Sensory experience to promote well-being
a health club design

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Submitted to the Department of Architecture in Partial Fulfillment of
the Requirements for the Degree Master of Architecture at the
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Abstract
Potentially, health clubs can be rejuvenating and pleasant places. Unfortunately, many clubs in Boston are merely monotonous rooms stuffed into any available space downtown. Or, they are overwhelming, disorienting facilities sprawled out in suburban locales accessible only by car. The proposed site locates a facility at a T-stop. The health experience can be made more varied yet comprehensive by increasing users' awareness of sensory experiences in their surroundings. Movements, actions are grouped into a section according to what the body senses while engaged in an activity. These associations or common denominators assign particular qualities and characteristics to each section and make them distinguishable and different from one another. These juxtaposed differences provide contrast and variety needed to increase sensory awareness and stimulate the human body and mind.

Thesis Supervisor: Bill Hubbard, Jr.
Title: Associate Professor of Architecture
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And, for always accommodating my schedule, for unceasing patience and thoughtfulness, for driving me around and eating with me, for helping with the tedious tasks—for keeping me happy: Thank you Neil.
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"Architecture is produced by ordinary people, for ordinary people; therefore it should be easily comprehensible to all."

p.14 Experiencing Architecture, Eiler Rasmussen

"...the specific property of architecture- the feature distinguishing it from all other forms of art - consists in its working with a three-dimensional vocabulary which includes man."

p.22 Architecture as Space, Bruno Zevi

"Full appreciation is a three-in-one action. When all three -- physical, emotional, and intellectual -- interact vigorously, the architectural experience promises to reach maximum enjoyment."

p.9 Architecture & You

"They (architects) try to create 'interesting', 'varied', i.e. complex forms with contrasts, using different forms (e.g. rectangular versus curves), different dimensions (e.g. concrete, brick, wood, steel)...."

p. 66 Niels L. Prak
natural landscape

The ideas for this thesis originated from travel in California and Hawaii this past summer. Walking on trails through Point Lobos National Park in California, I became aware of something I had not noticed before—a broad range of qualities in space and form juxtaposed in the natural coastal landscape. The range of characterisitics may be confined to only a few feet. At one point one overlooked a cliff at the water's edge in the brilliant sunshine, walked a few feet, and then continued on a darker, tree sheltered path—each separate but juxtaposed experience highlighted the other. The same on Maui. The diversity of the landscape within few hundred yards was incredible—one could walk on the open shore and then 100 yards away wander in underground caves. The different qualities of the two coasts—the rainy windward side, lush, tropical, thickly forested versus the leeward side, flatter, and drier, provided contrast on a larger scale.

My awareness of textures and materials was also heightened. For instance, at one point along a trail, nature presented a palette of textures within a single gray color range: varied textures in basic grey co-existed. A grey granite rock provided the background for a small moss-like plant that was a similar grey-green but had a softer knobby, texture. The tree trunks were another shade of grey and the bark possessed yet another texture. The juxtaposition created a beautiful composition and increased my awareness of each type of texture within it.

"These experiments demonstrate the existence of a need for variety in human beings in general,..." p.71 Niels L. Prak
creatures in their habitats

While viewing my slides from the San Diego Zoo and the Monterey coast I noticed that I had captured a certain sense of comfort of animals in their habitat. The images reminded me of the comfort that surroundings can hold. These animals found ideal resting spots. It seemed as if there could be none better. Envious of their apparent comfort in their environment, I considered built surroundings for humans. How could that same sense of comfort and contentment be captured in a habitat for human beings? These images prompted me to conclude that I want to design a type of habitat for human beings which should be comfortable and tailored for human beings as opposed to a historical reference or specific architectural style.
The last factor in formulating this thesis is my interest and involvement with the fitness industry in Boston. I have taught aerobics in many clubs and I've detected inadequacies in health club design. Basically, health clubs are monotonous environments with confusing layouts as a result of being housed in spaces that are small portions of larger existing commercial and office buildings. Probably, the primary design concern was getting all the required pieces of the program in, so the owners would have a viable health club to market no matter how awkward the layout. The result: compartmentalized spaces devoid of stimulation and variety -- an environment suited only to containing exercise equipment in the most minimal space, so people can come in, work out and leave dull physical routine devoid of pleasure. Could built surroundings contribute to the total experience by offering more stimulating surroundings? Could the total experience be more sensory by including a sequence of different spaces with their own characteristics with juxtaposed contrasts?
HEALTH CLUBS TODAY: OBSERVATIONS

2

3

4
The physical environments of health clubs could be vastly improved. I've noticed that health clubs are inserted into small areas that have been allotted for commercial or office tenants. In the city, health clubs do not stand as their own independent structures. Fitness centers are either stuffed into sub-street level spaces, occupy the ground level exposing exercisers to the public street outside, or are situated on the top floor of a building. As a result, especially in the case of basement locations, the interior space is bleak, compartmentalized and natural light is almost non-existent. Some try to compensate with sleek, clean, interiors which exude a sterile quality while others are drab and gloomy. At the other extreme, where the club occupies prime top-floor property, the place is indiscriminantly flooded with too much light, and often roasts its members in warmer months.
In other words, the centers are merely subdivided spaces resulting in unvarying, unpleasant, environments. The lack of clarity in the layout is a result of being stuffed into existing structures which imposes certain restraints; different programmatic needs result in convoluted plans. Such confusing and often disorienting layouts cause negative experiences of the place.

