Appendix 7: Exhibition

'Programme International Cooperation on the Conservation of Modern Art'
(96/412092)

Contemporary Art: modern materials, old problems

10 projects from the Foundation for the Conservation of Modern Art

Since the 1950s, many artists have been using modern materials such as plastics, neon and electrical equipment as well as other materials that were seldom used in art before this time: beeswax, chocolate, sausage, felt, scrap metal and rubbish. As a comment on industrial developments, various artists made 'useless' machines. Others became fascinated with the 'beauty' of these new materials and gave them a place in their work.

In the second half of this century, art not only took on a new significance but also another form. This introduced new problems for preservation. The experience restorers had acquired in the conservation of paintings and sculptures turned out to be no longer sufficient where contemporary art works made from non-traditional materials were concerned. It is well known how oil paint, wood and marble behave over the centuries, though how plastics and neon will look in a hundred years is still impossible to predict.
Much contemporary art consists of these modern materials. Artists have often used plastics with the expectation that they would retain their 'fresh' and 'new' appearance. However, the reality is different: plastic foam crumbles and other plastics become brittle and lose their colour. Yet we still wish to preserve these objects. These are often art works that provide an important reflection of our times and must therefore be preserved.

From 1993, in the Netherlands, there has been an organized discussion between restorers and curators. This collaboration between the disciplines is a unique undertaking, in that a specific conservation problem is now being exposed from two different angles. The practical and theoretical problems surrounding ten different objects from Dutch museums are being investigated in working parties. This exhibition provides a report on the findings of this research. The real work must now begin. One piece was easily restored – the refrigeration element was broken. Many of the other objects have such complex problems that it will be sometime before they can be seen 'normally' in the museum. One work is so damaged that it can no longer be considered an art work. The exhibition aims to provide an insight into the questions that confront many museums. These are old problems – how do you preserve art? – for which new solutions have to be found.

This is a project run by the Foundation for the Conservation of Modern Art. The research was financed by the Mondriaan Foundation, the participating museums, the Netherlands Institute for Cultural Heritage and The Limburg Conservation Institute.
The exhibition was also made possible through the willing cooperation of all the museums involved and the financial support of the European Commission.

Artist
Marcel Broodthaers (Brussels 1924 - 1976 Cologne)
Title
MB
Year
1970
Owner
Bonnefantenmuseum, Maastricht
Year of acquisition
1987

Original state
Two plastic plates with the artist's initials in relief. One plate is white with black, painted letters, the other is entirely black. Marcel Broodthaers wanted to produce this work in an edition of seven.
The Boijmans Van Beuningen Museum possesses one example of this work.
The plates are part of the 'Poèmes industriels', a group of plaques that were made in edition from 1968 and in which Broodthaers formulated ideas about the authenticity of the art work and the relation between text and object in a new way.

Problems
The plastic plates are supposed to be screwed directly onto the wall, to which purpose the artist made screw holes in the plates. A crack has appeared that runs from one of the holes to the edge of the work. The museum was concerned about the possible ageing of the plastic and was under the impression that the crack in the plate could be the first sign of deterioration.

Research
The Central Research Laboratory for Objects of Art and Science established that the work is made from ASA, a very stable and strong plastic. The plaques were probably made in the same way as street-name signs in Belgium and are able to withstand years of exposure to wind and rain. The white plate has yellowed somewhat. This discolouring is inherent in the material and will increase in the years to come.
Marcel Broodthaers made at least thirty different plaques in editions. Various Dutch museums own examples of these works, which meant that reference material was easily available. Not only could the production techniques and the conditions of the works be compared, but also the numbering of the editions and the signature.
New research into the history of the making of the plaques revealed that not only are they part of the 'Poèmes industriels', they can also be seen as a static commentary on the one-second film 'Une Seconde d'Eternité'. The plaques and the film were exhibited together in 1970.

Conclusion
The plates are in a relatively good condition. The crack in the plate turned out not to be a consequence of ageing, but probably occurred when the hole was drilled.
The plates have to be stored flat and contact between the painted areas and paper or carton has to be avoided. In both the depot and during exhibition, adjusted climate control must be applied.
The strength of the light during exhibition is particularly important.

Artist
Woody van Amen (Eindhoven 1936)
Title
Ice Machine, Willem Barentz's Winter on Novaya Zemlya
Year
1968/69
Owner
Centraal Museum Utrecht
Year of acquisition
1971

Original state
A frame covered in metal plates inside of which are two perspex containers of hay, an imitation wood fire and a refrigeration element with a drip tray. There are also coloured neon tubes (red and blue) attached to the work.

Problems
On being loaned to an exhibition in 1993, it was found that the refrigeration element no longer worked. There was also a fear that there were vermin in the containers of hay. Further investigation revealed that there were a number of other problems, both great and small. The drip tray turned out to be broken, a number of screws were missing, as was a bracket to fix one of the neons. The wiring in the work had aged and no longer complied with current norms for electrical appliances. Furthermore, the work had become extremely dusty and the stainless steel was covered in finger prints.

Research
Research revealed that there were no vermin in the hay. In response to the remaining problems an interesting discussion began with the artist, who was present at the investigation, about whether or not defective elements were to be replaced. Van Amen was very clear about this: the electrical elements had to work since they are an integral part to the functioning and experience of the work. They were therefore to be repaired, and if this wasn't possible they were to be replaced. The working party agreed with this view but emphasized that repair always takes priority over replacement. This question also applied to the polyester imitation wood fire and the plastic drainage pipe, which will cause problems in the future as the materials decay. Replacement is the only option then.

Conclusion
The refrigeration element had to be restored, which has now happened, and the wiring has to be replaced. For safety reasons the electric plug has to be replaced with an earthed one.

