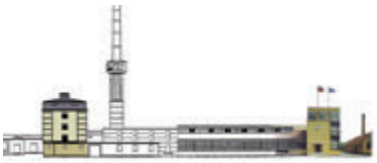
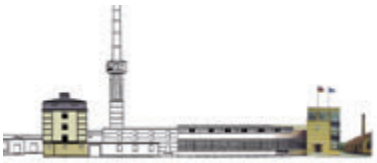
The Fagus factory in Alfeld



Nomination for Inscription on the Unesco World Heritage List

September 2009

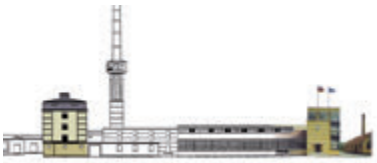
Summary



State party	Federal Republic of Germany
State, province or region	Lower Saxony, town of Alfeld
Name of property	Fagus factory
Geographical coordinates to the nearest second	51° 59′ 01″ degrees North 09° 48′ 40″ degrees East
Textual description of the boundary(ies) of the nominated property	Historical industrial area to the west of the core city of Alfeld: the nominated area borders the Hanover-Göttingen rail route in the northeast and the Hannoversche Straße in the southwest.
A4 (or „letter") size map of the nominated property, showing boundaries and buffer zone (if present)	See end of summary
Justification **Statement of outstanding universal value**	With the construction of the Fagus factory, Gropius made a breakthrough to new, modern art that went hand in hand with the age of technology. The Fagus factory, with a radical break from the conventional design practice, represents for the first time a new expression of architecture, which develops space and form from function, takes into account the light, air and lucidity requirements of its users and makes use of the new technical possibilities of construction with glass and steel in industrially pre-produced processing. Glass, which is actually an unsubstantial material, becomes a formative building material and mode of expression of architecture. The design concepts underlying this construction had a decisive influence on the development of twentieth century architecture not only in Germany and Europe, but around the globe. The artistic ideas convincingly introduced in the Fagus factory and later theoretically and practically taught in the Bauhaus were brought to England and USA by Gropius and developed into decisive values for training in international style. Its global significance as an outstanding artistic achievement and as the first industrial building of modern era is unequalled and incomparable. Its influence as an exemplary blueprint and initial building of an architectural epoch is still unimpaired.
Criteria under which property is nominated (itemise criteria)	**(I) The nominated plant is a chef d'oeuvre of the human creative power.** With complex interweaving of aesthetic, psychological, social and technical aspects,

	the Fagus factory represents a masterpiece of the creative mind on the threshold of a new time and manifests, for the first time, the theoretical basics for the development of twentieth century architecture. The structural possibilities of construction using steel and glass were made subservient to an extremely modern artistic design for the first time.The exterior wall of the building is only perceived as a transparent, space-encompassing cover and artistically visualised as a protruding, extensively glazed and subtly sectionalised steel framework that stands column-free around the building corner. **(II) The nominated property graphically documents a significant change in human values over a period of time or in a cultural area of the earth with respect to development in architecture or technology, large-scale sculpture, urban development or landscape architecture.** Based on a comprehensively understood functional analysis that incorporated psychological and socially reforming considerations, the Fagus building documents a radical change in the working conditions of the industrial society with respect to the humanisation of the industrial world and transparency of its operational sequences. Art of building and design as essential factors for the quality of human life were first programmatically formulated for the Fagus factory and presented to the following generations.
Name and contact information of official local institution/agency	**Niedersächsisches Ministerium für Wissenschaft und Kultur** Oberste Denkmalschutzbehörde Leibnizufer 9; D-30169 Hannover Phone: 0049 (0)511/1200 Fax: 0049 (0)511/1202801 info@mwk.niedersachsen.de www.mwk.niedersachsen.de **Niedersächsisches Landesamt für Denkmalpflege** Scharnhorststraße 1; D-30175 Hannover Phone: 0049 (0)511/92550 Fax: 0049 (0)511/9255328 denkmalpflege@nld.niedersachsen.de www.denkmalpflege.niedersachsen.de

General map



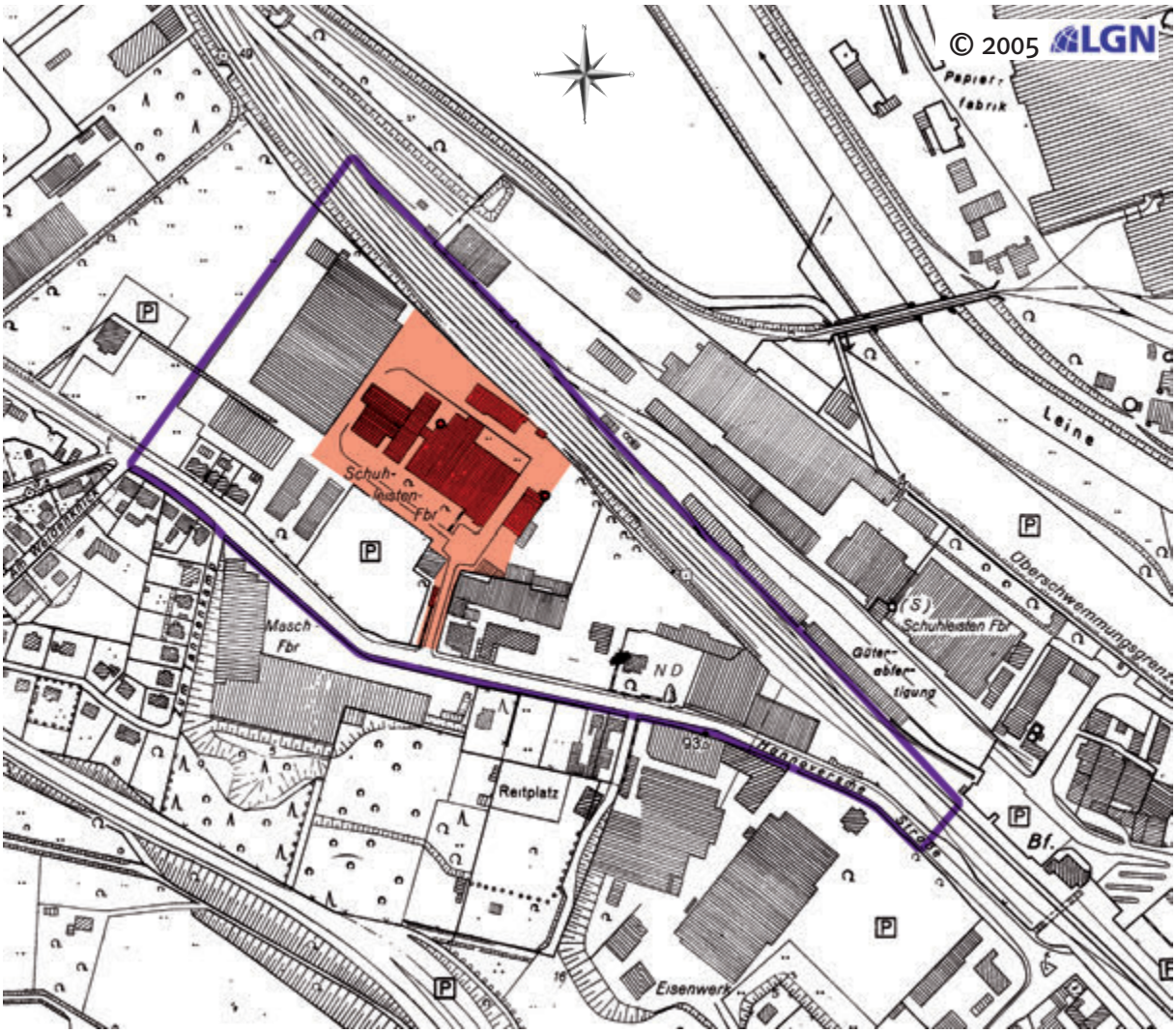
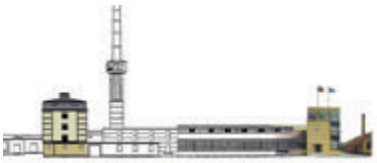


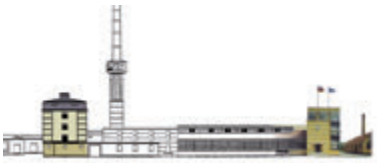
Fig. 1: 1. Nominated area of the Fagus factory with buffer zone, scale 1:5000

Total area nomination property
Nominated individual buildings
Boundary buffer zone

Contents



1. Identification of the Property



1. A Country

Federal Republic of Germany

Fig. 2: Central Europe with Germany

1. B State, province or region

Federal State of Lower Saxony

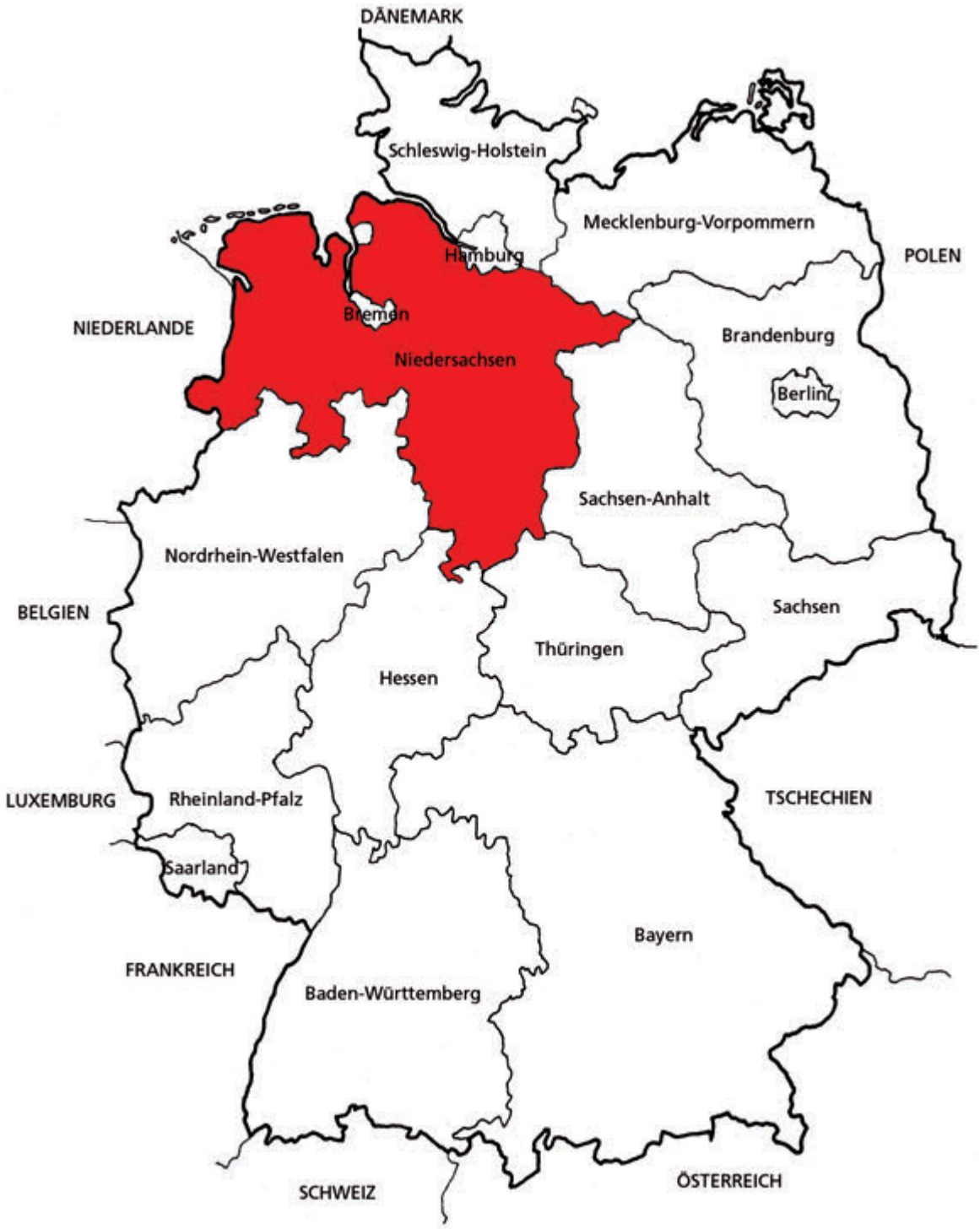


Fig. 3: Germany with Lower Saxony

1. C Name of property

Fagus factory, shoe last factory (Fagus-Grecon Greten GmbH & Co. KG)

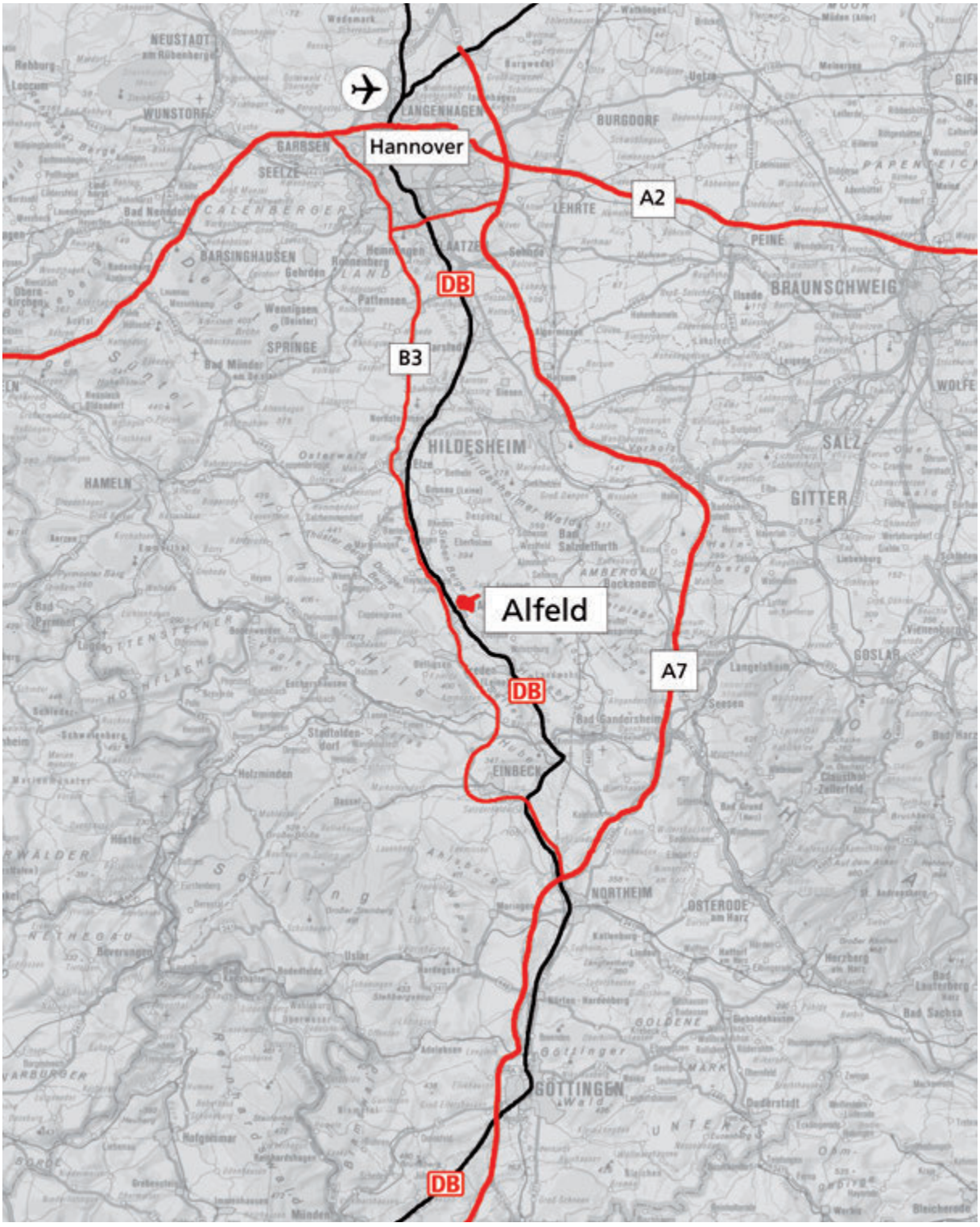


Fig. 4: Location of the nominated property in Lower Saxony

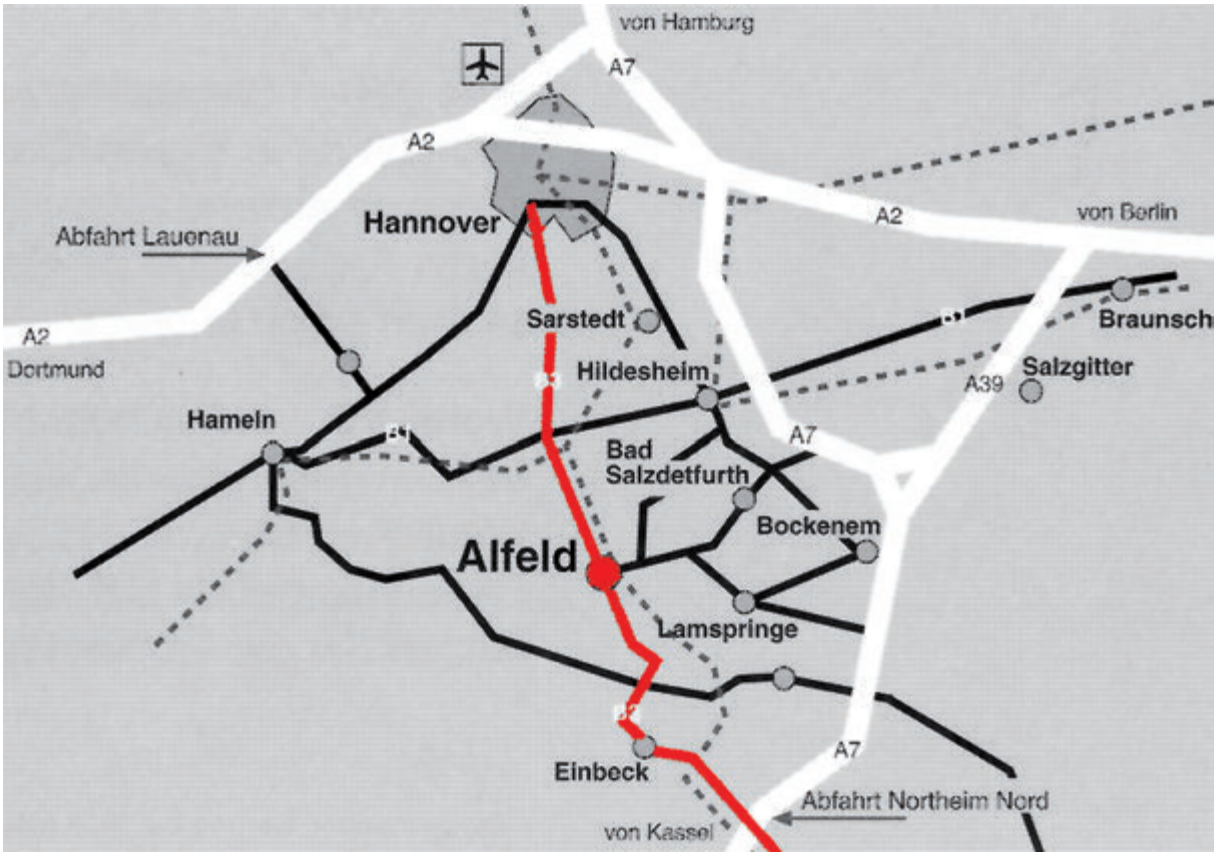


Fig. 5: Schematic traffic plan

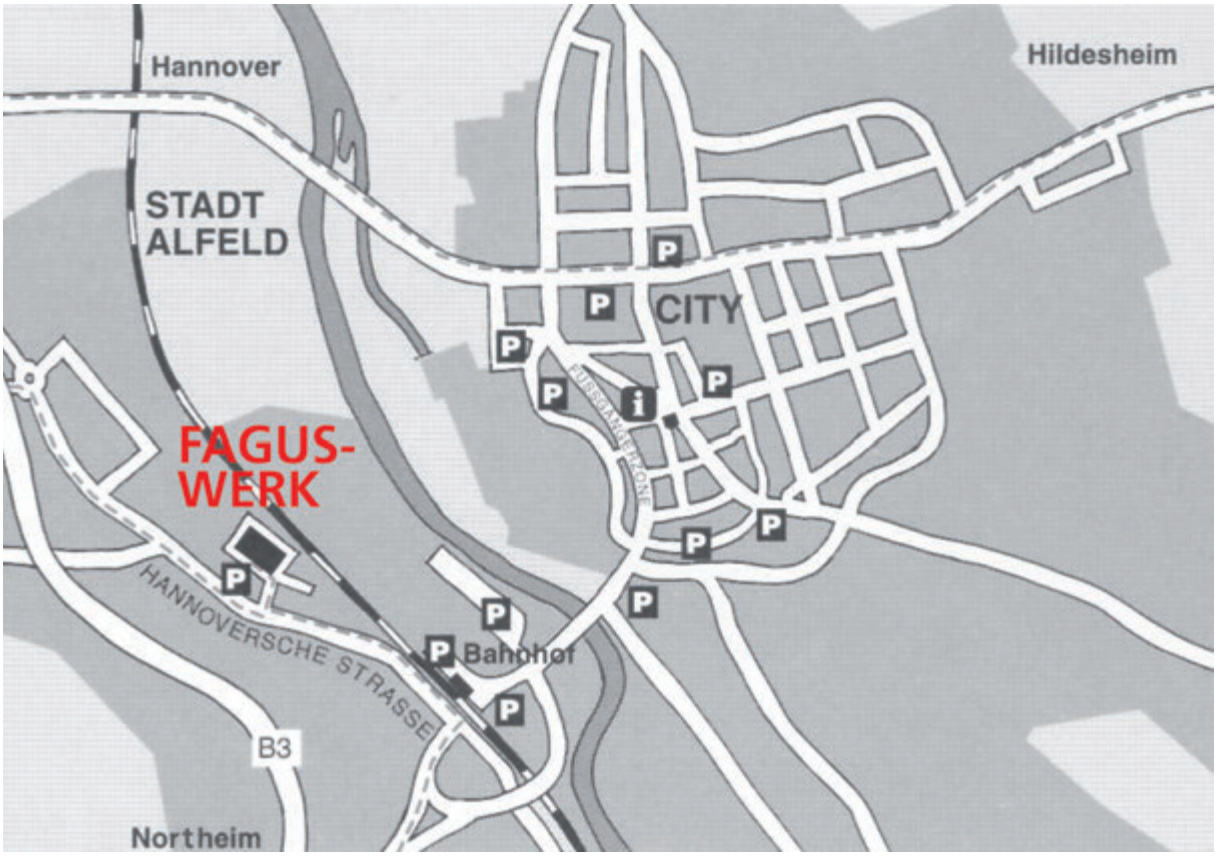


Fig. 6: Schematic site plan of Alfeld with parking spaces

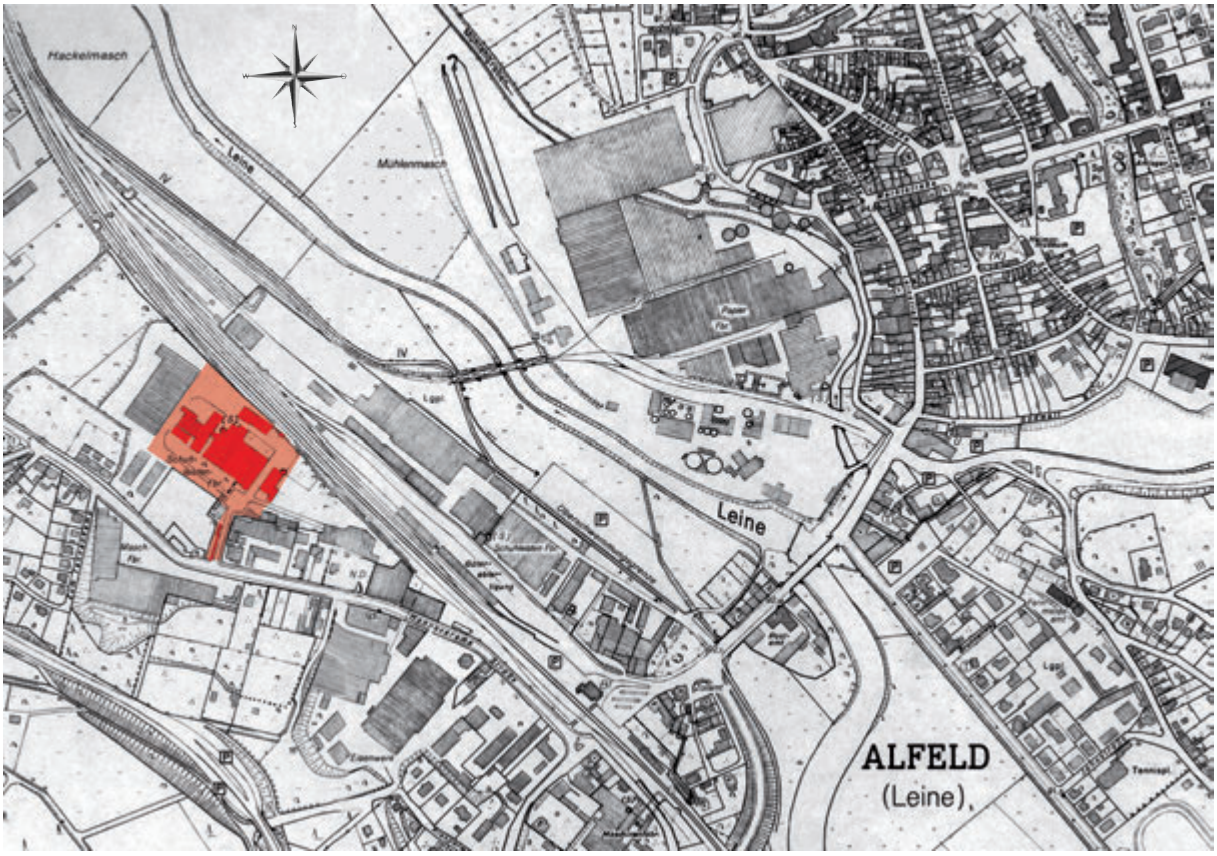


Fig. 7: Alfeld site map of 1:10,000 scale with the nominated property (dark red: main buildings of the Fagus factory; light red: total area of the Fagus factory with extensions)

1. D Geographical coordinates to the nearest second

51° 59′ 01″ degrees North
09° 48′ 40″ degrees East

1. E Maps and plans

Fig. 8: Nomination area of the Fagus factory with buffer zone, scale 1:5000
Total area nomination property, Nominated individual buildings, Boundary buffer zone

Fig. 9: Floor plan of the Fagus factory, scale 1:2,500 (dark red: main buildings of the Fagus factory; light red: nomination area, section
1: Sawmill, 2: Store house, 3: Drying house, 4: Workroom, 5: Main building, 6: Cutting die department, 7: Engine house, 8: Chip and coal bunker,
9: Rail-car scales, 10: Gatekeeper's house with factory gate and boundary wall

Fig. 10: Aerial view from the south-east (1993)

1. F Area of nominated property (ha) and proposed buffer zone (ha)

Nomination area of Fagus factory	1.88 ha
Buffer zone	9.29 ha
Total	11.17 ha

2. Description

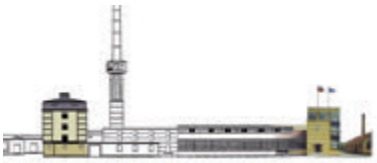


Fig. 11: View from the west with main building, workroom and cutting die department (1997)

Fig. 12: View from the south-west (2009)

2. A Description of property

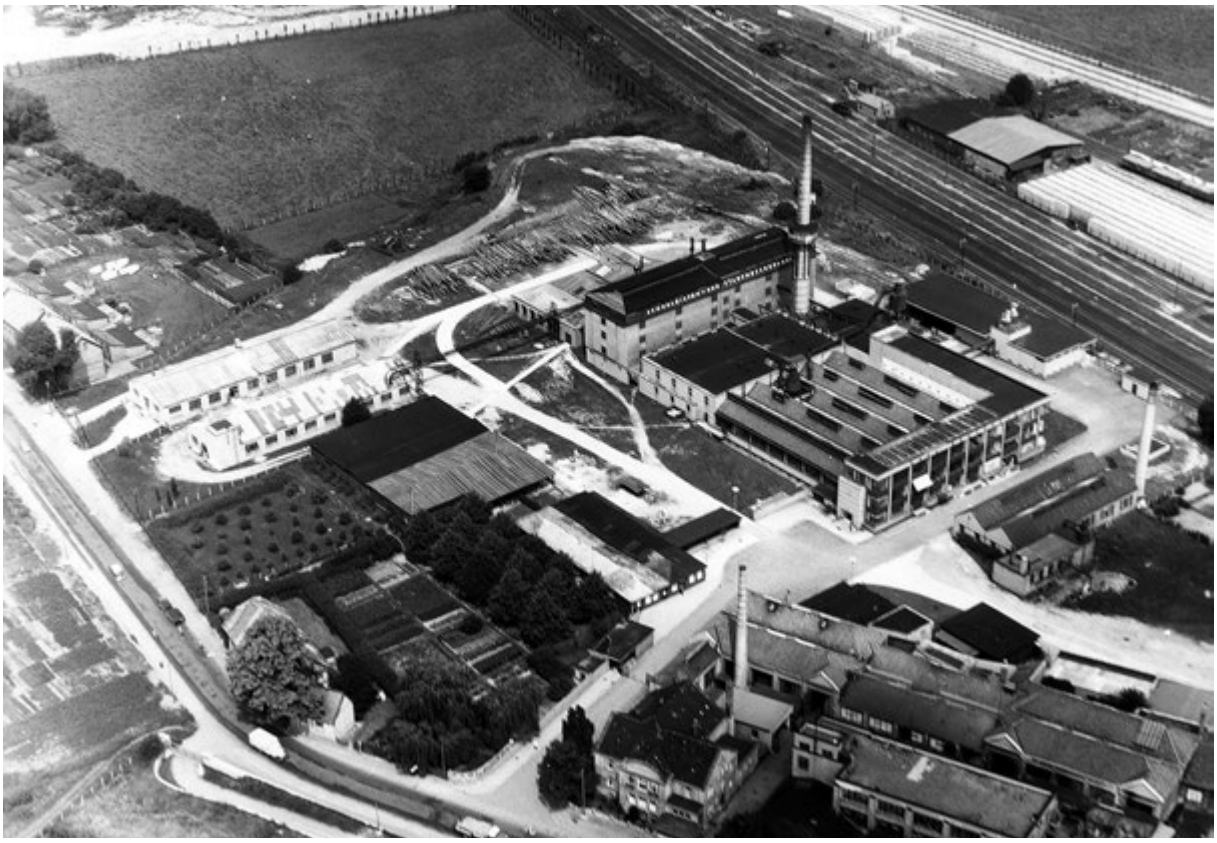


Fig. 13: Aerial view from the south-west (around 1955)

Complete property:
The shoe last factory, known worldwide as an epoch-making industrial building with the brand name "Fagus" (fagus = Lat. beech), is a multi-part, long complex of buildings, the individual parts of which vary in their dimensions depending on their respective functions. After the foundation stone was laid on 29 May 1911, Walter Gropius and his fellow employee Adolf Meyer designed the plant in three large construction phases and completed the construction until 1925. With the uniform use of leather-yellow brickwork coupled with dark grey metal-framed glass surfaces, the complex has been optically merged to form one unit. It extends from the north-west to the south-east and lies in close proximity of the Hanover-Göttingen railway line, which runs eastwards along the factory siding. The site access is located in the south at the Hannoversche Straße, which is connected to the national transport network via the Bundesstraße 3 (A-road 3), which is located close by.

Appropriate to the sequence of action in the production process, the series of buildings starts with a sawmill in the north-west. It is a single-storied building, in which beech wood used for the shoe last production was cut up into small workpieces from long trunks and roughly prepared for further processing. A five-storied storehouse follows, which was used to store the wood blanks over a period of several years for drying. Next in line is the almost windowless drying house, where the material was subject to another artificial dehumidification process before it reached the five-axle workroom for further processing. The three-storied main building with its glass facades is built angularly around the workroom and accommodates the production, packing and dispatch rooms as well as the administration and management offices on the top floors.

The engine house with the prominent smoke stack, which is situated at the north-east of the drying house, constitutes the heart of the plant. The chip and coal bunkers, which are used for storing wood chips and a rail-lifting jack / rail-car scales, are situated directly at the railway line across the yard. These scales can be used to weigh railway cars.

Fig. 14: Sawmill and storehouse, view from the north-west (2002)

Fig. 15: Sawmill, storehouse and drying house, view from the north-west (2002)

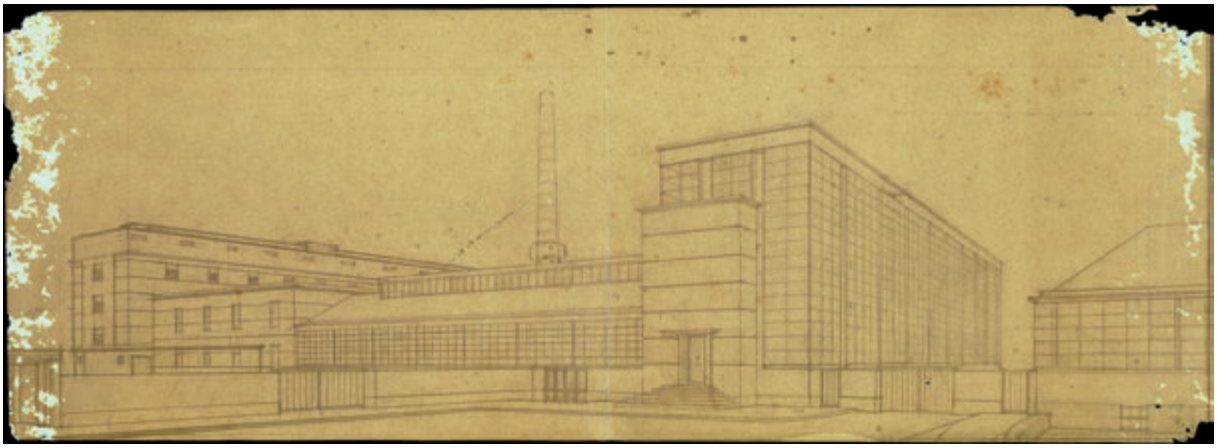


Fig. 16: Perspective of the entire property from south-west, Gropius/Meyer (around 1914)

Out-of-line with the buildings of the shoe last production, the cutting die department is located across the factory road, to the south-west of the main building. Blades for punching out shoe leather were manufactured in a second line of production here.

The factory premises can be approached from the Hannoversche Straße. A paved road along the boundary wall leads to the gatekeeper's house and the iron factory gate. Some garages in the south of the factory yard, one of was converted into a transformer station in 1938 by Ernst Neufert, are part of the original building stock of the property.

The sawmill

The complex starts in the north-west with the single-storied building of the sawmill the core part of which was constructed still in the first construction phase of 1911 and later expanded several times up to 1950 safeguarding the architectonic language of forms. An additional room was first planned by Gropius in 1921 and later in 1938 by Ernst Neufert, a fellow employee of Walter Gropius, who had worked with him in the times of the Dessau Bauhaus. An increase of the base area of the sawmill by 200% resulted, a building measure which became necessary due to the increased demand for shoe last blanks. Like all other buildings of the plant, this part with overhead lights and a hipped roof exhibits the characteristic yellow brickwork, sharp-edged window apertures and doorways as well as the dark grey painted cast iron windows sectioned into horizontal rectangles. With the changeover in shoe last production from wood to plastic towards the end of the sixties of the twentieth century, the building lost its original function. After a fire accident in the building in 1985, it was rebuilt according to the guidelines for historical monuments and converted into an engineering centre in 1990/91. Three adjacent rooms became one single open-plan office the three-axle structure and the outer appearance of which were preserved nevertheless.

The storehouse

Prepared workpieces passed a one-storied connecting tract, in which wood pieces were steamed and disinfected, and deposited in the five-storied storehouse with cellar through. This is where the wood was stored and dried over a period of several years. The tallest of all Fagus buildings and the largest space-enclosing structure on a rectangular ground plan bears four timber-framed storeys on the heavily stonewalled ground floor. The topmost storey has been constructed in the form of a slightly receding attic and is closed by a long stretch of ventilation lanterns. While the ground floor again exhibits the leather-yellow brickwork, all the timber-framed structures above it are revetted: three storeys with a plastered facing framework and the receding fourth floor with brown-beige sandstone slabs. To structure the massive cube, the design plan of which reflects classicistic form conceptions, fine, horizontal joints in plastered surfaces as well as a slightly pushed-up wall plate on the south-west slim front of the first three floors are used, besides some few openings in the wall. Separated by a band cornice, this motif is repeated in the brickwork of the ground floor as well, but here it continues via the three axles of the adjacent drying house across a gate opening. Both building structures are thus meshed together with the simplest architectonic methods and their common function, the drying of wood, is emphasised (r.a. drying house).
The basic design of the building as an industrial, half-timbered structure goes back to Eduard Werner, who had drafted the initial plans of the

Fig. 17: Cutting die department, workroom, store house, 1st building section 1911 (1911)

Fig. 18: Entire property from the north-east, 1st building section (1912)

Fig. 19: Extension of the store house, carpenters (1913/14)

Fig. 20: Extension of the drying house and store house, 2nd building section (1913/14)

Fig. 21: Store house, sawmill, 1st building section 1911 (1911)

Fig. 22: South-western view with main building, workroom, drying house and store house (2002)

Fagus factory before Walter Gropius took over the implementation planning in 1911. Initially only half its present size was built. Already in 1913, the plant was expanded westwards.

Today, the interiors of the building, which were refurbished in 1998/99, display their unpanelled, partially renovated wooden structure on five floors, which separates individual floors by wooden beamed ceilings, which have been constructed as split floors. All six floors can be approached using the heavily bricked staircase and a lift from the construction period 1911/12, both of which are situated at the centre of the building. In the course of the restoration process of the building, which was carried out under aspects of preservation of historical monuments, a second wooden staircase behind the south-western narrow side was replaced by a new one made of reinforced concrete. The today's use as an exhibition building with a presentation area of 3000 m^2 which made its debut during the EXPO 2000 is thereby possible. It was possible to preserve or regain the essential structures and architectonic features for this new use of the building, the original function was dropped. Only the outer wall openings that were formerly constructed as ventilation lamellas have now been paned for light and climatic reasons. Since 2005, five storeys of this structure, i.e. an area of more than 3000 m2, is being used for permanent exhibition purposes, where the unequalled, architectural-historical topic "Gropius and Fagus" is presented to the public (r. 5l) in the form of an up-to-date presentation divided into excellent thematic and museum-didactic sections, in addition to the product range of the company.

The drying house

After undergoing a natural drying process in the storehouse, the workpieces roughly prepared for the turning lathes reached the drying house, where they were subject to a secondary artificial drying process. The drying house accommodated approximately 30 heated, shaft-like drying chambers with a height of 9 m each. This equipment requires the height of the building, whose exterior is depicted to be two-storied, however, actually forms a single high room inside with a flat ceiling that has been designed as a cover girder floor. Ten out of the former characteristic 15 exhaust air smoke stacks could be preserved during the restoration work of the brickwork and roof taken up in 1997. After extending the plan in 1912, the plant, the construction work of which had started in 1911, received its present day dimensions in 1913. Between 1974 and 2003,

Fig. 23: A look inside the workroom (2003)

the machines used for preparing plastic last pieces were set up in the hall. Today, this room serves as a modern laboratory for developing electronic measurement devices. Apart from the overhead light, the building only receives daylight from the south-western front: four asymmetrically arranged, upright and rectangular cast iron windows on the top floor, each divided by a wide, bricked crossbeam, and three axially designed windows on the ground floor in the pushed-up wall plate with band cornice that runs across the storehouse (r.a. storehouse). The fourth opening axis is a door with a loading ramp fitted in front of it and a double-flight staircase. The building, perched wide on well-balanced horizontal bedding with a reddish-violet brick base, stands out due to five fine shadow gaps and the cornice of the flat roof. In 2007, the installation of some more engineering workplaces became necessary in the north-western part of the hall. This was done with maximum possible conservation of the original character of the plant. The necessary, new light openings were built only on the side facing the storehouse in a form that was adapted to the original windows.

The workroom

The workroom is the heart of the shoe last production. It has been conceived as a hall flooded with light, where the prepared workpieces are processed in precision instruments in numerous work steps till they are ready for dispatch. The single-storied space is directly connected to the drying house and is enclosed by the L-shaped main and administration building, which has been built around it, in the south and east. After the reduced version of the workroom was set up in 1911/12 based on the plans of Eduard Werner, it was extended by three axes towards the south-west in 1914 due to the rapid increase in production to receive its today's design. It is now a five-axis, large-capacity room on a column grid of approximately 5 x 7 metres, vaulted by partially paned shed roofs. The wooden roof construction is based on circular cast iron columns. While the exposed south-west facade of the workroom was designed by Gropius as heavy brickwork with diagonal windows in the first construction stage of 1911/12, he took the expansion in 1914 as an opportunity to let this facade end in a continuous wall of glass in the style of the large glass surfaces of the main building. The window axes measuring 6 x 6 units stretch as a continuous glass layer in front of the roof columns. With the transparency of the workroom of the Fagus factory, Gropius not only implemented a revolutionary form of industrial architecture, but also attempted to implement

Fig. 24: Workroom, iron columns and framing (2002)

Fig. 25: Workroom, gate in the basement (2002)

Fig. 26: View of the workroom and main building from the north-west (2002)

Fig. 27: A look inside the workroom (2003)

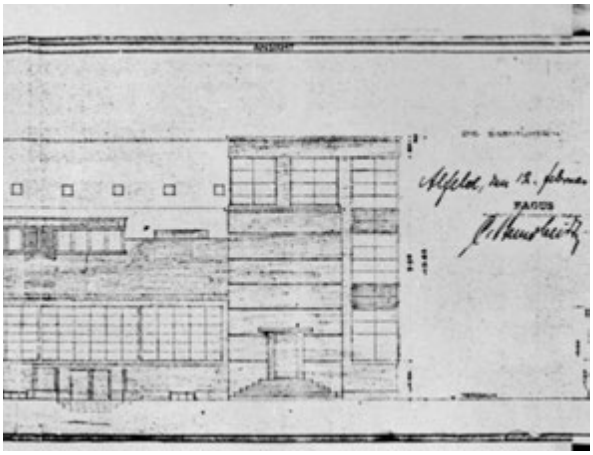


Fig. 28: View of the main building and workroom, Gropius/Meyer 1914 (section)

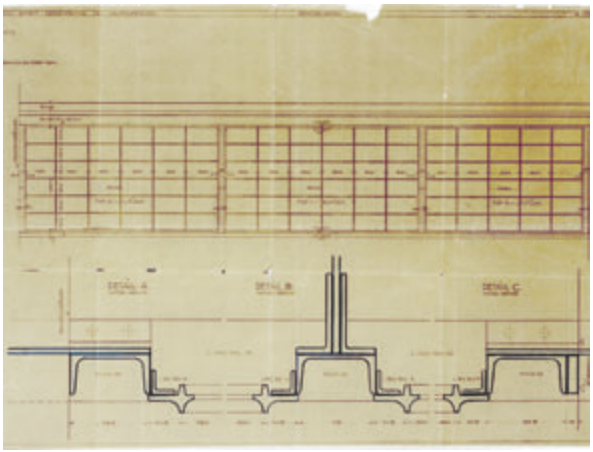


Fig. 29: Facade and window detail, Gropius/Meyer, probably 1911

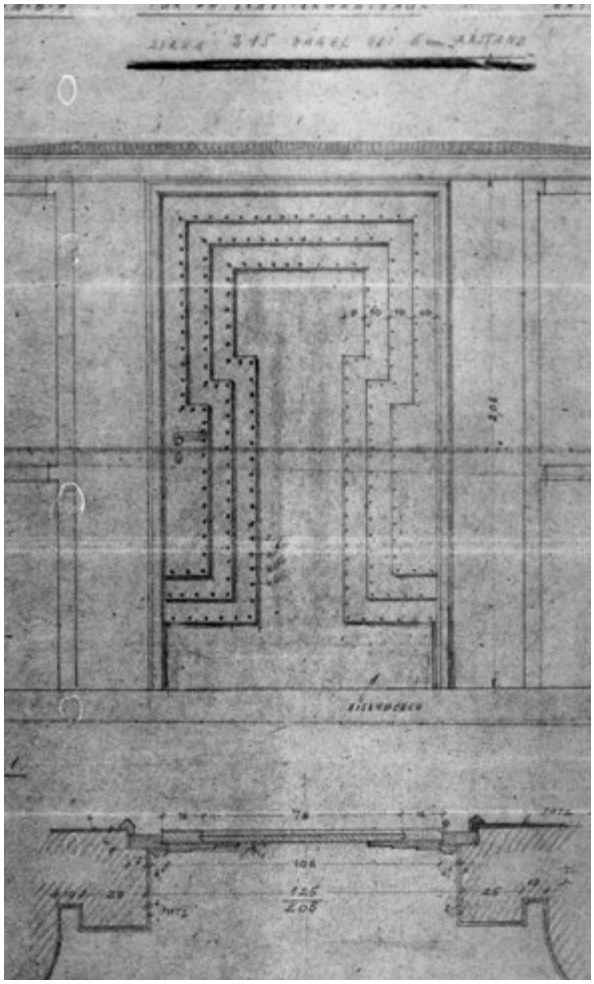


Fig. 30: Main entrance, design drawing of the door, 1921/22

his often quoted demand that "palaces must be built for work". In his client Carl Benscheidt, Gropius met an entrepreneur, who subscribed to these exact same modern views of the world of employment as business principles and who was open-minded about the social-reformist ideas of Gropius. Several facility rooms, including showers and a bathroom, which could also be used by the members of the staff, were built in the basement of the workroom. The building was carefully restored in several stages between the years 1989 and 1993.

The main building

The three-storied main and administration building, which runs around the workroom in an L-shape, is a clear expression of Gropius's ideas of the architectonic designing of a modern industrial facility. Almost all technical books and articles on the history of architecture introduce the main building of the Fagus factory as the first construction of modern architecture. The facades of the building are made completely of glass panels, which are suspended between a carrying and supporting structure made from the brickwork and steel girders, the design of which has been kept to a minimum, and which lends the building its striking airiness and transparency. The fragile-looking construction is optically stabilised by a strong plinth and attic area, the uniform rhythm of supporting pillars turned slightly inwards and the heavily bricked, pylon-shaped structures on both ends of the L-shaped building, from which the entrance area of a representative design is asymmetrically protruding to the narrow side.

The building achieved its present form in two construction phases that followed each other in a very short period of time. First came the wing facing the railway line. It was built in 1911/12 on a rectangular ground plan. The rapid increase in production necessitated an expansion of this building, as it did of the storehouse, drying house and workroom. As a result, the building was expanded south-westwards and an entrance area was built at its end.

The innovative features of this building, which have proved to be a landmark in the history of architecture, can be found in the development

Fig. 31: General south-eastern view (railway side) (2009)

Fig. 32: Main building viewed from the south-west (2002)

Fig. 33: Main stairway, paned corner, view from the west (1999)

Fig. 34: Main building, entrance area, view from the south-west (1999)

Fig. 35: Main building, view from the south-west (1999)

Fig. 36: Main entrance, view from the south-west (1999)

Fig. 37: Main building, foyer, detail of opal glass bands (2002)

Fig. 38: Main building, foyer, staircase (2002)

Fig. 39: Main building foyer, ceiling lamp, Bauhaus design of 1922 (2002)

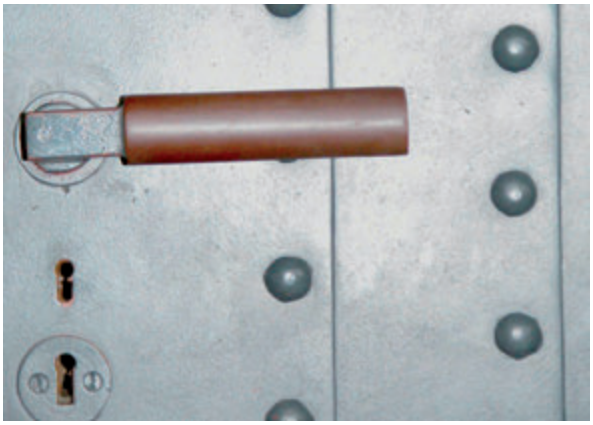


Fig. 40: Main building, entrance, door detail (2002)

of architectonic forms from their function and their design with reduced, but very expressive artistic methods: a regular sequence of facade-high glass panels, rhythmised with metal bands that separate the floors. The column-free break in window panels at the corners of the building not only generates airiness and transparency, but also breaks away from the traditional principles of tectonics. This proved to be the model approach for modern construction, functionalism or the international style in the following centuries. The pylons, which anchor the building on both ends, are bricked – in striking contrast with the airiness of this structure, which is in keeping with the form-function principle – in the classicistic block-like shape. Away from the centre and only two storeys high, this structural element serves as the portal on the south-west facade, with a flight of steps in front of it, a deep levelled metal door and a clinically sober factory clock at the top of the portal facade.

The internal arrangement of the building is linked to the production process on the ground floor and has several accesses to the workroom. Both the top floors have been designed for office purposes. These offices open into long corridors that run along the inner walls. The

Fig. 41: Main building, staircase, hand rail 1st floor (2002)

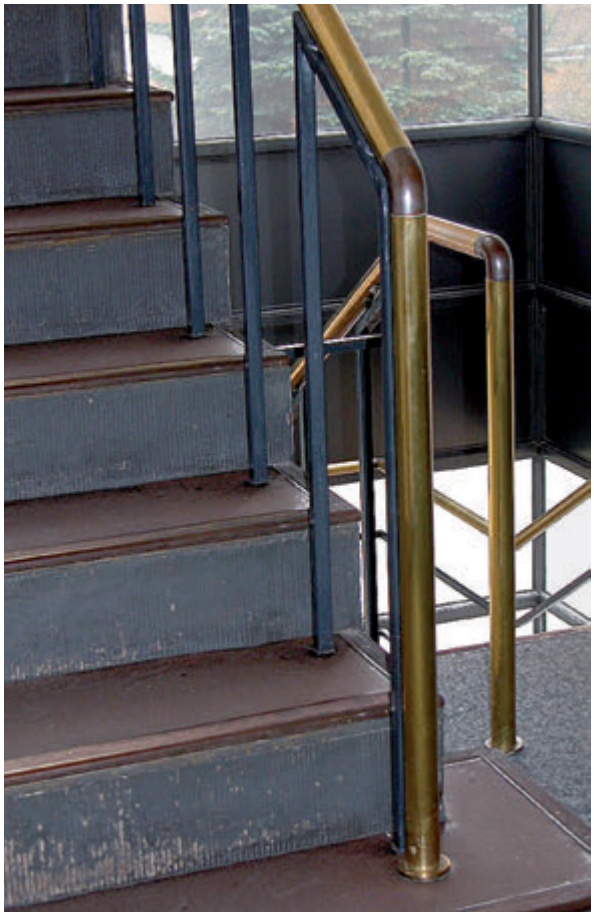


Fig. 42: Main building, staircase, handrails 1st floor (2002)

rooms had variable and easy-to-change ground plans with wooden partitions and lightweight wooden window walls to the corridor. Varying space requirements have led to modifications, the last of which was made in 1974, where the basic structure of the spatial program was retained along with the maximum possible original character of the structure at the time of construction. A staircase in the angle between both building arms, which has not been accentuated from the exterior, is used to access the building from all floors. The main staircase of impressive design with freely projecting flights of stairs and half-landings is situated in the paned south-west corner of the building and leads to the two top floors from a ground-level foyer. The artistic form of this entrance area was initially hindered due to the outbreak of the First World War and could be completed only in 1921/22. The white-plastered wall surfaces framed and divided by black glass bands are styled as per the archaic-antique ornamentation. A recess in the northern wall was conceived as the only place with artistic-representative complexity. The initial intention was to place male figure in an archaic position into this recess. After the First World War, however, it was filled up with an inscription tablet with the names of the factory employees who perished in the war. Gropius used the proportions of this unimplemented human figure as basis for a modular measurement system to which all the forms of the room are subjected. This system programmatically demonstrates that man should be the measure of all things in the working world as well. While the open-bolted ceiling lamp on a black opal glass plate dates back to the building plans in 1922, the so-called Gropius handle on the entrance door is a prototype manufactured in the Fagus factory itself. The smaller versions of this handle can be found on the floors of the building. The design of the entrance area reflects the next stage of development of the initial design concept in 1911 through the Bauhaus and is associated with the form conceptions of other innovative architects, including those of the De Stijl movement (Oud and Rietveld), but also Le Corbusier, Mies van der Rohe and Frank Lloyd Wright. After the Gropius/Meyer design created in 1925, a living-room suite made of white varnished wood was manufactured for the anteroom on the top floor. This suite, comprising a table, bench and two chairs, has been maintained at the same place even today.

Fig. 43: Engine house after restoration, interior view (around 1997)

Fig. 44: Engine house, smoke stack, store house, view from the south-east (2002)

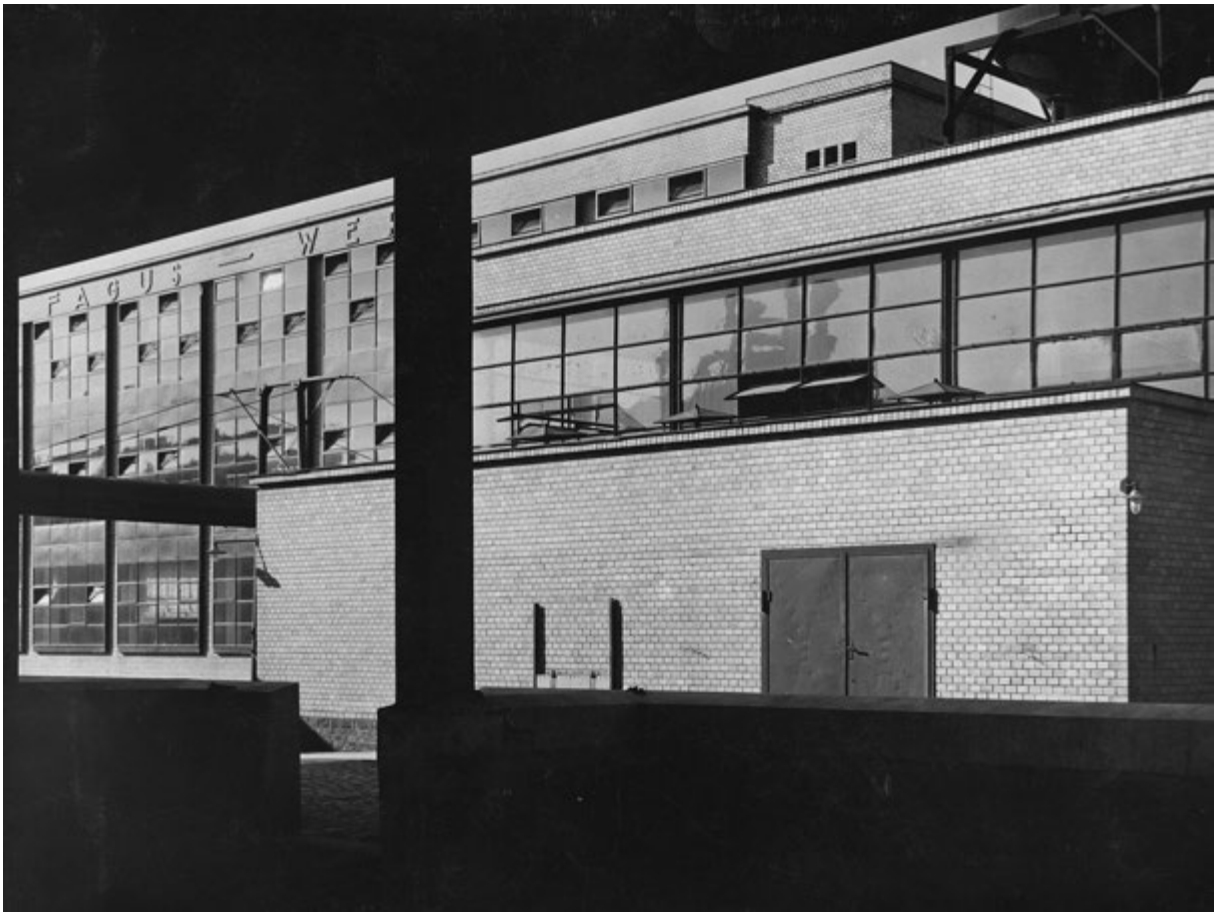


Fig. 45: Engine house and main building, photo by Albert Renger-Patzsch 1928

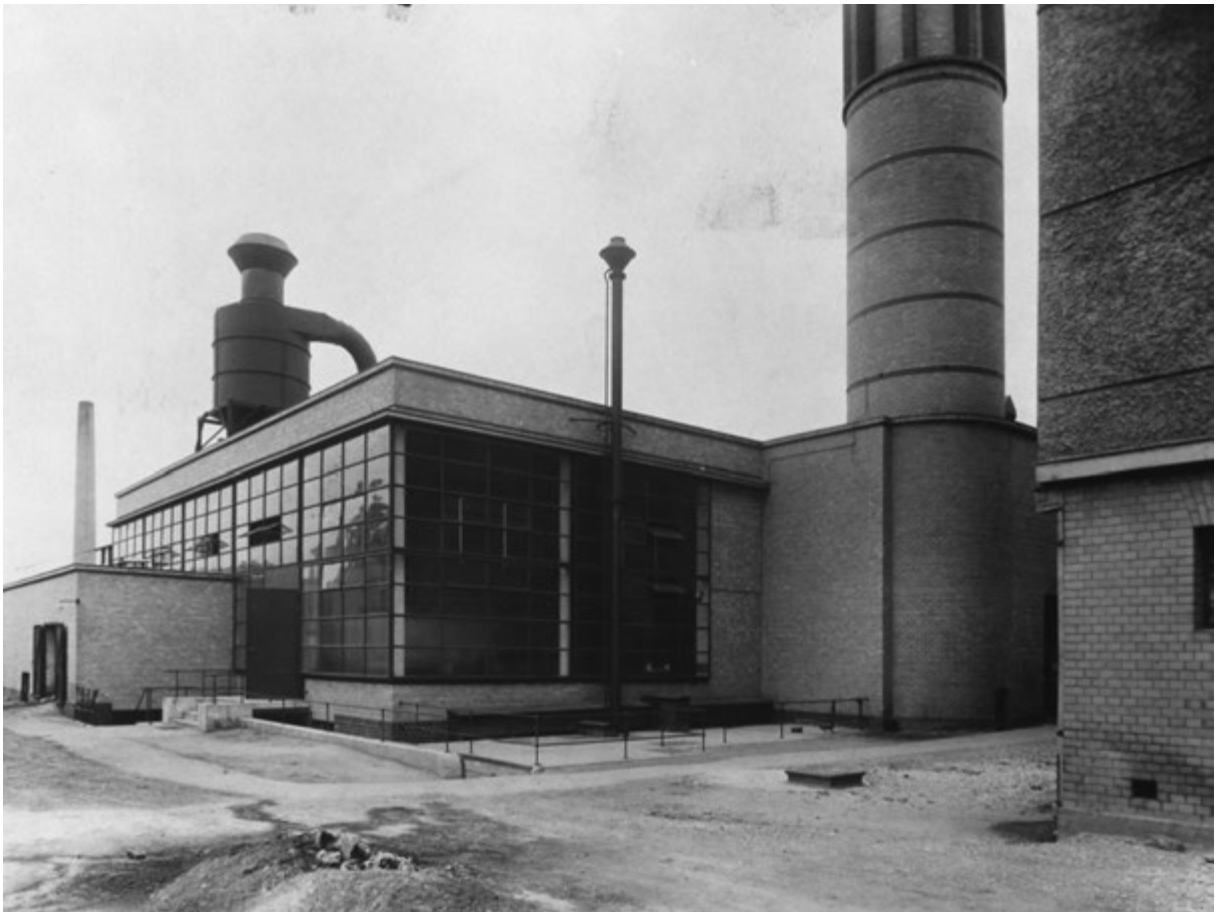


Fig. 46: Engine house from the north-east, photo by Edmund Lill (1922)

Fig. 47: Smoke stack, brickwork renovation (1988)

Relevant to its global significance as the first industrial building of modern architecture, elaborate restoration work of the building was taken up between 1985 and 1996 in several measures which were accompanied by the state office for the preservation of monuments and supported by expert colloquiums.

The engine house

The building application for a new engine house was submitted in 1915, the second year of the war, as per the plans of Walter Gropius. The responsibility of construction management and execution was undertaken by companies in Alfeld. The single-storied new building that connects to the eastern wing of the drying house was built around the already existing enclosure for a traction engine installed there. However, this was demolished in 1916 after the new building was completed. Like the main building, this structure is also extensively paned between plinth and attic area. In contrast to the other buildings, the engine house is a steel-frame construction, where the roof load is absorbed by a thin iron support in the otherwise free north-eastern corner. There is a medium-sized, heavily bricked structure in the southern part of the building, which supports the glass

facade of the receding main structure. This facade has been constructed as a window hinge that runs around the corner. The building has a steel roof construction and initially contained fuelled steam boilers and later oil burners for power generation till 1994 in the solidly walled-in boiler room. The part of the building with floor-to-ceiling glazing, i.e. the engine room, also contained a power system from the company Sulzer/Ludwigshafen till the year 1994. A trolley lane for the transportation of heavy loads crosses the room lengthwise. The room is designed with black and white quadratic tiles from Mettlach. The voids in the floor covering visible after the removal of the generator were filled up by newly produced replications of these tiles. The turned pipe railing on both sides of the entrance, the floor-to-ceiling glazing, the black and white tiled floor and a black glass cordon under the open roof construction express a creative will, which takes the architecture of the engine house way beyond its function. The entire building was restored part by part between 1994 and 1997. The former boiler room is now used as a storehouse and the engine hall serves as a cafeteria and visitors' cafe.

