PROPOSAL FOR

GREENVILLE MUSIC MUSEUM
(aka CAROLINA MUSIC MUSEUM)

SUBMITTED BY
CAROLINA MUSIC FOUNDATION

March 17, 2017

The Carolina Clavier Collection at Heritage Green

Overview

The Carolina Music Foundation is proposing the use of the former **BJU Museum & Gallery on Heritage Green** to serve as a home for the world famous Carolina Clavier Collection and to act as a center of operations for multiple Greenville music organizations including the **Guild of the Greenville Symphony Orchestra** and **SC Bach**. There has been an increasing desire on the part of many educators and cultural enthusiasts in the Greenville community to see the collection remain together and become more centrally located and accessible to the **Governor's School for the Arts and Humanities**, the **Greenville Fine Arts Center**, and local universities, which this proposal would succeed in making happen.

The former BJU Museum & Gallery is uniquely qualified to act as the institution's home with a history of its own, spacious areas that can be used as designed without any intrusive work, ample parking, and location in Greenville's downtown, almost midway between **Furman and Bob Jones University, GSAH and the FAC.**

The proposal succeeds on several levels including:

- **Tourism and access to the house by the general public with annual attendance expected to be north of 5000 students and adults.**
- **A stronger and improved educational impact, leveraging the existing and thriving tradition of Greenville Schools who now make use of the collection in its current and more remote location in Easley.**
- **A permanent home for associated music groups that will provide office and meeting space, and inspire a wider demographic to become involved.**
- **A secure and well-funded use of the space that can be made into a lasting jewel in Greenville's crown and a destination spot that will provide access to this major keyboard collection for generations to come!**
- **A unique asset to the City of Greenville that is usually available only in major metropolitan areas such as Boston, New York, London, and similar. Neither Atlanta nor Charlotte has anything similar to this kind of attraction.**
- **Potential jobs creation in museum science and operations, security and maintenance.**

Please read further to discover the details of this well thought out plan. A full proposal, plan of operations, and letters of recommendation are included.

Proposal for Working with the City and County of Greenville to house the Carolina Clavier Collection

Why consider the Carolina Clavier Collection?

The Carolina Clavier Collection, consisting of over 30 pianos and harpsichords from 1570 to 1845, from London, Europe and America, is seeking a home in the downtown Greenville area, making this an exciting opportunity for the partnership that has come together to create a proposal. An ideal location would be in the Heritage Green area where the collection can be used as a working collection to expose the maximum number of individuals and students in the upstate to this opportunity to experience music on instruments that the composers knew, and that the people of the upstate once heard. We cannot live in the past and we don't want to, but we can use the experience of the past to inform the future and breathe renewed life into music that is at risk of being abandoned.

What does this do for the City and County of Greenville and the upstate?

Under this proposal, a suitable location would become a busy center of access for the Greenville County School system to bring students of music and arts for exposure to the world of early keyboard performance. There are only a handful of centers in the country that can offer anything like this as a possibility, and we feel that Greenville would find this use of proposed museum an added gem among the attractions the city offers. Based on the 500+ visitors per year that visit the collection in Easley, we feel that the opportunity to the Greenville school system, Furman University, BJU, Clemson, NGU and others would be enormous. Learning opportunities at the historic house and collection would likely result in an annual visitation rate in excess of 5000 students, teachers and public per year (roughly 100 individuals per week).

Tourism

The opportunity for increased tourism however is very strong. The introduction of the 'Changing Keys' exhibit at the DeWitt-Wallace museum at Colonial Williamsburg in 2013 is credited with generating an attendance increase of over 5%/year, **representing some 12,500 additional visitors in 2015, according to museum officials**. For this reason the exhibit will be made permanent rather than the usual 2-3 year exhibit period. While the Colonial Williamsburg complex is an international attraction with an annual attendance approaching 1.8 million

visitors per year, even in Greenville there is something about these instruments that keeps the public coming in and coming back, and we anticipate a positive tourism experience at the proposed museum, given the similarity in the focus of the collection.

What is the Carolina Clavier Collection?

The Carolina Clavier Collection is comprised of 30 pianos and 5 harpsichords (valuation over $750,000) that make up the collection, ranging in date from 1570 to 1845, as well as the collection of very early keyboards before the 16th C. The primary mission of the collection is to help emerging musicians and seasoned professionals understand the critical ability of the historic keyboard to bring forward the actual intent of the composers who knew them and composed from them, rather than the heavily interpreted versions made suitable for modern pianos. The Carolina Clavier Collection, which is visited regularly by school groups from The Governor's School of Arts and Humanities, Greenville Fine Arts Center, BJU, Furman, Brevard Music Camp, and many others, is among the largest private collections in the US. In 2015 over 500 students had access to and enjoyed use of the collection at its Easley Home. Now represented in a print volume available through Lulu.com http://www.lulu.com/shop/thomas-strange/early-keyboard-instruments-in-the-carolina-clavier-colletion/paperback/product-22554834.html

Mission Statement:

The Carolina Clavier Collection exists to inform, educate, and enlighten students, teachers, and the public about the critically important nature of the sound and touch of historic keyboards, and their place in contemporary historically informed music performance. As such, controlled access to working authentic instruments for learning and performance is the primary objective of the collection, educational outreach is paramount, and careful preservation of these artifacts though approved museum practices guides their use.

Vision Statement:

The Carolina Clavier Collection serves as a hub for musical appreciation, education, and engagement across the Southeast, to present historically informed musical programming, promote youth studies across all economic backgrounds, and to serve as a locus for hosting musical organizations in the upstate of South Carolina and increasing awareness of historically informed performance practice.

Why does Greenville make sense for this collection?

A location of the proper size, between 5,000 and 10,000 square feet would be large enough to comfortably accommodate the collection as it is today, with room to expand. Additionally, Greenville is a large enough metropolitan area to sustain an operation like this proposed Museum.

> ***A focus on South Carolina pianos is already underway with three instruments in the collection that have been in the state and played an important role in history since they were new in 1829, 1834, and 1850 respectively.***

Additionally, other significant instruments could be added to round out the story of musical life in South Carolina during the early Federal and mid to late 19th century periods.

> ***Among many treasures, the collection features a piano that was played by Chopin, a square piano owned by David Rittenhouse and played by Thomas Jefferson, and a spinet harpsichord that came to Connecticut new in 1748.***

Adjunct space for offices would be ideal for housing several of the Greenville music & arts organizations (the Guild of the Greenville Symphony has already expressed interest.) The required square footage is small, ~1500 sqft of the stated goal of 5,000 sqft.

What would it look like?

We would propose an interior decoration not dissimilar to the current 'Changing Keys' exhibit at Colonial Williamsburg, with sound sticks and graphics to explain the instruments, but tailored to more nearly respect the setting, which could be a black box museum space similar to CWF or some other look, as needed.

The proposal would take some elements of a well-lighted and clean display of artifacts with signage and images to help the public, and to protect the instruments, so that the space is as much a part of the display as the keyboards themselves.

How will the proposal be sustainable into the future?

A realistic understanding of the cost of operations is already well underway, and an expectation of some 60K/yr in direct operations is already anticipated. Additionally, annual utilities (~$10-15K), a comfortable maintenance fund (~$15K), and future salaries for the required staff (~$100K) are being estimated and will be covered by the partners and grants, sponsorships, individual giving, and possible rental fees to other music organizations requiring a small center for operation.

Concerts already make up a regular function of the collection, including the SC pianos, and since many of the pianos and all the harpsichords are concert ready, with others to follow, it would be natural for the space to become a national center of excellence for early keyboard performance, bringing in entertainment dollars to the city. The Frederick Collection in Ashburnham Massachusetts is a close example operating in this country to the proposal. This operation has been successful for several decades even without the strong educational focus that the Carolina Clavier Collection brings to the upstate.

Outfitting the Museum at Heritage Green

Modern museum science looks for ways to enhance the interaction of the visitor with the objects, stories, and histories of the various objects. Our efforts will be along many different lines – how to allow people from very young children to advanced adults experience the sounds around them and how these sounds can be organized into what we call music. Although the central thrust of the museum involves early acoustic keyboard instruments, all acoustic stringed instruments will have a place in the learning environment, including electronic reproductions. Audio recording sticks and touch screen displays will be featured to call up musical instruments and learn about how they work, and how they sound. Working models of various piano types will be on hand eventually to help guide the visitor though the world of early pianos and harpsichords.

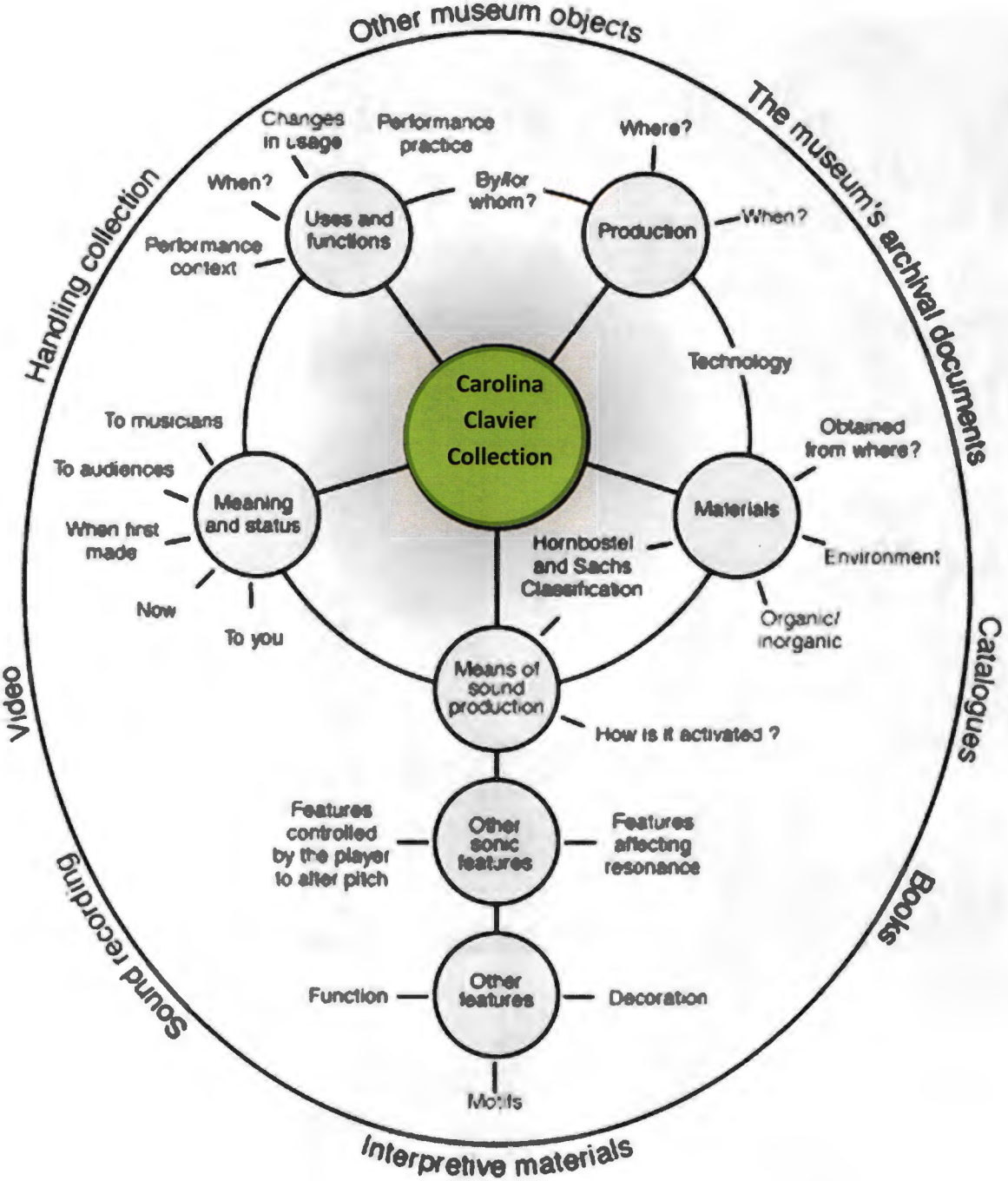
Touch screens throughout the display area help the visitor find information and learn about the objects as they listen to them.

All of the working instruments will have detailed photos of their actions, and GIFs of the action in operation so the visitor can gain a better appreciation of the function.

Special notes of history can be displayed as well. After use the screens reset to the beginning screen for better functionality


1797
Square Piano
1800-05
Square Piano
Touch to Start


1788-89
Square Piano
1785
Square Piano
1782
Chamber Organ


Other museum objects
The museum's archival documents
Catalogues
Books
Interpretive materials
Sound recording
Video
Handling collection
Carolina Clavier Collection
Uses and functions
Changes in usage
Performance practice
When?
Performance context
Production
By/for whom?
Where?
When?
Technology
Materials
Obtained from where?
Environment
Organic/ inorganic
Hornbostel and Sachs Classification
Meaning and status
To musicians
To audiences
When first made
Now
To you
Means of sound production
How is it activated ?
Other sonic features
Features controlled by the player to alter pitch
Features affecting resonance
Other features
Function
Decoration
Motifs

Greenville Music Museum 5 year budget. Startup expenses are in negoitation and are not included in the year one expenses at this time.

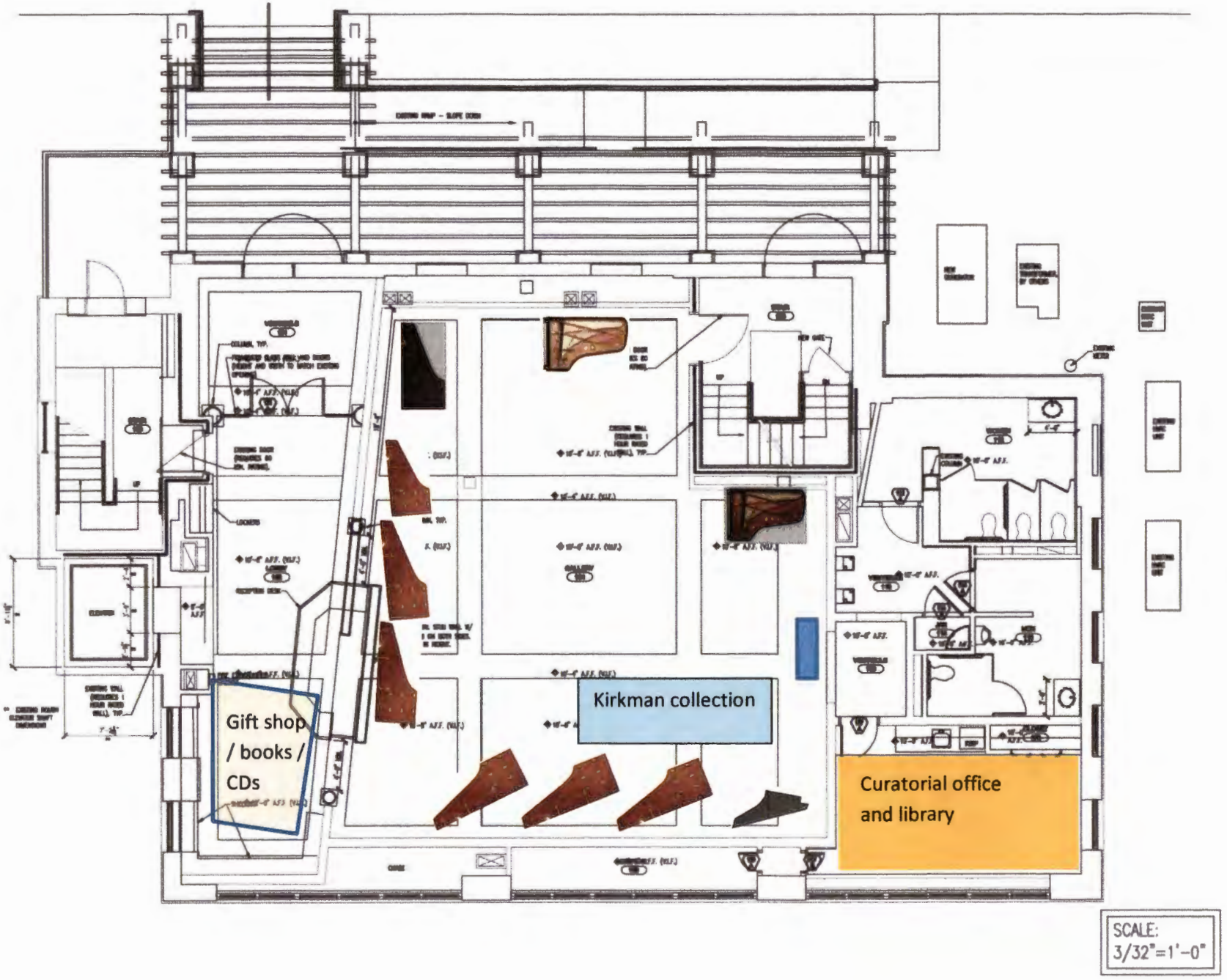
Revenue 1-year budget	2018FY	2019 FY	2020 FY	2021 FY	2022 FY
Grants Educational/History related	$ 15,000.00	$ 25,000.00	$ 25,000.00	$ 30,000.00	$ 30,000.00
Foundation & Corporate Grants	$ 50,000.00	$ 65,000.00	$ 65,000.00	$ 65,000.00	$ 70,000.00
Donations	$ 80,000.00	$ 80,000.00	$ 95,000.00	$105,000.00	$110,000.00
Ticket Sales	$ 18,750.00	$ 18,750.00	$ 19,500.00	$ 22,000.00	$ 25,000.00
Rent from Guild	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 6,500.00	$ 6,500.00
Gift Shop Profits	$ 1,000.00	$ 1,000.00	$ 1,250.00	$ 1,350.00	$ 1,500.00
Annual Fundraiser	$ 30,000.00	$ 30,000.00	$ 35,000.00	$ 55,000.00	$ 55,000.00
Total Revenue	$ 200,750.00	$225,750.00	$246,750.00	$284,850.00	$298,000.00
Expenses					
Personnel	$ 25,000.00	$ 35,000.00	$ 40,000.00	$ 50,000.00	$ 50,000.00
Executive Team	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 45,000.00	$ 50,000.00
Floor Staff & Program Leaders	$ 2,000.00	$ 3,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00
Facilities & Maintenance	$ 8,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00
Staff Benefits (vacation time, etc.) 20% of total salaries	$ -			$ 20,000.00	$ 20,000.00
Building and Office Services	$ 750.00	$ 1,000.00	$ 1,000.00	$ 1,500.00	$ 2,000.00
Electricity, Heating & Cooling Equipment	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00
Security System Support	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00
Computer Software	$ 750.00	$ 750.00	$ 750.00	$ 750.00	$ 750.00
Office Supplies	$ 750.00	$ 750.00	$ 750.00	$ 750.00	$ 750.00
Telephone/Internet Service	$ 1,800.00	$ 1,800.00	$ 1,800.00	$ 1,800.00	$ 1,800.00
Cleaning & Maintenance Supplies	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00
Exhibits & Programs	$ 500.00	$ 500.00	$ 500.00	$ 500.00	$ 500.00
Exhibits Supplies banners, specially made props,)	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00
Design and printing for graphic panels	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00
Artists fees	$ 14,000.00	$ 14,000.00	$ 14,000.00	$ 20,000.00	$ 20,000.00
Costs to put on fundraiser	$ 10,000.00	$ 10,000.00	$ 12,500.00	$ 12,500.00	$ 12,500.00
Marketing & Public Relations	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00
Professional Membership (museum organizations)	$ 1,600.00	$ 1,600.00	$ 1,600.00	$ 1,600.00	$ 1,600.00
Insurance	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00	$ 7,500.00
Miscellaneous	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00
Total Expense	$ 171,150.00	$184,400.00	$193,900.00	$270,400.00	$275,900.00

Notes: Museum staff can grow at a rate that the income will sustain. A campaign to create annual and endowment dollars can be started to support everything from part time help to full time. The Guild of the Greenville Symphony can provide and coordinate volunteers to act as docents, man the front desk, and provide support during donor cultivation events.

***** NO RENT IS SHOWN BECAUSE NO FIRM DEFINITION YET. WE ARE WILLING TO PAY THE $1/YEAR BUT ARE ABLE TO INCREASE THAT AMOUNT IF REQUIRED.

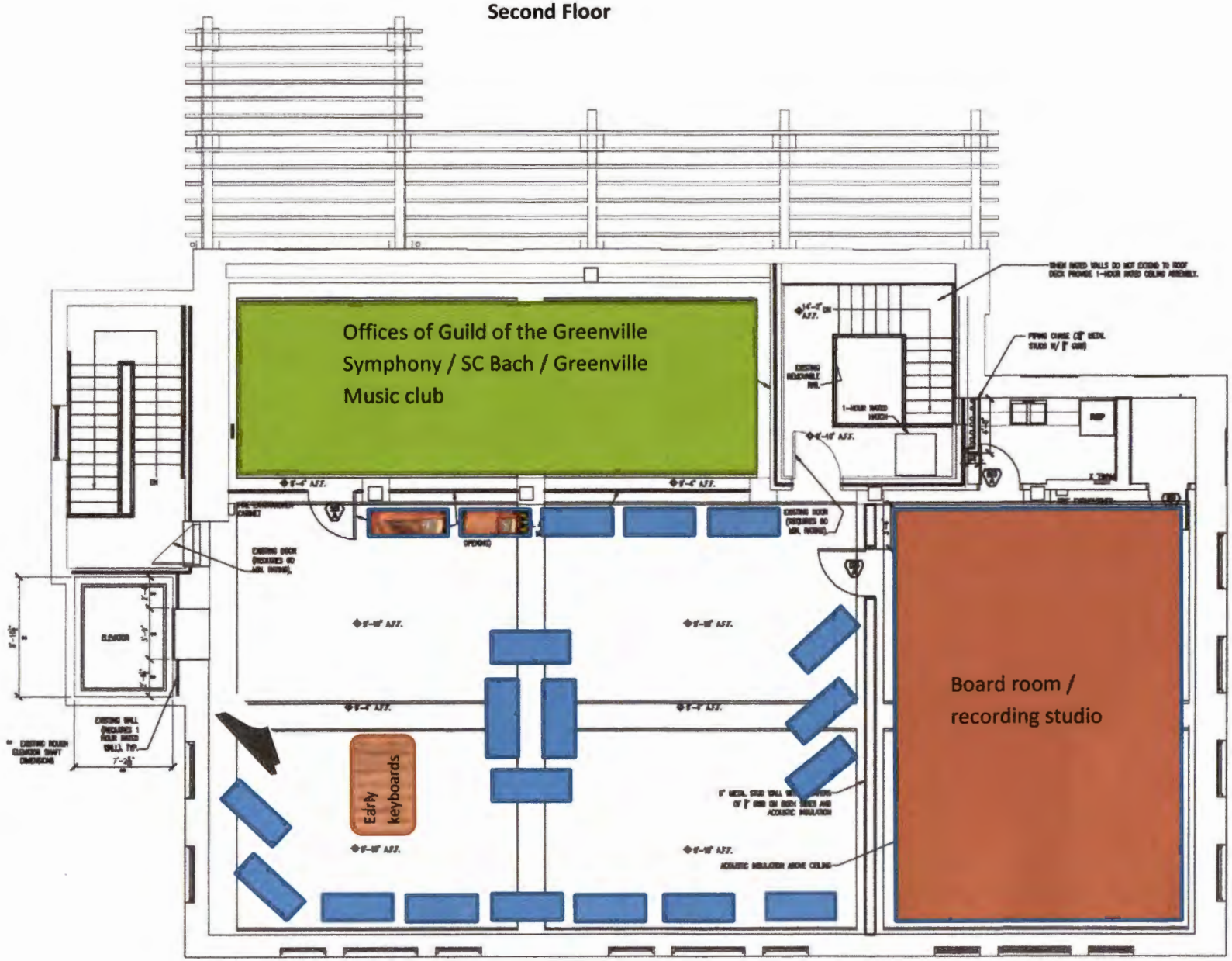
Greenville Music Museum layout

First Floor



Greenville Music Museum layout

Second Floor



Greenville Tech Foundation

September 26, 2016

Mayor Knox White
The City of Greenville
P. O. Box 2207
Greenville, S.C. 29602

Dear Knox:

I know that plans for sale of the Beattie House, formerly the Greenville Woman's Club, did not work out. I believe it would be a wonderful thing for our city if the historic home could be preserved in its present location and the surrounding grounds maintained.

It will take some money to restore the home, and any sale to a for-profit enterprise likely would result in attempts to move it, demolish it or do the absolute minimum needed to maintain it. Public access would probably be minimal.

The optimal solution would be for a non-profit group to acquire the home and land. Such a group would have an incentive to properly restore and preserve it, and find a use for the property that would maximize public access. The result could be another unique attraction for our downtown.

Such a group has been formed and would use the home to exhibit the Carolina Clavier Collection, currently located in Easley. This collection is unique in the United States and there may not be another one like it in the world. The collection would attract visitors and be a place for classes, lectures, demonstrations and concerts. Local schools could schedule field-trips to visit it.

The gardens, when restored, would themselves be a destination. In addition, the new location could be available for galas, receptions and fundraisers.

I support the efforts of this group to acquire the property and hope that the City of Greenville will give strong consideration to their request.

Sincerely,

Robert E. Howard
Foundation President

MS 6002, P.O. Box 5616, Greenville, S.C. 29606-5616
(864) 250-8835 • FAX: (864) 250-8665 • www.greenvilletechfoundation.org • foundation@gvltec.edu

THE FINE ARTS CENTER
THE SCHOOL DISTRICT OF GREENVILLE COUNTY
Greenville County's Public School for the Literary, Performing & Visual Arts since 1974

September 16, 2016

City of Greenville
206 S. Main Street
Greenville, SC 29601

To the City of Greenville:

There can be little doubt that Greenville's rise to prominence, its revitalization, its reputation as one of the most exciting cities in the New South, has been built on the arts--the Peace Center, the Greenville County Museum of Art, the Symphony, Artisphere, the West End, the West Village, two nationally known specialized arts schools, downtown theatres, a pedestrian bridge bookended by sculptors Joel Shapiro and Brian Hunt and, nearby, a Dale Chihuly, an internationally known artist in glass. Add the great hotels and the fabulous restaurants and Greenville has become a Destination--capital "D"--simply, we are talked about, admired and, naturally, we are all proud to call Greenville home.

Other cities, larger cities, send delegations to see how we did it, companies looking for a place to relocate find a vibrant, exciting and engaged citizenry who believes we have just begun to realize our potential. Supporting all of this, guiding all of this, are community leaders who have demonstrated not only prescient leadership, but leaders with imagination who found creative solutions to the myriad problems that always come when such transformations take place.

Are we done? Are we ever done, or do we know that while we celebrate our many successes we must also remain open to new opportunities that will separate us from those who would emulate what has been learned here? We know the answer to that question. And, there is an answer before us that will reverberate nationally, even internationally. The Carolina Clavier Collection, assembled by one of the most respected collectors and restorers of keyboard instruments in the world, Dr. Thomas Strange, whose 35 historical keyboard instruments, including the Broadwood grand piano that Chopin played when in London and keyboards that played a unique role in SC and American history, has already drawn nationally known musicians from all over the United States and Europe to play them in concert at his home and in the Sutherlin Recital Hall at The Fine Arts Center and at The Governor's School.

Imagine those instruments properly displayed in Greenville, in a place that is also historically prominent and right downtown; imagine a place where concerts can be given and recorded by internationally known musicians, where those concerts can be videoed and shown on public television (they have already been featured on NPR!), where research by early music experts, and undergraduate and graduate students from around the world can be undertaken in this place, a place where students of all ages from the upstate, from across the state, can tour the collection, guided by Dr. Strange and trained docents who can open up history, all history, as easily as opening up the 'lid" of one of these beautiful harpsichords or pianos.

Imagine the Beattie House, the home and gardens painstakingly restored, holding these beautiful instruments, holding regular concerts--downtown--and if you can imagine that, then you can imagine, too, what another **'first'** Greenville will have, another arts destination that in concert with what has already been imagined and realized, will be another outward manifestation of our spirit and community vision.

We need the imagination and courage shown when Greenville was remade to say, "The place, naturally, is The Beattie House."

Sincerely,

Roy S. Fluhrer, Ph.D.
Director

THE FINE ARTS CENTER
THE SCHOOL DISTRICT OF GREENVILLE COUNTY
Greenville County's Public School for the Literary, Performing & Visual Arts since 1974

12 September 2016

To Whom It May Concern at the City of Greenville:

I am the instructor of Advanced Placement Music Theory, Honors Music History, and Honors Advanced Topics in Music Theory at the Greenville Fine Arts Center. I am an ardent fan and supporter of Dr. Thomas Strange and the Carolina Clavier Collection. I take the students of the aforementioned Honors classes on field trips to Easley to see the collection on an annual basis, timing the visits to compliment my curricula.

I am extremely excited about the prospect of moving the Carolina Clavier Collection to the Beattie House. The enthusiasm generated among my students by their visits to the Collection is incredible and invaluable. Any teacher of music - at any level - would be thrilled to have such enthusiasm stimulated in their own students, and it is all but guaranteed to happen if they actually have the opportunity to see it. Such visits will be much, much more feasible with the Collection housed at the Beattie House.

In addition to the opportunity for area students to visit the Collection, the potential for select instruments in the collection to travel to other venues for performances will be another truly unique opportunity. We have already staged three concerts at the Fine Arts Center that featured keyboards from the Collection, and another is booked for this spring. I can attest – again, from personal experience – that these concerts are very special and a delight for all. They are a wonderful enrichment to our already multi-faceted performance schedule.

In addition to making the Collection conveniently accessible to all of Greenville County, the restored Beattie House will accommodate a wide range of musical activities and will be a visionary investment in this unrivaled collection of instruments. It will put another globally recognized feather in the City's hat, drawing a dramatically increased number of students and scholars from far and wide for study and performances. And, in the person of Dr. Strange, you have a person with exactly the necessary knowledge, wisdom, and drive to guide this effort successfully. The state of the Collection at present and Tom's wonderful hosting of our visits to see it in his home proves this beyond doubt. The timing could scarcely be better.

In sum, the repurposing of the Beattie House as the home of the Carolina Clavier Collection is a perfect marriage of function with history and culture. I urge you in the strongest terms to support this initiative with all the means at your disposal.

Sincerely,

Dr. Jon J. Grier
Instructor and Composer-in-Residence
Greenville Fine Arts Center
102 Pine Knoll Drive, Greenville, SC 29609
(864)-355-2561

South Carolina Governor's School for the Arts and Humanities

October 3, 2016

To Whom It May Concern:

It is a privilege to offer my most vigorous support for the proposal to acquire Greenville's Beattie House as a permanent home for the *Carolina Clavier Collection*, an undeniably vital cultural and educational gem located in the Upstate of South Carolina.

As a performing keyboardist (piano and organ), and especially as a longtime keyboard pedagogue at such institutions as the University of South Carolina and the South Carolina Governor's School for the Arts and Humanities, I have come to treasure the *Collection* as an invaluable resource for the study of historic instruments – those for which an enormous part of the pianist's repertoire was written. Until a student can hear what was actually in the ears of our greatest composers when writing for keyboard instruments, and is able to feel the touch and response of these now historic instruments, he can only surmise that the modern piano was always the intended voice of such creations. To say that a world of insight and understanding is possible for students is a vast understatement; contact with these instruments becomes revelatory, and for the serious musician even life-altering.

That such a collection exists is rare, but to think that it exists in our state and our specific area of the state is downright miraculous. The thought of a permanent home for such a rare and priceless resource is tantalizingly satisfying for educators like me who wish to see it remain in this vicinity and accessible in perpetuity. I view it as a boon for our city, state, and even our nation for the collection to remain intact and available for anyone in the world to experience.

Tom Strange has been an indefatigable scholar who has built and maintained this important collection. He has been selfless in his pursuit of making the *Collection* accessible to all who are interested, and a magnanimous host for students and educators who have visited his home for personal tours of the instruments – many (like me) on numerous occasions.

I implore those in charge of making decisions surrounding the future of the Beattie House to look favorably on the proposal that Tom and others are putting forth in the acquisition of this property. It will further elevate the cultural status of our area and state, and will forever serve as an important resource for keyboard students, professionals and enthusiasts around the world.