Because the work comprises many different elements, the conservation problem seemed at first to be very complex. It is now apparent that after a few technical interventions and provisions, the piece can once again work. The artist would like the piece to be exhibited in perfect condition – it has to look as good as new.

To prevent the work from becoming too dusty in the depot, it will be covered in thin cotton sheets. The plastic parts will be the first to deteriorate in the future. The artist has indicated that these may be replaced by new elements.

Artist
Mario Merz (Milan 1925)
Title
Città Irreale
Year
1968
Owner
Stedelijk Museum, Amsterdam
Year of acquisition
1969

Original state
The work comprises a metal frame of two triangles placed on top of each other and a nylon-mesh fabric to which wax has been applied. Neon tubes are attached to the nylon mesh with wire.
Photograph 1 (from 1969) shows that the mesh was wrapped around the frame in a different way to photograph 2 (from 1982). It is not clear why the mesh has been fixed in a different way in the past.

Problems
1. When the mesh is moved (during transportation from the depot to the museum gallery or another exhibition) small pieces of wax can come loose.
2. The materials have a different 'status'. The neon tubes were made by a glass-blower from a drawing by Mario Merz. The frame was also commissioned by the artist. 'The hand of the artist' is visible in the application of the layers of wax.

The art work came to the Stedelijk Museum in 1969 in separate pieces and was assembled there by the artist.
The original white neon letters have been stored in the museum depot since 1974. The work is always exhibited with copies of these letters. The blue neon lines were replaced at an earlier date and the originals no longer exist. Can we therefore speak of authentic neon tubes?

Research
The nylon mesh with the layer of wax is extremely fragile. The wax reacts strongly to changes in climate and the life expectancy of the plastic mesh is limited (a few decades). When the mesh deteriorates the support for the wax will disappear and the wax will fall off. The neon tubes are breakable and have a limited number of hours they can burn. Copies always differ from the original because they depend on a number of variable factors: the glass-blower, the type of glass, the type of gas and the coating.

Conclusion
The mounting of the mesh and the neons can be improved, reducing the vibration and thereby the danger of them becoming damaged during transportation. Strict climate control (the temperature must not be more than 25°C) has to protect the condition of the wax and delay the deterioration of the plastic mesh. Investigation showed that another version of *Città Irreale* exists in an Italian private collection. In this work a much more stable metal mesh has been used.

The neon tubes have to be reproduced with consistent accuracy. These replacements serve to preserve the original tubes. In any case, records and documentation of the technical information of the neon system and a full scale drawing have to be made by a neon specialist.

Artist
Krijn Giezen (Noordwijk aan Zee 1939)
Title
Morocco
Year
1972
Owner
Frans Halsmuseum, Haarlem
on loan since 1987, became a gift in 1995

Original state
The work consists of a wooden cupboard with a sheet of glass at the front. The back is covered in textile on which the artist has fixed a number of objects: two pencil drawings, a rolled-up piece of fabric, dried animals, a bunch of herbs and ten cutting and sawing tools. The work is intended as a record of a journey through Morocco.

Problems
The parts have aged over twenty-five years. Active carpet beetles have been spotted and there are remains of dead insects between the hairs and spines of the animals. These are now lying on the bottom of the 'vitrine'.
The sheet of glass is extremely dusty and dirty on the inside. There are marks on the work: on the back is a dark damp stain, inside there are rust patches on the fabric around the steel wire and on the top there are white splashes. The work makes a grubby impression.
The question for the museum is how this work can be preserved for the future. However, the artist sees the decay as a positive thing.

Research
The dried animal materials have been identified and an assessment made of their condition. The organic material turned out to be in reasonably good condition, though almost all the material has become darker with age. Attempts will be made to slow this process down in the future by keeping the light levels low.
The back is chipboard which contains formaldehyde. It is possible that the formaldehyde may damage the wire attaching the animals to the chipboard, and the paper.

Furthermore, at the request of the artist and the museum, the sheet of glass was not removed during the investigation so as not to disturb the balance inside the cupboard.

Conclusion
The work has to be handled with great care because the material is so brittle and the wire has become so weak. Knocks to the work during transportation could cause irreparable damage. To reduce the strain on the wire, from now on the case will be positioned leaning slightly backwards. The humidity of the environment is very important for this work: if it is too low, the organic material will dry out, and if it is too high there is a substantial risk of mould forming.
Because the presence of insects could be dangerous for the object as well as other works in the museum, *Morocco* has to be stored separately. The work will be placed in an environment with low oxygen levels for sometime to combat the insects.

Because transporting the object holds too many risks, the work can not be shown outside the Frans Halsmuseum. The work will be on show there for the duration of this exhibition.

Artist
Jean Tinguely (Freiburg 1925 - 1991 Bern)
Title
Gismo
Year
1960
Owner
Stedelijk Museum, Amsterdam
Year of acquisition
1974

Original state
The work is built up out of scrap metal: metal frames, drive shafts, wheels and found objects such as an oil can, a helmet, a metal jug and a round, rubber hairdresser's spray. The drive shafts and wheels are driven by an electric motor and various drive belts, hit hammers against various objects. The scrap metal, the movement and the rhythmic sound are characteristic of the work.

Problems
Tinguely used old materials for this work, it is not a solidly constructed machine. This old, rusty material is very easily damaged and Tinguely's welding is weak, rough and not durable.
Though the working of the machine – the movement and sound – is the most important source of wear and tear, the machine does have to function during exhibitions.

