



### ***William Leddy, FAIA***

***William Leddy, FAIA, is a Founding Principal of San Francisco-based LEDDY MAYTUM STACY Architects (LMS<sup>A</sup>), the 2017 recipient of the national American Institute of Architects Firm Award. For over 20 years, Leddy and his firm have focused on Mission Driven Design, working with non-profit environmental, educational, affordable housing and social justice organizations to serve their unique missions through innovative design thinking. Their practice is founded upon the belief that architecture is for everyone - that every work of architecture has a profound responsibility to reach beyond its property lines to address the larger challenges our communities face: climate change and resilience; equity and inclusion; housing the underhoused and celebrating the rich diversity of the human condition. Leddy has lectured nationally and internationally on the topics of Universal Design and equity in architecture. He has served as visiting professor at the Southern California Institute of Architecture and the California College of the Arts, as the Howard A. Friedman Visiting Professor at the University of California, Berkeley, and the Pietro Belluschi Distinguished Visiting Professor at the University***

***of Oregon. A past Chair of the national AIA Committee on the Environment (2013), he currently serves as the AIA California Vice President for Climate Action and Chair of the AIA CA Committee on the Environment.***

# Equity and Grace in Architecture

*William Leddy, FAIA*

## Everyone deserves Good design

**So our firm serves the underserved: unhoused individuals seeking a new start; seniors suffering from AIDS and at risk of homelessness; veterans struggling to find shelter and peace; adults living on the autism spectrum who want independent lives; students preparing themselves for a challenging future; and people with disabilities who all deserve dignified, inspiring spaces in their communities.**

### Who we serve



- *Permanent homes for the formerly homeless*

***But everyone also deserves dignified, safe, and healthy homes.....***

- *Schools as a model for a low -carbon future*

### Schools as a model for a low -carbon future



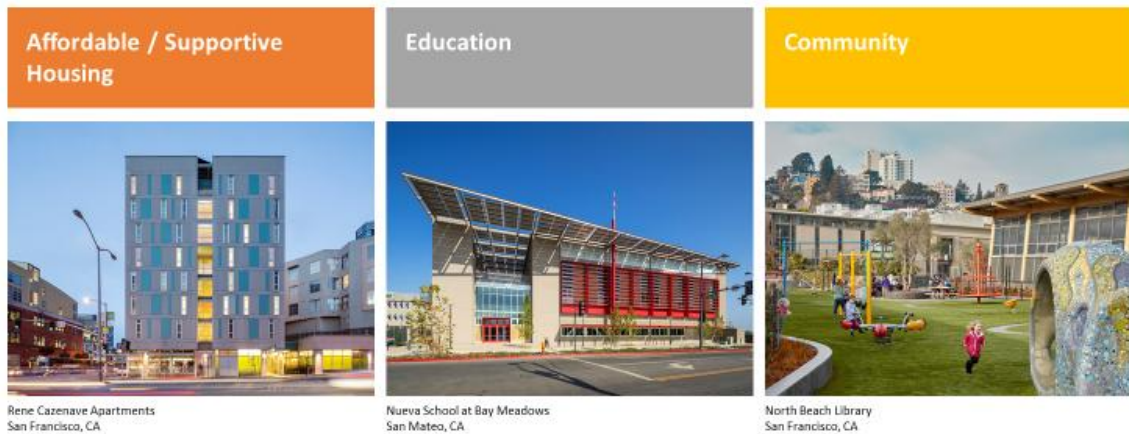
**And an education in learning environments that prepare students for a rapidly changing world.**

- Design with purpose



***This is "design with purpose" – we work to design every building beyond it's property lines to address some of our society's biggest challenges***

### **Mission- Driven Design**



***As a result, we focus on what we call "mission driven design" – working exclusively with non-profit organizations in three areas: affordable/supportive housing, innovative zero-carbon educational environments, and community centers, primarily for low-income communities. We create high performance, healthy, resilient and Universally Designed environments – all on tight budgets.***

## **Our Broader Context**

**Let's talk about the context within which we all reside: It will come as no surprise to any of you that we live in a time of unprecedented change and challenge.....**

### **Climate Emergency**



**.....a rapidly advancing climate emergency – one of the greatest existential threats to our species (and to all living things) in a thousand years....**

**.... a global pandemic that has sickened over 277M and killed 4.8M individuals worldwide so far....**

### **Black Lives Matter**

**..... festering racial and ethnic injustice that we witness and experience every day...**



**....chronic homelessness - with over 580K American citizens living on the streets of our nation....**



THEN: Ed Roberts, 1960's



NOW: Still protesting....