A health club is a place to exercise in order to maintain health and fitness. However, a health club should accomplish more than just provide locker rooms and exercise equipment for burning calories and building muscles. Exercise plays a major role, but why shouldn't the surroundings be more experiential? The environment should include a range of experiences and sizes within the one envelope. Some areas should be more stimulating or invigorating and others more relaxing or meditative. The club needs to provide a pleasurable environment that is comfortable and useable by all its members.
The image or perception should be more that of a spa or resort not a cheerless, dingy environment that is often associated with power lifting gyms. Resorts and spas are meditative, pensive, beautiful, calming and exist in stunning landscapes. The guests’ comfort is supreme. However, much of their comfort is achieved through pampering rather than being derived from the built environment. How might comfort originate from the built surroundings instead of relying on pretty picture postcard settings and excellent service? Spas can be plush and stunning but remain monotonous environments. Materials and textures could certainly vary the experience of the place. Why couldn’t some health club areas be subdued and sparse while others louder and embellished?
Rather than sameness, why not a variety and range of qualities and different experiences? Why not opportunities in the surroundings that could foster socialization and community as well as allow for individual focus and privacy? The health club could be oriented towards physical exertion yet allow for a more restful side. Some areas could be dynamic, others more tranquil. Some areas of the club could be exposed while other areas could be more private or secluded. The health club could become a pleasant place in which to work out. Also, it should be a comfortable place where the members could linger and relax after a good workout.

Education needs to be incorporated into the experience as well. Today members are informed about health, diet, exercise, injury prevention via bulletin boards and xeroxes. Why not educate with displays like those found in children's museums or science museums that engage the viewer? For example, to inform someone about risk of knee injury when a certain movement is performed, a display or video of a skeletal knee joint moving through its range of motion with an explanation of the kinesiology would do a better job of teaching than a xerox stating that the movement is bad to do.
I propose situating fitness centers at or near T-stops for convenience to home and/or place of work. Therefore, proximity or adjacency to a busy T-station that serves a large number of people from several communities is an important criterion for the site. Easy access, adequate space to accommodate the square footage needed for the program, and low lying surrounding buildings to allow for unobstructed natural light are additional criteria for site selection. If possible, a nearby green space or waterfront to provide an alternative to indoor activity during the warmer months would be a nice asset.
site description

The Wellington station stop on the Orange Line meets all the above criteria. Five towns feed into this location making Wellington Center one of the largest commuter stops on the Orange Line public transportation system. Vehicular access is also easy: it is a place where bus routes converge, and people park and take the T into town. Accessibility also makes the location available to those people from the surrounding communities who are not commuters. The site is relatively flat and provides enough square footage to house the program. In addition, there are few surrounding buildings and those that do exist are only one or two stories high and do not obstruct natural light. Water borders one edge of the site and down the road, less than a quarter of a mile is the Mystic River Reservation which provides a few acres of green space. Parking will need to be maintained on the site. Location near a T-stop means that commuters will be the prime candidates for membership to the health club. Potential members also include employees from surrounding businesses, and residents from nearby communities.
The general organization of the site assumes that the Massachusetts Bay Transportation Authority (MBTA) would want to preserve as much of the on-site surface parking as possible. The design provides a parking deck to maintain at least the same number of parking spaces that exist now. Also, drastically different edges border this triangular site. The west edge is the T-station, tracks and service yard. The east side is bordered by the Malden River which provides a natural coast or edge. The natural edge runs to the southern tip of the site. To the north is the bus depot and beyond, the hectic Revere Beach Parkway, like the T-station are reminders of traffic and hectic city life. The portion of the site that the health club occupies is from the most southern tip sweeping north as much as is needed to maintain parking. In general, I chose this part of the MBTA property because of its obvious attributes such as the natural rivers edge and southern sun contrasting with the harsh edge of the platforms and station to the west. These two dissimilar edges are the large scale juxtaposition that I observed and liked -- somewhat like the two different coasts of Maui.
My observations of the landscape and of the animals in their habitats and my interest in the health and fitness field are somewhat disparate forces but can be linked with exciting potential. A health club should be more than just a housing for physical activity. It should include a wellness dimension achieved through direct experience of juxtaposed qualities, textures and materials combined to form a sequence of experiences and opportunities to stimulate the senses. This positive experience of interior space could promote physical and mental well-being.