Sincerely yours,

Stephen P. Taylor

Stephen P. Taylor, D.M.A.
SCGSAH Piano Faculty
stephentaylor@scgsah.org
864-282-3761

To the City of Greenville

September 15, 2016

It is a pleasure to endorse the Carolina Clavier Collection's bid to be permanently housed in the Beattie House. I first met Tom Strange several years ago when he gave a lecture/demonstration of his then relatively small collection of historic keyboard instruments at the Greenville Art Museum. Since then, I have watched in awe as his collection has grown to world class status in both the number and the quality of historic keyboard instruments.

I coordinate the piano program at the Brevard Music Center, and for the past many summers, Tom and Debra have opened their home to twenty-five BMC piano students from around the country (and the world) who travel from Brevard to Easley to hear Tom lecture. And because of Tom's generosity, the students actually play the instruments and touch the keys that were touched by such legendary composers as Frederic Chopin and Muzio Clementi. I'll never forget the moment some summers back when Tom interrupted a student who was playing an 18th C. square piano. When Tom said, "Oh and by the way, I forgot to mention that Muzio Clementi played this piano," the student's jaw literally dropped.

There are usually forty or fifty students who want to see the collection, but Tom and Debra's home will only accommodate twenty-five. If the collection found a home in the historic Beattie House, I would most likely be able to bring as many students as would wish to make the trip. Again and again, summer after summer, the students remark that this was one of the high points of their entire summer, and that the experience contributed greatly to their education. They know that they would have to travel a great distance to view a comparable collection.

Several times over the years, I visited the Beattie House when I spoke and performed at meetings of the Greenville Women's Club, and I believe that the marriage of historic home and historic instruments would be a perfect union. I hope it becomes a reality for the upstate and for the state of South Carolina. What a crowning jewel it would be!

Sincerely,

Douglas Weeks

Babcock Professor of Piano, Converse College

Coordinator of Keyboard Studies, Brevard Music Center

JOHN R. WATSON
Maker and Conservator of Musical Instruments
210 John Pinckney Lane, Williamsburg, Virginia 23185 phone: 757-561-6591

September 18, 2016

City of Greenville
On behalf of Tom Strange and the Carolina Clavier Collection

To whom it may concern,

I am writing in support of the proposal to establish the Carolina Clavier Collection as a world-class institution in Greenville for the cultural enrichment of upstate South Carolina and South Eastern United States. This collection of musical instruments has reached a breadth and quality that is attracting attention and respect not only from the citizens in its region, but also of my professional colleagues in the museum field in America and abroad. It will be a credit to the Greenville community.

The vision embraced and articulated by Tom Strange is remarkably well informed and far-cited with provisions for effective educational objectives, integration with other cultural enterprises in the region, and policies for collection management that are characteristic of established museums. From my perspective as a career conservator with three decades of museum experience, I am impressed with the proposal's reasoned approach to maximizing use of the collection for education and musical performances while also preserving it for the enjoyment of future generations.

My own confidence in such an ambitious plan is strengthened by my years of knowing Tom Strange. More than anyone I know, Tom combines the energy, vision, persistence, leadership and teamwork to see such a venture successfully through its first years.

I commend you for considering the proposal and urge your enthusiastic acceptance of it. The Carolina Clavier Collection promises to enliven the Fountain Fox Beattie House in a way that will make it a destination and a complement to your community.

Yours Sincerely,

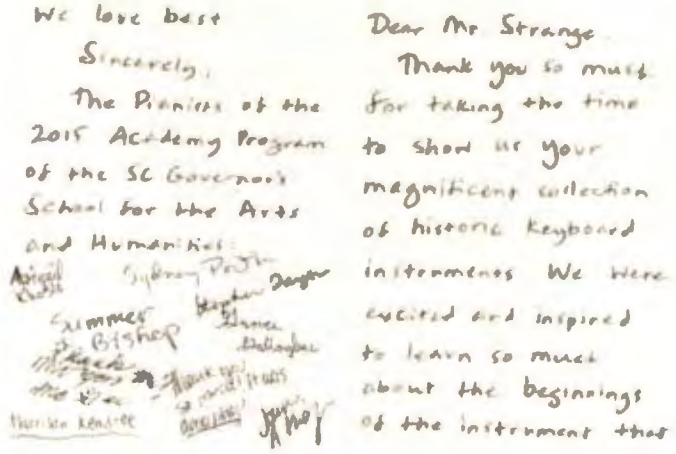
JOHN R. WATSON
Associate Curator of Musical Instruments and
Conservator of Instruments and Mechanical Arts (Emeritus)
The Colonial Williamsburg Foundation
www.PreservationTheory.org
J.Watson@jrw1.com

Thank You's

Over the years the Carolina Clavier Collection has received dozens of thank you notes from adults and students. The following is a short excerpt from some recent years.

Thank you so much for letting us come to your home and sharing with us the things you are so passionate about - Lydia

Young piano students from the Greenville Music Teachers Association.



2015 Governor's School for Arts and Humanities summer Academy Program

October 31

Dear Tom and Debra,

I am still floating from Wednesday night's incredible evening at your home and with the Carolina Clavier Collection! I am completely humbled to have been involved in such an undertaking, and am energized at the prospects for a continued relationship with you in the name of Keyboard education.

It is one thing to have such an extraordinary collection so close by, but for you to so willingly share it with us and others is beyond amazing! The event meant the world to me, but even more so for the students who got to perform. All are holding their heads a bit higher with pride in taking part of such a special event. Thank you for rolling out the red carpet for me and the students and for the Gounds personnel. I'm still pinching myself that everything transpired in the way that it has, and that the Keyboard area will be the ongoing beneficiaries for generations to come. Unbelievable!!

Continuing to
Educate, Inspire,
and **Support**
South Carolina's
Emerging Artists

South Carolina Governor's School
for the Arts and Humanities
15 University Street · Greenville, SC 29604
p 864 282 3777 · f 864 241 1235
www.scgsah.org

With endless gratitude,
Stephen

2014 Governor's School for Arts and Humanities

Thanks so much for the opportunity to come to your home and see and hear this wonderful collection of instruments! It was great!

Tom Arnold, President of GMTA

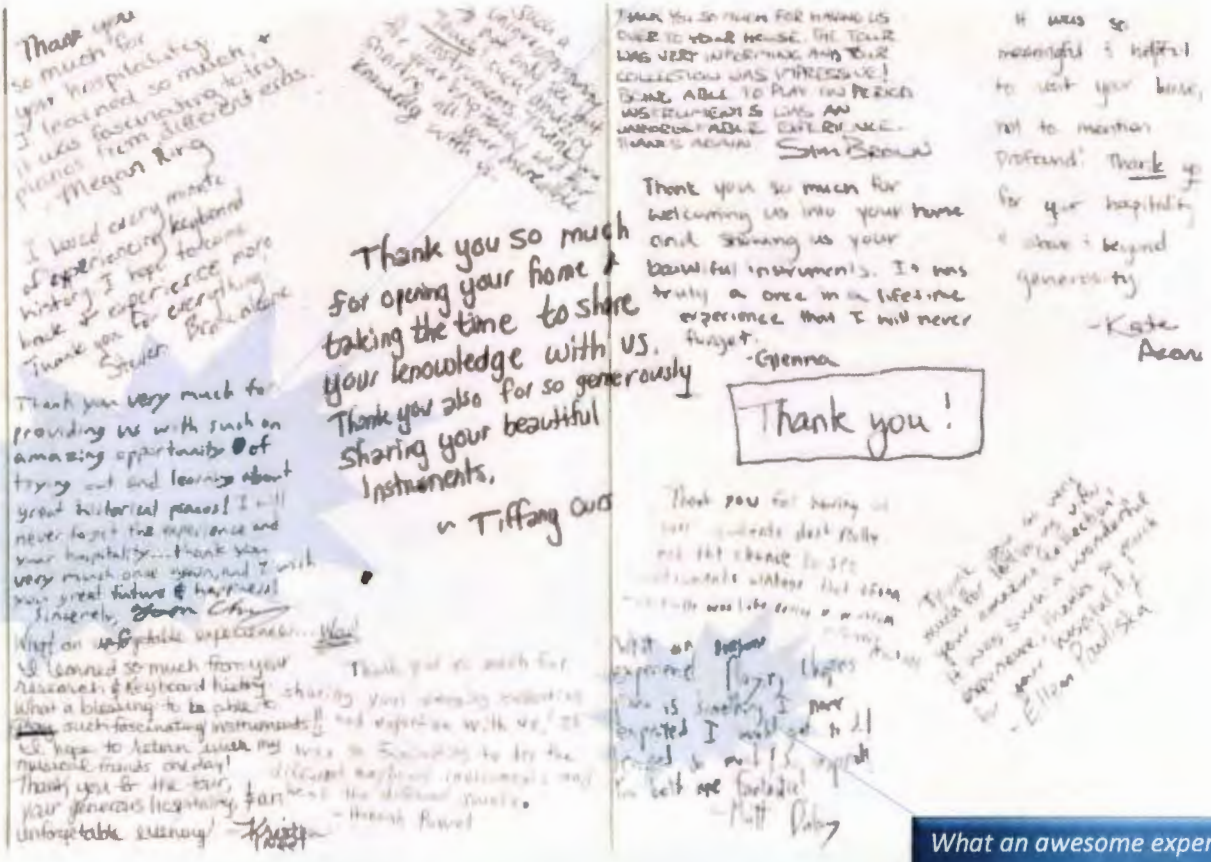
Thank you for your hospitality.
Karen Mentzer

Wonderful collection! Thank you!
Shelley Johnson

Thank you for sharing with us!
Ruth Greene

Greenville Music Teachers Association, 2014

Thank you very much for providing us with such an amazing opportunity of trying out and learning about great historical pianos I will never forget the experience and your hospitality – Soon Chi



Greenville Fine Arts Center, 2012 (above 2015, below)

What an awesome experience playing Chopin's piano is something I never expected to would get to do! I learned so much! So inspired! - Matt Daley

Debra + Tom, Many Thanks, yet again, for your generosity and the pleasure of your company. You enrich the lives of all who meet you. Best, Jen

Thank you so much for the amazing tour of your piano collection. I was captivated the whole time. Your generosity is much appreciated! – Morgan McCauley

Thank you for allowing our class to look at your AMAZING piano collection. I was entranced the entire time. Thank you for this opportunity! — Leigha Turner

Thank you so much for opening up your home to our class! I am so grateful for the opportunity to view your beautiful collection and learn a bit more about the piano and its history. Thank you! Dana Crytser

Thank you so much for giving me and my class the opportunity to see and learn from your amazing collection! It was a great experience and I am so glad that I came! ~ Amalie King

Thank you so much for letting us come see the collection! It's marvelous to see what you do to maintain these fantastic instruments. It was great to learn about the history of each one and how it survived to this day. I can't thank you enough for keeping these instruments healthy and functional, and for understanding their significance. – Sam Parrini

Thank you so, so, so very much for giving us the opportunity to see, ~~touch~~ touch, and know the full history behind all these amazing instruments! I really loved how you took us through a timeline of how everything began and what caused what. It is so fascinating that you are able to restore these ancient creations. I really hope that I am able to see these pianos and listen to you again! Thank you!

(P.S. - I really love your dog ^^)

Sincerely,
Rachel Y.

Dear Tom,
thank you so much for showing us around your magnificent collection of pianos. It was such an incredible honor!
Ally

Dear Tom,
Thank you so much for letting us see + learn about your continued support of the arts!
Taylor

Dear Tom,
We all really appreciate your knowledge & expertise & the manner in which you share it — and Joe is pretty nice. - Jack

Dear Tom,
I've been dreaming of your collection ever since we visited your house! Thanks for welcoming us. ♡ Gio

THE FINE ARTS CENTER PERMANENT COLLECTION
Jerry Uelsman
Untitled, 1956, Gelatin Silver Photograph

The Fine Arts Center
Greenville South Carolina's Public School for the Literary, Performing & Visual Arts Since 1974
www.FineArtsCenter.net

Dear Tom,
Thankyou so much for having us it was wonderful and I learned a lot.
thank you! Arianna

Tom, Thank you for sharing your love of music with us. Your collection was breathtaking. I hope to see it again. - Rachel R.

Dr. Strange,
It was a fantastic opportunity to go to your home and see your collection of instruments. It was fantastic and fun. The way you told us about these instruments' history was very interesting and you make learning entertaining. Continue what you do so other students can have the same opportunity.
Thank - you EG

Dr. Strange,
Thank you so much for the amazing opportunity you give us to see your wonderful collection. Your understanding of how the piano came to be and how it evolved. Passion shows through your ~~for~~ for your craft. I hope to return someday and relive music history all over again.
Jaylon Guisto

Carolina Clavier Collection at the Greenville Music Museum

Rules of operation, collection control, and training for Board, Staff, and Volunteers

Revision 1.2, January 28, 2017

Mission Statement:

The Carolina Clavier Collection (CCC) at Greenville Music Museum exists to inform, educate, and enlighten students, teachers, and the public about the critically important nature of the sound and touch of historic keyboards, and their place in contemporary historically informed music performance. As such, controlled access to working authentic instruments for learning and performance is the primary objective of the collection, educational outreach is paramount, and careful preservation of these artifacts though approved museum practices guides their use.

Vision Statement:

The Carolina Clavier Collection at Greenville Music Museum serves as a hub for musical appreciation, education, and engagement across the Southeast, to present historically informed musical programming, promote youth studies across all economic backgrounds, and to serve as a locus for hosting musical organizations in the Upstate of South Carolina and increasing awareness of historically informed performance practice.

Philosophy of operating the Carolina Clavier Collection at Greenville Music Museum

As indicated by the Mission and Vision Statement, it is the intent of the CCC to present functioning historical instruments for use by properly prepared students, faculty, and artists to allow them to understand the sonic soundscape of music over many centuries in the context of instruments contemporary to Bach, Beethoven, and Chopin among many others. To that end, it features a disproportionately greater number of restored and playable instruments than most museums of its kind. That said, not every keyboard in the collection is or should be restored to playing condition. Some are allowed to be played while not quite yielding the same sound as when they were new, and a few have been brought forward through restoration work that was perhaps more involved, but that has not removed the essential character of the instrument or transformed it into something it never was.

The Carolina Clavier Collection's general preservation philosophy is stated below, as adapted from "The care of Historical Musical Instruments", Robert Barclay, CIMCIM 2005 (electronic version) to which this philosophy is heavily indebted.

Overview

Musical keyboard instruments are similar to other functional objects because they have moving parts, or require physical interaction to fulfill the purposes for which they were made.

The sound they can produce is the primary aesthetic component of most musical instruments, and the reason why they were made. Thus there is always pressure from collectors and musical instrument makers, the general public, and from many museum staff to restore them to playing condition so that their musical qualities can be appreciated - in the words of one museum director, "to take them out of their glass cases and let them sing." In the past, restoration and maintenance of museum instruments for use in performance was often taken for granted. Today, museum professionals increasingly question such active, hands-on use of accessioned objects. The educational and aesthetic value of such use is often undeniable, but the potential for wear and tear and loss of original substance is equally great. Restoration work, though always well intentioned, can be detrimental to the long-term preservation of the instruments, and is considered by many to be inconsistent with standards of practice long accepted for other classes of museum collections, such as paintings and decorative arts. Even in the case of museum instruments for which restoration to playability seems an appropriate option, such as the Carolina Clavier Collection, it is always much more easily proposed than safely executed.

Present enjoyment must be balanced with the deterioration that must occur when the keyboard is played, but since a museum artifact is held in trust for the future as well as the present, one should always consider whether a present use or restoration proposal will close off interpretation options for future curators and visitors. No matter how much it may please an influential individual or special interest group today, many of the objects in our care will be viewed and used by future visitors and scholars in ways that are different than those we imagine today. It is therefore clear that collections of musical instruments (and other functional objects) provide some problems for museum staff, which differ from those of fine art collections. Nevertheless, their treatment can and should be judged by exactly the same standards applied to treatments of paintings, sculpture, and the decorative arts.

Codes of Ethics and Standards

Several national and international organizations of curators, conservators, and other museum professionals have adopted codes of ethics and standards that provide a good basis for sound conservation decisions, including those concerning restoration and performances using musical instruments. (The most relevant codes are listed in the bibliography.) Published and used for decades,

these codes have stood the test of time without major revisions or fundamental changes to the underlying concepts. Most of them were originally written for the needs of fine art collections, and some codes may require interpretation when applied to functional objects. Additional guidelines are needed for the restoration to playing condition of musical instruments, and for the situation when a decorative, functional, or technical component of an instrument is compromised by excessive attention to one aspect at the expense of others. Treatments of functional objects should conform to the codes of ethics and standards of practice published by appropriate national and inter-national conservation organizations. Based upon some fundamental principles drawn from the code of ethics of the American Institute for Conservation (AIC), but common to most of them, the following guidelines may help select treatment alternatives that respect and protect aesthetic and functional values, as well as the technical and historical evidence contained in functional objects.

AIC code as adopted by the Carolina Clavier Collection require that:

· respect be shown for the "aesthetic, historic, and physical integrity of the instrument";

· although circumstances may limit the extent of treatment, the quality of the treatment should never be governed by the quality or value of the instrument;

· personnel avoid the use of techniques, the results of which cannot be undone if that should become desirable;

· a conservator may supply little or much restoration, according to a firm previous understanding with the Board of Directors" but that he or she may not modify "the known character of the original"; and

. that good laboratory practices and OSHA guidelines be adhered to during any on-site conservation or cleaning that involves known or suspected hazardous material/s, and including proper use of personal protective equipment, disposal, and awareness of co-workers to minimize or eliminate exposure to hazardous materials.

· a written report (supplemented with photographs) detailing the object's condition, the proposed treatment, and the actual materials and methods used in the treatment be made to instruments within the collection.

Standards of the Maker

No museum object should be restored to a state of functional operation unless the result will meet the minimum standard of its original maker, or of a competent historical user, or if it will not or cannot be properly maintained thereafter. As an example, one sometimes encounters harpsichords restored using strings of incorrect gauge, tuned to the wrong pitch, or with a badly regulated action. On such an instrument, any museum demonstration will not respect the aesthetic intent of the original maker's work, even though it may be enjoyable to a modern audience. As well, there is often pressure to restore an object for some special event, even if it is uncertain that staff or other resources will continue

to be available to maintain it against gradual wear and tear and operational stresses. Such damaging treatment is inappropriate and will not be permitted.

Equal Consideration of All Aspects

All aspects of the instrument should be given equal consideration when planning and carrying out its treatment. These include:

- original function;
- original decoration;
- later historic functions;
- changes in decoration during any later period of historic use;
- visible or suspected evidence of its history of design, manufacture, or use;
- earlier restorations and repairs.

Instruments have commonly been restored in other collections with a singled-minded attention to either the decorative or the functional aspect - to the exclusion and detriment of the others. The warped soundboard of a harpsichord may be flattened by applying heavy blocks and internal braces, which improve its external visual appearance but ruin its resonance. Instruments have been completely repainted in a manner loosely consistent with the general style of the period without protecting or respecting traces of original or later decoration that remain on the object and are unique to it. In general, instruments in the Carolina Clavier Collection are acquired as close to original condition as possible, and maintained with minimal polishing and visual refurbishment as is consistent with the mission of being displayable and allowing for those instruments that are deemed playable to function.

Few early harpsichords or pianos retain their original plectra, hammer coverings, damper cloth or strings, because most traditional restorers usually replace all such material with either a modern equivalent, or a semi careful reconstruction based on historic principles. They have assumed that these components will produce a better sound and more reliable mechanical function. Although such assumptions are sometimes true, replacing historic material destroys the value of these parts of the object for later study and is inappropriate. It must be discouraged even at the risk of disappointing a performer, curator, or craftsman who sincerely wishes the instrument to look and sound its best. This is not to say that restoration or reconstruction is never appropriate, but it should be undertaken only as an infrequent, and thoroughly researched, last resort rather than as a normal, standard practice. In general, keyboards in the Carolina Clavier Collection are maintained with as much original material as is consistent with their intended purpose, and that in all cases, in the balance of a subtle tone improvement VS replacement of a key original material (hammer coverings and/or string replacement,

the original material is retained preferentially. If new material can be added to old without disturbing an earlier material then this is permitted, so long as it is reversible without loss of historical surface of function.

Justification for Functional Restoration

Restoring an instrument to functioning condition should not be considered unless an important historic, technical, or aesthetic quality can only be determined by actually operating the artifact, and only if this information cannot be gained in some other manner. It is recognized that functioning keyboards often have more financial value than non-functioning keyboards, and restoration is evaluated on a case by case basis. The act of restoring a keyboard can also uncover information otherwise hidden and historically informed restoration work is not always an approach of last resort.

All functional restorations are necessarily more intrusive than basic conservation treatments and always result in some loss of the original 'presence' of the artifact. Some original substance is always lost, as is evidence of performance practice, mechanical working clearances, and other adjustments. Evidence of successive stages of decoration and changes of function is often present on an instrument and is preserved in a manner analogous to archaeological strata. Such evidence is very easily lost or obscured.

Prevention

With the Carolina Clavier Collection, the question of wise use of available resources must always be considered. If resources are limited - as they usually are - the welfare of the entire collection will be better served by paying proper attention to the storage and exhibition environment, and through basic preservation treatments, rather than through a series of restorations of individual objects, each consuming hundreds of hours and incurring further maintenance.

Factors Against Functional Restoration

There are a number of factors that argue against functional restoration in all cases:

- The instrument is unique, or some element of it suggests that any restoration would alter its value negatively.
- The instrument has original ephemeral features that will be lost or altered.
- The function is obscure and unlikely to be determined as a result of restoration.

- The condition of the instrument is such that an accurate achievement of its original quality of function is unlikely.
- The function is so well understood that no new information is likely to be gained.
- The instrument is fragile or subject to significant wear during use.
- The use of a copy would be possible and advisable.
- The skills and other resources required for restoration, subsequent ongoing maintenance, and use consistent with historically appropriate standards are unavailable or only marginally available.
- The resulting functional use will be not be recorded or incorporated into education engagement in any permanent form.

- **Factors for Functional Restoration**

- The instrument is not uncommon or unique, and many similar examples exist.
- The instrument has been previously restored and most ephemeral features that would be lost in a restoration have already been lost.
- The instrument can be easily put into working condition without loss of substance or ephemeral features such as adjustments and clearances.
- The original function can be reestablished, and useful information about it is expected to be gained as a result.
- The instrument is sturdy, durable, and not subject to significant wear during operation.
- Using a copy would not give results equivalent to those produced by the restored original.
- Skills and other resources are available to restore and use the instrument so it will operate in a manner consistent with the standards of the period of origin.
- Skills and other resources are available to provide for the ongoing care and maintenance of the instrument.
- A permanent and accessible record will be made of the resulting functional use through sound recording, filming, video-taping, or other suitable means.

Playability and "Soundability"

Restoring historic musical instruments to playability is the most contentious subject debated in the organo-museological community. One reason for the lack of agreement is that the notion of playability is not well-enough defined to resolve the issue. Both sides agree that extant older instruments are a

vital source of knowledge about period musical practice. The opponents of restoration argue that the truly authentic musical instrument is not a restored version of an instrument that was:

- transformed to suit changing musical fashion throughout its working life
- was more or less worn out in the process
- spent a century or two in an abandoned state
- finally placed in the hands of a skilled, present-day musical instrument maker who might have known little of period instrument-making practice.

They argue that the truly authentic instrument is a reproduction of that relic, to the best of present knowledge and ability, in a state equivalent to what it was when new. This argument is diminished by the extent to which modern musical instrument makers do not have access to the equivalent materials, techniques, and sonic expectations of the original instrument, and the 'gravitas' that any student or audience brings to the table when hearing an authentic historical instrument sound again.

Aside from the desirability of hearing an original instrument speak, the proponents of restoration argue that it is impossible to determine which surviving instruments are worth reproduction unless the initial material can be evaluated in playable condition. This dilemma could be mitigated if it were realized that keyboard instruments do not need to be fully strung to evaluate a useful portion of their tonal characteristics. The stringing used for such purposes does not need to generate the same tension required by full playing condition. A great deal of progress could result from making a distinction between "soundability" and playability, where the former can often be achieved without any prerequisite restoration.

Musical instruments of historical or artistic importance can and should be treated under the same theoretical principles as other cultural property. Existing standards, such as the AIC and similar codes, provide an adequate and widely accepted basis for such decisions. Because of their diversity of material and structures and the very different and sometimes conflicting ways in which musical instruments are valued and used by their several publics - historians of art, professional musicians, amateur enthusiasts, historians of technology, craftsmen, and casual museum visitors - supplemental guidelines to the ethical codes are also needed. Those offered here have proven helpful in practice.

Operations Policy

A collection assessment is to be carried out to identify preservation priorities and these are used to inform a preservation program. Each of the instruments in the CCC have been catalogued and their current and future preservation/restoration status is recorded. The catalogue and this assessment is to be updated at roughly five year intervals.

Preservation priorities are included in the aims and objectives of all forward planning by the board, as captured at the annual meeting of the board when the collection assessment is reviewed annually, and updated every 5 years. This includes a description of the condition if the instruments and any concerns for the future, change in playing status, or relevance. Sudden changes in an instrument's status will be reported at the next meeting of the board or as soon as possible.

One or more members of the board and the acting chief curator are responsible for preservation and are included in the decision-making team of the institution for any change in the status or environment of the collection as a whole or in part.

The institution has a written policy covering acquisition, retention, accessioning, de-accessioning or disposal and the policy includes a review mechanism (see policy on acquisition, retention, accessioning, de- accessioning or disposal in **Appendix A**). This policy states any limitations on collecting imposed by factors such as inadequate staffing, display space, storage (quality or capacity), or conservation resources.

Those responsible for preservation are consulted about relevant policy-making decisions by the board or staff at all times.

Instruments are cared for in accordance with recommendations in the relevant **Museums and Galleries Commission 'Standards in the Care of Collections'** series (where applicable). Exceptions to these standards are taken with the playability of the instruments, where instruments that have been deemed historically sonically important and made playable again are not held to the rigorous level of restriction now called out in the MGC standards (**Appendix G**) but to a somewhat modified standard that tracks use but allows for a more informal exploration of the instrument through playing.

The preservation needs of instruments or material acquired for permanent retention are assessed prior to acceptance or immediately on accession and submitted to the board in written form.

The CCC will monitor the use of its collections in a log book. This information can be used to inform preservation and conservation planning.

Advice is to be sought from a conservator or collection care adviser when drafting or revising a policy related to acquisition, retention, accessioning, de-accessioning or disposal. Only items that the CCC has the resources to care for in the long term are collected or accepted on loan.

The CCC will follow a written policy on the use of instruments with school and group educational activities, the provision of non-accessioned objects and use of surrogates or replicas. This policy is attached in the **Appendix B** of the document. The CCC, in revising its acquisition and disposal policies, will address any inadequacies in conservation and collection care that have been identified.

The use and status of objects is reviewed periodically and any change approved by the board.

The CCC will receive regular advice from a conservator or collection care adviser on all aspects of its collection care activities. This may be provided by the staff curator or by outside curatorial contractors.

The individual(s) assigned responsibility for collection care activities will have these duties identified in their job description(s).

Staff employed to conserve collections, either in-house or contracted, are to have been trained in conservation practices and are aware of up to date conservation techniques. The CCC supports published professional standards for staff qualification and this is reflected in the recruitment policy. All consultants working on collection care related issues are to have a written brief. The CCC has a written policy on the use of volunteers for collection and facility cleaning and care activities (**Appendix C**).

Any conservator or conservation practice that is contracted to provide advice or services should normally be included on the Conservation Register and, where available, a professionally accredited conservator is used. There is at least one member of staff responsible for the following activities:

- Preservation of the collections.
- Coordinating activities relating to the display and/or storage of collections.

Building & Environment

The building is to be maintained as closely as possible to 50% relative humidity at a temperature of 72 F, with daily excursions of less than 5.0% relative humidity and temperature excursions of less than 4.0 F. Direct sunlight on any historical surface after 8:30 in the morning or before 6:30 in the afternoon is to be expressly avoided, and at all other times is discouraged unless for special events that may incur such exposure for brief periods. Fire alarms are to be operational and tested at the frequency recommended by the manufacturer. Activities that generate dust or debris are prohibited in the collection areas, or in areas that may feed into collection are air spaces. Filters for the air system are to be changed at intervals that meet or exceed the frequency recommended by the manufacturer. A particle count of under 500,000 per cubic meter of air is desirable and particle counts will be conducted monthly to ensure that they remain at or below these levels.

Buildings used to house collections are to be regularly inspected. All potential threats to collections from, for example, leaky roofs, poor wiring, internal pipework, blocked gutters and ill-fitting windows or doors, are to be identified and assessed and remediation plans written. A schedule for the routine maintenance of the buildings and utilities is to be in place. A building management plan is to be drawn up and is frequently reviewed to update priorities and track progress on implementing recommendations. Reports on the condition of the building are to be used in planning improvements or major developments, and in revising forward plans. Potential access points for vermin, insects and dust, including pipes, cracks and electrical/air ducts, are to be identified and sealed.

Staff responsible for collections are to be notified in advance of any building works, to enable them to brief contractors working on site regarding special precautions or to close and cover the instruments.

Records are kept of all building work, maintenance and inspections. A preservation advisory panel or advisory service should be consulted in planning any building work.

The bulk of the collection is to be housed so as to protect it from extreme environmental conditions. Any environmental data collected, such as spot measures of temperature and humidity or light levels, is to be recorded and retained. Collections can be damaged if they are kept in unsuitable environmental conditions. Monitoring the environment will alert staff to damaging conditions so that these can be improved. Records are to be kept of all environmental monitoring and collated monthly. Records are to be maintained in a systematic way and retained for a minimum of five years.

A program must be in place to measure relative humidity, temperature and light levels (visible and ultraviolet) in galleries and storage. The CCC will determine the level of control of the environment (temperature, RH, light and pollutants) it wishes to achieve for all areas housing collections. Simple measures such as closing doors, moving lights, providing entrance mats and controlling temperature and light levels are to be taken to improve the environment where appropriate. Monitoring equipment is to be stored and calibrated as recommended by the manufacturer. Environmental monitoring records are to be examined periodically and a summary prepared for the staff/board. A record is to be kept of calibration and maintenance of all environmental monitoring equipment.

A record is to be kept of all special events held in the Greenville Music Museum, including film-making, concerts or social events. The environmental conditions of the display, exhibition and storage areas are to be kept stable within defined levels during these events. Staff are to have management control over operational settings of all environmental control equipment/plant.

Controlled environments are to be established for some vulnerable items as needed. The environmental monitoring and control needs of the collection are to be recorded and reviewed at regular intervals.

The instruments and objects are to be displayed and stored away from heating, air-conditioning vents and windows. Items arriving in the collection are allowed time to acclimatize gradually in areas where they will be stored or exhibited.

Light levels are to be monitored through seasonal variations in all areas housing collections. Blinds, shutters, curtains and/or ultraviolet filters are to be used to reduce visible and ultraviolet light in all areas housing the collections. Efforts are to be expressly made to keep sunlight off any light sensitive surface while on display. The overall exposure to light of collections during exhibitions is to be kept within defined limits. Potentially harmful electric light sources are not to be placed close to collections. Instruments particularly at risk from light damage are to be identified, and exposure to visible and ultraviolet light is to be reduced as much as possible.

Particulates

Items in the collection are to be protected from excessive dust. All windows and doors must be closed so that the building provides some protection from airborne pollutants, both gaseous and particulate. An assessment is to be made of potential atmospheric pollutants and a program of spot checks is to be in place. An evaluation of the risks to the collection from airborne pollution should be made, with recommendations presented to the board where needed. All internal building surfaces are finished with a sealant or proper paint to reduce dust.

Products used by cleaning and maintenance staff must exclude those which give off gas or fumes that are potentially hazardous to collections (e.g. chlorine, hydrogen peroxide) and this is specified in contracts if appropriate.

Any technical improvements to the museum structure are to be developed in conjunction with an appropriately qualified engineer.

Training

Staff training needs in the field of collection care are to be assessed regularly. Training needs and provision are reviewed as part of the museum's planning cycle. Current and future collection care training, education and awareness-raising needs are identified and addressed during this cycle. The CCC will hold this planning cycle at least yearly and report out at the annual meeting.

All members of staff are to be made aware of security procedures and guidelines. Security guidelines are in **Appendix D**.

Collections are only cleaned by staff or volunteers who have received appropriate training. Staff responsible for the storage of collections are aware of the risks to the collection from inappropriate environmental conditions.

