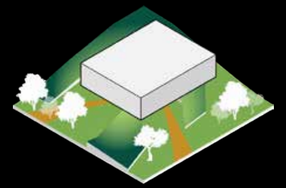
La Brea Tar Pits & Museum

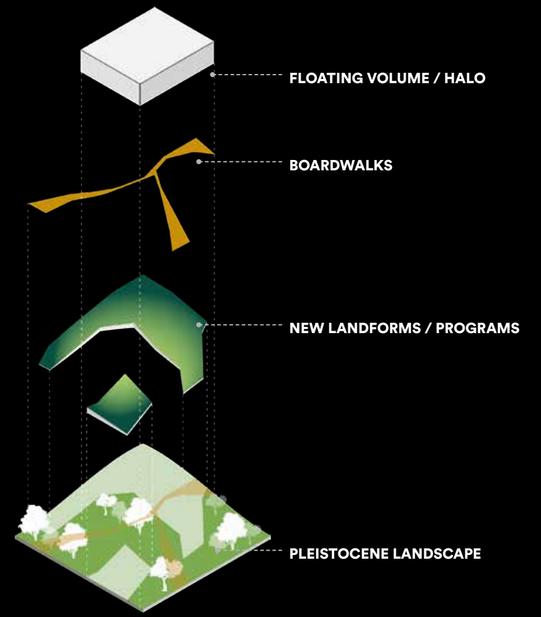
Project Statement

La Brea Tar Pits and the George C. Page Museum

The La Brea Tar Pits is a remarkable place that functions simultaneously as a beloved park, an active research laboratory, and a robust center for education. Both the park and museum are popular destinations for visitors from all walks of life.
The La Brea Tar Pits is a unique representation of a museum park, as both discovery and research are currently being conducted on-site, and where the visitor is encouraged to participate in and enjoy the excitement of ongoing discovery. This aspect of the site allows for a meaningful bridge between the past, present and future, where the Pleistocene meets the exploration of fossil fuels.
Our proposal seeks to amplify this cross pollination by creating a museum that is entirely embedded in the landscape and a park that reflects the living laboratory this place truly has become. Our goal is to create a space of learning through understanding the ecology of the site in the past, present and pressing future.
We propose to develop the Hancock Park and the Page Museum as an integrated and meaningful physical and emotional experience. A journey of curiosity that utilizes all senses, the site allows for the wonder and sheer fun of natural science, as well as addressing local and global challenges.
The Hancock Park and Page Museum should be the living room and the collection hub for the residents of Los Angeles. The building should be interwoven with the public park, visible, open, inviting, exciting, informal and accessible for everyone.
We aim to extend the areas and depth of experiences of both Park and Museum while preserving the use and the memory attached to the site, sustainably and responsibly.

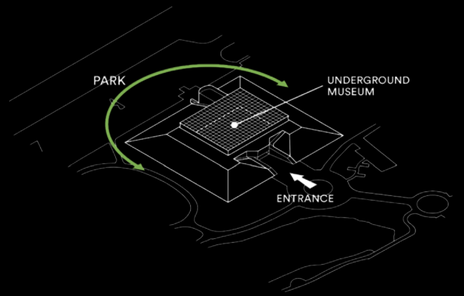


Concept of layers

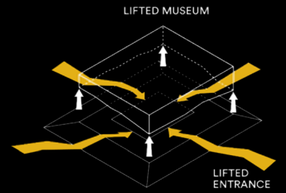


Concept - Masterplan and Museum

EXISTING CONDITIONS

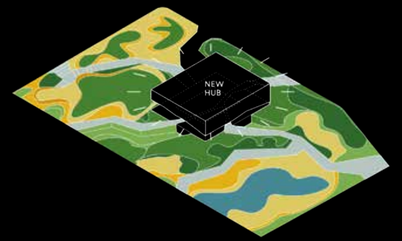


LIFTING THE MUSEUM



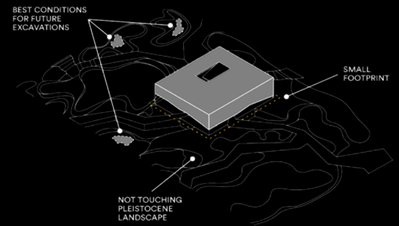
WEAVING PARK AND MUSEUM TOGETHER

THE NEW URBAN HUB



RELEASING PARKSPACE

BENEFITS OF A STACKED MUSEUM



Masterplan

As we develop the LaBrea Tar Pits, Hancock Park, and the Page Museum for a new generation, we must remember not only the past 50 years of site activity, but also the thousands of years of industrial and ecological development that has lead to the uniqueness of this site.

The George C. Page Museum
The George C. Page Museum is a structure of integrity. The simple and clear rectangular shape embedded in the landscape, with the frieze floating as a halo above, is easily conceived and recognizable by the visitor. The museum houses daylit exhibition spaces, and the park slopes outside are much loved by children who spend afternoons rolling down them. However, with the extension of other institutions in the park, the street edge along Wilshire Boulevard loses transparency and connection, and the entrance to the Museum is difficult to find. The exhibitions it houses are introverted, with no relationship between interior and exterior, between the excavation sites and the exhibition spaces. For visitors to have an immersive experience with the museum and park, and the immense research that's taking place on the site, an update is needed.

We propose an extension to the Page Museum that preserves the main characteristics already in place, keeping the simple and clear rectangular footprint, the geometric halo floating above the landscape and the frieze that tells the narrative of the Pleistocene.
We propose direct and visible access from all sides of the park.
We propose an open and inviting foyer acting as a public hub.
We propose new daylit exhibition spaces with a direct relationship to the park and the tarpits.
We propose a research core as the center of the building that connects all areas.
We propose a new roof garden.

The halo will be reinterpreted in the museum by utilizing its spaces for exhibitions, researchers and visitors in an integrated manner. We are interpreting the frieze by projecting the exact image with photovoltaic pixels on the facades as a visible demonstration of sustainable energy production. Furthermore, by using the existing footprint for the new Page Museum, adding a garden on the roof, and covering the parking lot with a new green roofscape, we will be extending the area of the park for users of all types.

The " HALO"

Main organisation

Masterplan

The Hancock Park and The Tar Pits
It is important for the park to be functional, yet fun. Our project becomes a perfect mix of the practical solutions that the park demands and the creative solutions that will capture visitors imaginations and keep them coming back again and again.

Although our proposal reconfigures the park, all of the existing activities are still present, and we have added a variety of new types of park spaces. Cherished aspects of the site remain, including a rolling hill and refurbishment of the iconic sculptures. In many ways, the La Brea Tar Pits should continue to function as it is functioning now: green open space for the neighborhood and an active educational experience. The park itself is already serving a large community and we would like to build upon and enhance the great things that already occur here. Our proposal maintains the allotted size of the central lawn while adding an array of new community spaces, including playgrounds, outdoor classrooms, a dog run, forest trails, a variety of seating areas, a hammock grove, and a new multifunctional chaparral terrace. This is achieved and integrated with protected research and educational areas around the tar pits.

