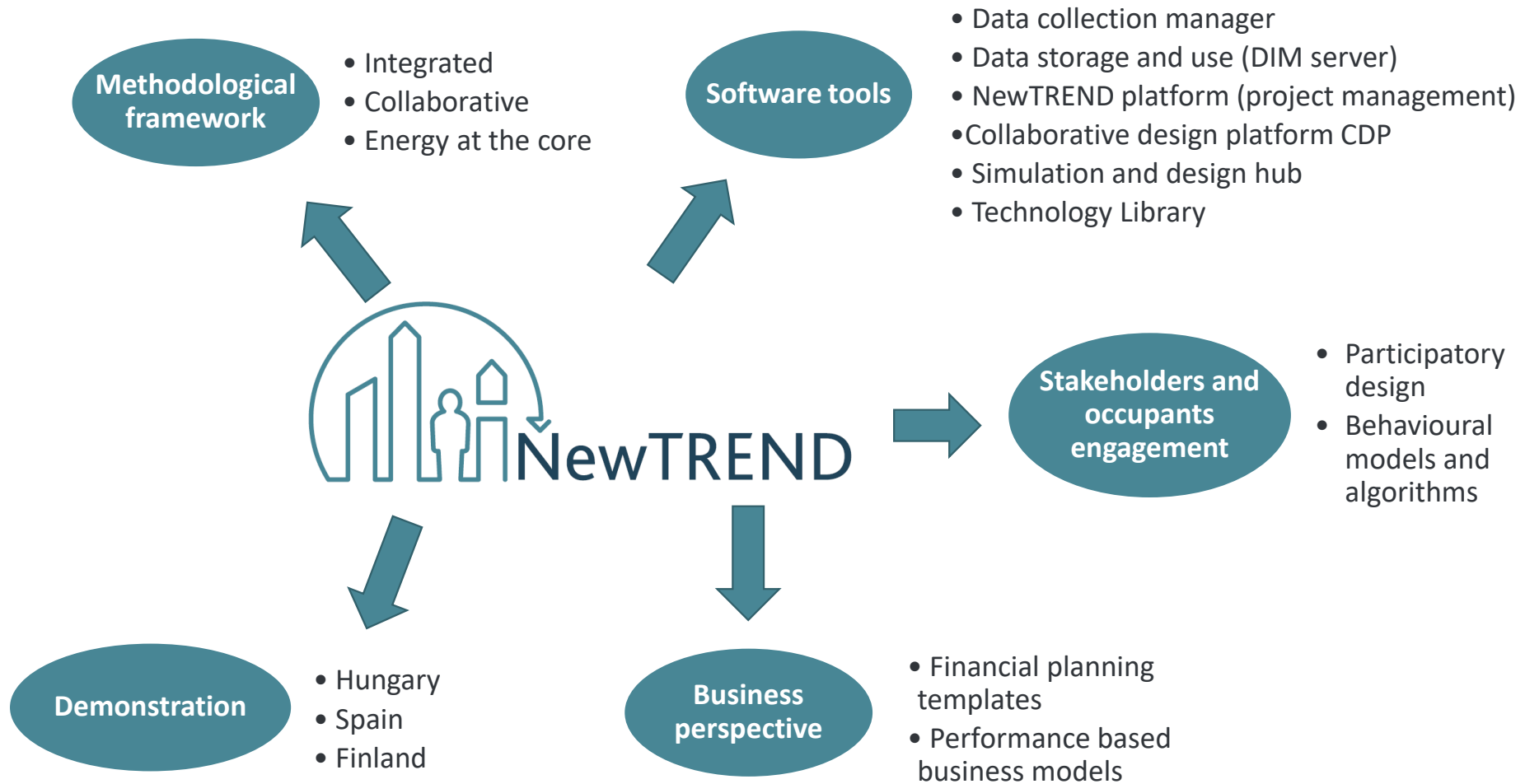**SANT CUGAT** (ES)

UNIPVM (IT)

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Overall objective - NewTREND wants to:

- develop an **integrated design methodology** for energy retrofit

- address **all phases of the refurbishment** process (concept design to implementation and operation)

