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Photo by Danmarks Nationalbank

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Danmarks Nationalbank – A monumental work of contemporary architecture

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In the very heart of Copenhagen, facing the waterfront and heritage buildings, stands a modern landmark, the central bank of Denmark. It is an accomplished building in the design of both its exterior and interior. The streamlined and stark appearance of this functionalist marble and glass structure interacts with the warm organic materials within, creating a uniquely unified whole. It was designed by the world-famous perfectionist modernist Arne Jacobsen.

After the Second World War, the premises that housed the central bank of Denmark, Danmarks Nationalbank, had become cramped, and larger facilities were needed. The bank was domiciled in a complex of buildings, while the main building was not part of a continuous block. Designed between 1865 and 1870, and lavishly ornamented in the style of Florentine Renaissance palaces, it was in keeping with venerable, heritage bank premises around the world.

New requirements to be met

In 1961, Danmarks Nationalbank invited five prominent architects and design offices of the day to participate in a closed architectural competition. This was the outcome of a proposal to consolidate the bank's presence and activities in a single modern building complex, taking into account its various functions and its central location, which is surrounded by historical buildings, ministries and businesses alike. Given the complexity of the project, the competition programme gave the participants the scope to decide whether the existing main bank building should be preserved or demolished. The rest of the existing complex was to be pulled down. To obtain the best possible basis for evaluating the incoming proposals, each of them was analysed by experts with reference to a set of criteria. These concerned harmonising the complex with the urban environs as well as fulfilling the bank's operational requirements.



Facing the waterfront and heritage buildings stands a modern landmark, the central bank of Denmark

A majority of jury members named the Danish architect Arne Jacobsen's proposal the winning submission. This project entailed demolition of the existing building to create new aesthetic values through an interaction between the modern complex, the heritage buildings that surrounded it, and the waterfront. This solution met the operational requirements of the bank, while the architectural vision was convincing. Furthermore, the jury found that the concentration of the bank's departments in a tall wing offered a number of advantages in terms of layout so that large parts of the complex, facing the historic buildings, could be kept much lower.

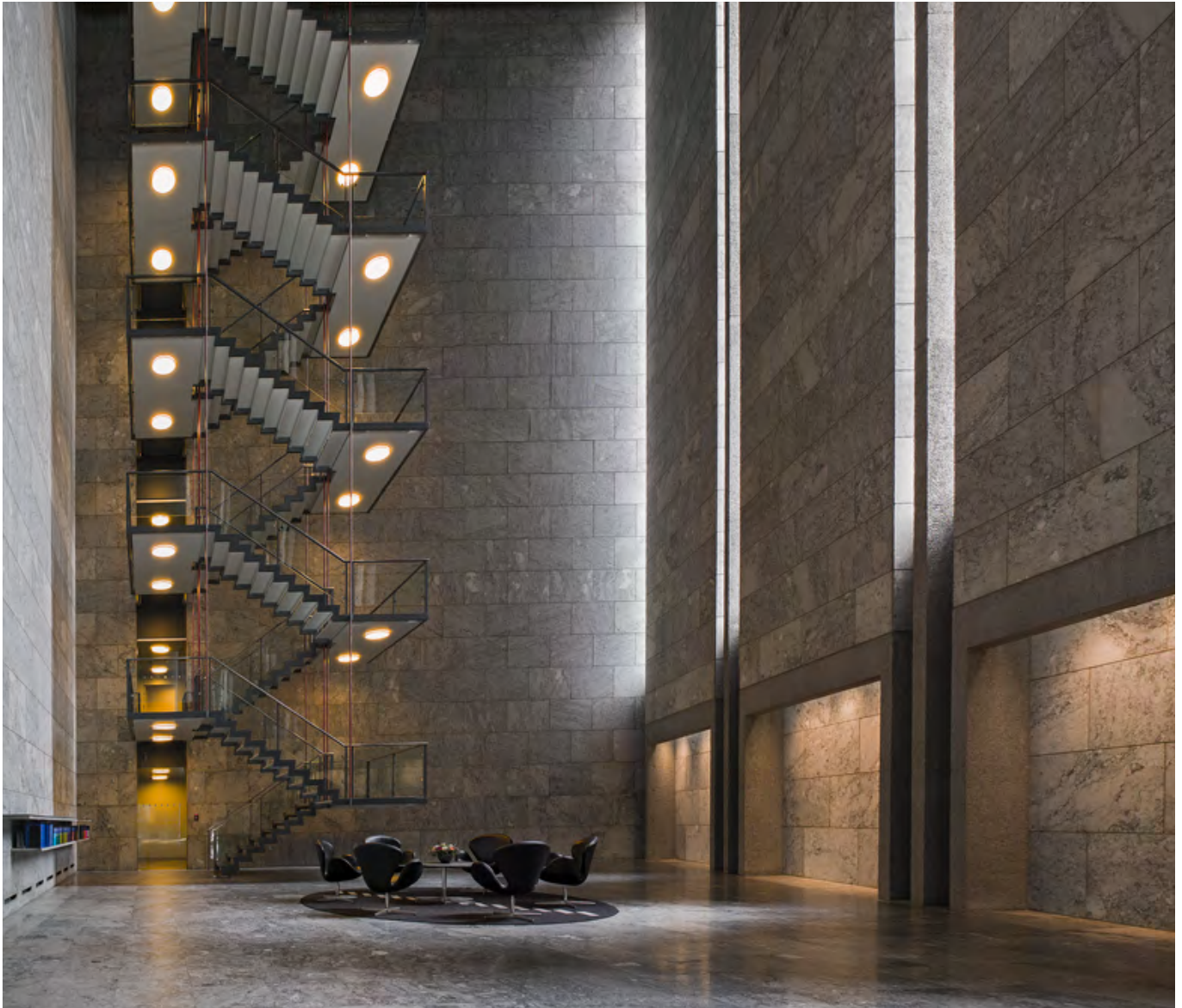
It was crucial that the bank's various operations would not be interrupted by construction of the extensive complex. The project was therefore split up into three stages, with individual bank departments to be transferred as soon as the various sections became ready.

