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## **Vorwort des Herausgebers**

### **11. Journal für Facility Management: Wissenschaft trifft Praxis**

Der Bogen der FM Forschung war immer schon sehr breit. Die eingereichten Beträge zeigen diese Vielfalt hervorragend auf und beweisen den interdisziplinären Ansatz der ausgewählten Forscher.

Viele Unternehmen müssen sich derzeit neuartigen Fragestellungen widmen. Es geht nicht nur um den Profit, den sie erwirtschaften, sondern auch um die Frage, wie sie zudem mit der Umwelt und den Mitarbeitern umgehen. Nachhaltigkeit ist in allen Bereichen gefragt. Viele Unternehmensführer müssen und wollen sich mit diesem Bereich intensiv auseinandersetzen. Dabei vertrauen sie im ersten Schritt vor allem ihren Stabstellen Controlling und Marketing. Meist beachten sie nicht, dass gerade FM viele dieser Bereiche als Kernaufgabe hat. Energieeffizienz, die Bereitstellung der optimalen Infrastruktur und Services für Mitarbeiter, um ihre Zufriedenheit aber auch ihre Produktivität zu steigern sind zentrale Themen des FM. Der erste Beitrag beschäftigt sich gerade mit diesem Spannungsfeld, der Perspektive des C Levels versus der Sicht von FM auf das Thema Nachhaltigkeit.

Die Frage nach der optimalen Organisation, um die oben genannten Bereiche optimal managen zu können, beschäftigt viele Unternehmen. Eine Studie aus UK zeigt nicht nur die Mannigfaltigkeit der möglichen Ansätze auf, sondern vergleicht die Ansätze und präsentiert die jeweiligen Vor- und Nachteile. Aber das Management fordert vom FM immer mehr Lösungen auch in nicht klassischen FM Bereichen. Die Wartung und Instandhaltung zu optimieren und die Reinigung zu managen sind in der Maslow Pyramide Grundlagen. Es geht vielmehr zu evaluieren, welche Bedürfnisse Mitarbeiter haben und wie sich diese Bedürfnisse gegebenenfalls unterscheiden. In Publikationen und Medienberichten ist viel zu hören, dass die Generation Y ganz andere Anforderungen hat als die Babyboomers-Generation. Ist das wirklich so? Eine breit angelegt Studie aus den Niederlanden gibt interessante Aufschlüsse.

Healthy Environment war schon immer ein wesentliches Thema, denn schon die alten Griechen wussten um die Bedeutung der Umgebung und ihres Einflusses auf die Genesung von Patienten. Diese Tradition wurde von den Römern weiterentwickelt, die Tradition der Badehäuser und der Entspannung hatte eine wesentliche Bedeutung in ihrer Kultur. Das Thesenpapier aus den Niederlanden „Healthy Thinking“ greift diese Traditionen auf und leitet daraus Fragestellungen, aber auch praktische Anregungen für das moderne Gesundheitswesen ab.

Diese wissenschaftlichen Beiträge in der 11. Ausgabe des IFM Journals zeigen Ihnen fundierte wissenschaftliche Ansätze zu diesen Themen. Sie wurden aber so verfasst, dass ihre Resümees sich leicht in der Praxis umsetzen lassen.

An dieser Stelle möchte ich mich bei den Forschern aus aller Welt bedanken, die einen Beitrag eingereicht haben. Mein Dank gilt aber auch meinen Kollegen vom internationalen Scientific Committee aus 2 Kontinenten und 5 Ländern. Sie haben in einem Double Blind Review-Verfahren zuerst die Abstracts und dann die Papers begutachtet und den Forschern mit Anregungen geholfen.

Die hohe Ablehnungsquote, die namhaften Mitglieder des Komitees und der damit vertretenen Universitäten, sowie das beschriebene Verfahren machen die Beiträge zu fundierten wissenschaftlichen Ansätzen für praktische Projekte in den oben genannten Bereichen.

Im 11. Journal für Facility Management finden Sie in der Folge die ausgewählten Beiträge zu folgenden Themen:

- CSR und FM
- The impact of organisational models for non-core business services in the FM industry
- Generational differences in the perception of work and workplace
- Healthy Thinking

Zudem möchte ich mich auch bei meinem Team bedanken, vor allem bei Frau Mag. Barbara Gatscher und DI Christine Hax, ohne deren großen Einsatz das Journal für Facility Management nicht in dieser Form vorliegen könnte.

Mit freundlichen Grüßen aus Wien wünsche ich Ihnen wieder viel Vergnügen bei dieser Lektüre und freue mich auf den zweiten Teil der ausgewählten Papers, der in der Frühjahrsausgabe des IFM Journals 2016 zu lesen sein wird.

Ihr

Alexander Redlein

Head of Scientific Committee

Für meine Familie vor allem Barbara

Caroline Sidonie und Alexander David

# **Wissenschaft trifft Praxis I:**

## **CSR und Managementstrategien**

# Corporate Social Responsibility (CSR) und Facility Management (FM)

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## Kurzfassung

Das Thema Corporate Social Responsibility (CSR) ist schon lange kein Randthema mehr. Unternehmen weltweit sind aufgefordert, verantwortlich zu handeln und einen Beitrag zur nachhaltigen Entwicklung zu leisten. Aufgrund diverser Richtlinien und gesellschaftlicher Ansprüche steigt der Druck, CSR in die Unternehmensstrategien zu integrieren. Der Trend CSR-Berichte zu erstellen nimmt immer mehr zu. Daraus ergibt sich ein Bedarf an CSR-Standardberichten. In Österreich sind Großunternehmen laut Gesetz ab 2017 dazu verpflichtet, CSR-Berichte zu erstellen. Ein Großteil der Unternehmen hat die Notwendigkeit von sozialer Verantwortung erkannt, allerdings fehlt es an Maßnahmen zur Umsetzung jener Ziele, die in den CSR-Berichten definiert wurden. Einen wichtigen Pfeiler bei der Umsetzung von CSR-Zielen und -Maßnahmen stellt für Unternehmen das Facility Management (FM) dar. Mithilfe der Implementierung von FM im Unternehmen können neue Nutzenpotenziale erschlossen werden. Es soll daher untersucht werden, welche Ziele in den CSR-Berichten von Unternehmen definiert sind. Weiters wird analysiert, ob ein Zusammenhang zwischen FM-Aktivitäten und CSR-Zielen besteht.

**Keywords:** CSR-Berichterstattung, FM-Aktivitäten, GEFMA 100-2

## Methodik

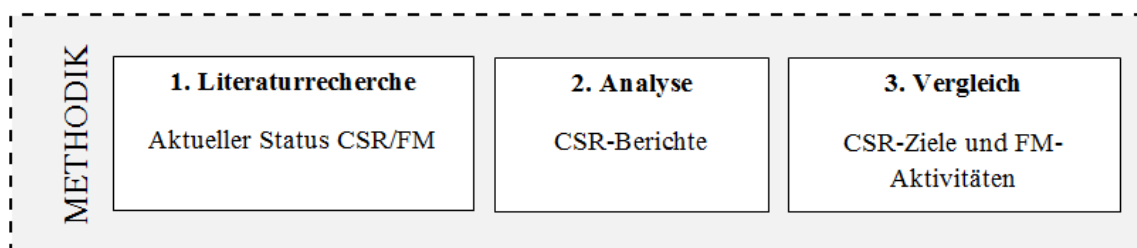


Abb. 1: Methodische Vorgehensweise

Das Paper gliedert sich in folgende drei Teile, welche von der Darstellung der methodischen Vorgehensweise ergänzt wird (siehe Abb.1).

### *1. Literaturrecherche*

Grundlage der Studie bildet eine Literaturrecherche, welche sowohl wissenschaftliche Literatur als auch Rechtsnormen von der Europäischen Kommission inkludiert. Anhand der Literaturrecherche soll die aktuelle Situation der CSR-Berichterstattung im deutschsprachigen Raum abgebildet werden. Zusätzlich erfolgt eine Analyse einer taxativ standardisierten Auflistung von FM-Aktivitäten, um diese den CSR-Aktivitäten gegenüberzustellen.

### *2. Analyse*

In einem weiteren Schritt erfolgt eine Analyse von 150 CSR-Berichten aus Deutschland, Österreich und der Schweiz. Dabei werden CSR-Ziele den FM-Aktivitäten anhand der standardisierten Auflistung gegenübergestellt.

### *3. Vergleich*

Evaluierung und Vergleich der Wechselwirkungen zwischen CSR-Zielen und FM-Aktivitäten.

## **CSR und CSR-Berichterstattung**

Die Anfänge von CSR finden sich im amerikanischen Business-Circle der 1920er Jahre. Das Thema CSR ist nicht neu, seit Anbeginn der Industrialisierung hielt Soziale Unternehmensverantwortung unbewusst Einzug in die Unternehmensstrategien. Eine Vielzahl an Definitionen basiert auf den OECD-Leitsätzen (OECD-Leitsätze für multinationale Unternehmen), der CSR-Richtlinie der Europäischen Kommission (neue EU-Strategie 2011-14 für die soziale Verantwortung der Unternehmen) oder internationalen Standards (ISO 2600).

Die deutsche Bundesinitiative “Unternehmen: Partner der Jugend” definiert CSR mit verantwortlicher Unternehmensführung und bezeichnet damit die soziale, ökologische und ökonomische Verantwortung von Unternehmen in allen Bereichen der Unternehmenstätigkeit, dabei geht es um die eigentliche Wertschöpfung bis hin zu den Austauschbeziehungen mit Mitarbeitern, Zulieferern, Kunden und dem Gemeinwesen. Dabei kann man vier Handlungsfelder unterscheiden: am Arbeitsplatz, im Markt, im Gemeinwesen und gegenüber der Umwelt (Blanke & Dresewski, 2007, S.5). Die Europäische Kommission definiert CSR als „ein Konzept, das den Unternehmen als Grundlage dient, auf freiwilliger Basis soziale

Belange und Umweltbelange in ihre Unternehmenstätigkeit und in die Wechselbeziehungen mit den Stakeholdern zu integrieren“ (Europäische Kommission, 2011, S.4).

Nach dem „Tripple-bottom-line-Ansatz“ unterscheidet man bei CSR drei wesentliche Aktionsfelder, d.h. drei Dimensionen: Ökologie, Ökonomie und Soziales. Dieser Ansatz konzentriert sich nicht alleine auf die wirtschaftliche Performance eines Unternehmens sondern wird erweitert um dem Aspekt der Nachhaltigkeit und den Umweltschutz.

Das Grundverständnis von CSR basiert auf dem Terminus „verantwortlich“. Garriga und Melé unterscheiden CSR in vier Hauptkonzeptgruppen: a) *ökonomisch-instrumentelle*, b) *politische*, c) *integrative* und d) *ethische* Konzepte (vgl. Garriga u. Melé, 2004, S.52).

Bei der CSR-Debatte wird unterschieden zwischen CSR-Konzepten (Corporate Responsivness, Corporate Social Performance, Corporate Citizenship, Sustainable Development), CSR-Modellen (CSR Pyramide, Three-Domain Model of CSR, CSP Modell, 5 Stufen Modell) und CSR-Instrumenten (OECD-Leitsätze, EU CSR Strategie, ISO 2600, Grünbuch der EU) (vgl. Breuer, 2011, S.5).

Unternehmen haben die Notwendigkeit von CSR und Nachhaltigkeit erkannt, allerdings fehlt es an der notwendigen Bereitschaft, sich mit diesem Thema auseinanderzusetzen und deswegen werden nur langsam strategische Impulse zur Umsetzung von CSR-Strategien, -Konzepten und -Modellen gemacht (vgl. Redlein und Zobl, 2014, S.25). Eines der bedeutendsten Instrumente, wenn es um die Umsetzung der genannten Konzepte oder Modelle geht, ist die CSR-Berichterstattung, also das Erstellen von CSR-Berichten. Die CSR-Berichterstattung ist als Kommunikationsprozess zu verstehen. Dabei soll die Gesellschaft über die sozialen und umweltrelevanten Aktivitäten des Unternehmens informiert werden (vgl. Campbell, 2004; Gamerschlag et al., 2011). In den letzten Jahren ist die Literatur zu den Themen CSR und CSR-Berichterstattung stark gewachsen (vgl. Campopiano u. Massis, 2015, S.511). Die beiden Begriffe Corporate Social Responsibility und Nachhaltigkeit sind stark miteinander verknüpft, sodass Überschneidungen nicht ungewöhnlich sind. CSR-Berichte sind eine Art „integrierte Berichte“, d.h., dass CSR und Nachhaltigkeit die Kernelemente von Unternehmensberichten darstellen. Das Ziel von Integrierten Unternehmensberichten ist die Darstellung von finanziellen und nicht-finanziellen Informationen in einem einzigen Bericht. Aufgrund dieser integrierten Form der Berichterstattung kann die enge Verbindung zwischen ökonomischen Werten und Nachhaltigkeitsaspekten deutlich gemacht und in weiterer Folge der Öffentlichkeit zugänglich gemacht werden. Weiters kann ein CSR-Bericht Unternehmen dabei unterstützen, Entscheidungen im Sinne des Nachhaltigkeitsgedanken zu treffen und gleichzeitig Stakeholdern und Aktionären dabei helfen, die erbrachte Leistung eines

Unternehmens besser einschätzen zu können (vgl. Madl, K., Rogl, G., Simacek, E, 2012, S.9). Die vorangegangene Erklärung zur Unternehmensberichterstattung beruht auf der IIRC (Integrated Reporting Committee) (vgl. International Integrated Reporting Committee, 2015). Es existieren zahlreiche Empfehlungen wie die CSR-Berichterstattung auszusehen hat, allerdings gibt es keine allgemein gültige Definition. Jedes Unternehmen ist bei der Gestaltung von CSR-Berichten frei, sowohl was den Inhalt, den Umfang als auch die Struktur betrifft.

