



Exploring Standardisation and User Satisfaction: Perspectives and Experiences in New Police Team Bureaus

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Preface

I wanted to begin with the sentence, "Before you lies my thesis..." but I would first like to reflect on the journey that led to it. In the first year of the Master's programme Management in the Built Environment, I worked as a student assistant, balancing my full-time studies with two days of work at the office each week. This worked well for two semesters until I realised that this approach was not conducive to maintaining a healthy balance, especially when collaborating in groups. I believe life should not fall out of balance because you are trying to achieve too much at once. Therefore, in the third semester, I decided to pursue a more "stress-free life" by taking only one course per quarter instead of two. This allowed me to study and work until the end of the second year without experiencing overwhelming stress. However, the anxiety I felt during the first two quarters resurfaced at the beginning of my thesis, where reading and synthesising multiple pieces of literature tested my patience. I had to step up my efforts once again.

That being said, writing my thesis has brought its fair share of ups and downs. Formulating a research topic that is based on academic study and aligned with my chosen graduation theme brought several moments of stress—so much for my stress-free life. My tendency to jump from one idea to the next could sometimes lead to confusion. In this case, it resulted in an incomplete foundation for my research. Fortunately, I had excellent supervisors who guided me through the process of completing my thesis. I ultimately arrived at a topic that is relevant to the Police and at the same time offers opportunities for further exploration in academic research.

Thanks to hard work, returning to the basics, and continuously reflecting on why I was taking certain steps, I now present to you a thesis I am proud of. I would like to express my gratitude to my supervisors, Hanneke Veldhuis and Herman Vande Putte. Hanneke, for helping me understand how to structure my research effectively and improve its readability; and Herman, for showing me how to formulate strong research questions and for providing guidance where I could ask any question. I would also like to thank my supervisors at the Police, Casper Bovy and Anke Neecke. Casper, for helping me identify a topic that is currently relevant to the organisation, and Anke, for reviewing my written chapters and offering constructive feedback when I needed it.

Lastly, I would like to thank my family and friends, who had to endure my constant stories, and my partner, who provided support whenever possible and willingly brainstormed with me when I needed it. I'd like to close my preface with a piece of advice that I frequently relied on during my master's journey: take a moment to reflect on all you've achieved and the steps you took to get there—then you'll know this will turn out okay as well.

Wishing you an enjoyable read,

Laura de Haas
Rotterdam, January 2025

Abstract - The 2013 reorganisation of the Dutch Police into a single organisation with ten regional units significantly reshaped their real estate needs, prompting plans to reduce 700.000 m² of real estate, add 200.000 m² of new construction, and renovate assets to align with the organisational changes. Since 2017, the Police have adopted a housing policy containing standardisation to tackle their real estate needs, including streamline processes, reduce costs, and create uniformity in new team bureaus. But balancing standardisation with diverse end user needs remains a key challenge, since it's hard to make changes to the standards in place. The resulting tension between standardisation and diverse user needs raises critical questions about its impact on satisfaction in new team bureaus. Since 2021, new Police team bureaus with standard aspects and standard processes have been developed under this housing policy, but no research has yet explored the impact of standardisation on user satisfaction. This research sought to fill that gap by investigating how the Police's standardisation approach influences end user satisfaction in the new team bureaus by answering the following research question: "How does the standardisation aspect of the housing policy affect end user satisfaction in the new Police team bureaus?". To answer this research question, qualitative data collection methods were used. The methods involved a literature review, a case study analysis and in-depth interviews. For the case study, four team bureaus were selected. In-depth interviews were conducted with Police housing staff, end users of team bureaus and architects to gather insights into standardisation and the satisfaction of end users.

Standardisation within the housing policy occurs within standard products and standard processes. Findings indicate that user involvement and clear, transparent communication in standardised processes, such as the design phase, positively influence satisfaction, while the requirements phase, perceived as overly theoretical, reduces it. Standardised products like building blocks and lay-outs are functional but sometimes struggle to meet specific needs such as noise control and spaces for focused work. Satisfaction hinges on the quality of the standard and its ability to balance uniformity with flexibility. Based on this results, recommendations have been formulated. They pertain to standardising processes, communication, incorporating Post-Occupancy Evaluations, monitoring policy documents, creating involvement and other important aspects of standard products and processes.

Key words – Standardisation, user satisfaction, standard aspects, standard processes, user involvement, the Police, real estate management

Management Samenvatting (Dutch)

Probleemstelling

Na de reorganisatie in 2013, waarbij de Nederlandse politie werd omgevormd tot één organisatie met tien regionale eenheden, staan ze voor aanzienlijke huisvestingsuitdagingen. De Politie wil hun vastgoedportefeuille aanpassen aan de nieuwe organisatie structuur, met als doel processen te stroomlijnen, kosten te beheersen, grotere teams op minder locaties te ondersteunen, en hybride werken te bevorderen. Dit omvat de afstoting van 700.000 m² vastgoed, de toevoeging van 200.000 m² nieuwbouw, en renovaties van bestaande panden. Sinds 2017 is er een huisvestingsbeleid geïmplementeerd dat standaardisatie bevordert, met vaste bouwblokken (ruimtes), een uniforme huisstijl en gestandaardiseerde processen om kosten te verlagen en uniformiteit te creëren. Deze aanpak kan echter leiden tot een gebrek aan flexibiliteit en weerstand van eindgebruikers, die vaak maatwerk wensen. Dit onderzoek richt zich op de vraag: "Hoe beïnvloedt het standaardiseringsaspect van het huisvestingsbeleid de tevredenheid van de eindgebruikers in de nieuwe teambureaus van de Politie?".

Methodologie

Het onderzoek is kwalitatief en hiervoor zijn de volgende methodes gehanteerd; een literatuuronderzoek, een case study-analyse en diepte-interviews. Deze methodiek zorgt voor een breed begrip over standaardisatie, gebruikerstevredenheid en vastgoedmanagement, specifiek binnen de context van de Politie.

Onderzoeksmethodes

Een literatuur- en documentenonderzoek is uitgevoerd om de relevante concepten zoals de Politie, Standaardisatie, Vastgoedmanagement en Gebruikerstevredenheid te begrijpen. Dit onderzoek bood inzicht in de theoretische basis en helpt bij het formuleren van het conceptuele kader voor het veldonderzoek. In dit onderzoek werd een multiple-case study uitgevoerd met vier geselecteerde teambureaus waar het huisvestingsbeleid van 2017 werd toegepast. De geselecteerde bureaus moesten voldoen aan de eisen van het beleid, zoals het gebruik van gestandaardiseerde bouwblokken, clusters en de huisstijl. Het doel was te onderzoeken hoe standaardisatie wordt toegepast en waar afwijkingen van de standaarden plaatsvinden. Diepte-interviews werden afgenomen om inzichten te verkrijgen in de ervaringen van eindgebruikers, politiepersoneel en architecten. De interviews waren semigestructureerd en richtten zich op de thema's standaardisatie en gebruikerstevredenheid. Er werden 13 interviews afgenomen, met eindgebruikers van de geselecteerde teambureaus, architecten en medewerkers van de huisvestingsafdeling.

Dataverwerking

De interviews werden opgenomen en getranscribeerd, waarna de transcripten werden gecodeerd met behulp van Atlas.ti. Er werd zowel deductief als inductief gecodeerd, waarbij vooraf gedefinieerde thema's uit de literatuur werden gecombineerd met nieuwe thema's die tijdens de interviews naar voren kwamen.

Interpretatie van de resultaten

De hypotheses die uit de literatuur voortkwamen, werden getoetst aan de hand van de data vanuit de interviews. De resultaten werden geïnterpreteerd en vergeleken om conclusies te trekken over de impact van standaardisatie op de gebruikerstevredenheid in de teambureaus van de Politie.

Literatuurstudie

De Politie en het huisvestingsbeleid

Het literatuuronderzoek toont aan dat de organisatorische hervorming van de Politie heeft geleid tot een aanzienlijke vastgoedtransformatie om aan te sluiten bij de heringerichte organisatiestructuur en diensten. De organisatorische hervorming heeft een grote huisvestingsuitdaging gecreëerd voor de Politie, waarbij in de komende tien jaar ongeveer 700.000 vierkante meter vastgoed zal worden afgestoten en ongeveer 200.000 vierkante meter nieuwbouw zal worden toegevoegd. Daarnaast zullen gebouwen gerenoveerd of functioneel aangepast worden aan de nieuwe organisatiestructuur. Om deze uitdaging aan te pakken, heeft de Politie sinds 2017 een nieuw huisvestingsbeleid aangenomen. De organisatie wil op minder locaties werken, meer digitaal werken en grotere teams vormen. Hierbij willen ze de functionele, technische en financiële aspecten in balans brengen, en hun nieuwe vastgoedstrategie heeft als doel efficiëntie en substantiële jaarlijkse besparingen van 76 miljoen euro te realiseren. Bovendien wil de Politie een nieuwe uniforme identiteit creëren voor het publiek en de gebruikerstevredenheid binnen de organisatie verbeteren. Door de complexiteit en veranderingen is de rol van de vastgoedmanager binnen de politie complexer geworden.

Standaardisatie

Een belangrijk onderdeel van hun nieuwe vastgoedstrategie is de standaardisatie van de nieuwe teambureaus. Door gestandaardiseerde processen en aspecten toe te passen binnen de nieuwe teambureaus, probeert de politie een uniforme, herkenbare identiteit te creëren. Of het nu gaat om de organisatie van de Politie of vastgoedmanagement in het algemeen, blijkt standaardisatie een krachtige vastgoedstrategie te zijn voor het vormgeven van de organisatie-identiteit, het beheersen van kosten en het waarborgen van operationele effectiviteit, allemaal aspecten die de Politie wil verbeteren. De implementatie ervan vereist echter een goed begrip van de organisatorische behoeften, gebruikersvoorkeuren en de dynamische aard van de vastgoedmarkt, omdat standaardisatie kan leiden tot een gebrek aan flexibiliteit, eentonigheid, gebrek aan innovatie en het niet voldoen aan de individuele behoeften van gebruikers. Het kan als een uitdaging worden gezien om gebruikers ervan te overtuigen hun gebouw als uniek te beschouwen, zodra het een standaardontwerp heeft. Om de gebruikerstevredenheid te verbeteren, is goed vastgoedmanagement nodig bij de implementatie van een nieuwe vastgoedstrategie. Zeker voor de Politie, waar ze moeten voldoen aan de veranderende behoeften van eindgebruikers, die verschillende functievereisten en vaak conflicterende verwachtingen en behoeften hebben.

Vastgoedmanagement en gebruikerstevredenheid

Essentieel voor vastgoedmanagement zijn de processen van coördinatie, communicatie en besluitvorming, die helpen conflicten aan te pakken, de efficiëntie te verbeteren en vastgoedstrategieën af te stemmen op bredere doelen. Voor de Politie, een publieke organisatie die een uitgebreid vastgoedportefeuille beheert, zijn deze processen cruciaal voor het aanpassen aan de uiteenlopende behoeften en het behalen van gebruikerstevredenheid.

Gebruikerstevredenheid is heel belangrijk in vastgoedmanagement, omdat het direct invloed heeft op de operationele efficiëntie, de prestatie van vastgoed en het algehele succes van de organisatie. Hoge niveaus van tevredenheid bevorderen betrokkenheid, verminderen personeelsverloop en verbeteren de marktwaarde, terwijl feedback van tevreden gebruikers de voortdurende verbetering en strategische afstemming ondersteunt. In vastgoedmanagement is gebruikerstevredenheid van vitaal belang voor het inspelen op de behoeften van de gemeenschap en het waarborgen van naleving van regelgeving. Ondanks het belang blijft het meten van tevredenheid een uitdaging vanwege de subjectieve aard ervan en het gebrek aan gestandaardiseerde criteria.

Standaardisatie en gebruikerstevredenheid

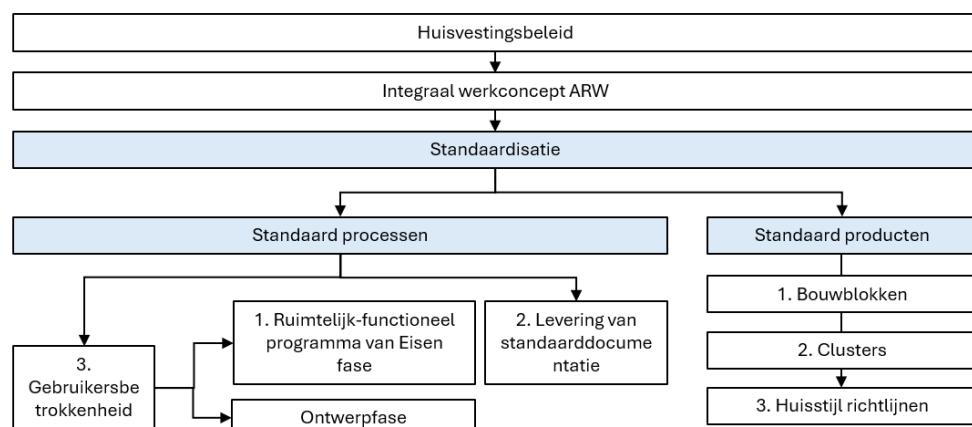
Sinds 2017 heeft de Politie dus een nieuw huisvestingsbeleid ingevoerd, dat is vertaald van een strategisch plan naar tactische uitvoering door de creatie van een Ruimteboek, huisstijlrichtlijnen en andere beleidsdocumenten, met de nadruk op het standaardiseren van nieuwe teambureaus. Zoals benoemd, kan standaardisatie echter een negatieve invloed hebben op de gebruikerstevredenheid door verminderde flexibiliteit en moeilijkheden bij het aanbrengen van veranderingen. Hoewel nieuwe teambureaus zijn ontwikkeld onder dit beleid, is er sinds 2021 geen verder onderzoek naar de gebruikerstevredenheid in politiepanden uitgevoerd. Het is nog onduidelijk hoe gebruikers de nieuwe teambureaus ervaren, wat vragen oproept over de impact van het beleid, met name de gestandaardiseerde aspecten, op de gebruikerstevredenheid en de huidige gebruikerservaring.

Onderzoeksresultaten

Uit onderzoek blijkt dus dat de Politie standaard processen en standaard aspecten van het product hanteert in de ontwikkeling van nieuwe teambureaus. Standaardisatie komt voort vanuit de huisvestingsdoelen waarbij kosten bespaard dienen te worden en uniformiteit moet worden gecreëerd. Ook stroomt het voort uit het integrale werkconcept dat de Politie heeft aangenomen voor nieuwe teambureaus. Dit concept heet Activiteit Gerelateerd Werken (AGW). Een AGW-omgeving past het 'desk sharing'-principe toe, oftewel het delen van werkplekken. In de praktijk betekent dit dat medewerkers niet langer hun eigen werkplek hebben, maar in plaats daarvan werkplekken delen met betrekking tot verschillende activiteiten.

Vanuit dit werkconcept zijn standaardproducten ontwikkeld, waaronder de bouwstenen en clusters. De bouwstenen zijn ruimtes die geïmplementeerd kunnen worden in nieuwe teambureaus. Alle bouwstenen zijn gedetailleerd beschreven in het beleidsdocument het Ruimteboek. De clusters bestaan uit een combinatie van bouwstenen om activiteiten binnen het AGW-concept, zoals samenwerking, te ondersteunen. Naast de bouwstenen en clusters heeft de Politie ook richtlijnen opgesteld voor een uniforme huisstijl van teambureaus.

Naast de standaardproducten heeft de Politie gestandaardiseerde processen die ze volgen. Het eerste is het proces van het maken van een ruimtelijk-functioneel programma van eisen. Dit is een standaarddocument dat wordt opgesteld voor een nieuw teambureau. Het tweede standaardproces betreft gebruikersbetrokkenheid, zowel in de eisen- als in de ontwerpfase. Het derde standaardproces is het leveren van standaarddocumentatie aan externe partijen.



Tevredenheid over AGW (Integraal Werkconcept)

Het AGW-concept heeft de Politie in staat gesteld om standaardisatie als vastgoedstrategie toe te passen. Dit heeft de tevredenheid van de huisvestingsafdeling verhoogd doordat alle gebruikers gelijk behandeld kunnen worden, wat conflicten verminderd. Aanvankelijk waren er zorgen over de overgang van individuele

werkplekken naar open werkruimten, maar na verloop van tijd werd de flexibele werkruimte geaccepteerd. Een aantal gebruikers merkte echter op dat AGW niet geschikt is voor medewerkers met regelmatige werktijden die een meer stabiele werkruimte prefereren. Er was ook weerstand tegen dit concept, vooral omdat de uitleg over het gebruik van de nieuwe werkplekken onvoldoende was. Gebruikers klaagden over misverstanden die ontstonden door gebrek aan begeleiding. Na verloop van tijd werd het concept echter wel positief ervaren, vooral door de flexibele werkruimte mogelijkheden die samenwerking bevorderden.

Tevredenheid over het standaardproces naar het Ruimtelijk-functioneel programma van eisen

De feedback over het standaardproces naar het programma van eisen was verschillend. Sommige gebruikers voelden zich betrokken, terwijl anderen het proces te theoretisch en moeilijk te begrijpen vonden. De documentatie was vaak te technisch en vereiste specialistische kennis. Ondanks de standaardisatie vond het huisvestingspersoneel dat er nog steeds aanzienlijke aanpassingen werden gedaan op basis van voorkeuren van gebruikers, wat de intentie van standaardisatie ondermijnt. Gebruikers gaven echter aan meer flexibiliteit te verwachten in dit proces, wat soms niet mogelijk was.

Tevredenheid over de levering van standaarddocumentatie

Architecten waardeerden het werken met standaarddocumentatie omdat dit het proces versnelt en de communicatie met gebruikers vergemakkelijkt. Hoewel de vrijheid voor ontwerpers beperkt werd, werd dit als positief ervaren omdat het de functionaliteit van het ontwerp bevorderde. Echter, er kwamen ook afwijkingen van de standaarden naar voren, vaak op verzoek van gebruikers of door de voorkeur van de architecten.

Tevredenheid over gebruikersbetrokkenheid

De gebruikersbetrokkenheid in de ontwerpfasen was over het algemeen positief, vooral wanneer gebruikers direct invloed hadden op het ontwerp. Dit vergrootte hun tevredenheid en betrokkenheid bij de ruimte. Er waren echter zorgen over de communicatie en het gebrek aan transparantie, waardoor sommige gebruikers zich gedwongen voelden om zelf informatie in te winnen. De mate van invloed verschildde ook op basis van hiërarchische rollen, waarbij hogere functionarissen meer invloed hadden dan lagere medewerkers.

Tevredenheid over bouwstenen en indeling

De standaard bouwstenen werden als positief ontvangen, vooral omdat ze zorgden voor consistentie tussen verschillende locaties. Dit vergemakkelijkte de overgang voor medewerkers. Toch waren er ook negatieve punten, zoals lawaai en gebrek aan privéwerkruimten. Gebruikers suggereerden dat de indeling verbeterd zou kunnen worden door meer afgesloten werkplekken en rustige werkstations toe te voegen, vooral voor gevoelige werkzaamheden.

Tevredenheid over de huisstijl

De huisstijl werd overwegend positief beoordeeld, vooral wat betreft de esthetiek en de consistentie van kleuren en materialen. Gebruikers gaven aan dat het ontwerp hen trots maakte op de ruimte. Er waren echter praktische problemen met de gekozen materialen, die snel slijtage vertoonden door onderdelen van een Politie-uniform, zoals schoenen en riemen, wat leidt tot visuele schade.

Conclusie

De gestandaardiseerde aspecten van het huisvestingsbeleid van de Politie kunnen worden onderverdeeld in twee componenten: product en proces. Beide componenten hebben een oorzaak-gevolgrelatie met de tevredenheid van eindgebruikers in nieuwe team bureaus.

Standaard proces: het Ruimtelijk-functioneel programma van eisen

Het eerste gestandaardiseerde proces betreft de ontwikkeling van het Ruimtelijk-functioneel programma van eisen. In deze fase wordt een gebruikersgroep samengesteld die vrijwillig deelneemt om input te geven op het programma van eisen. De gebruikers kunnen hun wensen delen over de voorgestelde ruimte-indeling

en het gebruik van bouwblokken. Desondanks vonden sommige gebruikers deze fase te theoretisch en moeilijk te begrijpen, vooral door de complexiteit van beleidsdocumenten. Ze gaven aan dat hun inbreng vaak niet voldoende werd benut, wat leidde tot lagere tevredenheid. Gebruikers gaven daarom de voorkeur aan een de betrokkenheid tijdens de ontwerpfase, waar ze meer invloed hadden op het eindresultaat.

Standaard proces: het ontwerpproces

In de ontwerp fase wordt opnieuw een gebruikersgroep gevormd, die samen met de architect werkt. Deze groep heeft de mogelijkheid om invloed uit te oefenen op details zoals kleuren, materialen en andere persoonlijke elementen, wat leidde tot een hogere tevredenheid. Gebruikers waardeerden de praktische invloed die ze hadden op het ontwerp, wat resulteerde in een werkplek die beter aansloot bij hun behoeften.

Standaard product: bouwblokken en indeling

De Politie heeft veel aspecten van de werkplekken gestandaardiseerd, met name de ruimte-indeling en bouwblokken. De standaardisering zorgt voor consistentie in nieuwe team bureaus, wat gebruikers helpt zich sneller aan te passen. Echter, de indeling heeft ook nadelen. Gebruikers gaven aan dat de open ruimtes vaak voor te veel lawaai zorgden, wat hun werkplezier verminderde. Bovendien werd de afwezigheid van privé-werkruimtes als een gemis ervaren. Segmenteerbare indelingen kunnen deze problemen verhelpen en leiden tot hogere tevredenheid. De segmentering van ruimtes, en dat ze geroteerd geplaatst worden staat als principe in het Ruimteboek van de Politie. Het blijkt echter dat in de ontwerpfase, hiervan af wordt geweken. Deze afwijking heeft een negatieve impact op de tevredenheid van eindgebruikers.

Standaard product: huisstijl

De huisstijl, waaronder kleuren, materialen en meubels, is ook gestandaardiseerd. Hoewel de meeste gebruikers positief waren over de esthetische uitstraling, werd er geklaagd over de duurzaamheid van de gebruikte materialen, die snel beschadigd raakten door contact met Politie-uniformen en andere uitrusting. Dit verminderde de tevredenheid over de visuele uitstraling van de werkplekken.

Proces en product: relatie en tevredenheid

De interactie tussen de gestandaardiseerde processen en producten heeft invloed op zowel de gebruikerservaring als de functionele effectiviteit. Het blijkt dat gebruikersbetrokkenheid, vooral tijdens de ontwerpfase, cruciaal is voor het verbeteren van aspecten zoals zichtlijnen, geluidsbeheersing en teamveiligheid. Tegelijkertijd kan onvoldoende betrokkenheid leiden tot producten die niet volledig voldoen aan de specifieke wensen van de gebruikers.

Uit bovenstaande blijkt dat standaardisatie bij de huisvesting van de Politie zowel positieve als negatieve effecten heeft op de tevredenheid van eindgebruikers. Wanneer gebruikers goed worden betrokken bij het proces en de communicatie helder is, kan de standaardisatie leiden tot een product dat beter aansluit bij de behoeften van de gebruikers. De standaard die de Politie momenteel hanteert is volgens gebruikers van goede kwaliteit. Volgens de organisatie komt dit doordat de standaard al vaker is geïmplementeerd, en door de jaren heen veel gebruikersinput is verzameld. Standaardisatie van het product op zich leidt dan ook niet automatisch tot negatieve resultaten omtrent tevredenheid, zolang de standaarden draagvlak hebben bij eindgebruikers en zorgvuldig rekening wordt gehouden met de diverse behoeften van de verschillende belanghebbenden.

Aanbevelingen

Hieronder worden zeven aanbevelingen gegeven om de gebruikerstevredenheid in nieuwe team bureaus van de Politie te verbeteren. De aanbevelingen zijn gebaseerd op de resultaten uit het onderzoek en de literatuur. De eerste vier aanbevelingen zijn aanbevelingen met betrekking tot het proces. De overige aanbevelingen hebben betrekking tot het product. De uitgebreidere onderbouwingen per aanbeveling staan in hoofdstuk 7.

- 1.** Gebruikersbetrokkenheid en communicatie in de eisenfase verbeteren: Betrek gebruikers minder intensief bij het opstellen van het programma van eisen en zorg daarnaast voor duidelijke uitleg over ontwerpkeuzes en de mogelijkheid om input te leveren tijdens de ontwerpfase. Wees in dit proces transparant over de reden van gemaakte keuzes en leg goed uit dat gebruikers al vaak zijn betrokken in voorgaande projecten.
- 2.** Toezicht op de uitvoering van beleidsdocumenten: Zorg ervoor dat de vastgestelde beleidsnormen (standaarden) tijdens het ontwerp goed worden nageleefd, zodat afwijkingen tijdig worden opgemerkt en negatieve gevolgen voor de gebruikers worden voorkomen.
- 3.** Verbeter communicatie bij projectoverdracht: Introduceer een gestandaardiseerd overdrachtsproces met duidelijke uitleg over het ontwerp en de functionaliteit (AGW) van de nieuwe werkruimte, zodat gebruikers, met name zij die niet geparticipeerd hebben in het ontwerpproces, de ruimtes gebruiken zoals bedoeld door de Politie en bepaalde ontwerpkeuzes snappen.
- 4.** Post-occupancy evaluaties: Voer standaard evaluaties uit nadat nieuwe team bureaus in gebruik zijn genomen, zodat feedback van gebruikers kan helpen om de standaarden te verbeteren.
- 5.** Indeling van de bouwstenen: Pas de lay-out aan door bouwstenen te draaien om geluidsoverlast te verminderen en verschillende werkstijlen te ondersteunen. Voeg ook afgesloten werkruimtes toe voor geconcentreerd werk.
- 6.** Gebruik van impactbestendige materialen en kleuren: Kies materialen en kleuren die bestand zijn tegen schade, zoals donkere vloeren en extra wandbescherming, zodat de werkomgeving langer netjes blijft.
- 7.** Gebruik deze studie als eerste evaluatie: Gebruik de bevindingen van dit onderzoek als basis voor het verbeteren van de huidige processen en implementeer post-evaluaties in toekomstige projecten om gebruikersbehoeften beter te begrijpen en aan te passen.

Deze aanbevelingen richten zich op het verbeteren van het proces en het product, zodat de gebruikers tevreden zijn met hun nieuwe werkomgeving en deze optimaal kunnen gebruiken.

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Chapter 1

Introduction

Chapter one demonstrates the problem statement and by that, the research question, sub-questions and this research's conceptual model. The relevance of this research is addressed with its societal and scientific relevance. It then outlines the objectives of this research and the deliverables. Finally, it gives an overview of the dissemination and audiences, my personal study targets and a reading guide.



