

# Leiden

“Leyden” redirects here. For other uses, see Leyden (disambiguation).

**Leiden** (Dutch pronunciation: [ˈleɪ̯.də(n)]; in English and archaic Dutch also **Leyden**) is a city and municipality in the Dutch province of South Holland. The municipality of Leiden has a population of 122,000, but the city forms one densely connected agglomeration with its suburbs Oegstgeest, Leiderdorp, Voorschoten and Zoeterwoude with around 190,000 inhabitants. Leiden is located on the Old Rhine, at a distance of some 20 kilometres (12 miles) from The Hague to its south and some 40 kilometres (25 miles) from Amsterdam to its north. The recreational area of the Kaag Lakes (Kagerplassen) lies just to the northeast of Leiden.

A university city since 1575, Leiden houses Leiden University, the oldest university of the Netherlands, and Leiden University Medical Center. It is twinned with Oxford, the location of England’s oldest university.

## 1 History

See also: Timeline of Leiden

Leiden was formed on an artificial hill (today called the Burcht van Leiden) at the confluence of the rivers Oude Rijn and Nieuwe Rijn (Old and New Rhine). In the oldest reference to this, from circa 860, the settlement was called *Leithon*. The name is said to be from Germanic \*leitha- “canal”.<sup>[6]</sup>

Leiden has in the past erroneously been associated with the Roman outpost Lugdunum Batavorum. This particular *castellum* was thought to be located at the Burcht of Leiden, and the city’s name was thought to be derived of the Latin name Lugdunum. However the *castellum* was in fact closer to the town of Katwijk, whereas the Roman settlement near modern-day Leiden was called Matilo.<sup>[7]</sup>

The landlord of Leiden, situated in a stronghold on the hill (*motte*), was initially subject to the Bishop of Utrecht but around 1100 the *burggraves* became subject to the county of Holland. This county got its name in 1101 from a domain near the stronghold: *Holland* or *Holland*.

Leiden was sacked in 1047 by Emperor Henry III. Early 13th century, Ada, Countess of Holland took refuge here when she was fighting in a civil war against her uncle, William I, Count of Holland. He besieged the stronghold



*Windmill museum De Valk*

and captured Ada.

Leiden received city rights in 1266. In 1389, its population had grown to about 4000 persons.

### 1.1 Siege of 1420

In 1420, during the Hook and Cod wars, Duke John III of Bavaria along with his army marched from Gouda in the direction of Leiden in order to conquer the city since Leiden did not pay the new Count of Holland Jacqueline, Countess of Hainaut, his niece and only daughter of Count William VI of Holland.

Burgrave Filips of Wassenaar and the other local noblemen of the Hook faction assumed that the duke would besiege Leiden first and send small units out to conquer the surrounding citadels. But John of Bavaria chose to attack the citadels first.

He rolled the cannons with his army but one which was too heavy went by ship. By firing at the walls and gates with iron balls the citadels fell one by one. Within a week

John of Bavaria conquered the castles of Poelgeest, Ter Does, Hoichmade, de Zijl, ter Waerd, Warmond and de Paddenpoel.

On 24 June the army appeared before the walls of Leiden. On 17 August 1420, after a two-month siege the city surrendered to John of Bavaria. The burgrave Filips of Wassenaar was stripped of his offices and rights and lived out his last years in captivity.

## 1.2 16th to 18th centuries



*Otto van Veen: Relief of Leiden (1574), Inundated meadows allow the Dutch fleet access to the Spanish infantry positions.*