In den letzten Jahren haben sich Plattformen zur CSR-Berichterstattung entwickelt. Diese Plattformen machen CSR-Berichte von unterschiedlichen Unternehmen für Interessierte frei zugänglich. Eine dieser Plattformen ist die sogenannte Global Reporting Initiative (GRI). Dabei handelt es sich um eine international tätige Institution. Die Plattform ist eine der bekanntesten und wird als weltweiter Standard bezeichnet (vgl. Gamerschlag et al., 2011, S.241). Ziel dieser Plattformen ist es, einen Rahmen für die CSR-Berichterstattung festzulegen. Laut GRI handelt es sich bei einem Nachhaltigkeitsbericht um einen Bericht, welcher Information über die ökonomischen, sozialen und umweltrelevanten Effekte eines Unternehmens offenlegt. Ein Nachhaltigkeitsbericht zeigt die Unternehmenswerte, das Führungsmodell und die Verbindung zwischen Unternehmensstrategie und dem Einsatz für eine globale nachhaltige Wirtschaft eines Unternehmens auf (vgl. Globalreporting, 2015). Aktuell ist die CSR-Berichterstattung für Unternehmen nicht verpflichtend. Unternehmen entscheiden also freiwillig über die Berichterstattung und über die Veröffentlichung. Bei einer verpflichtenden Berichterstattung müssten sich Unternehmen in einem weiteren Schritt mit der Umsetzung von vorab definierten Maßnahmen intensiv auseinandersetzen.

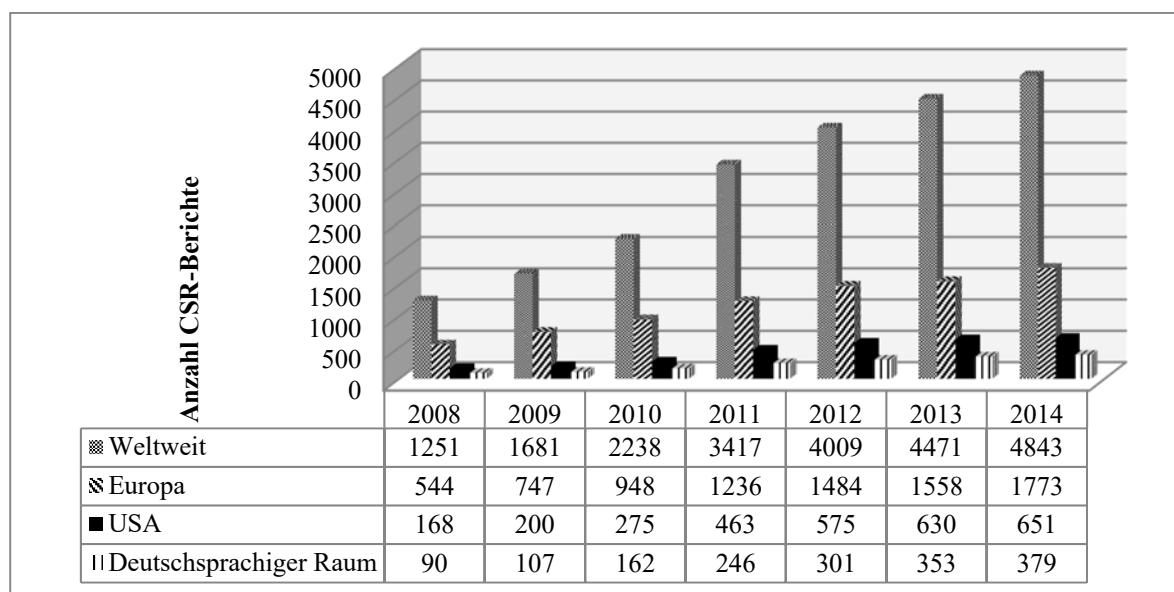


Abb. 2: Gesamtzahl CSR-Berichte von 2008 bis 2014, Weltweit, Europa, USA, Deutschsprachiger Raum

Anhand von Abbildung 2 ist die Entwicklung der CSR-Berichterstattung (laut GRI) weltweit, sowie Europa, den USA und dem deutschsprachigen Raum (Österreich, Deutschland und der Schweiz) im Zeitraum von 2008 bis 2014 abzulesen. Die Anzahl der Berichte steigt kontinuierlich. Auffällig ist das Jahr 2010, die weltweite Finanzkrise führte zu einem Umdenken der Unternehmen. CSR rückte schlagartig in den Mittelpunkt der Unternehmensstrategien.

### **CSR-Themen und Facility Management**

Allgemeine Themen, welche in CSR-Berichten inkludiert sind, sind zum Beispiel die finanzielle Performance, Compliance, Weiterbildung, Sicherheit oder Gleichbehandlung. Auf Basis der analysierten CSR-Berichte aus dem deutschsprachigen Raum ist festzustellen, dass auch FM-Themen in CSR-Berichten genannt werden.

Die Hauptaufgabe des Facility Management ist die „Support-Funktion“, wie zum Beispiel die Koordination von Sachmitteln, der Arbeitsplatz, die Unterstützung von diversen Services für den Verbraucher (vgl. Jensen, P. A., van der Voordt, T., Coenen, C., 2012). Die gängigste Definition von FM in Europa ist die der Europäischen Norm EN 15221, welche besagt, dass FM das Management der Unternehmensinfrastruktur und -services ist (vgl. ÖNORM EN 15221-1, 2007).

Um FM-Themen in den CSR-Reports ausfindig zu machen, braucht es eine einheitliche, standardisierte Bezeichnung der FM-Aktivitäten. In folgenden Europäischen Standards finden sich standardisierte FM Bezeichnungen:

- CEN/TS 15379 (vgl. DIN CEN/TS 15379, 2007)
- EN 15221-1 (vgl. EN 15221-1, 2007)
- GEFMA 100-2 (vgl. GEFMA 100-2, 2004, 2007)

Die GEFMA (German Facility Management Association) 100-2 beinhaltet eine Liste der FM-Aktivitäten. Diese Liste existiert im Vergleich zu den anderen beiden genannten Standards am längsten. In Europa ist die GEFMA eine der weit verbreitetsten Standards in Bezug auf FM. Daher wird in Folge die GEFMA-100-2 als Grundlage für den Vergleich von FM-Aktivitäten und CSR-Zielen, welche in den CSR-Berichten enthalten sind, verwendet.

1. Tab 1: FM- Aktivitäten nach GEFMA 100-2 und Ziele von CSR-Berichten

FM-Aktivitäten nach GEFMA 100-2	Ziele/Maßnahmen von CSR-Berichten
(6150) Qualitätsmanagement im FM organisieren	Green Building, Zertifizierung (z.B. ÖGNI, DGNB,..)
(6160) Umweltschutz im FM organisieren	Recyclingmaßnahmen, -materialien
	Reduktion der CO2-Emissionen
	Umweltmanagement, Umwelt-, Klimaschutz
(6210) Flächenmanagement durchführen	Flächeneffizienz, Raumeffizienz
(6420) Energiemanagement durchführen	alternative ökologische bzw. erneuerbare Energien
	Energieeffizienz, -reduktion, -sparen
	Energieverbrauch (Strom, Gas, Öl)
(6440) Entsorgungsmanagement durchführen	Abfall-/Müllvermeidung
(6500) Objekte reinigen & pflegen	Reinigung, -leistung, -mittel
(6870) Beförderungs- und Transportdienste erbringen	Fuhrpark, Flug, E-Mobilität
	Transportlogistik, Dienstreisen
(6880) Beschaffungen durchführen	Wasser-, Papierverbrauch

Quelle: Fuke, F., 2012, p.28

Tabelle 2 zeigt den Vergleich von FM-Aktivitäten nach GEFMA-100-2 und Ziele/Maßnahmen, welche in den CSR-Berichten evaluiert wurden. Da die GEFMA-100-2 im deutschsprachigen Raum die gängigste Richtlinie bzgl. FM-Aktivitäten ist wird diese zu einem Vergleich der CSR-Zielen herangezogen.

## 2. Analyse CSR-Berichte

Gegenstand der Studie waren 60 CSR- und Nachhaltigkeitsberichte von 2014 und 90 Berichte von 2011 aus dem deutschsprachigen Raum (Österreich, Deutschland, Schweiz) (siehe Tab. 2).

Tab 2: Anzahl der ausgewählten CSR-reports von GRI 2014/2011

	2014	in %	Selected CSRs	in %	Eval. in %	2011	in %	Selected CSRs	in %	Eval. in %
<b>AUT</b>	<b>77</b>	<b>36.5%</b>	<b>30</b>	<b>50.0%</b>	<b>39.0%</b>	<b>42</b>	<b>21.2%</b>	<b>30</b>	<b>33.3%</b>	<b>71.4%</b>
<b>GER</b>	<b>134</b>	<b>63.5%</b>	<b>30</b>	<b>50.0%</b>	<b>22.4%</b>	<b>88</b>	<b>44.4%</b>	<b>30</b>	<b>33.3%</b>	<b>34.1%</b>
<b>CH</b>	<b>0</b>	<b>0.0%</b>	<b>0</b>	<b>0.0%</b>	<b>0.0%</b>	<b>68</b>	<b>34.3%</b>	<b>30</b>	<b>33.3%</b>	<b>44.1%</b>
<b>Total</b>	<b>211</b>	<b>100.0%</b>	<b>60</b>	<b>100.0%</b>	<b>28.4%</b>	<b>198</b>	<b>100.0%</b>	<b>90</b>	<b>100.0%</b>	<b>45.5%</b>

Die Berichte wurden von der internationalen CSR-Plattform Global Reporting Initiative (GRI) entnommen. Die Auswahl war zufällig und es wurde nicht zwischen CSR-Berichten, Nachhaltigkeitsberichten oder integrierten CSR-Berichten unterschieden. Da die Europäische Kommission im Jahr 2011 eine neue Strategie zum Thema CSR veröffentlicht hatte, wurde dieses Jahr ausgewählt. Um eine möglichst aktuelle Aussage zu treffen, wurden Berichte aus dem Jahr 2014 herangezogen.

Auf Grundlage der ausgewählten CSR-Berichte und der definierten FM-Aktivitäten nach GEFMA 100-2 können folgende Wechselwirkungen zwischen CSR-Zielen und FM-Aktivitäten aufgezeigt werden:

### 3. Ergebnisse

Auf Grundlage der analysierten CSR-Berichte können folgende Aussagen getroffen werden:

Tab. 3: FM-Aktivitäten versus CSR Ziele

	AUT 2014	in %	AUT 2011	in %	DE 2014	in %	DE 2011	in %
Analysierte CSR-Berichte	30	100.0%	30	100.0%	30	100.0%	30	100.0%
FM-Aktivitäten in den CSR-Berichten	29	96.7%	29	96.7%	30	100.0%	29	96.7%
GEFMA 100-2								
In CSR-Berichten								
(6160) Umwelt, CO2	27	90.0%	29	96.7%	30	100.0%	29	96.7%
(6420) Energieeffizienz	26	86.7%	28	93.3%	27	90.0%	29	96.7%
(6440) Abfall, Müll	21	70.0%	12	40.0%	28	93.3%	10	33.3%
(6870) Fuhrpark, Reisen	21	70.0%	19	63.3%	23	76.7%	26	86.7%
(6880) Wasser, Papier	15	50.0%	24	80.0%	22	73.3%	26	86.7%
(6150) Green Building	9	30.0%	6	20.0%	11	36.7%	5	16.7%
(6500) Reinigung	9	30.0%	10	33.3%	8	26.7%	8	26.7%
(6210) Flächeneffizienz	1	3.3%	3	10.0%	5	16.7%	3	10.0%

Tabelle 3 stellt die FM-Aktivitäten nach GEFMA 100-2 dar, welche in den CSR-Berichten enthalten sind.

