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

WP7 – Introduction to the NewTREND Methodology

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

Grant agreement no.: *680474*

Contents:

- Introduction to NewTREND
- Introduction to the integrated design methodology (IDM)
- The scope of the IDM
- The IDM main parts
- The IDM project role
- The IDM project phases
- The IDM project mode
- The IDM communication and participatory methodology

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

NewTREND

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

newtrend-project.eu

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

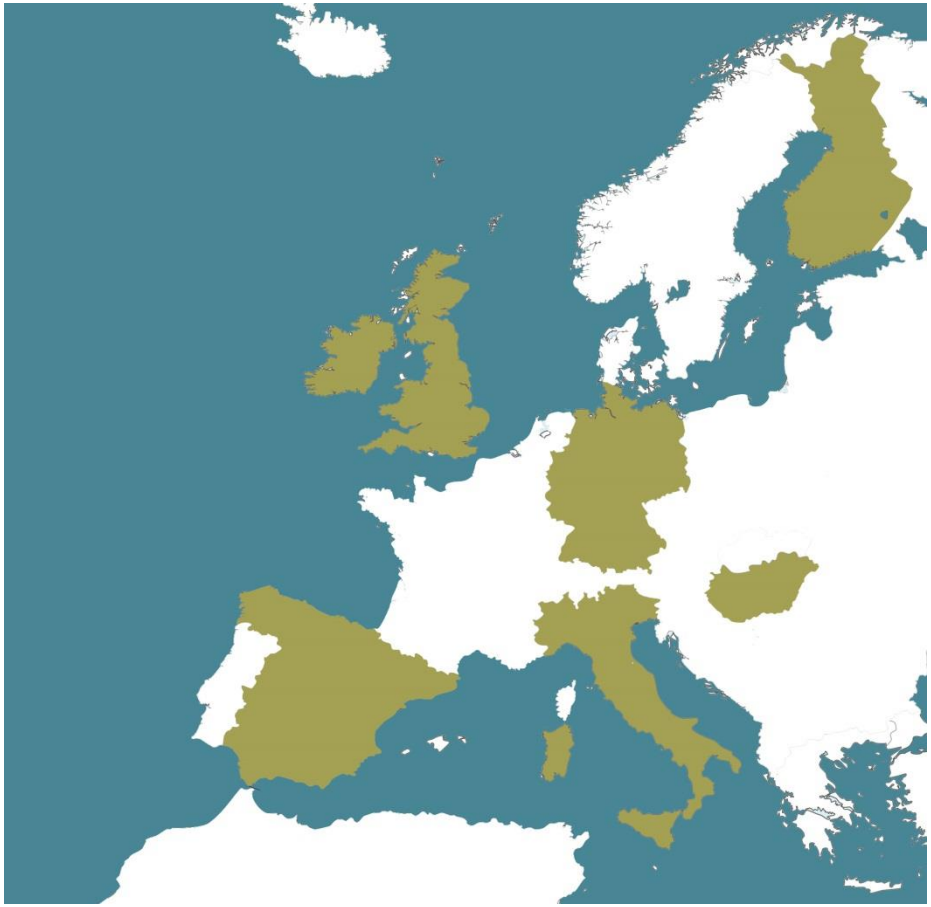
H2020 Project: EEB - Innovative design tools for refurbishing of buildings at district level

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)

Project consortium : 13 organization from 7 EU member states



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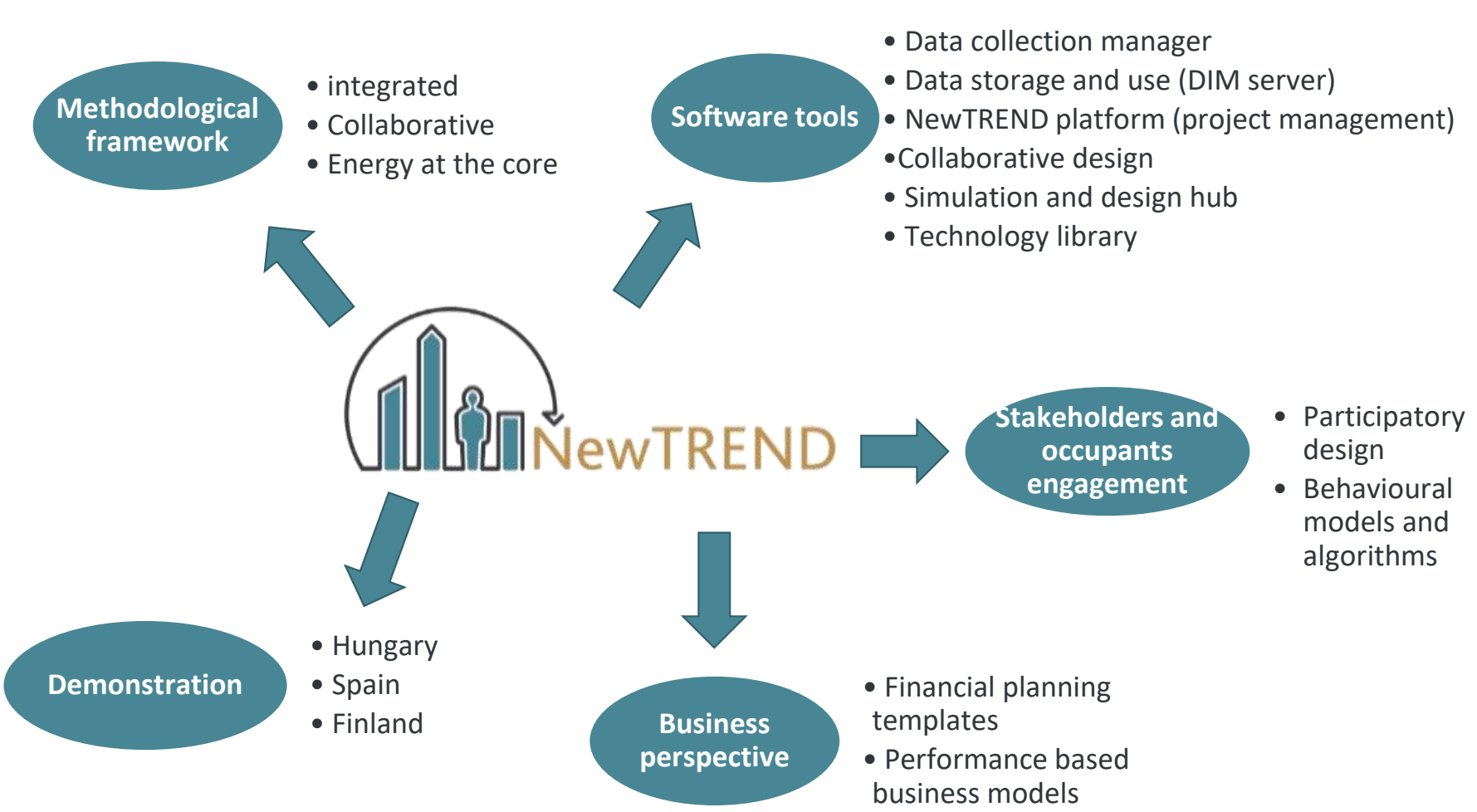
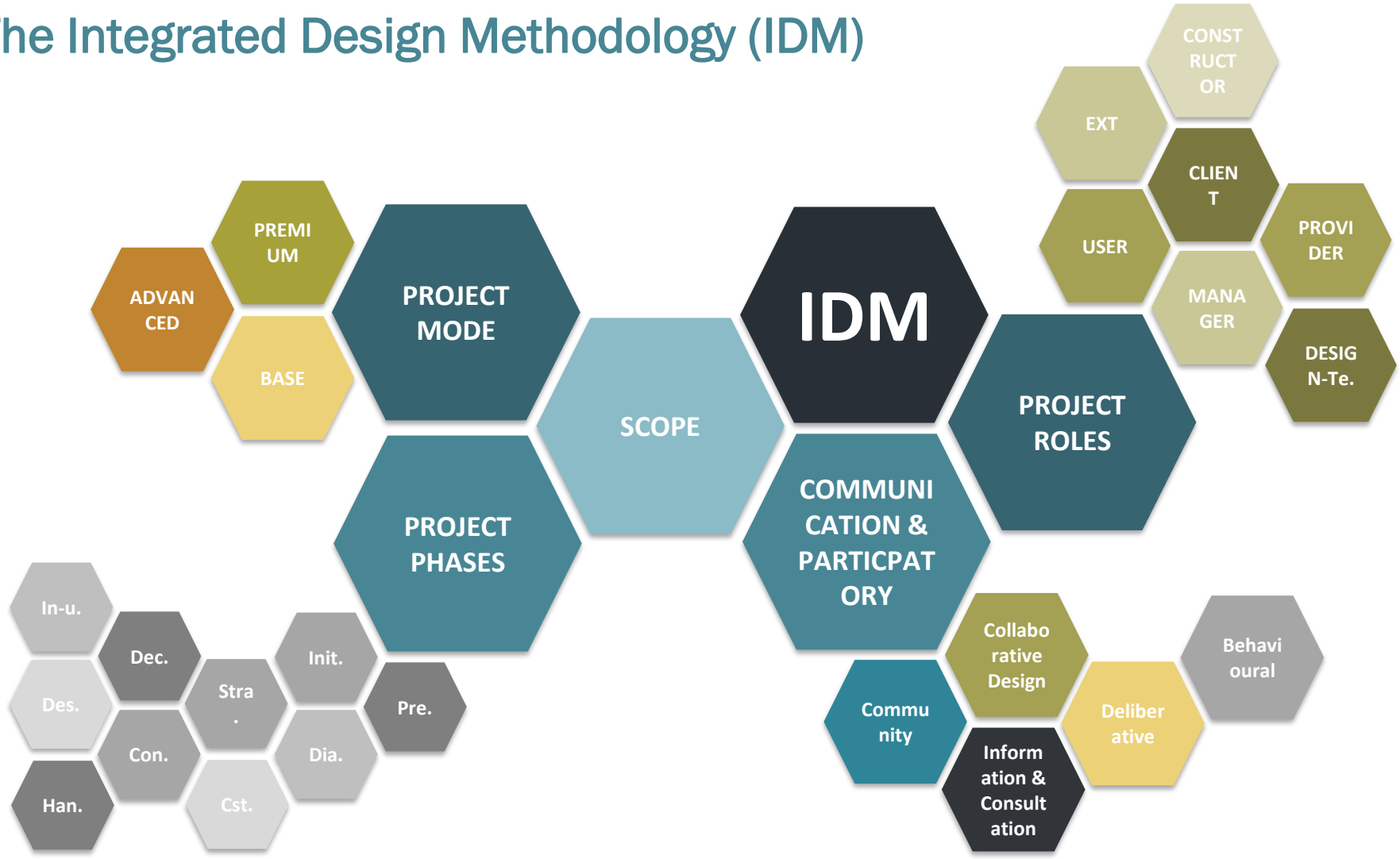


The Integrated Design Methodology (IDM)

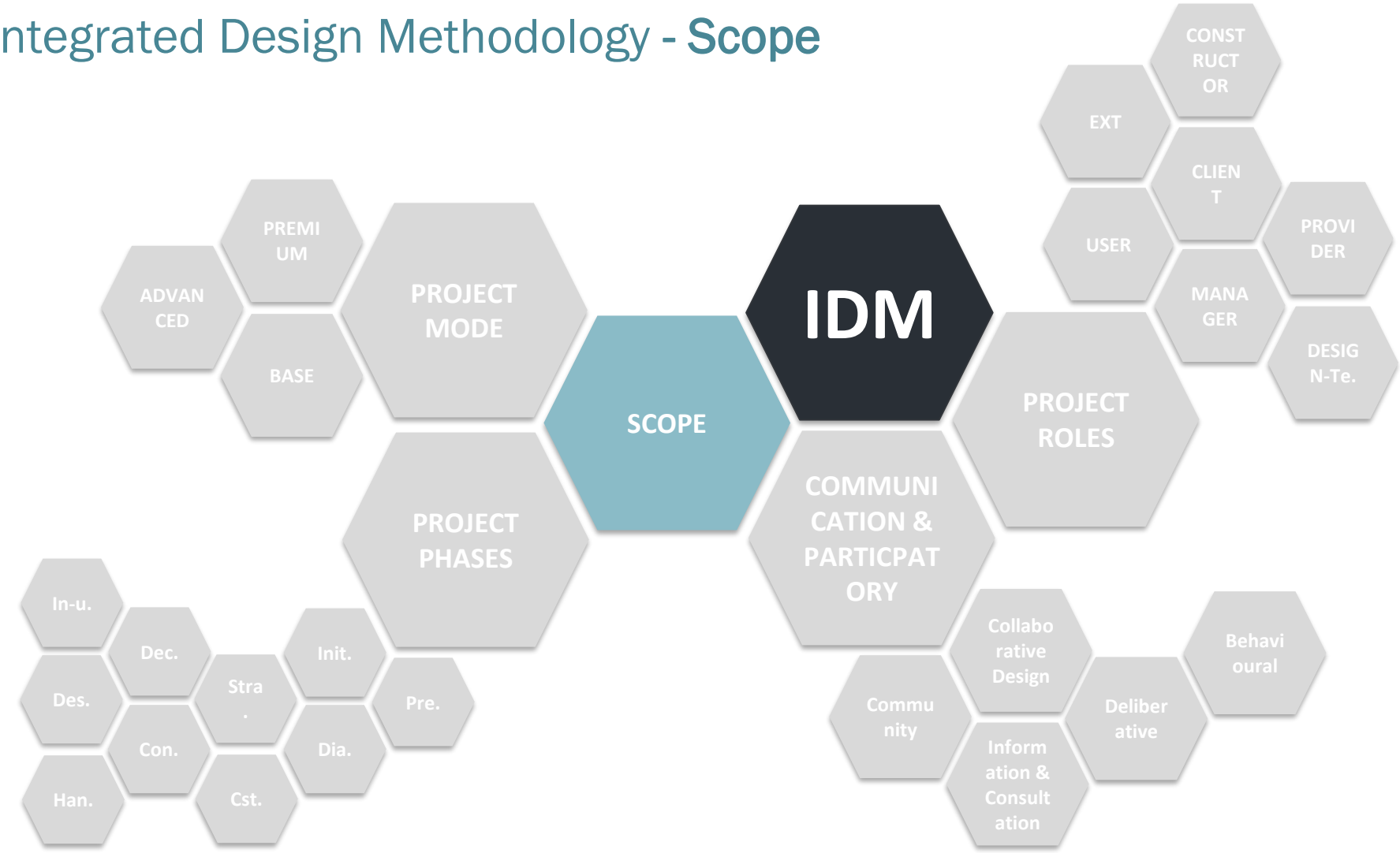


Integrated Design Methodology - **Introduction**

The goal of the NewTREND IDM is to **guide** all involved stakeholders in finding the most **effective energy retrofitting solutions in neighbourhood retrofitting projects** with regard to **energy** and **cost** efficiency and their overall **sustainability** performance.

