

## THE CENTRAL ART DEPOT OF THE FREIBURG CITY MUSEUMS

**DR. SC. TILMANN VON  
STOCKHAUSEN**

Städtische Museen Freiburg  
*tilmann.vonstockhausen@stadt.  
freiburg.de*

As part of the conference on depot buildings here in Zagreb, I would like to introduce the Central Art Depot of the Städtische Museen Freiburg, the Freiburg City Museums, to you. The Freiburg City Museums are a municipal association of five museums under the responsibility of the city of Freiburg in southwest Germany, near the Swiss and French borders. The range of these five museums in Freiburg stretches from archaeology to modern art including natural sciences and ethnology collections.

Six years ago, the new depot building was opened in Freiburg and is regarded as being one of the most modern and exemplary depots in Germany. The depot is particularly notable for the fact that it has been constructed relatively cheaply at a cost of 6.9 million EUR including furnishing and land costs. The total floor space is over 5000 square metres. The Freiburg depot is also an ecological building that produces more energy than it uses, a so-called “plus-energy building” (fig. 1).

But first I would like to explain the situation in Freiburg before the depot was



*Figure 1. The Central Art Depot right after the completion 2012*

constructed. Like in many other museum institutions, the situation of the depots was not very good. They were spread out in the most diverse places all over the city including hired depot areas but also side rooms in museums, attics and cellars in which the conservational requirements varied between bad and very bad. The collections were suffering under these bad conditions, their conservational state was getting worse and actually the artworks were therefore also losing value. The collections in Freiburg were particularly affected by the problem of contamination because primarily during the 1950s, endangered inventories were treated with wood protection chemicals containing chloronaphthalene which, also at that time, should only have been used for outside areas. Added to this is the fact that the attics where collections were stored were themselves treated with wood protection chemicals containing lindane and DDT which settled on the collection objects in the form of dust, creating so-called secondary pollution and also polluting the air. One example is the former cellar depot of the ethnological collection which needed to be continually dehumidified (fig. 2). The



*Figure 2. Storage of ethnological objects in former cellar depot (before 2010)*

situation became even worse when various depot rooms needed to be cleared and new emergency depots found. The institutions responsible for the museums often didn't consider the financial and personnel resources required for such emergency relocations. Temporary storage locations are very expensive and endanger the substance of the inventories. Fortunately, an external evaluation was carried out at the Freiburg museums in the year 2005. The results of this evaluation led to the realisation that the depot situation had to change. Planning began for a new depot, although the idea of renovating an older building was also discussed. At the planning stage, it could be proved that it was economically and eco-

logically better to construct a new building, because only with a newly planned building an optimal cubic volume and structure could be achieved. During the planning process it was important that the restorers had made exact specifications and calculated the space required in advance. This advance planning work was then rapidly incorporated into a room book for the future depot. During the course of these preparations it was very important to define realistic requirements relating to the room climate and to decide, as far as possible, on a universal climate for the future depot building. The climate for the new depot building needed to be 20°C with a permitted seasonal adjustment range of up to 2

degrees, the air humidity had been set at 40-55 percent. The fluctuations must occur only slowly, however the restorers confirmed that it is no problem when the temperature values rise somewhat higher during a hot summer. Drier special climates have been set for some areas of the depot. These are achieved by local, fixed dehumidifiers and apply to the metal and textile depots, for example, that require a lower humidity.

The prerequisite for a stable climate in the depot is to create a hermetic building shell. This is achieved by comprehensive insulation of the building as is now always the case in Germany, even for modern buildings. A well-insulated building is normally so impermeable that it has to be actively ventilated. This is exactly what we do in Freiburg where the entire building is actively ventilated, but with

air-conditioning. Air is sucked in from outside and then brought to the correct temperature in the ventilation system, cool and either humidified or dehumidified. Here you can see the technical room (fig. 3). The conditioned air is then blown into the individual depot rooms and the used air is sucked out again. There are two air conditioning circulations in the Central Art Depot as you can see from the wiring in the corridors (fig. 4). There is a special area for the contaminated sections and one for the depots that are unaffected. In the contaminated sections, the contaminated air that has been sucked out is cleansed via carbon filters before it is blown outside again. The entire building is therefore almost entirely heated and cooled via the air brought in. So-called convectors, these are basically radiators with a ventilator, which can be-



