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## **Architectural Approach for the Co-existence of Traffic-served Space and Meeting Space: Based on The Hague Central Station designed by K. van der Gaast in 1970**

### **1 Introduction**

Railway station buildings are defined as infrastructure architecture responsible for train traffic systems. Initially, they represented a unique architectural form of the 19th century, incorporating revival styles to provide a sense of comfort and familiarity to those who were uncomfortable about the novelty of this new transportation technology<sup>1</sup>. In the period about the 1900s, railway architecture started to simplify its design and almost broke away from the application of the historical form under the influence of the Amsterdam School<sup>2</sup> in the Netherlands. After the Second World War, stations were renovated and newly designed along with the construction of new lines<sup>3</sup>. Meanwhile, in a discussion about functionalism, architects continued to break with the past, further searching for highly simplified architectural forms, and particularly focused on the use of new materials<sup>4</sup>. As a result, new technology and materials influenced the spatial arrangement and architectural form of railway station buildings, creating new typologies for them.

By utilizing the Modernism design and Functionalism theory<sup>5</sup>, the railway station building employed reinforced concrete and steel frames to create an integrated system that makes the roof and structure systems as a whole<sup>6</sup>. This design approach allowed for greater flexibility in the interior arrangements of the station building without compromising the structure, and was also ready for future planning. Moreover, it resulted in the adoption of symmetrical layouts with a central hall that directly connects to the tracks and platforms. And functional rooms, such as equipment spaces, waiting rooms and toilets were set to surround the hall, in order to meet travellers' needs. To conclude, under the influence of the new structural approach, the typology of railway station buildings was mainly driven by functions.

Generally speaking, activities in railway architecture are linear and short-stay, hence architects usually tend to focus on clear arrangements of circulation and avoid large

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<sup>1</sup> Jeffrey Richards and John M. MacKenzie, *The Railway Station: A Social History* (Oxford and New York: Oxford University Press, 1986), 3.

<sup>2</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 61.

<sup>3</sup> Brian Edwards, *The Modern Station: New approaches to railway architecture* (London: E & FN Spon, 1997), 147-149.

<sup>4</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 61.

<sup>5</sup> Steven Parissien, *Station to station* (London: Phaidon, 1997), 201-206.

<sup>6</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 83.

gatherings in the building. However, during the period of 1965-1980, several significant terminal buildings, such as The Hague Central Station and Rotterdam Central Station, experienced a process of redesign to transform into mixed-use buildings that incorporated additional commercial, official, and other secondary functions<sup>7</sup>. As a result, meeting spaces had been set up at the station, allowing travellers to congregate and interact with each other. These station complexes responded to the needs of travellers, but also led to discussions and critiques on the differences between complex buildings and infrastructure architecture.

This thesis aims to analyse the coexistence of traffic-served spaces and meeting spaces in a railway terminal complex, with a particular focus on The Hague Central Station, designed by K. van der Gaast in 1970. The study is going to evaluate the significance of incorporating meeting spaces in the railway terminal complex and analyse the design strategies and typology approaches employed by Van der Gaast. The research will provide insights into the architect's perspective on the coexistence of these spaces and their influences on the travellers' experience.

## **2 Literature Review**

### **2.1 Overview of railway station buildings**

As mentioned in the introduction, post-war railway architecture was brought into a new time due to the utilization of new technology and materials, such as reinforced concrete frames and concrete platform coverings<sup>8</sup>. As Van den Hurk-van Haagen stated in 2004 in the book referring to Van der Gaast's works<sup>9</sup>, in response to the application of new structures, station buildings required a certain degree of flexibility in both structure and spatial layout, allowing for quick and easy implementation of any changes without the need for extensive reconstructions.

Moreover, influenced by the development of railway traffic, more people tended to choose trains as their travel options. Therefore, efficient and speedy transfers between different platforms were the most important aspect of station buildings<sup>10</sup>, which indicated the significance of circulation arrangements in the design of this type of infrastructure. If only considering its functions, a station would be a simple architecture<sup>11</sup>, with the main elements being a ticket office, a central hall, luggage storage areas, and equipment spaces.

To conclude, architects designing station buildings tended to prioritize the efficiency of interior circulation and flexibility of the overall layout and structural system, resulting in the common application of functionally oriented, centrally symmetrical typologies.

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<sup>7</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 97-106.

<sup>8</sup> Steven Parissien, *Station to station* (London: Phaidon, 1997), 201-213.

<sup>9</sup> Trudy van den Hurk-van Haagen, *K. van der Gaast [1923-1993] Transparatie en onverhulde constructies* (Rotterdam: BONAS, 2004), 8-9.

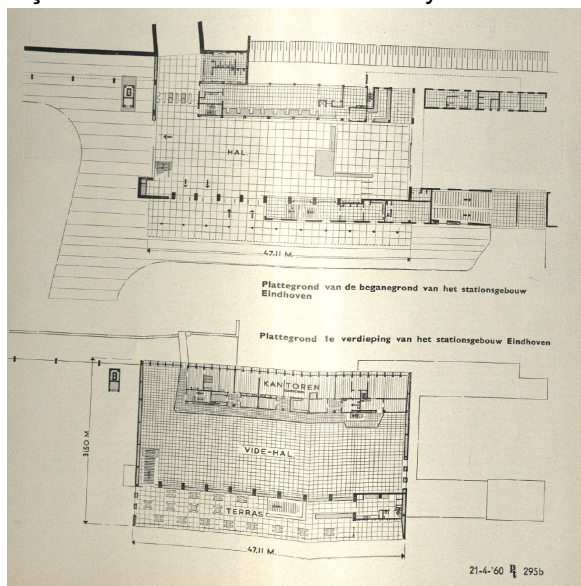
<sup>10</sup> *Ibid.*, 8-9.

<sup>11</sup> K. van der Gaast, "Overpeinzingen van een stationsarchitect." *BOUW: centraal weekblad voor het bouwwezen* 19, 1964, 622-624.

## 2.2 Typology developments in K. van der Gaast's work

K. van der Gaast, who is an important architect for Dutch railway architecture, brought a new era for the station buildings. He claimed that it was crucial for railway stations to be modern and up-to-date, providing travellers with the impression of a fast and contemporary alternative<sup>12</sup>. Therefore, Van den Hurk-van Haagen had come to the result that the modern stations should become the embodiment of the new architectural, planning and sociological vision of travelling<sup>13</sup>.

Eindhoven Station (1953-1954) was the first large station designed by Van der Gaast<sup>14</sup>. Van den Hurk-van Haagen described in 2004 that the openness of this station was one of the means of expressing the dynamic nature of transfers<sup>15</sup>. Referring to Van der Gaast in 1960, the station building, essentially a large hall, housed all facilities in an orderly arrangement surrounding the hall<sup>16</sup>, while the circulations were kept as direct as possible. During this period, the main focus was on creating clear circulation routes and open interior spaces. In addition, Van der Gaast incorporated a terrace designed to function as a restaurant, providing travellers with a space to rest during their waiting time. And the large glass façade allowed for views of the city<sup>17</sup>.



Plans of Eindhoven Station, 1953-1954<sup>18</sup>



Eindhoven, Station restaurant<sup>19</sup>

<sup>12</sup> K. van der Gaast, "Overpeinzingen van een stationsarchitect." *BOUW: centraal weekblad voor het bouwwezen* 19, 1964, 622-624.

<sup>13</sup> Trudy van den Hurk-van Haagen, *K. van der Gaast [1923-1993] Transparatie en onverhulde constructies* (Rotterdam: BONAS, 2004), 10-12.

<sup>14</sup> *Ibid.*, 16-19.

<sup>15</sup> *Ibid.*, 17.