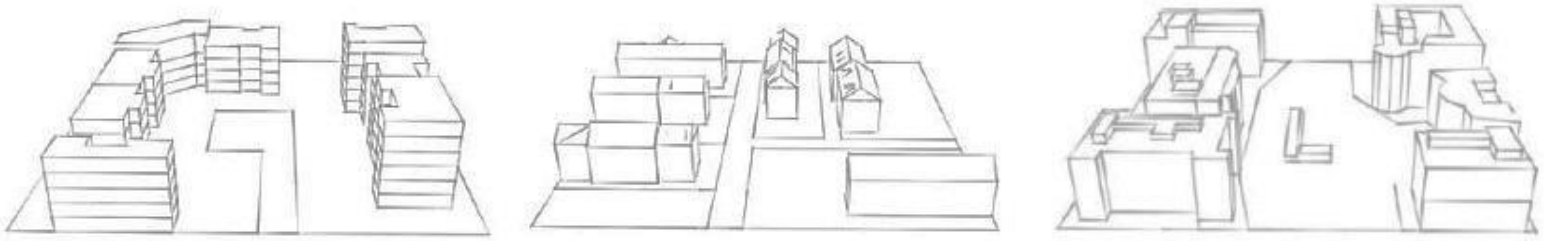
The IDM is intended to **support** the stakeholders **throughout the project life cycle** from the early initiation and **concept** phases to the **implementation** and **post occupancy** phase of the project in a structured and systematic manner that considers the required **communication and participation mechanisms** between all involved stakeholders.

Integrated Design Methodology - **Scope**



Integrated Design Methodology - **Scope**

The IDM is developed to be used at **single building** and at **neighbourhood** scale of **around 10 buildings**. Applying the IDM to a larger retrofit scale might prove to be ineffective. Moreover, the IDM is **limited to energy retrofitting solutions**, considering cost efficiency and overall **sustainability** performance of the single buildings and the neighbourhood as whole. Thus, the IDM is not suitable when the retrofit project has a different focus.



Source: F. Kiedaisch (JER)

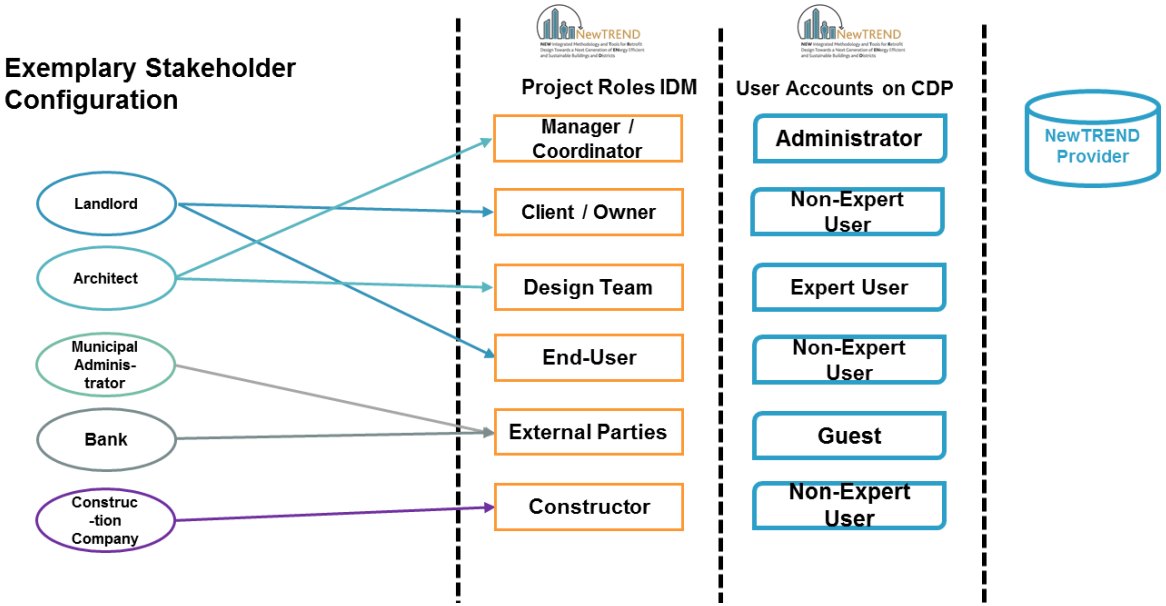
Main Parts

Project Role	Communication and Participation	Project Phases	Project Mode
The IDM defines 7 main project roles under which all involved stakeholders in a project can be categorized.	The communication and participatory methodology provide a number of participatory methods and linked them to the different IDM phases.	The IDM divides the retrofitting project into 10 phases, in which certain process are to be followed and a number of objectives are to be fulfilled.	NewTREND can operate in three different modes of operation namely; Basic, Advanced and Premium as per data availability and required output

Please note the squares are hyperlinked.. Click on the square to go the desired chapter!

Integrated Design Methodology - **Introduction**

The project role approach is introduced to reduce the unpredictable number and type of stakeholders to a limited number of project roles. For each project role a profile is developed, which describe the project role in detail.



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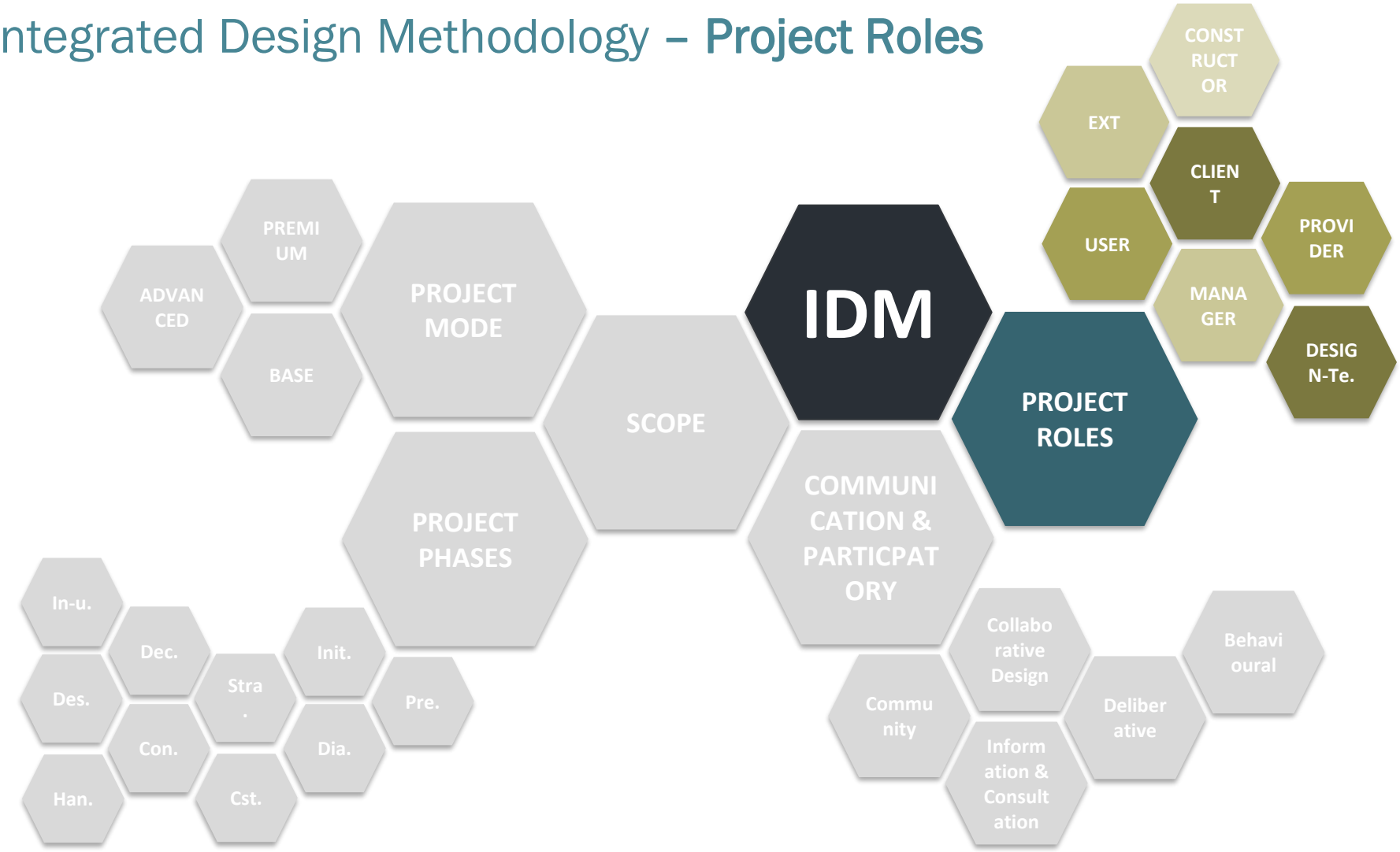
Integrated Design Methodology – **Project Roles**



Integrated Design Methodology – **Project Roles**

NewTREND Provider	Manager / Coordinator	Design Team	Client / Owner
represents the person(s) which are needed to set up a NewTREND IDM process	includes the entirety of leadership tasks in a retrofitting project	represents the person(s) which directly involved in the design process	represents the person(s) which initiates the NewTREND IDM Process

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Integrated Design Methodology – **Project Role**

Constructor

represents the person(s) which use are directly involved in the construction works of the project

External Parties

represents the person(s) which are not actively involved in the project but contribute in various ways to the project on demand

End-Users

represents the person(s) which use and interact with the retrofitted project

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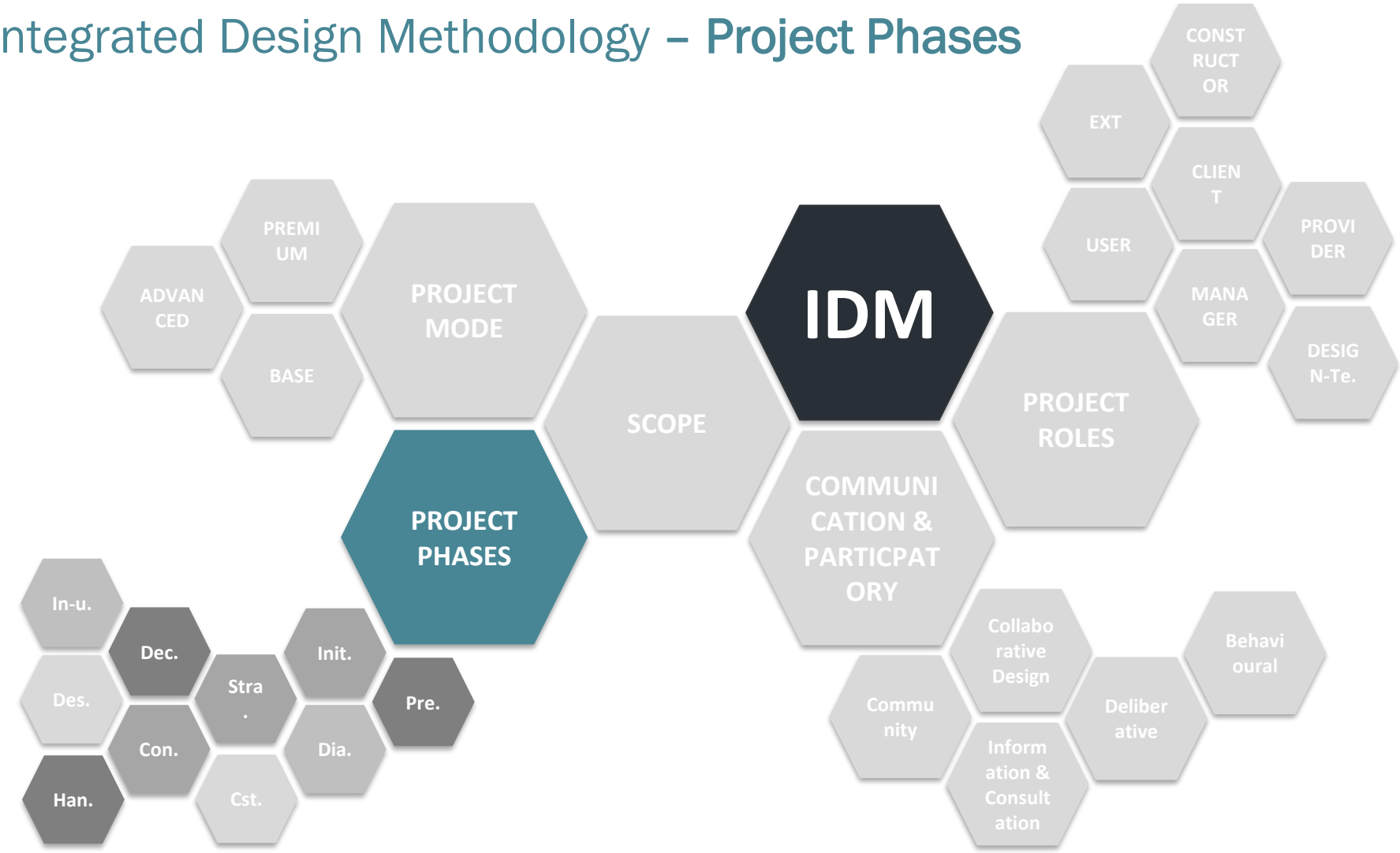
Integrated Design Methodology – **Project Phases**



IDM

intro

scope

main parts

project roles

project phases

project modes

communi-cation

Integrated Design Methodology – **Project Phases**

NewTREND IDM divides the retrofitting project into 10 phases, in which certain process and objectives are to be fulfilled for the project team.