Introduction

1.1 Problem statement

After a major reorganisation in 1994, the state and municipal police merged into 25 regional police forces with each force operating autonomously. This situation lasted until January 1, 2013. From then on, the Police underwent a second major reorganisation and formed one organisation, divided into ten regional units (Zijlstra et al., 2022). Due to this reform, the Police are currently facing a major accommodation challenge where the new organisational structure and new work processes have changed the use of and demand for their real estate assets. A major housing goal of the Police is to control costs within their accommodation. To achieve this, approximately 700,000 square meters of real estate will be divested and about 200,000 square meters of new construction will be added over the next ten years. In addition, Police intend to renovate and adapt their real estate portfolio to the changed structure of services, employing larger teams operating in fewer places, and to work more digitally (Zijlstra et al., 2022). Another goal set by the Police is to create a new uniform identity to be perceived by the public, and to enhance user satisfaction within their own organisation (Police, 2022).

The Police are among the biggest public real estate owners in the Netherlands, and their task regarding accommodation is diverse and challenging. The organisation of the Police is built up by a diverse and mixed group of end users, each of them having different work requirements, needs and expectations. Here, accommodations need to meet the expectations and evolving demands of their specific users in order to gain satisfaction. At the same time, the Police implement a housing policy, with standardisation as a real estate strategy to develop new team bureaus. In this respect they use standard building blocks, standard clusters and a house style with ground rules, but standard processes as well (van Asselt & de Gouw, 2022).

Standardisation as a real estate strategy involves adopting uniform processes, designs, or specifications across multiple accommodations or projects within an organisation. It concerns a strategic decision-making approach aiming to streamline processes, to design elements and to resource allocations, which can all of them be done on multiple levels (O'Mara, 1999). The overall advantages of this approach are the cost-reducing effect and the uniformity and stability created, with possible disadvantages resulting in a lack of flexibility, resistance to innovation, challenges in customisation and difficulty in addressing variances (Craig et al., 2000). The standard building blocks are different spaces used for the lay-out of new team bureaus. These building blocks are laid down in a policy document called the Space book and they are applied to every project. In addition, different requirements have been devised for them, making it difficult for end users to introduce changes to the design of their new team bureau. Deviations from the standards have to be approved by Police housing staff, and this does not always happen. This is a problem that arises within the Police, because end users (who are involved standard in the process by the Police housing staff) often want adjustments to be introduced to the building blocks in the design of their respective team bureau. This sometimes makes the building blocks unsuitable for the varying requirements of different end users. In their projects, the Police therefore face the choice between deviating from their housing policy or sticking to the standardised approach (Police, 2022).

To sum up, the Police have implemented a new housing policy which by 2021 had been translated from a strategic plan into tactical execution through the creation of the Space book, accompanied by a house style with standardisation as a strategy, which may in turn have a negative impact on user satisfaction since, once implemented, it will be hard to make alterations and can cause lack of flexibility. Since 2021, new team bureaus have been developed which all of them fall under the current housing policy. However, no further research has been conducted on user satisfaction in new team bureaus. The link between user satisfaction in new team bureaus and the housing policy containing standardisation illustrate the nuanced trade-offs that the housing department of the Police had to make when they decided to use standardisation within their real estate strategy. Especially as resistance from end users emerges in the process of new team

bureaus, questions arise about the impact of standardisation on user satisfaction. So, how does the standardisation aspect of the housing policy affect end user satisfaction in the new Police team bureaus?

1.2 Research objectives and questions

The primary goal of this research is to explore the impact of the housing policy on end user satisfaction, specifically its standardisation aspect in the development of new team bureaus. The focus on standardisation is divided between the products (the new team bureaus and their standard aspects) and the standard processes employed by the real estate department of the Police. This research first of all seeks to provide an overview of standardisation as a real estate strategy and to find out about the rationale behind its use by the Police. An understanding of the housing policy of the Police, in which standardisation plays a key role, is furthermore crucial. Secondly, the research aims to examine how the Police engage with end users during the development of new team bureaus and to find out about the functioning of the standard processes. This includes mapping all standardised elements used in developing these team bureaus. Ultimately, the goal is to explore how well standardisation aligns with evolving user needs and expectations, and how it impacts user satisfaction. These objectives have shaped the following research question and sub-questions.

“How does the standardisation aspect of the housing policy affect end user satisfaction in the new Police team bureaus?”

- RQ 1. What is standardisation and why is it used as a real estate strategy by the Police?
- RQ 2. What standardised aspects do new team bureaus have when developed under the current housing policy of the Police?
- RQ 3. What standardised processes do the Police use for the development of new team bureaus?
- RQ 4. How does the Police involve end users in the development of new team bureaus, and what impact does this involvement have on the outcome?
- RQ 5. How does standardisation affect end user satisfaction within the Police's new team bureaus?

1.3 Conceptual model

Figure 1 depicts the conceptual model of this research. It presents a visual representation of the theoretical constructs which are of interest in this research.

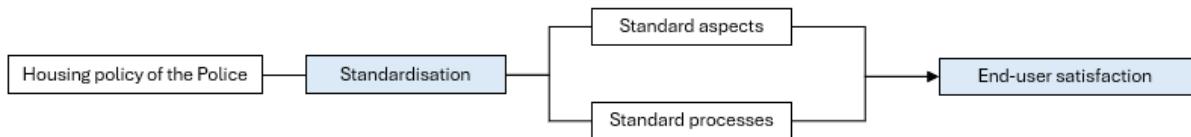


Figure 1 – Conceptual model (own work)

As mentioned in chapter 1.1, this research is based on the notion that standardisation affects user satisfaction in new team bureaus of the Police. This study focuses on end users within new team bureaus. Each team bureau employed standard processes and observes standard aspects after completion. They are presented in the conceptual model.

1.4 Deliverables

The final result of this research is a finished report containing answers to the research questions. Field research produced data collected on the basis of an extensive literature review, case study analysis and in-

depth interviews with experts and employees from the Police and external parties. This data will add to the knowledge base of standardisation and user satisfaction in real estate management (REM), especially public real estate management, since the Police is a public organisation. At the end of the study, recommendations are issued to the real estate department of the Police concerning possible practical alignment of standardisation with evolving user needs and expectations.

1.5 Societal and scientific relevance

The study holds societal relevance as it addresses the pressing challenges faced by the Police in accommodating the organisation after their major reorganisation initiated in 2013. As one of the largest public real estate owners in the Netherlands, the Police's task to divest, construct, renovate, and adapt real estate in alignment with their organisational changes is crucial. The accommodation challenge impacts not only operational efficiency but also the quality of work environments for a diverse group of end users. Creating a real estate portfolio, fitting to the new identity which should be visible to the public is a big societal goal which the Police want to achieve in the upcoming years. This research will contribute to that.

Scientifically, the study contributes to the understanding of how standardisation as a real estate strategy in REM, though beneficial, may encounter resistance, particularly in complex public organisations like the Police. By exploring the complex trade-offs and challenges associated with the implementation of standardisation in both products and processes, the research sheds light on the practical implications of such strategies in dynamic and diverse work environments. By exploring the impact of standardisation on end user satisfaction, the study contributes actionable insights for decision-makers in REM giving evidence-based practices in organisational environments on how to enhance user satisfaction.

Overall, the societal relevance lies in improving public service quality and efficient resource utilisation, while the scientific relevance encompasses advancements in REM studies and the practical applications of standardisation and its link to user satisfaction.

1.6 Dissemination and audiences

The primary audience for this research is a diverse group of stakeholders involved in real estate, organisational restructuring, and those specifically interested in the dynamics of standardisation within the organisation of the Police. This includes policymakers, real estate managers, workplace consultants, end users and scholars. This research provides valuable insights for policymakers and public real estate managers involved in decision-making processes related to housing policy which include standardisation. Workplace consultants may benefit from the detailed examination of the standardisation aspects of the housing policy and the impact on certain end users. This research offers a nuanced understanding of user satisfaction dynamics, providing insights into potential adjustments or changes to policy documents. Real estate management as well as scholars and researchers focusing on organisational behaviour will find this research valuable. The conceptual model, literature review, case-study and empirical findings from the interviews contribute to the academic discourse on standardisation, user satisfaction, and real estate management. Lastly, the study directly addresses the concerns of end users within the Police, offering a platform to understand their perspectives on standardisation and the development of new team bureaus.

Overall, the research output, including the comprehensive report and actionable recommendations, aims to contribute not only to the academic community but also to practitioners and decision-makers involved in shaping the landscape of real estate management within law enforcement organisations.

1.7 Personal study targets

My personal study targets are to conduct an extensive review to comprehend the existing link between user satisfaction and standardisation within the Police. I want to gather and analyse information from a diverse group of Police experts and employees to map out the current landscape of standardisation, documenting its effects on the organisation. Secondly, I want to identify and analyse key patterns or trends employed in standardisation efforts within the Police organisation and evaluate the effectiveness, limitations, and impact on user satisfaction through a detailed case study analysis and in-depth interviews. These interviews aim to assess the correlation between standardisation practices and user satisfaction. My last target is to formulate actionable recommendations for real estate managers based on my research findings. In this respect I intend to put together research outcomes into strategic recommendations, proposing practical and feasible recommendations to improve user satisfaction within the Police.

These personal study targets serve as a roadmap to dive into the specifics of the accommodation challenges which occur in the Police, concentrating on new team bureaus. Each target is individually linked to addressing the research goals as mentioned in chapter 1.2, aiming to provide actionable insights and recommendations for enhancing user satisfaction in standardised environments.

1.8 Reading guide

Chapter two is a comprehensive literature review, ending with the literature map and hypothesis model. The third chapter is the research methodology, where the research methods are explained. The fourth chapter offers the results of the case study analysis and the fifth chapter the research findings from the interviews, connected to the literature review. Chapter six provides the answers on the sub-questions and the main question and chapter seven gives recommendations. Chapter eight is the discussion.

Chapter 2

Literature review

Chapter two provides an extensive review of literature related to the problem outlined in the introduction, divided into four chapters: the Netherlands Police, Standardisation, Real estate management [REM], and User satisfaction. The Police case is woven into the four different chapters. The literature review also contains an examination of links between standardisation and user satisfaction. First of all it examines the Police organisation and the accommodation challenge it is currently facing. Its current housing policy is examined and eventually linked to standardisation, being a real estate strategy used by the Police. Secondly, it provides a detailed examination of standardisation as a real estate strategy, its advantages and disadvantages and possible effects on the organisation. Here, standardisation is linked to user satisfaction. Thirdly, it dives deeper into REM in general and how REM can contribute to enhanced user satisfaction, to be concluded by an examination of user satisfaction as such, why it is important in built-up environments and how satisfaction can be improved by way of effective REM. The end of the chapter contains a literature map, depicting the theoretical links obtained and a hypotheses model, where the hypotheses drawn from the literature are depicted.



Literature review

2.1 The National Police of the Netherlands

The Dutch National Police (hereinafter 'the Police') is a public organisation which in recent years has grown into one of the biggest public real estate owners. With a total of 63,000 employees, 14,000 of whom working in supporting roles in police offices, the Police are the Netherlands largest public employer (Police, 2021). This chapter dives deeper into the organisation of the Police, the structural changes to their services following the 1994 and 2013 reforms and the ensuing challenge they face regarding their real estate.

2.1.1 The reorganisation of the Police

Following a major reorganisation in 1994, national and municipal police merged into 25 regional police forces and the 'Korps Landelijke Politiediensten' [National Police Services Agency; KLPD] with each force operating autonomously. This structure remained in place until 1 January 2013, when the Police were unified into one single organisation under the direction of one Chief of Police. The new structure consists of ten regional units, along with various divisions including the corps management team, regional units, rural expertise and operational unit, national detection and intervention unit, police service centre, police academy, national control room cooperation, districts, base teams, and the control room. Now, the Police operate across three closely coordinated levels: National, Regional, and Local, where the Chief of Police (corps management), supported by the Chief of Staff (corps management team), operates at national level. The regional units, responsible for cross-regional and specialised policing tasks, and the Police service centre, which integrates all operational units, function at operational level. As of 2022, the Police employ nearly 58,000 full-time equivalents (FTEs). Figure 2 illustrates the organisational structure of the Police following the 2013 reorganisation (Police, 2022).

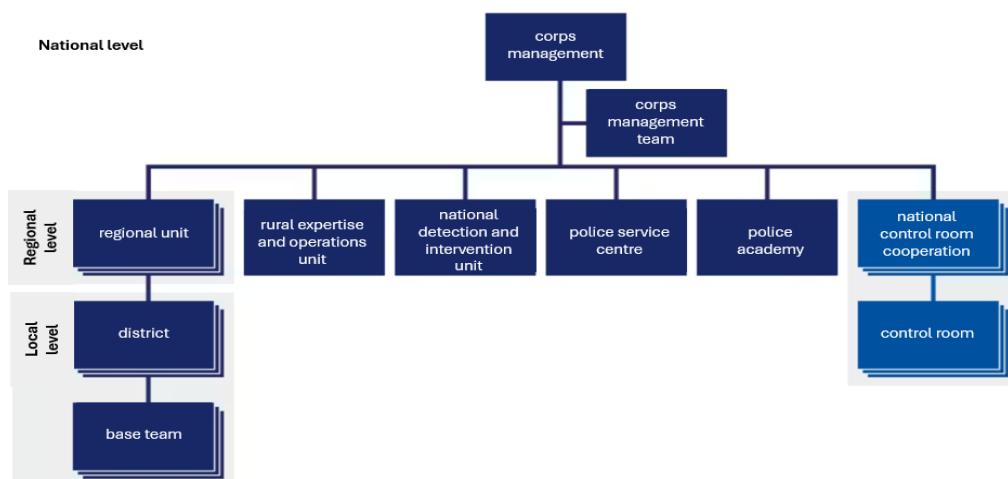


Figure 2 - The organisational form of the National Police (Police, 2022)

2.1.2 The accommodation challenge of the Police

Since its 2013 reorganisation, the Police have been facing a major accommodation challenge which imposed specific goals regarding their real estate. In 2017, a new housing policy was created in order to tackle the accommodation challenge. Figure 3 provides an overview of the accommodation goals set by the Police, implemented in the housing policy. In the next years, approximately 700,000 sqm of real estate will be divested, while about 200,000 sqm of new construction will be added. Moreover, buildings will be functionally renovated or adapted. The Police intend to adapt their accommodation to align with the new

organisation, its new identity and the changed structure of their services, consisting of larger teams, fewer locations and increasingly hybrid working (van Asselt & de Gouw, 2022). The focus will be on greater effectiveness in relation to technological developments, government policy and legal regulations. Because of hybrid working there is less need for real estate to accommodate the organisation of the Police (van der Maas et al., 2015).

Next to working towards less real estate for the building assignment, the aim is to achieve a good relationship between functional, technical, spatial, aesthetic and financial requirements and to create a new uniform identity for the organisation to appear to the general public. To perform its tasks, the Police has a target strength of about 58,000 FTEs and a budget of almost €5 billion, which covers around €4 billion in personnel costs and over €1 billion in material costs, including €347 million for accommodation costs. The task of striking a balance between functional, technical, spatial, aesthetic and financial requirements is accomplished by introducing a new real estate strategy, to result in 76 million euro annual savings on operating costs (van der Maas et al., 2015).

Another ambition set by the Police is to raise the quality of the buildings and the user satisfaction implied. Within Police real estate there is a quest for a redesign, prioritising adaptability while acknowledging the inherent organic and changeable nature of building usage, thereby catering to the evolving needs of its users, which is perceived as a challenge since, over time, the complexity of the public real estate of the Police has increased (Zijlstra et al., 2022). There are now more goals and expectations - often conflicting - that need to be balanced in real estate strategies in order to meet the evolving needs of the Police and their end users. Moreover, the decision-making process for police real estate managers has become more complicated. Challenges like climate change, digitalisation and budget cuts have shifted corporate and public real estate strategies from demand-driven to supply-driven. Due to the above developments the role of real estate managers within the Police has become increasingly important (Police, 2022).

To sum up, the Police are facing budget cuts forcing them to match their real estate properties with the new organisational structure and work processes. The quality of the buildings must increase, with user satisfaction being an important priority. In doing so, the portfolios must radiate a uniform identity to the public.

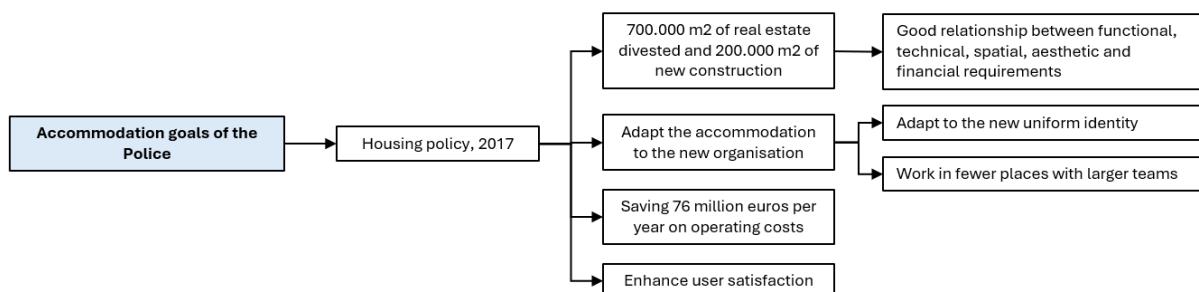


Figure 3 - Accommodation goals of the Police (own work)

2.2 Standardisation

As mentioned earlier, the Police is currently implementing standardisation as a real estate strategy in their new housing policy to tackle their accommodation challenge when developing new team bureaus. Team bureaus are the central gathering places for employees of base teams, including police officers, where they do their office work administration, hold meetings and prepare off-duty work such as surveillance and home visits (Police, 2021). Standardisation is used by the Police for efficiency in processes and cost savings, but also to create an uniform identity for the public (Atelier Politiebouwmeester, 2022). This chapter explores how standardisation is used by way of real estate strategy. This chapter sets out by exploring Police housing policy and its standard aspects. Here, at a strategic and tactical level, we look at the ways in which

standardisation is incorporated into the policy and the goals to achieve. It is followed by giving more detailed and comprehensive overview of standardisation in REM in general and its implications on a broader scale, emphasising on the implications of its nuanced role.

2.2.1 The standard aspects of the Police housing policy

Since 2017 the Police have been implementing a new housing policy with corresponding accommodation goals, preconditions and quality frameworks for new building projects. It describes the uniform starting point for projects to comply with. Since 2021, standardisation as a strategy has been made more concrete by creating a General programme of requirements, a Space book and ground rules prescribing house style. All of these are different policy documents for use in each development of a new team bureau. The housing policy aims to create healthy and safe workplaces for all employees both present and future, and provides insight into users and their requirements regarding police housing (Police, 2021). In this chapter, several standard aspects of the housing policy are identified; the building blocks, clusters, the calculation tool, the Spatial-functional programme of requirements and the house style. These standard aspects are covered either by product standardisation or process standardisation.

The integrated working concept ‘Activity-Related Working environment’ (ARW)

Standardisation within the Police flows from the integral working concept adopted by the housing policy. This concept is named Activity-Related Working environment (hereinafter ‘ARW’) and is applied in new team bureaus. An ARW environment uses the ‘desk sharing’ principle, or workstation sharing. In practice, this means that employees no longer have their own workstations, but rather a varied range of task-related stations to work from. This no longer involves one uniform place for each employee, but different places geared to concentration, consultation, meeting or regular aspects (Police, 2017). The different types of workstations are tailored to the requirements of the Police’s work processes. All Police accommodation has the same work area structure based on an ARW environment and workplace division. This enables any Police employee to work at any location, with Cooperation facilitated in three ways. First, Police employees can work at any Police station. Second, the work area is more open and a dynamic core for working and meeting has been created. Third, the working environment is more transparent while increased visibility of teams and departments aims to facilitate informal coordination and spontaneous meetings (Police, 2017). The choice of workplace sharing and multifunctional use of space makes the biggest contribution to saving space requirements for accommodation, as described in chapter 2.1.2.

The Space book - standard building blocks and clusters

To accommodate ARW, the Police created standard building blocks and clusters, implemented in a policy document called the Space book, and part of the standard product (Police, 2021). Every lay-out in new team bureaus is built with building blocks and clusters created for different team formations. Building blocks are the physical spaces that make up the housing, like a consultation room, a group of open workstations, a locker room or a pantry. In line with the housing policy, the spaces are kept as multifunctional as possible in order to create future-proof and flexible housing (Police, 2021). A cluster is a collection of building blocks which, although in varying sizes and interrelationships, are intended to house specific processes for different workplaces. An example is a cluster used as a collaboration zone, containing workstations, lockers, a briefing room and meeting rooms. As indicated in chapter 2.1.2, the accommodation goals seek to strike the right balance between functional, technical, spatial, aesthetic and financial requirements and to create a new identity. This standardised approach enables this task to be achieved. A similar working environment can be designed for any type of building or space (Police, 2021). See chapter 4.1.1 for a more detailed analysis of the Space book.

The calculation tool and the Spatial-functional programme of requirements

The Police housing staff developed a calculation tool making it possible for the Police to calculate an initial match between users and space requirements, based on the building blocks. The calculation tool is used in the requirements phase of each new project, where workplace consultants calculate the amount of building blocks necessary for inclusion in the design. The calculation tool is used standard and its

outcomes are included in the Spatial-functional programme of requirements specifically written for a new team bureau. This document lists all the building blocks required and the conditions they must meet. It is project-specific and is redrafted for each individual project using the calculation tool. The calculation tool is fed by team formations from which an overview of building blocks and clusters can be extracted (Police, 2021). Figure 4 shows an example of a standard work environment cluster appropriate for each individual team that uses the space.

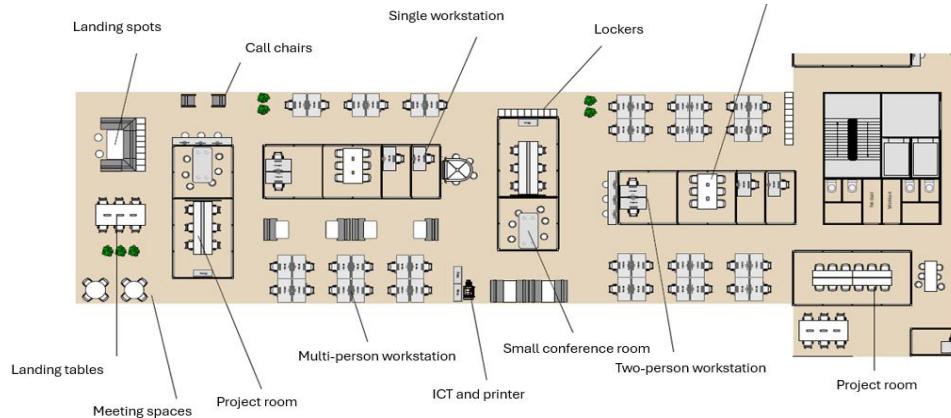


Figure 4 – Example of a standard work area cluster (Police, 2021)

Toolbox House style police building - house style guidelines

The house style guidelines are implemented in a policy document named Toolbox House style police buildings. According to Atelier Politiebouwmeester (2022), the purpose of police housing is to provide a professional, inspiring and safe environment in which Police employees can do their work optimally. Real estate serves the core process. Since the Police became one organisation, the processes for new project development have needed to become more efficient and cost-effective, for instance by way of standardisation (Police, 2021). Besides standardised clusters and building blocks, the Police work with guidelines regarding house style for police buildings, providing concrete ground rules for design and intended for all police work environments, like those in team bureaus. The house style embraces the diverse character of the Police organisation and its teams and the local environment in which these teams operate. The house style was created to streamline decision-making in designing new police buildings, which standardises the design process as well as the product (Atelier Politiebouwmeester, 2022).

The envisaged uniform public identity of the Police (chapter 2.1.2) and standardised organisational identity in their work environments is reflected in Police real estate conveying a recognisable and unambiguous 'Police image' in conjunction with other images of the Police (Atelier Politiebouwmeester, 2022). The Police aim to be a recognisable, trusted organisation for everyone in the Netherlands which at the same time radiates authority: one police for all of us. This new identity contributes to a positive perception of the services provided by the Police, improved office functionality and job satisfaction and an attractive future perspective. The purpose of the house style for police buildings is to translate this ambition into handy rules for building interiors so that designers and workplace consultants have something to hold on to when making design choices (Atelier Politiebouwmeester, 2022).

The house style guidelines are organised into three layers that represent a logical approach to the design process. Figure 5 shows the different layers of the house style guidelines used when developing new spaces (Atelier Politiebouwmeester, 2022). For all three layers, the Police have adopted rules on how everything can eventually appear, involving pre-selected materials, colours, looks and furniture elements. These 'ground rules' are covered by the standardised work environment designs and all of them fit the building blocks and clusters (Atelier Politiebouwmeester, 2022). See figure 6 below, with pre-selected colours and design materials included.

Layer 1 provides the foundation for using design tools to create a consistent look for police buildings. Eight design tools are described, such as colour and materials with associated guidelines. Here we find all the

rules for the design tool to comply with. This gives architects a basis to work from while designing a new police building. *Layer 2* focuses on scenarios describing user behaviour in said space. They help to identify spatial needs of users and guide the use of the design tools. There are six main scenarios, two of them being orienting and meeting. In this layer the building blocks and clusters are used to accommodate the different scenarios. *Layer 3* focuses on expressing the identity of individual departments or teams within the Police department. It contains guidelines and suggestions and presuppose the involvement of end users. Six themes are suggested - like landmarks and a team wall - which can be developed with users to achieve an appropriate look (Atelier Politiebouwmeester, 2022). See chapter 4.1.1 for a more detailed analysis of the Toolbox House style police buildings.



Figure 5 - Three layers of the house style guidelines from the Police (Atelier Politiebouwmeester, 2022)

Figure 6 - Preselected colours and materials (Atelier Politiebouwmeester, 2022)

Standard process towards Spatial-functional programme of requirements

Besides the standards aspects of new team bureaus, Police are employing standard processes for designing and developing a new team bureau. All of these standard processes were also included in the 2017 housing policy. The policy document named 'Standard Process Spatial-functional programme of requirements Police' describes the process for drawing up a Spatial-functional programme of requirements, listing all building blocks required and the conditions they must meet. It is project-specific and redrafted for each project using the calculation tool before being passed on to the architect.

