

Praktiske eksempler på strategiske samarbejder

- eksempler fra Sunshinehouse, containerboliger og kontorbyggeri til KINA samt energirenovering med systemleverancer. Derudover bliver der stillet skarpt på nogle vigtige pointer man skal have styr på, ved indgåelse af strategiske partnerskaber.

Contact information

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Agenda

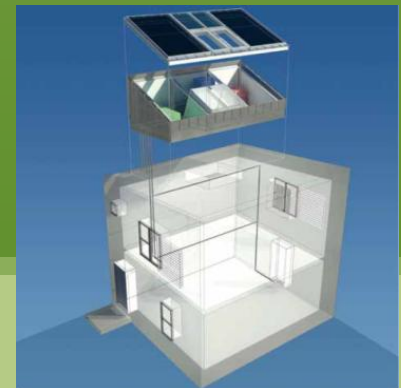
Systemleverancer og strategiske partnerskaber

Business Concept of FISH China

Containerhouses and a web-based configurator

Sunshinehouse

Energirenovering med systemleverancer



Byggesektorens udfordringer

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Lønandel i byggeriet er 50%. I industrien outsourcing af produktion hvis lønandel over 10%.

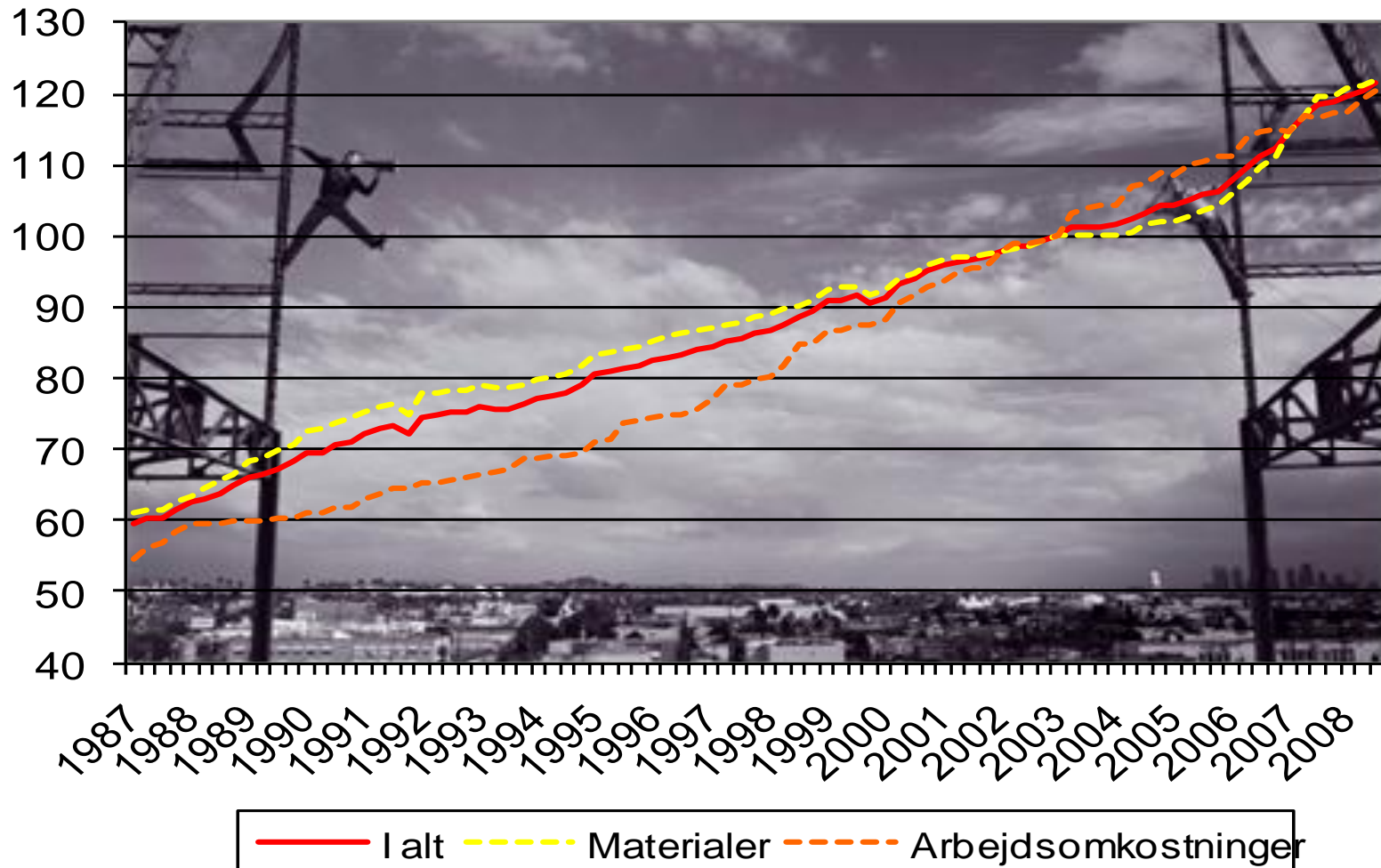
Dårlig indtjening hos entreprenørerne på 1 - 4%.

Årsag:

- Unikabyggeri med megen nyudvikling
- Tilbage loop uden værdiskabelse
- 30 % værdiskabelse på byggeplads

Skiftende parter få strategiske partnerskaber – men en del projektpartnering

Det blir bare dyrere og dyrere at bygge



Systemleverancer kan løse nogle af byggeriers udfordringer

- Færre faggrænser i byggeriet (storentreprise-model)
- Færre parter der skal koordineres med i byggeriet (hver part leverer et mere forædlet produkt)
- En systemleverandør påtager sig et større leveranceansvar (design/customization, produktionsforberedelse, præfab, indbygning/montage, driftsservice)
- Højere kvalitet, hurtigere leverance, bedre økonomi for leverandøren og bygherren (der leveres et industrielt fremstillet produkt med indbygget erfaring på tværs af projekter)
- Udvikle processer og produkter igennem løbende forbedringer
- Faste parter i systemleverancekæden
- Håndterer og måle på hele processen

Entrepriseformer og samarbejdsformer

- Fagentreprise
- Storentreprise
- Hovedentreprise
- Teknikentreprise (en variant af storentreprisen)
- Ovennævnte 4 entrepriseformer kan udbydes i "tidligt udbud" (ofte et ½ færdigt projekt) eller i hoved-projekt (er pr. definition et entydigt projekt, hvor omfang og indhold er afklaret)
- Totalentreprise (udbud i programudbud)
- Partnering (er en samarbejdsmodel – ikke en entrepriseform)
- **Strategisk partnerskab / Leveranceteams**
- OPK / OPP

Systemleverance/Strategisk partnering - Kendetegn

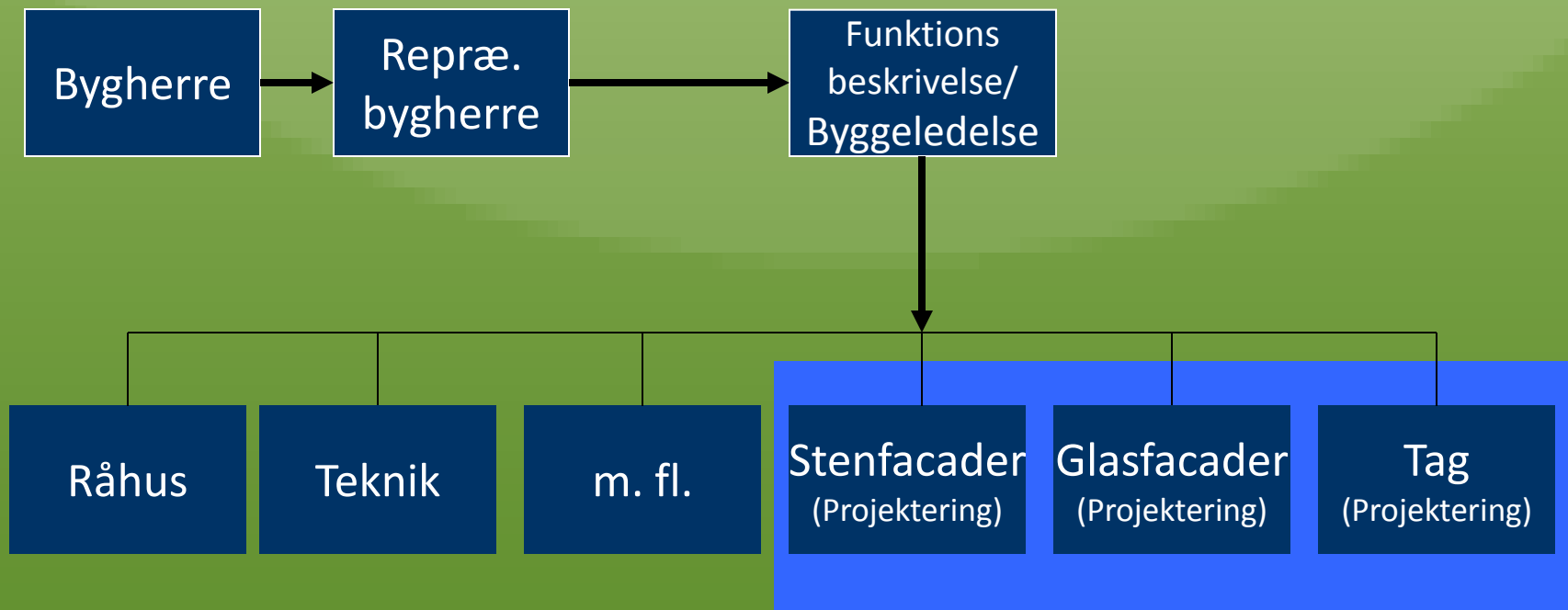
Systemleverance / Strategisk partnering i byggebranchen er kendetegnet ved:

- En "ny" form for samarbejde, som der ikke er tradition for i byggeriet (men erfaring kan hentes i industrien)
- En samarbejdsaftale/konsortieaftale, der er indgået forudgående den traditionelle rådgiveraftale og entreprisaftale
- Konsortieaftalen er en aftale mellem konsortieparterne og suppleres af en kontrakt mellem konsortiet og bygherren, helt afhængig af entreprisform
 - Aftalt samarbejde i projekteringen og gennemførelsen - afhængig af juridiske bindinger, med andre parter i byggeriet.

Systemleverance / Strategisk partnering (ikke en entrepriseform, men en kontraktform)

- Fag/områder der kan have fordele af at være slået sammen
- Der dannes et konsortium, der kan være dannet for projektet eller det kan være et fast konsortium
- Alle parter kan hæfte ”solidarisk” for projektet
- Bygherre, rådgivere og entreprenører deltager på fællesmøder
- Problemer forsøges løst ved dialog i stedet for kontraktuelle argumenter – der er en ”industriel” indgangsvinkel til problemløsning og ikke den traditionelle indgangsvinkel fra byggeriet
- Kræver professionel bygherre, rådgivere, entreprenører og konsortie-medlemmer (hvilken ikke altid er opfyldt, hvorfor der kan forekomme væsentlige problemer)

Systemleverance som lukningsentreprise i strategisk partnering (storentreprise)



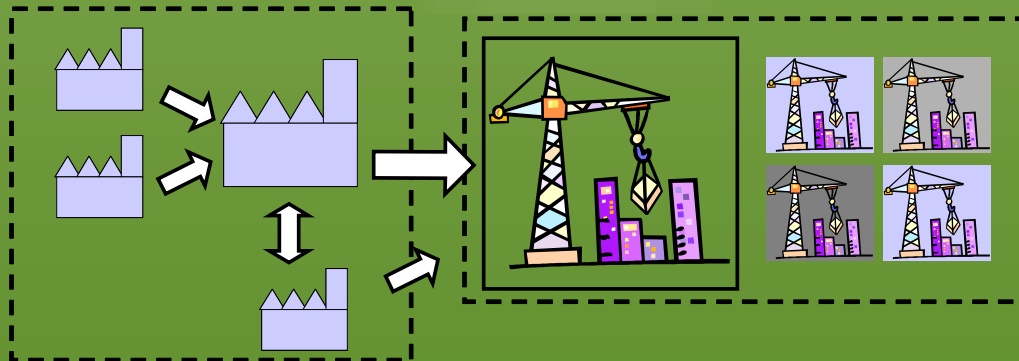
Typer af strategiske partnerskaber i byggeriet

- Strategisk partnering
(arkitekt, ingeniør, entreprenør – producent, underentreprenører)
- Long term partnering
(samme, men med bygherre)
- Byg- og driftsherrefællesskaber (OPK/OPP)
- Producentcentrerede partnerskaber

Systemleverancer og byggekoncept (boliger, flexhospitaller mv)

Bygningskoncept (Top down)

- Tænke i arkitektoniske og system helheder og udvikle genanvendelige tilpasningsmulige løsninger
- Adressere markedet og ikke kun det enkelte byggeprojekt

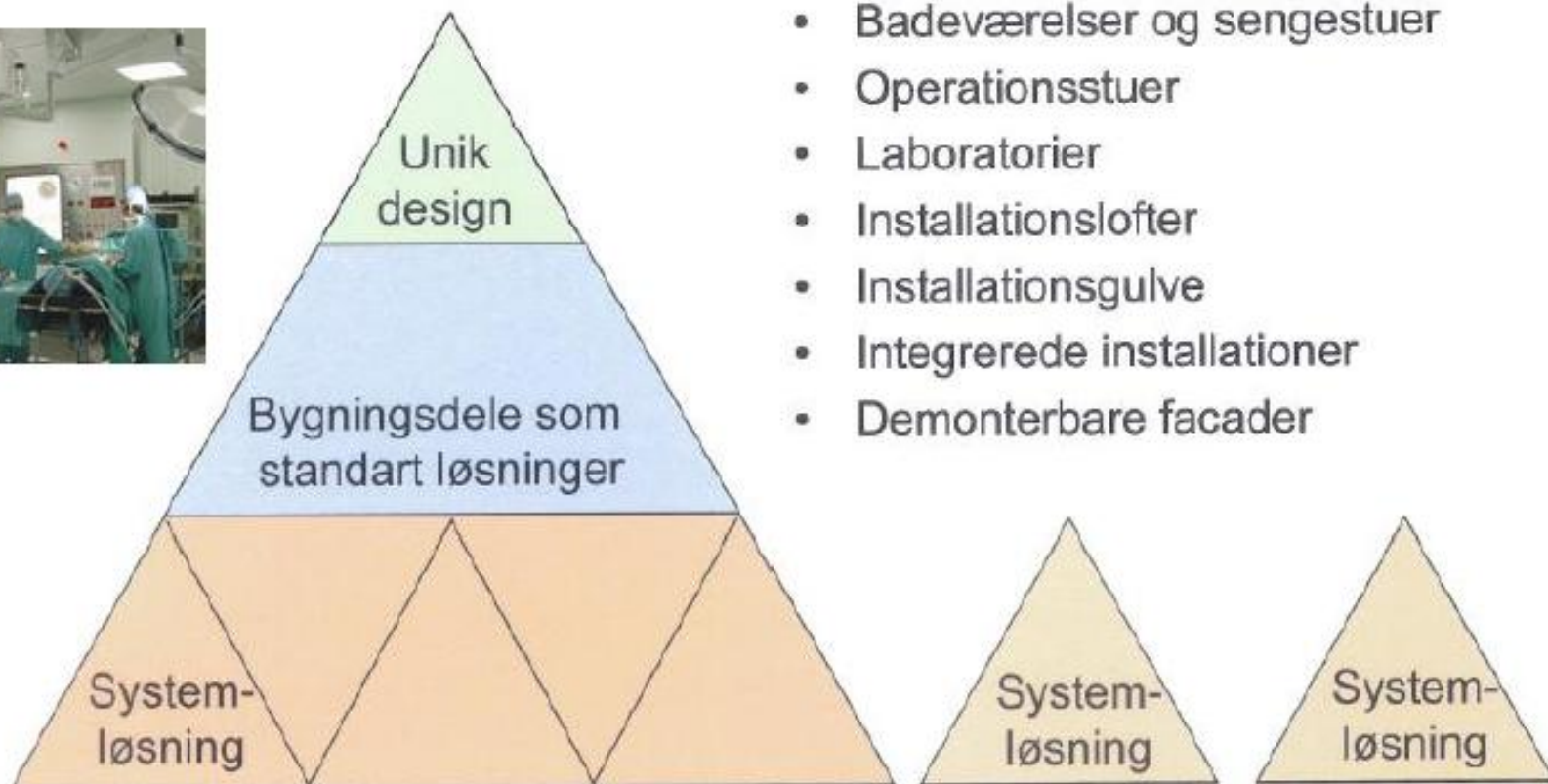


Systemprodukter (Bottom up)