1. **Initiation phase:** determining the project scope and mode
2. **Preparation phase:** data collection
3. **Diagnoses phase:** analysing the neighbourhood status quo
4. **Strategic definition phase :** setting the project target
5. **Concept phase:** developing the retrofitting concept
6. **Decision making phase** : choosing the retrofitting concept to be implemented
7. **Design development and tendering phase :** developing the working drawing and construction documentation
8. **Construction phase :** realizing the project
9. **Handover and close out phase:** handing over the project to the end user
10. **In-use phase:** monitoring and improving the realized project performance

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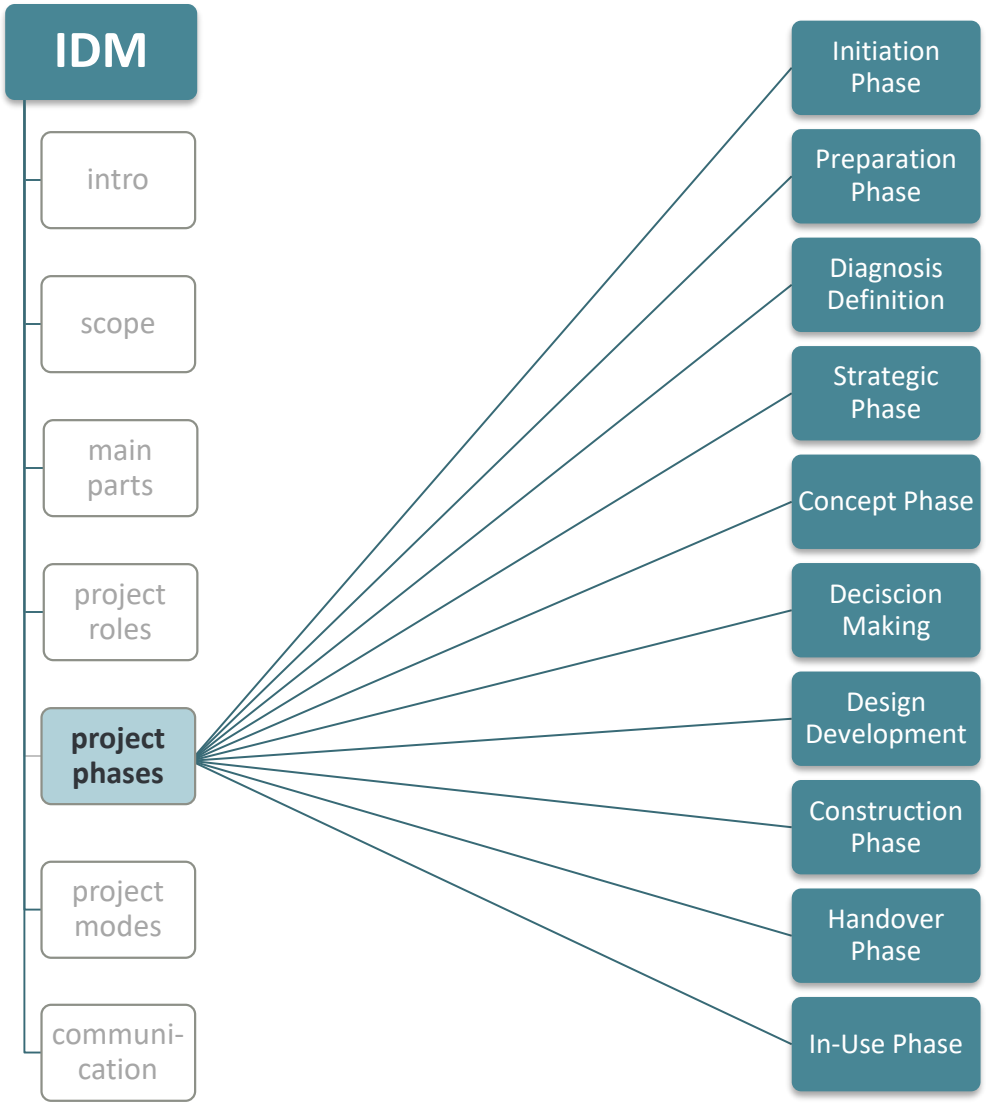
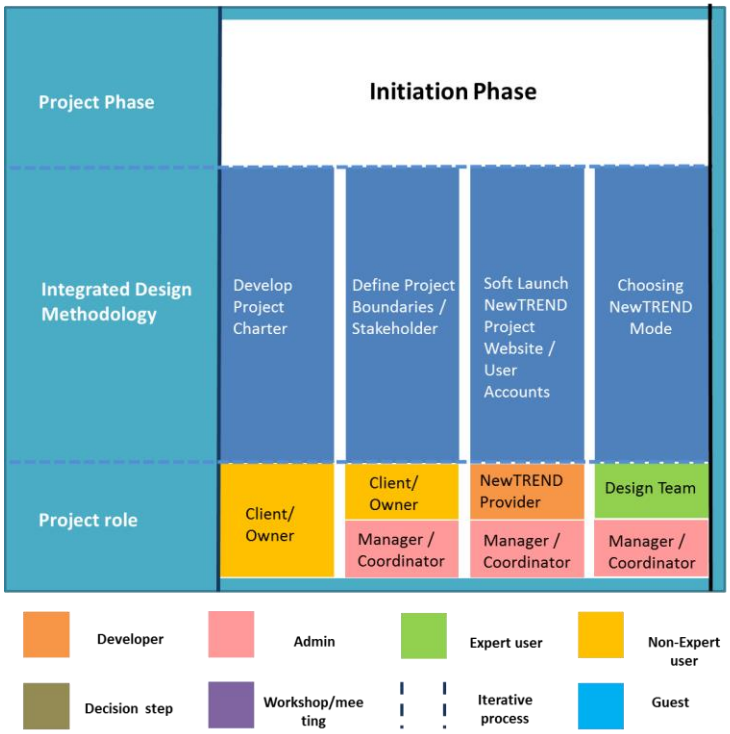
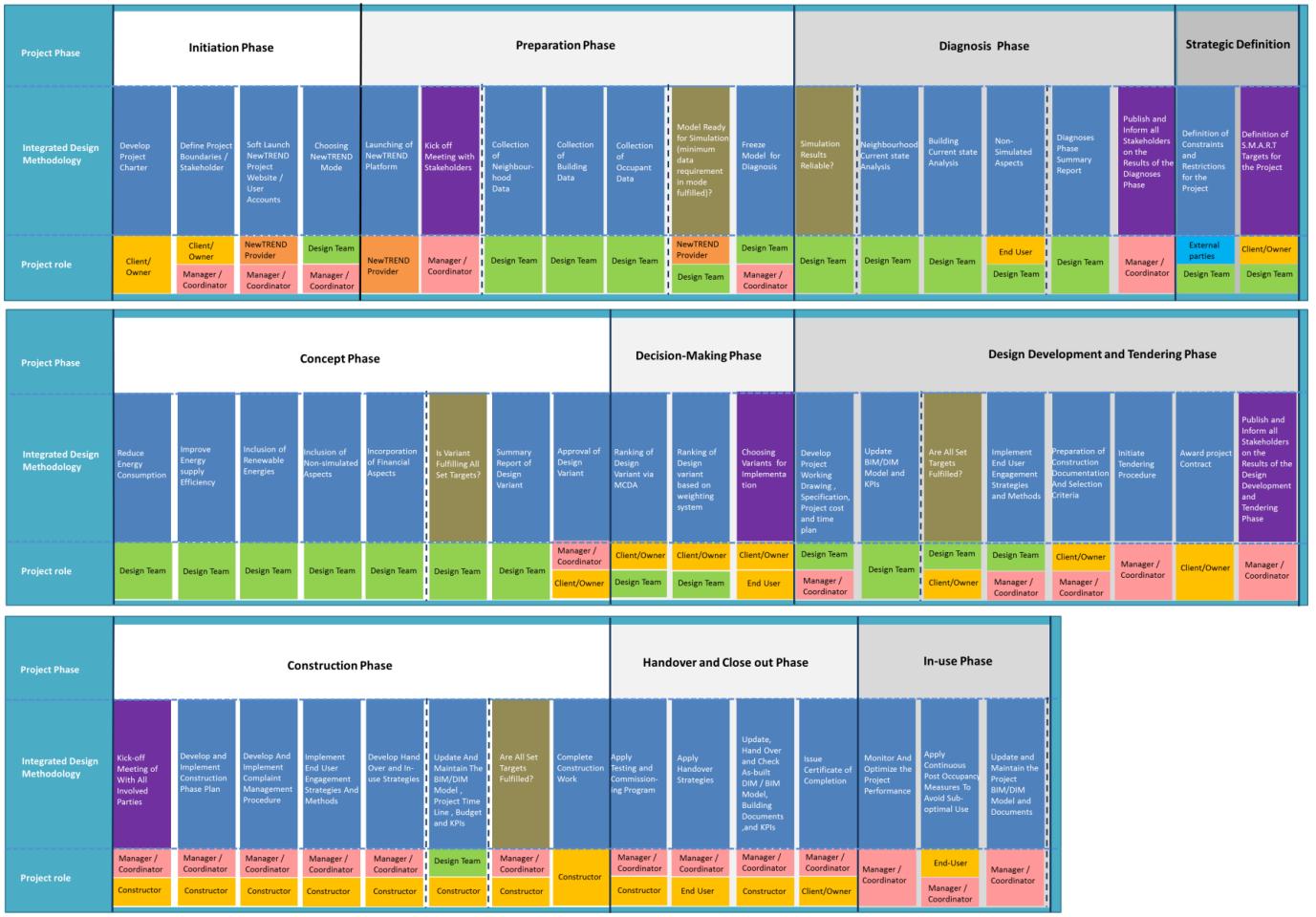
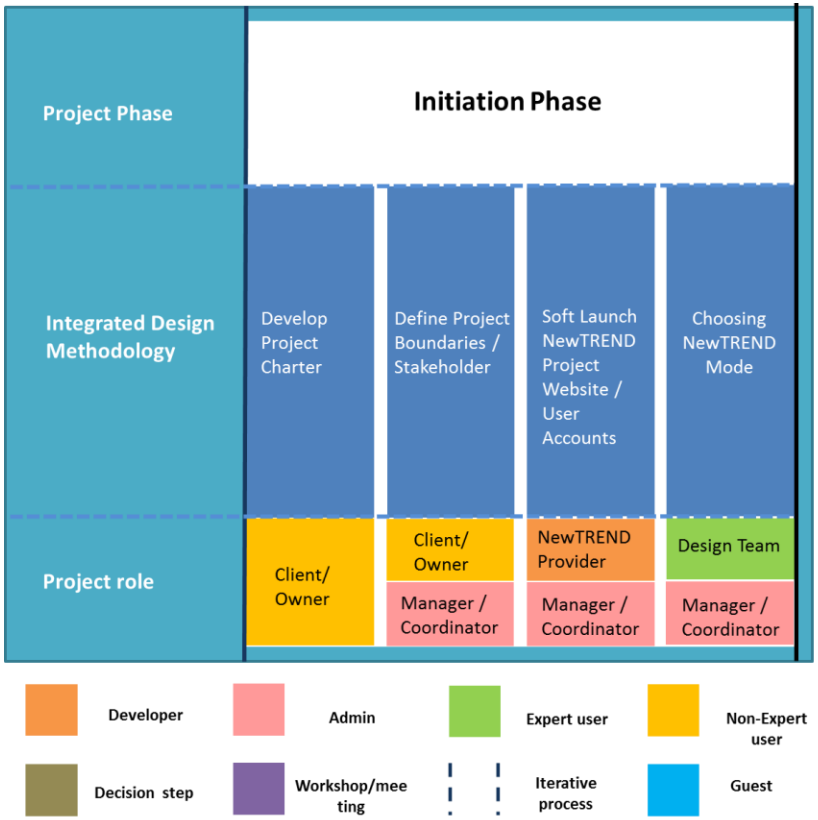




Integrated Design Methodology – Project Phases



Integrated Design Methodology – Project Phases



This section identify the phase of the project which the IDM is describing

This section describe the actions (on an High level) which is to be followed to find the most effective energy retrofitting solution throughout the project phases

This section describe the main project role whom are responsible to fulfill the task described in the IDM

The map legend describe via color code the type of user account for each role and the meaning of the IDM symbols /colors

Initiation phase

By the end of the initiation phase the project team is expected to achieve four main objectives:

1. Define the project scope, objectives and expected outcomes
2. Define the project physical boundaries and stakeholders
3. To soft launch the NewTREND web platform and to assign relevant stakeholders to their project roles
4. Define the NewTREND mode

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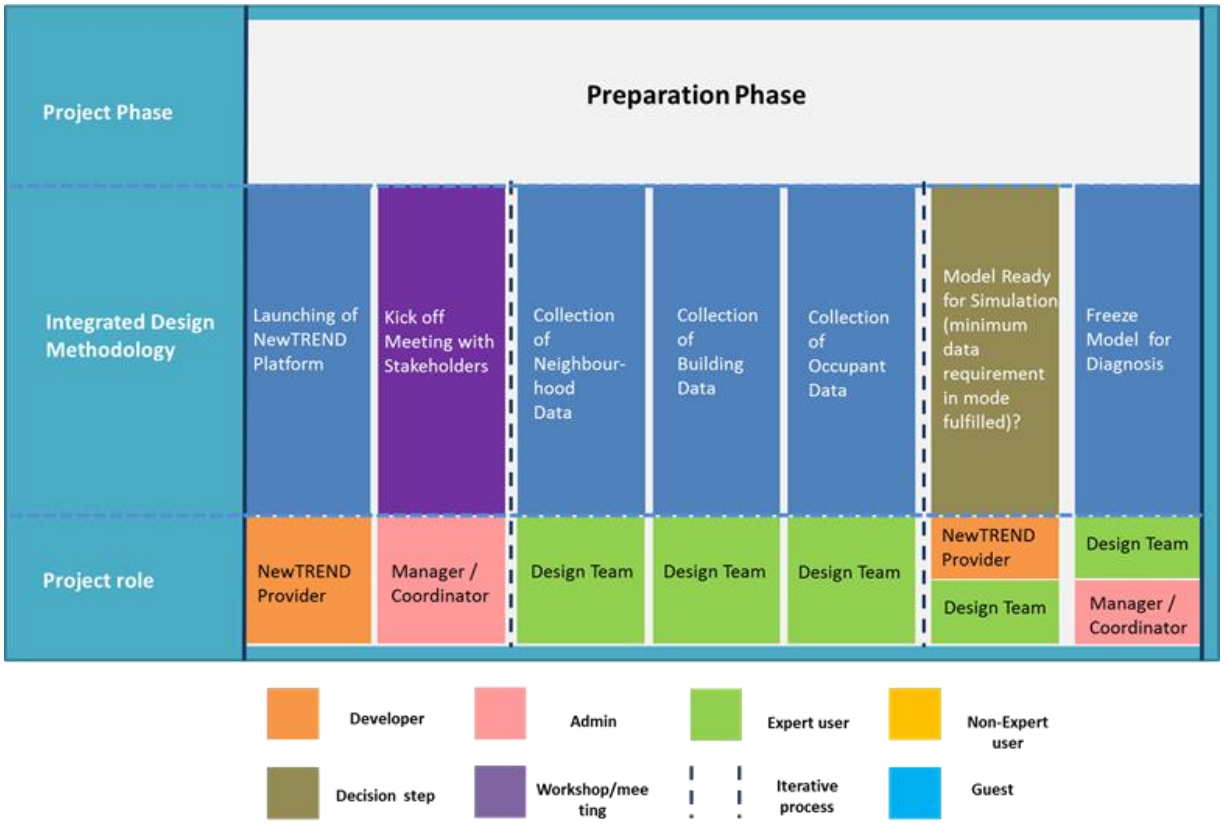
Preparation phase