Research
The working party has investigated the complexity of the machine's construction and what condition it is in at present. From this it became apparent that the central frame has subsided under the weight of the scrap metal, whereby the drive belts have slipped off the wheels. This means that some elements can no longer move or make a sound.
Various repairs over the years have fixed the subsidence so that it is no longer possible to precisely reconstruct the original movement. Documenting a moving sculpture is difficult. Furthermore, in the past repairs were carried out by the technical department rather than the restoration department which has resulted in very limited written documentation being available now. However, the most important alteration to *Gismo* turned out to have been well documented in photographs.

Conclusion
The following guidelines have been set for the restoration of the work: The central construction is to be returned, as far as possible, to its original state. The drive shafts and wheels will then have to be adjusted so that the grooves, and therefore the drive belts do not slip.
When the work is once again moving smoothly, the clappers will have to be checked and possibly restored so that the missing sound can be heard once again.

So that the *Gismo* can be safely transported, two special cases have been designed with a support/hanging construction to minimize the pressure on the work of its own weight. The sides of the cases can be dismantled to ease packing and unpacking.

Artist
Piero Gilardi (Turin 1942)
Title
Still Life with Watermelons
Year
1967
Owner
Boijmans Van Beuningen Museum, Rotterdam
Year of acquisition
1972

Original state
This art work has been made in plastic foam: a field of grass full of ripe melons with stalks and leaves. It makes a cheerful and colourful impression.

Problems
The work has been damaged in many places: the foam has lost its elasticity and has cracked or broken off in places. Through contact with the packing in which it has been stored for almost twenty years, part of the paintwork has worn off. The work is furthermore extremely dirty. In 1973, the museum contacted the Central Research Laboratory for Objects of Art and Science for advice on the ageing of the material and the dust that had gathered on the piece.
It was last exhibited in 1978 in the museum and has since had a sleepy existence in the depot. Due to a shortage of space the work was stored upright which is partly responsible for the damage and the foam has become deformed in many places.
For a long time it was thought that the work was in an irreparable condition and could never be shown again.

Research
When the work was unpacked (in January 1996), it became apparent that the elasticity of the foam was still relatively good. Furthermore, the colour was still strikingly bright and alive. For a thirty-year old work in this material, its condition is remarkably good. Piero Gilardi used an excellent type of foam: polyurethane-ether. However, many small pieces have broken off from the work. The complex forms in the work are a great problem for restorers. The leaves have to regain their original rounded shapes, broken stems have to be joined together again and the dirt has to be removed. The missing paintwork also has to be replaced.

Conclusion
The accidental loss of material is closely linked to the ageing of the object.
From now on, the work will slowly pulverize. The exact time-scale of the ageing process of the material is difficult to determine. There are ways to clean the work and repair the breaks, enabling it to be exhibited for a few years more.
However, it has to be very carefully surrounded (in the exhibition space and in the depot). In the depot it has to be stored horizontally, instead of upright as it has been until now. To prevent the work from becoming dusty in the depot, a protective packaging has to be made which does not touch the work and damage it.

Artist
Henk Peeters (The Hague 1925)
Title
59-18
Year
1959
Owner
Netherlands Institute for Cultural Heritage
On loan to
Centraal Museum Utrecht
Year of acquisition
1984

Original state
Holes have been burnt by the artist in the grey polyurethane foam (foam rubber). The foam is fixed to a piece of softboard. The work was later framed behind glass.

Problems
The foam is heavily discoloured and decayed. The original smooth, elastic surface has become brittle and cracked. Because the foam crumbles, some of the material has been lost.

Research
Looking at the material technically, there is no way the work can be restored or further deterioration prevented. There are no clear photographs available to confirm its original appearance. A black and white photograph from 1965 barely tells us anything about the original work.

Conclusion
The original meaning of *59-18* can no longer be found in the deteriorated state in which we now find it. Henk Peeters himself also feels that the work in its current condition no longer represents what he intended at the time.
It is no longerrecognizable as a work from the 'Nul beweging' (Zero Group).
The absence of possibilities for conservation or restoration creates a new problem: what should be done with material that can no longer be exhibited? Should the remaining material be kept surrounded by (expensive) museum care or is the most extreme consequence the destruction of the physical remains of an art work? In this case it would have to be well documented.

Artist
Piero Manzoni (Cremona 1933 - 1963 Milan)
Title
Achrome
Year
1962
Owner
Kröller-Müller Museum, Otterloo
Year of acquisition
1980 (on loan since 1978)

Original state
The work consists of a large amount of glass wool glued in clumps onto a sheet of polystyrene. The red flannel border is authentic; the white, artificial leather frame and perspex cover have been added at a later date.
The work is intended to have a light, immaterial presence.

Problems
The glass wool has become dirty over the years, which has affected the lightness, the 'immaterial' quality intended by the artist.
Is this reason enough to clean the work or does the dirt belong to the ageing process (patina)? If it is decided to clean the work, research will have to be carried out into the best way of doing this.

Research
The perspex cover (a later addition) is too small for the work, and presses the glass wool flat. Static electricity causes it to become more dirty. There are various ways to clean the work but it is of the utmost importance that the glass wool should not be affected. The weakest element in this art work is the polystyrene onto which the clumps of glass wool have been fixed. Polystyrene has a limited life span. In a few decades the work will fall apart.

Conclusion
The perspex cover and the white frame must definitely be removed. Without the cover it will be easier to determine how disturbing the dirty glass wool actually is. The initial aim of cleaning is to find a balance by removing the dirt that has collected over the years without removing the traces of natural ageing.
If necessary, cleaning methods can be tested on a dummy model. If treated, the work will be given a new, much larger cover to protect the work.
In the short term, an invisible support must be designed for the polystyrene. This can also be tested on models.

