Corporate Real Estate Management back to basics? A re-invention of the operational foundation of CREM

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Abstract
Since the nineties of the last century - due to the influence of international trends – the role pattern of Corporate Real Estate Management (CREM) of big companies and organizations is developed from pure operational to – to a large extent – strategic.
Some of the top priorities were:

- New developments of headquarters
- Real Estate as profitable asset in Portfolio Management
- Inside-company lease or rent out: a separate real estate 'company inside the company'

It sometimes was seen as a kind of strategic playground for CEO's, but as one of the results of the declining economic growth in the first decade of the new century and certainly after the break out of the worldwide financial crisis in 2008/2009, the strategic asset of corporate real estate is declining and the operational benefits are rediscovered again.

The Eindhoven University of Technology – the host University of this year's ERES 2011 Conference – has changed its processes of maintenance and control in a way, that it could be a matter of re-invention:

- Distance its self from an – exclusive - strategic approach.
- But not going back to the – original – small technical (building, electrical and mechanical engineering) basis.
- But to a new, on innovative and rally demand driven CREM organization on direct production and services focused operational restructuring, maintenance and control.

This re-invention leads to a brand new focus on policy and on daily work processes from the staff of the Division Maintenance and Control – where one of the authors is leading manager. The re-invention is illustrated with the casus of one of the University Campus buildings.

The paper could be an initial guide for modernization for CREM organizations. But – in times of the actual financial crisis – could also be an eye-opener for commercial real estate companies, whose lack of interest for their actual renters of their assets is often so huge, that – in general – one even doesn't know the names of the included firms!

Key words: CREM, operational management, strategic management, commercial real estate marketing

1. Introduction: the creation of an Innovative, Demand Driven CREM model

The last 25 years showed an increasing role of CREM inside the entire Corporate Real Estate Management from pure operational maintenance to pure financial strategic asset management. After the break out of the worldwide financial crisis in 2008/2009, the strategic asset of corporate real estate is declining and the basic management reaction to this all is: higher efficiency through CREM budget cuts and CREM outsourcing

Opposite to this trend, the Eindhoven University of Technology – the host University of this year's ERES 2011 Conference – has changed its processes of restructuring, maintenance and control in a way, that it could be a matter of re-invention:

- Distance its self from an – exclusive - strategic approach.
- But not going back to the – original – small technical (building, electrical and mechanical engineering) basis.
- But not follow the mean stream trend: efficiency (instead of effectiveness) and total outsourcing (instead of tactical and operational professionalism).
- But to a new – really – innovative and – really – demand driven, on direct production and services focused operational restructuring, maintenance and control.

The Division Maintenance and Control of the CREM organization of the Eindhoven University of Technology has rediscovered the tactical and operational benefits of CREM again.

This paper shows the 'roller coaster ride' of Corporate Real Estate Management trough the CREM history of the Pavilion, the oldest building on the – only 55 years young – Campus of the Eindhoven University of Technology. Also the specific features of the developed Innovative, Demand Driven CREM model are discussed.

In section two of this paper 'Theory: CREM as a hierarchic growing phenomenon', some theoretical reflections about the - relatively short – history of Corporate Real Estate Management (CREM) are presented.
Theory shows successive CREM models from pure Operational to pure Financial Strategic as a natural 'race to the top': a kind of natural growing process.
Due to the world wide Credit Crunch the strategic importance of Corporate Real Estate almost decreases completely. The basic management reaction to this all is: higher efficiency trough CREM budget cuts and CREM outsourcing. The CREM theory answers with the conversion of the present CREM organization to a so called Directive Organization model and finally, into its ultimate outsourcing consequence: a so called Demand Organization model.
The Authors of this paper state that the risks in so called Directive Organization models only will increase and that the renewing and innovative importance of so called Directive Organization models will be outmost modest: both parties will restrict themselves to the most traditional concepts.

Section three: 'Eindhoven University of Technology Campus and Pavilion Building' illustrates the in section two described theoretic development from CREM as pure operational model to CREM as pure financial strategic model and back to a - renewed – interest for maintenance and control abilities of CREM. At the end of the first decennium of 2000, new, evolving innovative and demand driven user needs appear. These new, evolving innovative and demand driven user needs influenced the answer to the arose question: 'how to organize this maintenance?'

In section four: 'Re-invention of CREM: innovative and really demand driven'
Diametrically opposed to this trend of complete outsourcing the Division Maintenance and Control comes with a completely renewed approach for CREM maintenance and control of Corporate Real Estate Management: Innovative and – really - demand driven. It can be characterized by five CREM re-inventing aspects.

The Pavilion Building on the Campus of the Eindhoven University of Technology was a kind of pilot project for reorientation for the new role of Corporate Real Estate Management in restructuring, maintenance and control of buildings, Service installations and terrains. In section five: 'Innovative demand driven CREM and the Pavilion Building', the aspects of the new CREM model are showed.

