

Target Value Design/Delivery TVD *Case PPSHP Alliance*

Jukka Vasara 15.5.2018

Future Hospital 2030, Programme

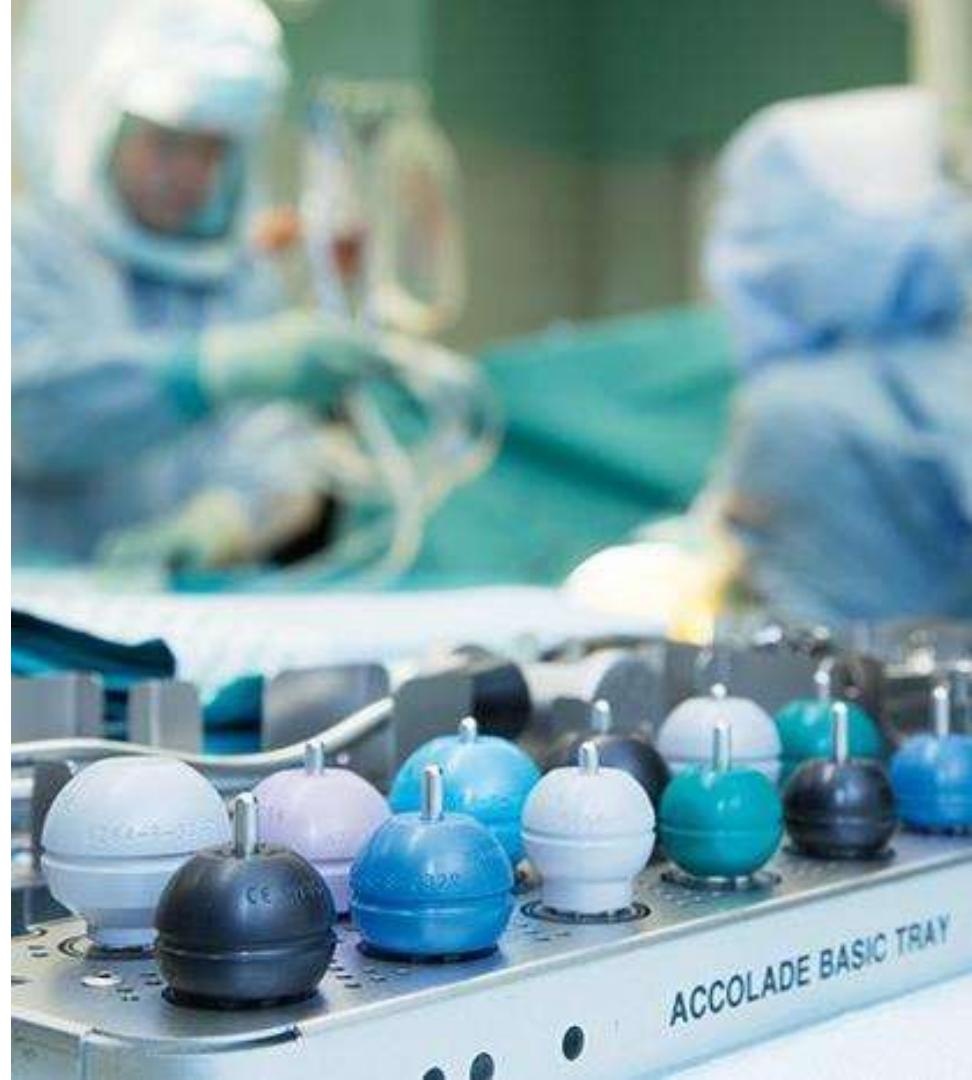
The facilities of Oulu University Hospital were completed in the 1970s and they do not no longer support modern hospital operations or the utilisation of new operational models and technology.



Future Hospital 2030

Programme

There is too little space, the functions are obtrusively apart and obvious renovation needs can be found in all the buildings in the area. The constant development of medicine, the growing expenses of hospital operations and the diminishing resources create their own pressures to the renewal of facilities and operations.



Design

Clear goals

A clear goal in the renewal of hospitals is the flexible use of resources, renewal of professional division of labour, standardisation of facilities and operations, utilisation of information systems and technology, efficient logistic solutions, comfortable facilities, multifunctionality and versatility, as well as energy efficiency and the use of renewable energy sources.



Main figures in Future Hospital 2030



~ **900 M €**

INVESTMENTS

Buildings and equipments ca. 4-6%
from lifetime costs during 30 years



26,6 billion €

OPERATION COSTS

during 30 years operation, based on
current 3% annual increase in costs



- **5,6 billion €**

POTENTIAL SAVINGS

decreasing operation costs from 3 to
1,5 %



10 - 15%

COST EFFICIENCY

performance increase 10 - 15%



3-5

PROJECTS

programme will be executed in
separate projects



- **40%**

ENERGY EFFICIENCY

implementing new technologies there
are 40 to 50 % saving potential in
maintenance costs

TVD

Target Value Design

The alliance is controlled by "value for money" principle, which means the benefits of the relationship between their costs and risks. In other words, it is the quality and cost-optimized complex, which meets the objectives set by the Subscriber.