... and persistent inequity for people with disabilities



- *These should not be seen as discrete phenomena – they’re all inextricably linked – a combined ecological/societal emergency that cries out for as many creative, integrated solutions as we can collectively produce.*
- *Successfully addressing these challenges together will allow current and future generations to continue to dwell and prosper on this planet.*
- *In this pivotal time, architects have an important role to play.*

- ***We must become creative agents of change, providing the vision and skill to lead our communities toward an equitable, climate-positive future for all.***

## **Equity in Architecture**

- ***Equity is a foundational element in constructing that preferred future***
- ***But, despite the robust national discussion around equity, diversity and inclusion, a wide gulf of understanding still remains between prevailing architectural design values and the making of environments that truly welcome everyone.***
- ***Bridging this gulf requires more than a broader familiarity with the principles and details of Universal Design. It requires that we evolve our shared design ethos to creatively embrace equity and grace as essential elements of best practice in architectural design.***
- ***Much like sustainable design, embedding the values of equity, diversity and inclusion in our built environment requires that we take an integrated design approach.***
- ***Incorporating a few isolated Universal Design strategies in our buildings isn't enough – although that would certainly be a good start. Instead, architecture in our pluralistic society should fully integrate the spirit of access for everyone, regardless of ability, race, ethnicity, age, or gender identity.***

## **Design dialogue: Seeking Diverse voices**

- ***It starts by actively engaging diverse voices throughout the design process, and proceeds with an abiding curiosity, empathy, and respect.***

- ***It ends with the creation of flexible, inspiring environments that warmly welcome all, and celebrate the rich diversity of the human condition.***
- ***We organize extensive community outreach – facilitate design workshops – report back – engage key stakeholders throughout construction***

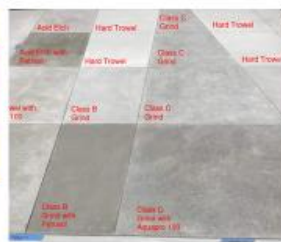
## **Continuous Feedback Loop+ post Occupancy Evaluation**



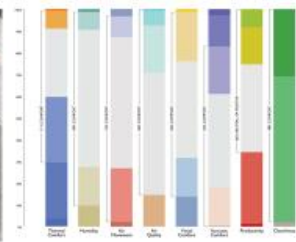
**Early design**  
Student & stakeholder surveys, programming and spatial feedback



**Design documents**  
Material selection, chemical sensitivity feedback, VR & daylight simulations



**Construction phase**  
Mock-ups for texture testing



**Post Occupancy**  
Comfort and satisfaction surveys for fine tuning solutions

## **Empathic Design : working to understand diverse experiences**



- ***In the end, universal ideals become personal. When designing for any community, it's important to find an***



*empathetic path to the heart of their values, needs and aspirations.*

- *While working on the Ed Roberts Campus, we were inspired by many of the folks we worked with, but none more so than Jan Garrett. She was then the President of the ERC – an attorney and charismatic disabled rights activist who happened to have been born without arms or legs.*
- *As we were designing the building – the largest, most public application of Universal Design thinking at the time – we would often ask ourselves: what would Jan think? How could we design a building that would allow Jan to arrive after hours, let herself in, go to her office, complete her work, and go home, all without any assistance from others?*
- *We would always engage her and many others in the final solutions, but for us, this initial question formed the foundation of our approach to Universal Design. It should really form the foundation of ALL design.*
- *What would Jan think?*

## **Dueling Disabilities: mitigating conflict needs**

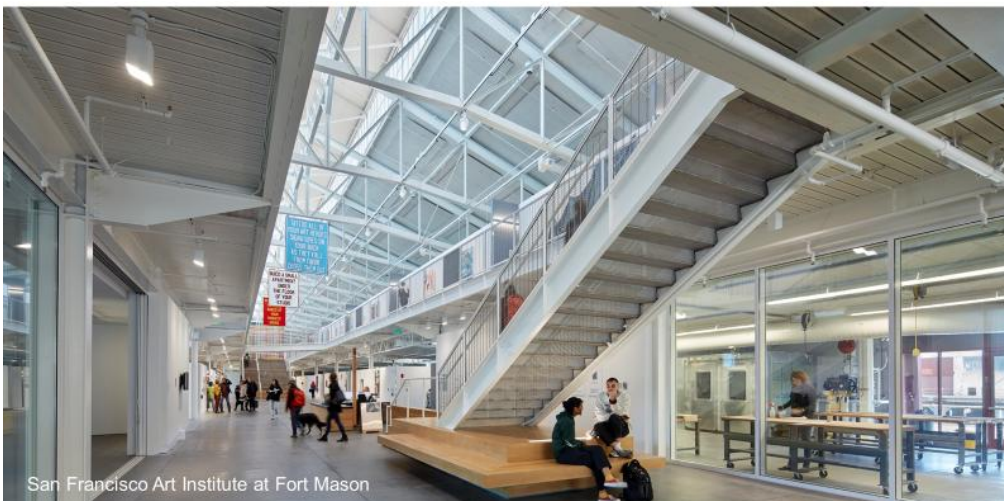


Support dogs present challenges for those sensitive to dander or pest treatments

Floor textures for people with low vision can be disruptive for wheelchair riders

