GLASS
ARCHITECTURE

by
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1 Environment and its influence on the development of culture

We live for the most part in closed rooms. These form the environment from which our culture grows. Our culture is to a certain extent the product of our architecture. If we want our culture to rise to a higher level, we are obliged, for better or for worse, to change our architecture. And this only becomes possible if we take away the closed character from the rooms in which we live. We can only do that by introducing glass architecture, which lets in the light of the sun, the moon, and the stars, not merely through a few windows, but through every possible wall, which will be made entirely of glass – of coloured glass. The new environment, which we thus create, must bring us a new culture.

2 The veranda

Obviously the first thing to tackle is something quickly done. To start with, therefore, the veranda can be transformed. It is easy to enlarge it, and to surround it on three sides with double glass walls. Both these walls will be ornamentally coloured and, with the light between them, the effect of the veranda in the evening, inside and out, will be most impressive. If a view of the garden is to be provided, this can be achieved by using transparent window-panes. But it is better not to fit window-type panes. Ventilators are better for admitting air.

In a modest way, it is thus comparatively easy for any villa-owner to create 'glass architecture'. The first step is very simple and convenient.

3 The Botanical Gardens at Dahlem

We already have glass architecture in botanical gardens. The Botanical Gardens at Dahlem near Berlin show that very imposing glass palaces have been erected. But – colour is missing. In the evening sunlight, however, the Palm House and the Cold House look so magnificent that one has a good idea of what could be achieved if colour were exploited. The Palm House is particularly interesting: outside, the seemingly unsupported iron* construction; inside, the framework of wood glazing bars, so that no rust-water accumulates and the iron can be repainted again and again. Wood, because of its impermanence, is not an impressive material. The worst thing, though, is that the glass walls are single and not double; in consequence, the expenditure on winter heating is simply enormous. In one of its guidebooks, the management recounts with unjustified pride that in winter, in a single day with a temperature at 8 am of –10 degrees

* Throughout the translation of Glasarchitektur the German word Eisen is given as 'iron'.
centigrade, a load of 300 centners* of best Silesian coal is consumed. That, it will be conceded, is rather excessive and not a fit source of pride. Heating expenses of this sort should have been countered with double glass walls.

4 Double glass walls, light, heating and cooling

As air is one of the worst conductors of heat, the double glass wall is an essential condition for all glass architecture. The walls can be a metre apart — or have an even greater space between. The light between these walls shines outward and inward, and both the outer and the inner walls may be ornamentally coloured. If, in so doing, too much light is absorbed by the colour, the external wall may be left entirely clear; it is then advisable simply to provide the light between the walls with a coloured glass shade, so that the wall light in the evening does not dazzle on the outside.

To place heating and incandescent elements between the walls is in most cases not to be recommended, since by this means too much warmth or cold is lost to the outer atmosphere. Heating and cooling elements, however, can be suspended like lamps in the interior, where all hanging lights are to some extent superfluous, since light is distributed by the walls.

In the first instance it is clearly advisable to build glass houses only in the temperate zones, and not in the equatorial and polar regions as well; in the warmer climates one could not do without a white reinforced concrete roof, but in temperate zones this need does not arise. To provide floor heating and cover, electrically-heated carpets are recommended.

5 The iron skeleton and the reinforced concrete skeleton

An iron skeleton is of course indispensable for glass architecture. This will inevitably stimulate an extraordinary upsurge in heavy industry. How to protect iron from rust has not yet been solved in a satisfactory manner. There are many methods of counteracting rust, but so far we do not know which is the best. The simple protective coating, long in vogue, leaves much to be desired aesthetically. The glass architect must surely think of something better to offer. But we can confidently leave this to future developments.

If we are ready to allow larger dimensions to the structural frame, for not every particle of the glass house has to be of glass, a reinforced concrete skeleton is well worth thinking about, for it has proved itself so admirably as a building material, that nothing more need be said about its merits here. Reinforced concrete can also be handled artistically — either with colour or to aesthetic effect by designs cut with the chisel.

6 The inner framework of glass surfaces

The iron or reinforced concrete skeleton virtually frames the glass, but the glazed surfaces must have another smaller inner frame. For this purpose in the Botanical Gardens, as already mentioned, impermanent wood was used. Instead of wood a durable material must now be found. Iron is certainly more lasting, but has to be protected against rust, which can be done by nickeling or coating with paint. The latter, as has been said before, is aesthetically displeasing and has to be renewed often. Perhaps reinforced concrete is an ideal building material here, as it does not take up so much surface.

Various other new building materials might be considered, but these have not yet been sufficiently tested for them to be thought of as entirely credible materials suitable for framing glazed surfaces. It is the technical man's problem, and he will surely find the right answer. In any case, only very strong and rust-free materials are potentially appropriate; wood is not durable and in iron constructions should only be used as a last resort. Wood is no longer used in bridges either; they are built entirely of iron and reinforced concrete. Similarly, glass-architecture is half-iron architecture. Heavy industry has consequently won a completely new market, which is bound to raise the consumption of iron tenfold.

7 The avoidance of wood in furniture and interior decoration

Inside the glass house, too, wood is to be avoided; it is no longer appropriate. Cupboards, tables and chairs must be made of glass if the whole environment is to convey a sense of unity. This will naturally be a grievous blow to the wood industry. Nickel-steel would, of course, have to be decorated with enamel and niello, so that the furniture may create a striking aesthetic effect — like extremely fine wood-carving and wooden cabinets inlaid with other woods. Wood is to be avoided, because of its impermanence, but the use of iron in iron-glass construction lies along the natural line of development.

8 The furniture in the middle of the room

It will surely appear self-evident that the furniture in the glass house may not be placed against the precious, ornamentally-coloured glass walls. Pictures on the walls are, of course, totally impossible. Given the highest intentions, this revolution in the environment is inevitable. Glass architecture will have a tough fight on its hands, but force of habit must be overcome. Ideas derived from our grandparents must no longer be the deciding influence in the new environment. Everything new has to wage an arduous campaign against entrenched tradition. It cannot be otherwise, if the new is to prevail.

* About 15 tons [Ed.]

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9 The larger veranda and its independence of the main building

Whoever has provided his veranda with colour-ornamented glass on three sides will soon want to have more glass architecture. One thing leads to another, and to stop the process is unthinkable. So the veranda continues to grow; in the end it emancipates itself from the main building, and may become the main building itself. To promote this evolution of the veranda will be the chief task of every glass architect.