The smoke stack

The 50 m high smoke stack of the Fagus factory was designed and erected in 1915, the second year of the war. Like the other brickwork structures of the factory, it is constructed with yellow bricks on a circular ground plan with a slightly tapering shaft on top. The smoke stack is sheathed in a layer that bricks up to the height of the building. This brickwork exhibits equidistant, horizontal bands made of "chocolate coloured iron clinkers" and thus fits in well in the graphic frame of reference of horizontal shadow gaps of the remaining structures. A crown of thin, rib-shaped supports carries the cylinder-shaped fire water container that is projected to half its height. Like the load-bearing supports, it is also sheathed in iron clinkers. The inner core of the smoke stack that is structured in horizontal stripes towers steep above the water container. The smoke stack was erected at the same time as the engine house. In the years before erection, the power supply to the factory came from a traction engine, for which a low metal pipe sufficed as smoke stack. Since 1975, the water tank of the smoke stack has been serving as an advertising medium: on all four sides, it exhibits the brand name, which was introduced in 1912 and has been inseparably associated with the factory since

Fig. 48: Rail-lifting jack/rail-car scales, chip and coal bunker, engine house, smoke stack, storehouse, view from the south, photo by Edmund Lill (1924)

Fig. 49: Chip and coal bunker, view from the south-west (2002)

Fig. 50: Rail-lifting jack, rail-car scales, view from the north-west (2002)

Fig. 51: Rail-lifting jack, rail-car scales, railway side, window front (2002)

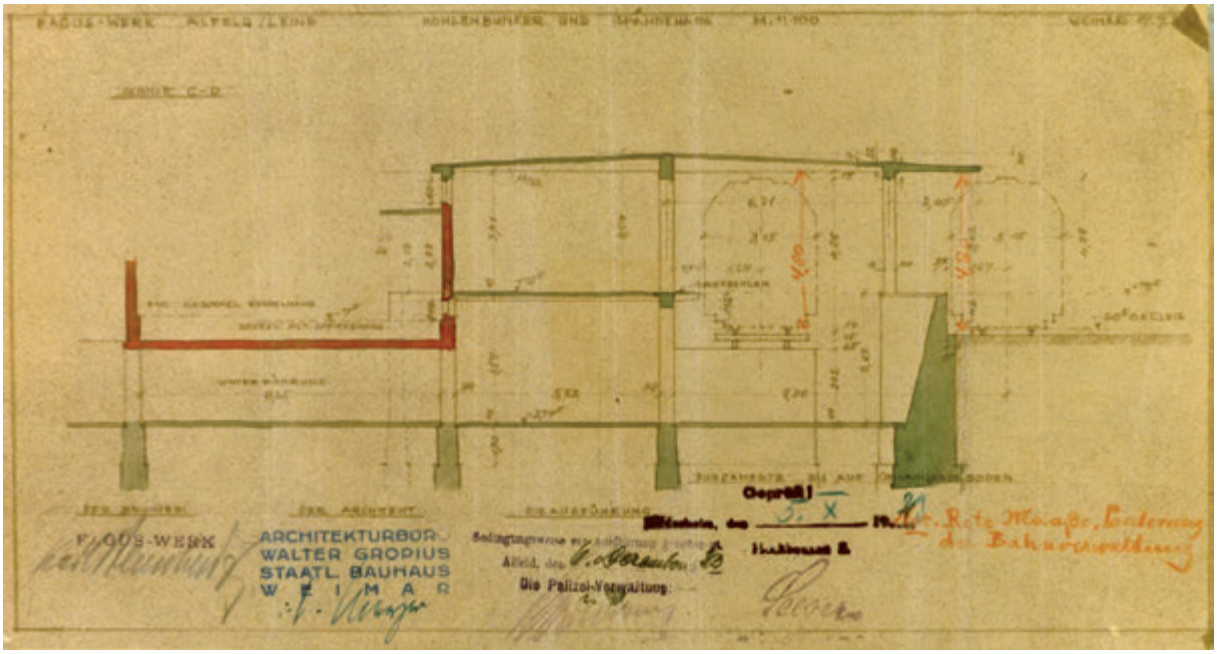


Fig. 52: Sectional drawing of chip and coal bunker, Gropius/Meyer, 1921

then. The lettering has been drafted by Max Hertwig (1881-1975), one of the first commercial artists in Germany who were trained in a college (Kunstgewerbeschule Düsseldorf, 1902-1906). Till 1920, Hertwig looked after the design of all printed matter published by Fagus, for example brochures and price lists as well as sheets of writing paper and advertisements. Max Hertwig was introduced to company head Karl Benscheidt jr. by Walter Gropius. Gropius and Hertwig had worked together in the office of Peter Behrens between 1908 and 1910.

Fig. 53: In the cutting die department (1912)

Fig. 54: Cutting die department, office (2003)

The smoke stack, along with the water container, was restored in the years 1987/88.

The chip and coal bunker

The chip and coal bunker situated very close to the factory railway siding was planned and set up by Gropius' office in 1911 and extended by Gropius' architecture firm in 1923/24, by which time it was already known as the Staatliche Bauhaus, Weimar. The original, considerably smaller building, with an attic area windowed similarly to the storehouse, was built around on three sides and provided with a long loading ramp on the railway side for loading and unloading of goods wagons and a smaller one on the side of the factory for the transport of heavy goods vehicles. The single-storied construction, which was a mixture of reinforced concrete and brickwork, is characterised by a projected, concrete flat roof of varying breadth, which is shouldered by thin concrete columns in the widely open ramp areas. Yellow brickwork, red clinker base and thin iron-framed window bands establish the material and form reference to the entire plant. The building witnessed concrete refurbishment in 1997. Today, its rooms are being used for storage and workshop purposes.

Fig. 55: View of the cutting die department from the north-east (2002)

Fig. 56: Entrance, gate (2002)

Fig. 57: Boundary wall at the entrance, photo by Albert Renger-Patzsch (1928)

The rail-lifting jack / rail-car scales

Construction plans for the building situated to the south of the chip and coal bunker and factory siding were drafted by Walter Gropius in 1921, when he had already become the director of the Staatliche Bauhaus in Weimar. The building has only one room with weighing and winching apparatus, which was used to position rail-cars on the adjoining siding and weigh them. The form, material and colour elements, which lend the Fagus factory its typical looks, are repeated on this small object as well: yellow brickwork with column-free glazing at both corners, red clinker base and a flat roof that juts out slightly in form of a walled brick-on-end course on a band cornice. Two narrow iron beams support the roof on both sides of the central window element on the railway side. The entrance door, which is panelled in four rectangles and which takes the shape of the window partitions, is located at the centre of the heavily bricked and otherwise closed wall to the factory yard. This miniature building is the youngest and the last of all buildings, the plans of which were personally signed by Walter Gropius. Though a miniature, it shows all design characteristics developed by Gropius for the Fagus factory in the smallest of spaces. An essential component of the entire Fagus factory that had become inoperable in the meantime, this building was repaired and renovated in 1991/92.

The cutting die department

In addition to the production of shoe lasts, a second line of business, i.e. the manufacturing of cutting dies, was incorporated in the Fagus factory. It was accommodated in a separate building to the south of the factory. Sectional steel blades for leather processing were manufactured in this single-storied, two-span building. The layout and arrangement of the building were submitted to the building authority according to the plans of Eduard Werner in 1911. However in the same year, the plans of the facades were revised by Walter Gropius' office and adapted to the exterior appearance of the remainder of the factory. The building contains a forge, the waste gas from which is drawn off by a 20 m high smoke stack. A locksmith's shop and a hardening room, which were extended to their present form by Gropius in 1914, were attached to this building. The complex, planned by Eduard Werner in its

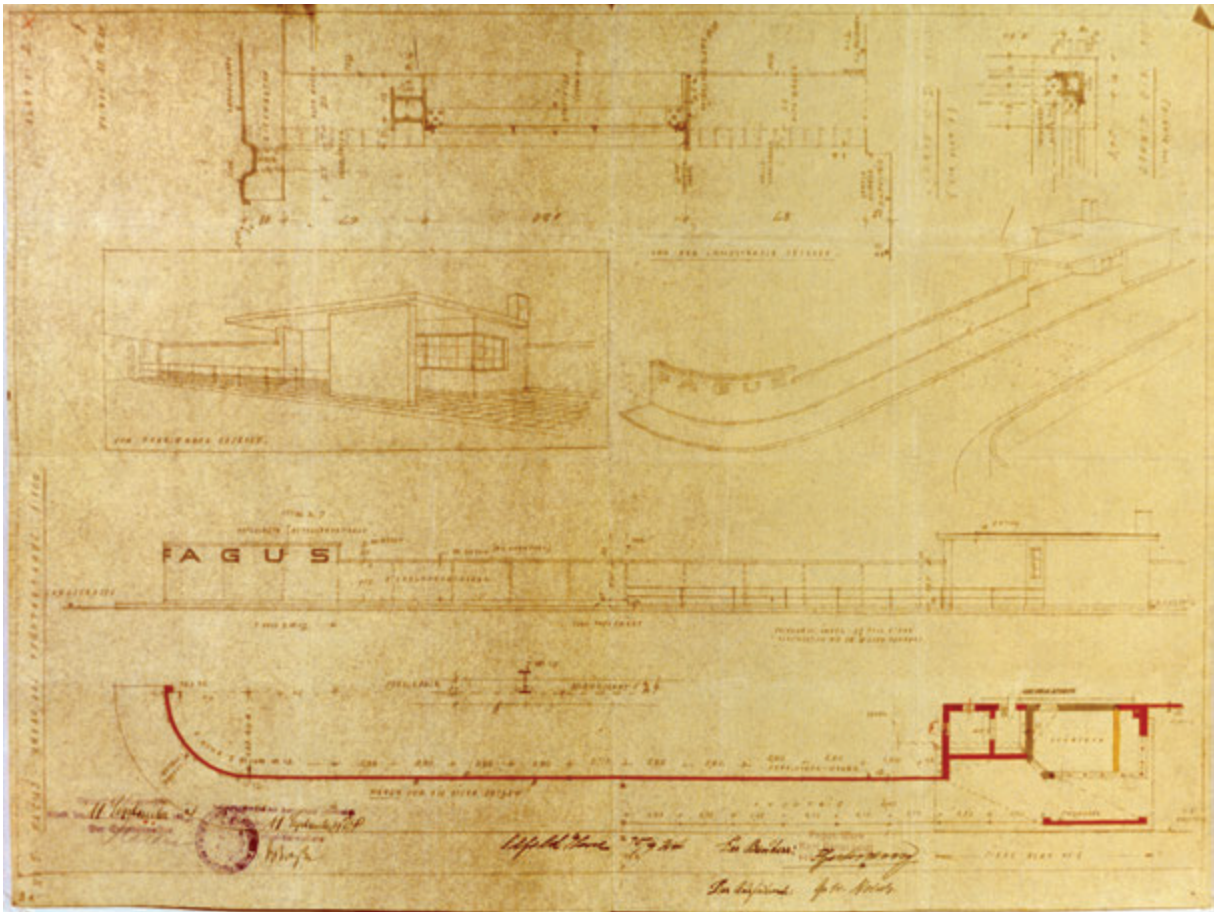


Fig. 58: Design drawing and perspective of entrance area, Gropius/Meyer (1924)

Fig. 59: Entrance, factory gate, photo by Albert Renger-Patzsch (1928)

Fig. 60: Entrance with gatekeeper's house, view from the south-east (2002)

cubature as a two-span hall under two parallel double pitch roofs as a conventional industrial facility, was adapted to the aesthetic central themes of the entire design in 1911 when it came to the external appearance: large cast iron windows divided into three parts by bricked posts rhythmise the long and stretched building together with a rigid rectangular surface sectioning as a result of flat cornice and wall projections. Two of the window compartments have been extended into entrances on the western side. Like in the sawmill, storehouse and drying house, the design principles of the classicistic architecture for industrial buildings have been applied here.

Fig. 61: Gatekeeper's house, south-eastern corner with gate system (2002)

With the closedown of the cutting die production in the year 1974, the building was used for a new function. Conference rooms and exhibition spaces were fitted such that the conceptual and constructive characteristics of the Gropius design were conserved even in the cast iron columns. Refurbishment work of the roof was undertaken in 1995 and 1996, where most of the roof tiles for the new roofing were handpicked from the original building of 1911 and reused. The year 1997 saw the refurbishment of the external brickwork.

Fig. 62: Boundary wall, entrance (2003)

Gatekeeper's house with the iron factory gate and boundary wall

After a makeshift gatekeeper's house had been built in 1917 during the First World War, the building application for the today's building was filed in 1924. This last building of the complex was completed in 1925. The boundary wall running from the gatekeeper's house to the Hannoversche Straße was built on the basis of the same application. It ends with a dome and exhibits Bauhaus-typical boxlights at both its ends. The yellow bricks are visually formative for both these structures as well. The single-storied gatekeeper's house is covered with a projecting concrete slab which spans the footpath and which is supported by two wall columns till the approach road. The design plan shows a vertical concrete slab in this place, which along with the projecting roof tile, is reminiscent of the design ideas with which the Dutch group of artists De Stijl had experimented. The design seems to have been especially influenced by Gerrit Rietveld and his free combinations of wall and ceiling surfaces, which were combined to form variable spatial sculptures. It was only after 1950 that the vertical shear wall was replaced by the two pillars, since it obstructed the gatekeeper's view of the road. Even this building is characterised by a window hinge running around the corners of the building with a half-glazed entrance next to it. Another window opening in a bevelled corner of the building gives a view to the Hannoversche Straße. The automatic gate system, also designed by the Gropius architecture firm, consists of one light appearing framework with clearly proportioned sequences of thick and thin vertical bars and a base of horizontal rectangles. With the construction of such small structures, which were completed by the Gropius architecture firm under the supervision of Ernst Neufert, the Fagus factory complex attained its final consolidation and present appearance. The concrete roof, curved wall, gate system and the door to the gatekeeper's house were refurbished within the scope of the repair work undertaken in 1997. At the same time, replicas of the boxlights used in a Bauhaus product in 1923-25 were installed in the approach area. This consummated and revived the stylistic homogeneity of the approach road of the factory.

2. B History and development

The shoe last and cutting die factory was founded under the name of "Fagus-Werk GmbH Alfeld" in 1911 and later, after the First World War, renamed to "Fagus-Werk Carl Benscheidt OHG". The founder, Carl Benscheidt (1858-1947), commissioned the architect Walter Gropius (1883-1969) in cooperation with Adolf Meyer (1881-1929) to build a uniformly designed group of buildings that were completed in three construction phases between the years 1911 and 1925 on the basis of the plans of the Hanover architect Eduard Werner. The assignment also included interior designing with the styling of doors, metal fittings, lighting and furnishings. The project planning of the new factory facility was well under way when Walter Gropius and Carl Benscheidt decided to work together. Eduard Werner, an experienced, planning industrial architect, who had been working on the plans since October 1910, had already submitted his drafts to the local building authority on 29th April 1911. Hence, Gropius had no influence on the ground plan disposition of the plant. He could only provide for a closer meshing of individual parts of the building, as for example the sawmill, with the rest of the buildings to achieve a more compact grouping in the entire complex. A separate wing for the cutting die department as a separate line of production with forge, smoke stack, locksmith's shop and a hardening and grinding shop, was built to the south of the main plant. The building sequence, as it exists still today, was determined by the production action line specified in the manufacturing process. In April 1911, however, Benscheidt had decided first to construct a smaller main building and drying house to cut down costs: the size of the storehouse was thus reduced by half, the workroom was built with just two axles and the main building just had the stretched wing facing the railway. This was how the plant looked in 1912, with its cutting die department, a small boiler room and the chip bunker at the site near the railway line. The rapidly flourishing business necessitated the second construction phase, planned exclusively

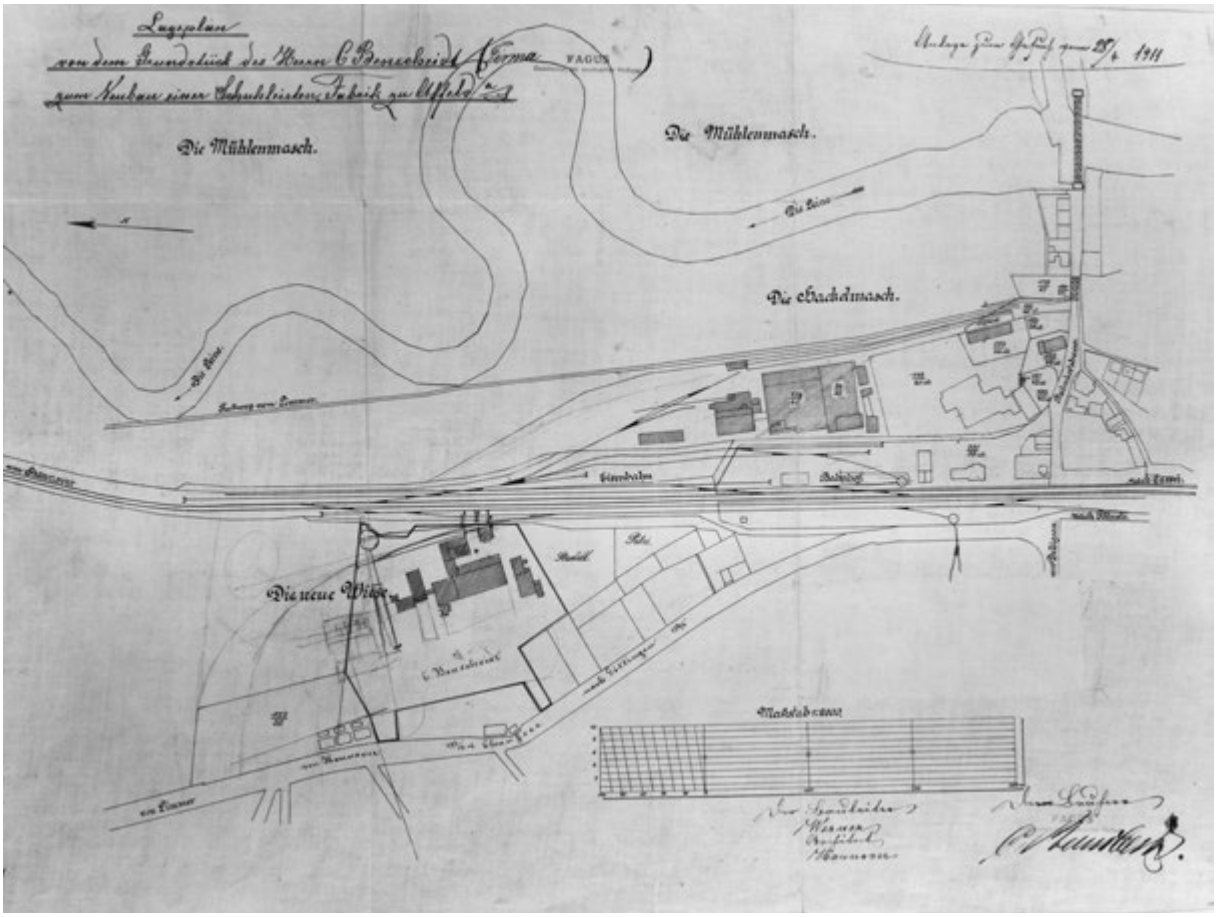


Fig. 63: Site plan, 1st building section (1911)

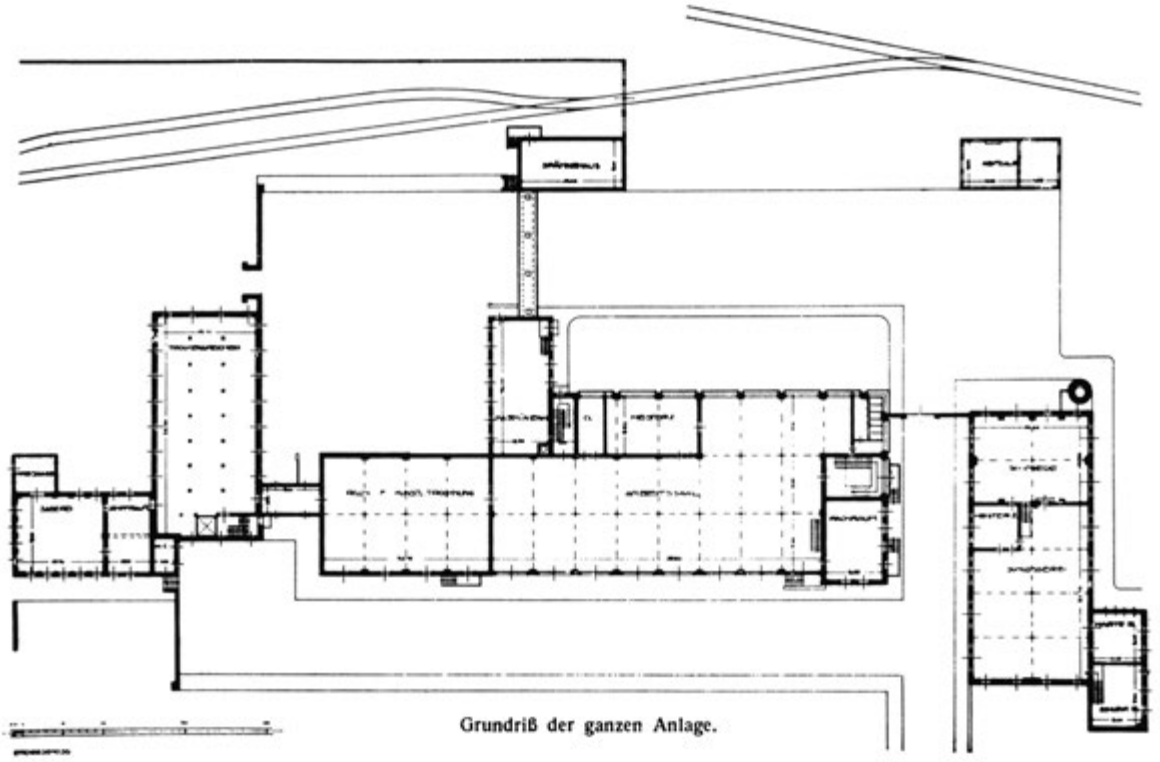


Fig. 64: Floor plan, 1st building section (1911)

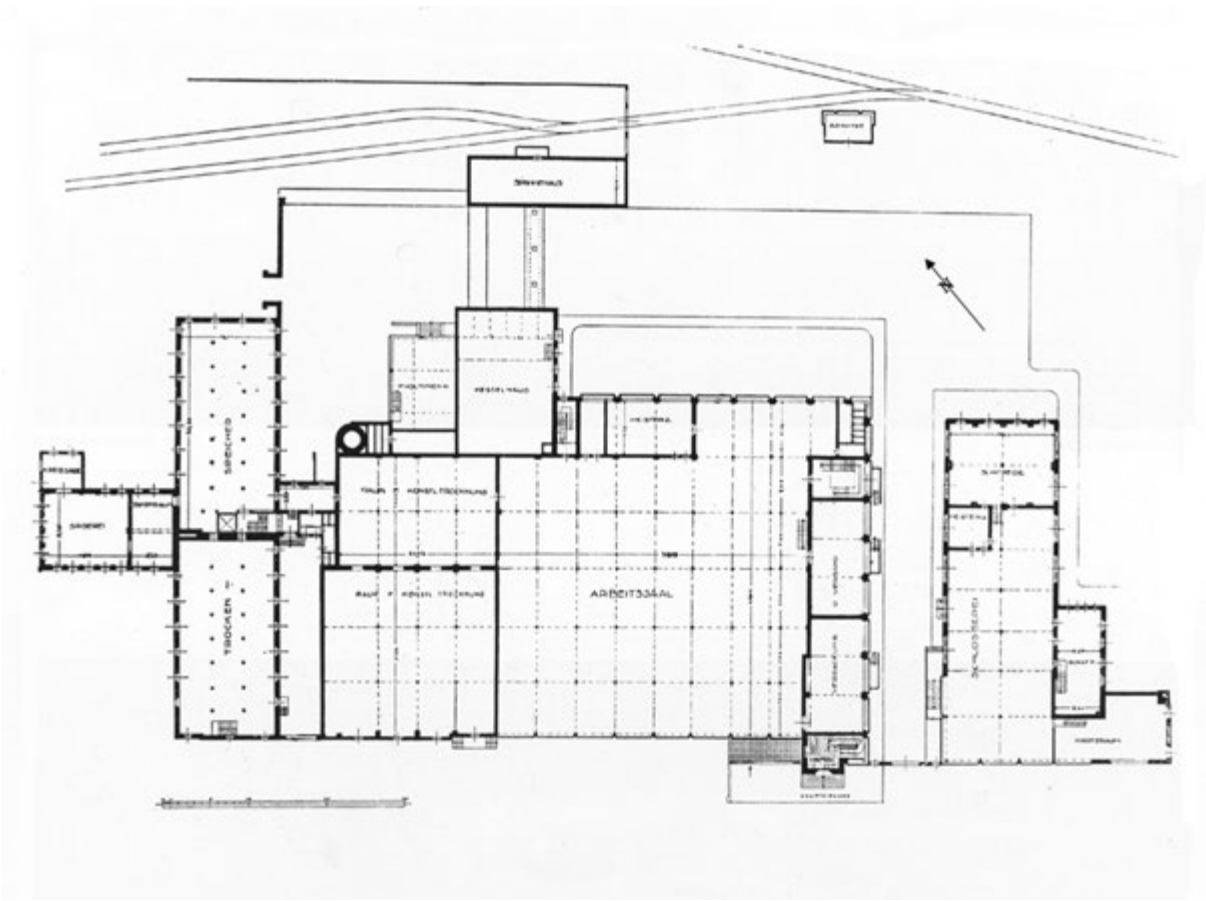


Fig. 65: Floor plan of the entire property

Fig. 66: Entire property from the south, 1st building section (1912)

Fig. 67: Entire property from the south-west, 1st building section (1912)

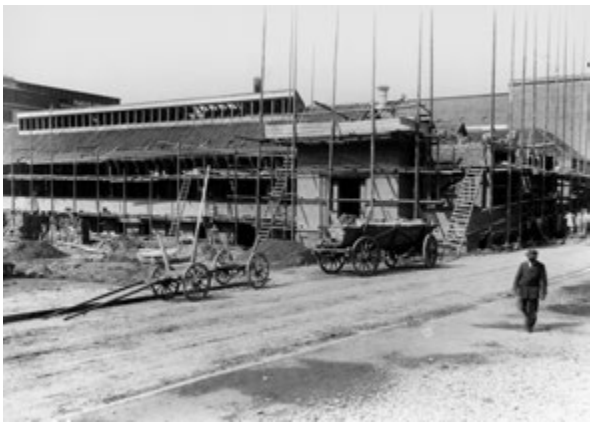


Fig. 68: Extension of the workroom, 2nd building section (1913/14)

Fig. 69: Main building, chip and coal bunker, engine house, 1st building section (1912)

by Walter Gropius, as early as in 1914. As a result, the drying house and storehouse were extended to double their original sizes, the workroom was increased by three axles and the southward office wing was extended by six axles. The projection in the entrance hall and the staircase at the back were then built in the column-free, paned southeast corner. The sawmill was also extended by constructing a northwest annexe also in 1914. In 1915/16, a water reservoir was attached to the smoke stack. At the same time, the new engine house came into being as well. It enclosed the already existing boiler room, which was demolished after the new building was finished. The year 1912 witnessed the construction of the rail-lifting jack and rail-car scales and in 1923/24 the addition of a coal bunker to the chip house followed. The gatekeeper's house with a boundary wall that extended up to the street was the last building to be erected on the site in 1924/25. Ernst Neufert, who had worked with Walter Gropius during the construction of the Bauhaus in Dessau, made changes in the exterior features of the plant in 1938 and extended the sawmill with adaptation to the style a second time. In 1974, a new production branch was added to the plant under a new management. Machines for the woodworking industry were manufactured in a hall built away from the old buildings. This hall, however, is not part of the properties for which the nomination is applied. The company came to be known as "Fagus-GreCon" since then. Refurbishment of the exterior design, which had become an urgent necessity, came through from 1982, after the interiors of the Fagus main building had been adapted to the changed organisational structure of the plant through careful renovation in the 1970s. Above all, the large window panels of the main building were damaged irreparably due to corrosion and had to be replaced. Owing to climatic reasons, window panels on the facade of workrooms required insulation glazing to retain the original use.

Restored window elements with the original single glazing and metal fittings were reinstalled in the hallway. The roofs and brickwork of almost all buildings were renovated in several stages until 1999. Due to the extreme importance of the property, financial means for the preservation of the Fagus complex were provided by the Federal Republic of Germany, the German Foundation for Monument Protection and the European Community, besides company

Fig. 70: Main building, roof renovation (1985)

Fig. 71: Storehouse during restoration (1999)

Fig. 72: Storehouse during restoration (1999)

Fig. 73: Main building, refitting of window elements (1989)

Fig. 74: Main building during the restoration (1987)

Fig. 75: Main building, refitting of window elements (1989)

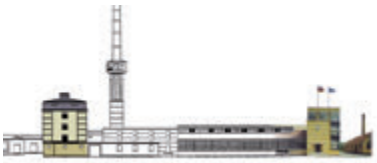
Fig. 76: Engine house, extension of the oil burner system (1994)

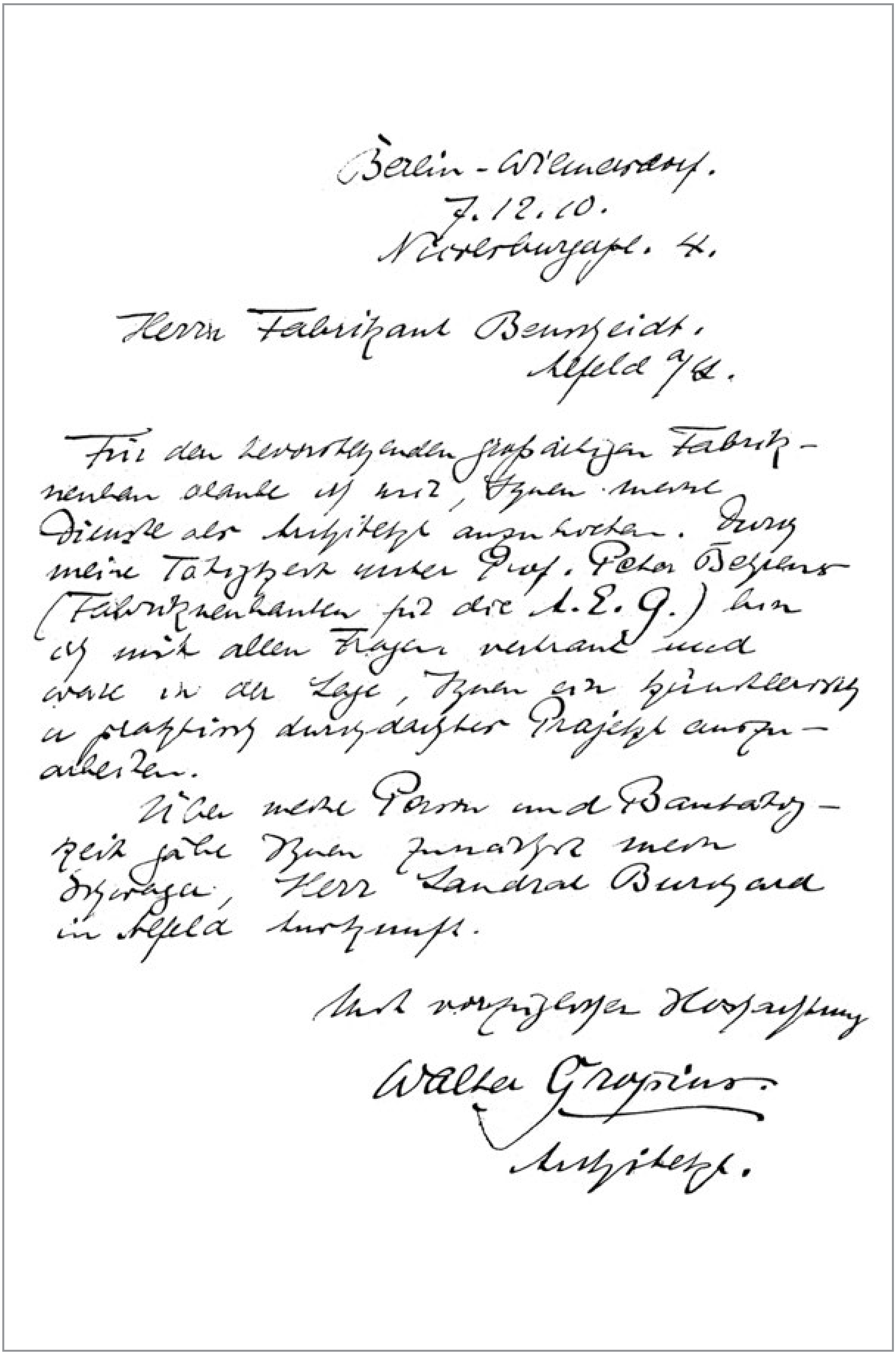
Fig. 77: Main building, roof renovation (1985)

Fig. 78: Main building, restoration of the entrance area (1995)

and state aids. The Fagus factory presented an exhibition project in the storehouse for the EXPO 2000 world fair in Hanover under the EXPO theme "Humankind - Nature - Technology" which showed tradition and innovation under the suspense arc and the restoration history of the Fagus factory under the aspect of sustainability, took up the shoe lasts and the shoe technology as well as wood as raw material and its processing, but also introduced modern derived timber products and environmental technologies to the visitors. The idea of a regular exhibition in the storehouse was conceived from 2002 meeting herewith the increasing interest of the public and international architecture experts in the Fagus building complex. The first section that was inaugurated in 2003 presents the company history, the story of the two protagonists Walter Gropius and Carl Benscheidt as well as the construction and restoration history in a modern, multi-media presentation to the visitors. Since 2005, the five-storied storehouse is being used as exhibition building and attracts about 10,000 visitors a year. The project was financed by means of the state of Lower Saxony and Fagus-GreCon.

3. Justification for inscription





Berlin-Wilmersdorf.
7.12.10.
Nicolsburgerpl. 4.

Herrn Fabrikant Benscheidt.
Alfeld a/L.

Für den bevorstehenden großzügigen Fabrikneubau erlaube ich mir, Ihnen meine Dienste als Architekt anzubieten. Durch meine Tätigkeit unter Prof. Peter Behrens (Fabrikneubauten für die A.E.G.) bin ich mit allen Fragen vertraut und wäre in der Lage, Ihnen ein künstlerisch u. praktisch durchdachtes Projekt auszuarbeiten.

Über meine Person und Bautätigkeit gibt Ihnen zunächst mein Schwager, Herr Landrat Burchard in Alfeld Auskunft.

Mit vorzüglicher Hochachtung

Walter Gropius.

Architekt.

Fig. 79: Application letter by Walter Gropius to Carl Benscheidt, 1910

3. A Criteria under which inscription is proposed

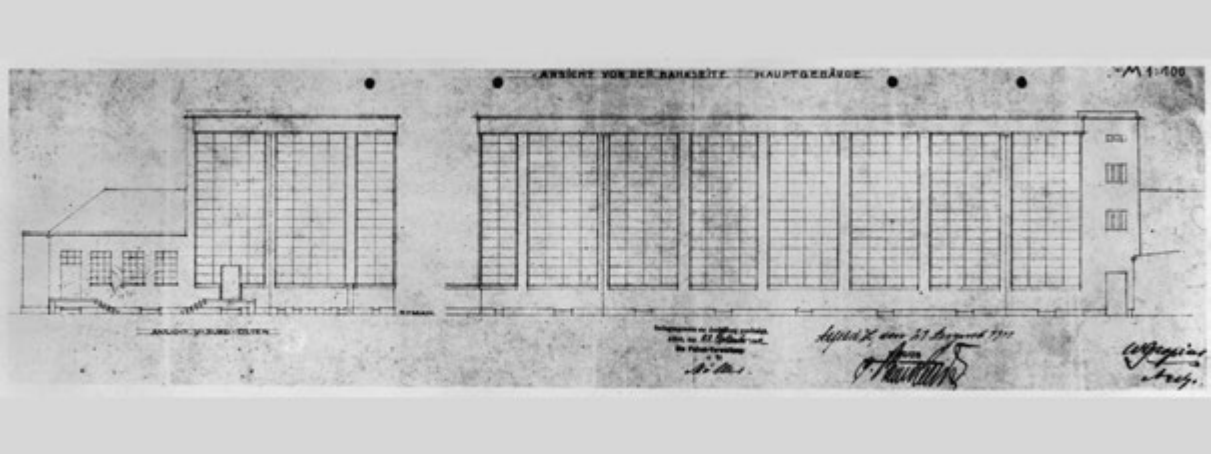


Fig. 80: View from the railway side and view from the south-east, design drawing Gropius (1911)

(I) The nominated plant is a chef d'oeuvre of the human creative power.
From 1911, Walter Gropius laid the foundations of modern architecture with the Fagus factory. Especially the office building of this complex industrial plant offered the then 27 year old architect the opportunity to realise his revolutionary visions of modern architecture through a project of substantial scope. For the first time ever, Gropius coaxed steel and glass, which had already proved instrumental in tremendous engineering feats in the nineteenth century, into a radically new form. In contrast to the iron and glass constructions that featured in many civil engineering structures of the nineteenth century, Gropius developed tectonically conceived structures and spaces, which, characterised by precision, rigour and compactness, lead modern architecture into the twentieth century.

The structural possibilities of construction using steel and glass were made subservient to an extremely modern artistic design for the first time. The exterior wall of the building is perceived as a transparent, space-encompassing cover and artistically visualised through a superior, extensively glazed and subtly sectionalised steel framework that stands column-free around the building corner.

Merely rating the Fagus factory as an initial version of its many, aesthetically excessive reproductions and as a timeless work of art of international standing would not do justice to its artistic significance. The claim to distinction of this piece of architecture gets validated as soon as one visits the site and perceives it as a document of its times. Here, the somewhat acheronian and monumental brick architecture of contemporary industrial plants in the near proximity gave way to a completely new language of form. The industrial design is transformed into a coherent art form using artistic methods, without disclaiming the place of industrial production. His academic training and orientation to space and design values of the German Classicism urged Gropius to make adequate use of the new materials steel and glass in combination with wood and brickwork. The result reflects disengagement from eclectic style adaptations, modern material aesthetics and concentration on a three-dimensional world of ideas of prospective users and recipients. Industrial architecture is raised to be a work of art, without following the viewing habits of academic aesthetics: "The stroke of genius of young Gropius surpasses the architectonic boldness and artistic innovation of almost all constructions before the First World War and its significance for all the architecture in the twentieth century cannot be estimated" (Nerdinger, 1985, Pg. 36).

With complex interweaving of aesthetic, psychological, social and technical functional aspects, the Fagus factory represents a masterpiece of the creative mind on the threshold of a new time and manifests, for the first time, the theoretical basics for the development of twentieth century architecture.

Fig. 81: Engine house, entrance (2002)

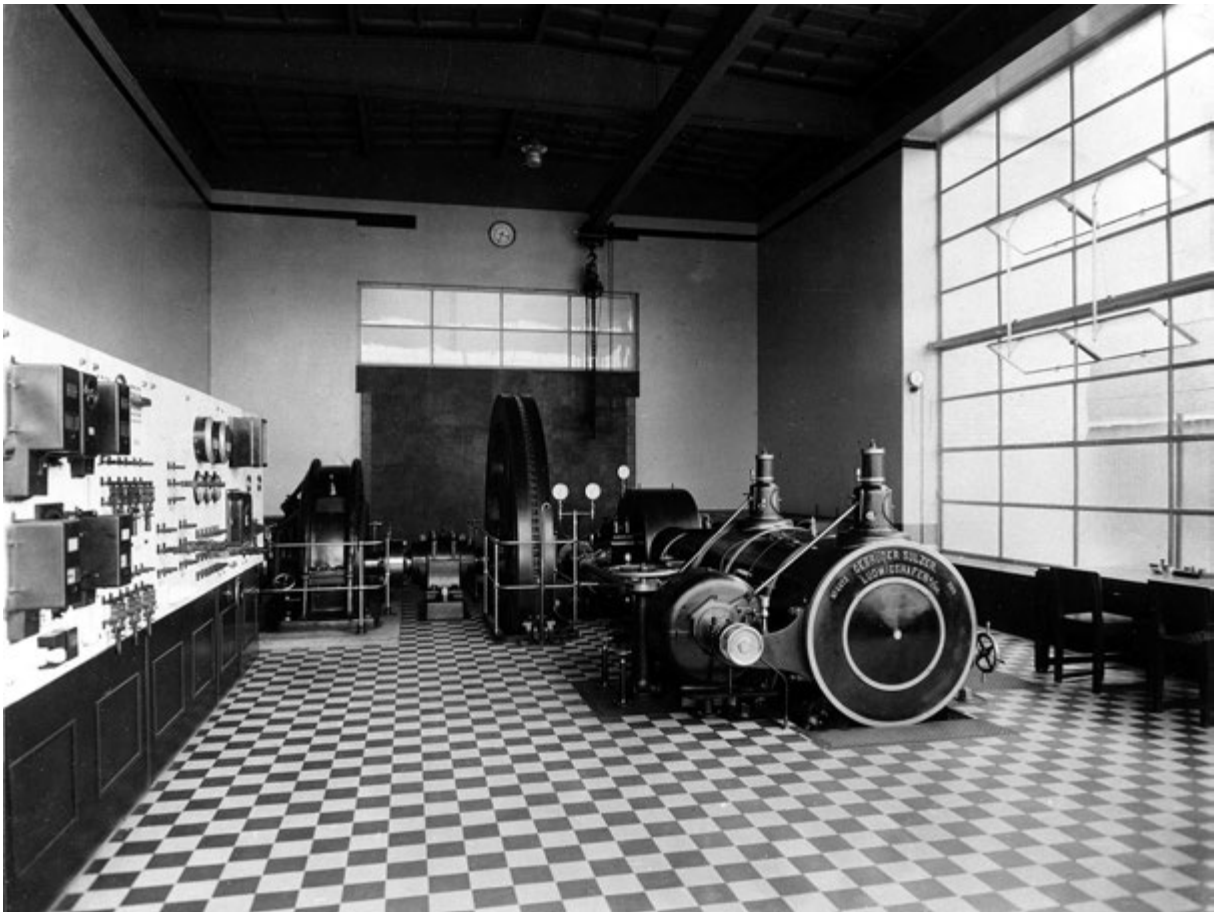


Fig. 82: Engine house, photo by Edmund Lill (1922)

(II) The nominated plant graphically documents a significant change in human values over a period of time or in one cultural part of the earth with respect to development in architecture or technology, large-scale structures, urban development or landscape architecture.

Based on a comprehensively understood functional analysis that incorporated psychological and socially reforming considerations, Gropius developed an aesthetic program for the Fagus factory, which cumulated in his requirement to "build palaces for work". The interplay of all the creative forces acting on the factory's construction, which later came to be taught systematically in Bauhaus, took roots in the main building of the Fagus factory. Its integrative and detailed styling substantiates Gropius' ability to lend an appropriate artistic expression, the fundamental principles of which have retained their significance in different variations even today, to the Modern Era using new technical and constructive prerogatives.

The Fagus factory is not just a timeless expression of the Central European industrial society at the outset of the twentieth century. It is, so to speak, the reaction of all sections of

Fig. 83: Main staircase, south-east corner (1998)

Fig. 84: Main building, south-west corner, detail with staircase (around 1990)

Fig. 85: Main staircase, 3rd floor, photo by Albert Renger-Patzsch (1928)

the civil society in pre-war Germany to the social revolutions of that time. The transition from an agricultural to an industrial society that occurred a few decades back was accompanied by a growing culture critique. Considering the increasing social unrest in an autocratic social structure that was in dire need of reform, large sections of the European educated classes pinned their hopes on the aesthetic education and reformed involvement of workers in the prospering development of industrial production. Against this backdrop, the quasi bright and clean production building not only symbolises the cultural and economic superiority of the bourgeois manufacturer, but also the humanisation of the industrial world in an unprecedented magnitude.

From this point of view, the Fagus factory is not just an unparalleled artistic achievement; it also documents a radical change in the working conditions of the industrial society with respect to the humanisation of the industrial world and transparency of its operational sequences. Architecture and design as essential factors for the quality of human life were first programmatically formulated for the Fagus factory and presented to the following generations.

Fig. 86: Main building with dispatch annexe, 1st construction phase (1911/12)

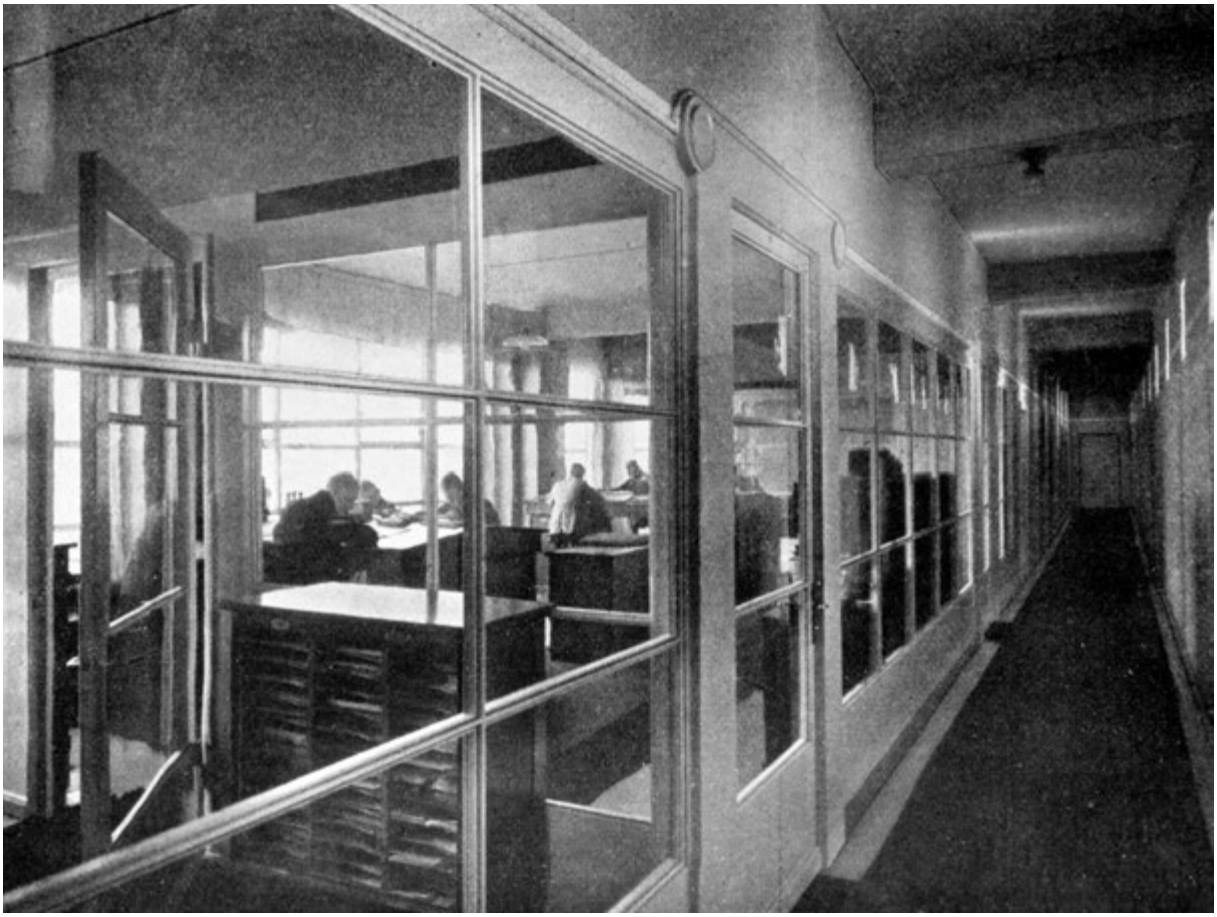
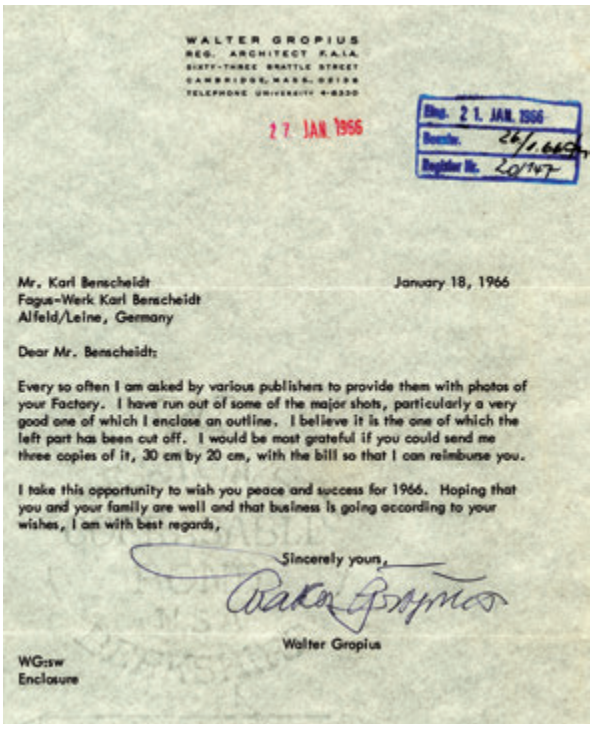


Fig. 87: View of office floor, photo by Edmund Lill around 1922

3. B Proposed statement of outstanding universal value

The year 1910 is often considered to be the reference year of the onset of modern architecture. It coincides with the proposal of the then twenty-seven year old Berlin architect Walter Gropius to Carl Benscheidt, the manufacturer of shoe lasts in Alfeld, to design the new building of an industrial plant. Benscheidt had recently learnt about the latest developments in the field of shoe last fabrication when on a fact-finding tour to USA and had returned to Germany with the vision of building his new factory in Alfeld taking the most modern aspects into account. This not only included business aspects such as rational production flow and the use of inexpensive building material, but also performance-enhancing working conditions in modern, objective architecture. With its artistic appearance worked out to the last detail, Benscheidt wanted the new factory building to stir commercial appeal for the product, which is distinguished by extreme manufacturing precision, and also had the intention to distinctly express the inner logic of the manufacturing process. This caused Carl Benscheidt to implement the already existing conventional drafts of Eduard Werner and have them revised by the young Walter Gropius and his colleague Adolf Meyer. Gropius could recommend himself to Benscheidt through his work with Peter Behrens in Berlin and his much noticed factory buildings for AEG. Agreement in the architectonic and creative objectives of the property developer and architect formed the basis of their herewith starting extremely successful cooperation that resulted in 1911 in Alfeld in the creation of an epoch making industrial complex the design principles of which ushered in a new period of architectural style. The design concepts underlying this construction had a decisive influence on the development of twentieth century architecture not only in Germany and Europe but around the globe.The artistic ideas convincingly introduced in the Fagus factory and then theoretically and practically taught in the Bauhaus were brought to England and USA by Gropius and developed into decisive values for the generation of the international style. Its global significance as an outstanding artistic achievement and as the first industrial construction of modern era is unequalled and incomparable. Its influence as an exemplary draft and initial construction of an architectural epoch is still unimpaired.



WALTER GROPIUS
REG. ARCHITECT A.I.A.
SIXTY-THREE BRATTLE STREET
CAMBRIDGE, MASS. 02138
TELEPHONE UNIVERSITY 4-6330

27 JAN 1966

Eing. 21. JAN. 1966
Beantw. 26/1.66
Register Nr. 20/147

Mr. Karl Benscheidt
Fagus-Werk Karl Benscheidt
Alfeld/Leine, Germany

January 18, 1966

Dear Mr. Benscheidt:

Every so often I am asked by various publishers to provide them with photos of your Factory. I have run out of some of the major shots, particularly a very good one of which I enclose an outline. I believe it is the one of which the left part has been cut off. I would be most grateful if you could send me three copies of it, 30 cm by 20 cm, with the bill so that I can reimburse you.

I take this opportunity to wish you peace and success for 1966. Hoping that you and your family are well and that business is going according to your wishes, I am with best regards,

Sincerely yours,

Walter Gropius

WG:sw
Enclosure

Fig. 88: Letter by Walter Gropius to Carl Benscheidt (1966)

HARVARD UNIVERSITY
CAMBRIDGE
MASSACHUSETTS

GRADUATE SCHOOL OF DESIGN

DEPARTMENT OF ARCHITECTURE

Eing. 14. OKT. 1938

September 29, 1938.

Herrn Karl Benscheidt
Alfeld, Leine.

Lieber Herr Benscheidt,

Ich habe mich sehr herzlich ueber Ihren ausfuehrlichen Brief vom 19. September und vorher schon ueber die Postkarte und die Druecksachen, die Sie mir geschickt haben, gefreut. Ich beglueckwuensche Sie zu Ihren Erfolgen und weiss, dass sie eine Frucht Ihrer gruendlichen Bemuehungen ein ganzen Leben hindurch sind. Ich moechte Ihnen bei dieser Gelegenheit sagen, dass ich in meiner ganzen Praxis keinen Bauherrn gefunden habe, wie meinen ersten, weil Sie aktiv in allen mitdachten und mittaten und dadurch kommt dann etwas zustande. Ihr Fagus-Gebaeude, das wir damals entwickelt haben, es sind jetzt 28 Jahre her, ist in der Tat ein Haltepunkt in der Architektur-Geschichte geworden. Sie koennen sich garnicht vorstellen, welche zahllosen Belege aus allen Laendern ich darueber in meinem Archiv gesammelt habe. Es wird in der Tat auch von den Kunst-Historikern fuer den ersten entscheidenden Bau des neuen Baustils gehalten. Aber trotzdem, ohne den richtigen Inhalt waere es nur eine Attrappe. Die Organisation, die Sie hinein getan haben, war ebenso zukunftsweisend wie der Bau selbst.

Wir haben es hier besonders gut getroffen und ich bin mir jeden Tag darueber klar, dass ich unter meinen Kameraden das grosse Los gezogen habe. Nicht nur ist die Arbeit, die ich hier aufbauen kann, ich bin inzwischen Chairman der Architektur-Schule geworden, sehr vielversprechend, sondern auch meine praktische Taetigkeit zusammen mit Marcel Breuer, der frueher am Bauhaus war, entwickelt sich gut. Ich lege Ihnen ein paar Bildchen eines Hauses bei, das ich mir hier auf dem Lande gebaut habe, in wunderbarer Gegend.

Ich wuerde mich natuerlich besonders freuen, wenn ich die gelegentlich eines Besuches in den Staaten hier wiedersehen koennte. Man kann im Augenblick nur wuenschen, dass

die Verhaeltnisse sich so entwickeln moegen, dass der Verkehr ueber die Laender nicht verbaut wird.

Mit herzlichen Gruessen auch von meiner Frau an Sie und die Ihrigen

Ihr

Walter Gropius

Fig. 89: Letter by Walter Gropius to Carl Benscheidt (1938)

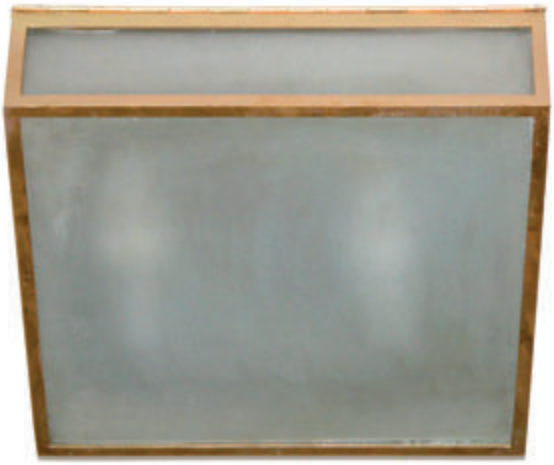


Fig. 90: Main building, south-eastern staircase, box light (2002)

Fig. 91: Engine house, gas pipe railing (2002)

The design concept of the Fagus factory stemmed from sources that go way beyond the purely architectonic urge to create. For the first time in the history of industrial architecture, a draft was based on the analysis of human needs. The poor working conditions of the advanced industrial age had lead to social exclusions in Europe at the beginning of the twentieth century and needed reform. Until that time, industrial work was carried out in poorly lit and ventilated spaces purely for reasons of economy. The architecture of these rooms lacked artistic inspiration and constituted forms that were hackneyed and inappropriate. Gropius followed a strict process of abstraction, both for the overall architectural form as well as for the details, when designing the Fagus factoring reducing all architectonic structures to primary and initial shapes. With the Fagus factory, Walter Gropius succeeded in freeing the art of architecture from the rigid fetters of convention and showing development possibilities for the future, taking into consideration the basic needs of human living conditions for man in the industrial world as well. It builds the prelude to a development, which was interrupted by the First World War, but reached final formulation with the construction of the Weimar Bauhaus in 1919 and its continuation in Dessau since 1925.

With the construction of the Fagus factory, Gropius achieved a breakthrough to new, modern art of construction that went hand in hand with the age of technology. The Fagus factory itself is a manifestation of the conquest of meaningless adaptations of style, which were brought forward by nineteenth century architecture in innumerable variations: while some of the buildings such as the sawmill, storehouse, drying house as well as the cutting die depart-ment still show the subdued, purged classicism in their architecture, a radical break from the conventional design practice that is evident in the core buildings, workroom, engine house and particularly the three-storied main and office building, represents an idea of architecture that develops space and form from function, takes into account the reformed light, air and visibility requirements of its users and makes use of the new technical possibilities of construction with industrially pre-produced quality glass and steel. Glass, which is actually an unsubstantial material, becomes a formative building material and mode of expression of architecture. The Fagus factory is a monument of experimenting with modern building technologies and implements the creative principles of functionalism for the first time. In the Fagus factory, the principle of "form follows function", which was often trivialised later, does not come out as rigid automatism

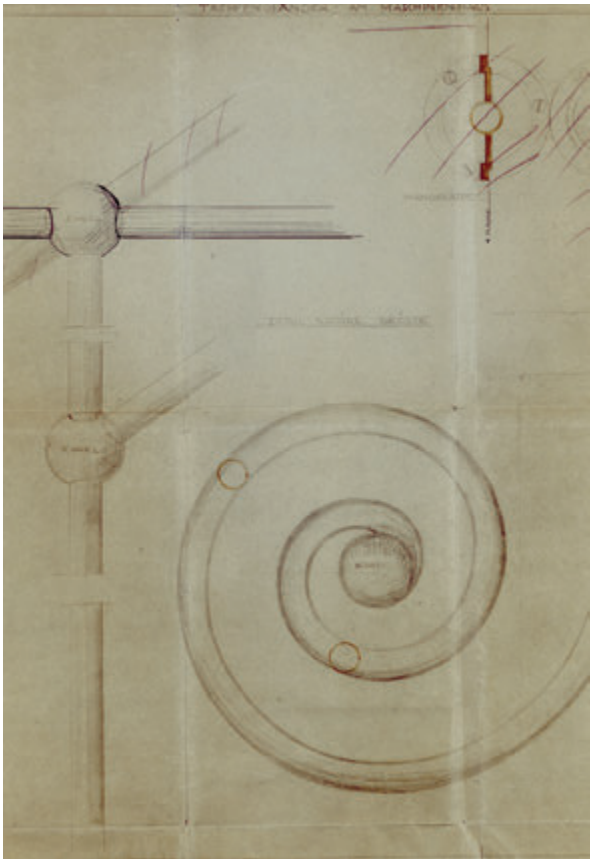


Fig. 92: Banisters in engine house, design drawing (1919)

Fig. 93: Main building, main staircase, 1st floor, door detail (2002)

but as artistic and perfect in form. Everything that was functionally dispensable was excluded and a piece of architecture of a higher form of originality with a subtle attraction of the details which are combined with technically compelling necessities and finely balanced moods came into being. Reduction of the means of expression – such as building all windows of one basic size and uniform use of simple yellow bricks – gave birth to new modern aesthetics, which is expressed by coherent proportions, geometrical forms and the abandonment of applied ornamentation. The Fagus factory is not an ostensibly representative piece of architecture; it convinces aesthetically with its precision and consistent proportions and conveys a democratic value system through its open, transparent character. Its revolutionary poise was noticed at an early stage and, as early as after the completion of the first construction phase in 1913, the Fagus factory found mention and first recognition in specialised literature as an exemplary industrial building. However, modern design does not concentrate on architecture alone. Analogous to the principles of the Werkbund to which Gropius made a large contribution, it encompasses all areas of presentation of the company as a medium of expression for innovation and quality: When it comes to the interiors, partitioning, flights and banisters are designed in new, functional forms, but also the equipage such as lamps and furnishings and all the graphic designs are uncompromisingly modern and give expression to an early form of corporate identity. The Fagus factory is representative of new intellectual movements in keeping with practical requirements and thus the most revolutionary architectonic achievement before the First World War. Its design principles were accepted at an early stage and transferred from industrial building to other construction assignments. In all important languages of the world, the specialised literature for architectural history cites the Fagus factory as one of the first construction projects of the Modern Era. As monument with its original function and largely preserved, exemplarily restored building fabric, it conveys its epoch-making values with unprecedented authenticity. Its openness and clarity fascinate even today and the fundamental ideas behind its development process have spread across the globe as cultural heritage of the twentieth century.

Fig. 94: Main building, south-east corner, photo by Albert Renger-Patzsch (1928)

3. C Comparative analysis

Fig. 95: AEG turbine hall, Berlin. Architect: Peter Behrens (1908-1909)

The epoch-making importance of the Fagus factory is mainly based on the uniqueness of its main building. About 1911, there existed not a single architecture either in Europe or anywhere around the globe, in which the new possibilities of construction with steel and glass were combined to an equally visionary architectural form.