Guidelines on the behavior of contractors/service providers on site should mimic that of staff and volunteers. Information on collection care practices is to be available to all staff in the form of regular practical training sessions, published literature and in-house documentation.

Staff are able to recognize the signs of infestation, dampness and mold and act promptly according to established procedures when these are discovered.

All new staff are to receive training in the handling and transportation of collections as part of their induction training. Staff who handle collections must have received training in the handling and transportation of collections, including unusual and delicate items, at least once in the last five years.

Staff responsible for exhibitions and loans understand the importance of following established guidelines for the display of collections. Relevant staff are to receive training in exhibition and loan procedures.

Repository and curatorial staff are to receive applicable training in preservation packaging procedures.

The CCC is to identify resources for collection care related training, and for maintenance of buildings, plant and equipment.

Budget

An annual review of the Carolina Music Foundation resources, facilities and activities is used to identify and prioritize collection care projects. The CMF has resources in place for a comprehensive operational and maintenance program for its buildings, services and plant.

The museum's budget makes annual provision for:

- The preservation and conservation of its collections and building.
- Financial support of staff and specialization workers.
- cleaning and housekeeping.
- insurance coverage
- Environmental monitoring and control assessment reports.
- Emergency preparedness.
- Monitoring and periodic migration of digital information, website, social media.

Security

General security procedures and guidelines are to be in place and enforceable. A security assessment is to be made at regular intervals and all risks, particularly to the perimeter of the building, are noted. All access points to the building such as doors, staircases, windows and ventilation must be able to be made secure. An annual security assessment, including recommendations for improvement, is to be presented to senior managers and kept under review to determine whether recommendations have been implemented. Intruder detection alarms are linked to the police or other appropriate monitoring service must be in place. Access to keys and security codes is to be strictly controlled. All doors with access to storage areas are strongly constructed, close-fitting and equipped with locks for which the issue of keys can be controlled. Doors leading out of closed-access areas are fitted with locks that may be opened from the inside without a key, but can be opened from the outside only with a key except during normal operating hours and during events. Access to storage areas is restricted to relevant staff and other authorized persons. Arrangements are to be made for maintaining appropriate levels of security while external contractors are working on site, especially outside normal office hours.

Housekeeping

All display and storage areas are to be cleaned and inspected regularly. Advice is to be sought from a conservator or collection care adviser as to the appropriate techniques, materials and equipment to use when cleaning areas. Effective management of pests and mold relies on early detection. Careful cleaning of collections, and the areas in which they are housed, will reduce the likelihood of pest infestation and damage to material from mold or from abrasive or acidic particles. A written cleaning specification for storage and display areas is in place (**Appendix D**). An integrated pest management program must be implemented. All parts of the building are to be cleaned and inspected regularly. Storage areas are monitored for the presence of insects and rodents, and traps are regularly checked.

The consumption, disposal and storage of foodstuffs are confined to areas well away from collections except during special events. All items which show signs of pest infestation are kept isolated from the rest of the collection until treated. All incoming material and acquisitions are to be examined for signs of infestation, dampness or mold. Remedial action is taken to deal with any problems identified.

Records of monitoring and treatments for pest infestation, whether of individual items, collections or buildings, are stored centrally. A conservator or collection care adviser is to be consulted if pest infestation, dampness or mold is found. Advice is to be taken from a conservator or collection care adviser before pest treatment is undertaken on items, collections or buildings. Any pesticide treatment carried out must comply with the relevant health and safety legislation. All incoming items are placed in a quarantine area on arrival in the Greenville Music Museum prior to inspection for pest infestation and mold, and any necessary treatment.

Handling and use of Collections

Written guidelines for safe handling and transportation of instruments and objects are to be available to all staff. All items taken out of a building are physically protected using best practices for moving and transport, such as moving blankets, straps, rubbing surface protection, etc.. Careful handling is a key element in collection care. Any handling can cause damage, while poor handling will rapidly lead to an item becoming unusable. Care taken when using the collections will ensure that they remain accessible to future users.

Handling and Moving Procedures

Advice is taken from specialists and professionals when large or unusual instruments are to be moved. Items from the collection which are to be moved off-site, including items travelling with a courier, are to be packaged so as to prevent damage. Equipment is to be made available through ownership or rental for gaining access to and for moving heavy, bulky, and less accessible instruments. Trolleys used to transport instruments are to be kept in a stable condition, and fully support the object they carry.

Information is to be circulated to all staff on the damage that can be caused to collections by the use of stationery products such as packing tape, gummed tapes, rubber bands, paper clips and Post-it™ notes. The use of non-residue creating materials like painter's tape to temporarily mark areas of interest for examination or concern is allowed and encouraged. A system is to be in place for recording damage to collections reported by staff, visitors or researchers.

An assessment is made by a member of staff, or someone acting on the museum's behalf, that the level of security is appropriate for any item to be transported or housed off-site. All items sent off-site are handled, transported and housed in conditions no worse than those found in the museum, unless the exposure is for a short enough time that the staff deem the deviation from norm is sufficiently important to allow the excursion to occur, such as a short trip to play an instrument offsite.

Records are to be kept of all serious accidents resulting in damage to collections.

Exhibitions Space

The condition of all material is to be noted before it is displayed and any changes (if any) are noted afterwards. A conservator or designated trained staff person will maintain responsibility for items included in exhibitions and for the display of all collections. A program is to be in place for the routine checking of all items on display and noted in the log book for performances. Physical access by staff to items on display is to be kept as simple as possible without compromising security. A conservator or collection care adviser will provide written or oral advice as to appropriate display techniques and materials, which is available to staff when setting up exhibitions. Written condition assessments are made by, or in consultation with, a conservator or collection care adviser, for all instruments to be exhibited. A conservator or collection care adviser should work with other staff to ensure that all instruments have individual specifications for appropriate support, lid stick placement, and exposure time. Materials and techniques used in the construction of exhibitions are to be approved by a conservator or collection care adviser as safe for the purpose, or have been tested by a recognized method.

Exhibition areas are to be constantly supervised by volunteers or staff when open to the public.

Loans

Items are to be assessed to establish their suitability for loan prior to their being loaned out. The CCC will have written procedures and agreements for loans of any type (**Appendix E**). A written condition report is made on all material after loan or special exhibition and noted in the log. A written condition report is to be made in consultation with a conservator or collection care adviser before any loan is approved. A site report is to be received from the borrower before the loan is agreed. This should include details of handling and security in transit, flood risk and arrangements for environmental and light control, security and fire detection and suppression at the exhibition site and temporary storage areas.

Exceptions to a written condition report are made in the event that an instrument is to be sent out for repair or restoration.

Couriers are issued with written or verbal guidance before transporting items from the collection. All movements are documented and receipts are signed by authorized staff. The CCC applies the conditions described in the MGC Standard Touring exhibitions for instruments loaned or on tour.

Photographic documentation for all material is to be included as part of the loan procedures. A trained courier may optionally accompany instruments that are to travel by road, rail, sea or air. On arrival, the courier confirms that all the loan conditions have been met. The loan agreement for any item specifies the conditions under which it should be handled, transported, displayed and stored, and its condition is assessed and reported to the owner.

Playing the Instruments in the Collection

No instrument is to be operated or played unless the board/staff has formally approved this activity. The board maintains a flexible policy on who can operate or play objects that have been designated as suitable, that includes level of expertise and educational opportunities likely to be achieved by the individual or group playing designated instruments. The mission of the CCC can only be achieved by tactile and sonic experience of designated instruments, and this more flexible policy is in place to ensure that the barrier to access is sufficiently high to prevent vandalism, but sufficiently low to allow and encourage education and enlightenment of individuals and groups.

An individual operating/playing log is to be maintained and kept with the collection's documentation. Information or instructions relating to operating or playing objects is to be retained in the object conservation file. A record is to be kept of all operating (playing, running, or working) objects.

Conservation

Priorities for conservation of the collections will have been identified prior to opening the collection to the public. Items requiring physical protection will be identified in this survey. Conservation makes an essential contribution to the continuing survival and accessibility of collections and aims to stabilize items both physically and chemically. Conservators examine, document and undertake both preventive and interventive treatments. The conservation program is to be regularly reviewed to set and monitor clear targets, and to check whether previous recommendations have been implemented successfully.

The institution will have a written conservation program based on defined conservation priorities for the collections. Conservation priority setting is to be underpinned by condition assessments. Results of all inspections or surveys of collections are to be recorded.

Conservators are to work in conjunction with other staff to identify priorities for conservation treatments. Sensitive or vulnerable items in the collections are to be identified and this information recorded centrally. The institution will keep records of collection care programs. Any commercial conservation company undertaking preservation or conservation services is to be provided with written specifications and a contract. The CCC will keep records, including photographs, of both in-house and external conservation treatments. Conservation treatment records are to be linked to the institution's conservation records and are to be held and updated on a database or spreadsheet. Records are to be produced to archival standards and are stored in an environment designed to ensure their long-term preservation. Conservators employed or contracted to work on collections are asked to show that the treatments and techniques they use are in line with current professional practice.

A quality control system is to be in place to evaluate the work undertaken by internal commercial conservation contractors. Any cleaning and minor repair of collections is carried out by conservators or others working under the instruction of a chief conservator.

Electronic Record Retention

Electronic media for back up and retention are to be securly protected against accidental and deliberate erasure. CD/DVD-ROM, film-based media, computer hard drive, solid state drives, USB drives and optical media are to be held in secure areas. Current information on technological innovations relating to the preservation, storage and retention of modern media is to be regularly provided to staff working in these areas. The specific storage, environmental and labelling requirements of electronic media are to be provided by the museum.

Emergency Preparedness

The CCC has a firm plan for emergency preparedness that includes a strategy for prevention and risk assessment (**Appendix F**). At least one individual or preferably a team, is responsible for implementing the plan. Advance planning is crucial to an effective emergency response and salvage of collections following a disaster such as flood, fire or other major incident. Emergency response rehearsals are to be carried out at least once a year. An early warning detection system is to be installed in any building at high risk from water damage. Copies of all emergency details and contingency plans are to be kept at a separate, accessible location. Further copies are to be kept by relevant members of staff or departments.

Risk assessments are to be made of hazards from, for example, water pipes, drains and inflammable materials, and priorities acted upon. A security copy of the accession register/catalogue data files is stored at a separate building or location. A report of any flood or fire, however minor, is made to the board together with any recommendations for improvement in prevention and response arrangements.

Staff should carry out joint familiarization exercises with representatives of the emergency services such as fire, police, and local EMS representatives.

Materials, paints, and coatings used for interior decoration or storage furniture are of a standard that will minimize the emission of harmful substances, including soot and smoke, in the event of fire.

At least one member of staff is responsible for revising the plan on an annual basis.

Automatic fire detection devices are fitted in all rooms and storage areas. Staff are to be trained in emergency response procedures, including the use of fire extinguishers and first aid.

Areas used for display are to be protected against theft, vandalism, fire and flood to the practical extent possible. Use of open flame such as candles is prohibited in the display area but may be allowed in entertainment areas, provided the source is under constant monitor and extinguished after use.

Following any disaster or near disaster, an Incident Report Form is completed and provided to the board or staff.

Floor plans are to be made available which identify the key features of the building and its contents. The local police and fire services are to be advised on emergency planning both verbally and in writing. Disaster recovery equipment and materials are to be available as needed. The CCC is to have details of suppliers of specialist equipment and services for use in an emergency.

Appendix A: Policy on acquisition, retention, accessioning, deaccessioning or disposal

The Carolina Clavier Collection (CCC) is composed of a group of instruments that:

1. Help define the development of the piano in particular, and stringed keyboards in general
2. That represent significant instruments in the history of the keyboard before 1860, or significant to the history of early America before 1870, and preferably before 1830.
3. That represent in particular, music making in the early American South before 1870.

Keyboards have been brought into the collection under these general guidelines on the individual merits of visual attraction, sonic soundscape, historical significance, or all three.

Acquisition

Since all keyboards take up significant floor space and present logistical challenges in moving and storage, additional keyboards will be considered only if having them in the collection advances one of the three major tenants of the collection listed above, and they meet at least one of the sub-tenants, displayability, sonic character, or historical significance. Many keyboards have been and will be offered that do not fit into the collection criteria, and these must sadly be rejected. There are few hard rules that can be followed within these criteria aside from the date of manufacture, and if an instrument with overwhelming historical significance outside of the normal criteria should be brought for consideration, it must be considered as its importance to the public would dictate, even if it violates the cutoff date as given. An example might be the sister piano to the 1937 Hindenburg aluminum piano.

Future acquisitions including pianos and harpsichords formally accepted into the CCC charity from the private collection that operates under that name as of September 2016 by Thomas Strange must be voted into the collection by the board of directors. A simple majority vote is required for any instrument fitting the usual criteria. A 2/3 majority vote is required for any piano that dos not normally fit the criteria. Preference will be given, in order, to keyboards with a South Carolina heritage, Southern heritage, American heritage, or UK/European heritage.

Retention

Keyboards will be retained in the collection so long as required funding commensurate with their upkeep and maintenance is available, where working instruments may have far greater need of resources than display-only instruments. Occasionally a keyboard will become available that is superior to and would replace an existing keyboard in the collection. In this case, deaccessioning can be considered for the former keyboard, so long as it is owned free and clear by the collection without encumbrances. It is anticipated that certain instruments are of such importance that no better example exists, and these may be designated as 'permanent' and will not be deaccessioned unless the collection is to be dissolved and dispersed legally.

Deaccessioning or Disposal

If instruments are obsoleted by superior examples coming into the collection, or are downgraded in status significantly (playable to display-only for instance) and it is desired to acquire a superior example, or one more directed to one of the collecting tenants, a 2/3 vote by the board, following a recommendation by the staff, can move the instrument out of the collection. It would be anticipated that every effort would be made to obtain the maximum value for an instrument so deaccessioned, and the board should pursue efforts to place the instrument such that maximum value can be obtained, consistent with the time frame as defined by the staff and the board.

Instruments can be loaned out of the collection to meet the above criteria without a sale being made, but a majority vote by the board is required to loan an instrument out of the collection for more than a period of 1 year, and a 2/3 vote required to loan an instrument indefinitely.

In the unlikely event that some catastrophic event requires disposal rather than sale, the maximum amount of recyclable material will be obtained from the instrument before it is carried away for disposal. Instruments with any value over $100 and which are arguably still intact must be deaccessioned through sale rather than disposal.

Appendix B: Use of Instruments with School Groups

In that the mission of the Carolina Clavier Collection is one of educational engagement, the use of designated instruments considered suitable for the purpose by students and school groups is encouraged. As with any historical artifact, wear and tear must be balanced with educational enlightenment, and a healthy respect for the degradation about to be encountered during such encounters.

To this end, students should at all times be first led through the function of the instrument, the proper way the instrument should be played, and certain approaches and repertoire that should be used or avoided with a particular instrument. Rachmaninoff makes no sense for instance on an 18th C Broadwood grand, and so students do not need to try this to learn firsthand.

At all times the act of 'banging', bumping, jostling or 'overworking' an instrument through exhibitionist playing is prohibited. Students that are too young to remain respectful and engaged near the collection should be guided to designated parts of the collection where appropriate, or discouraged from remaining among the instruments. As a general guidance, students younger than age 10 will derive limited value from the collection and are discouraged from engaging the instruments in any way other than a general tour.

Instruments brought to a school for demonstration purposes are to be used with similar restrictions.

Appendix C: Training of Staff and Volunteers for collection care activities

Staff and volunteers can be used for general cleaning and housekeeping of the collection, after receiving instructions on approved cleaning chemicals and equipment. Given that much unintended vandalism does occur while cleaning around stationary artifacts, this policy must be adhered to and updated as required.

You should keep in mind that the significant difference between housekeeping at home and housekeeping in museums is the goal of preservation. Approach cleaning spaces that house museum collections from a different point of view. Consider:

- the nature and condition of objects
- cleaning materials and methods appropriate to object preservation
- signs of object deterioration
- interpretive effects in exhibits and furnished historic rooms

Think about and understand why you are undertaking a certain housekeeping task. At home, the primary concern is usually aesthetics. You may want home furnishings and fixtures to look clean and shiny with the least amount of effort, so scrubbing and polishing may be done in haste. At a museum, these tasks are undertaken primarily to preserve collections. Cleaning must be careful, gentle, and thorough. If you simply clean for appearance, as you may do at home, then damage to collections will inevitably occur.

"Clean" in museums means that enough collected dirt has been removed so that deterioration will not take place. It does not mean spotless or "white glove" or "squeaky" clean. Evaluate the situation each time cleaning is done and decide first, if it is necessary and second, how far you must clean. Careful museum housekeeping requires using the correct supplies and equipment with proper techniques for the preservation of a museum collection. For example:

- When dusting, apply minimum pressure, move carefully, and frequently change to a clean dust cloth.
- When vacuuming, don't allow the vacuum cleaner, including cords and attachments other than the brush, to come into contact with museum objects.

Understand what each housekeeping task will accomplish. What are you doing and why you are doing it? A neat and clean museum will be the result of housekeeping, but it is not the only goal. Think of museum housekeeping as preventive conservation. You and your staff are trying to prevent damage to museum objects before it occurs.

Preventive conservation is the ongoing activity of non-invasive actions taken to prevent damage to and minimize deterioration of museum objects. Housekeeping, executed faithfully and with professional judgment, is a crucial component of preventive conservation. The CCC has developed this Museum

Housekeeping Plan to ensure consistent, long-term care of its museum collections. The plan is the product of a cooperative effort between all involved divisions and has the support of the staff.

Carolina Clavier Collection

MUSEUM HOUSEKEEPING PLAN

Prepared by: Thomas Strange

Date: Sept 15, 2016

Location: Exhibit Space

Temperature: Gradual fluctuations occur seasonally within a 5° - 10°C range (60°-70°F). Maintenance staff makes adjustments to climate control equipment only after consultation with curatorial staff.

Relative Humidity: Relative humidity is closely controlled. Front entrance doors provide immediate access to the outdoors, allowing air and humidity to flood the exhibit area whenever visitors enter. Microclimates in exhibit areas must be maintained to compensate for unacceptable levels of RH. Keep outside doors closed as often as possible, without holding them open for excessive times for the elderly or groups.

Pest Infestations: Note and record

Dust/pollution: Dust levels outside may require closer monitoring of instruments, closure of exhibits, etc.

Interpreters bringing walking tours from the historic garden, which is dirt, into the inside should caution on the use of mats to prevent excess dirt being tracked in.

Tasks:

- Monitor temperature and relative humidity. Daily.
- Monitor sticky traps (if used) for pests. Weekly.
- Monitor condition of objects, especially those located nearest the entrance. Weekly.
- Inspect instruments. Semi-Annually.
- Inform interpretive staff of rationale and procedures for following established tour routes at

seasonal and permanent staff training sessions. Prepared by: Tom Strange

Type of Equipment/Supplies: HEPA vacuum

Quantity: TBD

Brand: TBD

Location in Space: See attached floor plan.

Location of Manuals: TBD

Location of Supplies: TBD

Tasks:

- Purchase replacement bags and filters.
- Change bags. Monthly, or as necessary.
- Change HEPA filter.

DUSTING

Location: Exhibition Space, instruments

Task: Clean cabinets, dust spaces for brochures and areas of public access, instruments.

Frequency: Monthly. Before dusting, carefully inspect areas to decide if cleaning is necessary.

Procedure: Use of clean soft microfiber dust cloth is required. Give special attention to molding, using a soft artist's brush to dust. Dust ceramics and glass with brush. Wash dust clothes and brushes in non-ionic soap at first sign of darkening.

Dusting Task Sheet

You can prepare one sheet for all dusting tasks or divide them as needed. Log each cleaning cycle on the task sheet and retain for records.

PEST MONITORING

Location: Throughout building

Task: Monitor for pests

Frequency: Weekly

Procedure: Prepare new pest traps; write the location and number on each trap. Where necessary for clarity, draw a rough sketch of the room or wall. Collect traps from previous week. Place carefully inside plastic bags and seal. Put new traps into position. In work area (outside of storage room), count numbers of each specimen type and record data on data sheets or enter into database.

Task: Review Housekeeping Plan

Frequency: Annually (January)

Procedure: Assess currency of plan. If changes, based on observation and experience with plan, are needed to improve implementation, circulate the revised plan to appropriate reviewer onsite. If necessary, revise to keep plan current with changes in technology and procedure. Make copies for formal review. Reviewers may include: Curator, board, Building and Utilities Foreman, Conservator, volunteers involved in implementing the plan, Interpretive Staff.

Distribute plan for review. Allow a minimum of six weeks for review.

Incorporate comments as appropriate into plan.

Route for formal signature.

Distribute copies of revised plan.

Initial and date schedule.

Cautions: A memo reminding staff of impending review is recommended as a courtesy to staff.

Appendix D: Security Considerations

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1. Locked Doors and Openings

2. Alarm Schedules

3. Mechanical, Electrical, and Plumbing Systems

4. Storage Cabinet Keys

5. Emergency Egress

VIII. Disaster Management

I. Statement of Purpose

The CMF Museum has a number of rooms and areas that are dedicated to the housing and care of the Collections. The purpose of these Practices is to identify the minimum procedural and physical security requirements for those areas. The Practices are necessary to protect from loss or damage of the museums' collections and loaned collections that are in the museums' custody.

II. Applicability

These Practices apply to all existing museum collection spaces – owned and leased collections storage rooms, buildings, and facilities – and to new collections spaces as they are constructed or acquired.

For purposes of these Suggested Practices "collections space" is defined as:

An area, owned or leased, enclosed or outdoors, the primary purpose of which is to permanently protect and preserve, through managed environmental and security controls, collections owned by or in the custody of the institution in furtherance of its mission; and may include adjacent areas that provide managed environmental and security controls suitable to accommodate temporary use of collections. This use may include but is not limited to registration, processing, conservation, study, photography, preparation and packing, and movement.

"Collection management staff" is defined as:

Any staff (i.e. registrars, curators, conservators, etc.) that require regular access to use and/or manage the safety and security of museums collections.

The practices in this document apply to areas that permanently hold collections, as described in the definition, and other spaces that temporarily house collections for a significant period of the time. Other spaces may be defined as "collections space" based on their assigned function, and the duration and frequency of holding collections. All such cases will be assessed on an individual basis with practical consideration for how and why collections are accessed and used.

All existing collections space should strive to be compliant with applicable minimum suggested practices.

All new or renovated collections space should be planned and designed to be compliant with the policies, procedures, and design best practices identified in this document. Additionally, new or renovated collections space should strive to be compliant with the suggested practices.

Spaces that might contain collections but are nonetheless exempt from meeting these Suggested Practices include public space, exhibition space, and areas generally called "open storage". For security guidance for these types of spaces reference the Exhibit Case Construction and Alarming Design http://www.asisonline.org/councils/MLCP.xm.l

These Suggested Practices do not address security of collections in transit.

III. Risk Levels

The risk to any collection item is the result of a combination of several factors that can vary significantly from item to item.

The mitigation measures appropriate for reducing risk for any particular collection item should also correspond to these factors. The risk mitigation best practices, policies, and procedures identified in this document were developed to apply to collections in four risk categories as shown below. Assignment of collections to these risk categories shall be carried out by unit collections management staff, with assistance from the security chief as necessary.

The primary factor used to assign the appropriate risk category should be the perceived and/or actual value (or significance) of a collections item. Value, and the impact of loss or damage, can be defined in one of several ways including, but not limited to:

- Intrinsic value
- Cultural value
- Research value
- Reputation of the Institution
- Mission of the Institution
- Use and required access

When determining the appropriate risk categories for collections, staff should consider these various forms of value or significance as they apply to the following risk category definitions:

A. Low Risk

Items are considered to be of such value that the impact of their unauthorized access, removal, theft, or damage would not be significantly detrimental to the image or reputation of the museum. Duplicate or replacement items might fill their void.

B. Medium Risk

Items are considered to be of sufficient value that the impact of their unauthorized access, removal, theft, or damage would be significantly detrimental to the image or reputation of the museum.

In the absence of any risk category designation, the default risk level assignment for any collections would be that of Medium Risk.

C. High Risk

Items are considered to be of sufficient value such that the impact of their unauthorized access, removal, theft, or damage would be highly detrimental to the image or reputation of the institution and could impact the mission of the museum.

D. Very High Risk

Ownership or display of the items is a newsworthy event. Items are considered to be of sufficient value such that the impact of their unauthorized access, removal, theft, or damage would be extremely detrimental to the image or reputation of the institution such that the ability of the institution to receive borrowed collections or gifts may be impacted.

Note: Objects on loan may carry conditions that require a level of protection above that which the museum would normally establish if the item were in its collections.

IV. Collections Space Access

A. Principles

Although the mission of the CCC Museum and its collecting units require that collections are made available for study and educational purposes, physical access to collections space must be balanced against preservation and security concerns. Unescorted access should only be granted to employees and staff who have an official institution credential issued on the basis of an appropriate and adjudicated background investigation. This includes affiliated staff such as interns, volunteers, contract staff, visiting researchers, etc. Any employee or affiliated staff that does not have an official institution credential issued on the basis of an appropriate and adjudicated background investigation should be escorted at all times when in collections space.

Each collecting unit should maintain specific procedures regarding access to collections spaces. These specific procedures should be developed for each risk level. In other words, the procedures should identify the types of positions and staff that should receive access to each collections space. Procedures should also consider interests and needs of other collecting units when multiple collecting units reside in a single facility or building. However, at a minimum, unit-specific procedures should adhere to the requirements outlined in this section.

B. Authority

All requests for after-hours access to collections space by access card and/or key should be submitted in writing by the requestor and should require signature approval by the curator.

Electronic access cards and keys for each collections space will be held in a sealed security control key box for emergency access.

C. Electronic Access for Card Readers

Parameters for levels of access are programmed into each access control/electronic security system and define when and which doors/elevators museum credential holders are authorized to access. Access levels, coinciding with facility operations and collections risk levels, are determined by collaboration between the Collections Unit management and the Security Chief.

When a collections space door outfitted with a card reader is opened, the access card holder who opened the door should ensure that there is no unauthorized access behind him/her. Access card holders shall not open collections space doors for unauthorized persons lacking collections space access. Upon request, the Security Chief will provide collections management staff with entry and exit logs (where applicable) for collections spaces.

D. Keyed Access

When card readers are not used and the only lock is a mechanical lock, single doors should be equipped with high security deadbolt locks and double doors should be equipped with high security drop bolt locks. Collections space keys should be kept in Security's control and issued daily as needed to authorized staff. Procedures for collections spaces that have not been outfitted with electronic card readers should be identified in a policy that categorizes (by risk level) who can be issued keys to collections space, the management of such keys, and procedures for emergency access.

The opening of keyed access collections space doors for extended periods or for any purpose other than emergency egress, must be coordinated with the curator or Security Chief prior to opening. The Security Chief should maintain a copy of the access list for each collections space that should be used to identify staff authorized to coordinate such openings. If prior coordination is not accomplished, and a collections space door is opened, a silent alarm will be sent to the security control room. This will require security staff to respond to the door location. When a collections space door (not outfitted with an electronic card reader) is open for an extended period, a collections management staff person should monitor the open door at all times to ensure that there is no unauthorized access. Security staff may be called to support this monitoring if arranged in advance.

When collection storage is equipped with overhead doors used for movement of collections, the controls for opening the door should be located inside the collection storage room and should be key or card reader operated.

E. Visitor Access

Any person who does not have an electronic access card and/or authority to sign out keys to the collections space is considered a visitor to the collections space. Visitors may be both individuals with an official museum credential and those without.

1. Temporary Access

Museum collections spaces and reading or study rooms are accessible to users according to the policies and procedures established by individual Collections Unit. Users are persons having a demonstrable academic, cultural, or artistic interest that requires direct access to the collections consistent with the museum's mission. Unplanned or ad hoc access is usually not provided. Collections Units should develop specific procedures for user access based on the nature of their facilities and collections, logistics, and the risks to their collections. At a minimum, all procedures should include:

• Collections are accessible only by advance arrangements with authorized staff within the relevant Collections Unit.

• Users' requests should be specific. Casual browsing and additional impromptu requests should not be accommodated.

• Users who are visiting in collections or records spaces must be accompanied by a staff member with authorized access to those areas.

• Established collections handling and inventory procedures must be followed by users. Staff should advise users or provide written guidelines for handling procedures and rules for particular use areas.

• The CMF Museum reserves the option to restrict access due to resource limitations, security threat level, object availability, intellectual property rights, applicable restrictions, and preservation constraints.

Authorized staff (sponsors) granting access to collections should provide oversight during the collections visit. Sponsors are responsible for ensuring that visitors have checked in with Security and have received a museums visitor ID Badge, know the emergency exit routes, and understand collections handling and use policies and procedures. Sponsors should be responsible for ensuring that visitors exit collections spaces properly.

Visitor Logs: All visitors with unlimited access to the collections must sign a visitor log, maintained by the collections management staff, when entering the collections space with their escort/sponsor/authorized staff. All visitors must provide the following information on the visitor log:

• Name (tour groups may be logged in as a group)

• Address

• Dates of visit

• Purpose of visit

• Business or home phone number

• Business or home email

2. Tours

Tours of collections space for target audiences are an important part of the museum's outreach efforts. Each Collections Unit should have written procedures defining acceptable tour parameters, including:

• Procedures for scheduling tours

• Size limits for tours and number of tour "guides" required based on tour group size and demographic (e.g. Tours involving children may require additional supervisory efforts) . There should be at least one trained staff person who conducts the tour and at least one other staff person who remains with the tour at all times.

• Safeguards to be taken based on collections risk levels

• How to handle deviations from the tour route (e.g., restroom breaks)

• How to handle emergency situations

• Responsibilities of each staff member assigned to the tour

• Provision of training for tour "guides" in acceptable tour practices

• Acceptable use of photographic, video and audio equipment in collections spaces

• Carrying of bags and parcels into collections spaces

• Age restrictions (if any) on tour members

• Appropriate oversight for tours including younger persons, such as requiring the presence of chaperones.

V. Moving Objects from Collections Spaces

A. Principles

There are many mission-essential reasons for moving museum collections within a facility or between museums facilities. Tracking and securing collections movements and relocations within and among collections spaces and museum facilities is an essential risk management activity. Generally, these movements can be classified into two main categories:

• Object(s) Movement: When some objects, but not all, from a collection or collections are moved to a transitory or temporary space, for reasons such as exhibition preparation, study, conservation, or space renovation, for a finite period of time.

• Collections Relocation: When an entire collection or the collection contents of a specific space are relocated to another space for an indefinite period of time.

B. Object(s) Movement

1. Objects Moved Within a Facility

Collecting Units should develop object movement security procedures collaboratively with the Security Chief. These security procedures should address how object(s) will be protected based on risk, value, and the locations and timing of movements, including protocols for collections management staff to give timely notice of movements of large numbers of objects through public spaces within the facility to the Security Chief. This allows the Security Chief to arrange appropriate levels of protection services for the objects. Software products exist that may be helpful in tracking this movement.

2. Objects Moved Outside of a Facility

Object movements from museum facilities to any location other than the originating facility shall be documented by collections management. If movement of objects from a facility involves loading collections into a vehicle at a museum's loading dock or zone, collections management staff shall give timely notice to the facility Security Chief so that he/she can ensure appropriate security staffing at the designated area.

C. Collections Relocation

1. Planned Relocation

There are many possible reasons that may require the relocation of a portion or all of a collection to a new collections space. Some of the possible activities associated with a planned relocation include, but are not limited to:

• Movement to a space within the same facility

• Movement to a space within a different facility

• New purchased or leased space

A Planned Relocation process requires the coordination of many elements, including the Security Chief, to ensure the new space or site will meet the minimum requirements for security (often based on a formal threat and risk assessment), environment, and safety controls.

Note: Collecting Units should not, under any circumstances, relocate collections or collection items without coordinating with the Security Chief.

VI. Physical Security Measures and Practices

A. Principles

Physical security measures are considered the physical characteristics (equipment, construction methods, or location) of collections space that are used to mitigate the risk to collections located within. These measures are intended to deter, detect, and/or delay unauthorized access to a collections space and allow Security staff to respond in an appropriate manner.

The Collections Space Physical Security Design Criteria, located in Appendix "A" identify by risk level1 the physical security measures recommended for new or renovated collections spaces. The following measures supplement those identified in Appendix A.