- ***We've discovered that Universal Design isn't exactly universal. What might work for one community might not work so well for another.***
- ***Heavy floor textures designed to provide wayfinding for people with low vision can also become uncomfortable obstacles to wheelchair riders.***
- ***Support dogs present challenges for those allergic to dogs or their chemical pest treatments.***
- ***Navigating through these conflicting needs is part of the challenge of access for everyone.***

### **Adaptability: Design for Long life, loose fit**



San Francisco Art Institute at Fort Mason

- ***"Long life, loose fit is a key sustainable design strategy, but it also makes sense when designing for all.***
- ***No one can fully anticipate the future - a good building adapts easily to changing needs of both program and people.***
- ***It offers flexibility of use: rooms that can be easily reconfigured and flexibility of space: spaces that can be readily expanded or reduced***
- ***The pandemic is a prime example of unforeseen conditions that demand spatial responses***

## **Post Occupancy Evaluation: Documenting lessons learned**

- *Post-occupancy Evaluations for Permanent Supportive Housing*
- *Community Housing partnership POE*
- *Community Housing Partnership POE*

## **Universal Design and Health Well –being Arrival: Communicating inclusivity**



### **Arrival: communicating\_inclusivity**



**This is another model.....**

## **Acoustics: a welcoming acoustical environments**



**The acoustical environment is particularly important for people with hearing and sight loss. Here....**

## **Serenity: moments of quiet are good for everyone**

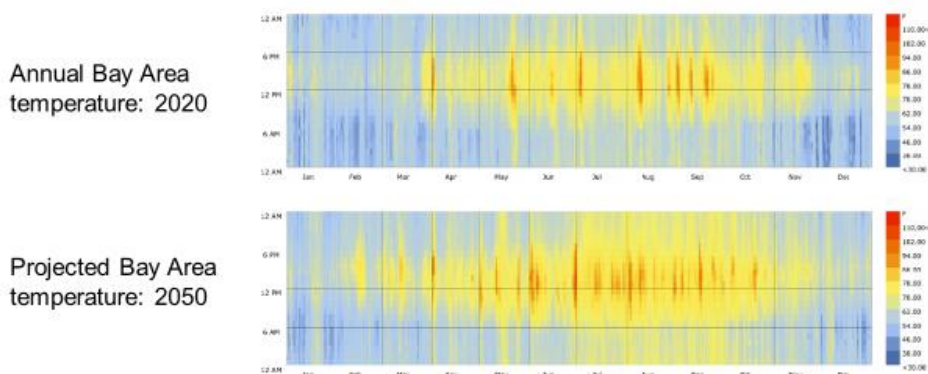


**The renowned Mexican architect Luis Barragan famously said "Any work of architecture that does not express serenity is a mistake." While that might be as slight over statement, it's not by much. People on the autism spectrum require environments that offer low sensory stimulation – but I think we could all use more of that!**

## Health: Super clean indoor air quality

- **Non-toxic materials/IAQ program**
- **Filtered fresh air**
- **Green cleaning program**
- **Smoke and fragrance free environment**
- **HEPA filtered mechanical system**
- **Air Quality test: 50-100% better than LEED IAQ standard**