With distinct, sharply cut construction cubes and purely functionally designed facades, which refused to adopt the style of historical role models, Gropius broke away from the aesthetic limits of the architectural taste of his times in a way that was previously unheard of. He freed architecture from the constraint to satisfy the need for the perception of seeming solidity and stability. In contrast to the AEG-Turbinenfabrik in Berlin for instance, the monumental main gable of which disclaims the load-bearing steel arc-type construction with its broad and huge corner pylon and a drumlike tympanum, the paned corner of the main Fagus building explicitly exhibits the non-load-bearing function of the outer wall. With the pulled-up, box-shaped facade components made of steel and glass, Gropius made use of a construction element, which, like a curtain wall, enabled the glazing of corners for the first time ever. The paned corner allowed the creation of arris crystalline or even organically rounded structures, however at any rate glass dominated structure parts with transparent appearance. Since the twenties of the last century, this facade component started being used more often and had influenced the structures of the international style. Multi-storied buildings with a load-bearing inner skeleton construction were preferred. Initially, however, the Fagus factory remained the peerless example of the new building style. Other reform-oriented architects of that time, such as Peter Behrens and Hermann Muthesius, made use of a classicistic form-oriented architectural language for the industrial buildings they built before the First World War. However, due to the outbreak of the First World War, neither the Fagus factory nor the buildings designed by

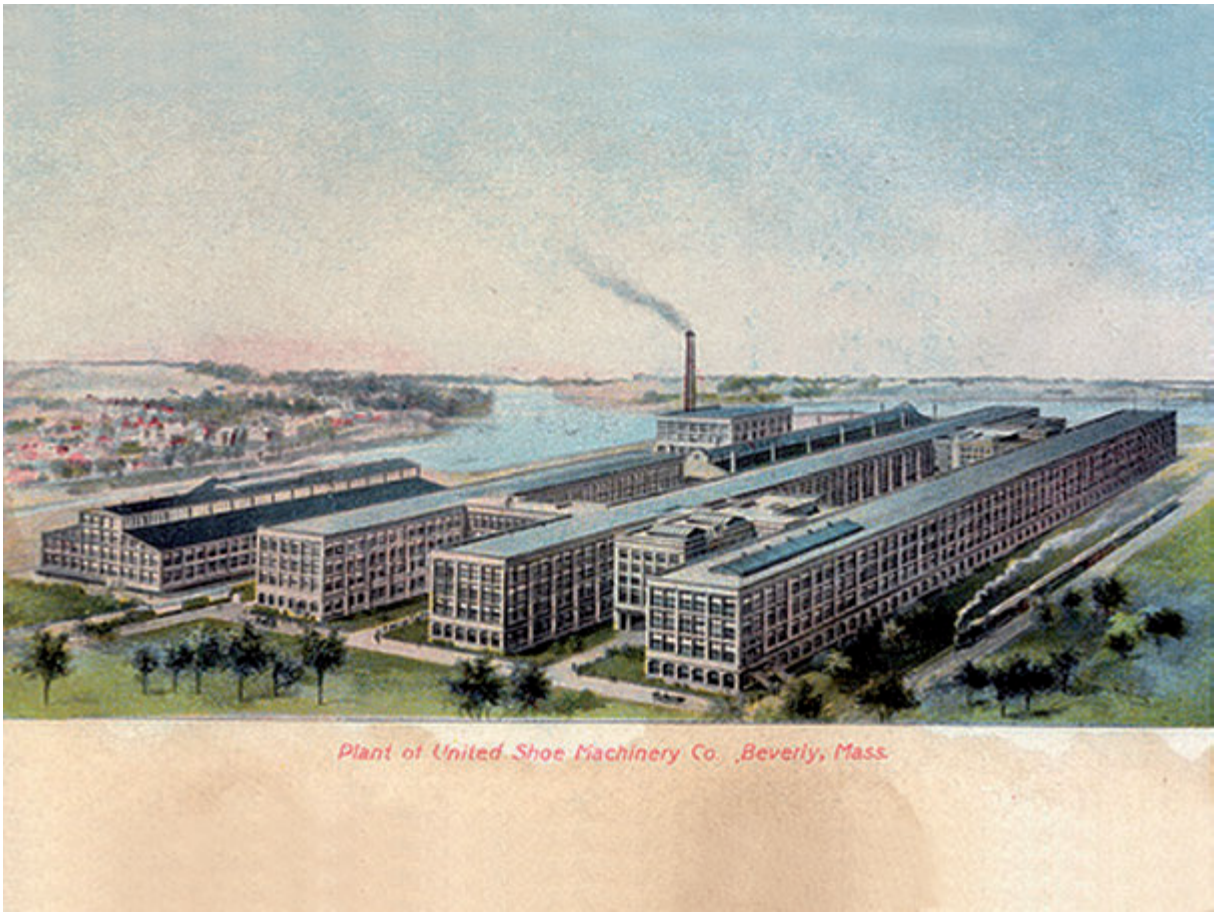


Fig. 96: United Shoe Machinery Corporation, Beverly, Massachusetts, Boston. Architect: Ernest L. Ransome (1903-1905)

Gropius for the exhibition of the German Work Federation in 1914 in Cologne managed to have an immediate impact. It was only as teacher and director of the Bauhaus that Gropius found it possible to pass on his ideas in the twenties and to continue on the path he had paved in Alfeld after the construction of the Bauhaus main building in Dessau in 1925.

With the Fagus building Walter Gropius built a style creating artwork, the elements of which are actually gained from different sources but generate a completely new overall idea of architecture that is unique compared to contemporaneous or earlier drafts and buildings.

Although individual constructive prerequisites, which facilitated the new building style of the twentieth century – such as the glazed steel skeleton construction and reinforced concrete skeleton construction – were developed since the mid-19th century, it was only due to Walter Gropius and his Fagus factory that architecture could outgrow the historicising world of forms and develop at a completely different level. Toward the end of the 19th century, other protagonists of modern industrial construction used the constructive possibilities of the new construction material for functional civil engineering works (François Hennebique in France, Ernest L. Ransome and Albert Kahn in USA) or for monumental architectures with artistic merit, as Peter Behrens, Hans Poelzig and Hermann Muthesius, who, like Walter Gropius, strived to achieve the ideal of work compound by merging "Usefulness and Beauty".

However, none of these designs equalled the pioneering pithiness of Gropius's Fagus design, where the constructive framework was suppressed behind the façade for the first time ever, where space demarcation was designed as a layer of glass skin around the corners and where a crystal-clear cubature determined the character of the building. The non load-bearing glass curtain wall as a medium of expression of modern artistic design is pre-formulated here; it is a principle design, which since then became and integral part of architecture and was continually perfected in the following decades.

Since his collaboration with the office of Peter Behrens (1908-1910), with whom Gropius had worked on the new buildings for AEG in Berlin, the then 27 year old architect intensively dealt

Fig. 97: Steiff GmbH, Giengen/Brenz, factory building, 1904-1908 (photo around 1920)

with the subject of industrial construction as a construction project, the core duty of which was to demonstrate modernity in an industrial society. Particularly in the America of those times, Gropius looked for and found modern industrial buildings, photographs of which he collected and presented as models in lectures and magazine articles. These industrial buildings particularly included the monumental concrete grain storehouses that were built in America around this time and examples of "daylight factories", out of which only the huge factory complex of the "United Shoe Machinery Corporation" in Beverly/Massachusetts that was constructed in 1903-1905 should be mentioned here. This design of Ernest L. Ransome was considered to be the largest industrial building made out of concrete in the world and the most exemplary factory of his times. Entrepreneur Carl Benscheidt too shared a close relationship with America: In the course of the foundation of his company in 1910, he won the support of the United Shoe Machinery Corporation in Boston as partner and more importantly, as financial backer. Founding the Fagus GmbH would never have been possible without its contribution. Despite the close association with America of both, the founder of the company and his architect, its direct influences on the Fagus factory in Alfeld can only be noted in economic and production-technical aspects and not in the architecture, as the unconditional objectivity was the only meeting point of the industrial buildings in America at that time, which were characterised by an austere, functional modernity and the artistic merit and architecture-theoretic prerequisites of the Fagus factory. About 1910, concrete, steel and glass had established themselves as building materials for industrial constructions in America as well as in Europe and had found remarkable architectonic solutions in many individual elements, which reappear in the Fagus factory: if one wanted to characterise the glass fronts of the Fagus factory as curtain walls, as Gropius later did, they could be found in Berlin, fully developed in the otherwise historically ornate facade of the Tietz departmental store (Bernhard Sehring 1899-1900). The architectonically lowbrow glass buildings of the Steiff factories in Giengen/Brenz constructed between 1904 and 1908, in which a dual-wall glass skin with intermediate steel construction lights up the workrooms at low power consumption and ventilates them, also demonstrate a pragmatic and modern

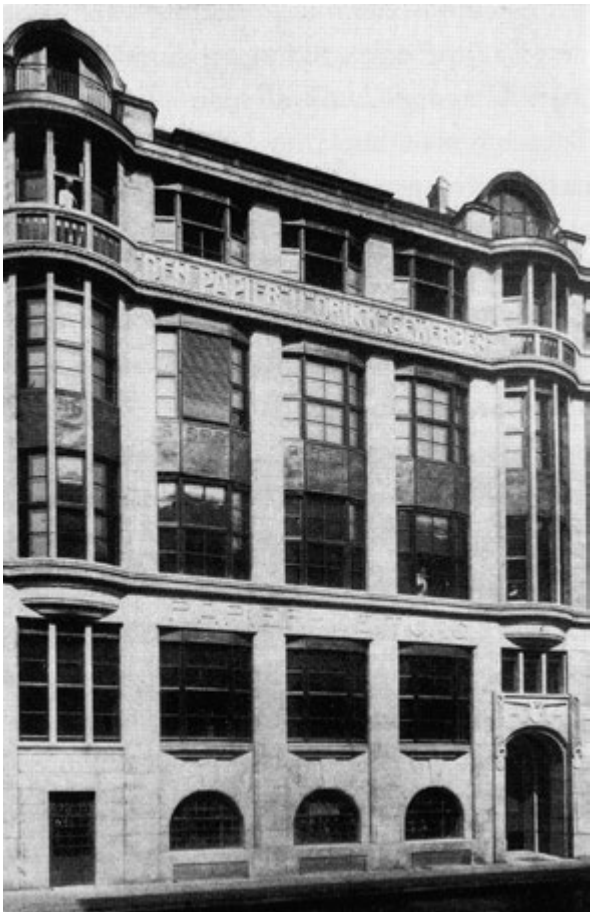


Fig. 98: Papierhaus, Berlin. Architect: Bruno Schmitz (1906)

Fig. 99: Warenhaus Tietz, Berlin. Architects: Bernhard Sehring and L. Lachmann (1899-1900)

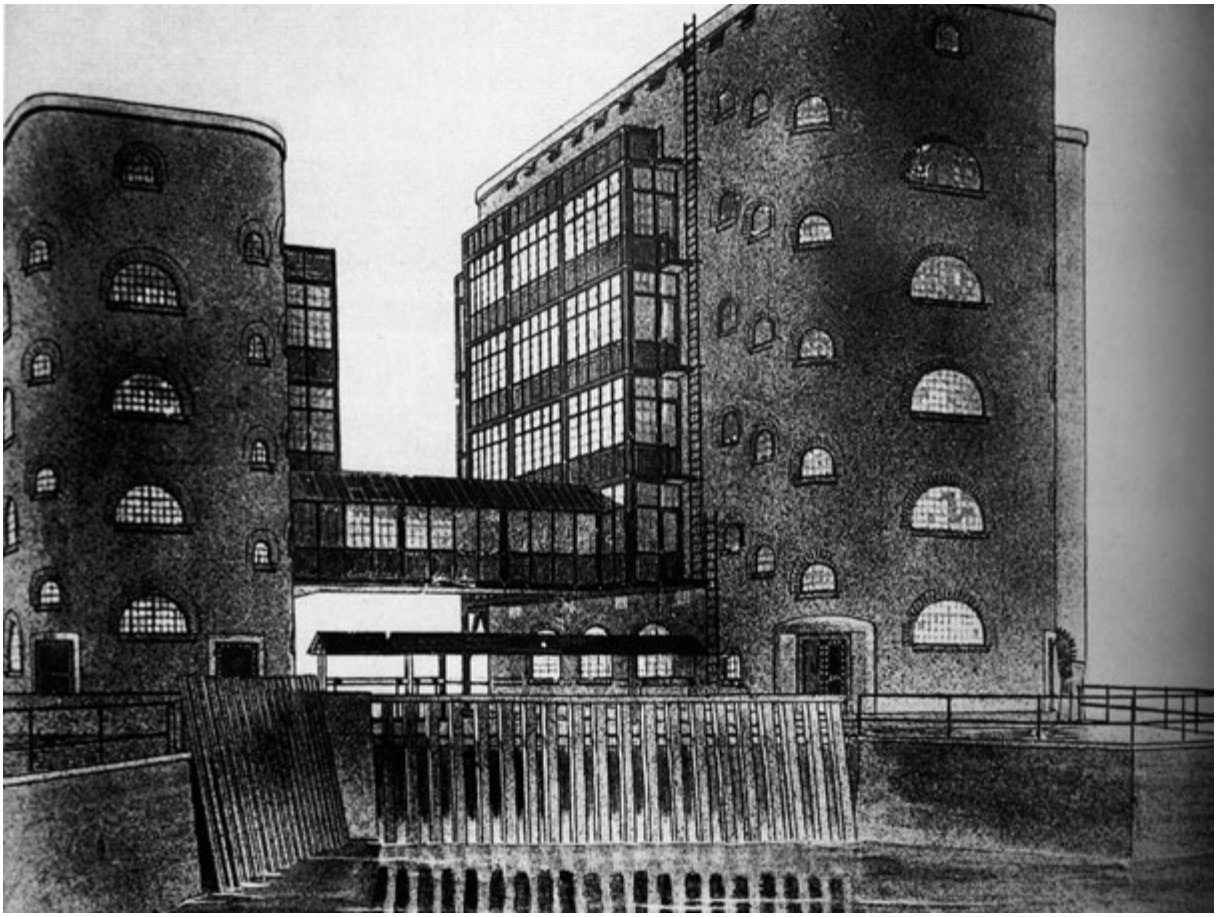


Fig. 100: Werdermühle, Wroclaw (Silesia). Architect: Hans Poelzig (1906-1908)

handling of the building material glass. The exten-sive, box-shaped steel and glass window rows in the Fagus factory have a similar form – spanning several floors and with steel revet-ment in the parapet area – in the construction of office and branch buildings such as the "Papierhaus" in Berlin constructed in 1906 by Bruno Schmitz. As is evident in his design for the Werder-Mühle in Breslau, Hans Poelzig too made use of extensive, box-shaped glazing in 1906, which spanned several floors and which was placed in front of the structures that otherwise appeared extremely massive and closed. If it was primarily used for dissolving space demarcations in the engineering architect-ure of the 19th century, reformers such as Poelzig, Behrens and Gropius intended to use glass, an unsubstantial material by itself, architectonically, i.e. for shaping usable and functional spaces and structures, especially for places where brightness and light are required. An example of this is Gropius`s own design for a new hospital in Alfeld in 1912, where the operation theatre exhibits such extensively paned space demarcations.

However, a comparison with the turbine hall constructed by Peter Behrens in 1908/09 for the AEG in Berlin will throw more light on the genesis of the Fagus factory. During his time in the office of Behrens (June 1908 to March 1910), Walter Gropius was closely involved in the development process of this gigantic steel arch construction (designed between autumn 1908 and spring 1909). After the initial identification with the renowned architect, Gropius experi-enced a phase of critical self-confrontation. As Gropius later narrated, the crucial factor for this was the front part of the turbine hall, which Gropius regarded as constructively artificial and aesthetically manipulated. One could actually view the main building of the Fagus factory as an architectural rectification of the turbine hall, in which Gropius takes an antithetic stand to Behrens. In a reversal process, Gropius corrects the approach of the teacher: while Behrens places supports vertically on the longitudinal side and tilts the intermediate window areas, Gropius banks the pillars and fixes the glass skin that spans several floors perpendicular to the lintel. The supports that have been bent inwards correspond to the tilted windows in Behrens design and take a negative shape. They decline behind the window and this gives rise to the impression of a continuous glass body for the first time in the history of architecture, where the supports only lend rhythm. Two glass

Fig. 101: AEG turbine hall, Berlin. Architect: Peter Behrens, 1908-1909 (2003)

Fig. 102: AEG turbine hall, Berlin. Architect: Peter Behrens, 1908-1909 (2003)

Fig. 103: AEG turbine hall, Berlin. Architect: Peter Behrens, 1908-1909 (2003)

Fig. 104: AEG turbine hall, Berlin. Architect: Peter Behrens, 1908-1909 (2003)

walls band together with the body through the glass corner. The fiction of a curtain wall is generated, which surrounds the building from all sides. Monumentality and outward display of size, as seen in Behrens's turbine hall, especially in the concrete corner pylons and the overlying bulky tympanum, do not correspond to the ideas of truly large structures of "Artist-architect" Gropius. He follows his own definition, which he has explained in detailed in his writings: the Fagus factory in Alfeld does not seek to convince through its appearance, but through its inner size, which expresses itself in the closed shape geometry, structure volumes and well-balanced proportions. In addition to its transitional ease, it is this form of corporality, which is far from demonstrating power and being symbolic, that makes the Fagus main building into the first work of modern architecture.

The architectonic ideas that took shape with the Fagus factory possessed immense innovative strength. In the following years, they went beyond industrial construction and were absorbed in other construction projects of the 20th century. In addition to Gropius himself, the architects of the De Stijl in Holland, Mies van der Rohe and Le Corbusier, acted as disseminators here.

The Fagus factory was listed in the specialised literature for architectural history in 1914, found expression in the artistic architecture and industrial photography (Edmund Lill, 1874-1958 and Albert Renger-Patzsch, 1897-1966) in the twenties and has been mentioned in every architectural-historical publication for Modern Architecture as a landmark building and prestigious component of global architecture ever since.

3. D Integrity and/or authenticity

Fig. 105: Storehouse, exhibition (2005)

Since the Fagus factory continues to perform its original function as a production site for shoe lasts even today, the renowned industrial plant still guarantees a high degree of authenticity. This particularly holds true for the core buildings, the workroom and the three-storied main building, where shoe lasts are produced even today and which serve as the administrative head office of the plant. The Fagus factory justifies the claim of authenticity insofar as the extensive restoration work was taken up by repairs between 1985 and 1999 strictly observing the aspect of preserving the original architectural fabric. In cases in which a repair was excluded for significant corrosion damages to the steel structure of window panels these parts were rebuilt according to the original construction documentation and the result of a discussion in an expert colloquium.

With the changeover from wood to plastic in the production of shoe lasts and the modernisation of energy supply, the buildings originally erected for these purposes have been preserved due to their significance in the history of architecture and simultaneously used for new

Fig. 105: Main building, model department (2007)

Fig. 107: Evening event in the engine room (2007)

Fig. 108: In the workroom (2009)

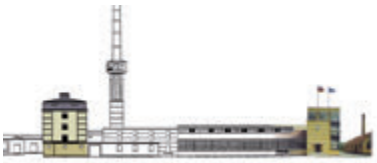
Fig. 109: In the workroom (2009)

Fig. 110: Event in the engine house (2000)

purposes. This is true for the sawmill, storehouse, drying house, engine house, chip and coal bunkers and - after close-down of this line of production, the cutting die department as well. Offices have now been set up in the sawmill, the drying house accommodates offices as well as some development labs, the engine house serves as a factory canteen/ cafeteria, the chip and coal bunker houses a carpenter's workshop while training and conference rooms have been set up in the former cutting die department. Preserving the five-storied storehouse proved to be the most difficult task. Due to its particular design, atmospheric environment and dim lighting conditions, intensive use of the storehouse for offices, etc. would have meant extensive changes and the corresponding loss of the architectural fabric with its monumental value.

Instead it was rather possible to establish a permanent exhibition about the history of the factory, here, in an authentic environment after an extensive restoration in 1998 and 1999 (see 5l).

However, it was the objective and result of all operational developments to fully maintain the entire building complex that represents the global importance of the plant and to be able to completely impart the original operation processes.



4. State of conservation and factors affecting the property

Fig. 111: Main building, restoration of the main staircase (1995)

4. A Present state of conservation

After the multi-phase refurbishment work of the Fagus factory completed between 1981 and 1999, the condition of the historically important buildings in the entire complex can be described as very good.

The following measures are taken in detail:

Main building:
With the partial renewal or refurbishment of the glass facade of the main building, which took place phase-wise between 1986 and 1990, the static equilibrium of the building was stabilised by introducing a stiffening roof plate made of concrete. This prevented strong movements of the building, which had led to the breakage of the glass of the tightly bolted window elements. The rear wall of the building as well as the ramps and the entrance stairway were also restored in 1990. The restoration of the vestibules in the year 1996, which included the reconstruction of the boxlight installed there as per the drawing of Meyer/Gropius, repair of the black opal glass bands and refurbishment of the entrance among other things, completed the overhauling of the main building of the Fagus factory.

Workroom:
The restoration work of the workroom commenced in 1989, with roof renovations, followed by the restoration of cast iron window elements and fungus-affected wooden truss frame constructions. In 1994, the refurbishment of the parapet brickwork took place.

Smoke stack:
Brickwork at the old height of 50 m, renovation of the pipe adapter and water container in the years 1987 and 1988.

Engine house:
The restoration work started in 1994 by preparing the building for new use. The old boilers were cleared out first and the room was furbished for storage purposes. The external brickwork was refurbished and the black and white tiled floor covering repaired and partially replaced in 1995. The glass refurbishment took place in the same year. Finally, the exterior gas pipe railing was restored in 1997.

Chip and coal bunker:
The concrete of columns and retaining walls as well as of the flat roof solid slabs were refurbished in 1997.

Rail-lifting jack / rail-car scales:
In the years 1991/92, small renovation and repair jobs were executed to preserve the material of this small building constructed in 1921.

Cutting die department:
The roof of this building was renovated in 1995 and 1996, where quite a few hand-picked roofing tiles laid in 1911 were re-used. The brickwork of the building was repaired in 1997.

Gatekeeper's house and approach area:
The roof of the gatekeeper's house was repaired in 1997. The boundary wall in the approach area was refurbished in the same year by installing the replicas of boxlights used in a Bauhaus product in 1923-25. The refurbishment job also included the renovation of the gate system and the door of the gatekeeper's house.

Drying house:
Brickwork and roof repairs in 1997.

Storehouse:
Refurbishment and partial renovation of the timber frame building, renovation of plaster panelling, roof repairs with renovation of lamp fixtures and re-panelling of the attic in 1998/99. A new concrete staircase was installed as part of the preparation to convert this into an exhibition building. Lamella openings for the ventilation of the lofts were paned.

Sawmill:
Reconstruction according to the guidelines for historical monuments after a fire accident in 1985.

Conversion into an engineering centre in 1990/91. Refurbishment of the exterior and setting up of an open-plan office. The original character of the three-axis hall as well as the external appearance of the building were preserved.

4. B Factors affecting the property

I Development pressures

At present, there are no specific development pressures that threaten the existence of the Fagus factory. Since the buildings of this plant are linked as "living monuments" with the production processes taking place in them, economic development could be the reasons for variations or changes in their use. In the past, such changes could be incorporated by developing new, monument-compatible application concepts and through public funding. With the use of the regulations of the Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act) and on the basis of the extraordinary significance of the Fagus factory as an outstanding work of art, the right of continuance of the building can be considered as safeguarded in the future.

II Environmental pressures

Environmental impairments stay within the limits of a magnitude that is normal for a milieu of a small-town that is rather scarcely industrialised. Exceptional damages, which can cause more wear and tear or more soiling than usual, are not known. Tremors caused due to the rail route in close vicinity were rendered harmless by the restoration and stabilisation measures taken in the past (see 4 A). These measures continue to prevent today the wind breakage at the large glass surfaces of the main building which occurred frequently before the restoration phase. The soiling of and environmental damage to roofs, brickwork and glazing in the previous decades have also been remedied according to the guidelines for historical monuments within the scope of the extensive reconstruction work.

III Natural disasters and risk preparedness

Only fire disasters come into consideration when speaking of conceivable catastrophes. Fire prevention arrangements meet the relevant regulations of the German building law and the provisions of the technical building regulations and standards. Moreover, a fire alarm system and a spark extinguishing system have been installed as preventive fire protection measures. A plan of action in case of fire has been coordinated with the fire department.

The Leine, which flows not far from the factory premises, often experiences floods especially in the winter months. However, the course of the river is embanked and has been secured through extensive flood areas that are identified in the land development plan.

IV Visitor/tourism pressures

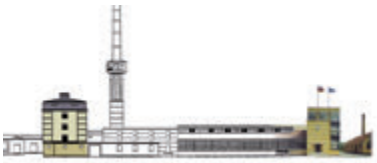
With approx 10,000 guests/year, the number of visitors in the Fagus factory has remained relatively constant in the last few years. The year 2000 was an exception since the World Exhibition EXPO 2000 was hosted by Hanover and the Fagus factory had been included in the big event as an external project. In that year, the Fagus factory could boast of having entertained 20,000 guests. Since the introduction of a regular exhibition in the storehouse of the plant (2005) and the increasing degree of popularity of the plant, the attendance figures have settled down to the abovementioned figure of approx 10,000/year. However, since tourist utilisation is primarily concentrated on the suitably prepared storehouse and external areas of the factory, it is unlikely to expect detrimental influences on the historically important Fagus buildings under this aspect.

V Number of inhabitants within the proberty and the buffer zone

The historically important building of the Fagus factory as well as all other architectural structures on the factory site exclusively serves commercial purposes. The site is uninhabited.

16 residents are registered within the marked buffer zone.

5. Protection and management of the property



5. A Ownership

The Fagus factory is a fourth-generation privately-owned company and all its structural installations and open areas are owned by Fagus-Grecon Greten GmbH & Co. KG with head office in Alfeld.

Address:
Fagus-GreCon Greten GmbH & Co. KG
Hannoversche Straße 58
D-31061 Alfeld

5. B Protective designation

With the initiative of Wilhelm Barner, the biographer of Carl Benscheidt, the Fagus factory, which survived the Second World War almost unscathed, was listed as a historical monument as early as in 1946. Thus, the Fagus factory could become the oldest heritage-protected industrial plant in Europe. The impending threat of demolition after the war ended could be warded off since the plant was placed under protection.

After the Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act) came into effect in 1978, the protection status of the Fagus factory was redefined and differentiated on the basis of the new statutory regulations:

As per § 3(3) NDSchG (Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act)), the Fagus factory, together with all the buildings and open areas mapped in point 1.E, is a protected group of architectural structures. Moreover, each factory structure listed in the following is an architectural monument as per § 3(2) NDSchG: sawmill, storehouse, drying house, workroom, main building, engine house, smoke stack, chip and coal bunker, rail-lifting jack and rail-car scales, cutting die department as well as the gatekeeper's house with boundary wall and factory gate.

With the induction of the building of the Fagus factory in the List of Cultural Monuments (§ 4 NDSchG) comes the duty to preserve it (§ 6 NDSchG).

5. C Means of implementing protective measures

In the Federal Republic of Germany, the protection of historical buildings and monuments falls under the cultural and educational autonomy of the individual federal states.

The Fagus factory is protected by the Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act) and has been registered in the List of Cultural Monuments.

The competent technical authority for monuments is the Lower Saxony State Office for Preservation of Historical Monuments. On account of the special cultural and historical significance of the Fagus factory, all measures are coordinated with the Ministry for Science and Culture, Lower Saxony as the supreme authority and their implementation is supported by the Lower Saxony State Office for Preservation of Historical Monuments. The formal approval of the proposed construction measures, which falls under the monument law, is incumbent on the town of Alfeld as the regional Monument Protection Authority, in coordination with the technical authority for monuments.

The most important regulations of the Monuments and Historic Buildings Act for the protection and conservation of a historical monument are summarised in the following:

The owner, Fagus-GreCon Greten GmbH & Co. KG, is obliged to repair, maintain, protect against menace and, if required, restore the historically important factory buildings as reasonable. The owner can be committed by the competent authority for monuments to take certain measures for the conservation of the structure. The appearance of monuments may be changed, renovated, restored or used for a different purpose only with the approval of the competent authority for monuments. This also applies for the accessories and furnishings of the monuments. Even the installation, modification or demolition of buildings in the immediate vicinity of the monuments require the approval of the competent authority, if this influences their condition or appearance in any way. Conditions and requirements can be imposed on the mentioned approvals. All modifications in the monuments and measures taken should be documented. If unapproved

Fig. 112: Storehouse during renovation (1998)

measures are implemented, an order can be issued for the discontinuation of the work or the restoration of the previous condition. Persons having disposition power are obliged to grant the representatives of the monument authorities access to the property, buildings and spaces in order to carry out their responsibilities and provide the required information and documentation. Violations of the above mentioned regulations of the Monuments and Historic Buildings Act may be subject to fines.

5. D Existing plans related to municipality and region in which the proposed property is located

Regional Development Plan of Lower Saxony (2008)

Regional development plan for the district of Hildesheim, district Hildesheim, 2002

Land utilisation plan, Alfeld, 1976 (see 7 B)

Fig. 113: Storehouse, exhibition (2005)

5. E Property management plan or other management system

I Principles

The designated group of buildings, the "Fagus factory", has preserved its exemplary function as the first industrial construction of modern architecture and as an architectonic achievement of the highest quality until today. The buildings constructed by Gropius between 1911 and 1925 continue to be used as production plants for shoe lasts even today and are thus the most authentic "living monuments" of industrial culture. While sections of the plant obtained new functions through the modernisation of production processes, the architectonic character of the plant was preserved and partially used as a museum, in full knowledge of the extraordinary significance of the buildings.
The management plan helps safeguard these qualities and is based on the "The Venice Charter for the Conservation and Restoration of Monuments and Sites" (1964) as well as the "Nara Document on Authenticity" (1994) for the conservation of the buildings of the Fagus factory.
Since the nominated cultural asset "Fagus factory" and all its components are in an outstanding overall state of conservation after the restoration work done in the eighties and the nineties of the previous century, extensive refurbishment measures are not necessary in the short and medium term. Substantial safeguarding of the cultural heritage through continuous maintenance based on permanent monitoring is the conservation strategy. Necessary conservation measures or repairs are implemented continuously in conformity with the material and trade requirements. This management of the nominated property corresponds to a good conservation tradition and has proved its worth. It will be kept up, since all parties concerned i.e., the Bundesland of Lower Saxony as applicant, the competent monument authorities and especially the owner of the property, agree to lead the Fagus factory as a site of world cultural heritage into the future.

II Objectives

Maintaining and safeguarding the monumental heritage
The primary objective of the management is the protection, maintenance and safeguarding of the historical buildings including the existing utilisation structure.

Essential structural modifications due to production requirements should be carried out so that authenticity and integrity of the property are preserved.

As has been done in the past, measure catalogues for continuous building maintenance according to the guidelines for historical monuments shall be developed together with the company owner for the implementation of the objectives for the preservation of historical monuments. Intended reconstructions in the buffer zone should respect the dimensions of the designated property and the existing free visual connections on the side of the railway line and the Hannoversche Straße.

Securing financial resources
The provision of financial means for the maintenance of the buildings and possible restoration work in the future is primarily incumbent on the owner and can be regarded as ensured by the owner within the framework of the continuous management. Tax return depreciation options in case of necessary investments made for the preservation of the monumental heritage also contribute to this.

In individual cases, public funding may also be necessary to strengthen financial resources. Potential world heritage sites also fulfil the eligibility conditions of the federal programme of "National valuable monuments".

Safeguarding the use as production plant
With new additions in its product range, the Fagus-GreCon Greten GmbH & Co. KG had to construct new buildings on the factory site. These buildings were erected at reasonable distances from the old one and the historical buildings were integrated in the production processes in such a way that the administration as well as the entire branch of traditional shoe last production remained in the historical factory building. Despite changing production processes, the company owners have placed great emphasis on upholding this application and will continue to do so in the future as well.

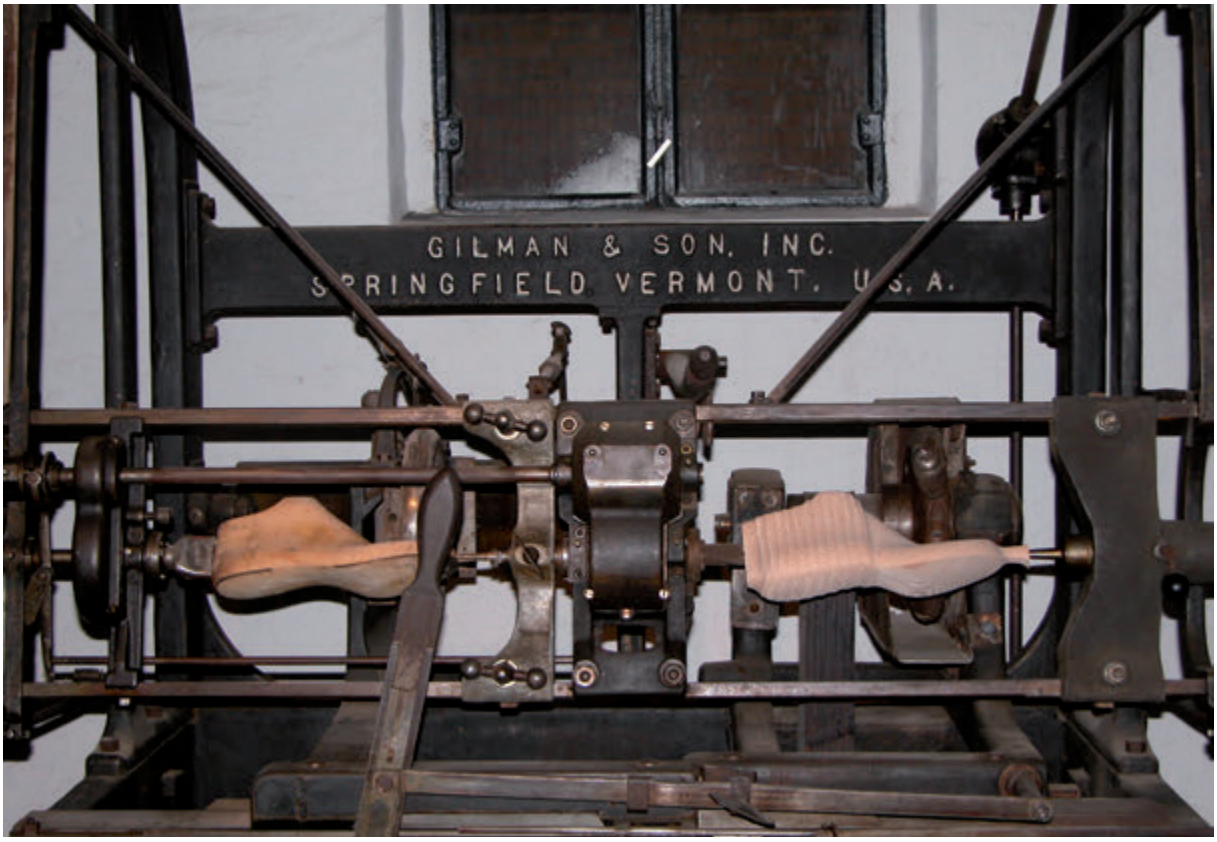


Fig. 114: Storehouse, exhibition, contouring lathe, around 1900 (2002)

Promoting the knowledge and acceptance of the property

For the preservation and maintenance of the nominated property, it is essential to enhance the awareness of the universal value of the Fagus factory and to continue to divulge its conservation according to the guidelines of historical monuments as a generally recognised objective. The strong identification of owners and employees with their work place as a high-ranking cultural monument lays a solid base for this. It can be enhanced into an even broader foundation through specific public relations work. The premises of the former die cutting department have been opened to a wider, culturally interested audience for lectures, trainings and concerts since years.

Apart from successful media work as well as publication and exhibition activities, cooperation with other world heritage sites, particularly from the field of industrial culture and architecture, are initiated with the intention of exchanging practical experiences with this category of cultural assets and spreading its significance as cultural heritage of the 20th century. Organisations as the TICCIH (The International Committee For The Conservation Of The Industrial Heritage) provide helpful support.

Exhibitions and other offers for imparting information shall be organised in cooperation with scientific and cultural organisations in Lower Saxony, which have devoted their teaching and training activities in the field of monument conservation and maintenance of world heritage or their research, collection and exhibition activities especially to modern architecture.

The high level of familiarity of the Fagus factory as the first construction of modern architecture established in professional circles worldwide already for a long time can serve as a point of departure to bring the plant and its significance for modern architecture closer to a wider audience. The most important presentation and museum-didactic prerequisites have already been implemented with the introduction of the Fagus-Gropius exhibition in the storehouse of the factory. The location Alfeld is well-connected – by rail as well as road – to the national transport networks and offers further development opportunities together with a corresponding tourist conception of the Weser-Leine region for increasing the number of visitors. However, there is no danger of overexploitation due to tourism because of the decentralised location and the thematic and very exclusive development of the cultural monument.

III Protagonists

The protagonists of the maintenance and further development of the property are the company owner, monument authorities as well as commissioned experts. Apart from these, the responsible bodies from politics and the local building administration, but also specialists and institutions with special competence in the field of monuments are indispensable partners.

The steering committee
Management tasks call for the pooling in of multifaceted expertise. Regular consultations between the owner and the technical authority for monuments form the basis of the management control committee, which can be completed by architects, planners, structural engineers, restorers, etc. if required depending on the character of the conservation measure concerned.

The owner
Within the framework of continuous management, the owner bears the main share of the financing for maintenance and renovation of the building according to the guidelines of the conservation of monuments. If necessary, he also commissions experts, in agreement with the monument authorities, for drafting reports and monument preservation plans. Furthermore, he is also involved in the monitoring process, since he has access to key information regarding the extent of resources used and the condition of the property.

The monument authorities
According to the regulations of the Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act), monument authorities have to perform their legal duties (see clauses 5B and 5C), starting from administrative protection, professional consultation, provision of financial resources in form of tax relieves or subsidies to property-oriented research, publications and public relations work.

They have to play the leading role in monitoring and other reporting activities, which will result from the registration of the Fagus factory in the list of world heritage sites. They also have to participate in the special activities, which are essential or recommended for the plant according to this management plan, as initiator and support.

Cooperation partners
For the conservation of the monumental heritage, it is imperative to consult specialised expert knowledge. Professional competence of research and development organisations experienced in the field of restoration and of architects and experts of the region is useful for the inspection of the assets, restoration analyses and the preparation of monument plans. The Leibniz University, Hanover with its renowned architecture faculty and the University of Applied Sciences and Art in Hildesheim, Holzminden and Göttingen, would be available as competent partners in the fields of research and technology. Committed partners in the chamber of architects, Lower Saxony, offer their services as competent consultants. As a publicly effective discussion and presentation forum, the chamber of architects incorporates the Fagus factory in its work and thus emphasises its outstanding position in the world architecture.

Cooperation with prestigious science and theory institutions working in the field of the conservation of monuments and world heritage management guarantees a high level of preparation and execution of measures.
Lower Saxony can already be proud of two world heritage sites (Cathedral and St. Michael's Church in Hildesheim, Mines of Rammelsberg and Old Town of Goslar), which have gathered management experience. Cooperation with these and other national and international world heritage sites will be a self-evident part of the management of the Fagus factory. In this context, regional focuses as well as thematic concentration on world heritage sites of the modern architecture (e.g. Bauhaus Weimar and Dessau) are appropriate for this purpose.

IV Instruments and spheres of activity

A plenitude of legal, planning and monitoring instruments is available for the sustainable protection of monumental heritage and its maintenance.

Legal and planning basics
The objectives of the management plan can be implemented on the legal basis of the building code, the Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act) and

Fig. 115: Advertisement, draft by Max Hertwig 1912

the Lower Saxony Building Regulations (see clauses 5B to 5D). The regulations of the Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act) are applicable to the listed property (see under clauses 5C and 7B). Therefore, structural modifications require approval from the monument authorities. This also refers to the design of advertising structures. Greater structural modifications and changes in application require an additional building permit. Violations of the regulations of the Monuments and Historic Buildings Act can be fined heavily as administrative offences. Monumental law instruments of the reinstatement and restoration order are provided to prevent dilapidation of the components of the monumental heritage.

Apart from all this, a land development plan has been drafted for the town of Alfeld in which the Fagus factory has been entered within an extensive industrial estate to the south-west of the rail route. The priority of the use of this land for industry and trade has thus been ensured in this region.

Financing
Ample financial resources are required for the realisation of the objectives of the management plan. According to the Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act), the owner (see clause 5A) is responsible for the building maintenance and renovation of the Fagus factory within the scope of his financial standing. He raises the required funds through his continuous management and performance. Besides, the owner has the option of depreciating expenditure for the conservation and maintenance measures taken for the historical monument in accordance with the income tax law.
Furthermore, the Bundesland of Lower Saxony contributes to the costs for the preservation and renovation of cultural monuments in accordance with the resources provided in the budget. Subsidies can be applied from the federal programme of the "National valuable monuments" as well as from the German Foundation for Monument Protection and other foundations.

Public relations
The Fagus factory has very effective and well-balanced public relations:

As an external project, the Fagus factory made its maiden appearance in from of a wider spectrum of audience through the topic "Man-Nature-Technology" in the year of EXPO 2000. The number of visitors escalated to over 20,000 in this year.

Temporary exhibitions on modern architecture, architecture photography and the artists' circle

of the Bauhaus are organised in the Fagus gallery in cooperation with partners such as the Bauhaus archive in Berlin.
Brochures, leaflets, Internet presence, lectures and concerts in the rooms of the property, cooperation with schools of the region as well as guided factory tours are effective instruments for increasing the degree of familiarity of the Fagus factory even more.
The Fagus-GreCon Greten GmbH & Co. KG has assigned public relations activities (publications, guided tours, press contacts, etc.) to an employee who is acquainted with the history of the property.

The exhibition with the main topics "Walter Gropius – Carl Benscheidt" and "Construction history – Restoration" that was inaugurated in 2005 in the storehouse of the factory was scientifically accompanied by the State Office for the Preservation of Historical Monuments, Lower Saxony in the conception stage and prepared for the exhibition by a specialised company.

Tourism
It is only natural that many of the above mentioned cooperation partners can be included in the development and implementation of the tourism concept. Cooperation of the UNESCO Welterbestätten Deutschland e.V. for the existing marketing activities association should also prove to be useful.

V Inspection and monitoring

It is necessary to have a body for monitoring the conservation status and the renovation, which documents and assesses the compliance with the principles and criteria of a historical monument and the related qualitative modifications. For this purpose, available information is continuously compiled preferentially and additional findings are obtained through appraisal or survey.

It is the owner who is primarily included in this regular process of data acquisition. In individual cases, however, architects and specialists can also be roped in. Purposes of the inspections are the key indicators cited in clause 6a and related query protocols. Besides, modifications approved on the basis of structural inspections of the complex are documented so that these documentations are available at the time of monitoring.

5. F Sources and levels of finance

Building maintenance and renovation of the property are in the responsibility of the owner company (see clause 5.A), which generally provides the required financial resources.

The Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act) (NDSchG) obligates the owner company for the "repair, maintenance, protection against menace and, if required, renovation" (§ 6 para. 1) of the cultural monument. In individual cases, subsidies of the Bundesland of Lower Saxony can be utilised for expenditures on the conservation of monuments. Furthermore, according to the existing income tax legislation, the owner of the property has the option of depreciating its expenditure for measures taken for the conservation or proper use of the historical monument from the taxable earnings over several years.

In addition to endowments and funds from regional organisations for the preservation of monuments, funds from the Federal Republic of Germany and the European Union can also be used for the conservation of the Fagus factory on account of its outstanding significance.

The total costs for the restoration measures taken between 1985 and 2001 amounted to 6.653 million euros and were shared by the financers as follows:

Federal Republic of Germany:	1,444 m
Bundesland of Lower Saxony:	1,674 m
The German Foundation for Monument Protection:	0,153 m
Hanover Klosterkammer:	0,051 m
European Union:	0,043 m
Fagus-GreCon Greten GmbH & Co. KG:	3,288 m

The exhibition project, which was implemented in several segments between 2003 and 2005, amounted to a total volume of 1.5 million euros. The Bundesland of Lower Saxony and Fagus-GreCon Greten GmbH & Co. KG bore the costs equally.

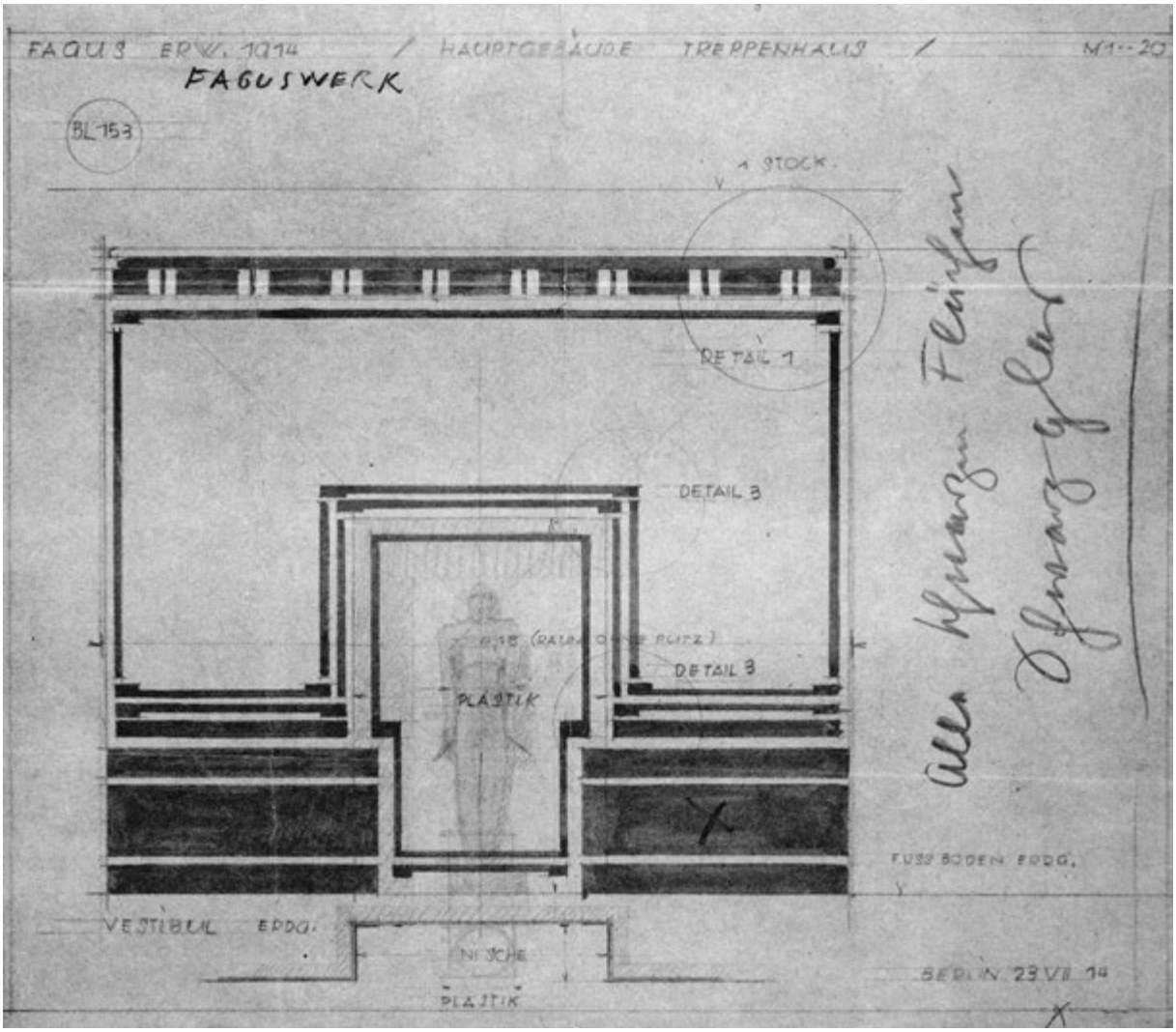


Fig. 116: Design drawing of the vestibule, Gropius/Meyer (1914)

5. G Sources of expertise and training in conservation and management techniques

For the conservation and maintenance of the property, it is ensured that the monumental heritage is looked after by the research personnel of the Lower Saxony authorities for monuments. The employees are trained art historians, architects or restorers.

In addition to this, the owner company has a pool of experienced employees and has for the past many years employed an architect, well versed in monument-specific matters, for on-going renovation and maintenance activities.

Planning of the basic restoration and, to some extent, also its supervision is outsourced to architectural firms that are experienced in monument-related work. There are sufficient numbers of suitably trained architects and restorers in Lower Saxony and several institutions of universities in the region teach and do research in the relevant fields. Suitable construction, specialist and trade firms are available in Lower Saxony and adjacent regions in sufficient numbers.

For all previous restoration and structural maintenance projects, Fagus-GreCon Greten GmbH & Co. KG worked with an architect who had a long-standing experience in matters related to the conservation of historical buildings and monuments. In coordination with the monument authorities, suitably qualified architectural firms were commissioned for the special activities undertaken during the lengthy restoration phase.

5. H Visitor facilities and statistics

The outdoor facilities of the Fagus factory are open for all during the daily opening hours of the Fagus-Gropius exhibition (visit www.fagus-gropius.com for opening hours).

Guided factory tours are possible on request.

In the year of the world exhibition EXPO 2000 in Hanover, the Fagus factory hosted more than 20,000 visitors.

In the following years, especially after the inauguration of the Fagus-Gropius exhibition in 2005, attendance figures settled down at approx 10,000 per year.

Overnight accommodations are available in the city centre of Alfeld as well as in the surrounding villages.

The factory has a cafeteria and toilet facilities for visitors.

There is enough space in the visitor's parking area (parking spaces for approx. 100 automobiles and five buses).

5. I Policies and programmes related to the presentation and promotion of the property

The Fagus factory is – as a medium-sized company and as a product plant that is intensively used even today – a "living monument". On the one hand, this has the benefit that maximum authenticity is accorded to most of the listed buildings. Preservation and continuous maintenance of the buildings are ensured in the future as well. On the other hand, however, the presentation of the property in the sense of large-scale tourist attraction has limitations. The Fagus-GreCon company, as the owner of the Fagus factory, has acknowledged its obligation to preserve and maintain this significant cultural heritage and opens select parts inside the factory for small and guided visitor groups that have applied for visits.

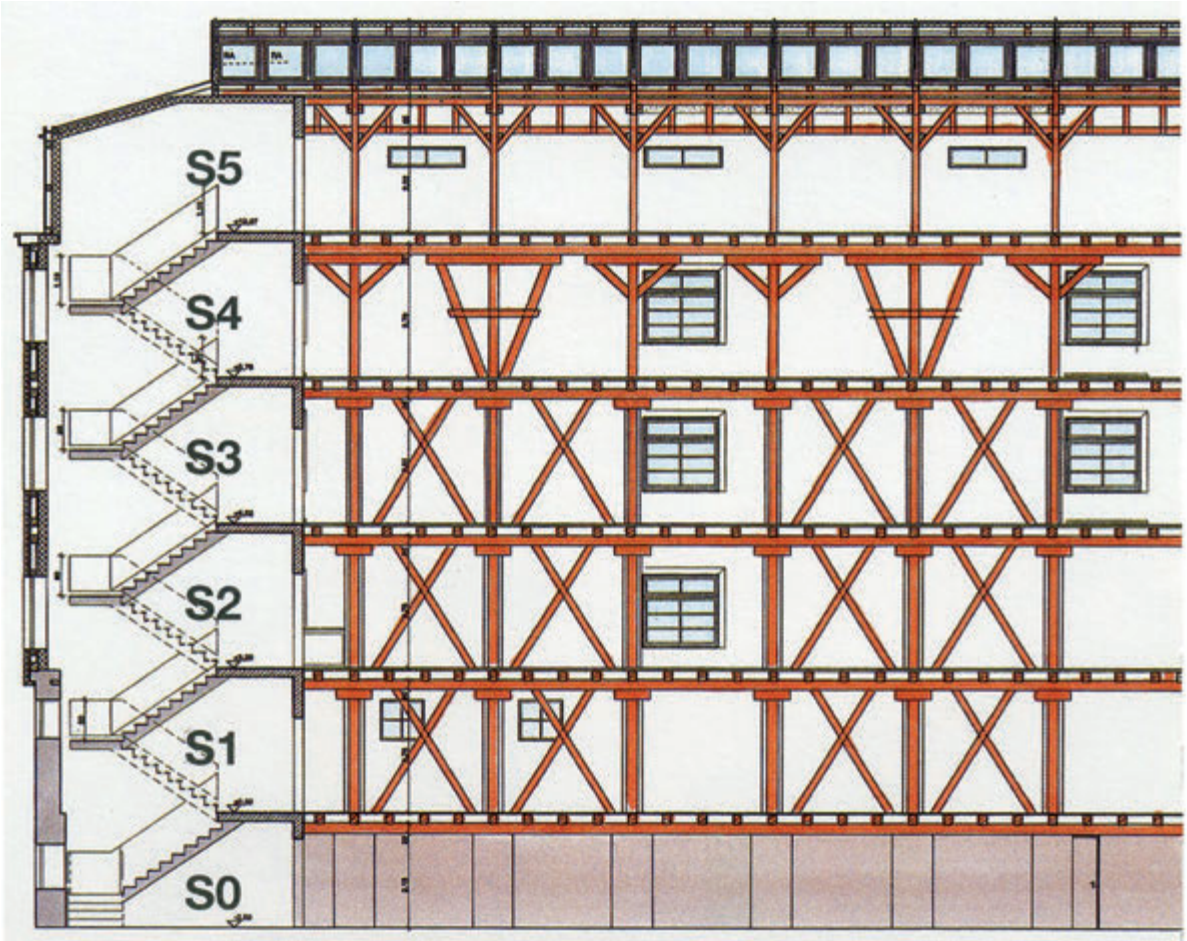


Fig. 117: Longitudinal section of the former storehouse, southern half. S0: Special exhibition, S1: Carl Benscheidt-Walter Gropius, S2: History of construction and restoration, S3: What are shoe lasts for S4: 100 years of shoe fashion, S5: Living monument

The external part of the factory was made accessible to larger groups of people and the need for information is met by the regular exhibition in the storehouse. The thematic points of focus of this presentation are the personalities of architect Walter Gropius and company founder Carl Benscheidt and the history of construction and restoration of the factory. The exhibition concept was developed in close cooperation between museum specialists, monument authorities of Lower Saxony and the company management. Specialists in the field of exhibition organisation and museum consultation were commissioned for its execution. Funds of the Bundesland of Lower Saxony and the company Fagus-GreCon were used for financing. The total exhibition area available in the storehouse is approx 3000 square metres. All important explanatory texts are presented in German and English.

Ten exhibition topics are dealt with in the five-storied storehouse (S1-S5 and N1-N5, see longitudinal section fig. 117 and 118). Only the architecture and application relevant of these have been presented in brief here:

N1: Company history/World Heritage
In the entrance area itself, visitors are given an insight into the complete Fagus-Gropius exhibition on all floors. The company history, starting from the foundation of the Fagus factory in 1911, the original company of the present Fagus-GreCon group, up to the present, the company products and their production in the listed Gropius buildings are shown, the epoch-making significance of the Fagus factory for industrial culture at the onset of the twentieth century is illustrated and the origin of the company name "Fagus" is explained, which is renowned worldwide for generations and means the endemic copper beech (Lat. fagus silvatica), the wood from which shoe last products are manufactured. The next section deals with the topic of UNESCO World Heritage with the Fagus factory as an aspirant of this outstanding rating.

S1: Benscheidt and Gropius/ BAUHAUS – history
This exhibition segment uses written and graphic credentials as well as furnishings from the BAUHAUS shops to illustrate the remark-

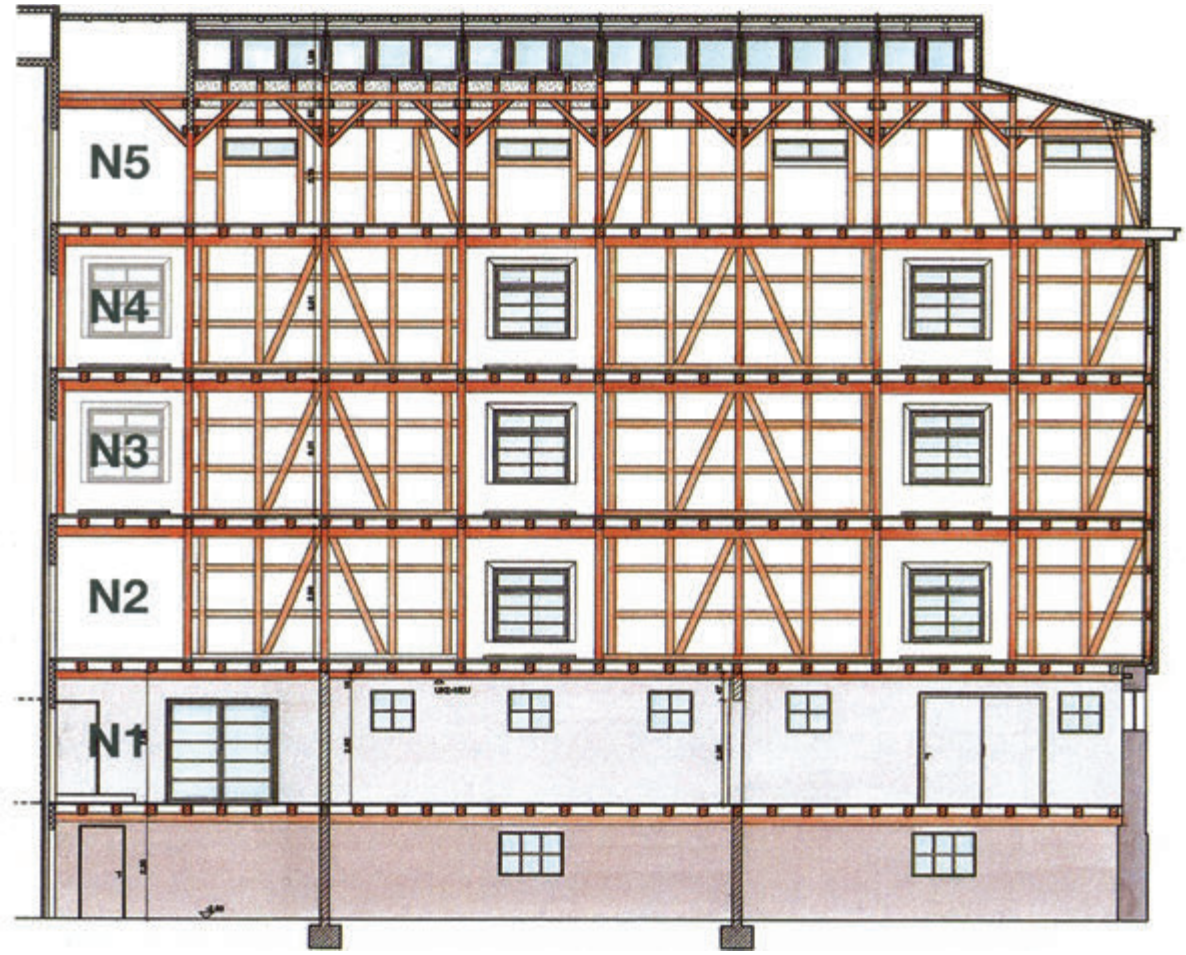


Fig. 118: Longitudinal section of the former storehouse, northern half. N1: Company history/world heritage, N2: People at Fagus, N3: Derived timber products, N4: Massive wood-working, N5: The forest: More than just trees

ably productive teamwork of property developer Carl Benscheidt and architect Walter Gropius, which continued well into the twenties of the last century. Newspaper interviews as audio presentations and a film documentation of the development of the BAUHAUS as well as the famous pictures of the Fagus factory taken by Albert Renger-Patzsch in 1926 are offered to the visitors here.

S2: Construction history and restoration
Valuable original photos of glass negatives from the construction period of the Fagus factory demonstrate the step-wise emergence of the factory since 1910 in individual construction phases. Walter Gropius's first design drawings of the Fagus factory as well as different blueprints are displayed in illuminated showcases. The sketches of the Hanover architect Eduard Werner, which were drafted almost around the same time but which represented inherited building tradition, also stand in contrast next to these. Photo series and slide shows document the complete restoration work, which started in 1984, was coordinated with the authority for the preservation of monuments and supervised by experienced architects. A model of the factory gives the viewer the opportunity to differentiate between the individual construction phases.

S5: Living monument
The originality of an unparalleled industrial ensemble should be preserved as much as possible and a globally operating company must appropriately adapt the utilisation of the building and structures given the competitive pressure. Combining the two is and has been a huge challenge for the company management, which has tackled it in an exemplary manner. In collaboration with a Hamburg architect, who was employed with the company for decades, the original interior fittings and valuable furnishings of the plant were adapted to present-day demands, preserving the original materials. The - for the purpose of monument preservation - living and respectful interaction with this brilliant testimony of architectural history is documented here with photographs and drawings as well as plenty of examples from production areas then and now.

S0: Special exhibition of the Fagus gallery
The basement of the Fagus-Gropius exhibition building has a Fagus gallery with an exhibition area of approx 250 square metres. It hosts regularly held special exhibitions. Artists from Lower Saxony present their work here and the BAUHAUS-Archive, Berlin regularly puts up exhibitions on the complete subject area of the BAUHAUS times. Schedules of these special exhibitions are announced through the print media and on the Internet (http://www.fagus-gropius.com).

Concert and lectures in the halls of the factory contribute to anchoring awareness about the outstanding significance of this industrial monument in the public mind.

The necessary tourist infrastructure, even for the accommodation of a larger number of visitors, is in place: there are approx. 100 parking spaces for automobiles and five for busses, a cafeteria has been set up in the former engine house and the factory site is equipped with several toilets for visitors.