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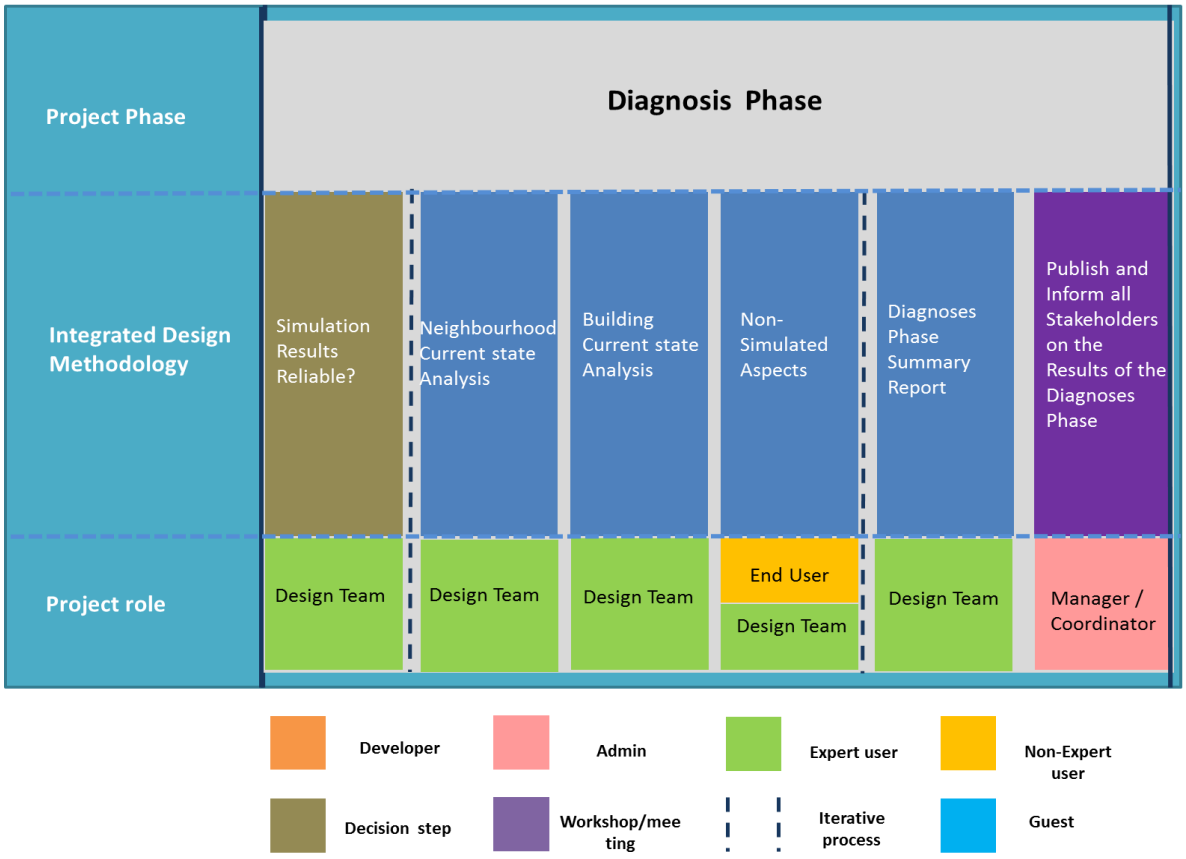
By the end of the preparation phase the project team is expected to achieve three main objectives:

1. To collect sufficient building and district related information to start the required simulations in diagnoses phase in the desired NewTREND mode.
2. To launch the NewTREND web platform and to provide all stakeholders with user accounts with the appropriate access rights
3. To conduct the first project kick-off meeting with all relevant stakeholders

Diagnosis phase



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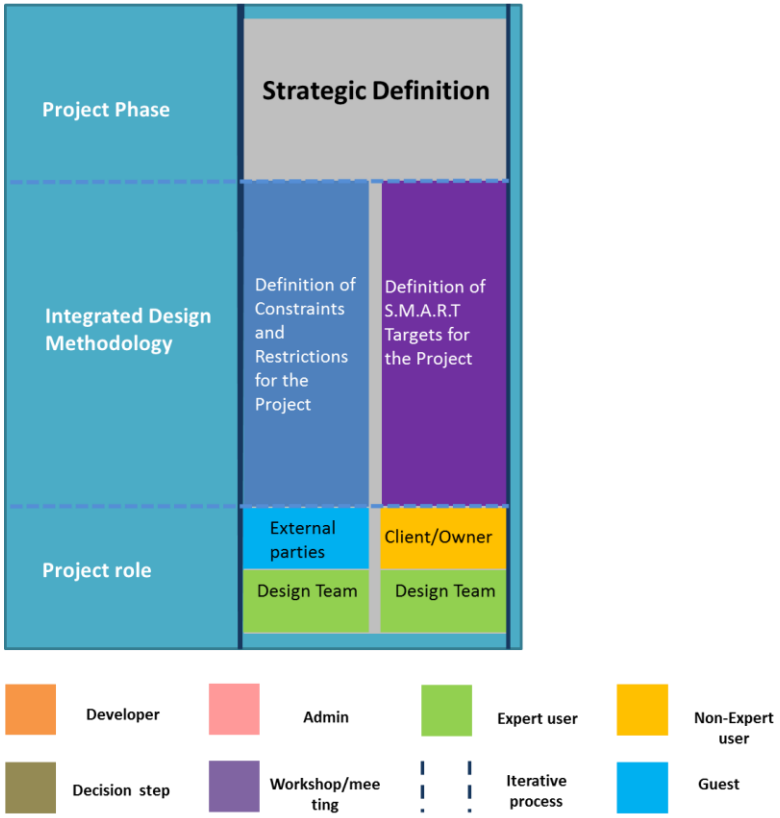
By the end of the diagnoses phase the project team is expected to achieve three main objectives:

1. To analyse the current state of the Neighbourhood
2. To analyse the current state of the Building
3. To inform all relevant stakeholders about the results of the diagnoses phase

Strategic definition



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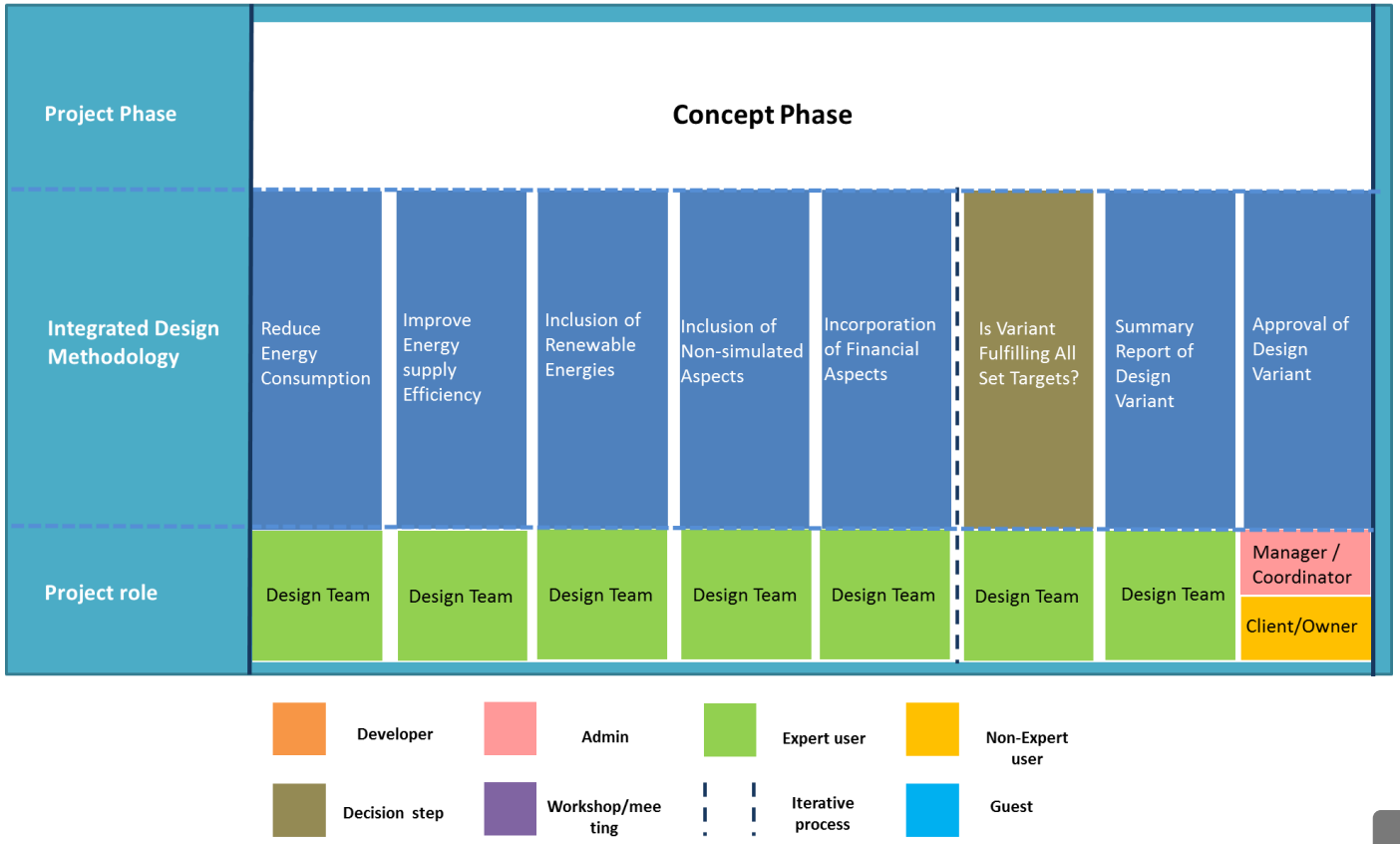
By the end of the strategic definition phase the project team is expected to achieve two main objectives:

1. To define the projects constringes and restriction

To define S.M.A.R.T targets for the project :

Specific – target must be clearly defined
Measurable – targets must be quantifiable
Attainable – target must be realistic and achievable
Relevant – are the targets relevant for energy retrofitting of urban neighbourhoods and buildings
Time-bound – specify when the result(s) can be achieved

Concept Phase



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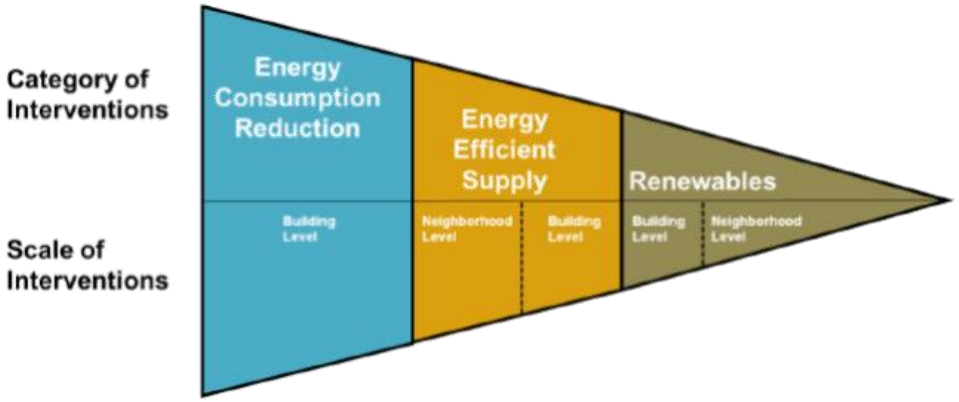
By the end of the concept phase the project team is expected to achieve the following objective:

1. To develop a number of design variants that fulfil the S.M.A.R.T targets as defined in strategic definition phase

Interventions sequence logic of application

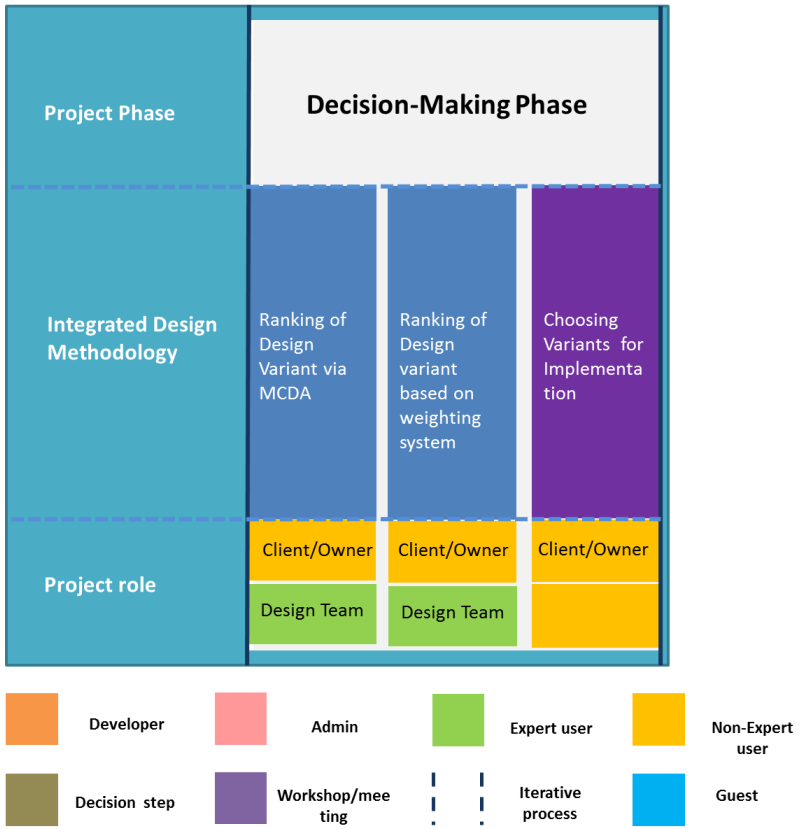
1. Energy consumption reduction (consumer-driven) on building level
2. Energy efficient supply on neighbourhood level
3. Energy efficient supply on building level
4. Renewables on building level
5. Renewables on neighbourhood level



Creation of a retrofitting design variant and optimization process

1. Creation of a number of design variants that fulfill the S.M.A.R.T targets
2. Selection and optimization of energy intervention package on building level
3. Selection and optimization of energy intervention package on neighbourhood level
4. Addition of non-simulated interventions
5. Inclusion of business models and financing schemes
6. Save variant for approval

Decision Making Phase



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Each Stakeholder can express his opinion about the importance of the different NewTREND topics/indicators in workshops and online-polls.

