NatSCA News

Title: 'Decant, Recant, Decant': A Moving Experience

Author(s): Young, D.

Source: Young, D. (2003). 'Decant, Recant, Decant': A Moving Experience. *NatSCA News*, *Issue 1*, 8 - 13.

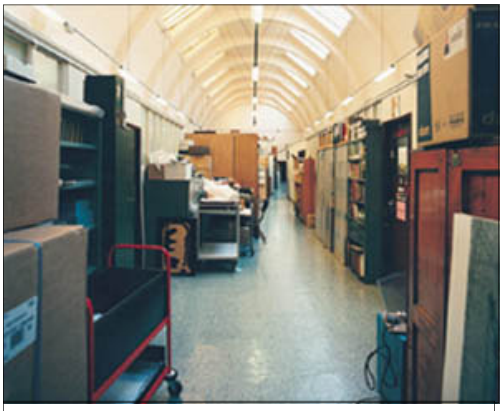
URL: http://www.natsca.org/article/339

'Decant, Recant, Decant': A Moving Experience

Donna Young, Collections Manager, Botany Department, Liverpool Museum

In 1998 a presentation was given at the NSCG AGM showing plans for new storage facilities for the Botanical collections at Liverpool Museum. National Museums & Galleries on Merseyside (now *National Museums Liverpool*) had heard the same year that their HLF bid had been successful. Having worked through ideas for new gallery spaces, plans were well under way for designing the new collection stores. By that time all the specifications had been drawn up and tenders were in. The purpose of the presentation given at the inaugural NatSCA 2003 meeting was to bring delegates up to date.
I chose not to discuss the tenders, contractors, and fitting out details, but to concentrate on the area of the project I was most closely involved in, that being the movement of the collections. It concerned me that from the outset this may have appeared to be the story about a lottery winner and their problems. As I'd been putting the talk together it was impossible not to think of those sob stories about lottery winners, whose lives have been made miserable by their big win. They tend not to evoke much sympathy. We are all only too aware of the financial uncertainties that museums face. It was with a certain amount of trepidation that I described this particular story of what happens when a museum is granted a large sum of money. However, this was no 'sob story', but rather an account of a unique experience and the challenges it provoked.

Back in 1999 it was envisaged that the Natural History collections would have to be moved temporarily for an approximate period of six months, possibly even one year. The collections were to be moved from an area called the 'Upper-Horseshoe' at the museum. Originally this was used as a gallery before it was firebombed in WWII. The HLF grant was to enable this area to be turned back into galleries again. Therefore the collections would have to be stored elsewhere. The natural science collections at Liverpool amount to approximately 1.2 million specimens. Along with these are their associated libraries, containing around ten thousand volumes and about one hundred separate archive collections. The option to keep the collections on-site was considered, as this would have been a cheaper option than an off-site move. However, with a collection this size this would have meant too many restrictions to the contractors. We had to demonstrate to the HLF that the collections safety was of paramount importance. The risk of damage from dust, vibration and changing environmental conditions were considered too high.



old collections storage & office space

As well as new galleries, the HLF bid also facilitated the acquisition of the adjoining building to the museum, previously used by the University. Our new collection stores and curatorial offices were to be created there and the work on this area was to run parallel to the gallery fit-out and build, therefore it was decided to move off-site during this period. Various premises were considered for the temporary store and eventually a number of units on a new industrial estate were found in Bootle, four miles north of the city centre. The Maritime Enterprise Park (MEP) units were not designed or equipped to hold collections, but there were many things in their favour. Each unit was around 400 sq. metres, the largest being 750 sq. metres. It would mean we would be able to keep all the Natural Sciences collections together on one site. The accessibility to the units was very good. Roller shutters were fitted on the front of each unit for vehicle access. As well as moving the collections in, this was also good for evacuation of collections if necessary. There were also large car park facilities for staff and the manoeuvre of large vehicles. All the units were on ground level and easy road access to Liverpool existed for the transportation of collections. 24-hour security existed, plus police approval had been given for low insurance purposes. Despite this not being entirely

relevant due to our 'national indemnity', it was reassuring to know that this level existed. The units were of modern design and construction and only 18 months old. Facilities such as toilets, washrooms, phone & electrical points were already in place. We were to be the first tenants, so there was no previous tenant 'baggage' to contend with. An open plan office area was on site. It could house a number a staff, as well as accommodating staff room and kitchen facilities, a meeting room, act as the central administrative point of the site, and hold the Liverpool Keeper's office. Most importantly for us, we were able to adapt the units for our own use, within the landlord's reason and a 'making good' dilapidation's agreement was drawn up.