- develop a **toolkit to support each phase**

- **foster collaboration** among stakeholders & **involve building inhabitants** and users

- establish **energy performance as a key** component of refurbishments

- cover **detailed design** of one-two buildings taking into account interactions with the surrounding neighbourhood

- Facilitate the use of BIM for retrofit

Why do these things?:

- The traditional design process in retrofitting projects often does not include energy related aspects in the early design phase
  - ➢ Unexpected delays, budget overruns and sub optimal performance

- Energy related aspects are multidisciplinary in nature and require a clear communication between all stakeholders

- The existing planning tools are not well adapted to being used in the early stage of retrofitting projects – complex and not interoperable

- Data acquisition and accuracy is challenging in retrofitting existing buildings and neighbourhoods.

- Obtaining the required information to carry out a district simulations from neighbouring buildings is often very complicated and the not always fruitful

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Methodological framework

- Integrated
- Collaborative
- Energy at the core

Software tools

- Data collection manager
- Data storage and use (DIM server)
- NewTREND platform (project management)
- Collaborative design platform CDP
- Simulation and design hub
- Technology Library

NewTREND

Stakeholders and occupants engagement

- Participatory design
- Behavioural models and algorithms

Demonstration

- Hungary
- Spain
- Finland

Business perspective

- Financial planning templates
- Performance based business models

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Pilot Project 1: Seinäjoki, Finland

GO

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H2020-EeB-2015 Innovation Action

Grant agreement no.: *680474*

Old hospital area – Seinäjoki, Finland

- Originally constructed to be the provincial hospital at 1931

- Hospital moved to new central hospital at half way of 1980's

- Four buildings:
  - Main building
  - Dental clinic & office building
  - Heat Distribution building
  - Kivirikko House

- Today's three main tenants:
  - Seinäjoki University of Applied Sciences (SeAMK)
  - Music School of Southern Ostrobothnia
  - Dental Clinic

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Pilot Project 2: Bókay Árpád School, Hungary

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Horizon 2020 Research and Innovation Framework Programme
H2020-EeB-2015 Innovation Action

Grant agreement no.: *680474*

Pilot project 2– Budapest, Hungary

The demo site consists of a school building and a nearby multifunctional park. All building are owned by the Budapest 18th district municipality.

Bókay garden (~16 ha)

historical main building, swimming pool, community centre, nursery school

School building

(2200 m2)

Bókay Árpád Primary School

Pilot Project 3: Sant Cugat del Vallès, Spain

SANT CUGAT

Horizon 2020 Research and Innovation Framework Programme
H2020-EeB-2015 Innovation Action

Grant agreement no.: *680474*

NewTREND

Demo site – Sant Cugat del Vallès, Spain, 35 rented apartment for young people

General information

Located at 7 Mar de la Xina
Built in 2008

Demo site – Sant Cugat del Vallès, Spain, Pins del Vallès School

General information

Built in 1980

Demo site – Sant Cugat del Vallès, Spain, 2 private houses in Les Planes

General information

1.228 inhabitants (1% of Sant Cugat population)

Surrounded by a Natural Park

Single family houses

Low social and economic level neighborhood

Training session: program and aims

Horizon 2020 Research and Innovation Framework Programme
H2020-EeB-2015 Innovation Action

Grant agreement no.: *680474*

Training session

TRAINING SESSION for users of the NewTREND toolset

GOALS:
- To facilitate the adoption of the toolset developed in NewTREND
- Showcase project results to potential Stakeholders
- Collect a more direct feedback from users that will test the toolset on field

MATERIAL:
- Video contents
- Paper manual
- Presentation by projects partners
- Credentials to test the software

After the session a questionnaire will be distributed to participants to get their comments and suggestions.

Training session and modalities

Today IN-PERSON Training will include:

Introduction – NewTREND methodology and phases of a retrofitting project

Introduction to the NewTREND toolset, user roles and project management functionalities

NewTREND software use – project set up and simulation on a use case

Fill in the Detailed Surveys and the CDP TFT and feedback collection

What's next?

WEB-BASED Training will include:

Time-limited access to the NewTREND platform

Software manuals and tutorials

Contacts for user support

Shall we begin?