Using online polls and votes to get a consensus for average priority settings of sustainability KPIs via the CDP

Tier 1.
CATEGORY Weighting
(33,3 % pre-defined)

↓

Tier 2.
PRIORITY ISSUES

↓

PRIORITY LEVEL of KPIs
(high, medium, low)

↓

Weighting System for KPIs
(%)

Two priority tiers approach for weighting system creation based on plain language priorities

Environmental category **VS** Social category **VS** Economic category

Tier 1. CATEGORY Weighting (33,3 % pre-defined)

1. Step	Category Priority Level	Category Score	Category Weighting
Environmental Quality	Medium	6	33.33%
Sociecty Quality	Medium	6	33.33%
Economic Quality	Medium	6	33.33%

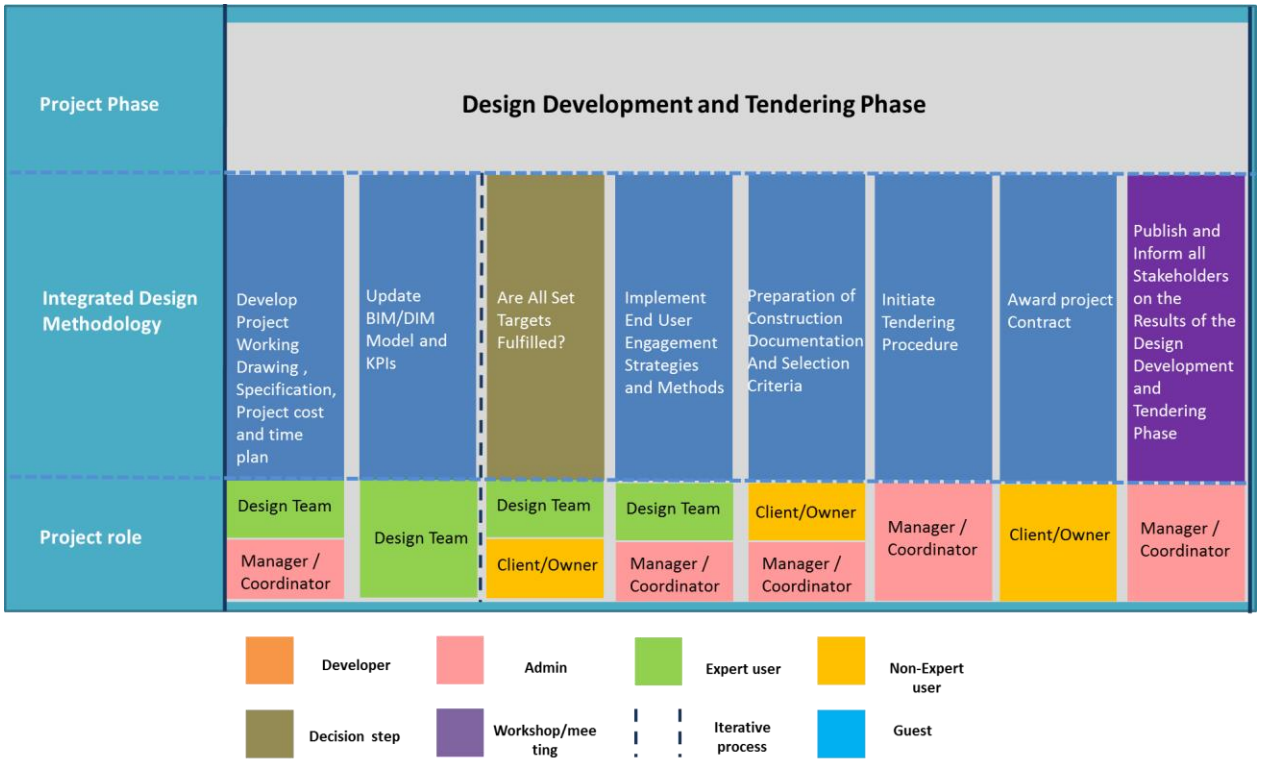
Tier 2. KPI weighting

2. Step	Building core key performance indicators	Building KPIs Priority Level	KPI priority score	KPI weighting	Design variant 1 KPI result against benchmark (1-100)	Design variant 2 KPI result against benchmark (1-100)	Design variant n KPI result against benchmark (1-100)
Environment	**B.1 Energy**						
	B.1.1 Operational Primary Energy Demand	Medium	6	8.33%	85	66	100
	B.1.2 Delivered Energy Demand	Medium	6	8.33%	50	72	50
	B.1.3 Renewable Energy on Site	Medium	6	8.33%	80	60	100
	B.2 Impacts						
	B.2.1 Global Warming Potential	Medium	6	8.33%	95	50	55
Society	**B.5 Air Quality**						
	B.5.1 Indoor Air Quality	Medium	6	6.67%	65	95	66
	B.6 Thermal Comfort						
	B.6.1 Summer Comfort without Cooling	Medium	6	6.67%	55	78	77
	B.6.2 Thermal Comfort in the Heating Season	Medium	6	6.67%	80	93	25
	B.6.3 Thermal Comfort in the Cooling Season	Medium	6	6.67%	95	44	30
	B.8 Acoustic Comfort						
	B.8.1 Acoustic Comfort	Medium	6	6.67%	100	44	70
Economy	**B.10 Operational Costs**						
	B.10.1 Operational Energy Costs	Medium	6	33.33%	50	40	100
		Overall Variant Score of Value Assessment:			68.83%	57.60%	76.62%
		Achievend rank of Variant in Value Assessment			2	3	1

Concept 1:

Current State (as-is)	Design Variant A+B „Building Envelope Renovation + District Heating“	Design Variant A+C „Building Envelope Renovation + Heat Pump“	Design Variant A+D „Building Envelope Renovation + Solar Collector“
KPIs	KPIs	KPIs	KPIs
Primary Energy	Primary Energy	Primary Energy	Primary Energy
Renewable Energy	Renewable Energy	Renewable Energy	Renewable Energy
Energy Costs	Energy Costs	Energy Costs	Energy Costs
Thermal Comfort	Thermal Comfort	Thermal Comfort	Thermal Comfort
Carbon Emissions	Carbon Emissions	Carbon Emissions	Carbon Emissions
Acoustic Comfort	Acoustic Comfort	Acoustic Comfort	Acoustic Comfort
Overall score ranking: 45%	85%	74%	70%
	Rank 1	Rank 2	Rank 3

Design Development and Tendering Phase



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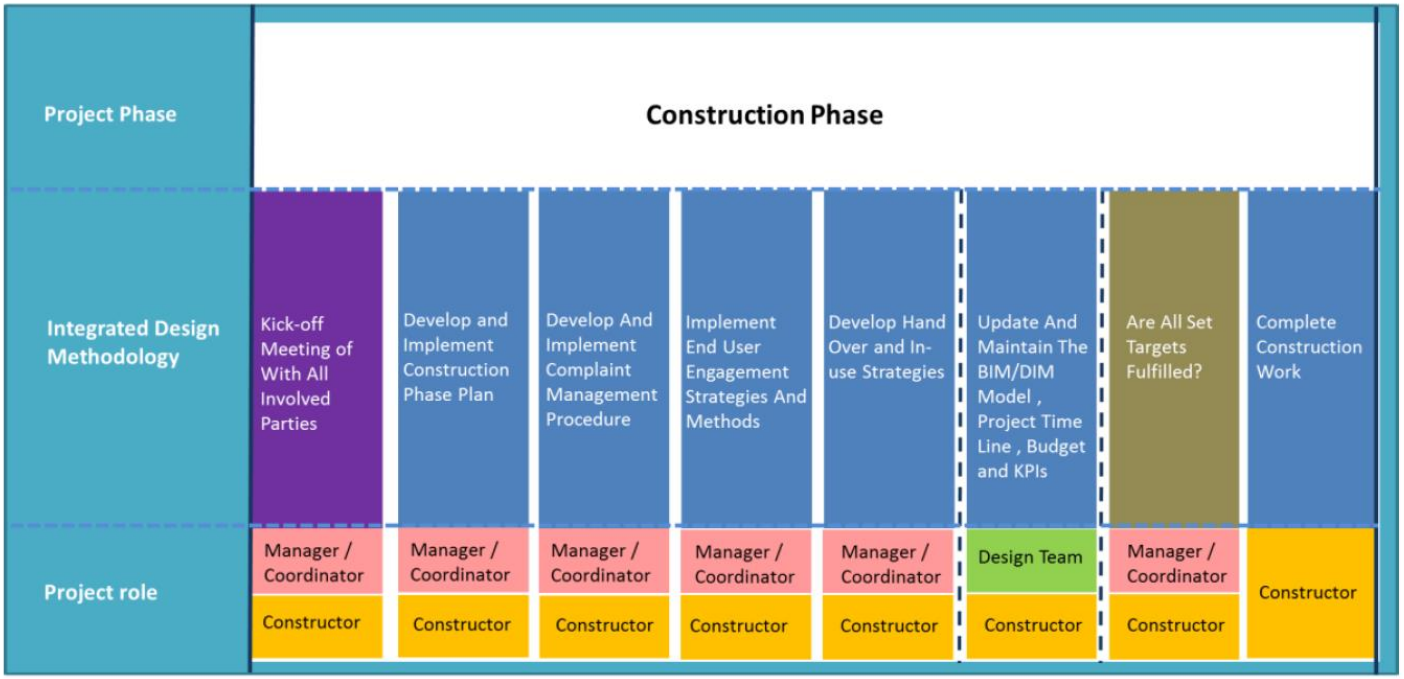
By the end of this phase the “Design team” is expected to achieve the following objectives:

- To develop working drawings and specification documents that allow for the project realization
- To ensure that the developed design reflect the end user and project performance targets
- To develop and implement end user engagement strategies and methods
- To develop a project budget breakdown
- To obtain the “Client/Owner” approval on all planned interventions
- To Publish and communicate the results

Construction Phase



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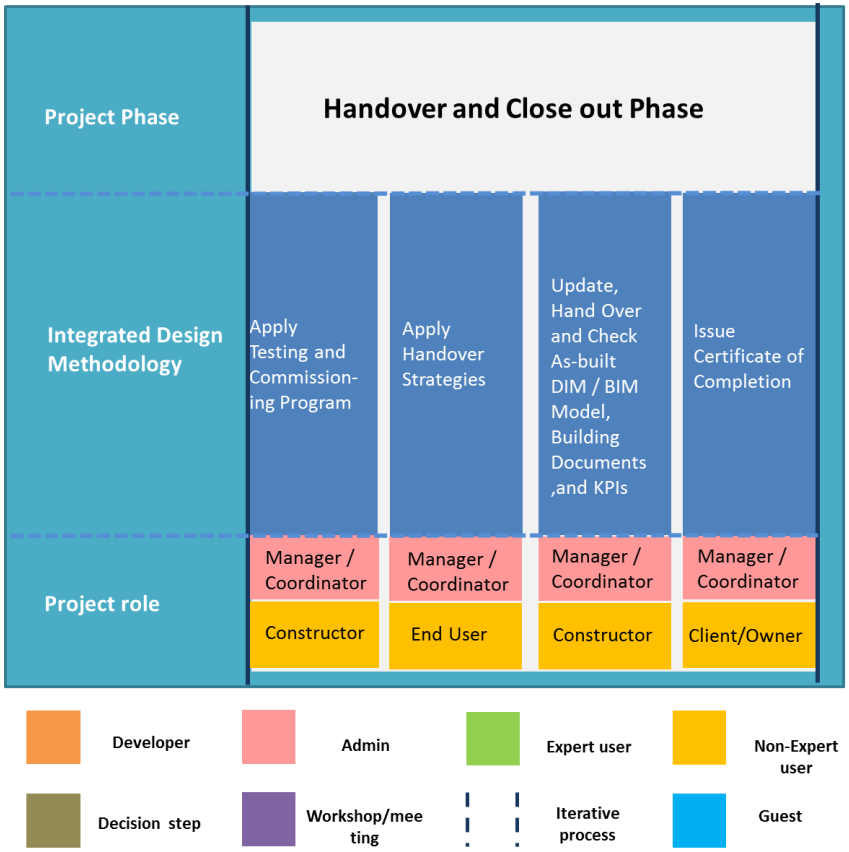
Handover and close out phase



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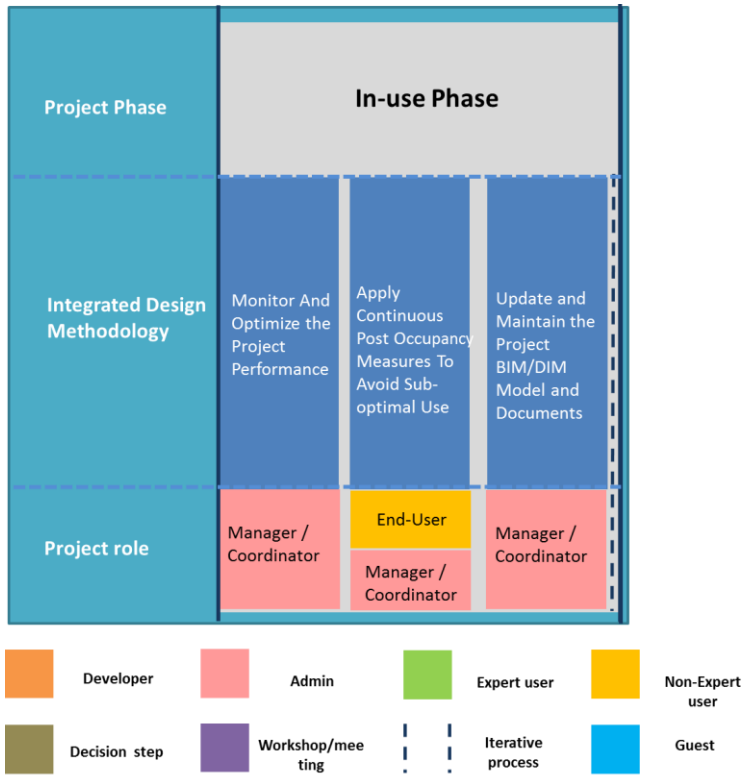
In-use Phase