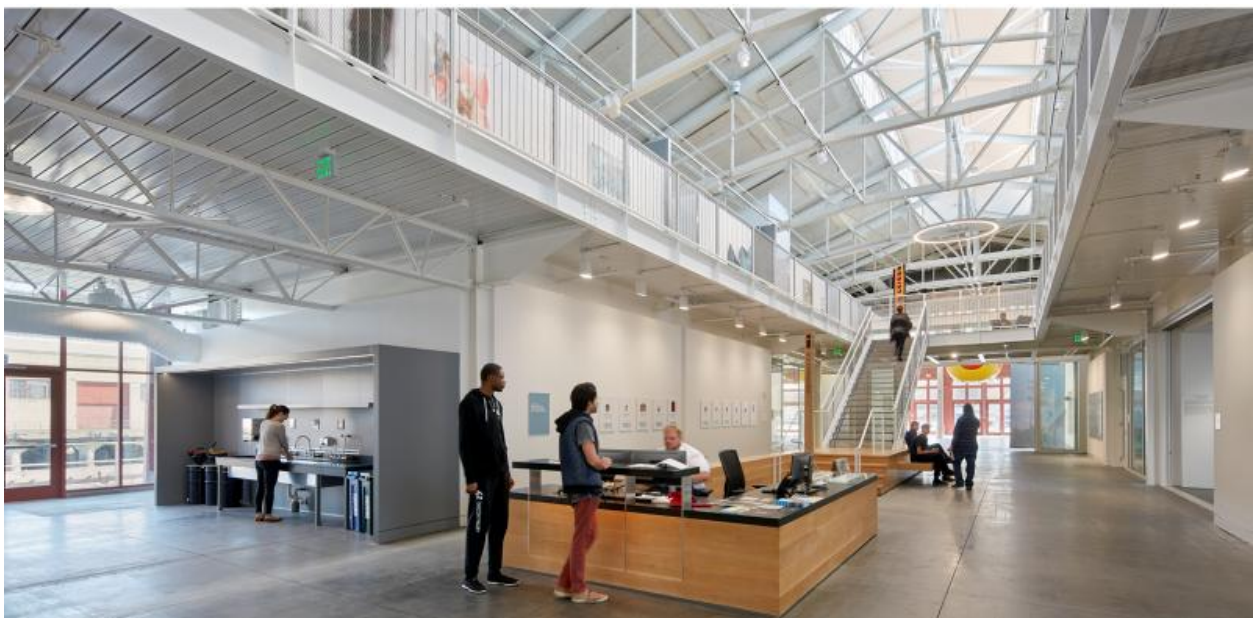
## Climate Change: Greater impacts on people with Disabilities



### **Extreme Weather Threatens People With Disabilities**

“Those with disabilities can experience more physical impacts and can be more socially isolated than the able-bodied”  
*Scientific American, 9/18/2019*

- **Day lighting: Balanced, glare-free daylight**



- **Biophilia: connecting with nature supports health and well-being**
- **Resilience: preparing for an uncertain future**

### Three Case studies

1. Case study: Ed Roberts Campus : An international center for the disability rights movement



**An international model of Universal Design applied at a civic scale  
2011**



**long process – story of approvals**

**A**

## Universal Design

*Creating environments that welcome everyone regardless of their abilities*

A working structure:

1. Physical Environment
2. Visual Environment
3. Acoustical Environment
4. Thermal Environment
5. Chemical Environment
6. Electronic Environment



UD Workshops



Tactile models

**UD working groups – wide participation and representation – discussed in terms of these categories**

LEDDY MAYTUM STACY ARCHITECTS

MEMORANDUM

TO: Ed Roberts Campus Board of Directors DATE: 02/09/09 FAX #:  
REV 07/15/09

FROM: Bill Leddy PROJECT: ERC NO. PAGES:  
RE: ERC Universal Design Update JOB #: 0212 FILE #: A1 LMS\*

ERC Universal Design Update

The following is an updated list of Universal Design features included in the ERC's contracted scope of construction. This scope reflects the results of our Universal Design Workshops held in October and November of 2005, and a Universal Design memo sent to the ERC Board on 05/31/05.

**Ease of Replication:**  
As previously discussed with the ERC Board, a major goal of the ERC design is to create a "replicable" environment; i.e. one that can be easily and economically repeated elsewhere, using predominantly "off the shelf" design elements and equipment and avoiding the use of esoteric or expensive design elements. Consequently, the construction scope of the project does not include highly specialized or newly developed technologies or equipment, such as infrared way-finding devices, "talking" signs, special restroom lifts, etc. Our understanding has been that these features would be added in the future as the technologies become more reliable and/or funding becomes available.

**Universal Design at the ERC:**  
The following is a list of Universal Design features included in the construction scope of the Ed Roberts Campus.

**A. PHYSICAL ENVIRONMENT**

1. **General Access / Movement: Public and common spaces**

a. **Approach to building**

- (i) Curb drop-off: Clearly marked, accessible drop-off areas for ERC visitors, BART patrons, Para-transit, shuttle vans, and AC Transit in front of ERC. Taxi drop-off on west side of Adeline.
- (ii) Safety: New clearly marked crosswalk with flashing caution signs across Adeline Street leading directly to Plaza and main building entry.
- (iii) New accessible ramp at east side of BART parking lot off Tremont Street.
- (iv) Wayfinding: Clearly marked path from Tremont and BART parking lot to ERC and BART entries. Building walls at Adeline Street direct visitors to entry Plaza and main building entry.