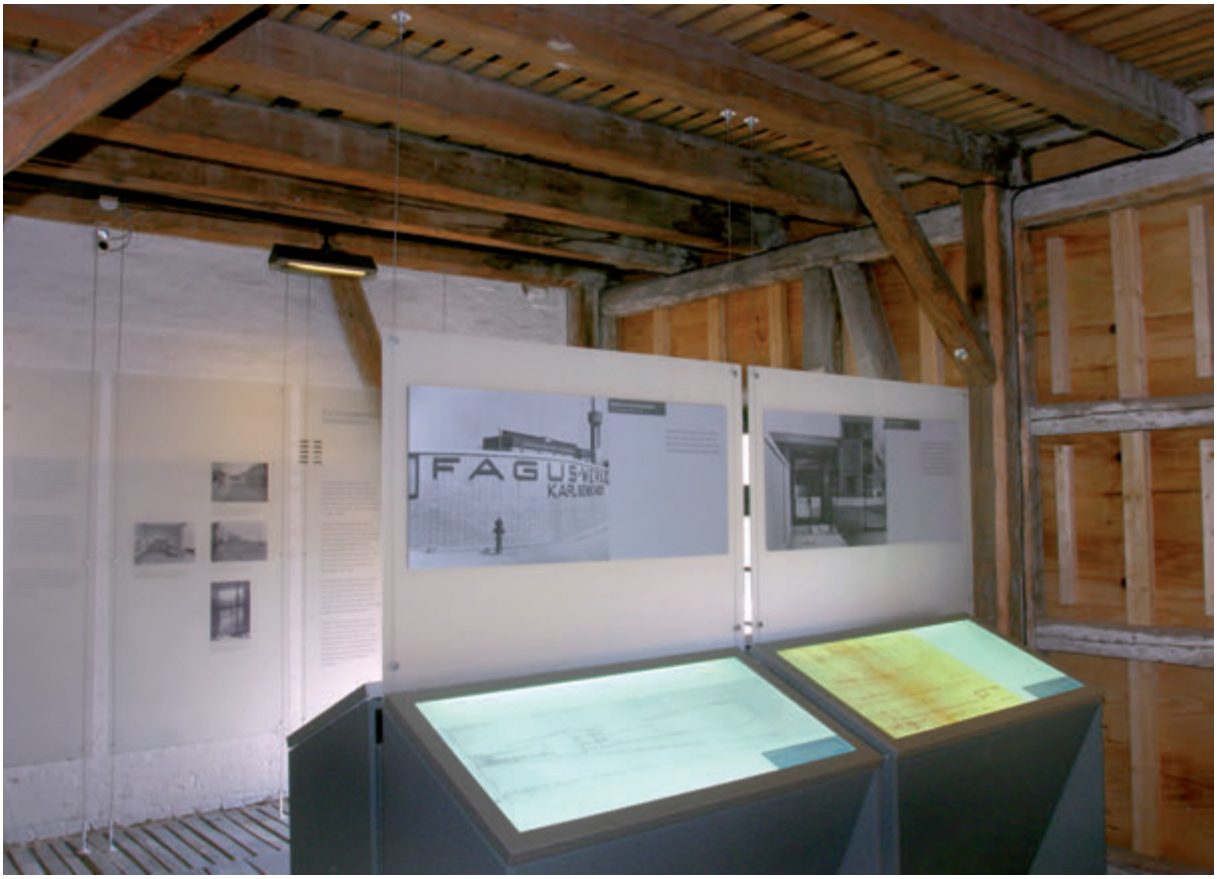


Fig. 119: Storehouse, exhibition (2005)

5. J Staffing levels (professional, technical, maintenance)

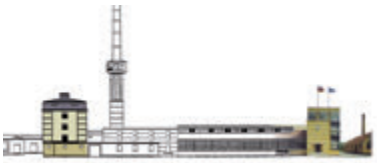
The Lower Saxony State Office for the preservation of historical buildings and monuments provides professional monument conservators (art historians and architects) as well as restorers and other specialists with university education for technical matters related to the preservation and maintenance of the plant.
Architects, structural designers, civil engineers and administrators in the building authority of the town of Alfeld, who are trained in the conservation of monuments, are responsible for the Fagus factory.
The Museumsverband Südniedersachsen e.V. (registered association for the cooperation of museums in Lower Saxony) and the affiliated museums have qualified personnel with university education and experience in the presentation of cultural assets at their disposal. The Fagus factory with its "Fagus-Gropius exhibition" is affiliated with the registered association of museums.
The Fagus factory itself employs an experienced person for public relations and guided tours along with supervisory staff in the exhibition building.

Fig. 120: Storehouse, exhibition (2005)

Fig. 121: Storehouse, exhibition (2005)

Fig. 122: Storehouse, exhibition (2006)

6. Monitoring



6. A Key indicators for measuring state of conservation

After completion of the extensive restoration process that was executed between 1985 and 1999 for the entire property, a high level of conservation was achieved according to the specifications for monument preservation. The owner company, Fagus-GreCon Greten GmbH & Co. KG, and the competent monument authorities keep all parts of the monument under continuous monitoring and structural maintenance.

Key indicators have been provided for monitoring in order to ensure future preservation of the monuments and to guarantee that structural maintenance and renovation measures are carried out according to the monument preservation principles and criteria. During regular monitoring processes, the respective preservation state shall be specified with the help of question catalogues and relevant data shall be recorded.

Data acquisition for the key indicators is initiated by monument authorities as well as the owner company.

Indicators based on which the authorities for monuments carry out surveys once a year or in case of concrete building measures:

- Maintenance and preservation state of the monuments
- Restoration status according the specifications for monument preservation
- Extent of the monument funds that have been spent for preservation and restoration
- Monument-related approvals for restoration and maintenance of monuments
- Tax certificates for monument maintenance measures
- Personnel resources available for the maintenance
- Planning-related specifications (e.g. modifications in the urban land-use plan)

Indicators based on which survey are carried out once a year in cooperation with the owner company:

- Implementation status of the restoration concept
- Development of the maintenance status
- Financial expenditures for restoration as well as general and structural maintenance
- Utilisation structure (modifications in the production process)

6. B Administrative arrangements for monitoring property

As the highest monument preservation authority or as technical authority for monuments, the Lower Saxony Ministry for Science and Culture and the State Office for the Preservation of Historical Monuments, Lower Saxony ensure adherence to the regulations mentioned under 6A. The present plans and measures for the buildings of the Fagus factory have been agreed upon in regular planning meetings in which Fagus-GreCon Greten GmbH & Co. KG, the Lower Saxony Ministry for Science and Culture, State Office for the Preservation of Historical Monuments, Lower Saxony and the building authorities of town Alfeld participated, so that adherence to monument maintenance principles and criteria is ensured and the preservation purpose is achieved. In detail, the following persons and institutions bear the responsibility for the regular monitoring and daily supervision of the cultural monument as well as for the provision of the budgetary funds required for maintenance and preservation:

Ernst Greten
Fagus-GreCon Greten GmbH & Co. KG
Hannoversche Straße 58
D-31061 Alfeld

Niedersächsisches Ministerium
für Wissenschaft und Kultur
Postfach 261
D-30002 Hannover

Niedersächsisches Landesamt
für Denkmalpflege
Scharnhorststr. 1
D-30175 Hannover

Bauamt Stadt Alfeld
Marktplatz 12
D-31061 Alfeld

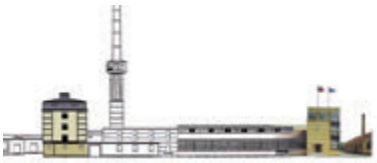
The basis of monitoring are the key indicators (6A) recorded in query protocols as well as other status evaluations such as photo documentations and planning documents, if required. Query protocols or data collected are updated according to the prevailing conditions.

The status of the monument property is also monitored by the employees of the owner company by taking regular inspection rounds (see 5A).

6. C Results of previous reporting exercises

The currently available reports and documentations that refer to statements about the preservation state of the property mainly comprise the extensive documentation material, which was generated during the longstanding restoration phase of the factory. See 4A for the scope and the time-wise progress of these restoration processes.

7. Documentation



7. A Photographs, slides, image inventory and authorisation table and other audiovisual materials

All photos used are saved as image files in tif- or pdf-format on the DVD's attached at the end of the application form, including a list with numbering, legends and photo credits (rtf, pdf and doc).

The „IMAGE INVENTORY AND PHOTOGRAPH AND AUDIVISUAL AUTHORIZATION FORM" required according to the standard application form can be found as separate pdf-file on the enclosed DVD which includes the entire application form.

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Fagus-GreCon: Front cover inside. Back cover inside. Fig.: 10, 11, 12, 13, 17, 18, 19, 20, 21, 23, 31, 33, 34, 35, 36, 43, 47, 48, 53, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 82, 83, 84, 86, 87, 105, 106, 107, 108, 109, 110, 111, 112, 113, 117, 118, 119, 120, 121, 122

Frîa Hagen, Hannover: Front cover outside, Back cover outside.

Niedersächsisches Landesamt für Denkmalpflege, Hannover: Fig.: 1, 2, 3, 4, 5, 6, 7, 8, 9, 14, 15, 22, 24, 25, 26, 27, 32, 37, 38, 39, 40, 41, 42, 44, 49, 50, 51, 54, 55, 56, 60, 61, 62, 81, 90, 91, 93, 101, 102, 103, 104, 114

Literature, Internet:

Beutinger, E.: Der Industriebau: Fig. 64
Jaeggi, A.: Fagus: Fig.: 95, 97, 98, 100
Posener, J.: Berlin auf dem Wege zu einer neuen Architektur: Fig. 99
Sharp, D.: Fagus Factory, (Global Architecture): Fig. 65

www.flickr.com/photos/beverlylibrary/3418723525/ (2009): Fig. 96

The enclosed DVD documents a television interview with Walter Gropius (incl. master copy of the text) recorded on 12.12.1965, in which Gropius commented on the Fagus factory.

Some details of linguistic expression have been changed in the master copy of the text for better linguistic expression.

L: Prof. Gropius, we have heard that the new Berlin Museum planned in the Lindenstraße here in Berlin, which will be rebuilt or better rebuilt for the first time by Prof. Wetzlow, has a room that will carry your name, i.e. the Gropius room and that this Gropius room is not only supposed to be a reference to you, probably primarily, but it is also supposed to demonstrate how your family is, so to say, deeply rooted in the history of Berlin. Could you tell us something about your roots here in Berlin?

G: Gladly! The family history, as far as we can actually peek into it, dates back to the first half of the 17th century. There is a lot of uncertainty regarding the goings on before that and in the beginning; the family had quite a few of my namesakes in Berlin. Some of my ancestors were French emigrants – that is, the Gropius family crossbred with them many generations back. They came to Berlin in the time of Friedrich the Great and the different Gropius´s settled here at that time. Later, different members of (the) my family got into the artistic line; there was a wallpaper and silk factory in the same place where the Leopold castle stood, close to the Kochstraße, the Gabain factory which was later taken over by a Gropius and then there was Martin Gropius, the architect, who built the arts and crafts museum. But the Diorama Gropius had already come into being before that - a large diorama, the predecessor of films. And this played an important role in Berlin and became so popular that when a couple of people from Berlin went to Switzerland, there was an old joke book in which it is said "Ach, how beautifully the scenery has been painted by Gropiusses".

L: So you actually had some form of art running in the family. But you started off at a remarkably young age. Your first large and significant building was a shoe last factory in Alfeld and the Fagus factor with which you expressed all that you wanted to express structurally as early as in 1911. You were hardly 28 years old, if I calculate correctly, when you constructed the first factory, this first Gropius building. How did this actually come about? How did you start working on a shoe last factory? You were still very young.

G: I had just started working as an independent architect after working with Peter Behrens, who was my master. I opened my own office with one of his employees and wrote to all; I wrote to addresses with construction projects which I somehow managed to obtain. After having sent hundreds of such letters, the owner of a shoe last factory in Alfeld at the river Leine wrote to me saying that he was interested in my offer. I immediately went there, we quickly made a deal. He was a man of modern thoughts, who already had plans that were started to be implemented. I had to then remodel them and he allowed me freedom of action. As a young man, I was obviously ecstatic and wanted to create something special, I had an image of what I wanted to do and he just supported me throughout. The outcome was good! The factory is in a very good condition even today; I was there myself two years ago. And it has also been listed as a historical monument in Germany, as you must already know.

L: Yes, and that's the way it should be. He must have been a really daring man to have given a contract for such a building for which there was no real model and have it then be built. Were the people of Alfeld critical about this project? Were they taken aback by the concept?

G: Of course! The population was astonished. But since it was a factory, no one really got worked up about that. One of my brothers-in-law was the district administrator there, which was pure coincidence. But he obviously played a role in warming up the public to me. Actually, I hardly confronted any problem since the owner of the factory, Mr. Benscheidt, got the others to agree to his opinion.

L: This first building that you constructed is now a listed historical monument, but when you visit a place today in any part of the world that is not directly behind the Iron Curtain, which has also evidently changed, you obviously come across many buildings, mostly buildings, the designs of which have been inspired and which are not very different from the very first building of 1911. Thus, you are one of the few who can actually say that they have changed the countenance of the earth or at least the

cities or structures of this world. Is this a frightening or a pleasant feeling? For example, when you go to Japan and see buildings that you think can resemble the ones built by you only to find out that they are actually inspired by Gropius?

G: It is but naturally a very good feeling when you stumble upon them. But I would not overestimate it, since there were other parallel forces which made things to what they are. However, it is a fact that this Alfeld building, this shoe last factory, was the first curtain wall as it is called today a continuous glass wall that is completely continuous. Obviously, the biggest challenge was to convince the building construction department, since the law was partially against such constructions and we had to take the long way round to gain their approval. The owner supported me throughout even here.

L: You started off immediately after the First World War, which you lived through as a soldier. How was your rank during the World Wars?

G: I had served in the Regiment of Wandsbeker Hussars and went to war with the Zieten Hussars. Just before that, I had held the Werkbund exhibition in Cologne, a building, which followed the same principles as that of the Alfeld building and was popular, but which burnt down at the beginning of the war and hence nothing of it remains today. I went to war as a hussar on the western theatre of war, have ridden for patrols and was also the first to receive the Iron Cross in my regiment for patrol rides. I enjoy riding even today.

L: Do you still ride?

G: Yes.

L: OK. So you came back from the war and immediately packed your bags for Dessau and took over the management of the Kunsthochschule, as it was called then, when

G: It was in Weimar, not Dessau.

L: Weimar, I beg your pardon. Weimar, yes obviously, yes, yes and you immediately started the Bauhaus of Weimar – something that continues to have an influence on our cities even today. This Bauhaus was something unique, it could be described as a type of monastery, or do you think otherwise when you have to talk about it in retrospect? A worldly monastery.

G: I would not call it a monastery, but it was definitely a close-knit association, which was structured based on human thinking. I would like to say that I experienced a very interesting moment in the post-war period; I came back and told myself that things would be difficult for some time, but everything would snap back to normal as it was before, till suddenly one day it struck me that this was not to be. What I could now see around me was rather the beginning of something different, something new. This moment, I cannot express it in words, has proved to be very important for me. There was a marked change in me. During this time, the Workers Council for Art was founded in Berlin, where I was president for a while and where we attempted to help artistically inclined people in Germany and to estimate how the state should react to this. In the meantime, I was appointed as director for two institutes, both of which were in Weimar – one was a School of Applied Arts previously under van de Velde, who was sent away from Germany by the grand duke there and the other was the Academy. I combined these two instruments to the Bauhaus "Government University for Arts and Design". The basic idea of the Bauhaus was, perhaps I can explain it better this way: till then the teaching pattern in Schools of Applied Sciences and also in Academies were such that more or less an influential master would teach his students to follow in his footsteps. It was clear to me that such a pattern could not produce an independent artist but merely an assistant. Just two years before that, I had visited the city where the renowned American architect, Frank Lloyd Wright, had worked. He was a great artist and his wife continued to run the school after his demise. I went there and found from 60 of its students that each drafted a second or third-rate design a la Frank Lloyd Wright. This was a sign of "Assistant upbringing" and not the upbringing of an independent artist. The contribution of the Bauhaus was that we composed – what I would like to call an optical science – objective things, which emerged from human psychology and physiology where we started laying down particular things which are applicable to every individual and thus equipped young architects with specific observations and visions, based on which they had to form their own perceptions. This was the essence of the training. I also realised the need to connect the new production-making

machines with the artistic human being. For this purpose, I set up workshops, in which people were trained from two aspects; from the artistic aspect as well as from the technical aspect. It has often been misunderstood that it was based on handicraft. It was just a cell of preparation. One cannot understand a machine before understanding the tools. Thus we trained our students in both, and asked them to accept a certificate of apprenticeship from the chamber of handicrafts, take exams there but also to obtain their license from the Bauhaus after training in the formal and artistic aspects. However, first I could not find teachers in Weimar, who would be able to design a new chair and manufacture it at the same time. I had to conduct a two-sided search; look for a capable artist and a capable workman. But the workman had no own formal ideas. Therefore, each student worked under two teachers in the workshops and the next generation in Dessau was a combination of architects, who were artists and were trained in handicraft at the same time.

L: Was it difficult to find teachers at that time? One hears such glorious names like painters Kandinsky and Klee, plus you have worked with big photographers and great master craftsmen. The style of an epoch has been developed in these couple of - in this short span, in this Age of Genius in Weimar and later in Dessau. How did you get people? Were they your friends or were they drawn by the sheer goodness of your activity?

G: I was fortunate in that respect. Some things also went wrong, but all in all, these people, such as Klee and Kandinsky and Moholy-Nagy, etc. were unknown figures at that time, but they were known to me because of the Sturm exhibition, etc. and I knew what their thinking was and then I also obviously spoke with a lot of people. Here in Berlin, I also sought Adolf Behne's advice very often; he was always in the know of things and then I was appointed at higher positions in various places. Fortunately in the beginning, there was a provisional social-democratic government in Weimar, which allowed me to do what I did and my suggestions were accepted then. But it was more difficult to break away from old professors in Weimar who had spent their life in teaching. Don't you see? It was no trivial matter.

L: But you evidently managed to do it.

G: Yes.

L: You then went from Weimar to Dessau after a few years. Why did you do so? How did it happen?

G: The national-socialistic wave hit Thuringia first very strongly, and unfortunately, artistic matters also started being used as playthings in politics and there was a war of the parties. As this national-socialistic party - the then Voelkisch party - started having a stronger foothold in Weimar and dampened our progress, we made a move, which perhaps was not a legal one, but it was definitely the right one. I sat with my faculty members and declared in public that the decision in favour of the Bauhaus was made. That took the wind out of the government. Legally perhaps, we were not authorised to do so. But I had the feeling that this thing that we had built up together was really "ours", teachers and students together so that we also wished to maintain it together. And thus we had success and four different places in Germany applied to adopt us and the best conditions were offered by Dessau, where an outstanding mayor Hesse had the courage to take on these things. He also provided us with funds, which was important, gave us a temporary building and commissioned me not only to construct the Bauhaus, newly, but also seven apartments for the main professors.

L: How long were you in Dessau, Prof. Gropius?

G: I was in Dessau from 1924 to 28. Then the pressure from the National Socialists became so strong that I thought it was perhaps better for another person to take over. My successor was Hannes Meyer, but he immediately left the Bauhaus since he had a strong inclination towards the communist side. And then, Mies van der Rohe took over on my request.

L: The Bauhaus had an astonishingly strong influence in Russia in your initial years. Were you yourself in the Soviet Union in those years?

G: In 1933, i.e. after the Bauhaus had ended, I had visited Leningrad for a week for some lectures. That was the time when Hitler came to power. That is the only time I was to Russia. I do not think that the Bauhaus really worked in Russia. But on the contrary, we were quite interested in the modern artists in Russia such as Lisetzky, etc. and many others, even

architects, who emerged immediately after the revolution, but later fell flat in Russia itself.

L: You worked as a freelance architect, constructed buildings here in Berlin-Siemensstadt, in Karlsruhe and Stuttgart and then left Germany in 1933 and went first to England. Did you immediately find a large sphere of work there or was it difficult for you, as an emigrant, to establish yourself in England, although you already enjoyed worldwide fame?

G: It was obviously very difficult at first. But I had held an exhibition at the Royal Institute of British Architects in London and there, one man had offered that I should work for him, stay with him, he would feed me and my wife and I took that opportunity, but the question was how to leave Germany. The Italians invited me to the Volta Congress. That was a theatre congress, where I presented the theatre I had designed once – the Total theatre – and held a lecture on this topic. I asked them whether they could give us a Berlin-Rome-London ticket instead of a Berlin-Rome-Berlin one. They agreed, and that's how we managed to get out of the country. But my wife and I had only 10 Marks in our pockets – so it was not easy to pull through. In London, I met different people and when they invited me to their homes and asked me whether they should fetch me a taxi after dinner, I used to say that I would rather walk to grab some fresh air. This was because I did not have money to pay for the taxi. But shortly I was introduced to an architect in London, Maxwell Fry, who is very well known today, and I worked with him. But I stayed on only for three years in England since I was offered an appointment in the Harvard University and I accepted it.

L: Your most renowned work in England has been a school which you built in Impington.

G: Yes.

L: Was it built on any particular principle, this school? It later became exemplary for many school buildings all over the world.

G: It was the idea of an education expert, Henry Morris, to build a school in rural districts, a part of which he also intended to devote to adults. The idea behind this was to prevent people from going only to bars and to provide them with a small, cultural centre. This proved to be of extraordinary value. This school was built in Impington near Cambridge, England, and I have seen it nowadays. It has even been extended. This entire principle of the school developed further, but the basic idea came from Henry Morris, who was a remarkable education expert.

L: But you work directly together with – and I mention this because of what you just said – the customer. You construct buildings for the people who shall live in them. Now, in recent times, there was often discomfort about the style of architecture – use of iron, concrete and glass – which you and the Bauhaus have encouraged to a great extent? There was a prejudice against this style, which was expressed in a very barbaric way under the Nazis, but still continues to exist; that it does not generate a feeling of warmth for the people, that it is too cold, that it is not cosy enough, that the kobold, who should actually be built in under the threshold of the house will not be able to live there at all. Such things are probably coming to the fore again as counter movements as the years pass. What do you have to say to that Professor?

G: It is absolutely true. You must not forget that it was a breakthrough.

L: Yes.

G: Spread and upheld around the world in the 20s. It was a breakthrough against the eclecticism of those times, where all possible old styles were imitated. It was a reflection on the self, on the industrial era. It was to create something from the conditions prevalent in those times, something which would finally befit the times. Of course, there was primarily a cleaning process, a certain amount of harshness emerged, doesn't it? We made everything too plane and disapproved of the ornaments, etc., which later developed in a more cheerful way. Just to quote an example, in the 30s, we constructed only parallel blocks in the north-south direction and with one west and one east side, which gave rise to corridor-shaped rooms. We no longer do this today. Today, since it gets too cold and bare from the human point of view, we try to group buildings differently, so that there is space between buildings, because this space is as important as the room structure itself. The room structure must be made positive; the room must have a human touch, it must be a place where one lives, which is not just a residual corpus.

L: You have done a lot of construction work in America and you also live in America now. And you come to Germany and Berlin only for visits. You have constructed lots of buildings in America. Which is your most favourite building in America, Professor?

G: Actually my favourite is the American Embassy in Athens, which I built from here, but I am also obviously extremely interested in the large Pan-America building, which I built there. It is the largest building in New York, too big actually, with 59 floors and 67 elevators in the building, etc. But that was an extremely interesting building both from the aesthetic as well as from the technical point of view.

L: It must have been tremendously difficult from the technical aspect, since this Pan-America building soars directly over or on the railway station, the Central-Station in New York. How did you manage it? The railway line actually ran under the building when it was being constructed. And it continues to do so even today.

G: There were two different levels of railways. During the construction, we had to erect 99 large pillars for this skyscraper on the platforms of the station. And these large pillars were erected on lead cushions to prevent vibration that was transferred to the building from the station. This was a successful exercise. It was an extremely difficult technical problem.

L: You have just spoken about ornaments and the fact that ornaments were thoroughly disapproved of in the initial years of the Bauhaus, in certain way of self-defence, perhaps against the preceding Jugendstil (Art Nouveau). Would you allow ornaments today? Would you really include them in your plans?

G: I would say that in the Bauhaus, we worked very closely on the foundations of the ornament, but did not simply pick up an ornament from the earlier time and use it in this. We made an attempt to find something that befits our times and the seeds of this approach were sowed in the Bauhaus. What I actually want to say is that the outcomes of the Bauhaus are not decisive but the direction is essential with which we proceeded with a method. The Bauhaus is a concept of the method, which can be applied as vividly today as 30 years ago. And the approaches of this, in all our artistic work in the Bauhaus, have definitely also laid the foundations for re-using the ornament, but it was rather developed from technique than from structure. It was something that belonged to the building, which grew from it and was not merely attached to it. In fact, there was a kind of iconoclasm involved; we no longer only wanted a panel painting that could be hung everywhere, we wanted a mural, which is an integral part of the conception of a room. And this concept was developed further and further.

L: Professor, you are working on a project in Berlin at present, which appears to be enormous to a layman's eye. It is an entire city that you are building, and it is expected to be as large as Bremerhaven or Baden-Baden when it is finished. This so-called Gropius city in the down south of Berlin, in Britz. Can you tell us something about this project?

G: I shall be glad to! I have always had a special interest in social matters. I keep telling my students, that when you build a small house, it is not just a simple task, you must be able to bring the house to life in your imagination. For example, when a young couple moves into a house, there would be children, these children would grow into young boys and girls – and the house is completely different in each of these stages – then they would move out of the house, and the old couple would remain. This receptacle "house" must be able to satisfy all these conditions. But you see, when we think of a residential area, which is larger, we obviously think about the house, the apartment, we have to build but also the larger structure of the entire complex, so that all the necessities of people who live there are satisfied. And by necessities I not only refer to the physical necessities but also the psychological need to feel good in the house. And there are obviously thousand and one ways of achieving this. I first studied the conditions of this residential area in Berlin that you have just talked about; there is an extensive green space that was planned as a curve from the east to the north-west with radial paths, which were already there. This green belt has been taken over by the state to preserve it according to my suggestion and to build an underground subway there. And it is from there that all these groups of houses now emerge. But they are placed in such a way that they are not just parallel rows, but court yard-shaped structures, which again consider the human dimension. And the population density is ever increasing – when planning these

houses, the density was increased from 1.0 to 1.5 – 1.0 means that the built area in an available space can be of the number of any cubic meters that one floor occupies. One can obviously have rooms with higher or lower ceilings. Hence we were compelled to go higher. And it is interesting; I have always made this observation that an idea, if it really has a strong base and life, requires almost a generation or 30 years to spread. I propagated the multi-storey block in the 30s and was dreadfully torn to pieces by the press and attacked for having come up with such an idea. Today, I put the brakes on. But it is, of course, a natural development – the limitations of the available development area due to the influx of people into bigger cities make it imperative to go higher. And there is nothing to say against the multi-storey blocks. Proportion-wise, the higher we go the more green area we get for living and one also cannot obviously exceed the specified density, otherwise we will have the pushing and shoving that we see in Manhattan and New York, where one had not taken the right measures at the right time and one can look directly into the neighbour's house on opening one's window, something that is obviously not a comfortable feeling.

L: Professor, when according to your assumption, will this massive project, the Gropius city in south Berlin, be complete?

G: Actually there are quite a few forecasts. There are so many other constructions, including public buildings, which would come up before that, which have to go in for competitions, etc., I think it would take about five years or even more till the area is really built. But I think even the authorities in the city have not got a very clear picture in their mind about how quickly this project will near completion. It obviously depends on all financing possibilities; it requires, of course, large sums, to make apartments for 45,000 people, but a quarter of the houses have already been built and in the next two, three years there will be many new buildings erected, if no other problems arise.

L: We hope that they do not arise and we want to thank you, Professor Gropius, for showing us your profile with such details and in such a friendly manner. Thank you very much, Professor.

7. B Texts relating to protective designation, copies of property management plans or documented management systems and extracts of other plans relevant to the property

The following extract from the Lower Saxony Denkmalschutzgesetz (Monuments and Historic Buildings Act) forms the legal basis of the preservation status of the Fagus factory:

Lower Saxony Denkmalschutzgesetz
(Monuments and Historic Buildings Act)
(NDSchG)
dated 30th May 1978
(Nds. GVBl. Pg. 517)

last modified by article 1 of the act for the implementation of administrative modernisation in the jurisdiction of the Ministry for Science and Culture dated 05.11.2004 (Nds. GVBl. Pg. 415)

Part one
General regulations

§ 1 Basic principle

Cultural monuments must be protected, maintained and studied scientifically. Within the bounds of what is reasonable, these should be made accessible to the public.

§ 2 Monument preservation and maintenance as public responsibilities

(1) It is the responsibility of the state to ensure preservation, maintenance and scientific research of cultural monuments. The state, the municipalities, the administrative districts and other local associations as well as institutions and unions active in the field of monument preservation and the owners of cultural monuments shall cooperate in exercising monument preservation and maintenance.

(2) The state as well as the municipalities, administrative districts and other local associations are under special obligation to maintain the cultural monuments owned or used by them and to make these accessible to the public within the bounds of the possible.

(3) Matters related to monument preservation and maintenance should be included in public plans and public building activities in due time such that cultural monuments are preserved and their surroundings designed appropriately, as long as no other public concerns prevail.

§ 3 Definitions

(1) Cultural monuments with reference to this act are architectural monuments, archaeological monuments and moveable monuments.

(2) Architectural monuments are physical structures (§ 2 Para 1 of Lower Saxony Building Regulations), parts of physical structures and parks, whose preservation is important due to their historical, artistic, scientific or urban significance.

(3) An architectural monument is also a group of physical structures, which should be preserved due to the reasons mentioned in paragraph 2, irrespective of whether the individual physical structures themselves are architectural monuments. Plants, open areas and water bodies in the surroundings of an architectural monument and the fittings of an architectural monument are considered as part of the architectural monument, if these form one unit, which should be preserved due to the reasons mentioned in paragraph 2.

(4) Archaeological monuments are objects, groups and traces of objects which are mounted on the ground or concealed in it, which have been created or processed by human beings or which shed light on human life of the past and should be preserved due to the reasons mentioned in paragraph 2, if they are not architectural monuments.

(5) Moveable monuments are moveable objects and groups of objects, which have been created or processed by human beings or which shed light on human life of the past and should be preserved due to the reasons mentioned in paragraph 2, if they are not archaeological monuments.

§ 4 List of cultural monuments

(1) Cultural monuments should be put down in a list, which should be compiled and maintained by the State Office for the Preservation of Historical Monuments with the support of the municipalities. Moveable monuments are listed only if their specific significance necessitates placing them under the protection of this act.

(2) Lower monument preservation authorities and municipalities maintain parts from the list for their respective regions. Anyone can view the list and the respective parts. Entries about moveable monuments and about fittings of architectural monuments may only be viewed by the owners and other parties holding real rights as well as by persons authorised by them.

(3) If the prerequisite for an entry is no longer present, the respective entry should be deleted from the list.

§ 5 Impact of entries in the list

The protection of this act does not depend on the fact that cultural monuments have been listed as per § 4. However, §§ 6, 10 and 11 are applicable for moveable monuments only if these have been entered in the list.

Part two
Preservation of cultural monuments

§ 6 Obligation of preservation

(1) Cultural monuments must be preserved, maintained, protected from menace and, if necessary, restored. The owner or the tenant under a building lease and the beneficial owner are obligated to do so; apart from them, persons currently exercising executive power over the cultural monument are also under obligation.

(2) Cultural monuments must not be destroyed, endangered or altered or displaced such that their monumental significance is impaired.

§ 7 Limits of the obligation of preservation

(1) Preservation measures cannot be demanded if they put unreasonable financial pressure on the obligated party.

(2) Approval must be obtained for an intervention into a cultural monument if
1. the intervention lies in the public interest for scientific reasons,
2. another predominant public interest imperatively demands the intervention,
3. unchanged preservation puts unreasonable financial pressure on the obligated person.

(3) Financial pressure is considered to be unreasonable especially if the preservation and management costs cannot be compensated with the earnings from or the utility value of the cultural monument. If the obligated person can utilise the allowances from public or private funds or tax benefits, then these should be taken into account. The obligated person cannot cite the pressure of increased preservation costs, which accrued for preservation measures he has not been taken in violation of this act or the public law.

(4) Paragraph 1 and Paragraph 2, No. 3 are not applicable for the state, the municipalities, the administrative districts and other local authorities. They are obligated for preservation measures within the scope of their financial capacities.

§ 8 Structures in the surroundings of architectural monuments

In the surroundings of an architectural monument, no structures may be built, modified or removed if this has adverse affects on the appearance of the architectural monument. Physical structures in the surroundings of an architectural monument should also be designed and maintained so that there is no cause for such adverse effects. § 7 is applicable accordingly.

§ 9 Use of architectural monuments

A use of architectural monuments should be strove for that ensures their long-term preservation. The state, the municipalities, the administrative districts and other local authorities should support the owners and other beneficiaries for this purpose.

§ 10 Measures subject to approval

(1) The following activities require approval from the monument preservation authority
1. Destruction, modification, repairs or restoration of a cultural monument,
2. Displacement of an architectural or ground monument or a part of an architectural monument mentioned in § 3 Paragraph 3 or placing signs or advertisements on the same,
3. Change in use of an architectural monument or
4. Construction, modification or removal of structures in the surroundings of an architectural monument, which may have an impact on the appearance of the monument.

(2) Restoration work does not require an

approval according to paragraph 1 if it only deals with those parts of the cultural monument that are not important for its monumental significance.

(3) Approval should be denied if the measure has the potential of violating this act. Approval subject to conditions or requirements can be granted if this is necessary to ensure adherence to this act. In particular, it can be demanded that a certain authorised expert should monitor the restoration work, that an architectural monument should be re-constructed at another location or that certain parts should be retained or reused in another physical structure.

(4) If a measure requires a construction permit or an official decision that includes or substitutes the construction permit, an approval as per paragraph 1 is comprised. Paragraph 3 is applicable accordingly.

(5) Measures as per paragraph 1 do not require an approval if they are to be executed on cultural monuments owned or possessed by the federal government or the state or are to be executed by the federal government or the state; they have to be notified to the State Office for the Preservation of Historical Monuments at the beginning of the planning phase. Clause 1 is accordingly applicable for measures as per paragraph 1, which are executed by the Klosterkammer Hannover or on cultural monuments owned or possessed by one of its administered foundations.

§ 11 Duty of disclosure

(1) If a listed moveable monument is sold, the previous and the new owner must immediately notify the change of ownership to the monument preservation authority.

(2) If restoration work is required for the preservation of a cultural monument or if there is any other danger to the monument, then the persons obligated for preservation must immediately notify the monument preservation authority if they do not carry out the restoration work or do not ward off the danger.

(3) Notification by one obligated person releases the other obligated persons.

7. C Form and date of the most recent records or inventory of property

The latest monographic description of the Fagus factory is the paper by Annemarie Jaeggi published in 1998: "FAGUS – Industriekultur zwischen Werkbund und Bauhaus" (see bibliography). This work is, for the first time, based on thorough evaluation of the extensive company archive. Under the wide research approach to industrial culture, Jaeggi not only examines the construction history of the factory, its architecture and art-historical position compared on the international level, but also includes in her presentation the company history, the close connection of the plant management with the Bauhaus with respect to design and advertising graphics as well as the early reception of the Fagus factory in the artistic photography. An article by Jürgen Götz deals extensively with the problematic nature of certain constructive specialties, which contribute significantly to the understanding of the plant's restoration history.

The restoration phase of the Fagus factory that started in 1981 and ended to a large extent in 1999 has been recorded with all steps in the papers and publications of the state's monument preservation authorities – State Office for the Preservation of Historical Monuments, Lower Saxony.

7. D Address where inventory, records and archives are held

Niedersächsisches Landesamt
für Denkmalpflege
Scharnhorststraße 1
D-30175 Hannover

Bauhaus Archiv / Museum für Gestaltung
Klingelhöferstraße 14
D-10785 Berlin

Fagus-GreCon Greten GmbH & Co. KG
Hannoversche Straße 58
D-31061 Alfeld

7. E Bibliography

The titles listed in the following present a selection of the most important literature with the "Fagus factory" and the architectural and historical development of modern industrial construction as subject matter.

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Banham, Reyner: A Concrete Atlantis. US Industrial Building and European Modern Architecture. Cambridge/Mass. 1986.

Barner, Wilhelm: Carl Benscheidt d. Ä., 1858-1947. Reprint: Niedersächsische Lebensbilder, 3, 1957, Pg. 1-12.

Behne, Adolf: Romantiker, Pathetiker und Logiker im modernen Industriebau.
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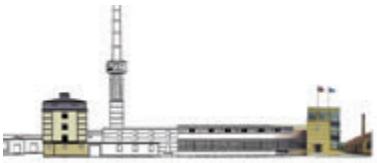
8. Contact information of responsible authorities



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State Office for the Preservation of Historical Monuments, Lower Saxony
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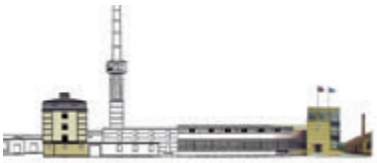
9. Signature on behalf of the State Party



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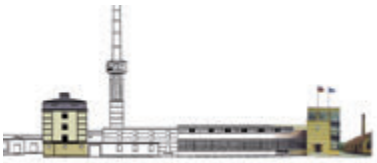
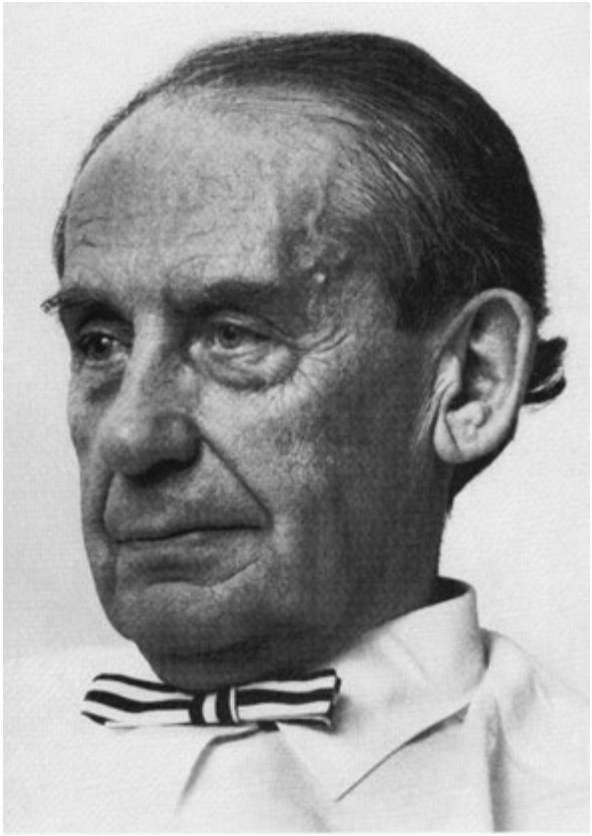
Lutz Stratmann
Minister for Science and Culture

Appendix



1. Short biographies

1. A Walter Gropius



18.05.1883
Born in Berlin

Up to 1908
Studied architecture at the technical universities in Munich and Berlin-Charlottenburg

1908-1910
Worked with Peter Behrens in Berlin

1910-1918
Independent architect in Berlin, teamed up with the architect Adolf Meyer

1912
Member of the Deutschen Werkbund (German Work Federation)

1918
Co-founder of the Arbeitsrat für Kunst (Work Council for Art)

1919-1925
Head of the "Staatliche Bauhaus" (School for fine arts and crafts) in Weimar

1925-1928
Director of the Bauhaus Dessau Hochschule für Gestaltung (Design school in Dessau)

1924
Member of the Berlin Association of Architects "Zehnerring" ("Der Ring" from 1926)

1927
Member of the Reichsforschungsgesellschaft für Wirtschaftlichkeit in Bau- und Wohnungswesen (Imperial Research Society for Economic Efficiency in Building and Housing)

1930
Vice President of CIAM

1934
Emigrated to England

1937
Emigrated to the USA, Professor of architecture at the Harvard University in Boston (Mass.)

1938-1952
Head of Department of Architecture at Harvard, partnership with the former Bauhaus master Marcel Breuer until 1941

1942-1952
Collaboration with Konrad Wachsmann for constructing plywood houses (General Panel Corporation)

1945
Founding of The Architects Collaborative (TAC)

1948-1950
President of CIAM

05.07.1969
Died in Boston (USA)

Important buildings

1911-1914 The Fagus factory (shoe last factory, Benscheidt), Alfeld a.d. Leine

1925-1926 Bauhaus building and Meisterhäuser (teacher's houses), Dessau

1926-1928 Dessau-Törten housing estate

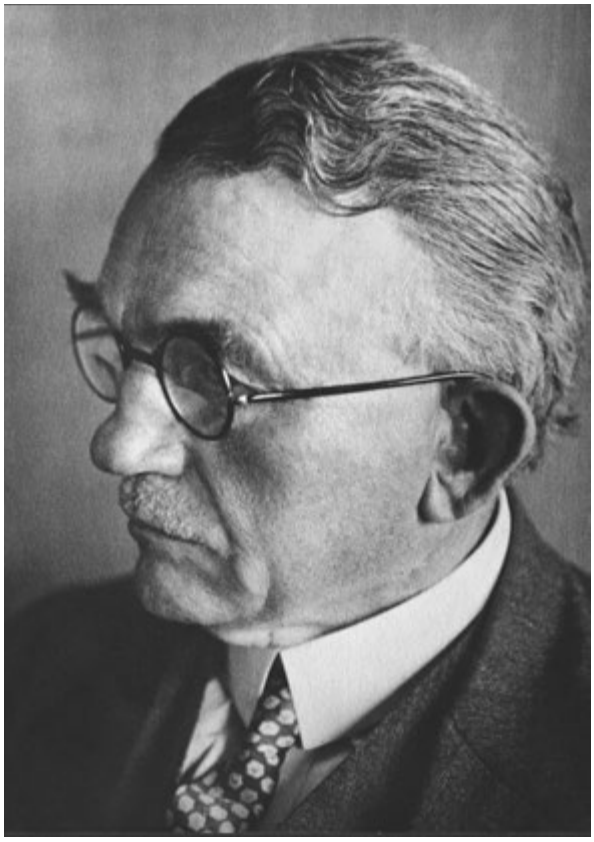
1928 residential houses in Dammerstock housing estate, Karlsruhe

1929-1930 Großsiedlung Siemensstadt (Block 4 and 9), Berlin-Charlottenburg

1955-1957 Apartment multi-storied building for INTERBAU in Hansaviertel, Berlin-Tiergarten

From 1959, General planning for the Großsiedlung in Britz-Buckow-Rudow (Gropius City), Berlin-Neukölln

1. B Carl Benscheidt



1858
Carl Benscheidt was born on 17 January in Othmaringenhausen, Halver district, Westphalia. He was the oldest of twelve siblings.

1876
Studied at Mittweida technical school

1877/78
Trained at the practice of naturopath Arnold Rikli in Veldes (Bled) and Triest. Worked for six months as bath attendant in Triest.

1879
Returned to Germany

1882
Manufactured the first pair of lasts in Lemgo

1884
Founding of last and shoe factory in Hannover

1896
Joined Carl Behrens' shoe last factory in Alfeld/Leine as technical director

1896
Benscheidt ran the company along with Wilhelm Bertram after the death of the owner

1899
The non-profit builders' association of Alfeld was founded on Benscheidt's initiative. He was a part of the management for 40 years.

1910
Benscheidt left the company Carl Behrens

1911
The Fagus factory was founded in March. Foundation stone laid in May for the factory's construction. Production started in autumn.

Until 1926
Benscheidt regularly gave assignments to Walter Gropius and the Bauhaus artists

1936
Honorary citizen of Alfeld.

1947
Carl Benscheidt died on August 31 in Alfeld.

Carl Benscheidt first married Emma nee Artmann (1855-1920). In this marriage, three children were born: Karl (1888-1975), Fritz (1894-1911) and Paula. Benscheidt's second marriage was with Liesel nee Artmann (1891-1963).

2. External reports

2. A Annemarie Jaeggi

bauhaus-archiv
museum für gestaltung

The Fagus factory in Alfeld an der Leine (1911-1925)
Expert report for the nomination for inscription on the UNESCO World Heritage List

Introductory comments

The Fagus factory in Alfeld an der Leine - one of the first buildings designed by the architect Walter Gropius (1883-1969) who went on to acquire worldwide fame later-on - is described as a turning point in the history of architecture in the technical literature: It heralds the arrival of the distinctive modern architecture of the 20th century that focuses on industrial construction as the new challenge for a dynamic society and derives its form from its function. The Fagus factory's superior status as an 'original building of modern arts' remains internationally unchallenged. It holds a unique position not only in the history of architecture, but also in the history of design because of the furniture conceptualised in the Bauhaus. Added to it, is perhaps the little known influence of the high social standards of the company's founder Carl Benscheidt (1858-1947). He based the blueprint, the implemented architecture, the daily work and the products manufactured in the Fagus factory on a holistic concept aiming at reform, which he considered a duty serving to the mankind. It is in no way an overstatement that the Fagus factory, apart from its eminent national significance, is an internationally recognised monument already since just after World War II. In addition to being acclaimed in all manuals on the history of architecture, it has to be pointed out the extremely early provision of protection to the Fagus factory - probably the first such instance for a modern building - in the year 1946, which was a time when the later state of Lower Saxony was under the sovereignty of the British military government.

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Historical Context: Factory culture around 1910

When Carl Benscheidt established Fagus GmbH in 1910, there were very few factory buildings in Germany that followed the reformatory essence of new architecture. Its appearance was a departure from the notions of the 19th century that vacillated between two extremes: either no attention was paid to this supposedly 'base' part of building, or they were turned into gaudy structures on the pretext of publicity. This was most commonly evident in breweries fashioned on the lines of medieval castles. A gradual turnaround began only when the Deutsche Werkbund was instituted in 1907. This association, which comprised of politicians, industrialists, architects, artists and publicists, dedicated itself to a comprehensive reform of all walks of life with artistic designs (motto: 'from construction of cities to sofa cushions') in order to bring about a qualitative enhancement and aesthetic training of the population and at the same time augment Germany's competitiveness in the international market.

Among the founders of the Deutsche Werkbund was Peter Behrens (1869-1940) who was trained as a painter, but engaged in all forms of art. He was called in 1907 for the 'artistic council' of the Allgemeinen Elektrizitäts-Gesellschaft in Berlin (AEG). He designed all the areas that defined the company's external look for a uniform style. This included the company logo and all advertising materials as well as the products (electrical devices) and even the factory's architecture. According to our current understanding, Behrens fulfilled the tasks of a designer, giving AEG a uniform corporate identity.

The young Walter Gropius worked from 1908 to 1910 in Peter Behrens' office and was involved during this time in the designing and implementation of the AEG projects. After an initial period when he strongly identified with the work of his boss, a critical phase of disagreements followed which led to a deadlock during the construction of a turbine room for AEG in Berlin-Moabit and ended their association. Gropius left Behrens' office in 1910. He started working independently and employed Adolf Meyer (1881-1929) who had also worked for Behrens and became his closest colleague until 1925. Towards end of 1910 they came to know about the Fagus factory planned in Alfeld an der Leine and sent an application to the company's founder Carl Benscheidt.

The Employer: Astute businessman with reformatory demand

Since Carl Benscheidt could not fulfil his dream of studying medicine due to financial reasons, he worked in a vegetarian and naturopathically oriented sanatorium in the 1870s. He came across a number of patients who complained about faulty shoes. At that time, shoemakers made shoes with their hands and there was no difference between the left and right lasts. Therefore, the shoes did not fit properly and needed to be broken in till they adjusted to the foot. Benscheidt began to cut lasts according to the foot and achieved remarkable therapeutic results with the shoes made out of these lasts. Soon he started working independently in Hannover as a last and shoe maker. Last manufacturer Carl Behrens (not related to Peter Behrens) in the nearby Alfeld an der Leine came to know about Benscheidt and employed him as his technical plant manager.

At the Behrens establishment, Benscheidt organised the production processes and introduced the latest machines. He was also responsible for the development of lasts which corresponded with the phase leading to automatic manufacture of shoes in the late 19th century. Soon, it became necessary to expand the factory, which Benscheidt achieved with the help of Eduard Werner who was a well established industrial architect in the Hannover region. The important experience of both men in their respective fields of work gave birth to an exemplary plant that needs a mention for its model technical facilities and the work conditions. With the death of the company owner Carl Behrens, differences arose between the heirs and Carl Benscheidt which caused him to quit the company.

The Architects: Old school and Avant-garde

In the area opposite the Behrens factory, Benscheidt purchased an expansive plot with railway access in Alfeld an der Leine on which he would later construct his own company: The Fagus factory, named after the botanical name for the beech tree (lat. Fagus silvatica). He became largely independent in the German credit market on the basis of the American capital and adopted the most advanced last turning lathes from America. He sent his son Karl Benscheidt jr. to Beverly close to Boston for a year for training in the heart of US shoe fabrication industry. After returning to Alfeld, he was expected to introduce technical know-how, efficient management and modern advertising in the Fagus factory in line with the American example.

In a successful collaboration with the architect Eduard Werner, Benscheidt developed the factory plant: it follows the production-based sequence of delivery of the raw material (beech wood) through railway to the sawmill, from there to the store house and the drying rooms and finally to the workroom where the lasts get their final shape on turning lathes. The so-called main building houses the model workshop, dispatch department and all offices. The boiler room, engine house and chip bunker are on the railway side. There is an independent department for metal processing separated from the actual plant complex with an internal road for fire safety reasons.

Benscheidt and Werner had thought of everything. Their factory met the technical requirements of a modern operation and was designed to expand the factory without any problems. But Carl did not want to settle with the architecture of Eduard Werner which was conventional and did not meet the standards propagated by the Werkbund for a comprehensive industrial culture. He came to know about AEG from the trade journals and wanted something similar. However, he could not afford a high-level architect like Peter Behrens at that time. The application by Walter Gropius and Adolf Meyer, both of them young employees of Behrens, came just at the right time. Benscheidt offered them the chance to remodel his factory in the planning stage and they grabbed this opportunity.

The factory structure as an artistic construction work of the future

Like Carl Benscheidt, Walter Gropius also admired the progress of the American industry. He was excited about the unconventional handling of the new construction materials like concrete, glass and steel that was entirely derived from requirement and function. He especially saw the power of a monumental art of construction in the utility buildings constructed by anonymous builders, mostly engineers that could lead architecture to a new level away from the ennobled temple motifs and use of stylistic elements from the past eras. Like his teacher Peter Behrens, Gropius knew that the castles, town halls or churches were no longer the major structures of the future, but industry had to be seen as the power that changed the society, in turn giving birth to a new mass culture.

In contrast to his teacher Behrens, Gropius went an important step further which is clearly manifested in the comparison between the turbine room of the AEG in Berlin and the Fagus factory in Alfeld. Behrens used the new materials: concrete, steel and glass, but he covered the turbine hall in a design reminiscent of monumental buildings of the past eras: the front likens, though not as a copy, the structure of a temple facade with monumental pylons of concrete which framed thin walls mainly made of glass. Behrens follows the conventional understanding here which professed giving clear lines to the corners of a building in order to give it an optical purchase. In reality, however, the turbine room does not require this substantial concrete reinforcing, since it is a steel construction. Gropius and Meyer accuse Behrens of this 'constructively pseudo' solution and his attitude of upgrading the structure by including the elements of temple architecture. Though the teacher and his students were of the opinion to build 'cathedrals' for the work place – i.e. industrial buildings that upgrade the social significance of the work through sophisticated architecture – Gropius and Meyer understood it not in the literal, but in the figurative sense.

In his book "Berlin auf dem Weg zu einer neuen Architektur (1979)", Julius Posener has very convincingly introduced an 'antithetic dependence' which is evident in relation between the turbine room and the main building of the Fagus factory. Instead of the powerful pylons, the corners dissolve into a support-less structure of steel and glass. For the Fagus factory, columns escarped into the building are used instead of the vertical supports on the longitudinal section of the turbine room. The sloping window surfaces of AEG meet perpendicular and clamped membrane-like thin glass walls designed over three stories in Alfeld.

It is still incorrectly believed that Gropius and Meyer had used new construction materials and constructions in Alfeld as Behrens did in Berlin. In reality, the Fagus factory was constructed in conventional brickwork without an inner reinforcement through steel or use of concrete. This is explained by the limited budget Benscheidt had and the consequent need to employ local construction resources. The production of large window elements at a special company in Berlin already brought his scanty finances to a crisis situation. At the same time, the large window surfaces have little to do with a curtain wall that is static and would have been placed on the internal structure of the construction. Gropius and Meyer completed this section in the Werkbund plant built in 1913/14 in Cologne. Gropius (without Meyer) then further honed this design in the Bauhaus building in Dessau to make it a distinguishing characteristic of modern buildings. The Fagus factory is the first important level in this development.

1913/14 expansion and other plans for extension

The Fagus factory required a two-fold expansion already after two years. Carl Benscheidt did not contact Eduard Werner for this and worked only with Gropius and Meyer. They extended the main building and gave it two more corners without structural support. One of them has a main staircase that gives an impression that it hovers in the air. It is a variation of the round and completely glass covered staircases in the Cologne Werkbund plant. The glass facade has been used in other buildings of the plant as well: Gropius and Meyer designed an opening with a glass-covered front for the main workroom. They covered the new engine house in a glass body. A few years later, the small rail-car scale structure was also enclosed in glass. Glass was used at every location that requires light or open view.

Besides serving its utilitarian function, it also meets the requirements of an innovative architecture and appearance of a modern establishment.

Carl Benscheidt was driven by the need for more extension plans at the beginning of 1920s. He commissioned Gropius and Meyer between 1923 and 1925 to make designs for an extensive expansion of the metal processing department (departments of forge, fitter's workshop and cutting die production). Though they were never implemented, they are of great significance from the point of view of architectural history, since they not only gave further shape to the concept of glass architecture, but also anticipate the constitutive elements of the Bauhaus building. Thus, the Fagus factory is not only a depiction of the evolution evident in Walter Gropius' oeuvre, but the design-based evolutionary history of the Bauhaus building can also be traced through it.

Furnishing by the Bauhaus

The interior furnishing of the Fagus factory extended in 1913/14 was delayed due to the First World War. From 1919 onwards, Walter Gropius' office began the design and production of interiors with the involvement of the Bauhaus workshops. Special attention was given to the vestibule in the main staircase which was initiated in 1922/23. Here, like the office wing on the first floor, a prototype of the so-called Bauhaus handle was used for construction which Gropius and Meyer had developed in 1922. Furthermore, they fitted the entrance area as well as the corridors with the typical box-shaped lamps. These were later used in the Haus am Horn in Weimar. The furnishing of the main building also attracts special attention. Gropius and Meyer used various types of furniture, sofas and tables for the visitors' area and conference rooms and benches in the corridors, some of which are now placed in their original location or displayed in the Fagus factory museum. With the furnishing of the Fagus factory, the considerable amount of work rendered by the Gropius office between 1910 and 1925 for Carl Benscheidt came to an end.

The Fagus factory today

In the year 1975, the brothers Gerd and Ernst Greten, great grandchildren of the founder of the company Carl Benscheidt, took over the management of the Fagus factory. From the early 1980s, they began the renovation of the famous, but past-its-prime factory complex. Their approach towards the decision making process is noteworthy in my opinion for the fact that they involved the State Office for the Preservation of Historical Monuments and the interested specialists who intently participated in the expert talks and discussion rounds. The process of retrofitting lasted almost 20 years in sections and with full factory operation. At the same time, the traditionally used beech wood gave way to plastic for producing the shoe lasts. This made large sections of the factory such as sawmill, the large storehouse, drying rooms, chip bunker and delivery through railway line along with the rail-car scales redundant. Before this development, the engine and boiler house were already out of commission and consequently the smokestack which was so important for the appearance of the Fagus factory also became redundant.

The renovation and transformation process had almost been finished by the Expo Hannover 2000 – the Fagus factory participated in the world exhibition as a local site. The buildings which had become obsolete were given new functions, for instance the engine room is now used as the factory canteen and cafeteria. A noteworthy mention is the storehouse which was completely revitalised. It housed in its four floors a professionally conceptualised and informatively presented exhibition on the history of the Fagus factory, its founder, its seminal architecture, architects as well as a cultural history of the shoe lasts and shoe fashion. Smaller, eclectic exhibitions are housed in the basement of the storehouse and the production hall also hosts concerts in the evenings or weekends. The management of the Fagus factory has not only opened the factory premises and its building to professionals but also lent an essential cultural contribution to the small town of Alfeld and its surroundings.

Summary: Significance and appraisal

No manual on the history of world architecture fails to mention the shoe last factory Fagus in Alfeld an der Leine, which was started in 1911 and finished in 1914 in two phases. The industrial complex designed by Walter Gropius is undeniably the forerunner of architectural modernism because it was a path breaking architectural work in terms of functionality of the building structure. It does not simply follow the demands of production in a utilitarian sense, but caters especially to the requirements of maximum light, air and hygienic working conditions for the people working there – a social concern which found a broader acceptance in the society only after the 1920s and became the most important requirement in the modern world. This prudent standard finds a corresponding expression in the Fagus factory architecture which does not follow the concepts of a representative upgrade of the factory through stylised borrowing from the past eras that was practiced at the time. It instead derives the shape from the operational function, the social substance and reformatory thoughts of the time.

The significance of the Fagus factory was recognised promptly. Shortly after its completion, there was an extensive reporting and appraisal in the German professional circles before the First World War which brought fame for its architect Walter Gropius as well. In 1919 Gropius was requested to manage the Weimar art schools - not least because of the fame that Fagus factory had brought him. He transformed the art schools into the first modern college for design under the name “Bauhaus” and made it worldwide famous. After the Bauhaus shifted from Weimar to Dessau in 1925, Gropius built a new building for the Bauhaus there which was a further development of the task begun in Alfeld for making industrial buildings the models for modern architecture. Immediately after World War II and before the making of the Federal Republic of Germany in 1946, the British military government provided protection to the Fagus factory.

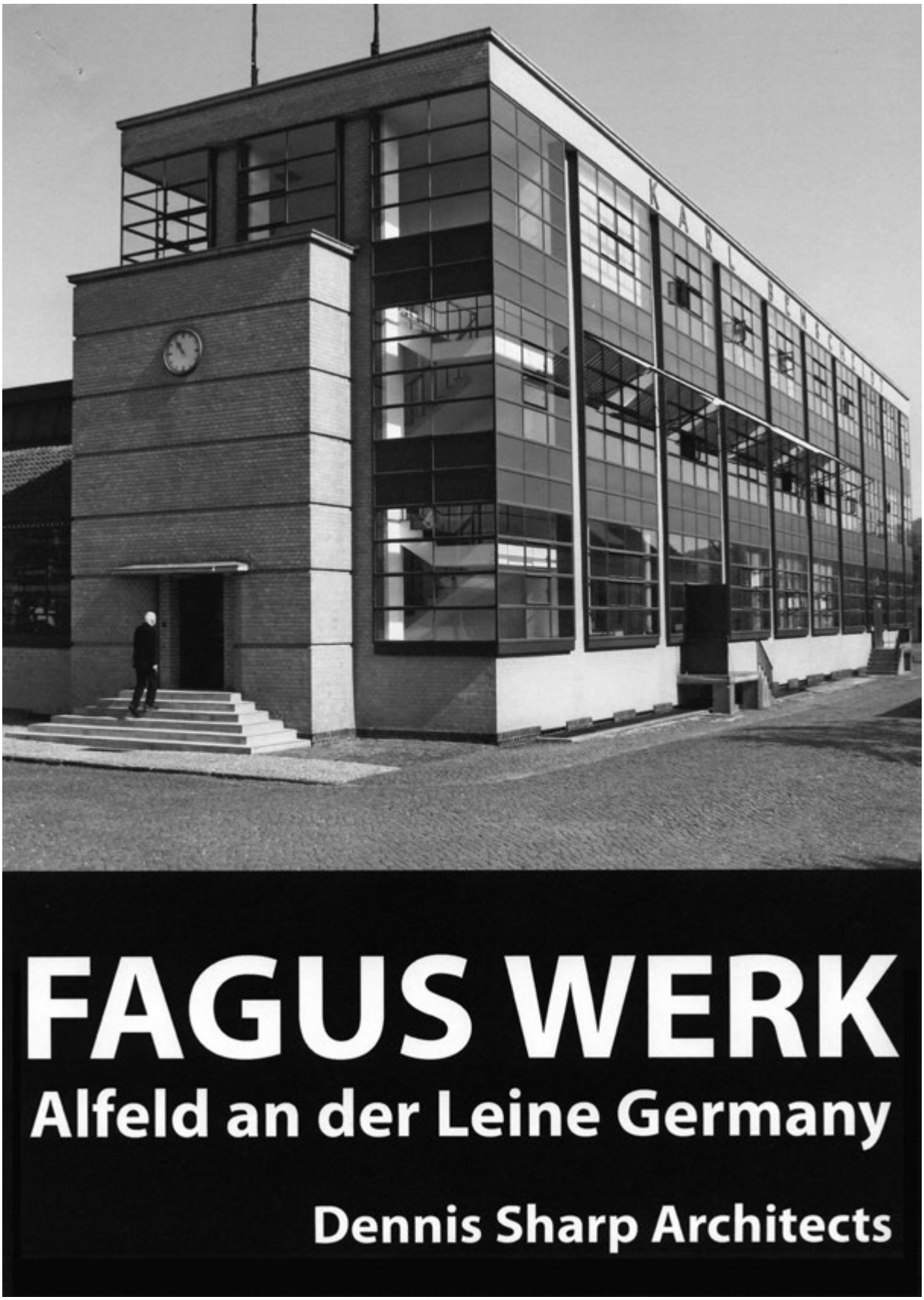
This extraordinary act of appraisal might be the first entry of a building of modern architecture in the annals of historical monument conservation. It recognises the phenomenal significance of the Fagus factory as original building of modern architecture, its originator Carl Benscheidt as an astute factory owner and its architect Walter Gropius as a co-founder of a new form of architecture.

The Fagus factory enjoys an exemplary status. It is still used as production site for shoe lasts - which alone is astonishing after almost 100 years - even though they are now made of plastic and not with its namesake beech wood (lat. Fagus silvatica). The management has started a museum in the storehouse which was formerly used to dry the wood. The museum lively illustrates the history of the Fagus factory and its architecture. Furthermore, the company contributes towards the enrichment of the local cultural offer by hosting various exhibitions and events in the halls of its factory. With a sufficient number of parking spaces and toilets facilities, the Fagus factory has professional infrastructure within its premises that is capable and worthy of receiving guests from all over the world who can visit the museum shop and get refreshments at the eatery.