*17th-century houses along the Herengracht.*



*Korenbrug*



*The 1852 Sijthoff printing office, Leiden*

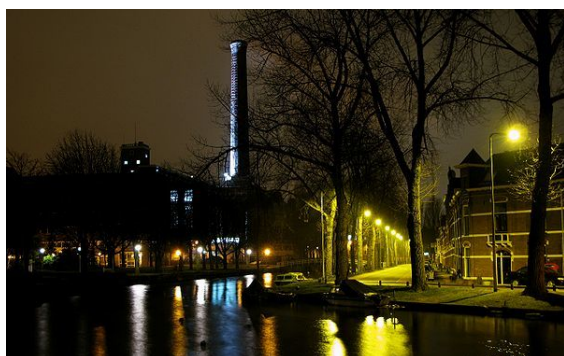


*Leiden's west gate, the Morspoort*



*Leiden's east gate, the Zijlpoort*





*The Singel at night, also chimney of the Light Factory*

Leiden flourished in the 16th and 17th century. At the close of the 15th century the weaving establishments (mainly broadcloth) of Leiden were very important, and after the expulsion of the Spaniards Leiden cloth, Leiden baize and Leiden camlet were familiar terms. In the same period, Leiden developed an important printing and publishing industry. The influential printer Christoffel Plantijn lived there at one time. One of his pupils was Lodewijk Elzevir (1547–1617), who established the largest bookshop and printing works in Leiden, a business continued by his descendants through 1712 and the name subsequently adopted (in a variant spelling) by contemporary publisher Elsevier.

In 1572, the city sided with the Dutch revolt against Spanish rule and played an important role in the Eighty Years' War. Besieged from May until October 1574 by the Spanish, Leiden was relieved by the cutting of the dikes, thus enabling ships to carry provisions to the inhabitants of the flooded town. As a reward for the heroic defence of the previous year, the University of Leiden was founded by William I of Orange in 1575. Yearly on 3 October, the end of the siege is still celebrated in Leiden. Tradition tells that the citizens were offered the choice between a university and a certain exemption from taxes and chose the university. The siege is notable also for being the first instance in Europe of the issuance of paper money, with paper taken from prayer books being stamped using coin dies when silver ran out.<sup>[8]</sup>

Leiden is also known as the place where the Pilgrims (as well as some of the first settlers of New Amsterdam)<sup>[9][10]</sup> lived (and operated a printing press)<sup>[11]</sup> for a time in the early 17th century before their departure to Massachusetts and New Amsterdam in the New World.<sup>[12]</sup>

In the 17th century, Leiden prospered, in part because of the impetus to the textile industry by refugees from Flanders. While the city had lost about a third of its 15,000 citizens during the siege of 1574, it quickly recovered to 45,000 inhabitants in 1622, and may have come near to 70,000 circa 1670. During the Dutch Golden Era, Leiden was the second largest city of Holland, after Amsterdam.

From the late 17th century onwards Leiden slumped,

mainly due to the decline of the cloth industries. In the beginning of the 19th century the baize manufacture was altogether given up, although industry remained central to Leiden economy. This decline is painted vividly by the fall in population. The population of Leiden had sunk to 30,000 between 1796 and 1811, and in 1904 was 56,044.

From the 17th to the early 19th century, Leiden was the publishing place of one of the most important contemporary journals, *Nouvelles Extraordinaires de Divers Endroits*, known also as *Gazette de Leyde*.

### 1.3 19th and 20th century

On 12 January 1807, a catastrophe struck the city when a boat loaded with 17,400 kg (38,360 lb) of gunpowder blew up in the middle of Leiden. 151 persons were killed, over 2000 were injured and some 220 homes were destroyed. King Louis Bonaparte personally visited the city to provide assistance to the victims. Although located in the center of the city, the area destroyed remained empty for many years. In 1886 the space was turned into a public park, the Van der Werff park.

In 1842, the railroad from Leiden to Haarlem was inaugurated and one year later the railway to Den Haag was completed, resulting in some social and economic improvement. Perhaps the most important piece of Dutch history contributed by Leiden was the Constitution of the Netherlands. Johan Rudolf Thorbecke (1798–1872) wrote the Dutch Constitution in April 1848 in his house at Garenmarkt 9 in Leiden.

Leiden's reputation as the "city of books" continued through the 19th century with the establishment of publishing dynasties by Evert Jan Brill and Albertus Willem Sijthoff.<sup>[13]</sup> Sijthoff, who rose to prominence in the trade of translated books, wrote a letter in 1899 to Queen Wilhelmina regarding his opposition to becoming a signatory to the Berne Convention for the Protection of Literary and Artistic Works. He felt that international copyright restrictions would stifle the Dutch publishing industry.<sup>[14]</sup>

Leiden began to expand beyond its 17th-century moats around 1896 and the number of citizens surpassed 50,000 in 1900. After 1920, new industries were established in the city, such as the canning and metal industries. During World War II, Leiden was hit hard by Allied bombardments. The areas surrounding the railway station and Marewijk were almost completely destroyed.

