The ice and the real estate on the Zuidas
From the logolength research Zuidas

Introduction

The Zuidas is usually described as corporate and anonymous, a place without Amsterdam roots that could easily be picked up and put down elsewhere in the world.
But is this correct? Does this view do justice to the Zuidas? The project logolength is an artistic, mathematical research project that maps the Zuidas in a particular manner.

Logos brand the Zuidas. They link the (business) owners to the towers. A logo provides for an image. You can measure the height of the logo, or judge her strength or radiance.

Fig. 1 The measuring of the logolength and fig. 2 Height meter

Maybe you think the logo is pretty, ugly, tough or boring and therefore condemn its location as well. One can also measure the content of a logo, by dissecting the logo into its stories. Did you know that the South-axis (Zuidas) was once a salt-axis? He immigrated from a place close to Paramaribo and expresses himself here in the 'k'[1] of the AkzoNobel logo.
And what to think of gold diggers in Mongolia? They already knew 10.000 years ago that dinosaurs became birds. You can read about them in the logolength research of the VU logo: the griffin.[2]
The logos on the Zuidas refer to other times and distant places. They can dig and fly and take us to the stars, salt lakes, carrot juice, industries, glaciers, gold, oil, Rembrandt, Vermeer, Nauman or Damasio.
Perhaps your judgement about the logos will alter after reading the stories. They disclose different characteristics of the place where the logos dwell.

Read along with what the Griffin says about the Zuidas

Fig. 3 VU logo

Although the designers[3] of the VU logo did not know of his existence, the griffin is situated on the lot where the farm of farmer Griffin once stood.

Jan Griffioen (John Griffin, 1841-1922), born in Kockengen, worked as a farmer servant along the Amstelveense weg. He was dark and handsome, and married Maria Verburg, the beautiful daughter of his neighbor. John married in the Zorgmeer farm, which was located next to the VU campus, on the Amstelveense weg 619, close to where the current math - and physics building stands. His son Jan Griffioen jr.(John Griffin jr.) in his turn married the girl next door, Maria van Barneveld, the daughter of Aagje Streefkerk. The Streefkerk family lived on a nearby farm called "Kent u Zelve" (Know thy Self), on the spot where the current VU hospital was built. The 'good looks' of the Jans and their family name root the logo. The griffin takes us back to the history of the polder, to the 'family album' of the location.

The Griffin family held cattle. The meadows came about by draining the reclaimed and excavated peat: the Amstelveen (the peat at the Amstel).

Fig. 4 Polder map. Subtitle: VU and the Zuidas drawn on the military map of ca. 1848.[4]

The peat grew continuously on the swamp areas between Amstelveen and Waterland and reached up to 10 meters above sea level. This was partly due to the shelter of the sandbanks that ran parallel along the North Sea shore. Yet something different also occurred.

Roughly 150.000 years ago, in the Salien, the ice slid over the weak soil of what later would be referred to as the Netherlands, and fanned out in lobes shaped like eggs.

Fig. 5 Map of ice lobes.

When the ice retreated during the warmer spell that followed, a basin remained that got filled with clay and sand. The deepest part of the ice basin lies right by Waterland and its edge near the VU.

That big basin of clay and sand was great grounds for the peat to settle and pile up. This 'negative' shape in the underground caused a 'positive' outcome in the landscape.

Fig. 6 Image cross-section.[5]

The highest part of the peat dome was located between the current Schinkel/ Kostverlorenvaart and the Amstel. The Schinkel and Kostverlorenvaart lodge where, in the year 1000, the Grote Hollandse Waterkering was: a high, long strip of peat that stretched to the Twiske in Amsterdam North. The peat formed a natural dam and sheltered against the West Winds.
East of the Hollandse Waterkering the water running down from the peat-sponges formed over time a stream that became the Amstel. The contours of the Schinkel/Kostverlorenvaart and the Amstel still tell the outlines and shape of the glacier underneath the surface (see fig. 7). This becomes even more apparent when we consider the fact that the Amstel has been dug from the Omval on.[6] Originally the Zuid-Amstel(South-Amstel) started as two little streams in a forerunner of the Watergraafsmeer and ran south.