In my opinion, the Fagus factory meets all prerequisites for being included in the UNESCO World Heritage List on account of its unique importance as a forerunner of modern architecture, its exemplary state of preservation and the public accessibility of the building complex.

Dr. Annemarie Jaeggi
Director, Bauhaus Archiv Berlin

2. B Dennis Sharp



Support for the nomination of the Fagus-Werk for inclusion on The World Heritage list.

The Fagus Boot-Last Factory at Alfeld-an-der-Leine 1911-24 by Walter Gropius and designed in collaboration with partner Adolf Meyer

Dennis Sharp, London

Preamble

This assessment is to be read in conjunction with the report for the Nomination of the Fagus Werk issued by Niedersachsisches Landesamt für Denkmalpflege, the Federal Republic of Germany, which refers to both the building and social history of the factory, its planning and layout and chief characteristics. It is accompanied by a wide selection of photographs and plans. My own assessment report on the Fagus Boot-Last Factory at Alfeld an der Leine was specially commissioned by the Fagus GreCon Company and the Lower Saxony Government. It is an independent and objective report based on a visit to the Factory in 2009 and extensive table top research in my own library and that of the Architectural Association and RIBA, London.

My credentials for carrying out this survey are as follows:

I, Dennis Sharp AADipl MA RIBA, architect, historian and critic, have prepared a number of reports on significant 20th Century buildings including an international submission for the World Heritage List nomination for the Opera House in Sydney, Australia. I was a member of the ICOMOS group in Paris responsible for the proposed listing of 20th Century buildings for UNESCO; a founder member of DOCOMOMO International and co-chair of DOCOMOMO UK.. I have served as a jury member on a number of international competitions including those for the Opera de la Bastille, Paris, the new Acropolis Museum, Athens and the World Architecture Forum. I have written a number of books on Modern Architecture including (1993) *Dessau Bauhaus*, Phaidon Press; (1994) *Bauhaus and the Fagus Factory* with illustrations by Futagawa, *20th Century Architecture: A Visual History* 3rd edn 2003. I am currently preparing a biography on Dipl Ing Stefan Sebok (with Dr Dubowitz) who worked in Walter Gropius's office at the Dessau Bauhaus and later in Berlin on the 'Totaltheater' project for Erwin Piscator. I have lectured on Walter Gropius and his work at various universities including the AA, Rome, Malta, Columbia, New York, etc.

A Special Design for a Special Factory

The Fagus Factory in Alfeld an der Leine in Lower Saxony is unique, a tangible and memorable product of its time. Begun in 1911 and in construction until 1914 with later additions. Now ninety nine years old time is moving it closer and closer to the celebration of a century devoted to one industry: the manufacture and production of shoe lasts. What was produced in wood is now made in plastic. It not just a memory of things past nor as a memorial to changing fashion, nor as a restitution, nor a renovation, or a rehabilitation but as a living workplace and centre of productive activity a museum and archive. In current parlance we could call it 'a centre of excellence'

The Fagus Werk is a colossal tribute to the experimental ingenuity of its founders: paterfamilias Carl and son Karl Benscheidt who were determined to build a 'state of the art' factory building. They had initially commissioned Eduard Werner, a local architect with experience in the design of industrial buildings and construction a project that had already begun on site before Walter Gropius and Adolf Meyer were appointed as successors in 1911. Gropius and Meyer saw an opportunity to create a truly 'modern' building which is now acknowledged as the 'the first masterpiece of Gropius's budding carer.' It was a work that according to the distinguished scholar Prof Alan Colquhoun 'come to be seen as prophetic of the objective *sachlich* modern movement of the twenties'. It is still viewed in that light today.

Without recourse to symbolism or to echoes of the neo-Classic approach favoured by Gropius's teacher Peter Behrens whose AEG Turbine Shed in Berlin (1909), despite its innovative three pin steel arches and the details of the framed windows, resorted to a more traditional approach to the solidity for the main façade. Gropius's much smaller and modest intervention at Alfeld in 1911 was very different. He created a light, airy and elegant structure with a sense of transparency and lightness. Giedion referred to this effect as a 'dematerialisation' of the corners of the administrative block and boiler house thus avoiding the need for corner columns. As an expression of modern factory design this simple but effective device gave the architect an opportunity to express American ideas of efficiency and production and couple it to progressive ideas of modernization and eventually, once this project was completed, to what is referred to as the Modern Movement in Architecture. Peter Behrens had a profound affect on Gropius's

development during his three year stay in his office. As the American architectural historian Anthony Alofsin has written in his book *Frank Lloyd Wright: The Lost Years 1910-22* (1993): 'It was during the period of working in Behrens's office that Walter Gropius and Mies van der Rohe claimed to have been influenced by an exhibition of Wright's work. Wright's great work was published by Wasmuth as *Ausgeführte Bauten u, Entwürfe von Frank Lloyd Wright* in 1910. There is little reason to argue that Gropius was unaware of this important portfolio.
There are a few hints as to how Wright treated corner windows in his early Priarie houses where corner stanchions were reduced to a minimum but there was nothing to be found that was as confident in its expression as the transparent walls of the Fagus Factory which came 'nearer to the integration of the new style than any other edifice built before 1922'. (see Hitchcock and Johnson, *The International Style (1932).* Hitchcock and Johnson called the Alfeld factory a 'technical triumph' in which 'the organisation of the parts of the complex structure is ordered by logic and consistency rather than by axial symmetry'.

Even in the earlier teen years the Fagus Werk had assumed a pivotal role from which sprang the modern, functional and rational approach to a new architecture. This is characterised by lightness, airiness and openness combined with a notion of social progress and a fresh kind of architecture that was experimental and innovative. But there are a few anomalies in which the windows are treated as if they were projecting bays and the brick piers as if they were acknowledgements of the column and beam structures of the past. But apart from the further experiments Gropius was to pursue in the design of the glazed stairs of the Model Factory at Cologne (1914) and its combination of Wrightian elements there is nothing he achieved 'again so fine and so coherent a production in the contemporary style before the Bauhaus in 1926' (Hitchcock and Johnson again) as the Fagus.

It is true that few buildings in Germany (with the exception of the Bauhaus in Dessau) have received the approbation and coverage that Fagus has enjoyed for the past 99 years. Many are referred to in an extensive list of books and journals which accompany this report. The significance of this building has been amplified by the extensive publication of architectural journals and books internationally since its erection.

The Fagus Werk reviewed

'The Fagus Werk at Alfeld ', Reyner Banham wrote in his book Theory and Design in the *First Machine Age* (London 1960), is frequently taken to be the first building of the Modern Movement properly so called , the end of the pioneer phase of Modern architecture'. (p.79). This Banham claims was the result of two factors the 'high esteem' accorded Walter Gropius by historians but also partly due to the accidents of photography – which usually featured only two significant views of the Fagus buildings. He goes on: 'These two blocks are in such strong contrast to the unadventurous neo-Classical regularity of the rest of the buildings that one may suspect that ... they must have been an unsought consequence of the *innerste Wesen* of the functional programme'. Neo-classical regularity and historicisms was conceded as a way of designing based on the Beaux Arts tradition. It was projected into the industrial area for the dressing up of factories, despite the efforts of the Werkbund to associate good design with industrial production. But as Nikolaus Pevsner concedes in his book *A History of Building Types*: 'by 1919 the battle for serious yet appropriate architecture for factories had been won. The two main masterpieces are by now familiar to everyone: the turbine factory by Peter Behrens for the AEG in Berlin and the shoe-last factory by Gropius at Alfeld...' (p.288)

Peter Collins in citing Hermann Muthesius and the aims of the Deutscher Werkbund in his book *Changing Ideals in Modern Architecture*, (1965) emphasized the importance of 'architectonics ' : '...the re-establishment of an architectonic culture was for him a basic condition for the improvement of all the products of industry.' (p.266) a principle that was taken seriously in the USA as well as Germany.

Sigfried Giedion the champion of Modernism in architecture, wrote of the openness of factory design: 'By their design all buildings are as open as possible. They blur their arbitrary boundaries and seek connection and interpenetration'. (1929). Architecture he claimed was no longer in an isolated position but had been drawn into a special place but not as a building style - a point that Gropius abhorred but to a 'Collective design....A fluid transition of things.'
That the Fagus Werk offered itself up to this view there can be little doubt. It may well have been sincerely influenced by Behrens's exercises in industrial fabric design but it went further by wrapping a glazed curtain around two asymmetric walls of the administrative block and freeing

the corners to dramatic effect both internally as well as from the light giving exterior. Inside the work spaces, follow Werner's plans with roof-lights flooding work spaces with high quality day lighting. In this most modern of buildings one can see that as an innovative architect Gropius experimented with materials and forms of construction that expressed the function of the building.

Earlier Adolf Behne in his book *Der Moderne Zweckbau* (1926) had stated that: 'The Fagus factory ....may be considered along with his building for the Cologne Werkbund exhibition (1914), to be the First factory that was no longer built, but constructed, from iron, steel and glass. ... there is no doubt that it is the still the most modern, the most exemplary German factory of the pre-war period.' Behne reminds his readers of Gropius's democratic approach : 'A clear internal plan that also from the outside clearly expresses the layout simplifies the production process considerably...(the modern factory worker) will work with much greater pleasure on large collective projects if his workplace , designed by an artist, complies with the sense of beauty innate in all of us, one that has an enlivening effect on the monotony of mechanical work. Thus, the increasing contentment will increase the working spirit and the business of performance.' (p.110)

Changes on the Site

Material change has of course occurred on the site and the supply of timbers from train sidings has gone. The Boiler House has become a canteen. The dominating tall chimney which is no longer in use and a storage area has been turned into an outdoor café.

That these buildings, largely unchanged in any figurative sense are today in a state that might be the envy of well tended public places. I have described their condition as 'impeccable'.

The well structured environment lends itself to an opportunity to experience a series of 'Functional' adopted spaces that still exhibit the simple industrial purpose for which the buildings were built, despite the change from wood to plastic in the production process. The Fagus then is still a fully productive factory. The site is now geared up to welcoming and educating visitors with well laid out and instructive exhibition panels, furniture and sample offering knowledge of the Benched dynasty , the buildings' architectural and the position it has held in contemporary

life. This embedded museum and its growing historical archive making it a key element in any scheme nominated for inclusion as a World Heritage Site.

Visitors to the site while dominated perhaps by architects, students and those interested in modern design I am told amount to somewhere in the region of 10,000 per year and many have an interest in this place for local, cultural and national reasons. This level of interest in this building in an industrial building is remarkable and it has not waned over the years and as the ensemble and for many architects students and visitors despite the acclaimed popularity of the Bauhaus structures in Weimar and Dessau, remains high on the 'worth a visit' agenda. One can therefore conclude that the innovative and significant nature of this modernist structure is still of great architectural, technical and cultural interest and that the attempts there have been to enhance its cultural and technical assistance have been exemplary in giving the Werk an international dimension.

Construction techniques

Writing in the **New architecture and the Bauhaus**, Walter Gropius 1936 claimed that the 'outstanding achievement of the new construction technique had been the abolition of the separating functions of the wall. Instead of making the walls the element of support ... a new space saving-construction transfers the whole load of the structure to a steel or concrete framework thus the role of the walls become that restricted to a mere curtain stretched between the upright columns of this framework to keep out rain, cold and noise.' This in essence was the Fagus factory whether the brick walls are tilted towards a classically inspired entablature with which the heads of the projecting glazed windows coincide – a witty conjunction that appears to replicate the old idea of column and beam now united by a continuous entablature.

In extolling the virtues of screen and curtain walls, concrete and steel framework Gropius also wrote of the revolutionary change there had been in the calculation of tensile and compressive strengths. These reduced the areas occupied by supporting structural members and subsequently the opening up of the wall surface which enables rooms to be much better lit. Modern architecture demanded that the traditional hole in the wall approach had gone out of the window! Light was the hope of the future. The continuous subdivision of the windows by thin

steel mullions were seen to be characteristic 'of the new architecture'. Here the Fagus factory was built on a pre determined plan its shape and form and spatial configuration were emblematic of the new architecture which according to Gropius: 'differs fundamentally in an organic sense from those of the old architecture'.
The distinguished architect historian Prof Alan Colquhoun has observed that 'this building is a kind of polemical reversal of Behrens's Turbine factory. There the glass surface slopes back and is recessed behind the solid structure . While, in the Fagus Factory the structure slopes back and the glass projects in front of it' acquiring the qualities of a palpable positive space below the identifiable cornice topping of brick piers become columns and the tall glass windows at some angles appear as the three storey structure for the offices with continuous facades turning around the corner to the much longer side originally facing the railroad siding.
This was the real nub of the Gropius and Meyer reworking of the Werner plan. The second phase of the design of 1914 saw the extension of the north east faced to create a corner entrance and a spacious and inviting staircase foyer decorated in a black and white brick patterning reminiscent of the *Jugendstil* graphics to be found in the *Kunstlercolonie* in Darmstadt.

If I could summarize the salient features and their significance they would suggest:
1. The desire to make the building in glass in order to enable light to penetrate to provide good factory working conditions.
2. With the introduction of corner windows an effort was made to lessen the visual effect of the recessed structural brick piers.
3. The well lit interior spaces of the factory itself, and particularly the offices which borrow light from the high walls of the corridor.
4. The functional layout of the previous architect Werner which is adapted carefully to the Gropius plans.
5 The creation of the later famous corner staircase in 1926 with its emphatic and decorated entrance, its riveted door and the internal stairs which reflect to an extent what was growing on graphically in the Dessau Bauhaus.

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Summary

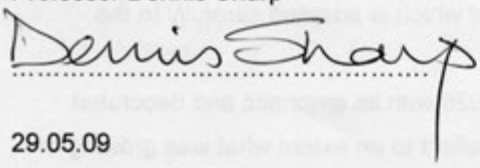
In examining the Fagus factory in some detail both on site, in its archives and a thorough investigation of published sources I now urge the World Heritage Committee to give due regard and consideration to adding the nomination of this outstanding and historically significant twentieth century building to the World Heritage List.

It is a building that has been carefully conserved and restored to the original design by Walter Gropius and Adolf Meyer and it has been well looked after and has been faithfully restorer.

It is still used for the manufacture and production of shoe-lasts for which it was originally designed. The significant changes in production methods that have seen the removal of the railway sidings link and the introduction of a café in the machine room has enhanced the buildings on site but also retains essential features. The Fagus offers fine well lit working conditions for its workers and provides a social ambiance shared with them and a wider community. The factory is itself a crucial pivot point in the development of a modern *sachlich* and rational architecture.

The Fagus Factory now includes an archive, library and bookshop and the owners operate an open door policy for visitors. There is little doubt in my mind that these factors form the basis of a successful bid for universal recognition.

Professor Dennis Sharp



29.05.09

p8 of 8

Lutz Stratmann Niedersächsischer Minister
für Wissenschaft und Kultur

UNESCO World Heritage Centre, Director
Mr. Francesco Bandarin
7, place de Fontenoy
75352 Paris 07 SP
France

Hannover, 26 January 2010

Subject: Nomination of the Fagus- Factory in Alfeld, Germany, for inscription on the World Heritage List

Dear Director Bandarin,

in accordance with the Operational Guidelines I submit to you the nomination dossier of the Fagus Factory in Alfeld, in which the comments of the technical analysis have been regarded.

With kindest regards,

Lutz Stratmann, Minister for Science and Culture of Lower Saxony

28.01.10
(7856)

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Preliminary note

The present application was revised and amended according to the comments of the

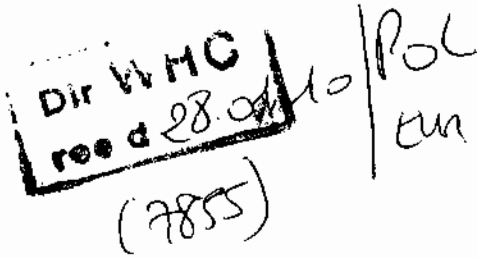
2011 COMMITTEE SESSION – DRAFT NOMINATION COMPLETENESS CHECK

of 05.11.2009.

The comments on the comparative analysis criticised particularly the term "incomparability" that was used. This term is misunderstanding. It is correct that the Fagus factory is an example of unique innovative strength that significantly justifies its universal meaning. As none of the architects who acted in the period from the turn of the century until the construction of the Fagus factory detached themselves from traditional forms and ideas to the extent Walter Gropius did, there are no buildings with similar features from the time about 1911. Thus, the comparative analysis (3C) deals with those buildings in which Walter Gropius developed his ideas of a modern architecture with glass as a medium of expression of design. First, Walter Gropius himself only propagated this idea with the construction of a sample factory on the Werkbund exhibition 1914 in Cologne, interrupted by the First World War (1914-1918) to be newly formulated to a programmatic form of architecture in the Bauhaus building in Dessau (1925/26).
Thereafter the basic idea of architecture as glass body with its internal design could establish in the modern construction and in the so-called International Style. The basic principle experienced such an enormous propagation in every construction work that a selection of individual more recent examples does not seem to be reasonable.

Corrections were included in the following sections of the application:

P. 49, left column, paragraph 1
P. 50, left column, paragraph 2
P. 56, right column from line 20
P. 76, left column, paragraph 4
P. 76, right column, paragraph 1
P. 81, left column, paragraphs 1 and 2.



Hannover, January 2010

(Dr. Kimpflinger)

SEKRETARIAT DER STÄNDIGEN KONFERENZ
DER KULTUSMINISTER DER LÄNDER
IN DER BUNDESREPUBLIK DEUTSCHLAND

GeschZ.: IIID – 5993

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Betr.: UNESCO-Konvention zum Schutz des Kultur- und Naturerbes der Welt;
hier: Evaluierung des Welterbe-Antrages „Fagus-Werk“

Bezug: Unser Schreiben vom 14.10.2010

Anlg.: - 3 -

Sehr geehrter Herr Maldacker,

als Anlage übermitteln wir Ihnen vorab per E-Mail die von der Direktorin von ICOMOS, Frau Durighello, zusätzlich gewünschten Informationen zum Nominierungsantrag „Fagus-Werk“.

Es handelt sich dabei um das Anschreiben an ICOMOS, eine 28-seitige Beschreibung und einen Bildanhang.

Der Eilbedürftigkeit halber sind diese Unterlagen vom Niedersächsischen Ministerium für Wissenschaft und Kultur bereits an ICOMOS übermittelt worden, damit der Termin 22. November 2010 gehalten werden konnte.

Das Original folgt unmittelbar auf dem Postwege.

Mit freundlichen Grüßen
Im Auftrag

(Werner Nagel)

Niedersächsisches Ministerium für Wissenschaft und Kultur
Postfach 2 61, 30002 Hannover

**Niedersächsisches Ministerium
für Wissenschaft und Kultur**

Mrs. Director Durighello

World Heritage Programme
ICOMOS International

49-51 rue de la Fédération

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Ministry for Science and Culture
of Lower Saxony

Bearbeitet von Herrn Lucka
E-Mail: wilhelm.lucka@mwk.niedersachsen.de
Fax: 0511 120 99 2579

Ihr Zeichen, Ihre Nachricht vom	Mein Zeichen (Bei Antwort bitte angeben)	Durchwahl (0511) 120-	Hannover, den
GB/MA 1368 30 September 2010	34 – 50923	2579	18.11.2010

World Heritage List: Fagus factory (Germany) – Additional information

Dear Mrs. Director Durighello,

please find enclosed the additional information, as requested in your letter. I hope, that they can help to clarify the aspects, to which further explanations were still necessary.

Yours sincerely

Wilhelm Lucka

(Referent for conservation in the Ministry of Science and Culture of Lower Saxony)

Niedersächsisches Landesamt für Denkmalpflege
Bau- und Kunstdenkmalpflege

Hannover, dated 16th November 2010

1. The exact role exerted by the Fagus Factory on the emergence of the Bauhaus

The starting points of modern architecture in the 20th century are manifested in three sites that Germany has nominated for adoption in the World Heritage List of the UNESCO: the Fagus Factory in Alfeld as an innovative site for work and production, the Berlin Modernism Housing Estates (Berliner Siedlungen) as the sites of the new residential living (World Heritage List 2008) and the Bauhaus Dessau as a place for communication and debate, learning and training for imbibing a new image of mankind (World Heritage List 2003). With this threefold nomination, it is attempted to give due credit to the significance of the “new style of building” (*Neues Bauen)*, that characterised the image of built-up spaces in the period between the two world wars in initially sporadic, but steadily increasing fashion. After 1945, this style of architecture with its property of bestowing identity spread all over the country and globally in a second step of its development.

The later nomination of the Fagus Factory for the World Heritage List in the year 2010 as compared to the Bauhaus Weimar/Dessau and the Berlin Modernism Housing Estates must not lead us to infer that this key construction of modernism is to be underestimated as a mere premature forerunner of the Bauhaus Dessau or to even rank it among the prevalent harbingers of modern construction from the reformist movement around or after 1900. Owing to its outstanding importance for architectural history, the Fagus Factory has been nominated since 1984 for inclusion in the application list of the Federal Republic of Germany, which had to apply for future inclusion of its sites in the World Heritage List. The nomination of the Bauhausgebäude (Bauhaus Building) in Dessau can be traced back to the list proposed by the German Democratic Republic before 1989. The two lists were consolidated after the Change in 1989, so that a tentative list for Unified Germany was formulated, in which all three sites of modernism – the Fagus Factory, the Bauhaus and the Berlin Modernism Housing Estates – were justifiably included.

In numerous writings by the early protagonists of *Neues Bauen*, buildings for industry, production and labour are described as the most promising building tasks, in which societal change and the creative will of the innovative architects could find expression. The housing scarcity and the catastrophic social conditions of the initial years of the Weimar Republic, however, made even the building of settlements into an experimental field for architectural modernism. As the first learning institute of repute, the Bauhaus had trained a young generation of architects and artists, who pursued this creative and forward-looking activity consistently and who earned worldwide recognition as role models and mediators of the new style of architecture. If Germany has nominated both an exemplary place of work and industry as well as the most startling places of housing and living to date (in the Berlin Modernism Housing Estates) beside a path-breaking place of architectural and design training (in Weimar and thereafter in Dessau) for inclusion in the World Heritage List of the

UNESCO, then this triumvirate of cultural creativity is of eminent importance for an understanding of the 20th century.

Meanwhile, the Fagus Factory that preceded the Bauhaus Dessau ensemble by more than one decade and was temporally separated from it by the First World War, must be regarded as the starting point and beginning of the modern movement. Adolf Behne described the Fagus Factory as "the most modern, exemplary German factory before the War" from the architectural and social point of view (Der moderne Zweckbau – *"The Modern Functional Building"*, 1926, P. 33). One of the spokespersons of architectural history writers for the last century, Winfried Nerdinger, expressed his judgement in 1985 as follows: “The stroke of genius of young Gropius outclasses nearly all the buildings before the First World War in terms of architectural daring and artistic innovation and cannot be estimated high enough in terms of its importance for the overall architecture of the 20th century” (1985, P. 36, s. Application P. 39). Similar sounding estimations of the Fagus Factory in numerous publications allow us to consider Criterion II of the World Heritage Guidelines, according to which the nominated plant “is an expression of a significant change in human values … in respect of the development of architecture”, as fulfilled without exceptions.

If one attempts to define the inter-relationship between the two architectural ensembles, the Fagus Factory and the Bauhaus Dessau, then not only the architectural forms and design play a role, but also primarily the purpose and function of the two establishments. In this context, one must conclude that the Fagus Factory is artistically a starting point and the Bauhaus building a point of culmination of the new way of construction in the history of architectural development of the 20th century. Whereas the importance of the Fagus Work as industrial and office building lies in its impelling force for characterising the international style of modern architecture, the Bauhaus is associated with its function as school, as a place of training, as an academy for the consummate artist of Classic Modernism. The Bauhaus was a point of convergence of the architect, painter, sculptor, photographer and craftsman. They combined architecture with fine arts. At the same time, they experimented with performing art such as theatre, dance and music.

Even if both building ensembles, the Fagus Factory and the Bauhaus Dessau, bear the signature of the same architect, they are still of epoch-making importance from the all-encompassing point of view, for both of which Criterion I of the World Heritage Guidelines, “Masterpieces of human creativity”, is fulfilled in equal measure. After all, Walter Gropius was one of the first architects to raise an industrial building to the level of a work of art with the Fagus Factory. If, on the one hand, the young and enthusiastic architect Gropius adopted his building owner Benscheidt's idea of arranging his building structures according to the principle of rationality of operational sequences developed in America, then, on the other hand, he succeeded excellently in bestowing artistic beauty of the highest level on the building structures and rooms through classic proportions, humanely agreeable atmosphere and lighting conditions.

Even this had been recognised by early critics such as Adolf Behne as an unusual property of the Fagus Factory (The modern functional building, in the place cited). By juxtaposing the hitherto mostly cramped industrial barracks created without higher demands on creativity and more or less ugly looking against the above mentioned design principles, Gropius counteracted the alienation of the individual in industrial

labour. Both to the factory workers and the employees, he and his then congenial building owner opened up completely new kinds of identification possibilities with the mass products to be produced in mechanical production work. It is a proven fact that the Fagus Factory is perceived in this manner to this date. The production there was intended to bring profit not only to the entrepreneur. The work environment with its humane dimensions, with light and sequentially arranged work processes was meant to appear beneficial to the workers and employees as well.

It is unquestionable that the exceptional Fagus Factory cannot be regarded in isolation in its time of creation, but ought to be considered as a part of the many reformist endeavours of progressive architects both in Germany as well as e.g. in the Czech Republic, Austria and the Netherlands. Among the reformists are primarily the more structurally than artistically active engineers since the 2nd half of the 19th century, who constructed innovative functional buildings made of steel and glass, i.e. factory buildings, railway buildings and exhibition halls as well as ever more daring bridge and tower structures. Ranked among the reformists are the first American high-rise building architects in Chicago und New York. In the same way, the remarkable and versatile experiments with reinforced concrete since the 80's of the 19th century belong to the reformist endeavours that usurped various building tasks both in America as well as in Europe and culminated, for instance, in a structural peak performance, the Centennial Hall Breslau (Jahrhunderthalle) constructed by Max Berg from 1911 to 1913 (World Heritage List 2006). However, a potential for artistic innovation such as in the Fagus Factory is lacking in the Centennial Hall, which clearly draws on the form repertoire of revived Classicism.

Architects of the *Stijl*, the Dutch style, as well as of the *Deutsche Werkbund*, the "German Work Federation", an association of artists, architects, designers and industrialists, occupied themselves more with creative and less with structural innovations. An exception from these two groups of architects and artists was the Viennese Adolf Loos, who postulated the radical abandonment of ornamental frill and at the same time sculpted the simple, geometrical structures as basic tectonic shapes in his buildings. Another exception was embodied in the person of Le Corbusier, who – four years younger than Gropius – began to shape city building ideas and housing construction in France after the First World War with an unusual and completely different kind of signature as compared to those of architects in Germany and the Netherlands.

As compared to these parallel developments of the early reform-oriented building creations at the beginning of the 20th century, the Fagus Factory built by Walter Gropius between 1910 and 1914 embodies for the very first time a consistent synthesis of the modern design ideas developed until then, a synthesis which breaks away from the traditional design motifs in building like no other synthesis of this time. As such, the Fagus Factory admittedly occupies a suddenly appearing special position in the entire course of architectural events and therewith constitutes a radical and far-reaching change in architectural history. Without any remnants of reminiscences from traditional architectural shapes, it first constitutes the change from historicism, neo-classicism and art-nouveau to modernism.

All the essential elements of the new style of building, the *Neues Bauen*, appear in the Fagus Factory with the highest artistic demands and with the application of classic principles of proportion. All the essential style elements of Classicism and

even more so of art nouveau are shaken off. The building ensemble is composed of cubic structural parts which, as described above, are arranged in a row according to the operational sequence and are stacked vertically. The concept radically does away with conventional dados and traditional brick-tiled roof shapes. The plastic ornaments hitherto customary in factory buildings, especially those attached on the facades facing the public, are completely missing. Profiles, fittings, railings and light fixtures are reduced to geometrical basic shapes. The 'curtain wall elements' in the facades made of iron sections and glass precede the structural load-bearing elements and define the seemingly weightless facade relief even in the striking and famous corners. Horizontally bedded ribbon windows stretch through the facades of the hall and machine house wing. The design principle of load transmitting building tectonics predominant before the First World War is completely abandoned, so that ceilings and roofs appear to float in many views. This design principle regarded as almost self-evident today due to habitual viewing must have appeared as revolutionary at that time as the painting of a Malevitch or Mondrian, who totally abandoned all objective and scenic motifs.

The design elements compiled by the young architect Gropius in a "stroke of genius" reappear in the Bauhaus Dessau building in a canon style further developed through increasing but novel experience, never before seen functional definitions. The characterisation by one and the same architectural signature, however, does not detract from the outstanding quality of the two building ensembles. Within the triumvirate of dwelling, working and learning, Walter Gropius is accorded the highest rank for the second time in the competition for innovation during the emergence of modernism. This fact is highlighted by the very differences between the Fagus Factory and the Bauhaus building. They find expression in the respectively existent conceptual strengths.

Whereas the Fagus Factory arranges operational sequences in various building structures in a row, the functions of workshop building, school building and studio building in the Bauhaus are organically oriented towards each other in a triple beam. School and workshop building are connected over the road by means of a bridge through the administrative wing and, above that, the architectural department. The auditorium is inserted between the studio and the workshop building. The connecting functions prominently penetrate into the architecture of the main functional areas. These have their own separate design characteristics respectively, which were spectacular in their time: The school building is the eye catcher with horizontal ribbon glazing and the 'floating' floor slabs, the orientation of the studio and the housing wing is in contrast tower-like with its conspicuous projecting balconies, the workshop building is finally distinguished by the overwhelming glass curtain wall. Gropius radically uses a new language of forms for the traditionally known building task of a design school, as accurately described by Huse in 1975 (New Style of Building (*Neues Bauen*) 1918-1933, p. 57 f): “The appearance of the entire complex is dominated by … building shapes from the area of factories and administration, not – as often in the case of earlier art schools – those from the area of temples, palaces and castles.”

It is undisputed that Gropius partly cites the Fagus Factory in the Bauhaus architecture – not only in individual, advanced architectonic design elements such as the curtain wall facade, but also in its social demands, in “the dignity of the common idea”, which connects pupils and teachers to each other, just as previously

employees and employer (Gropius, Industrial Building, cited according to Huse, p. 121). From the design and conceptual aspect, however, the Fagus Factory is the origin, the root of an epochal innovation, temporally marked at the beginning of second decade in the 20th century. The international style of *Neues Bauen* is manifested for the first time in the Fagus Factory and therewith characterises an entire century. No other building in the world can demonstrate a potential for innovation comparable to that of the Fagus Factory in the same period of creation.

2. Comparisons with other sites already inscribed on the World Heritage List and related to the emergence of 20th Century modern architecture

Eight world heritage sites already contained in the World Heritage List, which are connected with the development of modern architecture, can be compared to and related to the universally significant and seminal characteristics for modern architecture of the Fagus Factory represented in the text of the application. Since the selected world heritage sites encompass a very heterogeneous spectrum of architecture of modernism, it is not possible in each case to establish a quasi genetic link to the Fagus Factory. A few of the objects have emerged considerably later than the Fagus Factory and already intrinsically bear the impulses emanating from the Fagus Factory in severalfold communicated and further interpreted form. Owing to the typological character or regional distinctiveness of other objects, a reference to the Fagus Factory can be established only due to the modernity of design attitude, which, as first evidenced in the Fagus Factory, contains a great variation potential of architectural forming.

The World Cultural Heritage candidates included in the tentative list of the UNESCO from the area of architectural modernism are a part of the international comparison in Section 3 of this additional information.

a. Centennial Hall in Breslau, Poland, 1911-1913 by Max Berg (fig. 1)

Among the buildings already contained in the World Heritage List of the UNESCO, which reflect the modern architecture of the 20th century, the Centennial Hall erected by Max Berg in Breslau is an outstanding example. It emerged – practically simultaneously with the Fagus Factory – in 1911 to 1913 and marks an important milestone in the development of design engineering, especially in respect of the use of reinforced concrete and the associated possibility of achieving great span widths. With its diameter of 65 metres and a height of 42 metres, it was the largest cupola of its kind at its time of construction and therefore counts as a pioneering work of reinforced concrete construction and as a milestone of modern architecture. Due to its sober monumentality, the break from the richness of form of historism and the open presentation of the structural system on the inside, the typical characteristics of functionalism and a self-assured modernity are realised. The arrangement and layering of the massive construction dimensions are, however, achieved with the sooner conservative design repertoire of Neoclassicism as opposed to the main building of the Fagus Factory: The uniform rows of window openings consolidated in groups and especially the entrance hall supported by fluted columns remind one of

examples such as the Roman pantheon or the Hagia Sophia in Constantinople. The significance of the Centennial Hall in Breslau from the aspect of history of international architecture lies in the forward-looking use of the most modern structural technology for a new building task that emerged in that time: The erection of a multi-functional auditorium for the general public with more than 6000 seating places.

b. The Bauhaus and its sites in Weimar and Dessau, Germany, 1919-1933 by Walter Gropius, Wassily Kandinsky, László Moholy-Nagy, Lyonel Feininger, Paul Klee et al (fig. 2)

Out of the Bauhaus sites contained in the World Heritage List, the Haus am Horn, built as an exhibition venue in Weimar of 1923, the Bauhaus main building in Dessau of 1925/26 as well as five of previously seven houses for the Bauhaus masters in Dessau, which were finished in 1926, are to be mentioned as representatives of modern architecture. Though both the model house in Weimar built in 1923 by Walter March and Georg Muche as well as the houses for the Bauhaus masters in Dessau are functionally modern in their structure as dwelling houses, the large-scale use of glass as construction material is avoided. Here, modernism finds expression in the cubic design, in the economical division and capturing of space, in the alternation between horizontal and vertical ribbon glazing as well as in the external white colouring. Bearing the signature of one and the same architect, the Bauhaus building erected by Walter Gropius in 1926 cites the "glass curtain facade" in the main building which was developed in the first attempt in the Fagus Factory, but still not fully mature then. For the rest, you may kindly refer to section 1 of this additional information.

c. Rietveld-Schröder-Haus, Netherlands, Utrecht, 1924 by Gerrit Thomas Rietveld (fig. 3)

The small residential house in Utrecht built in 1924 by Gerrit Thomas Rietveld for Mrs. Schröder-Schräder finds place in the World Heritage List as an icon of modern architecture. Rietveld belonged to a group of Dutch artists called *De Stijl* founded in Leiden in 1917. The group pursued geometrical, abstract presentation shapes in art and architecture and a purist style based on functionality. Herewith, it followed similar objectives as those of the Bauhaus in Germany, to which it nurtured close relations – especially via the Bauhaus master Wassily Kandinsky. The only thing common between the Rietveld-Schröder-Haus and the architecture of the Fagus Factory is generally the revolutionary, new language of shapes and forms. In the building that Rietveld himself described as an "experiment", the individual components are reduced to their own separate function and are consolidated into a functioning whole in the manner of "building blocks“.

d. Berlin Modernism Housing Estates, Germany, Berlin, 1919-1931 by Bruno Taut, Otto Bartning, Walter Gropius, Hugo Häring, Hans Scharoun et al. (fig. 4)

The Berlin Modernism Housing Estates adopted in the World Heritage List in 2008 reflect an aspect of modern architecture that by far surpasses the aspect of purely architectural shaping: The wide scale modernisation of the German capital since the beginning of the 1920's after the economic crisis and inflation led to a convergence of the elite of modern German architecture in Berlin, whose works and writings caused a sensation in neighbouring countries: Ludwig Mies van der Rohe, Hugo Häring, Walter Gropius, Martin Wagner, Otto Bartning, Erich Mendelsohn, Hans Poelzig, Bruno and Max Taut, Fred Forbat, Hans and Wassili Luckhardt, P. Rudolf Henning, Ludwig Hilberseimer, Adolf Rading and Hans Scharoun were united by a common architectonic attitude towards design, in that the question of shape was not at the fore, but the social, economic, structural and urban construction dimensions of this enormous task. Modernity as design attitude is expressed in the settlements of Berlin modernism in the democratic rows of identical apartment types with balcony and loggias, which resulted in a serial and rhythmic design of the apartment blocks. In order to lower the building and rent costs, not only were typified apartment floor plans realised, but also self-contained, varying settlement typologies based on the respective place were created with new urban development figures. Many of these new, modern forms were at the same time artistic and rational answers to the economic and functional problems. In the circle of the architects of the Berlin Modernism Housing Estates, who did not develop any doctrinaire unified style, but only developed formal diversity, Walter Gropius belonged to the advocates of rationalistic and functionalistic concepts, which equally formed the basis of the Fagus drafts of 1910, but did not lead to any comparable structural shapes there owing to the completely different building task.

e. White City Tel-Aviv, Israel, 1930- approx. 1950 by Arieh Sharon, Joseph and Ze’ev Berlin et al. (fig. 5)

The White City of Tel-Aviv with its approx. 4000 buildings in the style of the Bauhaus and international style is a unique, stylistically uniform city picture of the architectural modernism. On the basis of a master plan drafted by Patrick Geddes since 1925, a new city picture could emerge from 1930 onwards on hitherto undeveloped land, the individual buildings of which were drafted by immigrant architects from Europe. A large number of the architects involved there had become familiar with the latest architectural currents in Germany, such as for instance Arieh Sharon, Philipp Huett, Ze’ev Haller, Shlomo Bernstein and Joseph Neufeld, who were involved in this large settlement project after their escape from Germany under the National Socialists. The functionalistic Bauhaus ideas with standardised floor plans, clear cubic forms with flat roofs and economical building material were implemented here on a large scale, even though a few typical characteristics of Bauhaus architecture, such as large-scale glazing, do not appear here due to the warm climate: buildings on stilts and long, narrow balconies that assure good ventilation are used instead. Rational and functionalistic drafting and design ideas that Walter Gropius gave shape to for the first time in the Fagus Factory and which were already two decades old at the beginning of construction of the White City, find expression in Tel-Aviv in diverse characteristics and interpretations.

f. Ciudad Universitaria de Caracas (University City of Caracas), Venezuela, 1940-1960 by Carlos Raúl Villanueva (fig. 6)

The Ciudad Universitaria de Caracas adopted in the World Heritage List in the year 2000 and drafted and built by Carlos Raúl Villanueva (1900-1975) between 1940 and 1960, is the first major project of modern architecture on Latin American soil, which stems from the hand of one single architect and achieves the urbanistic dimension (fig. 6). Brought up in London and Paris, Villanueva had received his architect's training until 1929 at the Parisian École des Beaux Arts, at which an eclectic draft style was still communicated at this time, which also defined Villanueva's early buildings in Venezuela. Although the avant-garde European architectural currents were known to Villanueva, the new reinforced concrete structural techniques were made familiar to him by his mentor August Perret in Paris, Le Corbusier was personally known to him and admired by him throughout his lifetime, yet Villanueva initially still drafted buildings in Neo-classicist manner in his later adoptive country, Venezuela, before he braved the step towards rational, functionalistic architecture from 1940 onwards. With his expressive emphasis on structure, however, Villanueva was set apart from the mainstream of the international style and developed an unmistakable personal design signature.

g. Central University City Campus of the Universidad Nacional Autónoma de México (UNAM), Mexico-City, 1949-1953 (fig. 7)

Based on a master plan by the great innovator in Mexican architecture, José Villagrán García, the massive complex of the Universidad Nacional Autónoma de México was built in the south of Mexico City between 1949 and 1953. More than 60 architects and engineers were involved in the wide-ranging creation with individual projects, which nonetheless constituted a coherent overall concept. Beside buildings that are committed to the rationalism of the international style, such as for instance the rectorate (fig. 8) and the reading room of the central library (fig. 9), architectures of hieratical blocky design also appear here adorned by murals that remind one of the pre-Columbian architecture of the country. 40 years after the Fagus Factory, a direct reference to the original buildings of Modernism can hardly be represented.

h. Villa Tugendhat, Brno, Czech Republic, 1928-1930 by Ludwig Mies van der Rohe (fig. 10)

Villa Tugendhat, maintained on the World Heritage List since 2001, was built by Mies van der Rohe 1928-30 for the couple Fritz and Grete Tugendhat.
It is regarded today as the most important residential house building of his time of creation in Europe.Created simultaneously with his famous gazebo for the international exhibition in Barcelona, Mies van der Rohe designed this building as well with rational strictness and in clear, cubic shapes, but achieved an extraordinary openness and lightness of architecture due to the chromium-plated steel pillars on the inside and free-standing walls around which the core of the house is concentrated. This lightness of architecture is further expressed in the exterior by the long, uninterrupted glass window all around the corner of the house. The principle that already formed the basis of the Fagus Factory to diffuse the external boundaries

that define the room by means of the use of glass is implemented here with the use of high-quality building material in a luxurious and modern living atmosphere.

3. A comparison of the beginnings of functionalism and modernism in architecture extended to countries other than Germany

A comparison of the Fagus Factory with the development of a rational, functionalistic architecture of Modernism outside Germany can only be attempted by means of selective examples. The selection is limited to countries in which architectural modernism characterised by rational functionalism has attained a certain continuity or has emerged with especially concise examples. Similar to Germany, where the initial impulses were interrupted and suppressed due to the war and the National Socialist dictatorship, Spain and Italy, for instance, experienced only a brief upsurge of architecture of early Modernism, before architecture was made an instrument of the powers of the State for their own purpose from mid-1930 onwards. Special appearances that are yet to find mention are for instance in Shanghai/China, where the "International Settlement" briefly put forth European modern architecture, likewise the colonial architectural works of the 1930's in Asmara/Eritrea, which are maintained on the tentative list of nominations of this country to the UNESCO.

To begin with, it can be noted down in writing that neither in Europe nor elsewhere on this earth can buildings be spotted prior to the First World War that come anywhere close to the modernity and the high artistic quality of the Fagus Factory of 1911. The Fagus Factory was unique work of its time in terms of style and design. The following comparative overview has been arranged in alphabetical order without any weighting.

a. Brazil

Scientific studies about light and sun in relation to architecture as well as practical occupation with structural problems that were important for Brazil, such as primarily the creation of good lighting conditions and simultaneous protection against too strong sunlight, generated the intellectual readiness to adopt new architectural concepts in the Brazilian architectural community since the early 1930's of the 20th century. The young architects of this epoch developed a specifically Brazilian variant of the modern, rationally functionalistic architectural standpoint that was prepared in Europe or even the *International Style*, as this modern architectural movement was called since the publication by the same name by Hitchcock and Johnson in the year 1932. One of the earliest examples of this Brazilian Modernism is the Ministry of Education and Public Health in Rio de Janeiro, which was begun in 1936 and completed in 1943 (fig. 11). The high-rise building complex that has a glass facade on one side with reinforced concrete structure on the inside was designed by Lucio Costa, who formed a team of architects together with Oscar Niemeyer, among other things. In 1936, Le Corbusier joined this team as Consultant for this building. Le Corbusier's ideas found receptive ears: His free form designing corresponded to Brazilian mentality, his brise soleil elements were in many cases a necessity and his pilotis, or piers, were especially suited to Brazilian climate. As an open glass-

concrete building structure open on two sides, Oscar Niemeyer also designed the building for a yacht club in Belo Horizonte in 1940 (fig. 12).

b. Finland

The stagnation of the First World War and the subsequent economic depression was followed by the breakthrough of rational, functionalistic Modernism in Finnish architecture around 1928. In Finland more than elsewhere in the world, Modernism became a style of public buildings – underlining the modernity of the young republic. The leading position among the rationalists was immediately assumed by Alvar Aalto, whose City Library in Viipuri (1927-35) with the large glass wall in front of the main stairs, functionally arranged building cubes and simple punctuated facades belongs to the Classics of rationalist Modernism (fig. 13). Another early example of unadorned cubic designing with large glass surfaces as means of expression of modern architecture is the "Lasipalatsi" in Helsinki, built in 1935/36 by a team of architects: Viljo Revell, Niilo Kokko and Heimo Riihimäki (fig. 14)**.**

c. France

In France, the entry of Modernism took place primarily by means of the new, structural possibilities of reinforced concrete and by means of large-scale, urbanistic concepts, in which primarily the theoretical writings of Le Corbusier and his proximity to cubism played an important role after his return to Paris in 1917. The variform onset of Modernism had been communicated to Le Corbusier in the course of his extensive travelling in the previous years. The architecture of the Mediterranean region became enduringly inspiring for him, likewise the meetings with the great innovator of architecture in Austria, Josef Hoffmann (1908), his work in the office of August Perret in Paris (1908/09) and with Peter Behrens in Berlin (1910/11), from whose office Walter Gropius had just separated at that time. Le Corbusier was familiar with the leading minds of the German reformist and Werkbund movement and he was also already familiar with the works of Frank Lloyd Wright through publications at this time. His Cité de Refuge testifies to radical modernity, a building complex erected between 1929 und 1933 as asylum for the Salvation Army, in which he was able to implement for the first time in a major building task his design principles that were very similar to those of the European avant-gardists: of rational composition of the building from elementary geometric forms while avoiding purely decorative effects (fig. 15). The outstanding importance of the creative work of Le Corbusier between 1920 and 1960 for the architecture of Modernism has resulted in three of the residential houses designed by him in France, Belgium and Argentina already being included on the tentative list for the World Heritage of the UNESCO. However, beside Le Corbusier, other architects in France such as André Lurcat or Pierre Chareau have also given artistic and architectural expression to rational functionalism. From 1928 to 1932, Pierre Chareau built the Maison de Verre in Paris, in Le Cobusier's own words, a "machine for living" fully consistent and articulated (fig. 16). A radically modern building style is also manifested in the École Karl-Marx in Villejuif near Paris (1931-33), built by André Lurcat and designed by him according to his cooperation in the Viennese Werkbund settlement as a composition made of cubic shapes and large-scale use of glazed building structures (fig. 17). The ideas

shaped by Gropius in terms of handling of steel and glass in building facades played only a subordinate role for the development of modern architecture in France.

d. Great Britain

In the years before the First World War and for some time thereafter, a monumentalism carried over from the 18th century and strongly influenced by the academic teaching in France dominated in British architecture. The innovator, who created a sensation from the end of 1920's in England with markedly modern structures, was Owen Williams, an engineer who came from the railway and aircraft industry and became a specialist for reinforced concrete buildings in the area of architecture. His Boots factory built between 1930 and 1932 in Beeston near Nottingham is structured with a continuous run of glazing and mushroom-topped pillars (fig. 18). Reinforced concrete and glass are also the structural elements of the Wembley Empire Pools, today's Wembley Arena dating back to 1933/34 (fig. 19). In 1932, Williams, together with Clarke and Atkinson, built the administrative complex of the "Daily Express" (fig. 20), the free-standing facades of which are glazed all over. In the horizontal bands separating the floors, opaque glass was used for the first time, a material that Walter Gropius had likewise used in the interior of the Fagus Factory. During his exile in England, Walter Gropius worked together with Maxwell Fry from 1934 to 1937, who, with his cubic Sun House designed in concrete and glass Frogwell/Hampstead in 1934/35 (fig. 21), represented similarly rationalistic and daring form concepts as Gropius. The Impington Village College (fig. 22) built by Fry and Gropius in 1936-40 with its sober and objective building technique as ensemble composed of large-scale brick buildings with flat roofs became a prototype for many English school buildings after the Second World War.

e. Japan

Japan has a long tradition of expanding its culture by adopting elements of foreign cultures and transforming them into its own form elements. After especially English influences also determined Japanese architecture in the 19th century, the Taisho era between 1912 and 1926 saw a leaning towards modern European Architecture. After a brief phase, during which young Japanese architects processed the thoughts of Viennese secession and German expressionism, the rational functionalism of Modernism made inroads in Japan as well. The new ideas were communicated by young architects, who had experienced the revolutionary innovations in Europe, such as for example Kunio Mayakewa and Junzo Sakakura, who had studied with Le Corbusier in Paris, as well as Bunzo Yamaguchi, who had been with Walter Gropius in Berlin. Frank Lloyd Wright, too, worked for several years in Japan and built the Imperial Hotel in Tokyo in 1915-1922, which is preserved only in rudimentary form today. Bruno Taut lived from 1933-1936 in Japan, where he compared the traditional Japanese wooden structure with the modern reinforced concrete grid construction in his writings, which had a great influence on the further establishment of modern architecture in Japan. The architectural ideas of Frank Lloyd Wright were principally further perpetuated in Japan by Antonin Raymond, who came to Japan with Wright and lived there for decades. The adoption of modern architectural notions was, however, practised in Japan not only by free-lance architects, but is also expressed in the outstanding buildings of the Urban Development Office of Tokyo, such as for

instance the elementary school Yotsuya built in 1933, a modern, objective, reinforced concrete structure with flat roofs and a fully glazed stairwell tower (fig. 23).

f. Mexico:

Well into the 20th century, a historical architectural notion held sway in Mexico, which was not only oriented towards the architecture of the Spanish motherland, but was also influenced by the Parisian École des Beaux Arts. In stark contrast to this, several young architects under the leadership and tutelage of José Villagrán García began to plan their buildings according to the principles of rationalism, especially in the case of hospitals and schools, though also in the case of workers' dwellings around 1925. Between 1930 and 1950, the principles of rationalism then caught on and became widely accepted on a broad basis. In 1939, the Mexican government summoned the former Director of the Bauhaus (1928-1930), Hannes Meyer, to the country; he laid the foundations of a new style of Mexican urban building. The use of high-rises in social housing began with the Presidente Alemán urban housing situated in Mexico city with 13-storey buildings for overall 5000 inhabitants by Mario Pani (1947-50). Along the Paseo de la Reforma in Mexico City, high administrative buildings emerged which followed the tendency of glass curtain walls. The same is applicable for the Torre Latinoamericano located at the core of the old town and built in 1950 by Augusto Alvarez and Adolfo Zeevaert (fig. 24).

g. The Netherlands

In the first two decades of the 20th century, two opposed currents were active in the architecture of the Netherlands: Though one group of architects worked with modern structural techniques, it adorned its buildings with luxuriant decor contrary to realistic tendencies, such as e.g. Johann Melchior van der Mey and Pieter Lodewijk Kramer in the Scheepvaartshuis (Shipping House) in Amsterdam (1911-1916). On the other hand, the architects who cited the rationalist Hendrik Petrus Berlage, out of which many joined the artists' group *De Stijl* founded in 1917, began to draft markedly progressive architectures, most of which were initially built in Rotterdam. Included in this group were Theo van Doesburg, Johannes J. Pieter Oud, Gerrit Rietveld, as well as Johannes Andreas Brinkman and Leendert van der Vlugt, who built the Van Nelle Factory in Rotterdam in 1926-30 (fig. 25). For this group of architects, progress in architecture was connected to the new structural techniques, they preferred the use of steel, concrete and glass and they were – as compared to the artists of the Bauhaus in Germany – convinced that their functional architecture would contribute towards a better future. The Van Nelle Factory which had a markedly modern effect with its stacked, free-moving structural parts with acute-angled offset. It is glazed over a large area and with the demonstrative display of service provision systems, such as the two glazed conveyor belts, it reflects influences of Russian Constructivism, to which links existed in the person of the German-educated protagonist El Lissitzky. The essential design elements of the Fagus Factory which was built fifteen years earlier, such as the structural parts reduced to geometrical basic shapes, the drawn-in structural framework and the fully glazed curtain wall facades, combine here, intermingled with other influences of European Modernism, to an outstanding example of new age industrial construction. Characterised by a similar lightness and openness of structure is the building complex of the sanatorium

Zonnestraal in Hilversum, which was built by Johannes Duiker in 1928 (fig. 26). The sweeping horizontal building structure of this complex reminds one of the likewise rather spacious Prairie houses by Frank Lloyd Wright. Both the objects are on the tentative list of the Netherlands for adoption in the World Heritage List of the UNESCO.

h. Russia

Modernism in Russia is mostly equated with the vague term Constructivism, which experienced a brief blossoming after the end of the Russian Revolution in 1917 until the Stalinist dictatorship starting in 1927. As in the other artistic branches of Constructivism, in which the design elements are composed of simple, geometrically arranged basic elements, the buildings of Constructivism are also characterised by plain, geometrical shapes, in which the functional component is strongly in the fore. Due to the emphasised abandonment of luxurious elements in favour of objectivity and functional aesthetics, the Constructivist master builders wanted to give expression to the democratisation of society in their architecture primarily with their public buildings, in line with the societal upheaval in Russia during the 1920's. Well-known architects among the Russian Constructivists were Konstantin Melnikow, Moissei Ginsburg, Noi Trozki and Boris Iofan. Characteristic for their buildings and for Constructivism in general was the Russian peculiarity that it often concerned novel building tasks. Typical examples for this are the so-called worker's clubs, cultural centres or even factory kitchens, which were meant to correspond to the modern post-revolutionary notion of public life of the worker class. Different from the Fagus Factory and the light-weight, reinforced concrete and glass structures that developed out of it in Western Europe, the trend in Russia was rather the emergence of blocky structural parts often fitting into each other, such as for instance the Worker's Club House Rusakow in Moscow, built by Konstantin Melnikow in 1927/28 (fig. 27). Glass as a means of expression of the architecture is used only sparingly, such as for instance in staircases that structurally step out of the building structure or – in rather untypical manner – in the dynamically expressive facade designing of a park house likewise designed by Melnikow in Moscow in the year 1933 (fig. 28).

i. USA

At the turn of the 20th century, historicising styles dominated in the architecture of the USA under European influence, which developed a multifaceted world of shapes through Neoromanticism, Neoclassicism up to the American version of Gothic Revival. One exception was the buildings of the Chicago School, the clear form elements of which primarily affected Louis Sullivan, who with his avowal of functionality in architecture (“form follows function”) was not only one of the founder fathers of the high-rise building but also became a precursor of rationalism in American architecture (fig. 29). These early approaches on the road to Modernism were, however, initially followed only by Frank Lloyd Wright, who kept alive the rational discipline of his teacher Sullivan with his revolutionary concept of Prairie Houses between 1894 and 1909 (fig. 30). Lithographs of drawings of these houses published by Wasmuth in 1910 in Germany were soon became known in Europe and influenced primarily the Dutch *De Stijl* group. In the United States of America, Wright, like the later Sullivan, was initially shown very little appreciation and the two great

streams of Neoclassicism and Neoromanticism held sway well into the 1920's. Different from the conventional architectural practice was the contribution of Albert Kahn, whose company quickly became specialised in the extensive industrial construction in the region around Detroit. With his pragmatically drafted buildings, Kahn anticipated at an early stage the precise and finely structured cubic form of the 50's and the 60's. Counted among the pre-eminent examples of a functionalistic functional building, the architectonic language of which is rationally adjusted to industrial requirements, is the Glass Plant in the Rouge Plant of the Ford Motor Company in Dearborn, Michigan from 1924 (fig. 31), as well as in particular the spacious Chrysler Dodge factory in Warren, Michigan from 1938 enveloped by finely structured curtain walls (fig. 32). Albert Kahn's factory buildings that were drafted completely on considerations of functionality are ranked as parallel development streams in nascent American Modernism, which was still a long time coming in the 1920's: The most important international competition of this period, the one for the Chicago Tribune Tower in the year 1922, was not yet won by one of the modernist designs from Europe, but by the reduced Neogothic proposal by Raymond Hood and John Mead Howells. Walter Gropius was not awarded to a prize for his unadorned reinforced concrete and glass project (fig. 33) Beside the undefined and undifferentiated style of Historicism, which reigned for quite a while in the 20's, the objective and sober aesthetics of rationalism also experienced a blossoming on the American East Coast towards the end of the century: The immense influence that European and primarily German immigrants had on the development of American architecture since the period around 1930's and therewith facilitated the final onset of the international style, is evidenced for the first time in the Philadelphia Savings Fund Society Building by George Howe and William Lescaze from the year 1929 (fig. 34). Lescaze, born in Switzerland, had completed his studies at the Federal Technical College in Zurich in 1919. He was familiar with the latest European architectural trends and carried these impetuses with him when he moved to New York in 1925. In 1937, Walter Gropius, Mies van der Rohe and Marcel Breuer came to the USA, in 1938 Martin Wagner and three years later Erich Mendelsohn. Gropius continued his teaching activity, which he had pursued at the Bauhaus, at the Harvard University in Cambridge, Massachusetts, to which place he was followed by Wagner and Breuer. Mies van der Rohe assumed an analogous role at the Armour Institute of Technology in Chicago. Its influence on the development of architecture primarily on the American East Coast was decisive and culturally downright commanding. The cool, perfect, restful stereometry of the buildings by Walter Gropius, by Mies van der Rohe as well as by Le Corbusier became an example of new American architecture. Beside numerous single family detached houses that Gropius built in the surroundings of Boston since the end of the 1930's, the Harvard Graduate Center (fig. 35) built by him in 1949/50, with its clear, functional strictness, the uninterrupted ribbon glazing and classical and harmonious proportions, is above all inspired by the spirit of Fagus Factory from 1911. Since the 1950’s, Gropius once again worked more frequently in Europe and his influence on the development of American architecture was propagated primarily by means of his teaching activity. The meanwhile firmly installed *International Style* was further perpetuated in the crystalline buildings by Mies van der Rohe (860-880 Lake Shore Drive Apartments, Detroit, 1949-51, (fig. 36) and Seagram Building, New York, 1958, (fig. 37), until his reduced and limited vocabulary was increasingly trivialised as early as since the middle of the 50's owing to its rationally producible and imitable design style. However, one of the final high points was set once again by Walter Gropius with his PanAm skyscraper (today's MetLife) in New York, which he built together with Pietro

Belluschi in 1960 (fig. 38). The building projecting out over the Central Station on an octagonal floor plan and dominating the Park Avenue with its triple horizontal structuring, the compellingly clear proportions and the fine facade meshwork from glass, steel and concrete once again supports his 50 year old principles of architectural modernism on which the Fagus Factory was based.

4. The main examples of the direct influence the Fagus Factory exerted in the field of architecture

The direct influence of the Fagus Factory on the development of modern architecture was evidenced after First World War by the examples already described in section 3. It became visible on a larger level only after the development caesura due to the two world wars from 1914-1918 and from 1939-1945. The factory and office buildings, business buildings as well as school buildings and cultural centres which were built in Europe after 1945 with the economic upswing and which were built with functionalistic and rationally economical considerations, are numerous and frequently lose quality of design with their mass emergence in the 1960's and 1970's.

The motif of fully glazed, cubic and unadorned design of reinforced concrete structures, which – as a structural and design characteristic of the international style – spanned countries and continents and was reproduced in large numbers since the end of the Second World War, however, continues to be manifested in such prominent and outstanding buildings as the UN Headquarters in New York (1949-50), for the drafting of which the two great innovators Le Corbusier and Oscar Niemeyer were able to prevail in the course of a worldwide competition (fig. 39). With the Jespersen office building, Arne Jacobsen also built an elegantly proportioned building in 1955 in Copenhagen with finely chiselled curtain wall facade, which reminds one very much of the Fagus Factory (fig. 40).

Were one to pursue the train of development of this architectural shaping in the history of modern building, then one would run across branches of the new architectural idea in many countries of the world in the 30's and the 20's, of which a few examples have been given in Section 3 (cf. Brazil, France, the Netherlands, the USA amongst others). One of the most important transporters of his architectural outlook in the Weimar Republic was Walter Gropius himself, who attempted to gain a foothold in America very early. He testified his engagement with his draft, for instance, for the high-rise building of the Chicago Tribune.

With a draft for a high-rise building made of glass on freely sweeping floor plan, Ludwig Mies van der Rohe – after initially pursuing Neoclassicist works – joined the ranks of the functionalists of the modern age in 1922 (fig. 41). Such daring designs qualified him for the direction of the Bauhaus in Dessau, which he directed from 1930 to 1932 after the departure of Walter Gropius and Hannes Meyer, before it was closed down by the National Socialists. Naturally, it was this very institution which promoted the international widespread effect of the modern style of building in large measure. It is, however, equally self-explanatory that many young architects from other countries shaped *Neues Bauen* into their role model after the First World War

and therewith helped – both as communicators as well as bearers of ideas – to unfold a broad effect that brought about change.

However, what remains undisputed is that: Before the First World War, it was Walter Gropius who, with the Alfeld Fagus Factory and the large-scale glazed, unpreserved model factory in the Werkbund exhibition in Cologne (fig. 42), created two icons of architecture as art works that founded a new style, i.e. that of Modernism.

5. Augment the chapter on Integrity-Authenticity included in the nomination dossier which mainly focuses on the industrial function of the property which is still in use today

As already explained in the comparison of the Alfeld Fagus Factory with the Bauhaus Dessau, the Fagus Factory assumes the extraordinary function of a foundation building which conclusively and verifiably illustrates for the first time, with absolutely consistent handling of his design elements, the style change from Historicism, Neoclassicism and art nouveau to modern architecture from the standpoint of architectural history. No other building in the world can demonstrate a potential for innovation comparable to that of the Fagus Factory in the same period of creation. And no other building can testify more clearly to the departure from the design motifs of the preceding epoch. To this extent, the Fagus Factory by Walter Gropius is the most important key piece of architecture for the development of modern architecture of the 20th century.

In particular in comparison with the functionalistic and reform-oriented buildings of the period around 1910, it turns out that no other architect of this time was able to completely discard the traditional or current style elements of the time and to simultaneously create with his draft an extraordinary work of art that depicted exclusively new form, design and structural elements from the stylistic point of view. It can be concluded without further ado that all the contemporaries in the playing field of architecture either still felt committed to the aforementioned traditional style elements in some way or experimented with new materials and techniques without having an eye on the result of the work of art.