The tenancy began in July 1999, and immediately work commenced on the construction and design adaptations we wanted. Internal links between some of the units were put in, and in one area this included a double door vestibule to maintain environmental conditions within each area. We also had additional smoke alarms fitted, along with extra electric sockets including computer network points. In the central office accommodation our IT department installed an independent server to connect all our pc's with each other and hourly back to the main NMGM sites in town. Though the security was already relatively high for this type of commercial unit, extra locks and doors chains were fitted to protect not only the collections but for staff welfare and reassurance. The units were already equipped with 'breaker alarms' and an additional infrared passive alarm system was added. All the units were linked back to a central control unit on 24 hour call out.

Environmental modifications were also carried out. Gas heaters already existed that were brand new. Our Conservation Science department looked at the various requirements of each unit and the individual units were then modified dependant upon their contents. For example, the Geology unit was fitted with additional humidification/dehumidification units ('humdehums'). These allowed a stable relative humidity to be maintained at the same time as comfortable heating levels. The heaters in the Botany & Zoology stores were fitted with humidistats to provide 'Conservation heating' and the Zoology offices had 'comfort heating'. Conservation heating provides relatively stable RH in the winter by allowing the temperature to drop to prevent the very dry conditions associated with heated buildings at that time of year. It does however result in low temperatures, which can be uncomfortable to work in, and there are occasions in the summer, on warm humid days, when the RH can be high for short periods of time. The assessment regarding the grading of the heaters was made with the original expected length of occupancy in consideration. Had we known then that the collections would have been there for nearly three years, 'humdehums' would most likely have been placed in all the stores. Sensors controlled the humidistats and the humdehums units in a Hanwell radiotelemetric system. The system also monitored the rh and temperature, and the data was accessed via modem and stored centrally back in the city at the Conservation Centre. This system was already in place for monitoring conditions at other NMGM sites. The expanse of the ceilings in the units was covered in skylights; these were painted over to reduce the problem of solar gain. The new bare breezeblock walls and concrete floor were fairly dusty. The floors had already been coated in a sealing substance. We had both the walls and the floor commercially cleaned. During this time, staff back at the museum were preparing for the collection move. General curatorial business was reduced down, e.g. loans and enquires, and the pre-packing clear out and sort out of offices began.

The Botany collection at Liverpool is made up of various components, including timber samples, economic botany items, botanical prints & drawings, archives and photographs. The non-herbarium specimens were already housed in a compactor unit. This was dismantled and re-constructed as a static unit up at MEP. Our main collection is the herbarium, which we housed in a number of wooden and metal cabinets stacked on top of each other. This amounted to over 300,000 specimens. It was decided not to unpack the cabinets themselves but to use them to transport the collection en-mass within. Before the removal contractors came in individual pigeonholes were padded out with bubble wrap, the cabinets sealed and numbered. When the metal cabinets were put out up at MEP, they were arranged in the wrong order. This was due to a number of reasons, including tight deadlines and limited staff supervision. It was this 're-installation' that had a major impact on later activities, when preparing for the move back.

By October 1999 all the natural science collection and staff were off-site, and expected to move back to the museum *at least* within the year. As a consequence of staff changes and shortages within the Botany de-

partment during this time, the supervision of this part of the project was limited. Instead of using the initial period of occupation as an opportunity to re-organise the cabinets, and therefore prepare for the subsequent move back, staff were directed onto other projects. These included the mounting and laying away of a large herbarium acquisition.

