

# User Driven Innovation in the Building Process

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## USER INVOLVEMENT

The *modern product end-user* is participative, creative, self organizing and community oriented.

There is a great need to investigate and develop *enhanced* methods and work processes for *end-user involvement* in the building process to meet the future *end-user needs* and to produce *better buildings*.

Buildings are *not ordinary products* like mobile phones or cars.

There are great *opportunities* for innovation in an open environment but also *challenges* caused by the *intra-organisational* setting.

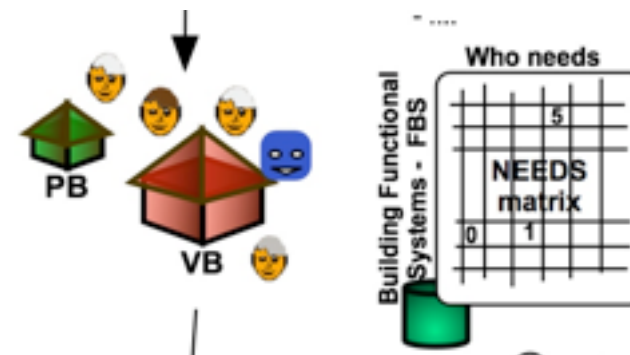
The *virtual building* (VB) plays a central role when we simulate, test, evaluate and refine services during building design.

End-user become a *prosumer*, producer and consumer.

## USER NEEDS AND REQUIREMENTS ON BUILDINGS

The *end-users* of a building are typically building inhabitants, external service providers, operation and maintenance personnel, and building administration.

*Weighted needs* are created in a *co-creation* process.



## USER DRIVEN INNOVATION METHODS

We describe *user driven innovation* as a 'systematic approach to develop new products and services, build-ing on investigation or adoption of users life, identity, praxis, and needs including unrevealed needs'

- Interviews and questionnaires
- Focus groups
- Self observation
- Story telling
- Scenario writing
- Lead user involvement
- Contextual inquiry
- Commented VB model walkthroughs
- .....