It is not an exaggeration if both the richness of form as well as the design of the Fagus Factory which can be easily perceived from the building ensemble to this date, are regarded as authentic to an extraordinarily high degree. Taking into consideration its age of nearly one hundred years and making allowance for wear which a factory ensemble is subjected to, the building fabric of the Fagus Factory is also to be assessed as authentic. Intactness as in a new building can meanwhile not be assured in a hundred year old building. To this extent, repairs and restoration as well as replaced parts, which have healed the sufferings of the building ensemble during the last 25 years of maintenance, have become estimable parts of the monumental building fabric. The monument protection authorities with many other participants have devoted themselves to reconstruction measures with the greatest possible subject knowledge and have provided their support and expertise for all the necessary measures successfully. For this reason, the requirements of the integrity of the Fagus Factory affected by the maintenance work are assessed as excellently

fulfilled. Owing to the protective instruments of building, planning and monument law, the perspectives for the future intactness of the Fagus Factory at the authentic site are assured.

As explained in the application, the use of the Fagus Factory corresponds to the original production flows of the shoe last factory in the predominant part of the buildings. For the building parts, in which new workshops and/or publicly accessible exhibition areas have been created, the building owner developed adequate usage requirements, which do not detract from the extraordinary importance of the architecture, but, quite to the contrary, further strengthen its architectonic meaningfulness. This is apparent, for instance, in the machine house and in the warehouse, building parts of the ensemble, in which the reuse of the interior rooms has brought rich dividends for their vividness.

In respect of the technical integrity of the Fagus Factory, the "curtain wall facade elements" of the administrative building has to be particularly focussed. Especially on the part of the monument care and protection authorities, as well as on the part of all the participants, it was important to learn how to handle an invention, which was a perfect success optically but not in terms of material and structure and which lacked in sustainability and durability. In the present-day combination of toughened and renovated facade elements, the consensually represented requirement of careful handling of these sensitive building parts that had been impressed on the minds of all the participants is clearly visible. Accordingly, it is one of the first tasks in the handling of the Fagus Factory to place the main focus on these facade elements in order to defer any further loss for as long as possible. Since it is thanks to these very steel and glass elements that the Fagus Factory enjoys such extraordinary appreciation.

To sum it up, it can be noted down that the requirements of authenticity and integrity named by the World Heritage guidelines may be considered as fulfilled for the Fagus Factory.

6. Provide additional information on the extensive restoration work that was undertaken between 1985 and 1999,

and

7. Complete the chapter on "state of conservation" with a detailed architectural analysis of the different restored parts of the property with special attention to the concepts of integrity and authenticity

Since the 1920's, small repairs for maintenance have been repeatedly performed on the building parts of the Fagus Factory, which have not changed the architecture in any way. In 1982, it was finally recognised for the first time with regard to the core plant that the building defects that had appeared over the ages could no longer be eliminated with the help of small repairs. Greater measures had to be undertaken on the facades in particular. Damages were primarily identified in the roof zone, on doors and window surfaces, due to crack formation in the raised brickwork, in the

roof drainage, in the entire installation and heating technology, in the electrical installation and in the chimneys. The heat protection system of the entire building was, at least in the office wings, totally insufficient and was to be improved in connection with the damage repair. Equally necessary were fire protection measures according to regulations with the creation of appropriate fire areas.

All in all, a reconstruction backlog had formed, which now justified unavoidably necessary preservation measures. An expert opinion required of the federal state of Lower Saxony formed the prerequisite for an appropriate measure in which considerable public funds of the federal state and of the central government were to flow in as aid. A first certificate by the Engineering Office Hoff, Heuer and Partners based in Hildesheim from the year 1982/83 proved that the cracks that had appeared in the building complex were apparently attributable to poor building ground. Furthermore, an insufficient foundation, missing building joints and insufficient static load distribution were recognised as the original cause of the damages. At the same time, the expert opinion also provided the reassurance that the crack formations had essentially settled down and, therefore, there was no need to perform any soil or foundation improvements, which would have entailed strong interventions in the foundations.

From 1984 to 1986, considerable federal state and central government funds were made available for a first section of measures. Thus, it was possible in the beginning of 1985 in consultation with the Lower Saxony State Service for Cultural Heritage to commission the architect Jörn Behnsen of Hannover with developing an overall concept, which would, on the one hand, provide information about type, scope and costs of all the necessary preservation measures and, on the other hand, would also contain a first partial measure for the especially damaged area of the roof and the steel and glass facade of the three-storey office wing. These first larger-scale measures starting in 1985 and the subsequent measures were assigned to the individual buildings of the Fagus Factory in accordance with the representation in the main application and were described such that the individual measures undertaken on the respective buildings until 2002 (not only until 1999) can be retraced in detail.

a. Main Building

At the wish of the company, which even today discharges the production of shoe lasts, the existent use of the main building with offices, production and service provision was wished to be retained without major changes. In the interior, where no great damages had occurred, only simple maintenance and restoration jobs were necessary, so that the entire structure including the mounted wall elements did not require any intervention. In the area of the roof, however, large-scale damage was visible due to defective sealing. However, the various shapes of the damages were visible in particular at the steel and glass facades.

As a first major measure, the reconstruction on the roof began in 1985. Here, the roofing was essentially renovated so that the overall flat roof structure could be preserved in its original form. As an addition to the previous situation, an insulation layer was attached on the roof, on which the appropriate liner sheets were in turn laid. The damages in the attic area (bulges) were repaired with the existent substance and restored to the original condition. The attic connection of the roofing

was restored in the existing form. It was possible to completely retain the original appearance with the repairs. Since then, there has been no need for further repair of the roof and the attic.

More problematic was ultimately the repair of the steel and glass elements on the facade system which was innovative at the time of its creation as extensive corrosion damage up to total material loss could be ascertained in particular at the profile joints and behind the fillisters. In the last decades, the glazing demonstrated 20-30 damages annually due to glass breakage, since the cementation of the rigidly clamped facade, the thermally induced deformation and the insufficiently absorbed wind pressure frequently led to shattering of the glass panes. Furthermore, the single folding and sealless wings did not close properly any more and the gear system and metal fittings were severalfold defective. The single glazing and the sealless nature of the rows of windows resulted in high temperature fluctuations and immense heating costs in the rooms in the interior behind the facade. The train line Hannover-Goettingen passed by directly in the Northeast had a likewise strongly impairing effect due to the noise emission by the train traffic. In the argument about the question of repair of defects on these components, the owner of the building for a long time moved within 'the limits of the economically reasonable'. This option to allow the status of protected monument to be lifted which is given in Germany according to the legal regulations of monument protection could be averted thanks to the financial aid of the federal state of Lower Saxony and the Federal Republic of Germany.

From the aspect of monument preservation and care, the repair of the steel and glass elements proved to be specially problematic and involved considerably more expenditure on planning than expected. Whereas one had assumed at the beginning of the investigations that it would be possible to perform the repair of the facade elements while largely preserving the original fabric, it had to be stated after a more accurate visual inspection of the damage pattern that large parts of the iron frame for the facade glazing were so strongly corroded that they could no longer be repaired and were missing. In view of this conclusion, one had to take into consideration the understandable requirement of the owner from the aspect of usage and economy to qualitatively improve the workplaces behind the facade on the one hand and on the other hand to considerably reduce heat losses through the facade. In addition, the following requirements were formulated as binding after comprehensive discussion with all the participants as well as a controversial expert hearing:

1. Steel was to be used once again as material for the framework.
2. A sufficient tolerance should be created maintaining the ways of construction of the two facade building sections for the thermally related stresses – Gropius had already used differing profiles for the extension of the original facade.
3. It was supposed to be recognisable on the inside and outside that two different facade solutions formed the basis of the two construction phases.
4. According to the original, the number, arrangement and functionality of the window wings was to be retained.
5. The glass to be used was supposed to demonstrate the same values in respect of light permeability and reflection – as far as technically producible – as the original single glazing. The use of customary green-coloured glass was ruled out.
6. The painting of the steel profile was to be true to the original in lead glance on red lead.

7. The external anti-glare shield on the facade was to be restricted to the six fields in the first upper floor of the second construction phase, which had already been equipped with slanted awnings since 1925.

All the aforementioned requirements could be fulfilled. The discussion during the expert colloquium in September 1985 finally resulted in a unanimously accepted consensus that additionally envisaged the following: The five glazing fields of the stairwell at the main entrance as well as the fully glazed pillar-less corners in the Southwest and in Southeast with one additionally abutting field were to be repaired as original due to lesser damages. Thus, it was possible to completely retain in these areas several fully glazed three-storey facade fields of the two construction phases. Therewith, beside the entire stairwell area of the second construction phase belonging to the main entrance, the originally complete southern gable of the first construction phase was also preserved in its original form and structure in three fields including an additional field on the east side. The use of the original steel and glass elements in these partial areas, however, resulted in offices being reinstalled only in the facade areas with insulated glazing contrary to the original plans of the owner, whereas secondary uses or infrastructural areas of the Fagus Factory were set up behind the facade elements that had remained as original.

Accordingly six facade fields on the east side of the first construction phase were exchanged, likewise six facade fields on the southern side of the second construction phase (between the first construction phase and the main stairwell). Structural alternatives for the exchange of steel and glass elements such as for instance a second window level corresponding to the box-type window principle in the interior had to be discarded primarily for optical reasons, since it was perceived during a sampling inspection that these starkly changed the appearance on the outside. With the much discussed second window level, it would moreover not have been possible to resolve the problem of damage of the old, too rigid structure and to satisfactorily and permanently eliminate the serious material weaknesses of the original steel.

Architect Jörn Behnsen commissioned with the restoration had carried out extensive detailed measurements of the previous profiles of Gropius and converted these into appropriate custom-made designs with the same external appearance for insulated glass panes. In spite of the deviation in depth, the new shatterproof glass panes were supposed to generate an identical picture that of the original in optical appearance. From the point of view of monument protection, this objective has been achieved with slight restriction: The glass pane surfaces are planar according to industrial production methods. The option of producing slightly uneven glass surfaces with trapped air, as produced around 1910, did not exist at that time. The sometimes offered criticism that the new glass pane surfaces reflect light more intensely than the old ones is not accurate. The reflection effect is attributable to the regular cleaning of the windows. If the row of windows were dirtier as in earlier periods, the reflection effect would also be reduced. Since the reflection problem has been recognised as such even at the preplanning stage of the repair measures, one had extensively compared and sampled various new glasses with the original glass panes, before one of the products was selected for the measure with the result available today.

The complete reconstruction measure for the main building was performed in several stages between 1986 and 1990. In connection with the repair and/or renovation of

the steel and glass elements in the facades, the associated ramps and/or entrance stairs and doors were also treated, but without exchanging the original fabric. The brickwork and the entire jointing were likewise repaired. In the year 1996, the restoration of the entrance area and the main stairwell followed, in that the wall surfaces were restored to their original state, among other things. The lost light switches formerly fitted there could be reconstructed according to a drawing by Walter Gropius and/or Adolf Meyer. Finally, one also improved the black opaque glass sheets embedded in the walls. The basic repair of the main building was therewith completely concluded.

Finally, it can be noted down that the entire building was completely preserved in its remaining original fabric except for the described exchange of the facade elements. Optically, it is identical to the original appearance of the factory. At the same time, it was a part of the conceptual aim of the measure phase in the mid-80's of 20th century that the renovated facade elements should be recognisable only for the expert. For the interested layman, on the other hand, the renovation is as good as imperceptible to this date. The reprocessed elements of the steel and glass facade, which comprise approx. 40 % of the original fabric, are sufficient evidence of the original structure, the lifetime of which will unfortunately be limited where thermal and hygric forces have a fabric destroying effect. On the part of the monument protection authorities of the federal state of Lower Saxony and on the part of the owner, every effort is being made meanwhile to guarantee this lifetime as long as possible.

b. Work Hall

The work hall that was built in two phases is encompassed by the main building in the south and the east in L-shape. Directly in the south, it adjoins the drying building. Since the expansion performed in 1914, the work hall exists even today in nearly unchanged condition in its original form. The original wooden roof truss structure rests on the original cast iron cylindrical columns. Even the steel and glass facade oriented towards the Hannoversche Straße was completely preserved in respect of building fabric. Rust and mechanical damages could be repaired. The old single glazing could be carefully inserted and/or extended once again after the treatment of the iron profiles. Merely in the axis that bordered on the administrative building, a steel and glass element had to be renovated after the old one had no longer existed since 1982.

In parts, the shed roof structures had to be renovated, since considerable damage in the area of the brick-tiled roof surface and of the shed itself had occurred. The replaced shed roof elements as well as the new roof covering, however, correspond to the previous state in terms of appearance. The incident solar radiation that was perceived as too intense due to the southwest orientation of the sheds was reduced by means of changed glazing, which generates – since then – diffused irradiation. As a final measure, another brickwork and jointing repair in the area of parapet elements was performed in 1994. Even here, there were no large-scale exchange measures, but merely repair and small additions.

Altogether, the original building fabric was largely preserved even in the area of the work hall, in that changes vis-à-vis the original are to be evidenced merely in the case of the sheds. Even here, another reason for the change, beside the irreparable

damage, was the improvement of the working situation of the workers in this large hall.

c. Chimney

The striking factory chimney with the Fagus logo on the water tank was built in 1915 in connection with the boiler house. The originally approx. 50 metres high chimney had been shortened in the post-war years in connection with the installation of a new heating plant. In the context of the repair of the chimney effected in 1987/88, the original height was once again erected approximately, so that the historical appearance can be regarded as restored today. The Fagus logo on the water tank exists as advertising vehicle only since 1975.

d. Machine and Boiler House

The today's machine and boiler house was built in the course of plant expansion between 1914 and 1916. The older and smaller machine house which already existed at the same place with a traction engine was initially modified by the new building, but was later demolished. Even in this component, Gropius had remained true to his form language, which he had used in the main building and in the work hall facade, a steel and glass structure framed in yellow clinker brick base and a similar attic. To begin with, a steam engine of the company Sulzer from Ludwigshafen, the steam boiler of which was fired with coal, was initially integrated in the machine house. Long before the general overhaul, the steam engine of the building had been replaced by an oil firing system.

The reconstruction took place between 1994 and 1997. At the same time, the building was set up as canteen and recreation room for the factory workers and employees, which today offers the possibility of hosting even larger visitor groups. In the process, the meanwhile aged oil firing system with the large boilers was removed to begin with. The reconstruction of the external brickwork followed as well as the restoration of the still existent original black and white tiled flooring with additions made at the places where tiles were missing. With the greatest care, the steel and glass facade was repaired while preserving the single glazing. Defective glass panes were exchanged. Subsequently, the external area with the entrance gate and the staircase with the simple railings were restored. The picture of an original machine house can be retraced especially well even today due to the still existent crane runway.

The conceptual basic thought in the handling of the machine and boiler house was to preserve the building fabric as far as possible, even though parts of technical equipment, which obstructed sensible use, had to be removed. From the point of view of monument protection, the removed heating systems could not, however, claim any recognition as monument. At the same time, it may be assumed that another solution would have been attempted if the original steam engine had still been present in the building.

e. Chip and Coal Bunker

The massively constructed chip and coal bunker that was built way back in 1911 and extended in 1923/24 with yellow clinker brick walls and projecting reinforced concrete flat roofs was built as a free-standing structure on the railway system with its own siding track. As a preliminary reconstruction measure, repair of concrete on the roof and its supports was performed in 1997. Otherwise, the building remained completely preserved in its original version. It is today used as warehouse as well as for workshop purposes and is intended to be reconstructed in 2011-12 while preserving all the original components.

f. Rail-Car Scales

Neighbouring the chip and coal bunker stands the small building of the track scales, likewise built as a free-standing massive structure in the plant-typical yellow fused clinker brick, open towards the track side by means of steel and glass window structure and closed by means of a flat roof. The building constructed in 1921 was out of operation way back at the beginning of the large-scale repair jobs in the mid-80's. Nonetheless, it underwent a repair of the brickwork, of the steel and glass window and of the roof with fabric-preserving improvements in the years 1991/92 and is thus preserved in its original state.

g. Cutting Die Department and Blacksmith's Shop

Way back in the original conception of the plant by the Gropius predecessor Eduard Werner, the construction of the blacksmith's shop and the cutting die department for leather production was planned in the south of the main building. Gropius had undertaken a reworking of the facades with yellow fused clinker bricks from 1911 onwards, without, however, being able to eliminate the already laid down, relatively strict elements which are still arrested in Classicism such as pilaster structures, drilling windows and the projecting cornices. He, however, adapted the iron lattice windows to be used to the rest of the plant in the known form. The chimney of a height of approximately 20 metres in the southeast corner of the double-gabled building which is out-of-operation, but nonetheless repaired and to this date preserved is part of the former blacksmith's shop.

With the task of production of cutting dies in the year 1974, the building was reused for exhibition area and conference rooms. The necessary rebuilding in the interior meanwhile take into consideration the original floor plan concept and the structural elements of the original room layout. A roof reconstruction became necessary, which was performed according to the measures of the work hall. The old vapour barrier of the roof was removed; intact bricks were secured and reused. Material such as for instance rafters, stringers or the like was only exchanged if there was irreparable damage. Otherwise, repairs appropriate to material were performed. In addition to the existing structure, insulation was integrated. The roof cover was executed as before in pantiles while making use of the secured bricks. The likewise reusable roof light profiles were dismantled, blasted, newly painted and reused. According to the procedure in the work hall, insulation glazing made of wired glass and a capillary plate disposed in between were used for the glazing, which directs diffuse light into

the rooms. As in the other factory buildings, the massive brickwork of blacksmith's shop and free-standing chimney underwent a jointing improvement.

The structural handling was in line with the strict criteria of monument conservation which strives for fabric preservation as far as possible and opts for a fabric change only in case of destroyed material. In the process, the changes vis-à-vis the original are recognisable only in relation to its changed use. In particular, the outer appearance has remained unchanged in its original form.

h. Gatekeeper's House with Factory Gate and Wall

The gatekeeper's house with the factory gate and the boundary wall adjoining Hannoversche Straße, which exists to this date, was built in 1925 as the last building by Gropius on the premises of the Fagus Factory. Both the factory-typical material selection of yellow clinker brick as well as the modern design language of the architect characterises the entrance. The roof overhang was originally borne by a vertical shear wall made of concrete, which was presumably replaced shortly after 1950 by the present-day support shafts such that the factory road could be surveyed from the gatekeeper's lodge. In the course of the overall measure, repair work had to be performed on the gatekeeper's house and the boundary wall; thus, for instance, the reconstruction of the porous concrete roof as well as rust removal from the steel and glass window elements and from the door. The wall joints were improved according to the rest of the building. Same as in the vestibule of the staircase, a boxlight reconstructed according to the Bauhaus design was installed in the gatekeeper's house. All in all, the original appearance of the access road is completely preserved except for the exchange of the shear wall with shafts as load-bearing elements of the concrete roof that took place after the war.

i. Drying Building

The construction of drying house, which is directly upstream of the work hall, begun in 1911 and was finished in 1913. It served the purpose of mechanical drying of the wooden work pieces for shoe last production which were already pre-dried in the warehouse. Though the building with its high drying chambers had one storey, it has the effect of a double-storeyed building on the outside due to accordingly distributed windows, which are attributable to the predecessor Gropius. The drying house is covered with a flat roof, out of which the exhaust shafts of the drying chambers projected. With the changeover to plastic production, parts of the drying chambers were removed already in 1974.

In connection with the large-scale factory reconstruction, repairs were also performed on the drying house in 1997, in particular on the roof and the facades, in which the roof sealing had to be completely renovated and furnished with an insulating layer. The brick-work covering made of zinc sheet was restored as original and does not allow any change in the appearance to be recognised on the outside. The rain drainage system, the trapping boxes and the rainwater pipes were dealt with in the same way. For optical reasons, a few of the exhaust shafts on the roof were also preserved, although their function was redundant now. The reconstruction of the brickwork surfaces and of the steel windows was carried out as a repair measure

according to the previously executed work on the rest of the buildings. In 2007, an independent wood structure was added into the interior space of a large volume without interfering into the historical building fabric, thus setting up additional workplaces for engineers. In addition, the vertical windows to the narrow courtyard opposite the warehouse wall were installed for a better illumination.

Insofar it can be concluded even for the former drying house that the external appearance as well as the internal building fabric remained largely preserved by the measures.

k. Sawmill

The sawmill building behind the large warehouse represents the northwestern conclusion of the factory and belongs in core to the buildings of the construction phase of 1911. In the following years, it was changed and expanded several times, for the first time in 1921 under Gropius, in 1938 by Ernst Neufert and later once again around 1950 by the internal building department of the factory. The single-storey building demonstrates on the outside the design language of the remaining factory, defined by the use of yellow clinker brick and the iron lattice windows. Closed by three very flatly inclined, hipped roofs in parallel, the building has the effect of a flat roof closure seen from the level of the pedestrian.

After the building had lost its original function already in 1960's due to the changeover from wooden to plastic processing in shoe last production, it was largely destroyed by a fire in the year 1985 except for the external brickwork. With the reconstruction in the original appearance, it was reused from 1991 onwards as an engineer's centre. Out of the three halls originally lying next to each other, a large room was created. The optically generated three-naves design, however, remained retraceable both on the outside as well as on the inside. Naturally, all the windows were destroyed in the fire, so that contemporary replacement was used with the reuse.

l. Warehouse

The warehouse, built in two construction phases in 1911 and 1914, can be traced back in its conception to the architect Eduard Werner, the predecessor of Walter Gropius. The basement and ground floor with bricked external walls form the base for the rising half-timbered framework structure. All the wooden beam ceilings are designed with perforated floor in the bearing areas. Three upper floors in traditional lattice framework structure with bricked up lattice framework external walls and a four-cm-thick so-called "washed-out concrete plaster layer" applied in front form the core of this mighty factory building. The 4th upper floor is optically slightly recessed over the 3rd upper floor by means of a wooden fascia at the ceiling level and appears to be a fitted and stacked floor clad in sandstone plates. The closure is formed by the ventilation louvers recessed on all sides and running across the entire length of the building with the open side fronts which are likewise constructed in half-timbered framework. The warehouse as a striking building that significantly co-determines the complete ensemble was repaired as the last object of the large-scale reconstruction measure towards the end of the 90's.

No maintenance and preservation work was undertaken before the measure on the building which stood empty for more than three decades. The ageing of the building progressed without any control. Building damages as well as problems in the static safety increasingly set in. The damaged roof sealing, the missing rainwater drainage as well as the facade damage ultimately burdened the wooden structure to a high degree. Frost in the damp walls caused cracks and shell-like flaking of the facade plaster. Penetrating water created mouldiness and dry rot in the structural wood as well as animal infestation in the entire structure.

Since 1995, it began to be deliberated for the first time to adopt the warehouse as external Expo project "Technology Centre" in the world exhibition concept of the year 2000 in Hannover. With a measurement that made allowances for deformation and an initial cost estimate, the basis for the reconstruction was formed in 1995/96. Further appraisal of the warehouse with mapping of the damage followed up to 1997. From the aspect of monument conservation, it was likewise the objective in the case of the warehouse to preserve as far as possible of the historical building fabric and its appearance on the inside and outside, although it was already apparent that a great part of the external half-timbered framework structure and of the plaster could not be maintained for reasons of too great damage – overall approx. 75 % of the external structure. Finally, it was the conviction that the preservation of the inner half-timbered structure and the perforated floors as the core fabric of the building appeared to be indeed 100 % possible in spite of the static problems that had occurred. Thus, a preservation of the fabric in the interior of the house and a facade design as original was agreed and performed between 1998 and 2002. In view of the planned permanent reuse as an exhibition building, the facade structure was provided with an insulated face shell consisting of plywood panels under the renovated plaster layer. On the inside, the visible half-timbered framework, which was not filled with bricks anymore for weight reasons, had the same form as the previous structure. The existent, centrally located staircase could be likewise repaired. An additional staircase in reinforced concrete on the inside was added for a static securing of the building and in view of the requirement of building authorities and of fire protection.

In the course of the unavoidable static stabilisation of the inner half-timbered framework and the facades, cross-bracings made of visible steel elements were built on the lower three floors. The force-fitted connection of the ceiling beams at the half-timbered framework nodal connections was visibly executed in steel. With respect to the design, there was consensus among planners, structural designers, monument preservationists and owners that the static protection should be left clearly visible in the interior as structural addition and integrate it in the factory exhibition after the avoidance of the danger of collapse, whereas the external appearance was intended to be kept as close as possible to the original. From the outside, only the new windows, which replace the original ventilation louvers in identical size, give away that the warehouse of the Fagus Factory had undergone a reconstruction and/or a reuse.

All in all, it may be noted down that the preservation of the wooden warehouse in the Fagus Factory could only succeed due to the impulse from Expo 2000. On the basis of the Expo project, other exhibitions on the topics "Walter Gropius as Architect of the Fagus Factory", "Bauhaus Architecture", "Shoe Lasts and Fashion" as well as

"Wood and Technology" were held up to 2005, which helped to bring a sizeable flow of visitors to the Fagus Factory and the city of Alfeld every year.

8. Could there be development pressures in the buffer zone and in the wider surroundings of the factory which could impact on the landscape?

With the existent legal instruments of building and monument preservation law of the federal state of Lower Saxony (Denkmalschutzgesetz and Bauordnung (Law on Monument Protection and Building Code)) as well as of planning law of the Federal Republic of Germany (Baugesetzbuch (Town and Country Planning Code)) all the developments that could exert pressure on the Fagus Factory in Alfeld can be controlled (s. chapter 5D and 5E IV-V). The following precise detailed information in respect of the safeguards related to planning law for the protection of the Fagus Factory can be amended:

The legally effective land use plan of the city of Alfeld from 1976 represents the plot of land and the extended environs of the Fagus Factory as commercial building area so that the future commercial development of this municipal area is secured. The development plan worked out from the land use plan of 2010 (No. 42.2, "Neue Wiese/Limmerburg"), which adjoins the nominated world heritage site in the northwest, has the objective of permitting the use of commercial building areas "for not significantly polluting commercial business of production, handicraft and service provision".

Both the area of the development plan as well as all the remaining areas in optical range are subject to § 34 of the Baugesetzbuch (Town and Country Planning Code) according to which the permissibility of possible neighbouring development in the near and extended environs has to be regularised. Each additional development must merge with the uniqueness of the existent surrounding. At the same time, the image of the place, which is characterised in particular by the significance of the Fagus Factory, must not be impaired. The requirements of healthy living and working conditions must be safeguarded.

Based on these planning law related commitments, it will always be possible to scale down planned buildings that are too bulky or too high and could impair the Fagus Factory. Taking the Fagus Factory into consideration is a planning goal to be observed and implemented for directly neighbouring buildings in the future. To this extent, an inappropriate optical competition with the Fagus Factory can be ruled out with the greatest degree of certainty. With these legal instruments, the conditions are created for all kinds of possibilities for additions in the close and extended environs of the Fagus Factory which are desirable from the point of view of urban planning.

As a basis for further urban land-use planning in the future, the city of Alfeld had developed a landscape plan for the extended environs of the Fagus Factory beyond the borders of the settlement in the year 1996. Optical disturbances from the southwestern hill side can be controlled with the help of the building and planning law in such a way that there are no negative effects on the Fagus Factory and the old town of Alfeld. In particular, the view relation between the Wahrberg and the Fagus

Factory can be regulated in combination of §§ 34 and 35 of the Baugesetzbuch (Town and Country Planning Code) and the objectives of the landscape plan.

The following has to be added with respect to other regionally relevant planning measures that could affect the Fagus Factory: At present, a regional planning procedure for setting up a 380-KV line between the substation Wahle in Lower Saxony and the substation Mecklar in Hessen is being conducted. Within the framework of the application conference, the responsible power supply company has been informed that a nomination has been made for inclusion of the Alfeld Fagus Factory in the World Heritage List of the UNESCO on the part of the federal state of Lower Saxony and/or the Federal Republic of Germany in the year 2009. An electric line routing in optical range of the Fagus Factory is therewith forbidden. Alternative line routings are meanwhile existent.

Other regionally relevant planning measures that could affect the Fagus Factory in any way are not known. In particular for wind energy plants, neither has investor interest been registered nor have planning procedures been initiated. With the additional instrument of environmental compatibility checks, the Fagus Factory could be likewise protected effectively with the help of the described legal instruments.

The following explanations may be given for the buffer zone: To the northwest the latch is closed with sufficient distance and adequate height on the Gropius buildings due to the mechanical engineering hall of the company Fagus-GreCon (nowadays GreCon-Dimter, s. application chapter 2.B, p. 33) built in 1974 as an expansion measure, which supports the design qualities of the cultural monument and makes an extended buffer zone in this direction superfluous. Since the plots in southwestern direction between the Hannoversche Straße and the railway line are narrower, the buffer zone in this direction is longer in order to have a strong instrument for height limitation of possible new buildings. On the city outskirts towards the southwest and inwards of the city to the northeast, the binding nature of building, planning and monument protection law apply without limitations (s. also application chapter 5.B/7.B). To this extent, optical obstructions for the Fagus Factory from these sides are not to be feared.

With the selected designation of the buffer zone, a consensus between the World Heritage applicants and the municipal planning administration is achieved, which makes the urban development in the environment of the Fagus Factory controllable under the economic conditions to be expected in the medium term. This consensus comes up with both, the strict requirements of monument protection as well as the necessary planning perspectives of the city of Alfeld.

Niedersächsisches Landesamt für Denkmalpflege
Bau- und Kunstdenkmalpflege

Hannover, den 16. November 2010

1. The exact role exerted by the Fagus Factory on the emergence of the Bauhaus.

Die Ausgangspunkte der modernen Architektur im 20. Jahrhundert manifestieren sich in drei Stätten, die Deutschland zur Aufnahme in die Welterbeliste der UNESCO angemeldet hat: das Alfelder Fagus-Werk als einer innovativen Stätte von Arbeit und Produktion, die Berliner Siedlungen als Stätten des neuen Wohnens (Welterbeliste 2008) und das Dessauer Bauhaus als einem Ort der Vermittlung, des Lernens und der Erziehung zu einem neuen Menschenbild (Welterbeliste 2003). Mit dieser dreifachen Anmeldung wird der Bedeutung des *Neuen Bauens* Rechnung getragen, das zwischen den zwei Weltkriegen zunächst punktuell, aber beständig zunehmend, das Bild der gebauten Umwelt prägte. Nach 1945 breitete sich diese Stilrichtung mit ihren identitätsstiftenden Eigenschaften in einem weiteren Entwicklungsschritt flächendeckend und global aus.

Aus der gegenüber dem Weimarer/Dessauer Bauhaus und den Berliner Siedlungen späteren Nominierung des Fagus-Werkes für die Welterbeliste im Jahr 2010 darf nicht abgeleitet werden, diesen Schlüsselbau der Moderne lediglich als noch nicht ausgereiften Vorläufer für das Dessauer Bauhaus abzuwerten oder ihn gar unter die verbreiteten Vorboten des modernen Bauens aus der Reformbewegung um oder nach 1900 einzureihen. Seit 1984 ist das Fagus-Werk aufgrund seiner überragenden architekturgeschichtlichen Bedeutung für die Anmeldeliste der Bundesrepublik Deutschland benannt worden, deren Stätten sich für die zukünftige Nominierung zur Aufnahme in die Welterbeliste zu bewerben hatten. Das Bauhausgebäude in Dessau zu nominieren, geht auf die ehemalige Vorschlagsliste der Deutschen Demokratischen Republik vor 1989 zurück. Beide Listen wurden nach der Wende von 1989 aufeinander abgestimmt, sodass daraus eine Tentativliste für den vereinigten Staat Deutschland entstand, in der alle drei Stätten der Moderne – Fagus-Werk, Bauhaus und Berliner Siedlungen – begründet enthalten blieben.

In zahlreichen Schriften der frühen Protagonisten des *Neuen Bauens* sind Bauten von Industrie, Produktion und Arbeit als die chancenreichste Bauaufgabe beschrieben, in der sich der gesellschaftliche Wandel und der Gestaltungswille der innovativen Architekten ausdrücken konnten. Die Wohnungsnot und die katastrophalen sozialen Verhältnisse der ersten Jahre in der Weimarer Republik machten aber auch den Siedlungsbau zu einem Experimentierfeld der modernen Architektur. Dazu hat das Bauhaus als erste und berühmt gewordene Lehranstalt eine junge Architekten- und Künstlergeneration ausgebildet, die dieser schöpferischen und zukunftsweisenden Tätigkeit konsequent nachging und die als Vorbild und Vermittler des neuen Stils weltweit Anerkennung fand. Wenn aus Deutschland sowohl eine exemplarische Stätte der Arbeit, als auch die bis heute aufsehenerregenden Stätten des Wohnens (in den Berliner Siedlungen) sowie ein bahnbrechender Ort der Ausbildung (in Weimar und danach in Dessau) für die Liste des Welterbes der UNESCO vorgeschlagen wurden, so ist dieses Dreigestirn der

Kulturschöpfungen für das Verständnis des 20. Jahrhunderts von eminenter Bedeutung.

Mehr als ein Jahrzehnt vor dem Dessauer Bauhausensemble und zeitlich getrennt durch den Ersten Weltkrieg muss das Fagus-Werk indessen als Ausgangspunkt und Beginn der modernen Bewegung betrachtet werden. Schon Adolf Behne bezeichnete das Fagus-Werk aus architektonischer und sozialer Sicht als „die modernste, die vorbildliche deutsche Fabrik vor dem Kriege“ (Der moderne Zweckbau, 1926, S. 33). Einer der Wortführer der Architekturgeschichtsschreibung für das letzte Jahrhundert, Winfried Nerdinger, hat sein Urteil 1985 folgendermaßen ausgedrückt: „Der Geniestreich des jungen Gropius übertrifft an architektonischer Kühnheit und künstlerischer Innovation nahezu alle Bauten vor dem Ersten Weltkrieg und ist in seiner Bedeutung für die gesamte Architektur des 20. Jahrhunderts gar nicht hoch genug einzuschätzen“ (1985, S. 36, s. Antrag S. 39). Die in zahllosen Publikationen ähnlich lautenden Einschätzungen des Fagus-Werkes erlauben es, das Kriterium II der Welterberichtlinien, nach dem die nominierte Anlage „einen bedeutenden Wandel menschlicher Werte … in Bezug auf die Entwicklung der Architektur ausdrückt“, einschränkungslos als erfüllt anzusehen.

Will man aus fachlicher Sicht das Verhältnis der beiden Bauensembles, Fagus-Werk und Dessauer Bauhaus, zueinander definieren, so spielen nicht nur die architektonischen Formen und die Gestaltung eine Rolle, sondern vor allem auch der Zweck und die Funktion der beiden Einrichtungen. In diesem Zusammenhang muss man feststellen, dass das Fagus-Werk gestalterisch ein Ausgangspunkt, das Bauhausgebäude ein Höhepunkt des *Neuen Bauens* in der Architekturentwicklung des 20. Jahrhunderts ist. Während jedoch die Bedeutung des Fagus-Werkes als Industrie- und Bürobau in seiner Impulskraft für die Ausprägung des internationalen Stils der modernen Architektur liegt, verbindet man mit dem Bauhaus die Funktion als Schule, als Ausbildungsstätte, als Akademie für den umfassenden Künstler der klassischen Moderne. Am Bauhaus trafen Architekten, Maler, Bildhauer, Fotografen und Kunsthandwerker aufeinander. Sie verknüpften die Baukunst mit den bildenden Künsten. Zugleich experimentierten sie mit den darstellenden Künsten aus Theater, Tanz und Musik.

Wenn beide Bauensembles, das Fagus-Werk sowie das Dessauer Bauhaus, auch die Handschrift desselben Architekten tragen, so kommt ihnen aus gesamtheitlicher Sicht eine epochale Stellung zu, für die das Kriterium I der Welterberichtlinien, „Meisterwerke der menschlichen Schöpferkraft“ zu sein, in gleicher Weise zutrifft. Immerhin hatte Walter Gropius als einer der ersten Architekten mit dem Fagus-Werk einen Industriebau zum Kunstwerk erhoben. Nahm der junge und enthusiastische Architekt Gropius einerseits von seinem Bauherrn Benscheidt die Idee auf, die Baukörper nach der in Amerika entwickelten Rationalität der Betriebsabläufe zu ordnen, so gelang es ihm andererseits in hervorragender Weise, den Baukörpern und Räumen durch klassische Proportionen, menschlich-wohltuende Atmosphäre und Lichtverhältnisse künstlerische Schönheit auf höchstem Niveau zu verleihen.

Auch das hatten frühe Kritiker wie Adolf Behne bereits als außergewöhnliche Eigenschaften des Fagus-Werkes erkannt (Der moderne Zweckbau, a. a. O.). Indem Gropius den bis dahin meist beengten und ohne höhere Gestaltungsansprüche entstandenen, mehr oder weniger hässlich geratenen Industriekasernen diese Gestaltungsprinzipien entgegenstellte, steuerte er der Entfremdung des Einzelnen in

der Industriearbeit entgegen. Den Fabrikarbeitern wie den Angestellten eröffneten er und sein damals kongenialer Auftraggeber damit völlig neuartige Identifikationsmöglichkeiten mit den in mechanisch-maschineller Arbeit herzustellenden Massenprodukten. Bis heute wird das Fagus-Werk nachweislich in dieser Art und Weise wahrgenommen. Die Produktion sollte nicht nur dem Unternehmer Gewinn bringen. Die Arbeitsumgebung sollte auch Arbeitern und Angestellten mit ihren menschlichen Dimensionen, mit Licht und geordneten Arbeitsabläufen vorteilhaft erscheinen.

Es steht außer Frage, dass die Ausnahmeerscheinung Fagus-Werk in ihrer Entstehungszeit nicht isoliert betrachtet werden kann, sondern ein Teil der vielen Reformbestrebungen fortschrittlicher Architekten sowohl in Deutschland als beispielsweise auch in Tschechien, Österreich und den Niederlanden ist. Zu den Reformern gehören vor allem auch die mehr konstruktiv als gestalterisch tätigen Ingenieure seit der zweiten Hälfte des 19. Jahrhunderts, die innovative Zweckbauten aus Stahl und Glas, d. h. Industrie-, Eisenbahn- und Ausstellungshallen sowie immer kühnere Brücken- und Turmbauwerke konstruierten. Den Reformern zuzuordnen sind die ersten amerikanischen Hochhausarchitekten in Chicago und New York. In gleicher Weise darf man die beachtlichen und vielseitigen Experimente mit Eisenbeton seit den 80er-Jahren des 19. Jahrhunderts zu den Reformbestrebungen zählen, die sich sowohl in Amerika als auch in Europa verschiedener Bauaufgaben bemächtigten und beispielsweise in einer konstruktiven Höchstleistung, der 1911 bis 1913 errichteten Breslauer Jahrhunderthalle von Max Berg (Welterbeliste 2006) gipfelten. Ein künstlerisches Innovationspotential wie im Fagus-Werk fehlt jedoch der Jahrhunderthalle, die sich deutlich auf das Formenrepertoire des wiederbelebten Klassizismus bezieht.

Mehr mit gestalterischen und weniger mit konstruktiven Innovationen beschäftigten sich Architekten des niederländischen *Stijl* sowie des *Deutschen Werkbunds*. Eine Ausnahmeerscheinung außerhalb dieser beiden Architekten- und Künstlergruppen war der Wiener Adolf Loos, der den radikalen Verzicht auf ornamentales Beiwerk postulierte und zugleich die einfachen geometrischen Baukörper als tektonische Grundfiguren in seinen Bauten herausarbeitete. Eine weitere Ausnahmeerscheinung erschien in der Person Le Corbusiers, der – vier Jahre jünger als Gropius – in Frankreich mit einer außergewöhnlichen und ganz anders gearteten Handschrift als in Deutschland und den Niederlanden Städtebauideen und den Wohnungsbau nach dem Ersten Weltkrieg zu formen begann.

Im Verhältnis zu diesen parallelen Entwicklungserscheinungen der frühen reformorientierten Bauschöpfungen am Anfang des 20. Jahrhunderts verkörpert das Fagus-Werk von Walter Gropius zwischen 1910 und 1914 zum allerersten Mal eine konsequente Synthese der bis dahin entwickelten modernen Gestaltungsideen, eine Synthese, die wie keine andere mit den traditionellen Gestaltungsmotiven im Bauwesen zu dieser Zeit bricht. Als solche nimmt das Fagus-Werk anerkanntermaßen eine plötzlich auftretende Sonderstellung im gesamten Baugeschehen ein und begründet damit eine tief greifende und weitreichende Veränderung in der Architekturgeschichte. Ohne verbliebene Reminiszenzen an traditionelle Bauformen begründet es erstmals den Wandel von Historismus, Neoklassizismus und Jugendstil zur Moderne.

Alle wesentlichen Elemente des *Neuen Bauens* tauchen am Fagus-Werk mit höchstem künstlerischem Anspruch und unter Anwendung klassischer Proportionsprinzipien auf. Alle wesentlichen Stilelemente des Klassizismus und erst recht des Jugendstils werden abgeschüttelt. Das Bauensemble setzt sich aus kubischen Baukörpern zusammen, die, wie oben beschrieben, nach betrieblichen Abläufen aneinandergereiht und in die Höhe gestapelt sind. Das Konzept verzichtet konsequent auf herkömmliche Sockelbereiche und auf traditionelle, mit Ziegeln gedeckte Dachformen. Die bis dahin im Industriebau üblichen, besonders die an den der Öffentlichkeit zugewandten Fassaden angebrachten, plastischen Ornamente fehlen vollständig. Profile, Beschläge, Geländer und Leuchtkörper werden auf geometrische Grundformen reduziert. Die ‚Vorhangelemente' in den Fassaden aus Eisenprofilen und Glas treten vor die konstruktiven Tragelemente und bestimmen, sogar an den markanten und deshalb berühmt gewordenen Ecken, das gewichtlos wirkende Fassadenrelief. Waagerecht gelagerte Fensterbänder ziehen sich durch die Fassaden des Hallen- und des Maschinenhaustrakts. Das vor dem Ersten Weltkrieg beherrschende Gestaltungsprinzip einer Lasten abtragenden Gebäudetektonik ist vollständig preisgegeben, sodass Decken und Dächer in vielen Ansichten zu schweben scheinen. Dieses heutzutage durch die Sehgewohnheit fast als selbstverständlich angesehene Gestaltungsprinzip muss seinerzeit ebenso revolutionär gewirkt haben wie die Malerei eines Malevitch oder Mondrian, die sich von allen gegenständlichen und szenischen Motiven vollständig abgewandt hatten.

Die vom jungen Architekten Gropius in einem „Geniestreich" zusammengesetzten Gestaltungselemente tauchen im Dessauer Bauhausgebäude in einem durch zunehmende Erfahrung weiterentwickelten Formenkanon, aber mit neuartigen, vorher nie dagewesenen Funktionsdefinitionen wieder auf. Die Prägung durch ein und dieselbe Architektenhandschrift tut der überragenden Qualität beider Bauensembles jedoch keinen Abbruch. Innerhalb des Dreigestirns aus Wohnen, Arbeiten und Bildung kommt Walter Gropius im Wettbewerb der Innovationen ein zweites Mal ein höchster Rang bei der Entstehung der Moderne zu. Das mögen gerade die Unterschiede zwischen Fagus-Werk und Bauhausgebäude beleuchten. Sie drücken sich in den jeweils vorhandenen konzeptionellen Stärken aus.

Während das Fagus-Werk Betriebs- und Produktionsabläufe in unterschiedlichen Baukörpern in Reihe setzt, sind im Bauhaus die Funktionen von Werkstattbau, Schulbau und Atelierbau wie in einem Dreistrahl organisch aufeinander ausgerichtet. Schul- und Werkstattbau sind über die Straße mithilfe einer Brücke durch den Verwaltungstrakt und die darüber liegende Architekturabteilung verbunden. Zwischen Atelier- und Werkstattbau ist die Aula eingefügt. Auffällig dringen die Verbindungsfunktionen baulich in die Hauptfunktionsbereiche ein. Diese haben gestalterisch jeweils eigene, in ihrer Zeit allerdings spektakuläre Charakterzüge: der Schulbau wird zum Blickfang mit den horizontalen Fensterbändern und den ‚schwebenden' Geschossdecken, der Atelier- und Wohnbau richtet sich demgegenüber turmartig auf mit den wie als Klappen auskragenden Balkonscheiben, der Werkstattbau schließlich wird mit der überwältigenden Vorhangverglasung nobilitiert. Radikal wendet Gropius eine neue Formensprache für die traditionell bekannte Bauaufgabe einer Bauschule an, wie Huse es 1975 treffend beschrieb (*Neues Bauen* 1918-1933, S. 57 f): „In der Erscheinung des Gesamtkomplexes dominieren … Bauformen aus dem Bereich von Industrie und Verwaltung, nicht – wie oft bei früheren Kunstschulen – solche aus dem Bereich der Tempel, Paläste und Schlösser."

Es ist unbestritten, dass Gropius in der Bauhausarchitektur das Fagus-Werk in Teilen zitiert – nicht nur in einzelnen weiterentwickelten architektonischen Gestaltungselementen wie der Vorhangfassade, sondern vor allem auch im sozialen Anspruch, in „der Würde der gemeinsamen Idee“, die Lernende und Lehrende ebenso wie zuvor Arbeitnehmer und Arbeitgeber miteinander verbindet (Gropius, Industrie-Bau, zit. nach Huse, S. 121). Gestalterisch und konzeptionell ist das Fagus-Werk jedoch der Ursprung, die Wurzel einer epochalen Innovation, zeitlich markiert am Beginn des zweiten Jahrzehnts im 20. Jahrhundert. Erstmals manifestiert sich der internationale Stil des *Neuen Bauens* im Fagus-Werk und prägt damit ein ganzes Jahrhundert. Kein anderes Bauwerk der Welt kann zur gleichen Entstehungszeit ein dem Fagus-Werk vergleichbares Innovationspotential aufweisen.

2. Comparisons with other sites already inscribed on the World Heritage List and related to the emergence of 20th Century modern architecture.

Acht bereits in der Liste des Weltkulturerbes enthaltene Welterbestätten, die mit der Entwicklung der modernen Architektur in Zusammenhang stehen, können mit den im Antragstext dargestellten, für die moderne Architektur wegweisenden und universell bedeutenden Merkmalen des Fagus-Werkes verglichen und in Beziehung gesetzt werden. Da die ausgewählten Welterbestätten ein sehr heterogenes Spektrum der Architektur der Moderne umfassen, ist es nicht in jedem Fall möglich, eine quasi genetische Verbindung zum Fagus-Werk herzustellen. Einige der Objekte sind wesentlich später als das Fagus-Werk entstanden und tragen die vom Fagus-Werk ausgegangenen Impulse bereits in mehrfach vermittelter und weiterinterpretierter Form in sich. Bei anderen Objekten ist wegen ihres typologischen Charakters oder regionaler Besonderheiten ein Bezug zum Fagus-Werk nur durch die Modernität der Entwurfshaltung herzustellen, die, am Fagus-Werk erstmals sichtbar geworden, ein großes Variationspotential architektonischer Formgebung beinhaltet.

Die auf der Tentativliste der UNESCO enthaltenen Weltkulturerbeanwärter aus dem Bereich der architektonischen Moderne sind Teil der international vergleichenden Darstellung in Abschnitt 3 dieser Additional Informations.

a. Jahrhunderthalle in Breslau, Polen, 1911-1913 von Max Berg (Abb. 1)

Von den bereits in der Welterbeliste der UNESCO enthaltenen Bauten, welche die moderne Architektur des 20. Jahrhunderts reflektieren, ist die von Max Berg in Breslau errichtete Jahrhunderthalle ein herausragendes Beispiel. Sie ist – praktisch zeitgleich mit dem Fagus-Werk – 1911 bis 1913 entstanden und markiert einen wichtigen Meilenstein in der Entwicklung des Ingenieurbaus, besonders im Hinblick auf den Einsatz von Stahlbeton und die damit verbundene Möglichkeit, große Spannweiten zu erreichen. Mit ihrem Durchmesser von 65 Metern und einer Höhe von 42 Metern war sie zur Bauzeit die größte Kuppel ihrer Art und gilt deswegen als Pionierleistung des Stahlbetonbaues und als Meilenstein der modernen Architektur. Durch ihre nüchterne Monumentalität, die Abwendung vom Formenreichtum des Historismus und die offene Präsentation des Konstruktionssystems im Innern werden

die typischen Merkmale des Funktionalismus und eine selbstbewusste Modernität realisiert. Die Gliederung und Schichtung der gewaltigen Baumassen werden jedoch im Gegensatz zum Hauptbau des Fagus-Werkes mit dem eher konservativen Gestaltungsrepertoire des Neoklassizismus erreicht: Die gleichmäßige Reihung von zu Gruppen zusammengefassten Fensteröffnungen und besonders die von kannelierten Säulen getragene Eingangshalle lässt an Vorbilder wie das römische Pantheon oder die Hagia Sophia in Konstantinopel denken. Die internationale architekturhistorische Bedeutung der Jahrhunderthalle in Breslau liegt in der zukunftsweisenden Verwendung modernster Konstruktionstechnik für eine in jener Zeit neu entstehende Bauaufgabe: der Errichtung einer multifunktionalen Versammlungshalle für die breite Öffentlichkeit mit mehr als 6000 Sitzplätzen.

b. Das Bauhaus und seine Stätten in Weimar und Dessau, Deutschland, 1919-1933 von Walter Gropius, Wassily Kandinsky, László Moholy-Nagy, Lyonel Feininger, Paul Klee u. a. (Abb. 2)

Von den in der Liste des Weltkulturerbes enthaltenen Bauhaus-Stätten sind als Repräsentanten des *Modernen Bauens* das Haus am Horn in Weimar von 1923, das Bauhaus-Hauptgebäude in Dessau von 1925/26 sowie fünf von ehemals sieben Meisterhäusern in Dessau, die 1926 fertiggestellt wurden, zu nennen. Sowohl das 1923 von Walter March und Georg Muche erbaute Musterhaus in Weimar, als auch die Meisterhäuser in Dessau sind als Wohnhäuser zwar funktionalistisch modern strukturiert, der großflächige Einsatz des Baumaterials Glas wird aber vermieden. Die Modernität drückt sich hier in der kubischen Gestaltung, der ökonomischen Raumaufteilung und -erschließung, im Wechsel von horizontalen und vertikalen Fensterbändern sowie in der weißen Außenfarbigkeit aus. Das von Walter Gropius 1926 errichtete Bauhausgebäude selbst zitiert in der Handschrift ein und desselben Architekten die im Fagus-Werk in einem ersten Versuch, jedoch dort noch nicht voll ausgereifte „Vorhangfassade“ am Hauptbau. Im Übrigen verweisen wir auf Abschnitt 1 dieser Additional Informations.

c. Rietveld-Schröder-Haus, Niederlande, Utrecht, 1924 von Gerrit Thomas Rietveld (Abb. 3)

Das von Gerrit Thomas Rietveld 1924 für Frau Schröder-Schräder errichtete kleine Wohnhaus in Utrecht ist als Ikone des *Modernen Bauens* in der Welterbeliste gewürdigt. Rietveld gehörte der niederländischen, 1917 in Leiden gegründeten Künstlervereinigung *De Stijl* an. Die Gruppe verfolgte geometrisch-abstrakte Darstellungsformen in Kunst und Architektur und einen auf Funktionalität beruhenden puristischen Stil. Hiermit verfolgte sie ähnliche Ziele wie das Bauhaus in Deutschland, zu dem – besonders über den Bauhauslehrer Wassily Kandinsky – enge Beziehungen bestanden. Mit der Architektur des Fagus-Werkes verbindet das Rietveld-Schröder-Haus nur allgemein die revolutionär neue Formensprache. Bei dem von Rietveld selbst als „Experiment“ bezeichneten Gebäude werden die einzelnen Bauteile auf ihre ganz eigene Funktion reduziert und in der Art von „Bau-Steinen“ zu einem funktionierenden Ganzen zusammengesetzt.

d. Siedlungen der Berliner Moderne, Deutschland, Berlin, 1919-1931 von Bruno Taut, Otto Bartning, Walter Gropius, Hugo Häring, Hans Scharoun u. a. (Abb. 4)

Die 2008 in die Liste des Weltkulturerbes aufgenommenen Siedlungen der „Berliner Moderne“ spiegeln einen die reine architektonische Formgebung weit übersteigenden Aspekt der modernen Architektur: Die nach Wirtschaftskrise und Inflation, seit dem Beginn der 1920er-Jahre breit angelegte Modernisierung der deutschen Hauptstadt versammelte in Berlin die Elite der modernen deutschen Architektur, deren Werke und Schriften auch in den Nachbarländern Aufsehen erregten: Ludwig Mies van der Rohe, Hugo Häring, Walter Gropius, Martin Wagner, Otto Bartning, Erich Mendelsohn, Hans Poelzig, Bruno und Max Taut, Fred Forbat, Hans und Wassili Luckhardt, P. Rudolf Henning, Ludwig Hilberseimer, Adolf Rading und Hans Scharoun vereinte eine gemeinsame architektonische Entwurfshaltung, bei der nicht das Formproblem im Vordergrund stand, sondern die sozialen, ökonomischen, baulichen und städtebaulichen Dimensionen dieser gewaltigen Bauaufgabe. Modernität als Entwurfshaltung drückt sich in den Siedlungen der Berliner Moderne in der demokratischen Reihung gleicher Wohnungstypen mit Balkonen und Loggien aus, die zu einer seriellen und rhythmischen Gestaltung der Wohnblöcke führte. Um Baukosten und Mieten zu senken, wurden typisierte Wohnungsgrundrisse verwirklicht, aber auch mit neuen städtebaulichen Figuren eigenständige, variantenreiche und auf den jeweiligen Ort bezogene Siedlungstypologien geschaffen. Viele dieser neuen modernen Formen waren zugleich künstlerische und rationale Antworten auf ökonomische und funktionale Probleme. Im Kreise der Architekten der Berliner Siedlungen, die keinen doktrinären Einheitsstil, sondern formale Vielfalt hervorbrachten, gehörte Walter Gropius zu den Verfechtern rationalistischer und funktionalistischer Konzepte, die den Fagus-Entwürfen von 1910 ebenfalls zugrunde liegen, dort aber aufgrund der völlig anderen Bauaufgabe zu keinen vergleichbaren Bauformen führten.

e. Weiße Stadt Tel-Aviv, Israel, 1930- ca. 1950 von Arieh Sharon, Joseph und Ze’ev Berlin u. a. (Abb. 5)

Die Weiße Stadt von Tel-Aviv ist mit ihren ca. 4000 Gebäuden im Bauhaus- bzw. Internationalen Stil ein einzigartiges, stilistisch einheitliches Stadtgebilde der Architektur der Moderne. Auf der Basis eines von Patrick Geddes seit 1925 entwickelten Masterplanes konnte ab 1930 auf einem bis dahin unbebauten Gelände ein neues Stadtgebilde entstehen, dessen Einzelbauten von immigrierten Architekten aus Europa entworfen wurden. Ein großer Teil der dort tätigen Architekten hatte sich in Deutschland mit den neuesten Architekturströmungen vertraut gemacht, wie etwa Arieh Sharon, Philipp Huett, Ze’ev Haller, Shlomo Bernstein und Joseph Neufeld, die nach ihrer Flucht aus dem nationalsozialistischen Deutschland für dieses große Siedlungsprojekt tätig wurden. Die funktionalistischen Bauhaus-Ideen mit standardisierten Grundrissen, klaren kubischen Formen mit Flachdächern und preiswerten Baumaterialien wurden hier großflächig umgesetzt, wenn auch einige typische Merkmale der Bauhausarchitektur, wie großflächige Verglasungen, wegen des heißen Klimas hier nicht auftreten, dafür aber aufgeständerte Bauten und lange schmale Balkone, die eine gute Luftzirkulation gewährleisteten. Rationale und funktionalistische Entwurfs- und Gestaltungsideen, die Walter Gropius erstmals am Fagus-Werk hat Gestalt werden lassen und die zu Baubeginn der Weißen Stadt

bereits zwei Jahrzehnte zurücklagen, kommen in Tel-Aviv in vielfältigen Ausprägungen und Interpretationen zum Ausdruck.

f. Ciudad Universitaria de Caracas, Venezuela, 1940-1960 von Carlos Raúl Villanueva (Abb. 6)

Die im Jahre 2000 in die Liste des Weltkulturerbes aufgenommene Ciudad Universitaria de Caracas, zwischen 1940 und 1960 von Carlos Raúl Villanueva (1900-1975) entworfen und errichtet, ist das erste große Projekt moderner Architektur auf lateinamerikanischem Boden, das aus der Hand eines einzigen Architekten stammt und das urbanistische Dimensionen erreicht (Abb. 6). In London und Paris aufgewachsen, hat Villanueva bis 1929 seine Ausbildung zum Architekten an der Pariser École des Beaux Arts erhalten, an der zu dieser Zeit noch ein eklektizistischer Entwurfsstil vermittelt wurde, der auch Villanuevas frühe Bauten in Venezuela noch bestimmte. Obwohl die avantgardistischen europäischen Architekturströmungen Villanueva bekannt waren, die neuen Stahlbeton-Konstruktionstechniken ihm über seinen Mentor August Perret in Paris nahegebracht wurden, Le Corbusier ihm persönlich bekannt war, der von ihm zeitlebens bewundert wurde, hat Villanueva in seiner späteren Wahlheimat Venezuela zunächst noch Bauten in neoklassizistischer Manier entworfen, ehe er ab 1940 den Schritt zu rational funktionalistischer Architektur wagte. Mit seiner expressiven Betonung der Konstruktion setzte sich Villanueva jedoch vom Mainstream des *International Style* ab und entwickelte eine unverwechselbare persönliche Entwurfshandschrift.

g. Central University City Campus der Universidad Nacional Autónoma de México (UNAM), Mexico-City, 1949-1953 (Abb. 7)

Auf der Grundlage eines Masterplanes des großen Neuerers der mexikanischen Architektur, José Villagrán García, wurde im Süden von Mexico-Stadt zwischen 1949 und 1953 der gewaltige Komplex der Universidad Nacional Autónoma de México errichtet. Mehr als 60 Architekten und Ingenieure waren mit individuellen Projekten an der weiträumigen Anlage beteiligt, die sich dennoch zu einem schlüssigen Gesamtkonzept formte. Neben Bauten, die dem Rationalismus des *International Style* verpflichtet sind, wie beispielsweise das Rektoratsgebäude (Abb. 8) und der Lesesaal der Zentralbibliothek (Abb. 9), erscheinen hier auch Architekturen von hieratischer Blockhaftigkeit, die mit flächig eingesetzter Bauornamentik auf die präkolumbianische Architektur des Landes zurückverweisen. 40 Jahre nach dem Fagus-Werk ist ein unmittelbarer Bezug zu den Ursprungsbauten der Moderne kaum noch darstellbar.

h. Villa Tugendhat, Brno, Tschechische Republik, 1928-1930 von Ludwig Mies van der Rohe (Abb. 10)

Die seit 2001 auf der Liste des Weltkulturerbes geführte Villa Tugendhat wurde von Mies van der Rohe 1928-30 für das Ehepaar Fritz und Grete Tugendhat errichtet. Sie gilt heute als der wichtigste Wohnhausbau seiner europäischen Schaffenszeit. Gleichzeitig mit seinem berühmten Pavillon für die Weltausstellung in Barcelona entstanden, entwarf Mies van der Rohe auch diesen Bau mit rationaler Strenge und

in kubisch klaren Formen, erreichte aber durch die innen liegenden, verchromten Stützen und frei stehende, raumteilende Wände eine außerordentliche Offenheit und Leichtigkeit der Architektur, die am Außenbau durch das lange, um die Ecke geführte Fensterband zum Ausdruck kommt. Das auch bereits dem Fagus-Bau zugrunde liegende Prinzip, die den Raum nach außen definierenden Begrenzungen durch Glas aufzulösen, wird hier durch die Verwendung hochwertiger Baumaterialien in eine luxuriös-moderne Wohnatmosphäre umgewandelt.

3. A comparison of the beginnings of functionalism and modernism in architecture extended to other countries than Germany.

Das Fagus-Werk in Beziehung zur Entwicklung einer rationalen, funktionalistischen Architektur der Moderne außerhalb Deutschlands zu setzen, kann nur an ausgewählten Beispielen erfolgen. Die Auswahl beschränkt sich auf solche Länder, in denen die architektonische Moderne rational funktionalistischer Prägung eine gewisse Kontinuität erlangt hat oder mit besonders prägnanten Beispielen hervorgetreten ist. Ähnlich wie in Deutschland, wo durch Krieg und nationalsozialistische Diktatur die Anfänge wieder unterbrochen und unterdrückt wurden, haben z. B. Spanien und Italien nur ein kurzes Aufleben der Architektur der frühen Moderne erlebt, ehe auch dort ab Mitte der 30er-Jahre die Architektur von den Staatsmächten für ihre Zwecke instrumentalisiert wurden. Unbeleuchtet bleiben auch Sondererscheinungen wie beispielsweise in Shanghai/China, wo das „International Settlement“ kurzzeitig europäische moderne Architektur hervorbrachte, ebenso wie die italienischen Kolonialarchitekturen der 30er-Jahre in Asmara/Eritrea, die auf der Tentativliste dieses Landes gegenüber der UNESCO geführt werden.