Our proposal organizes these activities in spaces surrounded by a thicker density of tree planting providing abundant dappled shade amongst the sunlit lawns, gardens, and recreational spaces. This allows for the playgrounds and the lawns to be enjoyed for longer parts of the summer and greatly increases outdoor comfort. These spaces are organized amongst a new boardwalk that extends east to west from the Page Museum across the park to Michael Heizer's Levitated Mass. This creates an educational corridor that can extend the exhibitions of the museum out into the park as well as provide a strong gathering place that is well lit, comfortable, and iconic.
Key Improvements
Six key improvements we made within the park were increasing access and improving the overall circulation strategy, integrating the tar pits as an iconic feature, reimagining the planting design, rethinking the parking, designing for the sequestration of atmospheric carbon, and creating a more open dialogue between the museum, the tar pits, and the park. All five of these items are about improving how people experience both the museum and park.

Masterplan

Park Circulation Network and Access
Our new pathway network allows for additional entrances to the park. The creation of midblock access points as well as more direct connections to the new LACMA proposal and transit corridor will ensure people feel much more welcomed to the park from Wilshire Boulevard. Playgrounds, a dog run, and a new lawn closer to the northern edge of park will provide better amenities for the neighborhoods to the north.
The circulation of the existing park lacked hierarchy and was in need of some love. Our proposal creates a series of main boardwalks that connect all of the activities within the park. These boardwalks also lead people elegantly up to the Page Museum continuing the park experience right underneath the building. The boardwalks also become extensions of the museum acting as educational corridors for learning about plants, climate change, and the tar pits.

Foyer
By reshaping the landscape curvature, the main paths from all sides of the park naturally and accessibly lead to the inviting new foyer. Passing through, the visitor will get glimpses of the activities and exhibitions happening all around. They are invited to purchase tickets for the exhibit or stop for a moment in the café that spills out into the park. Schoolchildren are greeted at the foyer, which is located and has direct access to the learning lab. The glass walls of the foyer can be slid open, and on warm days, a mist curtain used in conjunction with air flow creates a cool and pleasant environment, presenting a sustainable way of using old techniques for cooling.

Museum

Adaption of the existing exhibition
Upon entering the building, the visitor has a direct view of the exhibition areas on the floors above and below. The existing, more introverted building opens to the park with slits in the landscape, offering controlled views to the Pleistocene landscape, while the building's reference to the underground excavations is retaining and underlined. Dramatic black walls and ceilings create a sense of infinite mass, staging glowing objects and the many activities available to the visitor. Perhaps, installations of an oil pool and climbing sabretooth cat (Smilodan fatalis) give a multisensory and playful look into the magnificence of the site.

The Research Core
The research core connects all levels of the building. This core is a semi-transparent inner tower that is interwoven with the exhibition areas, creating pockets and bays that define the larger exhibition areas. The research core contains the ever-growing collection, labs and research offices. By placing the research core as the central figure in the building, the visitor is encouraged to interact with researchers and peer into labs, catching a glimpse behind the scenes of the impressive collection. The researchers will be able to create a focus on certain areas of their ongoing work or present new discoveries. All exhibition spaces are directly adjacent to the research core, promoting extensive interaction. To ensure that the researchers do not feel unwillingly exposed, in specific areas, the glass installed as electrochromic (smartglass) that can change from clear to opaque when you turn the switch. The research core is internally connected with stairs and a service elevator. On the roof of the research core, there is the staff canteen, administration and offices that do not need direct contact to the public. The research core is formally complex and can be extended or minimized over the years according to future needs.

New Exhibition space
The new exhibition space is created on an undulating floorplate that ensures that the exhibition spaces have different floor-to-ceiling heights, hereby creating various spatial experiences around the research core. Every space is connected by a ramp for accessibility. The exhibition spaces are daylit and have direct visual connection to the park and tarpits. However, the spaces can be divided and daylit can be minimized according to future curatorial narratives and experiences. Auditoriums, cinema space and enclosed meeting space/ learning space is placed in connection with the research core for access from both exhibition space and the research core.

GEOLOGIC FRACTURE

The La Brea Tar Pits are composed of asphalt seeps that have escaped thr ground through geologic fractures and fissures in surounding rocks. This Geologic Fracture becomes a park feature composed of boulder-like outcroppings and planting seeping up through its stacked layers. While visually iconic, this also works as a retaining wall allowing for new topographies and more varied spaces in the park. This allows for an elegant entry to the Page Museum on top of the hill and expansive views to the Gelasian Green Lawn below and beyond.

Museum

New Pleistocene Roof Garden and Tar Bar
The new Pleistocene Roof Garden and Tar Bar are placed on top of the building with access directly from exhibitions or via elevator from the foyer. From the Tar Bar there is direct access to the Pleistocene Roof Garden along a slope that can be used for informal seating and for small lectures and speeches.
The Pleistocene Roof Garden is very robust and draught tolerant. On the roof, a forest of photovoltaic trees creates shade on hot days, and together with cooling winds creates a pleasant place to relax. The Pleistocene Roof Garden creates a perfect venue for special events, openings etc.

Project Program Crosswalk
Part of our vision for the museum is to interweave the ongoing research; labs & workshops and the curated exhibition, seeking to create a visible connection that support the didactive and sensorial experiences of the visitors. We have therefore included areas for hands-on experiments such as the “Dig, Hands on” located in direct connection with Project 23 that is brought inside the museum. This allows visitors to experience the entire process from excavation to cleaning, sorting, archiving & researching.
As part of this strategy, we find that the immense collection of the Page Museum should be an integrated part of the museum experience at the Page and have included this as central element with more area set aside for the collection storage, that in our proposal is put on display.

NATURAL DAYLIGHT

In the practice of architecture, daylighting refers to the use of natural light, be it brilliant sunlight or muted overcast light, to support the visual demands of building occupants. Electric lighting in buildings consumes more than 15 percent of all electricity generated. Utilizing natural light can lead to substantial energy savings.

Park

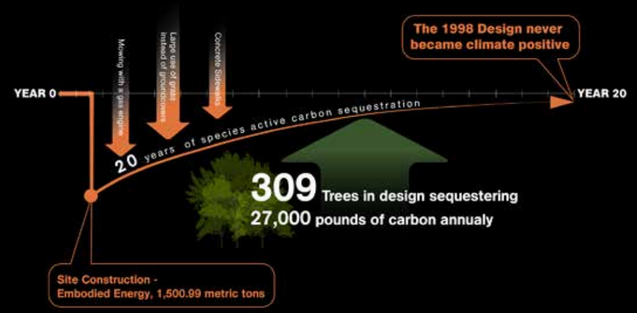
Discovery Scaffolds
The interface between the public open space and the active research areas of the tar pits also required rethinking. Our desire was to create something that touched lightly on the site, could be moved, and added to the expression and excitement of the space. We created Discovery Scaffolds, enclosures of sculptural fencing that proves that the solution for security can be tough, but elegant. Made of metal fabric, the structure acts as a transparent veil that drapes over the areas that are required to be protected from the public but also visible for education and observation. Suspended from cables and connected to a series of posts, the fencing becomes a dramatic element to the park. This metal fabric fencing is lightweight and easy to move if the research migrates elsewhere on the site. However, it is also rigid and difficult to climb as the metal cables are very small. This allows for any required footings or columns to be placed further away from the pit, but still maintains the required security.
The Tar Pits become outdoor classrooms along the boardwalks. The metal fabric is very porous so people can easily see in the tar pits. Interpretative signage will be integrated into these 'Discovery Scaffolds' for self-guided tours, while ample gathering spaces are provided for group educational sessions.

