



# Performance based maintenance and facilities contracts

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# Chair of Public Commissioning in Construction



The Chair aims to:

1. improve the general understanding of construction clients and their role and domain of work in asset management;
  2. to identify the key capabilities of those clients and their organisations;
  3. to generate supportive knowledge and tools for this target group.
- TU Delft – Faculty of Architecture – Department of Management in the Built Environment
  - Funding 2014-2020 largely provided by Opdrachtgeversforum (Dutch Client Construction Client Forum)

# Contents

- Introduction to project delivery models
- Performance based contracts in the Netherlands
- Typology of performance based maintenance and facilities contracts
- Recent developments in Dutch practice

# History of integrated contracts in central government in the Netherlands

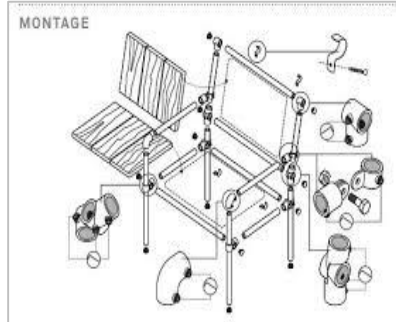
- 1999: Government policy towards PPP: enhancing market competition, performance management, off balance financing; PFI as an example
- 2002: Parliamentary Enquiry Construction Sector
- 2004: Report Committee Risk Assessment

# New contract forms...

FROM



*Effort,  
Lowest price*



*Technical specs & drawings  
'Construction firms'*



*Fragmented, 'one by one'*



*'We-them'*

product

requirements

Changing relationship

processes

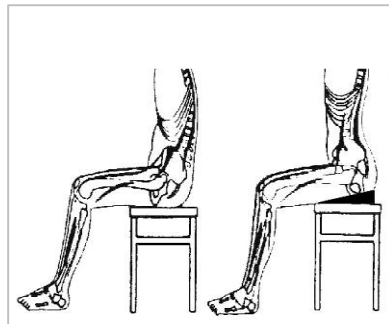
behaviour

between client and supplier

TOWARDS



*Result,  
Economically most  
viable solution*



*Functional specs  
'integral service suppliers'*



*Coherence,  
risk management,  
innovation*



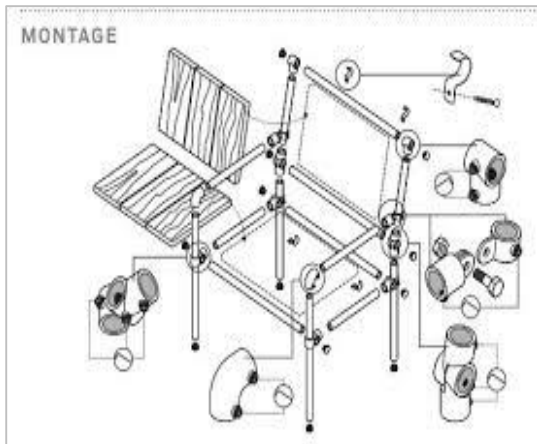
*Co-operation  
Dialogue*

# Characteristics

Model	Product	Result	Supplier(s)
Traditional	Effort ('how')	Design, ...	Architect, construction company
Design & Build	Product (‘what’)	Unit of use	Real Estate / infra developer
DB(F)M(O)	Availability (‘why’)	Facility	Asset Manager
Supply Chain Integration	Process (how)	Optimised process	Supply chain