In October 2000, a year on from the move out of Liverpool Museum, the collections were still based up at the MEP site at Bootle. Delays in building work back at the museum were having a knock-on effect upon the original proposed schedule. These delays were a result of a number of things including, the discovery of previously unknown asbestos and problems with the steel fabrication of the building. Every component of the move back into the museum depended upon each other. Schedules were drawn up and modified periodically to indicate this. Up at the MEP site, the collections were still laid out in the industrial unit. We were given a new moving back date of February 2001. This gave us now only four months to get the collections prepared. The Conservation division had decided upon the desired method for ensuring the collections were in a sterile state before recant. There had been a history of minor pest infestations in our collections prior to our move to MEP, notably *Anthrenus* and *Stegobium*. A close monitoring programme of all the natural history collections, using sticky traps was maintained during our stay at MEP. Though no damage was incurred, traps were found occasionally to hold the odd biscuit beetle and psocid. Different methods of de-infestation were considered, including fumigation and atmospheric gas treatments *(CO2 and nitrogen),* but a combination of cost, practicalities and health & safety issues determined the choice of 'freezing' as the best option. The Conservation Centre was designed with a purpose-built cold room for the freezing treatment of pest infestations. However, because of the size of the cold-room in relation to the collections at risk, it would only be possible to treat a small percentage of the collections there. It was decided to hire an industrial freezer trailer. TIP trailer Rental Company, in Manchester, could rent us a 40-ft unit.

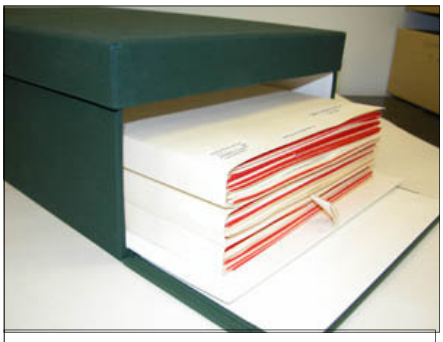
We estimated that the botany collections alone would need 200 pallets when packed. We wouldn't be able to pack the pallets on top of each other within the trailer, so freezing 26 pallets at a time, would take the whole process eight weeks. This was calculated on a weekly cycle of loading/or unloading, two days to get down to temperature, three days at that temperature, switch off, and two days to get back up again. Added on to this eight weeks were the vertebrate and invertebrate zoology collection freeze. We estimated, that the whole process would take around 16 weeks to complete. Normally these freezer trailers are powered during transit or outside in industrial holdings. However, because of the proposed contents, they would have to be kept inside. The engines run on either diesel, which was considered too dangerous to be used around the collections, or electricity. For the latter, the trailer would need a three-phase electrical supply and so the unit's electrics were adapted for this. Having already used all the available floor space in our unit, we had the problem of how to accommodate a 40ft trailer. We'd have to clear a space, not only big enough for the trailer, but also for manoeuvring space of a forklift truck.

Temporary 'work-stations' and the library were packed up first; they were nearest the stuttered entrance. Then the packed up crates were put onto pallets so they could be easily moved. With no available floor space it was decided, the only way was up! The units had a ceiling height of 19-ft. Conveniently for us, nearby was 'Crosby Plant Hire', a scaffolding/racking company. They said they were able to 'hire' and assemble second-hand racking for us. More importantly, they were prepared to do this with short notice. In the end we actually purchased these, as it was more cost effective. We couldn't put racking up in our cleared space; that was for the freezer trailer, so we had to consider what was movable in the units. At this point our collection was housed in a mixture of wooden and metal cabinets. The new Botany store back at the museum was to be made up of a combination of new metal cabinets, made by *Lista*, and our existing metal ones mounted together onto a mobile compactor base. *Lista* would need our old cabinets empty for re-assembly on the new bases up at the museum. It made sense to start emptying these ones first, move the cabinets out and place the boxed up specimens onto pallets. Then the first run of the industrial racking could be erected and the first pallets cleared. It was imperative that the individual pallets and contents of boxes within were packed in the order they would be unloaded back at the museum. The systematic sequence of the herbarium folders had to be maintained. Once the pallets had been sealed in polythene and

frozen they could not be opened again, so it was important that this was achieved at this stage.

We worked out we could put 35 boxes onto each pallet, which came to approximately one metre high. Higher than this, and the bottom layer of cardboard boxes would have suffered under the weight. Unfortunately each cabinet didn't conveniently dispense onto one pallet. A pallet held approximately 2.3 cabinet contents. A 'run' of racking could not be erected when a number of adjacent cabinets had been all emptied. As mentioned previously, the cabinets were in the wrong layout so therefore these '2.3' weren't always situated near each other. Deciding which cabinet to unpack first, taking into account its accessibility within the unit was a major logistics challenge. After reckoning the options, a 'moving' pattern and subsequent plan emerged. We used a simple form to show the contents of each pallet; this satisfied both audit purposes and kept track of the systematic orders. This was duplicated with one copy attached to the pallet.