Page 2  
ERC Universal Design Update  
February 9, 2009  
Updated July 15, 2009

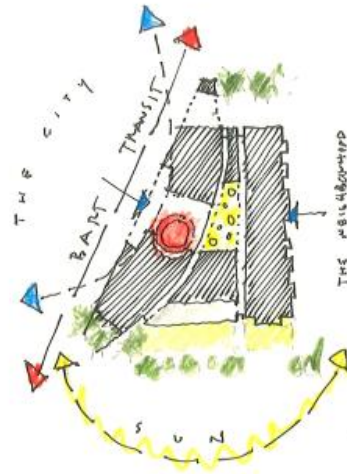
**Physical Environment (cont'd)**

- b. **BART Elevator:** New accessible elevator from Ashby BART station to Adeline Street.
- c. **Transit Stop and "Kiosk"**
  - (i) Covered, well-lighted transit stop on Adeline Street adjacent to BART Elevator, with ample wheelchair space.
  - (ii) Large, lighted display case for transit schedules and policies.
  - (iii) Space provided for bus lift loading and unloading.
  - (iv) Space provided for future interactive transit kiosk.
- d. **Plaza**
  - (i) Shape of Plaza intuitively leads to building entrance
  - (ii) Concrete paving with contrasting colors and non-slip textures
  - (iii) Furniture vs. obstacle: Plaza furniture currently not in scope, TBD.
  - (iv) Art opportunities: Plaza art currently not in scope, TBD.
- e. **Building Entry (basement and first floor)**
  - (i) Motion activated automatic sliding doors at main entry points.
  - (ii) After hours access with hands-free proximity card reader
- f. **ERC Lobbies (basement and first floor)**
  - (i) Generous circulation / waiting space
  - (ii) Concrete floor with contrasting colors and non-slip textures
  - (iii) Durable wall protection panels with corner guards
  - (iv) ERC Information Center and Reception Desk: located central to the entry path and designed for multiple users and staff.
    - (a) Information Center will feature base-relief building plan for easy orientation, Partner information and brochures in print and Braille.
- g. **ERC Elevators**
  - (i) Two elevators provided to ensure continuous access from the ERC Garage / BART Station level during busy periods and when one elevator is out of service.
  - (ii) Extra large elevator cabs with "through access" loading.
  - (iii) Durable cab finishes: textured rubber floor 9ms, stainless steel walls.
  - (iv) Large waiting areas at landings.
  - (v) Floor paddle elevator controls inside cabs in addition to conventional Braille button controls.
  - (vi) Floor paddle call buttons at landings in addition to conventional Braille button controls.
  - (vii) Proximity card readers provide security.
  - (viii) Audible notifications
    - (a) Cab direction: "going up", "going down"

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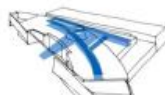
EP ROBERTS CAMPUS 6/07



legible approach & entry

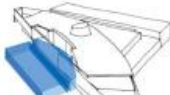


vertical circulation for everyone

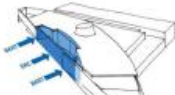


wide corridors | clear routes

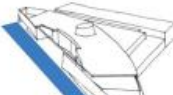
welcoming people with diverse abilities



BART station interface

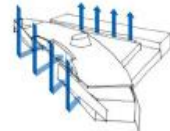


plaza as transit threshold

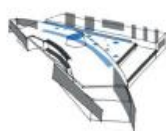


bus, paratransit & taxi zones

providing convenient mass transit access for all



natural ventilation



daylighting | sun control

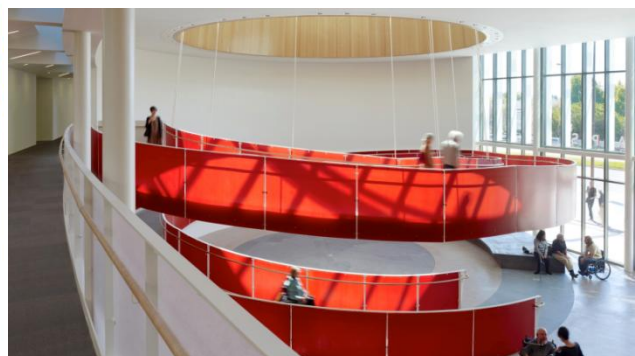
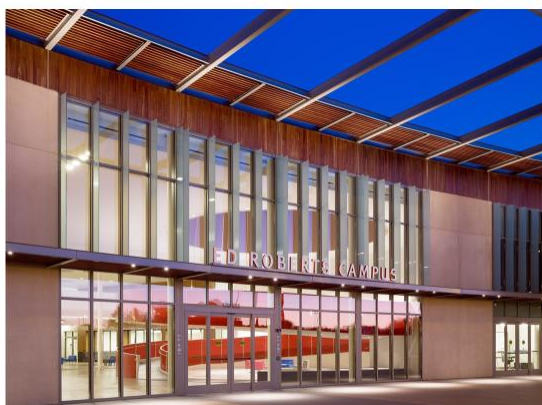
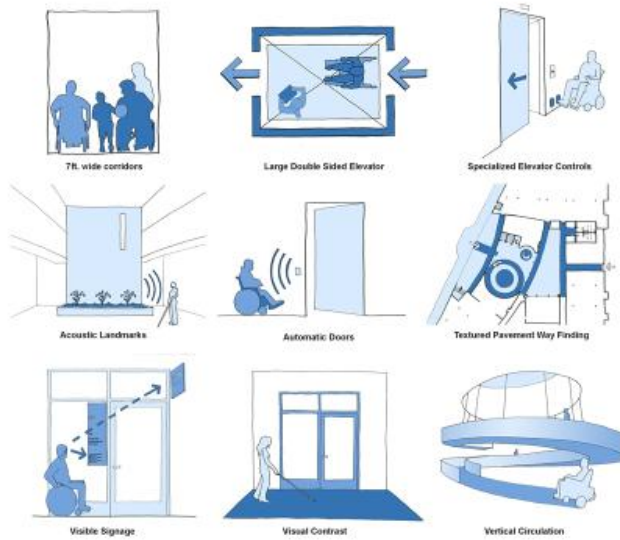