### 1.4 Leiden today

The city's biggest and most popular annual festival is celebrated at 3 October and is called simply 3 Oktober. The people of Leiden celebrate the end of the Spanish siege of 1574.<sup>[15]</sup> It typically takes place over the course of two to three days (usually two but three if there's a Sunday involved) and includes parades, a hutspot feast,

historical reenactments, a funfair and other events. The city has recently started to host the *Leiden International Film Festival*, the fastest growing festival of its type in the Netherlands.<sup>[16]</sup>

Leiden has important functions as a shopping and trade center for communities around the city. The University of Leiden is famous for its many developments including Snells law (by Willebrord Snellius), the famous Leyden jar, a capacitor made from a glass jar, invented in Leiden by Pieter van Musschenbroek in 1746. Another development was in cryogenics: Heike Kamerlingh Onnes (1913 Nobel prize winner in physics) liquefied helium for the first time (1908) and later managed to reach a temperature of less than one degree above the absolute minimum. Albert Einstein also spent some time at Leiden University during his early to middle career.

The city also houses the Eurotransplant, the international organization responsible for the mediation and allocation of organ donation procedures in Austria, Belgium, Croatia, Germany, Luxembourg, the Netherlands and Slovenia. Leiden also houses the headquarters of Airbus Group, a global pan-European aerospace and defence corporation and a leading defence and military contractor worldwide. The group includes Airbus, the leading manufacturer of commercial aircraft worldwide.

## 2 Rivers, canals and parks

The two branches of the Old Rhine, which enter Leiden on the east, unite in the centre of the town. The town is further intersected by numerous small canals with tree-bordered quays. On the west side of the town, the Hortus Botanicus and other gardens extend along the old *Singel*, or outer canal. The *Leidse Hout* park, which contains a small deer park, lies on the northwest border with Oegstgeest. The *Van der Werf Park* is named after the mayor Pieter Adriaansz. van der Werff, who defended the town against the Spaniards in 1574. The town was beleaguered for months and many died from famine. The open space for the park was formed by the accidental explosion of a ship loaded with gunpowder in 1807, which destroyed hundreds of houses, including that of the Elsevier family of printers.

## 3 Buildings of interest

Because of the economic decline from the 17th to the early 20th century, much of the 16th- and 17th-century town centre is still intact. It is reportedly the second largest 17th-century town centre in the Netherlands, the largest being Amsterdam's town centre.

Hundred buildings in the centre are decorated with large murals of poetry, part of a wall poem project active from 1995 to 2005.<sup>[17][18]</sup>

- Shakespeare on a Leiden wall
- Langston Hughes on a Leiden wall
- e.e. cummings
- Waring Cuney

### 3.1 Fortifications

At the strategically important junction of the two arms of the Old Rhine stands the old castle *de Burcht*, a circular tower built on an earthen mound. The mound probably was a refuge against high water before a small wooden fortress was built on top of it in the 11th century. The citadel is a so-called *motte-and-bailey* castle. Of Leiden's old city gates only two are left, the *Zijlpoort* and the *Morspoort*, both dating from the end of the 17th century. Apart from one small watch tower on the Singel nothing is left of the town's city walls. Another former fortification is the *Gravensteen*. Built as a fortress in the 13th century it has since served as house, library and prison. Presently it is one of the University's buildings.

### 3.2 Churches



*Hooglandse Kerk, Leiden*

The chief of Leiden's numerous churches are the *Hooglandse Kerk* (or the church of St Pancras, built in the 15th century and containing a monument to Pieter Adriaansz. van der Werff) and the *Pieterskerk* (church of St Peter (1315) with monuments to Scaliger, Boerhaave and other famous scholars. From a historical perspective the *Marekerk* is interesting too. Arent van 's Gravesande designed that church in 1639. Other fine examples of his work in Leiden are in the *Stedelijk Museum De Lakenhal* (the municipal museum of fine arts), and the *Bibliotheca Thysiana*. The growing town needed another church and the *Marekerk* was the first church to be built in Leiden



(and in Holland) after the Reformation. It is an example of Dutch Classicism. In the drawings by Van 's Gravesande the pulpit is the centrepiece of the church. The pulpit is modelled after the one in the *Nieuwe Kerk* at Haarlem (designed by Jacob van Campen). The building was first used in 1650, and is still in use. The 'Waalse Kerk' (Breestraat 63) was originally part of the Katharina Hospital. In 1584 it became the church of Protestant refugees from the Southern Netherlands (Brugge) and France.

