From this...

...to this?

A livable stadium for the Bijlmermeer: is it capable of transforming the current monofunctional Bijlmermeer structure into a dynamic multi functional system with a strong image, founded on inhabitants' affinity?
Designing the overlap

Preface

As a final project of my Architecture studies at the Delft University of Technology I wanted to design a project which brings all philosophy of architecture so far together. In general I think great architecture is a balance between rule and exception, on all scale levels. Aside my studies I worked on several designs in the private sector, in which the fascination of the client and its personal demands forms the essence of the design. In general, I think these project form an essence of a common rule in architecture of urban space. This rule can be seen as ‘the known’ and it allows the exception to be possible. During my internship and work period at Santiago Calatrava LLC. I mainly worked on the exception. An extreme form language, top-notch materials and custom details are ingredients for exceptional architecture on an international scale.

An Olympic stadium situated in an urbanized context with a post-Olympic residential function brings the rule and exception together. In the architectural sense it brings together the international rules of designing an Olympic stadium and the personal scale of designing proper housing solutions. Apart from the architectural fascinating controversy, also the Dutch and international attitude affect the design. On the one hand the Dutch approach of Doe maar gewoon, dan doe je al gek genoeg (litt. acting normal is difficult enough): the rule, and on the other hand the highly image based International Olympic Committee: the exception.

In the design of a Livable Stadium for the Bijlmermeer the main theme is the overlap of both the rule and the exception. Referring to the surprise egg as design metaphor, the chocolate can be seen as the exceptional packaging, increasing the value of the inner essence: the rule.

Joeri Ivar van Ommeren,

Delft 2010
"Boycot de bunkers" inhabitants protest shortly after completion of the Bijlmer-
Flowershop
Situated in local centre
Snackbar

typical Bijmermeer interaction
Regional scale centre characterized by huge amenities
Bep van Klaveren wins the 1928 Olympics final featherweight boxing in Amsterdam.
De huidige Nederlandse houding en haar politiek is kritisch te noemen wanneer het gaat om plannen voor grootschalige evenementen als het WK voetbal of de Olympische zomer Spelen. De mogelijke economische, sociale en ruimtelijke impuls wordt weggestreept tegen de eenmalige investering en de angst op doemscenario’s van post-Olympische leegstand als in Athene (2004).

De ambitie om de Olympische zomerspelen van 2028 in Nederland te organiseren en het huidige ruimtegebrek vraagt om een intelligente inpassing. Het implementeren van het Olympische programma van eisen in een (sterk) verstedelijkte omgeving als die van de Randstand lijkt uit den boze, refererend aan de Olympische venues tot dusver.

Binnen het ExploreLab van de faculteit Bouwkunde aan de Technische Universiteit Delft is een scenario van inpassing van de Spelen in een stedelijke context onderzocht. Vanuit het architectonisch vakgebied is de ruimtelijk technische haalbaarheid van een Olympisch hoofd stadion met post-Olympische woonfunctie onderzocht. Het ‘Livable Stadium’ maakt deel uit van een scenario waarbij de Spelen als katalysator voor imago verandering van Amsterdam Zuidoost (De Bijlmer) wordt ingezet.

Onderzoek naar de sociaal–economische- en politieke aspecten (lokaal, internationaal, IOC) van dit scenario vormt de randvoorwaarden voor de architectonische haalbaarheid.

Het architectonisch ontwerp is in staat de verschillende fases -Olympisch en woonomgeving- te huisvesten gebaseerd op een symbiotische relatie. Getracht is het gebouw zo vorm te geven dat het huidige gebrek aan affiniteit in de Bijlmer plaats maakt voor een omgeving gedefinieerd door de identiteit van zijn bewoners en gebruikers.
BijlmerOlympics: Design the overlap
Designing the overlap?

Introduction

The current Dutch (political) attitude on hosting a big scale event like the soccer world championships or the summer Olympics is critical. The possible economical-, social- and spatial impulse is subordinate to the financial investment and the fear of abandoned post-Olympic areas like in Athens(2004).

The ambition of hosting the 2028 summer Olympics in the Netherlands and the lack of space demands an intelligent adoption. The implementation of the Olympics programme brief in an urbanized area like the Randstad seems to be hardly impossible, referring to Olympic venues so far.

Within the ExploreLab at the Faculty of Architecture at the Delft University of Technology a scenario of hosting the Olympics in an urbanized context is researched. As subjected to the architectural profession, the spatial-technical feasibility of an Olympic main stadium with post-Olympic residential function is the main focus of this research. This Livable Stadium is part of a scenario in which the Games are supposed as a catalyst for image transformation of Amsterdam Zuidoost(“Bijlmer”). A sub-research on social-economical en political aspects (local, national, IOC) of this scenario form the constrains for the architectural feasibility.

Project aim

As this projects origin is in the architectural discipline, the main focus of the research is on the technical- and spatial feasibility. There are no precedents of residential buildings with an Olympic origin. Whether this is due to its complexity or simply because there is no need for it, there are no architectural guidelines for designing a stadium, regarding the post-stadium, residential usage. Where the design of the Livable Stadium for the Bijlmermeer area focuses on the specific implementation of found data, this research focuses on both the generic and specific conditions when designing a Livable Stadium.

Leading research question:

What technical and spatial conditions can be found when designing an Olympic stadium in an urban context with a social post-Olympic function?

One of the characteristics of a Livable stadium, compared to most Olympics stadium, is its location. Where Olympic venues are most likely situated in the periphery, one of the aimed strengths of the Livable Stadium can be its implementation in an urban context.

What impact can the Olympics have when applied in an urban context?

Apart from its enormous scale an Olympic venue, or main stadium, communicates a certain statement. The Olympic Games are more than just a sport event. It is a chance for a country or city to manifest themselves on a scale, bigger than just the 20 days of sporting. The organization of the Olympics can be a catalyst for different types of development, for example of public space and tourism(Barcelona, 1992), a commercial legacy (Atlanta, 1996), an urban restructuring (Sydney,2000), a “social” development(Beijing, 2008) or a sustainable one (London, 2012)(VROM,2008)

Focusing on a specific location as the Amsterdam Bijlmermeer area:

What influence can an event like the Olympics have on the image of a certain place?

The Amsterdam Bijlmermeer context is complicated. A complex history driven by spatial, social and economical difficulties resulted in a negative image. Recently the city and its media informally renamed the area from “Bijlmer” to “Amsterdam Zuidoost” in order to formally recognize the problems and their responsibility. Due to this projects main focus on the architectural design, the physical context and its social reaction the historical development play an essential role.

What are the spatial conditions when designing in the Amsterdam Bijlmer and how does the spatial structure influence the image and social behavior of the Bijlmermeer?

In order to place the found spatial solutions for the Livable Stadium in perspective, its typological characteristic are subjected to those of the former structures:

What can be learned from the Bijlmermeer building typology and its living climate?
Introduction

Besides the enormous scale of the actual building, the related required public space and logistics preferably require an un-urbanized location. As the post-Olympic residential function requires a lower capacity public domain and has lower infrastructural needs, they should be easily adaptable.

How can an Olympic stadium be implemented in the urban context of the Bijlmermeer?

In order to subject this design to other actors than the technical and spatial and thus ‘prove’ a broader feasibility of it, the political context is explored. Local aspects (Bijlmermeer and Amsterdam), national aspects (impact on infrastructure, hotels, sportfacilities) and international aspects (IOC) should be reflected in the specific design for the Livable Stadium for the Bijlmermeer area.

What aspects of the political climate should be considered when designing for the (post)Olympics?

Approach
The Bijlmermeer area is commonly known as one of the youngest and biggest urban failures in the Netherlands. Every single aspect had been analyzed, but never connected to a huge scale possible positive impulse as hosting the Olympics. Since the main focus of this research is in the work field of architecture, the building typology and their influences are a key research topic when building in this context.

When analyzing the social struggles coming forth from the lacking building typology, the huge influence of the media became clear. As the media again forms an important role in the complete time line of hosting the Olympics,
from bidding phase till post-Olympics, the architectural design is subjects to the characteristics of using a CityEvent (Rennen, 2007) as a place changing device.

**Assumptions and conditions**

The most important assumption for this project is that Amsterdam wants to organize the 2028 Olympics in the Bijlmermeer-area. Although the infrastructural conditions of the Bijlmermeer area are relatively good, there is not enough capacity to the Olympic peaks of 50,000 visitors per hour. Then again, the objective is not to manifest the complete Olympic program in the Bijlmer area but only the needed amount of program. 'Needed program' as an amount of program to make both an healthy (in size and amenities) venue during the Olympics but on the other hand being a realistic starting point for urban development. The scenario of the 'Randstad-Games' (Huijsmans, 2005) is therefore adapted in this project.

When doing this project, the city of Amsterdam is finishing the demolishing plans for 95% of the known problem areas of the original plans. This information is taken in account. The restructuring plans hardly on creating a new city centre, only in creating proper housing facilities, while the lack of city centre functions was one of the main arguments in failing of the Bijlmermeer-area. Therefore the demolition plans are fully taken in account, but the restructuring plans are only partially represented in this project.

**Structure of report**

Each chapter starts with the relevant conclusions on the described topics. These conclusions form the guidelines or context for the Architectural design.

Given the architectural environment of this graduation project, the main focus on will be on the architectural qualities-and ‘design ability’- of the ‘Livable stadium’ typology.

**Analysis**

A selection of topics is made in a way that they give a context to the project on different scales, physical and nonphysical. After an analysis of the Bijlmermeer area and its characteristics, common Olympic aspects are pointed out. The potential influence of a CityEvent like the Olympics games and its impact are reflected to the development approach of the Bijlmermeer. Besides this historic approach and its focus points, a prediction is made regarding the BijlmerOlympic scenario.

**Definition of context**

Since the architectural design is only focussing on the described research topics, the context needs to be clarified. Both the physical and the nonphysical context form the framework for the reflection. Earlier mentioned essential assumptions, such as Amsterdam’s ambition to organize the 2028 summer Olympics and the adaptation of the Randstad games scenario, form the “top down” context. The “bottom up”- focussing on Bijlmermeer specific aspects- will be described on the following pages. Again a selection is made of the key focus points, in order to make a clear reflection afterwards.

After a description of essential implementation rules - as an answer to the monofunctional context-, the general design theme will be explained. This theme will be explored using extreme models, focussing on underlaying themes.

**Design**

The former Bijlmermeer structure proves that not everything is ‘designable’. Human reactions and the way affinity will be formed is not always predictable, although conditions for a desired living climate can be designed and enforce the creation of affinity.

The livable stadium should be a foundation in which inhabitants of the Bijlmermeer can claim “their part” of the “new Bijlmer”. In which, “their part” should be a clearly defined (public) space with a strong relation to its users where the “new Bijlmer” should be characterized by the Olympic influence to the Bijlmermeer area- and its initiated restructuring.

In order to make the design a typical result of these themes, the general theme only involves the overlap of both. The presented architectural qualities suppose the essential overlaps in the complexity of the assignment. These qualities will be introduced by logo’s related to the research conclusions. The logo’s and diagrams show the overlap in quality of both the Olympics and the needs of the Bijlmermeer area.

**Evaluation**

In order to distinguish the research conclusions on the generic topics and the Bijlmermeer specific topics, multiple points of reflection are formulated. Where reflection on theory and the relevance to the known Bijlmermeer problems is tangible, is the relation to formulated design models and the design-ability less objective. The combination of these four reflection points and methods form the basis for the reflection on feasibility and the following recommendation when designing for the Olympics in an urban context.

**Recommendations**

Within the boundaries of this research, a two sided conclusion in relation to the Bijlmermeer area can be taken: on the one hand the ambition to realize the BijlmerOlympics is a realistic one and the possibilities to transform a stadium into living environment is very likely. However, the size of an Olympic main stadium in an urban context is doubtful. The building size and its ambition to connect to the urban tissue is complicated.

The architectural implementation in this specific project points out some benefits of possible solutions such as lowering the stadium structure in the ground.

But this dream might only become reality if the current conservative approach of the IOC changes.

The spatial and technical findings of designing a post-stadium ‘life’ are subjected to the current phenomenon of empty stadiums worldwide.
Bijlmermeer problems in relation to building typology

Spatial problems, centrality, affinity

Monofuntionality

CityEvents: Place/identity changing device

Olympic Games: climate

Olympic Games: Scale, impact

‘Randstad Games’-scenario

Development of context
Due to the scale of a project like the BijlmerOlympics, a selection of relevant topics are made. The topics are chosen in a way that they give a context to the project on different scales, physical and nonphysical. After an analysis of the Bijlmermeer area and its characteristics, common Olympic aspects are pointed out. The potential influence of a CityEvent (Rennen, 2007) like the Olympics games and its impact are reflected to the development approach of the Bijlmermeer. Besides this historic approach and its focus points, a prediction is made regarding the BijlmerOlympic scenario.

Leading research question:
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What impact can the Olympics have when applied in an urban context?
What influence can an event like the Olympics have on the image of a certain place?
What are the spatial conditions when designing in the Amsterdam Bijlmer and how does the spatial structure influence the image and social behavior of the Bijlmermeer?
What can be learned from the Bijlmermeer building typology and its living climate?
How can an Olympic stadium be implemented in the urban context of the Bijlmermeer?
What aspects of the political climate should be considered when designing for the (post)Olympics?
Typology vs. Bijlmermeer problems

Historical development of the Bijlmermeer area and its morphology

English summary of the following history paper: ‘Overmaat schaadt’

What started as a design for a way of living fed by the CIAM principles, turned out to be a mono-functional system of borders. Borders of infrastructure, morphology, functions and usage in time. Especially the strict separation of living and the public domain results in a living environment with lack of affinity. After several restructuring attempts, mostly on the building scale, finally the city of Amsterdam decided to demolish most of the typical hexagon structured flats. The new plans again are formed by a mono functional approach, the living program -now in “working” ground based housing- is separated from the public domain. The result in a centre with lack of affinity which leads to insecure places integrated in the living environment.

In 1958 the first plans for the development of the Bijlmermeer polder were made. Dutch fundamental urban principles were ignored. Where usually the poldergrid was used for a first guideline in development, now a tabula rasa for CIAM-based principles was created. Berlage’s AUP (lit. General Extension Plan) for the city of Amsterdam was known as the general guideline for development.

“Dutch fundamental urban principles were ignored...”

Due to the political fight between centralism and decentralism, Berlage’s “cycle-able” distance to the city centre was now to be taken by car or metro. The result of the approach was a concentric strategy for the Bijlmermeer-area, without any typical city centre functions. When after a few decades, the infrastructural connections were not sufficient, the Bijlmer turned in to the first “ghetto” of the Netherlands.

Within the plan, the phenomenon ‘street’ had to make place for the ‘Dry walk’, an inside connection between the residential- and the parking areas. Connected to this Dry Walk, were several collective functions, which were missing in the huge outside public areas. In these areas, the cyclist were dominant, again a result of CIAM’s monofunctional approach. The lack of social security and the poor materialization in the Dry Walks resulted in an anonymous area for vandalism and crime.

“Human interaction can be designed with a multifunctional approach.”

Generally spoken, the typological characteristics can not be seen as the main reason for human misbehavior. Nevertheless conditions for a livable environment can be designed. Human interaction can be ‘created’ in due to the designing with a multifunctional approach. Different scale should not result in borders within a monofunctional system but be a chance in creating coherence between the human-, the urban-, the economical- and infrastructural scale: capturing the complexity of the Bijlmer.
'Overmaat schaatd'

De gebouwtypologie in relatie tot de problemen van de Bijlmermeer

Het Algemeen Uitbreidingsplan (AUP) was bedoeld als een programma voor geleidelijke uitbouw van Amsterdam, dat eind twintigste eeuw voltooid zou moeten zijn. De stagnatie van de woningbouw gedurende de tweede wereldoorlog en de daaropvolgende bevolkingsexplosie zorgde ervoor dat voltooiing van het AUP deel uitmaakte van de wederopbouw. De voor de oorlog gestarte reeks van typologische experimenten in onder meer Frankendaal en de Westelijke Tuinsteden werd voortgezet tijdens de wederopbouw fase. Het grootste experiment volgde in de jaren '60, resultaat is een gebouw typologie waarbij iedere vorm van context op ieder schaalniveau genegeerd is: De Bijlmer.