*Figure 3. Technique room of the Central Art Depot*





*Figure 4. Floor of the Central Art Depot with wiring*

come either hot or cold, enable the temperature to be fine-tuned and therefore also regulate the moisture proportion, according to how full the room is and how often it is accessed. The appliances are fixed above the door of the room so that no artwork is damaged if leakage occurs. The warmth for treating the air is provided by a CHP installation that creates electricity at the same time and is gas-operated. Electricity is currently fed into the network but later it can be used to operate the cooling machines. Electricity is also produced via a large photovoltaic installation on the roof, as seen here, so that on balance more energy is produced annually than is consumed.

When planning a depot building it is very important to take the suitable cubic content of the building into consideration. In Freiburg, land is very expensive to purchase, therefore it was sensible to plan the building to be two storeys high to save plot space. A plot of city-owned land in an industrial business park was selected. It is located approximately 10 kilometres from the centre of Freiburg and can also be reached by public transport.

In order to use prefabricated concrete supports, a clear grid needed to be developed. The building was constructed in a long, two-storey construction with a gabled roof. The construction is almost 100 metres long. It is made of concrete with prefabricated supports as you can see on this photo taken during the construction period (fig. 5). Partition walls



*Figure 5. Freiburg storage building during the construction period*

are filled with limestone sand. Owing to a very high groundwater level, the building does not have a cellar and has been fitted with all-round flood protection. The concrete construction had to fulfil the earthquake regulations owing to the earthquake danger in the Freiburg region. The rooms on the ground floor are over 4.70 metres high, meaning that an intermediate platform has been installed in most of the depot rooms, significantly increasing the available floor space. The depot is divided into individual rooms located left and right of a long central corridor. They mostly range in size from 100 – 200 square metres, as one can see on the ground floor layout (fig. 6). There is also a utility area with workshops for the restorers, social room, an entrance for lorries and a delivery area so that artworks can always be unloaded in self-contained rooms and within the security area. When structuring the depots, the links and history of the collections were to be taken into consideration. For fire protection reasons, the individual depot units should not be too large; each depot unit is a self-defined fire zone.

After long discussions, it was decided not use an automatic extinguishing system because sprinkler systems and also water mist can cause substantial damage. A gas extinguisher system with oxygen reduction would have cost ca. 3 million EUR extra, but would have also been a permanent risk for the employees of the depot. As only one single employee was foreseen to be on duty during regular operations, the oxygen reduction was abandoned as a solution. The planning concentrated on fire prevention instead, initially using a smoke suction installation for detection and then by removing voltage-carrying cables and other fire risks, or reducing them to a minimum. All supply installations for the depot rooms, in which all supply strands are arranged, branch off from the central corridor. All entrances to the depots were planned as having large steel doors to make bringing in large objects possible. As most objects will be transported on pallets with forklift trucks in the future, the central corridor and all entrances have been designed to be large in size, so that the fork lift trucks don't scrape along the walls