The current process towards establishing a Spatial-functional programme of requirements for a new team bureau is shown in figure 7. This process diagram details the steps to be taken and shows which documents are to be consulted at which step. It also prescribes the form and degree in which users need to be involved. This policy document is used by the work place consultants and project managers. Standardisation of the process saves time when a new team bureau needs to be developed, as workplace consultants now know which steps to follow and no longer have to reinvent the wheel for each new project (Police, 2024). All

information is first collected and next tested, refined and established in conjunction with end users, invariably in the same order. In the process, it is important for the Police that users are involved in drawing up the Spatial-functional programme of requirements, in view of improved user satisfaction and user support throughout the organisation. Users are involved in eight interactive meetings. They include discussions about the eventual design process and the implications of the 2017 housing policy. This requires an explanation of different policy documents, like the 2021 Space book and the house style as of 2021. At that point, these are still abstract guidelines and there is no design for the actual team bureau yet. In other meetings, the first draft of the Spatial-functional programme of requirements is gone through together with the end users, with 80% already having been fixed, incorporating the input from earlier meetings. Here, discussions also include the result of the calculation tool, while end users are invited to contribute feedback. As soon as the entire Spatial-functional programme of requirements is finalised, the end users are given another chance to review it (Police, 2024).

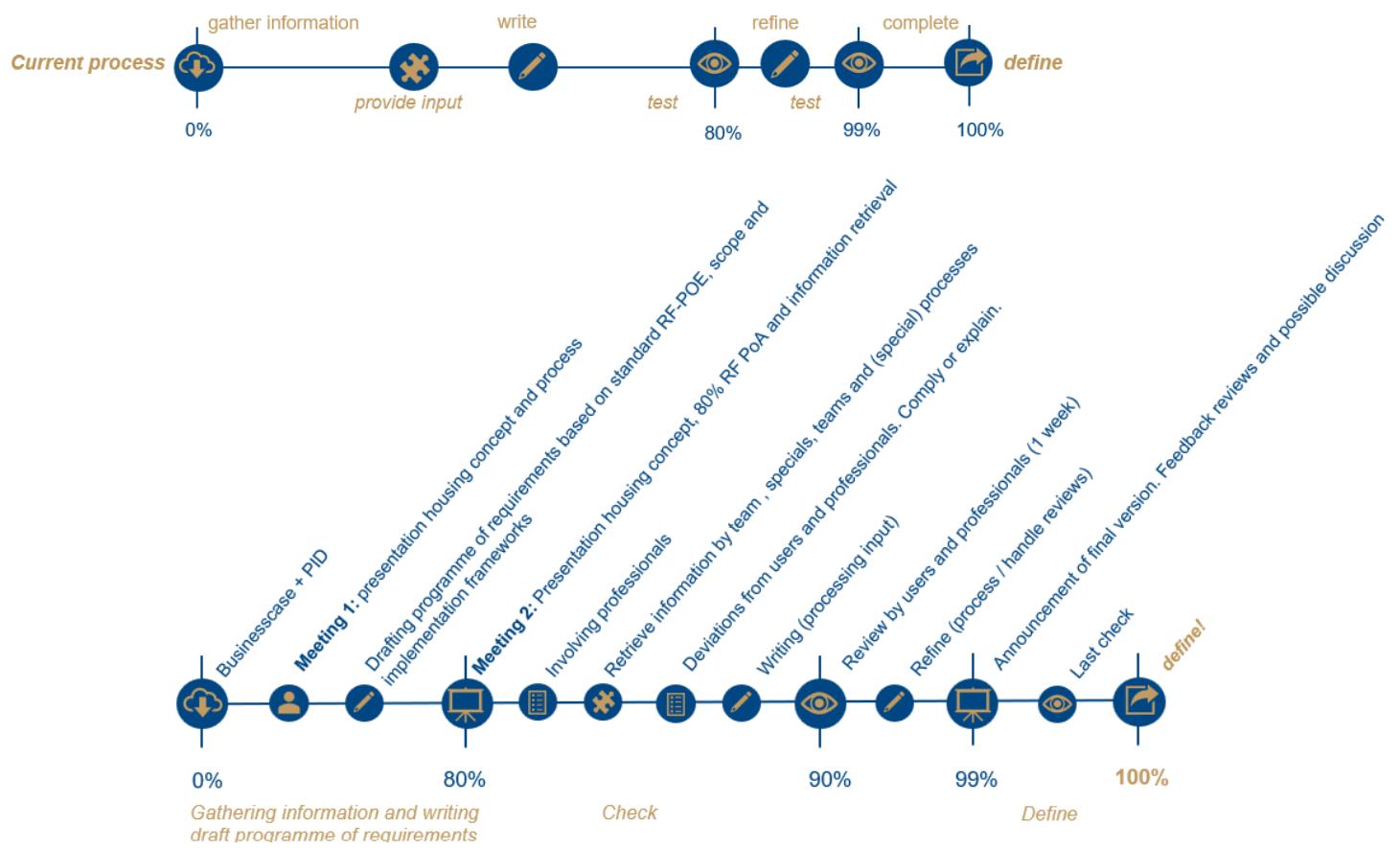


Figure 7 – Process diagram of creating the programme of requirements (Police, 2024)

2.2.2 Standardisation in real estate management

The Police is not the first organisation to use standardisation as a real estate strategy. According to O'Mara (1999), standardisation became appealing due to cost-effectiveness during the Industrial Revolution. Although O'Mara's (1999) work is relatively old, it is still widely referenced because it provides foundational insights into REM and the strategic role of standardisation. Creating standardised designs, materials and processes reduced overall costs, making the process more financially viable for real estate managers.

Levels of standardisation

Nowadays, many organisations explicitly formulate standardisation as a real estate strategy which attempts to merely control costs and to coordinate facility design and real estate operations within the organisation (Singer et al., 2007). When, for instance, all office furniture is bought in one batch by an organisation running different locations, furniture can be moved around instead of having to acquire new items for every impending change. The organisation does not have to reinvent the wheel every time a new facility is planned or a facility has to be renovated. They can stick to a uniform plan for all locations, which is generally quicker and lower-cost. It discourages unnecessary buys because standards are easier to implement (O'Mara, 1999).

Beyond cost control, standardisation can also address a range of other organisational needs (O'Mara, 1999). These needs can be met through various levels of standardisation, depending on how an organisation chooses to implement the strategy. See figure 8 for an overview of the different levels of standardisation. Organisations may apply design standardisation by using the same general design for both headquarters and field locations, selecting office furniture systems with the same characteristics. Others may opt for functional standardisation, specifying sqm and furniture types while allowing for regional or local autonomy in style choices (Craig et al, 2000). Other organisations may use behavioural standardisation where they control building usage or use of space by implementing standard ground rules which may control users to act in a standard way over different locations. Together with these different levels of standardisation it also limits the amount of discussion and controversy when making decisions regarding real estate, making the work of a single manager overseeing the process more efficient and easier (O'Mara, 1999).

Standardisation this way becomes more than just a strategy for cost control, it becomes a strategic decision-making method in the field of REM to create efficiency in the process. As organisations grow, standardisation offers a proactive solution to avoid incremental decision-making and reduce complexity. This helps ensure efficiency, consistency, and effective management across expanding portfolios (O'Mara, 1999).

Advantages and disadvantages of standardisation

See figure 9 for an overview of the advantages and disadvantages of standardisation. It shows another reason for organisations to implement standardisation: the opportunity to wield control over certain behaviour. As mentioned before, when standards are put into place to encourage similar individual behaviour across different locations, managerial actions can be controlled. This approach may also reduce competition and conflict between different sublocations or units within just one location. By implementing design standards and process standards, conflicts over resource allocations such as furniture can be avoided, while standardised lay-outs can ensure unity within the different locations of the organisation (Singer et al., 2007). Most of the time there is a great deal of variance in organisations' operations and the real estate markets where assets are located. When organisations want to minimise the management of different real estate portfolios, some of them use an universal approach to office design. Here, they

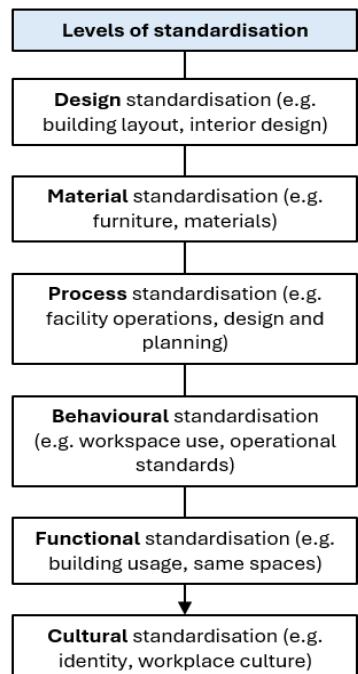


Figure 8 - Levels of standardisation (own work)

minimise the differences between all the facilities and units in a real estate portfolio, which can control behaviour as well (Craig et al., 2000).

The time- and cost saving advantages of standardisation also apply to standardised routine decisions for managements, saving them time to shift focus to other challenges. Standardisation can also create economies of scale in purchasing (O'Mara, 1999). Economies of scale are cost advantages used by organisations when production becomes efficient. They can be achieved by increasing production at lower costs, with costs being spread over a larger number of goods (O'Mara, 1999). Standardisation however, also has its disadvantages.

A possible example of disadvantage of standardisation is the ensuing great reliance on standardised requirements or designs, making it hard to make alterations and changes to a programme of requirements or a design, even when a better design option or requirement may be applied (Craig et al., 2000). Here we also find other downsides of standardisation, like dullness, lack of innovativeness, failure to meet individual needs of users and a lack of flexibility. It can be considered a challenge to convince users to consider their building as unique and fitting to their needs once it has a standard design. It may therefore be a challenge to make users accept that workplaces, although standardised, may still be a great place to work (Craig et al., 2000). This notion is supported by Vischer (2008), stating that standard work environments can negatively impact users' psychological comfort, productivity, and satisfaction by ignoring individual preferences and the dynamic nature of work tasks.

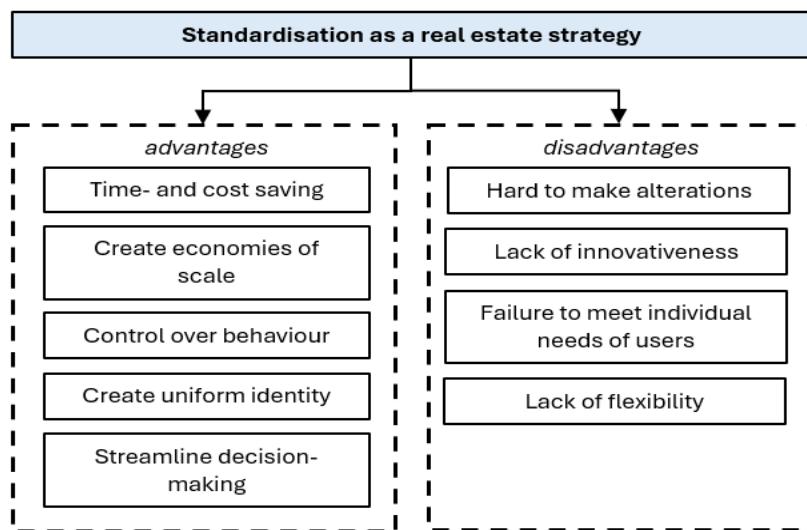


Figure 9 - Advantages and disadvantages of standardisation (own work)

Standardisation in a predictable environment

When standardisation is applied, the task of the real estate manager is to remain aware of the organisation's competitive situation and recognise when changes to standards for spatial development are needed. When standard requirements do not fulfil the needs anymore, they need to be replaced or altered. Organisations which use standardisation often have a relatively high degree of confidence, thinking they will last a long time and can commit to longer-range facility plans than other companies. When organisations work within a predictable environment, they tend to be older and have longer histories than organisations that work in an uncertain environment. Stable organisations often use regulatory standards and benchmarking which encourage standardisation as a real estate strategy (O'Mara, 1999). In a predictable environment, the conditions, factors and variables affecting an organisation's operations are relatively stable and can be anticipated to a certain extent. When organisations work within a predictable environment they usually have predictable patterns of input and output (O'Mara, 1999). This view is supported by Singer et al (2007). According to them, standardised decision-making relies mainly on predictions made by a property manager. Assets should have a predictable use, which is one of the basic characteristics. The combination

of creating an image and performing efficiently leads to the choice for a real estate strategy based on standardisation (Singer et al., 2007).

2.3 Real estate management

Having examined the role of standardisation as a real estate strategy, it becomes clear that it extends beyond controlling costs and time. While standardisation provides several advantages, the broader field of REM includes a wide range of activities which can also benefit an organisation. REM plays an important role in shaping the built environment to meet the specific needs and objectives of organisations and their users. Within REM, a range of strategies can be applied to optimise the efficiency and value of assets. This chapter dives deeper into REM and the fundamental process activities organisations can use to optimise their management and to align the requirements of organisations and end users, which is a goal of the Police as well.

2.3.1 Elements of real estate management

REM covers a wide range of practices aimed at optimising the use, maintenance, and development of real estate assets. At its core, REM involves leveraging real estate to support organisational objectives, improve operational efficiency, and ensure that these assets are utilised effectively. Successful REM requires balancing various factors such as cost-efficiency, space utilisation, and long-term value creation, while managing the needs and interests of diverse stakeholders (Marona et al., 2018).

REM prioritises aligning real estate assets with an organisation's broader strategic goals. This includes navigating complex decisions, such as buying, selling, leasing, or developing real estate to meet organisational needs. The effectiveness of REM has a direct impact on an organisation's budget and operational efficiency. Poorly managed REM can lead to insufficient real estate resources, which in turn undermines the organisation's ability to meet its operational demands (Pfnuer et al., 2021).

Another key element of REM is managing conflicts of interest and competing objectives among various stakeholders. Decision makers must ensure that real estate decisions optimise the cost-benefit ratio, balancing financial considerations with operational needs. In sectors where real estate is a core operational resource, such as public institutions or law enforcement, REM becomes particularly critical, requiring a strategic approach to ensure that these assets meet the unique demands of the organisation (Police, 2022).

Effective REM depends not only on the direct management of real estate assets but also on organisational structures and processes that enhance decision making and operational outcomes. By focusing on these management interventions, organisations can improve overall efficiency and ensure that their real estate portfolios continue to meet evolving needs (Marona et al., 2018).

Because the Police is a public organisation, they speak of Public real estate management (PREM) regarding their real estate management. In the context of law enforcement agencies or public organisations, PREM takes on a unique significance (Police, 2022). PREM for the Police involves managing real estate assets owned or operated by government entities at various levels (local, state, or national). The Police have diverse real estate needs which require strategic planning and efficient management. PREM for the Police involves not only the practical aspects of property maintenance and utilisation, but also aligning real estate strategies with the evolving needs of law enforcement, end users and the changed organisational structure (Police, 2022). According to Marona et al. (2018), the focus of PREM extends beyond profit generation to address public welfare, social equity, and urban development.

2.3.2 Aligning REM with the requirements of end users

According to Beckers et al. (2015), there are three fundamental process activities involved in effectively aligning REM with the requirements of end users and the organisation as a whole. This alignment can be done by implementing the following activities; *coordination, communication, and decision-making*. Real

estate managers (especially in PREM) often have to deal with an enormous number of square metres of real estate assets. In addition to that, is it often hard to cope with for instance the growing need for efficiency, cost reduction, sustainability and flexibility in existing real estate portfolios. The three fundamental process activities mentioned above can help real estate managers to deal with these kinds of challenges (Beckers et al., 2015). See figure 10 for a graphic representation of what they entail.

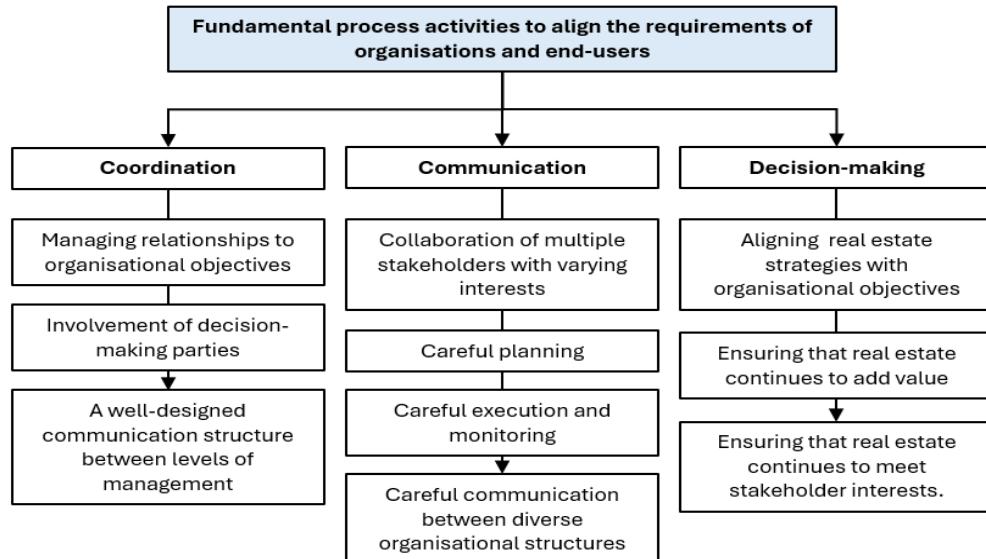


Figure 10 - Fundamental process activities to align the requirements of organisations and users (own work)

Coordination within an organisation involves managing relationships of stakeholders and decision-making processes to align with organisational objectives and needs. Coordination can be understood as the governance of organisational relationships, typically framed as market or hierarchy. According to Grandori (1997) coordination can be at different levels; on price, on voting, in authority relationships, in agent relationships, within teams, in negotiation, and on norms/customs, which can be applied both internally and across organisational collaborations. The degree of coordination in REM is influenced by the type of organisation and focus of top management, with transparency, cost savings, and standardisation driving this coordination. Successful coordination requires a well-designed communication structure between central and local management to balance strategies with different stakeholders needs (Jensen, 2012).

Effective *communication* is a critical element in the success of real estate strategies, particularly when multiple stakeholders with varying interests and conflicting objectives must collaborate. The complexity of communication arises from factors like fragmented parties, long project life cycles, and diverse organisational structures. There is a direct link between communication effectiveness and project success rates, with well-communicated projects achieving significantly higher success than those with poor communication (Setiawan et al., 2021). In fact, communication challenges are often at the root of delays, cost overruns, and reduced performance. To address these issues, communication management in real estate strategies must involve careful planning, transparency, execution, and monitoring (Setiawan et al., 2021).

Decision-making in REM, particularly within public organisations, involves complex considerations due to the multi-faceted objectives that their real estate portfolios must serve. Public organisations in the Netherlands own a significant portion of real estate, primarily acquired to achieve societal goals, but these properties must continuously be evaluated to determine whether they still meet the objectives (Arkesteijn & Binnekamp, 2012). When properties no longer serve their purpose, organisations face decisions about whether to sell or acquire new assets, often requiring multi-criteria group decision-making to balance diverse objectives. Ultimately, decision-making in REM revolves around aligning real estate strategies with

organisational or governmental objectives, ensuring that the real estate portfolio continues to add value and meets stakeholder interests (Arkesteijn & Binnekamp, 2012).

Within the Police, housing staff also work with a huge number of square metres of real estate on which decisions have to be made. For example, there are more than 500 properties with a public function and more than 350 properties with a non-public function (reference date May 2021). For a public function, it applies that citizens can enter and use the property, whereas for non-public functions, these spaces are open to only employees of the Police (Police, 2022). Of these properties, some are rented and some owned. Managing their real estate portfolio requires a clear division of tasks and responsibilities. To achieve their accommodation goals and align REM with the requirements of end users, coordination, communication, and decision-making are important activities to enact for Police housing staff.

2.4 User satisfaction

As shown in chapter 2.2.2, keeping different user groups all satisfied in a standardised environment proves to be a challenge. User satisfaction in the built environment is a critical concept, revolving around the comfort, functionality, and overall experience of individuals within physical spaces. The level of user satisfaction plays a significant role in determining the success and effectiveness of the physical space (De Vries, 2008). This chapter dives deeper into the importance of user satisfaction, the concept of user satisfaction within the Police and in the built environment in general. We look at how it plays a role in decision-making, and how certain strategies can overall enhance user satisfaction.

2.4.1 The importance of user satisfaction

There is currently a prevailing focus on concepts like 'added value' or, more dynamically put, the active process of 'adding value' undertaken by real estate managers and associated facilities and services. REM is no longer dictated by organisation mandate but to provide operating organisations with added value over their competitors (Jensen, 2012). In general, the term 'value' means the worth of something in terms of the amount of other things for which it can be exchanged. The value of REM in general lies within the contribution to organisational performance (Van der Voordt, 2016). Organisational performance is not only measurable in financial results, but also in non-financial factors such as identity, user satisfaction, and competitive advantage. In this context, the design and management of work environments play an important role (De Vries, 2008). The work environment affects the way in which users experience and engage with their environment, which can directly impact their satisfaction and, by extension, organisational success (Vischer, 2008).

Not only does the design and mode of occupancy of the work environment affect users' feelings, but also their work performance, their commitment to their organisation and the creation of new knowledge in the organisation (Vischer, 2008). User satisfaction is essential in REM as it directly influences operational efficiency and overall property performance of an organisation. High user satisfaction enhances engagement with facilities and services, leading to smoother operations and reduced disruptions (Murray & Howat, 2002). Satisfied employees are more likely to stay longer, which reduces turnover costs and maintains stability in manpower. Additionally, a positive reputation derived from high user satisfaction can enhance marketability and the identity of an organisation, setting it apart from competitors (Agyapong, 2011). Furthermore, feedback from satisfied users also provides valuable insights bringing continuous improvement and aligning real estate strategies with user needs and preference. Overall, focusing on user satisfaction in REM can support long-term success through improved operational efficiency, reputation and alignment with strategic goals.

2.4.2 User satisfaction within the Police

Public organisations, including the Police, often prioritise meeting the needs of external stakeholders. In this public sector environment however, real estate managers frequently face the challenge of managing

conflicting expectations and needs from multiple end user groups (Wilson et al., 2001). In case of the Police the range of end users is enormous, with special regard to the different job requirements and social and educational levels. Here, for a real estate manager, it is hard to meet the evolving end users' expectations and needs (Police, 2022).

In 2019, the Police, in cooperation with Hospitality Group, started to develop a new version of its housing policy for all police locations in the Netherlands. In order to gain insight into the main points of concern within the work environments at that time and the degree of improvement needed, a baseline measurement was carried out at a number of pilot locations of the Police. The results of this research showed that in 2019, the overall satisfaction score on the working environment and services during the baseline measurement was 5.9 out of 10. This score was -1.4 lower than the market average. The research also investigated into what Police employees considered to be greatest potential for improvement. This included workplaces (5.5), acoustics (4.8) and the atmosphere and design of the work environment (5.2). Here, satisfaction scored low on working together in open spaces (5.5) and relaxation (5.0).

In 2020, the Police Services Centre carried out another research, in which they examined users' perceptions of various issues regarding the organisation. Results regarding the issue 'Building' were 3.3 on a 5-point scale. Most striking was that buildings were often overdue for maintenance, with little or no parking facility and a need for more greenery. 'Office design' scored 3.4 with many employees being dissatisfied with the lay-out of workplaces and ways of arrangement in line with users' needs. Moreover, workstations were perceived too noisy and meeting rooms were often unavailable. Regarding the issue 'Influence' in a design process it was found that users wished to be more involved. As a result, Influence received only 2.5 out of 5.0.

Successive to the second study on user satisfaction no additional research has so far been carried out by the Police housing department regarding this topic. As outlined in chapter 2.2.1, the Police introduced a new housing policy, which by 2021 had progressed from a strategic plan to tactical implementation through the development of a Space book and a standardised house style. These policy documents, along with the Space book, primarily emphasise standardised team bureaus. However, as noted in chapter 2.2.2, standardisation can have a negative impact on user satisfaction as it reduces flexibility and, once implemented, makes adjustments challenging. Since 2021, new team bureaus have been developed under this policy framework, but no further evaluations of user satisfaction have taken place. Consequently, there is limited understanding of how users perceive the newly constructed team bureaus. This raises a critical question: what has been the impact of the new housing policy, specifically its standard aspects, on user satisfaction?

2.4.3 Strategies to enhance user satisfaction

According to Colenborg (2023), the workplace design plays an important role in the enhancement of well-being and consequent satisfaction of end users. Workplace designs should promote casual social contacts, reflect group identity, and provide workspace privacy in order to improve social well-being in workplaces. It is believed that these workplace benefits promote social inclusion, the fostering and preservation of connections and communities among employees and a decrease in unfavourable interactions. Environmental stressors can cause stimulation overload, which can result into coping strategies like social withdrawal. Open-plan offices, shared workspaces and high levels of background noise are associated with reduced well-being. In contrast, satisfying light conditions, greenery and personal control of the environment support well-being (Colenborg, 2023).

As mentioned before, real estate managers work within a multiple stakeholder balancing act where user satisfaction plays an important part in strategic decision-making. In PREM, the focus shifted from effective and efficient operational activities to focusing on satisfying the end users as well (Marona et al., 2018). Now, industries exist in hypercompetitive economies where users control the market as well. Here, the challenge for real estate managers lies in satisfying end users who expect more than just the traditional time-cost-

quality trilogy. To enhance user satisfaction, managers are responding by becoming client-centric in vision. Real estate managers achieved success by handling the evolving needs of users' demands by focusing on providing strategic advice (Wilson et al., 2001).

There are a few strategies employed to enhance user satisfaction in the field of REM. See figure 11 for an overview. Firstly, user satisfaction can be enhanced through the power of *stakeholder engagement*, also called collaboration. Research has provided insight into the importance of stakeholder engagement in crucial organisational activities like value creation, strategic planning and decision-making. Stakeholder engagement is a strategy or process implemented by organisations in their stakeholder relations (Kujala et al., (2022)).

User-centric design is a second strategy in the built environment to enhance user satisfaction. User-centric design is a strategic approach that prioritises users' needs, preferences and experiences to create spaces that foster satisfaction and usability. This approach has gained significant attention in recent years, emphasising its positive impact on enhancing user satisfaction in various built environments. User-centric design principles focus on understanding user behaviour, preferences and requirements during the design process. Researchers such as Brown and Katz (2011) highlight the importance of involving end users early in the design phase in order to gather insights which inform decisions on spatial lay-outs, amenities and overall functionality. Studies consistently demonstrate a positive correlation between user-centric design and increased user satisfaction. According to Smith et al. (2015), buildings designed while adopting a user-centric approach tend to provide more enjoyable and efficient spaces, contributing to higher levels of satisfaction among occupants. A critical aspect of user-centric design involves ongoing user feedback. There is a growing importance of Post-Occupancy Evaluations (POE) and a continuous engagement with users to adapt and refine built environments over time while ensuring these environments remain aligned with evolving user needs. Researchers Green et al. (2020) emphasise the importance of POE and said continuous engagement.