The project planning was detailed in the extreme, with thousands of plans, each with itemised time and cost estimates. All the façades were manufactured within the first construction stage to ensure that they were ready to be fitted with glass infills at the time when they were to be installed. As a result of the strict control and detailed planning of the construction process, which involved comprehensive coordination and weekly meetings, this grand and challenging project was executed on budget and on time.

A reputable architect and his loyal team

At the time of being awarded this commission, Arne Jacobsen (1902-1971) was already recognised as an acclaimed architect and designer internationally for the vast number of buildings, furniture and designer items to his name. These are now widely regarded as Modernist classics.

As early as in 1929, the 27-year-old Arne Jacobsen had established himself as one of



There are almost 20 meters to the ceiling in the cathedral-like lobby. Daylight enters through tall, narrow windows between the façade pillars

the most visionary and progressive Danish architects of his day when he was awarded the first prize for the ultra-modernistic, 'The House of the Future'. This was a concept presented at The Building and Housing Exhibition of the Danish Association of Architects in Copenhagen. Arne Jacobsen was one of the first to introduce and adopt modernism in Denmark, which was inspired by Le Corbusier.

Jacobsen's major architectural works include the Bellavista housing estate (1934), the playhouse Bellevue Teatret (1935-36), Aarhus City Hall (1938-41), Søllerød Town Hall (1942) and St. Catherine's College, Oxford (1964). In addition, his design objects include

the AJ cutlery (1957), the Vola tapware (1959), the Cylinda-line (1967) interior design/household ware and the Banker's Clock. Internationally, Jacobsen is perhaps most famous for his iconic furniture designs, including The Ant (1952) and Series 7 (1955) stacking chairs, The Egg (1958) and The Swan (1958) lounge seating.

With his holistic and perfectionist approach to both the smallest finesse and the overall appearance of his projects, Arne Jacobsen's style and method as an architect and designer were influential internationally and continue to this day to inspire up-and-coming architects.

In 1971 Arne Jacobsen died suddenly, just after the materials for the Danmarks Nationalbank building had been selected and the first stage of construction had been completed. This comprised the northern end of the tall block and the first section of the office wing, the banknote printing works, and the technical room and canteen facilities.

The architects Hans Dissing (1926-1998) and Otto Weitling (b. 1930), Arne Jacobsen's two closest colleagues, took over and continued the project. Arne Jacobsen's design office was renamed DISSING+WEITLING. The Danmarks Nationalbank building is considered



A versatile, pearwood-veneered storage and partitioning unit serving both the corridor side and office side with combinations of coat-rack, cabinet, drawer and shelving modules

Arne Jacobsen’s crowning architectural achievement not only in its form and function, but also in his detailed plans for how the building was to be operated; all of which were faithfully executed by the firm DISSING+WEITLING.

Straight lines through fundamental principles

The Danmarks Nationalbank building is constructed from 420 x 420 cm units forming the load-bearing structure. This design made it possible to add an extra storey while preventing the building from towering above neighbouring blocks.