The 'clearing' of floor space involved preparing the pallet, unpacking the contents, packing the contents, wrapping the pallet, moving the cabinet, moving the pallet, and then erecting 19ft high racking. This was all within the limited space of one metre wide corridors.



boxes used to store / transport historic material

The packing process itself involved covering each wooden pallet with a protective sheet of cellair™. On stop of this we laid a four by two metre sheet of heavy gauge polythene. The folders were then removed from the cabinets and laid on top of a long sheet of strong brown 'kraft' paper. This strip was then used to manoeuvre the bundle of folders into the cardboard box. The strip remained in place, packed into the box, so that the folders could be carefully lifted out when we were back at the museum. Manchester Museum kindly loaned us two hundred of their purpose made 'Solander' herbarium boxes. We used these to store our historically important collections. Eventually, sufficient space was cleared and the first run of racking erected. The full racking was actually erected in five different stages as each space and its contents were raised.

Our existing compactor unit had posed a couple of problems. The drawers were removed from the unit carcass, but as they didn't naturally lie evenly when stacked upon one another without the runners in place, we had to place two wooden batons upon each drawer. Then pieces of card were placed on top of these to cushion the next layer. Sequential drawers were laid in alternate directions to provide stability. It was only safe to do this six drawers high, and as the drawers only measured approximately 65 by 65 cm, a lot of space would be wasted on a standard 1 by 1.2 metre pallet. The metal drawers were going to fill 86 pallets alone, and we were already running out of vertical space. Therefore, we had to order non-standard pallets of a smaller size to accommodate more. The pallets of these drawers were packed in the new order in which in which they were to be housed back at the museum. The original unit was going to be reassembled differently to accommodate a newly purchased extension carcass. Therefore, the order which the pallets were packed had to be carefully planned as this differed from the original layout.

Part of the collection was housed in wooden cabinets. There was no floor or ceiling space left to hold the contents of these. We planned to dispose of these cabinets after the move back, so the collections remained inside and the cabinets sealed, placed on a pallet and frozen.

Each section of the collection, e.g. 'European herbarium', was given a unique code. Documentation was kept to show the break down of the individual pallets and their subsequent boxes/units were counted. This not only satisfied audit purposes, but also enabled us to calculate an estimate for manpower and time it would need to decant the collections on our return. Up until that point, numbers of pallets and the time taken to pack or unpack them were vague estimates. Effectively, the whole 're-packing' experience had provided us with a very intense 'time and motion study' from which the final move back could be planned

for more accurately.

With the collections packed and sealed we were ready for what we now refer to as 'the Big Freeze', but we still had 97 empty metal cabinets to move from the area where the trailer would stand. Delays in the laying of the new floor back at the museum meant that *Lista* couldn't receive the metal cabinets, or the carcass of the metal drawer unit. With nowhere else to store them, we had these items taken by a removal company and put into rented deep storage. By the time they were ready for them, this cost alone mounted to £4,500.

The freezer arrived in March 2001. This was already past our due date for return, but this was just as well as that date had slipped also. Our next return time was given as June. The entrance to the unit had been measured, and on paper it would take the trailer. But when it arrived we were alarmed to find it wouldn't fit through the shuttered entrance. Firstly, air was let out of the tyres to lower the height of the trailer slightly. Guiding it in by driving the vehicle was proving difficult with the front cabin attached. After the kind assistance of fork- lift truck drivers from a neighbouring unit, who must have been pretty amused at our plight, the trailer alone was guided slowly through into the unit. A risk assessment was carried out and health and safety procedures put into place. These included the provision of safety clothing; steel cap shoes, fluorescent jackets and hard-hats for wearing when working around the forklift truck. Various signage was employed; notices were changed on the outside of the trailer to indicate current activity, for example if someone was inside! Staff were also given emergency equipment such as a mobile phone and torch for when entering the freezer (in case someone hadn't noticed the sign and done the unthinkable!)

The freezer was fitted with a thermometer, which could give daily printouts of the temperature, measured at 30-minute intervals. Having loaded the first consignment of pallets, we noticed it was taking longer than we had anticipated getting the contents down to -25 degrees. Radio telemetric thermometers had been placed within the pallets and after four days these were still not showing as low a temperature as the trailer's inbuilt one. Obviously this was due to the density of the material and it was decided we would have to leave the freezer switched on for longer. Normally these freezers are unloaded and loaded whilst the freezer is on, as perishable goods need to be kept frozen. We would also need to add the extra days required for temperature to come back up so the specimens could be moved safely. Therefore we had to alter our original time plan of a nice weekly cycle. In the end each freeze cycle lasted ten, or twelve days, depending on when the weekend fell. This all fell around the Easter holiday period so staffing had to be carefully arranged, especially as only two NMGM staff were trained in forklift truck driving.