Veertig jaar lang is er een publieke discussie gaande, waarvan slechts enkele waardevolle oplossingen naar voren zijn gekomen. Dit stuk is een uiteenzetting van de aanloop tot de bouw van de Bijlmermeer, gevolgd door een selectie van relevante kritiek op de typologische kenmerken en hun uitwerking. Getracht wordt, de sociaal-maatschappelijke problemen te verhelderen door een koppeling te maken met typologische verschijnselen.

Het Algemeen Uitbreidingsplan (Berlage, 1935) werd formeel gezien als uitgangspunt voor de wederopbouw. Echter traden er twee wijzigingen op ten opzichte van eerder ingenomen standpunten. De wijzigingen hadden betrekking op gebouwtypologie, de uiteindelijke omvang van de stadsuitbreiding en hun samenhang.

Het verkavelingsprincipe van het AUP ging uit van strokenbouw, welke als 'weinig bevredigend'1 werd ervaren in de tussen 1938 en 1941 gebouwde Bos en Lommerbuurt. Tijdens de oorlog deed de afdeling Stadsontwikkeling (SO) studies om het probleem van de monotonie van verkaveling op te lossen, waarvan de wijk Frankendaal het resultaat is. De hoofdvorm van de wijk Frankendaal het resultaat is. De hoofdvorm van de wijk is voortgekomen uit het stramien van de droogmakerij 'De Watergraafsmeer' (1631). Dit stramien werd bepaald, zoals alle droogmakerijen, door een stelsel van waterafvoer- en polderwegen2.


Woningen zijn het grondmateriaal dat moet worden samengevoegd tot stedenbouwkundige vormen.

In 1947 kregen architecten Merkelbach en Karsten in samen werking met Stam van de Gemeentelijke Woningdienst de opdracht in Frankendaal 400 eengezinswoningen te ontwerpen. Het ontwerp moest voldoen aan een zover mogelijk doorgevoerde normalisatie en gelijkvormigheid. Het ontwerp werd overgenomen door de afdeling Stadsontwikkeling, die het verder uitwerkte. Het uiteindelijke ontwerp bestaat uit een fors motief van een gestandaardiseerde grondvorm, die is opgebouwd uit stukken van wonenheten. Deze typologie wordt gekenmerkt door de wonenheten die zich om een ‘woonhof’ groeperen.

Van Eesteren naar aanleiding van de typologie van Frankendaal (1947):

"Woningen zijn het grondmateriaal dat moet worden samengevoegd tot stedenbouwkundige vormen. De gerichte strook is de eerste primitieve samenvoeging. (…) stroken kunnen worden samengevoegd tot grondvorm, bijvoorbeeld een ‘L’. Twee grondvormen kunnen een motief vormen, welk motief, groter van formaat zijnde dan een strook, meerdere malen behoeft te worden herhaald met een gelijkblijvend aantal woningen minder snel tot monotonie leidt. Het motief kan zoveel malen worden herhaald als visueel vatbaar is, waardoor een nieuwe eenheid ontstaat. (…) In plaats van monotone is nu, door herhaling van een motief, harmonie ontstaan."3

De woningdienst ging in de jaren vijftig door met het toepassen van experimentele verkavelingsprincipes in de uitwerking van het AUP voor de Westelijke Tuinsteden.

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1 Bolte, W, Meijer, J. Van Berlage tot Bijlmer, SUN (Nijmegen, 1981, pp192-246)

2 Van Eesteren, C. Frankeldael, een woonbuurt in de Watergraafsmeer te Amsterdam (in Forum, 1952, p187)

3 Van Eesteren, C. Frankeldael, een woonbuurt in de Watergraafsmeer te Amsterdam (in Forum, 1952, pp 190-191)
De, bijna voor heilig verklaarde, voorspellende kracht van het AUP bleek te falen in toepassing in de Westelijke Tuinsteden. Waar het AUP uitging van bruto dichtheid van zeventig tot 110 woningen per hectare, bleek slechts veertig woningen per hectare haalbaar. Dit zorgde voor een verandering in benadering van ruimtelijke planning. Hoogbouw, van minimaal vier lagen, was op grote schaal nodig, voorzien van meer groen dan in de Westelijke Tuinsteden.

De gehele typologische ontwikkeling heeft zich grotendeels buiten het architectonische apparaat afgespeeld. Waar voorheen architectonische opvattingen, met name van Van Eesteren, geen rol speelden, werd nu enkel gefocust op de uitwerking van de experimentele principes van Stadsontwikkeling, waar Van Eesteren nota bene voorzitter van was. Daarbij werden de principes zelf niet ter discussie gesteld. Bolte en Meijer stellen dan ook dat dit isolement verbond met de ‘sociale inhoud van de wijkgedachte’.

De ontwikkeling van opbouwvoorstellen, uitgaande van ‘woonunits’ was verbonden met de ‘sociale samenbrengen der gezinscategorieën (levenphasen), stelde dat de: “bedoeling der wooneenheid is: het inhoud van de wijkgedachte’. Groep ‘Opbouw’ van ‘woonunits’ was verbonden met de ‘sociale geleding van een wijk tot uitdrukking te laten komen. Achterliggend doel was de zoektocht naar een middel om de heterogene stadsbevolking tot een homogene groep van buurtbewoners te laten komen. In de vertaalslag van sociale doelstellingen naar bouwtypologie voerden twee stromen de discussie aan, respectievelijk de Rotterdamse- en de Amsterdamse lijn.

De ‘Amsterdamse lijn’ ging uit van een scheiding van woonvormen op grond van stedenbouwkundige karakteristieken, waarna deze werden geordend per karakteristiek en de sociale geleding afhankelijk van de woninggrootte werd opgenomen in het blok zelf. In de ‘Rotterdamse lijn’ werd uitgegaan van een scheiding van woonvormen naar sociale karakteristieken, waarbij er verschillende woonvormen werden toegepast in een woonblok. Deze tweestrijd resulteerde in enerzijds Amsterdamse bouwblokken, met een geëindigde hoogte en anderzijds de Rotterdamse waarin verschillende hoogtes vertegenwoordigd waren. In een in 1962 uitgeschreven prijsvraag voor de Buikslotermeer kwamen beide lijnen haaks tegenover elkaar te staan, met Van Gool als vertegenwoordiger van de Amsterdamse lijn en Bakema van de Rotterdamse. Voor het schetsontwerp van 1450 woningen werden door de Woningdienst de architecten Bakema, Van Eijck en Van Gool aangesteld. Deze drie werken eerst gedwongen samen om ‘extravaganties’ te voorkomen. Het trio had een verkaveling van Stadsontwikkeling als uitgangspunt, maar mocht hier vanaf wijken. Vooraf werd gesteld dat de opgave bij een schetsontwerp zou blijven totdat er zicht was op een ‘vooruitgang in de volkshuisvesting’. Hierna zou ook het definitieve plan aan een van de architecten worden toegekend en onder toezicht van Stadsontwikkeling en de Woningdienst worden uitgewerkt.

Na een half jaar nauw samen gewerkt te hebben, werden vier uitgangspunten geformuleerd:
- Zoveel mogelijk samenhang tussen en variatie in architectuur en stedenbouwkundig geheel;
- Een optimale privacy van de woning;
- De woningen niet meer ontsluiten via trappenhuis of portiek;
- Verscheidenheid woonsoorten.

Door wisselende bouwhoogtes zou er verscheidenheid in de woonomgeving ontstaan. Hierbij moesten in pandige woonstraten oplossing bieden aan de ontsluiting van woningen en groen en voorzieningen. Voor de laagbouw werd gedacht aan patio-, rijtjes- en uitbreidbare groeiwoningen, die na inzicht van de bewoners konden worden uitgebreid. Door de woonstraat in het gebouw op te nemen, kon het maaiveld vrijgemaakt worden voor parkeren, groen en voorzieningen. Voor de hoogbouw werd gedacht aan trap- en of portiek; träppenhuse oplossing bieden aan de in de woonomgeving ontstaan. Hierbij moesten de woningen niet meer ontsluiten via trappenhuis of portiek;

**NB**: Groep Opbouw (Groep Opbouw, Verantwoording van ‘Opbouw’-activiteiten (in:Forum, 1952, pp 6-7))

Toen in 1963 gekozen moest worden, kon het ontwerp van Van Gool naast de logische stem van Stadsontwikkeling ook op de stemmen van de Woningdienst, de Federatie, de Directie voor de Volkshuisvesting en de Bouwnijverheid in Noord-Holland en een supervisor van de gemeente rekenen, waardoor het plan unaniem werd verkozen.

Het oorspronkelijke Algemeen Uitbreidingsplan (AUP) van Berlage uit 1935, ging uit van een concentrische stadsvorm met een zwaartepunt in het westen. Een ringspoorlijn zou de fiets te overbruggen zou zijn. Dit concept werd bij de herziening van het AUP in 1958 overboord gegooid en vervangen door nieuw concept: 'de Lobbenstad'\(^7\). Daarbij werd uitgegaan van een radiale ontwikkeling langs een aantal bouwgerichten. Amsterdam-Noord is georiënteerd op de fiets, terwijl de afstand naar het stadshart omgezet in 'per auto- of openbaar vervoer overbrugbare afstand'. Het belangrijkste kenmerk van de lobbenstad is dat de afzonderlijke lobben centrum met de fiets te overbruggen zou zijn. Dit concept werd bij de herziening van het AUP in 1958 overboord gegooid en vervangen door nieuw concept: 'de Lobbenstad'\(^7\). Daarbij werd uitgegaan van een radiale ontwikkeling langs een aantal bouwgerichten. Amsterdam-Noord is georiënteerd op de fiets, terwijl de afstand naar het stadshart omgezet in 'per auto- of openbaar vervoer overbrugbare afstand'. Het belangrijkste kenmerk van de lobbenstad is dat de afzonderlijke lobben centrum

Het AUP ging uit van een concentrische stadsvorm met een zwaartepunt in het westen.

zou een grotere omvang krijgen in vergelijking met het AUP en Amstelveen kon direct bij de stad betrokken worden. Ook in zuidoostelijke richting kon nu uitgebreid worden. Hierbij werd de in het AUP gestelde 'op fiets te overbruggen afstand' naar het stadshart omgezet in 'per auto- of openbaar vervoer overbrugbare afstand'. Het belangrijkste kenmerk van de lobbenstad is dat de afzonderlijke lobben centrum

\(^7\) Van Eesteren, C. Mededelingen van de Direktie van de Tuinbouw, Stadsontwikkeling (Amsterdam, 1958)

De uitgangspositie van Stadsontwikkeling voor het woonprogramma was gebaseerd op de aanname dat de totale agglomeratie voltooid zou zijn bij ongeveer één miljoen inwoners. Dat getal was gebaseerd op de 960000 inwoners dat het AUP voorstelde. Hoewel, dat de totale agglomeratie voltooid zou zijn bij ongeveer één miljoen inwoners, dat de totale agglomeratie voltooid zou zijn bij ongeveer één miljoen inwoners, dat de totale agglomeratie voltooid zou zijn bij ongeveer één miljoen inwoners.

Het idee van strikte functiescheiding kende zijn oorsprong in de CIAM congressen (1928-1959).

Het merendeel van de te bouwen woningen in de Zuid-Oost-lob, moest in de Bijlmermeer worden gebouwd. De 330000 woningen met een gemiddelde bezettingsgraad van 3,3 personen moesten 110000 Amsterdammers herbergen.

De voornaamste vooraf gestelde uitgangspunten van de gemeente Amsterdam waren integratie met de gemeente Amsterdam, functiescheiding en het bieden van een ‘optimaal woonmilieu’.

De schakeling van de Bijlmermeer met de andere delen van Amsterdam zou tot stand komen door een te realiseren Zuid-oostelijke metrolijn en autowegen die de woonwijk onderling verbindt met andere delen van de stad en regio. Zolang de metro niet

Het idee van strikte functiescheiding kende zijn oorsprong in de CIAM congressen (1928-1959).

Het idee van strikte functiescheiding kende zijn oorsprong in de CIAM Congressen (1928-1959). Wonen, werken, recreatie en verkeer werden gescheiden, waarbij het verkeer de functionele integratie van de andere vormen van stedelijk grondgebruik mogelijk maakt. In het plan voor de Bijlmermeer zou dit zich uiten in grootschaligheid, grofvlagzorg en een strikte scheiding van de diverse verkeerssoorten: hoge- en halfhoge autowegen; autovrij woongebied. Volgens de gemeente zou de schaal de overzichtelijkheid bevorderen en de strikte scheiding de veiligheid garanderen. De strikte scheiding, met name door (half)hoge verkeerswegen, had clustering van voorzieningen als gevolg en vormde een hoofdrol in de compositie van de woonblokken. Het gevolg was dat bebouwing zich rond de stations concentreerde, terwijl de bebouwingsdichtheid afneemt rond de primaire wegen omdat deze geen relatie hebben.

De typologische randvoorwaarden die gesteld werden om een ‘optimaal woonmilieu’ te realiseren waren: Hoogbouw, enerzijds als gevolg van de geïndustrialiseerde bouwwijze, anderzijds als gevolg van de eisen die aan de aanwezigheid van publiek groen werd gesteld. Negen bouwlagen als gevolg van woondichtheid, techniek, groenbeleving, ruimtelijke verhoudingen Een overdekte route, “droogloop” van de parkeergarages naar de woningen. Tussen de lange honingraat blokken komt een autolus groen gebied, bestemd voor recreatie van de bewoners. Langs de “droogloop” komen gemeenschappelijke voorzieningen voor bewoners. Uitgangspunt hiervoor is dat in de woning te privacy zo groot mogelijk moet zijn terwijl buiten de woning zoveel mogelijk contact is. De identiteit van de woonblokken zou bevorderd moeten worden door de verschillen in inrichting van het omliggende maaiveld.

Daarnaast werd vast gehouden aan het lobbestadprincipe, waarbij de lob centrum georiënteerd moest zijn en daardoor geen centrumfuncties bezat. In plaats van stedelijke functies werd gekozen voor het toevoegen van collectieve voorzieningen die voor “sociale beweeglijkheid” moesten zorgen. Deze ontmoeitingsplaatsen kregen vorm als binnenstraten, gemeenschappelijke ruimten en centra voor woongroepen. Daarnaast werden er grotere sociale voorzieningen ontworpen als buurcentra en het stadsdeelcentrum voor respectievelijk 20000 en 100000 inwoners.

Naast de ‘gebouwde’ collectieve ruimten, werd de gebouwtypologie ondersteund met groenvoorzieningen. Deze voorzieningen moesten ervoor zorgen dat recreatie binnen het gebied werd gezocht en moest een onderling geheel zijn door middel van voet- en fietspaden. De groengebieden werden vormgegeven als maaivelden tussen de woongebouwen (gevolg gebouwtypologie), buurten wijkparken, stadsdeelparken, sportparken en volkstuinen. Naast het groene maaiveld, dat in de planning tot onderdeel van de gebouwtypologie werd gerekend, is er in het plan 450 hectare groen opgenomen, wat neerkomt op 40 vierkante meter groen per inwoner. Door de groenvoorzieningen

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10 Nota Stand van zaken Bijlmermeer, Gemeenteblad nr. 668 (1964, Amsterdam)

11 Wielemaker-Dijkhuis, J.H., Jonge, D de, Interim rapport Bijlmermeer, Centrum voor Architecruonderzoek (Delft, 1972 pp 5-7)
een losse rol te laten spelen in het ontwerpproces en het maaiveld van de woonblokken als losstaand gegeven te zien, mist iedere relatie tussen de honingraat-vormige woonblokken en de openbare ruimte. Deze strikte scheiding is enerzijds te wijten aan het ‘geheime’ plannen tijdens het politieke spel om de Bijlmermeer, waardoor iedere vorm van publieke discussie ontbrak en anderzijds aan de op dat moment voor heilig verklaarde CIAM principes.