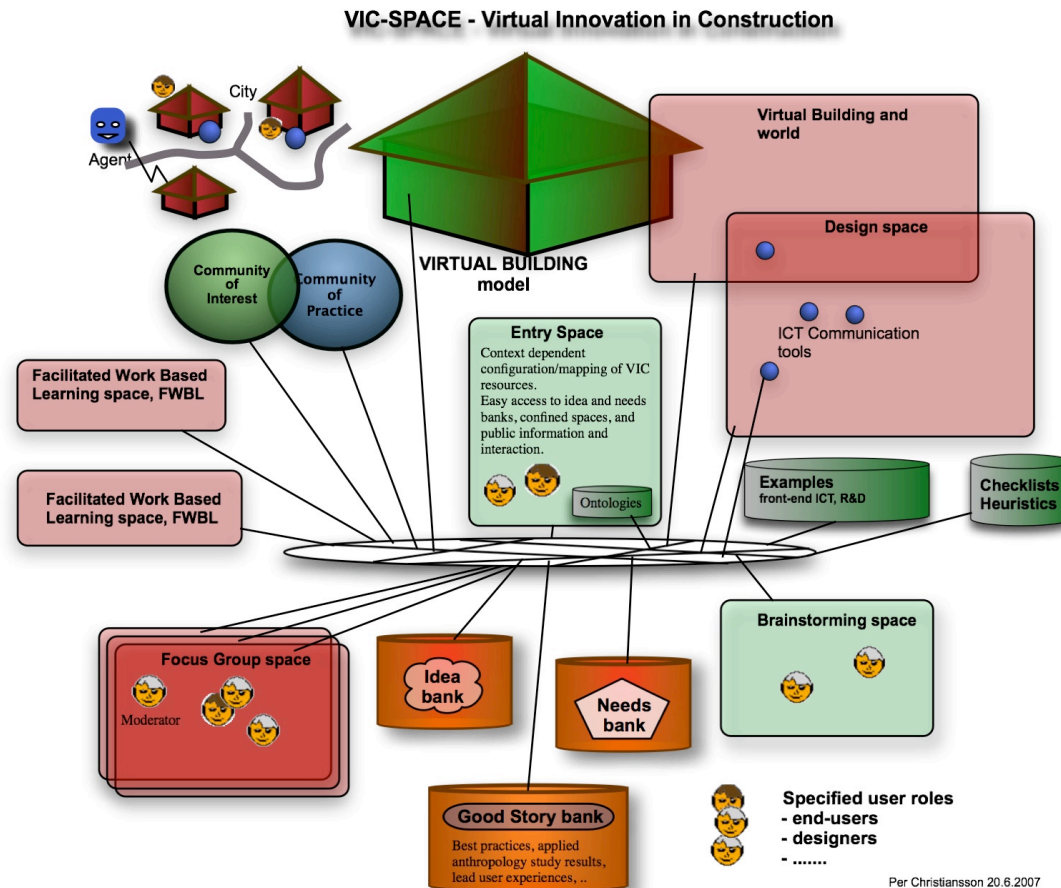


# VIRTUAL INNOVATION IN CONSTRUCTION - VIC

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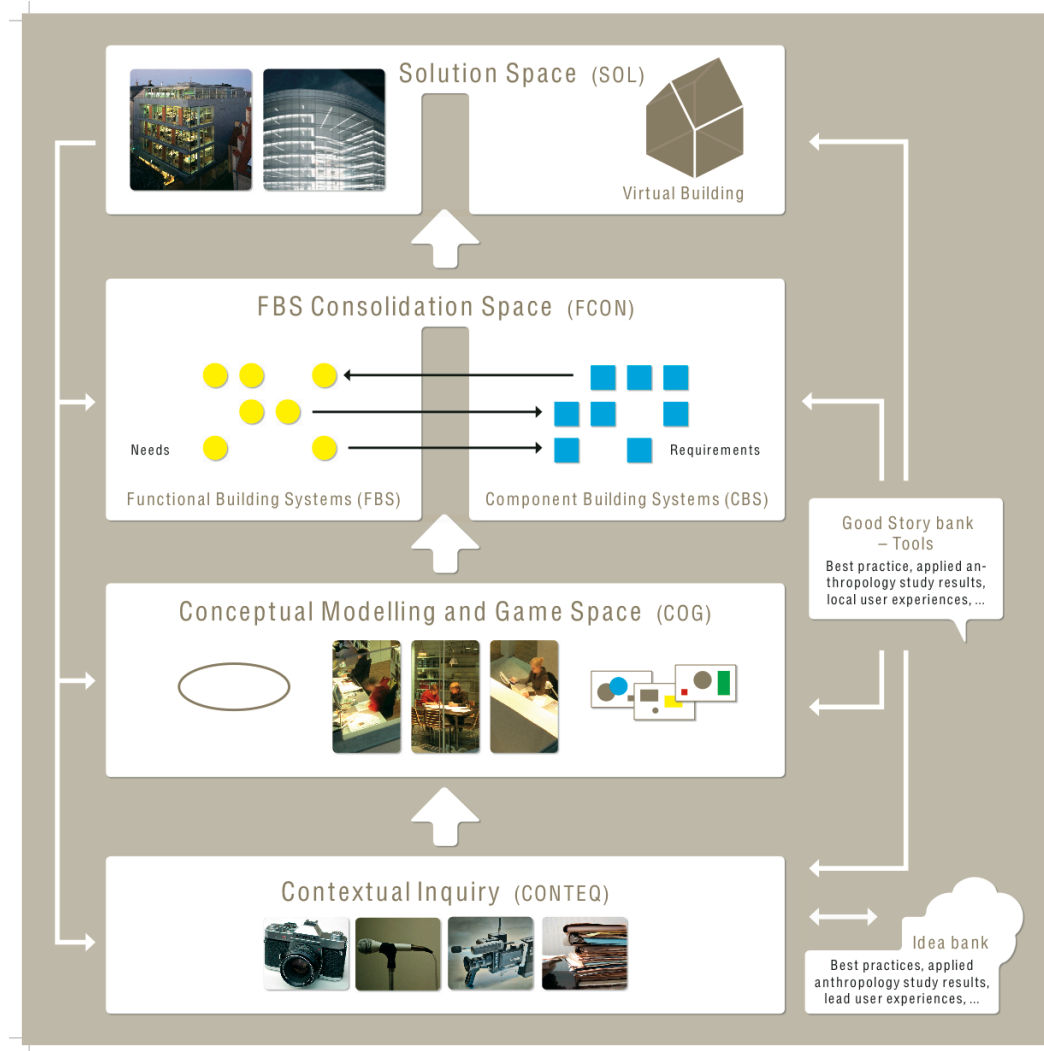
The goal is to create an ICT supported methodology *VICMET* to involve building end user in a creative innovation process together with building designers, to capture and formulate end-user needs and requirements on *buildings* and their functionality. An open dynamic innovation space VIC-SPACE is created with access from WWW.