The final section six: 'Conclusions and discussion' emphasizes the demand driven character of this new CREM model with help of 'Use Valuation survey methods'. Also the innovative character of this new CREM model is underlined. It is realized trough intensifying the relation between the division Maintenance and Control and its external contractors with help of the developed model 'Entrepreneurial cooperation' (see other paper: Nattem, van & Proveniers 2011 b).
The paper could be an initial guide for modernization for CREM organizations. But – in times of nowadays financial crisis – could also be an eye-opener for commercial real estate companies, which lack of interest for their

actual renters of their assets is often so huge, that – in general – one even doesn't know the names of the included firms!

2. Theory: CREM as an hierarchic growing phenomenon ??

Theoretical reflections about the - relatively short – history of Corporate Real Estate Management (CREM) show the last 25 years an increasing role of CREM inside the entire Corporate Real Estate Management. Because of this CREM is the last 25 years also better and better represented in the direction of the top management of the company, sometimes even inside the Company Board itself, and even sometimes represented trough the CEO himself.
Theoretical models, as that of Joroff, let it appear as this 'race to the top' would be a kind of natural growing process. Most of these models are shaped as a hierarchic pyramid. CREM started as pure operational maintenance of buildings, services installations and terrains. Most models see this as the basics of CREM: Operational CREM as the basis of the hierarchic pyramid. The next (sub) layer of the hierarchic pyramid is financial control to strengthen the financial efficiency (in some models regarded as a sub layer of the operational basis of CREM)
In most models the next layer in the hierarchic pyramid is a tactical Layer. It can also be divided in several sub layers. One of these sub layers can be standardization in service level packages. Another can be the creation of - a quasi – internal CREM market inside the company itself.
The 'top of the pyramid' is the strategic layer. It is a completely mixture of Real Estate interests and Key Business interests: the so called strategic role of Corporate Real Estate and its Corporate Board representatives. When the economy was booming and Real Estate prices were going up, Corporate Real Estate could be regarded as one of the high valued assets of the company.
Characteristic for this development seems to be that the distance to the Management top is decreasing but simultaneous the distance to the corporate production and services processes seems to increase.

The 2001 nine-eleven Twin Tower Incident marks a turnaround in the economic growth of the nineties of the twentieth century and with this also a turnaround in the strategic role of Corporate Real Estate inside the Company. The Asset value of Corporate Real Estate declines when in the Netherlands the volume of hired out offices and industrial property declines and more and more office blocks and industrial property remain empty. Also as a result of the world wide Credit Crunch - whit its progressive manifesto since 2007 – the strategic importance of Corporate Real Estate decreases even more. Simultaneous the Corporate Key business products processes and services processes came under more and more pressure and even can stagnate.
The basic management reaction to this all is: higher efficiency trough budget cuts and outsourcing. The CREM theory answer to higher efficiency trough budget cuts and outsourcing is the conversion of the present CREM organization to a so called Directive Organization model and finally, into its ultimate consequence a so called Demand Organization model: a total outsourcing to just one external party: a contractor with an Integrated Facility Management Contract.

This main stream efficiency and outsourcing trend is in several studies also modeled as a natural growth process: the total outsourcing as a natural result of a growing professionalization (FMN).
This natural growth process in CREM models started with small facility kernels fragmented over the total Corporation.
The next hierarchic stage is called the Traditional CREM Organization model. All small facility kernels which were fragmented over the total Corporation are bundled in one organization. The Traditional CREM Organization has its main focus on operational renewal, maintenance and control. The Traditional CREM Organization takes tactical decisions for renewal, maintenance and control. It makes also the preparations for the actual building and maintenance activities: the (building) specifications. A lot of maintenance and facility activities are executed by the Traditional CREM Organization itself. For the rest of the activities external contractors are selected. Most with so called 'volume based contracts' and 'effort based contracts'.

The following hierarchic stage in CREM Organization models is the so called Directive Organization CREM model. In this model, complete maintenance and facility tasks are sourced out, inclusive some strategic, almost all tactical and certainly all operational aspects. The internal CREM Organization only gives the directives, makes the selection of external contractors. For this the internal CREM Organization investigates the wishes of the 'internal clients': the sub-organizations and employees and the directives of the Corporate Board. The internal CREM Organization is much smaller than the Traditional CREM Organization.
The almost final hierarchic stage in CREM Organization models is the so called Demand Organization CREM model. The total staff of the Demand CREM Organization is minimal.
And finally, into its ultimate consequence a so called Demand Organization model has a total outsourcing to just one external party: a contractor with an Integrated Facility Management Contract.

The theoretical presentation of CREM models as a natural – successive - growth process leading to the total outsourcing as a natural result of a growing professionalization, suggests growing benefits with each successive CREM model.
The Authors of this paper state that the risks in so called Directive Organization models only will increase and that the renewing and innovative importance of so called Directive Organization models will be outmost modest: both parties will restrict themselves to the most traditional concepts. The increasing risks endanger the pursued efficiency. With this, all further claimed advantages of the so called Directive Organization model also seem to disappear to. (see second paper: Nattem, van & Proveniers 2011).
The ultimate goal of the re-invention processes of the Division Maintenance and Control of the CREM organization of the Eindhoven University of Technology was to create a new – really – innovative and – really – demand driven CREM model.