Sowohl für Österreich, als auch für Deutschland zeigt sich, dass in den betrachteten Jahren 2011 und 2014 nahezu alle analysierten Berichte FM-Aktivitäten enthalten.

Am häufigsten wurde dabei die FM-Aktivität „(6160 | Umwelt, CO2)“, gefolgt von der FM-Aktivität „(6420 | Energieeffizienz)“ und „(6440 | Abfall, Müll)“ genannt. Auch die Reduktion von Wasser- und Papierkonsum ist ein Hauptziel von CSR und FM.

Die FM-Aktivitäten „(6210 | Flächeneffizienz)“ und „(6150 | Green Building)“ haben die wenigsten Nennungen im Vergleich. Aus dieser Tatsache kann geschlossen werden, dass CSR-Berichte nicht unter Hinzuziehung von Facility Managern erstellt werden; haben diese Aktivitäten doch direkten Einfluss auf CO2 Emissionen und Energieverbrauch. Die Ergebnisse von 2011 und 2014 sind deckungsgleich. Das Ergebnis der analysierten CSR-Berichte bestätigt die Hypothese, dass FM dabei helfen kann, CSR-Ziele zu erreichen.

## **Schlussfolgerung**

Themen wie Corporate Social Responsibility und Nachhaltigkeit gewinnen aufgrund der Verknappung der Ressourcen und des Klimawandels zunehmend an Bedeutung. Der Boom der CSR-Berichterstattung und der dafür eingerichteten Plattformen zeigt, dass sich Unternehmen und dabei vorwiegend Großunternehmen mit dem Thema CSR intensiv auseinandersetzen und sich zunehmend um offizielle CSR-Konzepte bemühen.

Die Ergebnisse der 150 analysierten CSR-Berichte aus dem deutschsprachigen Raum zeigen, dass es eine starke Wechselwirkung zwischen CSR-Zielen und FM-Aktivitäten gibt. Die am häufigsten vorkommenden CSR-Ziele in Verbindung mit FM sind die Reduktion von CO<sub>2</sub>, Energieeffizienz und Einsparung von Verbrauchsgütern. Oftmals werden CSR-Themen auf den ersten Blick nicht in Verbindung mit FM-Themen gebracht, allerdings zeigt eine detailliertere Betrachtung, dass FM-Aktivitäten in fast allen CSR-Berichten enthalten sind.

Beide Management-Strategien – CSR und FM – verfolgen das Ziel einer nachhaltigen Unternehmensführung. Um dieses Ziel zu erreichen braucht es einen intensiven Austausch zwischen CSR und FM. Fakt ist, dass aktuell FM zumeist mit dem Ziel der Kostenreduktion eines Unternehmens in Verbindung gebracht wird. Diese Auffassung muss sich in Zukunft ändern. Eine aktuelle Studie des IFM (Abteilung – Immobilien- und Facility Management, TU Wien) zeigt, dass eine Veränderung im Bereich FM vonstattengeht (vgl. Redlein und Zobl, 2014, S.26). Die aktuellen Ziele von FM-Abteilungen sind Kostenreduktion und Kostentransparenz, aber auch Nachhaltigkeit, Qualitätssicherung und Umweltschutz. FM ist in der Lage, CSR direkt über Maßnahmen wie Energiereduktion oder den nachhaltigen Einsatz von Ressourcen zu beeinflussen. Die Aufgabe des Facility Managers ist es, die Performance eines Gebäudes sicherzustellen. Eine weitere Aufgabe des Facility Managers ist es, herauszufinden, inwieweit verschiedene Services den Erfolg des Unternehmens sicherstellen können. In CSR-Konzepten oder -Strategien wird oft nicht wahrgenommen, dass FM einen wesentlichen Einfluss darauf hat.

FM kann dabei helfen, CSR-Ziele zu erreichen. Dazu müssen Facility Manager CSR-Berichte analysieren und aktiv dazu beizutragen, FM-Aktivitäten, welche in den Berichten enthalten sind zu identifizieren und umzusetzen. Der Facility Manager tritt dann als strategischer Partner und nicht nur als Datenlieferant eines Unternehmens auf.

Die vorliegende Studie macht die Wechselwirkung zwischen FM-Aktivitäten und CSR in Deutschland, Österreich und der Schweiz deutlich.

Das Zusammenspiel von FM-Aktivitäten und CSR-Zielen ist nicht nur ein Phänomen, welches in Europa festzustellen ist. Um diese Hypothese zu belegen, braucht es eine detaillierte Analyse von CSR-Berichten weltweit.

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# **The impact of organisational models for non-core business services in the FM industry**

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## **Abstract**

With the growing complexity of organisations, it becomes important to investigate the impact of organisational models for the management of non-core support services in the Facility Management (FM) industry. Based on literature review, the research compared and evaluated relevant organisational models and presents the different strategic approaches behind these models. Thorough analysis of the strategic approaches and models led to the development of a comparison table between the organisation models and the alignment variables. Finally, the main advantages and disadvantages of each organisational model are presented, which is the first stage in the process of aligning FM with organisational strategies.

**Keywords:** Facilities Management, Business Processes, Organisational Models

## **1. Introduction**

In the past, many organisations utilised their internal personnel and resources for providing non-core support services as part of the Facility Management function. The function evolved and at first, there was an integration of construction and maintenance costs, which was called the life cycle approach. Later, buildings and workspaces were considered integral, and building, furniture and equipment became 'housing' and 'workspace design' (Duffy 2000).

Nowadays this trend has changed, and organisations tend to invest only in their core business services. Many innovative organisations (Battistella and Nonino 2012) used the outsourcing approach to deliver out not only many functions of their organisations such as Research and Development (R&D), manufacturing and logistics, but also 'non-core' support processes. The outsourcing and management of critical or non-critical processes to specialized companies is called business process outsourcing (BPO) (Johnson 2006). BPO is viewed by companies as a cost effective way to gain competitive advantage and focus organizational resources on strategic activities (Battistella and De Toni 2011). Many organisations also frequently outsource non-core support services to external providers to obtain specific know-how from these facility management companies. An evolution of Facility Management procurement models can thus be seen from the 1980s to date.

The 1980s saw a transition towards single-source outsourcing beginning with soft FM services (cleaning, catering, food services, etc.), then on to hard FM services (mechanical, electrical, heating, ventilation, plumbing, building control, management fire and life safety systems, etc.).

The 1990s witnessed an additional transition towards service integration, facilitated by FM automation (CAFM) systems, including: property management, contract management, space design and planning, property acquisition, relocation and asset management.

Further FM integration happened when new stakeholders, such as private investors, added another dimension to the facility services realm through Public-Private Partnerships (PPPs) including Public Finance Initiatives (PFIs). Although this engagement started initially in the UK, it is now expanding in other countries globally, with many derivatives of the UK model.

In the early 2000s, many organisations started outsourcing core functions or processes such as payroll, human resources, finance, business process outsourcing (BPO) functions, and waste management to FM companies. Value-driven design entered the equation, and regional and global contracts started to become more common.

As a result of these developments, FM operates in a huge competitive marketplace with many roles or functions such as FM-suppliers, FM-contractors, FM-consultants and in-house FM teams (Kincaid 1994).

FM covers an extremely wide field of activities (Nutt, 1999), and handles the provision of much-varied core and non-core services (Barrett, 1995). It has embraced a broader range of services, more than building operations and maintenance (Aston, 1994; Best et al., 2003). FM encompasses workplace, buildings, support services, property, corporate real estate, and infrastructure and asset management. Today there are a variety of positions from where FM practice is conducted; those that give priority to property management, business support, customer and employee support, or to different combination of these (Nutt 2000).

This paper reviews available literature on the organisational models for non-core process management in FM, and through analysis develops new classifications for FM organisations. It also examines the main advantages and disadvantages of the presented models, with suggestions on alignment with companies' strategies.

## 2. Classification of FM organisations

The pioneers of the idea of classifying FM organisations were Davis Gerard and Becker Franklin. In their study, they used classifications to identify the most appropriate FM strategies for different organisational types (Davis et al., 1985; Becker, 1990).

Davis et al. (1985) classified 18 context organisations according to the nature of change (low change/high change) and the nature of work (routine/non-routine). To them, FM operates differently in different contexts because of the attempt to fit into the organisational culture. Similarly Becker (1990) advocated that FM can be categorised according to the context of the organisation, and his typology is based on FM's response to its context.

Then and Akhlaghi (1992) classified facilities management functions into three distinctive groups: strategic FM, tactical FM, and operational FM (table 1). The balance between technical, managerial, and business acumen is required in the strategic, tactical and operational decision making processes. The research also noted that every item of the FM tasks represent a category of decisions that have to be made at various management levels; requiring relevant skills and knowledge to make and implement them, or to access their effectiveness and performance. Table 1 below presents the typical executive responsibilities, management roles and project tasks associated with the three distinct levels of FM as classified by Then and Akhlaghi (1992).

Tab. 1: Classification of FM tasks (Source: Then and Akhlaghi, 1992)

Level	Executive responsibilities	Management roles	Project tasks
Strategic	<ul style="list-style-type: none"> <li>• Mission Statement</li> <li>• Business Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Investment Appraisal</li> <li>• Real Estate Decisions</li> <li>• Premises Strategy</li> <li>• Facility Master Planning</li> <li>• IT Strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic Studies</li> <li>• Estate Utilisation</li> <li>• Corporate Standards</li> <li>• FM Operational</li> <li>• Structure</li> <li>• Corporate Brief</li> </ul>
Tactical	<ul style="list-style-type: none"> <li>• Corporate Structure</li> <li>• Procurement Policy</li> </ul>	<ul style="list-style-type: none"> <li>• Setting Standards</li> <li>• Planning Change</li> <li>• Resource</li> <li>• Management</li> <li>• Budget Management</li> <li>• Database Control</li> </ul>	<ul style="list-style-type: none"> <li>• Guide-line Documents</li> <li>• Project Programme</li> <li>• FM Job Description</li> <li>• Prototypical Budgets</li> <li>• Database Structure</li> </ul>
Operational	<ul style="list-style-type: none"> <li>• Service Delivery</li> <li>• Quality Control</li> </ul>	<ul style="list-style-type: none"> <li>• Managing Shared Facilities</li> <li>• Building Operations</li> <li>• Implementation</li> <li>• Audits</li> <li>• Emergencies</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance Procurement</li> <li>• Refurbishment/ Fit-out</li> <li>• Inventories</li> <li>• Post-occupancy Audits</li> <li>• Furniture Procurement</li> </ul>

Thompson (1990) supported this approach with an analogy using computer language. ‘Software’ represents the strategic level of facilities planning and general/office services. The operational level is described as the ‘hardware,’ including, for example, real estate, building construction and building operations and maintenance. The correct choice of ‘software’ enables ‘hardware’ to function. That is, the right management plan enables the best facilities implementation.

Barrett and Owen (1992) presented a different approach dividing FM into two broad categories by function analysis: management and operational, as presented in figure 1.

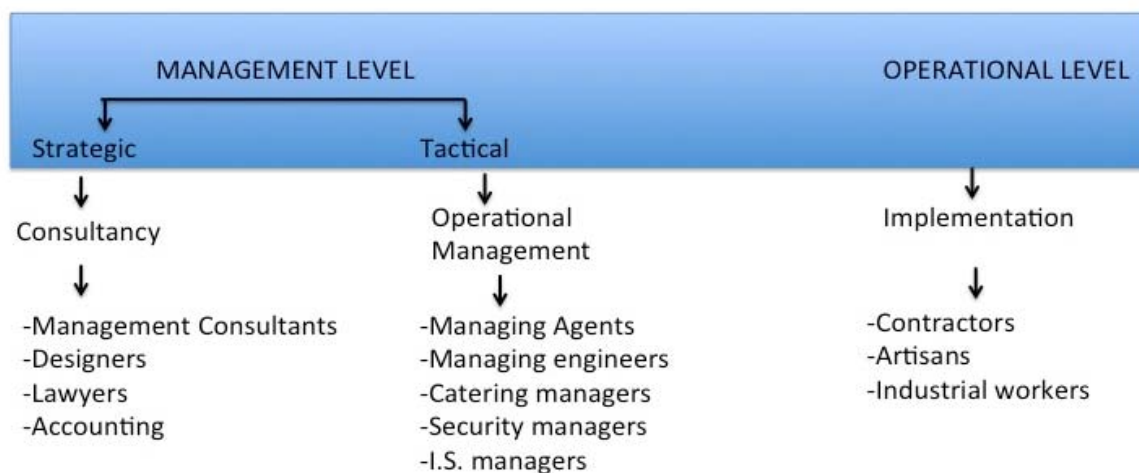


Fig. 1: How FM is carried out (Source: CEM, 1992)

Similar to Then and Akhlaghi’s (1992) classification, management functions can be distinguished at strategic and tactical levels. At the strategic level there is consultation and non-routine planning aimed at making the best, long-term use of the organisation’s physical resources and overall facilities.