10 Garden houses and pavilions

The ancient Arabs lived far more in their gardens than in their castles. For this reason garden houses and kiosks were very quickly developed by them. Unluckily, since perishable wood was their constant choice of building material, nothing remains of this Arabian garden architecture.

The task of the modern architect, therefore, is to use only the best iron and reinforced concrete materials for garden houses and pavilions, and to encourage double colour-ornamented glass walls everywhere in the garden. In introducing glass architecture, it is best to begin with the garden. Every owner of a large garden will want to have a glass garden house.

11 Stone flags and majolica on garden paths

In their gardens, the Arabs had patterned floors of stone and majolica; they thus transferred their taste for carpets to their gardens. The Dutch have copied this from the Arabs.

Modern glass architects will be well advised to pave their garden paths with stone and majolica tiles, for in this way the splendour of the glass palaces will be worthily framed.

12 Magnesite and the perfect floor covering for the house

We can now hardly avoid considering many new building materials, but only by way of suggestion. Jointless magnesite floors have much to recommend them; but whether they are equally suited to the house, with its colourful glass walls, is not so easily decided. In any case, many other materials obviously come into the picture as the perfect floor covering - even stone 'parquet', consisting of stones arranged like mosaic. But magnesite should be very durable, and therefore good. Inside the house one will have to be sparing with colour for the floor, in order to achieve a contrasting effect with the walls.

13 The functional style

The reader might gain the impression that glass architecture is rather cold, but in warm weather, coolness is not unpleasant. Anyhow, let me make it clear that colours in glass can produce a most glowing effect, shedding perhaps a new warmth. What has been said up to now takes on a somewhat warmer atmosphere. I should like to resist most vehemencly the undecorated 'functional style', for it is inartistic. It has often been adopted before in other contexts, and this is happening once again.

For a transition period, the functional style seems to me acceptable; at all events it has done away with imitations of older styles, which are simply products of brick architecture and wooden furniture. Ornamentation in the glass house will evolve entirely of its own accord - the oriental decoration, the carpets and the majolica will be so transformed that in glass architecture we shall never, I trust, have to speak of copying. At least, let's hope so!

14 The cladding of building materials and its justification

A housefront faced with perishable plaster is clearly reprehensible, and a single coat of paint, which is not weather-proof, is obviously not permissible. Architects have therefore declared any cladding unjustifiable and display the brick front completely naked. A ghastly sight! Brick is only effective if it has weathered and has the character of a ruin - when it looks like a ruin. The ancient Egyptians faced their brick pyramids with smooth granite slabs. These have not been destroyed, but stolen. If the latter occurs, preservation is naturally out of the question. A cladding of an inferior material is, in my opinion, fully justified.

Since, nowadays, there are very many buildings which cannot be replaced in a day by glass structures, we may reasonably give some thought to durable facing materials for factories, harbour installations, etc. Enamelled panels of iron and majolica are particularly suitable. Old walls, brick 'fences', stables, and so on, can be clad in this way.

Houses, too, can be given a passable veneer with roof-gardens, if large numbers of glass pavilions are erected in them.

15 The finishing and plastic treatment of reinforced concrete

Reinforced concrete is a building material which is very strong and weather-resistant. It has been rightly acclaimed by architects as the ideal material. A pity that it is not transparent: only glass is.

* The German word here is 'Sachetü' (author's quotes) [Ed.].
But reinforced concrete is unsightly if left in its natural state. A smooth finish to reinforced concrete, which is perfectly feasible, is therefore much to be recommended; the finish should also be able to take weather-proof colour. In addition, reinforced concrete should be provided with plastic decoration; it is as easy to work with the chisel as granite.

Granite is not exactly easy to work, but it can be done.

16 Enamel and niello applied to metal panels on reinforced concrete

If thin metal panels can be pressed into the surface of reinforced concrete during casting, these can be given an enamel coating - possibly one of transparent cloisonné enamel. Small surfaces can also be hollowed out and filled with niello, although lacquered niello is only suitable for interiors. Externally, metal niello would be very effective, but only precious metals should be used; the patina of bronze would also be suitable. Glass mosaic, too, is an obvious possibility.

17 Glass fibres in applied art

It has been forgotten by many that glass can be developed as fibres which can be spun. The story goes back more than forty years, perhaps further. I am not sure. These glass fibres may lead to a whole new industry in applied art; divan covers, chair arms, etc., can be made of them.

18 The beauty of the Earth, when glass architecture is everywhere

The face of the earth would be much altered if brick architecture were ousted everywhere by glass architecture. It would be as if the earth were adorned with sparkling jewels and enamels. Such glory is unimaginable. All over the world it would be as splendid as in the gardens of the Arabian Nights. We should then have a paradise on earth, and no need to watch in longing expectation for the paradise in heaven.

19 Gothic cathedrals and castles

Gothic architecture is unthinkable without Gothic. In the days when Gothic cathedrals and castles were rising, an architecture of glass was also tried. It was not completely realised, because iron, the indispensable material, was not yet available, and this alone enables the totally glass room to be constructed. In Gothic times, glass was entirely unknown in most private houses. Today it is a principal factor in the architecture of every house. But it still lacks colour. Colour, however, will come.

20 Ancient Greece without glass, the East with ampullae and majolica tiles

In ancient Greece glass was almost unknown. But before the Hellenic civilisation there were already many colourful glass ampullae and lustrous majolica tiles in the countries bordering the Euphrates and Tigris, a thousand years before Christ. The Near East is thus the so-called cradle of glass culture.

21 Glass, enamel, majolica and porcelain

All building materials which are durable and obtainable in weather-resistant colours, have the right to be used. Brittle brick and inflammable wood have no such right; a brick building is also easy to shatter by explosives, which endanger the whole building equally. This is not the case in a glass-iron building; only partial destruction can be induced by explosives in the latter.

Wherever the use of glass is impossible, enamel, majolica and porcelain can be employed, which at least can display durable colour, even if they are not translucent like glass.

22 The effects of Tiffany

The famous American Tiffany, who introduced the 'Tiffany glass', has by this means greatly stimulated the glass industry; he put coloured clouds into glass. With these clouds the most marvellous effects are feasible - and the walls acquire an entirely new charm, which admittedly puts the decoration into the background, but in particular situations is quite practicable.

23 The avoidance of the quicksilver effects of mirrors

If the dangers of Tiffany effects may not be wholly ignored - they are only dangerous, after all, in inartistic hands - one should only allow the quicksilver effects of mirrors a utilitarian existence in the dressing-room. In the other rooms
of the house mirror-effects, which continue to reflect their surroundings again and again in a different light, disturb the general architectural impression, for they do not last. When kaleidoscopic effects are wanted, they are perfectly justified. Otherwise it is best to do without the quicksilver-mirror; for it is dangerous - like poison.