Een groep ontwerpers, onder leiding van ir. Nassuth was verantwoordelijk voor de architectonische uitwerking van de gestelde uitgangspunten. Het toenmalige hoofd van Stadsontwerp, ir. Mulder, opvolger van Van Eesteren, kwam met een alternatief.

Bolte en Meyer stellen dat ook in deze fase Stadsontwerp wederom het project wil domineren: "normen en uitgangspunten...komen overeen met die, welke reeds ten grondslag lagen aan het Algemeen Uitbreidingsplan...Net als bij de lobbenstadconceptie valt op hoezeer SO probeerde de continuïteit van het AUP te benadrukken als rechtvaardiging van haar uitgangspunten."15

Hieruit is op te maken dat ook in de Bijlmermeer de naoorlogse lijn van experimenten wed voortgezet, met het Algemeen Uitbreidingsplan als excuus, waarvan de grenzen zo nodig werden verlegd. Het lag volgens SO voor de hand dat zij bij uitstek de partij zouden zijn om het definitieve ontwerp te maken, er werd geschermd met eerder behaalde resultaten, waaruit de voorspelende kracht van SO zou blijken, maar voor het gemak werd het falen bij onder meer het ontwerp voor de Westelijke Tuinsteden vergeten. “Toekomstwaarde” werd het sleutelwoord in het ontwerpproces.

Over de grote lijnen waren Mulder en Nassuth het eens, deze waren immers door Stadsontwerp ontworpen en aangezien beide van SO afkomstig waren, was dit geen punt van discussie. Het belangrijkste verschil in opvatting tussen Nassuth en Mulder, zat in de verdeling van de verschillende gebouwtypen. Nassuth streefde naar een verdeling van 90% hoogbouw tegen 10% laagbouw. Hierbij zouden de bekende nadelen van het wonen in een flat worden opgelost door de eerder genoemde “droogloop” met collectieve voorzieningen op te nemen in een 8-laags woongebouw, om zo de relatie met het maaiveld te vergroten. Dit zou een compensatie zijn voor de activiteiten waarvoor in een hoogbouw woning zelf geen plaats is.

Het alternatief van Mulder ging uit van een subtielere onderverdeling van respectievelijk 50% hoogbouw, 30% middelhoogbouw en 20%laagbouw. Voor de hoogbouw werd het honinggraatprincipe van Nassuth overgenomen. De kritiek van Mulder was dan ook niet gericht op de gehanteerde hoogbouw typologie, maar op de aansluiting ervan op omliggende stadsdelen.

Uiteindelijk heeft het voorstel van Mulder geen enkele invloed gehad op het uiteindelijke plan. Volgens Bolte en Meyer ligt deze beslissing op bestuurlijk niveau16, omdat een eenduidige keuze gewenst was, om zo duidelijk te maken dat Amsterdam een grootschalig project als de Bijlmermeer aankon. Daarnaast stellen Bolte en Meyer dat de keuze voor Nassuth voor de

13 Idem, pp 19-20
14 Idem, pp 5-64
15 Bolte, W, Meijer (1981) pp 244-245

De typologische uitwerking van Nassuths plan kreeg met name gestalte door de manier waarop de ‘droogloop’ in relatie werd gebracht met het publieke maaiveld. De droogloop werd gesitueerd op de eerste verdieping, zodat de fietspaden vrij konden worden aangelegd op de begane grond. De droogloop bestond uit een open galerij aan de zonzijde van het blok met een geklimatiserde galerij aan de schaduwkant. Tussen beide galerijen lag de ontsluiting, bergingen en collectieve ruimtes. Er werd uitgegaan van portiekontsluiting om het verkeer in de woonstraat te concentreren. In de vormgeving zou het collectieve gedeelte moeten worden benadrukt.
De analyse bestaat uit garages, ontleent aan de directe omgeving. Deze omgeving die de typologie van de woonblokken zijn karakter scheidt tussen privaat en publiek zorgt ervoor ten opzichte van de individuele woningen. Deze wasmachine noodlottig in de keuken werd geplaatst, immers enkele verdiepingen lager in de collectieve waspartij, deze staat opgenomen voor de wasmachine, deze staat verscholen tussen de bouwblokken en zijn qua omvang gericht op de lokale gebruikers, dit terwijl de totale openbare ruimte een openheid heeft die te vergelijken is met Schiphol of vier Vondelparken. Na voltooiing van de eerste woonblokken in 1968, volgt de eerste publieke kritiek uit het ontwerpvak. T. van den Berg, architect, vindt de uitwerking “…in de eerste aanblik teleurstellend…” “en de gevelwanden doen hem denken aan “…kazernes of mensenpakhuizen…”. Hugo Priemus had met name commentaar op de manier waarop de woningen waren uitgewerkt. De kwaliteit zou niet in verhouding staan met de huurprijs: “Woningen van vandaag voor prijzen van morgen”17. Ottenhof, één van de verantwoordelijke architecten noemt de reactie van Priemus een “…volslagen gebrek aan enig inzicht…” en “…gemengd met overborrelende eigenwaan, zich uitend in onbekookte kreten of afgekookte gemeenplaatsen.”

Volgens F. Grunfeld, is de Bijlmer “een monument van vakidiotisme”. In een reactie18 hierop licht hij toe: “Een vakidioot is iemand die zich op een nauw terrein stelt dat de Bijlmer een afspiegeling is van een serie eenzijdige benaderingen, die nooit tot één geheel zijn samengevoegd19.

Priemus sluit zich aan bij Grunfeld en vult hem aan met omliggend groen.
Het omliggend groen is autoluw en wordt omringd door garages en bergingen. Het groen bestaat uit programmaloos groen, onlogische fietspaden, sportvoorzieningen en enorme waterpartijen. De waterpartij staat niet in verbinding met open vaarwater, terwijl dit op eenvoudige wijze gedaan had kunnen worden, door een kleine ingreep buiten het herbestemde gebied. De voorzieningen liggen verscholen tussen de bouwblokken en zijn qua omvang gericht op de lokale gebruikers, dit terwijl de totale openbare ruimte een openheid heeft die te vergelijken is met Schiphol of vier Vondelparken. Na voltooiing van de eerste woonblokken in 1968, volgt de eerste publieke kritiek uit het ontwerpvak. T. van den Berg, architect, vindt de uitwerking “…in de eerste aanblik teleurstellend…” “en de gevelwanden doen hem denken aan “…kazernes of mensenpakhuizen…”. Hugo Priemus had met name commentaar op de manier waarop de woningen waren uitgewerkt. De kwaliteit zou niet in verhouding staan met de huurprijs: “Woningen van vandaag voor prijzen van morgen”17. Ottenhof, één van de verantwoordelijke architecten noemt de reactie van Priemus een “…volslagen gebrek aan enig inzicht…” en “…gemengd met overborrelende eigenwaan, zich uitend in onbekookte kreten of afgekookte gemeenplaatsen.”

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De teleurstelling van de bewoners komt voort uit de huren die hoger zijn dan aanvankelijk werd gedacht, het feit dat voor het gebruik van de collectieve ruimte betaald moet worden en als grootste ergernis, de onbereikbaarheid van de huizen.

De hoge huurprijzen hebben voornamelijk gevolgen op gezinnen met kinderen, die de huren niet könnten opbrengen. Het Centraal Planbureau in Amsterdam geeft de misser toe in de Telegraaf20.

In het Parool21 schrijft de Dagboekanier: “Van begin af aan heb ik het Bijlmerplan verwezen naar de steriele bedenksels die te weinig rekening houden met wat de mens tot méns maakt, die leiden tot onherstelbare fouten als deze Kafkawijk, waarin geen mens, buitenstaande, zijn eigen woning herkent.”

In latere edities kopt Het Parool “Taxipuzzelritten in de Bijlmer” en “Gids toevoggen aan ambulances in de Bijlmermeer”22.

Samenvattend stellen Wielemaker-Dijkhuis en de Jonge23 dat het plan een hoge mate van logica bevat, maar dat dit alleen binnen een gesloten systeem kan functioneren. Dit kan worden opgemaakt uit de vele kritiek van onder andere architecten, stedenbouwkundigen, sociologen en sociaal psychologen op het functionalisme van het CIAM. Daarnaast bestonden er in 1960 al aanwijzingen dat de vormgeving van de woonwijken, enkel gebaseerd op technische-, rationele- en functioneel esthetische eisen, spanningen kan oproepen, doordat het steriele ruimte, opgevuld met parken, grenzend aan het woonmilieu, zorgt door missende diversiteit in het

17 Goed Wonen, juli 1968
18 Stedenbouw en Volkshuisvesting, 1970, p 369
19 In Wonen, maart 1971

20 Bijlmermeer, Stad zonder kinderen, Telegraaf
7-3-1970
21 De grote vergissing die Bijlmer heet, Het Parool 6-12-1971
22 Het Parool 8-12-1971
23 Wielemaker-Dijkhuis, J.H., Jonge, D de, Interim rapport Bijlmermeer, Centrum voor Architectuuronderzoek (Delft, 1972)
publieke programma voor een onveilig geheel. Dit had voorspeld kunnen worden, uitgaande van publicaties in de jaren vijftig, die hoogbouw onmogelijk achtte voor gezinnen met kinderen.

Een van de eerste vergelijkbare projecten, waarvan het disfunctioneren voor de start van het Bijlmermeerproject bekend was, is Pruitt-Igoe, St. Louis,24 een stedenbouwkundig project in opgave en typologie vergelijkbaar met de Bijlmermeer. Het plan (1954-55) van architect Minoru Yamasaki, ook verantwoordelijk voor het World Trade Center in New York, voldeed aan dezelfde uitgangspunten als de Bijlmer, afkomstig van het CIAM. Het plan bestond uit 33 woonblokken met ieder 11 verdiepingen. De gebouwen werden ontsloten met galerijen, met daaraan gemeenschappelijke functies als wasruimten, zitruimtes en afval kokers. Het anonieme gebied tussen de "Rivers of public green"25 buiten en de goedkoop vormgegeven maar dure appartementen binnen, trokken overvallers en daklozen aan. In 1960 was het grootste gedeelte onbewoond door verder toenemende criminaliteit totdat in 1972 werd begonnen met de sloop van twee van de woonblokken. De sloop werd geleidelijk aan voortgezet, totdat in 1976 de locatie geheel leeg was.

Een eenduidige oplossing als afbraak van de Bijlmer is vele malen genoemd, maar nooit als serieuze oplossing overwogen. Volgens Koolhaas is de Bijlmer het onvoltooide Las Vegas van de verzorgingsstaat. De manier om de Bijlmerstrip werkend te maken is volgens hem dan ook de toevoeging van sociale condensatoren, een antwoord op de "...socialistische drive-in cultuur...".26 Deze reactie gaat in op de Bijlmer als fenomeen van CIAM-gestuurde gebeurtenissen, zonder de dialoog aan te gaan op typologisch gebied. In zijn betoog over de noodzaak van de Bijlmerstrip worden de eerder beschreven problemen onderkend, terwijl zijn oplossing, hoe krachtig ook geformuleerd, hier feitelijk niets aan veranderd.

De belangrijkste conclusies met betrekking tot de typologie zijn te onderscheiden in waardering voor de woonsituatie, waardering van de speciale voorzieningen en reacties op "minder gebruikelijke omstandigheden"27.

De waardering van de woonsituatie, getoetst in een interview onder 85% van de bewoners van de eerste vier voltooide flats, is negatief, visuele afwerking speelt hierbij een belangrijke rol. De groenvoorzieningen worden als enige positieve punt genoemd en een zeer negatief oordeel gaat uit naar de parkeergarages. Opvallend is dat de afstand van de woning tot de begane grond tot de woning als positief wordt ervaren, los gezien van de tussenliggende ontsluiting. De collectieve ruimten werden als positief ervaren, waren het niet dat ze gesitueerd zijn aan de, als zeer negatief beoordeelde, binnenstraat. De woningen zelf worden unaniem als positief ervaren, met name grootte en de privacy spelen in dit oordeel een belangrijke rol.

Binnen de term "speciale voorzieningen" peilde Dijkhuis de mensingen rond de collectieve functies. De collectieve ruimtes zijn bezit van de woningbouwverenigingen, maar bewoners hebben het recht de ruimtes te gebruiken en in te richten. Om een voorstel te kunnen doen voor de inrichting, moesten bewoners met een representatief aantal een voorstel indienen bij de woningbouwvereniging en alleen wanneer zij vertegenwoordigd waren in een stichting, zou de gemeente (dienst Sociale Zaken) financiële steun bieden voor de inrichting. In enkele gevallen zijn er ruimtes ingericht naar initiatieven van de bewonersstichtingen, het beheer van andere ruimtes is uitbesteed aan derden (bijvoorbeeld kinderdagverblijven) of ze staan leeg. Door gebrek aan tijd, belangstelling, criminaliteit en onduidelijkheid over de toegestane bestemmingen, mist er afzien zo blijkt uit resultaten van de enquêtes.

De belangrijkste graadmeter in de beoordeling van de "minder gebruikelijke omstandigheden: is de...".28

27 Dijkhuis, J.H. Bijlmermeer van binnen, Centrum voor Architectuuronderzoek (Delft, 1975) pp 6-11
28 Idem, pp 123-150
binnenstraat, ook wel ‘woonstraat’ genoemd. Dijkhuis omschrijft de 3,8 meter brede binnenstraat als relatief smal vormgegeven, zonder gemakkelijke verbinding met de begane grond en “kontaktvijandig”. De binnenstraat is niet openbaar en mist sociale controle. Het niet openbare karakter zorgt voor onduidelijk tussen de scheiding privé-openbaar. De woningen zijn van de binnenstraat af gericht, om zo de scheiding publiek-privé, naar CIAM principes, te vergroten. Wanneer de gezinswoningen gericht zouden zijn op deze binnenstraat, zou het volgens Dijkhuis in ieder geval uitnodigen tot gebruik en zou “automatische zelfcontrole” gestimuleerd worden.

Dijkhuis beschrijft de smal vormgegeven binnenstraat zonder verbinding met de begane grond als contactvijandig.

In een latere publicatie over de collectieve ruimten in de Bijlmermeer analyseert Dijkhuis de fysieke verschijnselen, waarna ze, gesteund met eerdere bevindingen, aanbevelingen doet. Ze beschrijft het verband tussen de identificatie van de bewoners met het functioneren collectieve ruimten. Daarbij

29 Idem, pp 44-45
30 Idem, p 45
31 Dijkhuis, J.H. Collectieve ruimten Bijlmermeer, Beheersgroep Bijlmermeer (Amsterdam, 1975)
is keuzevrijheid de belangrijkste graadmeter. Op basis van gerelateerde deelonderzoeken naar multifunctionaliteit, privé-openbaar, anonimiteit en sociale controle, concludeert ze dat het droevig gesteld is wat keuzevrijheid betreft. Zij stelt na een uitgebreide inventarisatie, dat het functioneren van de collectieve ruimten alleen kan verbeteren door het verbeteren van de randvoorwaarde zoals financiële middelen, advies op gebied van samenlevingsopbouw en voorlichting. Er moet opzoek worden gegaan naar verbeteren van sociaal-ruimtelijke voorwaarden, dit kan in gang worden gezet, juist door commerciële en voorlichting. Er moet op zoek worden gegaan naar verbeteren van de randvoorwaarde zoals, zo besluit Dijkhuis. 