3. Eindhoven University of Technology Campus and Pavilion Building

The in section two described – theoretic – development of CREM models can be illustrated with the history of the Eindhoven University of Technology Campus and Pavilion Building. This historic view also clarifies the need for a new – really – innovative and – really – demand driven CREM model.

Pavilion Building: 'breeding function' for creation of new Departments
The Eindhoven University of Technology is a relatively young University, This year – 2011 – it had its 55 year founding day. It may be surprising that a relatively young University is located so near to the city centre and main railway station. The reason is the ground quality for building in this part of the city. The nowadays campus was former marshland and there were also some garbage dumps on it. This made it relatively expensive to build on it. This while only a few hundred meters away good sand soil for easy solid building foundation was available. This marshland needed concrete pile foundation up to 20 meters and also an extra sand bed up to 2 meters to create more or less stable roads (with relatively long and heavy rainfall you still can have spontaneous rain holes in the pavement). This heavy concrete pile foundation explains also the building envelopes: medium to high rise (for Dutch standards) buildings.

On the nowadays Campus location the first building was the Pavilion building, build in 1958. The pavilion building is an a-typical building for the campus: low: only one layer, and very extended. It was built on sand on the back end of the marshland. The Pavilion had a breeding function for the young University: till the 1980's all the different Departments started to grow in the Pavilion and stayed there till their adolescent stadium. Some of them moved to the 'Main University Building', further growing till maturity, until their brand new building was finished.
The Pavilion building was very suited for this breeding function. In the centre around the main entrance is 'the hart' of the University / Department. In the back of the main entrance is a pond with fountain and representative offices and meeting rooms. There are also two lecture halls, one of the restaurants and there is room for several department libraries. From the hart 'the navel string': a four meter broad corridor, go's to both ends of the

pavilion. On the 'navel string' are a lot of side way corridors on both sides with office rooms for one, two or three lecturers (depending on their hierarchical status). Each corridor could accommodate a new scientific group, ready to grow and with room to grow. At some ends there are restaurants, so each Department can work on their own typical culture. Some of the corridors end in small halls, which can accommodate other functions, among which technical shops and laboratories. Parts of the Pavilion have special technical infrastructure, as high pressure air, special gasses, high voltage electricity, laboratory air conditioning, et cetera.
The 'navel string' with side corridors pattern is also very suitable for extra built-on additions: in 1959 the Q-Pavilion was added (Dommelgebouw) in 1968 the 'New Pavilion' (NP = Paviljoen Bouwkunde) and in 1994 R-Pavilion were added to the original building.
In between the different side corridors different kind of gardens and terraces arise. In spring and summer windows stand wide open and even tables and chairs were placed outside. In autumn and winter the long corridors gave a kind of monastery feeling of continual scientific thought….

Loss of 'Breeding function'
In the 1980's there came an end to the breeding function of the Pavilion. The last two Departments were the Department of Architecture, Building and Planning and the Department of Economic Science and Management. The Department of Architecture, Building and Planning moved to the main building. So the function of the Pavilion changed from 'breeding building' to Department building. As a department building it is less functional than as 'breeding building'. Some of the positive breeding building functions appear to be negative for a Department building. The vast layout surface with only one layer and al lot of small extensions gives the Pavilion a lot of façade surfaces and a lot of roof surfaces. This causes a lot of maintenance costs, especially as the labour costs are rising since the 1965 (painting, roof repairing, et cetera). Built in 1958 there are almost no heat insulation measures in facades and in the roofs (thin single glass, no insulation materials and - lucky – almost no asbestos!). Also due to the vast rising fuel prices, the heating costs rise more than average.
The less favourable proportion between net office space and corridors and total gross space causes not only for – in ratio with other buildings – extra maintenance costs, extra heating costs, extra lighting costs but also extra costs for daily cleaning maintenance. Also a number of extra linear meters waterworks, sewer drains, heating drains and heating radiators, electricity cables and other special piping leads to maintenance costs and periodic replacement costs.
So, as temporary 'Breeding building' the pavilion functioned well but as a Department Building the Pavilion became old and obsolete and also: expensive in maintenance and daily operations. Under 'old' CREM circumstances and models this would be inconvenient but not dramatic problematic. As showed in the theoretical section, in the 1990's CREM organization models changed. First in the directions of optimizing, cost efficiency and cost reduction and a first, partial outsourcing. When the Pavilion is still a part of the total University Operations and maintenance budget, the extra costs of the Pavilion are spread out over the total University budget. But later on, when the intra-preneurship model for CREM arises, the extra costs per Department building are passed on to the budgets of each separate Department. So, for the Pavilion in this case on the budget of the Department of Economic Science and Management.