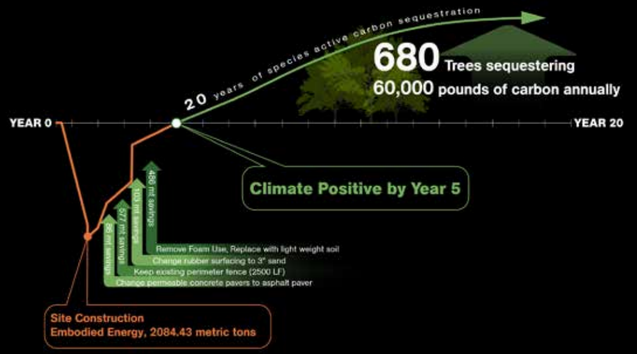
Planting Design
A major transformation within the park is the planting design. Our team was inspired by your existing Pleistocene Garden, and our first thought was to extend this palette to become a larger portion of the park. As our horticulturalists researched deeper into these species, we found that not only were they appropriate for the educational aspect of the project, but many of these plants were also able to adapt well to the rapidly changing climate.
The Pleistocene landscape is composed of these four major plant communities: coastal sage scrub, riparian, chaparral, and mixed evergreen/redwood forest. This planting extends from the new Page Museum, and creates an educational landscape amongst the iconic tar pits
These species embody the era of the tar pits and we think this landscape will feel like no other in Los Angeles. The park has a wild look and feel to it, traversing the site on boardwalks that are surrounded by both lush and drought tolerant planting. The only manicured spaces are the play lawns, playgrounds, and seating areas. This allows for a park that is more environmentally friendly, requires less maintenance, and increases biodiversity.

Landscape

Independent climate research and discussion with local LA horticultural societies have guided the development of planting palette for the eastern of the park. Studies of recent drought conditions have proved a formidable testing ground for the LA region's future native planting types. Chaparral and coastal sage scrub plant communities have adapted from desert plants. Not only are many of these species part of the Pleistocene landscape but they are also very likely to be able to quickly adapt again to the conditions of climate change.
Designing for the Sequestration of Atmospheric Carbon
The history of the La Brea Tar Pits is far longer than the creation of Hancock Park or the Page Museum. The tar (asphalt) is a form of petroleum, linked through time to fossil fuels, oil, and climate change. From zooplankton and their transformation into oil, to the ice age, to oil's extraction from the ground, to the burning and releasing of atmospheric carbon, the history of the La Brea Tar Pits is a History of oil, a history of carbon, and a history of climate change.

Throughout this process we have with Pamela Conrad and CMG, climate specialists to strategize how the park can become an active participant in the global fight against climate change. Utilizing the first ever Landscape Architecture Carbon Calculator developed by Pamela Conrad, we have made design decisions that have resulted in the park's ability to sequester all of the carbon emitted through its construction within the first five years of its existence (the existing landscape would require 52 years to sequester the amount of carbon used to make it). In the following 45 years (the typical lifetime of a park is 50 years before necessary replacement), the La Brea Tar Pits could sequester an additional 9,393 metric tons of carbon. This is equivalent to the typical size of 18,786 single-family homes. This calculator was developed by Pamela through a fellowship with the Landscape Architecture Foundation where Martha Schwartz was a supportive proponent of this tool's development.





Pleistocene

Evergreen/Redwood Forest - Riparian - Chapparral - Coastal Sage Scrub

1.8 Million Years Ago

Trees
Alnus rhombifoli
Cassia grandis
Cupressus macrocarpa
Juglans californica
Juniperus californica
Platanus racemosa
Pinus muricata
Pinus radiata
Pinus sabiniana
Quercus agrifolia
Quercus lobata
Sequoia sempervirens

Shrubs
Arctostaphylos pungens
Arctostaphylos viscida
Ceanotus oliganthus
Sambuca nigra
Xylococcus bicolor

Grasses
Bouteloua curtipendula
Bouteloua gracili
Carex squarrosa
Sporabolus tara

Perennials
Amaranthus cruentus
Amaranthus caudatus
Ambrosia
Antirrhinum nuttallianum
Artemisia californica
Balsamorhiza deltoidei
Berberis aquifolium
Chenopodium album
Eurotia lanata
Eriogonum fasciculatum
Montia spathulate
Rumex salicifolius
Sagittaria sanfordii
Salvia apiana
Salvia leucophylla
Sphaeralcea ambigua

Climate-Adaptive Species

Chapparral - Coastal Sage Scrub

Adaptive for Year 2100

Trees
Adenostoma fasciculatum
Aesculus californica
Platanus racemose
Populus trichocarpa
Quercus agrifolia
Salix lasiolepis
Sambucus Mexicana
Sequoia sempervirens
Styrax officinalis californica
Umbellularia californica

Shrubs
Ceanothus impressus
Convolvulus cneorum
Eurotia lanata
Lupinus albifrons
Ribes aureum gracillimum
Trichostema lanatum
Zauschneria californica

Grasses
Agrostis pallens
Festuca rubra
Hordeum californicum
Muhlenbergia rigens

Perennials
Abronia villosa
Acalypha californica
Achillea millefolium
'Californica'
Balsamorhiza deltoidei
Monardella macrantha
Salvia officinalis
Solanum umbelliferum
incanumVerbena
lasiostachys
Zigadenus fremontii

Landscape

The major strategy of afforestation can be implemented in the site inexpensively planting numerous trees as saplings/whips which requires only a small area. This can be integrated as an educational community activity and use volunteer labor to help plant the site. While the large, older trees provide an incredible ambience, younger, developing trees are more productive at sequestering larger amounts of carbon than older trees. This afforestation strategy can increase the recovery and sequestration rate for the emitted carbon by 35 years. Other strategies used throughout the design include:

- Using wood shrubs in lieu of annuals and perennials
- Using Lightweight fill for on-structure conditions.
- Material reuse/reclamation of perimeter fencing and trees removed during construc tion
- Creative grading to reduce concrete site walls
- Using natural materials for play and recreation areas instead of rub bers and synthetic surfaces
- Using native/no-mow grasses to reduce on-going emissions
- Switching from fossil-fuel based maintenance equipment to electric

Unification of Tar Pits, Museum, and Park
The new circulation strategies and planting design enhance the relationship between the building and the park. Our proposal opens the museum up more than ever before, directly engaging with the public realm. The museum is lifted up to allow for a deep overhang to greet visitors from all corner of the park up to one central tethering place. We believe a project is best when the landscape and the architecture really work together. Here the museum and the park not only compliment one another they become inseparable.

Rethinking Parking
The current parking remains in place, but a new green roof has been constructed overtop of the lot. This solution provides a significant addition of green space to the park. The intention is for this area to be more open and give additional lawn area to the community. The lawn allows for the deck to remain lightweight in construction. Parking built below a new deck will also protect cars from the intense sun during the warmer months. It will provide additional security for staff and guests and the terrace above can at times become an event space.

RE-USE OF ON-SITE WOOD

Reusing materials can improve carbon footprints, help create a unique sense of place and is a great educational opportunity. The trees that need to be removed from the site can potentially be milled down and either re-used in the building interiors or in the landscape as site furnishings. The carbon sequestered from the atmosphere stays in the wood as long as its integrity is maintained and not allowed to decompose.