“De Bijlmermeer, om de toekomst van 100.000 Amsterdammers”32 visies uit de verschillende symposium over de toekomst van de Bijlmer, van de bewoners toe te laten, zo besluit Dijkhuis. Met als doel een bijdrage te leveren aan een symposium over de toekomst van de Bijlmer, publiceerde A. Goethals in 1983 onder de titel “De Bijlmermeer, om de toekomst van 100.000 Amsterdammers”32 visies uit de verschillende vakgebieden. W. Berkhout33, bewoner en onderzoeker in stedelijke voorzieningen, koppelde unieke kenmerken aan kansen. Het autovrije maaiveld, de overmaat aan parkeerruimte, de gunstige infrastructuur en de hoeveelheid werklozen zouden volgens hem kans bieden aan de typologische problemen van de Bijlmer, anders dan het subsidiëren van nieuwe stichtingen biedt aan de typologische problemen van de Bijlmer, anders dan het subsidiëren van nieuwe stichtingen en commissies, besluit Goethals haar publicatie met de stelling dat verhalen over opblazen van de Bijlmer destructief zijn en er vooral behoefte is aan positieve beeldvorming.

Wat technologie betreft zit de Bijlmer buitengewoon goed in elkaar.

Frieling stelt in een interview35 in 1997 met Maarten Kloos, dat de Bijlmer wat technologie betreft buitengewoon goed in elkaar zat, zo blijkt inmiddels dat de eerder bekritiseerde parkeerontsluiting voldoen aan de huidige eisen. Le Corbusiers idealen, toegepast in de Bijlmer, zijn naar Frielings mening zeer conservatief en bedoeld voor de Franse middenklasse, niet voor de in de Bijlmermeer gewenste bevolkingsgroep. Samengevat stelt hij dat Le Corbusier technisch zeer geavanceerd, maar maatschappelijk zeer conservatief was. Over de sociaalmaatschappelijke problemen haalde Frieling de politie aan: “...de binnenstraat is geen openbaar gebied, dus daar ga ik niet patrouilleren, dat doet u maar zelf. En het buiten terrein, daar ben ik wel, maar daar zijn de problemen niet, dus daar hoef ik niet te patrouilleren.”36 Frieling, zelf liefhebber van de Bijlmer37, met name van zijn rol in de typologische ontwikkeling in Nederland, was voorzitter van de stuurgroep Bijlmer. Daar voerde hij discussie met Ab Vos en René Grotendorst, beide groot voorstander van afbraak en vervanging door laagbouw. Hoewel Frieling van mening was dat het probleem niet in de flats, maar in de voorzieningen zat, stemde hij, onder druk van de Gemeente Amsterdam, in met de sloop van vier flats. In de gedeelten waar zowel gebouwen als subcentra zijn afgebroken, worden de wegen van halfrugnaar, naar maaiveld hoogte terug gebracht. Dit is opmerkelijk te noemen, daar Frieling eerder stelde dat de halfrugnaagde wegen te laag zijn.

In 1982 is na een serie debatten begonnen met de renovatie van de flats Egeldonk en Gilphoeve. De belangrijkste ingreep met betrekking tot het karakter van de flats is de woningsplitsing38. Hiertoe werden twee nieuwe woningtypen geïntroduceerd, de HAT(Huisvesting Alleenstaanden en Tweepersoonshuishoudens). In 1975 werd onder leiding van toenmalig Staatssecretaris van Volkshuisvesting, Marcel van Dam, als doel gesteld 110.000 HAT huishoudens te creëren. Er kwam een subsidieregeling voor woningbouwverenigingen, wat er voor zorgde dat er in 1985 ongeveer 77.000 zijn gecreëerd. In de HAT woningen was het gebruikelijk een keuken en badkamer te delen. In 1995 is de HAT-regeling stopgezet.

32 Goethals, A. De Bijlmermeer, om de nieuwe toekomst van 100.000 Amsterdammers, Macula(Boskoop, 1983)

33 Idem, pp 51-53

34 Idem, pp 60-64

35 Frieling, D.h. Wij eisen geluk, Publicatiebureau bouwkunde(Delft, 1997)

36 Idem, p 16

37 Idem, 11-13

38 Afdeling RGO/Ruimtelijke Ordening: Renovatie Gilphoeve, de laatste kans voor Gilphoeve, Gemeente Amsterdam, Amsterdam 1983
Bruto huren p/m in guldens, voor en na de renovatie van Gliphoeve. bron: RGO

De toepassing van het HAT concept in de Bijlmermeer is opmerkelijk te noemen, daar de problematiek voortkomt uit het onvermogen tot samenleven. Het disfunctioneren van iedere vorm van collectiviteit zou bij de nieuwe bewonersgroep verder verslechteren. Peter Brinkmann stelt dan ook dat de aanpassingen geen enkel effect dreigen te hebben, omdat het geen enkel effect zullen hebben, omdat het onvermogen tot samenleven. Het is opmerkelijk te noemen, daar de problematiek van veranderd de woninggrootte in 1992 gewaardeerd zijn te vinden bij de arbeidgerelateerde activiteiten met mede bewoners, het onderhoud en het organiseren van gallerijgesprekken, feesten, taalcursussen, het “ken uw buren project” en als uitblinker punt 42: “het gebruik van radio om Ghanzen te bereiken” werden onderzocht.

De bewoners geven in een gelijke enquête, gehouden in 1992 en 1994 rapportcijfers, respectievelijk een 4,6 en een 4,9. Opvallend is, dat de bewoners met een 7,0 in 1994 als 7,2 becijferd. Het contact met mede bewoners, het onderhoud en het gebruik van de gemeenschappelijke ruimte in en om de woningen die doen denken aan de in het originele Algemeen Uitbreidingsplan voorziene type. De eerder beschreven Gliphoeve flat heeft na de renovatie en woningsplitsing nog 20 jaar gefunctioneerd en is in 2006 afgebroken. De geleidelijke afbraak van de flats, heeft een heldere typologische opzet als gevolg. Waar eerst onderdruk van de wederopbouw en de geplande stadssanering een grootschalig experiment is doorgedrukt, wordt nu geleidelijk aan vernieuwd met leefbare typologieën. In 2010 zou volgens de planning ongeveer driekwart van alle flats gesloopt zijn.

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<thead>
<tr>
<th>Woningen</th>
<th>Voor de renovatie splitsing</th>
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<tr>
<td>1-kamer</td>
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Een vakidioot is iemand die zich op een nauw terrein diepgaand heeft gespecialiseerd en vervolgens met dit specialisme problemen tracht op te lossen zonder oog voor aspecten die niet door het specialisme gedekt worden.

F. Grunfeld in Stedenbouw en Volkshuisvesting in een reactie op de Bijlmermeer, 1970
Conclusions typological analysis Bijlmermeer

Due to the ambition to stick to the AUP (General extension plan, Berlage, 1935) in a new urban concept: The lobular city (lobbenstad), a plan without any city functions was created.

Due to the post-war renewal, there was no time to test the typological statements, resulting in the biggest urban experiment in Holland.

The first 15 years, there was no proper connection with the Amsterdam city center: enforcing of the ghetto image.

Due to the CIAM-principles, the phenomenon ‘street’ has to make place for a semi-collective space in the flats: the “droogloop” (litt. Dry-walk, an inner street). At the inner street, collective functions like an evening-shop, a laundry room and an exhibition space are situated.

All the collective functions and houses are orientated away from the hallways, resulting in dark corners, causing criminality and vandalism.

Due to the strict separation between the huge public green areas and the extreme private houses, the anonymous character of the extraordinary flat buildings is enforced.

If you want to solve the typological problems, you should make a new start, instead of renovating smaller parts.

Media has huge influence in the success of an urban plan with the scale of the Bijlmermeer.

Selection of images from the first years.
01: impression public space
02: children playing in huge empty garages
03: anonymous border between public and private
04: impression elevated ‘street’
05: one of the rare collective functions in the inner street
06: collective meeting space situated at the inner street
07: custom connection from the private to the public domain
08: impression green structure, first years.
09: inner street
10: impression collective space
11: elevated street from garage to the flat
What impact can the Olympics have when applied in an urban context?

Convert transition space to place for stay.

Focus on the usage in time when new development of public programme takes place.

Stimulate the mix of unique local functions and generic public masses.
Urban development of centrality

In a high mobility environment

A common phenomenon in contemporary development of centrality is the high mobility condition. Infrastructural knots become urban knots, in which a mobility value becomes a local value. Something designed as mobility value gets an unplanned local value. Looking at the needs of the current structure of centrality in the Bijlmermeer area and two clear references of characteristic forms of centrality, guidelines for Bijlmermeer development can be found.

This phenomenon starts from a monofunctional approach and results in a multifunctional knot. An illustrative example is Schiphol airport. The high mobility serves thousands of people per day. This, combined with places to stay, attracts a huge bandwidth of functions, even shops with only one establishment in Holland. The result is a strong local -maybe even national- color, attracting also people who have no traveling plans.

A high mobility area is not necessarily a foundation for centrality. When looking at a Wallmart supermarket, always connected to main infrastructure, no signs of centrality are visible after shopping hours. After literally getting there needs, people get out and certainly the whole area turns out to be insecure.

Reflecting this theory to the Bijlmermeer area, one can state that the high mobility area is a fact, but since there is no place to stay, real centrality is missing. Terraces, public playground mixed working & housing programme is missing. These type of functions, combined with a broader usage in time can create the affinity the centrality the Bijlmer needs.

The monofunctional approach resulted in a clear system of borders, encapsulating all attempts to creation of centrality. This will become clear when looking at the physical appearance on the following pages.

In the current setting, the Bijlmermeer can be seen as a monofunctional system of borders. Borders manifesting on all scales and structures. Resulting is a public space formed by transition without place to stay. Functions such as restaurants and bars hardly manifest themselves outside, for instance terraces. When conditions for these kind of functions are formed, the anonymous public space can be more attractive and at the end more profitable.

Not all high mobility areas turn in to a centrality. Looking to the Wallmart, the mobility-factor is huge, nevertheless there is no reason to stay longer than needed, since there is lack of interaction with the user.

At night, the Wallmart area dies out and gives place to illegal camping, drugdealers and illegal prostitution.
How can an Olympic stadium be implemented in the urban context of the Bijlmermeer?

**Encapsulated**

Due to the elevated infrastructure and the business- and office programme at the borders, the local centre is encapsulated in the Bijlmermeer structure. Encapsulated in a way that there is hardly a connection with both the infrastructural knot and the residential area.

**Secondary connections**

The local centre is connected with slow traffic infrastructure. Most of these connections penetrate the fast traffic border with a tunnel, therefore the gap between the residential area and the centre is enlarged.
Spatial context and its issues

The result of a mono-functional approach

What was designed as a place for a local form of centrality, turns out to be an anonymous space with lack of character, affinity and social activity. The monofunctionality manifest itself on all scale levels. Starting with the by offices encapsulated public programme, and finally leaving a public domain used as transition space. Even if this public space should work, its entries to the residential areas are hardly sufficient, due to the huge borders.

Business-border

When one wants to enter the local centre a border of business- or office programme needs to be crossed. Relatively huge office blocks face each other aside the highway, turning their backs to the public programme.

So close and yet so far

The closest residential areas are within 100m of the centre, yet there is no coherence between the two. Even the closest connections, at the south-side of the centre face a transition from the residential area to an undefined public space to a cyclist tunnel and finally from an office building the centre can be found.
Both material and immaterial conditions should be formulated.

Conditions for the Bijlmer Olympics plan should regard ambitions of Amsterdam, the IOC and the media.

On the forehand a position towards reordering and renaming place should be taken in account.

Amsterdam needs to invest more than only in the Olympic event.

What influence can an event like the Olympics have on the image of a certain place?
CityEvents

Place selling in a Media Age

In his PhD thesis at the department of Media and Culture at the University of Amsterdam, W. Rennen describes the newly introduced phenomenon of CityEvents (Rennen, 2007). This is a summary of the, for this project, relevant chapters and topics, translated in guidelines for ‘BijlmerOlympics’ and the design of a ‘Livable Stadium’.

According to Rennen, huge events such as the Olympic Games, the World Expo or the Superbowl can be used as a place selling mechanism. In this mechanism, the core dynamic is formed by three actors: the event owner, the host city and the media. Within this main network actors like the audience and the nation state have a secondary function. The secondary actors do not constitute the network core, but are nevertheless important in the production process of the CityEvent.

Phases

Rennen devises the phenomenon CityEvent into four phases, pre-bidding, bidding, organizational and staging and the closure/memorization.

In the pre-bidding phase the three main actors establish a position. In most cases, especially by sport events like the Olympics, the formation of the network is initiated by leading (sports) figures. In former Olympic bids, these figures already had established connections with the IOC before initiating the network.

During the bidding phase a city has to form a position towards a specific event. A generic factor in bidding for a CityEvent, is that the organization of the actual event does not have a standard way of organizing the event. In case of the Olympics, a there is a public list with the required programme, connected with a judgement system, representing the IOC ambitions.

During the organizational phase and the staging of the actual CityEvent, the relationship between the event owner and the host city will be formalized. The event owner will no longer act as an obligatory point of passage but partly delegates its responsibilities for the local implementation of the generic event formula to the host city. An organizing body will be formed, partially initiated by the nation state.

In comparison to the three key actors, the organization committee only aligns itself with the city event temporarily. The network of the tree key actors remains, but with transformation, regarding the positions in society. The traces of the actual event will be obvious at the event location, in most cases the CityEvent has a temporary character and therefore needs a transformation afterwards. Traces in the media like postcards, press articles and film will achieve the commemoration of a CityEvent trough processes of mobilization and circulation.

(Re)imaging the Host City: Reordering and Renaming Place

Rennen's model for city development adopts Latour’s theory, making no strict distinction between human and nonhuman actors, in the CityEvent model. This makes it possible to reconstruct relations between the built environment and the way a city is presented and represented. For example, when looking to the 1936 Berlin Olympics (The Nazi Olympics), there is a strict relation between on the one hand the reconstructing of buildings, street decorations and the way transport systems were organized and on the other hand, the effectiveness of the propaganda imagery.

Rennen also states that a CityEvent like the Olympics often is used to create a momentum in larger processes of reordering and re-imaging the city.

Material versus Immaterial Place Images

According to Rennen’s findings a CityEvent, and its place selling ability, can be defined as successful when the Host City is able to attract media, businesses, capital, tourism and residents. In order to be successful the place selling involves more than devising slogans, logos and promotion: it requires an extensive and strategic (re) ordering an renaming of place. To illustrate this statement, Rennen refers to the 1936 Berlin Olympics. The Nazis created a false imagery with the purpose of a charm offensive. Physical changes in the environment, like the removal of anti-Semitic signs, were done and although it did not last long, the staged image of Berlin was real during the Olympics.

Amsterdam

With the “I AMsterdam” campaign (City of Amsterdam, 2006), Amsterdam has the ambitions to get their positions of top-5 European cities back. According to Rennen, this can be seen as an example of the fact city political and business elite realize that the city has lost its comfortable position in the international urban hierarchy.