Artist
Pino Pascali (Bari 1935 - 1968 Rome)
Title
Campi arati e canali d'irrigazione
Year
1967
Owner
Kröller-Müller Museum, Otterloo
Year of acquisition
1992

Original state
This work comprises five metal trays that are filled to the rim with blue water during exhibitions, and four corrugated 'fields' arranged in a total of forty-six asbestos cement sheets covered by a layer of earth on top. The work should evoke an image of ploughed fields with irrigation canals that appear to reflect the (blue) sky in their blue water.

Problems
Asbestos particles from the asbestos cement sheets can be a health hazard. To avoid the risks of harmful effects, the plates have, for the time being, been sealed so that they are airtight and can therefore not be exhibited.
The museum suspects that the adhesive between the corrugated sheets and the soil is insufficient. The metal trays are also extremely rusty and it is not clear what sort of dye should be used in the water. Besides this, it is also unclear how the work should be installed. Before being acquired by the Kröller-Müller Museum in 1992, it was sometimes exhibited as a single piece and sometimes as two separate pieces: *Campi arati* separately from *Canali d'irrigazione*. It would be advisable to investigate this further.

Research
Research carried out by TNO in Delft has shown that the sheets can be treated to prevent asbestos fibres being released. The condition of the adhesive on the layer of earth can only be investigated at a later stage.

The coating used by Pascali on the trays is not suitable for protecting the metal from the water. The formation of rust is therefore unavoidable. The current trays are already so rusted that they can no longer be exhibited filled with water.

The catalogues name the colouring in the water as being aniline, though this colour blue is different to the colour in the photographs of the work and how the curator at the museum remembers it.
In an attempt to find the original colour, inquiries were made at various places including the restoration department of the Galleria d'Arte Moderna in Rome, which has a large collection of work by Pascali.
It was also hoped that the remaining traces of the colour in the trays could indicate more. The colour of these traces ranges from bright blue to a greenish colour. These were analyzed, but turned out to contain too many different elements to be able to determine the original colour.

Conclusion
After dealing with the problem of the asbestos and possibly fixing the soil, the whole piece can once again be stored for the future. The soil-covered sheets should also retain their mat appearance after treatment. The water trays are to be watertight and an even grey.
The new blue dye for the water was determined from tests using different dyes, photographic records and the visual memory of the curator.

Artist
Tony Cragg (Liverpool 1949)
Title
One Space, Four Places
Year
1982
Owner
Stedelijk Van Abbemuseum, Eindhoven
Year of acquisition
1989

Original state
This work consists of five parts: a table and four chairs. Each part comprises a metal frame onto which objects have been attached. The objects were mostly found by Tony Cragg in the street, or in this case, along the banks of the Rhine. Because they were already rubbish they were also already dirty and broken when the work was made.

Problems
Through the rather rapid deterioration of one of the objects (a sponge), the metal frame became visible. This disturbed the rhythm, colour, composition and therefore also the illusory character of the work. The breaking of one or more of these objects makes the work unshowable.
The state of the objects on the metal frame vary greatly: the different plastic objects deteriorate faster than the metal or wooden objects for instance.
Transporting the work is complicated by these fragile elements.

Research
How the plastic objects will age is unpredictable, they form the weak link in the work. Most are at the moment reasonably stable, but rapid deterioration may occur at any time.
In a conversation with Tony Cragg, he gave clear guidelines about the meaning of the work and how it should be cared for. Cragg feels that an object may be replaced, if necessary by an object that differs from the original, as long as the restoration remains within the spirit of the work. It is important that no two objects of the same colour, shape or material are placed next to each other.
So, in the case of this work the formal considerations are more important than interpretations of the content.

Conclusion
The working party decided to replace the missing part (the sponge). It was considered that a replacement in this art work was similar to touching-up a painting. In the future, other elements that decay or become too fragile, may also be replaced with similar objects.
The aim, of course, is to preserve the original objects as long as possible.
Preventative conservation measures are therefore a necessity. The conditions then have to be as good as possible in order to preserve the work. What the ideal conditions might be is difficult to say, because of the diversity of materials – wood has to be stored in high relative humidity, whereas iron rusts under the same conditions.
During storage, attempts will be made to reduce potentially damaging pressure on the objects – for instance, from stones on foam rubber objects – by making a support.
Another important preventative measure is to document the work in descriptions and above all in photographs.

Photo appendix: Exhibition 'Contemporary Art: Modern Materials, Old Problems',
in Museum Boijmans Van Beuningen, Rotterdam (June 15th - September 8th, 1997)

1. Wall: Henk Peeters, '59-18' (1959), from left to right:
exhibition copy (1997), original (1959), photograph of the work in 1965.
Floor: Piero Gilardi, 'Still Life with Watermelons' (1967), detail.