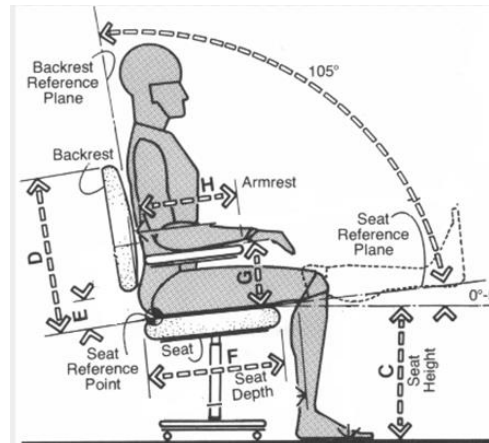


# Types of requirements



## Technical specs

*E.g. 'Plywood 40 mm'*



## Technical performance

*E.g. 'Load bearing capacity 90 kN'*

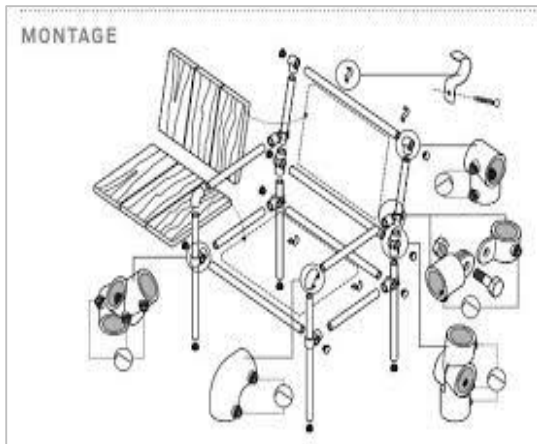


## Functional (output) performance

*E.g. 'Temperature at workplace should be 21C'*

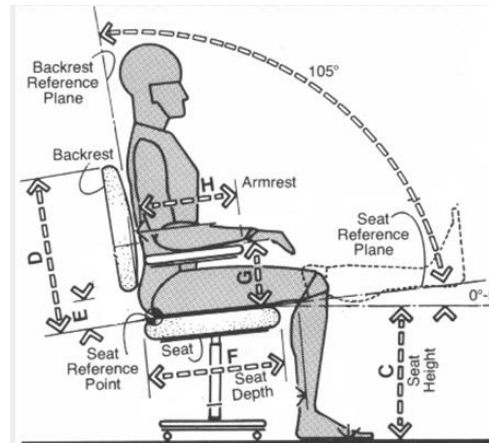


# Types of requirements



## Technical specs

*E.g. 'Plywood 40 mm'*



## Technical performance

*E.g. 'Load bearing capacity 90 kN'*



## Functional (output) performance

*E.g. 'Temperature at workplace should be 21C'*



# Types of performance based contracts in maintenance

- **Performance based activity contracts**
  - Object / project oriented
  - Portfolio oriented (framework agreement)
- **Performance based fully integrated contracts**  
(design – build – (finance) maintain & operate contracts)
- **Performance based main contracts**  
(maintenance & FM)

# Integrated contracts

## Combination of Phases and Tasks in 1 Agreement



**D =**  
design



**B =**  
build



**M =**  
maintain



**O =**  
operate –  
(facilities  
services &  
management)



**F =**  
finance

# 1. Activity based performance contracts

- Performance requirements related to quality of specific activity e.g. paintwork or cleaning
- SLA as a basis to facility service (e.g. level of cleanliness)
- Condition score as a basis to quality of maintenance
- Upkeep of existing state, usually no replacement included
- Process requirements included as well (e.g. 'when to execute maintenance activities')
- Expert supplier
- Payment: effort based or lump sum

## 2. Fully integrated contracts (DB(F)MO) (1/2)

- Designing, constructing, maintaining and managing full service accommodation
- Availability of accommodation and spaces (e.g. meeting rooms) is core of contract
- Usually includes cleaning, catering, energy delivery, facilities management, ICT (technical part), security, reception...
- Long term (>> 15 years)
- Output specifications define required (spatial) performance in use
- Service level for facility services
- Consortium (SPV + expert subcontractors + bank)
- Life cycle costs
- Private financing

## 2. Fully integrated contracts (DB(F)MO) (2/2)

- Payment on the basis of performance in use, with ‘tickle – hurt – kill’ mechanism, bonus – malus, client satisfaction
- Maintenance is full responsibility consortium
- Condition at end of contract is to be safeguarded;
- Functional performance-in-use (usually related to space) to be safeguarded during contract duration
- Repair times included in requirements
- Performance monitoring by consortium
- Process requirements as well

# Example of outputspec from Dutch practice

Naam	Eisniveau
centrale meldkamer beveiliging (faciliteer deel)	Standard

## 1.6.1.2 bewaking en beveiliging (CMK)

### Algemene Kenmerken

**Omschrijving**

Alle activiteiten, diensten en middelen behorend bij de centrale meldkamer, die erop gericht zijn het gebouw en de in het gebouw aanwezige personen te beschermen, te bewaken en de veiligheid te waarborgen.

Hieronder vallen o.a.:

- bedienen GBS, beveiligingsystemen en hulpmiddelen;
- beheren oproepsysteem BHV;
- beheren portofoons;
- beheren sleutels met geringe werklast;
- inschakelen BHV;
- signaleren van storingen, meldingen en calamiteiten.

### Eigenschappen/eisen

Naam	Waarde	Eisniveau
bereikbaarheid opdrachtgever voor opdrachtgever	telefonische bereikbaarheid in gebouw: 24 uur per dag, 7 dagen per week	Standard
beschikbaarheid	standaard: 07.00 - 15.00 uur (ochtenddienst) 15.00 - 23.00 uur (avonddienst) 23.00 - 07.00 uur (nachtdienst)	Standard
klantencontact	op afroep: binnen 90 min inzetten oproep personeel (in geval van calamiteiten, bij evenementen en hogere bezetting e.d.)	Standard
kwantiteitsniveau	storingen, wensen, informatieverzoeken en storingsmeldingen via front office opdrachtgever (telefonisch, digitaal en fysiek)	Standard
randvoorwaarde	- zeer hoog (bestuurlijke top) - hoog (gebruikers) - directe communicatiemogelijkheden met politie en brandweer - preventief beveiligen - in geval van een inbreuk op de veiligheid of beveiliging het beschikbaar hebben van optimale instructies en menskracht - cf geldende beveiligingsinstructies en bedrijfsnoodplan - snelheid van handelen en minimale gevolgen (in geval	Standard

### Relevante ruimten/elementen

Naam	Eisniveau
centrale meldkamer beveiliging (faciliteer deel)	Standard
centrale meldkamer beveiliging (vitaal deel)	Standard