Tactics are action plans involving routine, specific and short-term preventive or managerial operations. Operational level is the implementation of the works performed by different contractors.

Categorising FM activities in strategic, tactical and operational levels links with Kincaid (1994)’s three main strands of integrated activity:

- Property management: strategic activities;
- Office administration: tactical activities;
- Property operations and maintenance activities: operational functions.

Kincaid (1994) identified three distinctive characteristics of FM as follows:

- Facility management takes a support role within an organisation, or provides a support service to the organisation;
- FM must link strategically, tactically and operationally to other support activities and primary activities in order to create value;
- The managers must be reasonably knowledgeable in terms of facilities and management.

Alexander (1996) argued that the strategic FM role is in identifying business needs and requirements. It involves formulating and communicating a facilities policy, in order to ensure a continuous improvement of service quality. The scope of FM strategy is negotiating service level agreements (SLAs), establishing effective procurement and contract strategies, and creating service partnerships.

He suggested that whilst the strategic FM role is quite distinct, the tactical FM functions are basically emphasized through the organization and administration procedures. It involves monitoring, controlling and managing the operational FM, in order to ensure that the operations are well performed in accordance with the organization's requirements or standards; as well as implementing the policy, strategy and plan. The scope of operational FM covers all types of daily and routine services in the workplace. It is also concerned with the effectiveness of the service functionality in an organization.

Johnson & Scholes (2002) viewed management strategy as dealing with the complexities of ambiguous, non-routine situations, which can affect the direction and future of the whole organisation. Strategic decisions demand an integrated approach since the entire organisation should move in unison, in the same development direction. Tactical and operational levels depend on policy direction from strategic planners. The field of tasks envisioned by strategists appeared sophisticated and complex, because many processes and people were involved and many aspects of the organisation must be orchestrated.

Strategy is needed to cope with the prospect of an unknown and changing future since it may generally be said that "the further we look ahead, the more uncertain we become" (Nutt, 2002-03). Although long term forecasting can only hypothesise about the future, strategic planning aims to reduce uncertainty by choosing a preferred path and a reasonable long term direction for the development of the organisation (Nutt, 2002).

Strategic overviews have two objectives (Nutt, 2002-04):

- Negative aims (Reactive): to reduce risk and constraint, and to avoid failure and undesirable outcomes;
- Positive aims (Proactive): to increase opportunities and advantages; to achieve success; to increase value; and to achieve desirable outcomes.

Support activities in facility management can thus provide both short and long-term support, carrying out specific tasks at operational levels, and conceiving projects and plans from policy and strategy, with a view to what lies ahead in the distant future.

Chotipanich (2002) presented different levels of activities and services derived from operations, the foundation of FM practice, and management FM, with the highest level being strategic FM (Fig 2). Service levels begin with simple actions, easily carried out, and develop into sophisticated processes that are more difficult to implement. Assessment, similarly, occurs in small separate bits, leading to a more integrated evaluation of the whole organisation. People at different levels are linked, with a wide range from workers to managers and directors. The higher the service level to be achieved, the more sensitively connected FM must be with every aspect of the organization. This underlines the importance of FM's broadly integrated approach.

		FUNCTION	GOALS	CONCEPTS
FM	Strategic FM	-direct facilities -direct services -direct practise	-income -productivity -sustainability	-strategic -integrative
	Management FM	-implement -control & monitoring -project management	-achievement -satisfaction -performance	-proactive -integrative -planning
	Operational FM	-run facilities -services	-minimum cost -meet needs -quality	-cost-effective -quality assurance

Fig. 2: Characteristics of FM works in different levels (Source: Chotipanich, 2002)

Price (2004) proposed a generic classification system that incorporates the relationships

between the context organisation and its customers. Price (2004) referred to customers not as the employees of a workplace paid by the context organisation and serviced by FM, but the customers of the context organisation.

Kaya and Keith (2005) envisaged the introduction of new Facility Management Organisation (FMO) models, presenting a correlation based on patterns between facility management (FM) and organisation management (OM). He proposed that the characteristics of FMO derived by studies can be categorised into four:

- Occupancy profile;
- Service interaction and visibility;
- Organisational change; and
- Procurement type.

Kaya's FM classification differs in approach by looking at the characteristics instead of the functional levels. Nevertheless no substantial framework is currently available to link or identify strategies with organisation models for the non-core business services.

### **3. Classification of organisation models**

Since the objective of this research is to propose a classification framework for the various organizational models, the method used has involved a literature analysis of the organizational models for FM proposed by prior research and supported by empirical evidence. Williams (1996) and Varcoe (2000) took a procurement and service provider relations perspective in defining and characterising the patterns in FM organisations and the industry.

Williams (1996) models Facilities Management organisations in the following categories:

- Total in-house facilities management
- Outsourcing as "Single" or "Packaged" Contracts
- Total facilities outsourcing: management contract
- Total facilities outsourcing: managing agent

Williams (1996:31) describes managing contracting as *"a system in which the company*

*responsible for directing and coordinating the work of task contractors is paid a fixed or sliding scale fee". Although the management agent approach is also fee based, the main difference between management contract and managing agent is that management agent does not enter into the task contracts- these are all direct with the customer.*

Varcoe (2000) extended these categorisations and presented some of the future trends. He named the different business proposals as Total Workspace Management, Integrated Service Delivery, Total Infrastructure Provision, and Resource Platform Approach.

In comparison to Varcoe, Williams makes the contractual arrangements as the characterising variable in service provision and shows the relationships patterns between clients and service providers of Facilities Management.

In general, FM service providers can be divided into the following five types:

- Providers of single services
- Providers of multi-services
- Providers of total FM Concepts
- Providers of software solutions
- Providers of consultant services

To the companies who have specialised in being providers of FM services, FM is obviously the core business of the company; irrespective of whether they are providers of single services, multi-services or total FM concepts. Such companies often use the fact that FM is their core business as an important element in their marketing. Organisational models for non-core services can be grouped according to William (1996) as presented in the following sections.

### **3.1 Organizational model for total in-house FM**

In this organizational model type A, all the functional, operational units are able to provide non-core services without the presence of designated facility management personnel or company (Galbraith 2002).

In general, in organisations that utilise own employees for providing non-core services, a

supervisor or coordinator is usually assigned to the facility manager role. This approach (organisation model type B) is typical of small-medium enterprises (SME). The facility manager is a member of the company's management and supervises all the functional units.

In other organisations, research identified a special business unit (organisation model type C) internal to the company, responsible for performing such activities (Barrett 1995). The facility manager has responsibility to manage the whole unit. Examples of organisations that have adopted this organisational model are Rabobank and ING Bank (Krumn 1998). Also the National Park Service (Dept. of Interior 2004) uses a similar business unit for the facility management activities.

### **3.2 Organizational model for management by an agent strategy**

Many organisations without experience or know-how to manage and run non-core FM processes in an efficient and effective way, choose an external FM consultant company to perform FM activities (organisational model type D). This type of organisational model is called the FM managing agent. This strategy envisages the presence of a managing agent (Alexander 1996, Atkin and Brooks 2005) who is employed by the company as a consultant for a medium or long-term period. The main role and responsibility of the FM agent is to monitor or manage the non-core FM services. Examples of consulting firms are Atkins (Atkin 2011), Arup, Interserve, and Morson International (Vagadia 2012).

### **3.3 Organizational models for direct outsourcing strategy**

Nowadays, non-core FM services have become more complex and specialised, and organisations have moved towards outsourcing FM activities in a non-integrated form. Some of the benefits of outsourcing include: a reduction of internal personnel engaged, an increase of internal usage and flexibility to other functional units, and more control over the costs for each non-core service.

Types of outsourcing include: direct outsourcing (Vagadia 2012) in which the facility manager is absent (organisational model E); or is a customer's employee (organisational model type F). In the organisation model E, the customer may turn to three different FM providers.

The Hewlett-Packard Company utilises the organisation model type E in which facility operations are provided by different companies offering a sole typology of services to one or more customers' business units.

The Alcatel Italia Company is representative of the organisational model type F. The company has an internal facility manager, but it outsources the management of records, mail, maintenance and logistics (Pedrali 2007).

### **3.4 Organizational model for management contract strategy**

The single strategy for this organisational model (type G), is the management by a contractor, with the facility manager designated as the contract manager (Atkins and Brooks 2005).

### **3.5 Organizational models for total facility management strategy**

In these organisational models, the non-core support services are provided by a different FM approach, called "total facilities management " or "integrated facility management" (Atkin and Brooks 2005). The term integrated facility management means that the organisation assigns facility management to companies that are capable of providing services in a coordinated, integrated, and autonomous manner (Batistella and De Toni 2011).

Non-core integrated outsourcing providers follow the models H and I proposed in literature (Alexander 1996, Atkin and Brooks 2005, Cotts 1999). The organisational model type H provides an internal facility manager who works for the customer, and is the single point of interface between the customer and the service provider's facility manager. In this model, the service provider's facility manager handles the external relations with the customer and supervises the customer agreements. For the organisational model type H, the service facility manager's role is to report to the company management, and coordinate the non-core services.

The organisational model type I uses an independent outsourced facility manager, who does not work for the non-core service provider nor the customer.

The last three models (G, H and I) are applied by many facility management companies operating in the Middle East such as Johnson Controls, ARUP, and Interserve.

#### 4. Analysis of organizational models

Each of the organisational models (section 3 and fig 3 below) has both advantages and disadvantages, hence the need for alignment of organisational models with FM strategy.

FM MODELS SUMMARY					
Organisation Roles	FM Strategies	No in-house Facilities Manager	In-house Facilities Manager	Consultant (employed by organisation)	FM Service Provider
Internal Workers or Employees	FM Total In House	A	B		
	Management by Agent strategy			D	
Organisation Functional Units	FM Total In House		C		
Service Provider	Direct Outsourcing strategy	E	F		
	Management Contract strategy				G
Total FM Strategy	Total FM Strategy			H	I

Fig. 3 Analysis of FM organisational models from literature

An analysis of the strengths and weaknesses of the organisational models shows the following key points:

Organisation model type A is better used when the non-core services are not too specialised, and interventions are not too frequent. This model's limitations are mostly due to the absence of service coordination.

Organisation models type B and C aim at organising and improving resource coordination by enhancing the efficiency of facility activities. The internal facility manager is a member of the top management of the company, which gives the authority to managing the business units.

The facility management agent has the authority to advice on the activities of each business unit and propose procurement options. As a result, the client organisation has the option to select internal provisioning of the services and outsourcing services.

For the organisational model D, service quality is boosted with the presence of an outsourced consultant, and the company personnel carry out the non-core business services. The main difference between organisational models type B and D is the relation between the facility manager acting as internal employee or as consultant (temporary employee) and the company.

In both the organisational models type D (management by agent) and model type C (in-house management), the facility manager is responsible for the coordination of different business units.

The organisational models type E and F utilise the direct outsourcing strategy with the management of a large number of providers. Here, the customer might employ a facility manager to supervise and coordinate outsourced providers. The facility manager is the single point of interface between the service providers and the company.

For the organisational models types F and G, the managing contractor strategy is applied. The company turns to both non-core service providers and an outsourced facility manager. This approach is used when the company needs to negotiate supply contracts at regular intervals. On the other hand, in outsourcing non-core services for operations and coordination of management services such as the models type F and H, the company has limited control to evaluate the costs.

The total facility management strategy outsources all support for non-core processes/services to large facility management companies. In the organisation model type H, the client organisation retains its expertise and know-how (DeToni et.al 2011). According to Atkin and Brooks (2005), the transaction costs (Williamson 1985) for the organisational model type H are the cheapest amongst all the models due to the lack of sub-contractors.