Target Value Design -principles of the procedure

1. The scope of the project and the status of the program shall be defined in such a way that it is possible to achieve the cost target.
2. Checking the status of the program, whether the Subscriber's functional, cost-and other targets. If not, return to step 1
3. The cost of building components and systems will be set targets, as well as the technical and qualitative requirements and the design will be controlled in line with the objectives
4. the shape of the building, as well as the main structure and system options are made in such a

- way that it is possible to achieve the cost target.
5. Checking whether or not the plan meets the functional, cost-and other targets. If not, return to step 3.
6. Select the other design solutions in such a way that the cost objective will be met.
7. Checking the conformity of the objectives of the plan. If all of the Subscriber's goals will not be possible to achieve by the cost framework, the target will be checked

TVD principles in the development stage

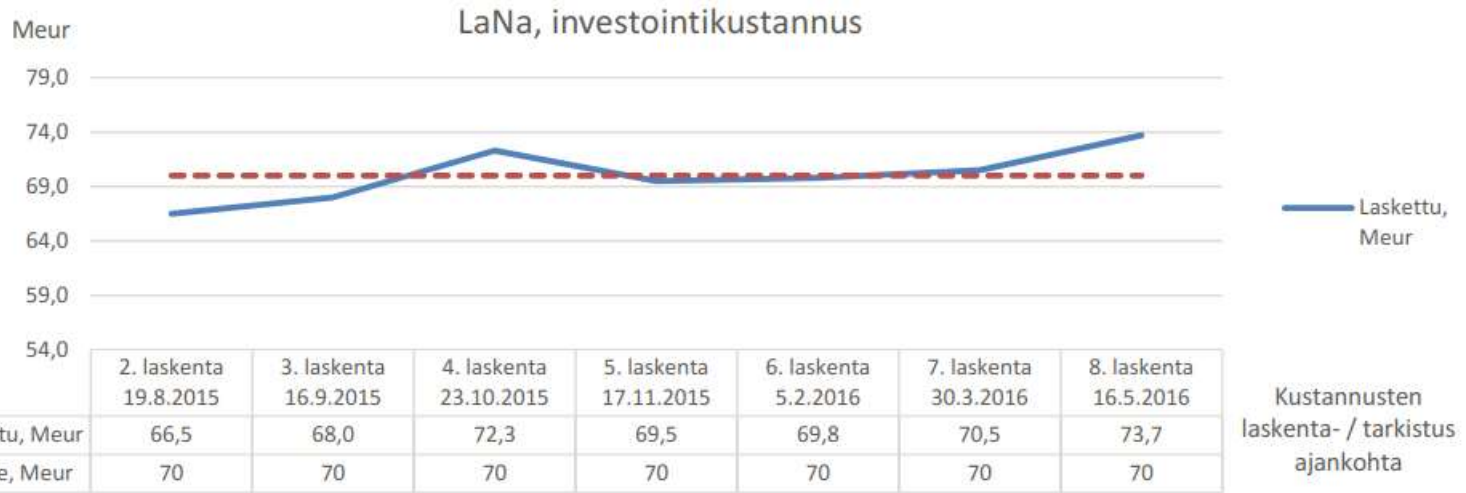
The resource plan (week 36) => Hours and cost objectives at person levels

Yritys / Henkilö	Rooli	Tuntia h				
		1/2016	2/2016	3/2016	4/2016	5/2016
UKI Arkkitehdit Oy						
Mikko Heikkinen	ark-suunnittelun koordinaointi	40	40	30	30	25
Antti Vanhala	pääsuunnittelijan varahenkilö	15	15	15	15	15
Raija-Liisa Miesmaa	arkkitehtisuunnittelu	80	80	80	80	80
Teuvo Tuorila	arkkitehtisuunnittelu	100	100	80	80	80
Pauli Koivisto	arkkitehtisuunnittelu	30	30	30	25	25
Sasu Alasentie	arkkitehtisuunnittelu	70	70	70	70	70
Tarja Fors	arkkitehtisuunnittelu	60	60	40	40	0
Juha Märsy	arkkitehtisuunnittelu	50	50	50	50	50
Janne Kursti	tietomallikoord. varahenkilö	0	0	0	0	0
Tunnit yhteensä		445	445	395	390	345
Tunnit kumulatiivinen						
Veloitus työn osuudesta / UKI ARK		27 732 €	27 732 €	24 616 €	24 305 €	21 500 €
keskilaskutusinta		62,32				
Käyttäjälähtöinen suunnittelu, UKin osuus 1/3						
		40	60	60	60	60
Käyttäjälähtöinen suunnittelu, Valocomp+Tuulikki						
		80	120	120	120	120
Tunnit yhteensä		120	180	180	180	180
Tunnit kumulatiivinen						
Veloitus työn osuudesta / käyttäjäläht. suunnittelu		14 824 €	22 235 €	22 235 €	22 235 €	22 235 €
keskilaskutusinta		123,53				
Matka- ja majoituskulut**						
		0 €	0 €	0 €	0 €	0 €
Toimitila- ja ATK-kulut**						
		0 €	0 €	0 €	0 €	0 €
Muut kulut						
		0 €	0 €	0 €	0 €	0 €
UKI Arkkitehdit Oy Yhteensä		42 556 €	49 967 €	46 852 €	46 540 €	43 736 €