24 The avoidance of figure representation in architecture

While architecture is spatial art, figure-representation is not spatial art and has no place in architecture. The animal and human body is made for movement. Architecture is not made for movement, and is concerned with formal composition and ornament. Only the plant and mineral kingdoms should be exploited - better still the whole repertoire of free invention - one should not think of the animal and human body as a design element. The fact that the ancient Egyptians did so is no reason at all for doing so today: we no longer associate our gods with the bodies of animals and humans.

25 The landscape architect and the tree and plant world in the Rococo period

The Rococo period treated trees and plants as if they were mouldable clay; to create perspective effects trees were shaped like walls and yew hedges clipped into geometrical figures. At the same time, the architect ruled the garden, which he should do today. But such laborious treatment of plant and tree material does not pay - because of the changing seasons and transitory results.

More glass walls in the garden would give it quite a different aspect, linking the garden to the architecture of the house, if the latter is glass architecture. It is scarcely imaginable what wonderful effects could be achieved in this way. An occasional mirror-wall close to pools is worth considering. But not too many.

26 The door

In our technical age developments occur rapidly; we often forget this. There is no reason to think that they will suddenly slow down. Fifty years ago there was not a single town in Germany with main water and drainage. Fifty years later one cannot imagine a home without a vacuum cleaner. And there will be many other things which now strike us as utopian, although those which are now feasible, like glass architecture, should never be so described.

The door in the glass house, for example, will be unlike those most commonly found today in brick houses. Self-opening doors are commonplace nowadays, but self-opening doors will be equally common soon. The outside doors do not need to open by themselves, but if the inside ones are self-opening, it is like a friendly gesture by the householder, although he does not have to make any movement with his hands. The mechanism is actuated by treading quite lightly on a sensitive plate. It already exists in Berlin pubs, and has been fully worked out and patented. The idea can be extended; rotating crystal elements or flashing lights can be set in motion in doors; a friendlier greeting than that of a liveried supercilious servant.

The doors can be made of transparent glass with crystal effects, and of ornamentally coloured glasses. To every room, then, its own particular entrance. This should create a more festive atmosphere. The outside doors can also be of glass.

Cities in their present form are not yet fifty years old. They can vanish as quickly as they came. Even the permanent way of the steam railway is not immortal.

27 The chair

The most complicated item in the whole of applied art is the chair. The steel chair seems to be an aesthetic impossibility, yet steel can be made so splendid with enameled and pietre dura that it need not fear comparison with the finest Venetian carving. The prices of enameled and pietre dura chairs are far from being higher than carved wood chairs, for which 4-500 marks are willingly paid. Enamelled work is so cheap that enamelled chairs can be produced very well for 100 marks apiece.

Of course, an industry which turns out identical chairs by the score will have to be disregarded. But one can reasonably expect that an industry which wants to satisfy artistic requirements will stop the indiscriminate production of identical objects.

The industry of the future will also turn eagerly to glass fibres. For only fire-resistant materials will be used - both for divans and for flooring, where glass fibres will prove the most important material.

28 Metal in art and applied art

It seems to me that habit lies like a heavy lead weight upon art and applied art. Because in grandfather's time most furniture and artefacts were made of wood, they must continue to be made of wood. But this should not be so. Glass architecture is also a compelling influence on applied art and art in general. We shall therefore be obliged to give preference in all fields to metal. The aestheticians will naturally try to counteract this, and the threatened timber industry will mobilise them.

There will be a lot of talk about the valuable associative ideas inherent in wood. I believe, however, that all the associative ideas inherent in wood can be transmitted to metal - by developing the artistic potentialities of metal - as I
have already indicated many times. Metal is supposed to be cold, whereas wood is supposed to be warm. These are notions born of habit: we found glazed tiles cold before the existence of the tiled stove. Majolica only became warm to us because of this association. The same thing may occur with metal.

29 **Hollow glass elements in every possible colour and form as a wall material (the so-called ‘glass-brick’)**

So-called glass bricks make a wall material which may well become interesting as an example of glass architecture. Large industrial undertakings have been formed already which could have a big future. Everything fire-proof and transparent is aesthetically justifiable as a wall material. Glass bricks should make iron skeletons superfluous.

30 **Aschinger’s buildings in Berlin, 1893**

If ideas are to be productive, they must really be ‘in the air’ - in very many heads at the same time - even if in a distorted form. This became clear to me in 1893 or a little later. Franz Evers was editing the theosophist journal *Sphinx*, and in consequence was overwhelmed with theosophist, spiritualist and other such literature; in this wilderness there was a lot to make one laugh. One gentleman, whose name escapes me, asserted that glass was the source of all salvation; that one must always have a glass crystal near one on the writing-table, and sleep in a room of mirrors, etc., etc. It all sounded crazy. But Aschinger’s beer halls, with their frightful mirrors, seemed to me an echo of that theosophist publication about mirrored bedrooms. At any rate some telepathic influence was at work.

I am convinced that every constructive idea will appear in many heads at the same time and quite irrationally; one should therefore not speak carelessly about the seemingly confused and crazy; it generally contains the germ of reason.

In the East the madman is left at liberty and honoured as a prophet. But that is by the way.

31 **Glass mosaic and reinforced concrete**

It must be emphatically said that reinforced concrete with a glass mosaic skin is probably the most durable building material which we have so far discovered. People are always so afraid that glass may be shattered by some malicious hand.

32 **Heating and cooling appliances in special columns, vases, suspended elements, etc.**

Although the electric light commands the room from between the double walls, this is not the place for the heating and cooling because, as already stated, half the warmth and cold air is uselessly dissipated.

For this reason the heating can be installed in columns, vases and suspended elements, and their outer shells can be designed, like the oriental ampulla, as delightful decoration.

33 **Lighting between the double walls (which does not exclude suspended fittings in the room)**

I have so often said that the double walls are there, not merely to maintain the temperature of the room, but to accommodate the lighting elements. I must ask to be forgiven for repetition but I want to stress and underline it.

With this type of lighting the whole glass house becomes a big lantern which, on peaceful summer and winter nights, shines like fire-flies and glow-worms. One could easily become poetic. But lighting can also be installed inside the room. This interior lighting also illuminates the walls - if not so strongly as the light between the double walls.