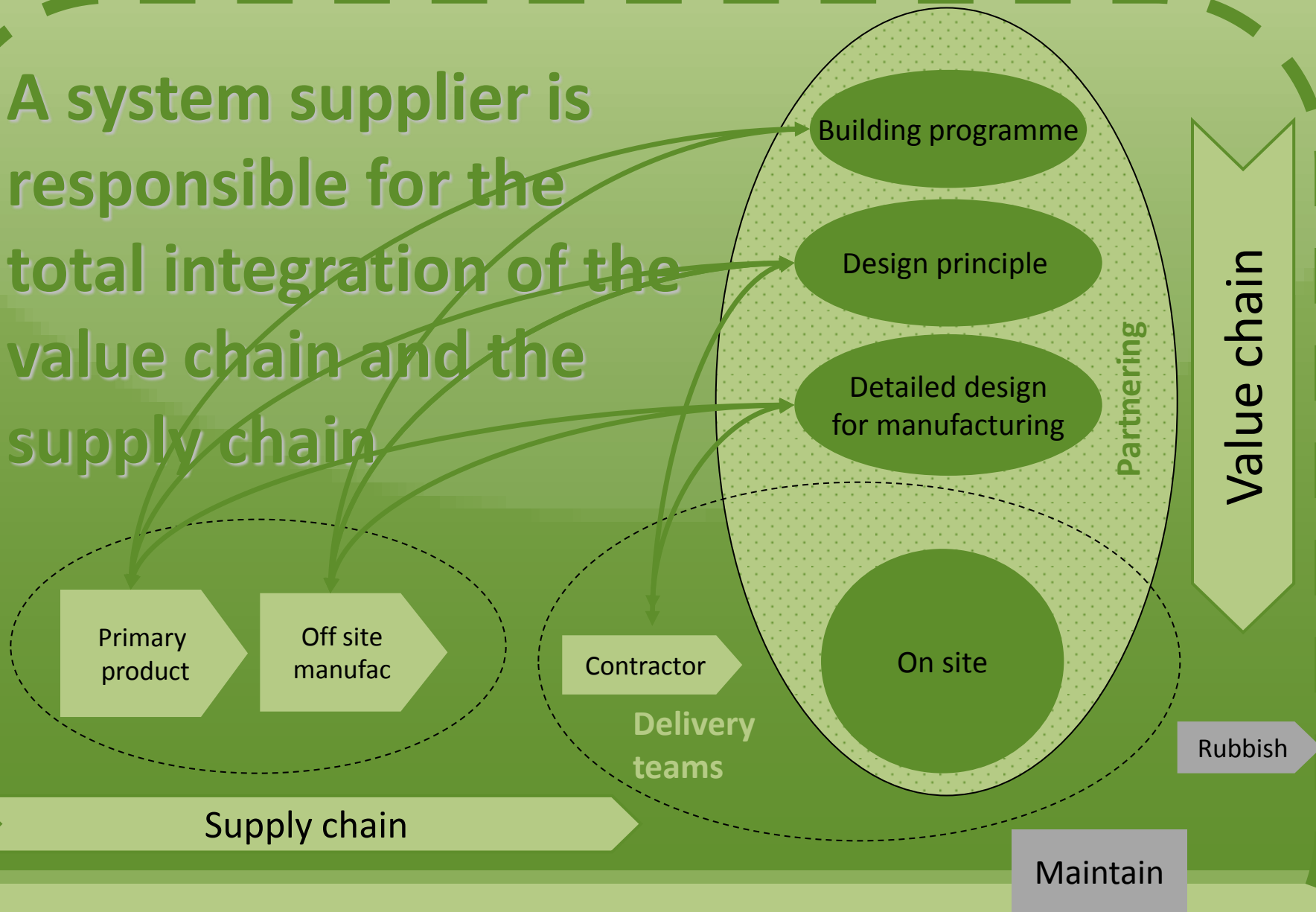
- Byggematerialeproducenterne udvikler (del-)systemer, som er tænkt til at indgå i en bygning
- Afklare snitflader og konstruktionsregler, så man opnår konfigurering og ikke projektering

Systemleverancer

Produktværdi og kvalitet



A system supplier is responsible for the total integration of the value chain and the supply chain



Systemleverancer og Mass customization



Opnå mere konkurrencedygtige byggerier/byggeprocesser idet en del af det løntunge håndværks- og monteringsarbejde kan effektiviseres i en industrialiseret proces. Dette vil også medføre en øget og mere konsistent kvalitet.

Ved at højne den arkitektoniske kvalitet i de præfabrikerede bygge produkter, er der mulighed for at kvaliteten i bybilledet højnes uden at prisen bliver høj.

Mass customization



Ford Model T:

1908 – 1927

Sale more than 15,000,000

Number of variations : 1



Mercedes E-Class:

Introduced in 1993; currently on offer

Sale more around 4,500,000 so far

Number of variations:
3,347,807,348,000,000,000,000,000



Aston Martin V8:

1969 -1989

Sales number 4,021

Number of variations: hand crafted

Popularity

Mass production

Mass customization

Individual customization

Developed based on (Anderson 2006)

System leverandør skal adresserer . . .

1. Business model

Hvordan tjener virksomheden penge?

2. Netværk

Hvordan er samarbejdet / værdikæden skruet sammen?

5. Produktydelse

Funktionalitet og ydeevne

6. Produkt system

Hvilke tillægsydelser/produkter?

7. Service

Hvordan serviceres kunden?



3. Understøttende processer

Ting der hjælper produktionsapparatet

4. Kerneprocesser

Ændring i selve produktionsapparatet

8. Kanalen

Hvor / af hvem kan kunden købe produktet?

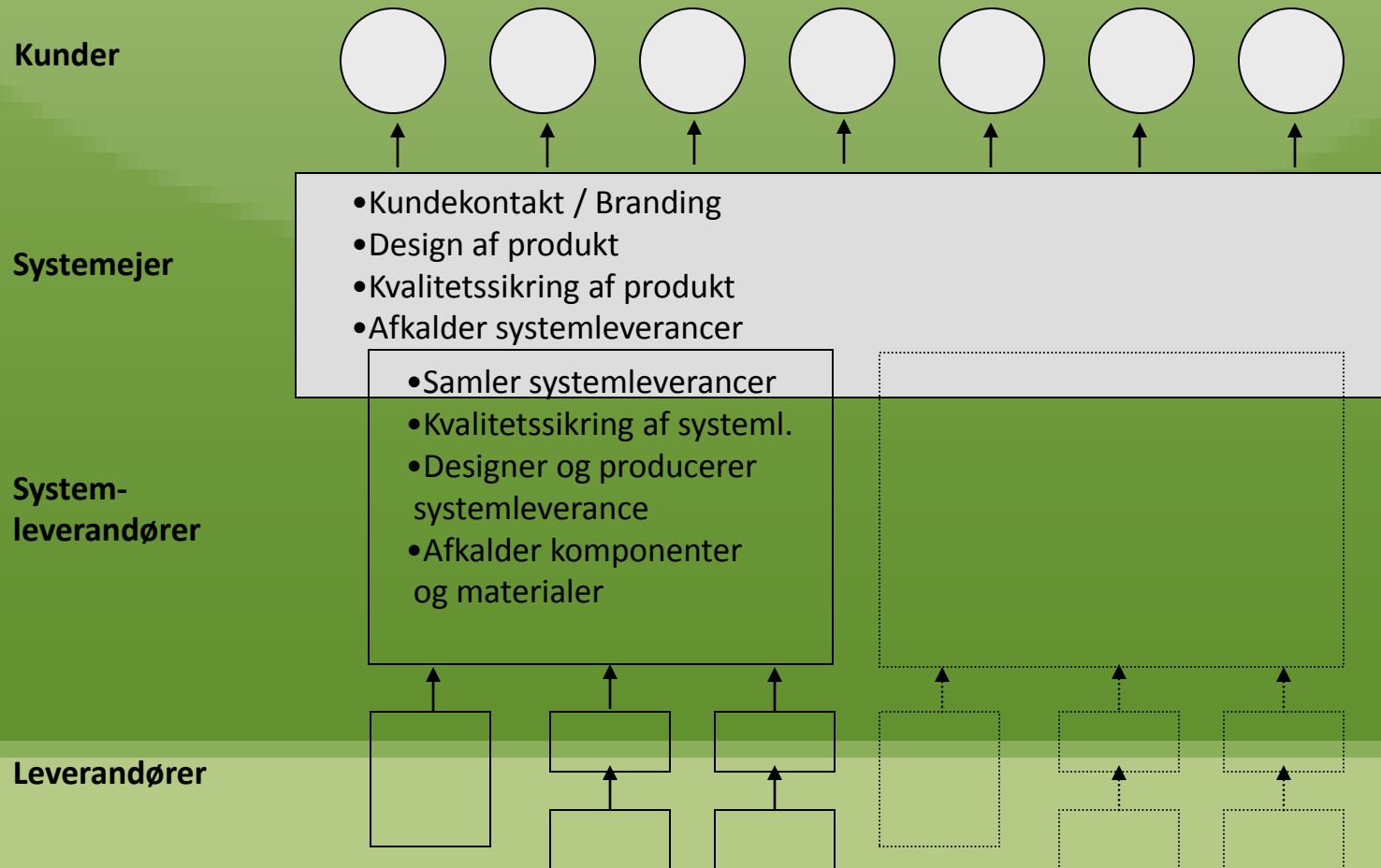
9. Brand

Hvordan markedsføres / præsenteres fordelene for kunden?

10. Kundeoplevelse

Hvordan skabes en helhedsoplevelse for kunden?

Organisering



Systemleverandørens organisatoriske set-up

Joint venture

Et fast samarbejde organiseret i et fælles selskab

Forretningsbaseret Supply Chain samarbejde

Et forpligtende udviklingssamarbejde mellem systemleverandør og underleverandører

Systemleverandøren kan have flere koncepter og dertil knyttede underleverandører

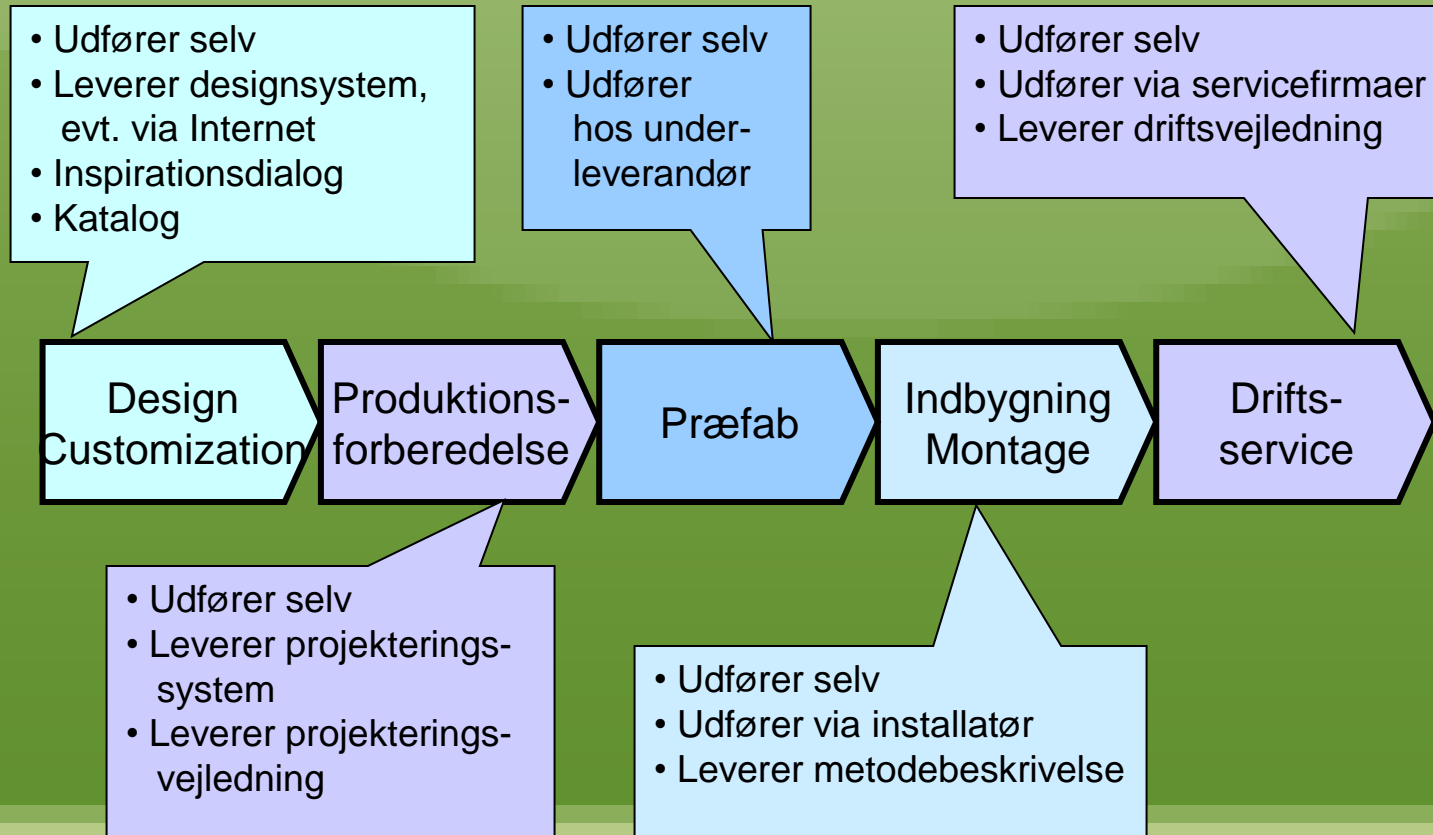
Underleverandørerne kan levere til flere systemleverandører – de bliver bedre derved

Strategiske partnerskaber

Ligeværdigt samvirke om produktudvikling og markedsføring

Aktiviteter og ydelser i værdikæden/byggeprocessen

Der er flere kombinationsmuligheder – vælg din vej gennem faserne!