B. Physical Security Measures

1. Electronic Access and Card Readers

All staff access to Collections space should be through doors outfitted with an electronic access card reader which provides an audit trail of the user. Although normal key locks and mechanisms may exist on doors outfitted with card readers, they shall not be used, except in an emergency or if the card reader fails.

2. Doors, Openings and Locking Mechanisms

All doors or other movable openings to collections space must remain closed and locked and all perimeter intrusion alarms on doors or other movable openings will be armed and monitored at all times except when accessed by authorized staff.

If a door is opened without using the card reader, a local audible alarm should sound and a silent alarm will be sent to the local security control room. This will require security staff to respond to the door location and follow security protocol.

If a door outfitted with a card reader is opened for an extended period of time, a local audible alarm will sound and a silent alarm will be sent to the local security control room. This will require security staff to respond to the door location and follow security protocol. The opening of a door outfitted with a card reader for an extended period (e.g., for moving in collections or large equipment) must be coordinated with the security control room prior to opening. The security control room shall maintain a copy of the access list for each collections space that shall be used to identify staff authorized to coordinate such openings. When a collections space door outfitted with a card reader is open, a collections management staff person should monitor the open door at all times to ensure that there is no unauthorized access. Security staff may be called to support this monitoring if arranged in advance.

3. Electronic Intrusion Detection

Intrusion detection devices shall be disarmed by authorized staff upon entering the space either by an alarm/disarm panel within the collections space or by coordinating with Security for deactivation upon entering the space. Security will maintain an access list of all staff authorized to enter the space and request deactivation of the intrusion detection. The intrusion detection will be reactivated (by either alarm/disarm panel or by Security) upon departure from the space for extended periods, or at the end

of the business day. It is the responsibility of the authorized user to verify with Security that the collections space has been closed and armed.

4. Mechanical, Electrical, and Plumbing Systems

With the exception of fire protection systems, collections spaces should be relatively free of systems that pose a risk of water damage if possible. This may include water pipes running through the room, sinks, or toilet facilities. However, when such systems are unavoidable, or desirable for operations, water detection systems should be installed to provide adequate notification of water leaks or flooding.

Collections space should not contain mechanical, electrical, or other equipment that necessitates access by contractors, building engineers, or others who would not otherwise have authorization to enter secure collections space. If dedicated systems are required for a particular collections space, the systems should be located in adjacent areas with separate access arrangements, but not within the collections space.

5. Separation of Collections (separate space)

Collections management staff should consider separating collections spaces by department or by access requirements. This more readily enables the unit to reduce the frequency of legitimate access to the space and also divides the target assets, making them more difficult to locate and gain access by unauthorized persons.

6. Separation of Collections (within the same space)

Staff should also consider additional separation of collections within a collections space. Small or easily pilferable (or easily concealed) items should be reasonably separated and secured to both restrict unauthorized access and support inventory practices.

Additionally, if a collection contains relatively few (or physically small) High Risk items, it may be more efficient to store those items in a separate cabinet or safe, within another, lower risk collections space. The cabinet or safe should meet all of the High Risk physical security requirements in this instance.

7. Storage Cabinet Keys and Combinations

If used, storage cabinets and safes should be keyed with unique keys or combinations so that access to an individual cabinet can be given to a specific staff member without providing access to all cabinets or safes. Keys and combinations should be stored in a locked key cabinet under the control of Security. Combinations should be placed inside a small sealed envelope with an identifying number, not a description of the safe and location. A log for key or combination issuance should be kept that is separate from collections space access. Locks for collections cabinets should be of high quality and should be pick resistant.

8. Emergency Egress

Collections spaces should not be located in the direct path of egress for a facility. In other words, emergency egress paths should not be planned to direct staff or visitors through a collections space.

9. Avoid Mixed Usage

Avoid mixing any other functions such general office space or work areas with collections spaces to limit access to collections. The nature of the collections, and their use, may not make this possible in all cases.

VII. Disaster Management

As part of a unit's Disaster Management Plan, specific procedures shall be developed to mitigate the impact of potential natural or man-made disasters on a collections space. The procedures and plan shall identify the following steps for each type of collection:

• Preparedness measures to protect collections space prior to the occurrence of potential disaster

• Response and notification procedures to protect collections spaces during, or shortly after, the occurrence of a disaster

• Short- and long-term collections spaces recovery procedures after a disaster has passed.

• Windows

Perimeter glazing and protection encompasses the entire space envelope. The delay times shall be calculated based on the threat using unlimited hand tools and limited power and thermal tools.

Measure 2 (if applicable!): All operable perimeter windows within 4 m (18 ft) of exterior ground surface or within 3 m (12 ft) directly or diagonally opposite a window, structure, fire escape, or roof shall be fitted with a positive latch or deadbolt to maintain the opening closed or be permanently closed. A window is considered permanently closed when a non-destructive mechanism has been installed which precludes opening with ordinarily obtainable tools. Where window hinges are on the exterior of the building and the hinge pins are capable of being removed, the hinge pins shall be either fixed in place with a set screw which is inaccessible when the window is closed or welded in place.

• Door Assembly

Boundary door protection encompasses the entire door assembly (door, hardware, and frame). The delay times shall be calculated based on the threat using unlimited hand tools and limited power and thermal tools.

HVAC considerations. Day gates must provide free egress from the protected area. The lock mechanism on open metal bar/mesh gates must protect against fishing the inside handle with a metal implement for entry.

• Door Hardware

Measure 3: Conventional key & locking mechanisms only.

Measure 4: A high security combination lock shall be provided. Consult Security for combination lock specifications.

• Electronic Access Control

Measure 3: Doors shall be provided with electronic access card readers. Locking mechanisms shall incorporate life safety requirements. Entry control features shall be coordinated with the intrusion detection system so authorized entries do not generate alarm conditions.

Measure 4: Doors shall be provided with electronic access card readers combined with keypads. Entrance shall be granted if an authorized card is presented AND the proper Personal Identity Number (PIN) is entered. Locking mechanisms shall incorporate life safety requirements. Entry control features shall be coordinated with the intrusion detection system so authorized entries do not generate alarm conditions.

Measure 5: An exit card reader shall be provided inside the protected space to record the departure of individuals within the protected space. An exit made without using the exit reader shall result in a door forced open alarm annunciated at the door and at Security. The electronic access control system will maintain a list of those individuals present at anytime within the protected space.

• Intrusion Detection

Low Risk: Doors and hatches shall be protected with door position switches. If the space has windows, they shall be protected with glass-break sensors. Ducts requiring protection (see "Walls") shall be protected with duct sensors. All openings shall be protected with motion detection. The protected space shall report as a unique security zone, independent of other detection devices.

Medium Risk: Doors and hatches shall be protected with door position switches. If the space has windows, they shall be protected with glass-break.

Ducts requiring protection (see "Walls") shall be protected with duct sensors. All openings shall be protected with motion detection. Walls shall be protected with vibration sensors or curtain motion detection to detect wall penetrations. The protected space shall report as a unique security zone, independent of other detection devices..

• Cameras

Measure 3: This space requires 'Forensic Detail' coverage of everything exiting this space via fixed camera.

Measure 5: This space requires 'Forensic Detail' coverage of all alarm points within this space via PTZ camera.

Measure 6: This space requires 'General Surveillance Detail' of at least 75% of the space via fixed or PTZ.

• Video Recording and Storage

Measure 1: At a minimum, all camera video shall be recorded at 2.5 images-per-second for 24 hours a day, seven days a week and stored for thirty (30) days.

Measure 2: Video motion detection shall be used to increase the recording frame rate from 2.5 images-per-second to fifteen (15) images-per-second.

Measure 3: Video motion detection shall be used to increase the recording frame rate from 2.5 images-per-second to thirty (30) images-per-second.

Measure 4: Alarm actuation or programmed events shall be used to increase the recording frame rate from 2.5 images-per-second to thirty (30) images-per-second.

Appendix E: CCC at Greenville Music Museum Loan Policies

Collection objects/instruments are occasionally loaned for exhibition to non-profit educational institutions which are open to the public on a regular basis. Under special circumstances objects may be loaned to institutions for traveling exhibits or scholarly study. The following information is provided to assist borrowing institutions when initiating loan requests:

Application:

Apply in writing to the acting curator of the CCC at least 9 months in advance of the loan start date. Specify the objects, purpose and requested loan dates. Include the exhibit outline/gallery layout (if applicable) and a copy of the AAM Facilities Report, along with the request.

Length of Loan:

Loans are granted for periods of up to one year with majority board approval, or up to three (3) years with 2/3 board approval, and may be renewed. Certain objects may only be lent for shorter periods of time. The Museum reserves the right to recall loaned objects on short notice if necessary.

Loan Approval:

Requests are reviewed by the Museum's Collections Committee which makes recommendations to the board for final approval.

Loans made to traveling exhibitions require special review and approval. Borrowers must follow the Museum's Guidelines for Outgoing Loans.

Loan Agreement:

The Borrower will be sent the Museum's Agreement for Outgoing Loan form to be completed and signed prior to final loan approval.

Borrower Responsibility:

Absorb all costs incurred by the loan (e.g. transportation, packing, insurance, and preparation of the object(s) for travel and exhibition)

Insurance must be carried for the duration of the loan by the borrower. The Museum may alternatively insure objects under its comprehensive, all-risk policy and the premium will be billed to the Borrower.

Comply with the Museum's environmental, security, handling and exhibition requirements. Requirements include 24-hour physical and/or electronic security, a fireproof building and protection from damage, mishandling, fire, water, insects, vermin, dirt and extremes of light, temperature and humidity. The Museum will advise the Borrower of specifications for environmental and security control as well as installation and handling requirements.

Comply with the Museum's packing and transportation specifications

Objects will be transported to and from the Borrower by means acceptable to the Museum. Instructions provided for unpacking and repacking the objects must be followed by the Borrower. In certain situations, packing and transportation must be contracted to a private company at the expense of the Borrower.

Comply with the Museum's standards regarding photography of the Museum objects and credit. Photography is allowed for creation of the public catalog, publicity and condition documentation only. No commercial use can be made by the Borrower or viewing public. Requests for electronic use of images must be submitted separately. Credit must be given to the National Postal Museum, Smithsonian Institution.

Loan Renewals:

Request an extension in writing at least 6 months in advance of the loan expiration date. Apply in writing to the acting curator. Loan renewals are submitted to the Museum's board for approval. Borrowers may be asked for annual condition reports on the object(s) loaned.

3.) Collections shall be maintained away from HV/AC ductwork and overhead piping, as well as doors, windows, and other points of ingress (to the extent possible);

4.) In order to prevent loss of invaluable collections-related data, hard copy Accession Records shall be maintained in fire-proof cabinetry or in a fire-proof vault, while duplicate electronic collections/catalog records shall be produced on a regular basis, stored on an external hard drive, and maintained off-site by responsible Museum staff (i.e. Curator of Collections);

5.) Collections either stored or exhibited in historic structures vulnerable to emergency incidents shall be protected in-situ and/or transferred to secure temporary storage in accordance with the policies set forth in Section V of this document.

If collections must be relocated beyond the Museum premises in the aftermath of a disaster, they may be stored, temporarily, at the Easley address of Tom Strange or a similar house suitable for temporary storage.

Attachments

In-House Equipment and Location

Item Location_____

After:

Water infiltration should be prevented by covering damaged roofs with temporary tarps or roofing. Damaged window and door openings should be covered with temporary enclosures, in order to keep the rain, snow, and ice out. If resources permit, the building shall be inspected by a structural engineer with historic building experience to determine which elements can be repaired, and which have to be replaced or rebuilt. In all cases, wherever possible historic building materials shall be salvaged and re-utilized in the restoration process. Building elements such as walls, ceilings, and chimneys that have been determined to be unstable should be braced or removed. Wherever practicable, building repairs/restorations should be designed to meet current building code requirements. Any and all damage to the historic structure shall be thoroughly documented, via photograph, throughout the building at the direction of the Curator of Collections. All collections materials stored or exhibited within the historic structure shall be evaluated for damage, at the direction of the Curator of Collections, and those requiring remunerative treatment shall be removed.

Said collections shall then receive conservation treatment appropriate to the level of resources and experience of Museum staff, and/or loaned to conservation professionals for evaluation and treatment, at the discretion of the Curator of Collections. With conservation/restoration work complete, these items shall be returned to the historic structure in question. Those collections materials deemed to have been damaged beyond usefulness, or which could pose a serious preventative conservation risk to other collections materials even after conservation/preservation treatment, shall be deaccessioned and disposed of at the discretion of the Curator of Collections and in full accordance with the guidelines established in the Museum's Collections Policy & Procedures Manual. A record of these activities shall be maintained in the Building Files, as well as the Accession Records by the Curator of Collections. In consultation with an historic architect and/or a structural engineer with historic building experience, the Executive Director and Curator of Collections shall develop a plan for repairs to correct the deficiencies that were discovered during the incident. The ultimate goal of said planning shall be to enable the historic structure to better avoid or mitigate damage from future fire-related incidents.

VI. Protection of Collections

Collections are the raison d'etre of the Museum, and their preservation before, during, and after an emergency incident shall be of primary importance. To this end, Collections Department staff shall be charged with the responsibility to ensure that collections materials are stored and exhibited in safe and secure locations, according to professional standard, in a manner designed to mitigate or eliminate (where possible) the potential of damage or destruction during an emergency. To this effect, collections shall receive the due care of responsible Museum staff, as follows:

1.) Collections shall be stored in areas appropriate to their needs, and designed with preventative conservation of the collection items in mind;

2.) Furthermore, collections shall be stored at least 6 inches above the floor, and more than 24 inches below ceilings;

been damaged beyond usefulness, or which could pose a serious preventative conservation risk to other collections materials even after conservation/preservation treatment, shall be deaccessioned and disposed of at the discretion of the Curator of Collections and in full accordance with the guidelines established in the Museum's Collections Policy & Procedures Manual. A record of these activities shall be maintained in both the Building Files, as well as the Accession Records by the Curator of Collections. In consultation with an historic architect and/or a structural engineer with historic building experience, the Executive Director and Curator of Collections shall develop a plan for repairs to correct the deficiencies that were discovered during the incident. The ultimate goal of said planning shall be to enable the historic structure to better withstand future wind storms.

C. Fire Damage

Fire of any origin can result in damage in a range from minor to complete destruction of a historic structure. Documentation of the building and its contents via photograph is very important because fire often results in considerable loss of property. The Curator of Collections shall, therefore, be charged with this task. In order to help prevent the possibility of accidental fire, and in consideration of the conservation needs of collections materials either exhibited or stored in historic structures, smoking is prohibited in or near any Museum structure. Of particular importance to those historic structures under the care and control of the Museum, due to its geographic location, is the risk of damage due to wildland fire. Wildfire risk can be mitigated or reduced by ensuring that grass, brush, and leaves are trimmed or removed around all historic structures on a regular schedule, and especially when there is a risk of wildfire.

Before:

All historic structures maintained by the Museum shall be thoroughly documented via photograph, and said records shall be maintained in the files of the Curator of Collections. Fire evacuation plans with designated routes and safe meeting areas shall be developed. Due to the relatively small square footage for most of the Museum's historic structures, such evacuation plans are self-explanatory and will not need to be formally promulgated. Resources permitting, lightning protection systems should be installed on historic structures to mitigate the potential of catastrophic fire due to lightning strike, and wiring and electric panels shall be inspected to ensure both that they meet current codes, as well as that no deteriorated wires or devices remain that could cause a fire. At the discretion of the Curator of Collections, collection material exhibited or stored inside the structure shall be fire-proofed (to the extent possible). A record of this temporary movement of collection materials shall be maintained in both the Building Files, as well as the Accession Records by the Curator of Collections.

During:

Vacate the building. The use of fire extinguishers by properly trained personnel is to be allowed when containment of a fire is reasonably expected with such an approach.

Call 911 to get the fire department on the way. Notification to the appropriate parties shall be made, in accordance with Sections I-III of the Museum Emergency Plan (above).

V. Disaster Plan For Historic Structures

A. Wind Damage

High wind can cause damage to a building by suction due to uplift pulling on the building, and by pressure trying to overturn the building or slide it off the foundation. Structures are generally designed to withstand wind on the exterior but not wind that penetrates the building, therefore prevention of wind penetration is most important. Once the wind penetrates the building, it is subject to twice as much wind force.

Before:

All historic structures maintained by the Greenville Music Museum shall be thoroughly documented via photograph, and said records shall be maintained in the files of the Curator of Collections. Particular attention should be paid to auxiliary structures (i.e. porches, cupolas, and towers) as they are exposed to wind over and through them, and are often not as well built as the main structure.

During:

If there is time, close and secure all doors, windows, and shutters. If there is time and the disturbance is deemed suitably intense (category 3 or greater hurricane), cover large window areas or openings with plywood covers. At the direction of the Curator of Collections, remove collections materials in the historic structure to safe, temporary storage.

Ensuring the personal safety of staff personnel and visitors is the PARAMOUNT priority.

After:

Water infiltration shall be prevented by covering damaged roofs with temporary tarps or roofing. In order to keep the rain, snow, and ice out damaged window and door openings shall be covered with temporary enclosures. If resources permit, the building shall be inspected by a structural engineer with historic building experience to determine which elements can be repaired, and which have to be replaced or rebuilt. Temporary structural bracing shall be supplied where recommended by a professional. Features determined to be unstable shall be braced or removed. Unstable walls and ceilings should be braced until repairs can be made. In all cases, wherever possible historic building materials shall be salvaged and re-utilized in the restoration process. Any and all damage to the historic structure shall be thoroughly documented, via photograph, throughout the building at the direction of the Curator of Collections. All collections materials stored or exhibited within the historic structure shall be evaluated for damage, at the direction of the Curator of Collections, and those requiring remunerative treatment shall be removed to collections processing areas.

Said collections shall then receive conservation treatment appropriate to the level of resources and experience of Museum staff, and/or loaned to conservation professionals for evaluation and treatment, at the discretion of the Curator of Collections. With conservation/restoration work complete, these items shall be returned to the historic structure in question. Those collections materials deemed to have

H. Storage

No combustible boxes or material shall be permitted to be stored within at least 24 inches of the ceiling.

I. Electrical Equipment

Live electrical components operating at 50 volts or more must be adequately guarded against accidental contact by an approved enclosure, or by another suitable method.

IV. Building Evacuation Procedure-

Main Museum: As the primary administrative, exhibition, collections storage/processing, and interpretive center for the Museum, the following procedure shall be rigorously followed when evacuating the Main

Museum:

1.) All personnel shall evacuate the building via the two main exits on the main floor. Exit route maps are posted in each gallery;

2.) Museum staff members will ensure that all visitors and other personnel evacuate the building. After meeting with the rest of the Museum staff to confirm that the building has been evacuated, he/she shall clear the foyer and exit via the main entrance, if possible;

*The Curator of Collections shall check the 2nd. floor work/office areas, double check the upstairs, and proceed down the main floor.

*The Director of Education (or Development Director, Collections Assistant, and/or Museum Aide (in the absence of the Director of Education)) shall call 9-1-1, close the windows and doors in the 2nd. floor work/office areas, clear these spaces of other persons, and confirm that the 2nd. floor is clear. He/she shall then proceed to check the rest rooms. If time permits, he/she will lock the cash register at the reception desk and remove the key. After meeting with the rest of Museum staff in the foyer, he/she will exit via the main entrance, if possible.

3.) Particular attention will be given to providing guidance and assistance, as necessary, to evacuating the public, especially those with disabilities (as defined by the Americans With Disabilities Act), the elderly, and children;

4.) In the event that the main entrance cannot be used, all personnel will be directed to evacuate the building via the nearest emergency exit in the rear.

5.) To assist Museum staff in keeping tabs on who is in the building, a sign-in sheet shall be posted in the reception area for use by all permanent and part-time Museum employees.

Contractors also will be required to notify Museum staff both when they arrive for work, as well as when they leave for the day;

Criminal Activity: Local Police Department, with responsibility to coordinate with the on-scene Incident Commander;

False Alarm: Fire: Local Fire and Police Departments, with responsibility to coordinate with the on-scene Incident Commander;

Heat or Air Conditioner Failure: Local HV/AC company;

Power Failure: Duke Energy;

Structural Damage: Local Fire Department if emergency an immediate threat, followed by the City Engineer.

Water Damage: Local plumber;

NOTE: In the event of a medical or fire emergency, Museum personnel shall be directed to call 9-1-1 immediately, then contact the appropriate staff member and board members, as necessary.

D. Recovery

If the recovery nature of the emergency requires additional labor, the Facility Coordinator shall form a Recovery Team, made up of additional Museum staff members and volunteers. It is very important to contact the Museum's regular volunteers immediately, and the media should be contacted if additional volunteers are needed. An up-to-date phone list must be maintained off-site by Museum staff in case it is impossible to enter the Main Museum.

E. Power Failure

1.) Annual tests of the power failure lights and all electric wiring rigged for displays shall be required;

2.) In the event of a power failure, Museum staff members, using flashlights, will enter the galleries to assist and direct visitors and members of the general public to the nearest exits.

F. Training

All Museum employees and volunteers are expected to be familiar with all the policies and procedures put forth in this Emergency Plan, and an annual training/review/emergency session will be conducted and documented annually. All new employees will be given training and orientation in the implementation of all safety and recovery plans. An annual simulated emergency training exercise shall also be conducted and documented annually.

G. Fire Extinguishers

All fire extinguishers shall be checked and serviced (as necessary) on an annual basis by a professional contractor, and all fire extinguishers will be visually checked the first week of every month by a designated staff person (i.e. Executive Director), who shall be tasked with the responsibility to initial and date the inspection card.

A. Emergency Call List

In the case of any emergency, the first call is to be made to 9-1-1, followed by notification to the Executive Director or next ranking staff member of the Greenville Music Museum, and finally the boar executive team are to be notified and their direction followed.

A list of Museum staff members shall be maintained at the Reception Desk, in the files of each staff member, with the Museum's security contact, and with the local Fire and Police Departments. It is the responsibility of every staff member to provide other staff members with a telephone number, or two, where he/she may reasonably be expected to be reached. This list will be maintained in an appropriate order of priority. The first staff member contacted and arriving at the scene of the emergency will serve as the Facility Coordinator, pending the arrival of the Executive Director or acting curator.

B. Emergency Response

Emergencies can be categorized according to how they are discovered and when they occur. Each category of emergency should be handled differently, to wit:

1.) In the event of an emergency discovered on a Saturday or a Sunday, the Museum staff member on duty shall automatically be designated as the Facility Coordinator, pending the arrival of the Executive Director, and shall be tasked with contacting the remaining staff members to come to his/her assistance as necessary;

2.) In the event of an emergency occurring during normal business hours during the regular work week, if the Executive Director is in the building he/she immediately becomes the Facility Coordinator. In the absence of the Executive Director, the order of authority shall be derived from the emergency list, pending the arrival of the Executive Director.

If the emergency is localized, it is up to the Facility Coordinator to delegate responsibility to the appropriate individual;

3.) In the event of an emergency occurring during off-hours, the Museum's security company shall notify specific personnel in a predetermined order:

(i.e. Fire Department in the case of fire, Police Department in the case of disturbance, Executive Director, Director of Education, Curator of Collections, Development Director, Collections Assistant, Museum Aide, etc.). In this case, the first staff member contacted shall become the Facility Coordinator, pending the arrival of the Executive Director.

C. Emergency Contacts

The Facility Coordinator shall contact the appropriate response agencies, to wit:

Accident: Local emergency response unit; Bomb Threat: Local Police Department, with responsibility to follow all further Instructions;

Attachments

MUSEUM EMERGENCY PLAN

Introduction

The following emergency plan is directed to those emergencies which do not require the response by an outside emergency agency. In the case of any emergency, the first call is to be made to 9-1-1, followed by notification to the Executive Director or next ranking staff member of the CCC Historical Museum, and finally the City of Greenville or Greenville County EMS contact.

I. Coordination With An Emergency Response Agency

There is a clear distinction between the policies and procedures which are internal and those exercised by a response agency, such as fire or law enforcement. In the event of such an emergency, the most senior Museum employee on site will act as the Facility Coordinator, for the purpose of coordinating with the response agency's Incident Commander. In all instances, the acting curator or a staff member will be contacted immediately and their decisions and direction will govern Museum response in accordance with Greenville City/County policy. Senior Museum staff on site will act as Facility Coordinator.

II. Policies Of The Board

It shall be the duty of the Board of Trustees to audit the building, grounds, and the plan at unannounced, irregular intervals. The Board of Trustees expects to be notified as soon as possible when an emergency occurs, but it does realize that, by the very nature of an emergency, decisions will have to be made immediately.

Therefore, the Board authorizes the staff to commit $1,000 toward emergency response without prior authorization. Any further expenses must be approved by two of the Trustees. In the event of an emergency, the Museum staff will immediately notify the Chair of the Board of Trustees, the acting curator, and at least one other trustee. In the event that these individuals cannot be contacted, Museum staff will notify at least two trustees, while continuing to attempt to contact the others.

The Board expects that Museum staff will contact the appropriate individuals as soon as possible after an emergency to implement procedures required for insurance purposes.

All Museum staff, employees and volunteers are expected to act in a professional manner, and will defer to the decisions of the Trustees, as expressed by their representatives.

III. Procedures for Staff and Volunteers

Appendix F: CCC at Greenville Music Museum Emergency Plan

CCC MUSEUM EMERGENCY PLAN

Approved by the Board of Trustees - TBD

Revised TBD

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Operating Structure for the Museum

In order to function successfully as a living museum for musical instruments, certain museum standards would be required to be adopted. In particular, the American Alliance of Museums standards (AAM) are adopted for controlling the **Carolina Clavier Collection** and the mission of educational outreach. These standards are discussed in brief below:

Standards and Best Practices

A shared set standards are a critical element for any professional field. Standards are a tool to help museums assess and align their operations and performance; they serve to hold museums accountable—to each other, their stakeholders, the public and society at large; and they enable museum leadership and staff to make informed, ethical and consistent decisions in support of their mission and public trust responsibilities.

Definitions:

- Standards are generally accepted levels of attainment that all museums are expected to achieve.
- Best practices are commendable actions and philosophies that demonstrate an awareness of standards, solve problems and can be replicated. Museums may choose to emulate them if appropriate to their circumstances.

AAM promulgates a set of core standards called the Characteristics of Excellence and shares best practices in the form of books, trainings, and networking opportunities. The Alliance recognizes the great diversity of the museum field and the importance of the ethical codes, standards, and best practices developed and issued by various organizations.

Standards on Public Trust and Accountability

Some of the key issues addressed in these standards include: stewardship of resources; accountability and transparency; community and audiences; diversity and inclusiveness; public service and educational role; accessibility; and legal and ethical issues.

Specific Standards:

- Standards Regarding an Institutional Code of Ethics

Standards on Mission and Planning

Some of the key issues addressed in these standards include: mission statements; planning and plans; and evaluation.

Specific Standards:

- Standards Regarding Institutional Mission Statements
- Standards Regarding Institutional Planning

Standards on Leadership and Organizational Structure

Some of the key issues addressed in these standards include: roles and responsibilities (Delegation of Authority); composition and diversity (of staff, volunteers, governing authority); structures and processes; and foundational or operational documents and policies.

Specific Standards:

- Standards Regarding Governance
- Standards for Museums with Joint Governance
- Standards Regarding the Composition of the Governing Authority
- Standards Regarding Delegation of Authority

Standards on Collections Stewardship

Some of the key issues addressed in these standards include: collections planning; staffing; collections management policies; documentation; care and conservation (includes climate control); ethical collections issues; and intellectual property.

Specific Standards:

- Direct Care of Collections: Ethics, Guidelines and Recommendations
- Standards Regarding Loaning Collections to Non-Museum Entities

Standards on Education and Interpretation

Some of the key issues addressed in these standards include: quality and credibility; interpretive planning; evaluation; exhibiting borrowed objects; excellence (intellectual rigor); equity (inclusiveness and access); diversity and inclusiveness; community and audiences; and accessibility (physical and intellectual).

Specific Standards:

- Standards Regarding Exhibiting Borrowed Objects

Standards on Financial Stability

Some of the key issues addressed in these standards include: financial planning and budgeting; diversity of income streams; commercial activities; patterns of financial behavior; and business and individual donor support.

Specific Standards:

- Standards Regarding Developing and Managing Business and Individual Donor Support
- Standards Regarding Retrenchment or Downsizing

Standards on Facilities and Risk Management

Some of the key issues addressed in these standards include: risk management; emergency planning and preparation; and visitor services.

Specific Standards:

- Standards for Facilities and Risk Management as Related to Contractors
- Standards for Museums Housed in Historic Structures

Field-Wide Standards

The following compilation includes standards and best practices that are specific to museums. We appreciate being informed of other statements of standards and best practices that may be useful to the museum profession.

- Alliance Professional Networks:
    - Committee on Museum Professional Training (COMPT)
    - Committee on Education (EdCom)
    - National Association for Museum Exhibition (NAME)
- Association of Art Museum Directors
- American Association for Museum Volunteers
- American Association for State and Local History
- American Historical Association
- International Council of Museums
- National Initiative for a Networked Cultural Heritage

- National Park Service
- Southeastern College Art Conference

Relevant Standards

There are many organizations with standards guidelines relevant to museum operations. We encourage museums to abide by these if appropriate to their circumstances.

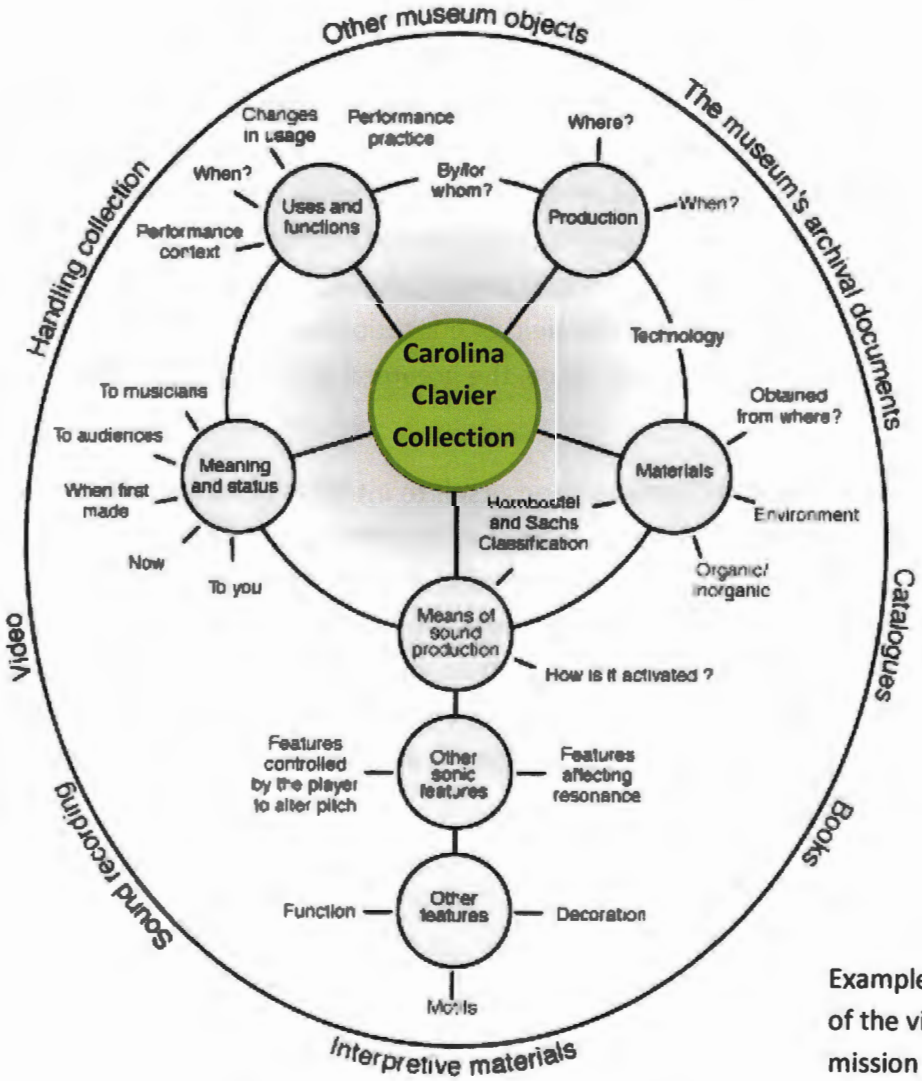
- American Institute of Philanthropy
- Association of Fundraising Professionals
- BBB Wise Giving Alliance
- Financial Accounting Standards Board
- Governmental Accounting Standards Board
- Oral History Association
- Society of American Archivists

CCC in use by Brevard Music School, 2014

Appendix B – Executing the Mission

The content below is taken in part from 'Voices for the Silenced: Guidelines for Interpreting Musical Instruments in Museum Collections' Margaret Birley, Heidrun Eichler, and Arnold Myers, and adapted for the Carolina Clavier Collection mission.