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Methodology for improving the building operation

Improving user behaviour to improve building performance

Motivating users in the long term

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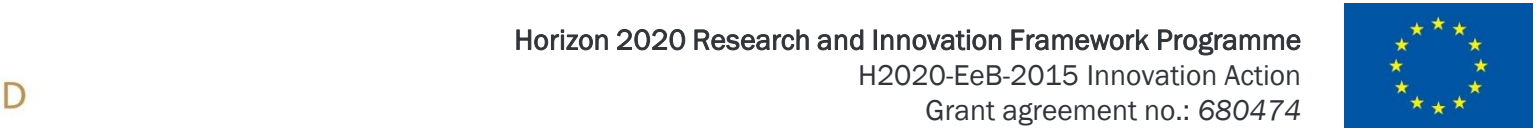

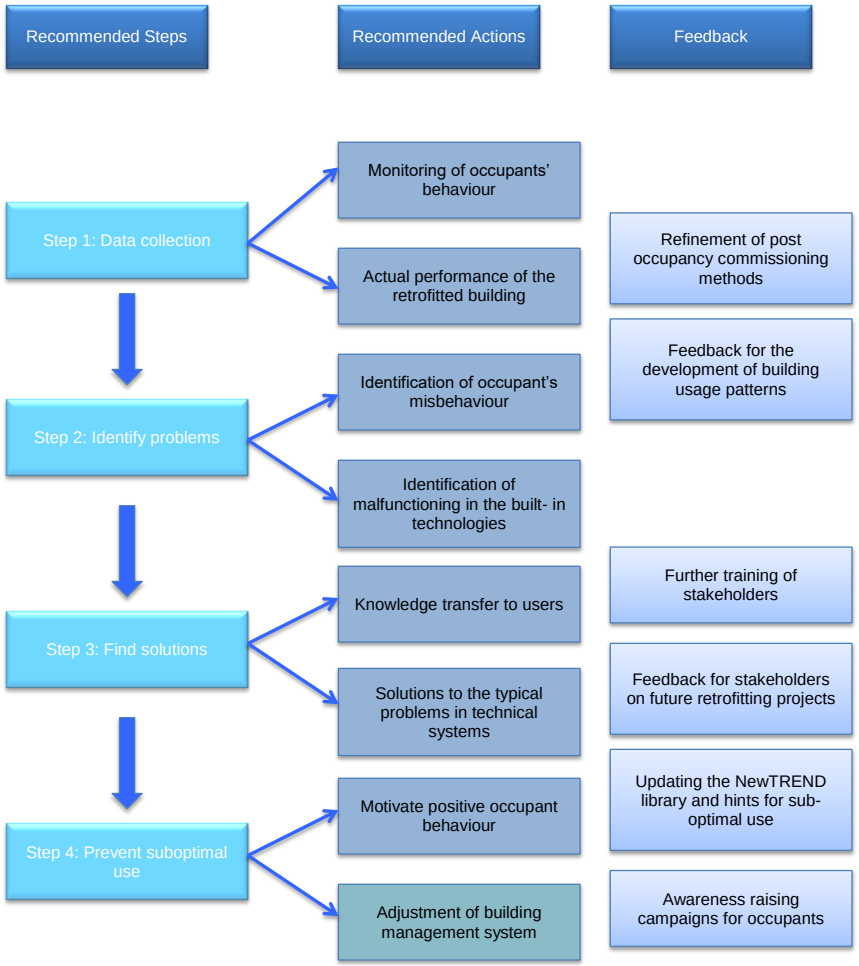

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VISUALIZING DATA WITH SPATIAL MAPPING

Suggested Project Phases: Post-occupancy

Responsible Stakeholder: Post-occupancy Energy Expert

Involved parties: Post-occupancy energy expert, buildings users

Level of Involvement: Communicate (past performance)

Cost: Low

In this profile spatial mapping is being used to show its relevance in the post-occupancy phase and to improve user behaviour and building performance.

What is it?

Visualization of spatial data such as POE studies is an existing problem. Localizing user satisfaction and dissatisfaction spatially can ease the identification of reasons behind user discomfort, dissatisfaction. One of the simplest way to create this link is asking users to identify their 'opinion' by colouring building layout correspondingly. This can be done with a map-based questionnaire service, e.g. Maptionnaire (https://maptionnaire.com/en/). This method can enable a highly structured research and later on, an open brainstorming.

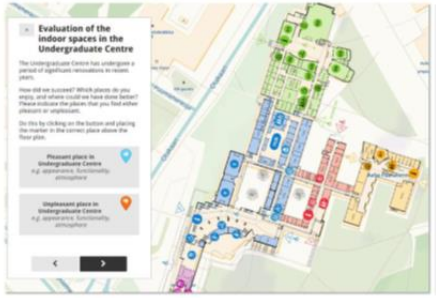

FIGURE 64: VISUALIZED DATA ON A FLOOR PLAN OF STUDENT CAMPUS

When to use it?

Spatial visualization data can be used for all sorts of data which is on spatial basis. For example room IAQ variables (temperature, humidity, CO2 level...) or creating interactive questionnaire where users can select room and give feedback on it.

How to use it?

Spatial mapping can build a link between BIM tools and different data sources, such as quantitative and qualitative methods used in POE studies. Depending on the data source, it is possible to create real-time spatial mapping, where always current information is visualized.

One of the existing products that provides spatial data visualization is already mentioned Maptionnaire.

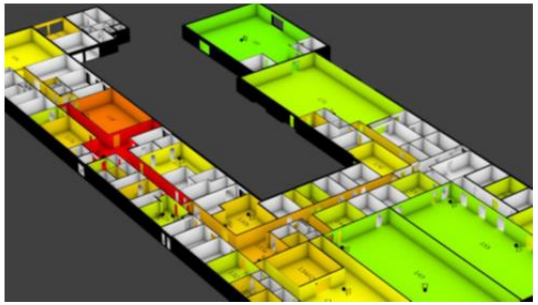

FIGURE 65: AN EXAMPLE OF PROCESSING AND VISUALIZING USER DATA COLLECTED WITH MAPTIONNAIRE

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BUILDING PERFORMANCE VISUALIZATION (DASHBOARDS)

Suggested Project Phases: Post-occupancy

Responsible Stakeholder: Facility manager

Involved parties: Facility manager, building users, energy consultant

Level of Involvement: Communicate

Cost: Low

In this profile building performance visualization is being used to show its relevance in the post-occupancy phase and to improve user behaviour and building performance.

What is it?

Building performance can be visualized in public dashboard format informing the end users on the current building performance. Public dashboards can educate and motivate occupants and visitors to adjust their behaviour in a way that will help building to be more energy efficient.

Additionally to the public dashboard, more detailed dashboard can be presented to the technical users, through which technical user can monitor the performance of system or part of the system, as it is presented in FIGURE 62. On the example presented in the figure, it is can be seen how often complicated technical variable can be simplified and understandable by even less tech-savvy user.

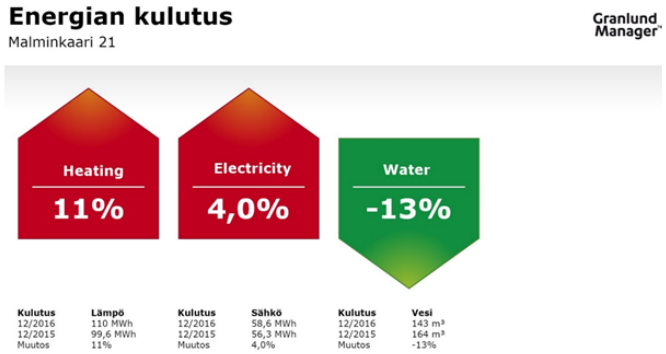

FIGURE 61: DASHBOARD INFORMING END USER ON UTILITIES CONSUMPTION

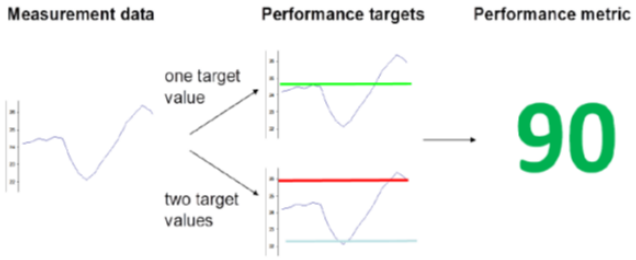

FIGURE 62: TRANSFORMING BUILDING INFORMATION DATA INTO PERFORMANCE METRICS

When to use it?

Dashboards are to be used in the post-occupancy phase to inform and motivate users to behave in energy saving way. For installation, technical requirements need to be met, such as sufficient submetering with regular reading intervals (it is possible even with manual readings on monthly basis).

How to use it?

Straightforward way of using it is showing consumption values on a dashboard in lobby of a building. But often average user looking at values of energy & environmental variables doesn't have an impression of their magnitude. To make it easier, public dashboards can provide comparisons to more understandable unit. Such as comparing carbon footprint of a building to the number of cars, or giving saving advices, such as turning off lights when there is enough daylight and when leaving workstation, would decrease building carbon footprint by 2 cars.

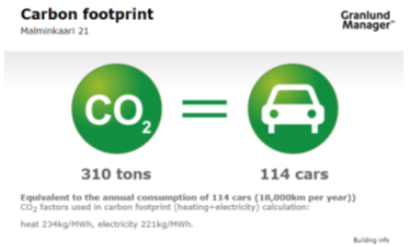

FIGURE 63: DASHBOARD PRESENTING THE COMPARISON BETWEEN LESS AND MORE PERCEIVABLE VALUE

USER TRAINING

Suggested Project Phases: Handover- Post-occupancy

Responsible Stakeholder: Post-occupancy Energy Expert

Involved parties: Post-occupancy energy expert, facility manager and building users

Level of Involvement: Education

Cost: Low

In this profile user training is being used to show its relevance in the post-occupancy phase and to improve user behaviour and building performance.

What is it?

User trainings are a way to educate users on the matter of using their new (or newly retrofitted) building in energy efficient manner. In the training users are pointed in what way they are wasting energy, what is impact of that behaviour and how could it be changed.

When to use it?

During the occupancy phase, it could be straight after retrofit has finished or anytime later. Trainings should be done especially in cases where often "bad" user behaviour is noticed.

How to use it?

Best practice has shown that user behaviour change trainings should be made in small groups, individually tailored for a particular group. In addition, it is recommended to perform building walkthrough during the training, showing the examples of good and bad practices.

Some examples of training materials that could be used in user behaviour change trainings are:

- Training manuals
- PowerPoint presentations
- Energy best practice guides and good housekeeping information
- Case studies with examples from other buildings
- Action pamphlets (best for use with children)
- Handouts, flyers, and brochures
- Posters and stickers (post-training reminders for users)

SOFT LANDINGS

Suggested Project Phases: Handover - Post-occupancy

Responsible Stakeholder: Design team

Involved parties: Design team, facility manager, building users

Level of Involvement: Communicate and educate

Cost: Low

In this profile soft landings is being used to show its relevance in the post-occupancy phase and to improve user behaviour and building performance.

What is it?

Soft Landings help to solve the performance gap between the intentions of the building's design team and the final operating buildings. The framework was originally developed by UK institutions the Building Services Research and Information Association (BSRIA) and the Usable Buildings Trust (UBT) with the key intention of ensuring that the final building matches the client's intentions and thus ensuring that the occupancy phase of the buildings life is as efficient as possible.

When to use it?

Soft landings are used since the briefing stage of the building and can last even few years as extended after care. Idea is to bring closer actual building performance to the designed performance.

How to use it?

The Soft Landings process is designed to give clients and their project teams a process to follow during the whole project from the initial brief to post construction. If the client body is unable to take part for the duration of the whole project then they are encouraged to appoint a design team member to focus on this issue on their behalf. The process includes 5 stages which are (1) inception and briefing, (2) design development and review, (3) pre-handover, (4) initial aftercare and (5) years 1 - 3 extended after care and POE.

There is also soft landing light version, which is a shorter version, lasting 6-8 weeks, where relevant project team members are on the site available for following tasks:

- Provide a presentation to the building users so that they can learn how to operate the building
- Monitor how the building is performing in order to discover any potential operating problems
- To walk through the building regularly and speak to people asking about their experience and how they think the building is performing
- Adjust the setting of the technical systems where necessary

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PEER COMPARISON LEADERBOARDS OF ENERGY CONSUMPTION

Suggested Project Phases: Post-occupancy phase

Responsible Stakeholder: Post-occupancy Energy Expert

Involved parties: Post-occupancy energy expert, buildings users

Level of Involvement: Education and motivation

Cost: Low

In this profile peer comparison leaderboards is being used to show its relevance in the post-occupancy phase and to motivate the users to behave positively during the life of the building

What is it?

One method of motivating buildings users to change their behaviour in a positive direction is to compare their behaviour with their peers. This makes the users more conscious of their consumption habits and is a simple way of providing feedback regarding their behaviour. It can also create a sense of competition between peer groups which encourages them to change their behaviour even further.

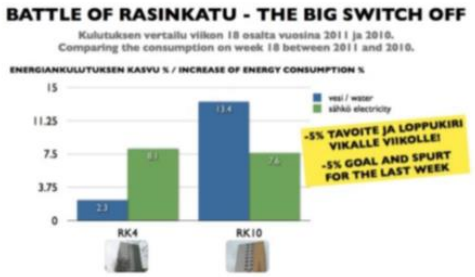

FIGURE 58: THE EXAMPLE FROM A COMPETITION BETWEEN TWO RESIDENTIAL BUILDINGS FOR UNIVERSITY STUDENTS IN HELSINKI

When to use it?

Peer comparison leaderboards are used during the use of the building, i.e. post-occupancy phase. It is used when the goal is to inform users on energy consumption and motivate them to change their behaviour.

How to use it?

Technology behind comparison leaderboards is very similar to the dashboards. But additional attention should be added to sub-metering. Required sub-metering depends on the building/neighbourhood areas which are planned to participate in the comparison. So if the idea is that building floors are to be compared, each floor should have separate energy meter. To motivate users even more, rewards could be given to the team/floor/building which shows the highest energy efficiency in given time period.