"Internal space, ... that space which cannot be completely represented in any form, which can be grasped and felt only through direct experience, is the protagonist of architecture."

p. 23, Architecture as Space, Bruno Zevi.
Wanting to work on some of the problems with health clubs in Boston, I chose to design a health club. Some people design their "dream house", I want to attempt my "dream health club" as the vehicle for my exploration. I want to include some of the terrific qualities of the natural landscape. The trip to Hawaii and California refreshed my senses and reminded me of the fantastic potential for built form. I learned that it was the contrast of the surroundings that made me notice the adjacent or far away landscape. If the island had all been the same, I would not have appreciated it as much, no matter how beautiful the monotony might have been. It is this juxtaposed contrast and comparison of specific qualities associated with certain regions that I want to use as a tool to create a stimulating environment.

"...the role of sensory stimulation from the environment, not only for the normal development of perceptual and cognitive functions but for motivational processes as well, has become of increasing concern... stimulation is good, indeed essential for the development and maintenance of normal behavior...."

p.85 People and buildings, ed. by Robert Gutman, from the article "The Physical Environment: A Problem for a Psychology of Stimulation", by Joachim F. Wohlwill

dimensions of stimulation: simple intensity, novelty, complexity, and temporal change or variation "...All these can be shown to touch on important aspects of our physical environment."

p.87 People and Buildings, ed. by Robert Gutman in the article "The Physical Environment: A Problem for a Psychology of Stimulation", Joachim F. Wohlwill
experience of a place, sensory awareness

The design focuses on the body’s experience of the place. An environment in which the senses are aware of the sounds, sights, smells and feel of the surroundings through contrast and juxtaposition. If the physical surroundings heighten sensory awareness through qualities and experiences that compare and contrast; for example, accommodate groups of people as well as individuals, provide information and educate, does satisfying these conditions make the experience of the place more pleasurable and increase human comfort and contentment?

What size space are you in? What are the spaces surrounding you like? Is there light? Do you understand where you are? Do you notice the materials and textures of the form? How do you move through the space? What else do you sense? Is someone sharing the space with you or are you alone? What do you sense when you enter? These questions will be addressed. How will this approach to design influence the form of a building?

“Sensations must be experienced to be understood . . .”

p.288 On Architecture

“. . . promote the idea that architecture can be enjoyed, much as the performing or visual arts, physically through the senses.”

p.9 Architecture and You

“. . . all higher species of animal derive pleasure from encountering moderate novelty, to the extent that they will deliberately search for it.”

p.84 “Urban Aesthetics” by Peter F. Smith
The outright contentment of the animals wedged in their cozy nooks in trees, or reposing on sun warmed rocks or basking in tide pools reminded me that when I design environments for human beings, I should strive to create a habitat for humans in which they would find as much contentment and be as comfortable as the animals are in theirs. Architecture should aspire to give the human animal a range of qualities and experiences variety within shelter and protection. These observations and experiences drive this thesis.

"By partial satisfaction of his need for variety, the individual not only enriches his life, but also keeps that same need functioning, which increases his possibilities of adaptation to new situations."

p.60 The Visual Perception of the Built Environment Niels L. Prak

"Earlier psychological theories assumed that men and animals interacted with their environment mainly to satisfy their primary biological drives, such as hunger and sex,... Some authors believe that the need to stimulate the organism by a variety of experiences and exposure to information is just as much a primary drive as hunger or thirst. ..."

p.59 Niels L. Prak
FRONT DESK ............................................................................................................. 125 ft
2 offices, 3 support .................................................................................................. 460 ft

DAY CARE ............................................................................................................. 660 ft

PROSHOP .............................................................................................................. 300 ft

MEN'S LOCKER ROOM ............................................................................................ 7000 ft
322 lockers
12 showers
sauna, steam, jacuzzi

WOMEN'S LOCKER ROOM .................................................................................... 8,180 ft
374 lockers
12 showers
sauna, steam, jacuzzi

PHYSICAL THERAPY/SPORTS MEDICINE/NUTRITION ........................................ 3,460 ft
classroom ............................................................................................................... 460 ft
5 offices .................................................................................................................. 670 ft
reception ............................................................................................................... 130 ft
therapy .................................................................................................................. 2200 ft

COURTS/AEROBICS/BASKETBALL ......................................................................... 24,480 ft
6 raquetball ......................................................................................................... 4800 ft
5 squash ................................................................................................................. 3040 ft
observation ........................................................................................................... 640 ft
2 aerobic studios .................................................................................................... 4800 ft
basketball (actual ct 50x29) .............................................................................. 8660 ft
restrooms .............................................................................................................. 350 ft
juice bar ................................................................................................................. 390 ft
outdoor deck ........................................................................................................ 1800 ft
<table>
<thead>
<tr>
<th>Section</th>
<th>Remarks</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARDIO</td>
<td>40 machines at 5x5................................</td>
<td>1680 ft</td>
</tr>
<tr>
<td></td>
<td>room for expansion..............................</td>
<td>1000 ft</td>
</tr>
<tr>
<td></td>
<td>2 offices for health screening/fitness testing</td>
<td>175 ft</td>
</tr>
<tr>
<td>WEIGHT MACHINES</td>
<td>2 circuits &amp; specialty at 8x8..................</td>
<td>3600 ft</td>
</tr>
<tr>
<td></td>
<td>room for expansion..............................</td>
<td>2300 ft</td>
</tr>
<tr>
<td>POOL</td>
<td>6 lanes at 50m.................................</td>
<td>12,400 ft</td>
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<tr>
<td></td>
<td>sun deck.........................................</td>
<td>1050 ft</td>
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<tr>
<td></td>
<td>jacuzzis/rock garden...........................</td>
<td>480 ft</td>
</tr>
<tr>
<td></td>
<td>laundry...........................................</td>
<td>120 ft</td>
</tr>
<tr>
<td>FREE WEIGHTS</td>
<td>4 offices.........................................</td>
<td>3680 ft</td>
</tr>
<tr>
<td>MASSAGE CENTER</td>
<td>4 cubicles........................................</td>
<td>2400 ft</td>
</tr>
<tr>
<td>CAFE</td>
<td></td>
<td>4800 ft</td>
</tr>
<tr>
<td>TOTAL*</td>
<td></td>
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</tr>
</tbody>
</table>