Many museums house collections of musical instruments, objects that have been created in order to generate sounds. These guidelines are intended for museum educators and guides who are not specialists in music or in organology, the study of musical instruments, and whose role it is to interpret museum collections for groups of children and adults of all ages. Outlined below are suggestions as to different ways in which the interpretation of musical instrument collections may be approached. A diagram (Example 1) represents a summary of the interconnected themes. Museum educators and guides are invited to select a number or just a few of these different options, depending on their area of expertise and the requirements of the visiting group. The aim of the guidelines is to empower interpreters to formulate their own approaches to the study of the musical instrument collection in their own museum.



Example 1, Interconnectedness of the visitor and the museum mission

Pre-tour training of "non-specialist" interpreters

It is recommended that the specialist staff in the museum should provide the interpreter with a written and/or oral outline of the exhibition's concepts and contents. Supplementary interpretative material, such as catalogues, should be made available. Reading material and recordings can also be suggested.

The nature, time and place of the interpretative session

The "non-specialist" educator or guide will be interpreting the musical instrument collection to audiences of both adults and children. In most museums, talks to such groups last from forty-five minutes to one hour. The talk should be informative, entertaining and not over-theoretical; listeners should be participants as well as observers. If the visiting group is small enough most members should, ideally, be given an opportunity to make a verbal contribution. Where possible the talk should begin at the entrance to the museum, since this creates a special rapport between the guide and the visitors, who will feel that they are guests at the museum. The educator or guide should be informed of any particular interest which the non-specialist group may have, so that s/he may have the opportunity to link this to the talk.

General aims for the interpretative session

The talk or tour can help to further the understanding of the relationship between abstracted facts and material objects. It can also enhance the audiences' investigative and perceptive abilities, by offering not only a variety of different theoretical perspectives, but also different modes of learning about musical instruments. Examples of musical instruments in showcases may be duplicated or replicated by a handling collection of instruments that can be played, an important interpretative resource. Handling, and even playing such instruments will strengthen the impression of the visit. Research in the field of education has demonstrated that the more senses are involved in the learning experience, the greater the retention for adults and children alike.

The interpretation of musical instruments lends itself to interdisciplinary studies bringing in the sciences, design and technology, the arts, history, geography, anthropology and sociology. An extensive exploration of these different subject areas, from the specific to the general, can be aided by the application of the interrogatives how?, where?, for/by whom? when? and why? (see example 1). For many people, a visit to a musical instrument museum will represent their first encounter with the music of another temporal period or cultural area. The interpretative session can represent an opportunity to teach science empirically, through the instruments' world of sound, its production and transmission.

How musical instruments work

A musical instrument acts as a transformer, converting the energy from an outside source into a series of sound waves. It is the sound of a musical instrument which we can hear and appreciate. All sound is the result of vibration. A drum skin, for example, vibrates when it is hit. Its movement causes the air around it to vibrate in a series of push-and-pull vibrations travelling outwards from the drum head. The vibrations in the air, on reaching the human ear, cause the ear-drum to vibrate in sympathy. These vibrations pass to the inner ear and are there converted into nerve impulses which are sent to the brain to be interpreted as a note.

A pure musical note, such as that produced by a tuning fork, consists of a simple vibration of the air at equal intervals. Normally, however, a fundamental note is heard together with other notes, called overtones. With some instruments there is a simple mathematical relation between the frequencies of the overtones, in which case they are said to be harmonics. The length of the waves of the harmonic overtones is half, a third, a quarter, etc. of the wavelength of the basic (fundamental) pure note. Any note produced on any instrument is in fact accompanied by a varying number of attendant notes called overtones.

The study of sound is called acoustics, and acousticians try to understand how sounds are produced, modified, transmitted, affected by buildings, and heard. The acoustics of musical instruments are extremely complicated, but always relate the sound-producing mechanisms of instruments and the voice to the hearing characteristics of our ears and brains. Instruments can be divided into two classes, those which produce sounds in the air in a tube, or other container partially open to the outside air, and those which produce vibrations in a solid such as a string, drum skin, or the moving parts of a loudspeaker which are subsequently transmitted to the air. Instruments which produce sounds in the air include those usually called wind instruments (and the human voice). Most wind instruments use one or more tubes, such as those of flutes, trumpets and pipe organs, because tubes can be made to produce patterns of sound which relate closely to the recognition capabilities of the human ear and brain.

Similarly, many instruments use vibrating strings because the vibrations of the strings also closely correspond to the human capacity to recognize sounds. Every object has natural frequencies of vibration, but because strings do not produce much sound directly, there is usually some device, such as the body of a violin or guitar, which modifies the vibrations and transmits them to the air as sound. Resonance is the enormous increase in the strength of the vibration that occurs when the frequency generated by the applied force, which is used to make the instrument sound, happens to equal the natural frequency of the object. The resonance makes certain overtones louder than others, and this is a significant factor in the characteristic tonal quality of different instruments.

Demonstrating the science of sounds

The interpreter can introduce some basic concepts relating to the physical acoustics of instruments into the talk or tour, using the museum's handling collection of instruments:

Sounds are made when objects, *e.g. strings on musical instruments*, vibrate. Vibrations from sound sources can travel through a variety of materials. The sound source: the primary vibrating agent can usually be identified, as can the means by which it is made to vibrate.

The pitch and loudness of sounds produced by some vibrating objects *e.g. a drum skin or a plucked string* can be changed. Concepts relating to pitch levels can be explored. The different levels of pitches may be correlated with aspects such as the length of a string/column of air in a tube.

Technology

The technology involved in the manufacture of musical instruments involves a diverse range of subjects for consideration. Among those directly related to an instrument's structure are the materials used (and there may be environmental or other reasons for selecting one material rather than another), the specific techniques for manufacturing both its internal its external components, the pattern or model adopted for the instrument, and the specialist tools required. The finishes used in an instrument's manufacture should also be considered. Instruments may have some components which are purely decorative, with distinct stylistic traits, or other features which have some function that is not directly related to the instrument's sound.

Some museums are located in cities or regions that have a long tradition of musical instrument building, which should be of interest to visiting groups.

Music

While handling collections make museum objects more accessible, an audience can sometimes gain from them a false impression as to how instruments should be played, and how they should sound. Some museums will be able to employ musicians who can demonstrate professional performance practice in musical instruments, and close observation of such performances should be encouraged. Video and audio recordings are also important media for interpretation. The following very basic elements of musical cognition are suggested as subjects for discussion with children by the museum educator or guide:

- Duration of notes - long/short
- Dynamics - loud/quiet/silence

- Tempo - fast/slow
- Timbre - quality of sound *e.g. tinkling, rattling, smooth, ringing*
- Texture - several sounds played or sung at the same time/one sound on its own
- Pitch - high/low

In museums in areas where music is a strong feature of general education the "non-specialist" guide/educator's fundamental knowledge of music will be quite extensive, and interpretative sessions conducted by such individuals can encompass related subjects in some depth. These might include:

- Groups of musical instruments e.g. within the European orchestral tradition (woodwind, brasswind, strings, percussion
- Families of instruments e.g. violin, viola, violoncello ('cello), double bass, and the correlation between the size of an instrument and its sound
- The history of musical instruments; their development and diffusion
- The influence of materials on the sound of instruments (e.g. the use of plastics in woodwind instruments)
- The correlation between the construction of musical instruments and their sound (e.g. the difference between instruments of the viol and violin families)
- The scales obtainable on different instruments (e.g. chromatic/diatonic)

Uses and functions

The uses and functions of musical instruments provide an inexhaustible line of enquiry. The place of musical instruments within the cycle of human life, their significance within a culture, or to particular individuals is infinitely varied. Suggestions for aspects to be considered are as follows:

- the cultural contexts in which instruments are played
- the people for whom they are made and/or played
- the place of instruments in the cycle of human life; in daily life, social life, political life, religious life
- the status conferred on individuals through the ownership or performance of different types of instruments

- the ways in which instruments are suited to the locations where they are played (e.g. indoors, out of doors etc.)
- the association of instruments with religious or other types of ritual when they are played or made
- the use of musical instruments as media for communication
- the use of musical instruments for imitating animals and birds
- the local names of the different components of musical instruments
- the symbolism of instruments
- musical instruments as *objets d'art*
- the relationship between musical instruments and other museum objects
- the history of the museum's collections, and how instruments are cared for within the museum.

Classification

Not all cultures have an inclusive term for "music", as distinct from other elements of secular or sacred performance, and this is one of the reasons why "sound-producing objects" rather than "musical instruments" is often the preferred term in museums which present a diverse range of traditions. A number of everyday objects such as spoons or glasses can have a musical function, should the occasion demand it, but they are not primarily musical instruments. **Since the core material in the Carolina Clavier Collection is and will remain keyboard instruments, we will be dealing primarily with chordophones (string instruments) and aerophones (wind instruments, i.e. organs)**

Activities after the interpretative session

After a talk or a tour, museum audiences are usually given time to explore the musical instrument galleries. An explanation as to how to use the gallery should be provided. Concerts, films and lectures by specialists can be arranged for adult audiences.

In many museums activity sheets are devised in the form of questionnaires about the collections, which are to be completed by visiting children, and they are also encouraged to learn about instruments by making observational drawings. The museum's handling collection gives children the opportunity of using multisensory modes to learn about the materials, pitches and timbres of instruments. Some museums encourage children to improvise short

performances using the instruments, creating pictures or stories in sound. Other organised activities allow children to explore the world of musical instruments in different ways, by conducting experiments in sound and by making their own instruments. Musical instrument making projects can represent an activity to be initiated after the information-gathering museum visit. The most successful instances of such projects are usually those that set out to fulfil design criteria, and subsequently to evaluate the achievement.

Appendix C - On-line resources featuring the Carolina Clavier Collection and educational outreach to date:

https://www.flickr.com/photos/southcarolinaetv/sets/72157641864698504/

http://etvradio.org/post/keys-carolina-clavier-collection

http://makinghistorynow.com/2014/06/another-organized-piano/

http://www.squarepianotech.com/

http://earlypianos.org/

https://www.youtube.com/watch?v=6VnKV1sr5VQ

http://historicalkeyboardsociety.org/wp/wp-content/uploads/2012/07/2015-Spring-v4-part2.pdf

http://towncarolina.com/article/on-the-keys/

http://amis.org/meetings/2013/docs/AMIS-2013-Abstracts.pdf

http://www.clemson.edu/caah/departments/humanities-hub/news-events/event.html?eventid=561538

http://elephantprotection.org/app/story/31870918;jsessionid=LUEk-6xgPtozdspYuMcvfze8.undefined

Appendix D - Comparable collections around the world:

Frederick Collection of Keyboard Instruments - http://www.frederickcollection.org/

The Catskill Mountain Foundation Piano Performance Museum Featuring the Steven E. Greenstein Piano Collection - http://www.catskillmtn.org/about-us/projects/pianoperformancemuseum.html

The Cobbe Collection - http://www.cobbecollection.co.uk/

Andreas Beurmann collection - http://www.mkg-hamburg.de/en/collection/permanent-collection/musical-instruments.html

The Historic Piano Collection of Steve Misener - http://stevemisenerpiano.com/

Fenton House - http://www.nationaltrust.org.uk/fenton-house-and-garden

Marlowe Sigal Collection (private) – http://musicalassumptions.blogspot.com/2015/05/a-visit-with-marlowe-sigal.html

What is Historically Informed Performance?

From the Society for Historically Informed Performance, Boston (SoHIP)

Historically Informed Performance is a much-debated term, and both music historians and performers have difficulty defining it exactly. There are many ideas of what HIP consists of, but at its most basic level, it means performing music with special attention to the technology and performance conventions that were present when a piece of music was composed. For many years, this approach was applied primarily to music composed before 1750, from the Medieval, Renaissance, and Baroque eras. In recent years, however, the drive towards historically informed performance has made musicians reconsider how they perform Classical- and Romantic-era repertoire as well.

The HIP movement began in the 1970s when people started to ask why works were being performed on instruments that hadn't been available to the artists who composed them. For instance, the keyboard Bach used was different from the one used by Mozart, and in turn the one used by Mozart was very different from that of Beethoven. In order to appreciate the intended effects of their works, it made sense that they be performed on the instruments for which they were written.

With instrumental music, being historically informed often means performing on instruments such as Baroque oboe, recorder, harpsichord, or viola da gamba. While some musicians (primarily string players) perform on antiques, most early music performers use instruments that were made relatively recently, by modern makers who have a variety of ideas about what an early instrument should be. Some makers try their best to make exact copies of surviving instruments in museum collections, some create their own designs based on historical principles,

and some try to blend the two approaches. The particular tonal characteristics of early music instruments, as well as their inherent strengths and limitations, help to create a historically informed sound.

The most important element of historical performance is the musical style, which is ideally based on a knowledge of primary sources and other reference materials from the era of the music being performed - for example, the writings of Johann Joachim Quantz (above) and Leopold Mozart (Wolfgang's father, below). Of course, it is also based on modern pedagogy and performance conventions, since in many cases the early music performers of the 20th and 21st centuries have resurrected musical instruments and traditions that lay dormant for centuries. It might seem incongruous to hear a Medieval mass performed in a concert hall, or a Renaissance drinking song performed in a church, but neither of these are uncommon in the early music world!

The truth is that majority of what we consider historically informed performance practices are speculative, and based on the best information available to the musicians and scholars of our era. Much has changed in the way that we perform early music since the beginning of the historical performance revival, and that was only 60 years ago. Those who perform early music, though (and there are more bright stars on the horizon all the time!), generally believe that the experience of the music for both performers and audience is a richer one when historical performance practices are taken into account.
Boston has long been an important center for early music, and SoHIP is committed to showcasing the best early music performers in the area. To find out more about what it means to be historically informed, try attending one of our summer concerts!

The Carolina Clavier Collection at Greenville Music Museum removes at least two layers of modern interpretation from the above description – authentic instruments are substituted for copies, which are at beast only approximations, and then presents the music in a space appropriate for almost anything in the repertoire from the 17th – 19th C. In this way Greenville will have an advantage over even Boston, a center for early music performance!

Appendix H – History of the Greenville Music Museum

Through no fault of its own, the 1834 Greenville Music Museum, one of the three oldest homes in the city, is an orphan. When the Woman's Club, which has leased it from the City of Greenville since 1948, was recently disbanded, its longtime meeting place reverted to the city.

It's probably not going to be a private home again. Renovations have made it a public place with meeting rooms, small kitchen, and multiple-toileted restrooms.

But surely there must be a nice nonprofit that needs a gracious headquarters on a gloriously tree-shaded lot with plenty of parking just two minutes from downtown. That organization, though, had better have deep pockets, because there are leaks to be repaired, peeling paint, air-conditioning issues and, perhaps, a resident raccoon.

The house has been part of Greenville since Fountain Fox Beattie moved here from Virginia in the early 1830s and purchased (for $400) a 3-acre lot "in the suburbs of the town," on the road to Laurens, now East North Street. There he built a fitting home for his bride, Emily Edgeworth Hamlin.

It was a posh neighborhood. Christ Church was just across the street. His neighbors (separated by acres) were congressman-to-be Waddy Thompson; Edward Croft, a lawyer who had settled into farming with more than 1,000 acres; and Francis McLeod, a wealthy Savannah transplant.

Beattie, 27, had enough money to make a splash. By October 1834, he was a partner in a general store (Greenway & Beattie) at Main and Coffee streets and had probably begun building his home.

While its construction date is listed on the National Register as 1834, it would have taken some time to complete. Carving mantels for the fireplaces that heated the high-ceilinged rooms and the staircase could take months to complete, even though the design of the house was simple — two rooms on each floor with a separate kitchen behind the house.

At the time of the Civil War, F. F. Beattie & Company, which had moved in 1854 to the corner of McBee and South Main Street, was worth $75,000 and was, according to its R.G. Dun credit report, "as good as the Bank of Charleston." Beattie listed his real estate as worth $39,000; he valued his personal fortune at $90,000, and he owned 53 slaves — wealth enough to afford decorative touches to his substantial home.

Beattie's eldest son, Hamlin, was his partner in the flourishing business, where the younger man operated a "banking agency" associated with the Bank of Charleston. (Evidently Beattie loaned money and discounted notes.)

His family prospered. The Beatties even did well during Reconstruction when Hamlin was one of three financially solvent Greenvillians. In 1872 he began the first National Bank in South Carolina in a rented room of Goodlet's Hotel on South Main Street.

He sent his son William to Princeton (where he was a baseball star) and later appointed him assistant cashier of his bank. W.E. Beattie went on to become a textile executive and president of several cotton mills.

After Hamlin's death in 1915, his brother, John, briefly became the bank's president before Hamlin's grandson, the second Fountain Fox Beattie, took over the position in 1916.

And they all lived in the house.

It grew to fit them all in, adding (probably in the 1880s) one-story wings and an elaborately columned porch with "Queen Anne" style Italianate brackets. For more than a century, until the death of Mrs. John E. Beattie in 1938, it remained the family's home and a Greenville landmark.

Its gardens were locally famous. Mrs. John Beattie had the first greenhouse in Greenville where she grew the first local pink dogwoods, and her gardener trained rare roses to climb over arbors throughout her garden.

After she died, Beattie heirs rented out the house. During World War II, officials began planning to extend Church Street from "the Super Highway" (Wade Hampton Boulevard) to Mills Avenue. The Greenville Music Museum was in the way.

But when plans for its demolition were announced in 1946, club women in the community (many were wives and mothers of local officials) objected vociferously. They pleaded that women's organizations needed a place to meet and that the historic house would the perfect place. Their voices were heard. (Even the thriftiest public official listens to his mama.)

The city paid $92,500 for the property. They put in a new street to its immediate north appropriately named Beattie Place. Then, with logs for support and ten mules pulling, in 1948 they moved the house at a cost of $5,900 to the new street. Greenville's sixth courthouse was erected on the house site.

After renovations including a new heating system, it was rented to the newly formed Greenville Woman's Club for a dollar a year. In March 1950 the house officially opened for club meetings

and receptions for organizations that included the DAR, UDC, music, garden and community clubs. In 1974, it was one of the first seven Greenville buildings to be listed on the National Register, its condition then was rated "excellent."

During the next 30 years, Beattie Place became a busy thoroughfare, and U.S. Shelter, then one of the largest real estate development companies in the region, began to eye the site for high-rise office buildings and a parking garage. Working with the city's Economic Development Office and the ladies of the club, they worked out a deal.

With U.S. Shelter and the city sharing the cost, the house was once again relocated, this time to a more secluded two-and-a-half landscaped site off Bennett Street with plenty of parking. In June 1983 the move was made. It took more than mules this time.

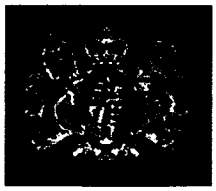
Loaded onto two trucks with the support of 17 steel beams, the house slowly edged down the Church Street hill. The half-mile trip took nearly 12 hours to complete and cost $58,000.

U.S. Shelter contributed $75,000 to cover the cost of new foundations, heating and cooling units, and a new glassed-in back reception area. For 30 more years it has served the community.

Now the Greenville Music Museum, one of the most historic structures in the city, needs a purpose and, not at all incidentally, some love and some dollars. Call the city's Parks and Recreation Department for more information.

Contact Judy Bainbridge at judy.bainbridge@furman.edu.

Maria Parrini at the circa 1570 Italian Virginal, Carolina Clavier Collection



MUSEUMS & GALLERIES COMMISSION

Standards 5. in the Museum Care of Musical Instruments. 1995

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MUSEUMS & GALLERIES
COMMISSION

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Foreword

by Stanley Sadie

Among the countless kinds of object conserved in our museums, a musical instrument occupies a very special position. It was not designed to be looked at, but to be used, specifically to be played upon, to produce some sort of vibration that creates sound. Instruments were not intended by their makers to last forever, or even for very long: no one would have been more surprised than a Ruckers or a Stradivari at the longevity of their creations, let alone the value that society places upon them after some three centuries, while the craftsman in China or Africa who created an instrument would be no less baffled at the worth ascribed to it and the care bestowed on it in an alien culture. These men and their colleagues made instruments to serve a particular cultural function which seemed to be of its time and was never envisaged as being more than that.

Today we take a different view of our own past, one that has been forming over some two hundred years, as tastes, in music as elsewhere, instead of moving with the times, have become set. The music chiefly valued by a large public today is that of the past, a selection of which has come to have canonical significance. This music was composed for instruments of the kind we preserve. The desire to preserve the instruments is a by-product not only of a civilisation that looks to its past and preserves many different kinds of artefact, but also of our interest in the re-creation of the performing traditions, and the sounds, of the period to which the music belongs. Also, as cultural boundaries have softened with the end of colonialism, the freer intermixing of cultures and the improvement in world communications, the readiness to abandon cultural insularity has increasingly fed curiosity and care about non-Western instruments. Yet the preservation of instruments of any kind is inherently enigmatic, for like other objects, they have been used, and in may cases used to destruction or at least substantial deterioration; the very act of using them places them under a kind of stress that belongs more, say, to machines than to art objects. Further, they may well have been repaired, or even modified to meet changing tastes.

To the ordinary musician, and to the ordinary listener, a musical instrument exists for only one purpose: to be played upon and to produce sound. Until quite recent times such attitudes remained unquestioned, and there are still quarters where even now they are regarded as almost axiomatic, where a silent

instrument is seen as a useless instrument; and indeed the traditions of English organology (which are long and distinguished) are based in a broader tradition of antiquarianism with which such ways of thought were consistent. The historian or the conservator today, however, takes a different view, in which the chief emphasis belongs with the preservation of an instrument as a tool for future research. The diversity of approach poses dilemmas which the present publication fully acknowledges, and it provides valuable guidelines for dealing with them. A central question must remain: of what use is an instrument of the past, or of another culture, as a guide in our efforts to reconstruct the sound world of its period or provenance if we do not permit ourselves to hear it, so that we know what we are trying to recreate? And, on the other hand, how can we permit ourselves to risk destroying what we have?

There are no simple answers: except to say that to compel a long silent instrument to sound may often be to court its destruction, and that no responsible custodian can allow that unless under severe safeguards. The purpose of this publication is to establish a basis for custodianship and conservation without denying the purpose of the objects. Its hard practicality and caution are salutary. Musicians may, in its light, have to deny themselves certain of their hopes and ambitions, but long-term considerations have to be paramount and the responsibilities of custodianship must prevail. This volume represents an enlightened collaborative statement of them and how best they may be realised.

Introduction

This booklet is one of a series being published by the Museums & Galleries Commission (MGC), setting out standards in various areas of museum work. Others in the series include the museum care of archaeological, biological and geological collections, and larger and working objects.

The purpose of this booklet is to set down standards for the museum care of musical instruments, and to provide guidance on the interpretation of those standards. We define a musical instrument as any object designed to make a sound, from a baby rattle to a viola, and from a fire siren to a gamelan.

This booklet follows directly from the survey of musical instruments in UK museums commissioned by the Museums & Galleries Commission and published as *Museums of Music.* One of the principal recommendations of that report was that the Museums & Galleries Commission should produce a *Standards in the Care of Musical Instruments* as part of its series of 'Standards of Collection Care'.

To produce this booklet, the Museums & Galleries Commission appointed an Editor, Crispin Paine, who prepared a draft, and drew together a group of practising curators, conservators and restorers, to discuss it; this publication is the result of their work. The Standards represent a consensus of current professional opinion of the best practice that every museum should aspire to reach. 'Aspire' is the key word. We take the pragmatic view that not all museums will be able to achieve all the Standards in the short-term. We hope, however, that every museum will work actively towards them.

Much work has been done in recent years to define standards in the care of musical instruments, and this booklet owes a great deal to the work of bodies like the International Committee of Musical Instrument Museums and Collections (CIMCIM) of the International Council of Museums, and the Canadian Conservation Institute, as well as of individual specialists. These bodies have now been joined by the Musical Collections Forum, which welcomes into membership all who look after music collections, musical instruments and related material in the UK.

Thanks to this growing professional consensus, the Expert Group found little difficulty in agreeing on these Standards. The Group saw parallels between the care of musical instruments and that of quite different types of object. The debate over whether musical instruments in museums should be played, for example, is similar to that over whether machinery preserved in museums should be worked. The approach recommended in this booklet is similar to that recommended in its companion booklet on larger and working objects: that the decision should be based on an assessment of the object's importance and its role in the museum, and that every object which is played or worked should have its own operating manual and operating log.

Many museums hold musical instruments for their design or social history interest, or simply for their beauty, rather than for their function. These Standards take that into account.

How to use this booklet

We envisage that these Standards will be used in a variety of ways and some of these are listed below.

- A curator is asked to draw up a schedule of objectives and performance indicators for the care of collections. The national standards in this booklet will be a benchmark for the museum's own objectives and performance indicators.

- An auditor (internal or external) may wish to review how a local authority is looking after its collections. This booklet will give defined national standards against which achievement may be measured.

- A curator is trying to persuade a museum governing body to make more resources available for care of collections. This booklet will help make the case.

- A curator of a social history or decorative arts collection has one or two musical instruments, and needs advice on their care.

- A local history museum run by volunteers is reviewing its acquisition policy, and is looking for guidance on the implications of acquiring various classes of material. This booklet will help in drawing up a sensible policy reflecting the constraints posed by the museum's resources.

- A designer is asked to design a new display or store to contain musical instruments. This booklet sets out the standards of security, environmental control, etc, that should be attained.

- A grant-giving body needs reassurance that a museum applying for a grant will use the money responsibly. These Standards enable it to judge whether the museum is likely to do so.

While this booklet is addressed primarily to museums, the MGC hopes that private collectors, too, may find it useful.

Each aspect of caring for collections is divided into three Sections:

- The Standards themselves. These are the standards at which every MGC registered museum should be aiming. Larger and specialist museums may already be meeting even higher standards.

- *Guidelines and notes* explaining and enlarging on the Standards.

- *Sources of advice and help:* generally one or two basic publications and a first-stop address.

We have tried in each Section to achieve a balance between the principles and detailed guidelines.

The MGC is grateful to the Department of National Heritage for funding its Standards Development Programme, and to the members of the Expert Group and others who gave their help. They are listed below.

Users of the booklet are warmly invited to comment on its usefulness, and to make suggestions for improvements - or even for a new approach - for a second edition.

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A J Lane	Royal Marines Museum
David Leigh	Museum Training Institute
Laurence Libin	The Metropolitan Museum of Art, New York
Catherine McCullough	Armagh County Museum
Clare McNicholas	Health & Safety Executive
Henry Middleton	Maidstone Museum and Art Gallery
J C Nolan	Ulster Museum
Maire Noonan	Glasgow Museums
Rob Payton	Museum of London
Len Pole	Saffron Walden Museum
Cathy Proudlove	Norfolk Museums Service
Jonathan Ranger	National Piano Centre & Information Service
Fergus Read	East Midlands Museums Service
E A K Ridley	voluntary cataloguer, Royal College of Music Museum of Instruments
Adam B Ritchie	City of Dundee Art Galleries & Museums
Pauline Rushton	National Museums & Galleries on Merseyside
Carol Sacha	Waverley Borough Council
Peter Skuce	keyboard player
Kate Starling	Museum of London
John Stevenson	Commonwealth Institute
Mark Taylor	The Museums Association
Eleanor Thomas	Leicestershire Museums, Arts and Records Service
Peter Thornton	Sir John Soane's Museum
Sue Underwood	North of England Museums Service
Alan Ward	The British Library
Stephen Weston	Charles Moore Collection of Musical Instruments, University of Leicester
Ros Westwood	Shibden Hall, Halifax

Jane Whittaker	Kirklees Museum Service
Christopher Wilk	Victoria & Albert Museum
Catherine Wilson	Norfolk Museums Service
Timothy Wilson	Ashmolean Museum
Geoffrey Winter	piano restorer
Stephen Wood	Scottish United Services Museum
Robert Woosnam Savage	Glasgow Museums
Barbara Woroncow	Yorkshire & Humberside Museums Council

The MGC is very grateful to all the above for their comments and suggestions.

Part One: Managing Collections

1 Standards for collecting

1.1 The museum's governing body should approve a detailed acquisition and disposal policy, which should be reviewed formally at least every five years.

1.2 The museum should ensure that it secures legal title to instruments it acquires.

1.3 Every musical instrument should be acquired in accordance with the guidelines set out in the MGC's *Registration Scheme for Museums in the United Kingdom: Revised Guidelines for Phase 2,* and with the law.

1.4 Once a decision has been taken formally to acquire an instrument for a museum's permanent collection, there must be a presumption against disposal. If disposal of an instrument is considered, it must be undertaken in accordance with the procedure outlined in Registration Guidelines.

1.5 The greatest effort should be made to acquire all available information and any associated objects with each instrument at the time of collecting, particularly where an object is removed from its context (see Section 2).

1.6 When a museum is considering acquiring a musical instrument, the questions should be asked: 'How does it relate to the museum's acquisition policy? Can the museum justify acquiring it in relation to the instrument's importance, rarity and relevance in regional, national or international terms?' A decision must then be made, on the basis of this assessment, on the role of the instrument in the museum and the quality of care it can be given. This decision must be reviewed regularly.

Guidelines and notes

1.7 The uneven coverage of instruments in public collections in the UK was revealed in the MGC's survey (Arnold-Forster and La Rue 1993). This unevenness makes it even more important that every museum follow a well-thought-out acquisition policy, drawn up by curator and specialist, and harmonised wherever possible with other museums collecting in this field. The MGC survey also revealed how few musical instruments in UK museums survive in their original state.

1.8 Because of the pressure on curators to allow instruments in their care to be played, which inevitably wears them out (see Section 4), it is vital to define just why the instrument is in the museum, and to reappraise its purpose at regular intervals.

1.9 Reasons for acquiring an instrument might include:

- its character
  An instrument may be worth acquiring because it is typical of its period or society, or by contrast because it is unusual.
- its appearance
  It may be exceptionally beautiful, or may incorporate rich materials or elaborate decoration. It may be important in the history of art or of design.
- its manufacture
  It may have been made by an important or interesting maker, or one based in the museum's region.
- its materials
  It may be made from interesting materials, whether unusual or typical.
- its history
  It may be associated with a particular repertoire, musician, owner or collector, or

with a particular place. It may bear evidence of the way in which it was played. It may preserve an unusual amount of information about its provenance and use.

- its context
  It may form part of a collection of ethnographic or social history material.
- its condition
  It may be of especial interest because of its unaltered condition, or because of the historical or musicological interest of any alterations.
- its sound
  It may make a particularly beautiful sound, it may be considered to preserve well its original playing characteristics, or it may be wanted for demonstration purposes, to illuminate a particular repertoire.

1.10 The same instrument can, of course, be used in many different ways, to illustrate the particular viewpoints and interests of, say, social history, decorative arts or ethnography. What matters is that every museum considers carefully, and writes into its acquisitions policy, its reasons for seeking to acquire musical instruments. Every instrument considered for acquisition should be measured against those reasons.

1.11 A museum considering acquiring a musical instrument for its aesthetic or social history value should carefully consider the care implications of holding what could be a delicate and susceptible item. Does the museum have access to the facilities, staff and financial resources to care for it?

1.12 The Musical Collections Forum is beginning to address the need for a register of historic musical instruments of national and international importance. It aims to ensure that these are identified so that proper decisions on their preservation can be taken.

1.13 Some museums hold two distinct collections, those that may be played and those that may not; some museums accession the latter but not the former. But an object may change its status, for example, because more is learned about it. A more sophisticated approach may therefore be helpful, based on regular assessment of each instrument's importance. What matters is that each museum should adopt and operate a clear policy.

1.14 When considering the acquisition of an instrument, the museum should also ask:

- how does it fit into our acquisitions policy?
- how much will it cost to keep?
- above all, *why* do we want to acquire this?

Sources of advice and help

• Advice on drafting a collections management policy can be obtained from the Area Museum Councils.