Phased Master Plan

In order to minimize disruptions to the Page Museum and the La Brea Tar Pits as an active research institution, and ensure the community maintains access to a green space, the design components have been thought out so that they can be phased while maintaining operations to continue. Within the park, the grading strategy has been carefully thought out to maintain three distinct zone: the hill, the lake, and the western tar pits with the construction of the new Page Museum is integrated with the 'Hill Phase'. These phases can occur in a linear sequence if funding needs to be allocated per phase, or they can be conceived holistically and overlapped, reducing the costs of re-mobilization of the construction team, and resulting in a complete project with fewer starts and stops.

The Hill
A major change to the site is the sculpting and smoothing of the existing hill and the construction of the new museum. While sculpting the hill will offer significant benefits to the design, including more varied program spaces, reclamation of the on-site parking for active park space, universal access to the 360 degree entry level, and more soil depth of a more varied and robust planting palette, it is the most complex construction of the three zones. However, during this construction, the western site and the southern site around the lake could remain open. This would allow Project 23 to continue in its existing location and access to the lower levels of the Page Museum. All major grading would occur during this phase which will minimize the need for large earth-moving equipment in future stages. Small parking provisions can be maintained throughout construction.

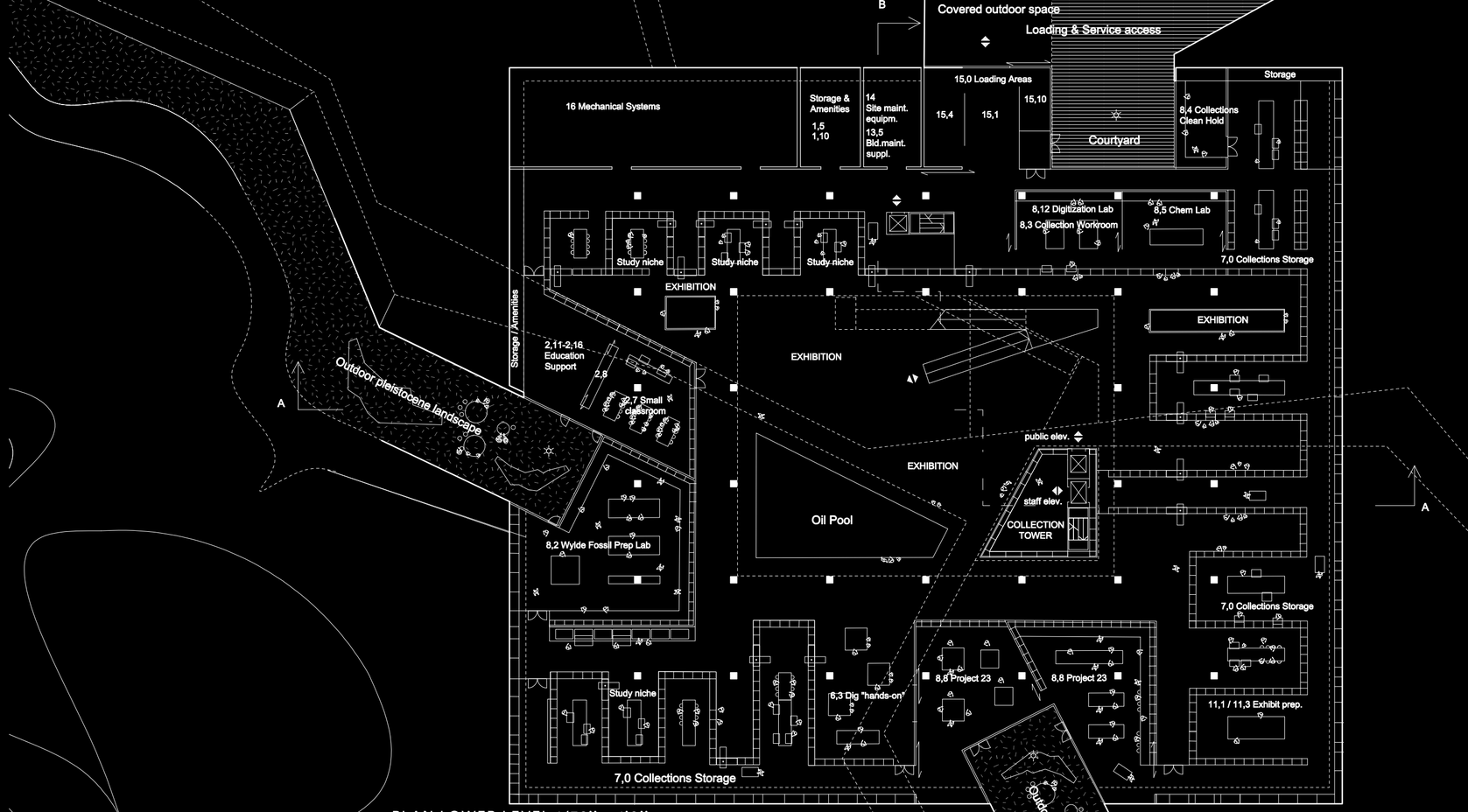
The Page Museum, undertaking renovation during this phase can also be phased to make sure adequate swing space is available for functions to continue. One option is to explore opportunities to occupy any vacant space within NHMLAC's other properties. This would allow construction to move on uninterrupted, but it would eliminate access to the existing building, and require the museum to close for the duration of construction. In lieu of utilizing other spaces, temporary trailers could also be purchased to accommodate research operations. Another option is to phase parts of the building construction and relocate staff and activities in zones throughout the building while working on other zones.

Phased Master Plan

The lower levels can be split in a way to accommodate this, while the new addition can move forward above. While the construction will need to be carefully managed and scheduled, this option does reduce the need for taking swing space from other properties (which could impact their operations) or purchasing temporary working trailers. At the end of 'The Hill' construction phase, the new museum will be complete, Project 23 can move into its new home, the chaparral terrace and parking accommodations will be completed, and universal access to the museum will be provided.

The Lake
The areas around the lake pit and the central lawn will require only localized grading changes. The major construction components are the reshaping of the lake edge and using the landforming/fencing strategy to provide safety to the public and the lake pit, while offering unobstructed views to this area. Other treatments to this area are low impact, including planting, the demolition of existing paving, and new finished being provided. The lawn will be reshaped and replanted with native, no-mow grasses, the outdoor classroom will be constructed, and the new Mammoth Excavation Playground will also be completed within this phase, providing exciting public amenities. Connections will be carefully coordinated with the adjacent LACMA property and the previous phase. 360 degree access to the Page Museum will be established.

The Western Tar Pits
Due to the sensitivity of this area with the tar pits and mature trees, much of the existing grade is maintained with local topographic changes to be completed with small equipment of by hand. As Project 23 will be moved to the new museum prior to this phase, construction of the boardwalk system and discover scaffolds will commence. The ground and soils will be prepared as new tree planting is performed; continued tree planting can occur with small saplings and whips following construction as community and volunteer events to further propagate the forest. Community amenities including, the Giant Sloth Hammock Hollow, The Dire Wolf Dog Run, the Pleistocene Exploration Playground, and an array of outdoor rooms and seating nooks will be built. Connections will be carefully coordinated with the adjacent LACMA property and tie into the previous phases. At the end of this phase, the park will be considered complete.