- 2 parallel designs -



# VIRTUAL INNOVATION IN CONSTRUCTION - VIC

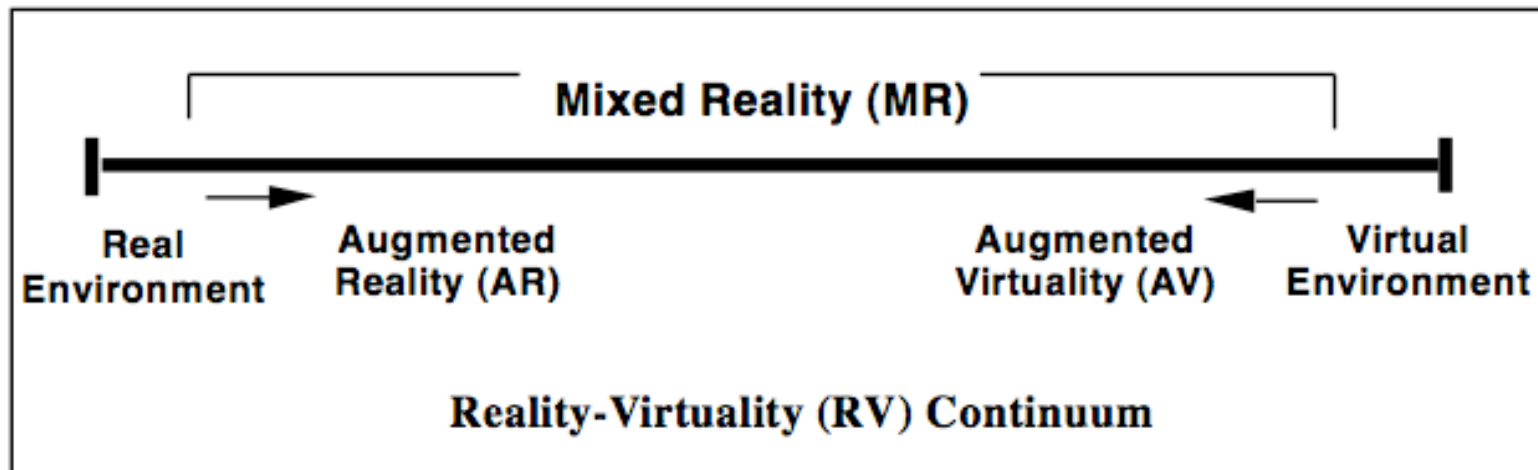
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VIC design space layout

# VIRTUAL INNOVATION IN CONSTRUCTION - VIC

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"Simplified representation of a RV Continuum." (Milgram et.al., 1994)