clean air | high indoor air quality

creating healthy, inviting, resource-efficient spaces

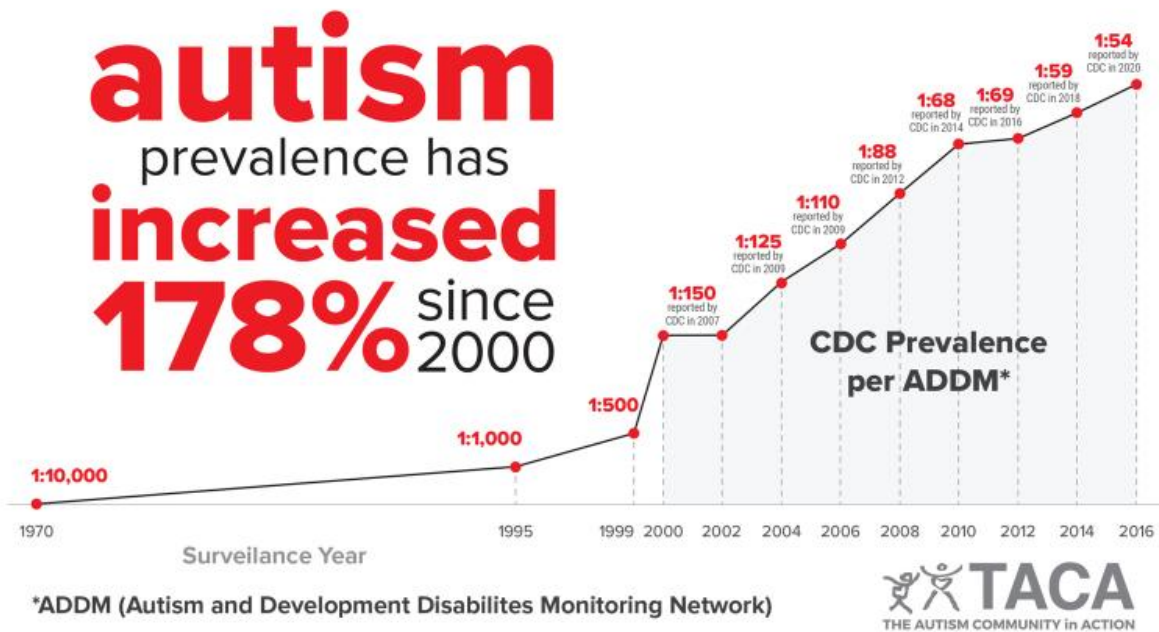




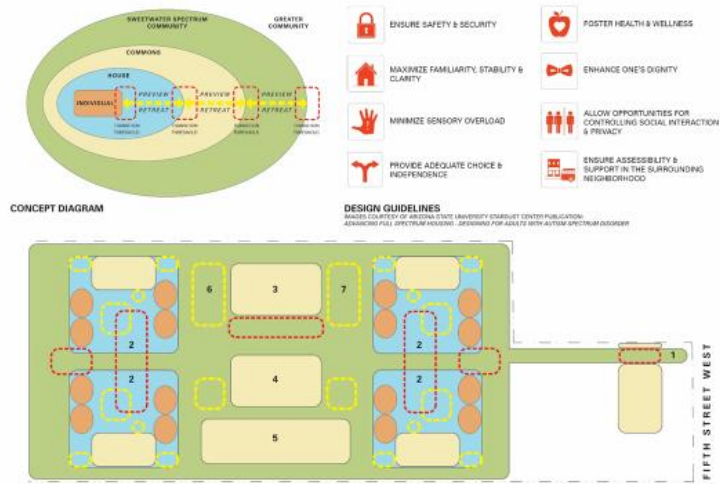




## 2. Case study: Sweetwater Spectrum: A new model for Housing on the autism spectrum



## Design for Adults on the Autism Spectrum



**PLAN DIAGRAM**  
 1 ENTRY 2 HOUSE 3 COMMUNITY CENTER 4 THE COMMONS: PLAZA & LAWN 5 THERAPY POOL & SPAS 6 ACTIVITY GARDEN 7 HAMMOCK GARDEN