Rennen analyses Amsterdam’s position towards organizing CityEvents regarding the 1928 Games and the ACH’87 (Amsterdam European Capital of Culture 1987). In both cases the production budgets were relatively small, showing that both the city and external subsidies, like the state, were not prepared to take huge financial risks. This turned out in quite minimal (re)decoration of prominent city places, advertising and public relations. The cutting in costs resulted in a short term approach towards hosting the CityEvents and the failure to integrate them with larger urban development.
Analysis

'Helft Nederlanders wil ondanks crisis investeren in sport'

Nieuwegein (Arko Sports Media) - Nu de economische crisis hard toestaat, denken publieke instellingen twee keer na voordat ze ergens in investeren. Investeringen die niet direct alle Nederlanders ten goede komen, lijken voor de hand liggende kinderen van de rekening te worden. Je zou denken dat investeringen in sport daaronder op dit moment niet de hoogste prioriteit genieten bij de Nederlandse publieke instellingen. Of is er behalve 'brood' nog ruimte voor 'spelen'? Het journalistieke vakblad Sport & Strategie vroeg TNS Nipo deze kwestie te onderzoeken.

Bijna de helft (49%) van de Nederlanders onderschrijft de stelling dat Nederland ondanks de economische crisis volop moet investeren in het aantrekken van grote sportevenementen en de bouw van nieuwe sportaccommodaties. Een iets kleinere groep (43%) is het daar niet mee eens.

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Uiteraard hangt de mening van Nederlanders samen met de interesse voor sport en de mate van sportbeoefening. Mensen die aangeven zeer geïnteresseerd te zijn in sport onderschrijven in overgrote meerderheid (76%) de stelling, terwijl mensen die helemaal niet geïnteresseerd zijn in sport een stuk minder vaak de stelling onderschrijven (22%). Soortgelijke verschillen zien we als we de mate van sportbeoefening vergelijken. Mensen die vaak een sport beoefenen, zijn het een stuk vaker met de stelling eens (63%) dan mensen die nooit sporten (38%).

Om te controleren of er verschil bestaat in de bereidheid tot investeren in 'het aantrekken van grote sportevenementen' en 'de bouw van nieuwe sportaccommodaties', is een andere (representatieve) groep Nederlanders beide vragen als losstaande stellingen voorgelegd. Het draagvlak voor sportinvesteringen blijkt dan nog iets toe te nemen. Iets meer dan de helft (53%) onderschrijft de stelling dat Nederland ondanks de crisis volop moet investeren in het aantrekken van grote sportevenementen. Een bijna even grote groep (51%) onderschrijft de stelling dat Nederland ondanks de crisis volop moet investeren in de bouw van nieuwe sportaccommodaties.

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What aspects of the political climate should be considered when designing for the (post)Olympics?

Tabel 2: Overgewicht

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Bron: CBS

Even in crisis, the Dutch want to invest in sports www.nocns.nl 27-04-2009

THE INTERNATIONAL OLYMPIC COMMITTEE

The IOC in four dimensions

MAKING THE GAMES COME TRUE
- Organising Committees for the Olympic Games

BRINGING OLYMPIC VALUES TO LIFE
- Olympism in action

SUPPORTING SPORT WORLDWIDE
- Over 90% of revenues are redistributed

LEADING THE OLYMPIC MOVEMENT
- Governance
The Olympics?

*Political climate*

The organizations of the Olympic Games has the image of a money making strategy. In most cases the Olympic investment is a long-term one. Since sport facilities are a proved way of creating affinity with place in Amsterdam and the Dutch government has the ambition to invest in sports, the proper climate for Olympic ideas is set.

**The city of Amsterdam**

Hundred years after the first Dutch Olympics, the city of Amsterdam has the ambition to host the 2028 Olympic event. One century after the first Olympic fire, designed by Jan Wils, it should burn again and put Amsterdam back in the top ten European cities. Compared to Rotterdam, the development of Amsterdam is stagnating. Since the Olympic event is a proved way of binding people with a place and -even more important- the possibilities of the Olympic legacy to bring sports to the inhabitants again, Amsterdam want to do a serious bid. Currently there are plans to add an extra ring to the former Olympic stadium to support a bid for the European Soccer Championships and even the 2018 World Championships. This development can be usefull in creating a solid foundation for an Olympic bid, but even more important, it shows Amsterdams affection with sports.

In a recently development plan of the Bijlmermeer area, two new huge sport facilities are planned in the Bijlmerpark(Projectbureau Vernieuwing Bijlmermeer, 2010). These two facilities should create affinity with the place. Again, this development is both a good condition for a bid and shows the Amsterdam affection with sports.

**The Dutch sports climate**

In a recently published research on investing in public sports accommodations a majority of the questioned Dutch crowd wants to invest in sport, even during the current crisis. There is a national growing interest in sport, in both following and practicing. Even though the Dutch youth has not yet an American image(VROM, 2008), it is getting fatter every year. If this trend continues, obesity and diabetes will be the main causes of death within a short time. The government admit this tread and wants therefore to invest in sports. The Olympic games is seen as one opportunity to make this investment, reaching beyond the investment in only the sports accommodations. For this reason VROM (Ministry of Housing, Spatial Planning and the Environment) together with the NOC*NSF started a traject(NOC*NSF, 2009) in which several Dutch Olympic scenarios are explored with the aim to do a realistic bid in 2021 for the 2028 Summer Olympics.

**The Olympic movement**

In detail the role of the IOC, according to the Olympic Charter(IOC,2010), is:

- To encourage and support the promotion of ethics in sport as well as education of youth through sport and to dedicate its efforts to ensuring that, in sport, the spirit of fair play prevails and violence is banned;
- To encourage and support the organisation, development and coordination of sport and sports competitions;
- To ensure the regular celebration of the Olympic Games;
- To cooperate with the competent public or private organisations and authorities in the endeavour to place sport at the service of humanity and thereby to promote peace;
- To take action in order to strengthen the unity and to protect the independence of the Olympic Movement;
- To act against any form of discrimination affecting the Olympic Movement;
- To encourage and support the promotion of women in sport at all levels and in all structures with a view to implementing the principle of equality of men and women;
- To lead the fight against doping in sport;
- To encourage and support measures protecting the health of athletes;
- To oppose any political or commercial abuse of sport and athletes;
- To encourage and support the efforts of sports organisations and public authorities to provide for the social and professional future of athletes;
- To encourage and support the development of sport for all;
- To encourage and support a responsible concern for environmental issues, to promote sustainable development in sport and to require that the Olympic Games are held accordingly;
- To promote a positive legacy from the Olympic Games to the host cities and host countries;
- To encourage and support initiatives blending sport with culture and education;
- To encourage and support the activities of the International Olympic Academy (IOA) and other institutions which dedicate themselves to Olympic education.
How can an Olympic stadium be implemented in the urban context of the Bijlmermeer?

Hardly impossible to implement in urban setting

Olympic programme too mono-functional

Risk for same (negative) impact as original structure in terms of scale.

600 ha.

Full Olympic programme excl. accommodation 100,000 persons open water sports
Olympic Games: Scale, Impact

In order express the possible post-Olympic impact on a certain scale, the size of the total Olympic programme is projected on the Bijlmermeer-area and the historic city centre of Amsterdam and an impression of the 1972 Munich Olympics is given. The Olympic programme without hotels, water sports facilities covers a total area of 600 ha.

Amsterdam 600 ha. covers:
- the complete city centre
- high density shopping area
- offices
- different moments of city extension
- different housing types, users and usage in time.
- renewal characteristics by AUP and existing city structure: concentric model

In order the express the possible impact of developing the complete Olympic plan at one location, the surface is projected on both the Bijlmermeer-area (left page) and the historic city centre of Amsterdam. The projected area of 600ha. consists the full programme, except the water sports and accommodations for 100,000 persons. Subjected to the Bijlmer, the area covers almost half of the 1953 restructuring plans, containing residential, public and recreation areas with approximately 35,000 inhabitants. The 600ha. Amsterdam city centre respectively covers the complete city till the 18th century, the central infrastructure (touristic mainport) and approximately 80,000 inhabitants.

In conclusion is it hardly unlikely to construct the complete Olympic programme in the Bijlmermeer area on behalf of scale and users. When looking the to meaning of scale and its impact, the conditions for a second failure, like the original Bijlmermeer, are created. Regarding to possible legacy of a full Olympic venue, in terms of usage, the Munich main venue is studied. The following pages will complete the statement of avoiding the construction of the Olympic venue as a whole.
How can an Olympic stadium be implemented in the urban context of the Bijlmermeer?

No clear Munich user defined

Oversize public space

Tourist attraction

Foundation for high impact tourist programme
When looking at the Munich 1972 Olympic legacy, the impact of the 740 ha site is huge to its context. All current functions have a programme defined by Munich users. The area mostly serves tourists and recreation purposes for the Munich inhabitants. Even when all public functions are intensively used, the density is very low, especially when the area dies out at night. Some of the former Olympic functions, like the former tennis park, are recently demolished after years of unprofitable use. Since the Frei Otto structures are monuments, it is very difficult to find fitting functions who can manifest themselves in these huge spaces.

An interesting situation, is the one shown on the left page, where Cirque du Soleil is "using" the former main stadium. Interesting, because it hits the essence of the problem: even a huge public event like this, -almost- designed for a stadium setting, builds up an own tent and tribune inside a stadium. It shows the complexity of scale when looking to the legacy programme of a stadium.

The characteristics of the partially dug in stadium, allows the building to have a strong connection to the public domain. This makes it even more sad that there is no clear user defined and therefore the stadium is fenced off, in order to make money to maintain this monument.

An interesting phenomenon to this -due to the Olympic usage- high mobility area, is the upcoming huge public functions around the borders of the former Olympic venue. A good example is the BMW-Welt, a two hundred million visitor attraction, giving a new impulse to the site. Still the Olympic venue has a secondary role in the tourist industry.

Reflecting this on the Bijlmermeer-area, where the user has a central role, it is hardly unlikable to facilitate the total Olympic programme.
Analysis

Space in optimal mobility area's

transformation area's

problem area's

existing sports locations

Adopt Randstad Olympic scenario-approach.

Use Huijsmans programmatic scenario and exaggerate the position of the Bijlmermeer area.

Adopt programmatic integration options thus a more efficient scenario.
Randstad Games scenario

Olympic games in the ‘Deltametropool’
Graduation project by Marloes Huijsmans, Delft 2005

In her graduation project, Huijsmans researches the implementation of the Olympic Games in order to gather a strong image of both Holland en the Deltametropool. The plan focuses on a scenario in which the Olympic programme is situated in the city’s of Amsterdam, Utrecht, Rotterdam and The Hague.
This is a summary of the, for this project, relevant chapters, topics and conclusions.

Huijsmans research starts with a reflection of the Deltametropool on the Olympic plans of Barcelona, Athens and Atlanta. Although the built area and the infrastructure in the three reference cities has a higher density, is the population in the Deltametropool 1,5-2 times bigger. Focussing on the Olympic programme characteristics, Huijsmans again reflects to earlier editions of the Games.

Accommodations
During the Olympics, 16.000 athletes and companions stay in the Olympic village of approximately 1 km². In Athens this village existed of 2.292 houses for 17.600 athletes, which were transformed to housing for 10.000 inhabitants.
The total area contains three zones: ‘The Residential zone’, the ‘International zone’ and the ‘Public zone’. The residential zone is highly secured, non-public area with common amenities like shops, restaurants and clinics.
The International zone is accessible for press and family of the athletes and contains a shopping mall, restaurants, administration centre and a car rental.

Media centre
The media village needs to have a good connections with the sports locations, the Main press centre and the International broadcast centre.

Sports programme
Huijsmans divides the sports programme into four categories: Specific stadiums, Complexes, Indoor halls and Landscapes&trajects.
By analysis of the sports programme, Huijsmans describes the possible combinations of activities thus the possibility to make the building masses more efficient by integration of programme. After the definition of the transport model, just before- and during the Olympics, the implementation in the Deltametropool is described.
Huijsmans plan focuses on existing key projects for the Deltametropools development, main ports, infrastructure, landscape, problem area’s and existing facilities (see next page).
After introducing three scenarios, Huijsmans connects the Olympic programme to four main locations: Amsterdam, Rotterdam, Utrecht, The Hague and Zoetermeer.
Even though Huijsmans design scenario is not literally implemented in the Bijlmer Olympic venue-scenario (due to the relatively small mass in the Amsterdam area when focussing on restructuring the Bijlmer) is the design approach and the implementation strategy adopted.
The dots represent the scale of intervention or ambition at a certain topic. The main focus of this project is in the spatial development, driven by social- and economical development.
Development of physical context

position toward Bijlmermeer planning

In order to make the Bijlmermeer area a healthy living environment, the current borders between the different urban structures should be either dissolved or activated. This should be main priority in order to transform the monofunctional (public) clusters form a transition space into an active public space: being a foundation for affinity. The plan (Project Bureau Vernieuwing Bijlmermeer, 2010) of the municipality of Amsterdam is taken in account in the 2012 focus. Within the planned restructuring plans there still is no clear connection between the residential areas and the centre. The planned lowering of the infrastructure will dissolve some of the existing borders. In order to create coherence between the centre and the surrounding housing areas, some connections need to be enforced and some spatial problems need to be solved.

The programme of the venue brief is formed by inventory of the existing facilities when organizing the ‘Randstad Olympics’. The programme is formed regarding the ‘left over facilities’, these should be able to be easily applied in other regions of the Randstad. This venue should be the main venue, and therefore contain the main Olympic programme. Apart from the tennis area, all Bijlmermeer functions should be (partially) transformable after the Olympics, answering the Bijlmer’s needs.

Mono functionality

Mono functionality is not necessarily a bad thing for the Bijlmermeer area. There should be no illusion that a huge multifunctional- or hybrid knot can activate or stimulate the site. Although on certain aspects, the known problems can be solved by activating or dissolving the CIAM-based (non-)physical borders.

The mono functionality manifests on all scales of the built Bijlmermeer area. Resulting in a non-livable environment, criminality, an undefined public space and finally lack of affinity.

The problematic result of the monofunctional approach towards both the planning and the design can be subdivided into three (pragmatic) themes:
- Spatial mono-functionality
- Social mono-functionality
- Economic mono-functionality

The development of these themes in relation with the Bijlmermeer area can be subdivided into three sub-themes: the scale of intervention, the usage in time and image or character.

Design strategy

The development strategy is subdivided into the three main themes regarding the Bijlmermeer monofunctional problems: Spatial-, Social- and Economic conditions.

Since the (re)development of each theme should inter react, they are divided on their common subthemes: Image/character; usage in time; and their scale or function.

The strategy starts with a reflection on the current 1992-2010 restructuring plans, visible in the 2012 strategy. When the Olympics will be organized within the given structure, this development will start after the final bids in 2021. Between 2021 and 2028 a huge (temporary) restructuring will take place, regarding the current and future use.

Finally in 2030 the re-transformation of the Olympic venue should have taken place.
Designing a livable stadium in an urban context requires a clear definition of user, function, scale and space.
Assumptions, such as Amsterdams ambition to organize the 2028 summer Olympics and the adaptation of the Randstad games scenario, form the “top down” context. The ‘bottom up context”, focussing on Bijlmermeer specific aspects, will be described on the following pages. After a description of essential implementation rules -as an answer to the monofunctional context- the general design theme of ‘Design the overlap’ will be explained. The theme is explored using extreme models, focussing on underlaying themes, based on the research topics.
Reconsider

The earlier mentioned three steps of transitions between the residential area and the centre, respectively; the undefined public space, a tunnel and the office buildings, create a huge border.

Two types of desired connections are formulated regarding the ability to redevelop the current situation, formed by infrastructure, space and programme.

The first type is based on uniformity in public character so the tunnel is the only transition space between a uniform system. Examples of implementation are densifying the station plaza, function change in the borders at the north-side and adding a central plaza.