Other way to do it is to benchmark similar buildings to the building in question and compare its consumption on a regular basis, as it is shown on the Figure 59. Implementation of comparison with similar peer, requires effort from an entity which has information on performance of many buildings, such as energy company or building management software provider.

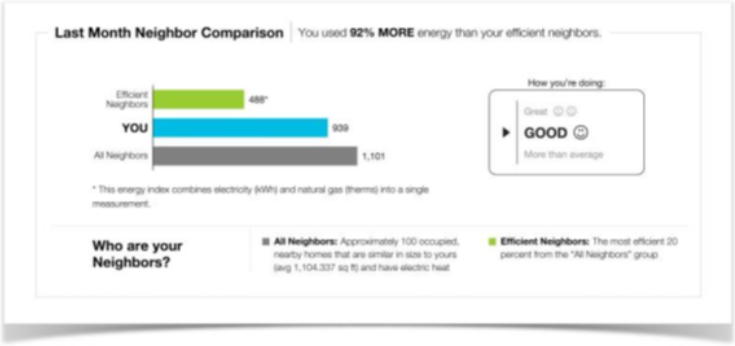

FIGURE 59: LAST MONTH NEIGHBOUR COMPARISON TRYING TO NUDGE USER BEHAVIOUR TO SAVE ENERGY

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CAMPAIGNS

Suggested Project Phases: Post-occupancy

Responsible Stakeholder: Post-occupancy Energy Expert

Involved parties: Post-occupancy energy expert, buildings users

Level of Involvement: Educate and motivate

Cost: Low

In this profile campaigns is being used to show its relevance in the post-occupancy phase and to motivate the users to behave positively during the life of the building

What is it?

Campaigns are a way to educate building users that does not involve formal training and that raise awareness of certain topics. The campaigns are often fun and engaging and avoid the classroom approach of formal training. Typical methods are education posters and providing volunteer staff to give one to one help so that building users can learn use the building correctly.

FIGURE 55: EXAMPLE OF A CAMPAIGN TO HELP USERS TO UNDERSTAND IMPACT OF THEIR CONSUMPTION HABITS

When to use it?

Campaigns are used when goal is to motivate users to change their behaviour which would increase for example building's energy efficiency and lower carbon footprint.

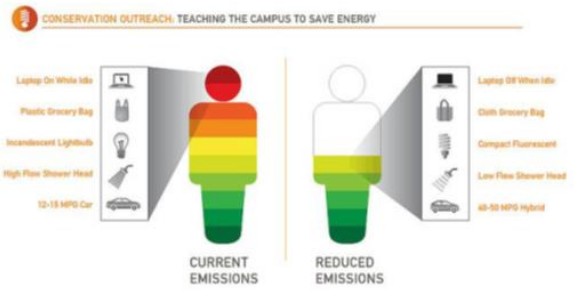

FIGURE 56: CAMPAIGN FROM CORNELL UNIVERSITY NUDGING USERS TO SAVE ENERGY

How to use it?

Campaigns can be done in various ways, such as using education posters, with the help of volunteers and to increase their effectiveness, campaigns can be combined with dashboards and gamified leaderboards. When creating campaigns, it is important that sources of inefficiency in the building are localized and then that the content of campaign is worked out. Additional support to the campaigns could be small nudges which would influence users choice right on the spot. For example effectiveness of campaign poster, such as "using quick flush button, can save xx % of water compared with using full flush", could be increased with placing green stickers on quick flush button and red stickers on the full flush button. Another example which nudges users to switch off the light when they don't need it is presented in the Figure 57.

FIGURE 57: NUDGES IN THE SHAPE OF STICKERS WHICH REMIND USERS TO SWITCH OFF THE LIGHTS

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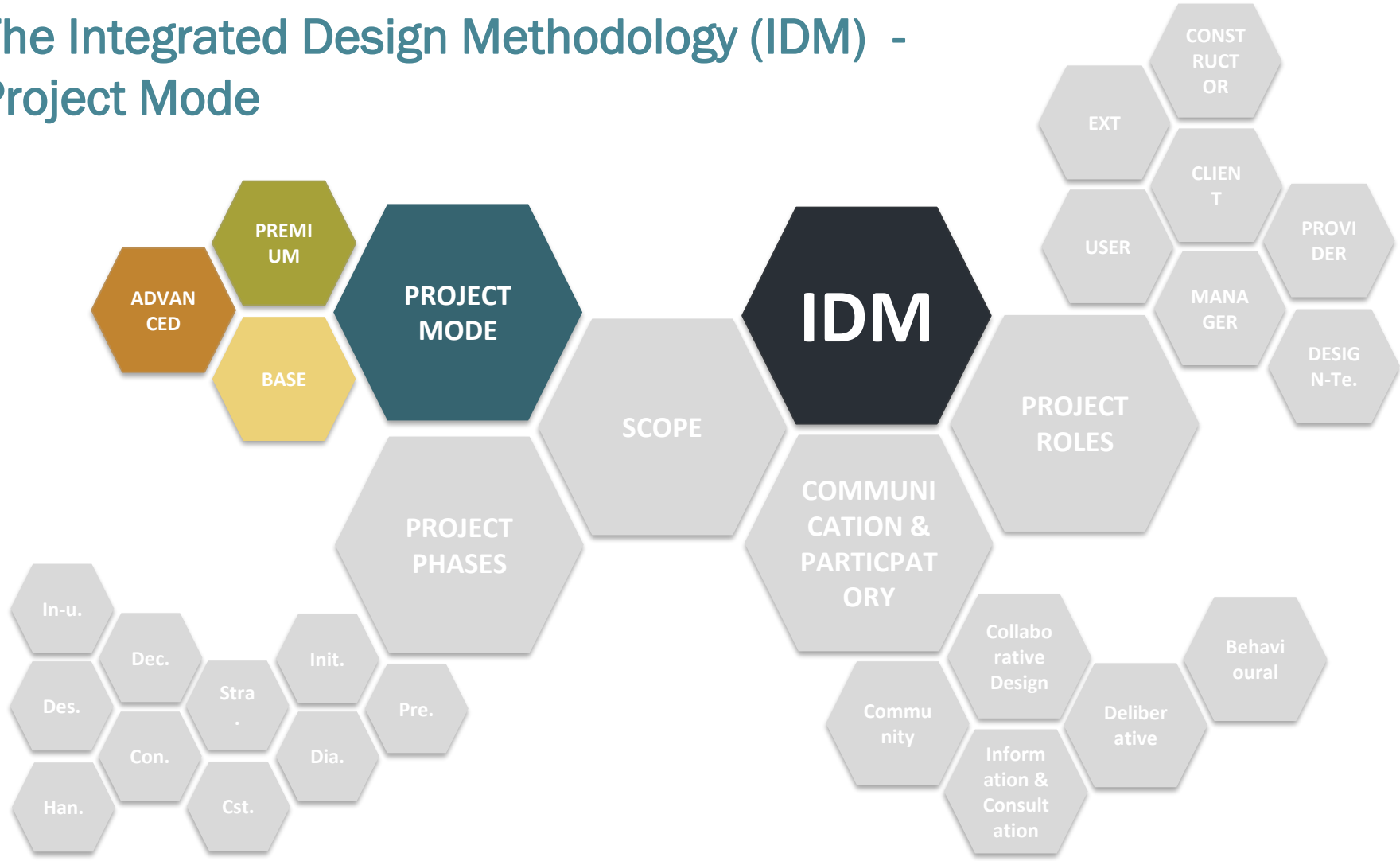
The Integrated Design Methodology (IDM) - Project Mode



The Integrated Design Methodology (IDM) - Project Mode

NewTREND can be used three different modes of operation namely; ***Basic***, ***Advanced*** and ***Premium*** as per the data availability and required output **.**

Basic mode: best suited when only little information about the building exists. The mode can be used to roughly assess the energetic performance of the building/neighbourhood.

Advanced mode: can be used when detailed information about the building up to room level is available . The mode can be used assessing the energetic and comfort conditions of the building.

Premium mode: requires real time data and thus is best suited to monitor and analyse the building performance

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The Integrated Design Methodology (IDM) - Project Mode

	BASIC	ADVANCED	PREMIUM
Geometry	2D Model	BIM Model	BIM Model
Data level	Story	Room	Room
Data input	Default / User Input	Default / User input	User input / Automated
Data source	Simulated / Default	Simulated / Default	Real values
Scale	Building/ Neighborhood	Building	Building
Scope	Energy	Energy and Comfort	Energy and Comfort

Modes can be used in parallel (e.g. premium for diagnosis phase and advanced for concept phase)

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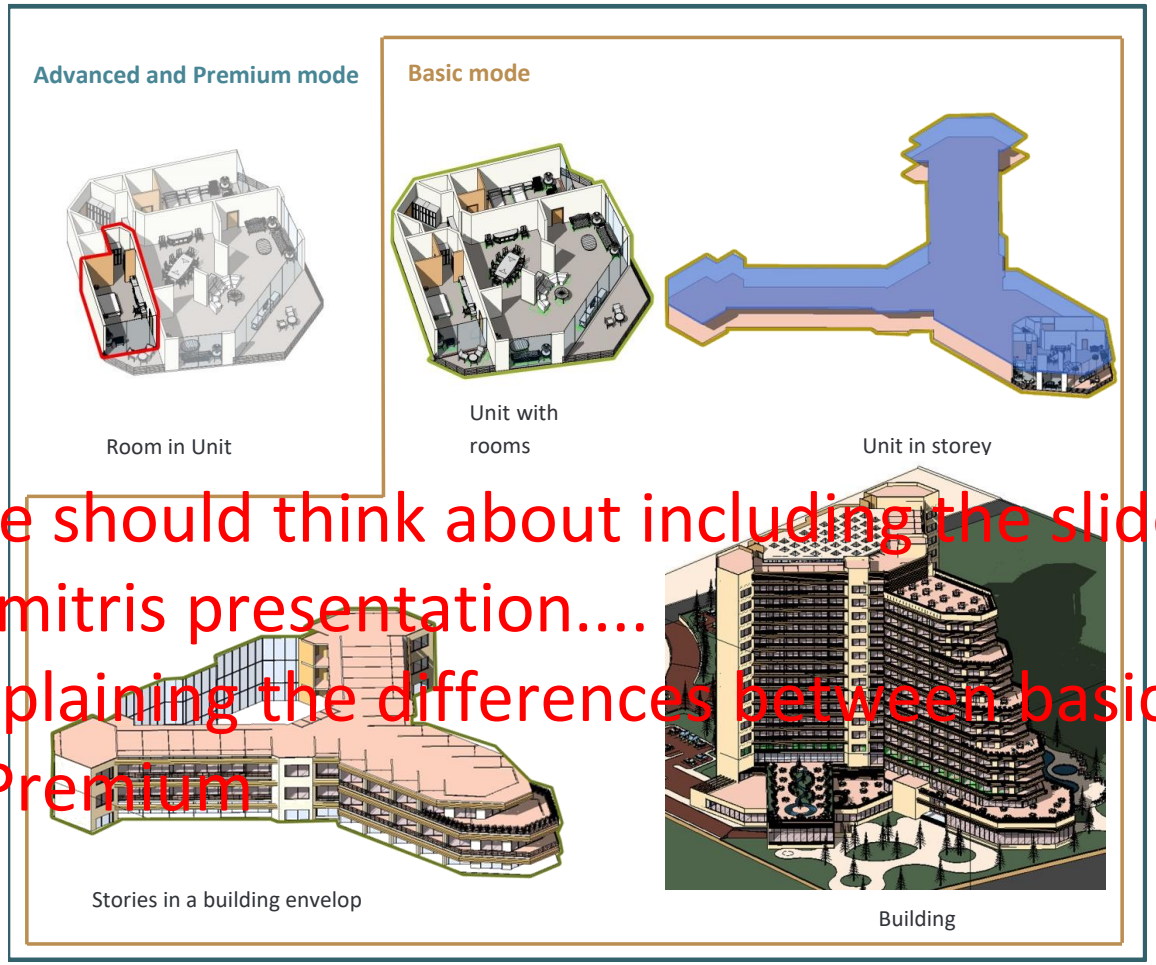
The Integrated Design Methodology (IDM) - Project Mode



We should think about including the slides of Dimitris presentation.... explaining the differences between basic / advanced / Premium