Agenda

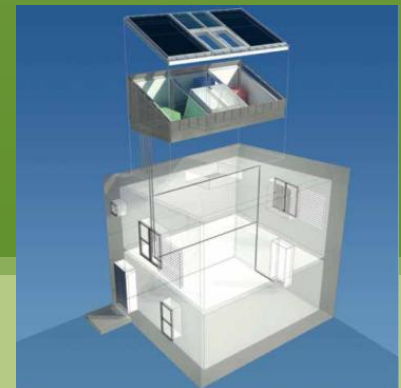
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Sunshinehouse

Energirenovering med systemle



The FISHclusters vision



Create a platform for joint Danish / Chinese Eco cities and Eco buildings that will improve the quality of future Chinese buildings (townhouses, high-rise districts & science parks, hospitals) while at the same time maintaining low prices and reduce energy consumption and CO₂ (Carbon footprint).

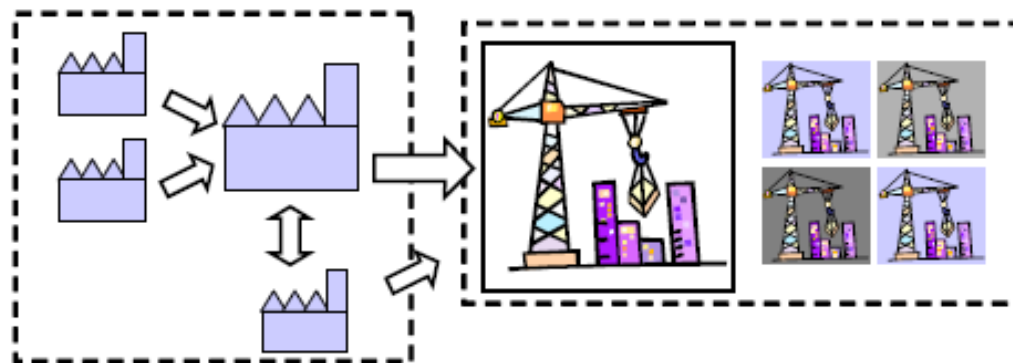
FISH: Future industrialized sustainable houses

Flexhospitaler og systemleverancer

Funktionskrav til Flexhospitalet

Det flexible hospitalskoncept (Top down)

- Tænke i arkitektoniske og system helheder og udvikle genanvendelige tilpasningsmulige løsninger
- Adressere markedet og ikke kun det enkelte byggeri



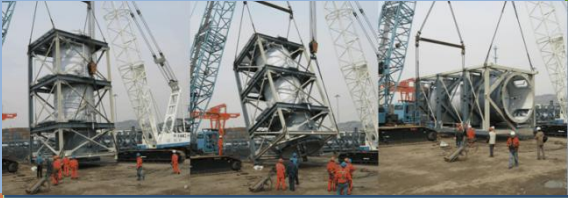
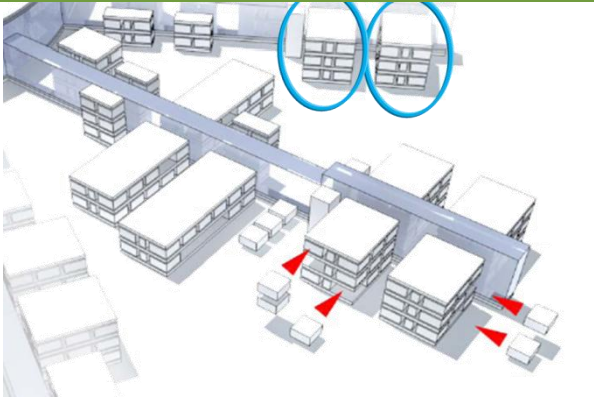
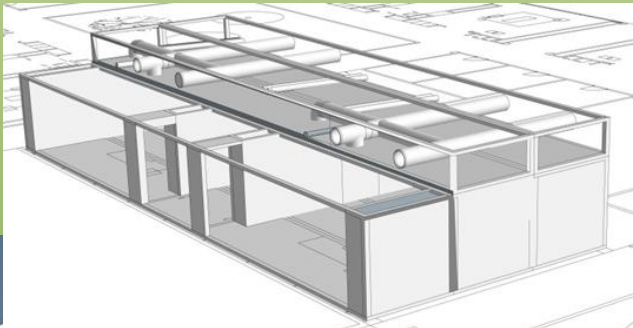
Systemleverancer:
Badeværelser og sengestuer
Operationsstuer
Laboratorier
Installationslofter
Demonterbare facader
Installationsgulve

Systemprodukter (Bottom up)

- Systemleverancer som indgår i flexhospitalet som funktionsmodul
- Afklare snitflader og konstruktionsregler, så man opnår konfigurering og ikke projektering

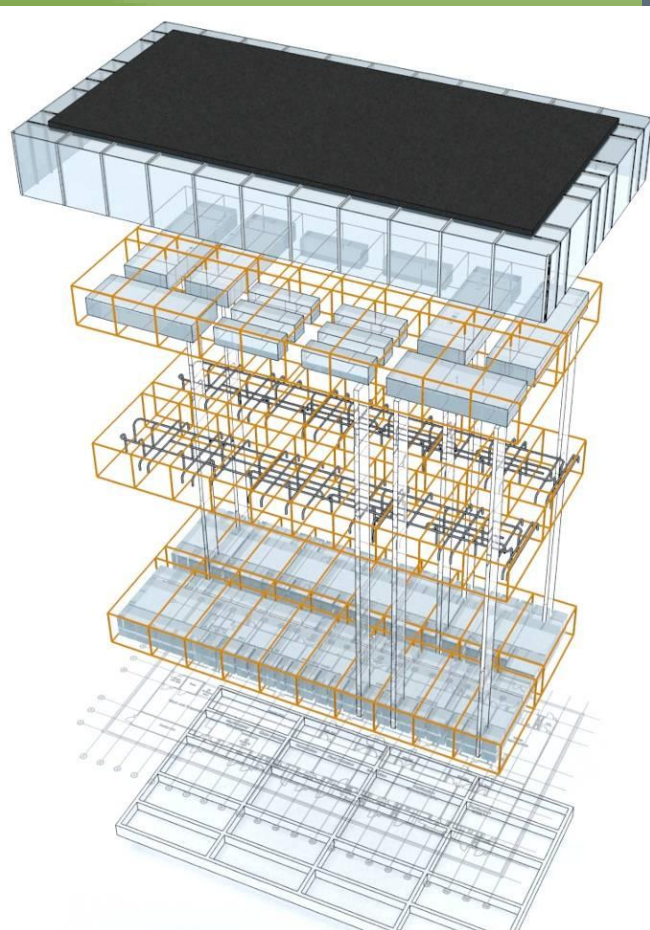
Flexhospitals

- An Industrialised system



Flexhospital - moduler

Moduler med forskellig
funktionalitet placeres i
strukturen som skuffer i en
kommode.



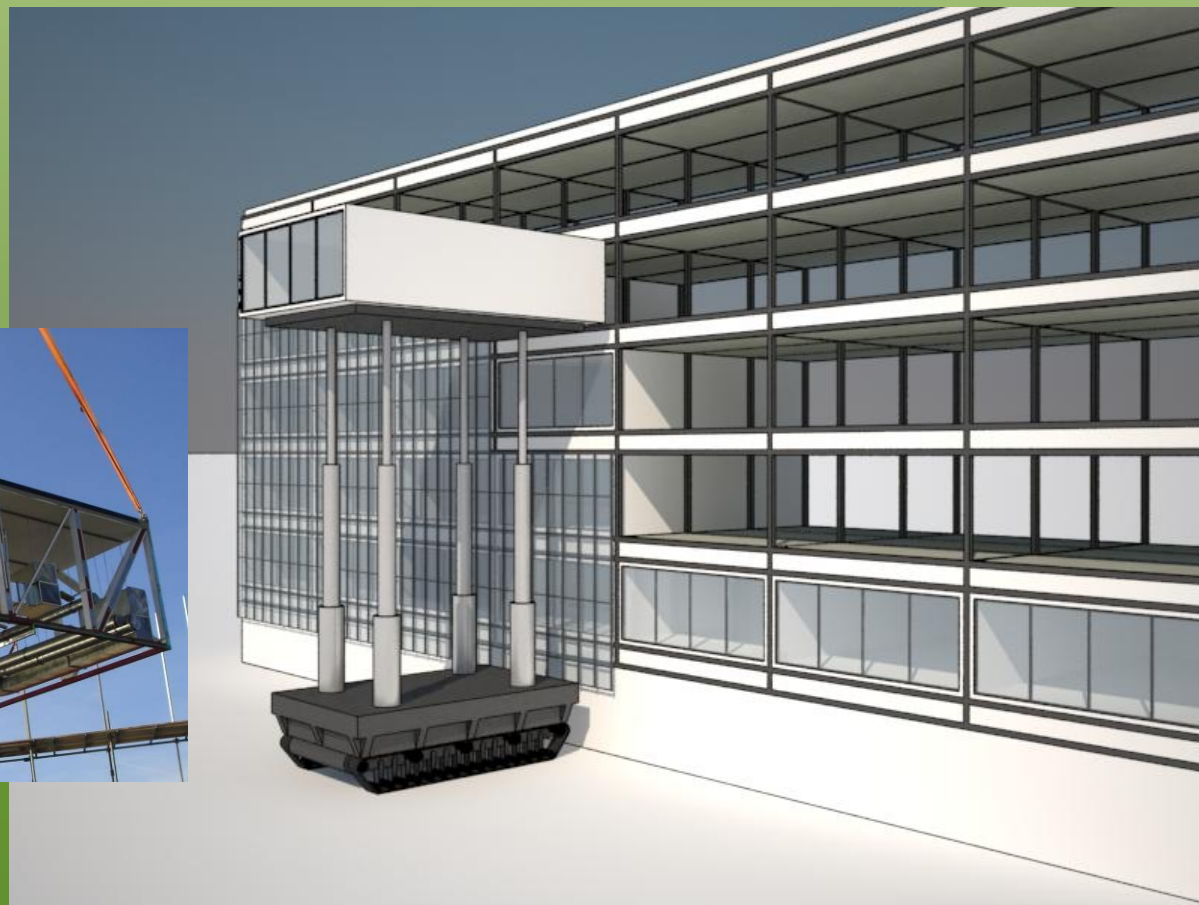
Flexhospital – udskiftning af modul

Det funktionsbestemte modul ankommer til byggepladsen "just in time" som pre-fabrikeret, indrettet og fuld udstyret modulær enhed.



Flexhospital – udskiftning af modul

Modulet løftes op og skubbes på plads efter det eventuelt tidligere og udtjente modul er demonteret.



Brugte moduler kan opgraderes off-site og genanvendes.

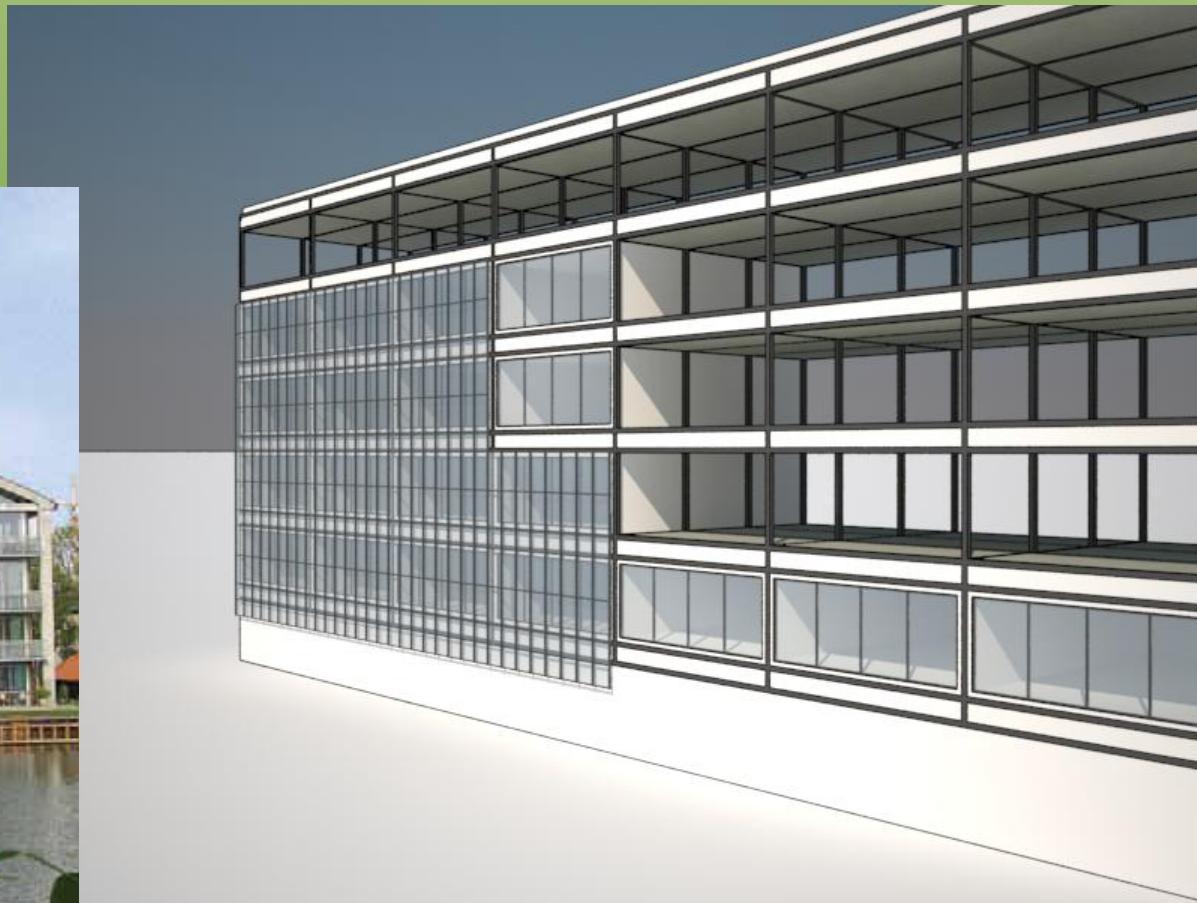
Flexhospital – udskiftning af modul

Modulet løftes og skubbes på plads.



Flexhospital - installationer

Installationer tilkobles som "plug and play" løsning og modulet er funktionsdygtigt.



Flexhospital – Eks på funktionsmodul



Buildings are society's biggest energy consumer and CO2 emitter



In most industrialised countries 40 % of the energy use in society is used in buildings.

2/3 of this is used for heating and cooling.

National and European strategies to move towards zero emission/energy buildings within less than 10 year

Building indoor climate

People spend 90% of our time in buildings, however up to 30 % of the building mass does not contribute to nor provide a healthy indoor climate

Climate challenges are global, however building environment are local

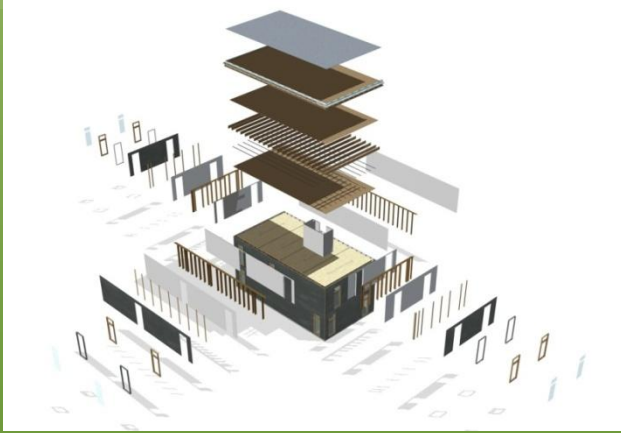


The Business Concept

To realize this FISH vision requires **three sets of results**:

- ✓ A number of Eco **showcases** in cooperation with Danish and Chinese municipalities, developers, architects, cleantech companies, building industry and universities.
- ✓ A **development and business network of companies and universities** in Denmark and China, which enable the development and implementation of Eco cities and Eco buildings in China with state of the art solutions and 2nd + 3rd generation solutions.
- ✓ An **web-based configurator** – showing the showcases in 3D object oriented models on the internet as a cooperation platform for the municipality, the developer and the supply chain.