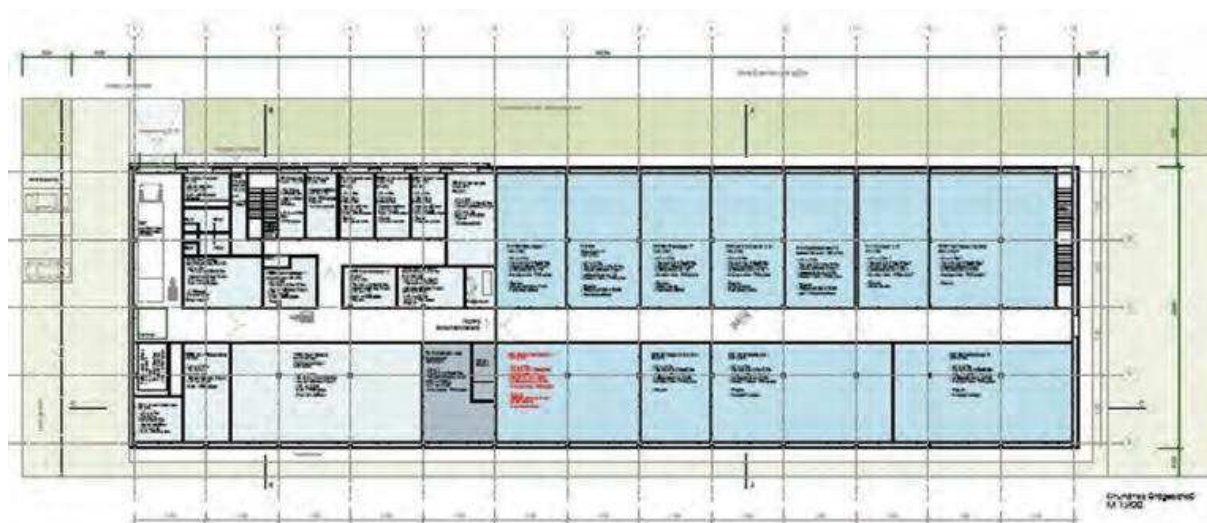


Figure 6. Ground floor layout of the Central Art Depot

or break off corners. Museum employees are usually not professional fork lift truck drivers.

The layout and structure of the depot is largely based on modern industrial warehouses, particularly regarding accessibility. However, in contrast to these industrial warehouses, the objects needed to be arranged in existing order systems and openly visible as far as possible, so that they can be seen.

### **IMPLEMENTATION**

The building developer was not the city of Freiburg but its subsidiary FSB (Freiburger Stadtbau), which rents out the building to the Städtische Museen Freiburg. Two further institutions were involved as subtenants: a municipal foundation and the Archdiocese of Freiburg. In a very short time the FSB won the approval of Freiburg City Council, in close consultation with the museums. The depot was constructed and finished in less than two years. The depot, which kept to its timetable and cost plan, could be inaugurated on 3rd May 2012. Since the depot building was opened there have been no structural or technical problems; above all, the technology functions seamlessly. Owing to the building's density, if a disaster occurred, for example if the air conditioning completely failed during the weekend, it would be absolutely sufficient to carry out the repair on the next working day, because the climate is extremely stable.

### **SECURITY**

Without going into detail here, I would like to mention that we have achieved a

very high level of security although the depot is not guarded 24/7 and does not even have a security reception, owing to a lack of museum personnel. The depot is accessed via a security system which only certain employees are able to enter. Only three employees have permission to access the actual depot areas; I am one of them although unfortunately I have forgotten the code yet again. Deactivating and activating the protection system of the building can only take place after logging in/out at the security switchboard. The outside of the building is monitored by an external camera and the building is fitted with the customary security systems. Before we moved into the new depot, numerous employees were given permission to access the various depots. After the new building was completed, these access rules had to become much stricter.

### **MOVING INTO THE NEW BUILDING**

The Städtische Museen Freiburg now no longer have any external depots; all stock has been brought into the new depot where it has been correctly stored. Large quantities of stock needed to be cleaned beforehand and treated in nitrogen tents against insect damage. More than 300 truckloads were brought into the depot building (fig. 7). It's easy to underestimate how much work it is to treat, pack, organise and store the depot inventories so that every object finds its ideal place. This was particularly difficult in Freiburg because there were items that had been lying in unsatisfactory boxes for up to 30 to 40 years and employees had not been able to access them. Moving into





*Figure 7. Transporting the museum collections (more than 300 truckloads) to the new Central Art Depot*

the new depot meant that the inventories could be thoroughly checked. A modern depot management system has also been developed. Each item receives a barcode which contains its scanner-readable inventory number. This is printed on a small plastic label which is stuck onto the item (fig. 8). Each shelf and each drawer in the depot also receive a code. A cordless hand scanner recognises the codes and registers the item and its location in the museum database.