* Does not include circulation.
primary concerns / parameters

The objective for this thesis is to design a health club with the sensory experience being the primary guiding factor for the layout and the design of the interiors. This exploration focuses on the insides of the building. This does not mean, however, that all other factors usually considered in design have been totally ignored, but they are not as important to this exploration. For example, the site is not driving the design in terms of contextual issues but it supplies two distinct features: natural and urban. The connection between the two should evolve in the organization of the program pieces.

"... it is interior space, the space which surrounds and includes us, which is the basis for our judgment of a building, which determines the ‘yea’ or ‘nay’ of aesthetic pronouncement on architecture. All the rest is important or perhaps we should say can be important, but always in a subordinate relation to the spatial idea. Whenever critics and historians lose sight of this hierarchy, they create confusion and accentuate the present disorientation in architecture."

p. 32 Architecture as Space, Bruno Zevi.
What is important is the feel and perception of space when engaged in an activity. Is the body sensing a light, bouncing quality such as with squash or aerobics or a heavy, muted, solid quality such as with free weights? Also important is what happens inbetween activities. What do you notice between sets in the free weight room or while walking to the courts from the locker room?

This body-sensing has determined the design organization – the strongest perception or common denominator of a set of activities. It is the criterion I used to figure out how to piece parts of the program together. It also determined the design of each component.
In addition, the incorporation of gardens throughout the plan as visual gardens or accessible courtyards or terraced decks to enrich spaces inbetween was a priority. The river bank edge and how to manipulate it or address it so it became part of the scheme was another concern.

"...the design of external spaces is seen as a cosmetic afterthought involving the capricious planting of trees, placing plant boxes, and other accessories. Instead it should be integral to the architecture."

p.37 Social Needs and Landscape Architecture by Darbourne and Darke in Architecture for People edited by Byron Mikellides]
schematics / general organization

The overall scheme assumes that the MBTA wants to maintain as much of its on site parking as possible, so I've preserved as many of the existing parking spaces on grade as possible and added a parking deck just one level high. The health club occupies the space between the Malden River and the T-tracks, beginning at a point on the southern most tip and sweeping north stopping before the bus stop.

"These contrasting environments (natural versus urban scenes) were presented as colour slides under strictly controlled conditions. To measure emotions not only verbal ratings were used but also physiological registration of brain and heart activity. The nature scenes were generally considered more pleasant that the urban scenes...they also seemed to have a positive effect on the hedonic emotions, while the urban pictures had a markedly negative effect. More over, the physiological results suggested that direct viewing of the nature scenes might have a relaxing effect under certain circumstances."

Architecture and Emotions by Rikard Küller p. 89 of Architecture for People
"the backbone", "the wall", "the arms"

The two juxtaposed parameters - nature (the river bank) and city, (the T-stop) are linked by the most direct connection possible, a straight line, running west to east. This linear connection is a walkway that is "the backbone" of the scheme. It is intended to be a physical barrier to the parking lot which it restrains and as a symbolic barrier to the stress and commotion of the city.