Eco cities and Eco buildings – the holistic approach



Future industrialized
sustainable construction &
urban development

- **A new industrialized and sustainable concept** (villa, townhouses, highrise districts, sciencepark ect.)
- **System deliverable** in a supply chain (1st generation, 2nd generation etc.)
- A **digital infrastructure** with 3D models (visualization and simulation in 3D)
- **Continuous improvement** across projects

FISH CHINA

Secretariat

- Strategi for FISH program
- Management and coordination of FISH activities
- Biannual FISH conference in CHINA and Denmark/Scandianvia



AVIATION
INTELLIGENCE
CENTER

GREEN
BUILDINGS
INTELLIGENCE
CENTER

HEALTH
INTELLIGENCE
CENTER

Intelligence centers

- Legislative mapping on private and public bidding
- Mapping of sector specific events; exhibitions, conferences, seminars
- Mapping of sector specific market research and analysis
- Sector specific market research and analysis
- Chinese stakeholder management
- Admission to project and innovation specific taskforces
- On-going technology and innovation scouting.
New challenges in the market. New solutions.
- Chinese demand for tech-transfer. Leading Chinese companies' demand for new technology/solutions
- Market report on green constructions
- Mapping of dominant stakeholders in China

PROJECT SPECIFIC
SINO-SCANDINAVIAN TASKFORCES

INNOVATION SPECIFIC
SINO-SCANDINAVIAN TASKFORCES

November 25, 2011

www.FISHclusters.dk

CHINESE AND SCANDINAVIAN BUSINESS NETWORKS

MINISTRY OF FOREIGN
AFFAIRS OF DENMARK



DANISH
TECHNOLOGICAL
INSTITUTE

DANISH-CHINESE BUSINESS FORUM
丹麦中国商业协会
UNDER THE PATRONAGE OF HIS ROYAL HIGHNESS THE PRINCE CONSORT OF DENMARK

DANISH EXPORT ASSOCIATION
DANSK EKSPORTFORENING



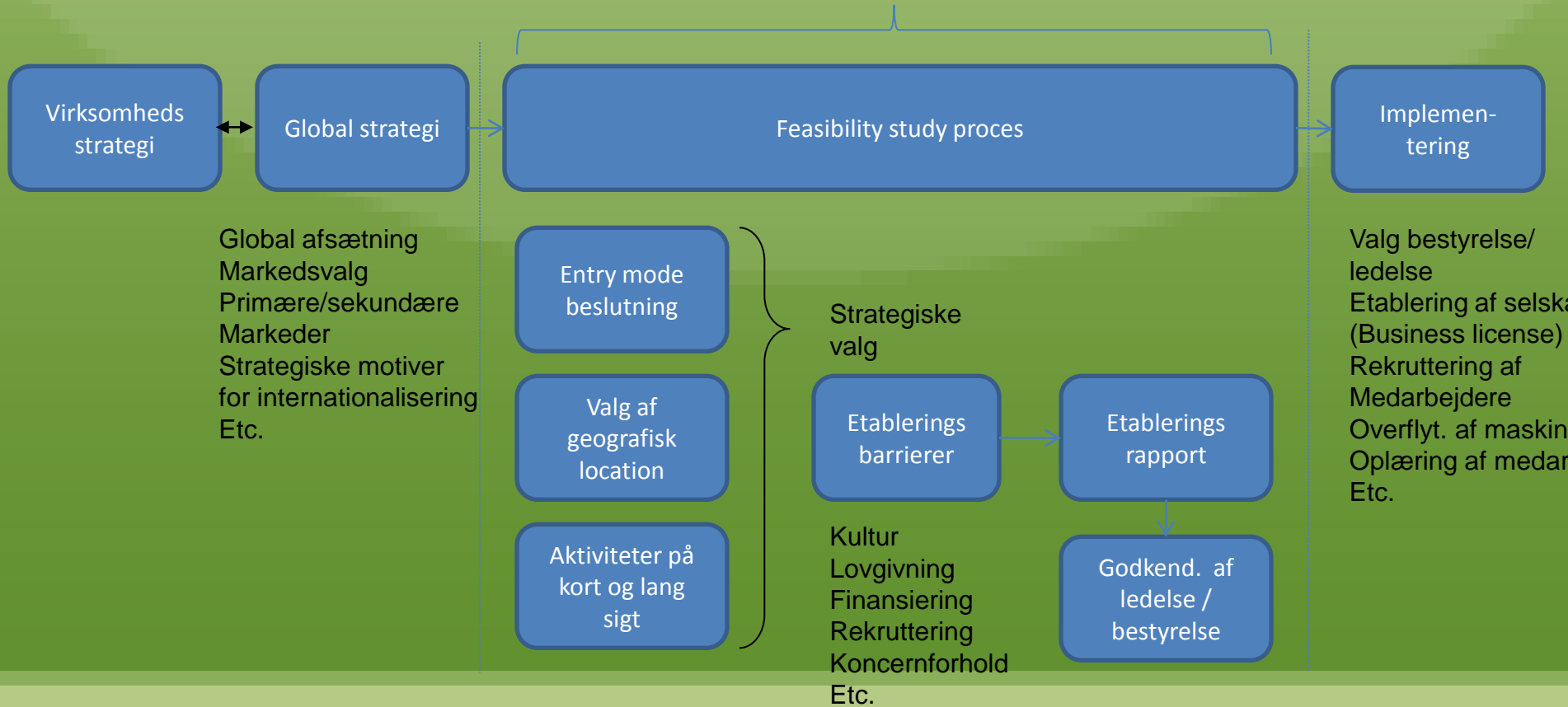
Future Industrialised Sustainable Construction & Urban development (the FISH Programme)

Entering the Chinese market for sustainable buildings and cities through innovation and collaboration with local partners. 2000 hospitals are going to be build in China.

FISH China koncept

- Fra ide til implementering

Gennemsnitlig forundersøgellesperiode = 9 måneder (inkl. 2-4 forundersøgellesrejser)

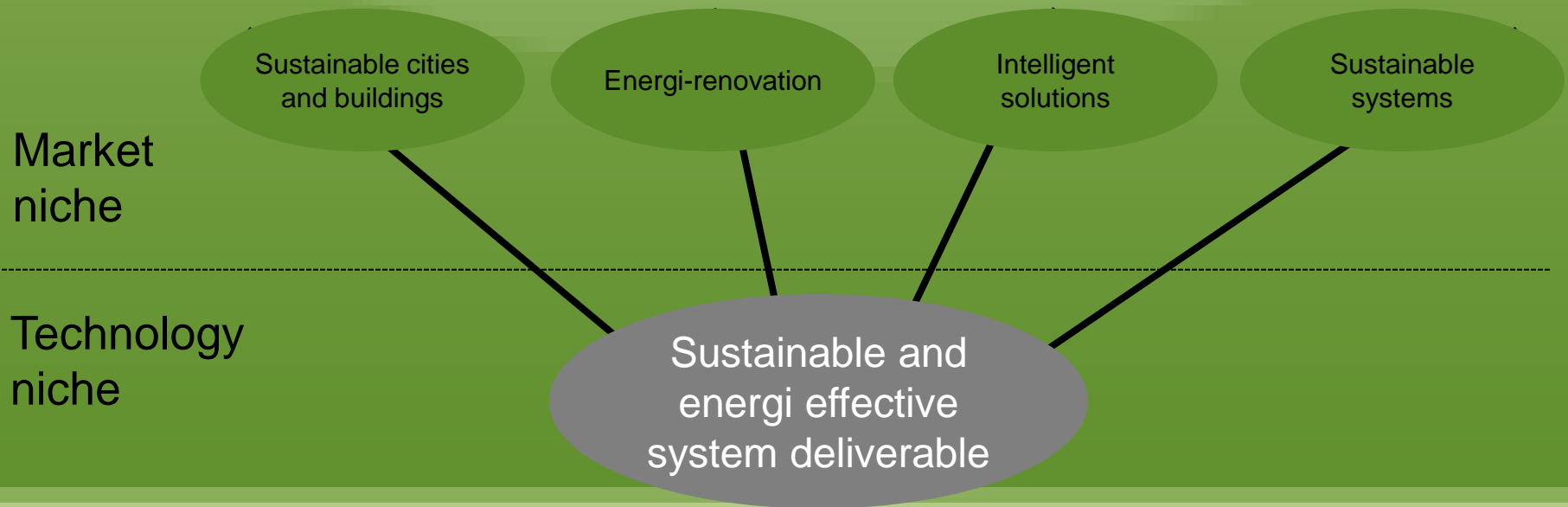


Main purpose of FISHclusters

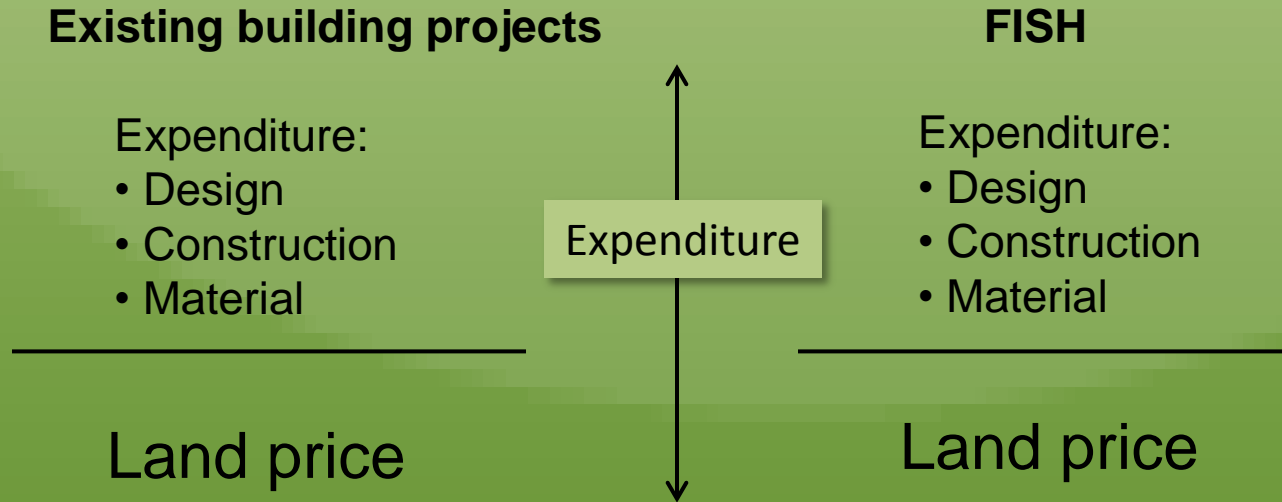
Success criteria:

Over the next three years FISHclusters has the goal of establishing and developing a cluster of Danish and Chinese companies & universities that can develop and execute ECO buildings and Eco cities to the Chinese and German market.

The solutions will be presented in an export configurator as a marketing and sales tool for the developed systems and solutions.



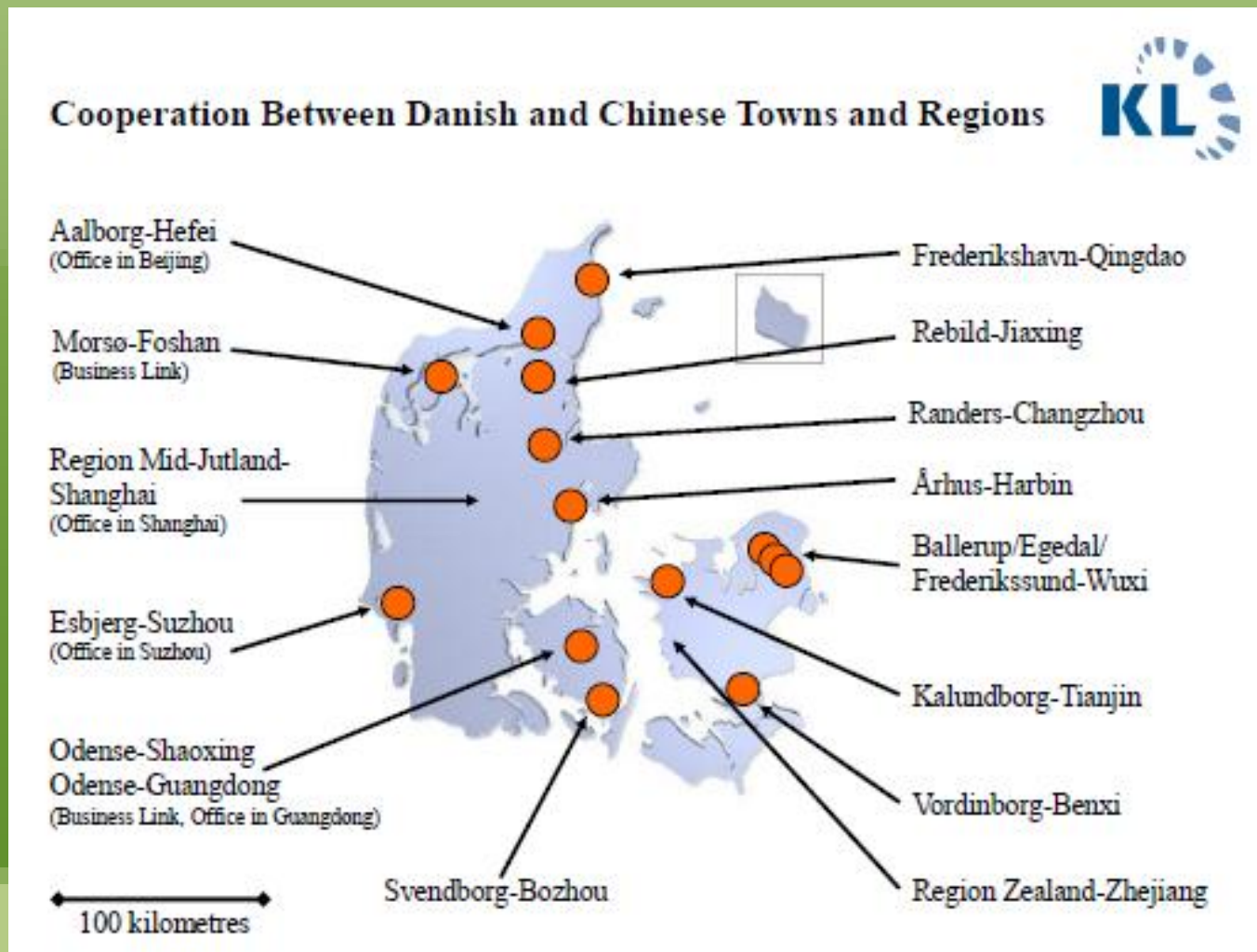
FISH program and success criteria



The price for a low energy department is the same as a normal department

The value proposition for the buyer is: Low energy department will give better indoor climate and will not cost extra

Partnership between Danish and Chinese municipalities (the political level)



Active House

Buildings that give more than they take

Active House is a vision of buildings that create healthier and more comfortable lives for their users without impacting negatively on the climate and environment – thus moving us towards a cleaner, healthier and safer world.