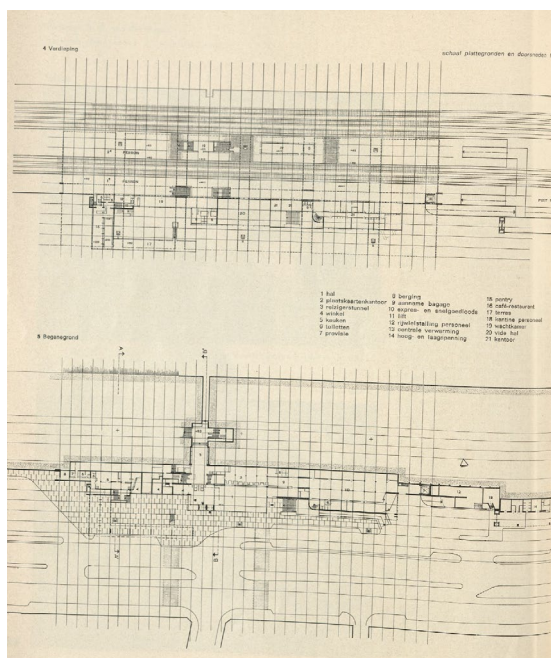
<sup>16</sup> K. van der Gaast, "De stationsgebouwen te Eindhoven en Venlo." *Polytechnisch Tijdschrift [PT]: uitgave B* 15, 1960, 292b-301b.

<sup>17</sup> Trudy van den Hurk-van Haagen, *K. van der Gaast [1923-1993] Transparatie en onverhulde constructies* (Rotterdam: BONAS, 2004), 18.

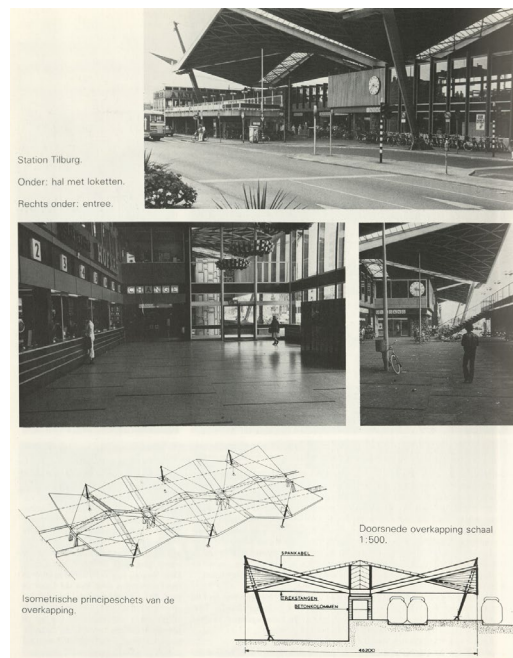
<sup>18</sup> K. van der Gaast, "De stationsgebouwen te Eindhoven en Venlo." *Polytechnisch Tijdschrift [PT]: uitgave B* 15, 1960, 295b.

<sup>19</sup> Trudy van den Hurk-van Haagen, *K. van der Gaast [1923-1993] Transparatie en onverhulde constructies* (Rotterdam: BONAS, 2004), 16.

Tilburg Station is one of the most renowned works of Van der Gaast, designed in 1959. Referring to Van der Gaast's magazine essay in 1966, the station is famous for its massive roof structure, which serves as a powerful symbol connecting the railway tracks to the urban context<sup>20</sup>. Under the roof, there was a two-storey entrance hall, which served as the most important space in the station. Van der Gaast also mentioned that the general layout showed openness and flexibility, with the hall being clearly visible and accessible from all directions<sup>21</sup>, providing fascinating views from the terrace. Moreover, escalators were linked to the hall, platforms, and service spaces<sup>22</sup> (such as waiting areas and restaurants). Additionally, Van der Gaast strengthened that a semi-exterior space was attached to the hall, with various commercial spaces gathered there<sup>23</sup>, providing spaces for short-stay activities and chances for social interactions based on travellers' needs. An interesting aspect of the design raised by Van Dal in 1981 was that the railway was no longer hidden behind the stations, but instead, standing out against the city<sup>24</sup>.



Plans of Tilburg Station, 1959<sup>25</sup>.



Photos of Tilburg Station<sup>26</sup>

During this stage, the typology of Van der Gaast's station buildings was typified by a focus on the balance between accessibility and functionality. The clear circulation routes leading to every point were the most important aspect of his design. However, he also took into

<sup>20</sup> K. van der Gaast, "Het nieuwe stationsgebouw te Tilburg." *BOUW: centraal weekblad voor het bouwwezen* 21, 1966, 648-651.

<sup>21</sup> Ibid, 649.

<sup>22</sup> Trudy van den Hurk-van Haagen, *K. van der Gaast [1923-1993] Transparatie en onverhulde constructies* (Rotterdam: BONAS, 2004), 34.

<sup>23</sup> K. van der Gaast, "Het nieuwe stationsgebouw te Tilburg." *BOUW: centraal weekblad voor het bouwwezen* 21, 1966, 651.

<sup>24</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 91.

<sup>25</sup> K. van der Gaast, "Het nieuwe stationsgebouw te Tilburg." *BOUW: centraal weekblad voor het bouwwezen* 21, 1966, 650.

<sup>26</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 90.

account the needs of travellers by creating common spaces where short-stay activities could occur, generating social interactions.

### 2.3 Meeting spaces and travellers' needs

Edwards was in 1997 of the opinion that different from circumstances in suburban stations, at intercity stations, particularly the larger ones, travellers tend to have more time and actively make use of their "dwell time"<sup>27</sup>. Therefore, when discussing the functions of railway architecture, it becomes important that it is easy to get access to retail services and common spaces for short-term stays. In addition, the spatial quality of meeting spaces is important to travellers as they could influence their willingness to use these spaces. However, Edwards also mentioned that due to the necessity of efficient circulation routes, it is suggested to establish hierarchies of circulation, which were related to the most important functions and activities<sup>28</sup>.

## **3 Methodology**

### 3.1 Typology and functions

As Edwards mentioned, railway stations are not similar to art galleries or shopping malls, but their primary purpose is to facilitate travel, and they are typically characterized by a bustling atmosphere filled with people in a rush<sup>29</sup>. To meet the fundamental requirements of a railway station, it is crucial to prioritize the arrangement of functional areas, and to ensure their accessibility, which could result in a linear process from the city to the platform edge. Moreover, as W. van Dal noted that railway stations in the Netherlands simplified their forms while maximizing their functions under the influence of functionalism<sup>30</sup> since 1901. Spaces are designed to serve as a form of guidance for people, indicating the specific activities that are expected to occur. Since the railway station has a distinctive typology which is functionally oriented, it could be predictable formal consequences that allow travellers to anticipate<sup>31</sup>, such as the circulation route "entrance - booking hall - check-in counter - platform".

Considering the development of the Dutch railway station after WW2, different from what they were in the 1950s, there had been a further shift towards multi-functionalism, which resulted in complex and diverse station forms<sup>32</sup>. Based on this, it is more important to make sure that the public consciousness can be guided to the presence of the essential elements and functions. For instance, the Tilburg Station, where the imposing roof may appear to be the most appealing feature. However, travellers could also effortlessly arrange their way from the central hall to the platforms due to the station's recognizable spatial layout, which

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<sup>27</sup> Brian Edwards, *The Modern Station: New approaches to railway architecture* (London: E & FN Spon, 1997), 61-62.

<sup>28</sup> Ibid, 62-63.

<sup>29</sup> Ibid, 25-26.

<sup>30</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 61.

<sup>31</sup> Brian Edwards, *The Modern Station: New approaches to railway architecture* (London: E & FN Spon, 1997), 26.