2. Piero Gilardi, 'Still Life with Watermelons' (1967)

3. Pino Pascali, 'Campi arati e canali d'irrigazione' (1967)
Metal trays in wooden storage case.

4. Idem, detail.

5. Total water quantity needed for Pascali's work, lined up in jerrycans of 15 litres.

6. Wall: reconstuction tests for the blue colour of the water in the work of Pascali.

7. Mario Merz, 'Città Irreale' (1968)

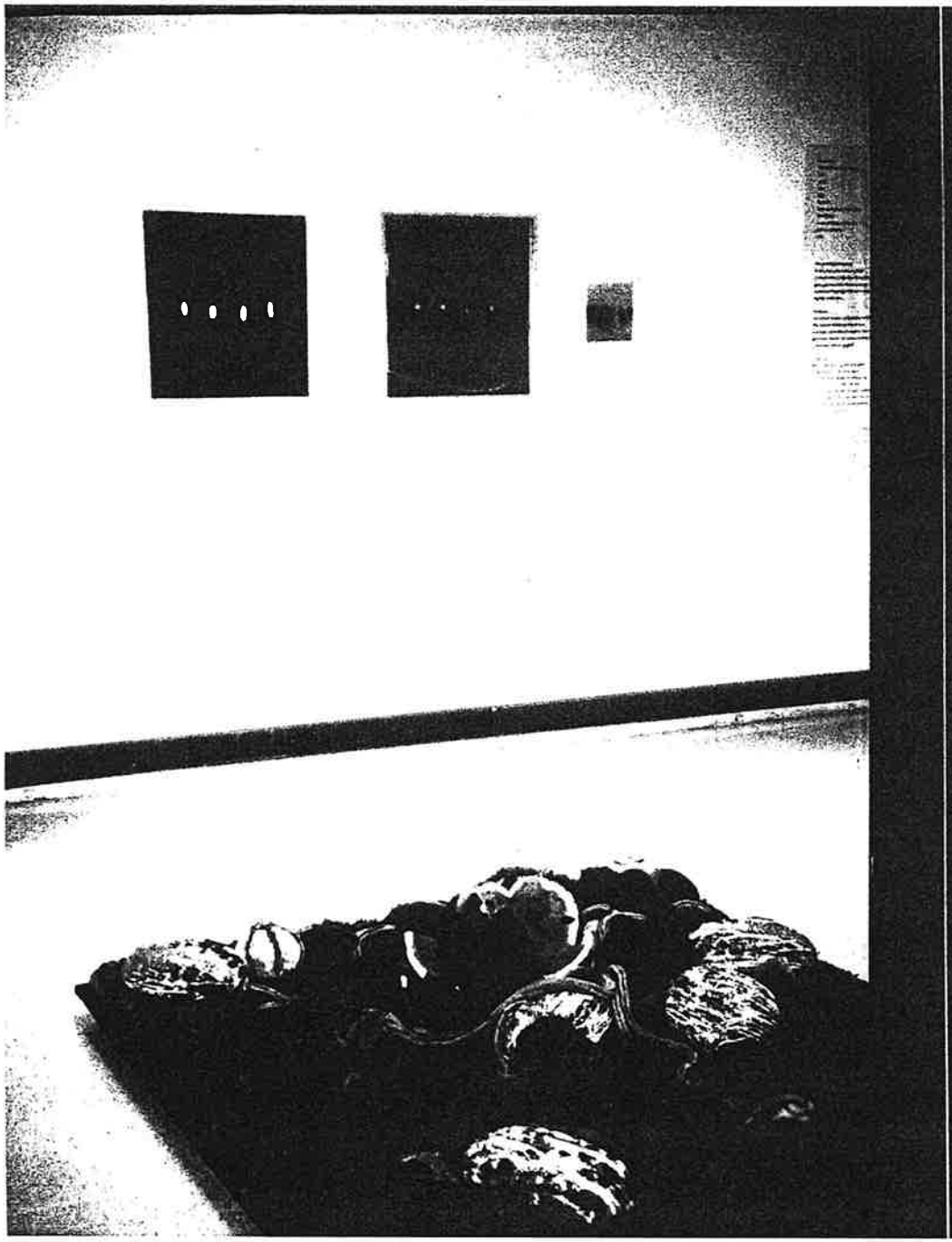
8. Photo-documentation: reproduction of neon tubes

9. Tony Cragg, 'One space, Four Places' (1949)

10. Woody van Amen, 'Ice Machine, Willem Barentz's Winter on Novaya Zemlya' (1968/69)

11. Jean Tinguely, 'Gismo' (1960)

12. Storage case for 'Gismo'



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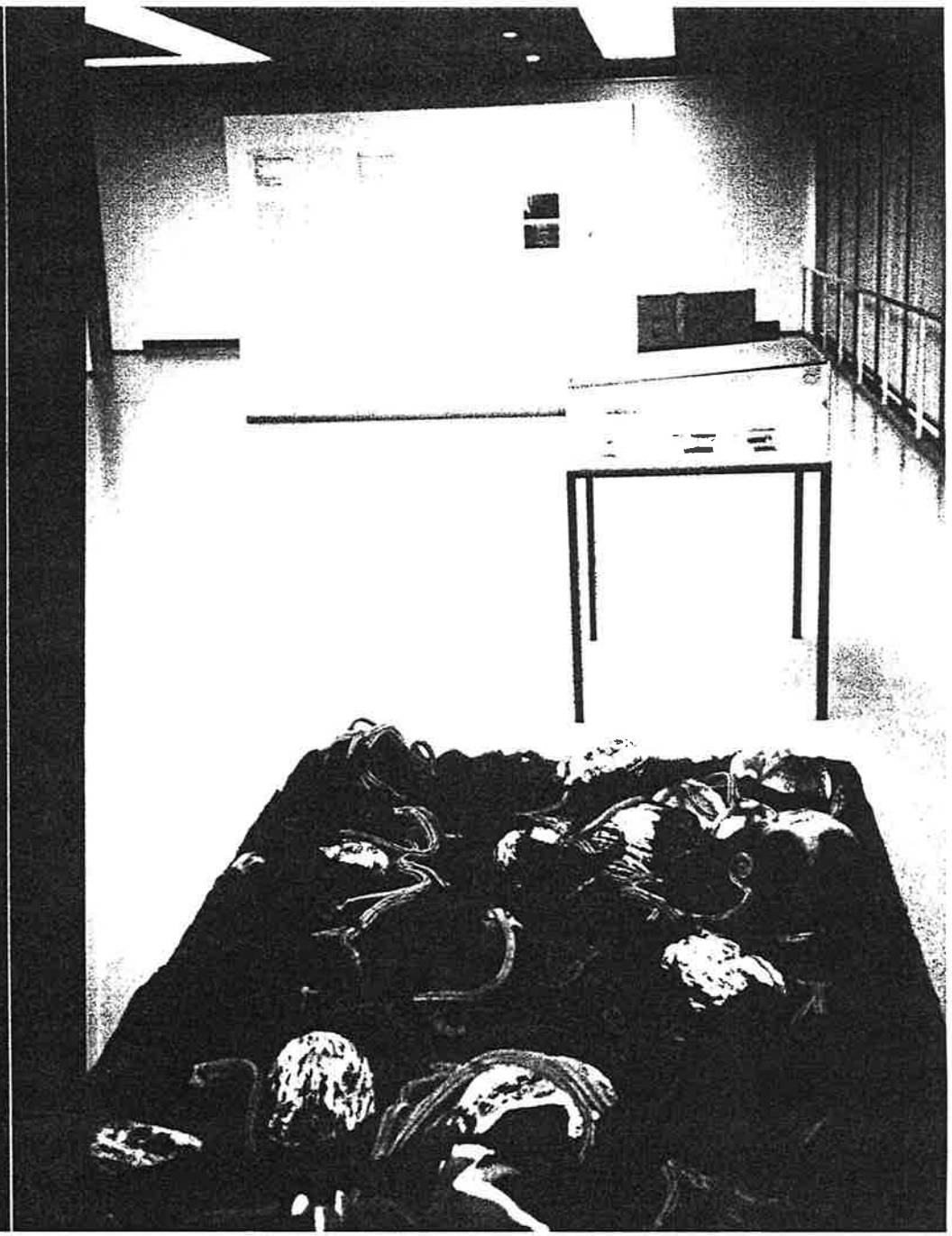