Energy

Contributes positively to the energy balance of the building

Indoor Climate

Creates a healthier and more comfortable life for the occupants

Environment

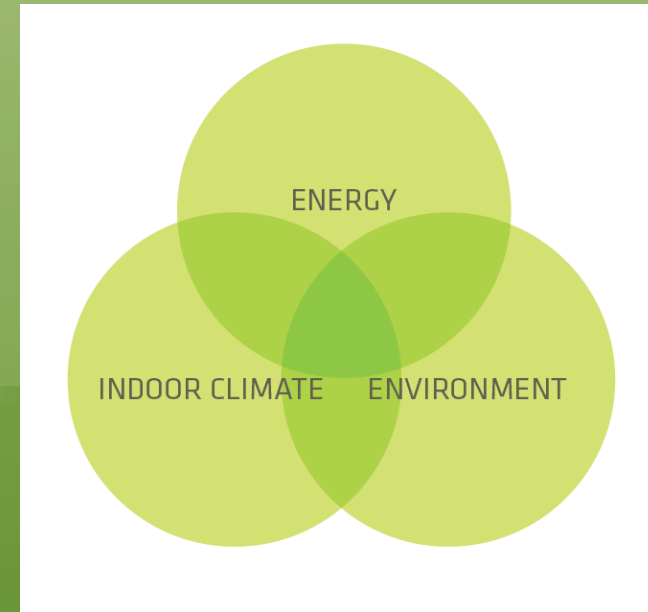
Has a positive impact on the environment

Flexibility

High Flexibility in design, façade-outlook and in use

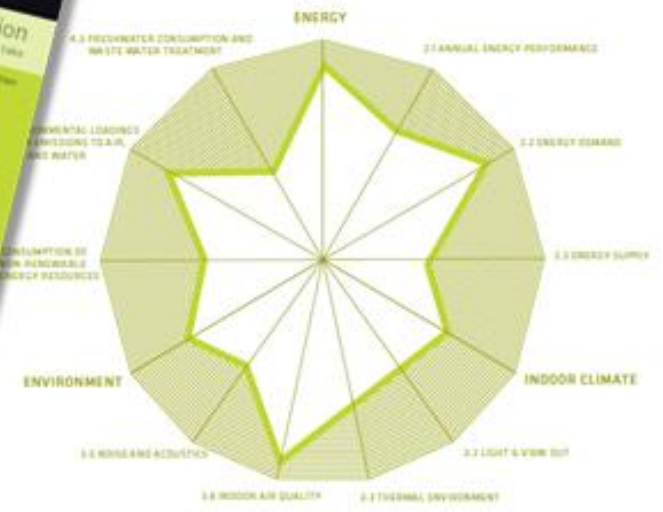
Economy

Intelligent building to measure the energy consumption, indoor climate, carbon foot print, life cycle economy



Activities

Specification and demonstration



FISH and Activehouse

	Objectives
Construction	Using Active house specification to build active buildings in Denmark, China, Germany , Norway and Polen
Development	Developing 2nd generation green systems fulfilling the Active house specifications
Communicate	<ul style="list-style-type: none">• Using an export configurator as a marketing/sales platform for active houses and projectweb for the supply chain• Access to decision tools for choosing the right activehouse concept for specific project

FISH

Sino-Danish showcases

- Science Park - project in Zhoushan (Insigma)
- Sciencepark project in Wuxi
- Active residential houses in Wuxi & Zhoushan (together with local design institut: Shanghai Etopia Building Development).

FISH China



Basic membership

- ✓ Market Intelligence Center & Newsletters
- ✓ Invitations to conferences, export promotions, study trips

Small businesses: 5,000 DKK
(**< 40 million DKK in turnover**)

Large companies: 10,000 DKK
(**> 40 million DKK in turnover**)

Special prices apply for members of:

- ✓ Danish Chinese Business Forum
- ✓ InnoBYG
- ✓ Industrinetværk.dk

Pro membership

- ✓ Market Intelligence Center & Newsletters
- ✓ Invitations to conferences, export promotions, study trips

✓ Participation in construction projects

Partnering and match making opportunities

Joint research and development

Small companies: 20.000 DKK
(**< 40 million DKK in turnover**)

Large companies: 30.000 DKK.
(**> 40 million DKK in turnover**)



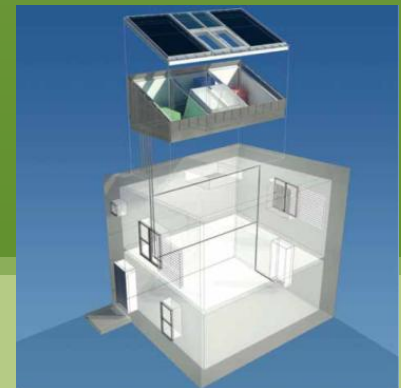
Agenda

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China

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web-based configurator**

Sunshinehouse

Energirenovering med
systemleverancer



Pilot house – Active house

The pilothouse:

试点展示建筑

- The pilot house or show room will be built at the Wetland Park of Xidong New Town. The land will be offered for free for the purpose of building a temporary pilot house (tentatively 5 years) to showcase sustainable Danish building technologies.

试点展示建筑或展示厅将建在锡东新城的湿地公园。土地将免费提供，用于兴建临时展示项目(展示期初步定于 5 年)，展示丹麦可持续发展的建筑技术。

- Tentatively the pilothouse would be an industrialized housing facility for the showcase of Future Industrialized Sustainable Housing.

试点展示建筑初步定为工业化生产的建筑，展示未来可持续发展住宅的产业化趋势。

- The Sino-Danish consortium will finance and build the house with local collaboration.

中丹项目联合体将通过本地化合作共同出资和建造展示建筑。

Westland and the selected area for the active houses (500 m²)



Zhairuoshan Science Demonstration Island



◆ First Science & Technology Research and Demonstration Island in China

Containerhouses as active houses



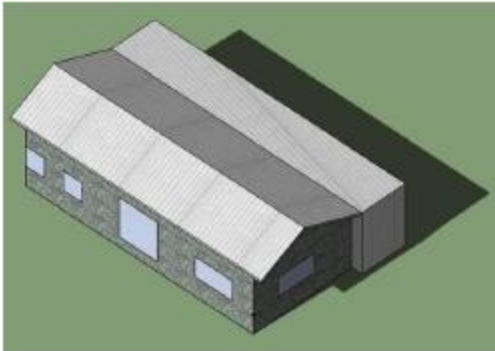
Rendering picture of Etopia container house residential area



Containerhouses as active houses



The exterior wall of the container house



40HQ container house with rock exterior wall



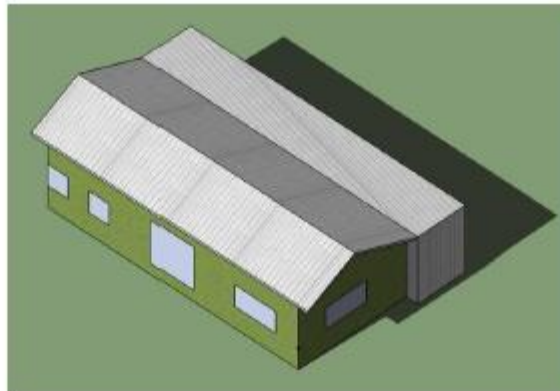
40HQ container house with Wood plastic exterior wall



40HQ container house with cement board exterior wall



40HQ container house with cement cladding board exterior wall



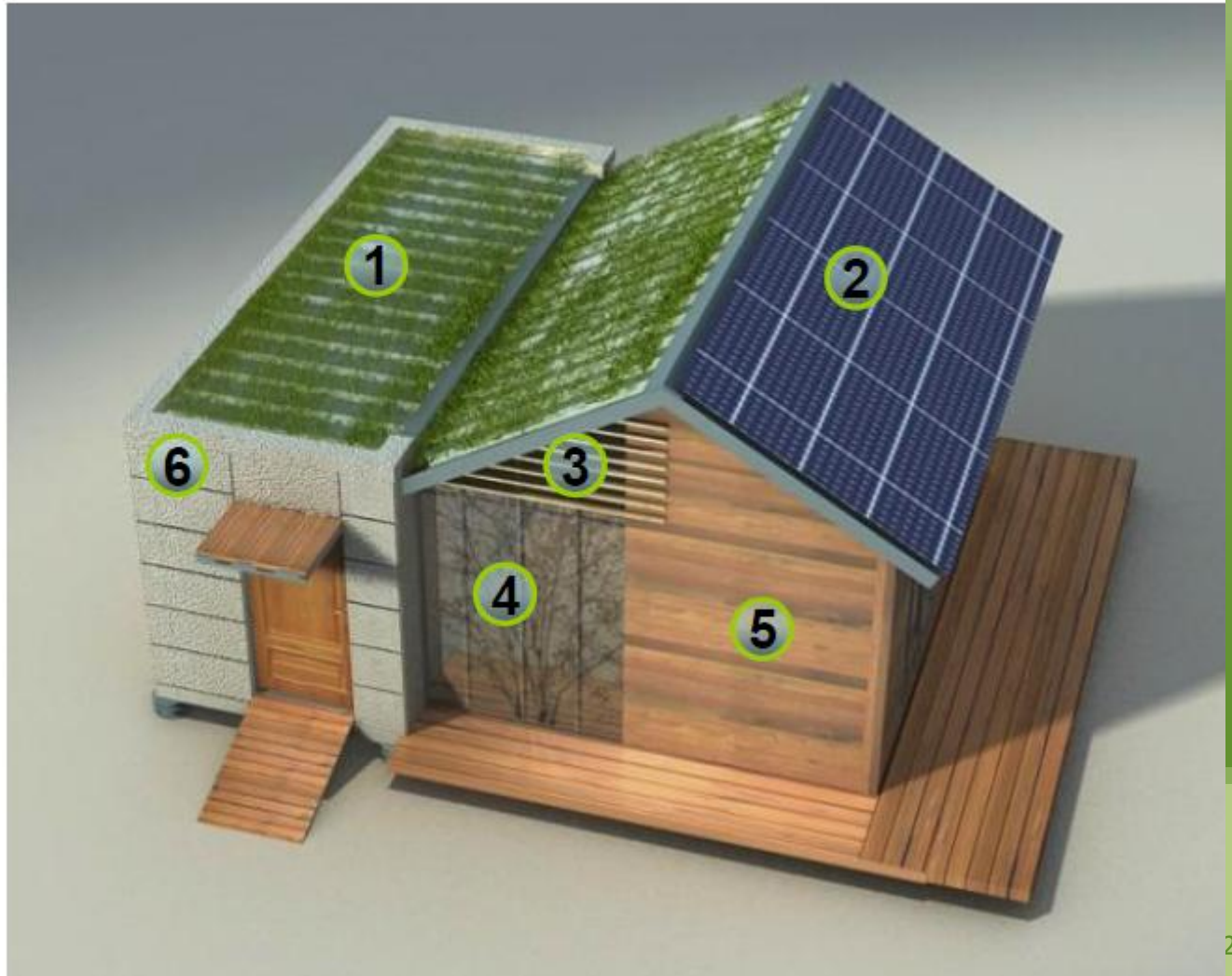
40HQ container house with greening exterior wall

Containerhouses as active houses

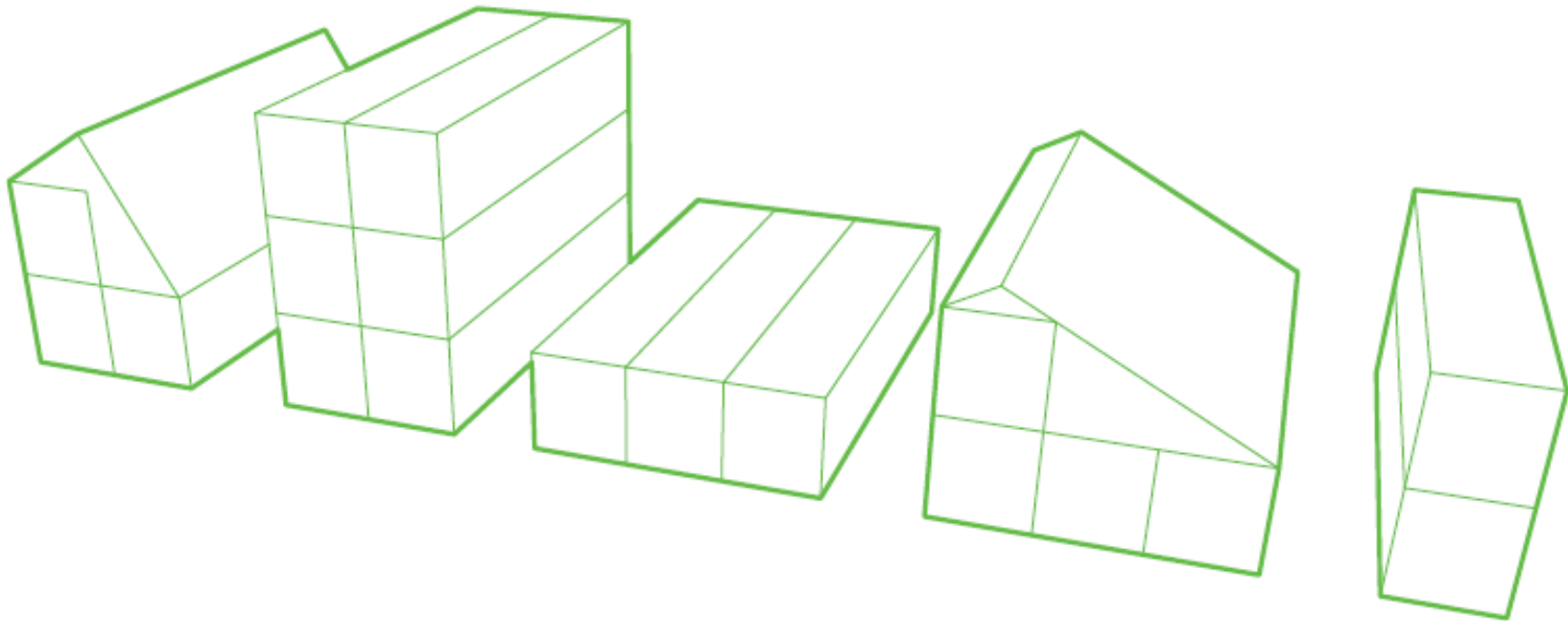


Spot lights of Etopia Container House

- 1、greening roof
- 2、solar-energy panel
- 3、wooden louvers
- 4、LOW-E double glass window
- 5、wood plastic material
- 6、cladding boards



Green Containerhouse as lego bricks



2 etagers rækkehus med overlys og solfanger på taget.

3 etager. Man bygger til over tid. Måske starter man med en enkelt etage. Systemet tillader at bygger op til 5 etager. Mulighed for at bygge tæt.

1 etage, med mulighed for at bygge ovenpå over tid

2 etagers dobbelthuset til to familier.

Smalt byhus i 2 etager.



Active House Kina- Pavillon

1109_MM - SKITSE

EMNE:
Typologier

TEGN. NR.:

Eksempler på forskellige konfigurationer med det samme system.