<sup>32</sup> Ibid, 27.

is centred around the hall and clearly organized. Therefore, the design of a railway complex should prioritize the clarity of orientation regarding the civic order and the hierarchy of patterns of movement<sup>33</sup>.



Photo of platform in the Station Tilburg, 1966<sup>34</sup>

Although the interior spaces of a railway station may be complexed, the typology of a railway station is primarily related to its functions from a basic perspective. Hence it can be concluded that when analysing a specific railway station, particularly a terminal complex, the methodology could begin by examining its circulation system with respect to programmatic arrangements.

### 3.2 Typology and meeting

In addition to its infrastructure role, a railway station could be considered a part of city life. According to Brian Edwards, a station can function as a public monument, with the responsibility of humanizing mass transportations<sup>35</sup>. In other words, a railway station can be viewed as a public realm within a city based on its original transporting functions, where strangers could have brief and informal encounters. Richard Sennett in 2020 suggests that anonymity and impersonality are the key features of a public realm, which are associated with the broadening horizons of information<sup>36</sup>. Therefore, the flexibility in space could be regarded as the primary characteristic of a station, as it offers travellers the opportunity to enjoy the waiting time before their tours.

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<sup>33</sup> Brian Edwards, *The Modern Station: New approaches to railway architecture* (London: E & FN Spon, 1997), 27-29.

<sup>34</sup> K. van der Gaast, "Het nieuwe stationsgebouw te Tilburg." *BOUW: centraal weekblad voor het bouwwezen* 21, 1966, 652.

<sup>35</sup> Brian Edwards, *The Modern Station: New approaches to railway architecture* (London: E & FN Spon, 1997), 26-27.

<sup>36</sup> Richard Sennett, "The Public Realm", in *Being Urban: Community, Conflict and Belonging in the Middle East*, ed. Simon Goldhill (Routledge, 2020), 35-58.

Furthermore, travellers tend to leave themselves a considerable amount of time before boarding the train<sup>37</sup>, and this kind of time gap creates a demand for various serves. For instance, Van der Gaast strengthened the space of the restaurant in Eindhoven Station in 1954, which created a place for short-time stays and encouraged possible conversations between travellers who had their meals<sup>38</sup>. For similar reasons, it is a tendency for a station to be set up with cafes, bars, shops and bookstalls. And the circulation routes between these “meetings” and the process of boarding a train tend to be interconnected.

To understand the relationships between meetings and spaces, it is important to determine how the spatial arrangements and circulation patterns will influence travellers’ activities, which in turn affects the meetings taking place within the station. Baum and Valins noted that architectural designs could shape people’s experience and behaviour, resulting in the development of social relationships<sup>39</sup>. Additionally, the physical constraints imposed by the architecture environment or some social aspects could also regulate people’s behaviours.

When analysing their relationships, the analysis typically revolves around two key aspects: how people utilize space to meet, and how people engage with design elements to facilitate their meetings. This approach could be referred to as a methodology based on the behavioural typology.

In summary, the methodology for analysing the Hague Central Station consists of two main components. The first part focuses on the relationship between the programmatic arrangement and circulation design, while the second one involves a synthetic analysis about the utilization and interaction of meeting spaces and activities, based on the results from the first part.

#### **4 Results and Analysis**

The Hague Central Station is the largest terminal station in the Netherlands with twelve tracks, which serves as the main station of The Hague. It was constructed in 1973 on the old Den Haag Staatsspoor Station site. The terminal station, designed by architects J. Bak and K. van der Gaast, comprises of an office building, a railway station and public traffic interchange stops<sup>40</sup>. The integration of train, tram, and bus traffic within a single building at The Hague Central Station was one of the first of its kind<sup>41</sup>. Additionally, to cater to the needs of travellers at the start or the end of their journey, commercial services were also incorporated into this terminal complex, creating a comprehensive center of life for citizens. This, along with other developments in the city center at the time, was part of the “active

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<sup>37</sup> Brian Edwards, *The Modern Station: New approaches to railway architecture* (London: E & FN Spon, 1997), 61-62.

<sup>38</sup> K. van der Gaast, “De stationsgebouwen te Eindhoven en Venlo.” *Polytechnisch Tijdschrift [PT]: uitgave B 15*, 1960, 292b-301b.

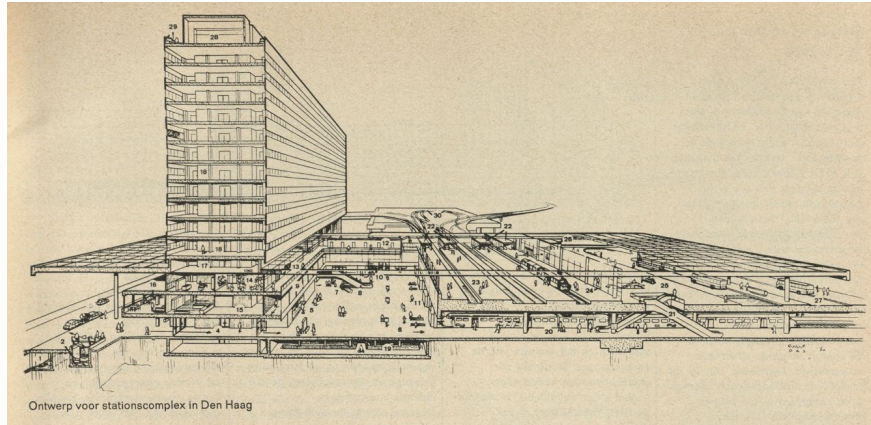
<sup>39</sup> Andrew Baum and Stuart Valins, *Architecture and Social Behavior: Psychological Studies of Social Density* (Hillsdale: Lawrence Erlbaum Associates, 1977), 1-7.

<sup>40</sup> Trudy van den Hurk-van Haagen, *K. van der Gaast [1923-1993] Transparatie en onverhulde constructies* (Rotterdam: BONAS, 2004), 40.

<sup>41</sup> *Ibid*, 41.

city formation”.

The terminal complex consisted of three floors above ground and one underground floor dedicated to the equipment. The 30\*90m station hall served as the center of the entire complex, with functional spaces and railway tracks and platforms located on either side of the hall<sup>42</sup>. The functional areas were situated primarily on the ground and first floors, with the office building located above them.



A sectional drawing showing the station complex in The Hague, 1970<sup>43</sup>

#### 4.1 Programmatic analysis

In order to gain a comprehensive understanding of the design of The Hague Central Station, it is essential to analyse and evaluate the programmatic layout due to its integration of various targeted functions within this terminal complex, and it will be better to figure out their interrelationships. Moreover, by analysing the categories of functions and their spatial distribution hierarchy, the initial typology of functions of this station can be obtained, which could build the foundation for further analysis of the circulation hierarchy and spatial connections of functional areas.

Generally speaking, referring to the plans of the Hague Central Station in 1970<sup>44</sup>, the programs in this terminal complex can be classified into basically five categories:

##### 1) Transportation service functions

This category encompasses the fundamental functions of a railway station, which included reception, ticket and information areas, check-in areas, luggage areas, travel agency services, seat reservation areas, and platforms for various tracks. These functions could be seen as a dual-centered layout, with one center being the platforms, which were the most important function of a station. And the other center being the ticket and information area, which is also crucial for travellers.

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<sup>42</sup> Architecten Spoorwegopbouw te Utrecht, “Stationscomplex te ‘s-Grabenhage,” *BOUW: centraal weekblad voor het bouwweze*, 1974, 1087-1090.

<sup>43</sup> G.S. zetten hun gedachten op papier, “Plan voor het station Den Haag C.S”, *BOUW: centraal weekblad voor het bouwwezen*, 1970, 635.