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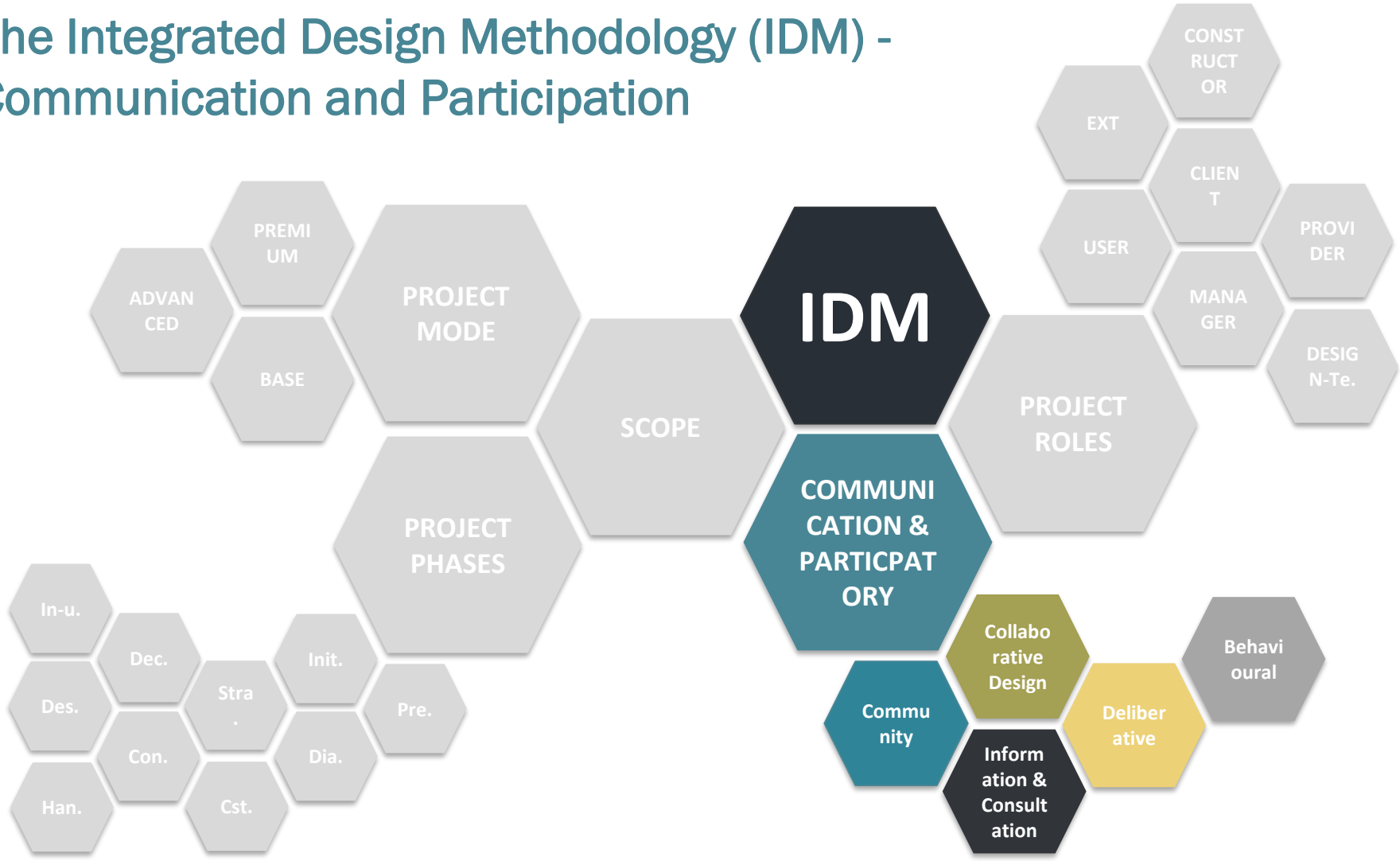
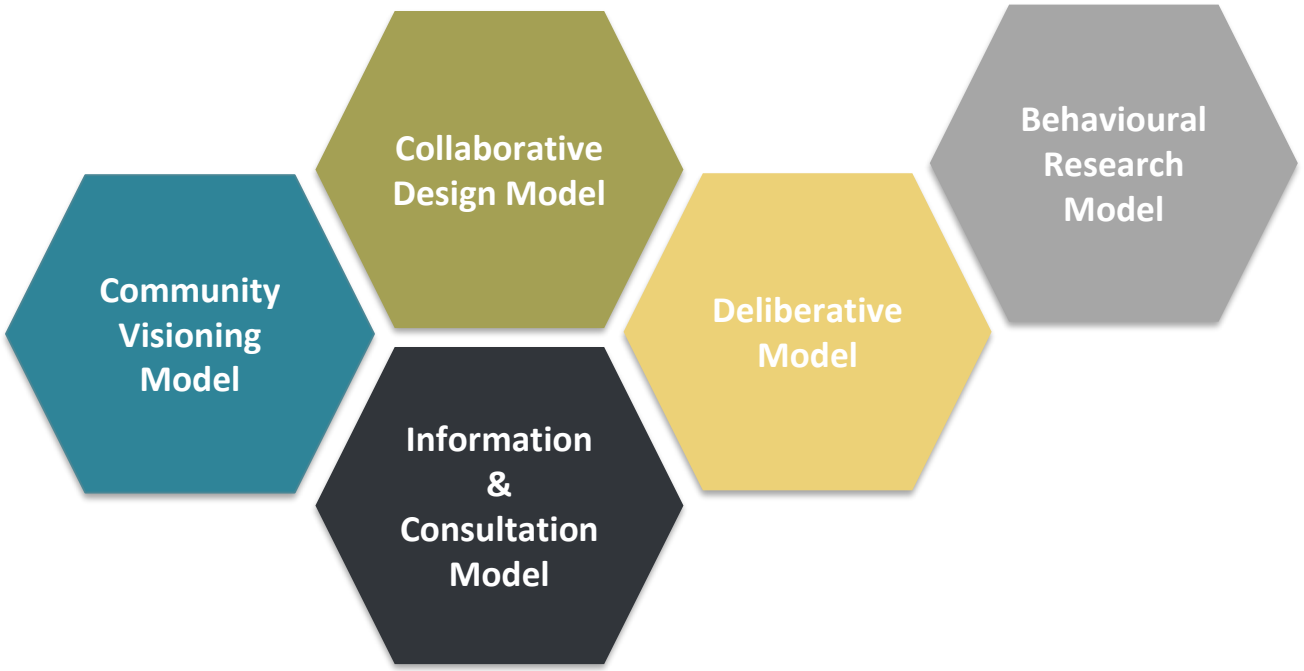
The Integrated Design Methodology (IDM) - Communication and Participation



The Integrated Design Methodology (IDM) - Communication and Participation



Fields are hyperlinked.. Click on the square to go the desired chapter

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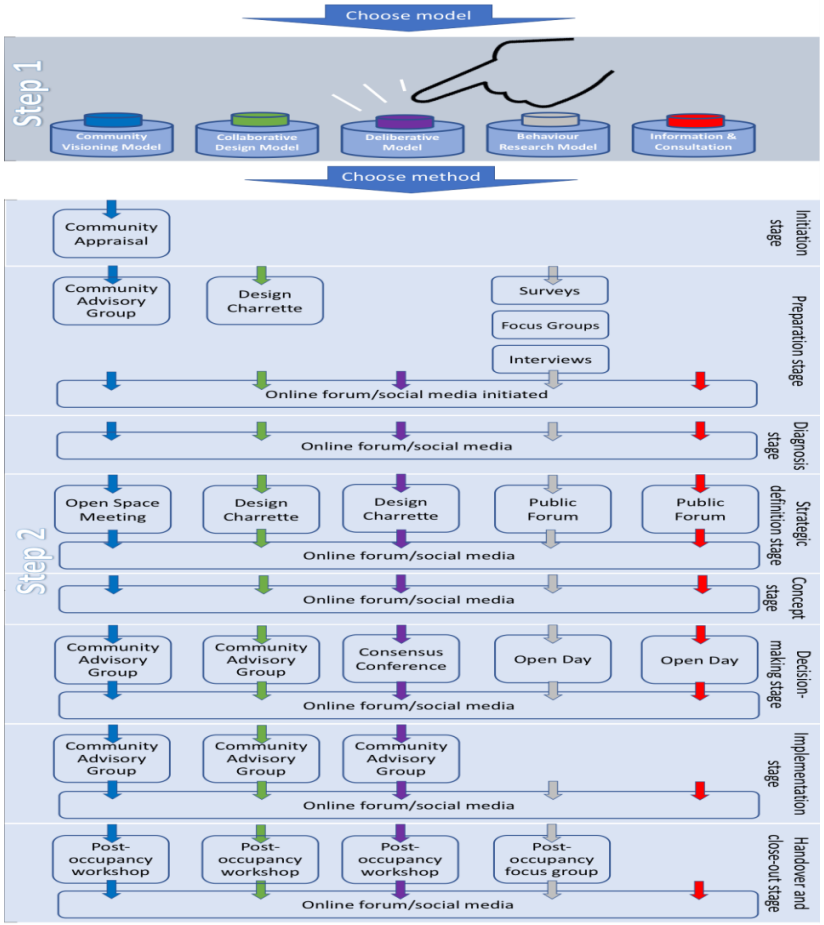
Communication and Participation

The IDM offers five different models of occupant and user participation, which combine different degrees of depth, breadth and inclusivity of participation. Each of the models suggests specific methods of occupant and user engagement for use in each project phase.



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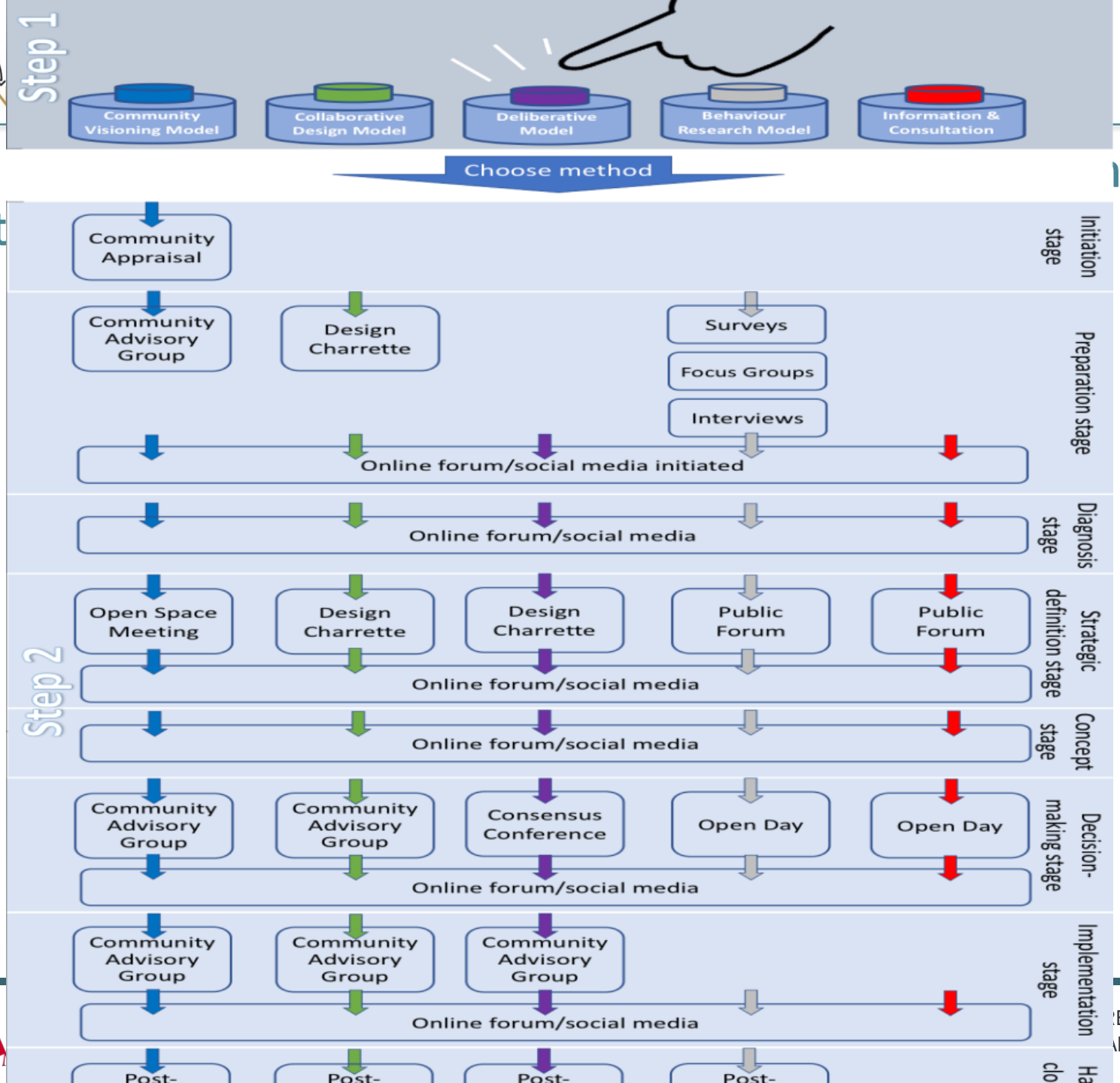

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The Integrated Design Methodology (IDM) - Communication and Participation

- This model incorporates the highest level of occupant and user participation, in terms of both depth, breadth and inclusivity
- Most suited to projects on a district scale, or where there are very large numbers of users who have strong views about the redevelopment

Community Visioning Model		
	Initiation stage	Community appraisal
	Preparation stage	Community Advisory Group Online forum/social media
	Diagnosis stage	Online forum/social media
	Strategic definition stage	Open Space Meeting Online forum/social media
	Concept stage	Online forum/social media
	Decision-making stage	Community Advisory Group Public forum Online forum/social media
	Implementation stage (Design development, tendering and construction)	Community Advisory Group Online forum/social media
	Handover and close-out and in-use stage	Post-occupancy workshop Online forum/social media

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The Integrated Design Methodology (IDM) - Communication and Participation

- The model is suited to a situation where a high level of participation is required, but where in-depth discussion of specific design options is more important than broad scale visioning.

Collaborative Design Model	Preparation stage	Design charrette Online forum/social media
	Diagnosis stage	Online forum/social media
	Strategic definition stage	Design charrette Online forum/social media
	Concept stage	Online forum/social media
	Decision-making stage	Community Advisory Group Online forum/social media
	Implementation stage (Design development, tendering and construction)	Community Advisory Group Online forum/social media
	Handover and close-out stage and In use stage	Post-occupancy workshop Online forum/social media

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The Integrated Design Methodology (IDM) - Communication and Participation

- This model is for situation where a moderate but still significant level of occupant and user participation is required

- The project team maintain the predominant role in decision-making, but they want a degree of involvement from occupants and users which goes beyond a once-off consultation

Deliberative Model	Preparation stage	Online forum/social media
	Diagnosis stage	Online forum/social media
	Strategic definition stage	Community Advisory Group Online forum/social media
	Concept stage	Online forum/social media
	Decision-making stage	Consensus conference forum/social media
	Implementation stage (Design development, tendering and construction)	Community Advisory Group Online forum/social media
	Handover and close-out stage and In use stage	Post-occupancy workshop Online forum/social media

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The Integrated Design Methodology (IDM) - Communication and Participation

- Model affords occupants little actual power in decision-making
- It is suited to a situation where the priority is not so much giving occupants input into and control over the design process, as gaining an understanding of their needs, attitudes and their interactions with technical building systems

Behaviour Research Model	Preparation stage	Surveys / Focus groups / Interviews Online forum/social media
	Diagnosis stage	Online forum/social media
	Strategic definition stage	Public forum Online forum/social media
	Concept stage	Online forum/social media
	Decision-making stage	Open day Online forum/social media
	Implementation stage (Design development, tendering and construction)	Online forum/social media
	Handover and close-out stage and In use stage	Post-occupancy focus group Online forum/social media

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The Integrated Design Methodology (IDM) - Communication and Participation

- This model offers minimal depth and breadth of participation but wide inclusivity.
- It is suited to a situation where a relatively low level of participation is required, but where inclusivity is important.
- The client and project team may be reluctant to cede power, occupants and users may be disengaged, or the project may be highly technical

Information and Consultation model	Preparation stage	Online forum/social media
	Diagnosis stage	Online forum/social media
	Strategic definition stage	Public forum Online forum/social media
	Concept stage	Online forum/social media
	Decision-making stage	Open day Online forum/social media
	Implementation stage (Design development, tendering and construction)	Online forum/social media
	Handover and close-out stage and In use stage	Online forum/social media

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Thanks for your attention.

Questions & Answers →

The Integrated Design Methodology (IDM)