In the 1990's four grounds for a more strategic approach van CREM appear:

New Dutch Governmental trend: financial budget cuts and more market organization.
For the 1990's, the top financial responsibility for Governmental and University buildings is for the Dutch State Government. All building maintenance, operations and renewal are part of a complicated yearly planning and budgeting system. This also leads to specific yearly budgeting and planning CREM model, in which the University CREM organization had – and only could had – a traditional operational function.
The Dutch Government decentralizes all the University buildings financial and CREM planning responsibilities to the Universities Top Management Board, realizing also budget cuts.
In that time period it just happened that a fire broke out in the service installations of the Auditorium building of the Eindhoven University of Technology. Using the unclear transitional phase and due to excellent networking of

the CEO of the Corporate Board, The University gets some budget for renewal of the service installations and some additional extra building improvement, including heat isolation of roofs and facades.
With this fire, in instant it became clear that on the strategic financial level, far-reaching measures were necessary for intended new-building, renewal and maintenance and daily operation of the University buildings. The Eindhoven University buildings were all at the same time 25 to 30 years old and stood all for main maintenance.

Simultaneous: new thoughts about the lay out of the Eindhoven University Campus
The old 'transistor printing plate concept' of the Eindhoven University Campus on witch every Department has his own building also becomes obsolete. The number of students of each Department fluctuates dramatic and also definite changed. Also new study disciplines were launched as split offs of existing departments. There are also constant new ideas and trends in education organization that had to be facilitated. Also the branding value of the 'transistor printing plate concept' declines: the 'transistor printing plate' itself became obsolete and the 'industrial look' of the facades and terrains - which in the post war period was a promise for work and welfare – now was regarded as 'grey and boring'. And last but not least complete new laboratory facilities are needed to maintain a prominent role in world wide scientific competition.

Simultaneous: increased growing of the strategic financial asset role of Corporate Real Estate Management,
The economic booming of the 1990's leads to continuous increasing values of Corporate Real Estate Buildings. When the economy kept booming and Real Estate prices were going up, Corporate Real Estate could be regarded as one of the high valued assets of the company. Because of the recent obtained financial responsibility for their own University Buildings the strategic financial asset approach was of special interest for the Universities.

Necessity for a new division Real Estate development as part of the University CREM organization.
Inside the University CREM organization, a new division for Real Estate development was founded to tackle – in first stage - some of the above mentioned problems. Soon, the inter action and inter relation of all the above mentioned problems was seen and got the highest – strategic financial asset management – priority of the Corporate Board.

New compact Main Campus Real Estate concept.
The main Campus Real Estate concept was to make a more compact University Campus and to sell and hire new or renewed buildings to third parties who ought to be more or less related to the research activities of the University. The selling and hiring out of the new or renewed buildings to third parties should be the financial basis for the renewal of old University buildings which stay in use and for the new to build buildings.
The new Compact Campus will be more attractive trough a linear green central strip on which all University buildings are gathered. The reconstruction, demolishment and rebuilding of the University buildings should take place in a kind of planning cycle: first a new building for 'Department one' than reconstruction of the old building of 'department one''. Then removal of 'Department two' to the reconstructed building. And so on.
This reconstruction planning cycle had an energetic start, but at the end of the last century, the constant rising construction prizes slow down the planning.

The first decennium of 2000: a decline of the financial strategic asset role of Corporate Real Estate
The 2001 nine-eleven Twin Tower Incident marks a turn around in the economic growth of the nineties of the twentieth century and with that in the strategic role of Corporate Real Estate inside the Company as well. The main stream new trend seems to be outsourcing of CREM. This starts with a Directive Organization model and ends with its ultimate consequence: a total outsourcing to just one external party: a contractor with an Integrated Facility Management Contract.
This main stream outsourcing trend is in some cases modeled as a natural growth process: the total outsourcing as a natural result of a growing professionalism (FMN)

Also for the CREM organization of this University, the vast declining strategic role of Corporate Real Estate is of importance. The Asset value of Corporate Real Estate declines when in the Netherlands the volume of rented offices and industrial property declines and more and more office blocks and industrial property remain empty. The plans to develop new Real Estate on parts of the Campus and to hire these out to market parties are substantial slowed down. The Credit Crunch - with its progressive manifesto since 2007 leads to a further shift to the future. The construction costs also decrease, but in a much slower tempo and financing of the new to build Real Estate remains the greatest bottle neck.
Now the prospect of a prompt reconstruction or renewal expires, the necessity for maintenance becomes urgent again.
For the Division Maintenance and Control of the CREM organization of the Eindhoven University of Technology the question arises: 'how to organize this maintenance ?':

- Going back to the 'old' operational oriented CREM goals and management ?
- Following the new outsourcing trends of a 'Directive Organization' and finally to a 'demand organization' with only one contractor as partner?
- Or develop a new inspiring, surplus value added third way??