The modular structure pervades both the exterior and the interior of the building complex, and is characterised by multiple types of façades: the open glass-faced bays; and the closed marble fronts, which are divided up into rectangular forms; also the pearwood-veneered, double-sided cabinets that separate the wide corridors from the meeting rooms and offices, which are located in the office corridors.

The building’s extensive glass façade vary in appearance depending on the weather and the time of the day, and they integrate surrounding buildings such as Holmen’s Church and the classical columns of Erichsen’s mansion by reflecting them. The glass bays are based on the curtain wall principle, whereby the façade is mounted on the building without being part of the load-bearing structure. The curtain walls feature triple-glazed infills consisting of insulating plate glass, sheet glass, and hardened

glass innermost with frosting to parapet level. Transparent window blinds between the inner and outer glazing units trap non-absorbed solar heat; this was a highly innovative feature in the early 1970s.

Unique attention to detail and materials

The special dictates of the architectural design for streamlining and minimal building maintenance are reflected in the consistent use of materials and the clean lines of the building’s structure.

Arne Jacobsen’s buildings are characterised by their exceptional level of detail. For Jacobsen, continuity between the finer details and the overall impression was essential, and the Danmarks Nationalbank building is permeated by this principle. Interior furnishings such as the stackable Lily chair, the Banker’s Clock, and fittings such as the Vola tapware, all of which are still in production today, were designed specifically for Danmarks Nationalbank.

Light grey Porsgrunn marble was used consistently for the façades, the lobby floor and walls and the coffee tables in the office corridors. Porsgrunn marble comes from Norway and was greatly favoured by Arne Jacobsen. With its finely detailed structure of coral patterns and fossils, the dynamic surface of this marble harmonises exquisitely with the surrounding architecture.

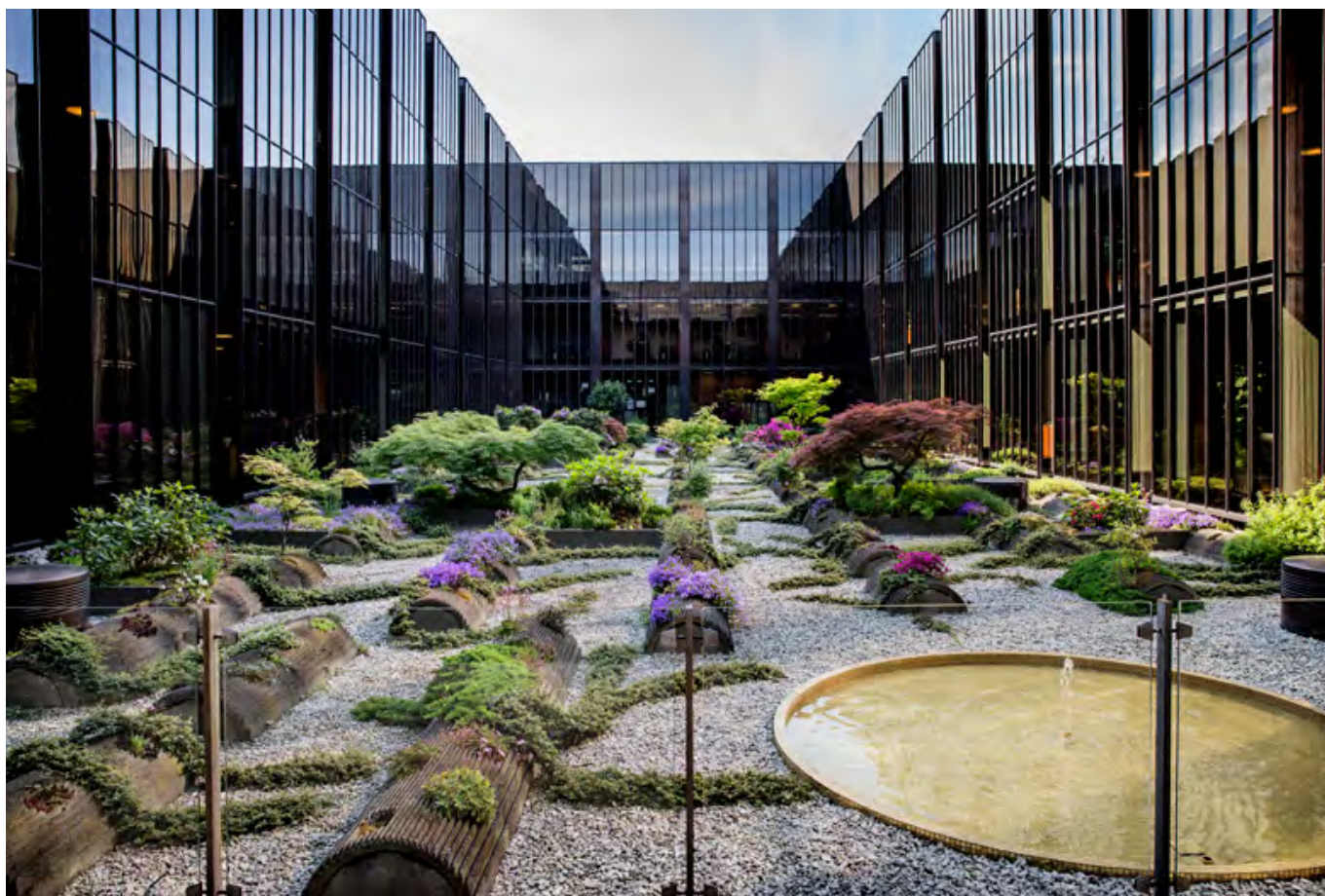
As a talented artist, Arne Jacobsen had a unique sense of colour, as evidenced by the façades and interiors that complement the surroundings in a colour