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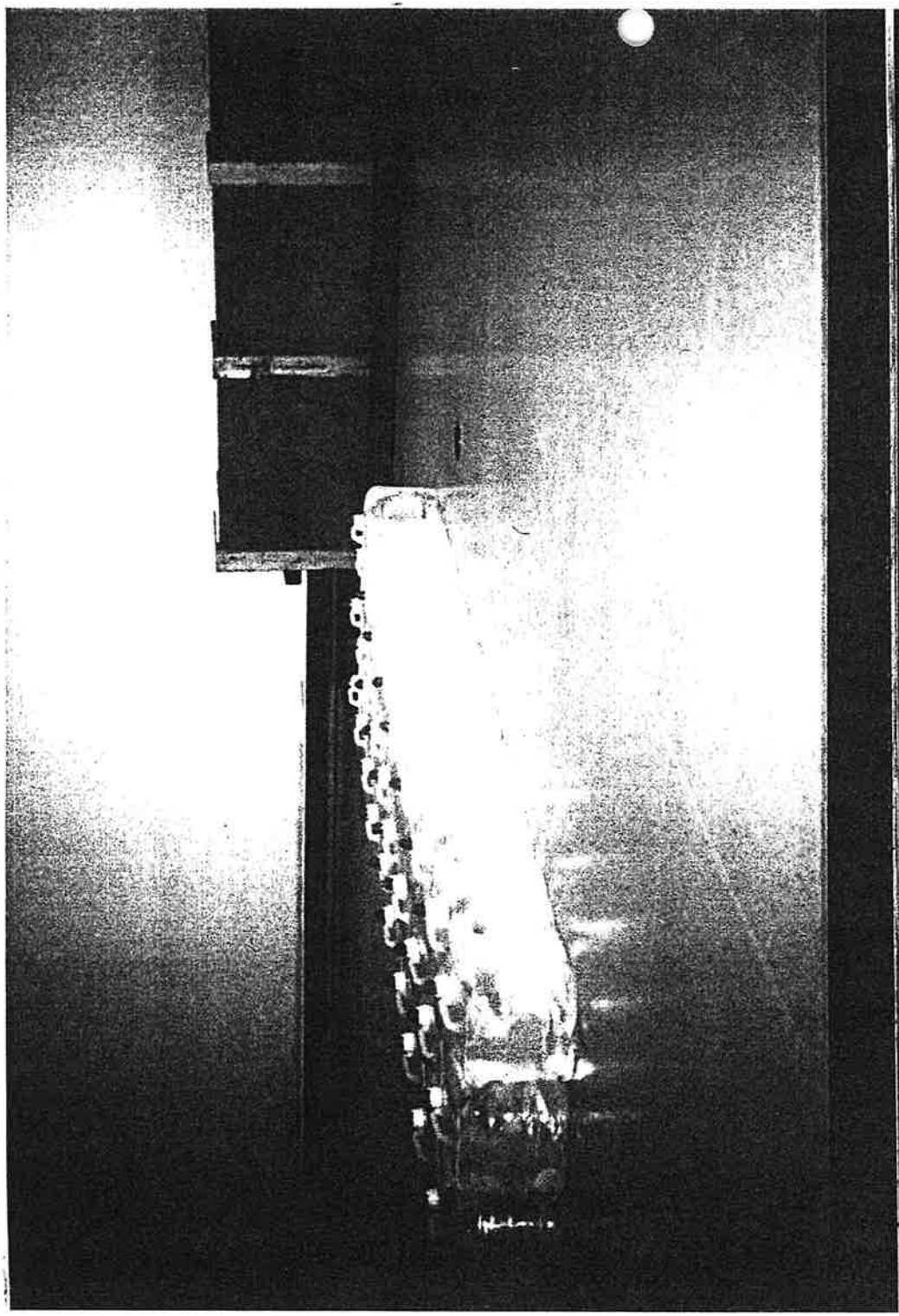