New, evolving user needs: innovative and demand driven
As result of a declining financial strategic interest of Corporate Real Estate the renewal of University buildings, service installations and terrains gets substantial slowed down. Now the prospect of a prompt reconstruction or renewal expires, the necessity for maintenance becomes urgent again: the economic live span of buildings, service installations and terrains has to be extended on an as effective as possible way.

The Division Maintenance and Control had to make a move.
The Division Maintenance and Control takes as starting point the main stream new trend what seems to be outsourcing of CREM. This starts with a Directive Organization model and ends with its ultimate consequence a Demand Organization CREM model: a total outsourcing to just one external party: a contractor with an Integrated Facility Management Contract.

But – also in regard of the specific aspect of the situation: the **temporary** extension of the economic live span of buildings, service installations and terrains – it is necessary to search for a so effective but also as efficient as possible way of optimizing 'production and services' in Education and Research.
Because the situation for each Department and each Department building is very different, the maintenance and operations measurements per department and department building will also differentiate substantial.

In addition, the Eindhoven University of Technology profiles itself especially as an innovative University, situated in a utmost innovative European top Region: the so called Brainport Region. Brainport Region is stretched out in between Eindhoven (the Netherlands), Leuven (Belgium) and Aachen (Germany). Eindhoven University of Technology gives – in all its external business relations – an optimized infill to its statement: 'Where Innovation Starts'. So the Division Maintenance and Control especially wants to integrate innovation in its activities and - in this way - extra contribute to the Corporate Key Business of the University.

The Eindhoven University of Technology also needs to have a quite differentiated infilling of CREM services and service levels, because of its quite differentiated Key Businesses: the quite different 'hardware' and quite different main cultures of its various Departments. The Department of Physics and the Department of Chemistry especially need top level laboratories, where – one could say – top level scientists live their entire live between their apparatus. On the other hand is inside the Department of Economic Science a continuous contact with external business entrepreneurs, what requires a higher quality level of work places and meeting facilities and restaurant facilities. The Department of Industrial Design and the Department of Architecture Building and Planning have to show an ever going creative production.

For the Division Maintenance and Control of the CREM organization of the Eindhoven University of Technology the new, evolving innovative and demand driven user needs influenced the answer to the arose question: 'how to organize this maintenance?'
The outcome was: an out of the Division Maintenance and Control of the CREM organization initialized innovative surplus value produced third way: optimizing 'production and services' in Education and Research trough differentiated - demand driven and eventual specific per Department – offer of buildings, Service installations and terrains, trough restructuring, maintenance and control of Corporate Real Estate. This with full agreement of the Corporate Board.
Beside these focus on effectiveness, also a focus on efficiency (budget cuts) remained necessary.

4. Re-invention of CREM: innovative and really demand driven

'On route' to a Directive Organization model and finally to a Demand Management Organization, for the Division Maintenance and Control it became clear that the Directive Organization model and the Demand Management Organization model don't facilitate such quite diverse and innovative (= not standard) options and solutions. (see other paper: Nattem, van & Proveniers 2011 b).

Diametrically opposed to this trend of complete outsourcing the Division Maintenance and Control comes with a completely renewed approach for CREM maintenance and control of Corporate Real Estate Management: Innovative and – really - demand driven. It can be characterized by five CREM re-inventing aspects:

- 'Curved bend thinking'
- New means of communication
- Innovation oriented CREM model
- New decision making structure
- Reorganization of the CREM organization

In this section the main focus is on 'new mains of communication': the User Valuation survey methods as basis for communication with internal clients. The other four CREM re-inventing aspects are only briefly, as far as necessary to understand the concept of the Innovative Demand Driven CREM model.

- **'Curved bend thinking'**

'Curved bend thinking' symbolizes the paradigm shift from traditional building maintenance thinking to corporate key process organization thinking. Innovative and really demand driven maintenance and operation of Buildings, service installations and terrains – also in temporary extension of economic live span - demands a constant 'curved bend thinking' from 'horizontal time-oriented maintenance' to the volatile 'vertical hierarchic-process thinking'.

- **New means of communication**

Inside the technical domain there is already the turn around from 'building specifications oriented contract communication' to a more 'performance oriented contract communication', but both of these operate in a – relative – small circle of professionals.
Architects, interior design architects and related consultancies use user oriented communication with principals and users to make the so called 'design brief' for further architectural design for new buildings.
But common used means of communication for assessment and adjustment of already adjusted rooms, halls, service installations, et cetera of already used buildings are still rare.
The Division Maintenance and Control of the CREM organization of the Eindhoven University of Technology hired different external consultancies with different methods to make a reconnaissance of different possibilities for getting some grip on this communication level of 'user valuation survey methods'.
Two Dutch methods are:

User needs by Systematic Elaboration method of the Dutch consultancy Bureau Interface of the Department of Architecture, Building and Planning, Eindhoven University of Technology:
The method is directed to a very differentiated use of a – qua design and usage – very differentiated building.
The basis of this method is each specific space/room of a building.
All user groups of that specific space/room are identified and surveyed.
This leads to specific User groups <-> means and activities patterns, which can be aggregated to 'standard activity patterns' for all different kinds of User groups. (The premise is that these 'standard activity patterns' less differentiate than all kinds of possible rooms.)
The User groups of a specific room give an assessment of their specific use of that room (the use facilitation of that specific room to that specific activity) and an indication factor of the importance of this activity for the whole process performance of the user group (for instance: for an education group is a lecture room of high importance. For a research group a lecture room is of less importance)

Quick scan work condition and situation diagnosis, combined with occupancy measuring of the Dutch consultancy Bureau 'Centre for People and Buildings'
The method is directed to more standardized activities of a - qua design and usage – more standardized building.
A pre condition to use the method is the presence of a lot of standardized location related properties and facilities.
A representative sample of Users is surveyed about their satisfaction or dissatisfaction with these properties and facilities. The consultancy bureau has done a lot of these standardized surveys on more or less standardized use activities. The outcomes of all these surveys are bundled in a bench mark used by the consultancy bureau - the so called 'satisfaction indicator'. Statistical calculating determines or the particular surveyed group is – in average - more satisfied with a certain situation or facility, or – in average – more dissatisfied with a certain situation or facility, than in the bench mark: the 'satisfaction indicator'.
The occupancy measuring indicates if certain facilities are over occupied or under occupied.

Important difference between both 'User oriented valuation methods' is the use of more or less standardized activities in - qua design and usage – more or less standardized buildings.

Essential is to realize that starting this kind of 'Use Valuation survey methods' means: starting a continuous communication process with the end users of the Corporate Building facilities. These 'Use Valuation survey methods' lead to expectations about adaptation and improvement of end user Corporate Building facilities and to a continuous monitoring of the end user satisfaction. If there is no intention to do this then these 'Use Valuation survey methods' could have a negative impulse on the Corporate key processes.

- **Innovation oriented CREM model**

As stated before in this section the Division Maintenance and Control lays special emphasis on an innovation oriented infill of the new CREM activities, partly because of the deep differentiation of activities between different departments and partly because of the innovation driven activities of the Eindhoven University of Technology.

During the orientation process of the Division Maintenance and Control on a new innovation oriented CREM model, it became clear that the main stream new trend models of outsourcing of CREM, starting with a Directive Organization model and ending with the Demand Organization model (a total outsourcing to just one external party), mainly will lead to traditional – inflexible - concepts, and quantitative increasingly extensive – and trough this more inflexible – contracts.
To encounter this 'non-innovative, inflexible dilemma', the Division Maintenance and Control has developed the model 'Entrepreneurial cooperation', in which – consciously and during several phases of the CREM processes – along several organizational lines on several organizational levels, cooperation takes place between the CREM organization and external contractors. For the CREM organization as for the external contractors as well, this

brings about an experimental zone for use of innovative and demand driven developments. (see other paper: Nattem, van & Proveniers 2011 b).

- **New decision making structure**

The Division Maintenance reshuffles consciously a number of – partly in time obtained – responsibilities 'to above in hierarchy' to the demanding site (to the Corporate Board plus to the Department top management) and to below in hierarchy' to operational level (to the external Contractor top management plus to the external Contractor professional specialists). (see other paper: Nattem, van & Proveniers 2011 b).

- **Reorganization of the CREM organization**

The new forms of activity organization lead automatic to a shift of activities. Also the new CREM model was not only directed on effectiveness but also on efficiency. Beside goals as more efficient use of space and reduction of energy costs, the organization of the Division Maintenance and Control also can be reduced in number of employees. This could be done by outsourcing of tasks which in the old setting still were part of the Division Maintenance and Control activities.

5. Innovative demand driven CREM and the Pavilion Building.

The Pavilion Building on the Campus of the Eindhoven University of Technology was a kind of pilot project for reorientation for the new role of Corporate Real Estate Management in restructuring, maintenance and control of buildings, Service installations and terrains.
As result of a declining financial strategic interest of Corporate Real Estate the renewal of University buildings, service installations and terrains gets substantial slowed down. Now the prospect of a prompt reconstruction or renewal expires, the necessity for maintenance becomes urgent again: the economic live span of buildings, service installations and terrains has to be extended on an as effective and as efficient as possible way.

The Eindhoven University of Technology also needs to have a quite differentiated infilling van CREM services and service levels, because of its quite differentiated Key Businesses: the quite different 'hardware' and quite different main cultures of its various Departments. The Department of Physics and the Department of Chemistry especially need top level laboratories. The Department of Industrial Design and the Department of Architecture Building and Planning have to show their focus on ever going creative production processes. For the Department of Economic Science is a commercial business outlook important, because of their continuous contact with external business entrepreneurs, what requires a higher quality level of work places and meeting facilities and restaurant facilities. Especially the Pavilion Building - as oldest University building on the Campus – could not offer a sufficient level.