The aim is that every item finds its permanent place and that its exact location can be demonstrated at any time. In the Freiburg depot we also wanted most of the objects to be visible most of the time to our own employees and any specialist visitors. The items can hardly get dirty because only clean air is blown into the depots. Access regulations must of



*Figure 8. An example of inventory barcode marking*



*Figure 9. Detail of item management that secures visibility for researchers and academics*

course be strictly adhered to. Anyone who enters the depot has to change his/her shoes or wear plastic pull-overs on their shoes.

### **CHANGING THE WORK OF THE MUSEUM**

During the planning phase of the Freiburg depot we discussed making the new construction an “exhibition depot”. However, such a concept could not be considered seriously because an “exhibition depot” would have pushed up the costs considerably. Visitors would not have found the location of the new depot, in the Freiburg-Hochdorf industrial business park, very attractive and the visitor traffic created would have put completely different requirements on the building. That said, we wanted to structure the

depot in an open and free way. Shelves are mostly open and the items can be seen on them. It is possible to exhibit the items openly in the individual depot sections because the climate conditions and avoidance of dust is so favourable. It is, of course, necessary to limit the number of people who come into the depot sections. There can be no open access to the depot, but the museums regularly hold guided tours through the depot for citizens who are interested. Researchers and academics who take a special interest in an item can of course view and study it at the depot (fig. 9).

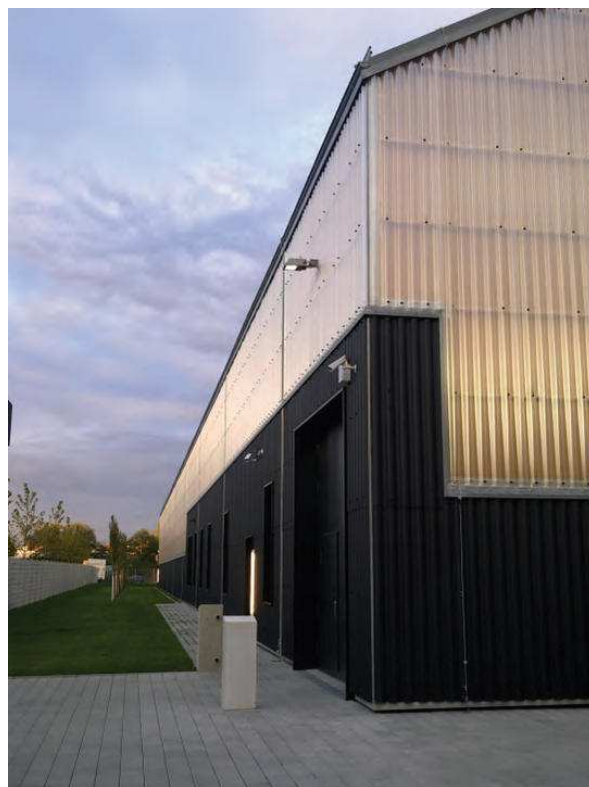
The principle of visual accessibility also meant that high-density storage systems were not installed. Many of the museum collections had not been visible for decades, and by moving into the new depot,



they have been brought to life again. We can only work with these museum items and research them if they are visible and accessible. The visibility of the items is therefore an essential foundation for future research work on the collections.

The museum team thought it was important to maintain the traditional collection contexts when setting up the new depot. The principle of visibility meant that storage only according to material and size was not a good idea, even if modern industrial warehouses often work according to this principle. Therefore, a great deal of classifying had to take place in advance and new collection areas had to be created.