A third strategy is *clear communication and transparency*. Clear and transparent communication is a vital component in the design and management of the built environment, playing a significant role in enhancing user satisfaction (Brown et al., 2020). When users are provided with clear information about design choices and planning decisions they feel more engaged and satisfied with the built environment. Clear communication regarding building policies, maintenance schedules, and any changes in the environment helps users feel informed and involved, fostering a sense of trust and enhanced satisfaction (Brown et al., 2020).

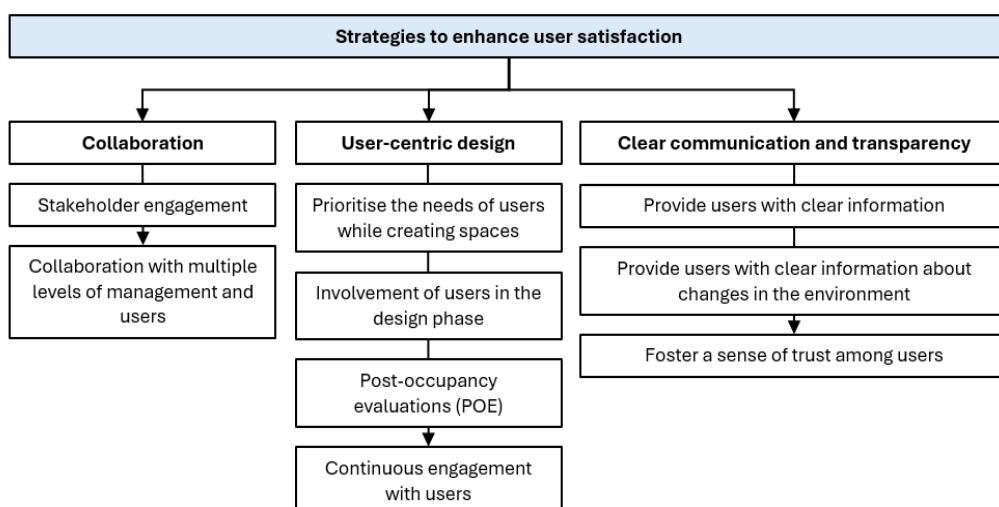


Figure 11 – Strategies to enhance user satisfaction (own work)

2.5 Conclusion of the literature review

In summary, the literature study shows that the organisational reform carried out by the Police has created a significant real estate transformation to align with the reshaped organisational structure and services. The organisational reform created a major accommodation challenge for the Police, where in the next ten years, approximately 700,000 sqm of real estate will be divested and about 200,000 sqm of new construction will be added. In addition, buildings will be renovated or functionally adapted to the new organisational structure. To tackle this challenge the Police has been adopting a new housing policy since 2017. The organisation intends to work in fewer places, employing an increasingly digital approach and larger teams. In this sense they intend to balance functional, technical and financial aspects while their new real estate strategy aims for efficiency and substantial yearly savings of 76 million euros. In addition to that, the Police wish to create a new uniform public identity and enhance user satisfaction among their organisation. However, due to the complexity and changes involved, the role of the real estate manager within the Police has become more complex.

A key component of the new real estate strategy of the Police is the standardisation of their new team bureaus. By implementing standardised processes and standard aspects within new team bureaus, the Police have sought to create a uniform, recognisable identity. Whether in the organisation of the Police or REM in general, standardisation emerges as a powerful real estate strategy for shaping organisational identity, controlling costs, and ensuring operational effectiveness; all of them components the Police wish to enhance. However, the implementation involved requires a great understanding of organisational needs, user preferences and the dynamic nature of the real estate market, because standardisation can cause lack of flexibility, dullness, lack of innovativeness and failure to meet individual needs of users. It can be considered a challenge to convince users to consider their building as unique once it has a standard design. To enhance user satisfaction, good real estate management is needed when implementing a new real estate strategy. Especially for the Police, in which case they need to meet the evolving end users' needs, all of which have different job requirements, social and educational levels and often conflicting expectations and needs.

Essential to REM are the processes of coordination, communication, and decision-making, which help address conflicts, enhance efficiency and align real estate strategies with broader goals. For the Police, in its capacity as public organisation managing an extensive real estate portfolio, these processes are crucial for adapting to evolving needs and for achieving user satisfaction.

User satisfaction is crucial in REM as it directly influences operational efficiency, property performance and overall organisational success. High levels of satisfaction enhance engagement, reduce staff turnover and improve marketability, while feedback from satisfied users supports continuous improvement and strategic alignment. In REM, user satisfaction is vital for addressing community needs and ensuring regulatory compliance. Despite its importance, satisfaction remains challenging to measure due to its subjective nature and the lack of standardised criteria.

By 2017 the Police implemented a new housing policy, translating it from a strategic plan into tactical execution through the creation of a Space book, house style guidelines and other policy documents, primarily focusing on standardising new team bureaus. However, as noted, standardisation may negatively impact user satisfaction due to reduced flexibility and difficulty in making changes. While new team bureaus have been developed under this policy, no further research on user satisfaction in police buildings has been conducted since 2021. It remains unclear how users perceive the new team bureaus, raising questions about the policy's impact, specifically its standardised aspects, on user satisfaction and the current user experience.

2.6 Identification of problems that remain to be solved

The literature review revealed several gaps, highlighting a significant challenge for the Police in aligning their real estate with the new organisational structure, services and identity. While standardisation can reduce costs and help regulate behaviour within the organisation, it may also result in reduced flexibility, innovation, and an inability to meet individual user needs. Striking a balance between standardisation and the adaptability required to improve user satisfaction remains a challenge. The focus on user satisfaction within the built environment is crucial because it directly influences operational efficiency and property performance of an organisation. It remains a complex challenge, however, to align real estate with user needs across diverse stakeholder groups. The evolving end users' expectations and needs present difficulties in meeting their diverse requirements, which is a problem occurring within the Police. This issue is further complicated by the fact that the Police have not conducted research on user satisfaction within the new team bureaus developed under the 2017 housing policy.

Addressing these challenges requires a delicate balance between adapting to a new organisational structure, meeting user needs and making strategic real estate decisions that align with the broader goals of the organisation and society.

2.7 Literature map

Figure 12 on the next page illustrates key themes, relationships and links within the body of knowledge of the National Police, Standardisation, Real estate management and User satisfaction. Many concepts and theories were researched separately in the literature review, even though they can be linked to user satisfaction. The figure below shows how various concepts interconnect by visually mapping out the literature and its most important source.

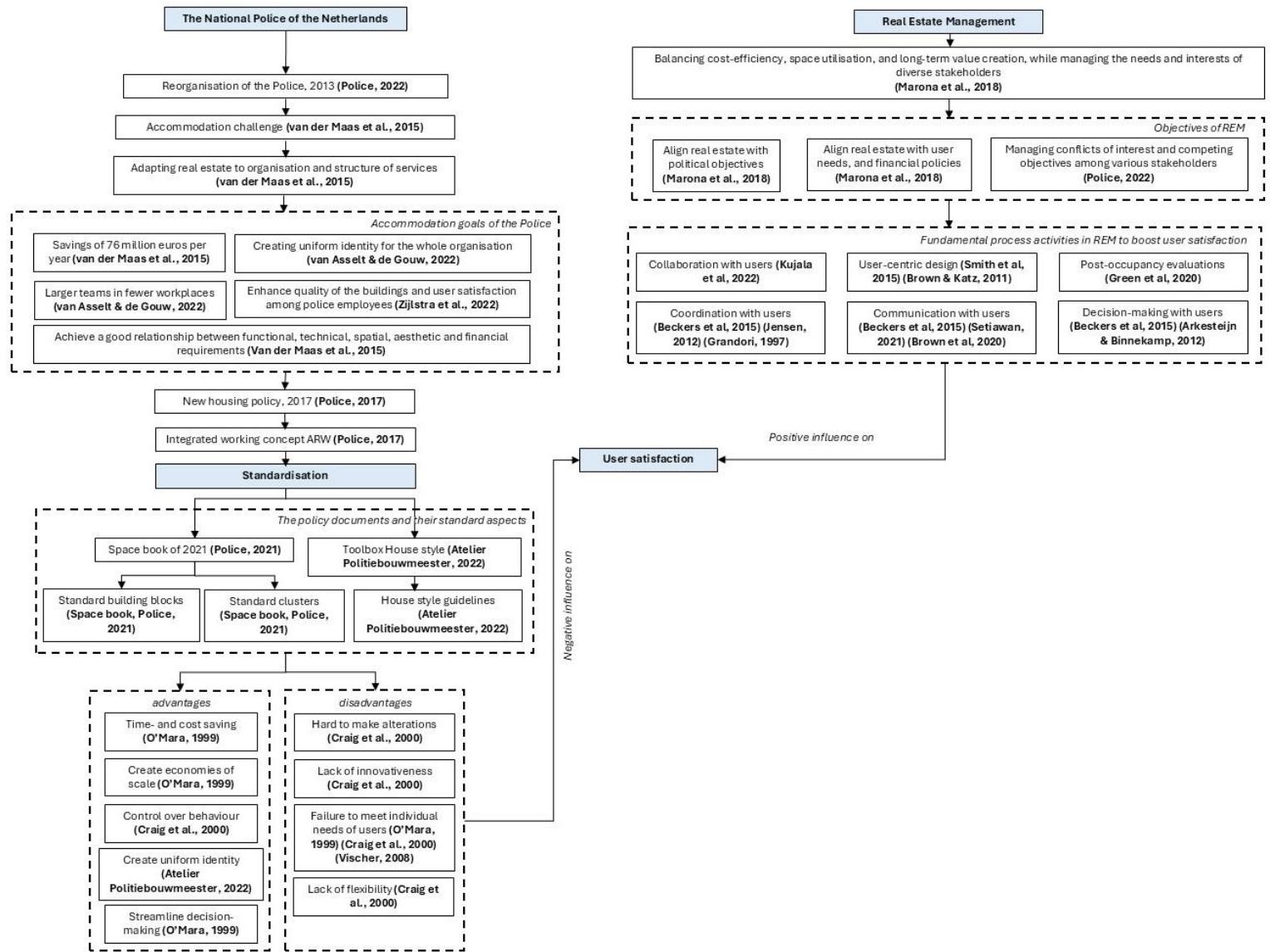


Figure 12 – Literature map of the literature review (own work)

2.8 Hypotheses model

A number of hypotheses can be drawn from the literature review. The figure on the next page shows them visually. The hypotheses formulated pertain to user satisfaction, as it is part of the central focus of the main research question. As standardisation takes place in processes and products of the Police, the hypothesis model focuses on both product and process. The formulated hypotheses indicate what I expect to find with my research. The first hypothesis is that standardisation of the product (in this case, team bureaus) has a negative impact on user satisfaction through a lack of flexibility, dullness, lack of innovativeness and failure to meet individual needs of users. But besides standardisation of the product having a negative impact, different process activities in real estate management (or in the standard processes of the Police) can have a positive impact on user satisfaction. Therefore, the second hypothesis is that communication, coordination, collaboration, decision-making, user-centric design, and post-occupancy evaluation have a positive impact on user satisfaction. The process activities are independent of each other. In chapter 8.2, the interpretation of the research results are given, using the hypotheses.

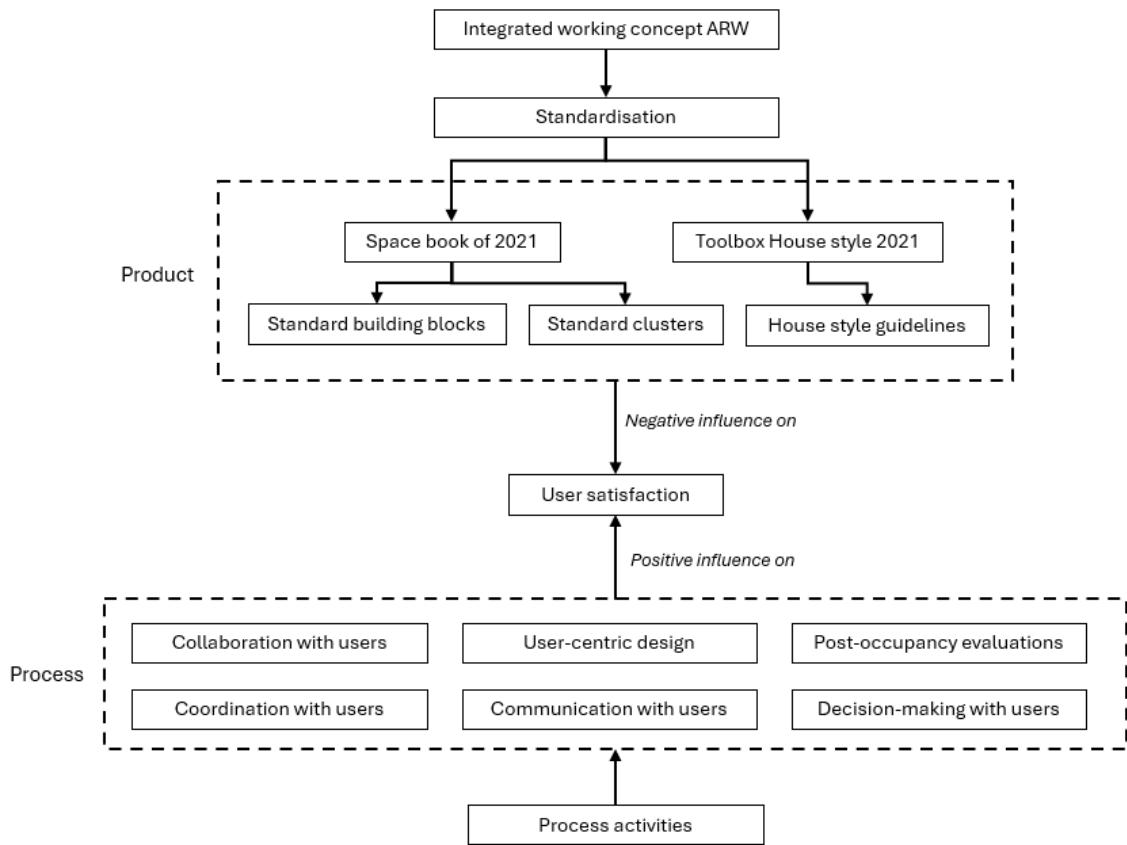


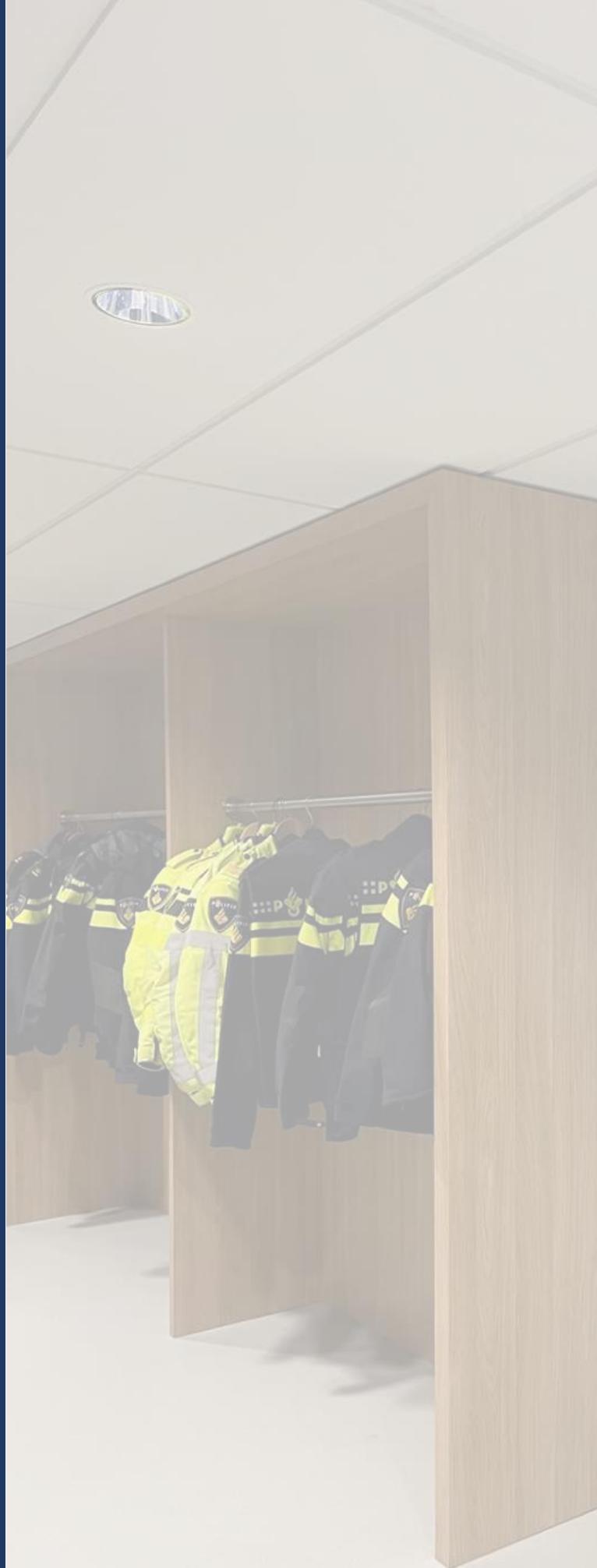
Figure 13 – Hypotheses model (own work)

Chapter 3

Research methodology

The primary goal of this research is to explore the impact of the housing policy - specifically its standardisation aspect in the development of new team bureaus - on end user satisfaction. The focus on standardisation is divided between the products (the new team bureaus) and the standard processes employed by the housing department of the Police. Achieving this goal requires qualitative research. Qualitative research is a research method that focuses on understanding human experiences, behaviour and interaction through in-depth examination of phenomena in their natural environment. It is characterised by an emphasis on subjective meanings, detailed descriptions and the complexity of social contexts, often using interviews, observations and content analysis as primary data collection methods (Creswell & Poth, 2018).

Unlike quantitative research, which focuses on quantifying variables and establishing generalisations, qualitative research focuses on capturing the richness and diversity of individual perspectives, allowing for deeper insights into complex issues. The data of this research is collected through a literature review, a case study analysis, in-depth interviews and a focus group. The literature review contributes to a better understanding of the topic and the development of new insights and knowledge. The case study is necessary in order to learn about the Police portfolio and to clearly establish a context in which the research is conducted. The in-depth interviews are aimed at gaining insights and understanding experiences within the Police organisation. The focus group was organised to discuss the conclusion and recommendations in terms of recognition and applicability. In this chapter, the research methods are explained in more detail.



Research methodology

“How does the standardisation aspect of the housing policy of the Police affect end user satisfaction in the new team bureaus?”

	Sub question	Research method
1	What is standardisation and why is it used as a real estate strategy for new team bureaus by the Police?	Literature study In-depth interviews
2	What standardised aspects do new team bureaus have when developed under the current housing policy of the Police?	Case study analysis In-depth interviews
3	What standardised processes do the Police use for the development of new team bureaus?	Case study analysis In-depth interviews
4	How does the Police involve end users in the development of new team bureaus, and what impact does this involvement have on the outcome?	In-depth interviews
5	How does standardisation affect end user satisfaction within the Police's new team bureaus?	In-depth interviews

Table 1 - Research methods per sub question (own work)

3.1 Type of study

This research encompasses a range of approaches, from a literature review for broader insights to a case study and in-depth interviews for more specific, detailed data. Table 1 shows the research method per question. The combination of these methods allows for a comprehensive understanding of standardisation, user satisfaction, and strategies within public real estate management, specifically within the context of the Police and its team bureaus. In this chapter, the research methods are explained.

3.1.1 Literature study

A literature review is a systematic examination of existing academic work on a particular topic. It involves identifying, evaluating, and synthesising relevant research to provide an overview of the current state of knowledge. This process helps to identify gaps in the literature, clarify concepts, and establish a conceptual framework for the researcher (Snyder, 2019). The literature review is a crucial step, undertaken before the field study. It enables a thorough investigation of the key concepts relevant to this research, allowing for a comprehensive understanding that forms the foundation for further exploration during the field study. In this study, the primary topics include the Police, Standardisation, Real estate management (REM), and User Satisfaction. Initially, it was essential to understand the organisational structure of the Police and the specific accommodation challenges they face. Following this, the concept of standardisation as a real estate strategy was examined, with a focus on its implementation within the Police. As standardisation falls under real estate management, REM was also explored through the literature review. Finally, the literature review examined user satisfaction, its potential enhancement within the built environment, and the existing theoretical perspectives on the relationship between standardisation and user satisfaction. The literature used, was found on Google Scholar, Scopus and with the use of the Rabbit AI tool. Policy documentation and other literature originating from the Police was also used, to do research on Police housing policy and standardisation.

3.1.2 Case study analysis

A case study involves an in-depth exploration of a particular subject, which could be an individual, group, location, event, organisation, or phenomenon. This research approach is frequently employed in fields like social sciences, education, healthcare, clinical settings, or business studies. The methodology typically involves qualitative data collection, and it provides a way to analyse, compare, assess, or gain a deeper understanding of various facets of a given issue (Merkus et al., 2023).

For the case study, new team bureaus were selected within the Police in situations where the 2017 housing policy had been applied, making this case study, a multiple-case study. For police officers, team bureaus are the central gathering places for doing office work administration, holding meetings and preparing off-duty work like surveillance and home visits (Police, 2021). It was important for my selection that team bureaus were already completed and in operation, so that end users had already gained experience in their work environments. In this way, it was possible to research user satisfaction within these real estate assets. It was also important that the standardised building blocks, clusters and house style had been applied in the development of the four team bureaus selected. Together with the selected methodology this made it possible to make good comparisons and findings in the research. This is a summary of important criteria for selecting the cases:

- The team bureau must have been fully completed and delivered.
- The team bureau must be fully operational.
- The development of the team bureau must have followed the 2017 housing policy.
- The standard house style must have been implemented.
- The 2021 standardised building blocks and clusters must have been applied.

The following team bureaus were selected under these criteria:

1. Team bureau Papendrecht
2. Team bureau IJsselmonde, Rotterdam
3. Team bureau Bergambacht
4. Team bureau Winsum
5. Team bureau Leek
6. Team bureau Nijverdal
7. Team bureau Velp

Because interviews took place at a later stage in the study it was more efficient to select locations closest to Rotterdam. The following 4 team bureaus were selected:

1. Team bureau IJsselmonde
2. Team bureau Bergambacht
3. Team bureau Papendrecht
4. Team bureau Velp

Conducting a case study analysis for this research made it possible to identify all standard aspects of a new team bureau and compare team bureaus with each other. Comparisons were made on the building blocks, lay-out and house style used. It was important to find out where standardisation is effected, and, on the other hand, where deviations have been made from the standards. The multiple-case study was done by using the policy documents regarding standardisation, the Spatial-functional programmes of requirements for each team bureau and the house style toolbox. Each team bureau was visited to get a picture of the current work environments. Photographs were taken so that each location could be compared mutually in terms of the building blocks, clusters, house style and furnishings used.

3.1.3 In-depth interviews

In order to explore user satisfaction in the standardised environments, in-depth interviews were considered to be the most efficient method for gathering data, gaining insights and understanding experiences within

the Police organisation. The interviewees targeted for this research were end users, Police housing staff and architects. End users who had participated in the design process and who were currently working in their respective team bureau were targeted, as well as end users who had not participated in the design process, after which the responses of either party were compared with each other. Police housing staff and architects were also invited for interviews. A total of 13 interviews were conducted, with background information of these 13 interviews specified in table 2, including corresponding roles and relationships with the Police organisation.

The mode of the in-depth interviews was semi-structural. A semi-structured in-depth interview typically involves the interviewer using a list of key topics or questions as a guide. The goal is to encourage participants to express themselves in their own words, so the questions are generally open-ended, allowing for a variety of potential answers. The two main topics discussed were standardisation and user satisfaction. Both topics could be viewed from different perspectives: the end user perspective on the one hand; the organisational perspective on the other. What was the reason for change, and how was the solution ultimately received? The interviews also distinguished between standardisation of the process and standardisation of the end product, including general real estate management and the ways in which the Police executed their management within the development of new team bureaus.

	Interviewee	Focus interview	Relationship with the Police
1	Housing and real estate policy advisor	Standardisation, Space book	In-house
2	Coordinator workplace consultants	Standard processes	In-house
3	Environmental psychologist	Standardisation, house style	In-house
4	End user (Velp)	User satisfaction, standardisation	In-house
5	End user (Velp)	User satisfaction, standardisation	In-house
6	Chief housing officer (Velp)	User satisfaction, standardisation	In-house
7	End user (Papendrecht)	User satisfaction, standardisation	In-house
8	End user (IJsselmonde)	User satisfaction, standardisation	In-house
9	End user (IJsselmonde)	User satisfaction, standardisation	In-house
10	End user (Bergambacht)	User satisfaction, standardisation	In-house
11	End user (Bergambacht)	User satisfaction, standardisation	In-house
12	Architect (Papendrecht)	User involvement, satisfaction, standardisation	External
13	Architect (IJsselmonde)	User involvement, satisfaction, standardisation	External

Table 2 – Interviewees (own work)

3.2 Validation of findings

After interpreting the case study analysis results and interviews, describing the findings and formulating recommendations, they were validated by Anke Neecke and a focus group. Anke is one of the experts in the Police housing department. All the results and recommendations were discussed together so that it could be determined whether results obtained were valuable with respect to the organisation. The validation was conducted in order to find out where more nuance was needed, or when she found results very surprising or did not understand them.

Following the interviews, all research findings were documented, and a conclusion accompanied by a set of recommendation was drafted. To evaluate their recognisability and applicability, a focus group was convened to discuss these conclusions and recommendations. The focus group included several participants, such as a workplace consultant, an environmental psychologist, a coordinator from the working environment department, and a policy advisor. All participants were affiliated with the Police. During the session, the conclusion was presented, and questions were posed to the group to encourage discussion among the participants. The recommendations were then introduced individually to assess their relevance and to gather the group's feedback on their applicability. The input gathered during the focus group was used to sharpen the recommendations where necessary and to adjust them where there was little rejuvenation.

3.3 Data analysis

3.3.1 Transcribing and coding

The analysis of the qualitative data took place after the interviews. The interviews were recorded and transcribed. After that, the transcripts were coded using Atlas.ti. This coding process employed both deductive and inductive approaches. According to Azungah (2018), the deductive method involves closed coding, where interview questions and codes are defined based on predetermined themes identified through the literature review and conceptual framework. However, additional themes that were not initially identified also emerged during the interviews. These themes represented areas not previously explored in the literature and were derived directly from the data, following an inductive approach. By integrating both methods, this research complemented existing studies while allowing interviewees to highlight what they deemed significant (Azungah, 2018). Each interview was transcribed and coded before the next one, enabling newly identified themes to be incorporated into subsequent interviews. See table 3 for an overview of all the codes used.