Tegning 02

SAG NR: 1109_mm

DATO: 13.08.11

IGN:

KONTR: MM

GDOK: MM

MÅL:

MAPT - Mediating Architecture Process and Technology
Ryesgade 19C, 1TV - 2200 København N

TLF: (+45) 9128 0012
E-mail: molle@mapt.dk
Mads Møller



Container-houses with different kind of facade system



Active House Kina- Pavillon

1109_MM - SKITSE

EMNE

TEGN. NR.:

Referencebilleder.'container' /Præ fab rækkehus

Tegning 06

SAG NR: 1109_mm

DATO: 13.06.11

IGN:

KONTR: MM

GODK: MM

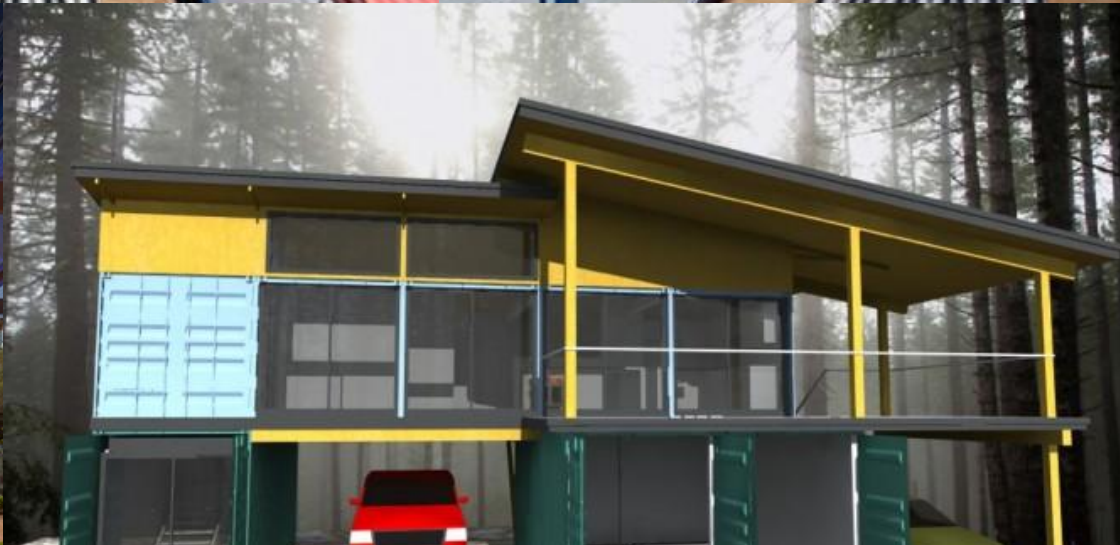
MÅL:

MAPT - Mediating Architecture Process and Technology
Ryegade 19C, 1TV - 2200 København N

TLF: (+45) 9150 0013
E-mail: molien@mapt.dk
Mads Møller



Examples of design layout for containerhouse



Containerhouse interior



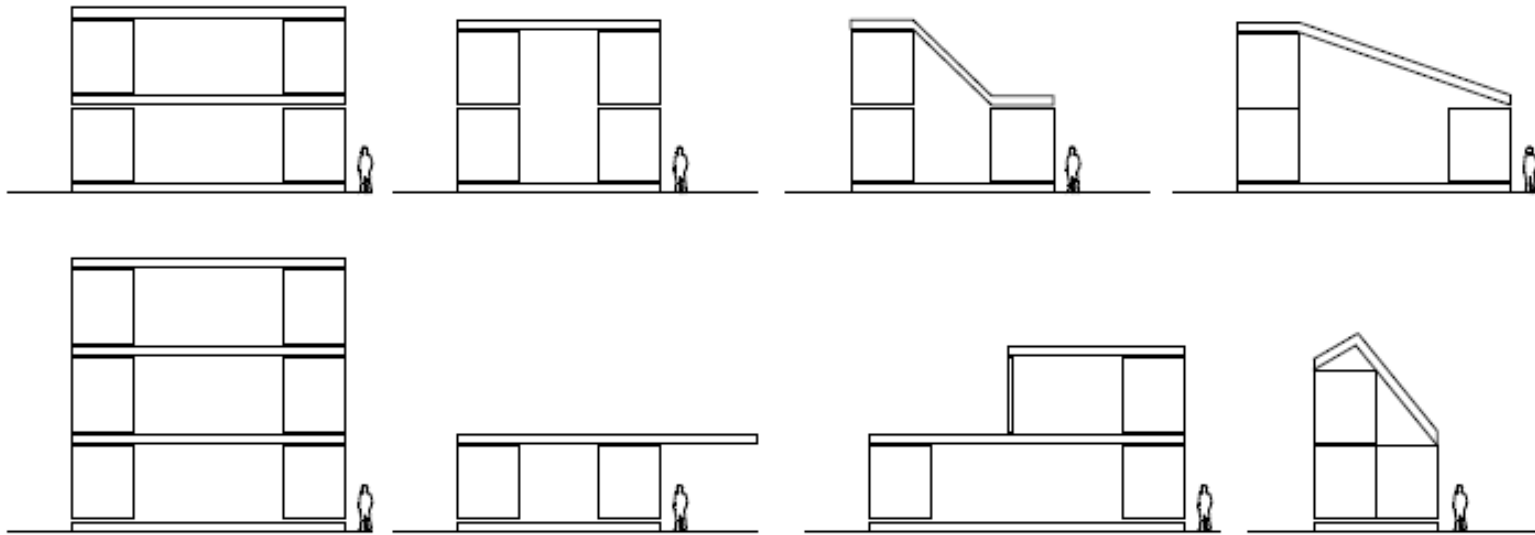
Interior
decoration



卧室氛围1



Modualized containerhouses in Wuxi



Examples of the building system where the container and SkanDek are combined. The properties of SkanDek is the long span and the properties of the container is the ability to carry load and stabilize.

The er is a million of possibilities for combining the systems. The most important fact is that by spanning between containers you get a lot of space for a little amount of money.

Wuxi

1109_MM - Sketch project

EMNE:

TEGN. NR.:

40 Feet + SkanDek

T-A-04

SAG NR: 1108

DATO: 21.06.11

SIGN: MM

KONTR: NA

GDOK: MM

MAL:

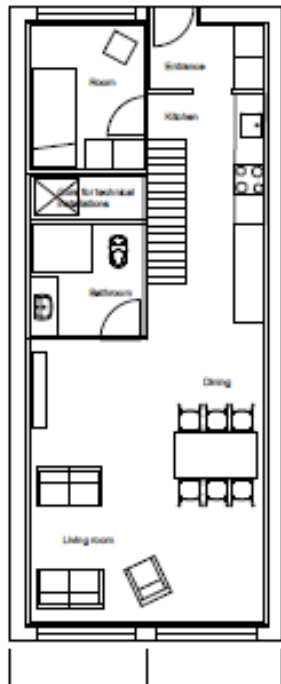
MAPT - Mediating Architecture Process and Technology
Ryegade 19C, 1TV - 2200 København N

TLF: (+45) 81 28 06 12
E-mail: molle@mapt.dk

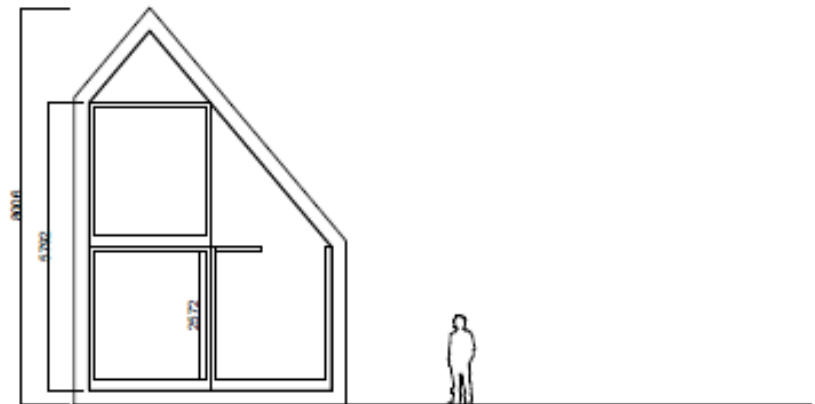
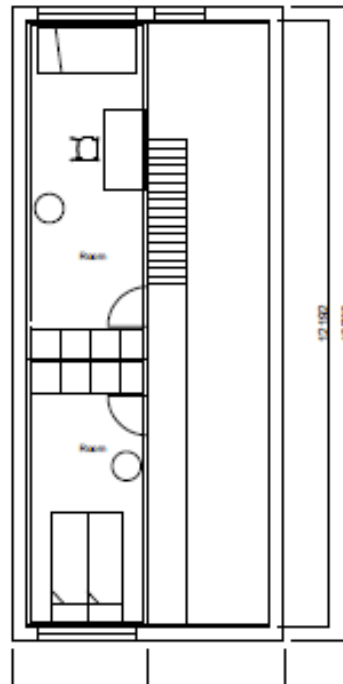


Container house at 120M2

Ground level.



First floor.



Wuxi

1109_MM - Sketch project

EMNE:
Plan and section

TEGN. NR.:
T-A-01

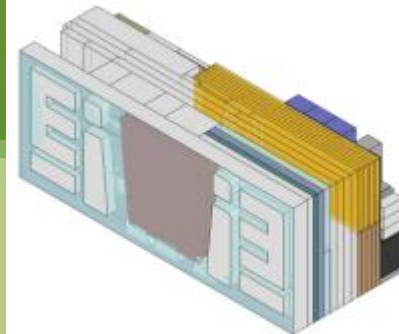
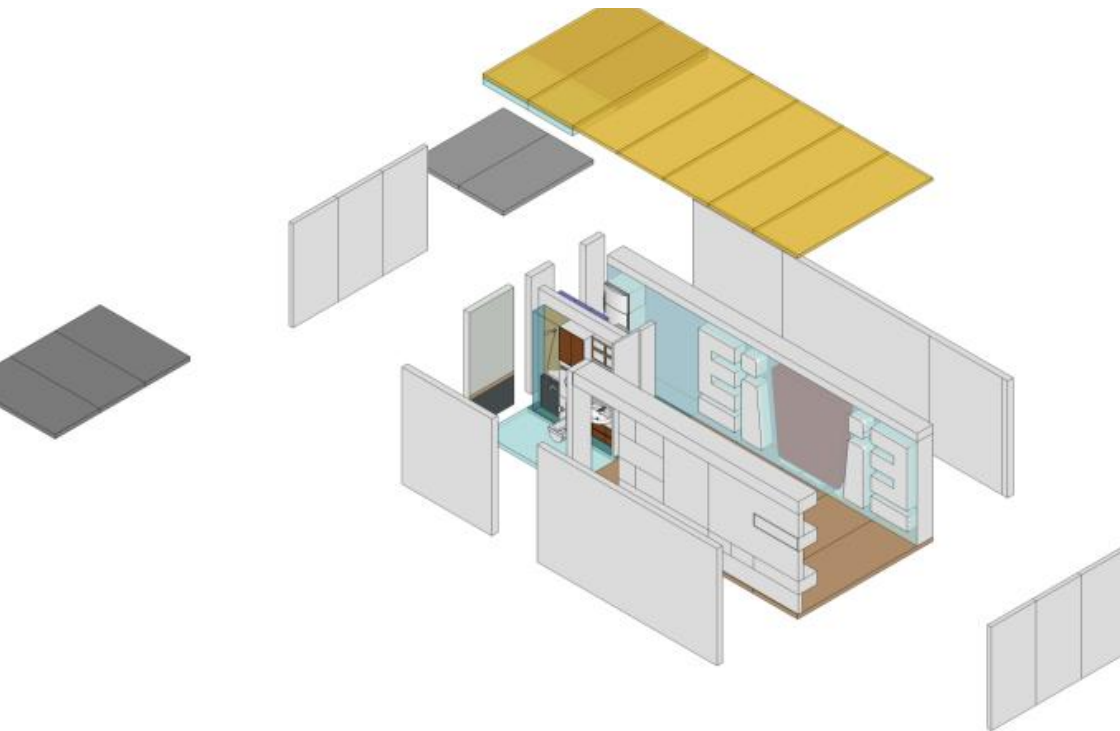
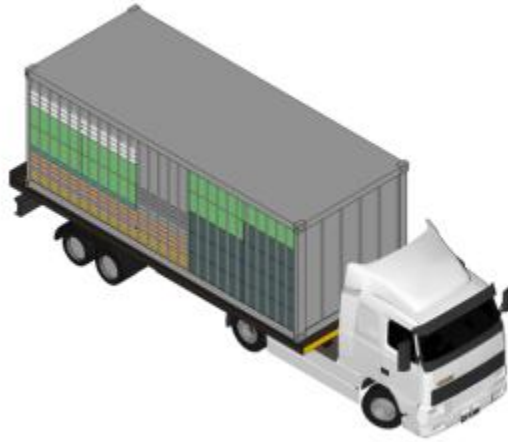
SAG NR: 1108 DATO: 21.08.11 SIGN: MM KONTR: NA GODK: MM MAL: 1:100

MAPT - Mediating Architecture Process and Technology
Ryegade 19C, 1TV - 2200 København N

TLF: (+45) 81 28 00 12
E-mail: molle@mapt.dk



Container house logistics



Business Models for container house

Business – to – consumer (end user demand the container houses and will be the client organization)

Business – to – Business (Chinese developer demand the container houses and will be the client organization)

Business to municipality (the municipality will be the client organization).

Market potential for containerhouses

2011: 10.000.000 building unit (high rise district)

2015: 36.000.000 building unit (high rise district)

New villa's where country side farmers sell their land around the big cities (ie. Beijing) where the middle class segment can build their new villa. The new villa can also be modulized into townhouses. The market potential for these houses is from 200 unit per year up to 1000 unit per year. The size of the basic house is 90M2 in two floor.

Type of container houses

Temporary container houses for earth quake areas or an exhibition house. Price 3-4000 RMB/m² for design & construct. That is the basic house.

Permanent houses (active houses) with more functionality and design. That is basic houses + ad on functional modules. Prices: Design & Construct 4-5000 RMB/m². The target groups are middle class segment.

Target group: Middle class segment

Type of property	Rough Average Price	Average price with decoration
Apartment (90 m ²)	16,500 RMB/M ²	18,500 RMB/M ²
Superposition Apartment (double floors)	22,000 RMB/M ²	26,500 RMB/M ²

Case example: A potential project in Shanghai:

The target group is the middle class clients who live in the middle and south of Pudong.