<sup>44</sup> Architecten Spoorwegopbouw te Utrecht, “Stationscomplex te ‘s-Grabenhage,” *BOUW: centraal weekblad voor het bouwweze*, 1974, 1087-1090.



## 2) Public service functions

This category contains functions served for the travellers, which included waiting areas, the VIP room, the reading room, a canteen, two café-restaurants, a bar, the cash exchange area, a flower shop and a pharmacy. Typically, these functions were located on the ground and first floors, providing supporting services for a journey.

## 3) Circulation spaces

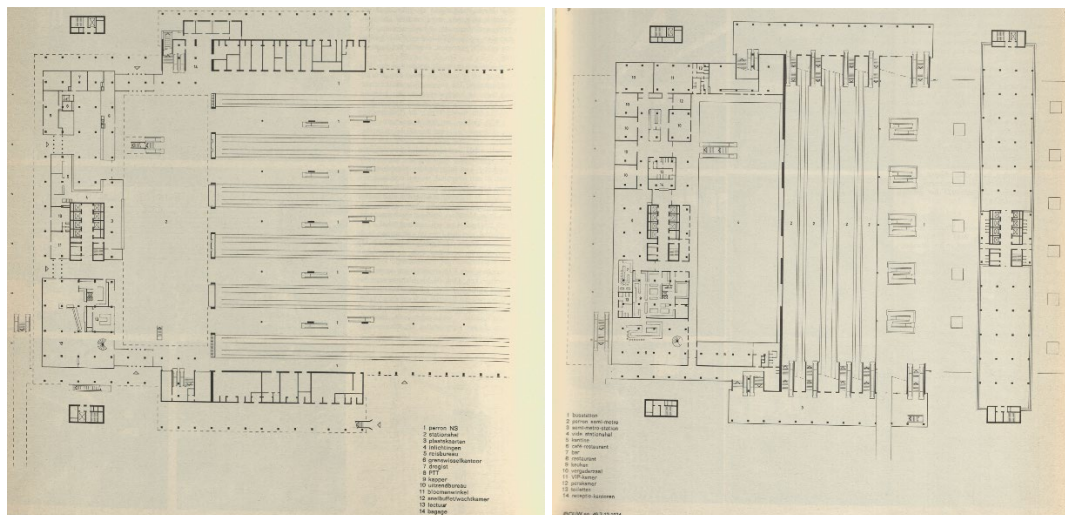
The most important space in this category could be considered as the station hall, which served as both a circulation space and a gathering space for travellers. It was a triple-height atrium encircled by public and transportation services spaces. In addition to the central hall, there were staircases and escalators leading to different floors, and, most importantly, to the platforms.

## 4) Official spaces

For this category, it includes the NS offices and employment agencies, which were generally located on the second floor. These functions primarily aided in the regular functioning of the station.

## 5) Equipment-related spaces

The equipment-related spaces can be categorized into two parts: the necessary equipment that served travellers, such as toilets and elevators for the disabled, and the equipment related to the technical operations of the station, which were typically located on the basement level.



Ground floor plan<sup>45</sup>

First floor plan<sup>46</sup>

In summary, these five categories of functional spaces were interconnected and formed a

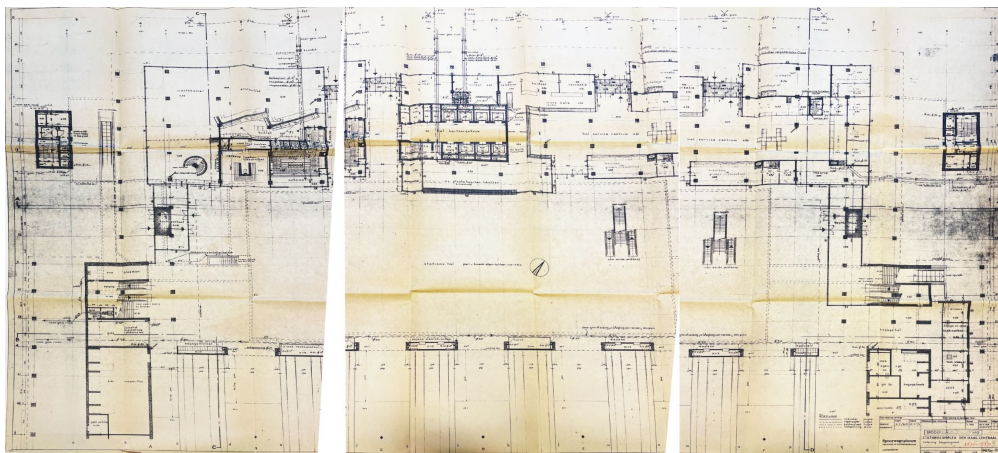
<sup>45</sup> Architecten Spoorwegopbouw te Utrecht, "Stationscomplex te 's-Grabenhage," *BOUW: centraal weekblad voor het bouwweze*, 1974, 1088.

<sup>46</sup> *Ibid*, 1089.

central layout focused on the atrium, which served as the station hall. Typically, Van der Gaast designed that the primary transportation spaces were situated on the eastern side, while the supporting functional spaces were located on the western side by the atrium.

#### 4.2 Circulation analysis

In this section, the interconnections between different functional spaces within the terminal complex will be analysed through different types of circulation, based on the programmatic analysis. Following this, there will be an analysis of the circulation hierarchy within the complex to determine the comprehensive typology of the station.



Constructional ground floor plan, the Hague Central Station<sup>47</sup>

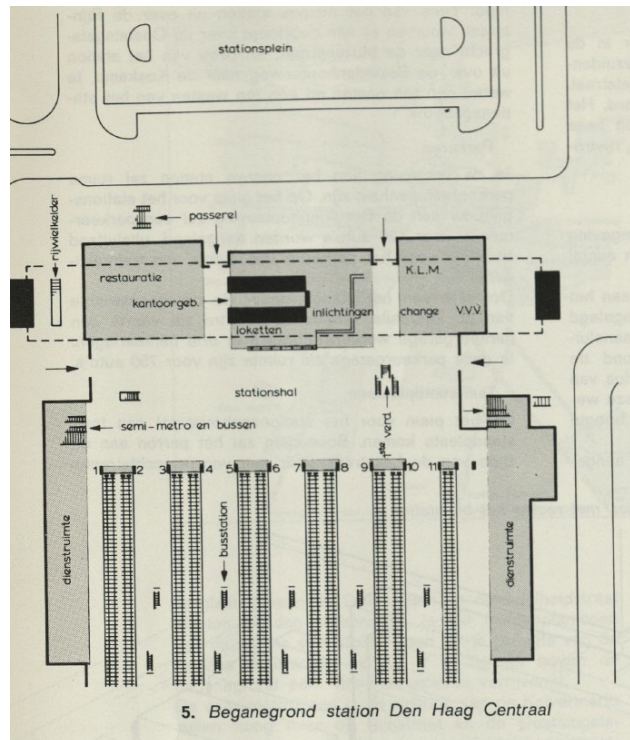
##### 1) The overall trend of circulation

The overall circulation trend followed a path of “entrance - ticket area - luggage area - check-in area - platforms”, aiming to make the beginning of the travellers’ journey as efficient as possible. As Van der Gaast stated in 1964<sup>48</sup>, a station building could essentially be a simple structure that housed a place where NS sold tickets, accepted luggage, and served as the starting and ending point for passengers’ travels to and from the platforms. At this point, the basic requirements of a station building had been met. Therefore, the most important spatial combination in the station building could be the connection between the station hall and the platforms, which served as the core circulation logic.