This "backbone" provides the connection for five limbs that branch off towards nature and extend southwards and meet the landscape at different intervals. At one end of the walkway is a garden and a view to the T-platforms beyond and at the other, is a cafe/restaurant/bar. Each arm or branch that extends from "the wall" houses an activity or group of activities.
To strengthen the "backbone" — which connects the two different poles of the scheme, a locker rooms section, "the wall", provides the strong edge from which one moves into the arms. One enters the club, through "the wall". It maintains its rigidity and strict adherence to its straight, linear form; no variation occurs except at the entrance. Because the locker rooms need the most privacy, they form "the wall". They are about 46 feet wide and the actual walls are bearing walls constructed of concrete masonry units. To maximize ones awareness of being within "the wall", and to heighten ones experience of it, the locker rooms are designed so that one circulates at the edges along the actual confines of the structure and moves towards the interior of the space to access lockers, showers, sauna, etc.. The locker rooms are where one undergoes a transition. One changes from street or business clothes to workout wear. This coincides nicely with the procedure of entering a solid walled almost cave-like environment and emerging ready to engage different regions of the club which have their own distinct characteristics. The environment in this protected part of the club is tiled. The associations are wet, smooth, cool and clean.
The only break in the wall is the entrance/exit. The front desk area being the arrival and departure point is the important transition from aggressive city world to tranquil natural world. As one moves through the wall and passes the front desk, one enters into a higher plant-filled space. It should immediately feel refreshing yet tranquil. A direct contrast to the environment that one just left at the T or the parking lot. One can hear the flowing water of a fountain and see the pool beyond. Here too we notice a slight dampness in the air for the plants and from the fountain. Movable screens provide shade and cool so the users and plants below do not bake in the summer. The front desk is not to look like a security desk or severe checkpoint. Off to one side there is a waiting area and a pro-shop. Offices are behind the front desk so that management can supervise and members can easily find a manager or sales person. The daycare is to the immediate right as one enters the club and allows for easy drop off and pick up. It is introverted so children are not distracted by their parents walking by and parents can concentrate on their own activities.
An important feature of the walkway that runs the length of "the wall" and links city and nature is the change in gradient. As one moves to the west towards the city, one rises in elevation and as one moves towards the waters edge, one drops in elevation. The total rise from one end to another is eight feet. When the slope levels off, then, one can move from the walkway into one of the arms. Thus, not only does this feature orient its user with changes in level, but it also breaks up a long straight-a-way. Furthermore, distributing educational exhibits strategically along the wall in the walkway would be ideal so the members could look at them when going from activity to activity in the club.

"Most people like changes of level.... People like buildings that 'ride the contours'."

p.43 Architecture & You
Each arm has a unique distinct quality that allows the user to distinguish one from another. They are at different points along the walkway but for some, however, different locations may not be enough of an indicator. As one moves off the walkway, a passage about 7-12 paces long directs you into the adjoining arm. In some cases one walks through courtyards on either side, or a courtyard on one side and a wall on the other, or through two walls. Generally, the passageway has a lower overhead plane than the walkway and the space beyond so that this contrast will again cue in the individual to the different sensory experience directly ahead and the activity within. Furthermore, the overhead plane of this passage juts out into the walkway space as a “sign” or visual cue for the location of the entry. Each arm would have a different sign. Also a change in gradient might occur within the passage.
Significant too, is the distinction made by using different floor surfaces. The "backbone", surfaced with pavers, contrasts with the "arms" and their floor surfaces whether it be carpet or dense rubber mats. Furthermore use of materials and method of construction as well as light will vary in each arm.

One more thing to note here is that most of the arms are connected only via the backbone of the club. The physical therapy section, the free weight area, and the massage center all stand by themselves and there is only one way in or out. The weight machine region is the only one that does not have one of its parameters directly touching the backbone so it is accessible only through the court wing or through the cardio section. These three sections are interconnected.

"People are more aware of the walking plane than they are of the walls, ceilings, and roofs."

p.43 Architecture & You
DESCRIPTON OF EACH "ARM"

This section describes each arm and why it stands alone or why it is a collection of activities. What has driven the design is the primary attention to the feeling of the place, what the human body is doing and experiencing. I related activities by trying to group them according to a common denominator— that is, parts of the program were grouped together while other uses were segregated from each other. Descriptive working names or labels for each grouping helped me associate the feeling of the place with the actual goings on within.

The "arms" are described in a sequence starting with the physical therapy center, continuing to the courts, cardiovascular area, weight machine room, swimming pool, free weight room, massage center and ending with the cafe. This sequence begins at the western most point of "the backbone" and progresses eastward.
The arm closest to the "city" (furthest west) is the physical therapy/sports medicine/nutrition wing. Located in this position it attains the privacy it needs from the rest of the club and has the unique feature of its own courtyard. Though it is more private, it is not unpleasant or boxed into a corner. Locating it at the end of the walkway near the T makes it easy to find for someone who is not a club member but just keeping a few appointments with a therapist or doctor. This arm is probably most traditional in its environment with offices, an area for weight machines and a classroom, however, its unique feel is that it is built within a garden. In the "backbone", planters serve as visual and (if fragrant flowers are thriving perhaps aromatic cues) line the approach to the therapy arm. A low wall with the closure system resting on top, easily allows views out into the garden. These features distinguish this particular area of the club. The actual therapy room contains select machines for therapy and some tables for therapeutic treatment. The space is open in plan with a classroom in one corner and offices tucked away to the rear of the space. The offices are lower in height than the overall roof so the office row separates the courts from therapy in plan but provides only a partial barrier since it reveals that there is something behind it through the space between the different ceiling heights. Faint sounds from the raquetball courts or aerobic studio adjacent to the space might also filter over the row of offices. These sounds are reminders of ongoing activities at other regions in the club. Concrete two-way slab construction gives the ceiling texture and depth and allows for an open plan. Here the floor material is cork tile. It provides sure footing for those who might be on crutches or in a wheel chair. It has a warmer quality than institutional vinyl tile. Some working phrases that I used were: therapeutic but not sterile and institutional, private yet open, natural light, conventional set up yet not boxed in.
raquetball, squash, aerobics, basketball arm