Clients type	<p>Core clients: live at Pudong San lin, Bei cai, Tang qiao, Hua mu, etc. who want to improve the living condition (along the main road of South Yang Gao Road and Luo Shan Road). They are mainly civil servants, senior management of enterprises and private entrepreneurs.</p> <p>Important clients: live at Zhou Kang, Hang Tou and the surrounding areas, who want to improve the living condition (they are mainly used to live in small and medium sized apartments)</p> <p>Other clients : for the purpose of investment (they are mainly from other areas of the city or provinces)</p>
Scale	Core clients: 70% , Important clients: 20% , Other clients: 10%
Basic characteristics of clients	Age : 25-45
	Occupations: owners or executives of foreign enterprise, private entrepreneurs, executives of national enterprise and institutes, senior civil servants
	Live or work at: Lu jia zui, Zhangjiang, Jin qiao and Kang Qiao (account for 70-80%), other regions (account for 10-20%)
	Income levels: for apartment clients: 0,2-0,3 million / year; for superposition apartment clients: 0,5 million / year or more
Clients Demand	The usage of the real estate: self use (more than 80%, on an improve basis)
	Intention of the property type: concentrated in the small units, innovative superimposed apartments, high value-added and refined decoration
	Size and type: the superposition apartments with more than 200 m ² ; 90 m ² apartments
	Price range: Apartments (1,5 - 2 million RMB); the superposition apartments (4 - 5million RMB)

Id	Task	Start date	Closing date	Duration	Taskforce ansvarlig	K3 11		K4 11			K1 12			K2 12		
						aug	sep	okt	nov	dec	jan	feb	mar	apr	maj	jun
1	Design of one active house in Wuxi - Kickoff workshop	29-09-2011	29-09-2011	1d	Technological Institute											
2	Contract agreement with Arcgency, Esbensen & Shanghai Etopia Building Development	23-11-2011	23-11-2011	1d	World Flexhome											
3	WordFlexhome established	04-11-2011	04-11-2011	1d	WorldFlexhome											
4	Business case for starting up production of container houses (active houses) in Wuxi	12-08-2011	01-12-2011	80d	Technological Institute	■										
5	Design of ver 1 of Container house project using product information form the suppliers	23-11-2011	01-12-2011	7d	Arcgency & Esbensen Engineering					■						
6	Project workshop # 2 with the suppliers, Architects, Engineers, WorldFlexhome	01-12-2011	21-12-2011	15d	Technological Institute					■						
7	Information to Wuxi about needed infrastructure for the active house	23-11-2011	23-12-2011	23d	Technological Institute					■						
8	Final design of the container house in Revit	21-12-2011	17-01-2012	20d	Arcgency & Esbensen Engineering					■						
9	Design user interface of the container house on the web with high resolution animation	17-01-2012	17-02-2012	24d	Etopia						■					
10	Develop a product model of the containerhouse with configuration and 3D model for visualisation	17-01-2012	01-05-2012	76d	Factotech						■	■	■	■	■	■
11	Developing 1 generation of the container house	01-12-2011	01-03-2012	66d	Nordisk Staal, system suppliers					■	■	■	■	■	■	■
12	Develop a final user interface with integration to the product model	17-02-2012	30-03-2012	31d	Factotech							■	■	■	■	■
13	Developing the final container house to Wuxi	01-03-2012	30-03-2012	22d	Nordisk Staal, system suppliers								■	■	■	■
14	Transport the final container house to Wuxi	30-03-2012	31-05-2012	45d	Maersk or System transport									■	■	■
15	On-site assembly in Wuxi	31-05-2012	15-06-2012	12d	WUXI & WorldFlexhome											■

Timetable

Containerhouse company worldFLEXhome will be established in Denmark

The investor group behind the worldFLEXhome are:

- Nordisk Staal
- Abson
- Investor group

The worldFLEXhome wants to start up production in Wuxi

Containerhouse clusters

Arcgency Architects will together with Esbensen Engineering & Shanghai Etopia Building Development design the active house, based on the Active house specification and Chinese conditions. Danish system suppliers to deliver green systems to the active house:

- Container manufacture (Nordisk Staal)
- Intelligent installations (Electronic Housekeepers)
- Green roof and deck solution (Skandek)
- Solar solutions (Solar Venti & Solarglass)
- Insulation (Isover)
- Geothermal varm pump & ventilation systems (Genvex)
- Windows & Doors (Jeld-Wen, Casa, Velux)
- Façade system (Cembrit)
- Wall and ceiling (Knaufdanogips)
- Kitchen (Aubo)
- Bathroom (BM Tag/DEVA)
- Pipes and fittings for water supply in the building (Uponor)
- Stairs (Dolle Trapper)
- Lego (toys)
- Doors (JeldWen and Abson as local representative in China)
- Floors (Juncker Industries)
- Interiør (Boconcept)
- E-business platform (Factotech and Shanghai Etopia Building Development).

Containerhouses on the web



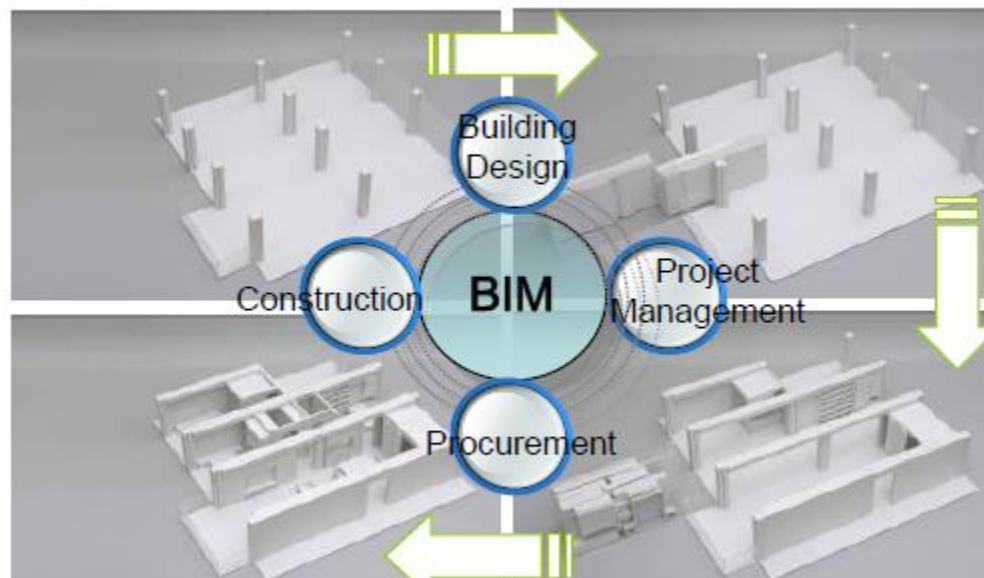
Online Virtual Reality Housing Selling System

E-Infill

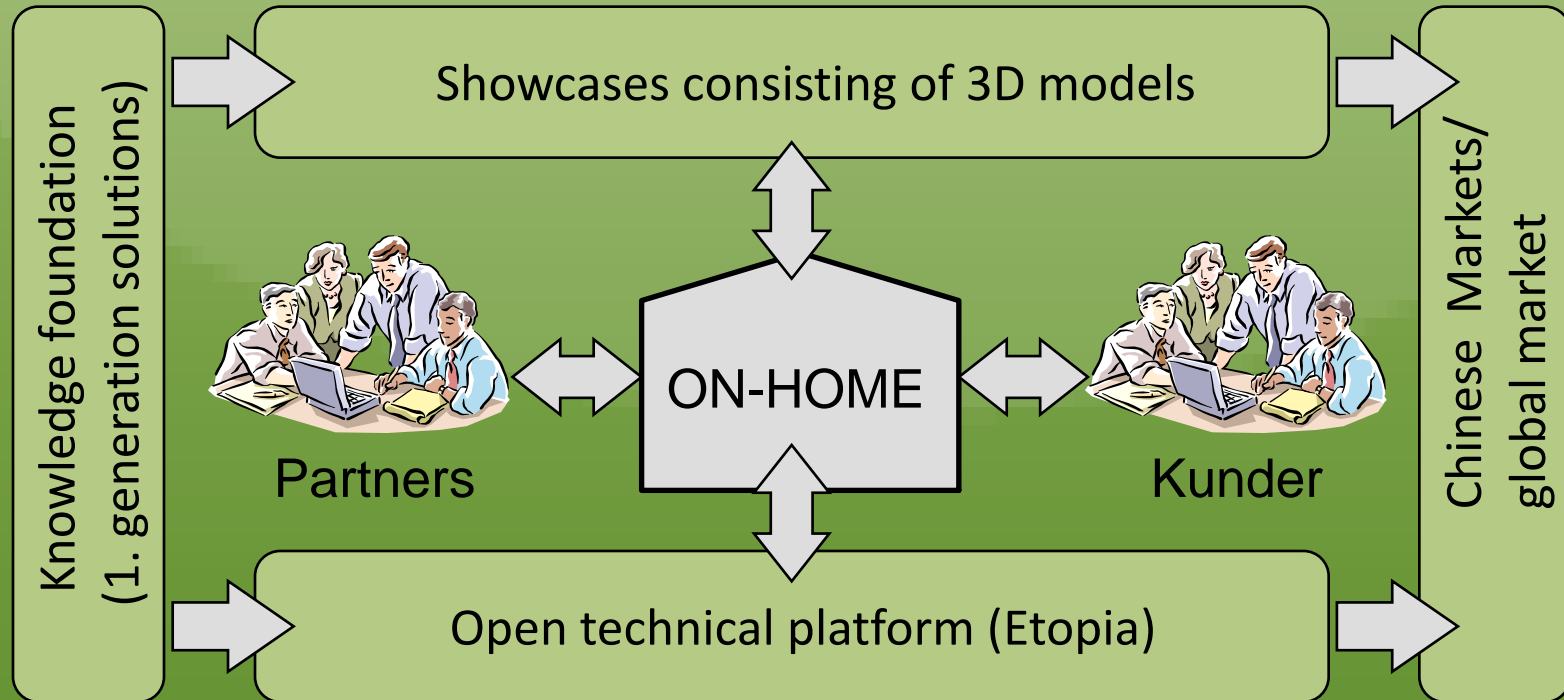


可视化交互设计平台网站 是易托邦公司正在开发的一个融合WebVR（网络虚拟现实）技术、SNS技术（Social Network Service、Social Network Software、Social Network Site）和BIM（建筑信息模型）技术而打造的，服务于住宅全装修和集成住宅市场的公共网站平台。将设计、建造、成本、管理等问题，以“可视化”+“定制化”+“集成化”的理念提出一整套交互定制的解决方案，将整个服务流程通过软件和网站固化下来，并逐渐形成行业标准。

BIM技术(建筑信息模型技术)将整个住宅建造过程的各个环节（设计、采购、施工、管理），以网上可视化方式展现给用户，使用户能够便捷地了解整个建造过程，包括各建造环节的时间节点、成本信息、构件展开图、安装顺序等建造信息。虚拟建造可以提高真实建造的效率，同时规避建造风险。



Containerhouses based on open technical platform on the web



The company network cooperates on developing, uniting and marketing their knowledge on sustainable houses and solutions in intelligent models for the international markets.

The configurator will be created in three levels



- A Virtual Reality model (VR 3D model) making it possible to take a virtual walk in the building
- An object oriented building model in 3D (BIM) where you can click the specific objects in the model and get further information about that object (e.g. a window or a roof construction)
- Access to product specific information by clicking the specific object in the building model

Examples of Content

Download tools for designing specific solutions

ASCOT
Type in specifications of the reference building. All orange figures can be modified.

BUILDING DATA
Building type: Block of flats
Project type: New build
Treated floor area per dwellings: 90 m²
Number of dwellings: 4 at
Number of floor level: 3
Floor height: 2.8 m
Basement temp: 18 °C
Window area/treated floor area: 25%
Distribution of window area: south, west, north, east (45%, 10%, 35%, 10%)

WEATHER DATA
Copenhagen COP

BUILDING REQUIREMENT
Energy class: 75
Currency: EUR

SOLAR HEATING LOCATION
Slope: 0 grader

PHOTOVOLTAC LOCATION
Slope: 0 grader

CONSTRUCTION YEAR
new build

TYPE OF CONSTRUCTION
Medium heavy

HEATING SYSTEM
District heating

MEAT SUPPLY
Natural ventilation

HOT WATER CONSUMPTION
Standard consumption

Yearly energy consumption
Bar chart showing energy consumption for Reference (57.0) and Example (75.0).

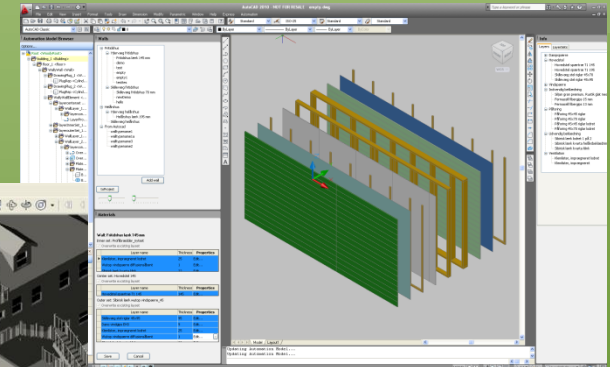
Energy Calculations

Documentation

Building type A

- Construction Status
 - Design
 - Production
- Requirements
 - Buildingcode
 - Delivery content
 - On site construction
- Filter specialties
 - Wood construction
 - Black work
 - Concrete work
 - Plant work
 - Chain work
- Energy certification
 - Constructed acc. to B10D
 - Energy class 2
 - Energy class 1
 - Passive house

Prefabricated Attic
Manufacturer: Atte Group A/S
http://www.attedgroup.dk
Product details: http://www.digitaleprodukt.dk/div/45223



Configurable intelligent Objects

YV01/06/09/10-01

ONV - Grøsvangen

Architectural drawing showing floor plan, elevations, and technical specifications.

Walk-throughs

Building Information Modeling

Links to additional info

Form programmer Dimensioner

Parameters for window configuration:

- FrameMemberWidth (Number)
- SectionDepth (Number)
- FieldFrameWidth (Number)
- FieldFrameDepth (Number)
- Bræde GrosserWidth (Number)
- Dybde GrosserDepth (Number)
- Loftet post Bræde VerticalPostWidth (Number)
- Dybde VerticalPostDepth (Number)
- Loftet Bræde HorizontalPostWidth (Number)
- Dybde HorizontalPostDepth (Number)

Buttons: Close without saving, Save to Project, Save to Database

Content of the ON-HOME

Web-based Configurator, Sustainable houses

Open area

- Get the overview
- 3D component catalogue and search engine
- Showcases in 3D (walk through)
- Sales & Marketing platform
- Product and supplier information

Closed area

- Guidelines/good practices
- Tools for decision support
- Energy Calculation Tools
- Access to intelligent Configurable building objects and complete building solutions (technical platform)
- Projectweb



User interface for the ON-HOME – Configurator

The screenshot displays the user interface for the ON-HOME Configurator. At the top, there are logos for TOPIA and other entities. Below the logos is a navigation bar with search filters: 快速搜索 (Quick Search), 搜索目标 (Search Target), 价格 (Price), 面积 (Area), 户型 (Floor Plan), 层数 (Number of Floors), and 品牌 (Brand). There are also links for 中文 (Chinese) and 英文 (English), and a search icon. Below this is a secondary navigation bar with links: 首页 (Home), 推荐房型 (Recommended Floor Plans), 我的房子 (My House), 论坛 (Forum), 在线设计师 (Online Designer), and 服务流程 (Service Process). There are also links for 注册 (Register) and 登入 (Login).

The main content area is divided into several sections:

- Style Selection:** 豪华型 (Luxury), 舒适性 (Comfortable), and 经济型 (Economic).
- Configuration Panel (Left):** A list of components and systems with expandable options:
 - 一. 结构部件 (Structure Components)
 - 二. 设备管线部件体系 (Equipment and Pipeline Components System)
 - 1 空调系统 (Air Conditioning System)
 - 2 独立供暖热水系统 (Independent Heating Hot Water System)
 - 3 中央吸尘系统 (Central Vacuum System)
 - 4 净水系统 (Water Purification System)
 - 5 智能系统 (Smart System)
 - 6 给排水系统 (Water Supply and Drainage System)
 - 7 弱电系统 (Low Voltage System)
 - 三. 外围护部品体系 (Peripheral Protection Components System)
 - 四. 内装修部品体系 (Interior Decoration Components System)
 - 五. 厨卫部品体系 (Kitchen and Bathroom Components System)
 - 1 厨房 (Kitchen)
 - 2 卫生间 (Bathroom)
 - 2 洗衣间 (Laundry Room)
- 3D Model View (Center):** A 3D rendering of a modern house with a staircase and a compass rose.
- Navigation Panel (Right):** A vertical panel with buttons for AI, OI, and Br, and a directional pad for navigation.