Extra problem is that the demolition of the Pavilion Building is expected before the year 2020. So, upgrading to 'normal' commercial business standards would be effective but certainly not efficient! (And would also disregard the lack of budgets for such an upgrading to 'normal' commercial business standards.)
So, a 'traditional maintenance and control option': upgrading of the building to fixed standards of the Division Maintenance and Control, is no real option.

Use Valuation Survey

Decided was to use a 'Use Valuation survey method'. In this case the Quick scan work condition and situation diagnosis, combined with occupancy measuring of the Dutch consultancy Bureau 'Centre for People and Buildings'. The method is directed to a more standardized activities of a - qua design and usage – more standardized building. This method is suitable for the Department of Economic Science, because of the relative uniformity of activities of this department.

A representative sample of users was surveyed about their satisfaction or dissatisfaction with these properties and facilities. Regarding to a bench mark used by the consultancy bureau - the so called 'satisfaction indicator' - users of the pavilion were most satisfying on:

Students:

- The restaurant: its central location and its inner building climate
- The Library: for studying and lending of books. The far distance to the entrance / restaurant / lecture halls ('the core of the building') has a negative score.
- The cabinets: for self studying and project studying in small groups, but the open cabinets (without doors) have a negative score.
- Students Association rooms: for organization activities and sociability with a very positive assessment

Faculty:

- ICT and other supporting services
- The accessibility of the building
- Work responsibilities and complexity of work

Di-satisfiers were:

Students:

- The extensive ground plan of the Pavilion
- The out dated architecture and branding atmosphere of the Pavilion and its interior
- The inner building climate, especially the temperature

Faculty:

- The extensive ground plan of the Pavilion is negative for the collaboration in teams and in total organization
- The out dated architecture and branding atmosphere of the Pavilion and its interior
- The inner building climate, especially the temperature, light and acoustics
- The functionality and comfort location related properties and facilities.

So it is obvious that the positive breeding properties of the Pavilion: the vast layout surface with only one layer and al lot of small extensions, have a negative influence on the building as Department building.
Also the out dated architecture and building technology: Built in 1958, the Pavilion has an out dated branding atmosphere and its interior and poor inner building climate due to lack on heat insulation measures in facades and in the roofs (thin single glass, no insulation materials and - lucky – almost no asbestos !). Also due to the vast rising fuel prices, the heating costs rise more than average.

Technical Survey of the building

The technical survey of the building includes building aspects, electro technical installations, service installations and risks of breakdown and safety, and legal aspects.

Building aspects:

Main building support structure, facades, stairs and sun screens are in tolerable condition.
Some spots with decay of concrete need to be local improved.
Some timber window frames have rotten edges and need to be local improved.
Some of the flat rooftops need a renewal in a few years. Some edges of roofs and skylights have to be improved and also some gutters. These all need a yearly inspection.
In some sections the interior building surfaces have some loss of quality.

Electro technical installations:

The state of electric cable-laying is no longer in conformity with the latest technical regulations. Some low voltage groups are constructed as shunts from high voltage groups. Also, the electrical safety system is dimensioned on high voltage groups. For optimum safety, this has to be dimensioned on the low voltage groups. Adjustment of

the electro technical installations has a high priority, also because of safety risks and risks of breakdown of other service installations. Also some electrical light fittings are still the original of 1958 and could cause safety risks.

Service installations:
The air conditioning condensers on the rooftops need (yearly) inspection and maintenance.
Some heating radiators are leaking and need (yearly) inspection and maintenance.
The electrical management system of the service installations need to be replaced.
High priority need for the adjustment of the electro technical installations because of risks of breakdown of service installations.

Legal aspects:
Legal labour working conditions: the reception rooms by both entrances have bad inner climate conditions. These have to be improved.
Security: The emergency lighting has to be improved and extended.
Energy use certification (EPA): no far-reaching changes at this moment. A benefit – costs analysis will be made for each energy reducing measurement, also regarding the limited planned live span of the Pavilion (till maximum the year 2020).

Maintenance planning of the pavilion
The impact of the demand driven aspect of the new Innovative demand driven CREM model on the Pavilion building maintenance planning is visible in the measurements regarding to the out dated branding atmosphere and the internal climate:

- The out dated branding atmosphere of the Pavilion and its interior and internal climate will be improved: new colours, new materials, better lighting, acoustic materials on the ground surface and walls.
- The external Architectural branding of the Pavilion will also be improved: the main entrance of the Pavilion building also will get a face lift: this part of the car parking will be changed in a green outdoor space with outdoor benches and tables.
- In regard to the climate installations only simple measurements are planned, because of the limited planned live span of the Pavilion (till maximum the year 2020). For extreme climate conditions organizational measurements are foreseen: an adapted day timetable for students and employees.