### 3.3 University buildings



*The 1860 Leiden Observatory, after restoration (2013)*

The town centre contains many buildings that are in use by the University of Leiden. The *Academy Building* is housed in a former 16th-century convent. Among the institutions connected with the university are the national institution for East Indian languages, ethnology and geography; the botanical gardens, founded in 1587; the observatory (1860); the museum of antiquities (*Rijksmuseum van Oudheden*); and the ethnographical museum, of which P. F. von Siebold's Japanese collections was the nucleus (*Rijksmuseum voor Volkenkunde*). The *Bibliotheca Thysiana* occupies an old Renaissance building of the year 1655. It is especially rich in legal works and vernacular chronicles. Noteworthy are also the many special collections at Leiden University Library among which those of the *Society of Dutch Literature* (1766) and the collection of casts and engravings. In recent years the university has built the Bio Science Park at the city's outskirts to accommodate the Science departments.

### 3.4 Other buildings

Some other interesting buildings are the town hall (*Stadhuis*), a 16th-century building that was badly damaged by a fire in 1929 but has its Renaissance façade designed by Lieven de Key still standing; the *Gemeenlandshuis*

*van Rijnland* (1596, restored in 1878); *De Waag* (weigh house in Dutch), built by Pieter Post; the former courthouse (*Gerecht*); a corn-grinding windmill, now home to a museum (*Molen de Valk*) (1743); the old gymnasium (*Latijnse School*) (1599) and the city carpenter's yard and wharf (*Stadstimmerwerf*) (1612), both built by Lieven de Key (c. 1560–1627). Another building of interest is the “pesthuis”, which was built at that time just outside the city for curing patients suffering the bubonic plague. However, after it was built the feared disease did not occur in the Netherlands anymore so it was never used for its original purpose, it now serves as the entrance of *Naturalis*, one of the largest natural history museums in the world.

## 4 Public transport



*Topographic map image of Leiden (city), Sept. 2014*

### 4.1 Bus lines

- Arriva : information
  - Bus stops and lines in Leiden:
  - Bus lines with schedules by line in the region  
Select “met Bus” at Reiszijde, fill in Leiden at “Plaats” and select your busline from the pulldown menu that appears.

### 4.2 Railway

- **Railway stations:** Leiden Centraal, Leiden Lamenschans, De Vink

To plan a train journey follow the link<sup>[19]</sup>

Leiden is on the planned route of the RijnGouweLijn, the Netherlands' first Light rail project. This project has, however been shelved for the foreseeable time.

## 5 Notable inhabitants

*See also People from Leiden*

The following is a selection of important *Leidenaren* throughout history:

- William II, 1228–1256, count of Holland, later also king of Germany.
- Cornelius Engelbrechtszoon, 1468–1533, painter.
- Lucas van Leyden, 1494–1533, engraver and painter.
- John of Leiden, 1509?–1536, leader of the Anabaptist Münster Rebellion.
- Pieter Adriaansz. van der Werff, 1529–1604, mayor of Leiden during the Spanish Siege.
- Ludolph van Ceulen, 1540–1610, mathematician, computed Pi.
- William Brewster, 1567–1644, pilgrim.
- Willebrord Snell, 1580–1626, astronomer and mathematician.
- William Bradford, 1590–1657, pilgrim, leader of the American Plymouth Colony in Massachusetts.
- Jan van Goyen, 1596–1656, painter.
- Rembrandt van Rijn, 1606–1669, painter.
- Love Brewster, 1611-1650/1, pilgrim.
- Frans Post, 1612–1680, painter.
- Gerard Dou, 1613–1675, painter.
- Pieter de Ring, ca 1615–1660, painter
- Jan Steen, 1626–1679, painter.
- Gabriel Metsu, 1629–1667, painter.
- Herman Boerhaave, 1668–1738, humanist and physician.
- Johann Bachstrom, 1688–1742, writer, scientist and Lutheran theologian.
- Bernhard Siegfried Albinus, 1697–1770, anatomist.
- Gottfried van Swieten, 1733–1803, diplomat, friendship and collaboration with several great composers.
- Philipp Franz Bathasar von Siebold, 1796–1866, physician, collector, 'Japanologist'.
- Johannes Diderik van der Waals, 1837–1923, physicist.
- Hendrik Lorentz, 1853–1928, physicist.
- Heike Kamerlingh Onnes, 1853–1926, physicist.
- Willem Einthoven, 1860–1927, physician, physiologist.
- Pieter Zeeman, 1865–1943, physicist.
- Willem de Sitter, 1872–1934, mathematician, physicist, astronomer.
- Albert Einstein, 1879-1955, lecturer/researcher at Leiden University, various dates between 1916 and 1930.
- Paul Ehrenfest, 1880–1933, physicist.
- Theo van Doesburg, 1883–1931, painter, architect, writer.
- Jan Hendrik Oort, 1900–1992, astronomer.
- Marinus van der Lubbe, 1909–1934, accused of setting fire to the *Reichstag* in Berlin.
- Hendrik Casimir, 1909–2000, physicist.
- Nina Foch, 1924–2008, actress/ acting teacher.
- Jouke de Vries, 1960, professor at Leiden University and runner-up candidate for the PVDA elections in 2002 (lost to Wouter Bos).
- Armin van Buuren, 1976, Producer/DJ, *DJ Magazine's* # 1 DJ 2007–2010 & 2012.
- Carice van Houten, 1976, singer and film/television actress
- Buurtpoes Bledder, 2011–2013, Cat covered by national media for his exploits around the city.<sup>[20]</sup>