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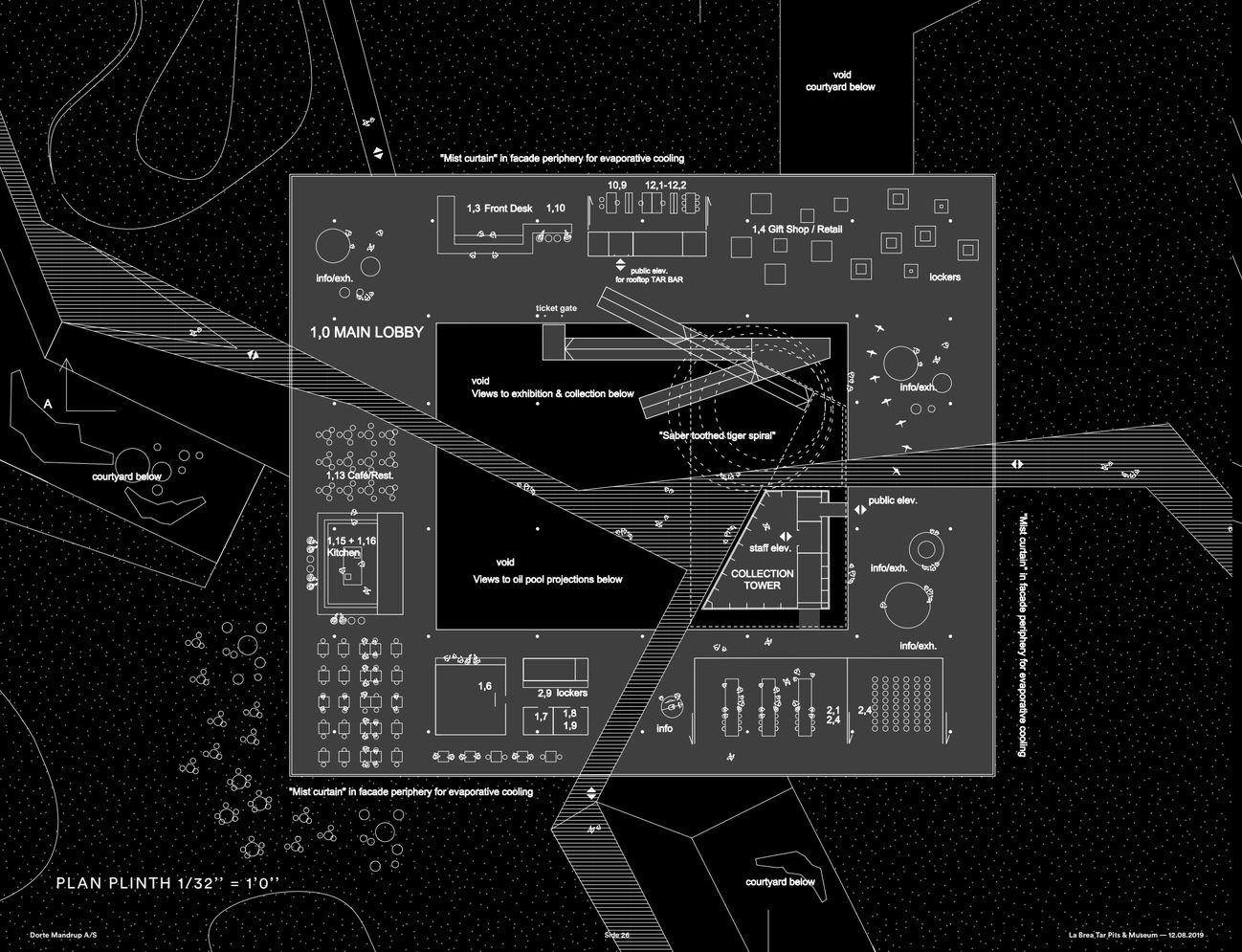

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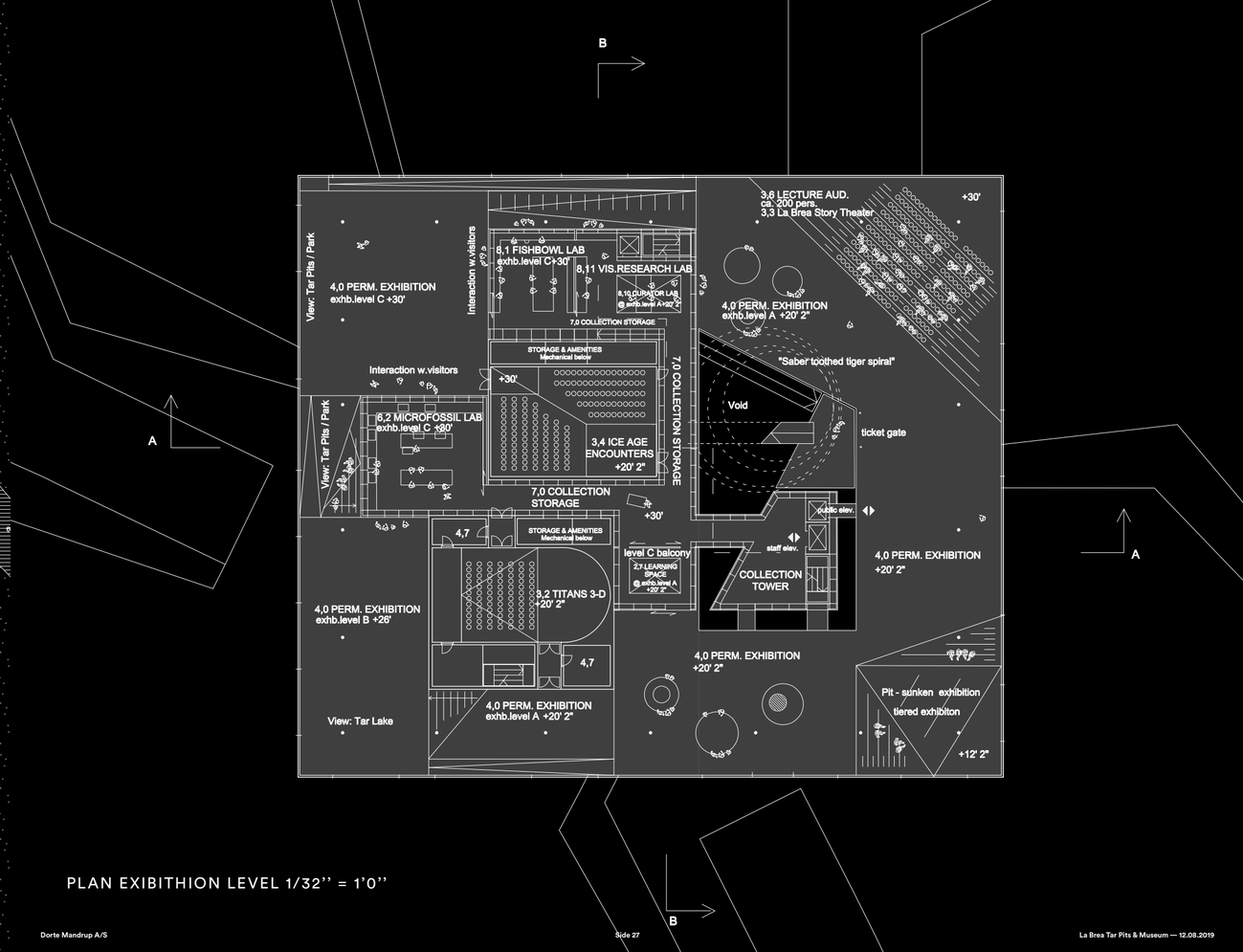