34 **The vacuum-cleaner - in the park, too - also as insect-exterminator**

In the near future the vacuum-cleaner will seem as important as main water, and it will be used in parks, for the inlaid paths must be kept free of ‘dust’. The vacuum-cleaner will naturally be needed as an insect-exterminator. It is
absolutely horrifying that today it is still not used for this purpose. That the vacuum-cleaner has already been employed for getting rid of street dust, I take to be a known fact.

35 Ventilators, which are ousting the customary windows

It will seem very natural that ventilators should have a principal part to play in a glass house, and will supplant everything window-like. When I am in my glass room, I shall hear and see nothing of the outside world. If I long for the sky, the clouds, woods and meadows, I can go out or repair to an extra-veranda with transparent glass panes.

36 Light columns and light towers

Hitherto, columns have served only as supports. Iron construction needs fewer supports than masonry; most of them are superfluous in the glass house. In order to make the columns in larger glass buildings lighter, they can be equipped with light elements behind a completely glass surround, so that the light columns do not give the impression of supporting, and the entire architectural effect seems much more free - as if everything were self-supporting; glass architecture will acquire an almost floating quality with these light columns.

Towers and other places should always be distinguished by towers. Every effort must naturally be made to lend enchantment to towers by night. Under the rule of glass architecture, therefore, all towers must become towers of light.

37 Direction-finding for aeronautics

Aeronautics will undoubtedly be determined to conquer the night. All towers must therefore become towers of light. And - to simplify navigation - every light tower will be built differently, emit a different light, and be fitted with glass elements of widely differing form. Uniformity in light towers is consequently out of the question. The signalling impulse can be so simple, and the tower itself must be so different from any other, that the aeronaut will immediately be informed where he is.

38 Ukley mother-of-pearl on the concrete wall

Naturally, transparent walls are not possible everywhere, in particular because the householder may not always want to sit or lie down between transparent walls. For such rooms, however, wallpapers and wall-fabrics are to be avoided because of fire risks, and wood-paneelling is no longer appropriate - it is as impermanent as paper and fabrics, encourages woodworm and is potentially inflammable.

Another wall cladding material must now be found. Reinforced concrete is not easy to handle artistically; it is as hard as granite, and enamel and niello are not all that cheap, anyway. Imitation pearls are coated with Ukley mother-of-pearl. This coating is perhaps to be recommended for walls as well. It could easily be embellished with semi-precious stones and glass brilliants.

But it is quite possible that a mother-of-pearl coat, applied to an uneven surface, could do the job alone. Whether this artificial mother-of-pearl retains its colour when daylight is kept away from it would have to be tested.

Dome-like undulating bulges may be very effective if they occur regularly and symmetrically.

39 Wired glass

For the walls, a good glass material is still, of course, the most worthwhile. After glass mosaic, however, the most durable glass material is the fairly familiar wired glass, which is particularly suitable for the external wall. Nowadays, wired glass can be handled in such a way that the wire mesh is scarcely visible. In the external wall the mesh does not matter because to an outside viewer it is practically invisible.

40 The vertical in architecture, and how to overcome it

The brick architecture of the past often overcame the problem of the vertical by domes, but to escape from the vertical in walls seemed impossible. In glass architecture it is quite different. The large Palm House in the Botanical Gardens in Berlin no longer has vertical walls; the upward curve begins at a height of three metres.

41 The developments made possible by iron construction

Iron construction permits walls of any desired form. Vertical walls are no longer inevitable. The developments made possible by iron construction are thus quite unlimited. One can shift the overhead dome effects to the sides, so that, sitting at a table, one only has to glance up sideways to appreciate them. Curved
surfaces are also effective for the lower parts of walls - it is specially easy to get results in smaller rooms which are even less tied to verticals. The importance of the ground-plan in architecture will be reduced by such means; the building's silhouette will now be more significant than it used to be.

42 Movable partitions in the home and the park

The Japanese constantly changes his living space by dividing it into smaller areas by partition-screens. Different silk materials are laid over these screens from time to time, so that the smaller ‘room' can have a frequently varying appearance. The same can be done in the living-rooms of glass houses by mobile and sliding glass partitions.

If one introduces movable glass walls, which of course do not have to be vertical, into a park, one can create wonderful perspectives, and a very delicate architecture of higher wall-screens could give the park a new architectural significance. This novelty would be perpetually flexible.

43 Overcoming the danger of fire

After what has been said, it is probably obvious that glass architecture makes fire-protection superfluous. By avoiding all inflammable materials fire insurance can be abolished. But the exclusion of fire risks should always be born in mind in architecture; in the applied arts and interior decoration, only materials which do not burn should be permitted.

44 Vanquishing vermin

That in a glass house, if properly built, vermin must be unknown, needs no further comment.

45 Floodlights in the park, on towers and house-roofs

As coloured glass greatly softens the strength of light, we have far too little electric light at the present time. But we should have a thousand times as much, if, wherever there is running water, we installed turbines, as is feasible. Given adequate light, we can have far more floodlights than before, and night can become day. The night, indeed, can be more glorious than the day, quite independently of the splendour of the starlit sky, which, when it is clouded, is invisible to us anyway.

Even the private citizen will have his ‘park' flood-lit, and there will be flood-lights on all roof constructions and roof-gardens. And a tower without flood-lights will then be entirely unfamiliar and look unnatural. Aeronauts will show their indignation at unlit towers.

46 Getting rid of the usual illumination effects

Glass architecture will be scornfully called ‘illuminations architecture' by its opponents, who naturally should not be ignored. This contempt is unjustifiable, for nobody will want to illuminate a glass house the way a brick house is lit up today; when it is lighted inside the glass house is in itself an illumination element. When there are many such elements, the effect cannot be so harsh as the primitive elements of present-day illumination. By manipulating mobile reflectors, the floodlights can project a thousand beams of every conceivable colour into the sky. Mirrors (used with discretion) and floodlights together will out the usual illumination. The new illumination will be essentially for airship travel, to guide the aeronaut.

47 The end of the window; the loggia and the balcony

With the introduction of electricity for cooking and heating, the chimney must unquestionably be abolished. People claim that such an introduction would be expensive, but forget that the tempo of technical development is continually quickening. Admittedly, this happens in the workshop and the expert's room, where talking a lot about oneself is frowned upon. But the enthusiasm is no less.

When glass architecture comes in, there will not be much more talk of windows either; the word ‘window' will disappear from the dictionaries. Whoever wants to look at nature can go on to his balcony or into his loggia, which of course can be arranged for enjoying nature as before. But then it will not be spoilt by hideous brick houses.

These are visions of the future, which we must not keep in mind, if the new age is ever to come about.