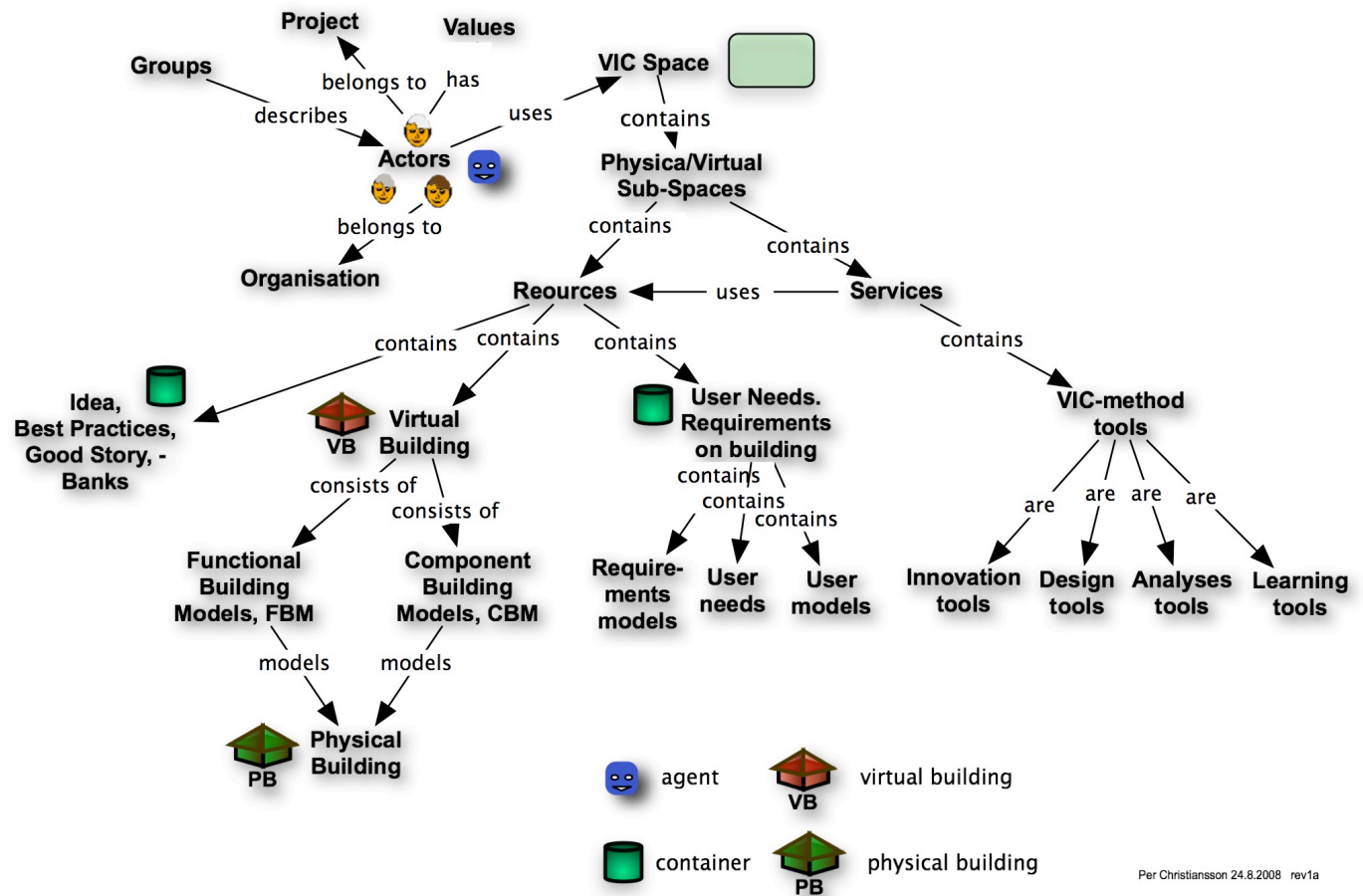
# ONTOLOGIES AND METRICS

An ontology is an explicit specification of a conceptualization [Gruber].