• Advice on assessing the importance of a musical instrument, and on collecting and documenting, can be obtained from the Musical Collections Forum:

Musical Collections Forum
c/o Bate Collection
Faculty of Music
St Aldates
Oxford 0X1 1BD

• An interesting attempt to categorise wind instruments is included in Myers 1987, and this is reproduced in Appendix C.

2 Standards for fieldwork

2.1 A collecting policy for musical instruments should include provision for documenting information about the context from which they come, wherever possible.

2.2 The context of a musical instrument should be carefully and systematically documented in the most appropriate way. The documentation should be available as part of the instrument's object file (see 5.10).

2.3 As much information as possible should be recorded about the object. This will include technical information - for example a description and where possible a documented field recording of the instrument - but also details of who made it, bought it, played it, restored it or listened to it.

Guidelines and notes

2.4 Music is both a product and a process of social interaction. When instruments are acquired directly rather than through the sale room, the museum has a heavy responsibility to document every scrap of available information about that instrument, its history and context. This may be a challenge where, say, the museum is acquiring an instrument for its aesthetic or technical importance rather than its social history value, but it is always vital. The Standards, Guidelines and notes in this Section address the question of preserving information about an instrument's context.

2.5 The context of an instrument should be seen as including:

- by whom, how and where it was made, kept and used;
- who trained the maker, and where;
- what it is made of, and where the materials were obtained and prepared;
- the original cost;
- where, when or how it was owned and transferred;
- by whom it was owned, and perhaps modified;
- the history of any damage, repairs or alterations;
- its use in ritual or ceremonial processes;
- the social and economic background of the instrument;
- the musical and artistic background of the instrument;
- by whom it was played, for what music; and in what circumstances;
- other instruments or voices with which it was used.

2.6 The documenting of the context may use a variety of techniques including:

- photography;
- field sketches;
- film and video recording;
- sound recording;
- transcription;
- reproduction (if collection is not possible) of printed and handwritten material associated with the object;
- ethnomusicological field reports;

- archaeological excavation.

2.7 Items associated with a musical instrument may include:

- makers' drawings, invoices, etc;
- bills of subsequent sale, etc;
- makers' tools;
- makers' catalogues, sales literature, etc;
- instruction and service manuals;
- clothing;
- orchestra, group or band materials such as rule books;
- personal ephemera;
- recordings and written music;
- accessories, such as tool kits, tuning hammers and spare parts;
- old reeds, broken strings, etc;
- samples or details of construction materials;
- patents;
- trade cards, advertisements;
- packaging, cases, covers, supports and carrying equipment;
- concert programmes.

All should be collected, and the maker, players and previous owners, or their descendants, should be approached for further information.

2.8 Where a substantial archive illustrates and enhances context, its acquisition should first be discussed with the appropriate archive service. Names and addresses of these are given in the Royal Commission on Historical Manuscripts. 1991. *Record Repositories in Great Britain.* London: HMSO

2.9 If the museum proposes to retain such an archive, reference should be made to the MGC's *Code of Practice on Archives for Museums in the United Kingdom,* 1990, agreed by the Association of Independent Museums, the Museums Association and the Society of Archivists. See Section 17 for the conditions in which primary records should be kept. *{Note:* a revised edition is forthcoming.)

See *opposite for sources of advice and help*

Sources of advice and help

• Advice on recording the context of objects can be found in:

Dournon, Genevieve. 1981. *Guide for the Collection of Traditional Musical Instruments.* Paris: UNESCO.

Hood, M. 1982 (revised edition). *The Ethnomusicologist.* New York.

Merriam, A. P. 1964. *The Anthropology of Music.* Evanston, Illinois.

Myers, Helen, ed. 1992. *Ethnomusicology: An Introduction.* New Grove Handbook. London: Macmillan.

• Other useful information is contained in: O'Hanlon 1993; and Ward 1990.

• Advice on ethnomusicology fieldwork is available from:

Malcolm Taylor
Librarian, Vaughan Williams Library
The English Folk Dance and Song Society
Cecil Sharpe House
2 Regent's Park Road
London NW1 7AY

Dr Helene La Rue
Pitt Rivers Museum
South Parks Road
Oxford 0X1 3PP

Roy Saer
Welsh Folk Museum
St Fagans
Cardiff CF5 6XB

Ulster Folk & Transport Museum
Cultra
HolywoodBT18 0EU
Northern Ireland

School of Scottish Studies
University of Edinburgh
27 George Square
Edinburgh EH8 9LD

Dr Roderyk Lange
Centre for Dance Studies
Les Bois
Jersey

Dr Janet Topp Fargion
International Music Collection
National Sound Archive
29 Exhibition Road
London SW7 2AS

Ros Rigby
Folkworks
69 Westgate Road
Newcastle-upon-Tyne NE1 1SG

International Council for
Traditional Music (UK)
c/o Dr Richard Widdess
Department of Music
School of Oriental and African Studies
University of London
Malet Street
London WC1E 7HP

Department of Social Anthropology
Queen's University of Belfast
14 University Square
Belfast BT7 1NN

Department of Ethnomusicology
Goldsmiths' College
University of London
Lewisham Way
New Cross
London SE14 6NW

3 Standards for curation and conservation

3.1 Every museum with musical instruments in its collection should have access to the advice of a specialist in historic musical instruments and of a conservator.

3.2 There should be a strong presumption against carrying out any work on an instrument. No work should ever be carried out on an instrument without the approval of a qualified conservator and of a specialist in that type of musical instrument.

3.3 Any work carried out must adhere to professional guidelines and codes of practice, such as those of the United Kingdom Institute for Conservation (UKIC), the Museums Association, the International Council of Museums (ICOM) and the International Institute for Conservation, Canadian Group.

3.4 Everyone responsible for the care of musical instruments should undertake regular and appropriate training.

3.5 Every musical instrument should ideally have its own care plan - one should certainly be written for every instrument which is to be played. The care plan should set out a programme of conservation and curatorial care, based on the latest assessment of the importance of the instrument and of its function in the museum. This assessment and the programme of care must be regularly reviewed.

3.6 The care programme for each object should start with research into its materials, composition, condition and history.

3.7 The collections should be regularly audited. Four types of audit are necessary:

- Can the instruments on the register be accounted for? This can be achieved by physically locating objects selected at random from the register.
- Are the instruments deteriorating? This can be discovered by a condition survey (see 13.1).
- Are the instruments catalogued, or at least accessioned?
- Are the environmental conditions in which the objects are displayed or stored optimal for the preservation of the collections? This is ascertained by an environmental survey (see Part 2).

Guidelines and notes

3.8 Each instrument's care plan should contain a written assessment of its importance and museum purpose, and a written care programme for the instrument. The care plan should be kept in the object file (see 5.10 and 5.11). Regular review - at least every five years - of both the assessment and the care programme is vital, as the status of an object may change over time.

3.9 Every museum will devise its own approach to caring for its collection, taking specialist advice where necessary. However, we commend as examples those given in Appendix A.

3.10 All museums holding musical instruments should have access to curatorial and conservation expertise. Museums with more than a few musical instruments in their collection should have sufficient appropriately trained and experienced curators and conservators to fulfil the functions set out in these Standards - either on their staff or regularly available.

3.11 Museums should show restraint with all the instruments in their collections and allow only the minimum conservation work necessary to enable an instrument to fulfil its agreed function in the museum. *It is impossible to return an instrument to some former condition*

without obliterating some evidence upon it, however slight, and as our analytical techniques and regard for the functional history of the object become more sophisticated we are obliged to leave as much evidence of usage upon the material under our care as is possible (Eliason and Hellwig 1986).

3.12 A museum considering having any work done on an instrument should follow the advice not only of a conservator, but also of a specialist *in that* type of musical instrument.

3.13 Most musical instruments were maintained, adjusted or reconditioned while in use. They thus acquired a battery of accretions and modifications that are part of their history. These very slight changes (which may now be almost undetectable) are of singular interest to scholars and players alike, since they throw light on the use of the instrument. It takes expertise and experience to recognise and evaluate these accretions, which can easily be swept away during injudicious work.

3.14 There are at present in the UK very few conservators with a special expertise in musical instruments, though there are a number of very distinguished instrument restorers. Briefly, conservators aim to arrest and prevent deterioration, while restorers aim to return something either to playing condition, or back to its conjectured state at some earlier time. Museums are concerned with conservation rather than restoration, and need to be sure that the specialist whose help they are seeking takes that approach too. Some of the best restorers are both willing and able to take a museum-orientated approach if asked to do so, and can help with or advise on conservation requirements. Moreover, many conservators who specialise in general antiquities can help with musical instruments.

3.15 In particular, a museum considering having an instrument restored to playing condition, or to an earlier appearance, should first consult one or more specialists in that class of instrument. The Musical Collections Forum can advise. A museum should not put a professional restorer in the invidious position of advising on whether the work should be done, and perhaps having in conscience to forgo profitable work.

3.16 Restoration to playing order should only be contemplated in the presence of good environmental conditions, adequate maintenance by expert staff, and the prospect of a real benefit to the legitimate work of the museum. The disadvantages in terms of loss of information should be carefully weighed, and restoration should be approved only if these disadvantages are very limited. The manner in which restoration work is carried out has a crucial effect on the extent of these disadvantages. The disadvantages are also highly dependent on the past history of the instrument: if it has been badly restored in the past, then a new, good restoration may do no harm; but if its condition is almost original it should not be restored. All restorations of any complexity should involve an independent consultant who undertakes to discuss procedure with the restorer and who will monitor progress on a continuous basis throughout the period of the work.

3.17 Musical instruments may themselves be, or may incorporate, works of art of a very high order. For example, many Western keyboard instruments incorporate important paintings. It is vital that any conservation work carried out on such a work of art is done by someone appropriately trained and experienced.

3.18 It is important to be aware that the conservator submitting the lowest tender for a job may not be the most suitable person to undertake the work.

3.19 On-going training and professional development are the most direct ways to improve the quality of a museum's activities. It is important that all members of staff and volunteers have access to training opportunities. A wide variety of training is now available in the UK in the care and conservation of museum collections in general, but so far little formal training is available in the care of musical instrument collections specifically.

See *over for sources of advice and help*

Sources of advice and help

• The Musical Collections Forum will be able to suggest specialists who can offer advice.

Musical Collections Forum
c/o Bate Collection
Faculty of Music
St Aldates
Oxford 0X1 1BD

• The Conservation Unit of the Museums & Galleries Commission maintains a Register of qualified and experienced conservators in England, Wales and Northern Ireland.

The Conservation Unit (Register)
Museums & Galleries Commission
16 Queen Anne's Gate
London SW1H 9AA
Tel: 0171 233 3683
Fax: 0171 233 3686

• A similar service is provided in Scotland by the Scottish Conservation Bureau of Historic Scotland.

Scottish Conservation Bureau
Historic Scotland
Longmore House
Salisbury Place
Edinburgh EH9 1SH
Tel: 0131 668 8668
Fax: 0131 668 8669

• The following leaflets published by The Conservation Unit of the Museums & Galleries Commission may be found helpful.

'How to Choose a Conservator or Restorer'
'Conservation - Restoration: The options'
'Working with a Conservator'

• Advice on training can be obtained from the Area Museum Councils (AMCs), Museum Training Institute and from the Musical Collections Forum.

Museum Training Institute
Kershaw House
55 Well Street
Bradford BD1 5PS

• Valuable guidance on the care of instruments is contained in:

Barclay, R. L. 1982. *The Care of Musical Instruments in Canadian Collections.* Technical Bulletin 4. Ottawa: Canadian Conservation Institute.

Eliason, Robert E. and Friedemann Hellwig. 1986. 'Musical Instrument Exhibitions in Scandinavia'. *CIMCIM Newsletter.* Special Issue, Edinburgh.

International Committee of Musical Instrument Museums and Collections (CIMCIM). 1993. *Recommendations for the Conservation of Musical Instruments: An Annotated Bibliography.* CIMCIM Publications 1. Edinburgh: CIMCIM.

• Further references may be found in: Barclay 1989; CIMCIM Publications 2, 1994: Huntley and Starling (eds) 1983; Karp (ed) 1992; and Keene 1991.

4 Standards for the care of musical instruments permitted to be played

4.1 Only instruments that have been designated as suitable for playing should be played.

4.2 An instrument should be played only in accordance with its care plan. This should state how, how often, for how long, in what circumstances and by whom it can be played.

4.3 Played instruments should be inspected at regular intervals. Any perceived deterioration should lead to a review of whether they should continue to be played.

4.4 A playing log should be kept for every played instrument, containing details of each occasion on which it is played.

Guidelines and notes

4.5 *There exist two often opposing views about the use and preservation of antique musical instruments. According to the first view, it is the destiny of all musical instruments to play music. Old instruments are often among the best instruments for playing. According to this point of view, preservation is accomplished most effectively through playing. Leaving an instrument permanently silent is thus absurd.*

The other view holds that our obligation to preserve old instruments is served only by protecting them from intrusive restorations and physical deterioration from use. Historical instruments are, in effect, primary documents detailing historical instrument-making techniques and technologies. This carries implications about the usefulness of non-playing antique instruments, and the destructive effects of restoration and use. Supporting evidence is offered from the example of keyboard instruments. In a solo keyboard work, a key near the middle of the range is likely to be struck over two thousand times in every hour of playing, and with each strike of the key, a chain reaction of abrasive forces is unleashed....

Antique musical instruments, especially those retaining substantial historic integrity, are a non-renewable and diminishing cultural resource - an endangered species. If we allow preservation to be secondary to musical performance, the legacy will be spent, the species extinct (J R Watson, abstracted in CIMCIM 1993).

The use of any museum instrument is connected with a clear risk of mechanical damage. The stresses generated by tuning a stringed instrument or those caused by introducing moist air into a wind instrument cannot be calculated in advance and may easily be more than the instrument can withstand. It is easy to abstain from bringing a stringed instrument up to working pitch, thus avoiding potentially dangerous situations. There is no similar buffer against damage caused by blowing into a wind instrument. (CIMCIM 1985).

4.6 The balanced view is that certain museums with suitable instruments, adequate resources and well-defined aims may allow limited playing of certain chosen instruments without seriously compromising the museum's obligations to preservation. Such playing can be valuable in education and research.

4.7 However, there should always be a presumption against the playing of musical instruments from museum collections. Where instruments are permitted to be played, they must be played only according to the strict rules set out in their care plans. The categories set out in Appendix C may be a helpful guide.

4.8 Historic instruments may no longer sound as they originally did, so a good copy or reproduction may give a truer approximation of an historic instrument's original sound. Hence the production of measured drawings and copies of museum instruments will reduce demands that historic instruments be restored or played.

4.9 However, when the decision is taken that the gains from playing an historic instrument justify the risk to the instrument, there are several ways to reduce the danger:

- The number of times an instrument is played can be reduced; the playing should be recorded. An archival recording of the instrument will reduce the need for it to be played again. Sometimes, though, it may be safer to maintain an instrument in playing condition, rather than subject it to the shock of occasional playing.
- The reasons for playing an instrument can be limited. Thus, playing for personal curiosity or pleasure can be forbidden, and playing can be limited to research, or recording, or the rare public concert. CIMCIM recommends: 'Any performance use of an instrument should be designed to reach as wide an audience as possible. Recordings and broadcasts are, therefore, generally more to be encouraged than are concerts alone.' (CIMCIM 1985).
- The players can be limited to those who are experienced and knowledgeable, and who are known to take particular care of instruments. Some of the most distinguished artists can have the least respect for old instruments; the selection of performers is a conservation decision.

4

- The location in which an instrument is played can be controlled. Thus, allowing an instrument to be-played only on the museum's premises ensures the museum's control over the instrument's playing, its security, environmental conditions and after-care (see Section 7).
- How an instrument is played can be controlled. Thus, some instruments can be played gently.
- How long an instrument is played can be restricted.
- A conservator can check the instrument immediately before and after use.

4.10 To bring an instrument suddenly into playing condition may cause considerable damage. Very occasionally, a decision may be made to make a recording of a normally mute instrument. On such occasions it should be brought gradually and carefully, over a period of weeks or even months, to tension and accustomed to playing. Parts such as strings, quills, bow hair, skins, pads and springs must not be replaced merely for the sake of making a recording. A conservation decision and adequate supervision by curator and conservator is essential.

4.11 However, regular playing will inevitably lead to wear on parts such as finger-boards and the balance and guide points of keys. Sometimes such wear can be prevented by covering the vulnerable part with a protective replaceable surface. At other times the wear can be pre-empted by replacing demountable parts with new copies. Any original part that is removed should always be retained in the museum's collection and marked appropriately (see 5.9).

4.12 Where it is judged desirable to obtain data on the tuning and tonal characteristics of wind instruments, an apparatus for sounding them without human breath can be employed, and the results recorded.

4.13 New or reproduction parts fitted to an instrument should wherever possible be clearly marked to show the date of manufacture and the museum. Such modifications should be fully documented.

4.14 If possible, a recording should be made whenever an historic instrument is played.

4.15 It can be very expensive to keep instruments in playable condition.

4.16 At least every five years, and preferably more often, the care plan of each instrument should be reviewed, with advice from curator, conservator and specialist historian. This review may well lead to a decision that the instrument should be played less frequently, or not at all, for example, because it is becoming too delicate or because it now appears more important than was previously realised.

Sources of advice and help

• Advice on drawing up a policy and rules on the playing of historic instruments, and with decisions on particular instruments, can be obtained from the Musical Collections Forum.

• Valuable advice may be found in:

International Committee of Musical Instrument Museums and Collections (CIMCIM). 1985. *Recommendations for Regulating the Access to Musical Instruments in Public Collections.* Edinburgh: CIMCIM.

International Committee of Musical Instrument Museums and Collections (CIMCIM). 1993. *Recommendations for the Conservation of Musical Instruments: An Annotated Bibliography.* CIMCIM Publications 1. Edinburgh: CIMCIM.

International Committee of Musical Instrument Museums and Collections (CIMCIM). 1994. *Copies of Historic Musical Instruments.* CIMCIM Publications 3. Edinburgh: CIMCIM.

5 Standards for documentation

5.1 Documentation of musical instrument collections should be in accordance with, and to the minimum standards set out in, *SPECTRUM: The UK Museum Documentation Standard.*

5.2 Every musical instrument should have a care plan (see 3.5).

5.3 Every musical instrument which is ever played should have a playing log (see 4.4).

5.4 A record should be kept of all condition checks; conservation, restoration and repair work; and of treatment against pests.

Guidelines and notes

5.5 The minimum standards to which musical instrument collections, as all museum collections, should be documented, are set out in *SPECTRUM Essentials,* a booklet published by the Museum Documentation Association which summarises *SPECTRUM: The UK Museum Documentation Standard.*

5.6 In addition to the documentation required by all museum objects, musical instruments have special documentation needs. They are noted here.

5.7 New or reproduction parts fitted to an instrument should be recorded and, wherever possible, should be permanently marked, preferably with the date and the museum's name.

5.8 Where a museum maintains two distinct collections of musical instruments, one for permanent preservation and one for playing, it should develop documentation and marking systems to prevent the two becoming confused. This should include central written records of what items are held and the reasons for acquisition, and a location record.

5.9 When larger instruments, such as organs, have to be held in museum stores in a disassembled state, the information held in the catalogue becomes particularly important.

5.10 Each instrument should have, in addition to its accession register entry and catalogue record, an object file or series of files. The object file provides a central location for all the information relating to that object or accession group that may accumulate over the years. It should contain at least a copy of every relevant document that exists, even where originals are held elsewhere (except where there is so much that the practice becomes impractical). The contents will vary according to the instrument and its museum use, but may include:

- drawings, specification documents, makers' instructions, etc, as originals or copies;
- film, tape or video records of the instrument being played;
- interviews with makers, players and owners;
- correspondence;
- details of all research findings about the object and its original context, particularly information on any discoveries about its manufacture and use made during conservation or restoration in the museum;
- copies of the instrument's care plan and playing log;
- conservation details, restoration and repair records;
- copies of any loan agreements, and of correspondence concerning the object;
- photographs or radiographs of the instrument;
- published references to the object.

5.11 The care plan sets out the programme of care agreed between conservator and the staff or volunteers who are to carry it out (see 3.5 and 3.6). It should include an assessment of the instrument's condition when received, the action required, materials to be used and timescale, and should cover basic cleaning as well as more invasive treatment. For instruments to be played, the care plan should also set out the rules and conditions for playing.

5.12 Where a museum frequently lends out instruments, the documentation procedures to deal with the management of loans in and out of the collection becomes particularly important. These procedures should be capable of accommodating the considerable amounts of information and special agreements that are frequently necessary to record the loan of an instrument, particularly in what circumstances it is to be played (see Section 7).

5.13 Objects may leave the museum for a variety of reasons, not only as loans - for example when they are played elsewhere or demonstrated at a lecture. Such events become part of the ongoing history of the object, in addition to being a collection management concern. It is essential that an exit record be made.

Sources of advice and help

• Standards for the documentation of museum collections are laid down in:

Museum Documentation Association (MDA). 1994. *SPECTRUM: The UK Museum Documentation Standard.* Cambridge: MDA.

• These standards are conveniently summarised in:

Grant, Alice. 1994. *SPECTRUM Essentials.* Cambridge: Museum Documentation Association.

• These standards provide a framework for the documentation systems described in: Holm 1991.

• In addition, the Museum Documentation Association is publishing a series of booklets of practical advice on documenting different types of museum object.

• Detailed advice on the classification, description and documentation of musical instruments (with an extensive bibliography) is given in: Barclay 1982: and Myers 1989.

• A standard guide to terminology is:

Art History Information Program. 1994. *Art & Architecture Thesaurus.* Oxford: Oxford University Press. (An electronic version is also available.)

• Advice on museum documentation in general can be obtained in the first instance from the Area Museum Councils or direct from:

Museum Documentation Association
Lincoln House
347 Cherry Hinton Road
Cambridge CB1 4DH
Tel: 01223 242848
Fax: 01223 213575

Scottish Museums Documentation Unit
National Museums of Scotland
Chambers Street
Edinburgh El 1JF

• Advice on the particular problems of documenting musical instruments can be obtained from:

Musical Collections Forum
c/o Bate Collection
Faculty of Music
St Aldates
Oxford 0X1 1BD

Footnote

* 'Documentation' in this booklet means all the recorded information a museum holds about its collections, and also the gathering, storing, manipulation and retrieving of that information.

6 Standards for access

6.1 The museum should have an access policy that defines the standards it seeks to reach, in relation to its purpose, to the status of its collections, and to the needs of its users.

6.2 It should be the aim of the museum to allow as much access as possible to the collections and their associated information. All forms of access should be considered - intellectual as well as physical. While limited resources may require that the museum sets priorities, and conservation requirements may limit some forms of access, the aim should be to provide fair access for everyone.

6.3 Museums with collections of significance for researchers should adopt access standards that include: publishing a description of the collections; a response time for confirming the presence or absence of particular types of object (recommended maximum 15 working days); and a period within which an appointment to study the object or objects can be offered (recommended maximum 30 working days).

6.4 The museum has a duty to safeguard the collections and documentation, that may conflict with ease of access. The access policy should properly balance the requirements of access with conservation and security (see Part 2).

6.5 The museum should as far as possible encourage forms of access that reduce the risk of damage to instruments - for example by making available photographs, radiographs, detailed drawings and recordings.

6.6 As far as possible, all museums should observe the standards and guidelines for 'customer care' set out in the MGC's booklet *Quality of Service in Museums and Galleries.*

6.7 As far as possible, all museums should observe the *Guidelines on Disability for Museums and Galleries in the United Kingdom* published by the Museums & Galleries Commission and endorsed by the Museums Association.

Guidelines and notes

6.8 The definition of a museum emphasises the fundamental presumption that it holds its collections for the public benefit. There should be a presumption against storing objects without the active development of policies and facilities to promote access to them - even though such access may lie in the future.

6.9 The appropriate types of access to each object will be determined by its status within the museum (see 1.6), and by the needs of users. Thus, a casual visitor may be content to see a viol in a 17th-century room setting, but a specialist will need to get much closer, and so will people with poor eyesight. The aim should be to provide appropriate access for all the museum's users, and to ensure that they have the same access to musical instruments as to other parts of the museum's collections.

6.10 A particularly important form of access to musical instruments is provided by the recording of instruments being played (but see 4.8).

6.11 Another traditional form of access is the provision of drawings and radiographs to enable working copies of the instruments to be made. Such drawings need to be detailed and accurate enough to enable a maker to select appropriate materials and make an instrument with characteristics similar to the original. Ideally, a good drawing should include expert recommendations on the original state if the original has been altered, on pitch, and on parts that have disappeared, such as strings or hammer coverings. Such recommendations will often need to be based on comparable contemporary instruments which might survive.

6.12 The taking of measurements for drawings can itself pose dangers to instruments (see 13.8); it also demands considerable staff time. Balancing public access in the present against preservation for the future is of course the fundamental task of every museum. The aim of these Standards and Guidelines is to ensure that museums take the necessary decisions with as much information as possible. (See also 13.8.)

Sources of advice and help

• The following publications will be useful:

Museums Association. 'Code of Conduct for Museum Professionals'. In *Museums Yearbook* (annual publication). London: Museums Association.

Museums & Galleries Commission (MGC). 1992. *Guidelines on Disability for Museums and Galleries in the United Kingdom.* London: MGC.

Museums & Galleries Commission (MGC). 1993. *Disability Resource Directory for Museums.* London: MGC.

Museums & Galleries Commission (MGC). 1993. *Quality of Service in Museums and Galleries: Customer Care in Museums, Guidelines on Implementation.* London: MGC.

Palfreyman, T. 1993. *Designing for Accessibility.* London: Centre for Accessible Environments.

International Committee of Musical Instrument Museums and Collections (CIMCIM). 1985. *Recommendations for Regulating the Access to Musical Instruments in Public Collections.* Edinburgh: CIMCIM.

International Committee of Musical Instrument Museums and Collections (CIMCIM). 1994. *Copies of Historic Musical Instruments.* Edinburgh: CIMCIM.

Acht, R. van. 1993. *Checklist of Technical Drawings of Musical Instruments in Public Collections of the World.* Celle: Moeck.

Acht, R. van (forthcoming 1995). *Technical Drawings of Musical Instruments from Public Collections in the World on Microfiche.* Lisse: MMF Publications.

• Advice on drawing standards together with a discussion of the usefulness and use of drawings is given in respect of viols in Fleming 1989.

7 Standards for the loan of musical instruments

7.1 Every museum should have a written policy and procedure for lending, and standard conditions that borrowers must accept in writing before the loan is made.

7.2 Every loan of an object that is to be played by the borrower should be covered by additional standard conditions for the loan of playable instruments, to be understood, agreed and signed by the borrower before a loan is made.

Guidelines and notes

7.3 Lending musical instruments is particularly dangerous, both because of the fragility of many instruments, and because of the danger that they may be played without permission. Thus, while a museum may wish to lend instruments from its collection to another museum for exhibition, a responsible museum will approach the drafting of a loans policy and procedure with great care, and will ensure that they are rigorously observed.

7.4 Standard loan conditions should normally include:

- object condition reporting;
- insurance arrangements;
- length of loan, and arrangements for renewal or cessation;
- conditions of security, handling, presentation, and environmental monitoring and control (see 9.5);
- exchange of environmental information between lender and borrower to safeguard continuity;
- no conservation work to be carried out without agreement;
- agreement on where and how the object is to be kept and displayed;
- packing;
- transport arrangements;
- photography, filming and commercial use;
- arbitration and successors;
- acknowledgement of the loaning institution;
- regular inspection by curator and conservator;
- arrangements for return.

7.5 Standard loan conditions for playing instruments should also normally include:

- stipulations on who may play the instrument, how often, for how long, etc (see 4.9);
- a requirement to observe the instrument's care plan, a copy of which should accompany the loan;
- any other special requirements of the conservator;
- general requirements on display and storage between playing;
- agreements on routine care and limits on necessary repairs;
- stipulations on tuners, tuning and pitch of the instrument;
- standards for documenting the playing and care of the instrument;

- requirement to maintain the playing log, a copy of which should accompany the loan;
- special insurance requirements;
- stipulations regarding sound recordings, and any copyright arrangements.

7.6 Conditions specific to a particular loan will normally cover:

- frequency and nature of playing (e.g. limits on time/dates of playing, what is played, etc);
- any financial arrangements for the loan, including hire/playing charges, cost of maintenance and repairs, percentage of earnings (especially, for instance, on film or television work; but see 7.9) payable to the lender, etc;
- access for monitoring the condition of the object.

All such conditions should be discussed, fully understood, and agreed in principle before substantive arrangements for the loan are put in place.

7.7 It is particularly important that the lender periodically monitors both the instrument and the conditions. The borrower should:

- pay for travel and subsistence on an agreed number of monitoring visits during the loan period;
- provide appropriate access and workshop facilities for an inspection of the object (including an internal inspection where necessary) during the course of a monitoring visit;
- make available during the loan period information on environmental conditions.

7.8 A permanent record of every loan should be kept, for example, by keeping the exit record and loan agreement in the object's object file (see 5.10).

7.9 Experience suggests that musical instruments in museum collections should never be lent or hired for theatrical, film or television purposes or advertising.

7.10 A museum considering borrowing a musical instrument from a church belonging to the Church of England should contact the Council for the Care of Churches.

Sources of advice and help

- The staff of leading specialist museums will be glad to advise on any aspect of the loan or care of musical instruments. These museums are listed in:

Arnold-Foster, Kate and La Rue, Helene. 1993. *Museums of Music: A Review of Musical Instrument Collections in the United Kingdom.* London: HMSO/ Museums & Galleries Commission.

- The following publication is essential reading:

Association of Independent Museums (AIM). 1988. 'Museum Collecting Policies and Loan Agreements'. *AIM Guideline 14,* AIM.

- Helpful advice on lending and borrowing, not only for exhibition, will be found in: MGC 1995; Barclay (ed) 1983; and McNeff 1994.

8 Standards for research

8.1 The Forward Plan of every museum should include reference to the museum's duty to undertake and to foster research. The governing body should ensure that time and resources are provided to enable research to be done.

Guidelines and notes

8.2 Research is fundamental to the function and purpose of a museum, though its form will vary greatly between museums of different sizes and types. Such research includes research into an object, wider historical or scientific research, and research into the history of the museum collection.

8.3 Every museum should have a research policy, preferably written as part of the museum's Forward Plan or Collections Management Policy. It should be realistic, and relevant to the museum's collections, its staff and resources, and its public role.

8.4 The museum's research policy should include details of its access policy for researchers, taking into account both its general access policy (see Section 6) and the needs of security (see 9.3).

8.5 The museum's research policy should take into account the special problems posed by the musical instruments in its collections, or associated with research-related activities. These may include the making of sound recordings or documenting music-making in other ways.

8.6 The research policy should be drawn up in consultation with neighbouring and related museums and collections, with appropriate local and national (and international, where appropriate) academic societies, and with specialist groups or individuals interested in the field.

8.7 Research without publication or proper documentation is useless. The museum should ensure that its own staff, and as far as it can other researchers using its collections, work to the highest academic standards, with proper citation of sources, including reference to objects' accession numbers (see 5.10).

8.8 Visiting researchers should normally sign a written agreement, especially if they are likely to make commercial use of their work. This agreement would include:

- conditions for access, handling restrictions, etc;
- arrangements for the museum to obtain copies of any resulting publications, or of research notes if the work does not result in publication;
- arrangement for the museum to obtain copies of any measurements, or photographs taken;
- proposed use of the information;
- any copyright aspects;
- warning of any hazards (see Section 18).

See *opposite for sources of advice and help*

Sources of advice and help

• Help can be given by staff at national and other specialist museums, as well as by academic bodies and specialist groups and societies. The following are useful sources of information:

Arnold-Foster, Kate and La Rue, Helene. 1993. *Museums of Music: A Review of Musical Instrument Collections in the United Kingdom.* London: HMSO/ Museums & Galleries Commission, London.

Bevan, Clifford. 1990. *Musical Instrument Collections in the British Isles.* Winchester: Piccolo Press.

The Conservation Unit of the MGC (TCU). 1991. *Conservation Sourcebook.* London: HMSO/TCU.

• A valuable introduction to copyright law is:

Museums Association (MA). 1994. 'Copyright for Museums'. *Museums Briefing.* 6. London: MA.

Part Two: Protecting Collections

9 Standards for protecting musical instruments from theft

9.1 Physical protection

9.1.1 The structure of the building should be designed and/or defended to a degree that will deter an attack by a thief or vandal.