48 Stone mosaic as paving

Up to now, we have not adequately discussed how to pave the surface underfoot. Stone flags are recommended for all paths and paved areas in gardens, but inside the house only magnesite has been mentioned for floors, in rooms of
Models for glass architecture

The most important objective would be for a number of models of glass architecture to be exhibited. Let us hope this happens at the 1914 Werkbund Exhibition at Cologne, for which Bruno Taut has built a glass house, in which the entire glass industry is to be represented. It does not seem right to me to produce models of glass architecture of pasteboard and selenium, but brass and glass models would not be cheap. A new model-building industry ought to be created to make models only for glass architecture, including church buildings, from good materials. Perhaps it would be advisable to use a different imitation-glass for larger models. About twenty years ago there was a substance called Tektonium — it was a transparent, coloured, leather-like material on wire-netting. For model purposes it would be admirable, but for buildings it would not be durable enough, although it could always be mended.

Mountain illumination

So much sounds fantastic, which actually is not fantastic at all. If one suggests applying mountain illumination to the Himalayas, this is just a ridiculous fantasy outside the realms of practical discussion. Illuminating the mountains near the Lake of Lugano is quite another thing. There are so many hotels there which would like to be part of the scenery, that they would be well disposed to glass architecture, if the proposition were not beyond their means. Their means are not inconsiderable, and the illumination of the mountains by illuminating the hotels, if these were built of glass, can no longer be described as fantastic. The rack-railway, which ascends the Rigi, could also be illuminated very easily and effectively by flood-lights.

When aeronautics have conquered the dark, the whole of Switzerland will have her mountains colourfully lit up at night by glass architecture.

We constantly forget how many things have changed in the last century. In the 1830s the aged Goethe did not see the coming of the railways. Less than a hundred years have passed since then, and the whole earth is encompassed by steel rails. Mountain illumination, which today still seems a fantasy to many, can develop just as quickly.

Park illumination

But park illumination will develop sooner than mountain illumination. If only we have more electric light, much will evolve of its own accord. Above all, we should consider towers of various forms in the parks for guiding airships (as already discussed).

A glass tower should not only be equipped with flood-lights; many of the glass surfaces could be made to move and so bring about kaleidoscopic effects. Here also the possibilities are boundless.

Ghostly illumination

When we speak of light, we are generally thinking of the glaring light of gas and electricity. In the past fifty years light has progressed quite surprisingly. It is all happening so quickly that one can hardly keep up. But if we had light in greater quantity (and this is perfectly feasible by using more turbines and dynamos), it would not have to be harsh in its effect and could be softened by colour. It can be so reduced by colour that it looks ghostly, which to many people would perhaps seem sympathetic.

The solid wall as background for sculpture

Where one either cannot or will not remove a solid non-transparent wall, it may perhaps be suitable as background for plastic art. This need not be stationary. Ornamental work stands out very effectively against a wall, and plant motifs are also simple to apply. But painting should not be used. In any case, it detracts from the architectural unity of a building.

Cars, motor boats and coloured glass

Now let us transfer glass architecture to the world of movement — to cars and motor boats. In this way the landscape will become quite different; it has already been permanently transformed by the steam train so transformed that for decades people could not grow used to the change. The coloured automobile, with its glossy glazed surfaces, and the glass motor boat, however, will alter the landscape so pleasantly that mankind, let us hope, should adjust itself to the change more quickly.
55 The steam and electric railway lit up in colour

When glass architecture has once successfully captured the car and the motor boat, there will naturally be no course open to the other vehicles, especially those which scorch along rails, except to accommodate themselves to it. We shall then enjoy a wonderful impression, if we see an express illuminated in colour speed by day or by night through the countryside. The railway, greeted so sourly by sensitive natures to start with, will in the end reach a level of artistic charm beyond our present powers of description.

56 Nature in another light

After the introduction of glass architecture, the whole of nature in all cultural regions will appear to us in quite a different light. The wealth of coloured glass is bound to give nature another hue, as if a new light were shed over the entire natural world. There will be no need to look at nature through a coloured piece of glass. With all this coloured glass everywhere in buildings, and in speeding cars and air- and water-craft, so much new light will undoubtedly emanate from the glass colours that we may well be able to claim that nature appears in another light.

57 Reinforced concrete in water

Reinforced concrete, as is well known, has proved itself in water; it is practically indestructible. It is therefore suitable for a new Venice, which must have foundations that are non-transparent, stable, rust-free and indestructible. Upon this sound base the most colourful glass architecture can rise and be reflected in the water. A new Venice in this style will eclipse the old one. Water, because of its intrinsic capacity to reflect, belongs to glass architecture; the two are almost inseparable, so that in future water will be introduced wherever there is none at the moment. If, after the example of the old Venice, a 'colony' were to be laid out with canal-streets, the traditional Venetian façade-architecture would have to be renounced from the outset; it does not agree with glass buildings which, when they are to be several storeys high, have in any case to be built in pyramid shape with terraces; otherwise too few of the glass walls come in contact with the daylight.

Should the individual sites be very close to one another, care must be taken over suitable boundaries. These can be walls of reinforced concrete, perhaps sheltering a covered way, open on one side. But they could be made in plenty of other ways.

Anyone can develop the theme further, even a non-architect.

58 Floating architecture

If reinforced concrete, as has often been asserted in many quarters - even by the State Material-testing Commission - cannot be attacked by water, then it is capable of carrying the largest building, like a ship. We can talk in all seriousness of floating architecture. For this, of course, everything which was said in the previous chapter holds good. The buildings can obviously be juxtaposed or moved apart in ever changing patterns, so that every floating town could look different each day. The floating town could swirl around in regions of large lakes - perhaps in the sea too. It sounds most fantastic and utopian, but it is far from being so, if reinforced concrete, shaped to the form of an indestructible vessel, carries the architecture. Indestructible boats have already been built out of reinforced concrete in German New Guinea. We must learn to accept that new building materials, when they really are of unrivalled strength and free from rust, can guide the architecture of the whole world into new paths. Reinforced concrete is one such material.

59 River and lake shipping in coloured lighting

As soon as there is floating glass architecture, ships - both great and small - will be fitted out in glass. The rivers, lakes and seas will then become gay. It does not take much perspicacity to predict this development in lake and river shipping, once a floating building is erected and is imitated.