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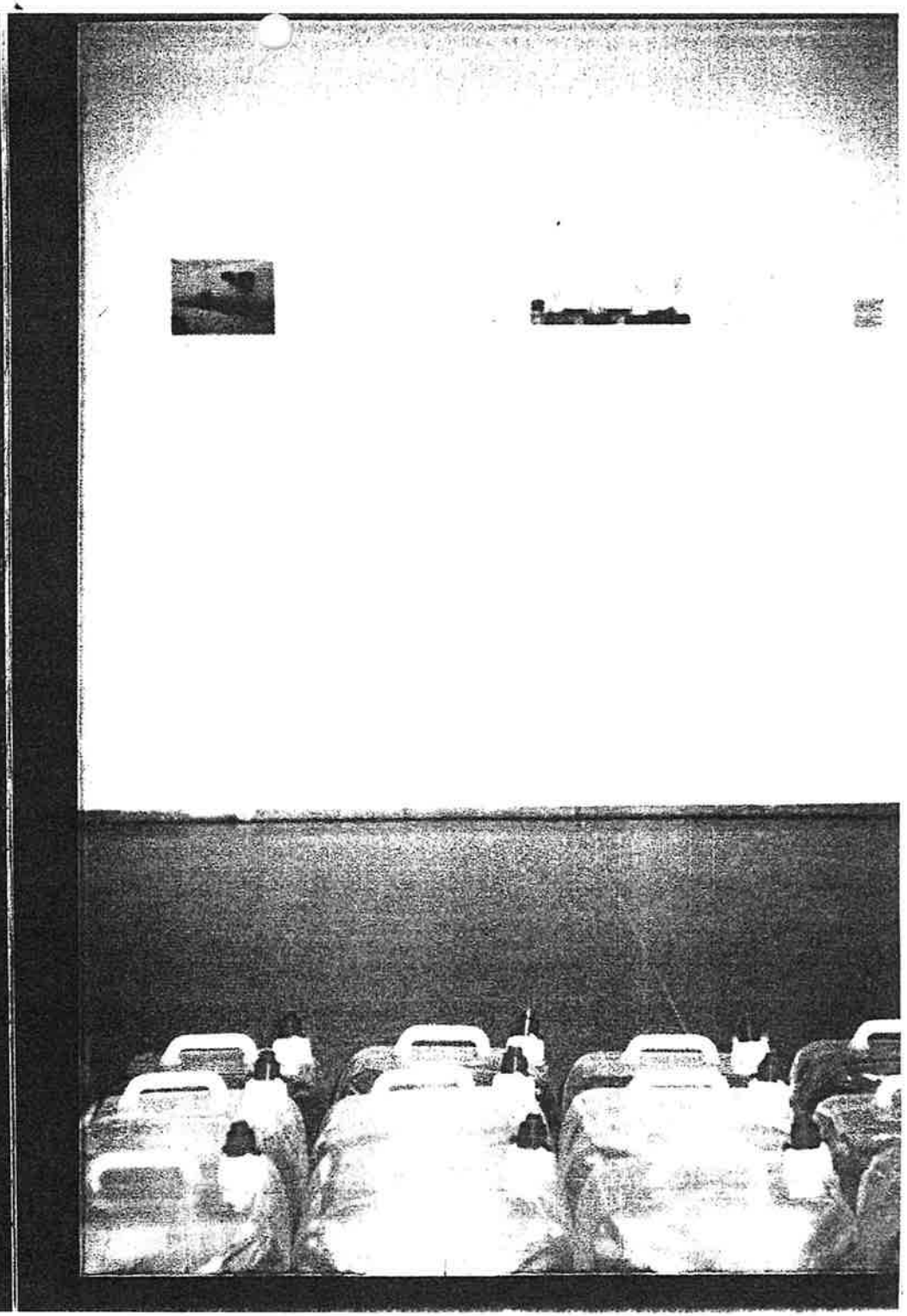

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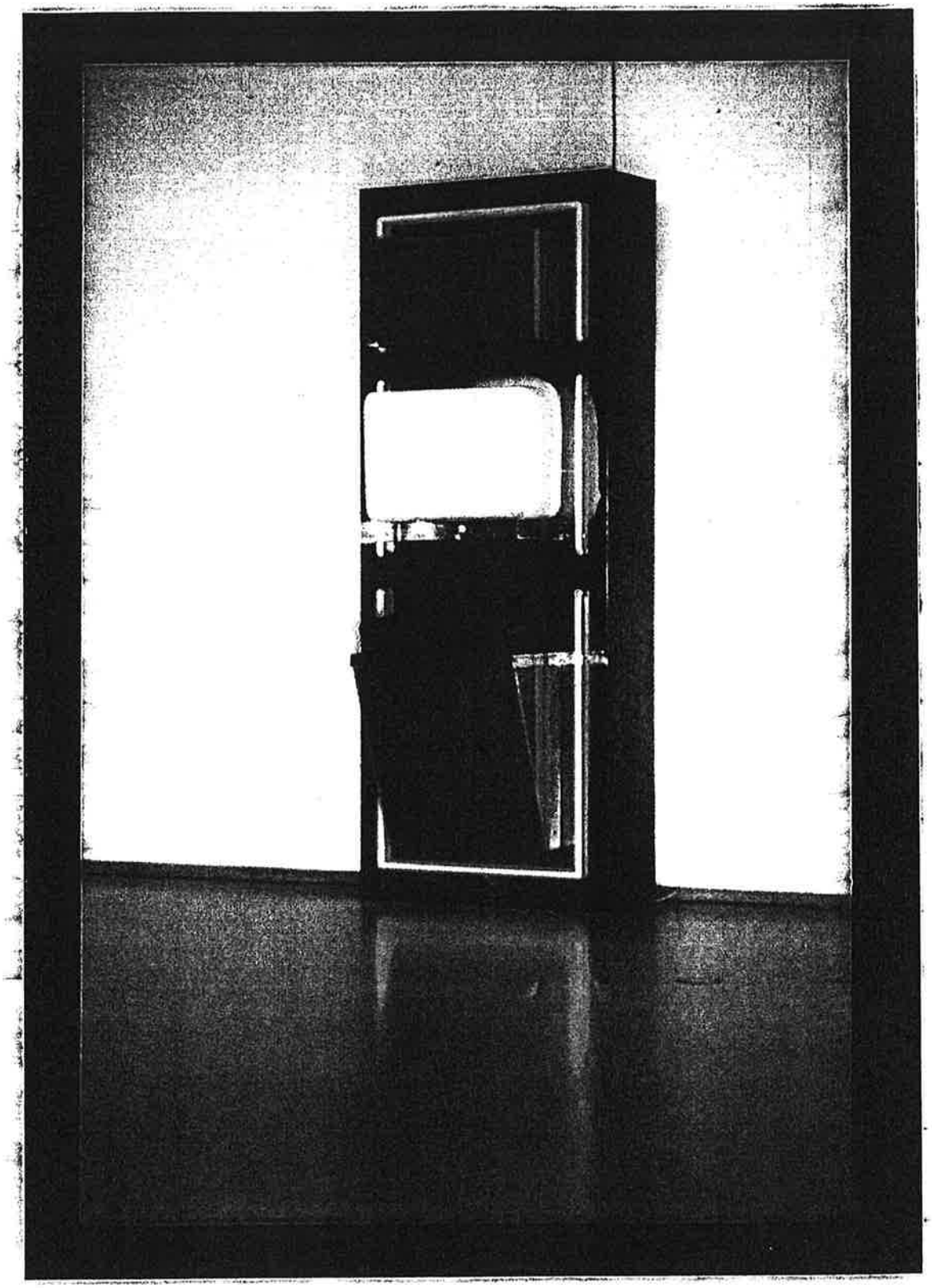

