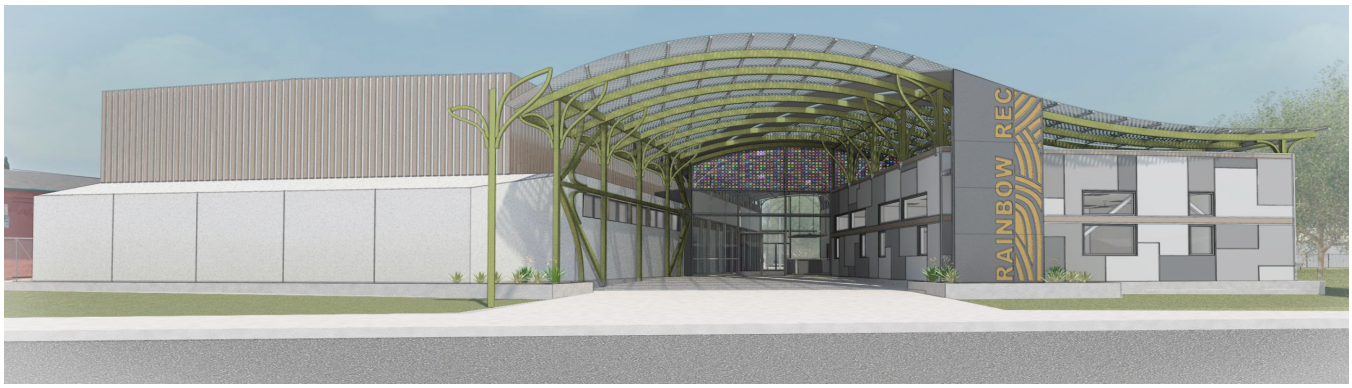


Artistic Enhancements for the new Rainbow Community Center
(Draft)

proposed by Peter Richards, Project Artist, in concert with Bryens Kim Design Works.

The intention of this process is to physically define the Center's role as a forward thinking center of cultural life in an Oakland neighborhood and to define the nature of its' inclusiveness and connectiveness.

Components include a series of related design details, when taken together, reflect the welcoming and inclusive atmosphere of Rainbow Recreation Center.

Welcoming Arch – The street side surface of the overreaching canopy arch is clad with diffraction grating – a subtle reflective coating which provides glimpses of intense color depending on light conditions and the positions of the sidewalk pedestrians or people passing by in their cars.

Shadow Canopy – A roof of perforated metal bridging the space between the gym and the new construction, creating lively shadow play as its' patterns move across the horizontal and vertical planes of the building, bringing to mind the playful atmosphere of the center throughout the day.

Sundial– a long narrow cut sliced through the canopy roof, aligned with the earth's north-south axis, creates a band of sunlight that moves slowly through the space of the building in time with the movement of the earth. A marker line in the atrium floor marks the location of the light band at local noon everyday.

Marble Tapestry – panels of frosted playing marbles create a rich tapestry of light located in the clerestory of the Lobby. Responding to the exterior light conditions of the day it becomes a playful celebration

of light, color, and the Rainbow Center's desire to be a place for peoples of all color.