Codes from literature review	Codes from interviews
Standardisation	ARW
Advantages standardisation	Deviations from standardisation
Disadvantages standardisation	Identity
Building blocks	Process - design
Clusters	Process – programme of requirements
House style	Standardisation - process
Collaboration	Standardisation - product
Communication	
Decision-making	
Post-occupancy evaluation	
User satisfaction	
Higher user satisfaction	
Lower user satisfaction	
User involvement	

Table 3 – Codes used for analysis of data (own work)

A semi-structured method allowed the outcomes to be compared across the four different team bureaus. Each interview was summarised with the summaries categorised by topic. This allowed the interviews to be compared with each other by topic. The summaries were written using Atlas.ti quotes and codes. This made it possible to compare data per individual topic and interview, draw conclusions. The topics used are shown in table 4. Ultimately, these topics were used to describe the actual research findings.

Used topics in interview summaries
Standard processes and user involvement
Positive impact on user satisfaction
Negative impact on user satisfaction
Reasons behind standardisation
Standard documents
Standard aspects in team bureaus
Adapting to the ARW concept
ARW, lay-out, building blocks and the house style
Post-Occupancy Evaluation
Architect's Design Freedom
Recommendations

Table 4 – Topics used to summarise interviews (own work)

3.4 Interpretation of results

The hypotheses model in chapter 2.8 shows the hypotheses drawn from the literature review. These hypotheses were tested during the field research by conducting the case study analysis and interviews. In chapter 8.2 the hypotheses are evaluated in conjunction with the research outcomes obtained. Here, the research results are fed back to the literature and it is described whether the results match the prior expectations.

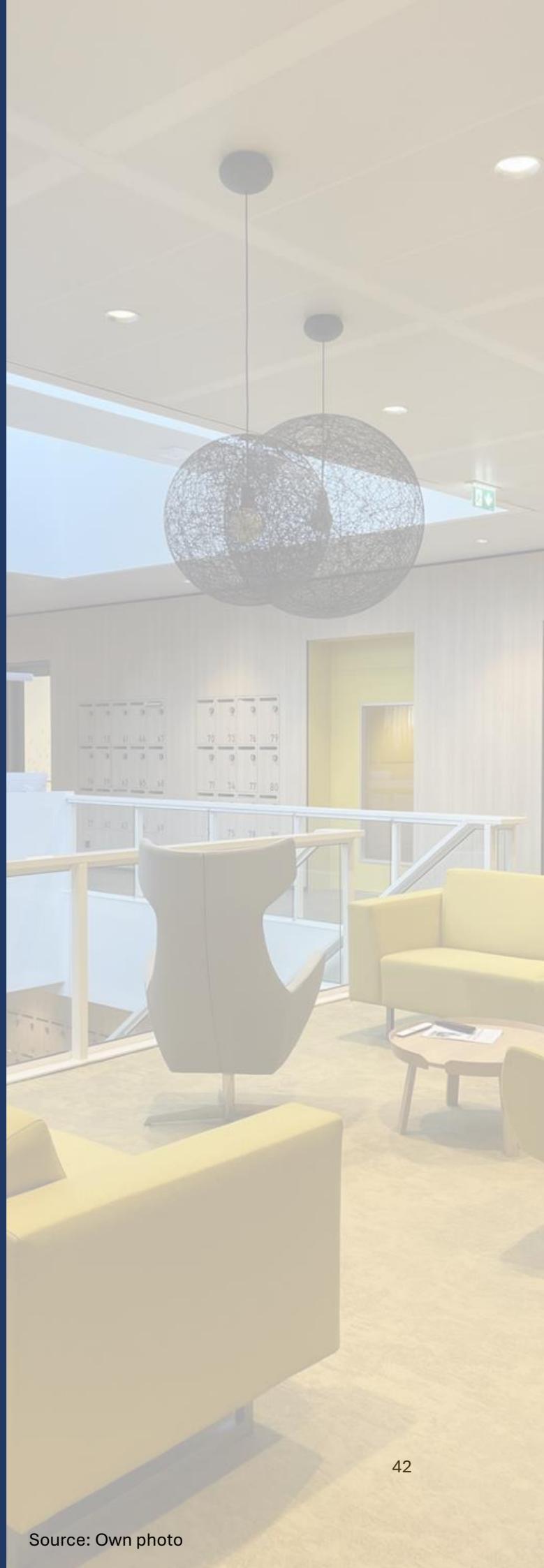
Chapter 4

Case study analysis

This multiple-case study focuses on how standardisation is applied across four new team bureaus within the Police. By analysing their Spatial-functional programme of requirements, final designs, and the applied house style at each team bureau, the study identifies commonalities and deviations in the implementation of standardisation.

The analysis provides insights into the standardised approaches in workplace design and operational processes by focusing on both the standardised process and the product. In this chapter, a document analysis is first done with the policy documents of the housing policy of 2017, its additional Space book and the Toolbox House style police buildings. From these documents, all aspects regarding standardisation are filtered, which are needed for the final case study analysis.

After that, the results of the case study are summarised. On the basis of the results, a context is outlined in which it becomes clear how standardisation is carried out, at which points it deviates and at which points, on the contrary, standardisation is highly pursued.



Case study analysis

4.1 Document analysis

First, a document analysis was carried out regarding existing housing policy documents covering standardised aspects. In this chapter, the following two documents were analysed; the Space book and the Toolbox House style police buildings.

4.1.1 The Space book and Toolbox House style police buildings

As mentioned in chapter 2.2.1, the standard building blocks and clusters are implemented in a policy document called Space book. Table 5 below is a summarised roadmap from the Space book detailing the interior design principles to achieve a standardised but modular working environment. When these principles are all applied in any development of a new team bureau, a similar working environment can be created.

Principles from the Space book	Interpretation
1. Building blocks for team bureaus are pre-selected.	For the work processes within a team bureau, the building blocks have been designed to assemble the different work spaces. As described in chapter 2.2.1, the Police have a calculation tool that, based on the size of the team, calculates the number of building blocks used for.
2. Building blocks in clusters are placed rotationally.	The building blocks are placed rotated in a space to create diversity in the (in-between) spaces. This makes some parts more open, others more closed, creating space for various types of activities. This deviates from an open-plan office.
3. Combining of multiple (rotated) building blocks into clusters	Combining several building blocks (rotated and shifted relative to each other) creates a cluster.

Table 5 – The three principles to create a workplace (own work)

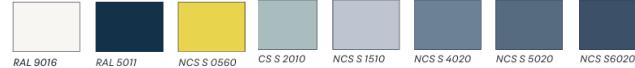
For the development of new team bureaus, the Police have the following standard clusters with no deviating standards. Table 6 shows all clusters with their explanations and corresponding building blocks.

Cluster	Description	Building blocks
1. Standard working area	The cluster standard working area is intended for (desk) work and is a 'normal' working environment for daily activities. Users occur throughout the Police organisation. Chain partners do not have access.	-enclosed single room -enclosed double room -open multi-person room -call room -open meeting room -open collaboration space -flex workplaces -small meeting room -medium-sized meeting room -central meeting point
2. Public area	The public area is intended for police-citizen interaction and can be seen as the calling card of the Police organisation. The Police house style is visible in this cluster and there are standardised furnishing elements such as the reception desk for the visitor.	-reception desk -waiting room -declaration room -toilet -MIVA Toilet -open multi-person room -pantry
3. Collaboration zone	The collaboration zone provides working spaces for collaboration with chain/external partners without opening up the entire office.	-flex workplaces -call room -briefing room -open collaboration space -small meeting room -medium-sized meeting room
4. Detention area	The detention area is a cluster of building blocks meant for detaining suspects including all related activities, such as booking, interrogation, conversations between lawyer, doctors and suspects. It is used by the base team, arrestees and some visitors. The number of holding rooms is location-dependent and is leading for the size of the cluster.	-search area/precision counter -identification room -holding room -interrogation room/lawyers' room

		-detainee toilet -breathing analysing room -pantry
5. Changing space	The changing space cluster covers all facilities required for Police employees to change from plain clothes to uniform. The cluster is mainly used by uniform-wearing Police employees. However, other Police employees can also use this cluster if they come to work by bicycle or motorbike.	-toilets -service weapons storage -drying area -dressing room -showers

Table 6 – Pre-selected clusters meant for a new team bureau and their building blocks (own work)

Apart from the strategic standardisation goals in the housing policy and the tactical goals set out in the Space book, house style guidelines were also developed for police buildings. As described in chapter 2.2.1, the purpose of police housing is to provide a professional, inspiring and safe environment, in which employees can do their best work. Chapter 2.2.1 also describes the three layers that make up the organisation's identity. As mentioned, layer 1 lays the foundation for using design tools to create a consistent look for police buildings. In this layer, colours, materials, textures, shielding elements, furnishing elements, greening, signing and art are pre-selected using ground rules. Table 7 shows the house style ground rules, specifically for the first layer.

Design tools	Ground rules	Inspiration per design tool (Atelier Politiebouwmeester, 2021)
Colours	<ul style="list-style-type: none"> -Colours should be able to separate certain activities in a natural way. -Floors and ceilings always in neutral colours. -Use warm tones with accentuating and zoning colours in the furnishing elements. -Use strong colour contrast effectively, for instance to mark an important place in the interior such as a reception desk or pantry. -Avoid a literal association of the Police with the colour blue by overusing it. Use blue in line with the palette in a more muted, saturated form -Apply dark blue (RAL 5011) mainly in areas where recognisability to citizens is important, such as the reception desk and signing. -Apply yellow (NCS S 0560-G90Y) mainly as an accent colour for highlighting elements and activities related to the teams' identity. 	  
Materials	<ul style="list-style-type: none"> -Use materials that contribute to a warm and natural atmosphere and apply the material in a solid, non-experimental way. -Ensure calmness and harmony in the use of materials and avoid unnecessary material transitions. -Detail materials and material transitions carefully and robustly and, where possible, demountable. -Transitions between materials are as much as possible in one plane, without protruding parts. -Use wood as a natural material to enhance the warm welcoming base, however, wood does not make up more than 25-30% of the interior image. -Avoid high-gloss finishes on materials unless functionally necessary. 	 

Texture and patterns	<ul style="list-style-type: none"> -Apply textures and patterns in a subtle and balanced way, avoiding an excess of stimuli. -Choose tone-on-tone colour contrasts. -Patterns should preferably be material-specific. -Choose one pattern and stick to it. -Do not use too many different coloured patterns too close together. -Surround patterns with a calm background so that the attention goes to the pattern. -Use textures and patterns effectively, for instance to improve orientation in a building or to evoke a certain behaviour. -In housing, never use the pattern of diagonal police striping. This is reserved only for uniforms and official cars. -Do not use patterns on fixed furnishing elements, such as pantries or counters. 	
Shielding	<p>Rules for glass foils:</p> <ul style="list-style-type: none"> -Glass films are matt, translucent, and in calm basic colours. -Cover a maximum of 40% of the glass surface in office environments. -In privacy-sensitive areas: approximately 2/3 coverage, up to door height. -No pictures or police logos on glass film. -Patterns and transparency gradient allowed, matching the environment. <p>Rules for curtains/ window coverings:</p> <ul style="list-style-type: none"> -Use curtains for homeliness and acoustic damping. -No coloured patterns, only texture through weaving. -Use sturdy fabrics, no fragile character. -Transparency where possible, depending on privacy needs. -Only wave-fitted and free-hanging from the floor. Slats: horizontal, no vertical slats. <p>Rules for flexible screens:</p> <ul style="list-style-type: none"> -Mobile or fixed, depending on flexibility. -Acoustically absorbent material where possible. -Pattern, (photo)prints or colour allowed. -Make screens multifunctional, e.g. writable or whiteboard. -Ensure robustness and solid detailing. 	
furnishing elements	<ul style="list-style-type: none"> -Design furnishing elements with recognisable volume running from floor to ceiling. -Use a 60x60 cm module for interchangeability. -Calm and solid appearance, with matching fronts and tops. -Use drawers instead of cabinets as much as possible. -Handle-less design of cupboards and drawers where possible. -Design inconspicuous, impact-resistant corners. -Integrate loose parts and equipment into the element. -Bundle facility components (wardrobe, lockers, storage, waste). -Neutral basic tones for common furniture. -Avoid too much white to avoid a sterile look. -Avoid light-coloured table and chair legs due to soiling. -Contrast in furniture for zoning. -Use 'soft' furniture for colour accents and break up large open spaces. -Match wood finish carefully with interior. 	

	<ul style="list-style-type: none"> -Reuse existing furniture if it is in good condition and matches house style. 	
Greenery	<ul style="list-style-type: none"> -Provide 360-degree views of at least one green space (indoor or outdoor) from anywhere in the building, including nature photos. -Greenery can include live planting, moss paintings or plant walls. -Use different types of plants for variety. -Consider greenery as a colour element in the building. -Apply artificial planting only where living plants are not possible (dark areas or hard-to-reach places). -Match the intensity of planting to both the internal and external appearance, connecting the interior with the exterior greenery as much as possible. -Place plants in bundles as separating, zoning or accentuating elements. -Add customised greenery solutions in special places. Planters in neutral basic colours or wood, with a uniform approach within the building. Make planters mobile as much as possible for flexible space lay-out. Involve users in applying greenery in the building. 	
Signing	<ul style="list-style-type: none"> -Uniform signing should contribute to the recognition of the Police as one organisation. -Signing should be made as visible, recognisable and clear as possible for citizens. -Signing should be close to the reception desk. 	
Art and images	<ul style="list-style-type: none"> -Use art and images purposefully and sparingly to avoid excess. -Make sure art is not building-specific and can be easily removed for flexibility. -Match photographic images to the user; executive police employees have less need for police-related images. -Create places where employees are not reminded of work, such as without logos or police images. -Match art and images to the interior in terms of size, colour and texture. -Align art within a use zone, for example by having one photo series or works by the same artist. -Involve employees in choosing art to promote mental relaxation. -In quiet spaces: simple, soothing art in proportion to the space. -Use simple, positive-voiced nature images with depth. 	

Table 7 – Ground rules regarding the standard house style for team bureaus (own work)

These ground rules aim to expedite the design process for new team bureaus by the architect. While they do not mandate identical designs across all locations, they ensure that each location reflects the Police's new identity to the public. Establishing such guidelines enhances efficiency in the design process, enabling the architect and project managers to make decisions more swiftly and streamline the overall workflow. Creating house style guidelines is therefore a standard aspect of the housing policy. However, it does not constitute full standardisation of work environments, as the ground rules allow for variations that make different environments less uniform in appearance.

4.2 Results case-study analysis

Policy documents convey that standardisation and the form in which it occurs within the Police is clear. Unclear however, is how this is demonstrated in the final product (the team bureaus). A case study analysis was executed with a view to find out how standardisation takes place, and where similarities to, and deviations from the standard aspects of the 2017 housing policy occur. Table 8 below lists the points on which the team bureaus have been analysed.

	The points on which team bureaus have been analysed	Reason
1	Design similarities with the house style of 2021	To analyse whether the ground rules of the house style have been adhered to, and thereby the standardised policy of the Police.
2	Design deviations from the house style of 2021	To analyse whether there has been any deviation made from the ground rules of the house style, and thus from the standardised policy of the Police.
3	Building blocks used in actual design compared to the Spatial-functional programme of requirements.	To analyse whether the building blocks of the Space book been adhered to, and thereby the standardised policy of the Police.
4	Building blocks not used in actual design compared to the Spatial-functional programme of requirements.	To analyse whether there has been any deviation made from the building blocks of the Space book, and thus from the standardised policy of the Police.
5	Clusters used in actual design compared to the Spatial-functional programme of requirements.	To analyse whether the clusters of the Space book been adhered to, and thereby the standardised policy of the Police.
6	Clusters not used in actual design compared to the Spatial-functional programme of requirements.	To analyse whether there has been any deviation made from the clusters of the Space book, and thus from the standardised policy of the Police

Table 8 – Research aspects of the case study analysis (own work)

As mentioned in chapter 3.1.2, the Spatial-functional programmes of requirements were used for this analysis. These documents show the outcomes of the calculation tool and thus specify the building blocks, the number of building blocks and the square metres required. By analysing these documents and comparing this analysis with the final designs of the team bureaus it is possible to see where deviations have been made from the Police standard.

As shown in figures 14 to 17 below, the four team bureaus differ from each other in terms of the building blocks used, the amount of building blocks used and how the design ultimately translated to the house style. For each location, the points that are in line with the Spatial-functional programme of requirements and the housing policy have been visualised (see the thick black line) as well as deviations that occur (see dotted lines). The numbers in the spheres represent the number of building blocks used in the actual design. When the sphere is on the dotted line left to the bold line, it means that fewer building blocks came into the design than calculated in the Spatial-functional programme of requirements. When the sphere is on the dotted line right to the bold line, more building blocks were added in the final design. When the sphere is on the bold line, it means that the number of building blocks calculated by the calculation tool matched the final design exactly.

4.2.1 Bergambacht

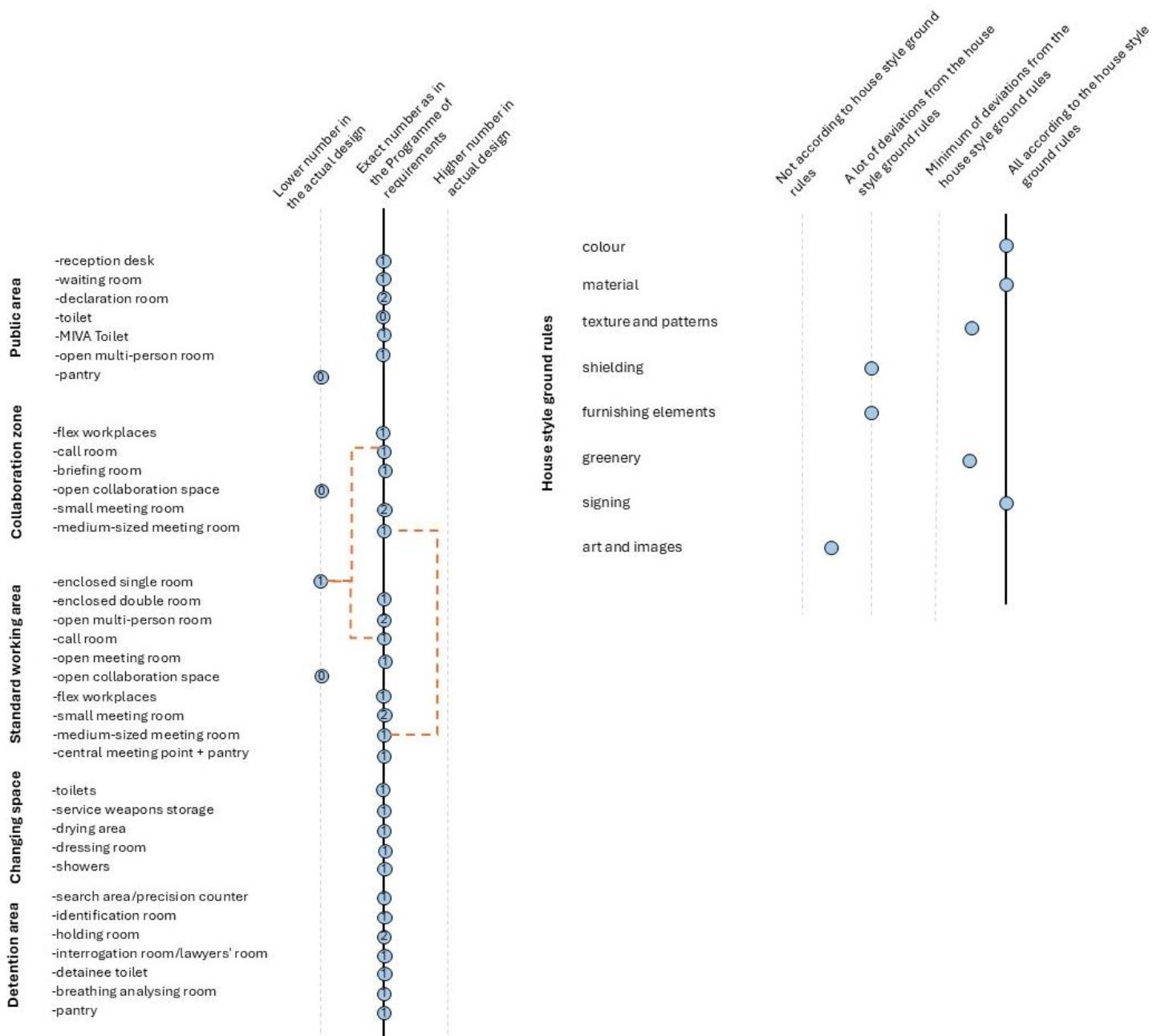


Figure 14 - Bergambacht; deviations from the Spatial-functional programme of requirements and house style ground rules (own work)

In Bergambacht, the design hardly deviated from the Spatial-functional programme of requirements for the clusters public area, changing space and detention area. Here, the outcome of the calculation tool was thus applied in the final product. Locations where the building blocks did deviate were the collaboration zone and the standard working area. Here, fewer enclosed single rooms were applied in the design, and there was no open collaboration space in accordance with the Space book. Apart from missing building blocks stated in the programme of requirements, a number of building blocks were also used for multiple functions (see orange dotted lines). An enclosed single room is also used as a call room, but both building blocks are named separately from each other in the programme of requirements. The house style of the final design differs in several sections, especially regarding art and images. Many similarities were found in the use of colour, materials and signing.

4.2.2 Papendrecht

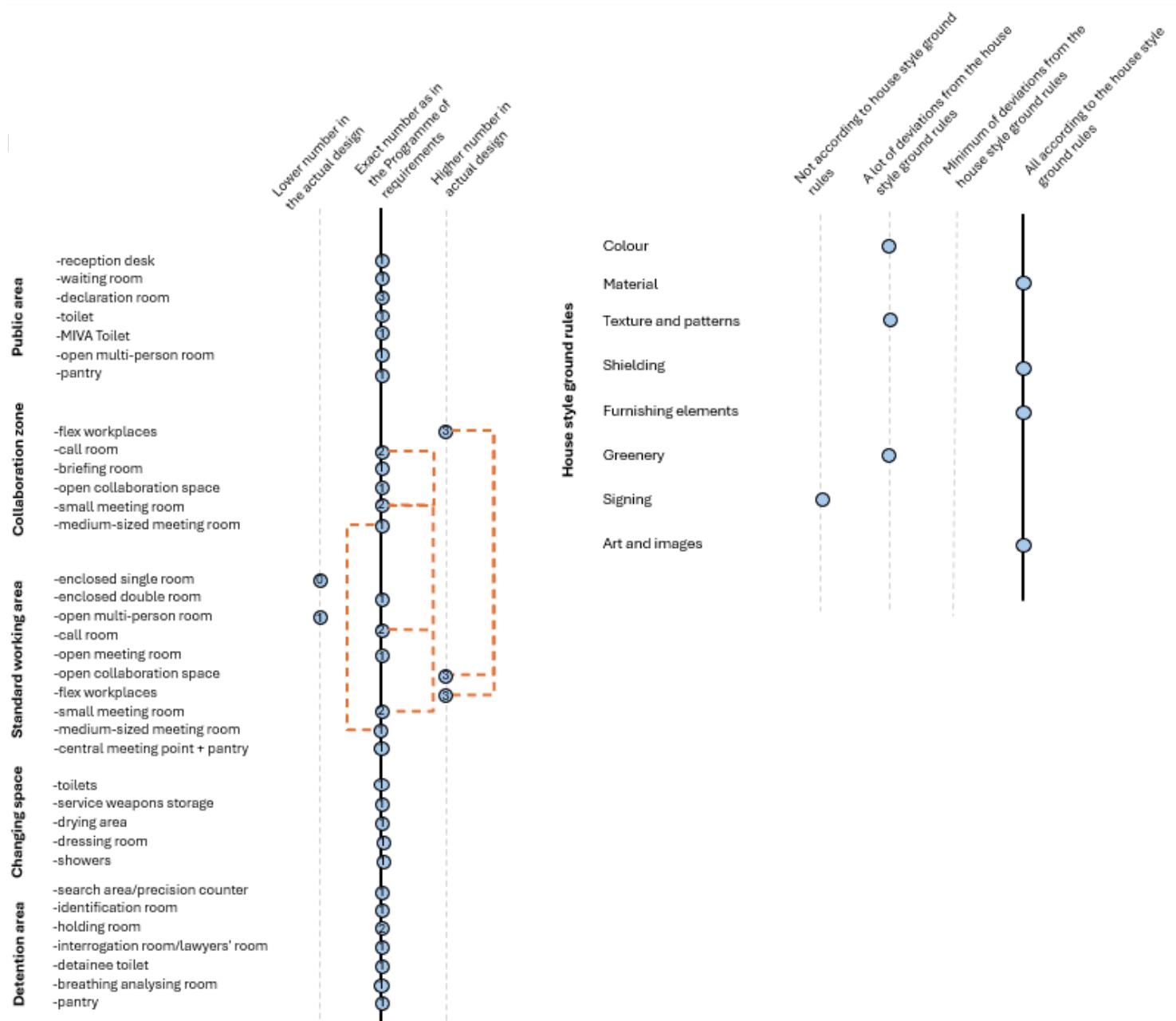


Figure 15 - Papendrecht; deviations from the Spatial-function programme of requirements and house style ground rules (own work)

In Papendrecht the deviations were mainly found in the standard working area. Here, the final design did not include an enclosed single room, while there was just one open multi-person room. Yet, more open collaboration spaces had been created than specified in the requirements. What was noticeable was that building blocks in Papendrecht are used for different functions. Here, open collaboration spaces are also used as flex workplaces, while small meeting rooms are also used as call rooms. The house style deviated from the ground rules in terms of colour, texture, greenery and signing. This is because yellow is overused according to the ground rules and there was no signing in the public area.