It is clear that in the old CREM model of maintenance and control and also in a new Demand Organization CREM model these measurements would be far less extensive, regarding the restricted live span of the building.
The use of the 'Use Valuation survey method' has as positive result that the faculty and student users of the Pavilion building have the impression that their complaints and wishes are taken serious. They felt terrible neglected in the situation that the Pavilion was nominated for demolition but now body could exactly say in what year.
Essential is to realize that starting this kind of 'Use Valuation survey methods' means: starting a continuous communication process with the end users of the Corporate Building facilities. These 'Use Valuation survey methods' lead to expectations about adaptation and improvement of end user Corporate Building facilities and to a continuous monitoring of the end user satisfaction. If there is no intention to do this then these 'Use Valuation survey methods' could have a negative impulse on the Corporate key processes.

The impact of the innovative aspect of the new Innovative demand driven CREM model on the Pavilion building is restricted trough the limited planned live span of the Pavilion (till maximum the year 2020). Despite this restriction there are two innovative aspects which are related to the 'Entrepreneurial Cooperation' between de division maintenance and control of the CREM organization and the external contractors:

- The cooperative technical survey of the building including building aspects, electro technical installations, service installations and risks of breakdown and safety, and legal aspects. This cooperation leads to a much sharper risk assessment and better agreements for acute damage maintenance. So budgets can be reduced.

- For the year 2012 the 'Entrepreneurial Cooperation' between de division maintenance and control of the CREM organization and the external contractors has lead to a cooperative maintenance year plan 2012 for the whole Corporate Real Estate, for which surveys, development of solutions and budgeting took place in cooperative Cross Functional Expert Teams.

6. Conclusions and discussion

As a reaction on the declining financial strategic importance of Corporate Real Estate, the Division Maintenance and Control of the Real Estate Management Service of the Eindhoven University of Technology has developed a new way for restructuring, maintenance and control of Corporate Real Estate Management. This new way could be characterized as really innovative and really demand driven. It has as focus not only efficiency but especially effectiveness.
This is diametrically opposed to the main stream trend in CREM. The main stream new trend seems to be efficiency trough outsourcing of CREM. This starts with a Directive Organization model and ends with its ultimate consequence: a total outsourcing to just one external party: a contractor with an Integrated Facility Management Contract.

The demand driven character of this new CREM model is realized trough intensifying the relation between employees as part of Corporate Key production and services processes versus employees as users of buildings, service installations and terrains. This intensifying is done with the use of 'Use Valuation survey methods'.
These 'Use Valuation survey methods' lead to expectations among employees, staff and Corporate Board about adaptation and improvement of end user Corporate Building facilities. If there is no intention to do this adaptation and improvement then the 'Use Valuation survey methods' even could have a negative impulse on the Corporate key processes. Essential is also to realize that starting this kind of 'User Valuation survey methods' means: starting a continuous communication process with the end users of the Corporate Building facilities.

The innovative character of this new CREM model is realized trough intensifying the relation between the Division Maintenance and Control and its external contractors.
During the orientation process on the new innovation oriented CREM model, it became clear that the main stream new trend models of outsourcing of CREM, starting with a Directive Organization model and ending with the Demand Organization model (a total outsourcing to just one external party), mainly will lead to traditional – inflexible - concepts, and quantitative increasingly extensive – and trough this more inflexible – contracts. In these – 'mega' - outsourcing contracts, risks shift from one party to the other and risks are stacked up. So Risks only enlarge and both parties will react - 'naturally'- trough very well know – thus traditional and inflexible – concepts (see other paper: Nattem, van & Proveniers 2011 b).

To encounter this 'risks stacking dilemma', the Division Maintenance and Control has developed the model 'Entrepreneurial cooperation', in which – consciously and during several phases of the CREM processes – along several organizational lines on several organizational levels, cooperation takes place between the CREM organization and external contractors. Inside 'Entrepreneurial cooperation' trough cooperation, risks are INTENTIONAL NOT stacked up and possibilities for steering and small corrective steering are INTENTIONAL EXTENDED. For the CREM organization as for the external contractors this brings about an experimental zone for innovative use and developments. (see other paper: Nattem, van & Proveniers 2011 b).

This paper could be an initial guide for modernization for CREM organizations. But it is obvious that Corporations that do not have such quite differentiation in Key Businesses and don't have such a drive for innovation, don't need such differentiated and innovation driven infilling of CREM services and service levels. So the Innovative, Demand Driven model for CREM organization will be too complex and too expensive for these Corporations. The 'traditional' Directive Organization model and Demand Organization model, what lay high emphasis on standard and traditional service concepts is most suitable for these corporations.

In times of nowadays financial crisis, this paper could also be an eye-opener for commercial real estate companies. Most of them have only very limited interest in their actual tenants of their assets. In general, one even doesn't know the names of the included firms! Especially when these commercial real estate companies are only a part of big asset management companies and real estate is only a limited part of the total portfolio of these big asset management companies. Most assets – as stocks, options, banking guaranties, et cetera - only have limited operational costs, while real estate as asset has a lot of different kinds of operational costs. So real estate is regarded as too complicated and all operational management is completely sourced out.
The financial crisis leads to a decreasing volume of rented offices and industrial property. So for commercial real estate companies (or their operational management contractors) it could be useful 'to know their own markets'!

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