## 1.6.1.3 leveren standaard beveiligingspersoneel

### Algemene Kenmerken

Omschrijving	Eisniveau
De opdrachtnemer is verantwoordelijk voor het leveren van standaard en extra gekwalificeerd beveiligingspersoneel t.b.v. beveiligingstaken voor het Ministerie van Financiën.	Standard

### Subdiensten

Naam	Eisniveau
beschikbaar stellen standaard beveiligingspersoneel	Standard
leveren extra beveiligingspersoneel	Standard

## 1.6.1.3.1 beschikbaar stellen standaard beveiligingspersoneel

### Algemene Kenmerken

Omschrijving	Eisniveau
De opdrachtnemer stelt beveiligingspersoneel beschikbaar gedurende de standaard tijden.	Standard

### Eigenschappen/eisen

Naam	Waarde	Eisniveau
frequentie	continu	Standard
type dienst	basis	Standard
volume	cf beschikbaarheid	Standard

### Monitoring

Naam	Eisniveau
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# Ministry of Finance



# Esco-programme Rotterdam





### 3. Main contracts

- Existing building
- 'One stop shop' maintenance and FM-contract
- Safeguarding continuous performance of accommodation (and it's services)
- Long term (>> 10 years)
- Service levels (services, spaces) & conditions (components)
- 'Input' performance levels, 'as built' info & risks are key
- Consortium (main contractor + specialist subcontractors)
- Performance based remuneration incl. bonus / malus

# Maincontracts Rijksvastgoedbedrijf



*Source: rijksvastgoedbedrijf*

# Example of main contract brief

## 2.1.3 handhaven conditieniveau elementen

Algemeen	
naam	2.1.3 handhaven conditieniveau elementen
omschrijving	de Opdrachtnemer voert alle diensten uit die nodig zijn om conditieachteruitgang van elementen te voorkomen
fase	fase I & II

Kenmerken	
naam	waarde
conditie/gebreken	direct na het onderhoud dient de actuele conditie van het element bepaald te worden
deadline	continu
niveau	afhankelijk van de conditie mogen bepaalde gebreken niet voorkomen (zie gebrekenlijsten). het gebrek onderhoud (zie RgdBOEI handboeken) mag nooit voorkomen
kwaliteit	De Opdrachtnemer richt zijn onderhoud conform de voorschriften van de fabrikant en volgens eigen inzichten zodanig in dat de conditiescore van de elementen gelijk blijft met inachtneming van de normale veroudering en de uitgesloten gebreken niet voorkomen
registratie	Opdrachtnemer verwerkt binnen 10 werkdagen na opname de bepaalde conditie in Condor
doelstelling	gebreken voorkomen en/of verhelpen waardoor conditie achteruitgang enkel door leeftijd plaatsvindt

Storingen		
naam	kenmerk	waarde
veiligheid, gezondheid & Regelgeving	1. hersteltijd (regime: 24 uur)	1 uur
veiligheid, gezondheid & Regelgeving	2. basis korting	€ 1000,- per incident
veiligheid, gezondheid & Regelgeving	3. variabele korting	€ 100,- per uur per incident
functionaliteit niet vitaal	1. hersteltijd (regime: 24 uur)	48 uur
functionaliteit niet vitaal	2. basis korting	€ 500,- per incident
functionaliteit niet vitaal	3. variabele korting	€ 50,- per uur, per incident
functionaliteit vitaal	1. hersteltijd (regime: 24 uur)	4 uur
functionaliteit vitaal	2. basis korting	€ 500,- per incident

# Application of performance based contracts in maintenance in the Netherlands

- **Performance based activity contracts:**
  - Commonly used in central government; large corporates; housing associations – NEN 2767 based or similar
- **Performance based fully integrated contracts**  
(design – build – (finance) maintain & operate contracts)
  - Niche market for large scale projects in central & local government; NEN 2767 used for technical requirements
- **Performance based main contracts**  
(maintenance & FM)
  - Regularly used in large scale corporates (Philips, Brightlands), niche market in local and central government for large scale objects or portfolio mngt, NEN or similar used

# Maintenance = upkeep of technical performance

- NEN 2767 relates to the **degree of deterioration** building components relative to their ‘newly built’ state
- NEN 2767 assesses the **effect of defects** that could lead to loss of performance
- NEN 2767 does **NOT indicate which performance level the original building component has** (e.g. load bearing capacity or degree of transparency or...) **NOR the ‘fitness for purpose’** (functional performance) of the building or the spaces within is (e.g. sufficient light (lux) to do reading work)

# Reflections

- Performance based contracts usually contain both output specifications (service delivery and performance of spaces) as well as condition based (technical) requirements
- NEN 2767 is a basis for assessing the technical requirements
- Contracts include product / service related requirements AND process related requirements
- The less influence the supplier/contractor has on the design of the building and its components the more difficult to enter into a functional performance contract (outputspecs)
- But: primary process of user is reflected in outputspecs not in technical requirements
- Future: adding output orientation / user focus to NEN 2767?