Then and Tan (2006) in researching the alignment of facilities management performance to business needs provided a model linking FM with the business organisation (fig 4). The need for alignment between the facility management infrastructure and business needs is mandatory for any strategic plan to support organisation success. As can be seen in figure. 4, the concept of FM alignment can be defined with the following four variables:

Variable 1: Supply and Demand alignment

Variable 2: FM service alignment

Variable 3: FM Resource alignment

Variable 4: Organisational alignment

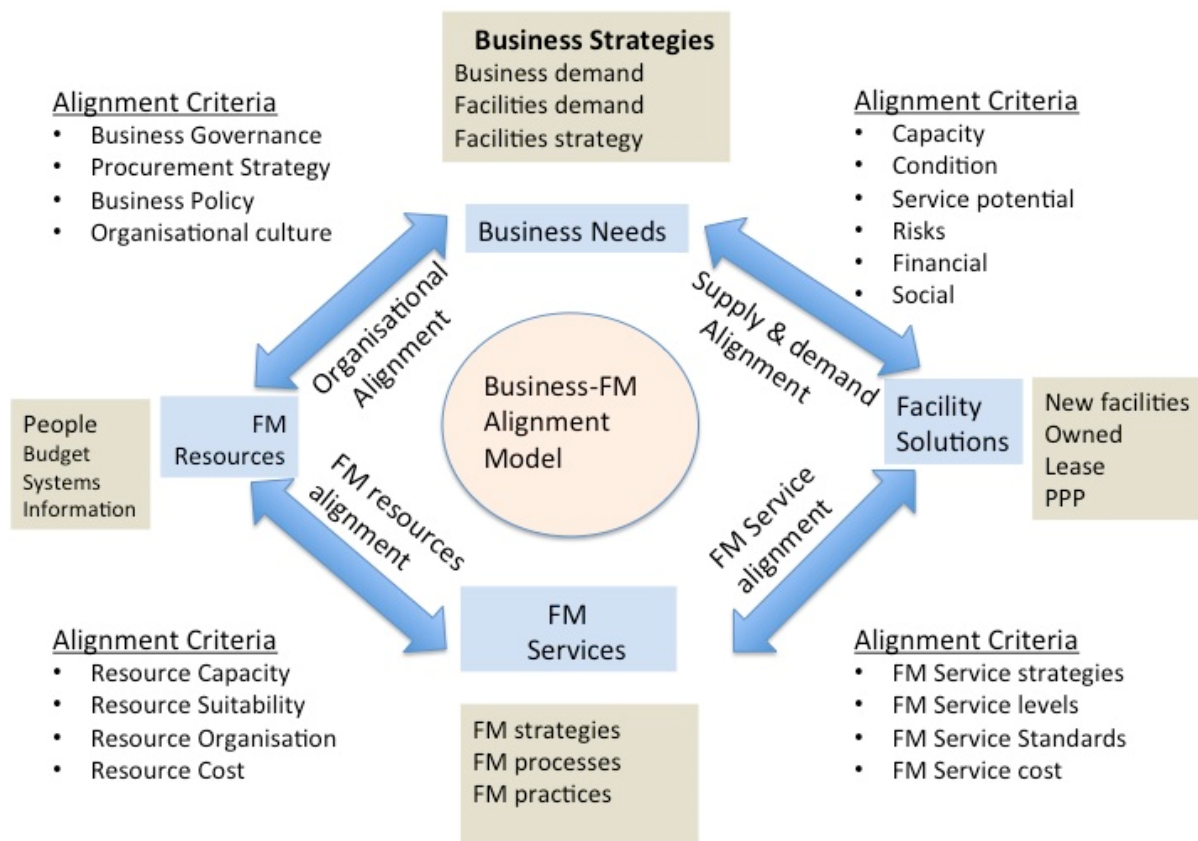


Fig. 4: Alignment FM with Business Needs (Source: Then & Tan (2006))

This can also be seen reflected in earlier work done by Nelson (2008, 2010) on the alignment of the supply and demand chain with the organisation (fig 5) to form a value chain in FM.

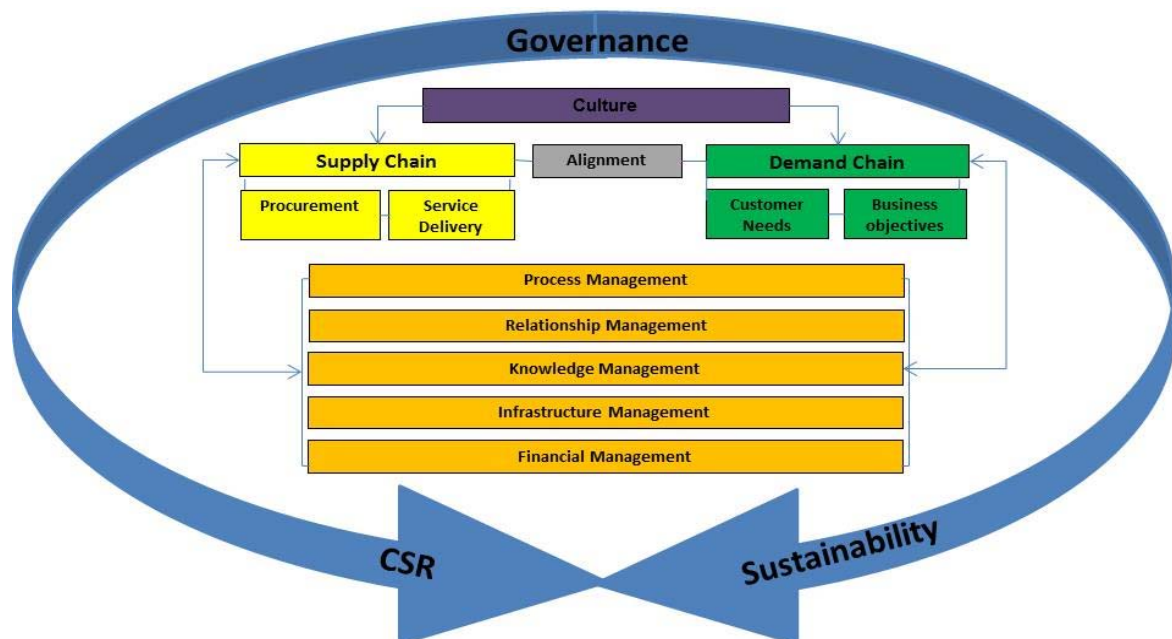


Fig. 5: FM Value Chain (Nelson, 2008, 2010)

In both models, (figs 4 & 5), there is a clear need for the alignment of FM functions, processes, resources and relationships with the organisational objectives and strategy to enhance business performance. Thus, further analysis of the relationships between the organisational models and the alignment variables (table 2) identified that most organisational models utilise the variable supply and demand alignment.

Tab. 2 Relationships between organisation model and alignment variables

Organisation Model	Type model	Alignment Variable
FM Total in house FM	A, B, C	FM Resource alignment
Management by agent strategy	D	Organisational alignment
Direct outsourcing strategy	E, F	Supply & Demand alignment
Management contract strategy	G	Supply & Demand alignment
Total FM strategy	H,I	Supply & Demand alignment

These results place emphasis on the outsourcing models, although it must be stressed that in-house models also require alignment with supply and demand. Further analysis is to be undertaken to examine the validity of these results against identified case studies.

## 5. Conclusion

The paper presents the classification of the organizational models for non - core service management. It identifies and describes all of the potential organisation models for non - core facility management services using literature review and examples from industry; and presents the advantages and disadvantages under the non-core services perspective.

During this study, it was identified that the selection of the optimal organisation model is contextual, and the selection is based on the following criteria: (a) the complexity of non-core facility services, (b) the internal know-how of the company, and (c) the degree of involvement of the management.

Finally, a relationship table was presented based on the alignment model between FM and business needs, which will be further developed in the research study.

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## **Wissenschaft trifft Praxis II:**

### **Workplace**

# **Generational differences in the perception of work and workplace**

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## **Abstract**

The war for talent (Ware & Grantham, 2003), caused by a shifting workforce and an increasing importance of knowledge workers, has driven organizations to seek optimum working conditions for their staff in order to retain key employees and to optimize performance. In order to retain (future) workers, a thorough insight in workers' needs is required. Age-related or generational differentiation regarding work and workspace has been suggested by several researchers such as Howe and Strauss (2007) and Puybaraud (2010). This study sets out to explore generational differences in facility management employees' expectations of their organizations and their workspace and aims to establish links between work environment and outcomes such as organizational commitment and performance. Results from a quantitative study (N=117) suggest that levels of distraction and group cohesiveness influence both performance and commitment, but no evidence was found to suggest that these relationships are influenced by one's generation or age group. Therefore, we conclude that when developing workspace, one should focus on employees' satisfaction and preferences and not focus on popular beliefs of Generation Y's characteristics.

**Keywords:** Workplace, generations, commitment, performance

## **Introduction**

According to Calo (2008), organizations nowadays face two challenges regarding human resource management. One is a capacity challenge: the ageing workforce in the Western world is awaiting the impending retirement of Baby Boomers, whereas fewer and fewer

young people enter the workforce; organizations will need to compete for young talent from Generation Y (Tulgan, 2003; Capelli, 2003; Dona, 2009; Jackson & Alvarez, 1992). Moreover, the ties between employers and employees are weakening, partly due to changes in the employment relationship with companies less able or willing to provide stable long-term employment (Conway & Briner, 2009). In response, employees have lowered their commitment to employers and are more focused on their own careers and employability rather than the organizations' performance (Lub et al., 2015; Rousseau et al. 2006). Generation Y - unlike Baby Boomers - are loyal to themselves and their profession, but less to their employer and turnover intention among employees of Generation Y is higher than among older generations (Lub et al., 2015). Haynes (2008) has shown that both the physical and the social aspects of the work environment influence satisfaction with workplace. This satisfaction in its turn influences both performance and commitment to the organisation, and ultimately job turnover. If workplace preferences differ between generations, as suggested by several authors (e.g. Joy & Haynes, 2011; Rothe et al., 2012) then facility managers, being responsible for workplace and services, may have to adapt workplace to suit different generations in order to optimize employee performance. This requires an understanding of intergenerational preferences for workplace in the broadest sense. Lee and Brand's research on workspace will serve as a basis for this understanding (Lee & Brand, 2005). Likewise, corporate real-estate managers do not just need to be able to estimate office demand (Miller, 2014), but also need to be aware of occupiers' preference, in order to optimally support their needs (Niemi & Lindholm, 2010). In sum, the purpose of this study is to identify the potential impact of workplace on commitment and performance for different generations.

## **Workplace**

One of the factors that influences commitment and performance, is the quality of workplace (McGuire & McLaren, 2007; Van der Voordt, 2004). Workplace research is a major issue within facility management, particularly since the introduction of alternative officing. This Including activity-setting environments, non-territorial offices, home-based telecommuting, and team environments, alternative officing is often introduced as a cost-reducing measure. In practice, employees become mobile within the office, by sharing desks, in activity-based settings. Laptops, Wi-Fi and mobile phones enable virtual officing, home officing, and working in social meeting places (Becker, 1999). However, alternative officing not only changes the design of office buildings, it also has an impact on e.g. job satisfaction

(Batenburg & Van der Voordt, 2008; Croon et al., 2005).

### *Workplace Satisfaction*

User satisfaction with their current workplaces is a key research area in order to achieve better work environments. Workplace environments contain both physical and behavioural aspects (Haynes, 2008), and both influence workplace satisfaction (Van Sprang et al., 2014). Many researchers have measured workplace satisfaction (e.g. Lee & Brand, 2005; Lee, 2006; Newsham et al., 2009; Hua, 2010; Thamkanya et al., 2012; De Been & Beijer, 2014).

Alternative officing has an impact on e.g. job satisfaction (Batenburg & Van der Voordt, 2008; Croon et al., 2005). Satisfaction with the workplace is positively associated with job satisfaction, according to Lee (2006), and job satisfaction is in its turn related to (perceived) productivity (Maarleveld et al., 2009; Haynes, 2008). McGuire and McLaren (2007) conclude that work environment is significantly related to employee commitment. According to Rothe et al. (2012) there is a clear connection between the work environments and office users' satisfaction and productivity.

### *Distraction*

Space is an important factor in knowledge transfer in organisations (Aznavorian & Doherty, 2011). This kind of work requires collaboration as well as time and space to do concentrated work. The latter is best supported by an environment that provides silence and privacy (Morgan & Anthony, 2008), as speech (people nearby, telephone conversations, etc.) is the most disturbing source of sound (Roelofsen, 2002; Ehrlich & Bichard, 2008). Many authors have discussed the effect of noise on performance of office workers (Banbury & Berry, 2005; Jahncke et al., 2011; Szalma & Hancock, 2011), especially the distracting effect of speech (Schlittmeier & Liebl, 2015). This is not surprising, as the potential loss in productivity is eight per cent (Roelofsen, 2008). The effect of noise is currently being researched by Oseland (2015).

### *Personalization*

According to Allen and Greenberger (1980), people may experience control by such means as e.g. personalization of their individual workplace. Brunia and Hartjes-Gosselink (2009) state that personalization is a relevant factor in non-territorial office design, as people tend to adjust their work environment to make it familiar and comfortable, and to mark their identity in the organization. Van der Voordt and Van Meel (2002) consider personalization to be related to

well-being and Elsbach (2003) has explored the effect of non-territoriality on identity. In his research on researched the effects of adjustability regarding the topic of control over the workplace on work outcomes like communication, environmental satisfaction, and perceived performance O'Neill (1994) found that adjustability was positively related to each of these aspects. The need for one's own space, or territory, is connected to both having a space to work and to one's place in the organisation (Vischer, 2008). The later is linked to one's status within the organisation

### *Group cohesiveness*

Group cohesiveness is a group characteristic; it reflects whether group members like one another, work well together, communicate effectively and coordinate their work efforts. It is part of the behavioural aspects of workplace environments (Haynes, 2008). According to Lee and Brand (2005), group cohesiveness increases job satisfaction and thereby increases performance.