4.2.3 IJsselmonde

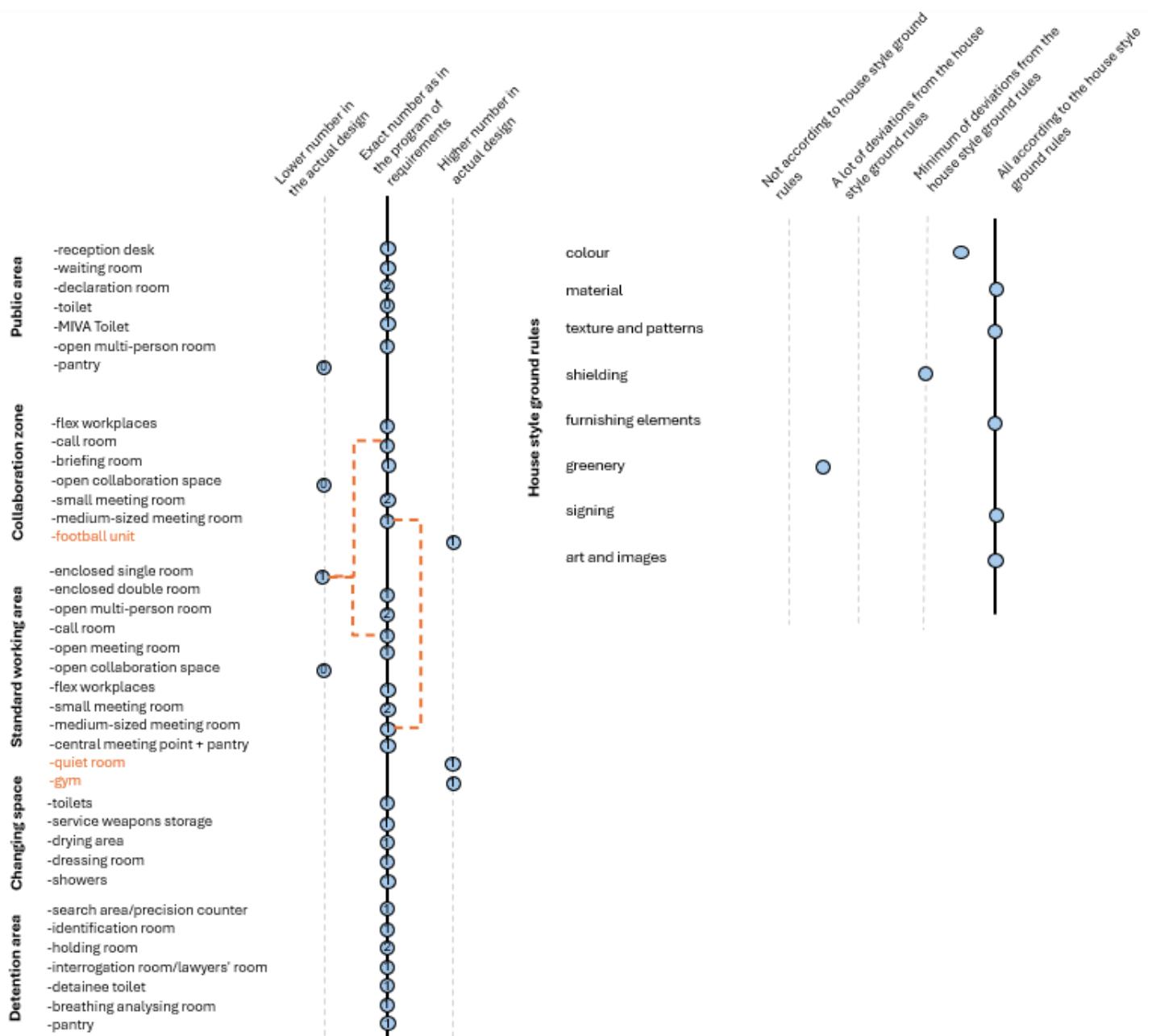


Figure 16 - IJsselmonde; deviations from the Spatial-function programme of requirements and house style ground rules (own work)

In IJsselmonde the final design adhered almost entirely to the house style ground rules. The only thing that deviated was greenery, which was scarce in the various spaces. As regards building blocks the collaboration zone and standard working area clusters deviated in terms of open collaboration spaces and enclosed single rooms. Building blocks are also used for multiple purposes in this location. This, however, does not deviate from the standard Space book, as it is also indicated as such. What makes this location special compared to the standard, is that it was allotted more building blocks in the final design than mentioned in both the Spatial-functional programme of requirements and the Space book. These building blocks are not building blocks which were added to the final design because of the location and the functions occurring in the team bureau. A gym was added, a quiet room and a football unit.

4.2.4 Velp

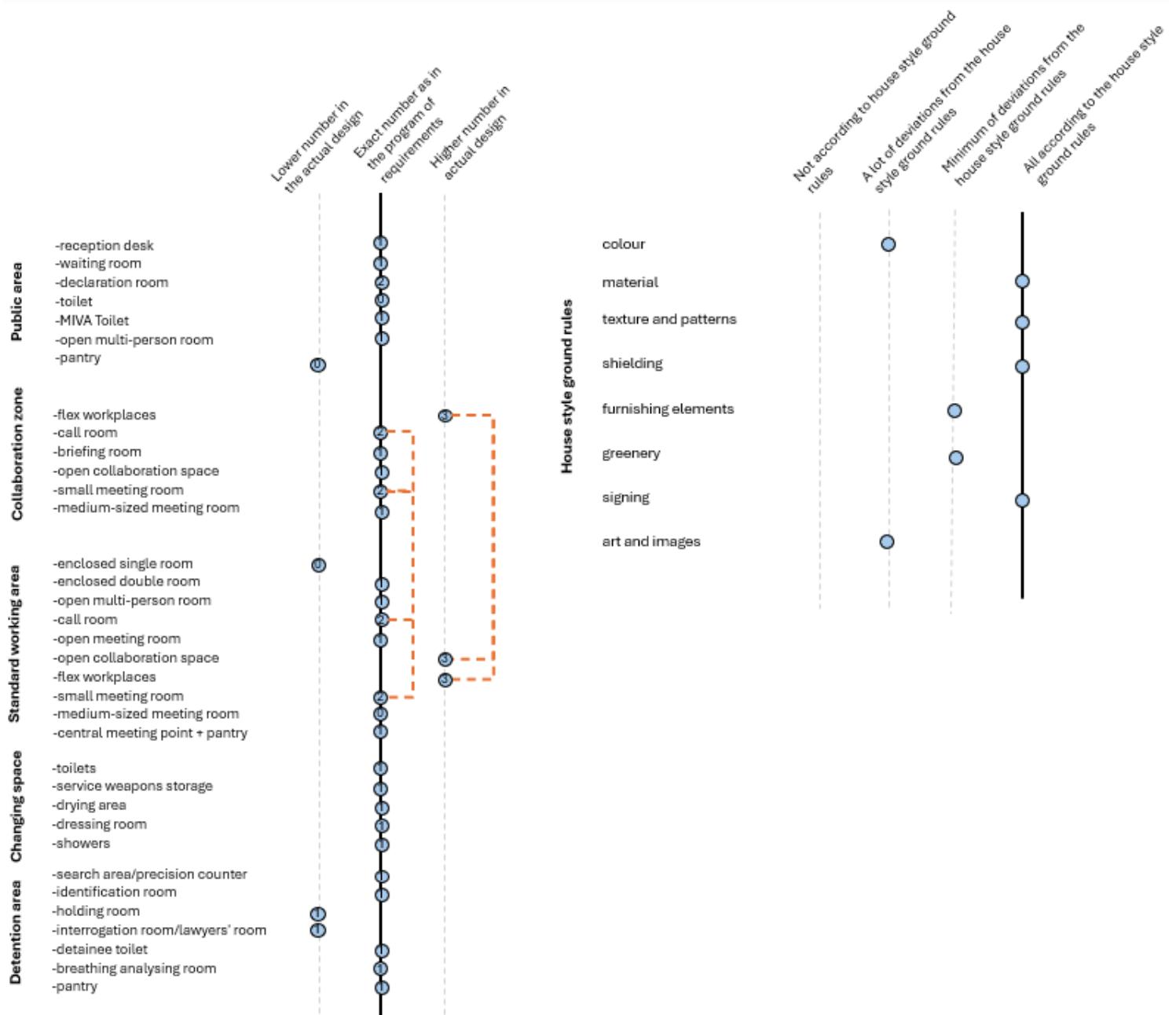


Figure 17 - Velp; deviations from the Spatial-function programme of requirements and house style ground rules (own work)

In Velp the final design shows very few deviations from the prepared programme of requirements. The final design omitted an enclosed single room and ultimately implemented only one holding room instead of two. Yet an extra flex workplace had been added. This was noted because flex workplaces may come in different forms. These can be informal seating areas, wall tables or single workstations in an open area. There are also many similarities in terms of house style, like material, texture and patterns, shielding and signing. What differed however, was colour and art. Here, no art had been introduced to some spaces, while the colour blue prevailed, which goes against the ground rules. Parts of the team bureau were also used for displaying historic Police gear, whereas this would also appear to go against the standard.

4.2.5 Conclusion

Standardisation within the Police takes an interesting turn because it is not directly visible across different locations. It flows from the integrated working concept ARW and the calculation tool used when drawing up the Spatial-functional programme of requirements for a new team bureau. As mentioned in chapter 2.2.1, the calculation tool is based on the team formations within team bureaus. The larger it is, the more building blocks should be used in the design. When the design is optimally standardised, the number of building blocks calculated is applied exactly in the final design by the architect. When changes occur in the number of building blocks specified in the final design, there is a deviation from the calculation tool and the Space book and therefore from standardisation.

From the case study it can be concluded that most of the building blocks and clusters used correspond to the Space Book and the outcome of the calculation tool. Yet there were deviations in some aspects per individual site, for example in the amount of building blocks in place. All in all the building blocks and their lay-outs and clusters are well-visible in all four locations. With the exception of IJsselmonde, no new building blocks not mentioned in the Space book had been integrated into the final design. The results show that it is possible to deviate from the standards devised by the Police for new team bureaus, but that architects generally stick to the Spatial-functional programme of requirements handed to them. Deviations are made in the design process, which may be a result of end user involvement in the process, or individual preferences of the project manager or architect.

Where differences are noted, they are the house style adopted by each individual team bureau. For all four team bureaus the house style ground rules had been applied. There is, however, a chance that the ground rules are understood differently by designers because they do not constitute 'hard' requirements. The rules are not concrete and their purpose rather is inspirational. This results in differences in appearance for each new team bureau.

Chapter 5

Research findings

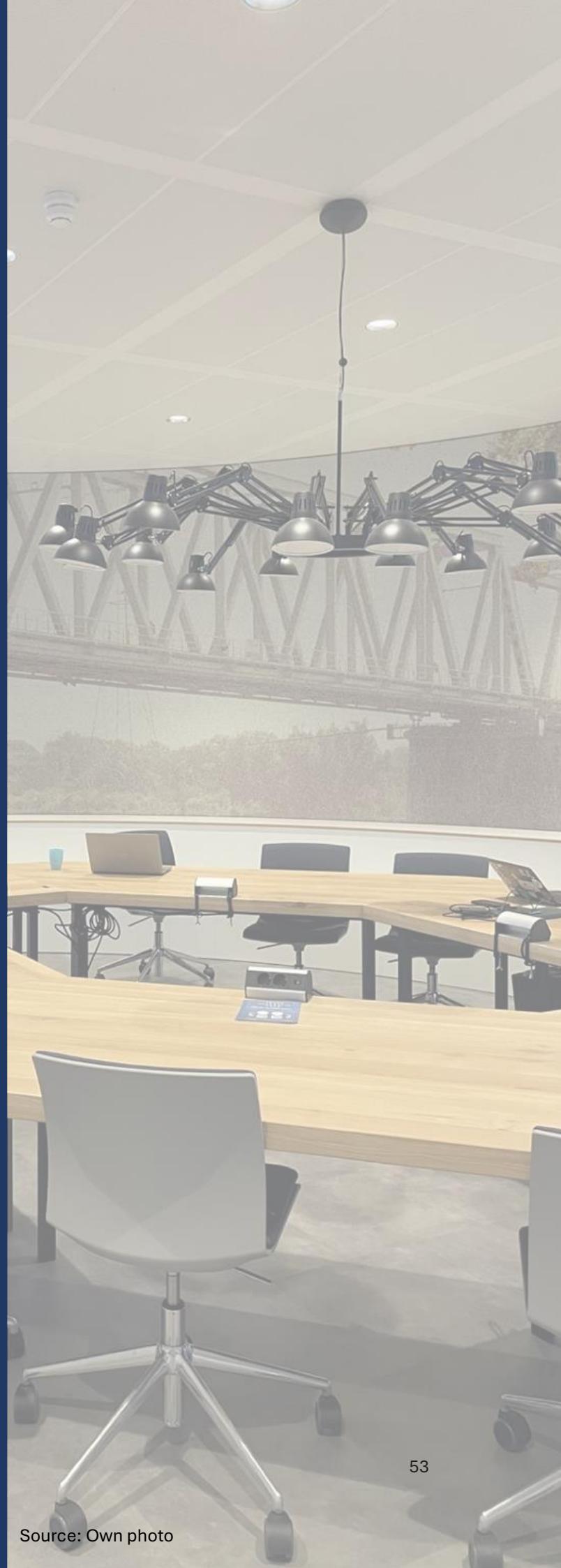
In this chapter, the findings from the interviews are described. In total, there were 13 interviews including experts from the Police, end users from the Police team bureaus and architects.

The interviews with experts from the Police provide a comprehensive overview of standardisation, its effects on the organisation as well as the effects on user satisfaction. Also which standard processes the Police use in the development of a new team bureau.

Additionally, interviews with end users from the selected team bureaus provide insights into their satisfaction with the standard aspects of their team bureau and the standard processes employed.

Together with the architects, insights regarding standardisation, the policy documents of the Police, and the involvement of users in the design process were gathered

Because this is an explorative view on standardisation and its link to user satisfaction, a deeper emphasis on subjective meanings and detailed descriptions were obtained.



Research findings

5.1 Overview of the standard processes and products

As described in Chapter 2.2.1, the Police have adopted an integrated working concept (ARW) which is governed by the housing policy and applied in every new team bureau. In order to implement this integrated working concept, aspects of new team bureaus are standardised while standard processes are executed. As outlined in Chapter 2.2.1, the Police have a standardised process for developing the Spatial-functional programme of requirements (1). In addition to this process, two other standardised processes were identified during the interviews. This chapter provides an overview of all standardisation measures within the development of a new team bureau, using data from the interviews linked to the literature review. See figure 18 for an overview of the standardisation of processes and products within the development of new team bureaus.

The second standard process is the deliverance of standard documentation to external parties (2), such as architects. This standard documentation package includes the General programme of requirements, the Spatial-functional programme of requirements, the Space book, the Toolbox house style for police buildings and other related policy documents. This standard documentation package forms the foundation for new Police projects and serves as a guideline. The General programme of requirements is applied to every project, and any deviations must be well justified by users or external parties. It was developed by comparing several existing programmes of requirements and consolidating these into a single document for use by the Police housing department.

The last standard process identified in the interviews is the involvement of users in both the requirements phase and the design phase (3). Interviews revealed that the Police ask tendering parties how they plan to involve users in the process when awarded the contract. This ensures that the parties ultimately executing the project will standardly involve end users, as this is an explicit Police requirement.

In addition to the three standard processes, the Police also standardise product aspects within new team bureaus. As described in Chapter 2.2.1, these include the building blocks (1), clusters (2), and ground rules relating to the house style (3).

If all these standards provided by the Police are applied as intended, a team bureau may basically be delivered fully standardised. However, as noted in Chapter 4.2.5, deviations are made from the standards during the process, leading to differences between new team bureaus. Despite these deviations a standardised foundation remains.

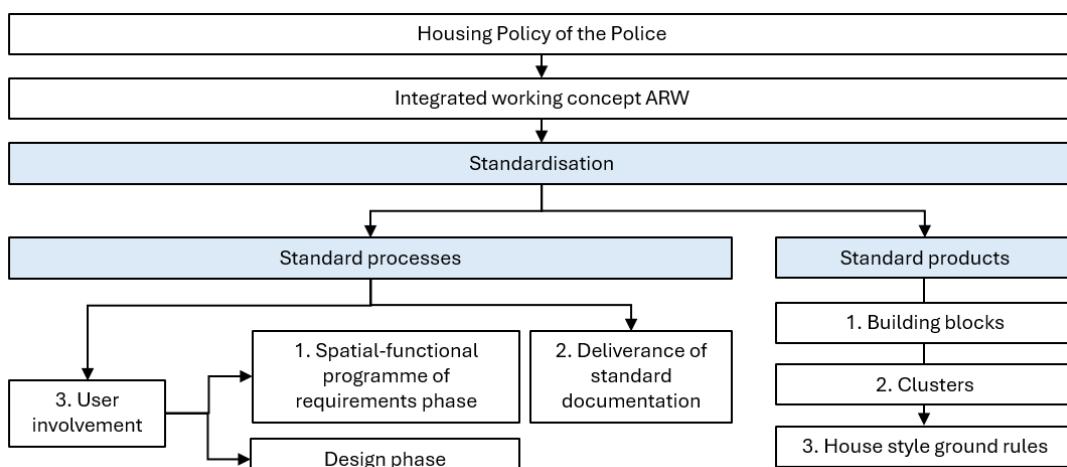


Figure 18 – Overview of all standard processes and products

5.2 Satisfaction according to the interviews

The interviews included several questions regarding product and process standardisation, user satisfaction and user involvement. This chapter discusses the interview results regarding satisfaction per standardised component as shown in figure 18. This analysis of the interview data is carried out from the perspective of the end users and sometimes from the perspective of the organisation and architects. The chapter starts with the degree of satisfaction with the integrated work concept ARW, to be followed first by the standard processes, and next the standard product. Finally, it presents the links between the process and product.

5.2.1 Satisfaction regarding ARW

ARW has enabled the Police to use standardisation as a real estate strategy. According to the interviews with Police housing staff, standardisation is employed as a real estate strategy to streamline processes and save time and costs where processes and product aspects require management. It was highlighted that the organisation's satisfaction has increased with the introduction of ARW and standardisation. By working with standards, all users can be treated equally by the housing staff, reducing the likelihood of disagreements.

As described in Chapter 2.2.2, there is a level of standardisation that can standardise behaviour across different locations, and ARW represents one such form within the Police. Most users were initially hesitant about this form of standardisation, particularly because it diverged from the previous workplace structure of individual and fixed workstations. While some interviewees noted that ARW initially caused confusion and resistance, others observed that the open, flexible working environment was gradually embraced by many employees. Several interview participants mentioned that clear communication was essential to familiarise end users with the new working concept, especially as employees needed to adjust their work habits and behaviour. A lack of sufficient information on how to use the different spaces effectively initially led to misunderstandings. Some users felt that more guidance on the practical application of the concept would have reduced frustration during the transition.

“I think if I talk for the colleagues in general, no context of ARW has indeed been the issue; we've been pulled in, no explanation of the working concept, which caused resistance” (User team bureau Velp, interview, 24 October).

On the positive side, the ARW concept was well-received for its ability to foster collaboration in the open workspaces. Interviewees appreciated how the open lay-out facilitated interaction between different teams, shortening communication lines and enabling faster decision-making. One participant noted that the open structure supports effective cross-team interactions, which many users consider an improvement over the previous, more isolated setup. Another interviewee highlighted how the flexible lay-out enabled seamless communication, which is particularly beneficial for teams that need to work closely together.

However, not everyone praised the concept. Some participants pointed out that while ARW works well for teams with irregular shifts, it may be less effective for those with regular schedules who prefer a more stable work environment. Others noted that although the concept offers a certain degree of flexibility, not all roles are suitable for such open arrangements.

5.2.2 Satisfaction regarding the standard process towards the Spatial-functional programme of requirements [the requirements phase]

The standard process leading to the Spatial-functional programme of requirements received mixed feedback. Some users are feeling involved while others find it too theoretical and difficult to understand. Several participants believed that the programme of requirements was heavily documented, making it challenging for some end users to navigate. One interviewee for example remarked that the process was overly technical and theoretical, containing policy documentation inaccessible to many end users. This sentiment was echoed by another interviewee, who felt the documentation required a level of expertise that

may not typically be expected from users within team bureaus. This interviewee suggested that more simplified documentation could have bridged this gap and provided a more meaningful foundation for end user feedback.

A recurring theme in interviews with Police housing staff regarding the outcome of this process was that, despite the standardised approach, significant customisation still takes place. Building blocks are often adapted based on user preferences, or additional building blocks are introduced. This, however, is not always supposed, since the Police housing staff operates within specific frameworks and agreements concerning the development of new team bureaus.

“We see this happen when users gain more influence. On the one hand, it’s important to keep them informed and to gather feedback allowing them to review and comment. We make adjustments, and as a result, it becomes a ‘100% document.’ This, however, also leads to a lot of customisation.” (Coordinator workplace consultants, interview, 17 October)

Nevertheless, some participants indicated that they felt they had limited influence during this phase of the process because the programme of requirements was largely standardised, leaving little room to deviate from the predefined building blocks. Which makes the perspective of the organisation on satisfaction sometimes opposite to the user perspective. One person even noted that while there was initial enthusiasm for involvement, the standardisation aspects of the product constrained their ability to make changes to the requirements, and this was only alleviated when the involvement of the team leader increased the opportunities for adjustments, highlighting that user influence can vary depending on hierarchical roles.

“Initially, I had expected a bit more flexibility in this process, but it turned out not to be the case. There was a very strict approach, and there seemed to be little room for individual input. Where I thought the policy documents would serve as a guideline — after all, guidelines are there to be adapted — it turned out to be binding instead.” (User, team bureau Bergambacht, interview of 25 October)

According to Police housing staff, the Police are now working to further standardise the process towards a Spatial-functional programme of requirements. The standard process has been widely implemented in previous projects, providing internal knowledge about what works best for users. By further standardising this process and reducing user involvement in the early stages, the programme of requirements could be developed more quickly, allowing users to assess a tangible design instead of a more abstract requirements package. According to the housing staff, this approach would foster more effective collaboration between users and architects. Additionally, users would see the impact of their feedback sooner. While projects can be time-consuming, standardising the requirement phases could help streamline the process.

5.2.3 Satisfaction regarding the deliverance of standard documentation

Architectural firms often have multi-year contracts with the Police, allowing them to design multiple projects. Police use the same policy documents for each of these projects. Interviews with architects highlighted the benefits of working with a standard documentation package. It was put forward that an advantage of this standard process is that processes become easier and quicker for the Police when organisations work on Police projects more frequently. A second advantage put forward is that it becomes easier to explain design decisions to the user since the architect is already familiar with Police policy. Working with standard documents limits the freedom of the architect to some extent, although this is considered a positive aspect. The primary goal of a team bureau building is functionality, and too much freedom does not always result in a better design.

“Yes, it certainly limits your freedom, but that’s actually a good thing. I mean, too much freedom doesn’t always lead to a better design.” (Architect team bureau IJsselmonde, interview, 29 October).

The conclusion of the case study analysis (chapter 4.2.5) also made clear that the final design sometimes contains deviations from standards. The interviews made clear that this is either because users want to make adjustments, or that adjustments originate in the preference of the architects firm. These firms often have their own style and way of working, which they want to implement in all their designs. It also appears that Police housing staff do not adequately control the handling of standard policy documents in the process, so deviations by external parties are getting more likely.

From user perspective this can be beneficial, as their wishes now become easier to accommodate. From housing staff perspective however this is less so, since they basically wish to avoid making deviations from policies.

5.2.4 Satisfaction regarding the process of user involvement

As mentioned in chapter 2.4.4, researchers Brown and Katz (2011) highlight the importance of involving end users early in the design phase to gather insights that inform decisions about spatial lay-outs, amenities and overall functionality. The interviews revealed that the formation of a user group occurs standard during the requirements phase and the design phase, in order to foster user involvement. An important aspect of this process is to achieve user buy-in and support. This is significant, as some interviewees highlighted that user buy-in and support contribute to greater satisfaction within the new team bureau. Chapter 2.4.1 shows this is crucial because high user satisfaction can positively impact organisational success. When users feel comfortable in their environment this enhances both their satisfaction and overall organisational performance. This positive impact can be achieved by embedding key moments for user involvement within a standardised process. Many respondents appreciated the opportunity to provide input, especially regarding specific design elements such as window coverings, colours, materials and furniture selection. These contributions strengthened their sense of connection to the space and ensured it reflected the identity of their team. Some noted that the ability to choose design elements fostered a sense of ownership and pride, which positively influenced their overall satisfaction with the new space.

On the other hand, several users expressed their frustration with the communication process within their sphere of involvement, feeling they had to take the initiative to stay informed. Communication issues were said to cause confusion and frustration, particularly as the project progressed. As outlined in Chapter 2.3.2, effective communication is a critical factor in the success of real estate management, particularly when coordinating diverse stakeholders with varying interests. Interviewees especially noted a lack of proactive communication from some project teams during key milestones, such as the opening of the new building. Others echoed this sentiment, suggesting that more transparent and consistent communication would have ensured that users would feel informed without needing to actively seek updates.

User involvement during the design phase was more effective when the project team and end users worked closely together, suggesting that structured, team-based engagement can enhance both the process and user satisfaction. Some interviewees also observed that user influence varied depending on hierarchical roles (see Chapter 5.2.2). Some participants noted for instance that user input only gained traction when the team chef took an active role, indicating that approval from higher-level stakeholders may sometimes amplify the impact of user feedback. One respondent moreover noted that user groups often included members nearing retirement, and recommended involving a more diverse group, including frontline workers, to ensure that insights would better align with daily operational needs. Input from end users who are likely to stay on longer in the team bureau may be more valuable for shaping design and functionality.

Overall, end user satisfaction with user involvement varied greatly depending on the level of involvement, communication quality and coordination. While involvement in both processes was perceived important, some end users found their involvement in the requirements phase too theoretical, sensing limited flexibility for end user input although this had been marked as possible by the housing staff. Involvement from higher-ranking team members positively influenced receptiveness to user suggestions, highlighting the potential benefit of engaging decision-makers early in the process.

“I already had the feeling, and you often see this within the Police, that user groups are being created in the requirements phase as part of transparency and that users are being told that they will have influence. But by now I have also realised that, as a user, you don't have much to say at all.” (User team bureau Papendrecht, interview, 31 October).

Feedback on the design phase was generally more positive; users often found it a more accessible and rewarding part of the process. Many interviewees valued the opportunity to directly influence design details, which they felt had a tangible impact on the final lay-out. Some participants were particularly satisfied by the opportunity they were allowed to contribute to changes in lay-out with a view to improved sightlines and addressed functional needs, especially as the architect's original design had some limitations in terms of usability and safety for a Police team bureau. This practical involvement in the design phase gave some users a sense of control and ownership over their workspace, fostering a positive connection to the final result.

Although the design phase offered more opportunities for input, some interviewees felt overwhelmed by the level of involvement expected from them. In one interview, a participant put forward that while they did not feel excessively engaged overall, the process sometimes demanded too much input, requiring skills beyond their expertise. One user for instance was asked to determine the placement of electrical outlets; a task which was felt to be better suited to professionals. Users preferred a process where user feedback is gathered and interpreted by experts rather than expecting users to address technical aspects. This perspective suggests that while user involvement is valuable, clearly delineating the roles of users and professionals could improve satisfaction by making the design process more manageable for end users.

5.2.5 Satisfaction regarding building blocks and lay-out

Several participants took the notion that the building blocks positively contributed to their overall satisfaction. One advantage frequently mentioned was that these standard elements ensure consistency across new team bureaus. This way of standardisation fosters a sense of familiarity for employees transitioning between locations, making adaptation easier and supporting the continuity of the identity of the organisation.