scheme dominated by shades of grey, and contrasted with the red tiles of the stock exchange building and the painted facade of Holmen’s Church. Inside the building, the same consistent use of materials adds to the harmony of the building. The linoleum floors and walls of the staircases and lifts likewise testify to Jacobsen’s ability to apply a colour scheme, which includes a muted yellow and a subdued turquoise that make the decor an experience in itself.

Architectural presence in the city

The Functionalist Danmarks Nationalbank building is centrally located in Copenhagen, close to the 17th century stock exchange building; the Neo-Baroque Christiansborg Palace, which is the seat of the Danish Parliament; the Supreme Court and the Prime Minister’s Office; the 350-year-old Holmen’s Church; financial institutions; and the waterfront. Here, the central bank premises are at once both prominent and in keeping with the heritage buildings that surround them.

The bank complex comprises a low-rise and a mid-rise structure, surrounded by a single-storey-high wall. The low-rise premises with the paved, public garden in front provide a softening distance to Holmen’s Church by taking its proportions into consideration. The mid-rise part of the building, facing a busy street, respects the general height of the district and ensures that the bank building harmonises with the adjacent 19th century houses.



'Arne Jacobsen's Garden' is designed by Jacobsen personally. It is inspired by fragments of columns and by his own private garden

Building layout and spatial qualities

From the bank's modest main entrance, a square 'hole' in the façade, the visitor enters a wedge-shaped and cathedral-like lobby with almost 20 metres to the ceiling, from which daylight enters through tall, narrow windows between the façade pillars. The design of the lobby is inspired by the former bank building from 1870 and by the grand entrance halls of other central banks.

The lobby widens out from 4 metres at the entrance to 14 metres at the opposite end where a sculptural steel staircase, suspended from red steel wires, provides access to the six floors of the building.

A low-ceilinged passageway leads to the banking hall, a 1,000 m² low-lit interior with walls clad in knotless Central European pearwood, and with West African Doussie-wood flooring. Both materials are used consistently throughout much of the bank's interior. Originally an open-plan office with counters and desks where staff kept accounts and served

customers, the banking hall is now used as a library and lecture theatre.

The daylight filters through a narrow window band placed by the ceiling and through glass display units, the upper sections of which connect with the courtyard beyond. Similar inset display units are found around the premises and contain exotic hanging plants that were carefully chosen when the building was designed.

The dark colouring of the wooden walls and flooring, the exotic plants and low daylighting provide a quite different atmosphere to the bright meeting rooms and offices with their large windows, such as the 'R-Hall', which is used for representational purposes.

The 'R-Hall' is a 140 m² meeting room with a high ceiling that, like the newly refurbished staff canteen, offers a panoramic view of Holmen's Church and the former stock exchange building. These are the only two interiors that depart from the modular principle. A flexible arrangement

of rectangular and quarter-circle tables in the 'R-Hall' makes this a versatile venue for hosting board-of-directors meetings or press conferences for example. In the canteen, employees meet up for lunch or a brief in-house meeting, while enjoying the wide-angled view of the waterfront, heritage buildings and the dynamic urban scene.