**SITE PLAN**  
 1 WELCOME BUILDING 2 PARKING 3 HOUSE 4 STORMWATER TREATMENT BIO-SWALE 5 COMMUNITY CENTER 6 THE COMMONS: PLAZA & LAWN 7 THERAPY POOL & SPAS 8 ORCHARD 9 TRASH 10 STORAGE BUILDING 11 IRRIGATION WELL 12 GREENHOUSE 13 ORGANIC FARM 14 FIRE ACCESS ROAD



**SUSTAINABILITY DIAGRAM**  
 1 ORGANIC FARM 2 IRRIGATION WELL 3 COOL ROOF 4 NATURAL VENTILATION 5 DAYLIGHTING 6 DROUGHT TOLERANT PLANTS 7 SOLAR HOT WATER PANELS 8 SOLAR PV PANELS 9 STORMWATER FILTRATION BIO-SWALE 10 SUN CONTROL 11 RADIANT FLOOR SYSTEM 12 POOL SOLAR PANELS 13 HIGH PERFORMANCE WINDOWS 14 SOLAR TUBE SKYLIGHTS 15 HIGH R-VALUE EXTERIOR WALLS & ROOF 16 PERMEABLE PAVING





### **3 Case Edwin M.Lee Apartments: Veterans and Low – Income families joined in resilience**



- ***A model for healthy living and resilience, the Edwin M. Lee Apartments is the first building in San Francisco to combine supportive housing for both unhoused veterans and low-income families.***
- ***provides 62 apartments for formerly homeless veterans and 57 apartments for low-income families with ground-floor services for families, veterans, neighbors, and the greater community.***

Credit: Wounded Warrior Home

**“about one third of the 103,788 returning veterans seen at V.A. facilities between Sept. 30, 2001 and Sept. 30, 2005 were diagnosed with mental illness or a psycho-social disorder.”**

**“There have been over 1100 major or partial amputations during the Global War on Terror.”**

**“Current estimates of PTSD in military personnel who served in Iraq range from 12% to 20%”**

**“Two percent (5.3 million) of the US population currently live with disabilities from a TBI”**

**“Last month [June 2010] set a tragic record for suicides - more than one per day. Multiple combat tours, bad economy, and family troubles all create incredible stress on today’s soldiers.”**

INTRODUCTION

### HOMES THAT REBUILD LIVES

A CONCEPT HOME FOR WOUNDED WARRIORS AND THEIR FAMILIES

**REBUILDING LIVES**

The welcome mat. You're looking at a house unlike any you've ever seen. An architect (captioned) by the core qualities that dramatize the needs of wounded warriors.

There's a dramatic interplay of light and space. The structure is solid, stable, and elegant, and people are drawn to its calm, quiet, and serene.

When you enter a room, you're greeted with a warm, friendly smile. The space is designed to be a place where you can relax and recharge.

For enough information about this, let's take the house apart.

Key features include:

- ① WELCOME MAT
- ② WELCOME MAT
- ③ WELCOME MAT
- ④ WELCOME MAT
- ⑤ WELCOME MAT
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### THE QUALITY PRINCIPLES

THE FOUNDATION OF THE HOUSE

These seven qualities act as our compass points, inspirations and standards. They're the key to delivering many of the positive life experiences we hope to provide. Our designs work toward answers to this specific range of needs in psychological, social and spatial terms. However important, the little details are all big deals.

**WELL-DEFINED, UNDEFINED SPACES**

**VISIBLE AND INVISIBLE SECURITY**

**INSIDE OUT, OUTSIDE IN**

**THE UNIQUELY NORMAL**

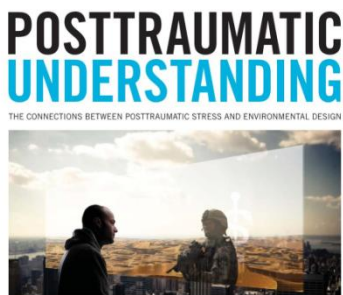
**SOCIAL PRIVACY**

**MOBILE ROOTS**

**OLD SELF, NEW SELF**

### DUALITY HOUSE

The house is the harmony of two houses. A balancing act that expresses the need for both social and private space. There are areas dedicated to recreation and space reserved for peaceful personal time. Healing takes many forms and we've tried to design for all of them.