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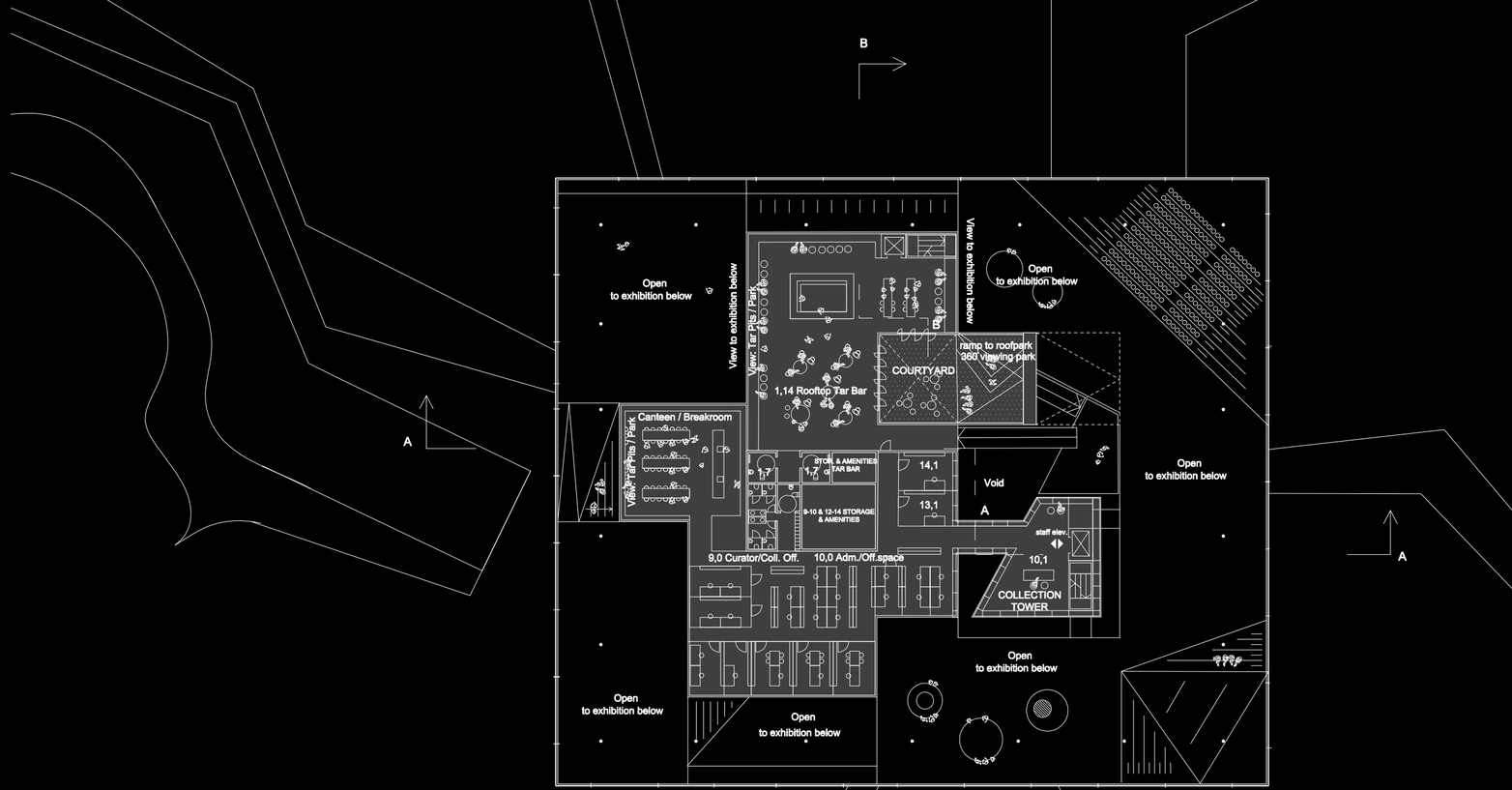


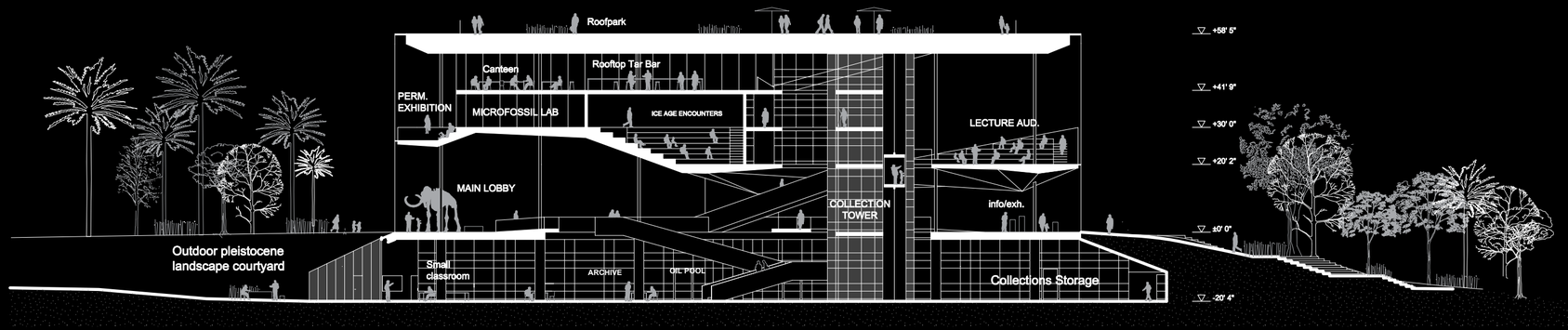
PLAN UPPER LEVEL 1/32'' = 1'0''

Phased Master Plan

Conclusion
These improvements will ensure that The Page Museum, Hancock Park, and the La Brea Tar Pits are memorable and remarkable for another generation of eager science enthusiasts. These alterations will also build upon the mission of the museum and the amenities of the park to create a space for everyone. We believe that the new design must match the ambition and spirit of the La Brea Tar Pits and the prominence of surrounding development in Miracle Mile. It must be welcoming to the surrounding community, visitors, and all walks of life. We think our proposal is a functional, elegant and unforgettable solution for the city of Los Angeles and surrounding community. This park will become the highlight of the NHMLAC's already stunning collection of educational spaces, both inside and outside.

Further Process
We believe that the collaboration between experts, scientists, researchers, curators, experience designers, community members, users, visitors, neighbors and politicians is extremely important to the design of the La Brea Tar Pits. The vision for the new Page is future facing with a flexible, adaptable and robust concept that maintains the strong identity already present at the site. We believe in a sensitive and clever use of materials that incorporates multi-sensory experiences, like touch, smell and sound. Spatial variations and surprises, with sequences of small and large, high and low, working with framed views and the interplay of light and dark, creates moments that can support the future curated narrative as well as deep and lasting learning. Combined, this creates a rich experience that allows the user to understand the layers of time, preserving the past and the memories connected to it without getting stuck.