The second type focuses on the reconsideration of the infrastructural border. By bringing the fast- and slow traffic together, both physical and typological, the uniformity will give space to different programme along the borders. This system can be implemented at the south-side of the centre, whereas the current fast lane is oversized to its contemporary use.
Spatial approach

An essential step in making the Bijlmermeer area a livable space, is enhancing the attractiveness of the local scale centre. The regional scale centre has the capacity to answer the needs of ten thousands of people. Public space is a transition space between the different events. This character of transition space continues in the local scale centre. The result is an anonymous space with lack of affinity. There are hardly no terraces or similar functions influencing the public realm. Mirroring the regional scale centre, where the Amsterdam ArenA ends a series of public event, should result in a clarified definition of the public realm.

Knots

When looking on the macro scale of the public space and programme, one can see a clear pattern of knots defining a public routing. The Amsterdam ArenA side of the routing is clearly defined by the stadium and the railway station as main knots. In the current situation, the local part of the route, at the east-side of the railway station, there is no end knot, so the public route dissolves in small programme and volumes. To make a clear definition of the renewed Bijlmermeer centre, an ending knot needs to be added. A knot with an influence comparable with the Amsterdam ArenA, regarding the character of the local side of the centre. The Olympic main stadium can have the desired influence, when carefully redeveloped after the Olympics, focussing on the conversation between the local- and the global/ Olympic character and meaning.
Implementation

From the local point of view of defining the end of the centre, the stadium needs to have a suitable mass. Even though the mass needs to have a certain bigness, it needs to be a logic step from the local public programme. From the connecting point of view, the distance between the current public area and the facade should follow the existing dimensions.

Focussing on the IOC's agenda, the stadium should be part of the main venue of multiple facilities. The facilities are in a secured open space of parks and semi public programme. The infrastructural connections should be able to facilitate a peak of 100,000 people in one hour. Both an open space at the west- and the east-side are needed to fit the public peaks.

The positioning of a mass with this size in crucial for the physical context. Derived from the different (literal) points of view and entries, the stadium should be on a sight location, facing the main public entries and in the mean while facilitate a connections between the public centre and the park in the post-Olympic function.
Stadium location

Since the main focus of this proposal is on the architectural aspects of the BijlmerOlympics, an assumption on the implementation of the Olympic main venue is made. The shown functions correspond with realistic scales, needs and spatial implementation.

A possible scenario of a main venue in the Bijlmermeer-park
Partially based on existing plans of Plan Bureau Bijlmermeer, and answering the needs in Olympics programme, formulated by NOC*NSF(VROM,2009).
Unforeseen combinations can result in typical qualities. Former railroad bridge Manchester: nature took over.

Create conditions for spontaneous qualities

Make public space claimable

BijlmerOlympics: the design should be characterized by the overlap
Designing the overlap

The unforeseen qualities of the former railroad bridge explains the aim of the architectural design. An abandoned bridge, transformed from a formal national connection to an informal local connection. The former Bijlmermeer structure proves that not everything is designable. Human reactions and the way affinity will be formed is not always predictable, although conditions for a desired living climate can be designed and enforce the creation of affinity.

The livable stadium should be a foundation in which inhabitants of the Bijlmermeer can claim “their part” of the “new Bijlmer”. In which, “their part” should be a clearly defined (public) space with a strong relation to its users where the “new Bijlmer” should be characterized by the Olympic influence to the Bijlmermeer area- and its initiated restructuring.

In order to make the design a typical result of these themes, the general theme only involves the overlap of both. The diagram of the bottom of this page shows the different design aspects, and their complexity, which should be combined in the architectural design.
Definition of context

Kindersurprise
Clear definition of 'best of both'
The translation from the formed vision towards designing for the Bijlmer Olympics makes his entry in the architectural design by defining the approach. Starting from the chocolate surprise egg, regarding the strength of both the inner essence and the chocolate an analogy with the Jan Wils (Bergeijk, 2007) 1928 Olympic stadium and the contemporary prestige architecture can be found. Referring to the design theme (see previous pages) of this proposal, these two should form the design. A design explaining the need of both the human, the ‘Dutch’, the known, the long term: the rule, and on the other side the global, the prestige short term leaving an exceptional (historical) footprint.

In order to facilitate these, on first side contradictory aspects, a smart way of designing should be taken into account. Smart in a way that both the “chocolate” and the essence are considered to be adapted in one design, regarding especially the (con)temporary character. In this proposal this could be illustrated as the meeting of the 1928 Jan Wils Olympic stadium and the Bayern Arena of Herzog&De Meuron.

Of course the aimed acceptance and affinity can not be taken for granted, even though, a good applied reference can be a first step in the success of a building. Referring to the previous pages, the chosen references should regard the aimed overlap. The overlap, based on the diagram of the previous pages, can be summarized as an ‘image’ part and a more pragmatic part, based on the local needs of the Bijlmer.

Looking at a popular candy- the Kinder Surprise- where a small toy is packed in a chocolate egg, an interesting reference can be found. The egg enriches the toy, while the surprise of the hidden toy gives a value to the chocolate. The livable stadium should have this same quality. Since a stadium is in principal an introvert function, communicating a certain statement to its surroundings, the skin of this mass can be seen as the ‘chocolate’, giving a possible clue on the inner essence.

The 1928 Olympic stadium, designed by Jan Wils, hits the essence in terms of building a typical Dutch, functional stadium. The concrete and brickwork structure communicates the human scale in the project. This stadium was the first Olympic stadium where the Olympic flame burned.

Compared to the Jan Wils stadium, the Bayern Arena has a global, less contextual architecture. The almost scale-less skin is a statement in its context. In the 1928 stadium, the combination of visitor and building ‘makes’ the stadium, while in this example, the visitor is only “a guest” in the mega structure. When designing for the Bijlmer Olympics, the stadium should communicate in a global way, using a language of the local identity: best of both.
Design as answer to the question: “What is a Livable stadium?”

Find the essence of the overlap

ew but known
Looking to the recent development of the BMW skin concept car an interesting approach towards a(n existing) concept can be found. Starting from a simple question “What is a ...” new approaches in design strategy can be found. In order to answer this question for a Livable Stadium, both the essences of the stadium and the healthy living environment should be isolated and combined. The combination should be more than the separate parts. And, in order to give a clear reflection, in this research form the essence of the design, functioning as a stand-alone aspect.

The actual design will be based on the moment in which the former Olympic stadium is partially transformed to a livable stadium. The livable stadium should overrule the ‘standard' stadium, similar to the BMW concept car. It is new, but started from the original concept of a car, so everyone understands the new essence of the design.

Referring to previous pages, an answer to the question of -what- the essence or the chocolate is can be answered when looking at ‘Gina’, the BMW skin concept car.

Starting from the question -What is a car?- the designers at BMW stated that a car consist of a structural/safety part, containing the part which make the car ‘move’ and on the other hand its contemporary, fashion feeded looks.

Since all the safety aspect of the care are underneath its skin, the skin can be made of a fragile, replaceable material. In the Gina prototype, the literal flexibility is shown by the shape changing possibilities of the car. Even the rear lights are invisible when turned off.

Reflecting this principle to architecture, possibilities of complex shapes in temporary structure become realistic, especially when looking at the current development in the (architectural) textiles, with their phase changing- , thermal regulation- and physical interchangeability.

Again the ‘chocolate’ meets in ‘inner essence’.
Conclusions on:

location specific & generic reflection related to theory, models and typology

recommendations: generic & specific
Design reflection

ways of reflection

Since the design is a local implementation of generic data, there needs to be a clear definition of the way of reflecting both. The actual design is reflected in relation to the found theory, the models and the relevance to the Bijlmermeer problems. The Livable stadium-typology is reflected (chapter 4) on its ‘designability’, defined in the contextual implementation, the way livability is applied, the ‘best of both’-theme and the technical designability.

After the reflection of the plan and the typological aspects, recommendations are given (chapter 5). These are distinct in location specific recommendations and general suggestions in the design of a livable stadium and a vision on the current phenomenon of the post-stadium question.

4.0 EVALUATION

4.1 - Design in relation to theory
4.2 - Design in relation to models
4.3 - Relevance to Bijlmermeer problems
4.4 - Designability ‘livable stadium’-typology
  4.4.1 - contextual positions
  4.4.2 - livability?
  4.4.3 - characteristics: best of both?
  4.4.4 - technical designability
4.5 - feasibility

5.0 RECOMMENDATIONS

5.1 - Designing for the BijlmerOlympics
5.2 - Designing a Livable Stadium
5.3 - Transformation of existing stadiums
In order to explore the design strategies and concepts regarding the diversified themes in designing a livable stadium in the Bijlmermeer area, different models are developed. These models show extreme solutions to the found problems of the Bijlmermeer. The models have scale nor context and have no illusion to be realized, the only thing they have in common is their origin: Designing the overlap (see paragraph 2.2).
When designing a stadium, one should regard the experience of scale. A common phenomenon in stadium experience, is the difference between the inside and the outside. This is not necessarily a bad thing, actually it is one of the qualities of a stadium. In the meanwhile, this is hard to match with the stadium as a living space. To communicate the outer and the inner, a characteristic shape is applied. This shape allows the tribune to function as a tribune, but allows the users to personalize the living space.

themes:
livable environment, icon, lack of coherence, personalizing
Accentuate borders

In the current situation, the Bijlmermeer is a monofunctional collage within the infrastructural borders. A huge function such as an Olympic stadium has the grain size to give a realistic answer to this problem. The high mobility character of this border can be a foundation for an optimal reachable stadium, defining both the border and the in-between space.

themes:
(defining) borders, infrastructure, in-between space, livable environment
Bridge

A bridge, formed by elevated VINEX-structures, facilitates as a podium for the stadium. The structure gives shelter to whatever happens underneath. Whiting the enormous structure, a clear defined surface for personalized space is facilitated.
Bucky 2.0: capture complexity

In a high density, complex urban situation with lack of coherence, a capturing structure can be applied. Instead of adding a huge mass like a stadium to the already complex urban context, the stadium can be part of the capturing structure.

themes:
complex urban structure, icon, defining place, lack of coherence
Disregard

In a context with lack of coherence a new ‘rule’ can be applied. The ‘rule’ can be structured as a disregarding park structure, facilitating park related functions, such as sports. The structure ignores the incoherent existing structure and answers with new connections, sharing the uniform quality of the elevated park.

themes:
lack of coherence, public structure, new rule, uniformity in quality
Public ‘gardens’

In order to avoid a non-livable situation like the current situation in the Bijlmermeer, one should be careful with applying new functions. The definition of functions and borders should be one of the focus points.

A proved working system in the Bijlmermeer-area is the public garden structure. Within this structure borders are formed by hedges, boardings, greenhouses or even something simple as a stroke of tiles. These borders have in common that they fit the scale of the given context.

Reflecting this principle to the appliance of a stadium, one should regard the impact of both the ‘border’ and the aimed space.

This model shows an example of a Victory Boogie Woogie-like structure reacting on the different scales of borders and their functions resulting in a coherent composition.
Personalized tribune

A reinterpretation of the currently loved ‘ground based living’ and the need to high density solution for the living environment, a new structure can be formed. A structure regarding the qualities of personalizing a stadium atmosphere. Literally the houses form a unity due to reinterpretation of the phenomenon ‘roof’. The collective of personalized space has a scale which can answer the impact of the sports function.

themes:
personalizing space, new rule, lack of coherence, livable environment
Wrapped VINEX

The standard living programme hardly got any connections with the stadium function. When the living programme is exploded and new clusters are formed, they can compete with the scale of the stadium.
The Wall

The current borders in the Bijlmermeer are undefined and of a similar scale. The model reacts on the possibility to overexaggerate a border by literally creating a wall. The wall teases the crowd to explore the other side and therefore enforces the impact of its protecting function.

themes:
- borders
- lack of coherence
- icon
- defining space
‘Livable stadium’-typology

Embedment

Qualities

A series of personal collages and designs is made in order to explore the living qualities of the designed Livable Stadium for the Bijlmermeer.
Design

an implementation of found data

Starting from the research of the possible effect of the Olympic games in the Bijlmer, a local interpretation of the Olympic programme and the Bijlmermeer characteristics and the architectonic translation, a design for a Livable stadium is made. In order to give a clear reflection afterwards, first the typological characteristics will be described in a generic way. The specific implementation in the Bijlmermeer area is a possible translation of the Livable Stadium typology. Since every context has its own characteristics a design should react on, a clear distinction between the location specific- and the generic livable stadium conclusions is made afterwards.

The typical qualities and their possible influence on the Bijlmermeer explain the architectural implementation of the found data. The aim is the overlap of an iconic value of an identity changing phenomenon, based on local characteristics.
A stadium initiates centrality while a housing block is a result of centrality.

Facade communication depends on scale and context.

The high floor heights compromise the high depth of the apartments.

A stadium is a reversed speaker.

Compared to a central square, where all kinds of public events take place, a livable stadium might not be that weird after all. Fare at central square, Haarlem.
‘livable stadium’- typology

In general there are two types of reactions to the livable stadium-typology: the “human” reaction which can be summarized as “...Highly undesirability a small question mark at the end) and that of an architect: “Interesting...” (with an eager wrinkle).

When looking at the possible meaning of a livable stadium, an analogy can be found with the central square of any medieval city. In this huge open space -the sports field-, surrounded by shops with housing on top -the public tribune-, all kind of public events take place, such as markets, faires and concerts. In case of the city square, the only threats to the high quality living environment seem to be possible noise pollution and the way housing is connected to the public realm. This description of the livable stadium typology zooms in from the urban implementation to materialization principles.

In this description the ‘livable stadium’-typology is compared to both a 200 household housing block and an Olympic main stadium, since the possible combination of both has a similar building mass.

Urban embedment
In character and contextual meaning, there is a huge difference between that of the huge housing block and an Olympic stadium. Where a housing block is a result of city development, initiated by a certain centrality, the stadium initiates. Reflecting to the development of the livable stadium in time, the impact of the stadium can be seen as a foundation for residential development.

Most (Olympic) stadiums are situated in an independent periphery-like context, while housing blocks are dependant on an urban context. The implementation of a stadium within an existing urban context is difficult in terms of scale and mass. When looking to a ‘rule of thumb’ in mass studies, the complexity becomes clear. The ‘45 degree-rule’ describes the relation of building height and distance to surrounding buildings, this should be the same. Even though the urban structures of city centres have a higher density than a 1:1 ratio, it is hardly impossible to fit a 45 meter high building in terms of mass, logistics and security. For the embedment of a livable stadium these aspects are crucial, so either the typology is applied in an open context, or design solutions should be found in the connection with the public domain.

Since both the housing block and the stadium have an introvert character, communicating the essence to the outside, the livable stadium should have a ‘facade communication’ depends on scale and context introvert character as well. In terms of communication the inner essence to the outside there is a decisive moment of the architect. The way the human scale is communicated in the facade depends on the context and scale of the actual building. For example, a huge scale stadium in a huge open space shall be more introvert than a smaller scale stadium in an high density urban structure. The result will respectively be a more anonymous(stadium)- and a more human(housing block) facade.

Building typology
Most aspects of the building typology are rooted in by usage, building code and technical aspects.

The main compositional structure of the livable stadium is formed by the distributional demands and the material characteristics. For a 100.000 visitor stadium, 20 entry points are needed(Neufert, 2000), resulting in a grid with a core-to-core span of +/- 35 metres (maximum concrete span without dilatations.) In the stadium function, there is need of bigger open spaces, resulting in huge spans and construction heights.

In terms of traditional housing typologies the height( more than 4 metres) is hardly undesirable. In case of the livable stadium typology, this heights are a possibility to adapt split-level houses. In the lower floors (with a bigger building depth, e.g. 15m) the huge floor heights(>4m) supply enough daylight for the relatively deep apartments.

The huge floor heights supply enough daylight to design a healthy living environment.