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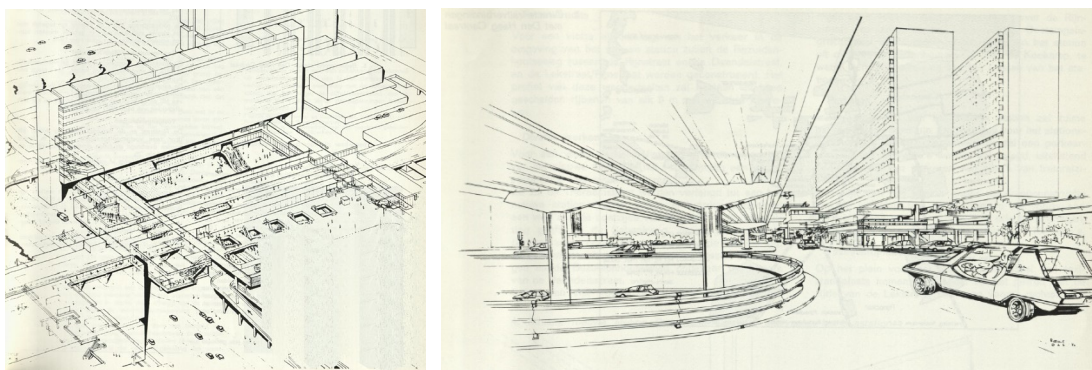
<sup>47</sup> Stationscomplex Den Haag Centraal riolering begane grond, 17<sup>th</sup>, March, 1971, 0484-02 Dienst der Gemeentewerken Den Haag, 8720, Stukken betreffende de bouw van het stationscomplex Den Haag Centraal in het Bezuidenhout C, 1970-1979.

<sup>48</sup> K. van der Gaast, “Overpeinzingen van een stationsarchitect.” *BOUW: centraal weekblad voor het bouwwezen*, 1964, 622.



5. Beganegrond station Den Haag Centraal  
Simplified circulation plan showing the functional areas<sup>49</sup>

In addition to the fundamental needs of railway travel, there were also demands for a connection to the bus and tram traffic system. This connection between the “station hall - platforms” could be considered as a secondary layer of circulation that accompanied it.



Integrated traffic system in the Hague Central Station<sup>50</sup>

## 2) Circulation of short-time stay

During the process of "entrance - ticket area - luggage area - check-in area - platforms," unexpected situations could arise, such as the need to wait for a train or grab a cup of coffee, resulting in a short stay at the station. As a terminal complex, many travellers will transfer to other trains or vehicles, which increases the demand for associated services and waiting areas. Referring to Van der Gaast's design<sup>51</sup> in 1970, in addition to the waiting

<sup>49</sup> "Station Den Haag Centraal." *Polytechnisch Tijdschrift [PT]: uitgave B*, 1970, 534.

<sup>50</sup> *Ibid*, 531-533.

<sup>51</sup> *Ibid*, 530.

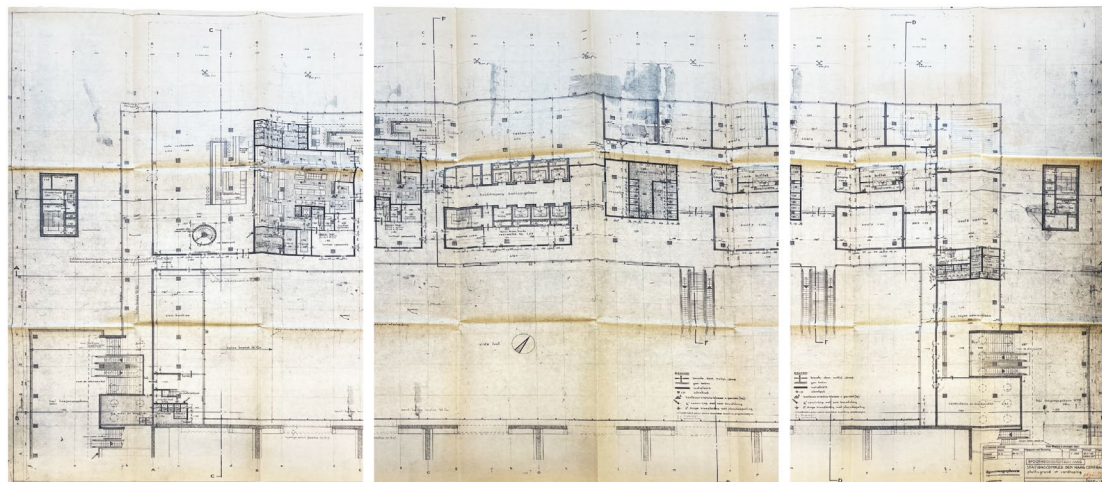
room, a coffee bar, self-service vending machines, and shops selling books, flowers, and refreshments were included to provide short-term stay for travellers. In order to provide convenience for them, these facilities were arranged on the ground floor around the atrium of the station hall, which was directly connected to the central hall. This layout allowed travellers to access the services they needed without having to go up and down stairs.

Therefore, it could come out that this arrangement had formed a secondary circulation layer for travellers, which essentially combined the entire ground floor with the basic circulation towards the railway platforms.

### 3) Circulation of relatively longer stay

Apart from the possibility of short-term stays, there might also be longer stays in spaces such as the café-restaurants, and the canteen, where travellers could plan their meals or enjoy their time with friends<sup>52</sup>. Moreover, there were also VIP rooms and meeting rooms<sup>53</sup> specifically designed for travellers who needed to work or hold meetings, which involved a different type of longer-term stay.

However, due to the high passenger flow in railway stations, longer stays are relatively less common than short-term stays for travellers. They were located on the first floor, separated from the atrium, which distinguished them from the circulation for short-term stays.



Constructional first floor plan, the Hague Central Station<sup>54</sup>

### 4) Hierarchy of the circulations

As previously mentioned, the primary circulation hierarchy in this terminal complex was based on transportation infrastructure and included the “entrance - ticket area - luggage area - check-in area – platforms” route. A secondary circulation hierarchy was established

<sup>52</sup> “Station Den Haag Centraal.” *Polytechnisch Tijdschrift [PT]: uitgave B*, 1970, 529-530.

<sup>53</sup> Architecten Spoorwegopbouw te Utrecht, “Stationscomplex te ‘s-Gravenhage,” *BOUW: centraal weekblad voor het bouwweze*, 1974, 1089.

<sup>54</sup> Stationscomplex Den Haag Centraal plattegrond ie verdieping, 17<sup>th</sup>, March, 1971, 0484-02 Dienst der Gemeentewerken Den Haag, 8720, Stukken betreffende de bouw van het stationscomplex Den Haag Centraal in het Bezuidenhout C, 1970-1979.

to address extra short-term stays in the station, with a spatial connection to the primary hierarchy. In addition, circulation related to longer-term stays can be considered as another circulation hierarchy that had an indirect spatial relationship with the central atrium, and acted as a supporting layer for the primary hierarchy. These are the three circulation hierarchies in this complex, linking the five different programmatic spaces and forming a comprehensive circulation system.

#### 4.3 Meeting space analysis

Although the concept of meeting space is ambiguous and lacks a specific function, it is more closely related to social conventions and gatherings. In 1977, Andrew Baum and Stuart Valins proposed that the built environments in which people reside have some influence on their actions and behaviours<sup>55</sup>. Regarding the spaces within a railway terminal complex, there are various arrangements that could direct travellers' behaviours of using these spaces, which could moderate the effects of other factors, and, conversely, be influenced by social and psychological processes. In the context of a railway terminal complex, a meeting space could be a restaurant or a bench on the platform, and is influenced to social and psychological factors which affects how the space is utilized.

Since the influence of architecture could be seen as a product of this reciprocal interaction<sup>56</sup>, the use of meeting spaces will be analysed in this section, generally from two perspectives: the meeting on time and spatial scales in the Hague Central Station.