Cost and hours monitoring 1 session/month => Company-specific monitoring

TULSA OYS 2030 / LANA		Toteutusvaiheen suunnittelukustannusten seuranta			Laskutus				Kustannus-				
		Tavoite			Sidottu	Laskutettu yhteensä	Laskuttamatta suhteessa budjettiin	ennuste	Budj-Enn	Enn-Tot	Tot/Enn		
Suunnitteluyrityksen kustannukset		1	2	3	1-3	1-ennuste							
Rakennuttaminen	435 501	435 501	256 515	374 986	371 234	60 267	114 718	69 %					
A-Innostus	303 167	182 360	127 690	54 473	133 805	98 470	4 020	97 %					
Projekti	389 141	249 141	128 625	120 517	239 543	8 791	110 717	54 %					
Pää- ja arkkitehtisuunnittelu	700 041	700 041	271 759	428 281	583 369	116 672	311 609	47 %					
Tarhi-Set	261 081	261 081	42 835	239 247	173 780	110 361	128 947	25 %					
Uu-Akkutehdas	211 340	211 560	128 066	83 491	239 140	-7 580	91 074	58 %					
Lätkä-asennus	206 410	206 410	100 658	105 543	193 448	15 952	91 531	52 %					
Toiminnallinen suunnittelu	277 758	277 758	135 467	142 291	245 945	31 813	110 478	55 %					
A-innostus	27 640	27 640	26 977	93 661	63 817	14 353	35 360	43 %					
Arkkitehti	298 118	298 118	108 490	91 621	182 881	17 511	74 218	59 %					
Rakennesuunnittelu	262 675	262 675	83 869	178 806	210 269	52 406	126 400	40 %					
Tote-suunnittelu	624 380	624 380	273 450	350 930	638 876	-14 490	365 430	43 %					
Asiantunt. Suoraan (alku)	500 185	500 185	213 236	286 354	522 686	-22 500	309 460	41 %					
Asiantunt. Tampere (LPE)	124 205	124 205	60 224	63 876	116 188	8 011	55 969	52 %					
Erikoisuunnittelu + varaus	298 000	298 000	64 223	233 677	219 123	78 877	154 800	29 %					
2030-suunnittelu	17 000	17 000	0	17 000	0	17 000	0	100 %					
ESL					68 038	1 962	49 000	28 %					
ESL					23 589	8 539	8 000	66 %					
ESL					20 000	0	15 000	25 %					
ESL					4 494	-4 494	0	100 %					
ESL					13 911	2 080	8 000	42 %					
ESL					25 348	24 623	23 000	9 %					
ESL					14 405	15 603	14 400	0 %					
ESL					26 544	3 051	14 400	45 %					
ESL					23 000	27 000	23 000	0 %					
Yhtei					2 208 810	325 545	1 183 426	48 %					





2. Updated infra changes and the cost of the helicopter field

3. Technical facilities and corridor spaces are larger than planned

4. Teaching, research and administration spaces added

5. Cost saving workshop findings

6. The wards are modified to comb-model

7. The calculations focused to the building block-level

8. Contractor workshop feedback

Big change

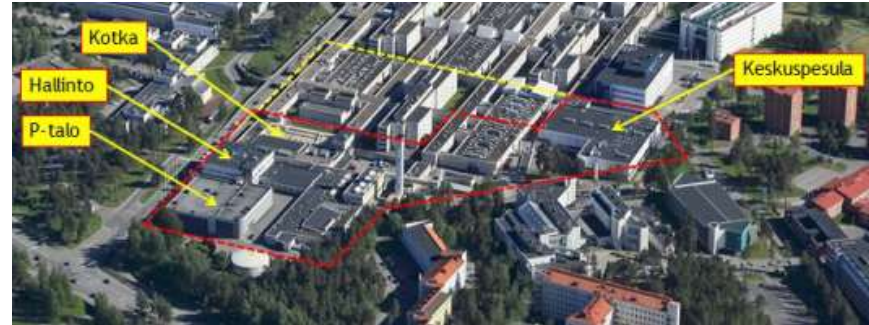
Email from subscriber 15.4.2018

- The design and construction of the technical implementation of the Alliance will be suspended – so far
- "In a rapidly changing policy environment, big changes have been made (SOTE solutions, regulation of centralization, and the needs for uninterrupted surgery) , that has an impact on the progress of the implementation phase of the project in the original schedule. It affects the location of the building, the functional content, format and size of the building."

In the project will begin the development phase 2

The options being studied

Existing Master Plan



Value for money

The progress

- Updated Master Plan
- Takes into account the changed operating environment
- Assessing the impact of the accelerated timetable (benefits, disadvantages, risks)
- Executive Board 14.5.2018
- Hospital Council 4.6.2018 => decision



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