The modern depot therefore became a requirement for research work at the museum. The public often does not take into consideration that basic research work also takes place in museums. The visibility of the items is passed on to future generations if you consider the history of the collection. Even in Cabinets of Curiosities, it was important to make things visible. The arranging, categorising and systemising of the items is only possible when you have registered the entire collection inventory. In Freiburg we can see that having a modern depot not only solves the problem of storing collection items for the future according to good conservational principles; having the modern depot means that comprehensive item research is only now becoming possible. However, our experience in Freiburg shows that the impact of the new depot on the practical work and research activities had been completely underestimated. For example, we realised that there wasn't a presentation,



*Figure 10. A view of the secured entrance and the outside of the Central Art Depot*

study and seminar room when suddenly numerous student groups and specialists started to get in touch with us because they all wanted to get to know the new depot. When planning the depot, we were concerned almost exclusively with the optimal storage conditions. The planners could not have anticipated that out of this elementary need, a re-activated collection would lead to a new dynamic. We could not have anticipated that the new depot would completely change the way we work with the collections. It also completely changed cooperation between the researchers and academics. Specialists from different fields meet up in the depot. The different collection areas are visible and perceptible to everyone. Suggestions for interdisciplinary work are the inevitable consequence. The depot also becomes a hotbed of

ideas for new projects. Exhibition projects can once again be developed from our own collection inventory; creativity and academic research are spurred on. Relatively large collection inventories can be surveyed in the new depot; work can take place in a comparative way and from these comparisons, a new creativity develops. A new creativity that is important for the exhibitions, but also for research. Accessibility of the complete collection inventory is now readily possible. Forgotten items have been rediscovered; items believed to have been lost, or meaninglessly left on meagre filing cards, have become the basis for new research (fig. 10).

### **SREDIŠNJA ČUVAONICA UMJETNINA GRADSKIH MUZEJA U FREIBURGU**

*Na početku priloga daje se organizacijska struktura Gradskih muzeja u Freiburgu kojom autor upravlja. Riječ je o pet muzeja s najraznorodnijim zbirka-ma i građom – od prirodoslovne do djela suvremene umjetnosti. Godine 2012. spomenuti muzeji uspjeli su izgraditi novu zgradu muzejske čuvaonice, veliku 5000 m<sup>2</sup>, sve za 6,9 mil. eura. Opisuje se zatečeno loše stanje čuvaonica i građe u njima na koje je utjecalo nekoliko čimbenika, među njima čak i upotreba problematične podrumske čuvaonice za etnografsku građu te neprikladnog sredstva za zaštitu drva u pedesetim godinama 20. stoljeća. Ističe se i problem povremenih premještanja građe koja su uzrokovala nove troškove. Godine 2005.*

*načinjena je procjena stanja te se odlučilo za trajno rješenje problema. Potom je počeo možda i najvažniji dio izgradnje, a to je proces planiranja tijekom kojega su se morale iskazati prostorne potrebe i njihove značajke. Odlučeno je da se zgrada oblikuje kao dobro izolirana zgrada, odnosno hermetična građevinska školjka sa stalnom temperaturom od 20 °C (sezonsko odstupanje 2 °C) i relativnom vlažnošću od 45 do 50 %. Budući da je zemljište u južnom dijelu Njemačke skupo, odabrana je dvokatna gradnja na parceli 10 km udaljenoj od središta grada i dostupnoj javnim prijevozom. Pozornost je bila posvećena organizaciji prostora koja je vrlo jednostavna, s prostorijama čuvaonica smještenim lijevo i desno od središnjeg hodnika, a bio je predviđen i servisni prostor s restauratorskim radionicama, društvenim prostorima, ulaznim prostorom za kamione itd. Navode se oprema upotrijebljena u unutrašnjosti, način financiranja i tijekom gradnje, kojom je u dvije godine dovršena funkcionalna zgrada, zamišljena kao zatvorena čuvaonica u koju u kontroliranim uvjetima mogu ući zainteresirani građani, pogotovo istraživači. Građa je tako dobila nove, visokoprofesionalne uvjete čuvanja te je za nju osmišljen i nov sustav upravljanja. Na kraju je opisano kako su izgradnja i uspostava zajedničke izmještene čuvaonice utjecale na cjelokupan muzejski rad (otkrivanje zaboravljene građe, bolje mogućnosti istraživanja i posljedično osmišljavanje novih izložbi, projekata i dr.), čega ni muzealci ni oni koji su planirali projekt u početku nisu bili svjesni.*