## **Performance**

Performance, or productivity, is a major issue in facility management research, but an entity that is not easy to operationalize and to measure, especially for knowledge workers (e.g. Haynes, 2007, 2008; Maarleveld et al., 2009). Often, perceived productivity is taken as a measure for objective productivity. Following Lee and Brand (2005), this paper will use self-rated performance as a measure for productivity. Therefore:

*H1 Performance is correlated to workplace (personalization, workplace satisfaction, distraction and group cohesiveness).*

## **Affective commitment**

Affective commitment is defined as "an affective or emotional attachment to the organization such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organization" (Allen & Meyer, 1990, p. 2). As empirical research has shown that affective commitment predicts employee performance (Meyer et al., 1989), a correlation between performance and affective commitment may be assumed. The interplay

between employer and employee obligations affects attitudinal and behavioural work outcomes such as affective commitment and work effort (Rousseau & Tijoriwala, 1998).

*H2 Affective commitment is correlated to workplace (personalization, workplace satisfaction, distraction and group cohesiveness).*

## **Generations**

In today's workplace, a distinction is often made between four generations, generally known as Traditionalists (born <1945), Baby Boomers (born 1945-1964), Generation X (born 1965-1980) and Generation Y (born after 1980) (Eisner, 2005). For the purpose of this article the focus will be on the last three generations, namely the Baby Boomers, Generation X and Generation Y, as these form the vast majority of the workforce in the facility management industry. Although some variation exists on the exact naming of these generations and the classified start and end dates of each of these generations, there is a general descriptive consensus among academics and practitioners regarding these generations (Eisner, 2005; Martin, 2005; Martin & Tulgan, 2001; Raines, 2003). However, though often mentioned in the popular press, current studies provide mixed evidence for the justification of generations and their behaviour and attitudes in the workplace (Becton et al., 2014; Giancola, 2006; Lub et al., 2012; 2015; Twenge, 2010).

Baby Boomers (born 1945-1964) are currently a large generation in the workforce, although Generation Y will overtake them over the next ten years. The current literature (Eisner, 2005; Kupperschmidt, 2000; Lancaster & Stillman, 2005; Smola & Sutton, 2002) suggests that Baby Boomer employees value job security and a stable work environment. Other descriptions of this generation include loyalty to an organization, idealism and ambition. Furthermore, they are suggested to be focused on consensus building and mentoring. Lastly, they are considered to be very sensitive to status (Kupperschmidt, 2000).

People belonging to Generation X (born 1965-1980) are generally characterized as cynical, pessimistic and individualist (Kupperschmidt, 2000; Smola & Sutton, 2002). They are also considered to be entrepreneurial, comfortable with change, and less loyal to an organization.

Instead, they are viewed as independent and, as a result of an economic crisis in their formative years, more likely to leave a job in search of more challenging options and higher salaries. They are said to have a lack of respect for authority (Howe & Strauss, 2007) and a strong focus on, and difficulties dealing with, work-life balance.

Generation Y (born >1980) is described as being very comfortable with change and less attached to job security (Eisner, 2005; Tulgan, 2003). Generation Y is further typified as valuing skill development and enjoying challenging work. Comparable to Baby Boomers, they are also considered to be optimistic, driven, goal oriented and demanding of the work environment (Smola & Sutton, 2002). Also, they are viewed as enjoying collective action.

### **Providing workplace to different generations of workers**

According to Van der Voordt (2004) different age groups may react differently to office innovation. One might even assume that contemporary kinds of workplace, like virtual officing, play a role in attracting and retaining top talent (Earle, 2003), especially Generation Y, the young generation of workers with the required technological skills. Even though the 'new way of working' has been debated for many years, surprisingly little research has been done into differences in workplace preferences (Puybaraud et al., 2010; Van Baalen et al., 2008). Though a number of authors have studied generational differences in preferences regarding workplace (e.g. Bennett et al., 2012; Brand, 2008; Joy & Haynes, 2011; Phillips & Addicks, 2010; Rothe et al., 2012; Rasila and Rothe, 2012), empirical proof is limited and further studies are needed. Satisfaction with workplace is one of the factors that determine job satisfaction and performance (Newsham et al., 2009; Lee and Brand, 2005), but these are also influenced by more psychological constructs like commitment and psychological contract. Again, age, or generation-related differences in commitment and psychological contract have received limited attention (Barron, 2008; Chen & Choi, 2008, Gursoy et al., 2008).

### *Workplace satisfaction for different generations*

Satisfaction with workplace has been determined by many researchers, e.g. Lee and Brand (2005), Lee (2006), Newsham et al. (2009), and De Been and Beijer (2014). These authors

research the effect of a number of aspects of office concepts on satisfaction with workspace. According to Van der Voordt (2004) different age groups may react differently to office innovation. Generation Y is said to be a far more social generation than older groups. They are fervent users of social media, and spend much more time online, communicating with their network (Boschma & Groen, (2005). That could indicate that they value group cohesion and team work more than older generations, and therefore prefer those workspaces that allow collaborative work: team rooms, rooms for more than 3 persons, but also home officing and social meeting spaces provided that adequate technology is available. According to Puybaraud et al. (2010), despite the trend to introduce non-territorial officing, the majority of generation Y (70% overall, even 80% in the US) is territorial and does not wish to share a desk, let alone exchange their private desk for a hot desk (18%). On the other hand, they also have the highest demand for collaborative workspace, specifically dedicated team workspace and formal meeting areas, compared to other generations. This confirms the need for team rooms and the importance of the social aspects of workspace, but also stresses that Generation Y is not yet prepared to become so involved in the social structure at work that they are willing to relinquish their office territory, their private desk (Brunia & Hartjes-Gosselink, 2009). Given all the current attention to workspace design for younger generations, we assume that regarding workspace satisfaction in general

### *H3 Baby Boomers, Generation X and Y show different levels of workplace satisfaction*

#### *Workplace distraction for different generations*

Regarding the effect of age or generation on the distracting effect of noise or speech, evidence is scarce. With age, hearing abilities decreases (Van Boxtel et al. 2000), but there is no consensus regarding the decrease of cognitive abilities (Nilsson et al., 2009; Salthouse, 2009), let alone the effect on performance and productivity at work (Silverstein, 2008). Ehrlich and Bichard (2008) researched the Welcoming Workplace aimed at determining how experienced knowledge workers aged over 50 (primarily Baby Boomers) experienced the design of their work environment. Their results show that open plan offices do not provide older workers an adequate work environment for concentrated work, and that in these environments background noise is the prime source of distraction. A literature review by Kaarlela-Tuomala et al. (2009) also shows that noise has a detrimental effect on performance. According to Honisto (2006) speech is a major source of distraction, whether it's relevant or irrelevant, and

at different sound levels Schlittmeier et al. (2009) have shown that background speech influences performance. Joy and Haynes (2011) found that Baby Boomers prefer a quiet room for concentrated work. Their focus, consisting of employees from all three generations, and they describe "that noise and distraction was a major contributor to losing focus when undertaking concentration work", but they do not report on differences in opinion on the distractive effect of noise between the generations. Brand (2008) argues that Generation Y workers are as distracted by noise as older workers. Were they less prone to distraction, then they would be able to truly multi task, divide their attention over their prime task and the speech or noise at the same time, without any detrimental effect on their prime - and often difficult cognitive - work. However, science by now has shown that multi tasking without negatively affecting performance is a myth. Brand states, "Younger generations cannot learn to ignore conversations around them any better than their older counterparts. Thus, Gen-Y knowledge workers, at least while working independently, need approximately the same physical design conditions as older employees do if they are to excel at their work" (Brand, 2008). So even though little experimental work is available on a differentiating effect of either age or generation on noise distraction in offices, we propose:

*H4 There is no difference between Baby Boomers, Generation X and Generation Y in level of distraction by noise*

#### *Group cohesiveness for different generations*

Given the definition of group cohesiveness, it should also increase affective commitment, as this represents the emotional bond of the employee with his organization. As Baby Boomers focused on consensus building (Kupperschmidt, 2000) and Generation Y on enjoying collective action, but Generation X is supposed to be individualistic, we presume that Generation X will show lower group cohesiveness.

*H5 Generation X shows a lower level of group cohesiveness compared to Baby Boomers and Generation Y.*

#### *Personalization for different generations*

According to Allen and Greenberger (1980), people may experience control by such means as

e.g. personalization of their individual workplace. Brunia and Hartjes-Gosselink (2009) state that personalization is a relevant factor in non-territorial office design, as people tend to adjust their work environment to make it familiar and comfortable, and to mark their identity in the organization. Van der Voordt and Van Meel (2002) consider personalization to be related to well-being and Elsbach (2003) has explored the effect of non-territoriality on identity. In his research on the effects of adjustability, regarding the topic of control over the workplace on work outcomes like communication, environmental satisfaction and perceived performance, O'Neill (1994) found that adjustability was positively related to each of these aspects. The need for one's own space, for territoriality, is connected to both having a space to work and to one's place in the organisation (Vischer, 2008). The latter is linked to one's status within the organisations. Baby Boomers are said to have more need for status, and entered the office before non-territorial officing became popular. On the other hand, Brunia and Hartjes-Gosselink (2009) indicate that Generation Y may have the same need for personalization of their workspace as reported for employees in general, and Wagman and VanZante (2004) describe Generation X's need for personalization. Therefore we hypothesize

*H6 There is no difference between Baby Boomers, Generation X and Generation Y in preferred level of personalization*

To conclude the discussion on the moderating effect of generation on workplace, we hypothesize:

*H7 The relationship between workplace (personalization, workplace satisfaction, distraction and group cohesiveness) and performance is moderated by generations.*

*H8 The relationship between workplace (personalization, workplace satisfaction, distraction and group cohesiveness) and commitment is moderated by generations.*

## **Method**

A digital questionnaire was distributed to Facility Management employees through the database of the FMN, the Dutch branch organization for facility management, and the alumni of the Master Facility & Real Estate Management. A total of 170 employees filled in the questionnaire. The questionnaires were then checked for completion and a final sample of 117

questionnaires was entered for analysis. The sample (N=117) represents a balanced mix of different types of organizations, and is largely representative of the demographic workforce characteristics of the industry in terms of gender distribution and educational level (Van der Pluijm & Ruys, 2012). Sixty-three percent of the population is male – which is consistent with the distribution of gender in the Dutch industry in practice. Over 90% has a Bachelor Degree or higher and 84% of the respondents work fulltime. The sample is on average younger than the average facility manager, and tenure is shorter (average 6.7 years, s.d. 6.2 years). Three generations are represented in the sample: 28% of the respondents was born between 1945-1964 (Generation Baby Boomers); 50% was born between 1965-1980 (Generation X); and 22% of the respondents belonged to Generation Y, born between 1981-1995.

All scales used were taken from validated instruments. Affective commitment was measured using an adapted questionnaire based on Meyer and Allen (Meyer & Allen, 1991; Ten Brink, 2004), with a 5-point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree). Measurement of workplace (performance, distraction, personalization satisfaction with workplace, and group cohesiveness) was based on Lee and Brand (2005).

Cronbach's alphas ranged between 0.75 and 0.89. Analyses were performed using SPSS. ANOVA and post-hoc tests (LSD) were used to denote differences between generations. Linear stepwise regression analysis was performed using mean-centred independent and moderator variables for moderation tests.

## **Results**

Table 1 shows the average values for all parameters; overall, and per generation. Compared to results by Van Baalen et al. (2008), satisfaction with workplace and personalization are higher, whereas distraction is lower. Table 2 shows that Generation X and Y only show significantly different values for performance; Baby Boomers on the other hand perceive significantly less distraction than Generation Y and are more satisfied with their workplace than younger workers. Furthermore, Generation Y reports lower performance than older workers, and Baby Boomers have a higher affective commitment than younger workers.

Regarding the relation between workplace dimensions (group cohesiveness, distraction, personalization, satisfaction with workplace) and the outcome variables commitment and performance, analysis shows that all workplace dimensions show a significant correlation with performance (Table 3), thereby supporting Hypothesis 1. Hypothesis 2 however, is only

partly supported; group cohesiveness is significantly correlated with affective commitment, but not with the other workplace characteristics (Table 3). Hypothesis 3 is partly supported: Baby Boomers differ significantly in workplace satisfaction with respect to both Generation X and Generation Y, but these younger generations are alike in workplace satisfaction (Post hoc test, table 2). Results of individual aspects of workplace show that in general level of distraction is negatively correlated with satisfaction with workplace (Table 3). Surprisingly, Hypothesis 4 is not supported, as Baby Boomers report significantly less distraction than Generation Y (Table 2). This seems even counter-intuitive, giving the popular opinion on Generation Y, and might be caused by the fact that three times as many Baby Boomers as Generations Y report that they primarily use a private workplace. Generation X is significantly more satisfied with workplace than Generation Y. Given that Generation Y rates their performance lower than older generations, this makes them the most critical and maybe also the least performing group. Hypothesis 5 is not supported -although group cohesiveness is indeed lowest for Generation X- as post hoc analysis shows that this difference is not significant (Table 2). Hypothesis 6 is supported; we indeed find no difference between generations regarding personalization.