Vorab ist festzuhalten, dass weder in Europa noch in sonst einem Land der Erde vor dem Ersten Weltkrieg Gebäude auszumachen sind, die auch nur annähernd die Modernität und die hohe künstlerische Qualität des Fagus-Werkes von 1911 erreichen. Das Fagus-Werk war zu seiner Zeit in Stil und Gestaltung einzigartig. Die vergleichende Übersicht erfolgt ohne Gewichtung in alphabetischer Reihung.

a. Brasilien

Wissenschaftliche Studien über Licht und Sonne im Verhältnis zur Architektur sowie praktische Beschäftigung mit Bauproblemen, die für Brasilien wichtig waren, wie vor allem die Schaffung von guten Lichtverhältnissen und gleichzeitigem Schutz vor zu starker Sonneneinwirkung, erzeugten in der brasilianischen Architektenschaft seit den frühen 30er-Jahren des 20. Jahrhunderts die intellektuelle Bereitschaft neue Architekturkonzeptionen aufzunehmen. Die jungen Architekten dieser Epoche entwickelten eine spezifisch brasilianische Variante der modernen, in Europa vorbereiteten, rational funktionalistischen Architekturauffassung oder auch des *International Style*, wie seit der gleichnamigen Publikation von Hitchcock und Johnson im Jahre 1932 diese moderne Architekturrichtung bezeichnet wird. Eines der frühesten Beispiele dieser brasilianischen Moderne ist das Ministerium für Erziehung und Gesundheit in Rio de Janeiro, 1936 begonnen und 1943 fertiggestellt (Abb. 11). Der auf einer Seite voll verglaste Hochhauskomplex mit innen liegender

Stahlbetonkonstruktion wurde von Lucio Costa, der zusammen mit Oscar Niemeyer u. a. eine Arbeitsgemeinschaft bildete, entworfen. 1936 war Le Corbusier für einige Monate als Berater für diesen Bau hinzugezogen worden. Le Corbusiers Ideen fielen auf fruchtbaren Boden: Seine freie Formgestaltung entsprach der brasilianischen Mentalität, seine Sonnenschutzelemente waren in vielen Fällen eine Notwendigkeit und seine Pilotis eigneten sich besonders gut für das brasilianische Klima. Als einen nach zwei Seiten offenen Glas-Betonbaukörper gestaltete Oscar Niemeyer auch das 1940 entstandene Gebäude für einen Jachtclub in Belo Horizonte (Abb. 12).

b. Finnland

Nach Stagnation durch den Ersten Weltkrieg und der danach folgenden wirtschaftlichen Depression erfolgte der Durchbruch der rational-funktionalistischen Moderne in der finnischen Architektur um 1928. In Finnland wurde die Moderne mehr als anderswo zum Stil öffentlicher Bauten – die Modernität der jungen Republik unterstreichend. Die führende Stellung unter den Rationalisten nahm sofort Alvar Aalto ein, dessen Stadtbibliothek in Viipuri (1927-35) mit gebäudehoher Verglasung des Treppenhauses, funktionalistisch angeordneten Gebäudekuben und einfachen Lochfassaden zu den Klassikern der rationalistischen Moderne gehört (Abb. 13). Als ein weiteres frühes Beispiel für ornamentlose kubische Gestaltung mit großen Glasflächen als Ausdrucksträger moderner Architektur ist der „Lasipalatsi“ in Helsinki zu nennen, ein 1935/36 errichtetes Gemeinschaftswerk von Viljo Revell, Niilo Kokko und Heimo Riihimäki (Abb. 14).

c. Frankreich

In Frankreich erfolgte der Einzug der Moderne vor allem über die neuen, konstruktiven Möglichkeiten des Stahlbetons und über großräumige urbanistische Konzepte bei denen vor allem die theoretischen Schriften Le Corbusiers und seine Nähe zum Kubismus nach seiner 1917 erfolgten Rückkehr nach Paris eine große Rolle spielten. Der vielgestaltige Aufbruch in die Moderne ist Le Corbusier durch seine umfangreiche Reisetätigkeit in den Jahren davor vermittelt worden. Die Architektur des Mittelmeerraumes wurde für ihn dauerhaft inspirierend ebenso wie Begegnungen mit dem großen Erneuerer der Architektur in Österreich, Josef Hoffmann (1908), seine Mitarbeit im Büro von August Perret in Paris (1908/09) und bei Peter Behrens in Berlin (1910/11), von dessen Büro Walter Gropius sich in dieser Zeit gerade getrennt hatte. Le Corbusier war bekannt mit den führenden Köpfen der deutschen Reform- und Werkbundbewegung und über Publikationen war er bereits zu jener Zeit auch mit den Arbeiten von Frank Lloyd Wright vertraut. Von radikaler Modernität zeugt seine Cité de Refuge, ein für die Heilsarmee als Asyl zwischen 1929 und 1933 errichteter Baukomplex, bei dem er erstmals in einer größeren Bauaufgabe seine den anderen europäischen Avantgardisten sehr ähnlichen Entwurfsprinzipien der rationalen Komposition des Bauwerkes aus elementaren geometrischen Formen bei Vermeidung rein dekorativer Effekte realisieren konnte (Abb. 15). Die überragende Bedeutung, die das Schaffen Le Corbusiers zwischen 1920 und 1960 für die Architektur der Moderne hat, führte dazu, dass bereits drei von ihm entworfene Wohnhäuser aus Frankreich, Belgien und Argentinien auf der Tentativliste für das Weltkulturerbe der UNESCO enthalten sind. Neben Le Corbusier haben in Frankreich aber auch Architekten wie André Lurcat oder Pierre

Chareau dem rationalen Funktionalismus baukünstlerischen Ausdruck verliehen. Pierre Chareau baute 1928-32 in Paris das Maison de Verre, eine in vollendeter Konsequenz ausformulierte „Maschine zum Wohnen“, wie sie Le Corbusier postulierte (Abb. 16). Radikal modernes Bauen manifestiert sich auch in der von André Lurcat errichteten École Karl-Marx in Villejuif bei Paris (1931-33), die er nach seiner Mitarbeit an der Wiener Werkbundsiedlung als Komposition aus kubischen, großflächig verglasten Baukörpern entwarf (Abb. 17). Die von Gropius geprägten Ideen im Umgang mit Stahl und Glas an Gebäudefassaden spielten für die Entwicklung der modernen Architektur in Frankreich nur eine nachrangige Rolle.

d. Großbritannien

In den Jahren vor dem Ersten Weltkrieg und einige Zeit danach dominierte in der britischen Architektur ein noch aus dem 18. Jahrhundert übernommener, stark von der akademischen Lehre in Frankreich beeinflusster Monumentalismus. Der Neuerer, der ab Ende der 1920er-Jahre in England mit ausgesprochen modernen Konstruktionen Aufsehen erregte, war Owen Williams, ein Ingenieur, der aus der Eisenbahn- und Flugzeugindustrie kam und auf dem Gebiet der Architektur zum Spezialisten für den Stahlbetonbau wurde. Seine 1930-32 errichtete Boots-factory in Beeston bei Nottingham ist eine durchgehend verglaste Pilzstützenkonstruktion (Abb. 18). Stahlbeton und Glas sind auch die Konstruktionselemente des Wembley Empire Pools, heute Wembley Arena von 1933/34 (Abb. 19). 1932 errichtete Williams zusammen mit Clarke und Atkinson das Verwaltungsgebäude des „Daily Express“ (Abb. 20), dessen freistehende Fassaden vollständig verglast sind und an dessen stockwerktrennenden Horizontalbändern Opakglas zum Einsatz kam, ein Material, das Walter Gropius im Innenbereich des Fagus-Werkes ebenfalls verwendet hat. Während seines Exils in England arbeitete Walter Gropius von 1934 bis 1937 mit Maxwell Fry zusammen, der mit seinem kubisch in Beton und Glas entworfenen Sun House in Frogwell/Hampstead 1934/35 (Abb. 21) ähnlich rationalistisch kühne Formauffassungen vertrat wie Gropius. Das von Fry und Gropius 1936-40 erbaute Impington Village College (Abb. 22) wurde in seiner nüchtern sachlichen Bauart als Ensemble aus großflächig verglasten Ziegelbauten mit Flachdächern zum Prototyp für viele englische Schulbauten nach dem Zweiten Weltkrieg.

e. Japan

Japan hatte eine lange Überlieferung darin, seine Kultur zu erweitern, indem es Elemente fremder Kulturen aufnahm und in die eigene Formensprache umwandelte. Nachdem im 19. Jahrhundert besonders englische Einflüsse die japanische Architektur mitbestimmten, fand in der Taisho-Ära zwischen 1912 und 1926 eine Hinwendung zur modernen europäischen Architektur statt. Nach einer kurzen Phase, während der junge japanische Architekten Gedanken der Wiener Sezession und des deutschen Expressionismus verarbeiteten, setzte sich auch in Japan die rational-funktionalistische Moderne durch. Vermittelt wurden die neuen Ideen durch junge Architekten, die in Europa die revolutionären Neuerungen erlebten, wie zum Beispiel Kunio Mayakewa und Junzo Sakakura, die bei Le Corbusier in Paris studiert hatten, sowie Bunzo Yamaguchi, der bei Walter Gropius in Berlin war. Auch Frank Lloyd Wright wirkte mehrere Jahre in Japan und baute 1915-1922 das heute nur noch

rudimentär erhaltene Imperial Hotel in Tokio. Bruno Taut lebte von 1933-1936 in Japan, wo er durch seine Schriften, in denen er den traditionellen japanischen Holzbau mit dem modernen Stahlbeton-Gerüstbau verglich, großen Einfluss auf die weitere Etablierung der modernen Architektur in Japan nahm. Die Architektur-vorstellungen Frank Lloyd Wrights wurden in Japan vornehmlich durch Antonin Raymond, der mit Wright nach Japan kam und dort über Jahrzehnte lebte, weiter getragen. Die Aufnahme moderner Architekturvorstellungen wurde in Japan aber nicht nur durch die freischaffenden Architekten aufgenommen, sondern drücken sich selbst in herausragenden Bauten des Stadtbauamtes Tokio aus, wie etwa in der 1933 entstandenen Grundschule Yotsuya, einer modern sachlichen Stahlbeton-konstruktion mit Flachdächern und einem vollverglasten Treppenhausturm (Abb. 23).

f. Mexiko:

Bis weit in das 20. Jahrhundert hinein hielt sich in Mexiko eine historistische Architekturauffassung, die sowohl an der Architektur des spanischen Mutterlandes orientiert als auch von der Pariser École des Beaux Arts beeinflusst war. Um 1925 begannen in krassem Gegensatz hierzu mehrere junge Architekten unter der Führung und Lehre von José Villagrán García ihre Bauten nach den Prinzipien des Rationalismus zu planen, besonders bei Krankenhäusern und Schulen, aber auch bei Arbeiterwohnhäusern. Zwischen 1930 und 1950 setzten sich dann die Prinzipien des Rationalismus auf breiter Basis durch. 1939 berief die mexikanische Regierung den früheren Leiter des Bauhauses (1928-1930), Hannes Meyer, ins Land; er legte die Grundlagen für einen neuen mexikanischen Städtebau. Die Anwendung von Hochhäusern im sozialen Wohnungsbau begann mit der in Mexiko-Stadt gelegenen Wohneinheit Presidente Alemán mit 13-geschossigen Gebäuden für insgesamt 5000 Bewohner von Mario Pani (1947-50). Entlang dem Paseo de la Reforma in Mexiko-Stadt entstanden hohe Verwaltungsgebäude, die der internationalen Tendenz vorgehängter Glasfassaden folgten. Gleiches gilt für den am Altstadtkern gelegenen Torre Latinoamericano, 1950 errichtet von Augusto Alvarez und Adolfo Zeevaert (Abb. 24).

g. Niederlande

In den ersten beiden Jahrzehnten des 20. Jahrhunderts wirkten in der Architektur der Niederlande zwei gegensätzliche Strömungen: eine zwar mit modernen Konstruktionstechniken arbeitende Gruppe von Architekten, die ihre Bauten jedoch entgegen den rationalistischen Tendenzen mit üppigem Baudekor versahen, wie z. B. Johann Melchior van der Mey und Pieter Lodewijk Kramer am Scheepvaartshuis in Amsterdam (1911-1916). Auf der anderen Seite begannen die sich auf den Rationalisten Hendrik Petrus Berlage berufenden Architekten, von denen sich etliche in der 1917 gegründeten Künstlergruppe *De Stijl* zusammenschlossen, ausgesprochen progressive Architekturen zu entwerfen, von denen die meisten zunächst in Rotterdam entstanden. Zu dieser Gruppe zählten Theo van Doesburg, Johannes J. Pieter Oud, Gerrit Rietveld, aber auch Johannes Andreas Brinkman und Leendert van der Vlugt, die 1926-30 in Rotterdam die Van Nelle Fabrik errichteten (Abb. 25). Für diese Architektengruppe war der Fortschritt in der Architektur mit den neuen Bautechniken verbunden; sie verwendeten mit Vorliebe Stahl, Beton und Glas für ihre Bauten und sie waren – vergleichbar mit den

Künstlern des Bauhauses in Deutschland – davon überzeugt, dass ihre funktionale Architektur zu einer besseren Zukunft beitragen würde. Die ausgesprochen modern wirkende Van Nelle Fabrik mit ihren aufeinandergestapelten, geschwungenen und spitzwinklig versetzten Baukörpern ist großflächig verglast und reflektiert mit der demonstrativen Zurschaustellung von Erschließungssystemen, wie den beiden verglasten Förderbändern, Einflüsse des russischen Konstruktivismus, zu dessen in Deutschland ausgebildeten Protagonisten El Lissitzky Verbindungen bestanden. Die wesentlichen Gestaltungselemente des fünfzehn Jahre früher entstandenen Fagus-Werkes, wie die auf geometrische Grundformen reduzierten Baukörper, das zurückliegende Konstruktionsgerüst und die vollverglasten Fassaden, verbinden sich hier, vermischt mit anderen Einflüssen der europäischen Moderne, zu einem herausragenden Beispiel des neuzeitlichen Industriebaus. Von ähnlicher Leichtigkeit und Offenheit der Konstruktion ist der Baukomplex des Sanatoriums Zonnestraal in Hilversum geprägt, der von Johannes Duiker 1928 errichtet wurde (Abb. 26). Die weit ausgreifende horizontale Baustruktur dieses Komplexes, lässt an die ebenfalls eher breit gelagerten Prairie Houses von Frank Lloyd Wright denken. Beide Objekte befinden sich auf der niederländischen Tentativliste zur Aufnahme in die Liste des Weltkulturerbes der UNESCO.

h. Russland

Die Moderne in der russischen Architektur wird meist mit dem unscharfen Begriff Konstruktivismus gleichgesetzt, der nach dem Ende der russischen Revolution 1917 bis zur 1927 beginnenden stalinistischen Diktatur eine kurze Blütezeit erlebte. Wie in den anderen Kunstzweigen des Konstruktivismus, bei denen die Gestaltungselemente aus einfachen, geometrisch angeordneten Grundelementen zusammengesetzt werden, sind auch die Bauwerke des Konstruktivismus von schlichten, geometrischen Formen geprägt, bei denen die funktionelle Komponente stark im Vordergrund steht. Durch den betonten Verzicht auf alle Luxus-Elemente zugunsten von Sachlichkeit und funktioneller Ästhetik wollten die konstruktivistischen Baumeister, dem gesellschaftlichen Umbruch in Russland während der 1920er-Jahre entsprechend, die Demokratisierung der Gesellschaft in der Architektur vor allem mit den öffentlichen Bauten zum Ausdruck bringen. Bekannte Architekten unter den russischen Konstruktivisten waren Konstantin Melnikow, Moissei Ginsburg, Noi Trozki und Boris Iofan. Charakteristisch für ihre Bauwerke und die des Konstruktivismus im Allgemeinen, war die russische Besonderheit, dass es sich oftmals um neuartige Bauaufgaben handelte. Typische Beispiele hierfür sind so genannte Arbeiterklubs, Kulturhäuser oder auch Fabrikküchen, die der neuen postrevolutionären Vorstellung vom öffentlichen Leben der Arbeiterklasse entsprechen sollten. Anders als beim Fagus-Werk und den sich daraus in Westeuropa entwickelnden leichten Stahlbeton-Glaskonstruktionen, entstanden in Russland eher blockhafte, oft ineinandergeschobene Baukörper, wie etwa das Arbeiterklubhaus Rusakow in Moskau, das Konstantin Melnikow 1927/28 errichtete (Abb. 27). Glas als Ausdrucksträger der Architektur wird nur zurückhaltend eingesetzt, wie etwa in konstruktivistisch aus dem Baukörper hervortretenden Treppenhäusern oder – in eher untypischer Weise – in der dynamisch expressiven Fassadengestaltung eines ebenfalls von Melnikow entworfenen Parkhauses in Moskau aus dem Jahre 1933 (Abb. 28).

i. USA

Um die Wende vom 19. zum 20. Jahrhundert herrschten in der Architektur der USA unter europäischem Einfluss historisierende Stile vor, die über Neoromanik, Neoklassizismus bis hin zur amerikanischen Version des Gothik Revival eine facettenreiche Formenwelt hervorbrachten. Eine Ausnahme bildeten die Bauten der Chicago-School, die in ihrer klaren Formensprache vor allem auf Louis Sullivan wirkte, der mit seinem Bekenntnis zur Funktionalität in der Architektur („form follows function") nicht nur einer der Väter des Hochhauses, sondern auch ein Wegbereiter des Rationalismus in der amerikanischen Architektur wurde (Abb. 29). Diese frühen Ansätze auf dem Weg zur Moderne verfolgte aber zunächst nur Frank Lloyd Wright weiter, der mit seinen zwischen 1894 und 1909 revolutionär konzipierten Prairie Houses die rationale Disziplin seines Lehrers Sullivan lebendig hielt (Abb. 30). 1910 in Deutschland von Wasmuth publizierte Lithographien von Zeichnungen dieser Häuser wurden rasch in Europa bekannt und beeinflussten vornehmlich die holländische *Stijl*-Gruppe. In den Vereinigten Staaten selbst wurde Wright, nicht anders als der späte Sullivan, zunächst nur wenig beachtet und bis weit in die 20er-Jahre hinein herrschten die beiden großen Strömungen des Neoklassizismus und der Neoromanik vor. Abseits von der konventionellen Architekturpraxis lag der Beitrag von Albert Kahn, dessen Firma sich rasch auf umfangreiche Industriebauten im Gebiet um Detroit spezialisierte. Kahn nahm mit seinen pragmatisch entworfenen Bauten schon früh die präzise und feingliedrige kubische Form der 50er- und 60er-Jahre vorweg. Zu den hervorragenden Beispielen eines funktionalistischen Zweckbaues, dessen architektonische Sprache nüchtern den industriellen Erfordernissen angepasst ist, zählt der Glass Plant in der Rouge Plant der Ford Motor Company in Dearborn, Michigan von 1924 (Abb. 31), besonders aber die weitgespannte, mit feingliedrigen curtain walls umhüllte Chrysler-Dodge-factory in Warren, Michigan von 1938 (Abb. 32). Albert Kahns ganz aus der Zweckmäßigkeit heraus entworfene Industriebauten reihen sich als paralleler Entwicklungsstrang in die aufkeimende amerikanische Moderne ein, die in den 1920er-Jahren jedoch noch auf sich warten ließ. Der bedeutendste internationale Wettbewerb dieser Periode, jener für den Chicago Tribune Tower im Jahr 1922, wurde noch nicht von einem der modernistischen Entwürfe aus Europa gewonnen, sondern von dem reduziert neogotischen Vorschlag von Raymond Hood und John Mead Howells. Walter Gropius erhielt für sein ornamentloses Stahlbeton-Glas-Projekt keinen Preis (Abb. 33). Neben dem geglätteten Historismus, der sich in den 20er-Jahren noch eine ganze Weile hielt, brachte aber auch die sachlich nüchterne Ästhetik des Rationalismus an der amerikanischen Ostküste gegen Ende des Jahrzehnts erste Blüten hervor: Der ungeheure Einfluss, den europäische und vornehmlich deutsche Immigranten auf die Entwicklung der amerikanischen Architektur seit der Zeit um 1930 nahmen und dem *International Style* endgültig zum Durchbruch verhalfen, zeigt sich erstmals mit dem Philadelphia Savings Fund Society Building von George Howe und William Lescaze aus dem Jahre 1929 (Abb. 34). Der in der Schweiz geborene Lescaze hatte sein Studium an der Eidgenössischen Technischen Hochschule in Zürich 1919 abgeschlossen. Er war mit den neuesten europäischen Architekturtendenzen vertraut und nahm diese Anregungen mit, als er sich 1925 in New York niederließ. 1937 kamen Walter Gropius, Mies van der Rohe und Marcel Breuer in die USA, 1938 Martin Wagner, drei Jahre später Erich Mendelsohn. Gropius setzte die Lehrtätigkeit, die er am Bauhaus ausgeübt hatte, an der Harvard University in Cambridge, Massachusetts fort, wohin ihm Wagner und Breuer folgten. Mies van der Rohe übernahm eine analoge Rolle am Armour Institute of Technology

in Chicago. Ihr Einfluss auf die Entwicklung der Architektur vor allem an der amerikanischen Ostküste war entscheidend und kulturell geradezu beherrschend. Die kühle, perfekte, in sich ruhende Stereometrie der Bauten von Walter Gropius, von Mies van der Rohe aber auch von Le Corbusier wurde zum Vorbild der neueren amerikanischen Architektur. Neben etlichen Einfamilienhäusern, die Gropius seit Ende der 30er-Jahre in der Umgebung von Boston errichtete, atmet vor allem das 1949/50 von ihm errichtete Harvard Graduate Center (Abb. 35) mit seiner klaren, funktionalen Strenge, den ununterbrochenen Fensterbändern und klassisch harmonischen Proportionen den Geist des Fagus-Werkes von 1911. Seit den 1950er-Jahren arbeitete Gropius wieder häufiger in Europa und sein Einfluss auf die Entwicklung der amerikanischen Architektur pflanzte sich vornehmlich durch seine Lehrtätigkeit fort. Der inzwischen fest installierte *International Style* wurde in den kristallinen Bauten Mies van der Rohes (860-880 Lake Shore Drive Appartments, Detroit, 1949-51, (Abb. 36) und Seagram Building, New York, 1958, (Abb. 37) weitergetragen, bis seine reduzierte und limitierte Sprache wegen ihrer rationell herstell- und imitierbaren Konstruktionsart bereits seit der Mitte der 50er-Jahre immer mehr trivialisiert wurde. Einen der letzten Höhepunkte setzte aber noch einmal Walter Gropius mit seinem PanAm-Wolkenkratzer (heute MetLife) in New York, den er zusammen mit Pietro Belluschi 1960 errichtete (Abb. 38). Der auf oktogonalem Grundriss über der Central Station aufragende, die Park Avenue beherrschende Bau belegt mit seiner dreifachen Horizontalgliederung, den zwingend klaren Proportionen und dem feinen Fassadennetzwerk aus Glas, Stahl und Beton ein weiteres Mal seine fünfzig Jahre vorher am Fagus-Werk zugrunde gelegten Prinzipien der Architektur der Moderne.

4. The main examples of the direct influence the Fagus Factory exerted in the field of architecture

Der direkte Einfluss des Fagus-Werkes auf die Entwicklung der modernen Architektur zeigte sich nach dem Ersten Weltkrieg in den bereits im Abschnitt 3 behandelten Beispielen. In seinem vollen Umfang wird er auf breiter Ebene erst nach den Entwicklungszäsuren durch die beiden Weltkriege von 1914-1918 und 1939-1945 sichtbar. Die nach 1945 mit dem wirtschaftlichen Aufschwung in Europa entstehenden funktionalistischen und nach rational ökonomischen Gesichtspunkten entstehenden Bauten der Industrie und Verwaltung, Geschäftsbauten sowie Schul- und Kulturbauten sind zahllos und verlieren in den 1960er- und 1970er-Jahren mit ihrem massenhaften Auftreten auch häufig an gestalterischer Qualität.

Das seit dem Ende des Zweiten Weltkrieges – als ein Konstruktions- und Gestaltungsmerkmal des *International Style* – Länder und Kontinente übergreifende und in großer Zahl reproduzierte Motiv der voll verglasten, kubisch und ornamentlos entworfenen Stahlbetonkonstruktion, manifestiert sich jedoch auch weiterhin in so prominenten und hervorragenden Bauten wie dem UN-Hauptquartier in New York (1949-50), für dessen Entwurf sich die beiden großen Neuerer Le Corbusier und Oscar Niemeyer im Rahmen eines weltweit ausgelobten Wettbewerbs durchsetzten (Abb. 39). Auch Arne Jacobsen errichtete 1955 in Kopenhagen mit dem Bürohaus Jespersen einen elegant proportionierten Bau mit fein ziselierter Vorhangfassade, die sehr an das Fagus-Werk erinnert (Abb. 40).

Verfolgt man den Entwicklungsstrang dieser architektonischen Formgebung in der Geschichte des modernen Bauens zurück, so trifft man in den 30er- und 20er-Jahren bereits in vielen Ländern der Welt auf Verästelungen der neuen Architekturideen, von denen in Abschnitt 3 einige Beispiele dargestellt sind (vgl. u. a. Brasilien, Frankreich, Niederlande, USA). Zu den wichtigsten Transporteuren seiner Architekturauffassung gehörte in der Weimarer Republik Walter Gropius selbst, der schon frühzeitig in Amerika Fuß zu fassen suchte. Das bezeugt beispielsweise sein Entwurf von 1922 für das Hochhaus des Chicago Tribune, das er als revolutionär-moderne Stahlbeton-Glas-Konstruktion konzipierte.

Mit einem Entwurf für ein Hochhaus aus Glas auf frei geschwungenem Grundriss reihte sich Ludwig Mies van der Rohe – nach anfänglich noch neoklassizistischen Arbeiten – 1922 in die Riege der Funktionalisten der Moderne ein (Abb. 41). Derartig kühne Entwürfe qualifizierten ihn für die Direktion des Bauhauses in Dessau, das er nach dem Ausscheiden von Walter Gropius und Hannes Meyer von 1930 bis 1932 leitete, ehe es von den Nationalsozialisten geschlossen wurde. Selbstverständlich war es gerade diese Institution, von der die internationale Breitenwirkung des modernen Bauens in hohem Maß befördert wurde. Ebenso selbstverständlich ist es aber auch, dass nach dem Ersten Weltkrieg viele junge Architekten aus anderen Ländern das *Neue Bauen* zu ihrem Leitbild formten und damit ebenso als Vermittler und Ideenträger eine den Wandel hervorrufende Breitenwirkung entfalteten.

Von unwiderlegter Bedeutung bleibt indessen: Vor dem Ersten Weltkrieg war es Walter Gropius, der mit dem Alfelder Fagus-Werk und der großflächig verglasten, nicht erhaltenen Musterfabrik auf der Kölner Werkbundausstellung (Abb. 42) zwei Ikonen der Architektur schuf, die als Kunstwerke einen neuen Stil, eben jenen der Moderne begründeten.

5. Augment the chapter on Integrity-Authenticity included in the nomination dossier which mainly focuses on the industrial function of the property which is still in use today

Wie im Vergleich des Alfelder Fagus-Werkes mit dem Dessauer Bauhaus bereits dargelegt, kommt dem Fagus-Werk aus architekturgeschichtlicher Sicht die außergewöhnliche Funktion eines Gründungsbaus zu, der erstmals in absolut konsequenter Handhabung seiner Gestaltungsmittel den Stilwandel vom Historismus, Neoklassizismus und Jugenstil zur modernen Architektur schlüssig und nachvollziehbar veranschaulicht. Kein anderes Bauwerk der Welt kann zur gleichen Entstehungszeit ein dem Fagus-Werk adäquates Innovationspotential aufweisen. Und kein anderes Bauwerk kann die Abkehr von den Gestaltungsmotiven der vorangegangenen Epoche klarer bezeugen. Insofern ist das Fagus-Werk von Walter Gropius der wichtigste Schlüsselbau für die Entwicklung der modernen Architektur des 20. Jahrhunderts.

Insbesondere im Vergleich mit den funktionalistischen und reformorientierten Bauten der Zeit um 1910 stellt sich heraus, dass kein anderer Architekt es zu dieser Zeit vermochte, die traditionellen oder damals aktuellen Stilelemente vollständig über

Bord zu werfen und mit seinem Entwurf zugleich ein außergewöhnliches Kunstwerk zu schaffen, das in stilistischer Hinsicht ausschließlich neue Form-, Gestaltungs- und Konstruktionselemente inszeniert. Man kann ohne Weiteres feststellen, dass alle Zeitgenossen im Spielfeld der Architektur sich entweder noch den genannten herkömmlichen Stilelementen in irgendeiner Weise verpflichtet fühlten oder aber mit neuen Materialien und Techniken experimentierten, ohne dabei das Resultat Kunstwerk im Blick zu haben.

Es entspricht keiner Übertreibung, wenn sowohl der Formenschatz als auch die Gestaltung des Fagus-Werkes, die bis auf den heutigen Tag dem Bauensemble ablesbar sind, in höchstem Maß als authentisch angesehen werden. Unter Berücksichtigung des Alters von nahezu einhundert Jahren und unter Anrechnung der Abnutzung, der ein Industrieensemble unterliegt, ist auch die Bausubstanz des Fagus-Werkes in weiten Teilen als authentisch zu bewerten. Eine Unversehrtheit wie an einem Neubau kann es an einem einhundertjährigen Gebäude indessen nicht geben. Insofern sind Reparaturen und Restaurierungen sowie ersetzte Teile, die während der letzten 25 Instandsetzungsjahre die Wunden des Bauensembles geheilt haben, achtenswerte Bestandteile der denkmalwerten Bausubstanz geworden. Die Denkmalpflege hat sich mit vielen anderen Beteiligten dem Sanierungsgeschehen mit größtmöglichem Sachverstand gewidmet und alle notwendigen Behandlungen erfolgreich begleitet. Aus diesem Grund werden die Anforderungen an die durch die Instandsetzung tangierte Integrität des Fagus-Werkes als ausgezeichnet erfüllt beurteilt. Aufgrund der bau-, planungs- und denkmalrechtlichen Schutz-instrumentarien sind die Perspektiven für eine zukünftige Unversehrtheit des Fagus-Werkes am authentischen Ort garantiert.

Wie im Antrag dargelegt, entspricht die Nutzung des Fagus-Werkes im überwiegenden Teil der Bauten den ursprünglichen Produktionsabläufen der Schuhleistenfabrikation. Für die Bauteile, in denen neue Arbeitsstätten bzw. öffentlich zugängliche Ausstellungsflächen entstanden sind, hat der Bauherr adäquate Nutzungsanforderungen entwickelt, die der außergewöhnlichen Bedeutung der Architektur keinen Schaden zufügen, sondern, ganz im Gegenteil, die architektonische Aussagefähigkeit sogar noch verstärken. Das zeigt sich beispielsweise im Maschinenhaus und im Lagerhaus, Bauteilen des Ensembles, in denen die Erlebbarkeit der Innenräume durch die Umnutzung einen enormen Gewinn verbuchen kann.

Im Hinblick auf die technische Integrität des Fagus-Werkes ist das Hauptaugenmerk besonders auf die „Vorhangfassadenelemente“ des Verwaltungsbaus zu richten. Besonders aufseiten der Denkmalpflege, aber auch aufseiten aller anderen Beteiligten, war zu lernen, mit einer Erfindung umzugehen, die zwar optisch, aber nicht in Material und Konstruktion perfekt gelungen war und der es an Nachhaltigkeit und Lebensdauer mangelte. In der heutigen Kombination der ertüchtigten und der erneuerten Fassadenelemente wird der konsensual vertretene Anspruch auf einen besonders behutsamen Umgang mit diesen empfindlichen Bauteilen deutlich, der sich in die Köpfe aller Beteiligten eingeprägt hat. Zu den ersten Aufgaben im Umgang mit dem Fagus-Werk gehört es demnach, das Hauptaugenmerk auf diese Fassadenelemente zu richten, um jeden weiteren Verlust so lange wie möglich aufzuschieben. Denn es sind gerade diese Stahl-Glas-Elemente, denen das Fagus-Werk seine außergewöhnliche Wertschätzung verdankt.

Zusammenfassend ist festzuhalten, dass für das Fagus-Werk die Anforderungen an die Authentizität und die Integrität, die die Welterberichtlinien benennen, als erfüllt anzusehen sind.

6. Provide additional information on the extensive restoration work that was undertaken between 1985 and 1999,

and

7. Complete the chapter on "state of conservation" with a detailed architectural analysis of the different restored parts of the property with special attention to the concepts of integrity and authenticity

Seit den 1920er-Jahren wurden an fast allen Teilbauten des Fagus-Werkes immer wieder kleinere Reparaturen zur Instandhaltung durchgeführt, die keine Veränderungen an der Architektur hervorriefen. 1982 gab es schließlich zur Kernanlage erste Erkenntnisse, dass die aufgetretenen Baumängel nicht mehr mit kleineren Reparaturen zu beseitigen waren. Insbesondere an den Fassaden mussten größere Maßnahmen in Angriff genommen werden. Schäden waren vor allem in der Dachzone, an Türen und Fensterflächen, durch Rissbildung im aufgehenden Mauerwerk, bei der Dachentwässerung, an der gesamten Installations- und Heizungstechnik, der Elektroinstallation und an den Schornsteinen festzustellen. Der Wärmeschutz sämtlicher Gebäude war, zumindest in den Bürotrakten, völlig unzureichend und sollte im Zusammenhang mit der Schadensbehebung verbessert werden. Ebenfalls notwendig waren vorschriftsmäßige Brandschutzmaßnahmen mit der Bildung entsprechender Brandabschnitte.

Insgesamt hatte sich ein Sanierungsstau gebildet, der nunmehr unabdingbar notwendige Instandsetzungsmaßnahmen begründete. Ein vom Land Niedersachsen gefordertes Gutachten zum Schadensumfang war Voraussetzung für eine entsprechende Maßnahme, in die auch erhebliche öffentliche Mittel des Landes und des Bundes als Förderung fließen sollten. Ein erstes Gutachten des Hildesheimer Ingenieurbüros Hoff, Heuer und Partner aus den Jahren 1982/83 wies nach, dass die im Gebäudekomplex aufgetretenen Risse offensichtlich auf schlechten Baugrund zurückzuführen waren. Zudem wurde eine unzureichende Fundamentierung, fehlende Gebäudefugen und eine unzulängliche statische Lastverteilung ursächlich für die Schäden erkannt. Zugleich brachte das Gutachten aber auch Sicherheit darüber, dass die Rissbildungen im Wesentlichen zur Ruhe gekommen waren und somit keine Boden- oder Gründungsverbesserungen vorgenommen werden mussten, die ohne Frage stärkere Eingriffe in die Fundamente mit sich gebracht hätten.

1984 bis 1986 wurden erhebliche Landes- und Bundesmittel für einen ersten Maßnahmeabschnitt zur Verfügung gestellt. So konnte in Absprache mit dem Landesamt für Denkmalpflege (seinerzeit Institut für Denkmalpflege) Anfang 1985 der hannoversche Architekt Jörn Behnsen beauftragt werden, ein Gesamtkonzept zu erarbeiten, das über Art, Umfang und Kosten sämtlicher notwendiger Erhaltungsmaßnahmen Auskunft geben und zum anderen eine erste Teilmaßnahme

für den besonders geschädigten Bereich des Daches und der Stahl-Glas-Fassade des dreigeschossigen Bürotraktes beinhalten sollte. Diese 1985 beginnenden ersten größeren Maßnahmen und die danach folgenden werden entsprechend der Darstellung im Hauptantrag den einzelnen Bauten des Fagus-Werkes zugeordnet und so beschrieben, dass die einzelnen, bis 2002 (nicht nur bis 1999) erfolgten Maßnahmen an den jeweiligen Bauten detailliert nachvollzogen werden können.

a. Hauptgebäude

Auf Wunsch des Unternehmens, das bis heute der Herstellung von Schuhleisten nachkommt, sollte die bestehende Nutzung des Hauptgebäudes mit Büros, Produktion und Erschließung ohne größere Veränderungen beibehalten werden. Im Inneren waren, da keinerlei große Schäden aufgetreten waren, lediglich einfache Instandhaltungs- und Restaurierungsarbeiten erforderlich, sodass die gesamte Konstruktion einschließlich der wandfesten Ausstattung keinerlei Eingriffe erforderte. Im Bereich des Daches waren jedoch wegen schadhafter Abdichtungen große Schäden erkennbar. Insbesondere aber an den Stahl-Glas-Fassaden wurden die unterschiedlichen Ausformungen der Schädigung augenscheinlich.

Als erste größere Maßnahme begann 1985 die Sanierung des Daches. Hier wurde im Wesentlichen die Dachhaut erneuert, sodass die gesamte Flachdachkonstruktion in der ursprünglichen Form erhalten werden konnte. Ergänzend zur bisherigen Situation wurde eine Dämmschicht auf das Dach aufgebracht, auf die wiederum die entsprechenden Dichtungsbahnen gelegt wurden. Die Schäden im Attikabereich (Auswölbungen) wurden mit der vorhandenen Substanz behoben und in den ursprünglichen Zustand versetzt. Der Attikaanschluss der Dachhaut wurde in der bestehenden Form wiederhergestellt. Mit den Reparaturen konnte man das ursprüngliche Erscheinungsbild vollständig beibehalten. Seither bedurfte es keiner weiteren Instandsetzung des Daches und der Attika.

Problematischer war schließlich die Instandsetzung der Stahl-Glas-Elemente an dem zur Erbauungszeit innovativen Fassadensystem, da insbesondere an den Profilstößen und hinter den Kittfälzen umfangreiche Korrosionsschäden bis hin zum materiellen Totalverlust festzustellen waren. Die Verglasung hatte in den vergangenen Jahrzehnten jährlich 20-30 Schäden durch Glasbruch aufzuweisen, da die Verkittung der starr eingespannten Fassade, die thermisch bedingte Verformung und der nicht ausreichend aufzufangende Winddruck die Scheiben häufig zerbrechen ließ. Außerdem schlossen die einfälzigen und dichtungslosen Flügel nicht mehr richtig, Getriebe und Beschläge waren vielfach defekt. Die Einfachverglasung und die Undichtigkeit der Fensterbahnen führten zu hohen Klimaschwankungen und immensen Heizkosten in den dahinter liegenden Räumen. Ebenfalls starke Beeinträchtigungen entstanden von der direkt im Nordosten vorbeiführenden Bahnlinie Hannover-Göttingen durch die Geräuschbelästigung des Zugverkehrs. In der Auseinandersetzung um die Frage der Mängelbehebung an diesen Bauteilen bewegte sich der Bauherr über längere Zeit an der ‚Grenze des wirtschaftlich Zumutbaren'. Diese in Deutschland nach den gesetzlichen Regeln des Denkmalrechts gegebene Möglichkeit für den Eigentümer, den Denkmalschutz aufheben zu lassen, konnte durch die finanzielle Förderung des Landes Niedersachsen und der Bundesrepublik Deutschland abgewendet werden.

Denkmalpflegerisch erwies sich die Instandsetzung der Stahl-Glas-Elemente als besonders problematisch und insgesamt erheblich planungsaufwendiger als erwartet. War man am Anfang der Untersuchungen noch davon ausgegangen, die Instandsetzung der Fassadenelemente unter weitgehender Erhaltung der Originalsubstanz vornehmen zu können, so musste nach genauerer Inaugenscheinnahme der Schadensbilder konstatiert werden, dass weite Teile der Eisenrahmen für die Fassadenverglasung so stark korrodiert waren, dass sie nicht mehr reparierbar und deshalb abgängig waren. Angesichts dieser Feststellung musste die unter Nutzungs- und Wirtschaftlichkeitsgesichtspunkten verständliche Forderung des Eigentümers Berücksichtigung finden, zum einen die Arbeitsplätze hinter der Fassade qualitativ zu verbessern und zum anderen die Wärmeverluste durch die Fassade erheblich zu reduzieren. Dazu wurden nach weitgreifenden Erörterungen mit allen Beteiligten sowie einer kontroversen Expertenanhörung folgende Vorgaben als bindend formuliert:

1. Als Material des Sprossenwerkes sollte wieder Stahl verwendet werden.
2. Für die thermisch bedingten Spannungen sollte unter Beibehaltung der unterschiedlichen Konstruktionsweisen der zwei Fassadenbauabschnitte, ausreichender Spielraum geschaffen werden – Gropius hatte bei der Erweiterung der Ursprungsfassade bereits voneinander abweichende Profile verwendet.
3. Innen und außen sollte erkennbar bleiben, dass den beiden Bauabschnitten auch zwei unterschiedliche Fassadenlösungen zugrunde lagen.
4. Entsprechend dem Original sollten Anzahl, Anordnung und Funktionsweise der Fensterflügel beibehalten werden.
5. Das zu verwendende Glas sollte hinsichtlich Lichtdurchlass und Reflektion – soweit technisch herstellbar – die gleichen Werte aufweisen wie das originale Einfachglas. Die Verwendung handelsüblicher grünlich gefärbter Gläser wurde ausgeschlossen.
6. Der Anstrich der Stahlprofile sollte originalgetreu in Bleiglanz auf Mennige erfolgen.
7. Der äußere Sonnenschutz an der Fassade sollte auf die sechs Felder im ersten Obergeschoss des zweiten Bauabschnittes beschränkt werden, die schon seit 1925 mit Schrägmarkisen ausgestattet waren.

Alle genannten Vorgaben konnten erfüllt werden. Die Erörterung während des Expertenkolloquiums im September 1985 führte schließlich zu einem allseits akzeptierten Konsens, der zusätzlich Folgendes vorsah: Die fünf Verglasungsfelder des Treppenhauses am Haupteingang sowie die vollverglasten stützenfreien Ecken im Südwesten und im Südosten mit jeweils einem weiteren angrenzenden Feld sollten aufgrund ihrer geringeren Schädigungen als Originale instand gesetzt werden. Somit war es möglich geworden, in diesen Bereichen jeweils mehrere vollflächig dreigeschossige Fassadenfelder beider Bauabschnitte komplett beizubehalten. Damit wurde neben dem zum Haupteingang gehörenden gesamten Treppenhausbereich des zweiten Bauabschnittes auch der ursprünglich komplette südliche Giebel des ersten Bauabschnittes in drei Feldern einschließlich eines weiteren Feldes der Ostseite in der ursprünglichen Form und Konstruktion erhalten. Die Verwendung der originalen Stahl-Glas-Elemente in diesen Teilbereichen führte allerdings dazu, dass entgegen den ursprünglichen Planungen des Eigentümers Büros nur in den isolierverglasten Fassadenbereichen wieder eingerichtet wurden, während man hinter den original verbliebenen Fassadenelementen Nebennutzungen oder Infrastrukturbereiche des Fagus-Werkes ansiedelte.

Ausgetauscht wurden dementsprechend auf der östlichen Seite des ersten Bauabschnittes sechs Fassadenfelder, ebenso sechs Fassadenfelder auf der südlichen Seite des zweiten Bauabschnitts (zwischen erstem Bauabschnitt und Haupttreppenhaus). Konstruktive Alternativen zum Austausch der Stahl-Glas-Elemente wie beispielsweise eine zweite, dem Kastenfensterprinzip entsprechende Fensterebene im Inneren, mussten vor allem aus optischen Gründen verworfen werden, da diese sich während der Bemusterung von außen als stark ansichtsverändernd darstellten. Mit der viel diskutierten zweiten Fensterebene hätte man darüber hinaus die Schadensproblematik der alten, zu starren Konstruktion nicht lösen und die gravierenden Materialschwächen des ursprünglichen Stahls nicht befriedigend und dauerhaft beheben können.

Der mit der Restaurierung befasste Architekt Jörn Behnsen hatte zur Fassadenerneuerung umfangreiche Detailaufmaße der bisherigen Profile von Gropius durchgeführt und diese in entsprechende, äußerlich gleich aussehende Sonderanfertigungen für isolierverglaste Scheiben umgesetzt. Trotz der Abweichung in der Tiefe sollten die neuen Verbundglasscheiben in der optischen Erscheinung ein dem Original identisches Bild erzeugen. Aus denkmalpflegerischer Sicht ist dieses Ziel mit einer geringfügigen Einschränkung erreicht worden: Die Scheiben-oberflächen sind entsprechend den industriellen Herstellungsmethoden plan. Möglichkeiten der Herstellung von leicht unebenen Glasoberflächen mit Lufteinschlüssen, wie sie um 1910 hergestellt wurden, existierten zum damaligen Zeitpunkt nicht. Die gelegentlich geäußerte Kritik, die neuen Scheibenoberflächen würden stärker spiegeln als die alten, trifft nicht zu. In ihrer Wirkung geht die Spiegelung auf die regelmäßige Reinigung der Fenster zurück. Wären die Fensterbahnen wie in früheren Zeiten stärker verstaubt, ließe auch der Spiegelungseffekt nach. Da das Spiegelungsproblem schon in der Vorplanung der Instandsetzungsmaßnahme als solches erkannt worden war, hatte man verschiedene neue Gläser mit den originalen Glasscheiben ausgiebig verglichen und bemustert, bevor eines der Produkte für die Maßnahme mit dem heute bestehenden Ergebnis ausgewählt wurde.

Die Gesamtsanierungsmaßnahme für den Hauptbau wurde in mehreren Abschnitten zwischen 1986 und 1990 durchgeführt. Im Zusammenhang mit der Instandsetzung bzw. Erneuerung der Stahl-Glas-Elemente in den Fassaden wurden auch die damit in Verbindung stehenden Rampen bzw. Eingangstreppen und Türen behandelt, jedoch ohne Austausch von originaler Bausubstanz. Ebenso wurden das Mauerwerk und die gesamte Verfugung instand gesetzt. Im Jahr 1996 folgte die Restaurierung des Eingangsbereichs und des Haupttreppenhauses, in dem unter anderem die Wandoberflächen in ihren originalen Zustand zurückversetzt wurden. Die verlorene, ehemals dort angebrachte Kastenleuchte konnte man nach einer Zeichnung von Walter Gropius bzw. Adolf Meyer rekonstruieren. Schließlich besserte man auch die in die Wände eingelassenen schwarzen Opak-Glasbänder aus. Damit war die Grundinstandsetzung des Hauptgebäudes vollständig abgeschlossen.

Abschließend bleibt festzuhalten, dass der Gesamtbau bis auf die beschriebenen Auswechslungen der Fassadenelemente in seiner übrigen ursprünglichen Originalsubstanz vollständig erhalten blieb. Optisch ist er mit dem ursprünglichen Erscheinungsbild identisch. Dabei gehörte es Mitte der 80er-Jahre des 20. Jahrhunderts zum konzeptionellen Ziel des Maßnahmeabschnitts, dass die

erneuerten Fassadenelemente nur für den Fachmann erkennbar sein sollten. Für den interessierten Laien dagegen ist bis heute die Erneuerung so gut wie gar nicht wahrnehmbar. Die wieder aufgearbeiteten Elemente der Stahlglasfassade, die ca. 40 % des originalen Bestands ausmachen, sind ausreichende Belege für die ursprüngliche Konstruktion, deren Lebensdauer dort, wo thermische und hygrische Kräfte substanzzerstörend wirken, leider begrenzt sein werden. Vonseiten der niedersächsischen Denkmalpflege und vonseiten des Eigentümers wird indessen alles getan, um diese Lebensdauer so lange wie möglich zu gewährleisten.

b. Arbeitssaal

Der in zwei Phasen entstandene Arbeitssaal wird vom Hauptgebäude L-förmig im Süden und im Osten umfasst. Er schließt unmittelbar südlich an das Trockengebäude an. Seit der 1914 erfolgten Erweiterung besteht der Arbeitssaal bis heute nahezu unverändert in seiner ursprünglichen Form. Die originale hölzerne Dachbinderkonstruktion ruht auf den ursprünglichen gusseisernen Rundstützen. Auch die zur Hannoverschen Straße ausgerichtete Stahl-Glas-Fassade blieb substantiell vollständig erhalten. Rost- und mechanische Schäden konnten repariert und instand gesetzt werden. Die alte Einfachverglasung konnte nach der Aufarbeitung der Eisenprofile behutsam wieder eingesetzt bzw. ergänzt werden. Lediglich in der an das Verwaltungsgebäude angrenzenden Achse musste ein Stahl-Glas-Element erneuert werden, nachdem das alte schon vor 1982 nicht mehr existierte.

Erneuert werden mussten in Teilen die Sheddachkonstruktionen, da erhebliche Schäden im Bereich der Ziegeldachflächen und der Sheds selbst entstanden waren. Die ersetzten Sheddachelemente sowie die neue Dacheindeckung entspricht im Erscheinungsbild jedoch dem Vorzustand. Der als zu stark empfundene Sonneneinfall durch die nach Südwesten ausgerichteten Sheds wurde durch eine geänderte Verglasung abgemildert, die seither eine diffuse Einstrahlung erzeugt. Als abschließende Maßnahme erfolgte 1994 noch eine Mauerwerks- und Fugenreparatur im Bereich der Brüstungselemente. Auch hier fanden keine großflächigen Austauschmaßnahmen, sondern lediglich Reparaturen und kleinere Ergänzungen statt.

Insgesamt ist auch im Bereich des Arbeitssaales die originale Bausubstanz weitgehend erhalten, wobei lediglich bei den Sheds Veränderungen gegenüber dem Original festzustellen sind. Auch hier war neben der irreparablen Schädigung ein zweiter Grund für die Veränderung, die Arbeitssituation der Mitarbeiter in diesem großen Saal zu verbessern.

c. Schornstein

Der markante Fabrikschornstein mit dem Fagus-Logo auf dem Wasserbehälter wurde 1915 in Verbindung mit dem Kesselhaus errichtet. Der ursprünglich etwa 50 Meter hohe Schornstein war in den Nachkriegsjahren in Verbindung mit dem Einbau einer neuen Heizungsanlage gekürzt worden. Im Zusammenhang mit der 1987/88 erfolgten Instandsetzung des Schornsteins wurde auch die ursprüngliche Höhe annähernd wieder errichtet, sodass heute das historische Erscheinungsbild als

wiederhergestellt angesehen werden kann. Das Fagus-Logo auf dem Wasserbehälter besteht als Werbeträger erst seit 1975.

d. Maschinen- und Kesselhaus

Das heutige Maschinen- und Kesselhaus wurde im Zuge der Werkserweiterung zwischen 1914 und 1916 errichtet. Das an gleicher Stelle bereits bestehende ältere und kleinere Maschinenhaus mit einer Lokomobile wurde durch den Neubau zunächst umbaut, später jedoch abgebrochen. Auch an diesem Bauteil war Gropius bei seiner Formensprache geblieben, die er am Hauptgebäude und an der Arbeitssaal-Fassade angewandt hatte, einer Stahl-Glas-Konstruktion mit rahmendem gelbem Klinkersockel und einer ebensolchen Attika. Zur Energieerzeugung war zunächst eine Dampfmaschine der Firma Sulzer aus Ludwigshafen in das Maschinenhaus eingebaut worden, deren Dampfkessel mit Kohle befeuert wurde. Schon lange vor der Generalinstandsetzung war die Dampfmaschine des Gebäudes durch eine Ölfeuerung ersetzt worden.

Die Sanierung erfolgte zwischen 1994 und 1997. Zugleich richtete man das Gebäude als Kantine und Pausenaufenthaltsraum für die Werksangehörigen her, heute eine Möglichkeit, auch größere Besuchergruppen zu bewirten. Dabei wurde zunächst die inzwischen veraltete Ölheizungsanlage mit den großen Kesseln entfernt. Es folgte die Sanierung des äußeren Mauerwerks sowie eine Restaurierung des noch vorhandenen originalen schwarz-weißen Fliesenfußbodens mit Ergänzung der Fehlstellen. Mit größter Behutsamkeit wurde die Stahl-Glas-Fassade unter Beibehaltung der Einfachverglasung repariert. Defekte Glasscheiben wurden ausgetauscht. Abschließend richtete man den Außenbereich mit der Eingangstür und den Aufgang mit den schlichten Geländern wieder her. Das Bild einer ursprünglichen Maschinenhalle ist bis heute durch die noch vorhandene Kranbahn besonders gut nachvollziehbar.

Konzeptioneller Grundgedanke bei der Behandlung des Maschinen- und Kesselhauses war der weitestmögliche Erhalt der Gebäudesubstanz, obwohl Teile der technischen Ausstattung entfernt werden mussten, die einer sinnvollen Nutzung im Wege standen. Aus Sicht der Denkmalpflege konnten jedoch die entfernten Heizungsanlagen keinen Denkmalwert für sich beanspruchen. Dabei ist davon auszugehen, dass eine andere Lösung angestrebt worden wäre, wenn sich die ursprüngliche Dampfmaschine noch im Gebäude befunden hätte.

e. Späne- und Kohlenbunker

Der bereits 1911 errichtete und 1923/24 erweiterte, massiv erbaute Späne- und Kohlenbunker mit gelben Klinkerwänden und auskragenden Stahlbeton-Flachdächern wurde freistehend an der Bahnanlage mit eigenem Gleisanschluss errichtet. Als vorläufige Sanierungsmaßnahme wurde 1997 eine Betoninstandsetzung am Dach und an dessen Stützen durchgeführt. Ansonsten blieb das Gebäude in seiner ursprünglichen Fassung vollständig erhalten. Es wird heute als Lager sowie zu Werkstattzwecken genutzt und soll 2011-12 unter Beibehaltung aller originalen Bestandteile saniert werden.

f. Gleiswaage

Benachbart zum Späne- und Kohlenbunker steht das kleine Gebäude der Gleiswaage, ebenfalls als freistehender Massivbau in den werkstypischen gelben Verblendklinkern errichtet, zur Gleisseite geöffnet durch eine Stahl-Glas-Fensterkonstruktion und abgeschlossen durch ein Flachdach. Das 1921 errichtete Gebäude war bereits zu Beginn der großen Instandsetzungsarbeiten Mitte der 80er-Jahre außer Funktion. Dennoch wurde es in den Jahren 1991/92 einer Instandsetzung des Mauerwerks, der Stahl-Glas-Fenster und des Daches mit substanzerhaltenden Ausbesserungsarbeiten unterzogen und ist somit im Originalzustand überliefert.

g. Stanzmesserabteilung und Schmiede

Schon in der ursprünglichen Werkskonzeption durch den Gropiusvorgänger Eduard Werner war die Errichtung der Schmiede und Stanzmesserabteilung für die Lederherstellung südlich des Hauptgebäudes geplant. Gropius hatte ab 1911 eine Überarbeitung der Fassaden mit gelben Verblendklinkern vorgenommen, ohne allerdings die bereits festgelegten verhältnismäßig strengen, dem Klassizismus verhafteten Elemente wie Pilastergliederung, Drillingsfenster und die vortretenden Gesimse eliminieren zu können. Die zu verwendenden Eisensprossenfenster passte er jedoch in der bekannten Form der übrigen Anlage an. Zur ehemaligen Schmiede gehört der funktionslose, aber dennoch instand gesetzte und bis heute bewahrte, ca. 20 Meter hohe Schornstein an der Süd-Ost-Ecke des doppelgiebligen Gebäudes.

Mit Aufgabe der Produktion von Stanzmessern im Jahre 1974 wurde das Gebäude für Ausstellungsflächen und Konferenzräume umgenutzt. Die dafür notwendigen Umbauten im Inneren berücksichtigen indessen die ursprüngliche Grundrisskonzeption und die konstruktiven Elemente der ursprünglichen Raumaufteilung. Erforderlich wurde eine Dachsanierung, die entsprechend der Maßnahme des Arbeitssaales durchgeführt wurde. Die alte Dachhaut wurde abgenommen, intakte Ziegel gesichert und wieder verwendet. Material wie beispielsweise Sparren, Pfetten o. ä. wurden nur ausgewechselt, wenn eine irreparable Zerstörung vorlag. Sonst wurden materialgerechte Reparaturen durchgeführt. In Ergänzung zur bestehenden Konstruktion wurde eine Dämmung eingebaut. Die Dachdeckung führte man unter Wiederverwendung der geborgenen Ziegel wie zuvor in Hohlpfannen aus. Die ebenfalls wiederverwendbaren Dachfensterprofile wurden ausgebaut, gestrahlt, neu lackiert und wieder genutzt. Bei der Verglasung wurde entsprechend dem Vorgehen beim Arbeitssaal mit einer Isolierverglasung aus Drahtglas und einer dazwischen liegenden Kapillarplatte gearbeitet, die diffuses Licht in die Räume leitet. Wie an den anderen Werksgebäuden erfuhr das massive Mauerwerk von Schmiede und freistehendem Schornstein eine Fugenausbesserung.

Die bauliche Behandlung orientierte sich an den strengen Maßstäben konservatorischer Denkmalpflege, die Substanzerhalt so weitgehend wie möglich anstrebt, einen Substanzaustausch nur bei zerstörten Materialien vornimmt. Dabei sind die Veränderungen gegenüber dem Original nur in Bezug auf die veränderte

Nutzung erkennbar. Insbesondere das äußere Erscheinungsbild ist in der ursprünglichen Form unverändert erhalten geblieben.

h. Pförtnerhaus mit Werkstor und Mauer

Das Pförtnerhaus mit dem Werkstor und der heute noch vorhandenen Grenzmauer zur Hannoverschen Straße wurde 1925 als letzter Bau von Gropius auf dem Gelände des Fagus-Werkes errichtet. Sowohl die werkstypische Materialwahl des gelben Klinkers als auch die moderne Gestaltungssprache des Architekten prägen den Werkseingang. Der Dachüberstand wurde ursprünglich von einer senkrechten Wandscheibe aus Beton getragen, die vermutlich kurz nach 1950 durch die heutigen Stützpfeiler ersetzt wurde, um aus der Pförtnerloge die Werksstraße überblicken zu können. Im Zuge der Gesamtmaßnahme mussten am Pförtnerhaus und der Einfriedungsmauer Instandsetzungsarbeiten durchgeführt werden, so u. a. eine Sanierung des durchlässigen Betondaches sowie die Entrostung der Stahl-Glas-Fensterelemente und der Tür. Die Mauerfugen wurden entsprechend der übrigen Gebäude ausgebessert. Ebenso wie im Vestibül des Treppenaufgangs installierte man im Pförtnerhaus eine nach einem Bauhausentwurf rekonstruierte Kastenleuchte. Insgesamt ist das ursprüngliche Erscheinungsbild der Zufahrt bis auf den nach dem Kriege erfolgten Austausch der Mauerscheibe gegen die Pfeiler als Tragelemente des Betondaches vollständig erhalten.

i. Trockengebäude

Das 1911 im Bau begonnene und 1913 fertiggestellte Trockenhaus, das dem Arbeitssaal unmittelbar vorgelagert ist, diente der maschinellen Trocknung der im Lagerhaus bereits vorgetrockneten hölzernen Werkstücke zur Schuhleistenproduktion. Das Gebäude war mit seinen hohen Trockenkammern eingeschossig angelegt, wirkt jedoch nach außen aufgrund entsprechender Fensteraufteilungen, die auf den Vorgänger von Gropius zurückgehen, zweigeschossig. Das Trockenhaus ist mit einem Flachdach gedeckt, aus dem die Abluftschächte der Trockenkammern herausragten. Mit der Umstellung auf die Kunststoffproduktion wurden 1974 bereits Teile der Trockenkammern entfernt.

Im Zusammenhang mit der großen Werkssanierung wurden 1997 auch am Trockengebäude insbesondere am Dach und an den Fassaden Instandsetzungsmaßnahmen durchgeführt, wobei die Dachdichtung vollständig erneuert werden musste und mit einer Dämmlage versehen wurde. Die Mauerwerksabdeckungen aus Zinkblech wurden originalgetreu wiederhergestellt und lassen nach außen keine Veränderung des Erscheinungsbildes erkennen. Ebenso wurde mit der Regenentwässerung, den Einlaufkästen und Fallrohren verfahren. Aus optischen Gründen wurden auch einige der Abluftschächte auf dem Dach erhalten, obwohl ihre Funktion entfallen war. Die Sanierung der Mauerwerksoberflächen und der Stahlfenster erfolgte als Reparaturmaßnahme entsprechend den bisher aufgeführten Arbeiten an den übrigen Gebäuden. 2007 fügte man in den großvolumigen Innenraum eine unabhängige Holzkonstruktion ohne Eingriff in die historische Bausubstanz ein, mit der man zusätzliche Arbeitsräume für Ingenieure schuf. Zur besseren Belichtung baute man zusätzlich die liegenden Fenster zu dem schmalen Hofraum gegenüber der Lagerhauswand ein.

Insofern ist auch für das ehemalige Trockenhaus festzuhalten, dass sowohl das äußere Erscheinungsbild als auch die innere Bausubstanz durch die Maßnahmen weitgehend gewahrt blieb.

k. Sägerei

Das Sägereigebäude hinter dem großen Lagerhaus stellt den nordwestlichen Abschluss der Werksanlage dar und gehört im Kern zu den Bauten der Bauphase von 1911. In den Folgejahren wurde es mehrfach verändert und erweitert, erstmals 1921 noch unter Gropius, 1938 durch Ernst Neufert und später nochmals um 1950 durch die werkseigene Bauabteilung. Das eingeschossige Gebäude zeigt nach außen die Gestaltungssprache der übrigen Werksanlage, bestimmt durch die gelbe Klinkerverwendung und die Eisensprossenfenster. Durch drei sehr flach geneigte parallel liegende Walmdächer geschlossen, wirkt das Gebäude vom Fußgängerniveau aus, als wäre ein Flachdachabschluss vorhanden.

Nachdem bereits in den 1960er-Jahren durch die Umstellung von Holz- auf Kunststoffbearbeitung in der Schuhleistenproduktion das Gebäude seine ursprüngliche Funktion verloren hatte, wurde es durch einen Brand im Jahre 1985 bis auf das äußere Mauerwerk weitgehend zerstört. Mit dem Wiederaufbau im ursprünglichen Erscheinungsbild wurde es ab 1991 für ein Ingenieurzentrum umgenutzt. Aus den ursprünglich drei nebeneinanderliegenden Sälen wurde ein Großraum geschaffen. Die optisch angelegte Dreischiffigkeit blieb jedoch sowohl im Äußeren als auch im Inneren nachvollziehbar vorhanden. Naturgemäß wurden bei dem Brand alle Fenster zerstört, sodass dafür mit der Umnutzung zeitgemäßer Ersatz Verwendung fand.

l. Lagerhaus

Das Lagerhaus, in zwei Bauabschnitten 1911 und 1914 errichtet, geht in seiner Konzeption auf den Architekten Eduard Werner, den Vorgänger von Walter Gropius, zurück. Das Unter- und Erdgeschoss mit gemauerten Außenwänden bildet den Sockel für die aufgehende Fachwerkkonstruktion. Sämtliche Holzbalkendecken sind in den darüberliegenden Lagerbereichen als Spaltböden ausgebildet. Drei Obergeschosse in traditioneller Fachwerkkonstruktion mit ausgemauerten Fachwerkaußenwänden und einer davor aufgetragenen vier Zentimeter starken sog. „Waschbetonputzschicht“, bilden den Kern dieses mächtigen Industriegebäudes. Das vierte Obergeschoss ist optisch durch ein hölzernes Gurtgesims in der Deckenebene über dem dritten Obergeschoss geringfügig zurückgesetzt und erscheint als aufgesetztes, mit Sandsteinplatten verkleidetes Staffelgeschoss. Den Abschluss bildet die allseitig zurückgesetzte, über die gesamte Länge des Gebäudes gezogene Lüftungslaterne mit den offenen Seitenfronten, die ebenfalls in Holzfachwerk konstruiert sind. Das Lagerhaus als ein markantes und das Gesamtensemble wesentlich mitbestimmendes Gebäude wurde als letztes Objekt der großen Sanierungsmaßnahme erst gegen Ende der 90er-Jahre instand gesetzt.