As one walks down the "backbone" towards the cafe, the court, aerobics and basketball "arm" is next. The court sports, specifically raquetball and squash have a light bouncy feel where the players run, jump off the floor (sometimes even run into the walls), and the ball rebounds from the walls and floors. The materials I associate with these activities is a light wood for resiliency. Similarly, aerobics/dance studios demand a springy floor. Therefore, the wood floor is suspended to lessen shock to the leg joints. The last element which I considered was the basketball court which requires a larger area. Here the bouncing is a little heavier and there is more running. Despite some of these minor differences, the common factor to all these activities is bouncing on wood within designated boundaries whether it be a 50x94 b-ball court or 10x5 feet on an aerobics floor or a 40x20 raquet court. I have grouped these pieces of the program with the same common denominator together in one arm of the design. The working label, "birch" conjured up other associative labels such as light, springy, graceful, strength, thin, natural woods. The birch wing uses wood as flooring to distinguish it from the harder, less resilient, rougher pavers of the walkway.

In general, the "birch" wing is the longest piece anchored at the end with the basketball court and other courts grouped in the middle, and the aerobics studios situated at the beginning. Eventhough it is approximately 180 feet in length,, it is not a long, continuous, straight stretch but instead shifts and widens in some areas to create gathering places and slightly alter one's course. Some of these are pausing or waiting places to enjoy views to the outside while others focus on a court. These contrasts provide for some variety, and break up the longest arm so it does not feel overwhelming, uninviting nor sterile. Instead there are nooks for conversation or watching. The arm is not subdivided to the extent that it is disjointed but the slight variations still allow it to be understood
as a whole. These distinctions differentiate it from the backbone despite its almost equal length.
cardiovascular conditioning equipment

In plan, the conditioning machines are adjacent to the swimming pool (described later). I coupled the pool and the fitness machines because they are both cardiovascular activities but almost opposite in feel so they need to remain separate. Separating the pool and machine room is an angled floor to ceiling glass wall which overlooks the pool. Moreover, this section is coupled with the swimming pool to provide users with another setting to look at rather than into a mirror or another exerciser. The machines face the pool with the back edge towards the access. This orientation enables the user to step right off the path onto the machine and immediately presents the view of the pool. The angle of the glass wall is important because it gives the person on the equipment the feeling of being out in the territory of the pool. The floor to ceiling span of glass contrasts with the low three foot wall of the adjacent weight machine area.
When using the aerobic conditioning machines one steps off the ground plane onto a machine such as a treadmill, stairmaster, cycle, or rowing machine. The body is moving and working in a standing or sitting -- essentially vertical position. One works vigorously and with effort by pushing against a pedal with one's feet yet does not travel through space--does not gain any distance. In fact, one remains in an area about 4x8 feet. For this region, carpeting will call attention to the action of stepping on and off the floor as in the weight machine room (described next) but the rest of the details and qualities stand apart from those used in the adjacent weight machine room and court "arm".

A lounge is situated at the juncture of the aerobic conditioning equipment, weight machines and courts. It protrudes into the courtyard and is at the level of the lower surrounding land so one steps down into it from the corridor.
The glass spans floor to ceiling to call attention to the verticality of the body when on the treadmill, stairmaster or cycle. Since the climate in the pool area is damp and more humid, a physical division is necessary to protect the other areas of the club from moisture. The glass wall serves as a moisture seal yet allows for visual juncture. This visual link and the roof which is the same for these adjacent activities ties the activities together yet they maintain their own identities and distinct feels since they are articulated differently. I envision using light materials like wires, metal screens or metal or plastic tubing with the predominant glass separation.

Working phrases that I used were hi-tech, the Frank L.Wright Johnson wax building, how to avoid rows of machines in a square room, what is there to look at?
weight machines

If one moves through the cardiovascular section one arrives at the weight machine room. The weight machines such as Universal, Nautilus, Cybex all involve alighting on some piece of equipment. One steps off the floor and sits or lies prone on a seat or bench or sometimes hangs from equipment. This action of stepping off the ground plane and inhabiting the zone just a few feet off the floor is the unifying factor in this area. So I chose to highlight the floor zone and not just the floor plane as done in the previously mentioned cardiovascular section. By laying a durable pile carpet on the floor and having it wrap up to cover the inside surface of the low 3 foot exterior wall too, I've emphasized the floor zone and not just the planar surface of the floor. One is aware of stepping off the ground and then stepping back onto to it after finishing the exercise because underfoot, the carpet is cushiony and slightly yielding. The carpet gives slightly when stepping off the floor onto a machine and then receives the foot when it steps toe-ball-heel back down. The floor is
malleable under the weight of a body and accentuates this motion.

One does not need to watch one’s form in mirrors because the machines align the body. So this allows windows to be the closure system rather than solid mirrored walls. The mirrors can be placed overhead instead. The closure system is more like a screen than a solid wall making the room seem less confined. This is in direct contrast to the free weight section that is enclosed by a solid wall. The weight machine room juts out into the river bank so it is surrounded on three sides by nature. This move physically connects the building to nature and the screen-like enclosures allow a visual connection to nature.

