

March 14, '96

Dear Ery,

I hope everything is well with you. Our keyboard project has been delayed a bit because Brian has not been able to get the Pavo box to function. While he was here (4 months) we were able to get quite a bit of music recorded. I have been doing well. I recently finished building two Pentaphones (the pentatonic idiophone instrument I built 10 years ago) which were contracted through the Exploratorium's Exhibit Services. They build exhibits they have developed for other hands-on museums. It seems that the idea of the hands-on museum is really taking off and I am benefiting. The great news is that I have the inside track on designing a sound museum for the huge Exposition 2000 in Hannover, Germany. I am taking German in preparation. I will probably know in about a month if I will be designing this Sound Exploratorium. I feel I have about a 60% chance of landing the contract. If I do, I will be very busy for the next few years. This will mean that I will be the main designer for the whole project. I'm sharing this with you because you know that I wanted to have a sound museum in San Diego. The Sonic Arts Gallery was the test market of that idea, but San Diego has very little philanthropic base, so...it didn't work out.

The Germans are, with this Exposition 2000, recreating Hannover as the beacon of the 21st Century and they have already funded the project and have huge buildings earmarked for development. They have been in touch with Richard Ford who is the boss at Exhibit Services and since I was there for most of the month of January, finishing my project, I got the lead.

My main objective (which has unwavered from before) is to put musical situations in people's fingertips. To let them in on the joy of creating music by pushing sounds around and interacting with others in that delightful practice. For too long, music has been an elitist activity which has been dichotomized into the doers and listeners. It has always been my dream to create a space where the joy of musical participation can be available to everyone. The context of this is to avoid traditional notation and keyboard schemes and design exhibits which invite participation. Actually seduce the participants into the joy of making music.

I'm going to take you on a tour of my ideas for the larger rooms. So far the main rooms (moving counter-clockwise) will be around the perimeter of the Expo. The EAR(N)TRANCE; leads the public through a giant ear. Then, after the "earie canal" (where a large clear-plastic tube will have fiberoptic 'cilia' to model how sound rolls through the canal), a huge mural of the middle and inner ear will lead to a room with exhibits all about sound and the human body. You might have some input here. I want people to understand the body from a musical standpoint, such as a plastic-like cadaver which, when touched, would produce sounds that would correspond to that part of the body. There are six exhibits in this area which I have sketched out.

After that one enters the WORLD MUSIC ROOM. There the participant puts his finger on any area of the globe and an LED lights up and a convient CRT displays many aspects of the given culture. Then there is a keyboard which has software which will play the given culture's music. Then, through multi-tasking one can change instruments and use instruments from any other part of the globe and hear the music of the chosen culture in a new way. The idea is to introduce the participant to a broad cultural divsity, and then to allow creative choices to produce a musical multicultural product.

This leads into the SPACE ROOM. In the space room, there will be recordings from radio telescopes and some of the sounds NASA has brought back, and again through special mixing and simple effects which will be available, the participant will be able to invent the spatial sounds of his/r dreams. There may be many types of midi synths controling the sound resources or there may one central module with a large brain which all sounds come from.

After this is a long hallway 40 to 80 ft. which will be the RAINFORREST. A huge mural with sculptural apparata will put the participant right in the middle of the rainforrest. As the participant looks around, he sees trees, plants and animals. A smaller copy of the mural along the walkway allows the participant to find said animal or brook or river and play that sound by pressing a button (LED lighting up) and magically the sound of that thing speaks it's tune. So, as people are walking down the hallway, they are playing the RAINFORREST. Near the end of the hall is a group of instruments which would likely be found in these cultures. So, people will hear instrumental sounds along with the environmental sounds. At the end of the hall as it turns, one hears the sound and sees the fire which is destroying said resource and then one sees (and, of course hears) machinery which is resurfacing the Rainforrest into farmland. At the end, one sees crops and hears only farm animals and machinery.

The next sound experience is the NOISE exhibit. In this exhibit, all types of noise from the city will be available to the participant. Through virtual reality headset stations people will be able to experience downtown Tokyo or New York at different times or a factory or a number of noise producing events (maybe a Metalica rock concert) and real get blown away if they so desire. The other part of this exhibit will be a remake of Arthur Frick's HUMMER, which is an alter to our electronic appliances. Behind the glass one sees sewing machines, electric saws, a radio, and a couple of dozen other appliances sitting there in a soft candle-lit envinonment. The keyboard allows the player(s) to mix the sounds and hear a concert of our household instruments (appliances).

After this room is the SILENT SOUND CHAMBER, which is sort of a an anochaic chamber, but not quite. Anyway, people will be encouraged to make no sounds at all, which is imposible, but the process of trying will be an ear-opener to all.