On the other hand, some interviewees noted drawbacks in the standard lay-out compared to their previous work environments, particularly concerning noise control and a lack of personal workspaces. Open spaces and absence of private areas in two team bureaus resulted in frequent disruptions, with noise levels cited as recurrent. This problem occurs in multiple team bureaus, even though Police standard documents specify that building blocks should be placed while observing a mix of open and closed spaces to help manage noise levels (see chapter 4.1.1). In two out of the four team bureaus the open spaces were combined with dedicated focus workstations. In these cases no noise disturbance complaints were observed during interviews.

Some respondents believed that the lay-out could have been improved by adding extra enclosed workspaces on certain floors. Users suggested that reorganising or increasing the number of focus rooms would enhance satisfaction in terms of reduced noise and the creation of private spaces for sensitive discussions. This view reflects a recurring sentiment that, although the open lay-out offers benefits, it does not always meet the specific needs of all employees - particularly those handling sensitive information or requiring more secluded workspaces in their work.

5.2.6 Satisfaction regarding the house style

Feedback on the house style, particularly regarding the choice of colours and materials, was predominantly positive. Users noted that the aesthetic appeal and consistency of the house style enhanced their personal satisfaction, as it contributed to an inviting environment, especially when compared to their previous

workplaces. Several participants mentioned that the style and design fostered a sense of pride and ownership over the new space, particularly as they had been involved in certain decisions.

While the design was generally appreciated, some users highlighted practical issues with the selected materials and colours. One interviewee noted that certain materials were not particularly resistant to Police uniforms (such as boots and belts, which can cause damage), leading to visible wear and tear within a short period of time.

5.2.7 The link between standard processes, standard products and satisfaction

The relationship between standard processes and standard products reveals a complex interplay that influences both user satisfaction and the functional success of new team bureaus. Interview data suggests that the processes - encompassing the Spatial-functional programme of requirements and the design phase - has a direct impact on the reception and effectiveness of standard products like building blocks and their lay-outs, and therefore on the ARW concept as such. Process and product join hands shaping the work environment within new team bureaus, affecting the quality of these meeting operational needs and aligning with end user needs.

Influence of user involvement on acceptance of standard products

One of the clearest links between the standard processes and products is the impact of user involvement on the acceptance and functionality of standardised aspects. Interviewees highlighted that involvement in the design phase and decision-making significantly affected the way in which users perceived their new work environment and the ARW working concept. Interviews for example noted that they appreciated the opportunity to influence lay-out decisions with a view to improved sightlines or subdued noise levels critical for functionality and team safety. However, in cases of limited user input, particularly in the early stages of requirements phase, some users felt that the building blocks and lay-out did not fully support their unique needs, underscoring how standard processes can constrain or enhance satisfaction regarding the product.

Communication and its impact on understanding the product

Effective communication during standard processes also played a significant role in shaping user acceptance of standard products. Several participants noted that communication gaps during the design and requirements phases led to confusion about how to use features like open workspaces and flexible workstations. Some users for example were unsure of how these open and shared spaces could be used optimally, leading to frustrations as regards noise and perceived lack of privacy. Improved communication about the intended purpose and benefits of these products could have resulted in better user adaptation and satisfaction.

Clear and transparent communication during the requirements phase could moreover have helped users understand the boundaries of standard products, such as the limited scope for deviations in building blocks and lay-out decisions. Interviewees indicated that greater transparency early on in the process could have made clear to users whether user feedback could or could not impact the final product, which would potentially mitigate dissatisfaction in cases where deviations from standards are not possible.

User ownership and satisfaction with final products

Design processes involving end users in certain decisions fostered a sense of ownership that positively impacted satisfaction with the final products. This direct input on design helped users feel more connected to the workspace, enhancing their overall acceptance of the standardised elements. However, when users felt their contributions were ignored or not utilised, their sense of ownership diminished, which corresponded with a lower level of satisfaction with the final products.

So, the link between standard processes and standard products within Police new team bureaus highlights the way in which procedural flexibility, clear communication and targeted user involvement can greatly impact the functionality and user acceptance of standard building features. Processes that integrate user input meaningfully and communicate limitations openly make it possible for standard products to better address operational needs while fostering a sense of ownership and satisfaction. The interview data clearly shows that incorporating end user involvement within an adaptable framework and maintaining transparent communication throughout the process can significantly enhance the effectiveness of both the procedural and product-based standards within new team bureaus.

Chapter 6

Conclusions

This chapter presents the conclusions drawn from the research. Following the completion of all research phases and analysis of the results, an answer to the main research question is now formulated. To support this, several sub-questions were initially developed, each of which is addressed in this chapter. The answers to these sub-questions are presented first, leading to a comprehensive response to the main research question. This chapter answers the sub-questions by combining all the research findings from both the literature review, the case study analysis and the interviews. The answer of the main question is a combination of the answers of the sub-questions.



Conclusions

6.1 Sub-questions

6.1.1 Sub-question 1

What is standardisation and why is it used as a real estate strategy for new team bureaus by the Police?

Nowadays, many organisations explicitly adopt standardisation as a real estate strategy aimed at controlling costs and coordinating facility design and operations. Following the literature review (see Chapter 2.2.2), it became evident that standardisation in real estate, as implemented by the Police for their new team bureaus, serves as a strategic approach to streamline the planning and design of these essential facilities. This strategy involves creating uniform design principles, space lay-outs, and processes to ensure consistency across various locations. In this way spaces like team bureaus will become more efficient, functional, and cost-effective for the Police organisation.

Chapter 2.2.2 shows that organisational needs can be addressed through varying levels of standardisation, depending on the way strategies are implemented. Some organisations for instance apply design standardisation by using the same overall design for headquarters and field locations, or by selecting office furniture systems with consistent characteristics. Others may opt for functional standardisation, specifying sqms and furniture types while allowing regional or local autonomy in style choices. Alternatively, behavioural standardisation may be adopted in cases where building or space use is controlled while observing standard rules with a view to encouraging uniform behaviour across different locations.

Standardisation also helps in managing expectations among diverse stakeholders. In terms of Police real estate strategy, standardisation became pivotal following the 2013 reorganisation into a single organisation (see Chapter 2.2.1). This shift made it necessary for all police buildings to adhere to the same conditions and therefore the General programme of requirements. Police control costs, avoid the need to reinvent the wheel for each project and ensure that team bureau end users have clear and consistent expectations if they adopt standardised aspects of products and processes.

6.1.2 Sub-question 2

What standardised aspects do new team bureaus have when developed under the current housing policy of the Police?

As referred to in sub-question 1, the Police standardised different aspects of products - aspects of team bureaus - in order to avoid the need to reinvent the wheel for each project and to control costs. Conducting a literature review, document analysis and case study analysis made it possible to visualise the standard aspects in new team bureaus. Three different standardised aspects within new team bureaus were found (see figure 17).

Integrated working concept ARW

First of all, new team bureaus use an integrated working concept ARW (see Chapters 2.2.1 & 5.2.1) which controls employees' behaviour across new team bureaus, leading to behavioural standardisation. ARW is actually the working concept from which standardisation flows. ARW focuses on flexible and shared workspaces, promoting open areas and reducing reliance on personal workstations. This approach tries to address the operational needs of police officers who, after all, often work in the field, by optimising space use. New team bureaus under this concept support collaborative, flexible working arrangements, accommodating remote work and different teams working closely together on-site.

Standard building blocks and lay-out

To achieve the integral work concept requires several standard aspects. New team bureaus observe a standardised lay-out using the same building blocks and clusters originating from the Space book, which is an important policy document (see Chapters 2.2.1 & 4.1.1). Building blocks, like consultation rooms or open workstations, are specific functional spaces designed to be as multifunctional as possible. An example of a cluster is the collaboration zone, which contains workstations, lockers, a briefing room and meeting rooms. This is a collection of standard building blocks placed together, providing space for specific work processes. The team bureau lay-outs support flexible, future-proof designs in order to accommodate changes in team formations while maintaining consistent, functional space distribution across different bureaus.

House style ground rules

Lastly, by adhering to a unified house style across all police buildings, standardisation enhances Police identity and image. Police house style, developed by Atelier Politiebouwmeester, provides ground rules for streamlining designs and ensures a consistent visual identity for all police facilities (see Chapters 2.2.1 & 4.1.1). This includes predefined ground rules for materials, colours and overall aesthetic, creating a recognisable police image across bureaus. This house style aligns with the organisational goal of projecting an accessible Police presence, ensuring each bureau reflects a unified identity while allowing for local adaptations where necessary.

6.1.3 Sub-question 3

What standardised processes do the Police use for the development of new team bureaus?

As referred to in sub-question 1, the Police has standardised different processes as well, included in policy documents and used with a view to guiding the development of new team bureaus. These processes support streamlined and consistent planning across projects. Three standardised processes are identified (see figure 17).

Process towards Spatial-functional programme of requirements

The first standardised process leads up to a Spatial-functional programme of requirements (see Chapter 2.2.1). It sets a timeline and roadmap to guide workplace consultants in creating a spatial-functional programme of requirements. Key steps in this process include engaging end users and using a calculation tool to determine the space lay-out and sqm requirements. The calculation tool outcomes are standardly embedded in the spatial-functional programme of requirements. User engagement is another critical aspect, with users participating in around eight interactive sessions over a three to four-month period. These sessions help align user understanding with the current housing policy documents and clarify concepts like the ARW working concept. While this approach ensures thoroughness and customisation to a certain extent there is an ongoing effort by the Police organisation to standardise this process further by reducing early-stage user input to speed up the process and focus on expert-driven decisions.

Deliverance of standard documentation

The second standardised process involves delivering standard documentation to external partners, like architects, at the start of each project. This documentation package typically includes the General programme of requirements, the Spatial-functional programme of requirements, the Space book, the Toolbox regarding the house style guidelines and other policy documents. Architects familiar with these standards find the process more efficient, as these guidelines reduce ambiguity and align project outcomes with the functional priorities set by the Police. The standard documentation package is the foundation for each development of a new team bureau.

User involvement

The third standardised process is adopted by the Police for standardising user involvement across the requirements phase and the design phase of each project. As users are standardly involved in the process towards a Spatial-functional programme of requirements, forming user groups in the design phase is also a standard practice, involving sessions with a view to explaining design decisions and gathering feedback. This approach not only integrates user preferences, but also fosters a sense of ownership and comfort with the new space. According to the interviews, external parties are required to involve users in their plans during the tender phase, with project leaders and architects organising presentations for end users at key design stages. Early input is encouraged by architects in order to avoid costly modifications during construction and ensure that the team bureau design matches user needs and the integrated working concept of the Police.

6.1.4 Sub-question 4

How does the Police involve end users in the development of new team bureaus, and what impact does this involvement have on the outcome?

First of all it is important to understand that user involvement in REM, particularly within public organisations like the Police, is essential for aligning spaces with the diverse and evolving needs of end users. Several strategies and practices referred to in the literature review highlight the importance and methods of user involvement in REM. Chapter 2.4.4 states that user involvement is achieved through engaging key stakeholders in REM processes. Stakeholder engagement is identified as a critical strategy for ensuring that real estate assets meet user needs. For public organisations, effective stakeholder engagement is necessary to address conflicting expectations and balance varied end user needs and expectations; especially relevant for an organisation like the Police, where user groups vary in work requirements, social and educational levels. The Police involve end users in developing new team bureaus through a structured but occasionally restrictive process, particularly regarding the Spatial-functional programme of requirements and the design phase (see Chapters 5.2.2 & 5.2.4). Although this involvement does indeed influence outcomes regarding new team bureaus, this is at varying levels of satisfaction among users in terms of process flexibility, communication and the perceived result of their input and feedback.

The involvement and influence of end users in the requirements phase

During the phase leading up to a Spatial-functional programme of requirements, end users are involved by workplace consultants. Here, user involvement can influence the result obtained from the calculation tool (see Chapter 2.2.1). Together with the workplace consultants, users can offer input on what they think is needed in the final design. User involvement during this initial phase is somewhat limited due to the standardised nature of the programme. As mentioned in sub-question 3, end users are involved in small groups over an average of eight sessions. A few end users expressed frustration that the programme's standards restricted their input, noting that it relied heavily on policy-bound building blocks with little room for deviation. According to the interviews however, higher-level involvement, such as the participation of team chiefs, did allow some adjustments, suggesting that hierarchical support could increase flexibility and amplify user influence. Overall, this phase saw mixed feedback, with some users feeling sidelined and others noting that greater managerial involvement helped align requirements more closely with practical needs.

The involvement and influence of end users in the design phase

According to the interviews, user involvement during the design phase can directly influence aspects of layout and functionality like sightlines and safety measures. This phase invites a more tangible and accessible form of involvement, allowing end users to make practical contributions that meet their operational requirements. In the design phase, small user groups are also involved in the choices concerning use of

colour, materials and wall photos and posters. The involvement of users in the design process can therefore directly influence the product.

6.1.5 Sub-question 5

How does standardisation affect end user satisfaction within the Police's new team bureaus?

The literature review in Chapter 2.2.2 identifies a possible disadvantage of standardisation in the way that great reliance on standardised requirements or designs makes it hard to make alterations and changes to a programme of requirements or a design, even when a better design option or requirement may be applied. Other possible downsides of standardisation are dullness, lack of innovativeness, failure to meet individual user needs and a lack of flexibility. It can be considered a challenge to convince users to consider their building as unique, once it has a standard design or process. It can therefore be a challenge to make users accept that although workplaces can be standardised they can still be a great place to work. This question answers whether the theoretical negative impact of standardisation on user satisfaction also occur in standardised Police team bureaus. Standardisation in the Police's new team bureaus impacts end user satisfaction in several ways. This question is answered by separating satisfaction regarding ARW, lay-out, building blocks, standard processes, house style and communication.

Satisfaction regarding ARW

Another standard aspect referred to in sub-question 2 is the integrated working concept. There was some initial resistance to the ARW working concept due to its contrast with the old work environment, which included fixed workstations for employees. Effective communication on how to use the new space was found lacking, which led to misunderstandings and frustration among different end users. As users adapted, they more and more came to appreciate the flexibility for collaboration purposes. However, some users noted that regular-shift teams would benefit from stability rather than flexibility. Generally however, end user satisfaction with ARW improves over time, with staff getting increasingly familiar with the new concept.

Satisfaction regarding lay-out

The interviews indicate that the standard open lay-out as part of the ARW working concept and building blocks employed enhances collaboration and improves communication lines within different teams. For tasks requiring discretion or concentration however, the open environment is problematic due to noise and lack of privacy. When the building blocks are not in a circular plan, which would make the open space larger than intended in the Space book, a higher noise level is detected in the open work spaces. While some bureaus mitigated this by incorporating concentration workstations, other team bureaus lacked this adaptation, leading to dissatisfaction as regards noise management and privacy.

Satisfaction regarding the building blocks

The standard building blocks used in the final designs got the most positive reception from end users on grounds of their functionality and their role in creating consistency across different team bureaus. This consistency can enhance familiarity in the eyes of Police housing staff who move between new team bureaus. On the other hand, certain teams feel that strict adherence regarding the building blocks and therefore standardisation limits their ability to give input and make changes in their workspace, which some consider important for their personal satisfaction. Generally however, end users are satisfied with the spaces in their new team bureau as long as there is a sufficient number of concentration workstations.

Satisfaction regarding the standardised processes

Satisfaction with the standardised processes, like user involvement in the requirements and design phases, varied based on the level of involvement and transparency of communication. Higher levels of user involvement, particularly during the design phase, made it possible for end users to influence lay-out designs, enhancing their connection to the workspace and satisfaction with the result. On the other hand, limited user involvement during the Spatial-functional requirements phase, increasingly standardised and

technical as it is, caused frustration since some users felt less influential. When end users were invited to choose between participation in the requirements phase or the design phase, they generally went for the design phase on grounds of the amount of influence they could exercise and the perceived theoretical degree of the requirements phase. This indicates that standard processes benefit from a balanced approach in case users have influence, especially in design decisions affecting daily functionality with a view to enhancing overall satisfaction. The effectiveness of communication throughout the standard processes also influenced satisfaction. Insufficient proactive communication led some users to feel uninformed about the design changes, impacting their ability to adapt to new concepts like ARW.

Satisfaction regarding the house style

The standardised house style, including colours and materials, contributed positively to user satisfaction and created a welcoming environment many felt proud of. However, practical concerns arose regarding material durability, as some materials were easily damaged by police uniforms.

6.2 Main question

“How does the standardisation aspect of the housing policy of the Police affect end user satisfaction in the new team bureaus?”

The standardised aspect of Police housing policy can be divided into two components: product and process. Both components include a cause-and-effect relationship regarding end user satisfaction in new team bureaus. The user satisfaction extent already appears in the process that leads up to the completion of the new team bureau. In this process there are several standards to be identified, implemented by the Police in their housing policy.

The first is the standardised process toward a Spatial-functional programme of requirements, also called the requirements phase. In this stage the workplace consultant routinely forms a user group consisting of end users who voluntarily participate in the process, often with the view to providing input on the programme of requirements. This user group participates in an average of eight sessions, during which policy documents, the integral work concept and the Space book are discussed, furthermore including the associated standard building blocks. The workplace consultant aims to set end users expectations regarding their new team bureau. The workplace consultant starts by calculating which spaces should be included in the programme of requirements, using a calculation tool that incorporates building blocks originating from the Space book. User input is vital at this stage as well. Users can provide input on the building blocks calculated with the help of the calculation tool while outcomes are reviewed and specified together with the workplace consultant. If Police housing staff approve the reason for changing the programme, users are invited to introduce changes to the programme of requirements. The Police find that this is essential for fostering user support, which ultimately increases satisfaction as soon as the team bureau is transferred for use. Yet there are interviews revealing that users who participated in this process found it to be very theoretical. Reading and discussing policy documents may fall outside their expertise, making it challenging for them to comprehend. Users reported that whereas input had been collected during many sessions, some questioned whether it had adequately been materialised. The way in which input had been handled and expectations had been set in this standard process led to reduced satisfaction among some participants, primarily due to a perceived limited influence of their input on the final product due to the fact that it was hard to make changes to the programme of requirements. Interviewees expressed a preference to be involved only in the design process, where user involvement is also a standard practice.

During the design process the project manager forms a user group for voluntary participation along with the architect. This is frequently the same group as is involved in the requirements phase. In these sessions the architect presents designs and explains design choices based on the standardised Police documents. User groups in the design phase often have the opportunity to decide on colours, materials and more personalised elements, such as photos and wall posters. This allows collaboration between architect and users in identifying the team identity which suits the team and location. Interviewees generally found this

phase more engaging, appreciating the influence of their input on the final team bureau. Participation in this standard process led to higher satisfaction among users.

The two standard processes are therefore significant for user satisfaction, with one process exerting a more positive influence than the other. User input is a critical factor, as is the ability of users to identify results from their input and involvement. When in users' views this is insufficient it negatively impacts their satisfaction. Conversely, higher satisfaction is achieved when users can make changes to the lay-out, building blocks, colours or other standardised aspects.

Beyond standardised processes, the Police have standardised many aspects within a team bureau, which also contribute to a cause-and-effect relationship with end user satisfaction. The most significant standardised aspect within the housing policy and, therefore, in new team bureaus, is space usage and layout. The spaces (also referred to as building blocks) and their requirements are predefined. The Police developed these building blocks and aggregated them in the Space book, a key policy document. As noted earlier, these building blocks are incorporated into the Spatial-functional programme of requirements in consultation with a group of users. The architect subsequently develops a lay-out based on this input. Interviewees generally reported satisfaction with the building blocks, finding the spaces pleasant and functional, often compared to their previous work environments. What is also perceived as positive is that users liked the choices in building blocks, with spaces they would not think of needing themselves. However, the selection of building blocks revealed a need among users for spaces designed for focused work. When such spaces are absent in new team bureaus there is less end user satisfaction. The lay-out of building blocks has another impact on satisfaction. A segmented lay-out that creates distinct work areas and separation can reduce noise levels and increase satisfaction. Conversely, large open spaces tend to raise noise levels, leading to users disturbing each other and negatively affecting satisfaction. However, a positive aspect of large open spaces is that they can facilitate smoother communication between teams.

House style aspects like colours, materials, images, partitions, furniture, patterns and signing are also standardised by way of ground rules. Although these restrict the architect's design freedom, they can create a more uniform appearance to both public and employees. Since these guidelines apply to all new team bureaus they represent a form of standardisation in the housing policy. User satisfaction with the house style depends on how architects interpret these ground rules in the final design. Interviewees often spoke positively about the various house style elements. Yet the adopted house style also had its drawbacks regarding colours and materials used. Users noted that walls, floor coverings and furniture were prone to damage, often caused by Police officers who were less careful with the environment. Items such as protruding belts and work boots caused scratches or stains, which detracted from the appearance of the team bureau and reduced satisfaction for some individuals.

The final standardised aspect in a new team bureau is the integral work concept applied. ARW is actually the working concept where standardisation flows from. The integrated ARW working concept focuses on flexible and shared workspaces, promoting open areas and reducing reliance on personal workstations. The ARW concept changes the working environment compared to previous team bureaus. The most significant impact on end users is the elimination of fixed workstations, having been replaced by flexible workstations. Interviews indicated that end user satisfaction is affected here. Initially, resistance can arise as users are adjusting themselves to the new working method or when the integral work concept was insufficiently explained when they moved into the new building. Poor explanations can result in improper use of spaces, lowering satisfaction. After working with the integral work concept for an extended period however, interviewees generally reported satisfaction with the work processes. The difference between short-term and long-term satisfaction highlights a link between process and product.

The relationship between standard processes and products in new team bureaus reveals a complex interplay that influences both user experience and functional effectiveness. Interviews emphasised that processes like the requirements phase, the design phase and user involvement have a direct impact on the acceptance and functionality of ARW and standard products like building blocks and lay-outs. User involvement, especially during the design phase, was very important for improving sightlines, noise control,

and team security, while a lack of involvement led to products that did not always meet specific end user needs. Communication also played a key role: inadequate explanations caused frustration and confusion, while transparency about the limits of standard products might have managed expectations better.

To sum up, the standard aspects of Police housing policy affect end user satisfaction in new team bureaus on grounds of processes as well as products. This research demonstrates that the process itself can positively influence user satisfaction. When a real estate manager effectively involves users and maintains clear communication the outcome is often a product that achieves higher end user satisfaction. Standardisation does not inherently lead to negative outcomes, as long as the standard provided has high user support. Meaning that the standards being used have already received a lot of user input and where user feedback has been applied. The organisation is responsible for implementing a well-designed standard that takes careful account of the diverse needs and requirements of various stakeholders.

Chapter 7

Recommendations

This chapter provides the recommendations based on the data found in the study. They are based on Chapters 5 and 6 and the literature review of Chapter 2. Theories found in the literature and findings from the field study are combined into achievable recommendations.



Recommendations

7.1 Recommendations

This chapter provides the recommendations based on the research findings and the literature review. For each recommendation, the literature from Chapter 2 is used along with research findings. The recommendations are sorted according to recommendations regarding the process, the product and the research in general. There are seven recommendations in total, which were collaboratively reviewed and discussed in a Police focus group to ensure their recognisability and practical applicability.

7.1.1 Recommendations regarding processes

Recommendation 1 – Enhancing user engagement and communication in the requirements phase

As described in theory, it is important to involve users in the process to enhance user satisfaction. Chapter 2.4.4 describes that user satisfaction is increased when clear communication and transparency takes place within processes. When users receive clear information about design choices and planning decisions they feel more involved and satisfied (Brown et al., 2020). As described in chapter 2.3.2, effective communication is also a crucial element in the success of real estate strategies, especially when multiple stakeholders with different interests and conflicting objectives have to work together (Beckers, 2015).

The first recommendation concerns the standard process leading up to the Spatial-functional programme of requirements and is in line with the above theories derived from literature. Specifically, it is about user engagement during this process and the way of communicating. Currently a user group is involved eight times on average during the three to four months of writing the programme of requirements. From the interviews it appears that some users can perceive this process as being very theoretical and feel to have less influence on the final product although input is requested. Interviews indicated that people often expect to have more influence than is actually the case. As a result, user satisfaction can become lower for some. To increase user satisfaction, improvements can be done in terms of user engagement and communication within this process.

My recommendation is to increasingly standardise this process, involving the user in a different way. During the three to four months of this process, users can get overall explanations of the new integrated working concept, the Space book and the housing policy, while there is an opportunity to ask questions rather than to provide input. In these sessions the Police are allowed time to properly explain their standards and motivations for design choices and decisions. In this sense it is really important for the Police to communicate clearly and transparently regarding the fact that user input has been intensively collected from other team bureau projects in recent years and incorporated into the current standard to be used for the new team bureau. It is also important to communicate that users will participate in the design phase. This way, it is possible for users to continually feel involved.

By following this recommendation, the process is likely to proceed more quickly since fewer adjustments of the programme of requirements will be needed. This recommended shift would streamline the process, reducing delays and increasing efficiency by allowing experts to define core standards upfront. It may also result in less frustration for end users because they are given a lot of explanation, which may make this process less considered theoretical. It would moreover help to avoid user frustration stemming from their session inputs being excluded from the final product. When less input is sought from users, it is very important to communicate transparently and effectively that users can contribute their input during the upcoming design phase. Otherwise, the recommendation could backfire on satisfaction.

Recommendation 2 - Monitor implementation of policy documents

It emerged from the interviews and the case study that deviations from Police standards are made at the design stage. A possible reason is the user group providing input, but also external parties deviating from the standard document package provided with each new project (see Chapter 5.2.3). Sometimes the architect deviates from the standards on grounds of personal preference or because documents are not well understood. Interviews with end users revealed that some aspects of their new team bureau have a negative impact on their user satisfaction (e.g. excessive noise levels in open spaces) while this had been referred to otherwise in the policy documents and could therefore have been avoided.

My recommendation therefore is to include a moment during the process leading up to the design, where a policy advisor checks and tests whether the policy documents, including corresponding standard aspects, are properly implemented in the project, which currently is not done. This means that deviations from the housing policy are not noticed in time and will as such ultimately have a negative impact on users. Look within the organisation for a way in which this can be done standardly and efficiently in the process. Is the standard devised properly implemented and understood?

Recommendation 3 – Improving communication at project handover

Chapter 2.3.2 finds that there is a direct relationship between communication effectiveness and project success rates, with well-communicated projects achieving significantly more success than poorly communicated projects.