FBS ontologies are today not even de-facto standardized.

Ontologies and folksonomies input needed (IFC/BIM/IFD will contribute)

## VIC - ontologies



Per Christiansson 24.8.2008 rev1a

VIC meta ontology first version

# THE VIC METHOD

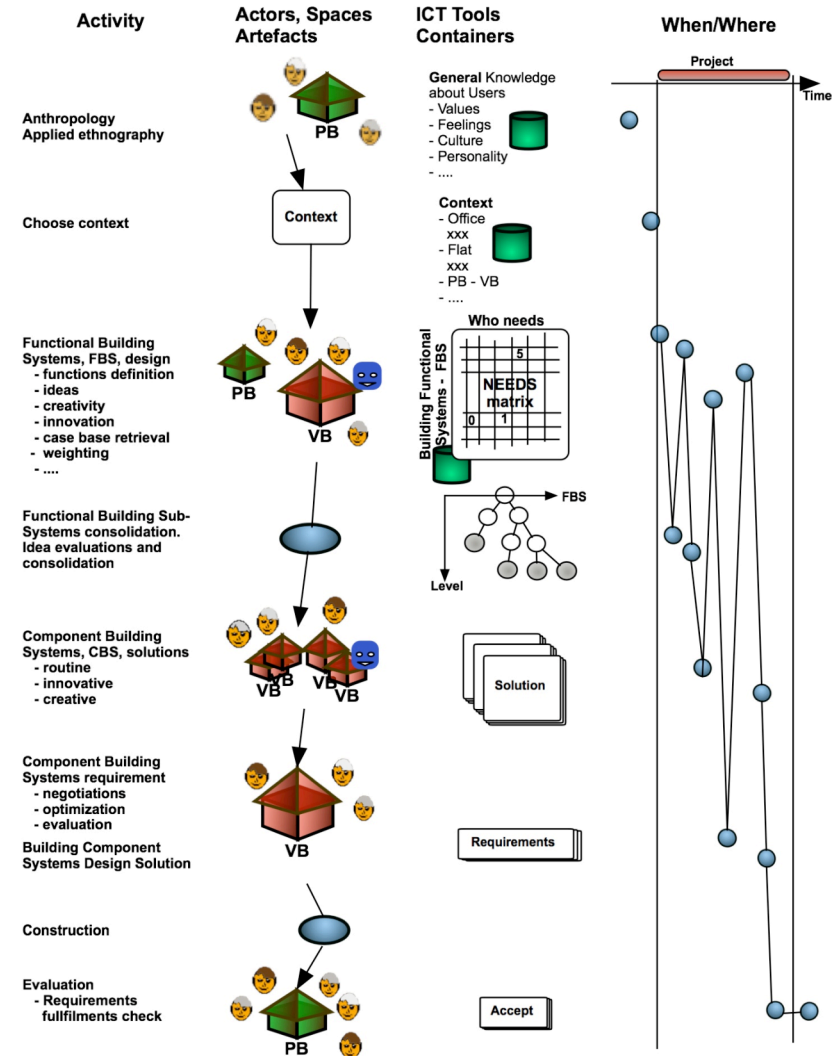
VICMET will be open to support different business models and settings.

The method is continuously evaluated in terms of usability, effectivity and efficiency.

All innovations in VICSPACE do not have to be part of the current design. They can also be stored as ideas or partly evaluated innovations stored with rationale, evaluations, and feedback views.

The project work is supported by the Confluence system.

## VIC - method steps



Per Christiansson 14.11.2007 rev3

## CONCLUSIONS

A sequential *methodology*, including better functionality on supporting ICT *tools*, to support a creative design in an open innovation environment is needed (VICMET).

Client/end-user *needs capture* and *requirements formulation* and modeling must be further advanced.

*Ontologies* and dictionaries have to be further developed especially on *business* and *meta* levels to secure effective systems interoperability, and information handling.

*Functional Building Systems* have to be categorized.

END

<http://it.civil.aau.dk>