##### 1) Meeting on time scales

When analysing meeting behaviours over time, it could be classified into two general categories: short-term stays and long-term stays for travellers. Based on the analysis of the programmatic layout and circulation hierarchy, Van der Gaast in 1970 divided the station into two parts for travellers, with the ground floor serving short-stay travellers and the first floor primarily designed for those who will stay longer.

For those travellers who preferred short stays at the station, the station hall could serve as their central area during the waiting period. Typically, travellers would follow a common circulation logic after entering the station, with the ticket and information desk being their first destination, followed by waiting for their train and finally boarding the train from the platform. Throughout this circulation process, the waiting time at the station hall became the main short-term stay for travellers. They tended to wait in the station hall, for the reason that Van der Gaast designed the station hall as the role of connection between the functional areas and the platforms, which was a convenient area for travellers to wait. They could go to the platform by using less time if they were waiting in the hall. In addition, referring to the idea of "everything under one roof" from Van der Gaast<sup>57</sup>, it was evident that several shops were located on the ground floor to cater to the needs of travellers.

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<sup>55</sup> Andrew Baum and Stuart Valins, *Architecture and Social Behavior: Psychological Studies of Social Density* (Hillsdale: Lawrence Erlbaum Associates, 1977), 19.

<sup>56</sup> *Ibid*, 19-20.

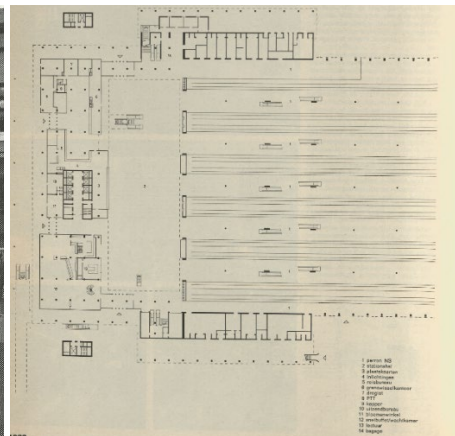
<sup>57</sup> C. Duma, *Station architecture in the Netherlands 1938 /1998* (Zutphen: Walburg Press, 1998), 118.

These shops were attached to the central hall and served as supporting functions to better serve those travellers who required a short stay, which could potentially provide the objective conditions for meeting activities.

Therefore, in order to save time on unnecessary circulation and meet their needs through the nearby shops, the station hall became an objective gathering center for travellers, allowing for the possibility of spontaneous meetings between them. Short and random conversations could occur not only among travel companions but also between strangers during their short stays, thereby constituting the meeting activities centred in and around the station hall.



Photo about the station hall<sup>58</sup>



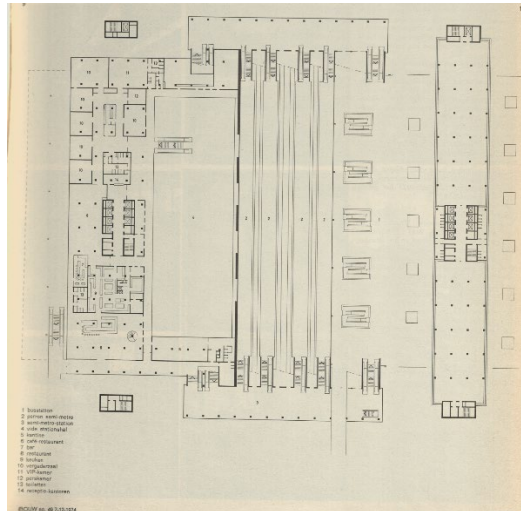
Ground floor plan<sup>59</sup>

Van der Gaast assigned the first floor of the station for the restaurant and café functions. These areas were intended for travellers who desired a longer period of rest, in contrast to the shorter stays on the ground floor. The first-floor functions, based on the analysis of circulation, had an indirect spatial relationship with the central atrium and acted as a supportive layer for the primary hierarchy. The restaurant, café, and canteen areas were designed for travellers who wanted a longer period of rest, often providing a relaxed atmosphere that attracted them to linger. These areas were intended for those who were not in a hurry to board the train. In this context, the open spaces provided an opportunity for travellers to meet and converse with each other, whether they were friends or strangers. Conversely, the meeting rooms and VIP rooms were reserved for closed and semi-private meetings between acquaintances.

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<sup>58</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 101.

<sup>59</sup> Architecten Spoorwegopbouw te Utrecht, "Stationscomplex te 's-Gravenhage," *BOUW: centraal weekblad voor het bouwweze*, 1974, 1088.



First floor plan<sup>60</sup>

These two types of stay modes resulted in different characteristics of meeting activities in the terminal complex. Van der Gaast's design incorporated a clear circulation hierarchy to accommodate these modes. Additionally, spatial atmospheres were also crucial in shaping their meeting characteristics, which will be analysed on a spatial scale in the following section.

## 2) Meeting on spatial scales

In 1970, Andrew Baum and Stuart Valins asserted that density and architecture could influence users' behaviours. Spatial reductions may make users feel “cramped”, disrupting behaviour, inducing stress, and causing behaviours more conducive to achieving goals in “tight” situations<sup>61</sup>. In a railway terminal, this may result in the quickly passing through the space and using it solely as a circulation area. On the contrary, spatial expansion could lead to a comfortable experience for users and attract them to stay. Building upon this idea, this section will examine meetings at different spatial scales, which can also be referred to as spatial density, in order to explore the connection between meeting activity hierarchy and spatial characteristics.

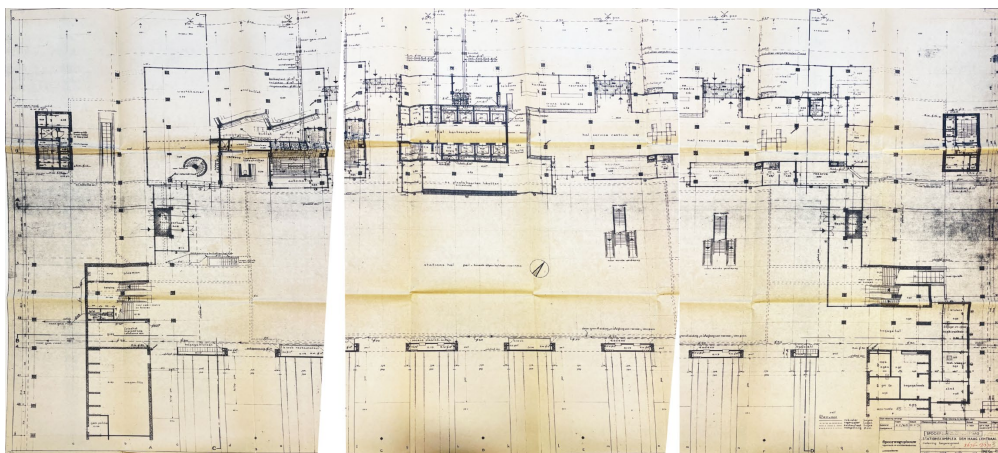
The station hall space, located on the ground floor and connecting the supporting functional areas and the platforms, served as a central atrium where travellers can gather and wait for their trains. Van der Gaast emphasized in 1964 that the proportion of a station is crucial. Therefore, constructing a building according to human scale would be a mistake, as it would be overshadowed by the surrounding transportation modes, particularly for a train station<sup>62</sup>. Thus, the central atrium of this terminal complex measures 74m by 33m and with height of three floors, serving as the core of the station. Due to its scale, travellers would

<sup>60</sup> Architecten Spoorwegopbouw te Utrecht, “Stationscomplex te ‘s-Grabenhage,” *BOUW: centraal weekblad voor het bouwweze*, 1974, 1089.