## 6 International relations

See also: List of twin towns and sister cities in the Netherlands

### 6.1 Twin towns – Sister cities

Leiden is twinned with:

- Juigalpa, Nicaragua
- Krefeld, Germany

- Oxford, United Kingdom<sup>[21]</sup>
- Toruń, Poland<sup>[22]</sup>
- Buffalo City, South Africa
- The Leyden jar, a capacitor made from a glass jar, was invented here by Pieter van Musschenbroek in 1746. It was actually first invented by Ewald Georg von Kleist the year before, but the name “Leyden jar” stuck.

## 7 Miscellaneous



The poem on Leiden's Stadhuis.

- The coat of arms of Leiden is two red keys, crossed in an X-shape on a white background. These keys are those to the gates of heaven held by St. Peter, for whom a large church in the city center is named. Because of this coat of arms, Leiden is referred to as the “*Sleutelstad*” (“the key city”).<sup>[23]</sup>
- For a time Leiden held the title “The Coldest Place on Earth” because of the developments in cryogenics in a laboratory there. Heike Kamerlingh Onnes (1913 Nobel prize winner in physics) liquefied helium for the first time (1908), and later managed to reach a temperature of less than one degree above Absolute zero.
- The Norwegian cheese “nøkkelost” (“key cheese”) is named after the keys in coat of arms of Leyden, as it is a variation of Leyden cheese.
- The following places and things are named after this city:
  - Leyden, New York, USA
  - Leyden, Massachusetts, USA<sup>[24]</sup>
  - Leyden High School District 212 in Franklin Park, Illinois, USA.
  - Leiden scale, for measuring extreme low temperatures.
  - Factor V Leiden is named after the city of Leiden where it was discovered in 1994.
- Leiden's *Stadhuis* (Town Hall) has a poem in the form of a cryptogram on its façade that records the date 1574 in Roman numerals, the year of the “Black Famine” or Spanish siege (W equals two Vs):
 

Nae zWarte HVnger-noot  
GebraCht had tot de doot  
bInaest zes-dVIZent MensChen;  
aLst god den heer Verdroot  
gaf hI Vns Weder broot  
zo VeeL WI CVnsten WensChen.

(Dutch: “When the Black Famine had brought to the death nearly six thousand persons, then God the Lord repented, and gave bread again as much as we could wish”).<sup>[25]</sup>

## 8 Sports

- Zorg en Zekerheid Leiden is the basketball club of Leiden. In 2011 and 2013 they won the National Title, in 2010 and 2012 the National Cup and in 2011 and 2012 the National Super Cup. The club also played in the FIBA EuroChallenge and reached the Second Round (Best 16) in 2011/2012.

## 9 See also

- Leiden Classical A distributed computing project
- Wireless Leiden
- Oudt Leyden, former Michelin starred restaurant



## 10 References

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## 11 External links

- Official site
- Scenic video 'Leiden Sleutelstad' ('Leiden, city of keys') (time lapse)



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