Some associations while working on this section were views out into the landscape, overhead mirrors, carpeting, cushiony, soft landings.
swimming pool

Though the pool is not directly accessible from the "backbone", it is the next piece of the program one sees as one moves from west to east in the "backbone". One gains access to the pool through the locker rooms and descends a level to the garden that one first saw upon entering the club. The swimming pool is unique because it is not really an "arm". It has no direct accessibility from the "backbone". Instead, I thought of the pool as a garden—more like one of the courtyards interspersed throughout the plan. Since it is the largest "garden", it contains greenery and jacuzzis that form smaller ponds of water.

Swimming has quite a different feel from the cardiovascular exercises mentioned previously. The emphasis is the body in a horizontal position (rather than vertical) travelling through water (instead of remaining in one place). Being suspended, floating, or sometimes submerged in water, pulling or propelling itself is obviously different from using one of the conditioning machines where one strains against the foot pedals of a machine.

One can enter the pool area and immediately approach the water, select a lane and begin to swim. The pool deck is wide on this end of the pool to give swimmers stretching or waiting room. If one wants to relax, then one progresses along the east wall where, inbetween the large structural steel ribs that provide the frame for the closure system, are the jacuzzis and seating areas for small groups or individuals. Showers are located at each end of the pool along the east wall.
One can also proceed to the sun deck at the southern tip of the pool which remains at the same level as the pool deck and extends out from beneath the overhead covering all the way out to the river bank. This move integrates the river bank edge with the building. The continuity of the ground identifies it as part of the pool and serves to distinguish it from the surrounding pieces of the program which are higher. For example, the land surrounding the weight machine room is a few feet higher as is the free weight room. In addition, this part of the enclosing panels will be able to roll back to allow this portion of the pool to be opened up in warmer months.

The southwest perimeter of the pool has a completely different quality since the cardio room juts out into the pool space. The deck is narrowest along the west wall and is only for passage. This contrasts directly with the east side which is more spacious and sculpted into a rock garden of sorts.

For this section of the club helpful words were garden, distinguishing decks, rock garden, how to enclose it?
free weights

As one walks down the "backbone" past the pool, one finds the free weights in the next to last "arm". The free weight activity is unique to itself and therefore housed by itself. In this activity mirrors are important for watching one's form and to see muscle definition. Here the body interacts with racks of barbells or plates, benches, and bars. In this room it is the feel of exertion, muscle contraction, lever action and tension and strain. Propped up walls or partitions stabilized or hung tension wires or suspended ceiling panels symbolize the type of work that occurs in the muscles. Fatigue at the end of work or sets results in weights being dropped. A dense rubber floor emphasizes heaviness and strength while providing firm footing. It cushions the fall of weights to the floor protecting the surface beneath. Also dense rubber mats muffle the sound of the barbells landing on the floor.

Windows at the base would introduce distracting and interfering glares especially with the mirrored walls. Therefore having mirrored walls implies that the enclosure is mostly solid with few openings for windows if any. Natural light will be brought in from above. In between the roof and the mirrored walls is a band of clerestory windows. To the south and east the roof overhang will prevent direct light from penetrating down to the floor. Operable clerestory windows provide ventilation as well.
These characteristics and requirements are distinct from the weight machine region where the windows are at the base level to afford views out and let natural light in.

Since the weight room is essentially one wide open space 85x50x18, certain sub-spaces could be more defined. In a practical sense, the free weight area should be relatively open or unobstructed at the ground plane in which case partitions or overhead screens could be hung from the structure to define the different uses—lifting and moving from station to station, within the whole. For instance, task lighting—incandescent lights, not flourescent are used to light the lifting areas. This is one way the work areas are distinguished from the circulation paths. Further, it creates a different quality of light at the ground level from the natural light penetrating from the clerestories closer to the roof. These different properties of light will aid in lessening the cubical nature of the overall space.
Steel construction, columns and steel trusses provide the shell for the room. Commercial overhead doors open up the space to a deck in the spring and summer at the southeast corner. This method of construction suits the images or associations I had for this region. Industrial, warehouse, heaviness, muted or absorbed sounds, no flourescent lights, dense rubber, realm of hard work, exertion.
massage center

The last "arm" along the west to east journey is the most indulgent, soothing and tranquil realm of the club. The massage center is a quiet area with contemplative views and natural light from above. The environment is subdued calming and peaceful. It is dominated by "natural" settings and is somewhat Japanese in style.

As one descends the walkway one is engulfed in an indoor garden with plants on one side and a water wall on the other. Falling water is a soothing sound. One proceeds directly to the massage hut on a stone slate path or wanders along the water wall or meanders through the garden walking on a surface of small pebbles or fine gravel. One could sit on the stone wall by the water or perhaps by a window and look out across the river. One ascends wood stairs to the massage room where one passes through sliding doors and steps onto a cushioned mat floor. After entering the cubicle, one disrobes and lies face down on a table. The side walls are solid and act as blinders to focus one's attention directly ahead to the wall directly in front of the table.
The exterior closure system is designed to be translucent at standing eye level but transparent at 3.5 feet down to the floor. This allows you to gaze out through the low window while lying on the massage table. The translucent material is etched glass.