60 Aircraft with coloured lights

It is generally known that the aeronauts would like to take over the night! That they have not so far done so is easily explained: on the earth the night is not yet light enough. But when, thanks to glass architecture, it has become light down below, it will also be light up in the air; the aircraft will be equipped to project coloured lights, which will also form the vocabulary of a signal-language, understood everywhere by the light-projecting stations of the earth-towers and giving a practical value to the colour display both above and below. Here the elements of progress fit smoothly together and are slowly but steadily completely transforming life on the surface of the earth. The changes brought about by the steam train have not been so significant and far-reaching as those which glass and iron construction is bound to produce. The crucial factor in this is undoubtedly reinforced concrete.

* The German here is staatliche Materialprüfungskommission [Ed.].
Reinforced concrete and the architecture of fences

Reinforced concrete can be a few centimetres thick, and is very convenient to use for fences. If it is treated artistically, with enamel and glass mosaic or embellished with niello ornamentation, areas with such concrete boundary fences can easily be converted into places of recreation.

In the architecture of fences reinforced concrete has a great part to play.

Terraces

In higher glass buildings, when there are several storeys, the terrace-form is beyond question a necessity, for otherwise the glazed surfaces do not touch the sunlit air but can only fulfill their purpose at night and not by day. These terrace-form storeys will naturally out the tedious façade-architecture of brick houses.

View-points

One imagines the view-points, from which nowadays we can survey a town or landscape. These view-points will show us quite different pictures, when glass architecture has become general and all vehicles (even the flying ones) reveal the full possibilities of coloured glass. One must simply try to make such view-points clear to visualise. It is not easy, but the imagination soon adapts itself in the end to giving more than isolated details.

Glass in factory buildings

To have a comprehensive picture of the glass-architecture world, it is essential also to think of factory buildings in glass. There will be no question of immediately destroying brick structures everywhere, but at first the brick will be faced with glass materials and glazes — and glass garden pavilions will be put on roofs, etc.

Market halls entirely of glass and iron

It is well known that market halls are already being built entirely of glass and iron. Missing only are the double walls and ornamental colour. It is not fanciful, however, to assume that both these will come soon. A total architecture of glass and iron cannot be far off.

Churches and temples

In Europe the larger church buildings are very well planned and executed as a result of the unnatural concentration of people in the larger towns. Whether it will be possible in this field to impose a purely glass and iron architecture in individual cases by rejecting brick, I do not know. But I do know well that the greater cheapness of glass and iron building must help towards success; we shall only have this greater cheapness when a larger number of firms are in competition — and for that we must wait. The free churches of America may well be the first to build glass temples, thus making a good step forward for glass architecture in the religious sphere.

It ought to be stressed here that the whole of glass architecture stems from the Gothic cathedrals. Without them it would be unthinkable; the Gothic cathedral is the prelude.

Club and sports buildings

Club and sports buildings are today being erected in large numbers. As these are almost always the concern of well-to-do societies, glass architects would do well to pay closer attention to them; the advantages of glass architecture for rooms mainly used for social occasions are obvious.

Militarism and brick architecture

So often only the obnoxious side of militarism is alluded to; but there is also a good one. It consists in the fact that, with the significant advent of the 'dirigible' aerial torpedo, it inevitably draws attention to the dangers of brick architecture; if a brick church tower is struck low down by a torpedo, it will in every case collapse, kill many people and reduce an entire group of buildings to rubble.

If, therefore, militarism evolves logically, it is bound to bring our brick culture into disrepute; this is its good side, and one constantly emphasised, especially by those tired of living as 'brick-dwellers'. A glass tower, when it is supported by more than four metal piers, will not be destroyed by an aerial torpedo; a few iron members will be bent, and a number of glass panels will have holes or cracks, but such damage is simple to repair.
69 Parliament buildings

What has just been said about glass towers applies also to parliament buildings built entirely of steel and glass. In wartime these, too, are much more resistant to damage than the old parliament buildings of brick faced with sandstone. To many this claim will seem very paradoxical, but it is quite logical. Dynamite can only damage a glass house partially: in relation to the whole it is fairly harmless. It needs a hailstorm of dynamite bombs to destroy a larger building complex made of glass and iron.

70 Restaurants, cafés, hotels and sanatoria

It seems to me beyond question that restaurants, cafés and hotels will be the first to show an interest in glass architecture, in order to attract a larger public, who always have plenty to spend on anything new. Sanatoria also will want glass buildings: the influence of splendid glass architecture on the nerves is indisputable.

71 Transportable buildings

Transportable glass buildings can be produced as well. They are particularly suitable for exhibition purposes. Transportable buildings of this type are not easy to make.

But one must not forget that, in a new movement, the most difficult step is often the first.

72 The future inventor, and the materials which could compete with glass

To earn a lot of money by inventions is not always easy. All the same, as I am bound to concede at once, the number of inventors grows daily: while many inventors lose all their goods and chattels and achieve nothing, the others are not deterred. Despite everything, however, the amply provided inventor is, in the long run, a very rare exception. Failure has its humorous side, and, so long as this is so, things are not so bad. But that is by the way. Nevertheless, it cannot be doubted that inventors – for their number, as we have said, is constantly growing – could or should have a great future.

Materials will be invented able to compete with glass. I am thinking of those which are elastic, like rubber, and transparent. The previously mentioned Tektorium is one already invented; but it is only too easily broken – and that, after all, is a defect. However, the outcome may be different. Materials may be invented combining transparency with durability. With the ever-increasing number of inventors everything possible is indeed ultimately possible.

73 The timelesslessness of ornamental glass and glass mosaic

Meanwhile, since we do not yet have the better, we must put up with the good, and this good is glass and ornamental glass mounted in lead, glass mosaic, and enamel. These glorious materials have not been outmoded by time; they have survived hundreds and thousands of years. It is regrettable that they have not been protected from infamous hands, but tough granite, which was used to face Egyptian pyramids, has fared no better, and has also been stolen.

But this is no place for lamentations; our hope is that glass architecture will improve mankind in ethical respects. It seems to me that this is a principal merit of lustrous, colourful, mystical and noble glass walls. This quality appears to me not just an illusion, but something very real; the man who sees the splendours of glass every day cannot have ignoble hands.

74 Exhibition buildings in America and Europe

In the past twenty years we in Europe have frequently heard fabulous tales of American glass buildings. In part, these have certainly been only the idle fancies of reporters, but there may well be a grain of truth in them. Tiffany plays a great part in America, and the Americans are very well disposed to glass things. It would be very interesting to know what is planned in glass for the World Exhibition of 1915 in San Francisco.

In my opinion the exhibition buildings in America must differ considerably from those in Europe. The American bridge constructions at Niagara Falls are at all events so magnificent that an exhibition hall, if it is built of iron and glass, should also reveal impressive dimensions. Whether it will be double-walled with coloured decoration, we do not yet know.