Within the 30 or 35m structure, a housing grid can be adapted. When designing a livable stadium on the forehand (so no transformation of an existing stadium) the housing grid can be taken into account, e.g. a 6m column grid, which can easily be filled in...
in the post-stadium usage. Since the a huge mass like a livable stadium with 200 households there needs to be sufficient parking space. When this takes place within the building, this should be considered in the grid size. A regular parking place should have a width of 2,5-3,0m. This can either be matched with the housing grid, or an intermediate construction should be designed. In terms of building costs and construction size, the matching grid is desirable. In the design of functions underneath tribunes, this can result in a 7,5m grid with a core to core span of 30m. In a (former) skybox area this can result in respectively a 5,4m grid and a 34m core to core distance.

The tribune is the most characteristic aspect of the stadium and unique compared to a housing block. Structurally speaking, similarities can be found in terrace housing. Both the tribune and the terrace houses are structured by orientation, respectively on the stadium activity and the sun or sight. Even though there is an overlap in quality, the terrace housing concept is not fully adaptable in a tribune structure, since the optimal sun orientation only suits half the tribune.

Even though similarities can be found between a stadium and terrace housing, the type is not fully adaptable

Within the design of the physical appearance of the tribune based on sight and experience, there are certain tolerances, dependant on the size of the stadium. For the design of a livable stadium, with an optimal sight, the use of rings is unavoidable. Aside the main tribune (max 48 seats in section) one or two rings should be added. One ring will result in a lower, but relatively deep building(40m at the bottom) while a two ring building will be higher but slimmer(25-30m).

In terms of materialisation, one of the determinant factors is the acoustic performance. Stadiums and theatres are designed in a way that the visitor becomes part of the activity on stage. The ancient Greek amphitheatre is the reference for today audio speakers. When designing a livable stadium, one should consider the clear distinction between stadium- and living environment , if both are in use at the same moment. Where the living environment requires soft or porous materials in order to absorb sound, needs de stadium harder materials in order to

A stadium is a reversed speaker. Materialisation should regard the acoustic behavior of both the stadium and the housing function.
transfer the field sound to all the visitors. Besides the materialisation of the building, vegetation can also be applied to diffuse and absorb the field sounds. The appliance of green should regard its winter condition. In general, all acoustic solutions are more effective, when situated lower in the stadium structure. This can be compared with imperfections in an audio speaker, which are more influential in the speaker’s core. Again, the implementation depends on the usage of the livable stadium.

Most of these general aspects in designing a livable stadium are highly context dependent. Physical context has a huge impact on the appearance an image of the building and its meaning to the location. While the local housing types and traditions have their effect on the internal structure and image. After this, more general aspects of a livable stadium, the theory will be applied in the specific case of the Bijlmermeer.
Stadium mass adapts to urban context.

Orientation for sports reasons used as quality for embedment.

In the post-Olympic situation, the stadium literally opens up.

Comparing the Livable Stadium and the Amsterdam ArenA (upper right), a clear distinction is visible in scale and urban embedment: representing the local and the regional scale.
Urban embedment

A series of diagrams explains the key decisions in the design of the 'Livable Stadium' for the Bijlmermeer. Even though the diagrams seem to be a series of following steps, they influence each other both backward and forward in the design process. Just in order to isolate key moments in the design, they are presented in a sequence.

During the Olympic phase of the Livable Stadium both sporter and supporter experience defines clear aspects of the building. The field size (FIFA, 2007), the athletic track and their orientation (Neufert, 2000) combined with the IOC ambition of a 100.000 visior stadium (IOC, 2009) determine the mass of the building.

Both the visitor and the post-Olympic inhabitant experience and the urban situation, require to make a clear main side of the building. At this side-the end of the public domain of the Bijlmermeer center- the stadium is 35 metres deep, at the east side 25 metres.

For aesthetic reasons (generating a strong image) and the post Olympic function, an entrance (on the urban scale) is added. After the Olympics, the stadium literally opens up at this side, connecting the housing areas to the public domain.

In order to give a realistic dimension to the public square at the front of the building and a realistic proportion of the stadium in relation to the built environment, the stadium is lowered. Since the stadium connects the centre side and a small scale residential area, the partially underground buildings lowers in scale, moving from the west to the east side.
Design

Qualities

Transformable without loss of image
Flexible due to the separate construction
Backwards transformable

Impression: connection Livable Stadium and local centre side.
Building structure
The separation of technical-, programmatic and image determining structure preserves the image of the building in the different stages.

The structural concept (2024) is based on the roof structure, the exterior distribution, the installations and the structural floors which are needed in all stages. The ‘fill in’ is explained by three examples: the 2028 Olympic scenario, the 2029 post-Olympics situation and an extreme housing situation. The structural concept is detailed in a way that all other scenario’s are backwards transformable.

The 2028 Olympics scenario gives place for 100000 visitors. The majority of the first ring will be removed in the post-Olympics scenario. The Bijlmermeer grade orientated levels become residential and the below grade levels maintain stadium, with public facilities underneath the main tribune. Each household has a personalized tribune, connected to collective green facilities for acoustic purposes. This stage consists a functional 27000 seat stadium, 270 households and 35000 sqm. of public facilities. A public route is added in the roof structure, connection all collective areas to the cores. This 2028 phase is worked out in the following pages.

In the most extreme density housing scenario a total of 900 households can be implemented in the given structure. The public ring is extended and now residential area. The lower tribune made place for 550 extra households, resulting in a total of 900 households.

Even though the exterior appearance (image) hardly changes, this scenario is unlikely due to the below grade residential area and the meaning of the stadium as a stadium.
Stadium opens up to public

Olympic image becomes ‘claimable’ to inhabitants

An answer to the regional knot: the Amsterdam ArenA
3.2 - Implementation
Stage of athletes becomes stage for public activity

Living qualities based on Olympic legacy

roof as capturing element
The former stage of the world’s best athletes becomes a stage for public activity. Private-, collective- and professional gardens are surrounded by parks, meeting places and Olympic legacies. The gravel of the athletics track is replaced by grass with chalk lines. The former press- and warming up areas in the perimeter of the field are now a shallow water basins for water management and ice skating in the winter. The field is surrounded by the remains of the former tribune in which connections are situated to the exterior public domain. The tribune is connected to office spaces, which guaranty activity during day time. The residential spaces are mostly situated above the Bijlmermeer grade level with exception of the ‘public gutter’ facing apartments for daylight requirements.

The building cores divide the building in a ‘known’ scale of building blocks, accentuating the public dynamics of logistics. The roof structure is part of the post-Olympic plan. After removing the glare- and rain protecting foil, the steel geometry optically unifies the residential areas and maintains the image of the building in a raw way.

The athletics track is one of the determinant elements in the stadium. This ‘stage’ of the world’s best athletes will be transformed to a stage for public activity. The track will be part of the grass structure, defined by chalk lines. It defines and connects the inner world of different types of gardens and facilities.
In order to prove the flexibility of the apartments floor plan a group of designers, amateur and professional, sketched their visions on living in this Livable Stadium. De designers had a carte blanche with exception of the wall and facade dimensions.
In order to distinguish the research conclusions on the generic topics and the Bijlmermeer specific topics, multiple points of reflection are formulated. Where reflection on theory and the relevance to the known Bijlmermeer problems is tangible, is the relation to formulated design models and the design-ability less objective. The combination of these four reflection points and methods gives a clear foundation for following recommendation when designing for the Olympics in an urban context.
Public, private and all in between clear defined

Facilitating spaces instead of over defined functions.

Regard local character, even in a global scale building

Impression - winter situation.
As an answer to the current undefined public space, ending at the front door of an apartment, the Livable stadium clearly defines public, private and everything in between.
Reflection on theory.

The design reflection on the found theory has both a pragmatic and a predictive side. The pragmatic side is a clear translation of found data into an architectural design. The implementation of found architectural aspects is thus the pragmatic of this part of the reflection. On the other hand, the real quality of this design can probably only be measured, in the way a balance in created between the different aspects: the subjective part of this reflection.

The ‘hard’ ingredients of the design are described by the way they come forward in the design. Since the design is flexible, the balance between them can change in time, something the former Bijlmer building typologies were not able to.

This design is proposed as an answer to all the interventions of the last 50 years. Most of the former interventions were on the building scale, while the origin of all problems is on the regional scale.

The Bijlmermeer supposed to have a strong relation with the city centre of Amsterdam. Therefore no typical centre functions were adapted in the design. (Bolte, 1981) Exaggerated by the monofunctional approach (Meyer, 1981) a monofunctional functional system of borders is the result (Goethals, 1983). Borders of infrastructure, functions, user groups and usage in time, form the context for the an anonymous architecture in an undefined public space.

This approach continues till the front door of the apartments. An inner street was the ‘new’ version of the known street typology (Dijkhuis, 1975).

The BijlmerOlympics is supposed as a final attempt to solve the biggest problem of the Bijlmer: the negative image. Currently there are several examples of good functioning residential areas without a proper connection to the public domain. The public domain has no proper ending, as the regional side of the centre has with the Amsterdam ArenA. In order to endure a transformation of the public space characterized by transition, into a healthy space with room for affinity, an image change is needed. The CityEvent (Rennen, 2007) phenomenon cover both the image- and place changing needs. The Amsterdam ambition of hosting the 2028 Olympic summer games and the Dutch sports climate form a realistic climate for the BijlmerOlympics.

Highly based on existing development plans of the Bijlmermeerpark (Projectbureau Vernieuwing Bijlmermeer, 2010) a possible implementation of the BijlmerOlympics is made. The architectural exercise of designing a Livable Stadium is an attempt to prove this implementation.

The stadium is located at the end of the public route, at the Bijlmermeerpark. This local answer to the regional scale knot (the Amsterdam ArenA) stimulates development of the public space in to a space to stay, where is currently is characterized by transition.

The public west side of the stadium mixes public functions with a residential area. Due to the lowered stadium, the residential area is visible from the surrounding ground levels, while actually situated on top of public programme.

The architectonic implementation of housing types, results in a strong connection to the public domain. Without losing essential privacy, the apartment seem to be an open fill of the stadium mass, ‘giving’ the stadium to the public.

Instead of making isolated areas for sports and public activity, these types of programme are now situated within the public domain and the building. Due to the separation of construction and function, a variety of public programme can be situated in the Livable Stadium Typology.

The describes architectonic answers to the mentioned Bijlmermeer problems can be clearly pointed out in the design. Since the real prove of these aspects is more subjective and has to be defined by the actual usage in time, the building typology can only facilitate.

Apart from flexibility when transforming from a stadium to a residential building, the flexibility on the urban scale is far more important.

The building is designed in a way that the cores (structural and facilitating) and roof are independent of the actual programme inside. The user distribution has an important function in the image of the design. Where other stadiums are introvert masses, the Livable Stadium conveys its user by the outside distribution. In this way, the programme is also independent from the building character.

The scale of the Livable Stadium can be compared with the former hexagon structures. In contrast with the failed overdefined hexagon masses, this huge statement can grow with its users. Programme, user, usage in time and even the character can change in time due to the way it is designed on the forehand.
Evaluation

Conclusions

Models used for literal, conceptual and metaphorical implementation

Working model-impression, May 2010
Small aspects of the models are used in a literal way, like the personalized tribune. Other models form the basis for the meaning of the stadium in its context and the physical appearance.
Reflection on models.

In order to explore the possibilities of the different analyzed themes when designing a Livable Stadium, nine different models were made. Twenty different themes (see paragraph 2.4) are related to the common theme of Design the overlap. Most of the nine models are used in the actual design of the Livable Stadium. In general there are three different ways of implementation: the literal implementation, the conceptual implementation and the metaphorical implementation. Three examples are shown, representing other all nine models ordered by category. However, most models do not entirely belong to one specific category but are implemented in different ways.

Literal implementation
Since the models are intended to explore the design by showing an extreme implementation of the regarding themes, the literal implementation is barely applied in the design. However, some small design interventions can be found in the actual design. Characteristics of the models “Personalized tribune” and “The wall” can be back in respectively the way apartments are related to each other and the public domain- and the impact of the building in its context. Together the two models form an interesting first step in adapting the huge mass in the urban context, respecting the smaller scale user inside.

Conceptual implementation
Due to its origin, the conceptual implementation has a strong relation with found theory. Models like ‘Wrapped VINEX”, “Accentuate borders” and “Disregard” form the conceptual basis of the CityEvent(Rennen, 2007) theory, the answers to the monofunctional roots and the city structure in the design. The position of the stadium as endpoint of the public domain, defined the former border by activating it with a representative amount of public programme, instead of respecting it as a neutral function between surrounding programme(Grunfeld,1970). The unique scale and position of the stadium -a disregarding structure- allows the building to gather the impact Rennen describes, while creating a new rule, resulting in new chances and qualities.

The concept of ‘exploding’ the living programme and reorder it in a sufficient way, like the wrapped VINEX model, creates a multifunctional basis for an healthy living environment.

Metaphorical implementation
The implementation of a 100.000 visitor Olympic stadium in the Bijlmermeer area is a sensitive one. After the failure of the 1960s plans, the development of a statement like the BijlmerOlympics should be well considered. As Rennen describes, the message to communicate should be clear on the fore hand in order to be successful. Metaphors as The Bridge- a huge bridge made of standard living environment, serving a sports stadium- and the complexity capturing structure of the “Bucky 2.0” model have their traces in the design. The post-Olympic situation is characterized by the huge three dimensional grid, “filled” with human scale programme. The structure forms only the platform for a huge statement, based on known content.

**Personalized tribune**
A structure regarding the qualities of personalizing a stadium atmosphere. The collective of personalized space has a scale which can answer the impact of the (former) sports function.

**Wrapped VINEX**
The standard living programme hardly got any connections with the stadium function. When the living programme is exploded and new clusters are formed, they can compete with the scale of the stadium.

**Open up**
To communicate the outer and the inner, a characteristic shape is applied. This shape allows the tribune to function as a tribune, but allows the users to personalize the living space.
Development should serve a bigger scale than the actual building site.

The building facilitates the ability to claim the public domain.

Architectural implementation: both open as private.

An attempt to fill in the public domain, characterized by transition space. Most current street furniture is (re)movable. The result is an anonymous space with lack of affinity.
4.3 - Relevance to Bijlmermeer problems

The Bijlmermeer is from the start informally known as the first and only ghetto of the Netherlands. Due to the poor relation with the Amsterdam city centre, the missing infrastructure connection and the insecure living environment, the Bijlmer became all but the aimed middle class utopia.

Most known problems of the Bijlmermeer, such as vandalism and criminality, can be summarized as the result of lack of affinity. Since the problems occurred directly after realization, it is obvious that one of the main causes was the design.

The decentralized area does after fifty years of restructuring plans still not provide a livable situation. The most recent plans are again small scale interventions, like building renovations or isolated streets with typical developer plans. (Projectbureau voor Vernieuwing Bijlmermeer, 2010).

One crucial aspect is absent in most restructuring plans: identity. According to Rennen (2007) a proportional gesture is needed to regenerate a place its image. Only a huge scale CityEvent has the ability to achieve the role of place changing devise.

The designed Livable Stadium is part of the BijlmerOlympics scenario. This scenario has a realistic foundation based on Amsterdams ambition to facilitate the 2028 Olympics. Even more interesting are the Bijlmermeer ambitions of applying more sports facilities in the Bijlmermeerpark in order to activate the public domain. (Projectbureau Vernieuwing Bijlmermeer, 2010).

The possible implementation (shown in paragraph 2.1) answers the needs of the IOC(VROM,2008), the city of Amsterdam and the Bijlmermeer(PVB,2010).

Since the Livable Stadium should form the image of the ‘new’ public character it is situated directly next to the centre, being part of existing plans and ending the public domain.

Most known examples of Olympic main stadiums are situated outside the city centre. The huge introvert masses have a scale conflicting with the Bijlmer centre. Like the former flats, they have an alienated shape without a human scale (Parool, 1971).