Adoption by the Police of ARW has introduced new working styles which focus on remote work, flexible spaces and open office lay-outs. Despite its benefits, this transition has been difficult for some employees who are accustomed to traditional office lay-outs. Some interviews highlighted a need for consistent, informative handovers with workplace consultants thoroughly explaining to users the new design, lay-out and operational procedures of the building. This is particularly important in cases where users transition from older, traditional bureaus to modern, standardised facilities with open workspaces and new spatial arrangements. For many of them this shift can be challenging without adequate context, often leading to frustration and misuse of spaces. Users may struggle with the open designs or fail to locate private areas for focused work or confidential discussions, as observed in one interview. Where presently this briefing process is executed during the requirements phase, lately there has often been a change in team formations often due to the years lapsing between this phase and the handover. As a result, the new team is often less aware of the newly integrated working concept and motivations for certain choices.

My recommendation is for workplace consultants to incorporate a briefing process at handover which would ideally involve walkthroughs and instructional materials. This orientation would clarify the reasoning behind design choices and help users to understand how to effectively use the space. Such sessions can also encourage user engagement with the new workspace and promote a smoother transition, reducing early-stage frustration. By standardising the handover process, police departments can ensure a consistent experience across all bureaus, making the operational features of standard designs more accessible.

Recommendation 4 – Incorporating Post-Occupancy Evaluations (POE)

As described in Chapter 2.4.4, the importance of post-occupancy evaluations (POE) and ongoing engagement with users is increasing in order to adapt and refine built environments over time so that they continue to meet the changing needs of users (Green et al., 2020). Chapter 2.2.2 describes that when standardisation is applied, it is the real estate manager's job to recognise when changes in spatial development standards are needed. If standard requirements no longer meet stakeholder needs, they should be replaced or changed.

Without systematic feedback on completed team bureaus, it is difficult to measure how standardisation affects user satisfaction or to identify areas where standardisation needs refinement. From the interviews,

it appears that post-evaluation is not yet done by the Police, especially when new team bureaus have been delivered under the current housing policy. My last recommendation regarding processes is to do an evaluation by default at a fixed time, where end users can provide feedback on their work environment. The evaluation can help improve the standards used by the Police so that it continues to meet the various needs of stakeholders. It is valuable to collect user feedback from different new working environments so that the outcome of the evaluation applies to a larger group of end users from different locations.

7.1.2 Recommendations regarding products

Recommendation 5 – Lay-out of building blocks according to a circular plan

Chapter 2.4.1 states that user satisfaction is essential in REM because it has a direct impact on operational efficiency. High user satisfaction improves commitment to facilities and services, leading to smoother operations and fewer disruptions (Murray & Howat, 2002). Satisfied employees are more likely to stay on, which reduces staff turnover costs and maintains workforce stability (Agyapong, 2011).

Above findings conclude that it is very important for users to have high satisfaction regarding their work environment. Interviews revealed that users in team bureaus with large open spaces experienced higher noise levels, inhibiting concentration. Users identify a negative impact on satisfaction, with some of them even working in other locations when required to really concentrate on their work. My recommendation therefore is to place the building blocks according to a circular plan in order to create diversity in (in-between) spaces. This would make some parts more open while others would remain closed, creating space for different types of activities. This differs from an open-plan office, also included in the Space book (see Chapter 4.1.1), but not yet applied by the architect for each project. Nevertheless it is important for end users health that this is done adequately and standard for noise levels to remain at a healthy level and users to work well together while also being able to concentrate. Besides the fact that building blocks should be placed according to a circular plan, it is important to apply the 'enclosed single or double room' for each building block design, enabling users to retreat.

Recommendation 6 – Use of resilient materials and colours

The purpose of Police housing according to Chapter 2.2.1 and Atelier Politiebouwmeester (2022) is to provide a professional, inspiring and safe environment in which police staff and their colleagues can do their work to the best of their ability. The house style embraces the diverse nature of the Police organisation, its teams and the local environment in which they operate. Layer 1 of the house style lays the foundation for using design tools to create a consistent look for police buildings. Eight design tools are identified, like colours and materials with corresponding guidelines.

The colours and materials in the four team bureaus included in the case study emerged as being quite vulnerable. Damage is for instance inflicted by police officers walking in on their work shoes, also inclined to lean their work shoes against the wall when in conversation. They also wear broad belts which may occasionally hit the wall or furniture. This soon inflicts visible damage on materials, furniture, floors and walls. Where end users in the interviews acknowledge them to be self-inflicted, they hold that this behaviour is part and parcel of Police officers. My recommendation is therefore to use materials and colours that can take a beating. This can be done by using dark colours on floors instead of light colours or reinforcing walls at hip height with an extra protection layer to reduce damage. This can be included in the house style toolbox, for architects to take account of it in their design. End users can still get an aesthetically pleasing design which also caters for the typical Policeman's character.

7.1.3 Recommendations regarding the use of this research

Recommendation 7 – This research as first evaluation

As outlined in Chapter 5.2.1 & 7.3.1, the Police are already working on a shift towards standardising the process for the Spatial-functional programme of requirements, aiming to enhance user engagement. Yet interviews reveal that this shift has not been preceded by an evaluation of end users, or their perspectives

on the new process. This study provides extensive qualitative insights into user satisfaction, particularly regarding standard processes used in the development of new team bureaus.

Based on these findings, I recommend leveraging this research to support current decision-making within the Police. The results align well with the ongoing organisational changes and can serve as a foundation for implementing post-evaluations of new team bureaus. Designed from a user-centric perspective, the study outlines an approach that can be adapted for broader evaluation purposes. While this research emphasises qualitative data through in-depth interviews, future evaluations could expand on the topics covered, enabling the Police to apply these insights more comprehensively.

Chapter 8

Discussion

This chapter discusses the validity of the study. How reliable were the sources and methods used? The chapter also discusses the applicability of the results. It moreover presents the way in which the results were interpreted. Do results match expectations? The hypothesis model of Chapter 2.8 is also discussed here, after which the impact of the research is discussed. Next, limitations are given, followed by the implications of my research. The chapter concludes with recommendations regarding future research.



Discussion

8.1 Validity and generalisability

The objective of this research was to explore the effect of standardisation on user satisfaction. This was investigated through a literature review, document analysis, interviews and a focus group. These are research methods which fall under qualitative research. The validity of the study was ensured in several ways. First, the interview questions were based on the conceptual model and the hypothesis model set out in chapter 2.8. The hypothesis model is based on theories originating from my literature. Second, the interviewees were surveyed anonymously, thus reducing the likelihood of socially desirable answers. Third, the interviews were recorded and fully transcribed, so that conclusions could be drawn from the data. Fourth, an effort was made to select four similar new team bureaus. By maintaining consistency over various criteria, a good comparison between the selected cases could be made. The selection criteria were obtained by performing an analysis of documents of the housing policy of the Police. Here, an attempt was made to find out about the standards observed within police housing policy. While the four team bureaus could be evaluated based on the selected criteria, the study's validity could be improved by placing greater emphasis on the psychological dimensions of user satisfaction. This could be achieved by conducting interviews with experts on user behaviour. By integrating criteria like standard aspects and standard processes with psychological considerations we would be able to reach a deeper understanding of how standardisation affects user satisfaction. The reliability of the research findings was ensured in two ways, namely checking the research findings by the supervisors of the Police organisation and discussion of the research findings, conclusion and recommendations within a focus group consisting of Police housing staff.

As a result of its integrated multiple research methods, the study captures a comprehensive understanding of standardisation and its effects on user satisfaction. The use of different data sources ensures that the conclusions drawn are robust and less prone to individual biases. The study is deeply rooted in the organisational structure and housing policies of the Netherlands Police. As a result, the findings are most applicable within this specific context and may not readily translate to other organisations or regions with differing structures, policies, or objectives. Although the study examines multiple cases, the sample is limited to four team bureaus in the Rotterdam area. This geographic focus may introduce regional biases, and the relatively small sample size constrains the ability to generalise findings to all team bureaus or similar organisations.

8.2 Interpretation of results

This chapter discusses whether the results match the expectations based on the literature review. The interpretation of the results is done using the hypothesis model depicted in chapter 2.8 (see figure 19 on the next page). This model shows the hypotheses obtained from the literature review, and as such my expected research outcomes. This chapter evaluates the hypotheses using the research findings and presents the new model (see figures 20 & 21) according to the research findings.

Before setting out on my field study, I expected that standardisation (especially the standard aspects of the products) within new team bureaus would have a negative impact on users. This aligns with the findings of Craig et al. (2000), O'Mara (1999), and Vischer (2008), as the design offers limited flexibility, preventing users with diverse needs from fully accommodating their preferences in the working environment. However, the interviews revealed that the standardised aspects within Police housing policy do not necessarily have a negative impact on end users within new team bureaus. So standardisation does not exactly have the effect experienced by the Police in theory. One possible explanation for this is that the Police had arrived at a standard with intense end user support, since in recent years a considerable amount of input had already

been gathered from users within new developments. Standard aspects in all four new team bureaus show positive contributions to end user satisfaction, especially compared to the former work environment.

Police user satisfaction is based not only on the actual working environment and therefore the product, but also on the underlying process and its process activities. Before conducting the field study, I anticipated that the standardised processes and their process activities would positively influence user satisfaction, since these activities involve user engagement. This is crucial for enhancing user satisfaction, as highlighted by Kujala et al. (2022), Beckers et al. (2015), Jensen (2012), Grandori (1997), and Arkesteijn & Binnekamp (2012). However, the interview findings revealed that the standard processes used by the Police received mixed reactions among end users who participated in the process. This aligns with the findings of Craig et al. (2000), O'Mara (1999), and Vischer (2008), as users in the interviews sometimes indicated that they found the process rigid, with input and change not often being possible, resulting in lower satisfaction regarding the process.

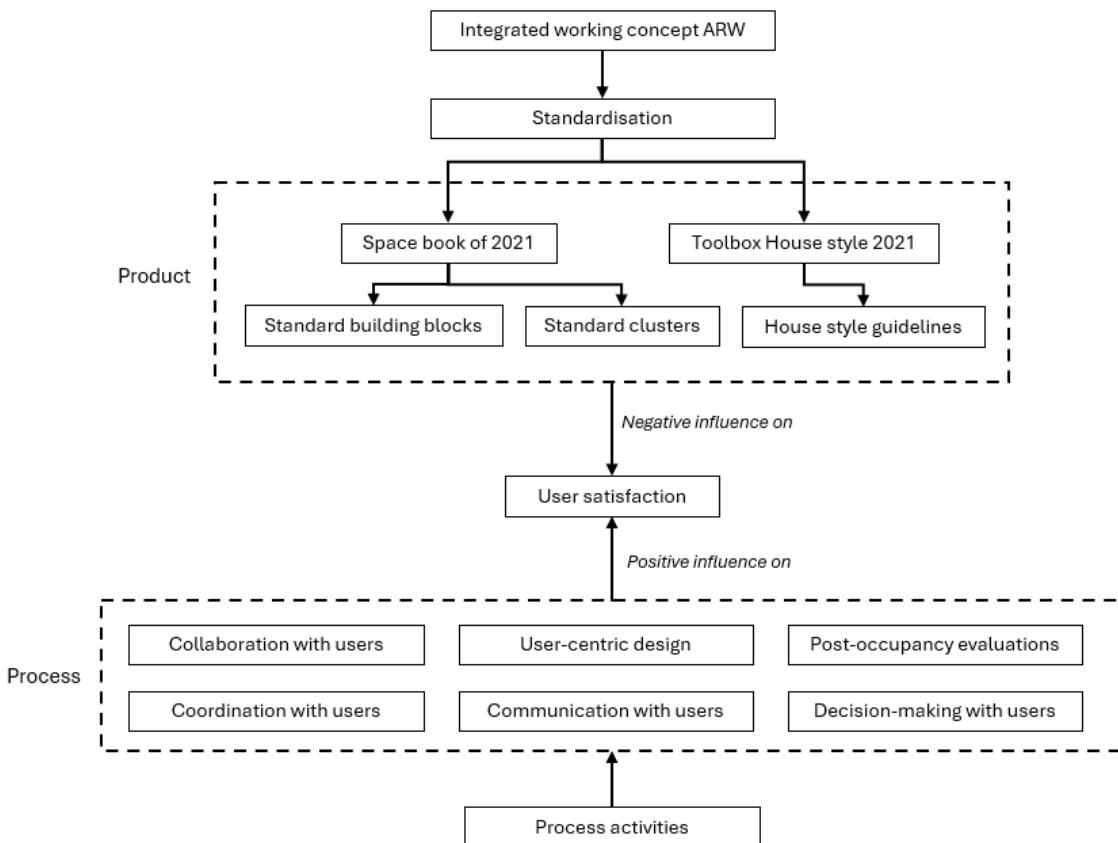


Figure 19 – Hypotheses model before the field research (own work)

Thus, the results of my research differ from the theoretical framework, changing the above hypothesis model. Within the Police context, standardisation does not have the same effect as described in theory. This results in a new model (see next page) where standardisation possibly has a positive effect on user satisfaction. The reason for using the adverb ‘possibly’ is that it is not certain whether these standard aspects will have a positive impact on everyone. The model also shows the process activities which have a possible positive effect on user satisfaction. These new results are shown in figure 20. Figure 21 depicts the aspects of standardisation which have a possible negative impact on user satisfaction.

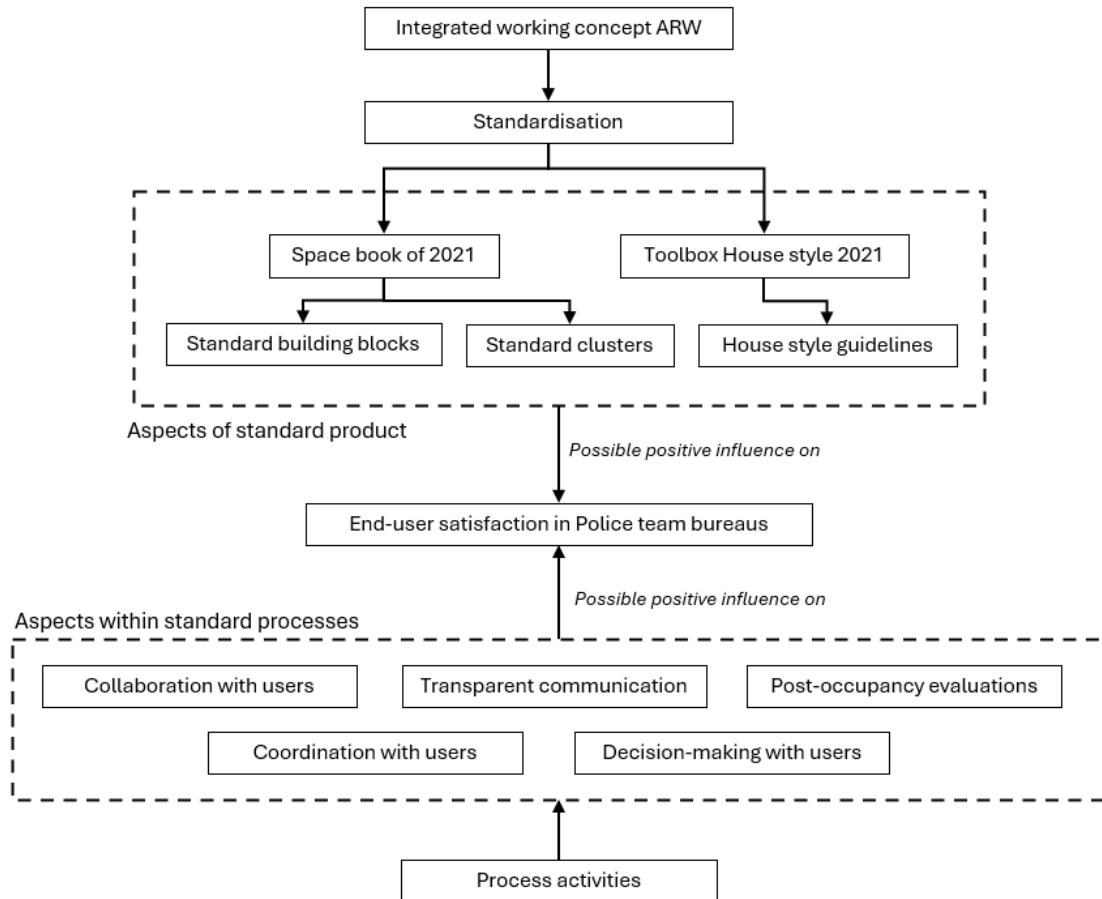


Figure 20 – Standards producing a possible positive influence on user satisfaction (own work)

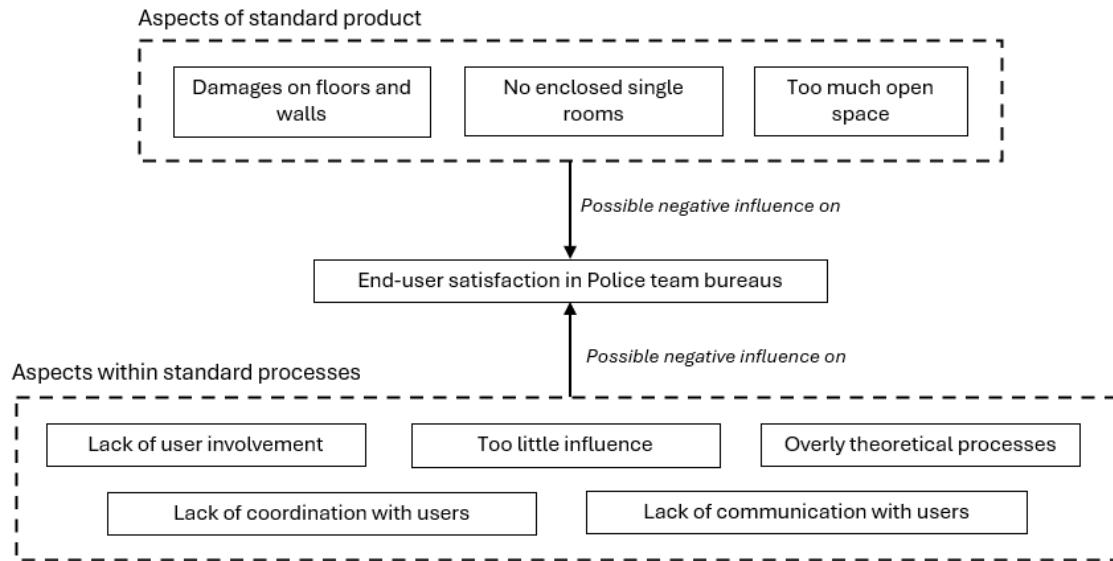


Figure 21 – Standards producing a possible negative influence on user satisfaction (own work)

8.3 Impact of my research

To better position my research findings, it is essential to mirror them against existing literature and the concepts of standardisation and user satisfaction it contains. This chapter discusses the level of consistency or difference of the findings with previous research, and what this means for the broader debate on standardisation in organisations.

Standardisation is often associated with efficiency, consistency and improved service delivery. Grandori (1997) and Kujala et al. (2022) for example emphasise that standardisation can play an important role in structuring processes. My research nuances the literature by showing that the Police have also standardised some processes in order to enhance structure. However, my research shows that not all phases of standard processes of the Police are valued equally. In the requirements phase, users often found the processes rigid and theoretical, so they experienced less influence. This is in line with the criticism expressed by Vischer (2008) and Craig et al. (2000) implying that standardised processes can lack flexibility, leading to lower satisfaction. Contrary to the negative expectations emerging from literature, my results show that standardised products like building blocks and space use generally were received positively. Users appreciated the functionality and aesthetics of these standardised elements, despite limited opportunities for customisation. This result differs from the negative picture presented by O'Mara (1999) and Craig et al. (2000).

The results of my research suggest that standardisation is not inherently positive or negative, but that success is heavily dependent on implementation and the level of user engagement. The positive reception of standardised products within the Police organisation highlights the importance of iterative feedback and continuous improvement of standardised processes and products. My research contributes to the academic debate by showing that standardisation can have positive effects on user satisfaction, provided users are actively involved and their input is visibly incorporated. These findings provide valuable insights for organisations as regards implementing standardisation and highlight the importance of a user-centric approach.

8.4 Limitations

This research provides contributions but also several limitations. Some of these limitations relate to earlier stages of the research, while others emerged during the field research. They are set out in the following paragraphs. The first limitation occurs in its generalisability, because the study focuses specifically on Police team bureaus which represent a unique organisational and operational context. The findings of this research may not be entirely transferable to other organisations of sectors with different organisational structures, processes or real estate strategies.

The second limitation is selection bias in the case study analysis. Here, only four team bureaus were selected, and the selection was influenced by its geographical proximity to Rotterdam. This could limit the diversity of cases studied, as the selected bureaus might not represent the full range of standardisation of team bureaus under the 2017 housing policy. Also, the selected team bureaus were operational, but the duration of use by end users was not specified. If the team bureaus had been relatively new, end user satisfaction may have reflected initial impressions rather than long-term usability or effectiveness. While deviations from standardisation were noted, the study primarily focuses on standardised aspects. This may overlook significant insights into why and how deviations occur, which could be critical to understanding their impact on user satisfaction.

The third limitation is that the chosen methodology for this research relies heavily on qualitative methods such as in-depth interviews and the case study, with no incorporation of surveys or other quantitative methods to measure user satisfaction. The absence of quantitative data limits the robustness of findings, particularly when assessing satisfaction levels. Qualitative research on user satisfaction was based on a

total of 13 interviews and a focus group. The results of the study reflect the satisfaction of a small group compared to the large user group which makes up the Police.

8.5 Future research

This chapter offers suggestions for follow-up research. An important follow-up study would be a longitudinal study, which could investigate how user satisfaction in standardised environments evolves over time. This could investigate whether initial concerns about standardisation decrease - or increase - with long-term use. Right now the nature of the problems that arise in new team bureaus is obvious, but not whether these problems will persist in years to come. Adopting a longitudinal study would make it possible to check whether resistance from end users persists.

A second suggestion is comparative research between standardised and non-standardised real estate strategies that can provide insight into the relative advantages and disadvantages of either approach. Non-standardised environments for example theoretically promote higher satisfaction compared to non-standardised environments. A follow-up study might focus on comparing satisfaction between standardised, new team bureaus and existing non-standardised team bureaus. In such a case, the results of this study can also substantiate the results of this study and clarify whether user satisfaction is actually influenced by standardised aspects in new team bureaus.

A third suggestion is a qualitative study including a survey, in order to find out about grades awarded by end users to their new working environments, specifically within team bureaus. Such research is often used to standardise data collection and to be able to generalise results. Answers will this way reflect larger groups of people.

As described in the recommendations, the Police could benefit from implementing a Post Occupancy evaluation (POE) by default. My last suggestion is for future research, possibly focusing on designing and implementing a framework for conducting systematic POEs within organisations such as the Police. This research could explore the optimal timing and frequency of evaluations with a view to ensuring timely feedback from end users. It could also develop standardised metrics for assessing the impact on user satisfaction, functionality and adaptability. A key focus would be to explore ways and degrees in which systematic feedback could be effectively integrated in policy and design processes, for property standards to remain aligned with the changing needs of stakeholders. The research could also explore how a POE framework can be scaled across different team bureau locations while maintaining methodological consistency.

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Appendix A – Reflection

Reflection on the process

The process of my thesis began with selecting a theme, for which I chose the User Perspective theme. I opted for this because I believe it is essential to ensure that the built environment aligns as effectively as possible with a diverse group of stakeholders, including the actual end users. However, at the outset, I found it challenging to select a subject, as it needed to be based on the literature review—something that requires patience and effort, which I underestimated at the time. Reading various papers and extracting relevant insights was difficult, especially when I encountered sections unrelated to my original theme. This led to considerable uncertainty about my topic early in the process, which meant that everything progressed more slowly than anticipated.

Eventually, I identified a subject with theoretical gaps and practical relevance to the Police. When I began my fieldwork with the Police, I initially struggled to determine where I could conduct my research within such a big organisation with diverse real estate portfolios featuring standardised aspects. In hindsight, I am pleased with my decision to focus on the new team bureaus. What made my topic particularly challenging for me was its focus on standardisation, which often conjures images of how supermarkets and fast food chains like Albert Heijn or McDonald's standardise their locations. At this level, finding comparable examples within the Police felt like searching for a needle in a haystack. This sentiment persisted even when I visited the four selected team bureaus; they did not appear to resemble one another, which made me question whether my chosen cases even fell under the umbrella of standardisation.

This doubt lingered until I completed my case study analysis. It was only after I compared policy documents with the Spatial-functional programmes of requirements and the photos I had taken that the connections became clear. I could then confidently explain and understand what standardisation within the Police entails. From that moment, my interviews began, which alleviated the initial doubts I had about whether I would gather sufficient research results. The pieces started to fall into place, and I grew increasingly closer to achieving my research objectives.

Reflecting on the entire process, I see that my levels of stress and uncertainty gradually decreased over time within my field research. This is also evident from the number of times I changed my research questions at the beginning. In the first two weeks of my fieldwork, I revised the main research question three times because the context of my study was unclear and kept shifting. Eventually, the uncertainty diminished, and the research questions were finalised, although this happened relatively late in the process.

The final product is complete, which has certainly come with its share of ups and downs. At the start, during my P1 phase, I worked three days a week in an office alongside my studies, which created significant time pressure. A characteristic of mine is wanting to progress quickly on a project, sometimes at the expense of skipping necessary steps. For example, I often move on to new chapters before properly refining the ones I've already written. This approach led to a product where the problem statement and objectives were poorly defined, even as I had already begun my fieldwork. While I often have the correct methodology in mind, it does not always translate effectively onto paper. When this issue arose again, I realised it was an area I needed to improve. I dedicated a week to thoroughly revisiting the foundation of my research, ensuring it was clearly described and properly linked to the fieldwork I had already started.

Reflection on the product

I am very satisfied with the final product. The research findings are particularly interesting when compared to the hypotheses I developed based on the literature review. In addition to creating a conceptual model based on the research questions, I was also curious about the hypotheses I had formulated. From these research findings, I developed valuable recommendations, which are discussed with the Police organisation, which I found to be a crucial part of my research.

Reflection on the research methods

In hindsight, I am satisfied with my choice of methods. The case study was critical for understanding the context of standardisation within the organisation. There wasn't a single document that clearly explained standardisation, so the case study allowed me to identify the standard aspects of the product and derive insights from these findings. Without the case study, the interviews would not have been possible. The interviews provided deep, well-substantiated insights from end users regarding their satisfaction with their working environments. The focus groups has further enhanced the research. By organising a focus group, it was possible to discuss the preliminary conclusion and recommendations with several people from the organisation. Here, applicability and recognisability were discussed and this sharpened and improved the recommendations.

To analyse the data, I used coding, a method I had practiced during a course at TU Delft. This familiarity made the process smoother and more manageable. Overall, my chosen methodology led to research findings and recommendations that are particularly valuable for the Police. I am proud of the outcome.