America is also the chief country for impressive giant buildings: the Pan-American Railroad, which is intended to protect the North and South against military attacks from East and West, is at present probably the greatest engineering work on earth.
75 Experimental site for glass architecture

Glass-painters never fix the glass pieces with lead, without first testing the effect experimentally. This is done with all new designs. The full effect cannot be appreciated in the imagination. For the same reason, experiment is also essential for glass buildings. We need an experimental site for the purpose. It would be advisable for such a site to be provided by private enterprise rather than by the state. The latter brings in its official architects, who unhappily are rarely artists and are incapable of becoming so overnight.

76 A permanent exhibition of glass architecture

A glass architecture exhibition would have to be linked to the experimental site, and it would have to be permanent. Glass architecture can only be effectively promoted if every new idea can be exhibited at the same time, and all those interested can constantly order or buy on the spot whatever is best or newest.

77 The crystal room illuminated by translucent floors

At the exhibition, particular attention would have to be given to lighting tests. We do not yet know, for example, what the effect would be of a room lit by translucent floors. One could discuss lights for ever, but things like flooring, and many other ideas, would have to be tested. In my view a Glass Building Association would have to make capital available for the site and exhibition. If the interest were general, the association would soon be formed.

78 Metal filigree with enamel inlay hung in front of crude reinforced concrete

Many experiments could be imagined; the choice is almost unlimited. Particular thought must be given to overcoming the crudeness of reinforced concrete: filigree ornament with enamel inlay is perhaps worth considering. It would look like a piece of jewellery, on a large scale. Much of glass architecture concerns the jeweller, and jewels should be transposed from necks and arms on to walls.

79 The aeronaut's house with airship models on the roof

Let's turn to something pleasanter! In my opinion, air-navigation will be eager to build an aeronaut's house in the restaurant garden of the exhibition, with airship models projecting little mobile lights fixed to the domed roof. This would be a variant of the Stenschifferhaus at Bremen. To immortalise aircraft models in this way would be of great interest to the aeronautical profession, and would lie very close to its heart.

80 Soft lighting

It must be repeated that efforts should not be directed towards achieving greater brightness in lighting, for we have got that already. We should think all the time of the softening of light in choosing colours.

81 Twilight effects

Incidentally, we should consider introducing light behind coloured glass panels into a few corners, even in bright sunshine. It produces wonderful twilight effects during the dusk and dawn hours. A great many lighting experiments will, of course, be necessary.

82 Lighthouses and shipping

When new lighthouses have to be built, the glass architect must see to it that in the immediate future glass architecture is adopted on a large scale. Since lighthouses generally stand on high eminences, it is undoubtedly cheaper than designs in brick, where the frightful labour of lifting such materials to the site disqualifies them. Building will unquestionably be cheaper with the simple

A hope lies here that America might also tackle the greatest architectural work on earth. May it be composed of iron with glass of every colour. Europe is too conservative and slow.
equipment needed for carrying up metal and glass. This must be repeatedly emphasised.

83 Airports as glass palaces

For the building of airports, also, glass-iron construction has much to recommend it; airports must be visible and identifiable from far off and this is best achieved by coloured ornamental glass. This will reach its full effect at night, when the entire building is crowned by a diadem of projected lights, delighting not only the aeronauts, but also people who have no airship at their bidding.

84 Light nights, when glass architecture comes

It seems easy to say that something is indescribable, but of those light nights, which glass architecture must bring us, there is nothing else left for us to say except that they are truly indescribable. One thinks of the lights shining from all the glass towers and in every aircraft, and one thinks of these lights in all their many colours. One thinks of the railway trains all gayly lighted, and one adds the factories in which at night, too, the light shines through coloured panes. Then one thinks of the great palaces and cathedrals of glass and the halls of glass, and of the town-like structures, on solid land and in the water – often in movement – and of ever more water in ever different colours. On Venus and Mars they will stare in wonder and no longer recognize the surface of the earth.

Perhaps men will live more by night than by day. Astronomers will erect their observatories in quiet mountain ravines and on peaks, because the huge sea of coloured light may disturb the study of the heavens.

All this is not a modern concept – the great Gothic master-builders thought of it first. We must not forget that.

85 The brilliant (diamond) effect in architecture

Brilliants are treasured on the hands and neck, but in architecture the diamond effect is by no means prized. I suggest that this only happens because the brilliant is too small and architecture is too big. Large glass brilliants, however, can be produced of pumpkin size, without becoming too expensive. Will architecture despise the brilliant effect, when glass can be seen everywhere in large quantities? That seems to me unlikely. It is no argument against coloured glass that primitive people and small children are enraptured by it.

86 Three-dimensional and two-dimensional ornament in architecture

In the Alhambra, we mostly find three-dimensional ornament, but of perishable plaster-work. Glass architecture can also use such ornament, but of imperishable glass materials. The most delicate blown decoration is made of glass, even of frosted and filigree glass. This kind of plastic art for the ornamental glass wall should admittedly only be considered for formal rooms; there it is entirely feasible and not merely a figment of the imagination. Venice is no longer the pinnacle of glass culture, although it has contributed much that often obliges one to return to it later. I do not recommend copies, but it certainly seems to me that the splendours of Venetian glass, as reflected in particular by the palaces of Isola Bella, are valuable sources of inspiration. One often forgets that present-day Italy, without glass, really has very little attraction.

87 The transformation of fireworks

When there is more glass everywhere, fireworks will be transformed; thousands of reflection effects will be possible. But this chapter must wait until pyrotechnics have been further developed.

88 Colour-lit pools, fountains and waterfalls

This chapter shall be left to the landscape architects. They will tackle the job with great enthusiasm and be determined to offer more than the rococo period offered us.

89 The discovery of the brick bacillus

Brick decays. Hence fungus. The discovery of the brick bacillus is no great discovery, but now the doctor also has a major interest in finally ousting the cult of brick.

In the cellars of brick houses the air is always full of brick bacilli; glass architecture needs no cellars beneath it.
The nervous effect of very bright light unsoftened by colour

We have to thank very bright lights, in part, for the nervous ailments of our time. Light softened by colour calms the nerves. In many sanatoria it is recommended by nerve doctors as beneficial.

91 Railway stations and glass architecture

For station premises, which have to be screened at least partially against wind and rain, glass architecture is so appropriate that nothing further needs to be said about it.

Uniform street-lamps and their elimination

If we must mention something detestable, this is, in my view, those street lamps which in every town look so alike that one cannot help wondering how mankind can be capable of such monotonous repetition. Happily, this repetition can be quickly eliminated by combinations of coloured glass hanging-lamps, which are adaptable to a vast number of forms. This elimination will of course come very soon.