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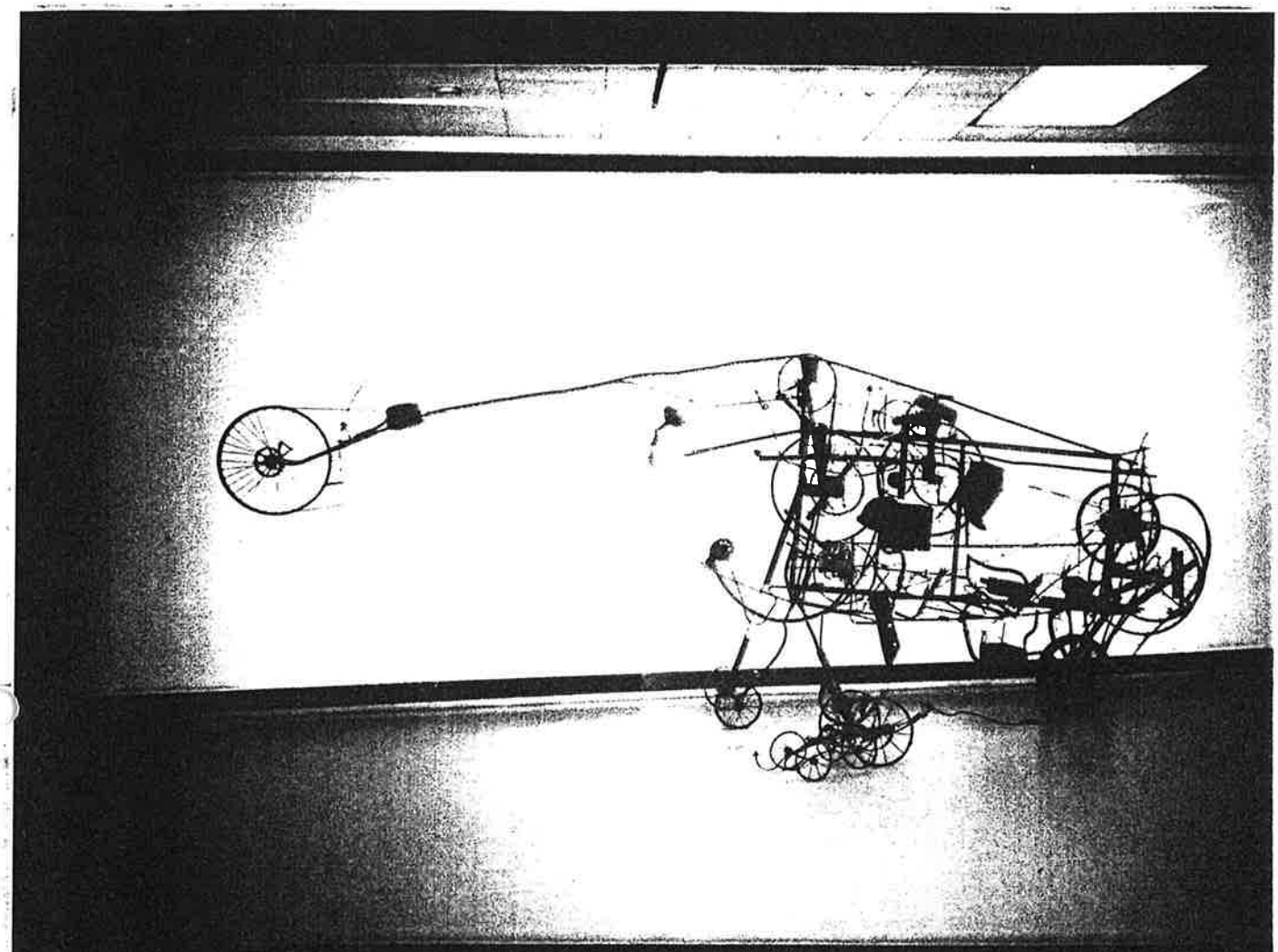

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