Fig. 7 Map of ice basin.[7]

The peat moor could be reached on foot. On the peat a fine maze of streets materialized with exits roads to the west and south. It produced a lucrative moneymaking living - and working space with the Dam as trade center.[8]

The area located at the east side of the Amstel developed completely different, because of the difference in the foundation. Where at the west side the peat could flourish because of the underground - the glacier-, the east side lacked a nourishing foundation. This lack of grip on the soil allowed the (inland) sea Almere, later known as Zuiderzee, to wash away the bog, resulting in floating islands. As a consequence that area could only be reached by boot. Men and cows were put on a boot and dropped on the bog. We can still see the result in the urban development and infrastructure in the sense that the east side of Amsterdam is completely fragmented.
The east side of the city expanded in smaller residential areas. There exist no big main roads and the streets are running dead end to the Wibautstraat.

Fig .8 City map of Amsterdam

In the area north of 't IJ the peat was not piled up or sheltered enough either, causing the sea to wash away entire pieces of land.

The rich trade part of Amsterdam has therefore been located in the NE/SW for centuries now, running roughly from the Kostverlorenkade and the Amstel to the Dam, following the old patches of ice.

The push moraine[9] next to the ice lobes pushed the ground up. The Haarlemmermeer and the Bijlmermeer lie on top of the ice ridge of Amsterdam. They started as little water pools on higher

peat patches or sand.[10] West of the Hollandse Waterkering the propelling southwest wind created a lot of damage and blew pieces of peat away. The Haarlemmermeer was born, a place where it tended to be very spooky. Especially at one particular storm hole where the ships would run wild and hit shallow grounds, the so-called 'shipshell'; the later Schiphol. The old salt marsh landscape, from the time that the area was still 'Waddensea', lies close under the current surface and still shimmers through the fields as creeks when you fly over them in fall or winter. The sandy and salty soils of the drained Haarlemmermeer turned out to be less suited for farming. The ground was eventually dug out and used for the raising of farm - to building land in the neighboring polder, the land of Jan Griffin on the boggy outwash plain.
By the persistent southwest wind, the Haarlemmermeerpolder became an excellent spot for airplane traffic. Schiphol expanded in a little less than a century from a small military airbase in 1916 in an international airport. In 2003 the fifth lane (the Polderbaan) was opened to enforce the 'hubfunction'[11]. The international airport together with the A10 highway and railway over the dike, from 1988 on called the Zuidas[12], has formed a great location for international, service businesses.

Fig. 9 Expansion of Schiphol Airport on the ice ridge (push moraine).

The infrastructure on the Zuidas reflects the polder landscapes as can clearly be seen in fig. 4. So that explains its E/W direction and his slightly bent shape.
What remains is the question whether the Zuidas is randomly located in the rich trade part of Amsterdam.

The A10 and the VU are drawn in on the geological map of the Rijks Geologische Dienst (Royal Geological Service) of 1986. The cross structure on the map stands for the boulder clay from the glacier. That is the gravel, clay and rocks that remain after the ice withdrew. Boulder clay is used to build our dikes from.

Fig. 10 Boulder clay map.

Just for aesthetic purposes we[13] have also drawn the boulder clay in on the altitude map of Amsterdam.

Fig. 11 Altitude map.

What turns out to be the case? The most expensive piece of land in the Netherlands, the Zuidas, borders the boulder clay in the soil: the footprint of the glacier. It is the locus of the terminal moraine! The edge of the ice depression offers a great place for high buildings, for after all the poles that Amsterdam is built on rest on the layers of sand in the ground. At the edges of the lobe these layers are closer to the surface than at the Dam, let alone Waterland where poles of over a 100 meters have to be used![14]

That's how the Amsterdam glacier dictates deep in the ground, along with the ever chilly and persistent west wind, it has to be said, the organization at the surface. Profitable soils and profitable real estate produce each other![15]

And the griffin? It marks high in the sky the end of the line, the point of return for the ice sheet.

Fig. 12 Cross-section griffin on boulder clay.

From appearance and content to a weighed average.