Down the long corridors, the pearwood-veneered, double-sided cabinets variously contain wardrobes, drawers and closed bookcases made of maple. Personal belongings and supplies are stored out of sight behind a plain wooden surface, and the clean lines of the storage units and other furniture ensure that the corridors and offices remain elegantly streamlined and functional. Mobile grey partition walls enhance the flexibility of the office spaces.

Until recently, a large printing hall was in use. With its length and breadth of 25x25 metres and a floor-to-ceiling height of 8 metres, this is the largest room in the



Two types of façades: The open glass-faced bays and the closed marble fronts, divided up into rectangular forms

building, and in reality extends upwards by three floors. Although equipped with the necessary machines, instruments and tools for producing banknotes, the interior is elegant in its design, with a distinctive Arne Jacobsen touch.

Each room and corridor in the building has its own distinctive features, which complement the overall design. The interior abounds in refined features, testifying to the architect's assiduous attention to detail.

Gardens and courtyards for reflection

The building has two courtyards, a roof garden and a paved garden facing Holmen's Church.

These outdoor areas share common design themes with landscaping elements consisting of natural stone, water and greenery. The variety of dramatic and restrained layouts reflects Arne Jacobsen's keen interest in gardens and greenery such as succulents and leafy plants.

The primary function of the courtyards is to provide the offices with daylight and a view of the outdoors. The northern courtyard is just over 700 m² in size and features semi-cylindrical concrete drums as plant beds and four ornamental pools. It is known as 'Arne Jacobsen's Garden' because he designed it personally, inspired in part by his own private garden and by fragments of classical columns.

The southern 500 m² courtyard covers the roof of the banking hall with transverse waves, formed by stone. Laid out as a rock garden with a minimum of soil beneath the plants, this courtyard contains five reflecting water pools with water lilies and goldfish.

The largest garden in the complex is on the almost 5,000-m² trapezoidal roof covering the lower part of the building. This ornamental garden is visible from all four office floors. The pale stones covering the roof garden and the mesh of the aluminium railings hold

formations of circular skylights and planters containing creepers and taller specimens.

Outside the lower wall of the bank, encircling the roof garden at street level, an extended public pavement zone serves as a visual link between the bank and Holmen's Church. The granite plinth from the former bank building has been cut into kerbstones and reused, just as two former column capitals are incorporated in the paved garden. Just by a pool, a long granite wall winds its way around taller plants and trees to evoke 'the snake in the tunnel', the name given to the first attempt at European monetary cooperation in the 1980s. This flowing garden layout offers passers-by a tranquil sight and place to stop on an otherwise busy urban street.

A heritage building

In 2009, what is now the Danish Agency for Culture decided to list the Danmarks Nationalbank building on the recommendation of



Corridor outside the governor's office. Walls clad in knotless Central European pearwood and floors in West African Doussie-wood – both of which materials are used consistently throughout much of the bank's interior

the Historic Buildings Council. At that time, it was the youngest listed building in Denmark. The listing was based on the architectural and heritage merits of the building, including its architectural landmark value for the city, its layout and materials, its gardens and courtyards and fine detailing. The listing entails that the bank must apply for permission to perform any construction work other than maintenance, in order to preserve the building and its interior as a tribute to the vision of its architect.

Public access

The lobby of Danmarks Nationalbank is open to the public on weekdays from 9:00 am to 4:00 pm and contains an exhibition of old and current Danish and Faroese banknotes and coins.

For security reasons, no guided tours are offered, and photography is strictly prohibited inside the building. ●

Bibliography & sources

Thau, Carsten & Kjeld Vindum. 'Arne Jacobsen', Arkitektens Forlag, 2001

'Danmarks Nationalbank's Building', Danmarks Nationalbank, 2016

About the building visit:
www.nationalbanken.dk/en

About Arne Jacobsen visit:
www.fritzhanzen.com

All photos by Danmarks Nationalbank

Facts at a glance

The Danish central bank building, Danmarks Nationalbank, covers an area of 48,000 m². At the time of construction, the price per square metre was DKK 6,500, and the building cost a total of DKK 370 million.

In 2013, solar panels were installed on the roof of the building. They are arranged horizontally so that they are not visible from the street and do not detract from the façades of the building. The solar panels generate approx. 100,000 kWh a year.

Author profile

Pia Jønsson (b. 1958) holds an MA in Literature and Film & Media from the University of Copenhagen. She runs the agency METAFOR, www.metafor.dk, and works in the field of strategic cross media communication, texts, concept development, and visual aesthetics. Pia Jønsson is the author of 3 books, jurywoman at the Danish Book Craft Society, and committee member at the Danish-Japanese Society.