Section A - A



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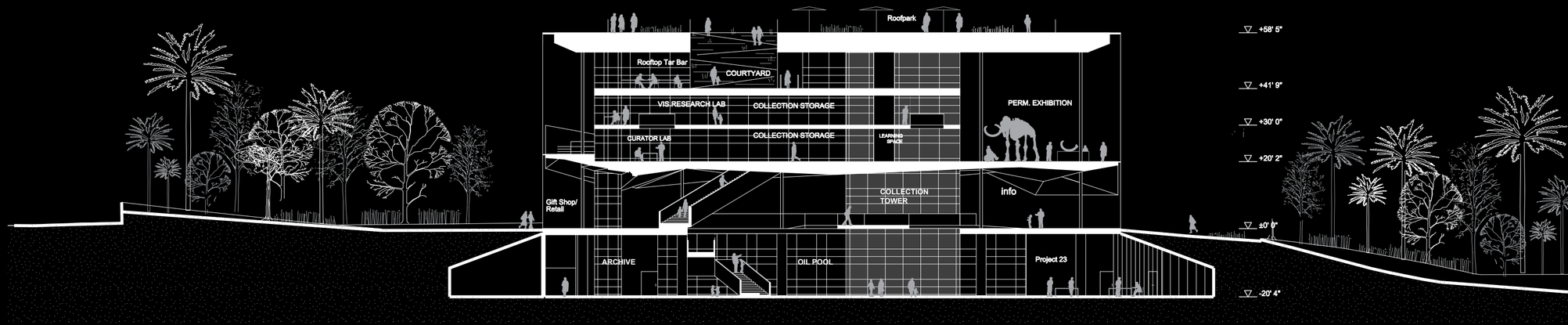
Section B - B



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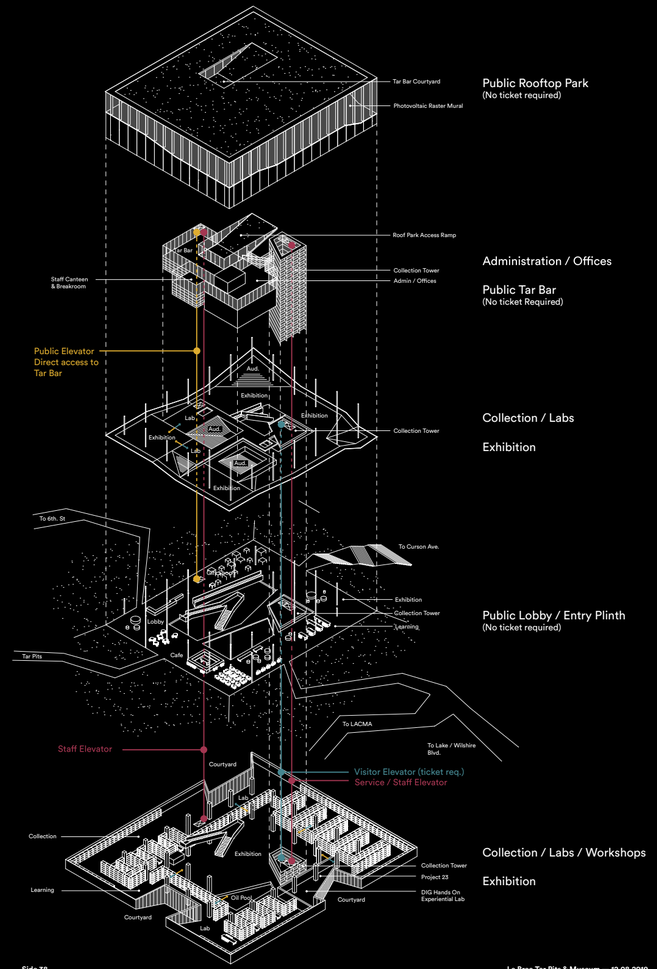
Material References

Programmatic AXO



Public Rooftop Park
(No ticket required)

Administration / Offices

Public Tar Bar
(No ticket Required)

Collection / Labs

Exhibition

Public Lobby / Entry Plinth
(No ticket required)

Collection / Labs / Workshops

Exhibition

Wayfinding

Wayfinding is an integral part of the proposed layout of the entire park and the openings in the new museum façade. Whereas the museum at present only offers one single entry point which is linked to one single entrance path in the park, the new layout opens a new wayfinding concept that pays tribute to the fundamental curiosity and exploratory nature of science. We envision the museum and park becoming one and the presence of the museum permeating the park through wooden boardwalks that extend to all corners of the park.
Seeing that each of the broad and inviting boardwalks lead to the museum, they function as the primary, intuitive wayfinding – reminding the guests of the park and the museum that the most interesting route is not always a straight line. The boardwalks interact with the landscape and touch upon points of interest in the park, thereby translating scientific findings into a physical sensation, a narrative experienced by foot and by venturing off the boardwalk prompted ever so subtly by the discovery of tiny footprints.
The construction of the boardwalk allows for surprising details and a flexibility that goes hand in hand with the organic, ever-changing and adventurous nature of the tar pits. The result is a holistic experience on a human scale for visitors, locals and all other users of the park with curiosity and knowledge radiating from the museum and enlightening the entire park.
Exhibition design intro

To us science, facts and ongoing discovery are the ultimate starting points for good storytelling. We believe science does not end conversations but opens them up and uncovers wonderful levels of “why” and “how”.
This is also the hallmark of a successful museum: the need to return and revisit the whys and the hows – and add more pieces to the lifelong jigsaw puzzle of knowledge and experience. The pieces we pick up from each exhibition may vary but people of all ages and interests return home with valuable pieces.
By creating an exhibition flow that combines the immersive, the interactive and the sensuous and not only allows for but rewards personal initiative and curiosity, the exhibition aims to hit the universal sweet spot on the learning-enjoyment continuum.
The La Brea Tar Pits Museum is an abundance of science inside an adventure wrapped in storytelling. It is our ambition to create unforgettable stories through facts and fiction, knowledge and hands-on experiences, and space and time.

Cutouts

Cut-outs on the edge of the boardwalk are used to display a range of different information. From formal signs
relating to sites in close proximity to the boardwalk, to cut-outs of footprints or plants with an arrow prompting
the visitor to explore the park. The arrows point the visitor in the direction of an additional sign with an
identical cut-out. This makes it easy to navigate regardless of language or reading skills.

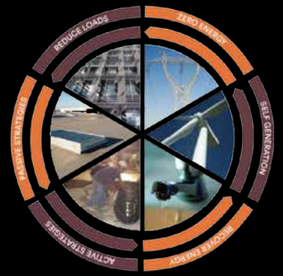
Shapes

The shape of the signs are inspired by tectonic plates, landscape and contour lines. The shapes and different levels add an element of play and a range of functionalities.

Animal Heights

The edge of the boardwalk can be warped and transformed into shapes that display information in an
unexpected and informal ways. Here, it illustrates the height of different animals.

Sustainability approach



Sustainability is a core component of our vision for the La Brea Tar Pits. We believe there is an incredible opportunity for the project to become a living sustainability laboratory. By designing the project to exist in harmony with the natural environment and implementing regenerative features, the educational mission of the La Brea Tar Pits and Page Museum can be expanded to include environmental sustainability. The project will seek to “close the loop” to the extent practical for energy and water, as well as focusing on outdoor thermal comfort and overall resilience of the project. The project will leverage these features as part of the LEED Gold certification process.