At the bottom, there is a search bar with 即时搜索 (Instant Search) and 批量对比 (Batch Comparison). Below the search bar are tabs for 选定房型 (Selected Floor Plan), 我的房子 (My House), 相似房型 (Similar Floor Plans), and 更多房型 (More Floor Plans). A row of small 3D house icons is shown, with a '看房' (View House) button and a '购房' (Buy House) button. A large green arrow points to the right, indicating the next step in the process.

User interface for the ON-HOME – Configurator



快速搜索 搜索目标 价格 面积 户型 层数 品牌 >>> 中文 ENG

首页 推荐房型 我的房子 论坛 在线设计师 服务流程 注册 登入

豪华型 舒适性 经济型



建筑参数

编号: _____
项目名称: 都江堰样板房
制造商: 上海易托邦建设发展有限公司
时间: 2008年

项目图标: [Info] [Shopping Cart] [Film Strip]



编号: _____
项目名称: 都江堰样板房
制造商: 上海易托邦建设发展有限公司
时间: 2008年
地点: 都江堰
价位: _____

项目图标: [Info] [Shopping Cart] [Film Strip]

选择房型 我的房子 相似房型 更多房型

石房 政府 购房

关于我们 加入我们 合作伙伴

ICP 2242453647

User interface for the ON-HOME – Configurator



快速搜索
搜索目标
价格
面积
户型
层数
品牌

中文 ENG

首页
推荐房型
我的房子
论坛
在线设计师
服务流程
注册 | 登入

豪华型
舒适性
经济型








建筑参数
内装信息
主要建材
评论

编号:

项目名称: 都江堰样板房

制造商: 上海易托邦建设发展有限公司

时间: 2008年

地点: 都江堰

价位:

建筑类别: 薄壁轻钢体系

建筑层数: 2层

建筑高度: 9.974m

建筑面积: 212.98平方米

建筑耐火等级: 三级

建筑使用年限: 结构使用年限50年、建筑使用年限70年

抗震设防烈度: 8度

中国钢铁网 

ABBS建筑论坛 

筑道设计 

衡峰纸膜 

TOTO卫浴 

大众服务 

选定房型
我的房子
相似房型
更多房型

<<














>>

看房
>>>
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>>>

关于我们
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合作伙伴



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User interface for the ON-HOME – Configurator





快速搜索
搜索目标
价格
面积
户型
层数
品牌

中文
EN

[首页](#)
[推荐房型](#)
[我的房子](#)
[论坛](#)
[在线设计师](#)
[服务流程](#)

[注册](#)
[登入](#)

豪华型
舒适性
经济型

标配部件
✕





部件名称: 双开门
 品牌: 宜家
 型号: 2-117
 价格: 500
 特点: 特质优等钢, 轻质, 刚性强

公司网址: www.gangneng.com
 公司地址: 上海市杨浦区军工路1239号

物品选购
历史购物记录



部件名称: 双开门
 品牌: 宜家
 型号: 2-097
 价格: 500
 特点: 特质优等钢, 轻质, 刚性强

公司网址: www.gangneng.com
 公司地址: 上海市杨浦区军工路1239号



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 品牌: 宜家
 型号: 2-097
 价格: 500
 特点: 特质优等钢, 轻质, 刚性强

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 价格: 500
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 品牌: 宜家
 型号: 2-097
 价格: 500
 特点: 特质优等钢, 轻质, 刚性强

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房屋总价







选定房型
我的房子
相似房型
更多房型

















看房

购房

购房

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[合作伙伴](#)












ICP 2242453647

Office building i Zhoushan

**OFFICE BUILDING IN CIXI
INSIGMA**

Architects:
PHOAM STUDIO
Architecture - Design - Research
Wildersgade 46 b, 2. sal
1408 Copenhagen
tel: +45 2254 9678
phoam@phoam.dk
www.phoam.dk

1:1 ARKITEKTER MAA
ANBODER STRUKTURER OG KLIMATILPASNING
T: +45 7030 3301
WWW.1-ARKITEKTER.DK

Engineers:
MOE & BRØDSGAARD
- kompetent og engageret rådgivning
Tertingvej 7
2620 Rudersdal
Danmark
Tel: +45 4457 6000
Fax: +45 4457 6050

CENERGIA
København Hovedgade 150
2710 Sønder
Danmark
Tel: +45 44660099
Fax: +45 44660136

Facilitator:
**TEKNOLOGISK
INSTITUT**
Ongemmervej 3
2610 Taastrup
Telefon T2 20 20 00
Telefax T2 20 20 19



Office building i Zhoushan



Scenario 1 - BASIC
Standard configuration of facade.
Reduction of energy consumption
of 149,6 kWh/m².



Scenario 2 - FLEX
The add-ons and cut-aways are based
on the same module as the windows.
This allows these elements to be built
sustainably and economically whilst also
enhancing the aesthetic appearance of
the building.
Reduction of energy consumption
of 67,5 kWh/m².



Scenario 3 - GREEN
The rooftop additions are also built
utilising the same module as the facade.
This means that the whole building is built
around one modular element whilst being
speciality and aesthetically diverse. The
rooftop is envisaged as a green space,
a sustainable feature which can also be
used as outdoor space.
Reduction of energy consumption
of 49,3 kWh/m².



DECEMBER 2010



PHOAM STUDIO

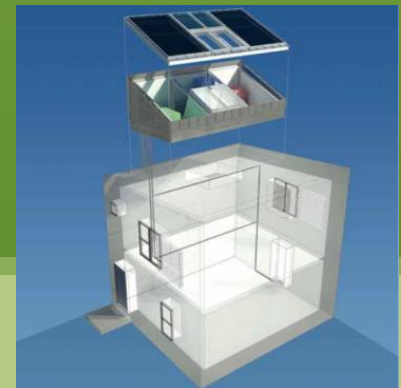
Agenda

Business Concept of FISH
China

Containerhouses and a
web-based configurator

Sunshinehouse

Energirenovering med
systemleverancer



Projektets indhold

Præfabrikerede lavenergiboliger



Bygges efter "Passivhus standarden"

Betyder blandt andet:

- Max. 15 kWh/år/ m² til rumopvarmning
- Max. 120 kWh/år/m² i forbrug til varme, varmt vand, ventilation, hvidevarer og fast lys
- Max. utæthed i opvarmede rum på 1,5 m³/m²/sek målt i Blowerdoor test
- Installering af balanceret ventilation

Omfang og placering

I alt 24 passivhuse, bygget i 2 etager – 12 i Sønderborg og 12 i Dalby ved Kolding.

Sønderborg,

Sønderborg Andelsboligforening c/o Salus

- 6 Eec Living huse, opføres af Hassing-Huset, Hurup
 - Årstiderne Arkitekter, Grontmij, Ellehauge & Kildemoes
- 3 Ai Sunshine huse, opføres af BM Tag A/S, Hobro
 - Ai-Gruppen, Dansk Passivhus Center
- 3 Unit House, opføres af BM Tag A/S, Hobro
 - Prisme Arkitekter, Bascon, Dansk Passivhus Center

Omfang og placering - fortsat

Kolding,

Kolding Ældreboligselskab c/o Domea

- 3 Eec Living huse, opføres af Hassing-Huset, Hurup
 - Årstiderne Arkitekter, Grontmij, Ellehauge & Kildemoes
- 3 Ai Sunshine huse, opføres af BM Tag A/S, Hobro
 - Ai-Gruppen, Dansk Passivhus Center
- 3 Unit House, opføres af BM Tag A/S, Hobro
 - Prisme Arkitekter, Bascon, Dansk Passivhus Center
- 3 Everhouse, opføres af Ginnerup Byg, Skive
 - Dissing + Weitling, Viborg Ingeniørerne, Troels Kildemoes

EEC Living - Hassing-Huset A/S



Everhouse - Ginnerup Byg A/S



Ai Sunshine - BM Tag A/S

Rækkehuse - indgangsside (nord)



aigruppen 

Unit House - BM Tag A/S



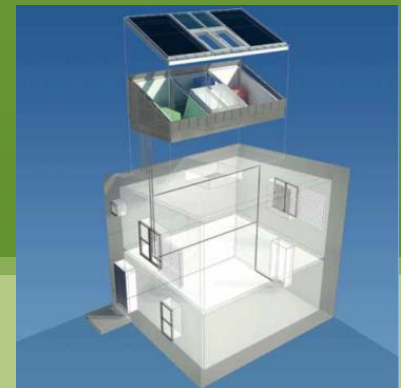
Agenda

Business Concept of FISH
China

Containerhouses and a
web-based configurator

Sunshinehouse

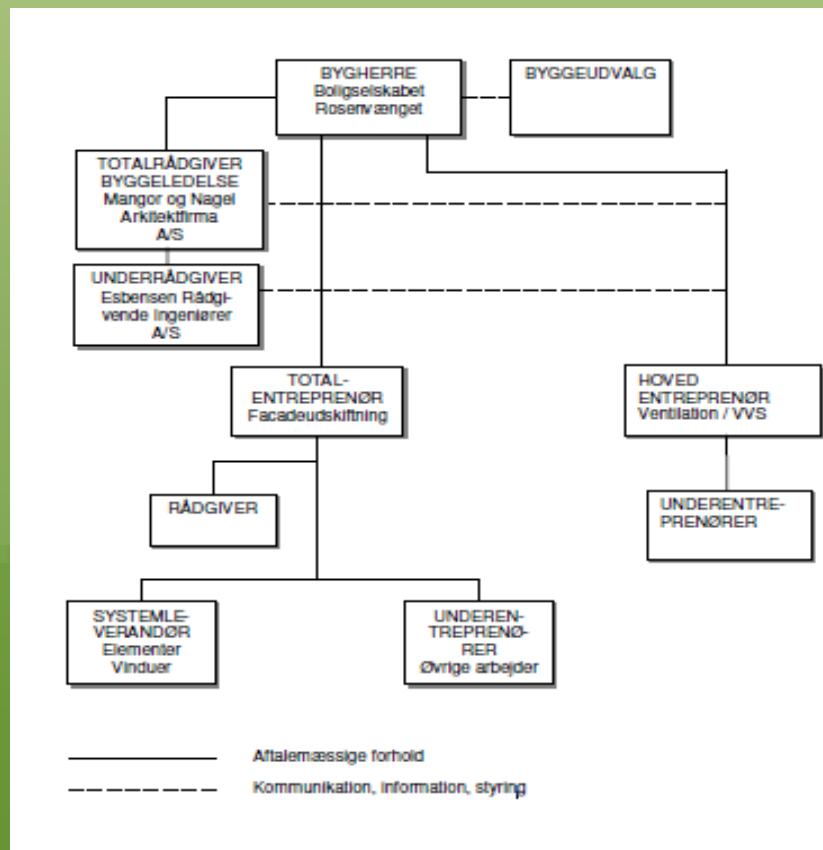
Energirenovering med
systemleverancer





Energirenovering af Boligselskabet Rosenvænget, afdeling 8-5 Frederikssund Nord I Heimdalsvej 51-81 ved Domea

Projekt udarbejdet af Mangor & Nagel Arkitektfirma og Esbensen Rådgivende Ingeniører i samarbejde med Domea. Maj 2010



Afprøvningsprojektets deltagere

Bygherre: Domea

Projekteringsleder og arkitekt:

Mango & Nagel

Sagsingeniører: Esbensen

Rådgivende Ingeniør og Slott

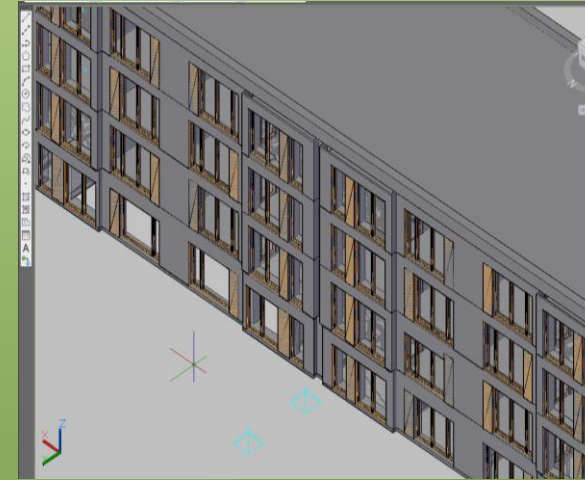
Møller Ingeniører.

Energirenovering, Etageejendom fra 1970-erne

Energiklasse 1 energirenovering med fokus på:

- Udskriftning af eksisterende facade med en let facade med udestue (fremskudte altaner), med 3lagsvinduer og med solafskærmning
- Installering af ventilationsanlæg i hver lejlighed som placeres under loft i lukket skab. Anlægget skal være behovsstyret og nemt at betjene.
- Individuelle vandmålere

Den eksisterende facade udskrifies successivt således at der kun er den bærende betonkonstruktionen tilbage. Udskiftning af eksisterende facader sker lodret, hvor hver lodrette etape renoveres på 1 dag ved brug af præfabrikerede elementer.



Konkurrenceprojektet

Projektet opdeles i en **prækvalifikationsfase** og i en **udbudsfase**, hvor der endelige systemleverandør af facadeløsningen vælges. I prækvalifikationsfasen er udvalgt 7 systemleverandører som efterfølgende skal give tilbud ud fra **det økonomiske mest fordelagtige tilbud** der er specificeret i udbudsmaterialet.

Bedømmelseskriterierne er:

70% Pris

15% Kvalitet af materialer, afvanding, drift og vedligehold samt principielle detaljer

15% Procesbeskrivelse og udførelsestidsplan

Konkurrenceprojektet

Udfaldskravene og funktionskravene til facadeløsningen kan opdeles i:

Vindues funktioner (åbning og lukning mekaniske)

Energi (U og G værdi)

Tæthed i facaden (samlet og i forhold til betonsøjler (lodret og vandret)

Indvendige og udvendige overflader (vejrbestandig, let at vedligeholde og overflade behandling med nano teknologi)

Statiske forudsætninger ved montering

Systemleverandøren

Jönsson a/s er valgt som totalentreprenør og kontraktholder med bygherren Domea. I projektteamet indgår JJW arkitekter, Moe & Brødsgaard og UNS4. UNS4 er systemleverandøren af den lette facadekonstruktion, hvor de har et projekteringsansvar, produktionsansvar og montageansvar inklusiv blower-door test der opfylder tæthedskravene. Jönsson har ansvaret for at eksisterende facade fjernes og for finpudsning af den nye facade og den indvendige væg. Moe og Brødsgaard og JJW arkitekter kommer med de overordnede arkitektoniske- statiske og energikrav til som systemleverandøren efterfølgende skal kunne tilpasse sit systemprodukt til.

Produktion og montage af facadeløsning



Montage af system leverance



Well-known pitfalls

- ◆ Misalignment on strategy
- ◆ Overly optimistic synergy estimates
- ◆ Weak or competitive partner
- ◆ Top management not involved
- ◆ Cultural clash
- ◆ Failure to learn or to protect IP
- ◆ Failure to plan for evolution