To value this story and hence the logo we developed the logolength. We want to be able to

express the logo in a number and compare it with other logos. What is the length of each logo? The strength, height and content of the logo are being measured and weighed. How does that work? We will stick to our example. The logo brings us through the fields of farmer Griffin to the Ice Age.
The place and time at which a story takes place are being brought together in the logolength formula:

$$ll = lh + lv + lf$$

logolength = logoheight + logospeed + logostrength

or in symbols:

$$ll = lh + \left(\frac{\sum_{i=1}^{n} \left(\left(\frac{(\log S_i) - \log s_i}{2 \log S} \right) + \frac{\log(t_i + t_c)}{2 \log T} \right) g_i}{\sum_{i=1}^{n} abs(g_i)} \right) LH + \left(\left(als\ lw < 6 \left| \left(\frac{(lw-6)}{5} \right) LH \right. \right) \left| \left(als\ lw \geq 6 \left| \left(\frac{(lw-5)}{5} \right) LH \right. \right) \right. \right)$$

- designed by the mathematician B. Gietema – and calculated in (logo)meters. This happens through switching years to length and by taking the distance of where the event happened in as spatial correction factor. The older the story, the longer its length. The longer the distance, the bigger the correction factor. When history takes place at the Zuidas the factor is 0.

$$lv = \left(\frac{\sum_{i=1}^{n} \left(\left(\frac{(\log S_i) - \log s_i}{2 \log S} \right) + \frac{\log(t_i + t_c)}{2 \log T} \right) g_i}{\sum_{i=1}^{n} abs(g_i)} \right) LH \qquad (logosnelheid)$$

A logo consists of several stories. The speed of the stories are added up, and its average multiplied with the LH; the average logoheight of the Zuidas, which is 52,5 meters. The logospeed (*lv*) in the formula of the griffin comes down to 30 meters. This is added to how high the logo is placed above the pavement of the Zuidas, which makes for the logoheight (*lh*). Without a correction for the height of the surface compared to the NAP, we measured the griffin with our logo altimeter at 35 meters. The basis logolength of the VU logo, the griffin, comes down to 65 meters, but that's not the end of things.

To every story from the logo a weight can be assigned by the public on a digital 'logolength chart' on the site of logolengte.nl, a design by E. Kraakman.

Fig 13. The logolength chart.

The third value, the logostrength (*lf*) is also being calculated from a public evaluation of the logo.

$$als\ lw < 6\ dan\ lw = \left(\frac{(lw-6)}{5} \right) LH \qquad (logokracht\ als\ lw < 6)$$

$$als\ lw \geq 6\ \ dan\ lw = \left(\frac{(lw-5)}{5} \right) LH \qquad (logokracht\ als\ lw \geq 6)$$

Through the logolength chart, the public can assign a grade to the logo.
The last two values vary from person to person. The public-logolength is being calculated 'on the fly', expressed in logolength meters and is as a bar directly visible in the chart.
Through a database we can register the public logolengths. Do you, as a company, want to know how long your logolength is? Contact Buro *jan*-ZE, www.burojanze.nl and have your logo

measured.

[1] The K stands for Koninklijke Zout Maatschappij (Royal Salt Company).
[2] See www.logolengte.nl
[3] In 1989 bureau Premsula Vonk designed the griffin as a logo for the Vrije Universiteit.
[4] Adaptation by J. Fokkema
[5] Source: www.falw.vu/~huik/ijstijd.html
[6] Bont, C. de, *Vergeten land: Ontginning, bewoning en waterbeheer in de West-Nederlandse veengebieden (800-1350)*, pp. 484-530, phd.Wageningen,
Alterra, 2008
[7] GIS adaptation J. Fokkema
[8] Available from the Atlas Amsterdam, Dijkstra, Reitsma, Rommerts; Toth, 1999
[9] stuwwal
[10] meerstallen
[11] More information on the expansion and history of Schiphol can be found on www.urbannebula.nl
[12] According to Tess Broekmans: Godin van de Zuidas, p. 109 the term Zuidas is first used in 1988.
[13] 'We' is Jaap Fokkema of GIS, Faculteit der Letteren, VU and Irene Janze, Buro *jan*-ZE .
[14] Source: Prof Jan Smit, VU, personal communication
[15] This way a piece of land during a time of international, servicing industry gets pulled up from a muddy, swampy and windy 'frayed fringe'.