Tab. 1: Mean values for group cohesiveness, distraction, personalization, satisfaction with workplace, performance and affective commitment

	All respondents	Baby Boomers	Generation X	Generation Y
Group cohesiveness	2.08 ± .86	1.97 ± .70	2.16 ± .91	2.04 ± .92
Distraction	3.57 ± .78	3.82 ± .77	3.51 ± .77	3.38 ± .75
Personalization	2.77 ± 1.37	2.69 ± 1.38	2.90 ± 1.42	2.65 ± 1.21
Satisfaction with workplace	1.83 ± .81	1.51 ± .53	1.92 ± .87	2.04 ± .86
Performance	2.25 ± .76	2.08 ± .61	2.21 ± .63	2.58 ± .79
Affective commitment	1.23 ± .83	0.99 ± .87	1.44 ± .83	1.55 ± .61

Note: measured with 5-point Likert scale, ranging from 1 (very high level of the variable) to 5 (very low level).

Our main question was whether the relationship between workplace and performance and commitment was moderated by one's generation. Results from the regression analysis in Table 4 show that although workplace does influence performance and commitment, by

means of distraction and group cohesiveness, this influence is not moderated by generation. Our results support Giancola (2006), Becton et al. (2014) and Cugin (2012), who all doubt that the popular connotations of characteristics of generations are sufficiently grounded in empirical research. Therefore, hypotheses 7 and 8 are rejected.

Tab. 2: Mean differences between generations, in post hoc test (LSD) with workplace and group cohesiveness.

	BB vs Gen Y	BB vs Gen X	GenX vs Gen Y
Group cohesiveness	-.07	-.19	.117
Distraction	.44*	.30	.13
Personalization	.03	-.21	.24
Satisfaction with workplace	-.53*	-.41*	-.12
Performance	-.49**	-.13	-.36*
Affective commitment	-.56**	-.44*	-.11

Note. \* $p < 0.05$ ; \*\* $p < 0.01$ . BB = Baby Boomers; Gen X = Generation X; Gen Y = Generation Y.

Tab. 3: Correlations and Cronbach's Alphas.

	1	2	3	4	5	6
1. Group cohesiveness						
2. Distraction	-.178	.76				
3. Personalization	.071	-.461**	.73			
4. Satisfaction with workplace	.036	-.264**	.365**	.79		
5. Affective commitment	.354**	-.102	.103	.039	.89	
6. Performance	.248**	-.364**	.244**	.205*	.208*	.89

Note. \* $p < 0.05$ ; \*\* $p < 0.01$ . Values in Bold are Cronbach's alphas for scaled variables.

Table 4. Hierarchical regression analysis predicting commitment and performance.

Dependent variable	Performance			Commitment		
	Step1	Step 2	Step3	Step1	Step 2	Step3
Control variables						
Gender	.172	.120	.117	-.140	-.203*	-.195*
Independent Variables						
Distraction		.276*	.257*		.045	.087

Group cohesiveness		-.212*	-.215*		.391*	.396*
Workplace satisfaction		-.089	-.140		-.034	.026
Personalization			.020		.074	.080
Moderators (generation)						
Distraction * GenX			-.054			-.047
Distraction * GenY			-.025			-.041
Group cohesiveness * GenX			-.019			-.042*
Group cohesiveness * GenY			-.003			.147
Workplace satisfaction * GenX			-.227			.249
Workplace satisfaction * GenY			-.083			.156
Personalization * GenX			.059			.034
Personalization * GenY			.011			.029
Regression model						
F	3.48	5.12*	2.21*	2.26	4.48*	2.41*
$\Delta F$	3.48	5.39*	.51	2.26	4.95*	1.12
R2	.030	.189	.220	.019	.169	.139
$\Delta R2$	.030	.159	.031	.019	.150	.067

Note. Standardized regression coefficients are reported \* $p < .05$ .

## Discussion

We may conclude that all workplace-related variables (personalization, workplace satisfaction, group cohesiveness and distraction) are correlated to performance, whereas only group cohesiveness is correlated with affective commitment. Furthermore, comparing average values for these variables among generations, we find that personalization and group cohesiveness are similar for all generations, that Baby Boomers show higher affective commitment and higher work satisfaction than younger workers, and that they report less distraction. Furthermore, we found that distraction and group cohesiveness predict performance, and group cohesiveness predicts affective commitment. Finally, we aimed to establish whether the relationship between performance and commitment on one hand, and workplace variables (personalization, group cohesiveness, distraction and workplace satisfaction) indeed is moderated by generation. Results indicate that generational membership does not moderate these relations. Therefore, we conclude that distraction and group cohesiveness are important elements, for all workers, and that these effects are not age-dependent. Despite the popular belief that Generation Y prefers to work in a hustle-and-bustle, and can manage distractions from nearby colleagues, our results contradict these popular beliefs and suggest that they are as distracted by noise and speech as are older workers.

## **Practical implications**

According to Appel-Meulenbroek et al. (2011) designing general office concepts that take all work styles and activities into account is a challenge. Many employees feel distracted by what is happening around them, and opt to work from home on busy days. On the other hand, people value being part of their organization, come to the office with the intention to keep in touch, indicating a need for group cohesion. Therefore, as stated by Haynes (2008) and Van Sprang et al. (2014), both physical and social elements of workplace need to be optimal for performance of employees. Fortunately, these preferences do not seem to be different between generations. This research does not support differentiating between generations when developing workplace for knowledge workers.

Further research in the role of auditory distractions is needed, as this factors clearly influences productivity. Given the predicted effect of the use of earphones on youths, we may expect that noise in offices will become a hot topic.

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## Healthy Thinking

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### Abstract

Two century-old hospitals that are now part of UNESCO's world heritage and the recent trend concerning 'healing environments' inspire to take a short trip in history...

At 300 BC the Greek were already well aware of the role the environment could play in the healing process. The Romans perfected the Greek ideas further, providing buildings and cities with a sewage system, bathhouses and aqueducts. One century ago, spread across Europe, hospitals and sanatoria were built, taking into account the effects of hygiene, colour and lighting to the healing process of patients.

In this presentation, best practices from one century ago (the 'Hospital de la Santa Creu i Sant Pau' in Barcelona (Spain) and the 'Sanatorium Zonnestraal' in Hilversum (Netherlands) and Paimio Hospital in Paimio (Finland)) are compared with the recent best practice at St. Charles Medical Centre in Redmond (Oregon, USA)).

It will become clear that the knowledge how to make a health stimulating environment is there and is based on centuries of experience. 'Modern' is the attention that is paid to the 'mood' and 'behaviour' aspects of the healing environment. The role of the behaviour of staff and volunteers in putting the patient in a good mood and in stimulating healthy behaviour of the patient is an important aspect. Here lies a great challenge for facility management, a great chance to prove 'added value' as a 'healthy thinking' advisor.

### Keywords

Healing environment; Hospitals; Trends in FM.

### Healthy Thinking; the challenge to provide a healthy work environment.

During a search for 'healing environments', one will not only find inspiring 'modern' environments, but also places that have been designed to be a healing environment for over a century ago. And digging deeper into history, even places that did so almost three millennia ago!

What can we learn from the past? What can we apply for our future? This paper puts some history and best practice in line, to conclude with some challenging questions concerning our future.

## 1. The history of thinking about health

The Hieron at Epidauros was the most celebrated healing center of the Classical world, the place where ill people went in the hope of being cured. To find out the right cure for their ailments, they spent a night in the Enkoimitiria, a big sleeping hall. In their dreams, the god Asklepios himself would advise them what they had to do to regain their health. As the illustration below (Fig.1) shows, the place was enormous. "There were plenty of places to get the juices flowing: woods for walking, a gymnasium and a stadium where one could watch athletic events, and run his own prescribed course. Below the frame to the right is a pure mineral spring that still flows, and a "hotel" where incubants would sleep until they were ready for Dream Night. Near the center of the picture is the Asklepion, or Temple of Asklepios, and below it an *Odeon*, or small theatre and lecture hall. Extending up from the *Enkoimitiria*, the Dream Diagnosis Hall at middle left are the baths (L) where the detox process could be moved along with water therapy, sweats and massages. Those who were getting ready for dream therapy could even see the country's finest actors play uplifting spiritual stories, as they still do in the warm months today" (Furst, 2007).

Asklepios, the most important healer god of antiquity, brought prosperity to the sanctuary, which in the 4th and 3rd BC embarked on an ambitious building program for enlarging and reconstruction of monumental buildings. Fame and prosperity continued throughout the Hellenistic period.

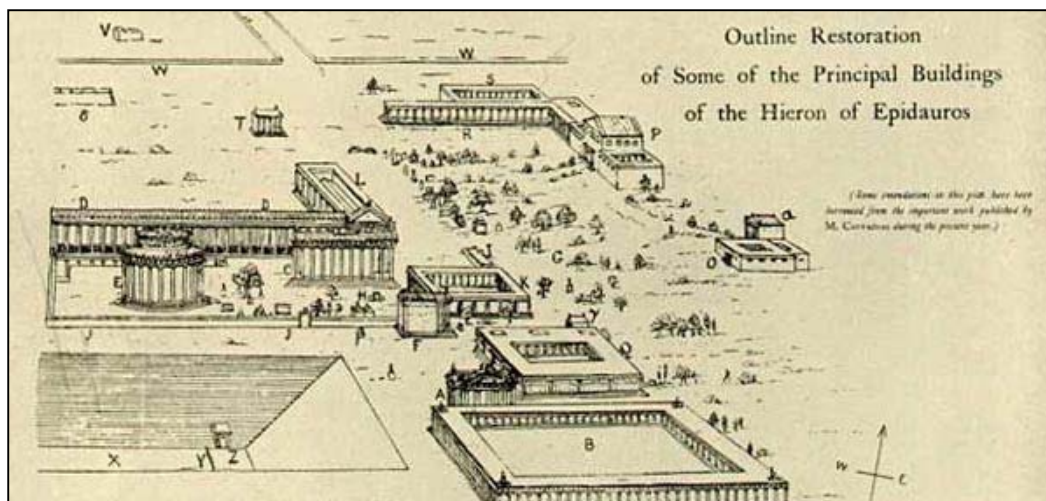


Fig. 1: The Hieron of Epidauros (Caton, 1900)

The Romans copied the Greek example into their way of life and enhanced it. They have become well known for their Bathhouses (The city of Bath (UK) is named after its Roman baths!), their Aqueducts and their sewage systems. There is a well-known Roman expression saying: 'mens sana in corpore sanum', meaning: a healthy mind in a healthy body... The Romans did obviously not only have healing environments, but also were aware of the effect that a healthy body has on one's mind.

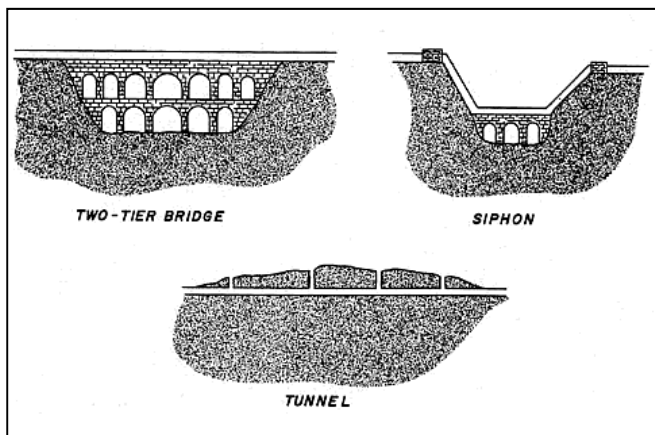


Fig. 2: Roman Aqueduct structures (Macaulay, 1978)

At A.D. 410, The Visigoths, led by Alaric, conquer Rome and sack Rome for three days in a row... the beginning of the 'Dark Middle Ages'.

During the Middle Ages our western culture seems to have forgotten almost everything the Greek and Romans had invented. Bloodletting became the main way of treating illnesses. Sewage systems decayed and were not used any more. All dirt was just thrown on the street.

It was during the Krim war (1853-1856), that the awareness of influence of buildings on health returned to our civilization. Miss Florence Nightingale was shocked, hearing about the 47% death rate amongst English patients in the Scutari Hospital in Istanbul. Lack of hygiene in the hospital caused many patients to die on 'secondary diseases'. She fought the lack of hygiene and also introduced standardized shipable hospital units for 30 men. In 1859 she published 'Notes on Nursing', in which she states that nursing "ought to signify the proper use of fresh air, light, warmth, cleanliness, quiet, and the proper selection and administration of diet – all at the least expense of vital power to the patient." She believed that nursing should provide care to the healthy as well as the ill and discussed health promotion as an activity in which nurses should engage.