However, there are examples, like the 1928 Jan Wils Olympic stadium in Amsterdam, with a proper connection to its surrounding city structure.

The Livable stadium is lowered partially into the ground in order to maintain the current proportions. The public plinth of the stadium activates the plaza. Terraces, shops and public sports facilities form a connection from the plaza to the lowered part of the stadium.

The apartments are characterized by their open appearance and their private essence. Due to the elliptical contours of the building, the walls are slightly not parallel. This allows the facades to be very open without losing privacy, due to the distance to the other side of the building (minimal 80 metres).

Compared to former Bijlmermeer development, this building is very flexible. History proved the urgency of flexibility when developing in such a scale. The flexibility of programme and structure is one of the characteristics of the Livable Stadium typology. Since the image and its meaning for the location should be continuous in order to create a form of affinity between the inhabitants and the building, the physical appearance should change at least as possible when transformed. By separating the cores and distribution of the programme, a continuity of physical appearance is granted. The distribution is designed as a contemporary ornament of human scale. Even though the actual impact of the building on its surroundings can only be predicted, it has a huge contrast with the former anonymity and all the ambition to create a public realm characterized by affinity.

The ambition to stick to the AUP (General extension plan, Berlage, 1935) in a new urban concept: The lobular city (lobbenstad), a plan without any city functions was created. The public domain of the improvised local centre is characterized by transition space. The lack of bars, play gardens or other public functions created a certain anonymity. In recent development, public functions become part of daily life, but a local knot like the -regional- Amsterdam ArenA is missing. Besides the urban meaning of new development in the Bijlmermeer, also the physical appearance needs attention.
Designability Livable Stadium typology.

This description of designability means the analysis of complexities and characteristic aspects one should regard when designing a Livable stadium. The stadium for the bijlmerOlympics is used to put general aspects in context. The complexity is described using four categories. The contextual position focusses on the implementation of the actual building. This regards the high demands of the IOC, made for -in most cases- a location without any urban context conflicting with the current Bijlmermeer context. Similar complexities are categorized by the currently missing ‘Livability’, the very important characteristics and the more pragmatic technical designability.

4.4.1 - contextual position
The physical implementation of the Livable Stadium depends on the (urban) context, the type of stadium function and the additional programme. The complexity will be explained using the BijlmerOlympic Livable Stadium as example, reflecting in a general way.

One of the essential aspects of designing the Olympic stadium according to the IOC(2008) standards is the infrastructural connection. The stadium should be part of the main venue, situated within a 30 minute boundary of other venues. The 100.000 visitor stadium should regard the IOC rules on safety, public domain and transport capacity.

According to Huysmans(2005) the Bijlmermeer is capable of hosting the Olympics. The additional programme of housing and public facilities barely influences the Olympic programme, since the Olympic dimensions are far more specific due to the higher safety guidelines. Still in case of the Bijlmermeer Livable Stadium, the post Olympic functions should be more than just a fill in of the Olympic mass in order to maintain the character.

The designed stadium has an intense relation to its surroundings by programme, user group and usage in time. Scenario’s like the Munich venue (see paragraph 1.6) are unlikely in this context. When designing outside the urban context the pragmatic part of the BijlmerOlympic Livable Stadium(flexible character, distribution, housing principles) is usefull, but the character had an essential role. Where the image BijlmerOlympic stadium connects the inner essence to its context, a livable stadium in the periphery should be more introvert(see paragraph 3.1). The lowered stadium is in the BijlmerOlympic stadium part a solution as a quality(3.2), for other cases this is no necessity, even though it has a positive influence on the dimensions of distributional spaces.

4.4.2 - livability?
In general the Livable Stadium typology is not very different form a common multiple story apartment building. The type of (sports) stadium has a significant influence on the living quality, since the field size determines the distance between the apartment and the angle between the house its walls. The Olympic main stadium has a shortest distance of 80 metres between the houses and a wall to wall angle of maximum 3 degree. This angle is acceptable till a building depth of 18 metres, maintaining sufficient daylight for living purposes.

In case of the Bijlmermeer there is a clear definition of non-livable space. Even though in other cases it is not that necessary to over define property and public or private character, it is desirable to create a coherent system within the building. Referring to former ‘new’ typologies, like the Bijlmermeer and Pruitt Igoe(Bristol, 1975), the inter relation of houses within unknown architectural masses is of high importance.

Also the need of a multifunctional situation when designing a building with such a scale is not specific for the Bijlmermeer. In order to provide variety of programme and user in the Livable Stadium for the Bijlmermeer, the Building needs a flexible character. Two crucial aspects of a living quality in relation to the architectural design, are sunlight and acoustics.

The amount of day and sunlight in a common stadium with a depth of 30 metres at the bottom-common when designing for 100.000 visitors- is far too low for the Dutch standards. Due to the inter changeable programme between the building cores and the relatively high floor heights, the building is capable of facilitating a proper amount of daylight.

The acoustic solutions are very complex. Even though the research did not focus on exact numbers or guidelines, one should understand the urge when designing a Livable Stadium. The stadium can be seen as a reversed speaker. In the stadium function, this is essential, in order to hear what is happening on the field, but when looking to a housing environment this is all but desirable.

In the design of the Bijlmermeer stadium, the stadium opens after the Games. The open roof and the porosity of the facades combined with soft materialization influent the acoustic performance. A high quality solution is the implementation of vegetation, especially when placed in the lower areas of the stadium.

4.4.3 - characteristics; best of both?
Due to the urban context, the BijlmerOlympics Livable
Stadiums function changes from Olympic stadium to a residential building with stadium qualities. In a more free context, it might have been possible to put the found theory to the test when designing a fully operational Olympic stadium with a residential part at the same time. In this scenario the architectural outcome of the ‘best of both’- strategy might have been more explicit. Nevertheless there are a few characteristics representing the ‘best of both’ aspect of the design.

By lowering the stadium structure partially in the ground as a result of the context, IOC(2008) guidelines on safety and the desired connection with other residential areas, a characteristic for this Livable Stadium is developed. As a result of both programmes and the Bijlmermeer ambitions(PVB) the living environment is closely situated to high quality sports accommodation and facilities.

The most important ‘best of both’ aspect is the meaning of the building in its context. Generally speaking it is desirable to maintain a certain image for any context of a Livable Stadium. But regarding the history of this specific context it is the key element in the design for the BijlmerOlympics Livable Stadium. Since characteristic elements of the exterior appearance should manifest continuity of character, they come forward from a common aspect of both stadia of the design: the human distribution(see paragraph 3.2).

4.4.4 - technical designability

The complexity of the physical embedment is inherent to the implementation of the Livable Stadium typology in an urban context. Technical aspects coming forward from the type of stadium and the built context inflict each other.

In case of the Livable Stadium for the BijlmerOlympics, the position in relation to the sun, the main tribune and main public transport resulted in an angle of 30 degree of the stadium in relation to the orthogonal context. The exact positioning takes place in a certain bandwidth. In this specific case, the long axis of the stadium had to be positioned between 285 and 345 degree to North. Finally the position of the main tribune -where the building had the biggest depth: 35m- and its influence on the connection between the ending of the public domain and the Bijlmermeerpark made the angle 300 degree to North.(see paragraph 2.3)

The building cores form an essential role in this design. Apart from the distribution and technical aspects, they are the basis of the continuous character(2.3). Due to the separate construction of the programme in between the cores, they need to be a standalone construction for the roof, during the construction and later transformations.

A huge difficulty in designing a Livable Stadium is the conflict between the building depths of the stadium and the housing programme. The relatively high floor heights of the stadium functions solve a part of the poor daylight entrance, still the depth needed to decrease to 18 metres (preferably 12). In order to make the transformation relatively simple and able to reverse, the minimum construction dimensions -4 metres floor height, 12 metres depth- can be permanent, for example with reinforced concrete. With the concrete basis, the different programme can be finalized, transforming only the smallest possible amount of construction.
Feasibility

The general feasibility of this specific design of a Livable Stadium for the Amsterdam Bijlmermeer area can be distilled in several types of feasibility. In current public discussions on Olympics plans, the economical feasibility seems determinant. In this specific design, the economical feasibility is broader than in ‘standard’ Olympic bids. The long term economical benefits of the image changing capacities of this concept are difficult to express. Since this design is coming from an architectural profession point of view, the economical feasibility is considered as less important than the spatial- and technical feasibility. The social- and political feasibility however form the context for the architectural design and are therefore relevant to reflect on their feasibility.

Spatial-technical feasibility
The spatial context and the scale of the Livable Stadium in the Bijlmermeer area, resulted in a concept in which the design is partially lowered in the ground. The site is located in a former polder. Even though the building is situated in one of the higher parts of the area, the lowest point of the structure is still 7 metres below the water level. There are several scenarios explored on how to cope with the ground water pressure. Either a ‘reversed polder’- a solution in which a perimeter barrier is created with a continuous pump pressure- or an over dimensioned foundation with a critical mass should make the embedment realistic. Due to the time span and the focus of this design, a feasible application of one of these-, or the combination of these solutions is assumed.

The load bearing structure exists of the former distribution cores of the stadium. Where usually the cores are one of the dimensioning aspects of a stadium, are the cores in this Livable Stadium formed by the minimum load bearing dimensions. This is only possible since the stadium is partially below grade thus the core can be entered at two places, doubling its logistic capacity.

The roof structure has no influence in the stability of the structure. After the stadium phase of the building the rain- and glare protecting foil will be dismounted and the structure will remain. The structure unites the residential building by accentuating the shape as a continuous geometry. The huge steel structure will be used as a green hanging garden or gather solar energy, depending on the orientation. The spatial benefit of the legacy roof, besides its capturing capacity, is the inhabitants orientation while being in the roof gardens. The geometry accentuates the panoramic view over both the Bijlmermeer area and the inner world of the Livable Stadium.

The floors of the Olympics phase are designed in a way that the residential- and public programme related floors can be easily added and removed. The double floor heights are then single. One of the characteristics in the facade is the exterior distribution. These express the human scale and maintain in the post-Olympic situation as distributional space for the apartments.

The positioning of the sports field and the angle of the tribunes, and thus the building depth, are directly related. This specific design location demands a maximum building height of 30 meters in order to be proportional to its surroundings. This is relatively low for an Olympic stadium. On the other hand, the housing programme demands a steeper stadium type, in order to have less depth and thus more sun- and daylight. The public functions in the lower levels of the building have a lower needs of day- and sunlight. By rising the sports field by 1 metre, the angle of the lower tribunes decreases and the field can be situated closer to the crowd. The relatively close field results on the other hand in steeper upper tribunes, as needed for the residential areas.

In the post Olympic situation, the field will be used as a horticultural area for residents, restaurant and tourists. The athletics track maintains, but as in grass, with chalk lines and legacy aspects can be found, for example the record distance of javelin trowing.

Social-economical related
The impact of the Olympics in a dense area like the Bijlmermeer of course is huge. The maintenance of the image plays an important role of the inhabitants response to the built environment. The importance of a designated user is clear when looking at the Munich post-Olympic structure(p44). In case of the Bijlmermeer the post-Olympic used should ‘claim’ the stadium in a more direct way. In order to suffice, the transformation is as simple and fast as possible. All post-Olympic floors and walls can be built without the use of cranes and boom trucks.

Since these details are reversible, they are easily adaptable to the users needs. Interiors can be easily adapted, since the floor plans proportions allow the user to customize the apartments relatively easily. This small scale intervention can have influence in the national (political) position towards organizing the Olympics or Soccer World Championships. A second investment in such a bid is lower and more reliable in terms of economical feasibility of the architectural implementation of the programme brief.
Designing for the BijlmerOlympics
Designing a Livable stadium
Transformation of existing stadiums
Recommendations

When designing a Livable Stadium

Within the boundaries of this research, a two sided conclusion in relation to the Bijlmermeer area can be taken: on the one hand the ambition to realize the BijlmerOlympics is a realistic one and the possibilities to transform a stadium into living environment is very likely. However, the size of an Olympic main stadium in an urban context is doubtful. The building size and its ambition to connect to the urban tissue is complicated.

The architectural implementation in this specific project points out some benefits of possible solutions such as lowering the stadium structure in the ground.

The current top financial sports climate, especially in soccer, is changing. Governments make cuts in subsidies and stadiums are abandoned. Based on the found data in this specific design, a shorts recommendation is given when the transformation of a (soccer) stadium is considered.
Recommendations

Livable Stadium scale is difficult to implement in an urbanized area.

Design final programme in advance.

Development on this scale should be flexible.

Consider the type of stadium in relation to its context.

Most extreme form of the Livable Stadium requires other context and more research.
Recommendations

The design of the Livable Stadium for the Bijdmermeer is put to the test in a scenario of the BijdmerOlympics. This scenario influenced both the research and this typical design of the Livable Stadium. For this reason the recommendations consider the used scenario and design of a Livable Stadium in general. The recommendations on designing a Livable stadium for the Bijdmermeer are related to this design exercise.

5.1 - Designing for the BijdmerOlympics
The current climate towards organizing a more social type of Olympic Games like the BijdmerOlympics seems realistic. The most important aspect of designing an Olympic venue with a future social use is planning the final function in advance. The complexity of implementation according the IOC standards becomes clear when looking to alternatives like the Randstad Games scenario.
Within the specific Bijdmermeer context a livable stadium is hardly possible with both the stadium and the residential function at the same time. The scale of building mass, infrastructural capacity and safety regulations are difficult to combine with the personalized public space. For this reason the Livable Stadium for the Bijdmermeer focusses on the simplicity of transformation.
The flexible character is a must when building on such a scale in the Bijdmermeer, after a first-over-defined-failed concept in the 1960s, new development should have the ability to develop itself confirm the inhabitants needs.

5.2 - Designing a Livable Stadium in general
Regarding the found data and the designability it is plausible to design a Livable Stadium for the Bijdmermeer. However, the research and the design influenced each other with an other outcome than a livable stadium representing both the stadium and the residential function. The decision to create a building with a flexible character, capable of hosting both phases at a separate moment, with the ability of reverse transformation excluded further research on a scenario of a 100.000 visitor Olympic stadium and proportional residential area at the same time.
The scale of this more extreme form of a Livable Stadium does not match the Bijdmermeer context. Still, in other Olympic scenarios, with a similar social ambition and but a less urbanized location, the implementation of a ‘complete’ Livable Stadium seems doubtful. Further research on logistics, acoustic solutions and public transportation is needed in order to make the pragmatic combination also a livable one, with an extra quality due to the combination.

5.3 - Transforming an existing stadiums
Even though the transformation of existing stadiums was not the main goal in this research, there are several found aspects to consider when working on this currently relevant topic of empty (soccer) stadiums.
The stadium location and its dimensions are two of the key aspects when looking at the programmatic point of view. Most (soccer) stadiums are isolated from any public amenities. In order to avoid ghetto-like scenarios, such as the Bijdmermeer, the mix of public and residential programme should be well considered. Comparing a residential stadium with a small village, visitors should have a reason to stay inside in order to ‘open up’ the introvert typology. A higher capacity (60000-100000 visitor) stadium seems more feasible.
Focussing on the higher capacity stadiums, the steeper types are easily transformable due to the building depth and the daylight requirements of the housing programme.
A huge tread in designing a feasible transformation is in the buildings load bearing structure and the distributional system. If the distributional system completely exists of load bearing elements (cores) an efficient transformation is unlikely. Referring to the Livable Stadium for the Bijdmermeer, the cores-housing ratio is approximately one to six, due to the cores with multiple access points. In an existing stadium this can be one to three. If these cores are load bearing, and therefore not able to be removed transformation to a residential function is not likely.
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Monofunctional contrasts

still from Monofunctional contrast movie
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