An dem über mehr als drei Jahrzehnte leer stehenden Gebäude wurde vor der Maßnahme keinerlei Wartung und Werterhaltung vorgenommen. Die

Gebäudealterung schritt dadurch unkontrolliert voran und es stellten sich verstärkt Bauschäden sowie Probleme in der statischen Sicherheit ein. Die schadhafte Dachdichtung, die abgängige Regenentwässerung sowie Fassadenschäden belasteten die Holzkonstruktion schließlich in hohem Maß. Frost in den durchfeuchteten Wänden verursachte Risse und schalenförmige Abplatzungen des Fassadenputzes. Eindringendes Wasser schuf Moderfäule und Hausschwamm in den konstruktiven Hölzern sowie tierischen Befall an der gesamten Konstruktion.

Ab 1995 entstanden erste Überlegungen, das Lagerhaus als externes Expo-Projekt „Technologiezentrum“ in das Weltausstellungskonzept des Jahres 2000 in Hannover aufzunehmen. Mit einem verformungsgerechten Aufmaß und einer ersten Kostenschätzung wurde 1995/96 die Grundlage für die Sanierung gelegt. Weitere Bestandsaufnahmen des Lagerhauses mit Schadenskartierungen schlossen sich bis 1997 an. Denkmalpflegerisch war auch am Lagerhaus das Ziel, möglichst viel von der historischen Bausubstanz und außen wie innen von ihrem Erscheinungsbild zu bewahren, obwohl bereits augenscheinlich war, dass ein Großteil der außenseitigen Fachwerkkonstruktion und des Putzes aus Gründen zu starker Schädigungen – insgesamt ca. 75 % des Außenbaus – nicht erhalten werden konnte. Schließlich kam man zu der Überzeugung, dass allerdings eine Erhaltung der inneren Fachwerkkonstruktion und der Spaltböden als Kernsubstanz des Gebäudes trotz der eingetretenen statischen Probleme zu 100 % möglich erschien. So einigte man sich auf die Substanzerhaltung im Inneren des Hauses und auf eine originalgetreue Fassadenausführung, die zwischen 1998 und 2002 erfolgte. Angesichts der auf Dauer geplanten Umnutzung zu einem Ausstellungsgebäude erhielt die Fassadenrekonstruktion eine gedämmte, aus Sperrholzplatten bestehende Vorsatzschale unter der erneuerten Putzschicht. Nach innen stellt sich das sichtbare, aus Gewichtsgründen nicht mehr mit Backstein gefüllte Fachwerkgerüst in gleicher Form wie die vorher abgängige Konstruktion dar. Das vorhandene, mittig gelegene Treppenhaus konnte ebenfalls instand gesetzt werden. Ein zusätzliches, innen liegendes Treppenhaus fügte man zur statischen Sicherung des Gebäudes sowie aufgrund der brandschutz- und baurechtlichen Anforderungen in Stahlbeton hinzu.

Im Zuge der unumgänglich gewordenen statischen Stabilisierung des inneren Fachwerkgerüstes und der Fassaden baute man Querversteifungen aus sichtbaren Stahlelementen in den unteren drei Geschossen ein. Auch die kraftschlüssige Anbindung der Deckenbalken an die Fachwerkknotenverbindungen wurde sichtbar in Stahl ausgeführt. Konzeptionell war man sich zwischen Planern, Statikern, Denkmalpflegern und Eigentümern einig, dass man nach der Abwendung der Einsturzgefahr die statische Sicherung als bauliche Zutat im Inneren deutlich sichtbar belassen und in die Werksausstellung integrieren wollte, während das äußere Erscheinungsbild dem ursprünglichen Original möglichst nahekommen sollte. Von außen verraten lediglich die neuen Fenster, welche die ursprünglichen Lüftungsklappen in gleicher Größe ersetzen, dass das Lagerhaus des Fagus-Werkes eine Sanierung und vor allem eine Umnutzung erfahren hat.

Insgesamt darf festgehalten werden, dass die Bewahrung des Holzlagerhauses im Fagus-Werk nur durch den Impuls aus der Expo 2000 gelingen konnte. Auf der Grundlage des Expo-Projektes entstanden bis 2005 weitere ständige Ausstellungen zu den Themen „Walter Gropius als Architekt des Faguswerkes“, „Bauhausarchitektur“, „Schuhleisten und Mode“ sowie „Holz und Technik“, die dem

Fagus-Werk und der Stadt Alfeld jährlich zu einem ansehnlichen Besucherstrom verhelfen.

8. Could there be development pressures in the buffer zone and in the wider surroundings of the factory which could impact on the landscape?

Mit den bestehenden Rechtsinstrumentarien aus Bau- und Denkmalschutzrecht des Landes Niedersachsen (Denkmalschutzgesetz und Bauordnung) sowie aus dem Planungsrecht der Bundesrepublik Deutschland (Baugesetzbuch) können alle Entwicklungen, von denen ein Druck auf das Alfelder Fagus-Werk ausgehen könnte, gesteuert werden (s. Kap. 5D und 5E IV-V). Folgende konkrete Detailinformationen hinsichtlich der planungsrechtlichen Absicherung zum Schutz des Fagus-Werkes lassen sich ergänzen:

Der rechtswirksame Flächennutzungsplan der Stadt Alfeld von 1976 stellt das Grundstück und die weitere Umgebung des Fagus-Werkes als gewerbliche Bauflächen dar, sodass die künftige gewerbliche Entwicklung dieses Stadtgebietes gesichert ist. Der aus diesem Flächennutzungsplan entwickelte Bebauungsplan (Nr. 42.2, „Neue Wiese/Limmerburg“) von 2010, der nordwestlich an das nominierte Welterbe anschließt, hat zum Ziel, gewerbliche Bauflächen „für nicht erheblich belästigende Gewerbebetriebe aus Produktion, Handwerk und Dienstleistung“ zu ermöglichen.

Sowohl die Fläche des Bebauungsplans, als auch alle übrigen Flächen in optischer Reichweite des Fagus-Werkes unterliegen dem § 34 des Baugesetzbuches, nach dem die Zulässigkeit möglicher Nachbarbebauungen in der näheren und weiteren Umgebung zu reglementieren sind. Jede zusätzliche Bebauung hat sich in die Eigenart der vorhandenen Umgebung einzufügen. Zugleich darf das Ortsbild, das insbesondere durch die außergewöhnliche Bedeutung des Fagus-Werkes geprägt ist, nicht beeinträchtigt werden. Die Anforderungen an gesunde Wohn- und Arbeitsverhältnisse müssen gewahrt bleiben.

Aus diesen planungsrechtlichen Bindungen wird es immer möglich sein, zu großvolumig oder zu hoch geplante Baukörper, die das Fagus-Werk beinträchtigen könnten, auf ein angemessenes Maß zu reduzieren. Im Fall zukünftiger unmittelbarer Nachbarschaftsbauten ist eine Rücksichtnahme auf das Fagus-Werk ein zu beachtendes und durchsetzbares Planungsziel. Eine unangemessene optische Konkurrenz zum Fagus-Werk kann insofern mit großer Sicherheit ausgeschlossen werden. Für städtebaulich wünschenswerte Ergänzungen in der näheren und weiteren Umgebung des Fagus-Werkes sind mit diesem Rechtsinstrumentarium alle Möglichkeiten geschaffen.

Als Grundlage für weitere künftige Bauleitplanungen hat die Stadt Alfeld 1996 einen Landschaftsplan für die weitere Umgebung des Fagus-Werkes über den Besiedlungsrand hinaus erarbeiten lassen. Optische Störungen von der südwestlichen Hügelseite können mithilfe des Bau- und Planungsrechts so gesteuert werden, dass sich keine negativen Auswirkungen auf das Fagus-Werk und die Altstadt von Alfeld ergeben. Insbesondere die Sichtbeziehung zwischen dem

Wahrberg und dem Fagus-Werk ist in der Verbindung von §§ 34 und 35 Baugesetzbuch und den Zielsetzungen des Landschaftsplanes regelbar.

Zu weiteren raumrelevanten Planungen, die das Fagus-Werk tangieren könnten, ist Folgendes anzufügen: Zurzeit wird ein Raumordnungsverfahren zur Errichtung einer 380-KV-Leitung zwischen dem Umspannwerk Wahle in Niedersachsen und dem Umspannwerk Mecklar in Hessen durchgeführt. Im Rahmen der Antragskonferenz ist das zuständige Stromversorgungsunternehmen darüber in Kenntnis gesetzt worden, dass vom Land Niedersachsen bzw. der Bundesrepublik Deutschland 2009 für das Alfelder Fagus-Werk ein Welterbeantrag bei der UNESCO eingereicht wurde. Damit verbietet sich eine Stromtrassenführung in optischer Reichweite des Fagus-Werkes. Alternative Trassenführungen sind vorhanden.

Weitere räumlich relevante Planungen, die in irgendeiner Weise das Fagus-Werk tangieren könnten, sind nicht bekannt. Insbesondere für Windkraftanlagen gibt es weder angemeldete Investoreninteressen noch eingeleitete Planungsverfahren. Mit dem zusätzlichen Instrument von Umweltverträglichkeitsprüfungen ließe sich das Fagus-Werk über die beschriebenen Rechtsinstrumentarien hinaus ebenfalls wirksam schützen.

Zur Pufferzone sind folgende Erläuterungen zu geben: Nach Nordwesten hin ist den Gropius-Bauten durch die betriebserweiternde Maschinenbauhalle der Firma Fagus-GreCon von 1974 (heute GreCon-Dimter, s. Antrag Kapitel 2.B, S. 33) mit ausreichendem Abstand und angemessener Höhe ein baulich schützender Riegel vorgeschoben, der die gestalterischen Qualitäten des Kulturdenkmals unterstützt und eine verlängerte Pufferzone in dieser Richtung überflüssig macht. Da die Grundstücke in südwestlicher Richtung zwischen der Hannoverschen Straße und der Bahnlinie schmaler werden, ist die Pufferzone in diese Richtung länger angelegt, um ein starkes Instrument bei der Höhenbegrenzung eventueller Neubauten zu haben. Stadtauswärts nach Südwesten und stadteinwärts nach Nordosten gelten uneingeschränkt die Bindungen des Bau-, Planungs- und Denkmalrechts (s. auch Antrag Kapitel 5.B/7.B). Insofern sind optische Beeinträchtigungen für das Fagus-Werk von diesen Seiten her nicht zu befürchten.

Mit der gewählten Pufferzonenausweisung ist zugleich ein Konsens zwischen den Welterbe-Antragstellern und der kommunalen Planungsverwaltung erzielt, der die städtebauliche Entwicklung in der Umgebung des Fagus-Werkes unter den mittelfristig zu erwartenden wirtschaftlichen Bedingungen steuerbar macht. Dieser Konsens wird sowohl den strengen Anforderungen des Denkmalschutzes als auch den notwendigen Planungsperspektiven der Stadt Alfeld gerecht.

1 Centennial Hall, Wroclaw, Poland, 1911-1913 by Max Berg

2 Bauhaus and its Sites in Weimar and Dessau, Germany, 1919-1939 by Walter Gropius et al

3 Rietveld Schröder House, Utrecht, Netherlands, 1924 by Gerrit Thomas Rietveld

4 Berlin Modernism Housing Estates, Berlin, Germany, 1919-1931 by Bruno Taut, Otto Bartning, Hans Scharoun, Walter Gropius et al

5 White City of Tel-Aviv - Modern Movement, Tel-Aviv, Israel, 1930-1950 by Arieh Sharon, Joseph and Ze'ev Berlin et al

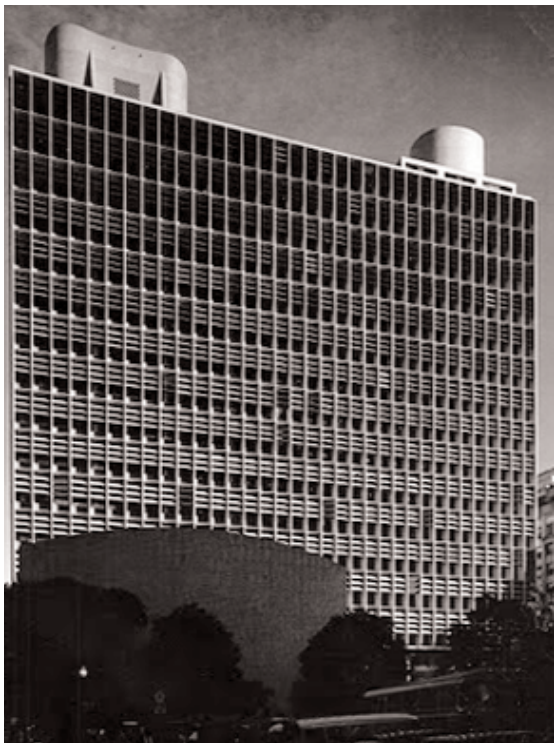
6 Ciudad Universitaria de Caracas, Caracas, Venezuela, 1940-1960 by Carlos Raúl Villanueva

7 Central University City Campus of the Universidad Nacional Autónoma de México (UNAM), Mexico-City, Mexico, 1949-1953 by José Villagrán Garcia et al

8 UNAM, Rectorate building

9 UNAM, central library

10 Tugendhat Villa in Brno, Czech Republic, 1928-1930 by Mies van der Rohe

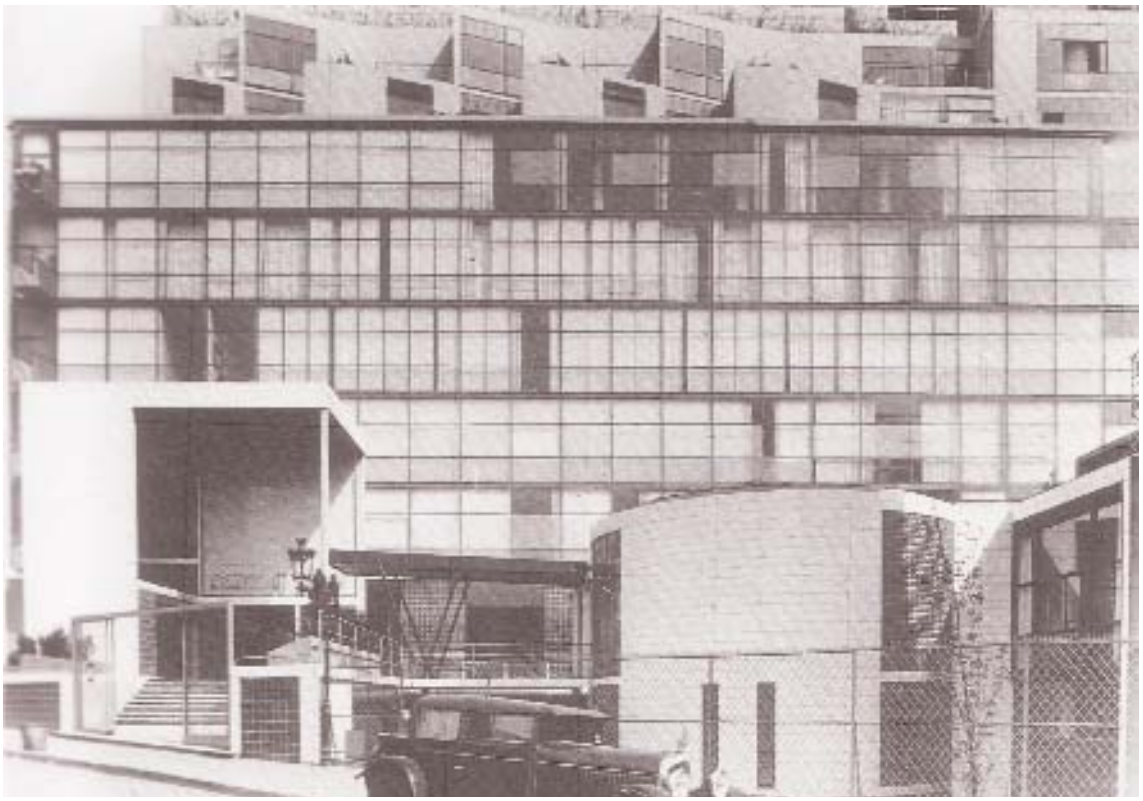


11 Ministry of Health and Education, Rio de Janeiro, Brasilia, 1936-1943 by Lucio Costa

12 Yacht-Club in Belo Horizonte, Brasilia, 1940 by Oscar Niemeyer

13 City library of Viipuri, Viipuri, Finland, 1927-1935 by Alvar Aalto

14 “Lasipalatsi“, Helsinki, Finland, 1935/36 by Viljo Revell et al



15 Cité de Refuge, Paris, France, 1929-1933 by Le Corbusier

16 Maison de Verre, Paris, France, 1928-1932 by Pierre Chareau

18 Boots factory, Beeston, Great Britain, 1930-1932 by Owen Williams

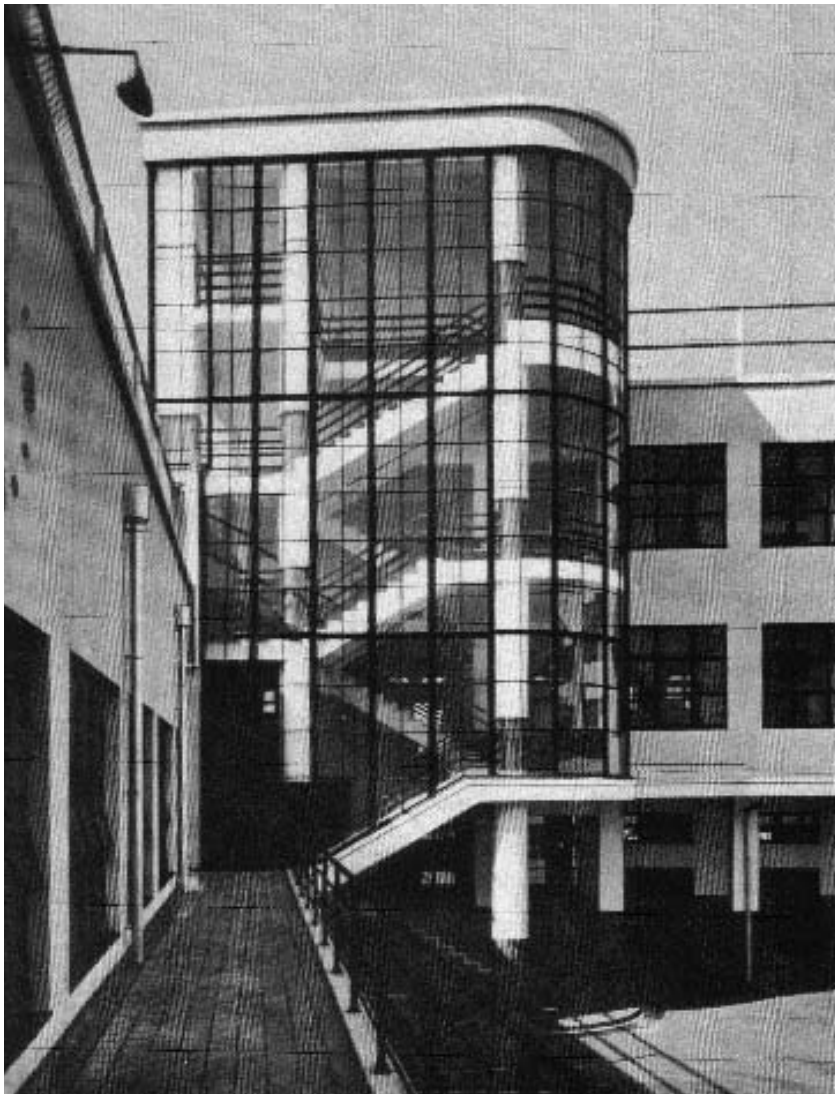
17 École Karl-Marx, Villejuif, France, 1931-1933 by André Lurcat

19 Empire Pools, London, Great Britain, 1933-1934 by Owen Williams

20 Daily Express building, London, Great Britain, 1932 by Williams/Clarke/Atkinson

21 Sun House, Frogwell/Hampstead, Great Britain, 1934-1935 by Maxwell Fry

22 Impington Village College, Impington, Great Britain, 1936-1940 by Maxwell Fry and Walter Gropius



23 Elementary school of Yotsuya, Tokyo, Japan, 1933 by building authorities of Tokyo

24 Torre Latinoamericano, Mexico City, Mexico, 1950 by Augusto Alvarez and Adolfo Zeevaert

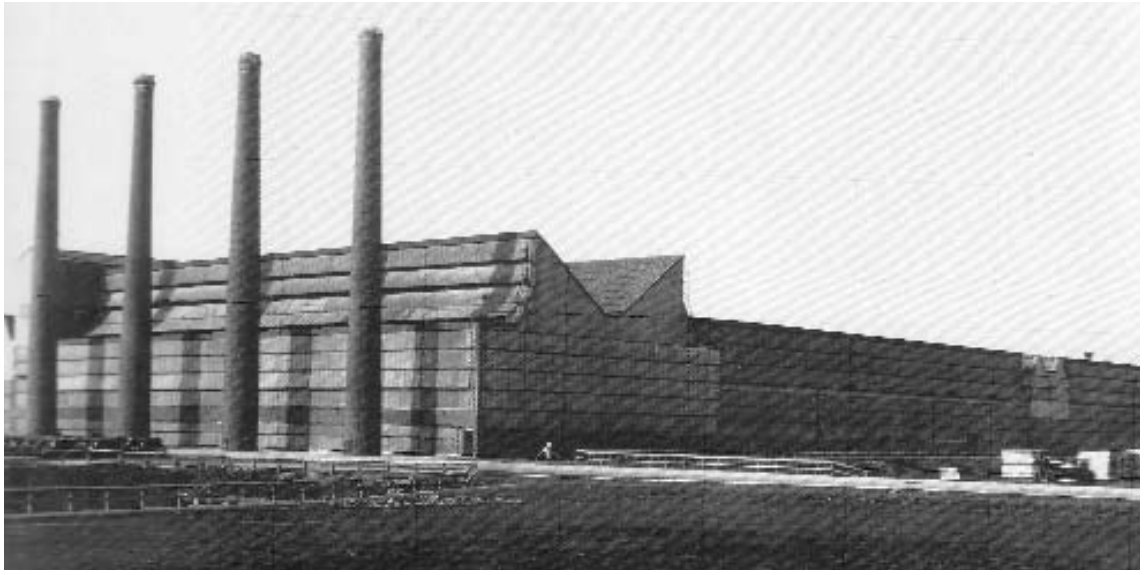
25 Van Nelle factory, Rotterdam, Netherlands, 1926-1930 by Leendert van der Vlugt and Andreas Brinkman

26 Sanatorium Zonnestral, Hilversum, Netherlands, 1928 by Johannes Duiker

27 Club House Rusakow, Moscow, Russia, 1927-1928
by Konstantin Melnikow

28 Multi-storey car park, Moscow, Russia, 1933 by Konstantin Melnikow

29 Guaranty Building, Buffalo, USA, 1894-1895 by Louis Sullivan



31 Glass Plant, Ford Motor Company, Dearborn, Michigan, USA, 1924 by Albert Kahn

30 Ward W. Willits House, Highland Park, Illinois, USA, designed 1901 by Frank Lloyd Wright

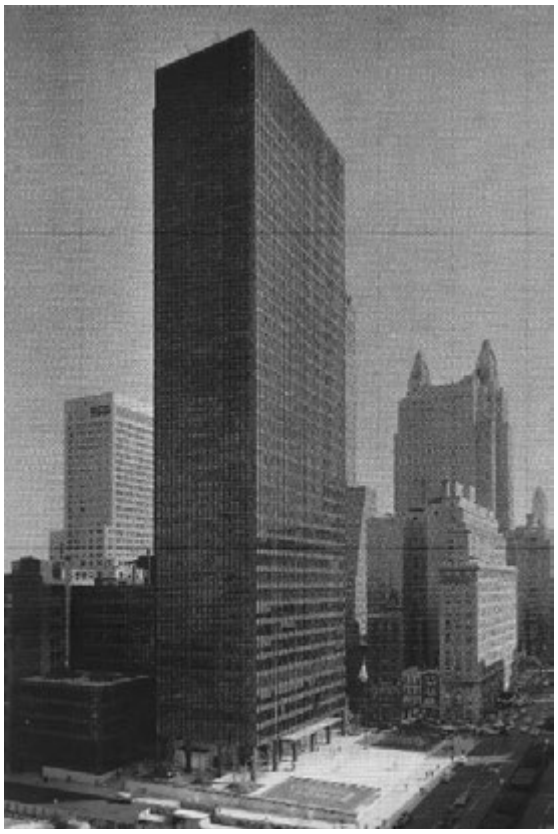
32 Chrysler Dodge Factory, Warren, Michigan, USA, 1938 by Albert Kahn

33 Chicago Tribune Tower (draft), 1922 by Walter Gropius

34 Philadelphia Savings Fund Society Building, Philadelphia, USA, 1929 by George Howe and William Lescaze

35 Harvard Graduate Center, Cambridge, Massachusetts, USA, 1949-1950 by Walter Gropius

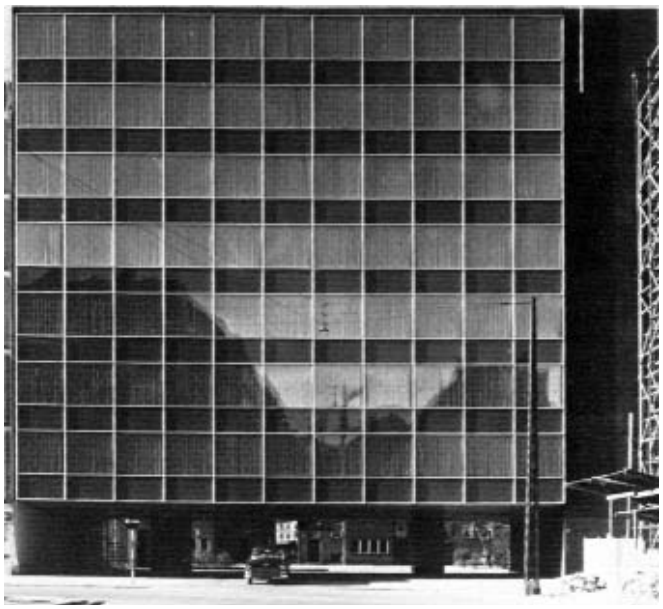
36 Lake Shore Drive Appartments, Detroit, USA,
1949-1951 by Mies van der Rohe



37 Seagram Building, New York, USA,
1958 by Mies van der Rohe

38 PanAm Building, New York, USA,
1960 by Walter Gropius and Pietro Belluschi

39 United Nations Headquarters, New York, USA,
1949-1950 by Le Corbusier and Oscar Niemeyer



40 Office Building Jespersen, Copenhagen, Denmark,
1955 by Arne Jacobsen

41 Skyscraper (draft),
1922 by Mies van der Rohe

42 Model factory, Werkbund exhibition, Cologne, 1914 by Walter Gropius and Adolf Meyer

ICOMOS

INTERNATIONAL COUNCIL ON MONUMENTS AND SITES
CONSEIL INTERNATIONAL DES MONUMENTS ET DES SITES
CONSEJO INTERNACIONAL DE MONUMENTOS Y SITIOS
МЕЖДУНАРОДНЫЙ СОВЕТ ПО ВОПРОСАМ ПАМЯТНИКОВ И ДОСТОПРИМЕЧАТЕЛЬНЫХ МЕСТ

H. E. Mrs Martina Nibbeling-Wrießnig
Ambassador, Permanent Delegate
Permanent Delegation of Germany to
UNESCO
Maison de l'UNESCO
Bureau MS1.18
1 rue Miollis
75732 Paris Cedex 15

Our Ref. GB/MA 1368

Paris, 14 December 2010

World Heritage List: Fagus factory (Germany) – Additional information

Dear Madam,

ICOMOS is currently assessing the nomination of "Fagus factory" as a World Heritage Site and we thank you for the additional information we received on 18 November 2010.

As part of our evaluation process, the ICOMOS World Heritage Panel has now reviewed this nomination and identified a few areas where it considers that further information is needed.

Therefore we would be pleased if the State Party could consider the following points and additional information:

1 Consider a possible extension of the buffer zone in the north-east of the property, so as to include the railway buildings and the space beyond corresponding to the former Behrens/Kappe factory. More generally, confirm that the Alfeld urban development plan has been promulgated, and specify the measures which guarantee the protection of the property's landscape environment.

2 State the policy on vehicle parking in view of the foreseeable increase in the number of visitors to the site.

3 Indicate the number and the competence of the Exhibition Centre staff and of the staff in contact with the public.

4 State whether an increase in rail traffic and the passage of express trains on the line at the edge of the property constitute a risk which could compromise the anti-vibratory measures taken when the large glass panels of the main building were restored (p. 59-60 of the nomination dossier). Concerted discussions with the railway company would seem to be advisable in this matter.

We look forward to your responses to these points which will be of great help in our evaluation process.

ICOMOS has no obligation to contact States Parties during the evaluation process. However, with a view to being as transparent as possible, ICOMOS has agreed to approach States Parties in specific cases. This does not prejudice the ICOMOS recommendation on the nomination and should be considered as preliminary information. It also does not prejudice the World Heritage Committee's decision.

ICOMOS • 49-51 rue de la Fédération • 75015 PARIS • Tel. : 33 (0) 1 45 67 67 70 • Fax : 33 (0) 1 45 66 90 22
e-mail : secretariat@icomos.org • web site : www.icomos.org

We would be grateful if you could provide ICOMOS and the World Heritage Centre with the above information by **Monday 28 February 2011**.

We thank you in advance for your kind cooperation.

Regina Durighello
Director
World Heritage Programme

Copy to Ministry for Science and Culture of Lower Saxony
Lower Saxon state office for historic preservation
UNESCO World Heritage Centre, Paris

Niedersächsisches Ministerium für Wissenschaft und Kultur
Postfach 2 61, 30002 Hannover

**Niedersächsisches Ministerium
für Wissenschaft und Kultur**

Mrs. Director Durighello

World Heritage Programme
ICOMOS International

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Ministry for Science and Culture
of Lower Saxony

Bearbeitet von Herrn Lucka
E-Mail: wilhelm.lucka@mwk.niedersachsen.de
Fax: 0511 120 99 2579

Ihr Zeichen, Ihre Nachricht vom	Mein Zeichen (Bei Antwort bitte angeben)	Durchwahl (0511) 120-	Hannover, den
GB/MA 1368 14 December 2010	34 – 50923	2579	17.02.2011

World Heritage List: Fagus factory (Germany) – Additional information

Dear Mrs. Director Durighello,

please find enclosed the additional information, as requested in your last letter. I like to direct to the point, that the buffer zone has not only been extended. The administration board of the city of Alfeld has also agreed to consider the buffer zone and the associated objectives and to take them into account within the scope of the planning authority of the municipality. You will find the translation of the decision in the file. A copy of the document will be redirected. I hope, that the additional information can clarify the remaining questions to your full contentment.

Yours sincerely

Wilhelm Lucka

(Referent for conservation in the Ministry of Science and Culture of Lower Saxony)

Niedersächsisches Ministerium für Wissenschaft und Kultur
Postfach 2 61, 30002 Hannover

**Niedersächsisches Ministerium
für Wissenschaft und Kultur**

Mrs. Director Durighello

World Heritage Programme
ICOMOS International

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Ministry for Science and Culture
of Lower Saxony

Bearbeitet von Herrn Lucka
E-Mail: wilhelm.lucka@mwk.niedersachsen.de
Fax: 0511 120 99 2579

Ihr Zeichen, Ihre Nachricht vom	Mein Zeichen (Bei Antwort bitte angeben)	Durchwahl (0511) 120-	Hannover, den
GB/MA 1368 14 December 2010	34 – 50923	2579	21.02.2011

World Heritage List: Fagus factory (Germany) – Additional information

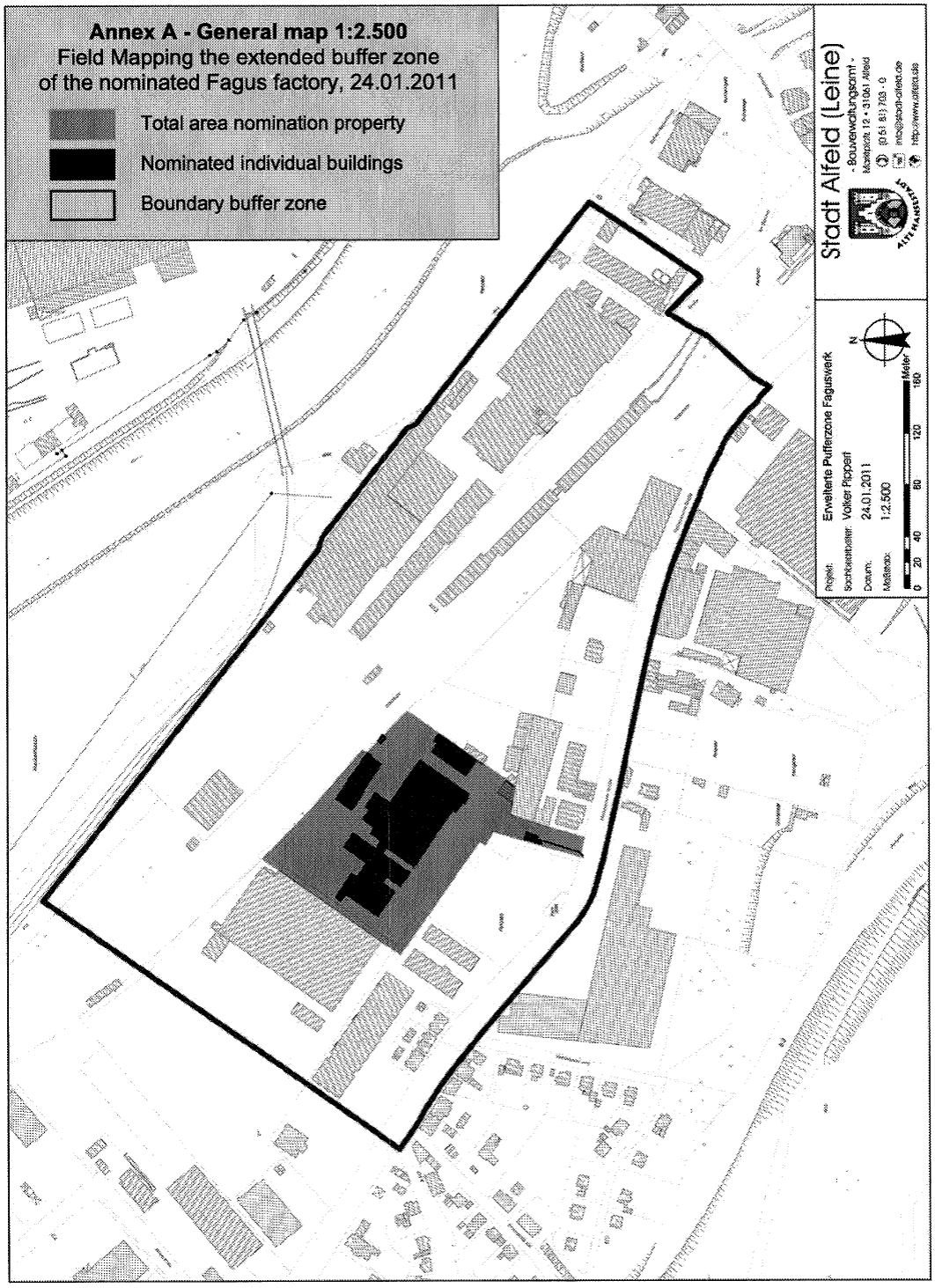
Dear Mrs. Director Durighello,

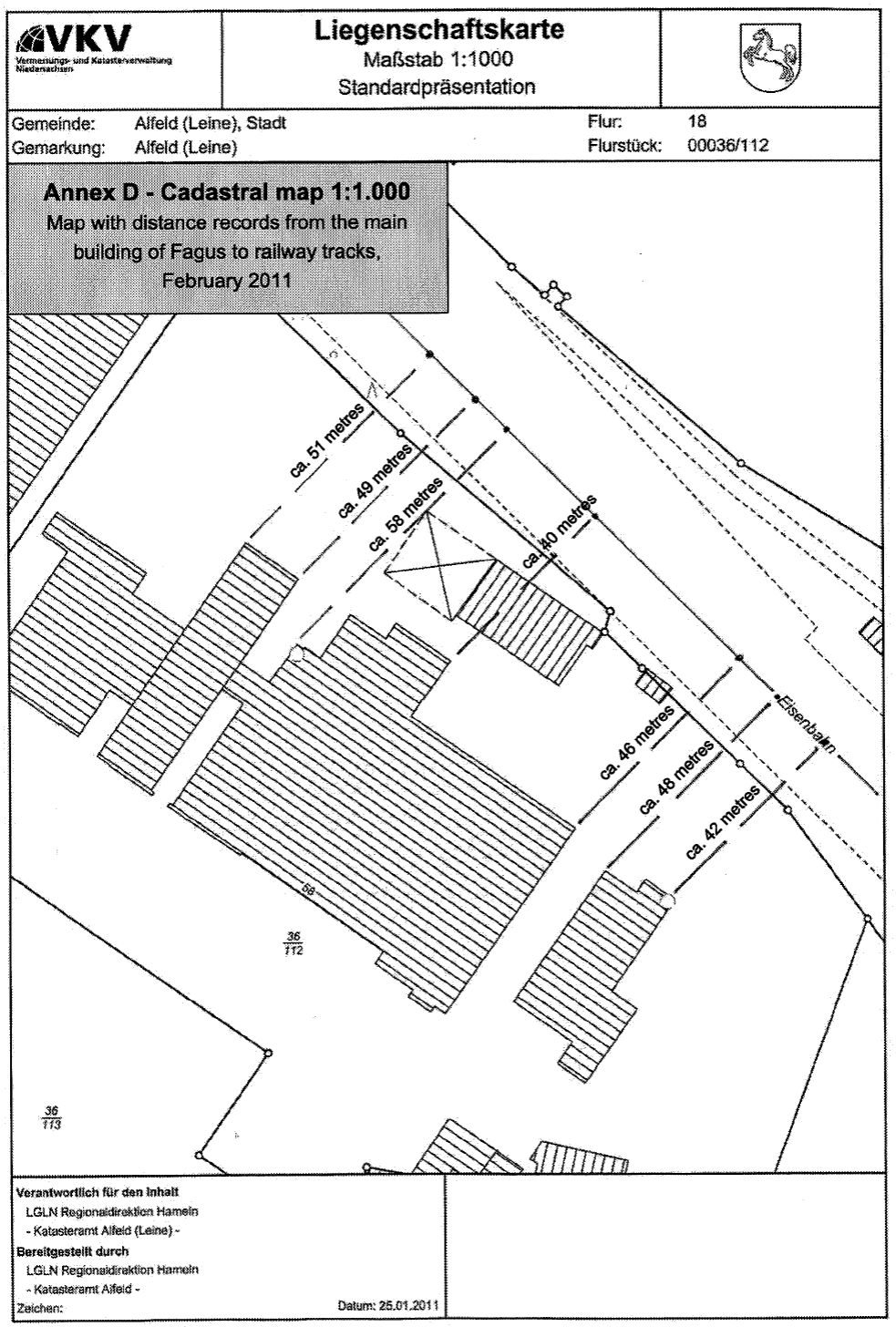
unfortunately the maps, that were sent as annexes A, D and F to the additional information in my letter from 17 February 2011 have no legend or designation in English. I am very sorry about it and ask you to exchange them against the enclosed maps.

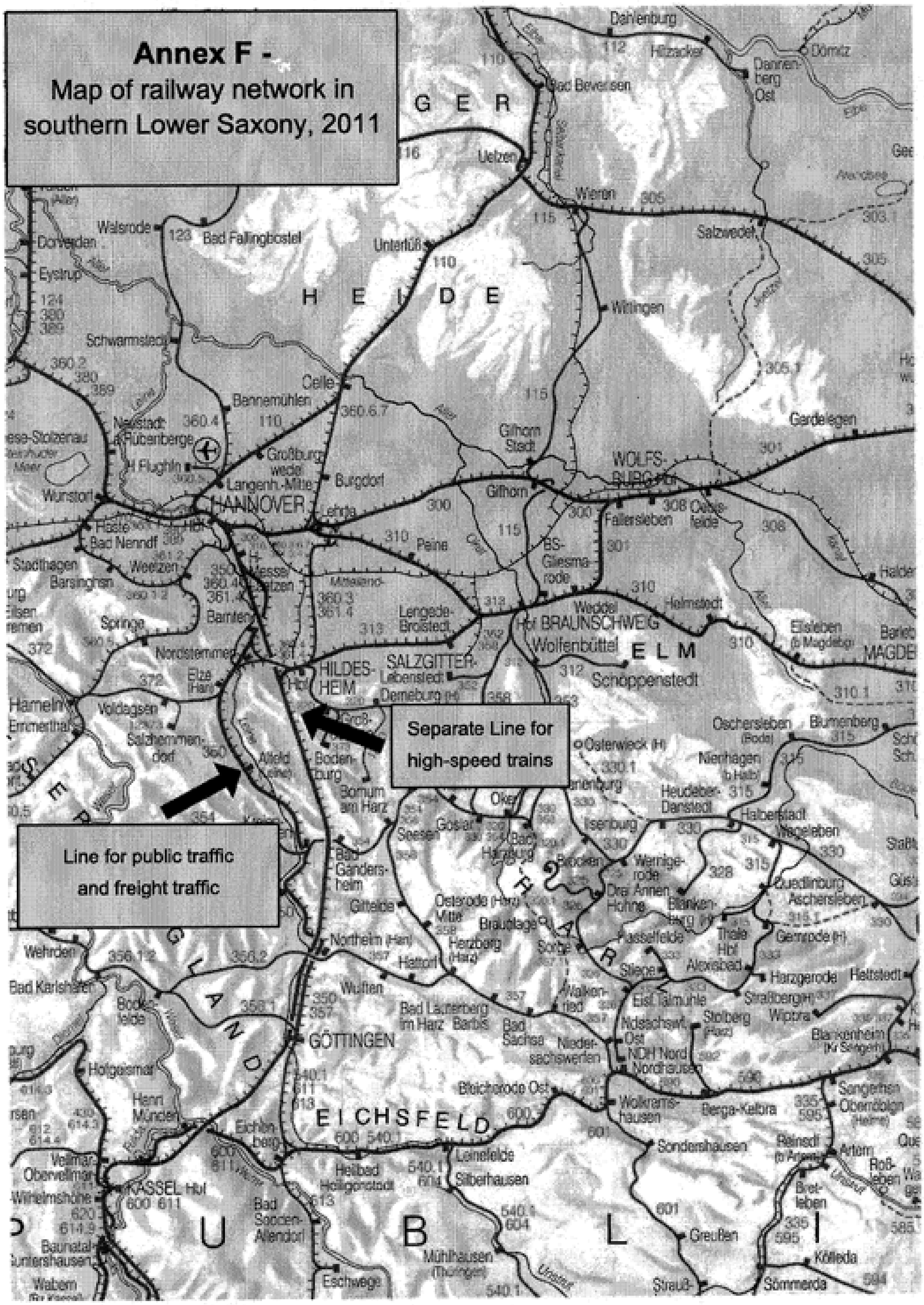
Yours sincerely

Wilhelm Lucka

(Referent for conservation in the Ministry of Science and Culture of Lower Saxony)


Annex A - General map 1:2.500
Field Mapping the extended buffer zone
of the nominated Fagus factory, 24.01.2011
Total area nomination property
Nominated individual buildings
Boundary buffer zone
Stadt Alfeld (Leine)
- Bauverwaltungsamt -
Projekt: Erweiterte Pufferzone Faguswerk
Sachbearbeiter: Volker Pippert
Datum: 24.01.2011
Maßstab: 1:2.500
N
Meter
0 20 40 80 120 160


VKV
Vermessungs- und Katasterverwaltung Niedersachsen
Liegenschaftskarte
Maßstab 1:1000
Standardpräsentation
Gemeinde: Alfeld (Leine), Stadt
Gemarkung: Alfeld (Leine)
Flur: 18
Flurstück: 00036/112
Annex D - Cadastral map 1:1.000
Map with distance records from the main building of Fagus to railway tracks, February 2011
ca. 51 metres
ca. 49 metres
ca. 58 metres
ca. 40 metres
ca. 46 metres
ca. 48 metres
ca. 42 metres
Eisenbahn
56
36/112
36/113
Verantwortlich für den Inhalt
LGLN Regionaldirektion Hameln
- Katasteramt Alfeld (Leine) -
Bereitgestellt durch
LGLN Regionaldirektion Hameln
- Katasteramt Alfeld -
Zeichen:
Datum: 25.01.2011


Annex F -
Map of railway network in southern Lower Saxony, 2011
Separate Line for high-speed trains
Line for public traffic and freight traffic
HANNOVER
HILDES-HEIM
SALZGITTER
BRAUNSCHWEIG
WOLFS-BURG
GÖTTINGEN
KASSEL Hbf
Celle
Uelzen
Gifhorn
Peine
Wolfenbüttel
Hameln
Northeim (Han)
Goslar
Elze (Han)
Alfeld (Leine)
Nordstemmen
Salzwedel
Wittingen
Helmstedt
Halberstadt
Eichsfeld

Niedersächsisches Ministerium für Wissenschaft und Kultur
Postfach 2 61, 30002 Hannover

**Niedersächsisches Ministerium
für Wissenschaft und Kultur**

Mrs. Director Durighello

World Heritage Programme
ICOMOS International

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Ministry for Science and Culture
of Lower Saxony

Bearbeitet von Herrn Lucka
E-Mail: wilhelm.lucka@mwk.niedersachsen.de
Fax: 0511 120 99 2579

Ihr Zeichen, Ihre Nachricht vom	Mein Zeichen (Bei Antwort bitte angeben)	Durchwahl (0511) 120-	Hannover, den
GB/MA 1368 14 December 2010	34 – 50923	2579	23.02.2011

World Heritage List: Fagus factory (Germany) – Additional information

Dear Mrs. Director Durighello,

as announced in my letter from 17 February 2011, the annex B should be redirected. So you find the certified copy of the decision of the administration board of the City of Alfeld as the original document in German and its complete translation in English as attachments

Yours sincerely

W. Lucka

Wilhelm Lucka

(Referent for conservation in the Ministry of Science and Culture of Lower Saxony)

- A/10.2 -

Certified extract

from the minutes of the closed meeting of the **administration committee** of the city of Alfeld (Leine) on **08.02.2011**

PP.

3. Nomination of the Fagus factory as World Heritage - Protection of the buffer zone; submission no. 682/XVI

Decision of the administrative board of the city of Alfeld (Leine):

The city of Alfeld (Leine) explicitly endorses the nomination of the Fagus factory as a World Heritage Site. It supports the objective of the so called buffer zone within the scope of the planning authority of the municipality. In this regard, the city of Alfeld (Leine) is obligated to revise its urban development plan (land development plan, layout plans) accordingly, so that there are no hindrances to this exquisite, highly regarded ensemble of art and architectural significance.

- unanimously -

PP.

It is herewith certified that the above is a true extract. At the same time it is certified that the invitations to the meeting were given in time and due form with the communication of the agenda. The quorum is constituted.

Alfeld (Leine), 17.02.2011

The city of Alfeld (Leine)
The mayor
pp.
[Signature: Runge]
(Runge)
[Stamp: city of Alfeld (Leine)]

- A/10.2 -

Beglaubigter Auszug

aus der Niederschrift über die nichtöffentliche Sitzung des **Verwaltungsausschusses** der Stadt Alfeld (Leine) am **08.02.2011**

PP.

3. Nominierung des Fagus-Werkes als Weltkulturerbe-Sicherung der Pufferzone; Vorlage Nr. 682/XVI

Beschlussempfehlung für den Rat der Stadt Alfeld (Leine):

„Die Stadt Alfeld (Leine) befürwortet ausdrücklich die Nominierung des Fagus-Werkes als Weltkulturerbe. Sie unterstützt die Zielsetzungen der sog. Pufferzone im Rahmen ihrer kommunalen Planungshoheit. Die Stadt Alfeld (Leine) verpflichtet sich in diesem Zusammenhang, ihre Bauleitplanung (Flächennutzungsplan, Bebauungspläne) dahingehend auszurichten, dass keinerlei Beeinträchtigungen dieses baugeschichtlich und architektonisch ausgesprochen hochwertigen Ensemble entstehen können."

- e i n s t i m m i g -

PP.

Die Richtigkeit des Auszuges wird beglaubigt. Gleichzeitig wird bescheinigt, dass zur Sitzung unter Mitteilung der Tagesordnung rechtzeitig und ordnungsgemäß eingeladen worden ist. Die Beschlussfähigkeit war gegeben.

Alfeld (Leine), 17.02.2011

Stadt Alfeld (Leine)
Der Bürgermeister
Im Auftrag:

(Runge)

STADT ALFELD (LEINE)

United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation,
la science et la culture

Organización
de las Naciones Unidas
para la Educación,
la Ciencia y la Cultura

Организация
Объединенных Наций по
вопросам образования,
науки и культуры

منظمة الأمم المتحدة
للتربية والعلم والثقافة

联合国教育、
科学及文化组织

The Culture Sector

H.E. Mrs Martina Nibbeling-
Wrießnig
Ambassador
Permanent Delegation of Germany
to UNESCO
UNESCO House

Ref.: CLT/WHC/4219/DE/PA/JSW

02 AOUT 2011

Subject: Inscription of *Fagus Factory in Alfeld* (C 1368) Germany, on the World Heritage List

Dear Ambassador,

I have the pleasure to inform you that the World Heritage Committee, at 35th session (UNESCO, 19-29 June 2011), examined the nomination of the ***Fagus Factory in Alfeld*** and decided to **inscribe** the property on the World Heritage List. The decision of the Committee concerning the inscription is attached below.

I am confident that your government will take the necessary measures for the proper conservation of this new World Heritage property. The World Heritage Committee and its Secretariat, the World Heritage Centre, will do everything possible to collaborate with you in these efforts.

The *Operational Guidelines for the Implementation of the World Heritage Convention* (paragraph 168), request the Secretariat to send to each State Party with a newly inscribed property a map of the area(s) inscribed. Please examine the attached map and inform us of any discrepancies in the information by **1 December 2011**.

The inscription of the property on the World Heritage List is an excellent opportunity to draw the attention of visitors to, and remind local residents of, the *World Heritage Convention* and the outstanding universal value of the property. To this effect, you may wish to place a plaque displaying the World Heritage and the UNESCO emblems at the property. You will find suggestions on this subject in the *Operational Guidelines for the Implementation of the World Heritage Convention*.

In many cases States Parties decide to hold a ceremony to commemorate the inscription of a property on the World Heritage List. Upon request to the World Heritage Centre by the State Party, a World Heritage Certificate can be prepared for such an occasion.

I would be grateful if you could provide me with the name, address, telephone and fax numbers and e-mail address of the person or institution responsible for the management of the property so that we may send them World Heritage publications.

7, place de Fontenoy
75352 Paris 07 SP, France
Tél. : +33 (0)1 45 68 24 96
Fax : +33 (0)1 45 68 55 70

www.unesco.org

Please find attached the brief descriptions of your site, prepared by ICOMOS and the World Heritage Centre, in both English and French. As these brief descriptions will be used in later publications, as well as on the World Heritage website, we would like to have your full concurrence with their wording. Please examine these descriptions and inform us, by **1 December 2011** at the latest, if there are changes that should be made. If we do not hear from you by this date, we will assume that you are in agreement with the text as prepared.

Furthermore, as you may know, the World Heritage Centre maintains a website at http://whc.unesco.org/, where standard information about each property on the World Heritage List can be found. Since we can only provide a limited amount of information about each property, we try to link our pages to those maintained by your World Heritage property or office, so as to provide the public with the most reliable and up-to-date information. If there is a website for the newly inscribed property, please send us its web address.

The full list of the Decisions adopted by the World Heritage Committee at its 35th session is available electronically at http://whc.unesco.org/en/sessions/35COM

As you know, according to paragraph 172 of the *Operational Guidelines for the Implementation of the World Heritage Convention*, the World Heritage Committee invites the States Parties to the *Convention* to inform the Committee, through the World Heritage Centre, of their intention to undertake or to authorize in the area protected under the *Convention* major restorations or new constructions which may affect the outstanding universal value of the property.

May I take this opportunity to thank you for your co-operation and for your support in the implementation of the *World Heritage Convention*.

Please accept, dear Ambassador, the assurances of my highest consideration.

Kishore Rao
Director
World Heritage Centre

Encl.

cc: German National Commission for UNESCO
ICOMOS International
Dr Birgitta Ringbeck, National Focal Point for World Heritage

Extract of the Decisions adopted by the 35th session of the World Heritage Committee (UNESCO, 2011)

Decision: 35 COM 8B.31

The World Heritage Committee,

1. Having examined Documents WHC-11/35.COM/8B and WHC-11/35.COM/INF.8B1,

2. Inscribes the **Fagus Factory in Alfeld**, **Germany**, on the World Heritage List on the basis of **criteria (ii)** and **(iv)**;

3. Adopts the following Statement of Outstanding Universal Value:

Brief synthesis
Designed in around 1910, the Fagus factory in Alfeld constitutes an architectural complex which foreshadows the modernist movement in architecture. Built by Walter Gropius, it is notable for the innovative use of walls of vast glass panels combined with an attenuated load-bearing structure. It bears testimony to a major break with the existing architectural and decorative values of the period, and represents a determined move towards a functionalist industrial aesthetic.

The Fagus factory in Alfeld establishes several major fundamental aspects of modern functionalist architecture of the 20th century, in particular the curtain wall. It constitutes a homogeneous, territorial and built complex, rationally and completely designed to serve an industrial project. It expresses great architectural unity. The scheme is at once architectural, aesthetic and social, and bears witness to a determination to achieve humanist control of the social and aesthetic changes linked to industrialisation. The interior decorative and functional elements are attuned with the architecture and the social project. They represent one of the first consummate manifestations of industrial design.

Criterion (ii): The Fagus factory in Alfeld illustrates a moment of considerable interchange between different generations of German, European and North American architects, which gave rise to a rational and modernist architecture. It was a site of synthesis of these influences, which were technical, artistic and humanistic; it went on to influence many other architectural works; it was the starting point of the Bauhaus movement.

Criterion (iv): A manifesto of modernity in architecture, the Fagus factory won its designer, Walter Gropius, an international reputation. It exemplifies the innovation of the curtain wall, which optimises both luminosity and lightness. It is a concrete expression of the functionality of the industrial complex in the interest of productivity and the humanisation of the working environment. It incorporates into the scheme the concepts of industrial aesthetics and design.

Integrity
All ten buildings constituting the Fagus factory have been conserved in their entirety, in their initial ground plans and architectural forms. The factory corresponds with the programme set out by its designers around 1910. No buildings have been added or demolished. The conditions of integrity in terms of layout and exterior architecture have been preserved.

Authenticity

Major repairs and restorations were carried out from 1985 to 2001. They were carried out with great respect for the property with regard to its outstanding testimony to 20th century industrial architecture, which has contributed to the preservation of the conditions of authenticity both as regards architecture and decoration.

Protection and management requirements
The property has been listed as a historic monument since 1946, which is a very early date for an industrial complex. The 1978 Act of the Regional State of Lower Saxony on Historic Monuments and Buildings redefined the terms of its legal protection. The property is managed under the responsibility of its owner, Fagus-Grecon Greten GmbH & Co. KG. The owner acts in concert with the regional and local historic monument conservation authorities, via the property's Steering Committee, which exercises authority with regard to project control and coordination between the various partners involved. The management system consists of a set of maintenance and conservation measures which is regularly updated by the Steering Committee. If major works are required, joint funding is set up between the private sector owner and the regional and national public authorities.

4. Recommends that the State Party give consideration to the following:

   a) Consider one or more possible scenarios which could be implemented in the event of a change of owner and/or a change in use of the buildings,

   b) Set out a medium-term conservation programme, including the participation of professionals specialising in the conservation of 20th century architecture,

   c) Consider establishing more precise technical indicators for the monitoring of the state of conservation.

Surface and coordinates of the property inscribed on the World Heritage List by the 35th session of the World Heritage Committee (UNESCO, 2011) in accordance with the *Operational Guidelines*.

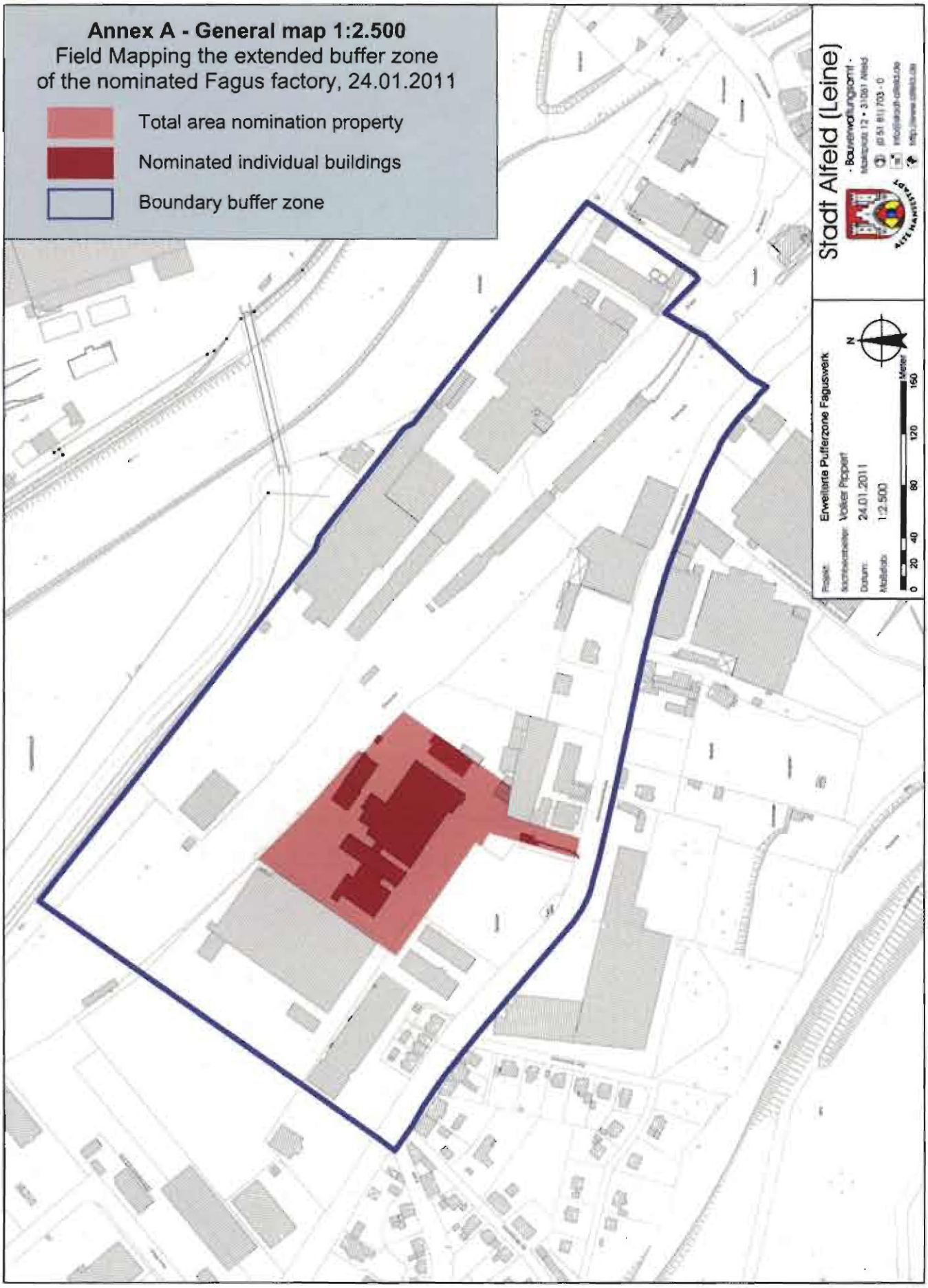
Etat partie		ID N		Bien	Zone tampon	Coordonnées du point central
Allemagne	Usine Fagus à Alfeld	1368		1.88 ha	18.89 ha	N51 59 01 E09 48 40

Brief Description in English

Fagus Factory in Alfeld is a ten-building complex began around 1910 to the design of Walter Gropius, which is a landmark in the development of modern architecture and industrial design. Serving all stages of manufacture, storage and dispatch of lasts used by the shoe industry, the complex, which is still operational today, is situated in Alfeld an der Leine in Lower Saxony. With its groundbreaking vast expanses of glass panels and functionalist aesthetics, the complex foreshadowed the work of the Bauhaus School.

Brief Description in French

Ce complexe de 10 bâtiments, conçu au début des années 1910 par Walter Gropius, témoigne du développement de l'architecture moderne et du design industriel. La succession des bâtiments est organisée pour accompagner le processus industriel, depuis les matériaux bruts jusqu'à la fabrication et le stockage des chaussures. Situé à Alfeld an der Leine, en Basse-Saxe, l'ensemble est encore en activité. Avec ses verrières révolutionnaires et son esthétique fonctionnaliste, l'usine annonce le mouvement moderniste et l'école du Bauhaus.


Annex A - General map 1:2.500
Field Mapping the extended buffer zone
of the nominated Fagus factory, 24.01.2011
Total area nomination property
Nominated individual buildings
Boundary buffer zone
Stadt Alfeld (Leine)
Erweiterte Pufferzone Faguswerk
Volker Pippert
24.01.2011
1:2.500
N
Meter
0
20
40
80
120
150