<sup>61</sup> Andrew Baum and Stuart Valins, *Architecture and Social Behavior: Psychological Studies of Social Density* (Hillsdale: Lawrence Erlbaum Associates, 1977), 12-13.

<sup>62</sup> K. van der Gaast, “Overpeinzigen van een stationsarchitect.” *BOUW: centraal weekblad voor het bouwwezen* 19, 1964, 622-624.

not feel cramped and could freely arrange their time, encouraging them to stay in the hall. Secondly, the plan showed that this atrium is a continuous space without columns interrupting the view. Van der Gaast concealed the columns in the functional areas around the hall, creating a purely public space that made travellers feel open in the interior space, thus enhancing its appeal for them to stay. In addition, the station hall was equipped with 6 escalators and 7 elevators that connected it with the other floors, and signs were placed to indicate the locations of different facilities for travellers. These features made the circulation system clear to travellers and directed them to their desired destinations, reducing congestion in the station hall. As a result, those who wanted to stay and gather in the hall were able to do so without feeling cramped or overwhelmed. Under these kinds of circumstances, the station hall was designed as a suitable place for short-term stays, which could lead to meeting activities happening in the hall.



Constructional ground floor plan, the Hague Central Station<sup>63</sup>



Station Hall of the Hague Central Station<sup>64</sup>



Signs in Den Haag CS<sup>65</sup>

<sup>63</sup> Stationscomplex Den Haag Centraal riolering begane grond, construction drawing, 1971, 0484-02 Dienst der Gemeentewerken Den Haag, 8720, Stukken betreffende de bouw van het stationscomplex Den Haag Centraal in het Bezuidenhout C, 1970-1979, Haags Gemeentearchief archief Leidschendam-Voorburg, The Hague.

<sup>64</sup> Cassandra Wilkins and Victor Lansink, *Ontwerpen Aan Het Spoor* (Nai010 Publishers/Publishers, 2014), 49.

<sup>65</sup> *Ibid*, 49.



Considering spatial hierarchy, the platform space could serve as a secondary public area for travellers to gather. However, it was only a semi-enclosed area that functions as a connector between different tracks and the station complex. It was not very comfortable for travellers waiting for trains, as it tends to become colder in winter and hotter in summer compared to interior spaces. Additionally, the noise from arriving and departing trains could negatively affect the comfort of the space. Moreover, as the platform area was primarily a functional facility, it lacked supporting functions which could meet the needs of travellers. Therefore, although benches were provided for travellers to wait for their trains, the spatial quality of the platform area might not be conducive to meeting activities taking place on the platforms.



Platforms for travellers to use in Den Haag CS<sup>66</sup>

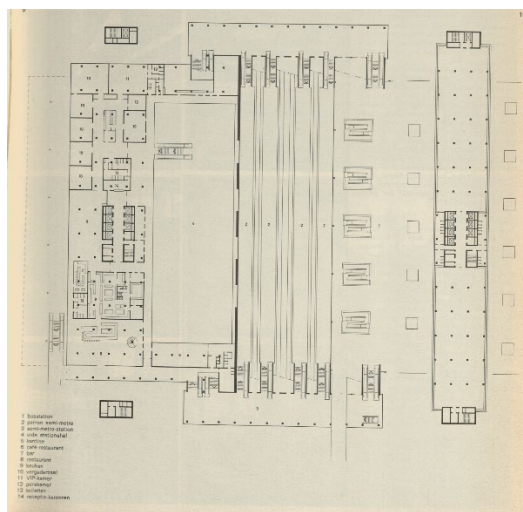
The meeting spaces on the first floor, such as the restaurant, cafe, and bar, could be considered as a middle-scale public space which offered services for travellers and provided a natural space for them to stay. Although these areas couldn't be as open and free as the station hall, Van der Gaast arranged them along the western facade and used transitional spaces such as kitchens and elevators to separate them from the busy atrium, creating a quiet space without interruptions. Moreover, he emphasized the importance of materials, particularly glass<sup>67</sup>. In the Eindhoven Station in 1953, Van der Gaast designed an eye-catching glass facade that served as a view frame for the station restaurant<sup>68</sup>. He brought light into the restaurant area using glazed facades, creating a pleasant atmosphere for travellers to stay and meet with each other. The spatial quality of these areas could also attract more people to rest here. Therefore, meeting activities could naturally arise from these gathering spaces.

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<sup>66</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 101.

<sup>67</sup> K. van der Gaast, "Overpeinzingen van een stationsarchitect." *BOUW: centraal weekblad voor het bouwwezen* 19, 1964, 622-624.

<sup>68</sup> K. van der Gaast, "De stationsgebouwen te Eindhoven en Venlo." *Polytechnisch Tijdschrift [PT]: uitgave B* 15, 1960, 295b.



First floor plan<sup>69</sup>



Photos of the restaurant in Den Haag CS<sup>70</sup>

The shops that were attached to the station hall could be considered small-scale public spaces within the railway terminal complex. They offered services such as selling flowers and medicine to travellers, but despite this, they did not have the same appeal to attract travellers to stay as the restaurant and cafe. However, they still played an essential role in connecting the station hall. After purchasing items from these shops, travellers would tend to return to the station hall to wait for their trains or proceed to the platform to catch their trains, thus creating a hidden circulation logic behind. Furthermore, the small interior spaces of these shops indicated that there was not enough space for travellers to stay for an longer period. These spatial characteristics of the shops also corresponded to the secondary circulation hierarchy, which was established to address extra short-term stays in the station, with a spatial connection to the primary hierarchy relating to the station hall. Therefore, these small-scale public spaces did not provide spaces for gatherings but instead served as functions to support the gatherings happening in the station hall.

<sup>69</sup> Architecten Spoorwegopbouw te Utrecht, "Stationscomplex te 's-Gravenhage," *BOUW: centraal weekblad voor het bouwweze*, 1974, 1089.

<sup>70</sup> *Ibid*, 1090.



Photo about the shops and entrance of the platform<sup>71</sup>



Photo about the information desk<sup>72</sup>

In summary, the meeting activities within this railway terminal complex were shaped by its spatial characteristics, which gave rise to two basic types of meeting spaces. The primary meeting space was the station hall, where created gatherings between strangers. The duration of these interactions were often limited by the length of time the travellers spent waiting for their trains. On the other hand, the secondary meeting space was the public service area on the first floor, where both friends and strangers could meet and tend to spend a longer time than in the station hall. By clearly organizing the circulation hierarchies and managing the overall programmatic layout with the spatial atmosphere, Van der Gaast successfully created a dynamic railway terminal complex at The Hague Central Station, by activating the meeting activities. This approach provided travellers not only with a comfortable experience but also a commercial success.

## 5 Discussion

### 5.1 Comments on the Hague Central Station

After its opening in 1975, The Hague Central Station received a range of comments. According to Douma's 1998 conclusion, the station had a paradoxical development<sup>73</sup>. On the one hand, it embodied the greatest ideal of modern station construction and transportation integration. On the other hand, it lacked attraction and visual relationships with the surrounding environment, human dimensions, and inspiring designs.

Regarding to the design agreements of the station, Douma concurred with Van der Gaast's 1964 proposal<sup>74</sup> to integrate all transportation under the same roof which made the circulation system more efficient and contextualized within the urban context<sup>75</sup>. As a result, the Hague Central Station became a flagship of integrated transportation in 1975.

However, there were critiques of the terminal complex as well. Firstly, Van Dal believed that the station's huge scale lacked consideration for the human scale<sup>76</sup>. Secondly, Douma argued that the integration with the office building made it lose its meaning as a landmark

<sup>71</sup> Architecten Spoorwegopbouw te Utrecht, "Stationscomplex te 's-Gravenhage," *BOUW: centraal weekblad voor het bouwweze*, 1974, 1089.