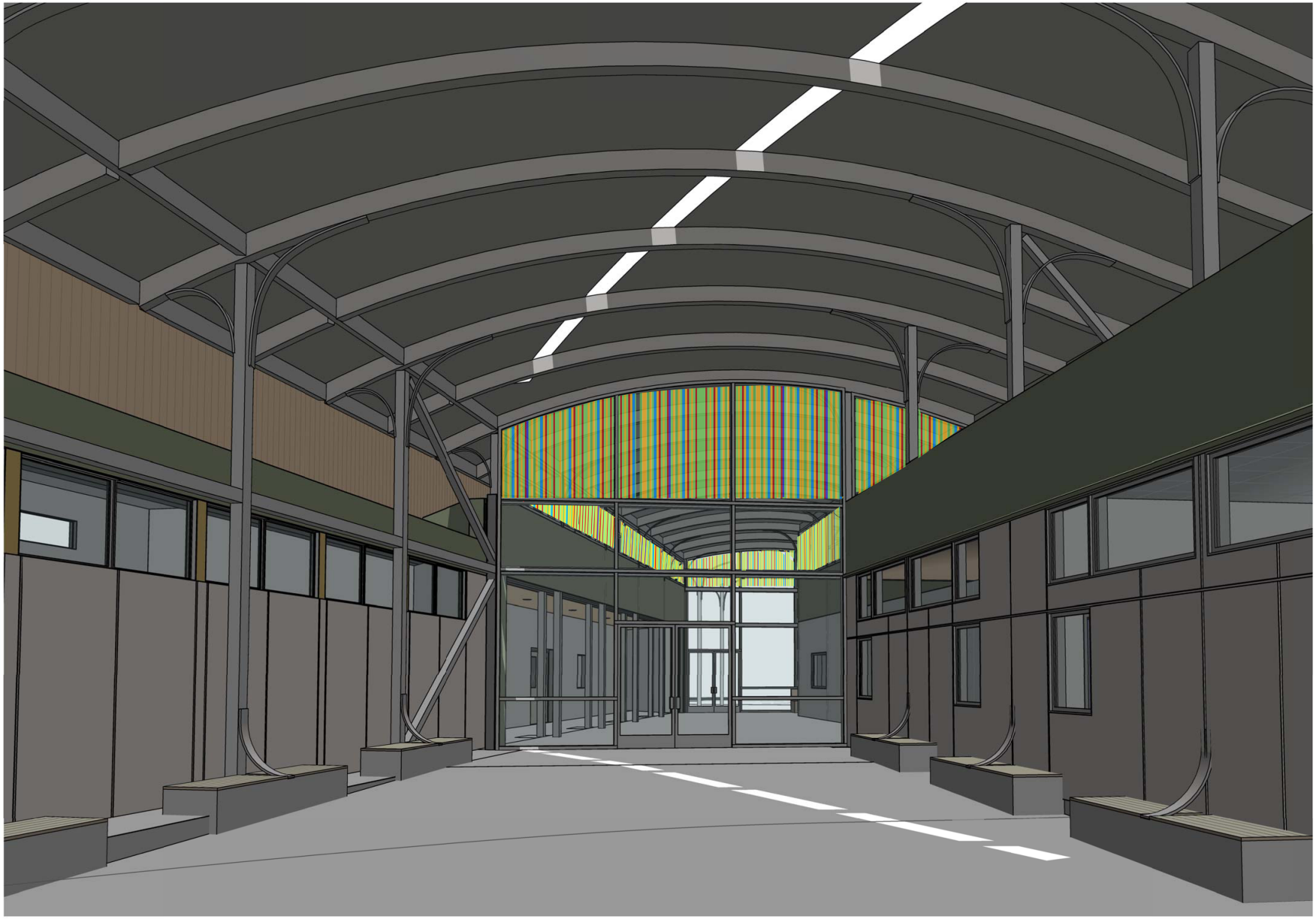
Gliding Colors – multiple bands of colors glide slowly across the walls and floors of the Lobby in time with the sun, created by narrow skylights treated with diffraction grating. This element serves as a complement to both Noon Marker and the Marble Tapestry.

Learning Opportunities:

Welcoming Arch – The material used to create the reflected colors is a diffraction grating. Acting in a somewhat similar fashion as a prism, this material has minute ridges on its' surfaces which disperse different wavelengths of light, resulting in rainbow like spectrums of light. This phenomenon could be the basis for studies of the **nature of light**.

Shadow Canopy – when the sun shines through the roof made with perforated metal, complex geometric shadows are formed on the floor and walls of the building. The dark aspect of these shadows are easy to understand because the perforated roof blocks some of the light, creating the shadows. The light that is not blocked creates pinhole images of the sun. There are many fascinating things that can be done with this phenomenon including constructing pinhole cameras. **Light and Shadow Studies** can be linked to the above studies of the Nature of Light.

Solar Noon Marker – It is possible to design a curriculum around the notion that noon can be marked by having a slit cut in the roof so the strip of light falling on the floor of the building will always align with a strategically located mark. The mysteries to be solved begins with: "why is Solar Noon different than Pacific Standard Time?" (The fact that PST is noted at Longitude 120° while the Center is located further west at Longitude 122°.200 is one of the clues).



Sundial - roof opening, sun ribbion and marble tapestry in background.

Marble Tapestry Prototype

SUNDIAL

Our life and all life on our planet depends on the interaction of the sun and earth. Here in the atrium of the Rainbow Center you can watch the sunlight travel across the floor in a very predictable fashion. The marker in the floor indicates where the sunlight will fall at *local noon* every single day. Because local noon and *clock time* are almost never the same, use the chart below to predict when the sun ribbon will be centered on the line in the floor at clock time or Pacific Standard Time.*

TRY THIS: Find today's month and day on the chart. In that square is the time when the ribbon and line will be centered on each other. The blue shading on the chart indicates Pacific Daylight Time so please add one hour to that time.

NOTICE: The times are different from day to day. Our solar system is not a perfect machine – its movements slow down and speed up throughout the year. These changes are small but enough to create these daily differences.