With the racking space limited, there was always at least one consignment of pallets 'over'. This would be eventually 'housed' in the vacant floor space available after the trailer had left. To keep the aisles as free as possible for the manoeuvring of the forklift truck, the location of the pallets differed each time a consignment was put into the freezer. A weekly update of the pallet location was kept on forms showing the individual front view of each face of racking. Pallets holding high priority items were always kept at ground level for ease of evacuation.

By mid June the Botany freeze was complete. Shortly before this we had heard of another put back in the return date to the museum but by now staff were getting quite used to this. Now we had a different problem. With the collections frozen and packed we had to re-assess the staff work program. We decided to keep out from the end of the freeze a number of old cabinets that were holding our 'unincorporated collections'. Over a period of around forty years, this had amounted to approximately 28,000 specimens. The contents of the cabinets would have to be removed, as the cabinets themselves were to be disposed of. We used the delay in the decant as an opportunity to do an inventory of this collection. There wouldn't be the time to do this in detail, but we could at least do a basic break down of what was actually there. Prior to this exercise we had no idea exactly how large the collection was. A simple form was used that could be placed onto each bundle as they were numbered. A duplicate of this was kept so the information could be entered onto a computerised database at a later date. With an assessment of bundles on the database, we can now do useful calculations such as how much is in need of mounting, how much is unlabelled, where there gaps in accessioning details, and which parts of the collection are they from. The same brown paper

strips, as used in the packing boxes, were used to hold these bundles, which were made no bigger than the new pigeon-holes they were going to go into back at the museum. This meant they could remain as bundled 'units' on their return. In the future when we have the opportunity to work on parts of this collection, individual bundles can be 'cherry picked' as appropriate. The Conservation Centre cold room was used to freeze this collection.

frozen collections, waiting to be moved back

In Christmas 2001 we planned for the imminent move back in the New Year. As we had been told to pack away computers and other office belongings, we actually believed this time we would be going! During the temporary re-location the Botany section consisted of at most three members of staff, but in the main one full-time curator and one part-time collections manager. With Leander, our new Head of Botany, in post, and seconded assistance from the Collections Access department, we felt prepared for the task ahead.

The company used to transport and assist with the final decant back into Liverpool Museum was Harrow Green. Along with the physical move of the pallets/ furniture etc, they provided the additional resources of two members of staff on a daily basis to assist with the unpacking. These were given manual handling of collections training and were very efficient. We felt it was imperative that curatorial involvement/supervision was available at all times to reduce the risk of collections being housed out of systematic sequence. Deliveries were made on alternate days, so that each consignment could be unpacked and cleared to make floor space for the next pallets. The actual move back of the botany collections took 43 working days. Each day was planned out, with someone responsible for i) overseeing the loading of the van, ii) escorting the vans in transit by following in a vehicle behind (with consignment documentation and the key for the trailer), and iii) maintaining documentation and communication with our security staff and Registrar. With all the preparation work done and paperwork in place, the final decant went as smooth as clockwork.

Herbarium in new compactorised storage

In conclusion what advice could we give to others who may be about to embark on something like this? I don't think it matters how big the operation is. Some may consider ours large, but it's all quite minor compared to the Darwin Project. It's not always possible to prepare for the unexpected and obviously planning is important, but one has to be flexible and adaptable to change. When things don't go to plan, have contingency activities in place. We turned our delay and inaccessibility to the main part of our collection to our advantage. Our unincorporated collection would have been returned back to the museum and most likely have sat, in the main, in the same condition as it has for forty years. Expect the costs to be higher! Rent, rates, security and cleaning added up to approximately £15,000 a month for the whole site. The Botany unit alone cost £2000 a month in rental fees. From moving there in July 1999, to nearly three years later in spring of 2002, the costs of MEP had reached over half a million pounds. Lastly, we would recommend a good sense of humour (!) and recognise the importance of good teamwork. It's difficult to put into words the 'high' and sense of achievement we all felt seeing our collections back at the museum and accessible once again.