<sup>72</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 101.

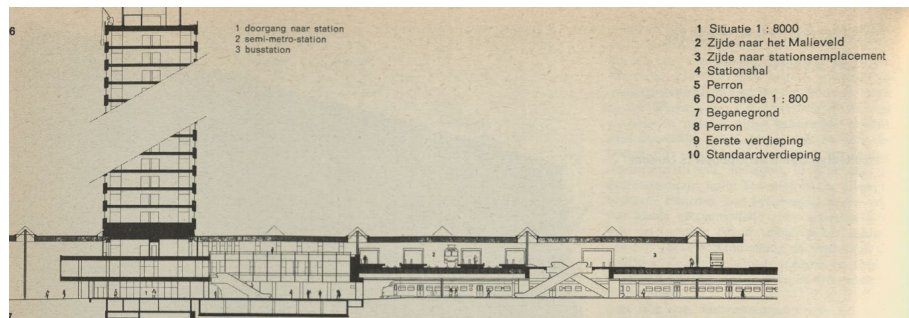
<sup>73</sup> C. Douma, *Stationsarchitectuur in Nederland 1938/1998* (Walburg Pers, 1998), 148.

<sup>74</sup> K. van der Gaast, "Overpeinzingen van een stationsarchitect." *BOUW: centraal weekblad voor het bouwwezen* 19, 1964, 622-624.

<sup>75</sup> C. Douma, *Stationsarchitectuur in Nederland 1938/1998* (Walburg Pers, 1998), 116-119.

<sup>76</sup> Johan W. van Dal, *Architectuur langs de rails: overzicht van de stationsarchitectuur in Nederland* (Deventer: Kluwer Technische Boeken, 1981), 100-101.

for a central station in the city context<sup>77</sup>. Additionally, the station's appearance was lacked of identifiability, which made it difficult for travellers to find the main entrance. And for the interior spaces, Cassandra Wilkins and Victor Lansink pointed out in 2014 that the interior signs of the station were compared to nearly unreadable puzzles, due to their combination and large number. Despite the intention to make it easier for travellers to understand the routes of the station, it had the opposite effect in reality<sup>78</sup>.



Section of the Hague Central Station<sup>79</sup>

In general, the comments received were focused on the urban context, the station's relationship with its surroundings, and its identity. The comments did not seem to touch upon the overall interior and exterior circulation systems or spatial qualities. Additionally, there was no mention about the importance of providing meeting spaces or activities within a station terminal complex. As a kind of supplementary opinion and discussion, the use and significance of meeting spaces in a terminal complex will be discussed in the next section.

## 5.2 Discussion on the Hague Central Station and meeting spaces

According to the principles of functionalism<sup>80</sup>, railway stations are generally viewed as modern and sober buildings that stand for the identity of a city or area, while also functioning as a kind of transportation and connection with other areas or cities. Meeting spaces might seem to conflict with the importance of efficient transportation and circulation in a station. However, despite the primary focus on those functions, commercial and public services in a railway station also have the potential to generate social interactions and create meeting spaces. As station buildings scale up and travellers' demand for services increases, meeting spaces could become an integral part of the station's dynamic and interactive spaces. Van der Gaast recognized this potential as early as 1954, by incorporating commercial spaces and social services into his station designs. For example, the design of the station restaurant in the Eindhoven Station<sup>81</sup> provided a conducive spatial atmosphere and quality services for travellers to enjoy, facilitating social interactions.

<sup>77</sup> C. Douma, *Stationsarchitectuur in Nederland 1938/1998* (Walburg Pers, 1998), 116-119.

<sup>78</sup> Cassandra Wilkins and Victor Lansink, *Ontwerpen Aan Het Spoor* (Nai010 Publishers/Publishers, 2014), 48.

<sup>79</sup> Architecten Spoorwegopbouw te Utrecht, "Stationscomplex te 's-Gravenhage," *BOUW: centraal weekblad voor het bouwweze*, 1974, 1088.

<sup>80</sup> Steven Parissien, *Station to station* (London: Phaidon, 1997), 201.

<sup>81</sup> Trudy van den Hurk-van Haagen, *K. van der Gaast [1923-1993] Transparatie en onverhulde constructies* (Rotterdam: BONAS, 2004), 16.

In the design of The Hague Central Station, Van der Gaast focused on the layout of commercial and public service areas, indicating that although he did not specially mention the importance of meeting spaces, the design of the central station itself suggested that such activities were integral to the vitality of a station building objectively.

Located in the heart of downtown and serving as a railway terminal, The Hague Central Station played a crucial role in gathering and distributing travellers<sup>82</sup>. Recognizing the location advantage, Van der Gaast first designed the station with enough and integrated meeting spaces for travellers arriving from different areas, such as the central station atrium, providing a convenient place for them to take a short break before continuing their journey. The provision of such meeting spaces would be welcomed by travellers as they are essential infrastructure for travelling to other areas.

Secondly, with the basic function of a railway terminal station, The Hague Central Station was designed as a terminal complex. Van der Gaast recognized the importance of commercial functions in enhancing the overall experience of travellers at the station. By introducing commercial and public services in the station<sup>83</sup>, Van der Gaast aimed to attract travellers to stay for short periods and create opportunities for social interactions. The commercial area and meeting spaces interact with each other. The commercial services attracted people to stay, leading to social interactions, and, in turn, more people would visit the commercial services. This mutual relationship between commercial and meeting spaces was instrumental in the emergence of meeting spaces within the station.

These two concerns could enhance the spatial experience for travellers and maintain a balance between the transportation area, gathering area, and commercial and service area to create an orderly atmosphere in the central station. As a result, more people could be attracted to the station, enriching the activities here and making it a dynamic terminal complex.

However, there were also disadvantages to setting up meeting spaces in a railway station, which could be the potential security risks of too many people and the extra risks on the management and maintenance.

In summary, the Hague Central Station was Van der Gaast's important attempt to envision the potential of a railway terminal complex, which aimed to research to the future urban development and daily life of citizens<sup>84</sup>. The design of meeting spaces, although a secondary consideration, became increasingly significant when analysing the entire spatial arrangement and balancing of different functional areas. Van der Gaast's emphasis on the gathering spaces evolved after his experiences working on the Eindhoven station and

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<sup>82</sup> Trudy van den Hurk-van Haagen, *K. van der Gaast [1923-1993] Transparatie en onverhulde constructies* (Rotterdam: BONAS, 2004), 30.

<sup>83</sup> "Station Den Haag Centraal." *Polytechnisch Tijdschrift [PT]: uitgave B*, 1970, 530-531.

<sup>84</sup> Cassandra Wilkins and Victor Lansink, *Ontwerpen Aan Het Spoor* (Nai010 Publishers/Publishers, 2014), 48.

Tilburg station.

## 6 Conclusion

In conclusion, this architectural history thesis takes the Hague Central Station designed by K. van der Gaast in 1970 as a case to study the co-existence of traffic-served space and meeting space, and what meeting spaces bring to the central station. Design strategies and typology approaches for the co-existence are analysed, and it comes out that Van der Gaast illustrated the important role of meeting spaces in shaping the spatial characteristics of a railway terminal complex. Based on the location advantages and integration of commercial and public services, Van der Gaast created two types of meeting spaces that attracted both friends and strangers to interact in the station hall and public service areas. By organizing the circulation hierarchies and managing the overall programmatic layout, he achieved a balance between the transporting area, gathering area, and commercial and service area, making travellers feel in order in this central station. The successful activation of meeting activities could not only provide a comfortable experience for travellers but also achieved commercial success, demonstrating the importance of spatial design in enhancing both social and economic values.

Word account: 7549

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