Solar Noon Calendar for RAINBOW COMMUNITY CENTER

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	12:12:20	12:22:20	12:21:01	12:12:32	12:05:54	12:06:45	12:12:49	12:15:11	12:08:51	11:58:23	11:52:19	11:57:54
2	12:12:48	12:22:27	12:20:49	12:12:15	12:05:47	12:06:55	12:13:00	12:15:07	12:08:26	11:58:04	11:52:18	11:58:17
3	12:13:16	12:22:34	12:20:36	12:11:57	12:05:41	12:07:05	12:13:11	12:15:02	12:08:06	11:57:45	11:52:18	11:58:41
4	12:13:43	12:22:40	12:20:23	12:11:40	12:05:36	12:07:16	12:13:22	12:14:56	12:07:46	11:57:26	11:52:18	11:59:05
5	12:14:10	12:22:45	12:20:10	12:11:23	12:05:31	12:07:26	12:13:33	12:14:50	12:07:26	11:57:08	11:52:20	11:59:30
6	12:14:36	12:22:49	12:19:52	12:11:06	12:05:26	12:07:37	12:13:43	12:14:43	12:07:06	11:56:50	11:52:22	11:59:55
7	12:15:02	12:22:53	12:19:41	12:10:49	12:05:22	12:07:49	12:13:52	12:14:36	12:06:45	11:56:32	11:52:26	12:00:21
8	12:15:27	12:22:55	12:19:26	12:10:33	12:05:19	12:08:00	12:14:01	12:14:28	12:06:25	11:56:15	11:52:30	12:00:47
9	12:15:52	12:22:57	12:19:11	12:10:16	12:05:17	12:08:12	12:14:10	12:14:20	12:06:04	11:55:59	11:52:35	12:01:14
10	12:16:17	12:22:58	12:18:56	12:10:01	12:05:15	12:08:24	12:14:19	12:14:11	12:05:43	11:55:43	11:52:41	12:01:41
11	12:16:41	12:22:59	12:18:40	12:09:45	12:05:13	12:08:36	12:14:27	12:14:01	12:05:22	11:55:27	11:52:47	12:02:09
12	12:17:04	12:22:58	12:18:24	12:09:30	12:05:12	12:08:48	12:14:34	12:13:51	12:05:01	11:55:12	11:52:55	12:02:36
13	12:17:26	12:22:57	12:18:08	12:09:15	12:05:12	12:09:01	12:14:41	12:13:40	12:04:39	11:54:57	11:53:03	12:03:05
14	12:17:48	12:22:55	12:17:51	12:09:00	12:05:12	12:09:14	12:14:48	12:13:29	12:04:18	11:54:43	11:53:13	12:03:33
15	12:18:10	12:22:52	12:17:34	12:08:46	12:05:13	12:09:27	12:14:54	12:13:17	12:03:57	11:54:29	11:53:23	12:04:02
16	12:18:31	12:22:49	12:17:17	12:08:32	12:05:14	12:09:40	12:14:59	12:13:04	12:03:35	11:54:16	11:53:34	12:04:31
17	12:18:51	12:22:44	12:17:00	12:08:18	12:05:16	12:09:53	12:15:05	12:12:51	12:03:14	11:54:04	11:53:46	12:05:00
18	12:19:10	12:22:40	12:16:43	12:08:05	12:05:18	12:10:06	12:15:09	12:12:38	12:02:52	11:53:52	11:53:58	12:05:30
19	12:19:28	12:22:34	12:16:25	12:07:52	12:05:21	12:10:19	12:15:13	12:12:24	12:02:31	11:53:41	11:54:12	12:05:59
20	12:19:46	12:22:28	12:16:08	12:07:42	12:05:25	12:10:32	12:15:16	12:12:10	12:02:09	11:53:30	11:54:26	12:06:29
21	12:20:03	12:22:21	12:15:50	12:07:27	12:05:29	12:10:45	12:15:19	12:11:55	12:01:48	11:53:20	11:54:41	12:06:58
22	12:20:20	12:22:13	12:15:32	12:07:16	12:05:33	12:10:58	12:15:21	12:11:45	12:01:27	11:53:11	11:54:57	12:07:28
23	12:20:35	12:22:05	12:15:14	12:07:05	12:05:39	12:11:11	12:15:23	12:11:24	12:01:06	11:53:02	11:55:14	12:07:58
24	12:20:50	12:21:56	12:14:56	12:06:54	12:05:44	12:11:24	12:15:24	12:11:08	12:00:45	11:52:54	11:55:31	12:08:27
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27	12:21:30	12:21:27	12:14:02	12:06:25	12:06:04	12:12:01	12:15:24	12:10:17	11:59:43	11:52:35	11:56:28	12:09:56
28	12:21:42	12:21:16	12:13:44	12:06:16	12:06:11	12:12:14	12:15:23	12:09:59	11:59:22	11:52:30	11:56:49	12:10:25
29	12:21:52	12:21:08	12:13:27	12:06:08	12:06:19	12:12:26	12:15:21	12:09:41	11:59:02	11:52:26	11:57:10	12:10:54
30	12:22:02		12:13:08	12:06:01	12:06:28	12:12:38	12:15:18	12:09:23	11:58:42	11:52:23	11:57:32	12:11:23
31	12:22:11		12:12:50		12:06:37		12:15:15	12:09:04		11:52:20		12:11:52

* Google "solar time" = to find its' definition and its' relation to clock time.