Credit: Perkins + Will

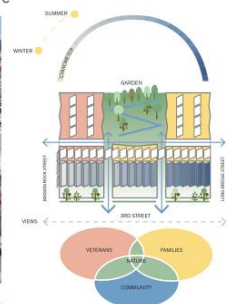
**Design attributes:**

- Visual transparency
- Calming transitions
- Visible spatial order
- Garden access
- Views to nature
- Social privacy

**Design Concept**  
Veterans and Families Joined Through Nature



The Edwin M. Lee Apartments is San Francisco's first integrated veteran and low-income family housing development.



Level 1 Plan



Level 2-5 Plan







- ***The project frames a generous internal garden courtyard that balances a range of areas for retrospection, interaction and play.***







Gracr in Architecture

***"The society of rooms is knit tighter with the elements of connection which have their own characteristics ....It is good to consider the stair landing as a place to sit near a window with possibly a shelf for a few books. The old man ascending with the young boy can stop here, showing his interest in a certain book, and avoid the explanations of infirmity." Louis Kahn 1971.***

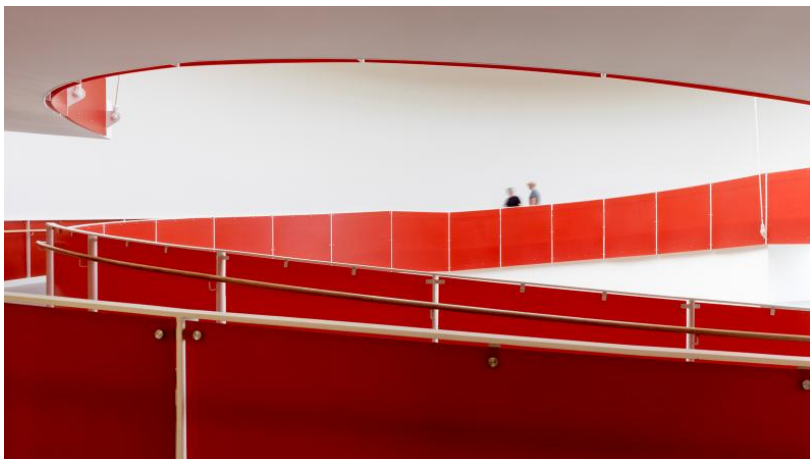


**Kahn might not have understood the principles of Universal Design twenty-five years before the term was invented, but he clearly understood the fundamental value of circumstantial grace embedded within them - that is, the special characteristic of**

**environments that welcome everyone with a timeless generosity of spirit.**



**These are spaces that don't discriminate between the abled and disabled among us, but rather celebrate the rich diversity of the human condition at many scales. It's an approach that transcends rote compliance with disabled access regulations and seeks a broader, more gracious and integrated definition of "accommodation".**

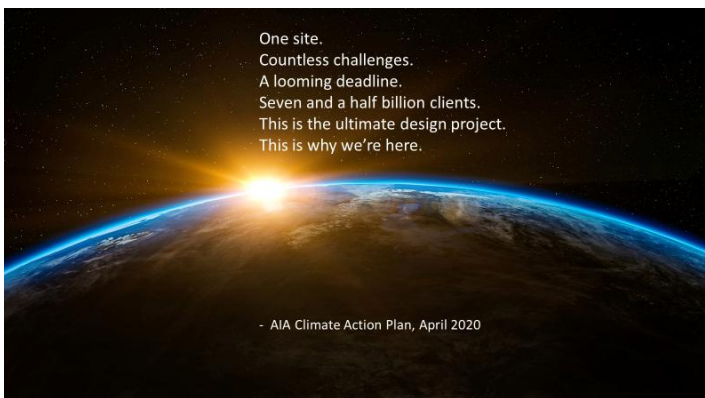


**At the Ed Roberts Campus, the helical ramp was our version of Kahn's staircase. We asked ourselves how we could invite everyone to the second floor, making the experience a joy rather than a chore. We also wanted to make a very public expression of Universal Design, displayed to the city as a symbol of the important mission of the ERC. Thus, the ramp was conceived as a**

**public sculpture, hovering in space, daylit from above, inviting to all.**



**The responses to design decisions such as this one are often unexpected and add to its value and meaning. Soon after the ERC was occupied, a woman approached me in her wheelchair to tell me how grateful she was to be working in the building. *“I’ve never felt so safe in a building before, knowing that I can evacuate myself in an emergency.”* Months later, I found the space at the center of the ramp filled with white chairs. A young couple - with no connection to the ERC other than they had passed through it on the way to the BART station - had decided that this space would be ideal for their wedding. The bridal procession descended the ramp and entered the center where the ceremony was held – a delightful expression of grace that we had never imagined**



**I'd like to close with this statement from the AIA Climate Action Plan. Intended to address the climate emergency, I believe it is equally meaningful when directed toward the broader ecological / societal emergency we're now experiencing. Architects and designers have a moral responsibility to take leadership in this moment of peril and focus the transformative power of design thinking to build a better world for everyone.**