Fig. 3: Client and environment (after Nightingale, 1859)

## 2. Healing environment; a perspective

This paper has been inspired by Mobach's model describing organisational-environmental performances (Mobach, 2009). In this model, health, mood and behaviour are shown as 'performances' to which the environment can contribute, influencing the well-being of its users. A simplified version of Mobach's model is shown in figure 4.

With 'health' as a performance by the environment is meant the influence at the health of employees (sickbuildingsyndrome, obesitas, stress) as well as at the health of patients (fear, pain, depressiveness, delirium, death).

'Mood' as a performance of the environment, concerns satisfaction of users and the way climate, colours, odour and emotions are experienced.

'Behaviour' concerns the ways the environment influences users to behave healthy by stimulating them to walk, talk, concentrate, produce, wait or shop.

In the next three paragraphs of this paper, best practices from one century ago (the 'Hospital de la Santa Creu i Sant Pau' in Barcelona (Spain), the 'Sanatorium Zonnestraal' in Hilversum (Netherlands) and Paimio Hospital in Paimio (Finland)) are compared with the recent best practice at St. Charles Medical Centre in Redmond (Oregon, USA)), focussing on the ways these environments perform concerning health, mood and behaviour. Information on the different cases is gathered by excursions (Barcelona and Hilversum) and desk study (all).

The final paragraphs describe the most important differences found and the challenges these offer to facility management.

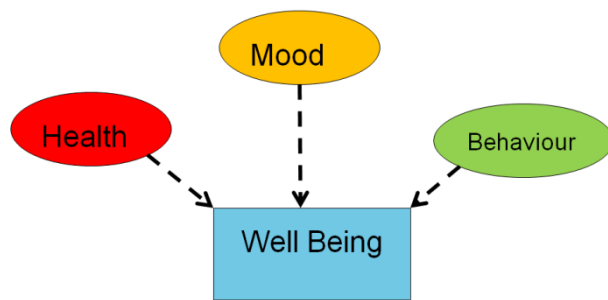


Fig.4: Organisational-environmental performances (Mobach, 2009)

## 2. Century old healing environments

In 1878 the first edition of 'Der Rohrleger', a magazine about how to equip buildings with Lighting, Warmth, Water and Air is published by Seydel in Berlin. In those years about a century ago, death toll by tuberculosis was three times as high as by lung cancer nowadays. It became clear that the best way to fight tuberculosis is to provide much daylight, clean air, to make the patient use and clean his lungs by walking in clean air and make him rest to recover and to do this all over a long period of time (several years). It was in this time, that the sanatorium and hospitals described in the next paragraphs were built.

### 2.1 Hospital de la Santa Creu i Sant Pau, Barcelona (Spain, 1902)

According to the World Heritage List of Unesco the Hospital de la Santa Creu i Sant Pau (St. Pau Hospital): "is of immense importance because it is the largest hospital complex in Modernist style (equivalent to *Art Nouveau*). Historically, the Hospital de Sant Pau, at one and the same time original and daring, demonstrates how it's architect Domènech i Montaner had studied the problem of modern hospitals" a century ago.

The hospital complex is in the form of an enclosure, containing 12 pavilions in a green parkscape of 13,5 hectares. Almost two kilometres of underground passages connect all the pavilions.

**Health:** in this hospital the rooms are light and colourful. Patients would be brought outside in the gardens of the enclosure, to enjoy even more sunlight and fresh (sea)air (see Fig. 5.). Each patient's bed was next to a large window. But, over more than 25 patients were put in one room, with negative consequences concerning noise, privacy and hygiene.

**Mood:** its floral decoration and abundant use of sculptures by the best artists of the period emphasize in a remarkable way the structure of the buildings. For Domènech i Montaner it was essential to be able to give sick people a feeling of well-being and beauty, which would

most certainly contribute to an early convalescence, since according to him beauty has therapeutic value."

Behaviour: patients were mostly kept in bed, but would be moved to the garden in the daytime when the weather provided. So the patients were 'forced' to take a 'sunbath' and to inhale fresh air.



Fig.5: Patients in the garden of St. Pau Hospital (picture courtesy of St. Pau Hospital)

## **2.2. Sanatorium Zonnestraal, Hilversum (Netherlands, 1928)**

This sanatorium was designed for diamond cutters from Amsterdam who had caught tuberculosis. It has been designed by architect Jan Duiker, in cooperation with Bernard Bijvoet and Jan Gerko Wiebenga. The main building was opened in 1928. In 1957 Zonnestraal became a general Hospital.

Health: Typical for this building is the attention that is paid to daylight and to the location in the woods (120 hectares) offering fresh air.

Mood: An inviting place for people who must rest, walk, and spend lot of time in a hygienic surrounding with lots of light and fresh air.

Behaviour: since patients would be staying in the sanatorium over a longer period of time, conversation rooms, terraces, stairs and balconies and the location in the woods stimulate to meet with other people and to enjoy the outdoors. At the same time making the stay less depressing and giving opportunity to the lungs to recover.



Fig.6: Sanatorium Zonnestraal, Hilversum (picture by author)

### 2.3. Paimio Hospital, Turku (Finland, 1933)

The sanatorium was built in 1930-1933 by architect Alvar Aalto. The 'Nomination of Paimio Hospital for inclusion in the World Heritage List' (Ehrström et al. 2005) contains a great description of the complex.

Health: Aalto's starting point for the design of the sanatorium was to make the building itself a contributor to the healing process. He liked to call the building a "medical instrument". For instance, particular attention was paid to the design of the patient bedrooms: these generally held two patients, each with his or her own cupboard and washbasin. Aalto designed special non-splash basins (see Fig.7), so that the patient would not disturb the other while washing. The patients spent many hours lying down, and thus Aalto placed the lamps in the room out of the patients line of vision. Patients had their own specially designed cupboards, fixed to the wall and off the floor so as to aid in cleaning beneath it.

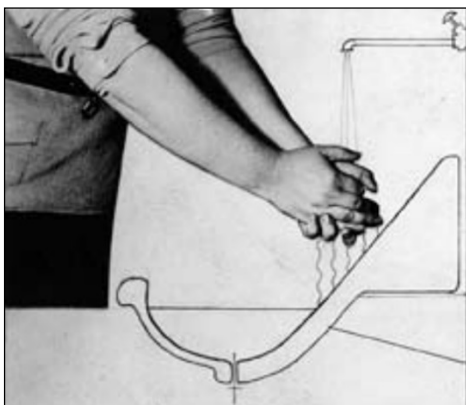


Fig.7: The principle of the 'non-splash' washbasin in the patients' room (Ehrström et al. 2005).

Since the only known "cure" for tuberculosis was complete rest in an environment with clean air and sunshine, on each floor of the building, at the end of the patient bedroom wing, were sunning balconies, where weak patients could be pulled out in their beds. Healthier patients could go and lie on the sun deck on the very top floor of the building.

Mood: the ceiling of the patients' rooms was painted dark green to provide a relaxing atmosphere and to avoid glare. As the patients spent a long time—typically several years—in the sanatorium, there was a distinct community atmosphere among both staff and patients; something which Aalto had taken into account in his designs, with various communal facilities, a chapel, as well as staff housing.

Behavior: specially laid out promenade routes through the surrounding forest landscape invite the patients to enjoy the outdoors and exercise their lungs in fresh air.

### **3. Today's best practice and research results**

The economic hardships of the thirties, the second world war and the consequent urge to (re)build much and fast seems to have pushed the developments and knowledge concerning healing environments to the background, not to return until recently. Recent research makes clear that:

- A fancy room, well planned use of colours, a dynamic lighting system and a good climate (temperature) have a positive influence at vitality (Maslow and Mintz, 1956);
- Good use of odour and colour can relax anxious people (Lehrner et al., 2000; Jacobs and Suess, 1975);
- Sunlight and flora can reduce pain and lower the need for medicine (Ulrich, 1984; Walch et al. 2005);
- Sunlight, especially the morning sun, shortens the necessary length of stay of depressive patients (Beauchemin and Hays, 1996; Benedetti et al. 2001);
- A room with a view lowers the chance to have a delirium after being operated (Wilson, 1972; Keep et al. 1980);

The next hospital is described to show today's best practice in the field of healing environments.

#### **3.1. Saint Charles Medical Centre Redmond (Oregon, USA, 1952)**

This hospital has been built in 1952. It contains 331 beds. It's not the architecture that makes this building special, but the way the interior and the staff are supporting the healing process.

Most of the information on this hospital has been derived from a Dutch travel report written by Sonnenschein and Haimé (2007).

#### Health:

The normal health related aspects are all provided: clean bedrooms with a good climate, bright colours and a great view to the outside (see Fig. 9.)

#### Mood:

In the St. Charles MC (226 beds) the focus is on the patient. The environment is styled to make the patient feel at home. All waiting rooms are different, with different furniture, club chairs and even fireplaces (see Fig 8). Illumination like at home, lots of green plants, views to the natural surroundings of the building. Live music is performed regularly by patients, visitors and even the local music school. Good facilities are available for visiting family members to make a longer stay possible.

#### Behaviour:

Hospital staff is considered to be an important part of the 'healing environment' as well. Staff is only hired when they see "healthcare as a calling for those who serve". All staff, also medical, is in plain clothes. Since cleaning staff are active especially during nightly hours and are then addressed by patients, they all get trained in communication skills, so they as well can be 'caregivers'.

Environment, including hospital staff and family, stimulate patients to feel at home and to behave as if they were not patients.



Fig.8: Fireplace at Saint Charles Medical Centre (Sonnenschein and Haimé, 2007)



Fig.9: Great view: Saint Charles Medical Centre (Sonnenschein and Haimé, 2007)

#### 4. Old practice and best practice compared

In table 1, the way the different hospitals and the sanatorium perform(ed), has been summarized.

Tab. 1: Performance of the described environments

Environment	Health	Mood	Behaviour	Remarks
<b>Sant Pau</b>	Daylight; colours; Sunlight; (sea)air; garden; many patients in one room.	Decoration, sculptures, 'beauty'.	Patients stay in bed, but are moved to the outside in the daytime.	
<b>Zonnestraal</b>	Light; bright (not colourful); fresh air; woods; one or two patients per room.	Inviting, facilities must make longer stay agreeable.	facilities stimulate to walk and to talk	Both Zonnestraal and Paimio have initially been designed as TBC-
<b>Paimio</b>	Building = medical instrument; total design, also furniture and 'non-splash' washbasins Light; bright; fresh air; woods; one or two patients per room.	Dark green ceiling for relaxing atmosphere; various facilities must make longer stay agreeable.	facilities stimulate to walk and to talk	Sanatoria. Both facilities have turned out to be very useful as general hospital as well.
<b>Saint Charles</b>	Clean bedrooms; good climate; bright homely colours; great view.	Make patient feel at home; colours; odour; fireplaces; green plants; non uniformity of rooms; musical instruments and performances; facilities for visiting family; involvement of family and volunteers.	Environment, hospital staff, family and volunteers stimulate patients to feel and to behave as 'at home'. Behaviour of staff plays in important role in making the patient feel at home (=mood of patient).	The behaviour of staff plays a very important role in this hospital!

Comparing old practice and best practice, the following differences are striking:

- Health: most of the good 'old' practice, especially concerning 'health', is still in use;
- Mood: nowadays a lot more is done to make the patient feel at home: non uniformity of rooms, use of odour and indoor green plants. But also the integration with the rest of the world, by facilitating the stay of family and by actually inviting the world to the hospital, by organising repetitions and performances;
- Behaviour of staff and volunteers nowadays plays an important role in putting the patient in a good mood and in stimulating healthy behaviour of the patient. Working in this way calls for special leadership.

## **5. Conclusion**

The knowledge how to make a health stimulating environment is there and is based on centuries of experience. 'Modern' is the attention that is paid to the 'mood' and 'behaviour' aspects of the healing environment. The role of the behaviour of staff and volunteers in putting the patient in a good mood and in stimulating healthy behaviour of the patient is an important aspect.

Facility Management can play an important role as the facilitator of a healing environment. This will not only be the built environment, but also the way this environment is decorated, the service that is provided and the way in which that service is provided. Looking at the St. Charles Medical Centre the facility staff can also be 'caregivers'. This will mean a strong integration of Facility Management in the primary process.

Succeeding will depend on providing the right 'hardware' (building, interior, design, colours, green plants, odours, logistics...) more scientific data to support making the right choices concerning those aspects is needed.

Succeeding will also depend on providing the right 'software' (people) with the right skills, the right attitude and the right vision and approach (management).

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