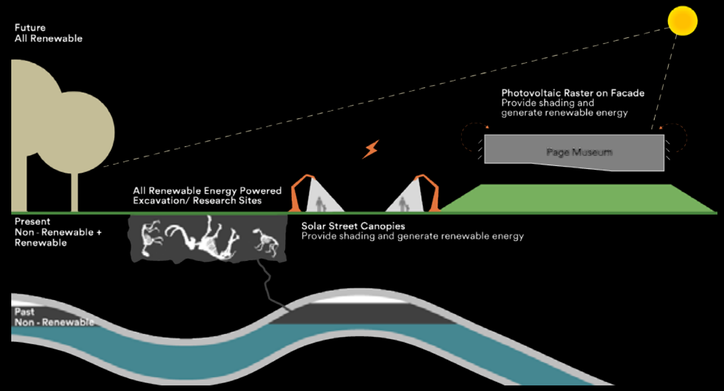
Energy

The tar pits that naturally define the site are a visual and visceral reminder of the integral role of energy for the project. Our vision of the living sustainability laboratory is organized around the link between the carbon-intensive fossil fuels from the Pleistocene and before that powered most of the modern era and a carbon-free renewable energy future. Interpretive signage will help highlight this connection and show how energy is the connecting thread of the specific project side through millions of years.

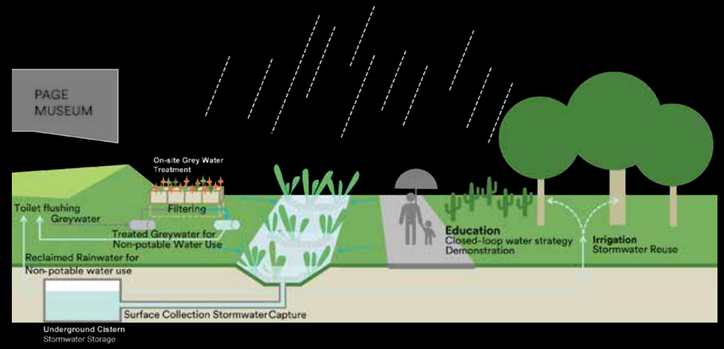
The first strategy for closing the energy loop is always efficient use of energy. We will design the Page Museum building to use as little energy as possible through a high-performance façade designed to maximize natural daylight penetration while minimizing thermal gains. Where lighting is necessary we will use all LED lighting. We will also call upon our extensive experience designing museums to provide the proper thermal conditions and humidification for the exhibits while using efficient HVAC systems and thermal massing to reduce energy demand.

In order to begin actually closing the loop, the minimal energy demand that the project will have should be met by as much renewable energy as possible. The building will feature highly innovative façade-integrated solar photovoltaic cells that will generate renewable energy with the look of a conventional glazed façade. The project will also include solar “trees” throughout the site that provide shade and outdoor thermal comfort while producing carbon-free electricity.

Energy of the Past, Present and Future



Closed Loop Stretegy - Water Ressources



Climate Positive Design: Designing for Carbon Sequestration

CARBON ANALYSIS SUMMARY

	Carbon Emitted (metric tons (mt)	Carbon Sequestered (mt)	Years to Neutral/Positive	Impact Beyond 50 yr Lifespan (mt)	Impact in Next 10 Yrs (mt)
EXISTING LANDSCAPE	1,500.99	-1,448.07	52.00	52.93	1,488.00
PROPOSED MSP LANDSCAPE	2,084.43	-18,941.11	52.00	-16,856.68	1,750.00
PROPOSED MSP LANDSCAPE W/CHANGES	492.19	-52,055.39	5.00	-51,563.21	-313.00

IMPROVEMENT STATS	**76.39%**	**274.83%**	**47 less years to offset**	**-34,706.53**	**-2,063.00**
	less CO2 emitted	**more CO2 sequestered**	**10.4 times as fast**	**more CO2 removed in 50 yrs**	**more CO2 removed in 10 yrs**

RECOMMENDED CHANGES AND IMPACTS

	Design Improvements	Proposed Landscape CO2 Footprint (mt)	Decrease Emitted CO2 w/Change (mt)	Increse Seq CO2 w/Change (mt)	YTP Improvement	YTP Change
1	Change perennial and grasses to shrubs	18,941.11		32,351.95	-28	from 52 to 24
2	Remove foam, use lightweight fill (soil)	486.00	486.00		-6	from 24 to 18
3	Keep existing perimeter fence (-2500 LF)	577.78	207.41		-5	from 18 to 13
4	Reduce site walls by 50%	338.98	144.49		-2	from 13 to 11
6	Change rubber surfacing to 3" sand	103.50	101.16		-2	from 11 to 9
7	Add 100 more trees	51,293.06		1,125.66	-1	from 9 to 8
8	Change perm conc to asphalt	86.00	44.62		-1	from 8 to 7
9	Reuse 50% of existing site fencing (-700 LF)	207.41	103.70		-2	from 7 to 5
10	High maint. lawn to native/no mow					N/A
11	Switch maintenance equipment from gas to electric					N/A
12	Reuse wood on site for furnishings		TBD			N/A
	Totals				**-47**	**5 YEARS TO POSITIVE Meets Challenge Goal**

Sustainability apprach

Water
The project is designed to minimize the use of potable water on site through efficiency and reuse of nonpotable water on site. With no purple pipe infrastructure in the immediate vicinity, municipally supplied recycled water is not available. As with energy, the new development design should stress the local utilities as little as reasonably possible. Indoor low-flow or no-flow efficient fixtures significantly reduce potable water demand, and ideally limit potable water use to fixtures with human consumption (faucets, sinks and showers). Climate-appropriate planting outdoors reduces irrigation demand and retains water in designated low-impact planted areas to prevent localized flooding of streets and pedestrian walkways. Due to the local soil conditions, we do not anticipate that onsite infiltration of stormwater will be feasible. We will design the site to provide surface drainage channeled through vegetated strips to an underground cistern for future pumping and reuse for landscape irrigation. We will also consider implementing a grey water treatment system to capture waste water from sinks and showers for onsite treatment and beneficial reuse.

Healthy Building and Low Embodied Carbon
Our team is committed to three key principles: protect occupant health, promote occupant wellness, and prevent environmental harm. Protecting occupant health means removing active hazards such as toxins in materials, air, and water. Promoting wellness goes much further: it means creating spaces that are not just healthy but comfortable and delightful; spaces that support effective learning, working, and playing. Preventing environmental harm is the basis of all of our work. There are seven design issues that are critical for healthy buildings: air quality; water quality; material assessment; lighting design; access to daylight and views; comfort, including visual, thermal, acoustic, and ergonomic comfort; and active design. Our team has deep experience in delivering buildings that are optimal for human and environmental health.
Reducing embodied carbon is a deliberate practice that includes a focused assessment and alternatives analysis for the building structure and facades. Our team utilizes a suite of database, BIM plug-ins and database applications for assessing embodied carbon in materials. Compared to a base case, the team will investigate alternatives to traditional design such as cross-laminated timber, timber products for facades, reduced Portland cement concrete mixes, alternative aggregate products, reduced material quantities, and recycled/reused products where possible to avoid emitting carbon emissions associated with the extraction, manufacturing and construction of the new building. We will look to use materials sourced locally to support the southern California economy by considering local lumber manufacturing and stone quarries for the project.

Dorte Mandrup

GRUENASSOCIATES
ARCHITECTURE PLANNING INTERIORS LANDSCAPE

Martha Schwartz Partners MSP

ARUP

Kontrapunkt