9.1.2 Windows, doors, ventilation shafts and ducts should be designed, constructed and secured so that an intruder is deterred from trying to enter, or is delayed long enough to allow an alarm to trigger a response before the intruder can enter, steal, or damage, and escape.

Guidelines and notes

9.1.3 Further advice on these Standards and Guidelines can be obtained from the Museums & Galleries Commission's Museums Security Adviser. The difficulties in achieving the above standards of physical protection in some historic buildings are well understood. Indeed, it may sometimes only be possible to counterbalance physical weaknesses by the use of supervisory regimes involving people or equipment.

9.1.4 The structure of any building in use should be such that penetration through the walls and roof is difficult and time consuming. Even relatively weak buildings, for example those of wooden construction, can be improved to meet this requirement.

9.1.5 The number of windows should be reduced to the essential minimum (though necessary ventilation must be maintained). Windows no longer required should be filled in to a strength similar to the surrounding structure. Windows in use, and those in historic buildings, should be protected by a means agreed with the MGC's Museums Security Adviser.

9.1.6 The number of doors to the outside should be reduced to the minimum, leaving only those required for entry or as emergency exits. Unused doors or windows should be filled in or blocked by other methods agreed with the Museums Security Adviser. Remaining wooden doors should be of at least 50 mm thick solid construction and fitted with security-standard mortice deadlocks. Emergency exit doors should be fitted with modern quick-release door furniture which must be capable of being deadlocked when the building is unoccupied. Exterior doors should wherever possible have no external furniture.

9.1.7 Pitched roofs of slate or tile should be fitted over close-boarded timber. Measures to modify roofs constructed of other materials should be agreed with the Museums Security Adviser. Unauthorised access to the roof should be limited by physical barriers, such as fencing, anti-climb paint or anti-vandal barriers.

9.1.8 The risk to instruments on display will vary enormously. Factors which should be considered are the value of the instrument, its location in the building and the location of the building. All instruments on open display are at risk, especially if small parts can easily be removed. These risks need to be assessed and countered by the mode of display, which may sometimes involve the use of replica parts or objects.

9.1.9 Modification of historic buildings may require Listed Building or other consents.

9.1.10 Where the museum shares a building with another user it is important to ensure that strict security arrangements are agreed and adhered to by all parties. In shared buildings the internal perimeter of the museum premises should be treated and strengthened in the same way as the external perimeter.

9.2 Perimeter alarms

9.2.1 All openings in the building fabric, such as doors, windows, roof-lights, and ventilation shafts (including those giving internally into adjacent accommodation

outside the museum area), should fall within the protected zone of an intruder detector. An intruder detection system that qualifies for a National Approved Council for Security Systems (NACOSS) certificate and is to BS 4737 specification should be fitted by a company recognised and approved by NACOSS for such installations.

Guidelines and notes

9.2.2 The system should be as simple as possible to avoid an unacceptable false alarm rate; and should depend upon suitable sensors fitted to doors and other openings. Separate movement and body heat detectors are prone to false alarms, but newer devices that combine both techniques are more reliable.

9.2.3 The signalling of an alarm condition should be by means of a monitored line or radio link to an alarm company's central station. This will give an alarm if the line is cut.

9.3 Invigilation

9.3.1 The level of invigilation must be appropriate to the risk.

9.3.2 The bona fides of all researchers and others with access to instruments should be checked and recorded, and they should be adequately supervised at all times.

9.3.3 Nobody should be allowed into museum stores unless accompanied by an authorised person at all times.

Guidelines and notes

9.3.4 The risk to items on display should be assessed and an appropriate level of invigilation should be provided. This level should never be reduced. If sufficient invigilators are not available the gallery or even the whole museum should be closed. Special care should be taken at unusual times, for example while an exhibition is being installed or during evening events.

9.3.5 Researchers have, unfortunately, been responsible for serious thefts from museums. Everyone using the collections should be made aware that access is subject to guidelines; even the most senior researchers should be obliged to follow them.

9.3.6 The Museum Association's 'Guidelines on Security when Using Outside Contractors' should be observed.

9.3.7 The use of small security alarms within showcases or attached to instruments may help to reinforce invigilation.

9.3.8 All the instruments in the collection, and all their parts, should be photographed, with especial attention given to any distinguishing marks.

9.4 Key security

9.4.1 A strict policy regarding the possession of keys should be devised and enforced.

Guidelines and notes

9.4.2 There should never be more keys than is strictly necessary, and the number of people in possession of keys should be kept to the barest minimum. All keys, other than the external door-keys held by key-holders, and keys to safes, should remain within the building in a secure key cabinet or safe, and should be identified by a coding system. An issue system against signature should be used as a security measure.

9.4.3 If an instrument can be locked, it should be. The key should be kept in a key cabinet or safe, and should be appropriately documented in the object file.

9.5 Instruments outside the museum building

9.5.1 Similar levels of security should apply when an instrument is taken, for whatever reason, outside the museum (see Section 7).

Sources of advice and help

- The following publications are useful:

A free leaflet published by the Museums & Galleries Commission. 1989. *Museum and Gallery Security.* MGC, London.

Hoare, Nell. 1990. *Security for Museums.* London: Committee of Area Museum Councils (CAMC).

Burke, R. and S. Adloye. 1991. *Basic Museum Security.* Paris: International Council of Museums.

Kluwer Handbooks (updated periodically). *Handbook of Security.* Kingston-upon-Thames: Croner Publications.

Dovey, Bryan. 1992. 'Security'. In *Manual of Curatorship.* eds. J. M. A. Thompson et al, 183-90. Oxford: Butterworth-Heinemann/Museums Association.

Museums Association (MA). (Annual publication). 'Guidelines on Security when Using Outside Contractors'. *Museums Yearbook.* London: MA.

- Advice is readily available from the Museums & Galleries Commission's Museums Security Adviser (Tel 0171 233 4200) and from the Area Museum Councils.

10 Standards for protecting musical instruments from fire

10.1 Museum buildings should be designed or adapted to minimise the risk of fire and to prevent its spread. Depending on the use of a building and the number of people working in it, a fire certificate as required by the Fire Precautions Act 1971 may be needed.

10.2 Areas housing collections should be rigorously insulated to a high standard (not less than half an hour protection, but preferably one hour) against fire spread from areas of risk, eg workshops, laboratories, kitchens, boilers, plant room or chemical stores. The degree of risk from 'risk areas' must be reduced as much as possible, for example by using an external chemical store. If chemicals are kept within the building, the conditions must be in accordance with the advice of the local authority's Fire Officer and must comply with Control of Substances Hazardous to Health (COSHH) Regulations. A suitable COSHH assessment must be made and a copy kept in a convenient place for passing to emergency services on their arrival at an incident (see 12.4).

10.3 In museum buildings, all electrical wiring and equipment (including portable equipment) must be installed in accordance with the appropriate British Standard, the Institution of Electrical Engineers' Regulations, and the Electricity at Work Regulations. Electrical installations should be regularly maintained and checked as required by those regulations. Gas, oil and mechanical equipment must also be installed in accordance with appropriate British Standard and statutory instructions, and must be regularly checked and maintained. A Register of each piece of equipment should be established, which should contain maintenance records and inspection certificates. A detailed plan of all installations should be kept in a convenient place for passing to the emergency services on their arrival at an incident (see 12.4).

10.4 The advice of the Building Control Officer and Fire Officer should be sought on the selection of all materials used in displays and storage areas. Normally, all such materials should be fire-retardant, class O or A (but see 14.18). Apart from fulfilling their statutory responsibilities these officers should be invited to inspect the premises at least once a year, and should be made aware of the particular requirements of museums. Their recommendations should be reported to the museum's Board of Management. A formal application for Building Regulation Approval is normally required for any structural work.

10.5 All contracts for work on the premises should be on a 'Permit to Work' basis, and no work involving heat sources such as blow-torches or arc welding machines should normally be permitted. If such 'hot work' has to be done, it should be to the safety regulations contained in Section 31 (4) of the Factories Act 1969.

10.6 Wherever possible, buildings housing museum objects should be covered by an automatic fire-detection and alarm system, installed and maintained in accordance with *BS 5839: Fire Detection and Alarm Systems in Buildings.*

10.7 The premises should be equipped with fire-fighting equipment as recommended by the Fire Officer and complying with *BS 5423: Portable Fire Extinguishers* and *BS 5306: Fire Extinguishing Installations and Equipment on Premises.*

10.8 Fireproof cabinets should be provided to house the primary records and museum documentation. Wherever possible, copies of records and back-up computer disks should be kept in a different building.

10.9 All staff and volunteers should regularly attend training in fire prevention and response. The level and standard of this training should be at least consistent with Part 1 (18) of the Fire Precautions Act 1971.

Guidelines and notes

10.10 A survey is needed to decide the type, number and location of fire-detection sensors appropriate to the premises. Indeed, a wider ranging survey can be undertaken to identify specific risks and any necessary precautions, to provide a fire precautions manual containing checklists and disaster response plans (see Section 12), and to set out a reporting procedure. Specialist companies and many major security firms can give such advice.

10.11 Smoking should be forbidden in all parts of the premises that contain collections or documents.

10.12 Public events - for example concerts or exhibition openings - pose a particular fire hazard. Careful thought should be given to fire prevention when planning events. Emergency procedures should be planned and practised.

10.13 Sprinkler systems were long avoided in museums because water damage can sometimes be worse than fire damage. Modern systems, though, are reliable if well planned and maintained. Systems are available which can be designed to operate only in the locality of the heat source and will close off the water supply once the heat source has been neutralised.

10.14 Modification of historic buildings may require Listed Building or other consents.

10.15 Instruments incorporating electrical apparatus may themselves constitute a fire hazard. All such instruments should be regularly checked and all electrical equipment installed by a qualified electrical engineer. All circuits, unless operating security, environmental control or computer equipment, should be isolated when the museum is closed.

Revised proposals for Fire Precautions (Places of Work Act) Regulations and Associated Guidance are likely to be produced in 1995 or 1996.

Sources of advice and help

• The Local Authority Fire Prevention Officer and the Local Authority Building Control Department will both be glad to give advice.

• Information about UK fire authorities and companies offering prevention and detection services is given in the *Security and Fire Prevention Yearbook,* available from:

Paramount Publishing
17-21 Shenley Road
Borehamwood
Herts WD6 1RT

• Other useful information such as safety data sheets can be obtained from:

Fire Protection Association
Loss Prevention Council
140 Aldersgate
London EC1A 4HY
Tel: 0171 606 1050/3757
Fax: 0171 600 1487

• Many museums are in, or include, historic buildings, whose adaptation to meet fire prevention and security requirements often causes problems. *Fire Safety in Historic Buildings,* 1990, published by the Fire Protection Association is a useful source of advice. Area Museum Councils can also give advice - directly or through consultants - on possible solutions.

• Useful information on the interpretation of the Fire Precautions Act 1971 can be found in:

Her Majesty's Stationery Office (HMSO). 1989. *Code of Practice for Fire Precautions in Factories, Offices, Shops and Railway Premises Not Required to Have a Fire Certificate.* London: HMSO.

Her Majesty's Stationery Office (HMSO). *Fire Precautions Act 1971: Guide to Fire Precautions in Existing Places of Work That Require a Fire Certificate.* London: HMSO.

11 Standards for protecting musical instruments from flood

11.1 As far as possible no pipework or tanks should be permitted in new buildings in or above areas where collections are kept; every effort should be made to exclude pipework from such areas in old buildings. Adequate drainage should be provided in buildings where there is a possibility of flooding.

11.2 No object should be placed lower than 125 mm above the floor.

11.3 Appropriate precautions should be taken in museums liable to flooding.

Guidelines and notes

11.4 Most musical instruments are exceptionally vulnerable to water damage. 'If a flood can occur, one day it will'; this assumption should guide all arrangements in the museum.

11.5 Compliance with relevant building regulations and recommendations, especially in old buildings, may make complete exclusion of pipework difficult. Every effort should be made, in discussion with the appropriate technical consultant, to find a satisfactory compromise solution. In areas where objects can be raised off the floor, one solution may be to run the pipework at ground level rather than ceiling level. Automatic cut-off valves should be installed, and leak detectors are desirable.

11.6 All pipework and stop-cocks should be labelled in accordance with *BS 1710: Identification of Pipelines and Services,* 1984, and their locations should be noted on the building plan in the museum's disaster response plan (see Section 12). All pipes liable to freezing should be well lagged and should be inspected very frequently during frosts.

11.7 There should be drainage to cope with flooding; drains should have non-return traps.

11.8 All taps to sinks should be of the spring-loaded automatic turn-off type.

11.9 The danger of water damage as a result of fire should be considered in the disaster response plan (see Section 12), and should be regularly discussed with the Fire Brigade.

11.10 Larger objects may be protected with polythene sheeting to provide extra protection from water leaking from above. Waterproof boxes, cabinets, etc, should be used whenever possible. Appropriate ventilation should be provided to prevent condensation and the risk of mould growth.

11.11 The Local Authority and local Water Authority should be asked for advice on the likelihood of flood; long-resident neighbours should also be consulted. Bund walls, stop boards, sandbags and other precautions may be appropriate in some museums.

11.12 All staff and volunteers should receive regular training in flood prevention and response.

11.13 When new buildings are planned, the danger of flood posed by central heating must be weighed against the danger of fire posed by electrical heaters.

Sources of advice and help

The fire brigade will provide advice on the prevention of flooding.

12 Standards for planning response to disasters

12.1 The museum should draw up a disaster response plan for the protection and rescue of the collections in the event of fire, flood or other catastrophe.

12.2 All museum staff and volunteers should receive regular training in how to respond to disasters.

Guidelines and notes

12.3 The disaster response plan is a written document that sets out procedures to be followed in an emergency. Its general contents should be known to all staff through prior discussion and through regular training sessions and emergency exercises. Liaison with the public emergency services over its contents is essential. Once written, a disaster response plan requires continued revision to ensure that it remains relevant.

12.4 The plan should include:

- the responsibilities of personnel, and methods of raising the alarm and communication to others;
- emergency telephone numbers, including home numbers of staff;
- a confidential up-to-date plan of site and buildings clearly showing all services, hazardous stores, etc. A separate copy of this should be lodged with the fire brigade or available to them on their arrival;
- priorities in limiting damage to the collection and to its documentation;
- sources of relevant expertise, including conservators and nearby museums, archives, etc, as agreed beforehand;
- a list and locations of material and equipment (every museum should have a 'disasters box' containing mops, buckets, cloths, overalls, rubber and heat-resisting gloves, etc);
- a list of suppliers and services (eg freeze-drying, haulage contractors);
- security measures for the collections if the premises are damaged (eg pre-arranged off-site safe storage);
- arrangements for documentation of objects taken off-site;
- first-aid measures for damaged collections, by type of material, drawn up in consultation with conservators;
- an agreed budget including petty cash and/or chequebook, with a hierarchy of authority to spend money in an emergency. The hierarchy should extend as far as possible in order that someone present at a disaster is authorised to spend money;
- a safety policy for working in hazardous conditions;
- security measures for the buildings, if damaged (eg boarding-up contractors).

12.5 A complete record of the collection and its disposition within the stores or displays should be available at some distance from the collection itself, and a duplicate should be held in another building.

12.6 It is essential that the disaster response plan be drawn up in close co-operation with the fire brigade, and be regularly reviewed with them.

12.7 In every museum, the disaster response plan should be only part of a wider policy for the protection and rescue of people (first) and of the collections (see Section 18).

Sources of advice and help

- The following publications are useful:

East Midlands Museums Service (EMMS). 1991. *The Museums and Records Office Emergency Manual.* Nottingham: EMMS.

Anderson, Hazel and John McIntyre. 1985. *Planning Manual for Disaster Control in Scottish Libraries and Record Offices.* Edinburgh: National Library of Scotland.

Jenkins, I. A. 1987. *Disaster Planning and Preparedness: An Outline Disaster Control Plan.* London: British Library.

Fire Protection Association (FPA). 1990. *Fire Safety in Historic Buildings.* London: FPA.

Society of Industrial Emergency Services Officers (SIESO). 1986. *Guide to Emergency Planning.* Borehamwood: Paramount Publishing.

- Advice can be obtained from the Area Museum Councils. In addition, The Conservation Unit of the Museums & Galleries Commission (Tel: 0171 233 3683, Fax: 0171 233 3686) maintains a Register of private conservators throughout England, Wales and N Ireland and a list of suppliers of materials. In Scotland this information is held by Historic Scotland's Conservation Bureau (Tel: 0131 668 8668, Fax: 0131 668 8669).

- In some areas emergency conservation units are available.

- The National Preservation Office video *If Disaster Strikes* is useful for training. Contact your Area Museum Council to hire or purchase this video and to organise disaster contingency planning seminars.

13 Standards for protecting musical instruments from physical damage

13.1 Musical instruments should be regularly inspected for pest damage, or for any signs of physical or chemical deterioration. Reports based on these inspections should be recorded in the object's documentation.

13.2 Instruments not identified as able to be played, or not returned to playing condition, should never be played.

Guidelines and notes

13.3 Many musical instruments are exceptionally delicate objects, and are prone to damage even when at rest.

13.4 Musical instruments should always be handled with cotton or disposable plastic gloves, as appropriate.

13.5 When a small instrument is being studied, it should be placed on soft padded blankets and padded packing blocks.

13.6 Display mounts must support the weight of the instrument evenly, and support is greatly to be preferred to suspension. The use of monofilament line to suspend instruments on display is undesirable. If lines are used, they should be of substantially greater breaking-strain than the weight of the instrument, should always be well padded, should be tied in the special non-slip fishing-line knot, and should never pass over sharp edges. Since light degrades nylon, monofilament lines should be replaced regularly.

13.7 Small instruments should be stored in nests of acid-free tissue paper in acid-free boxes or in freely running drawers, or else in specially cut slots in Plastazote (polyethylene foam). Instrument cases may not always provide a satisfactory (eg acid-free) environment for long-term storage, but should themselves be treated as important museum objects.

13.8 The taking of measurements, for example by researchers or the makers of working copies, can pose dangers to instruments. Strict guidelines should be laid down for such researchers and strict supervision exercised. These guidelines should include:

- no sharp-edged tools, whether plastic or metal (the researcher's tools should be inspected);
- no parts should be removed without specific approval;
- no rubbings without specific approval;
- no adhesives, moulding compounds or any other substances should be used without the supervision of a conservator;
- profile gauges should be used with great caution;
- use of photographic lamps should be strictly controlled;
- electronic measuring instruments should be encouraged, rather than rules and callipers. Laser and X-ray scanning techniques are being applied to museum artefacts.

Taking a rubbing with soft crayon or cobbler's heelball can be as effective as, and less dangerous, than taking many measurements.

13.9 Eating and drinking should not be permitted in collection areas.

13.10 Cleaners working in the museum should always be under curatorial supervision, and should receive appropriate training.

13.11 The following notes draw attention to some of the dangers to which different types of instrument are susceptible.

String instruments

- Instruments played seldom or never should not be kept at playing tension; strings should be under very little tension, yet should lie flat and straight in their correct places.
- Generally, parts that can be relieved of strain should be. Thus, the hair of bows should be relaxed, as should the action of harps.
- String instruments with necks should always be supported, at the minimum, at both the base and the neck. They should be so supported both when on display or in store, and when being lifted.

Woodwind instruments

- Woodwind instruments, especially those of boxwood, are very susceptible to distortion ('bananaing') if not properly supported throughout their length. Flutes, etc, should be supported at the very least at three points when on display, and in store should be supported throughout their length.
- Moist warm breath can cause severe damage to wind instruments; the strictest care should be taken to ensure that rules governing their playing are observed (see Section 4).
- The lappings of woodwinds should be left slightly loose to allow dimensional change in the wood. Special care is then needed when moving such instruments.
- Separate sections should always be individually supported.
- Bagpipes should be laid flat, not suspended.

Keyboard instruments

- The greatest care should be taken in opening harpsichord and piano lids, some of which have complicated arrangements of hinges and catches. Proper lid-props should be ready, and should be correctly placed. Lids should normally be closed when the museum is. Nothing should ever be placed on them.
- Care should be taken not to jolt legs and stands, which may be weak.
- Many keyboard instruments have handstops, pedals, knee-levers, etc, which are easily damaged by people not familiar with their function.
- Moving parts that can be relieved of strain should be. For example a sostenuto mechanism should not be left engaged.
- A harprack (buff stop) should not be left engaged, or the pressure of the strings may damage the stop.

Metal instruments

- Metal instruments should only be handled wearing disposable vinyl, latex or nitrile gloves. Perspiration from bare hands can rapidly etch metal, especially brass and silver.
- Metal instruments should always be supported throughout their length; they should never rest on their bells.
- Never polish or lacquer a metal instrument without consulting a conservator.
- Valves, keys or slides should not be operated unless they are known to be in good condition. If an instrument is to be played, the mechanisms should be lubricated; the mechanisms should be thoroughly cleaned after use.

Drums

- Drum heads should be kept slightly relaxed, where that can be achieved without danger of damage.
- Drums should be stored and handled so that drum heads are not exposed to sharp points.

- The heads of drums on open display should be covered.

Bells

- Bells should not be rung or struck; clappers can damage bells with fragile interiors.
- Bells should never be polished or lacquered.
- Bells in a museum should normally rest on their rims rather than be hung, but in such a way that the clapper does not scrape the rim or the ground.

Electronic instruments

- Electronic instruments should never be left plugged into the mains.
- All batteries should be removed when exhausted, or before the instrument is stored, and disposed of appropriately.
- An instrument permitted to be played should be checked by an electrician before being switched on after a period of disuse.
- Operating voltages should be checked before the instrument is plugged in.

Organs

- The leather parts of the bellows should always be checked for suppleness before an organ is pumped.
- No mechanism should be operated unless it is known to be in good condition.
- Before an organ is played, careful consideration should be given to the quality and humidity of the air to be blown in.

Automatic instruments

- Spring mechanisms should if possible be kept unwound. No spring mechanism should be wound unless it is known to be sound, or unless it will be unwound again quickly and completely.
- An instrument that creates a plucked note, such as a musical box, should only be stopped at the end of the tune, so that no tooth of the comb is left bent.
- No mechanism should be operated unless it is known to be in good condition.

The Museums Association's 'Guidelines on Security when Using Outside Contractors' should be observed.

Sources of advice and help

- Advice is available from the relevant departments of national and other larger museums, and from the Musical Collections Forum.

Musical Collections Forum
c/o Bate Collection
Faculty of Music
St Aldates
Oxford OX1 1BD

- Useful advice will be found in:

Barclay, R. L. 1983. 'Instrument Mounts'. In *Anatomy of an Exhibition: The Look of Music,* ed. R. L. Barclay. Ottawa: International Institute for Conservation, Canadian Group.

International Committee of Musical Instrument Museums and Collections (CIMCIM). 1985. *Recommendations for Regulating the Access to Musical Instruments in Public Collections.* Edinburgh: CIMCIM.

Sandwith, H. and S. Stainton. 1993. *The National Trust Manual of Housekeeping.* Harmondsworth: Penguin.

14 Standards for protecting musical instruments from dust, dirt, pollutants and pests

14.1 Instruments should be protected as fully as possible from dust and dirt. Basic protection is provided by storage in showcases, drawers or cupboards, or covering with dust sheets.

14.2 All collection and storage areas must be kept clean and tidy, and a regime for regular cleaning and record-keeping instituted. Maintenance, monitoring, cleaning, pest control or related work should be undertaken or supervised by fully trained and experienced people.

14.3 Objects must be protected from contact with harmful substances such as gases, fumes or other pollutants.

14.4 All harmful biologically active agents must be eliminated from collections and from all areas within a museum building.

14.5 Cleaning of objects (dusting) should be as gentle as possible and must be undertaken by trained people; the need for it should be reduced to a minimum.

14.6 Dust and dirt should only be removed when it has been clearly determined that it does not itself form part of the instrument's history.

Guidelines and notes

14.7 Dust and dirt encourage corrosion by attracting and holding moisture. They can act as a catalyst for other chemical reactions such as fading and corrosion, and as an abrasive that could cause an object to be scratched during cleaning. They may also cause mould growth and attract pests.

14.8 However, dirt acquired during the instrument's playing life may itself be part of the instrument's history. It is possible, for example, to discover much about the playing technique from the dirt marks on an instrument. Instruments should only be cleaned after the most careful research: it is necessary to distinguish between dirt acquired through use, and dirt accumulated afterwards.

Prevention

14.9 Dust can originate from both internal and external sources; good housekeeping and simple preventive measures can be used to reduce levels of dust and dirt to a minimum. Special precautions, such as temporary relocation of the collection, is advisable during building work, however minor. Windows should be close-fitting and kept shut, and concrete floors covered or sealed. Many Western instruments were originally supplied with cases or covers; the provision of case-covers for keyboard instruments is very desirable. All instruments in store should be boxed, cased or protected by dust sheets, and there should be large loop-piled doormats at the doors to store-rooms, as well as at all entrances to the building.

Cleaning of premises

14.10 A regular and effective cleaning regime should be established in consultation with a conservator.

14.11 Wet cleaning should never be permitted in the vicinity of instruments.

14.12 Indoors, all surfaces should be vacuum cleaned (not swept), using vacuum cleaners with ultra-fine filters; they should conform to Section 2.2, Supplement 1 in BS 5412: Specification for Type H Industrial Vacuum Cleaners for Dusts Hazardous to Health. Filters should be cleaned and changed regularly.

14.13 Only materials approved by a conservator should be used; some cleaning materials give off damaging chemicals.

14.14 All curtains, dust-sheets, etc, should be washed regularly.

Pollution

14.15 New building work and redecoration can introduce contaminants such as dust, solvent fumes or large quantities of moisture, which are potentially harmful to objects. Action should be taken to remove dust, excess moisture and other contaminants before collections are rehoused following such work. Whenever possible, a newly decorated space should not be used to house objects until tests show that emissions have been reduced to acceptable levels.

14.16 Building and finishing materials give off particles (eg sawdust and concrete dust) and vapours (eg ammonia and water), especially during and soon after application. This may continue for some months; good ventilation will speed the process. Surface drying can be speeded up by using appropriately sized industrial dehumidifiers. As soon as practical after drying out, all porous surfaces should be sealed. Duct grilles should be covered with polythene during building work or redecoration.

14.17 Concentrations of external pollutants such as sulphur dioxide, ozone and nitrogen oxide, as well as smoke, dust and deposits from diesel fumes, can rise to high levels in city air, causing fading and degradation of organic materials, deterioration of inorganic materials and particulate matter, causing staining and soiling. The ingress of pollutants can be reduced by draught-proofing doors, sealing windows, and displaying and storing objects in sealed containers. The reduction of pollutants can be carried out efficiently by air-conditioning plant that incorporates particle filters or activated charcoal filters.

14.18 Many inorganic and organic materials are affected by gases, organic vapours and other compounds given off by construction or display materials such as manufactured boards, natural fibres such as wood felt, fire retardant coatings, recently applied paint and adhesives, and some hardwoods including oak. Time needs to be allocated during the planning of any work for testing of materials before use.

14.19 All materials used for the display, storage or transport of objects should be tested by a recognised method before being used in close proximity to objects.

Pest Management

14.20 Biologically active agents include rats, mice, birds, insects, fungi, algae and bacteria.

14.21 Regular inspections and maintenance procedures will ensure that such agents remain inactive. Procedures should be in place for the quick and effective eradication of pests should an outbreak occur.

14.22 All incoming instruments, together with their associated packaging materials, should be inspected for the presence of biologically active agents before being introduced to the main storage or display areas.

14.23 The storage and use of pesticides is controlled under the Control of Pesticides Regulations, 1986. Remedial treatments using pesticides to eliminate any biological pest should be minimal, in order to reduce the potential risk of damage to objects, the environment, and to staff and visitors.

14.24 A range of new pest fumigation methods are being developed. These include heat treatment, freezing and the use of gases such as carbon dioxide or nitrogen. Much of this work stems from the proposed banning of methyl bromide because of its ozone depleting properties. The advice of an experienced conservator should be sought before a decision to use one of these newer techniques is taken.

Cleaning of objects

14.25 A conservator should make an assessment of the appropriate cleaning method (see also 15.12 and 15.13) for each instrument, based on an appreciation of its importance and

condition, and this should be recorded in the object's documentation. Cleaning should be undertaken only by appropriately trained and supervised staff.

14.26 Dusting is such a common household activity that its dangers when applied to museum objects are often not recognised. Yet dusting can scratch objects, cause breakages, stir up more dust than before and encourage corrosion. Vacuuming is therefore always preferable.

14.27 For dusting, long bristle brushes or well-washed lambswool mops are preferable to cloths and cotton wool.

14.28 The use of a vacuum cleaner together with a brush can help prevent dust removed by brushing from settling on adjacent objects (see 14.9).

14.29 The instrument to be cleaned should be moved as little as possible, and must be stable.

14.30 Textiles, or friable or loose materials, such as old paintwork or veneer, should be cleaned only with the guidance of a conservator.

Wet cleaning

14.31 Normally, no musical instrument should be wet-cleaned, and certainly not without the direct guidance of a conservator.

Sources of advice and help

• Area Museum Councils can point to sources of advice on particular problems and types of object.

• The following publications are useful:

The National Trust Manual of Housekeeping (Sandwith and Stainton 1993) provides good accessible advice on the care of musical instruments. The National Trust also produce an accompanying training video *Keeping House,* 1990.

Barclay, R. L. 1983. 'Instrument Mounts'. In *Anatomy of an Exhibition: The Look of Music,* ed. R. L. Barclay. Ottawa: International Institute for Conservation, Canadian Group.

Horie, C. V. 1992. 'Conservation and Storage: Leather Objects'. In *Manual of Curatorship,* eds. J. M. A. Thompson et al, 340-345. Oxford: Butterworth-Heinemann.

Pinniger, D. 1994. *Insect Pests in Museums.* London: Archetype Publications.

Moncrieff, A. and G. Weaver. 1992. *Cleaning.* 'Science for Conservators' series. London: Routledge.

• Several organisations, including some commercial conservation firms, offer a testing service for the suitability of materials for use in the exhibition or storage of museum specimens. These include:

British Museum Department of Conservation, Great Russell Street, London WC1B 3DG. Tel 0171 323 8772.

Wiltshire Library and Museum Service, Conservation Centre, Wyndham House, 65 The Close, Salisbury SP1 2EN. Tel: 01722 331321.

• The Health and Safety Commission and the Health and Safety Executive publish a great deal of information which is of interest to museum managers. Many publications are available free of charge. Contact: HSE Books, PO Box 1999, Sudbury, Suffolk, CO10 6FS (Tel 01787 881165). A full list of current Health and Safety Commission/Health and Safety Executive Publications, *Publications in Series,* is published twice yearly.

Advice on pesticides is available from all regional offices of the Health and Safety Executive and from:

Registration Section
Health and Safety Executive
Magdalen House
Stanley Precinct
Bootle
Merseyside L20 3QZ

15 Standards for buildings and environment

15.1 The planning phase of all museum projects such as new building works, refurbishment, exhibitions and other significant developments within museum buildings should include assessments of the impact they will have on the museum's environmental conditions and of the potential risks to the collection.

15.2 Buildings used to house musical instruments should be inspected annually to ensure they provide adequate physical protection against the weather and are generally fit for their purpose. Building maintenance should have a high priority and an adequate budget.

15.3 All heating, ventilation and air-conditioning systems should be checked and maintained regularly by suitably qualified engineers. Spare parts should be stocked on site where possible.

15.4 A long-term environmental monitoring programme must be developed. Environmental records should be analysed regularly and summary reports presented to the museum's management team.

15.5 A programme for the regular calibration and maintenance of all environmental monitoring and local control equipment must be established.

Guidelines and notes

15.6 Managing the museum environment includes: monitoring and control of relative humidity, temperature, light (including ultraviolet radiation) and pollution; pest management; and an assessment of the environmental (heat and moisture) impact of visitors.

The building envelope

15.7 New buildings intended to house collections should be constructed so that they perform as good weather buffers by using materials and low-energy design features which help achieve as stable an internal environment as possible.

15.8 When considering the refurbishment or re-use of an ageing building, an assessment of both the building fabric and engineering services should be carried out by a suitably qualified technical expert prior to any decision on environmental control methods.

15.9 If a historic house is to be used as a museum, decisions relating to the provision of environmental control should aim to achieve a balance between the merit and sensitivity of the building fabric and the specific needs of the collections.