93 Present-day travel

Today people travel from nervous habit: they want to have something different, and although they know that all hotels and towns, mountain villages and health resorts have a dreadful sameness, they travel there just the same. They travel, knowing well that they will find nothing better wherever they go.

Future travel

In the future, people will travel in order to look at new glass architecture, which will differ widely in various parts of the world. To travel for the sake of glass architecture has at all events a meaning: one may surely expect new glass effects in other places. One may also assume that nine-tenths of the daily press will report only on new glass effects. The daily press wants novelty - so it will not be unfriendly to glass.

95 The Doppler and the Zeeman effect

It has often been said that glass is not a 'precious' commodity.

In contrast to this, remember Fraunhofer's lines of the glass spectrum. In addition, Christian Doppler discovered that light, when it approaches or recedes, breaks up Fraunhofer's lines into infra-red and ultra-violet. By using photography it has been possible to measure this, and from these measurements we know precisely whether stars of weak luminosity are approaching us or receding, and at what speed. Without glass the Doppler effect would not be discernible; I should think that this speaks volumes for the importance of glass.

The Zeeman effect occurs through the action of a magnetic field and a flame; the spectrum then shows Fraunhofer's lines suddenly triplicated. From these 'triplets' one can determine the existence of magnetic fields, which are detectable in sun-storms and explain the constitution of sun-spots. I believe that the Zeeman effect also speaks volumes for the importance of glass.

Thus one can no longer be permitted to describe glass as of little value; whoever does that has no right to be considered an educated person.

96 Which spheres of interest are fostered or endangered by glass architecture

The livelihood of masons and carpenters - from what has been said above - is clearly threatened; also that of the whole timber industry, joiners, turners, etc. But the process will not be so rapid that it will be impossible to assimilate those affected into other trades; they will have plenty of time to transfer to the metal and glass industries. Very many new skills are required, and nothing stands in the way of the change.

Admittedly, many locksmiths say that a mason could never become a locksmith: the locksmith only says this because he fears competition.

But the spheres which will inevitably be stimulated by glass architecture are principally heavy industry, the chemical dye industry and the glass industry.

97 Heavy industry

The introduction of iron into house-building will, beyond question, bring so many new orders to heavy industry that it could continue to exist even if all
When the private client wants to build, he looks for the best architect. When the state wants to build, government architects are at its disposal not the best architects, who are generally freelances. This IS a deplorable situation, and it is the state that one chiefly deplores. These official architects, who are always hamstrung by bureaucracy (hence their inhibitions and conservatism), must once again become free; otherwise they will hinder future architectural progress.

One sees from the buildings produced by official architects that they arc scared of colour; scared of ridicule. This remarkable colour-shyness stems from old Peter Cornelius who would have nothing to do with colour.

In the botanical gardens at Dahlem there is as yet no orchid house. This is bound to be a glass palace. Its construction must be already assigned to government architects. I am curious to see the result. Heating by (ceramic) stoves has been proposed, for they are supposed to be better-suited to orchids than central heating; I do not know whether the construction of the stoves is being entrusted to a government master-potter.
The psychological effects of the glass architectural environment

The peculiar influence of coloured glass light was already known to the priests of ancient Babylon and Syria; they were the first to exploit the coloured glass hanging lamp in the temples, and the coloured glass ampulla was later introduced into churches throughout Byzantium and in Europe. From these were developed the stained glass windows of the Gothic period; it is not to be wondered at that these make an especially festive impression, but such an impression from coloured glass is inevitably inherent in glass architecture; its effect on the human psyche can accordingly only be good, for it corresponds to that created by the windows of Gothic cathedrals and by Babylonian glass ampullae. Glass architecture makes homes into cathedrals, with the same effects.

A composed and settled nation, when glass architecture comes

When home life has reached the stage where even the wildest fancies appear to be realised, the longing for something different ceases; people will travel only to learn about a particular type of glass art and possibly to bring it home – to be able to reproduce it in a similar design.

Perhaps somewhere one may discover the art of making glass fibres like brocade, so that the fibres, viewed from different angles, will show different colour effects. Perhaps somewhere they can make a lace-like fabric from glass fibres and fix it to a darker glass wall of one colour; an intimate effect might result, and this would make for a homely atmosphere, which one would leave reluctantly; a certain effect would be created. Perhaps then one would only travel to find out about new glass crafts; much that was new might emerge from old designs. But the entirely new is also to be expected from the great inventors of our own and future times.

More coloured light!

We must not strive to increase the intensity of light – today it is already too strong and no longer endurable. But a gentler light is worth striving for. Not more light! – 'more coloured light!' must be the watchword.

The main entrance

The pyramids are monumental. Cologne cathedral, too, is monumental – the Eiffel tower is also often so described nowadays, but the idea of what is monumental will be changed by glass architecture. Glass towers will be built deep in the sea, creating a special kind of luxury architecture, cool and very peaceful. Many people might think of giant windmills, with sails over a hundred metres long; but town hall and powder-magazine towers might not be suitable for windmill purposes; brick architecture would not stand up to a severe storm.

The monumental

In my opinion, the entrance to a great palace should always be an open hall of many glass walls, gathered together one upon another like the petals of an exquisite flower. The best architects should devote themselves particularly to entrance-hall construction, and then invite the interior designers to surpass the complicated architectonic effects. This should create a splendid challenge; and it would simply be necessary for the client to bear the cost and not come to the end of his financial resources too quickly.

Streets and highways as light-column avenues

The verges of streets and highways will no longer be planted with trees, which are not high enough for the purpose, but columns of light, provided with festoons of lights and shedding constantly changing coloured light, would be highly appropriate for verges.

Chemistry and technics in the twentieth century

We are not at the end of a cultural period – but at the beginning. We still have extraordinary marvels to expect from technics and chemistry, which should not be forgotten. This ought to give us constant encouragement. Unshatterable glass should be mentioned here, in which a celluloid sheet is placed between two sheets of glass and joins them together.
After all the above, we can indeed speak of a glass culture. The new glass environment will completely transform mankind, and it remains only to wish that the new glass culture will not find too many opponents. It is to be hoped, in fact, that glass culture will have ever fewer opponents; to cling to the old is in many matters a good thing; in this way at any rate the old is preserved. We, too, want to cling to the old -- the pyramids of ancient Egypt should most certainly not be abolished.

But we also want to strive after the new, with all the resources at our disposal; more power to them!