Now we are more than half way around the perimeter of this 20k to 50k sq. ft. building. Now after we have had various hands-on creative sound and music experiences we are ready for the punchline, the **KEYBOARD ROOM**. In this room will be keyboards of various patterns. For the first time one will have one conventional keyboard to try next to a number of Partchian, Wilsonian, Wesleyan, (and Bosanquet of course) keyboards. This will be "pass the muster" test for the new keyboards. We want to set this one up so any dope can see that the generalized formations will produce quicker learning and ergonomic bliss when compared to the keyboredom of the present. This is where we really get a chance to point the way to the future. I know that you are working on your special keyboard which you hope to market, but what better way could there be than to create an exhibit in a hands-on museum where thousands of people will be using and testing the viability of new keyboard arrangements?

Next is the **PENTAPHONE STAGE**, which is a 100-200 seat theatre which has a Pentaphone on it. When it is not being used as the Theatre for new instruments and improvised music, it is an exhibit which has shown over eleven years of success. Behind the stage is a staging area behind that a multimedia studio with offices.

The other Theatre, which is a dome-like structure in the middle of the hall is the **SENSORIUM**. This will be a theatre-in-the-round affair which will be a high tech synesthesia environment. The Shadow and Light Dancer connected to the Hotz technology will be stage center. Also, there will be a screen on the ceiling and video monitors and speakers abound. The exact configuration will be worked out by a team, as will all the exhibits. This one will relate to young people and will have the feel of a "rave".

The last two larger rooms are museum/galleries. One is the **Museum of Electronic Music**, which will house Ivors treasures plus a Thereminvox and what ever else can be obtained. The other is the **Museum of New Instruments and Sound Sulpture**, which speaks for itself. That gallery will have revolving exhibits by important contemporary musicians. They will be encouraged to perform at the Pentaphone Stage. So, the focus will not be a museum of the past except for the electronics part, but a window from the present to the future.

What I will not go into here are the 20 to 30 other exhibits which will be scattered around the floor of the Sound museum. I will go into more detail later.

What we have here is a genuine opportunity to create a new way of presenting sound and music to the public. As you see, the attitude is from the improvisers (players) viewpoint. There is usually some sort of keyboard with buttons to push which gives the participant creative license to join with others in the exploration of sounds. It is in this spirit of creative collaborative sound making that this Sound Museum Project is being designed.

Outline for ZOUNDS Music Exhibit

(to do and to notice)

Concept

Purpose: To create a touring museum exhibit which shows how science interacts with emotions through the human senses of hearing, touch, movement and sight to produce music. There will be an attempt to slice through the barriers of non-involvement by an inviting look and feel to each hands-on exhibit. Also, the overall visual style of presentation will be to show the shapes of music (wave forms, keyboard patterns, melodic and rhythmic patterns). Discrimination of pattern recognition and creative (musical) choices are the foundations which each exhibit will lead the participant down the road to simple or complex activities.

Exhibits

Rooms or Areas-

- A **Pentaphone Theater** A small theater dedicated to musical improvisation and presentation of unique musical instruments in concert. A pentaphone will be built into a sizeable stage (see sketch) which will be used as an exhibit where people can listen passively or play actively.
- A **Sounds of the Rainforrest** a muraled room which put the participant in the environment which s/he can see and hear the animals, and hear rain and river sounds as well as an area where there are built-in instruments (Planks-A-Lot, rainstick chorus, animals of the rainforrest, metal and wood hand drums, tree harps, panpipes)
- A **Sensatorium** Synesthesia-melding of senses/arts. (Shadow dancer). Other instruments and environments which combine arts and sensory involvement.
- A **Keyboard Patterns** An exhibit which shows the properties of various keyboards and the difference between a generalized keyboard and one which is not. Array keyboard, Wilsonian (nesting scales, Bosanque, 12).
- A **Noise and Music** (Hummer-an array of household instruments. **Computer Music Stations** The latest in simple music making computer software which allows full interaction with high success quotient.
- A **Human Ear** an exploded view of the ear and how it changes sound waves into brain messages. *WALK-IN*
- K **Resonators** Exp EXH
- K **Nodes of Bars and Plates.**
- K **Waveform Graphics** Instrument which projects wave forms on wall and then one notices how they sound
- K **Horns and Reeds** Pentahorn, Pentareed
- Space Plates and Percussion Boards** Tom Nunn's instruments
- Harmonic Series Generator** EXP EXH
- Instruments which use water** Jacques Duden
- Violin Acoustics**
- Flute Mechanism** EXP EXH

* LONG STRING TRANS DUPE FINDS HARMONIS

* GRAPHIC WHICH SHOWS 12 VS RATIOS.

A. Electronic music

* section on sound synthesis - music concrete theremin

diff between analog - digital theremin - synthesizers