Monitoring and control

15.10 Routine environmental monitoring should cover all four seasons and should be related to external climatic conditions and also take account of visitor numbers. (A person can release approximately the same amount of heat as a 60 watt light bulb and 100 ml of water per hour.)

15.11 Engineering services to control the environment must not be used to provide 'a quick technical fix'. They should be designed and used to support and improve, and not to replace, the stability provided by the building fabric. Their primary function should be to mitigate the heat and moisture effects of people.

15.12 Prior to any major new project in an existing building, there should be a short period of intensive monitoring outside the building and at the four compass points within the building. If the building is being considered for use, having previously been unoccupied by the museum, it will establish whether the building is worthy of consideration at all. If it is,

then different areas may be zoned for different activities according to their natural environmental stability.

15.13 Zones within buildings can be created by establishing groups of rooms with similar environmental characteristics, or by locally conditioning one room, or by the use of microclimates within display cases.

15.14 Passive measures to stabilise the environment within a building or a room should be taken first. Draught-proofing, thermal insulation and multiple glazing are ways in which temperature fluctuations can be reduced. However, these measures can also reduce air movement in a space, which can have a harmful effect on collections, buildings and their occupants. Technical advice from a building specialist may be needed to identify the causes of instability before so-called 'improvements' are made.

15.15 Air-conditioning is only one among many options available to control the museum environment and should not be used as a quick fix.

15.16 Air-conditioning can work successfully when the volume of tightly controlled air is restricted, such as in display cases or when a system is installed in new museum buildings. Air-conditioning should preferably be localised.

15.17 A decision to install air-conditioning should be based on:

- the need for tight relative humidity and temperature control for the collection;
- the need to control the heat and moisture effects of large numbers of visitors;
- the affordability of the system, including the running and maintenance costs for the duration of its life.

Maintenance

15.18 Appropriate levels of relative humidity and temperature can be more easily sustained if the building is watertight, with all possible sources of excess damp such as failed or non-existent damp-proof membranes, leaking pipes, water tanks, faulty guttering and missing roof tiles, identified and remedied.

Relative humidity and temperature

15.19 Many musical instruments are very susceptible to damage from unsuitable climatic conditions, and the situation may be complicated if they are made of a variety of materials. Each material, wood, metal, hair, bone, stone, etc, will respond differently to a specific set of environmental conditions. Each material also has a relatively narrow range of environmental conditions within which it is most stable, and the conditions for the various materials found on a musical instrument (or within a collection of instruments) do not always coincide. It is therefore pointless to specify too tightly 'ideal' conditions of relative humidity or temperature. These Standards aim to promote environmental stability (reducing to a minimum the frequency and amplitude of fluctuations) rather than 'ideal' conditions.

15.20 There is an on-going debate about the most suitable levels of humidity and temperature for different historic materials. The levels and tolerances cited in the literature vary and the tolerances specified are, in some cases, impossible for a museum to achieve. Therefore, such information should be used with caution and, where possible, after taking expert advice. For most materials, what is important is to maintain an equilibrium between the moisture content of the object and its environment.

15.21 Appendix A suggests the criteria for different levels of environmental control and for determining the relative significance of the instruments for which the different levels of control might be appropriate.

15.22 Sensitive objects can be stored and displayed in small environmentally controlled space. This could be a room, showcase or box. A solution such as this is cheaper to run, is simpler to maintain, and is safer for objects in the long term.

Light

15.23 Both daylight and electric light may be used to illuminate displays, but all light must be controlled because visible light (and the ultraviolet component) can cause damage to sensitive materials. The most noticeable sign of this is fading or discolouration, but structural damage can also occur in the long term.

15.24 All storage and display areas should be kept dark when not in use. Curtains, blinds, screens or opaque dustsheets provide an effective and economic way of reducing light levels.

15.25 The period of exposure must be kept to a minimum, as damage by light is cumulative. It is possible to vary the amount of light falling on objects, particularly when daylight is used, if a maximum cumulative exposure value (in lux-hours per year) is established. For example, an object normally exposed to 200 lux and illuminated for approximately 2,250 hours during an average year would have a cumulative exposure of 450,000 lux-hours. If the level of illumination was doubled and the period of exposure halved, the cumulative exposure will remain the same.

15.26 Ultraviolet light levels can be reduced by use of protective film or varnish applied to windows and/or lamps. These films have a limited life and require monitoring and regular replacement.

15.27 Both natural and electric light sources produce heat, which can damage objects; for example metal objects will expand as their temperature increases, which may lead to permanent distortion, or displacement of coatings or inlays.

15.28 All instruments should be positioned away from sources of heat, and excess heat should be ventilated away from objects. Some display lighting equipment, notably low-voltage types, produces less heat - though care needs to be taken when positioning their transformers which should be outside display cases.

Exhibition outdoors

15.29 Museum objects should only be taken or displayed outside in very exceptional circumstances. Only in the case of soundscapes, sound machines and aeolian instruments made to be kept outside should permanent exhibition outdoors be considered. Fairground organs and similar instruments may, however, occasionally be demonstrated outside if they have been identified as able to be usable in that way. However, these should only be left outside overnight if they are adequately protected and if this is considered less damaging than moving them between outdoors and indoors.

See *over for sources of advice and help*

Sources of advice and help

• Advice can be given by:

Area Museum Councils
The Conservation Unit of the Museums & Galleries Commission

• A comprehensive introduction to the whole field is:

Cassar, May. 1995. *Environmental Management: Guidelines for Museums and Galleries.* London: Museums & Galleries Commission and Routledge.

• The preprints of the contributions to the International Institute for Conservation of Historic and Artistic Works (IIC) Ottawa Congress, September 1994, contain many important papers on current practice and research in the field of preventive conservation. Several of the papers are cited below. These are published in

Roy, Ashok, and Perry Smith, eds. 1994. *Preventive Conservation: Practice Theory and Research.* London: International Institute for Conservation.

Copies are available from:

International Institute for Conservation of Historic and Artistic Works
6 Buckingham Street
London WC2N 6BA

• Other useful publications include:

Greeves, Margaret, (compiler). 1990. *Caring for Museum Collections. A* video and information pack. Edinburgh: Scottish Museums Council.

Staniforth, S. 'Control and Measurement of the Environment', eds. Thompson, J. M. A. et al, 234-45. 1992. *Manual of Curatorship.* Oxford: Butterworth-Heinemann/Museums Association

Staniforth, Sarah, Bob Hayes and Linda Bullock. 1994. 'Appropriate Technologies for Relative Humidity Control for Museum Collections Housed in Historic Houses'. In *Preventive Conservation: Practice Theory and Research,* eds. Ashok Roy and Perry Smith. 123-128. London: International Institute for Conservation.

Thomson, G. 1986. *The Museum Environment.* London: Butterworth.

Frost, Murray. 1991. 'Planning for Preventive Conservation'. In *Manual of Museum Planning,* eds. B. Lord and G. Dexter Lord, 127-160. London: HMSO.

Chartered Institution of Building Services Engineers (CIBSE). 1994 (revised edition). *Lighting Guide: Museums and Galleries.* London: CIBSE.

Chartered Institution of Building Services Engineers (CIBSE). 1994. *Lighting Guide: Museums and Galleries.* London: CIBSE.

Energy Efficiency Office. 1994. *Introduction Jo Energy Efficiency in Museums, Galleries, Libraries and Churches.* London: Department of the Environment.

16 Standards for moving musical instruments

16.1 The handling and movement of instruments should be kept to an absolute minimum.

16.2 Trained personnel and suitable equipment must be available for the safe lifting and transport of instruments.

16.3 Every move of an instrument should be carefully planned in advance. A sufficient number of staff with appropriate equipment should be available, the route agreed and cleared in advance, and the supervision of the operation agreed.

16.4 Instruments should be protected from physical shock and vibration, and from hostile environmental conditions.

16.5 Staff and volunteers should be trained in the handling and moving of instruments and should be aware of the potential risks to instruments and to themselves.

16.6 Contractors used for lifting and removal work should have proven experience in the field and must work closely with museum staff to ensure best practice in care for the instrument.

Guidelines and notes

16.7 Moving any object involves a risk of damage. Many musical instruments are very delicate, while others are large, complex and heavy; some instruments are all of those things.

16.8 Moving any object, whether manually or mechanically, requires careful planning to ensure that it is done successfully and without danger to people or object.

Manual handling

16.9 Museum objects should be lifted and carried by hand as little as possible. Prior to any lifting operation a full risk assessment should be carried out (see Section 18).

16.10 Trollies or crates - cushioned for example with Plastazote (polyethylene foam) should be provided for the moving of smaller objects.

16.11 All joints should be checked and all loose components should be removed or secured. Accessible moving parts should be padded to avoid vibration, especially those on keyboard instruments.

16.12 All instruments should be adequately supported when lifted. Thus, stringed instruments should be supported at the base as well as at the neck, and heavy objects like pianos should never be lifted by the mouldings.

16.13 Wherever possible, self-opening doors and lifts should be used to make moving objects around the museum easier. Floor surfaces should be clear of obstacles (including matting) and should not be slippery; lighting should be adequate and there should be sufficient space.

16.14 The weight alone of a load is no longer considered a sufficient indicator of whether it may be carried by one person without risk of injury. The object's size, stability and the distribution of its weight must all be considered. However, the Manual Handling Operations Regulations indicate maximum guideline figures for a load, carried at elbow height close to the body, of 25 kg for men and 16.7 kg for women. The maximum weight for loads carried in any other position should be reduced by at least 5 kg, and by 10 kg when lifting from points below elbow height.

16.15 A heavy load should not be carried more than 10 m by one person in one stage. Trolleys should be used, as should lifts of sufficient weight capacity between floors.

Mechanical handling

16.16 Moving larger instruments, particularly keyboard instruments, will normally require some form of mechanical handling.

16.17 The use of pallets and pallet movers, both manual and motorised, is the key to the management of larger instruments. Instruments should be secured to their pallets by strapping devices, web netting or polythene wrapping sheets. Everyone who uses such equipment should receive appropriate training.

16.18 Never rely on an instrument's own castors. Antique keyboard instruments should never be moved on their castors, but always lifted; their legs are often unstable.

16.19 Large instruments should have padding attached to their corners and edges before being moved, and accessible moving parts should be padded to avoid vibration.

16.20 Unless it is designed to be portable, a pipe organ should be moved only by an organ builder or other experienced and qualified person with appropriate historical knowledge. Injudicious handling can easily damage metal pipes.

Sources of advice and help

• Guidance on manual handling will be found in:

Health and Safety Executive (HSE). 1992. *Manual Handling; Guidance on Regulations (Manual Handling Operations Regulations).* London: HSE.

• Standards and guidelines for moving objects, including handling, packing, carriers and agents and couriers, will be found in:

Museums & Galleries Commission (MGC). 1995. *Standards for Touring Exhibitions.* London: MGC.

• Advice on moving musical instruments is included in:

Barclay 1982; Barclay (ed) 1983; and Sandwith and Stainton 1993.

17 Standards for protection of primary records

17.1 Records, including paper, microform, computer disk and magnetic tape, should as far as possible be kept to the standards set out in Appendix B.

17.2 Photographs should as far as possible be kept to the standards set out in *BS 5687: Recommendations for Photographs.*

Guidelines and notes

17.3 Some acquisitions will include, associated with the instruments, such original documents as field notebooks, tape recordings and makers' catalogues (see 2.7). These primary records are distinct from the museum's own documentation (see Section 5), and should be accessioned into the museum collections as museum objects. They need the highest standard of preservation, for they are of equal importance to the instruments themselves in the museum's musical collection.

These primary records should be duplicated so that the originals are handled as little as possible. The originals can then be stored in a different building.

Sources of advice and help

- Valuable guidance is contained in:

Royal Commission on Historical Manuscripts (RCHM). 1990. *A Standard for Record Repositories.* London: RCHM.

Ward, A. 1990. *A Manual of Sound Archive Administration.* Aldershot: Gower Publishers.

East Midlands Museums Service (EMMS). 1993. *Preservation of Photographic Negatives at the National Tramway Museum, Crich, Derbyshire.* EMMS Good Practice Notes. Nottingham: EMMS.

National Preservation Office (NPO). n/d. *Photographic Conservation.* London: NPO.

Preservation and Conservation Group of the Society of Archivists. 1994. *Directory of Suppliers.* London: Society of Archivists.

- Advice can be obtained from:

Royal Commission on Historical Manuscripts
Quality House
Quality Court
Chancery Lane
London WC2A 1HP
Tel: 0171 242 1198
Fax: 0171 831 3550

National Sound Archive
29 Exhibition Road
London SW7 2AS
(Tel 0171 412 7000)
(Fax 0171 412 7441)

Society of Archivists
Information House
20 - 24 Old Street
London EC1V 9AP
Tel: 0171 253 5087
Fax: 0171 253 3942

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18 Standards for protection of people from objects

18.1 All museums must comply with the letter and the spirit of all legislation designed to protect the health and safety of people on the museum site.

18.2 The museum must draw up and maintain a Safety Policy, covering all aspects of its work. The Policy should take into account the various categories of people using its premises, from schoolchildren to specialists, and should seek to identify and prescribe for all risks inherent in the museum's premises, collections and activities.

18.3 All objects must be positioned and protected so as to minimise the risk of direct physical injury.

18.4 All museum staff and volunteers must receive regular training in health and safety aspects, and should be fully familiar with the museum's Safety Policy.

Guidelines and notes

18.5 Although this booklet is principally concerned with the protection of objects, the museum's first responsibility is to protect people, and the two need to be parts of one policy and approach. This section therefore draws attention to some of the particular threats posed by musical instruments.

18.6 A wide variety of health and safety legislation applies to museums, and serves to help protect visitors, volunteers and staff. The principal laws affecting museums in the United Kingdom are:

- Health and Safety at Work Act 1974
- Health and Safety (General Provisions) Regulations 1992
- Management of Health and Safety at Work Regulations 1992
- Provision and Use of Work Equipment Regulations 1992
- Manual Handling Operations Regulations 1992
- Workplace (Health, Safety & Welfare) Regulations 1992
- Personal Protective Equipment at Work Regulations 1992
- Offices, Shops and Railway Premises Act 1963
- Control of Substances Hazardous to Health Regulations 1988
- Transport and Works Act 1992
- Environmental Protection Act 1990
- Factories Acts

18.7 Generally speaking, most types of musical instrument pose few hazards. Some hazards that may be found in musical instruments are:

- instability: unstable instruments should be securely mounted using materials that are sufficiently strong to bear the load;
- inadequate space: instruments and showcases should be sufficiently spaced to allow people to pass without having to push against them;
- electrical instruments should be fully checked before being used;
- electronic instruments can be dangerous; they should always be unplugged and their batteries removed when not being played;

- wooden instruments may have been treated with insecticide, which could seriously affect a player;
- the strings of stringed instruments can be dangerous if they break;
- the springs of many clockwork instruments can be very powerful;
- whistling arrows from certain cultures may have been treated with poison;
- horn instruments or parts may carry anthrax;
- piano lids and fallboards can be insecure; upright pianos can topple;
- bells, if hung, can fall;
- old paint and the corrosion salts of lead can be very toxic;
- reeds and mouthpieces can be insanitary.

18.8 Where instruments are to be played or examined closely, care should be taken to ensure that loose ends of strings, sharp pins and pegs, and other similarly hazardous objects, are protected or tucked away safely.

Sources of advice and help

- The Health and Safety Executive has a number of local offices throughout the United Kingdom, and should be consulted at an early stage. A full list of current Health and Safety Commission/Health and Safety Executive publications, *Publications in Series,* is published twice yearly. Contact: HSE Books, PO Box 1999, Sudbury, Suffolk, CO10 6FS (Tel 01787 881165).

- Two organisations able to offer advice and help to members are:

RoSPA
Cannon House
The Priory
Queensway
Birmingham B4 6BS
Tel: 0121 200 2461
Fax: 0121 200 1254

The British Safety Council
National Safety Centre
Chancellors Road
Hammersmith
London W6 9RS
Tel: 0181 741 1231

A Sample care programme

The following is an example of an approach to grading of collections care based on an assessment of an object or collection. The assessment of the significance of the object or collection must be based on condition and vulnerability as well as rarity or value. It may not necessarily be appropriate to subject the most significant objects to tight control when these are robust. This assessment could be applied to a single item, a collection or a whole museum. A museum may have areas where tight control is in operation and others where low control is appropriate. The status awarded an object or collection should be reflected in all aspects of its care and use, including security, documentation, conservation, display, interpretation and access. This scheme is not designed specifically for musical instrument collections but could be adapted.

Category of Object	Standard of Care
Category A: Objects which are internationally significant, or nationally very rare and vulnerable.	Tight Control
Category B: Objects which are nationally significant, regionally rare or internationally important but robust.	Moderate Control
Category C: Objects which are locally significant and/or central to the museum's collection or display and activities.	Simple Control
Category D: Objects which are useful for demonstration.	Basic Control

The fabric of the building housing the object or collection forms the primary means of providing a suitable stable environment. If due care is taken to ensure that a building is well insulated, maintained to a high standard and care is taken in the positioning of objects, this will go a long way to ensuring a long life for them. This involves a full understanding of the construction of the building and its services, the way it interacts with the external climate and climate modifiers such as people, kitchens, routine cleaning operations, and a knowledge of the materials of which the object/collection are made (see Sections 14 and 15). An up-to-date introduction to the whole field is given in: Cassar, May. *Environmental Management: Guidelines for Museums and Galleries.* 1994. London: Museums & Galleries Commission and Routledge.

Tight control is normally only possible in the best resourced institutions. It involves having buildings built to the highest specifications for maintaining a stable environment and fitted out with 'state of the art' monitoring and control equipment. This level of care also requires a team of dedicated collection-care staff including curators, conservators, building engineers and technical support staff together with management systems and staff structure such that they can address the demands of monitoring and maintaining these high standards. The financial implications of this level of care should be taken into account in the overall budget.

Definitions

A. Tight Control

Condition of objects/collection

A programme of monthly object condition checks is in operation. Any object deemed to be highly sensitive or vulnerable should be examined more frequently.

Environmental monitoring

The environment of all display, storage and conservation areas is monitored continuously, and a programme of analysis and interpretation of the collected data is in place.

Environmental control

- Relative humidity

  Relative humidity should be controlled to within a band of +/- 4% of a specified level for greater than 90% of the time. This is the band of control that readily available technology can deliver, although it is possible to design systems to control to +/- 2%.

  The *rate of change of relative humidity* should, as a general rule, not be greater than the equivalent of 10% in a 24 hour period [1],

  Repeated sharp fluctuations in relative humidity should not occur. As a rule, any event repeated with a frequency of greater than once in 24 hours should be investigated and steps immediately taken to identify the cause and to rectify the problem.

- Temperature

  Temperature is controlled to within a band of +/- 2°C of the specified level for greater than 90% of the time.

  The rate of change of temperature should, as a general rule, be less than 10°C in 24 hours[1].

- Light

  All light is excluded except for periods of display or inspection. Light levels should be kept to a level which gives maximum protection to the most vulnerable element of the object. Alternative strategies may be available to protect particularly vulnerable elements of an object, eg removal for storage elsewhere or localised protection in situ.

  Both duration and level of illuminance are important when assessing the possible damage caused by light; both should be kept to a minimum.

  Objects should be exposed to no greater than 10 μWatts per lumen of UV radiation from all sources of daylight and electric light combined. The performance of UV filters fitted to lamps, windows, skylights, etc, should be checked every 6 months during the first five years of use and monthly thereafter.

Pest control

An integrated pest management programme is in place. This involves good building maintenance, a thorough cleaning programme, exclusion of sources of risk, eg food and drink, and monitoring and trapping of pests.

Air quality

Air entering the display or storage areas is filtered to remove more than 95% of particulate and gaseous pollutants. Where mechanical ventilation is available the condition of filters should be capable of being checked by measuring the pressure drop across the particulate filter. Internal air quality should be checked at least every 6 months. Where appropriate, display cases having reduced air exchange can be used to minimise the effects of external

pollutants. Display and storage materials should be tested for any possible harmful effects, using the procedures established by the Department of Conservation at the British Museum.

Maintenance plan

A planned preventive maintenance programme is in place for all buildings and equipment.

A programme of servicing and calibration of monitoring equipment is in place. Frequency of servicing and calibration will vary according to the type of equipment used but in general thermohygrographs should be cleaned and calibrated every two months and/or whenever moved.

Documentation

All procedures are logged and data is available in a readily accessible form.

Quality control

A programme of continuous monitoring and assessment of performance of all the above is in place together with a scheme to evaluate and revise all operational procedures.

B. Moderate Control

Condition of objects/collection

A programme of three monthly condition checks is in operation.

Environmental monitoring

The environment of all display, storage and conservation areas is monitored continuously, and a programme of analysis and interpretation of the collected data is in place.

Environmental control

- Relative humidity

  Relative humidity is controlled to within a band of +/- 10% of a specified level for greater than 90% of the time.

  The *rate of change of relative humidity* should, as a general rule, not be greater than the equivalent of 10% in a 24 hour period [1].

  Repeated sharp fluctuations in relative humidity should not occur. As a rule, any event repeated with a frequency of greater than once in 24 hours should be investigated and steps immediately taken to identify the cause and to rectify the problem.

- Temperature

  Temperature is controlled to within a band of +/- 5°C of the specified level for greater than 90% of the time.

  The *rate of change of temperature* should, as a general rule, not be greater than 10°C in 24 hours [1].

- Light

  All light is excluded except for periods of display or inspection. Light levels should be kept to a level which gives maximum protection to the most vulnerable element of the object. Alternative strategies may be available to protect particularly vulnerable elements of an object, eg removal for storage elsewhere or localised protection in situ, where it is not necessary to protect the whole object.

  Both duration and level of illuminance are important when assessing the possible damage caused by light; both should be kept to a minimum.

Objects should be exposed to no greater than 10 μWatts per lumen of UV radiation from all sources of daylight and electric light combined. The performance of UV filters fitted to lamps, windows, skylights, etc, should be checked every 6 months during the first five years of use and monthly thereafter.

Pest control

An integrated pest management programme is in place. This involves good building maintenance, a thorough cleaning programme, exclusion of sources of risk eg food and drink, and monitoring and trapping of pests.

Air quality

Air in the display and storage areas is filtered to remove more than 90% of particulate pollutants. Where mechanical ventilation is available, the condition of particulate filters should be capable of being checked by measuring the pressure drop across the filter. Where the level of gaseous pollution is of concern, consideration should be given to the installation of gaseous filters. Internal air quality should be checked at least every six months. Where appropriate, display cases having reduced air exchange, can be used to minimise the effect of external pollutants. Display and storage materials should be tested for any possible harmful effects, using the procedures established by the Department of Conservation at the British Museum.

Maintenance plan

A planned preventive maintenance programme is in place for all buildings and equipment.

A programme of servicing and calibration of monitoring equipment is in place. Frequency of servicing and calibration will vary according to the type of equipment used but in general thermohygrographs should be cleaned and calibrated every two months and/or whenever moved.

Documentation

All procedures are logged and data is available in a readily accessible form.

Quality control

A programme of continuous monitoring and assessment of performance of all the above is in place together with a scheme to evaluate and revise all operational procedures.

C. Simple Control

Where simple control is appropriate the building forms the primary, and perhaps only, means of providing a stable environment. Where this level of control is appropriate maintenance of buildings must have a high priority and adequate funds should be included in the budget.

Condition of object/collection

A programme of annual object condition checks is in operation. This work should be undertaken by a conservator or other person experienced in caring for the object type.

Environmental monitoring

The environment of all display, storage and conservation areas is monitored. This may be done by using recording devices or by a regular programme of spot readings. A programme of analysis and interpretation of the collected data should be in place.

E

Environmental control

- Relative humidity

  Relative humidity is maintained within a band of +/- 10% of the daily average for greater than 75% of the time. Good draught proofing, insulation, building maintenance and, where appropriate, local humidification or dehumidification should enable this to be achieved.

The *rate of change of relative humidity* should, as a general rule, not be greater than the equivalent of 10% in a 24 hour period[1].

Repeated sharp fluctuations in relative humidity should not occur. As a rule, any event repeated with a frequency of greater than once in 24 hours should be investigated and steps immediately taken to identify the cause and to rectify the problem.

- Temperature

In occupied buildings the temperature should be maintained between 16°C and 19°C to meet legal requirements. In unoccupied or infrequently used buildings the temperature can be allowed to fall to 7°C and be controlled by a humidistat rather than a thermostat.

- Light

  Daylight is not allowed to fall directly on objects. Blinds and filters are fitted to the windows of all rooms where objects are stored or displayed. All light is excluded except for periods of display or inspection. The elements of objects which are most vulnerable to damage by light should receive special protection. Light is excluded when the building is closed and/or not in public use.

  Objects should be exposed to no greater than 10 μWatts per lumen of UV radiation from all sources of daylight and electric light combined. The performance of UV filters fitted to lamps, windows, skylights, etc, should be checked every 6 months during the first five years of use and monthly afterwards.

Pest control

An integrated pest management programme is in place. This involves good building maintenance, a thorough cleaning programme, exclusion of sources of risk, eg food and drink, and monitoring and trapping of pests.

Air quality

The building can act as an effective buffer to protect from external air pollutants if air infiltration has been reduced. A 'building within a building' and display cases having reduced air exchange, can provide a higher degree of protection.

Maintenance plan

A planned preventive maintenance programme is in place for all buildings and equipment.

A programme of servicing and calibration of monitoring equipment is in place. Frequency of servicing and calibration will vary according to the type of equipment used but in general thermohygrographs should be cleaned and calibrated every two months and/or whenever moved.

Documentation

All procedures are logged and data is available in a readily accessible form.

A

Quality control

A programme of continuous monitoring and assessment of performance of all the above is in place together with a scheme to evaluate and revise all operational procedures.

D. Basic Control

This applies to structures which do not have a satisfactory environmental performance to protect the object/collection. As a minimum all objects are protected by tarpaulin over a framework (so as not to touch object and to permit good air circulation) or simple roofed structure with walls to protect from the prevailing weather. Where it is not possible to cover an object other protective measures can be taken; specialist advice should be sought. Where appropriate, objects should be on a hard standing and rainwater should be diverted away to a drain.

It is extremely unlikely that musical instruments would be assessed as requiring such minimal levels of control.

Condition of objects/collection

Objects are prepared for storage outside (moving parts greased, ash, etc, removed, potential nesting sites for birds and mammals blocked).

Condition of objects is checked at least every 12 months but preferably at 6 month intervals.

Pest control

Regular inspections for pests are undertaken. Action is taken where pest infestations have occurred.

Quality control

All procedures are reviewed annually.

Notes

[1] Any event when this *rate of change* is exceeded should involve investigation of monitoring equipment, environment, building use, etc, examination of its effect on the object to explain the change. The object should be examined for any harmful effects. Steps should be taken to ensure that no such event occurs again.

Definition of terms

Specified level - The term *specified level* is used when describing the level of relative humidity or temperature. No recommended level has been given in this section as its aim is to emphasise the importance of maintaining *stable* environmental conditions rather than ideal conditions for the material of which an object was made when new. Continuity of the conditions with which objects have reached an equilibrium should normally be maintained.

Event - This term is used to describe a deviation from the normal, such as a sudden rise or fall of relative humidity and/or temperature.

B Relative humidity and temperature for the storage of records relating to musical instruments[1]

Materials	Ambient Temperature[C]	Ambient Relative Humidity	Microclimates[2] (Where needed)
Historical Records:			
Documents on paper	13°- 18° [3]	55 - 65% [3]	Not applicable
B&W prints	15° - 20° [4]	30 - 50% [4]	Prevention of condensation on cooled material important
B&W negatives:			
Cellulose ester base	<20°C [5]	15 - 40% [5]	
Polyethylene terephthalate base	<20°C [5]	30 - 40% [5]	
Glass negatives (silver image photographic plates)	15° - 25° [7] (preferably below 20°C)	20 - 50% [7] (preferably below 40%)	
Modern Records:			
Magnetic recording media	18° - 22°C [6]	35 - 45% [6]	
Optical or laser discs	18° - 22°C [6]	35 - 45% [6]	
Microform/Film (master & copies):			Prevention of condensation on cooled materials important
Cellulose ester base	<20°C [5]	15 - 40% [5]	
Polyethylene terephthalate base	<20°C [5]	30 - 40% [5]	
Colour slides/negatives	2°C or below [4][2]	25 - 30% [4][2]	Higher than necessary RH accelerates deterioration
Colour prints	2°C or below [4][2]	30 - 50% [4][2]	

Notes

[1] There is great debate about acceptable levels. In general the nearer the minimum figure quoted the better.

[2] Take advice on microclimates. Refrigeration of these materials should include RH buffering with conditioned silica gel. Allow materials to acclimatise to room temperature before use, and provide moisture sorbents, eg bagged silica gel, to counteract any possible condensation.

[3] BS 5454

[4] ISO 6051

[5] ISO 5466

[6] BS 4783

[7] BS 5687

Categories of use

The following categories of use, originally devised by Myers for Western wind instruments (Myers, Arnold. 1987. The Conservation of Wind Instruments'. *Conservazione, Restauro e Riuso degli Strumenti Musicali Antichi: Per una Carta Europea del Restauro.* Florence: Olschki.) may be helpful to those drawing up a Care Plan for an instrument, particularly for one that may be considered for playing (see 3.8 and Section 4).

Category of use

Category 1
Instruments not played at all, any information coming from observation, measurement and non-destructive tests.

Category 2
Instruments played for short periods under specialist guidance by an appropriate player, purely for information extraction, such as cataloguing. All information derived from such playing should be documented.

Category 3
Instruments used by specialist performers who can learn from the instrument and communicate their findings, generally on the premises of the museum so that environmental conditions and length of use can be controlled. All such performances should be recorded to the highest possible standard and the record preserved (see Section 17). Here the gain in information is expected to outweigh the marginal increment in wear: the playing is for information rather than for pleasure.

Category 4
Instruments used on rationed occasions for specific performances and recording sessions by established musicians accustomed to the kind and period of instrument. Curators should remember that some of the most distinguished artists can have the least respect for old instruments: the choice of performer is crucial to the well-being of the instrument.

Category 5
Instruments freely lent to players for performance, practice and learning on.

D Glossary of terms

1 Documentation

The following terms, not all yet standard in museum work, have been adopted in this booklet and are recommended.

Object File:

The Object File (or series of files) supplements the museum's catalogue entry, and is the repository for other information about the object in correspondence, notes, press cuttings, curatorial and conservation reports etc. The Object File of a larger object should contain copies of its Conservation/Maintenance Care Plan and Conservation/Maintenance Record, and - if is a working object - also copies of its Operating Manual and Operating Log.

Other names for the Object File include 'Object History File', 'Supplementary Information File' or 'Technical File'.

Object Files need to be accessible by accession number.

Conservation/Maintenance Care Plan:

Sets out a programme of care for each individual instrument.

Conservation/Maintenance Record:

Records all work carried out on each instrument, whether routine maintenance work, cleaning or active conservation, restoration or repair.

Operating Manual:

Where an automatic instrument is to be played or sounded, the Operating Manual gives instructions on how to do so.

Playing Log:

Where the instrument is played or sounded, the Playing Log records all operations. It may overlap with, or even be combined with, the instrument's Conservation/Maintenance Record.

2 Treatment terms *

Conservation:

All actions aimed at the safeguarding of cultural property for the future. The purpose of conservation is to study, record, retain and restore the culturally significant qualities of the object with the least possible intervention.

Preservation:

All actions taken to retard deterioration of, or to prevent damage to, cultural property. Preservation involves controlling the environment and conditions of use, and may include treatment in order to maintain a cultural property, as nearly as possible, in an unchanging state.

Reconstruction:

All actions taken to recreate, in whole or in part, a cultural property, based upon historical, literary, graphic, pictorial, archaeological and scientific evidence. Reconstruction is aimed at promoting an understanding of a cultural property, and is based on little or no original material but clear evidence of a former state.

Restoration:

All action taken to modify the existing materials and structure of cultural property to represent a known earlier state. The aim of restoration is to preserve and reveal the aesthetic and historical value of an cultural property. Restoration is based on respect for the remaining original material and clear evidence of the earlier state.

Footnote

* taken from the Glossary in:

The International Institute for Conservation - Canadian Group, Canadian Association of Professional Conservators. *Code of Ethics and Guidance for Practice.* 1986. Ottawa IIC-CG/CAPC.

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