For this realm words and images such as Japanese gardens, contemplative atmosphere, engulfing, nurturing, subdued, natural materials, utilizing the natural river bank. Somewhat exclusive—not just anyone would feel comfortable walking into this region an element of mystery—what's in there?
cafe/restaurant/bar

The circular cafe anchors the end of the walkway on the "natural" side. It serves as a receptacle and captures the essence of this section which is the panoramic view. It is a place to unwind while taking in the view, eating, or socializing. The feel of the place is welcoming, pleasant, "loungeable", and materials pleasant to the touch. Though the circular form makes the cafe unique, a melange of materials might be used to strengthen its individuality.
I realize that while things are unresolved or need further study, I believe that this personal exploration is a valid beginning to an approach to design that I might investigate and pursue in the future.

Stimulating the senses by providing variety and direct experience of contrasts creates interior spaces or environments that encourage continual exploration by the user. Hopefully contrasts alleviate some of the boredom and monotony we experience when we encounter compartmentalized spaces that are devoid of any identifying features or distinguishing qualities or characteristics. Then, perhaps, full understanding of a building—being able to continually discover new information within, can occur over a long period of time instead of only a few hours. Built environments should contain enough diversity to hold our interest so that we explore and seek new stimulation rather than becoming so accustomed to our surroundings that we eventually tune them out, no longer find them stimulating and therefore, declare them dull, less enjoyable, lifeless.

"One thing that is very important to the layman in his environment is that it should not be too monotonous; he demands greater variation (than an architect) in what he sees or otherwise experiences."

p.49 On Architecture

"Variety in the built environment is also of practical use. Lynch (1960) and de Jonge (1962) have shown that the image ('cognitive map') of a city is based on a set of characteristic points and boundaries, such as a conspicuous church, a traffic intersection, a canal or a railroad track. These objects contrast with the interminable stretches of houses, in which they lie or stand; in other words, they are locations where new information is supplied.... Such a cognitive map is necessary for orientation; without it, it is hard to find one's way(Goodey 1971). For an efficient use of our vast urbanized areas, contrasts are indispensable."

p.71 Niels L. Prak
"...the visual system is built for the detection of changes in the environment."
p.71 Niels L. Prak

"...a 'dull building', which we see every day, could start to bore us because its information-content is soon exhausted...."
p.71 Niels L. Prak

"They (architects) try to create 'interesting', 'varied', ie. complex forms with contrasts, using different forms (e.g. rectangular versus curves), different dimensions (e.g. high versus low, wide versus narrow) and different materials (e.g. concrete, brick, wood, steel).... The effect of using a great many contrasting forms is that they are reduced in perception to a disjointed collection of simpler parts,... The contrasts reduce the formal coherence in the design."
p.66 Niels L. Prak

"By partial satisfaction of his need for variety, the individual not only enriches his life, but also keeps that same need functioning, which increases his possibilities of adaptation to new situations."
p.60 The Visual Perception of the Built Environment Niels L. Prak

"...the specific property of architecture - the feature distinguishing it from all other forms of art - consists in its working with a three-dimensional vocabulary which includes man."
p.22 Architecture as Space, Bruno Zevi

"Variation in the stimulus input enters into diverse problems in environmental design that in one way or another have concerned the need to reduce boredom or monotony...."
p.87 "The Physical Environment: A Problem for a Psychology of Stimulation," Joachim F. Wohlwill
The initial ideas for this thesis fell together from disparate but valid sources outside academia and congealed to formulate a possible working method or design tool which I had not been able to articulate previously. Maybe it even identified a specialty (if there is a market for new health clubs). In this manner this thesis was useful, and has potential and has potential eventhough it is a personal exploration.

The known here, spaces in between, utilization of systems, acquiring a language of form, landscape as a reference, the importance of a range of sizes and dimensions, space in section, quantifying the qualities or characteristics of a place -- are all principles or focuses that can be applied to or implemented in the "method" or "tool" which I described for myself. Work on this thesis has confirmed some of these notions introduced in the design studios. However, an aspect of architecture that I encountered only belatedly needs to be considered: Architecture should consider the senses and perception in addition to useability and comfort. A building should not be foremost a piece of art but a place that can be inhabited.

My personal view as to what architecture needs to be is incomplete for now but at least I am continuing to formulate my own "philosophy"/preferences and will continue to do so as I pursue specific interests and develop in the field.

"Architecture, however, is like a great hollowed out sculpture which man enters and apprehends by moving about within it."

p.22, Architecture as Space, Bruno Zevi.

"The experience of space, which we have indicated as characteristic of architecture, has its extensions in the city, in the streets, squares, alleys and parks, in the playgrounds and in the gardens, wherever man has defined or limited a void and so has created and enclosed space."

p. 29, Architecture as Space, Bruno Zevi.
process
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