BORDERS & BANDAIDS
READ BETWEEN THE LINES
DAVID GLEN FOLK
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Abstract:

A threshold can be understood as the visible or invisible division and demarcation of space. It is an age-old concept tracing back even to the first notions of urban space. The largest scaled gestures of thresholds are those lines and walls that divide nations and territories. All complexities of past and current geopolitical tensions simply derive from the interpretations and implementation of the walls and geopolitical lines – or lineaments; it is therefore crucial to comprehend the concept of lineaments on every scale, as it is the base idea that permeates all design. It is design in its purest form.

The following architectural argument will explore Leon Battista Alberti’s theory of lineaments, particularly the wall as an architectural element, as he spells out in his architectural treatise On the Art of Building in Ten Books. A closer look at Alberti’s treatise and the idea of lineaments will help to better refine the definition and implementation of international borders and treaties. Reconsideration of a lineament in the slightest form has the potential to drastically change the execution and enforcement of a lineament in tangible materials and their assembly during construction.

The chosen design proposes a new U.S.-Mexico Joint Land Port of Entry along the border of Columbus, New Mexico, United State of America, and Puerto Palomas, Chihuahua, Mexico.
Dedicated to:
The WAAC consortium of students and faculty (dotted all over the globe and too many to list) who collectively helped me to challenge architecture as much as it challenges me.

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THANK YOU!
The fight over land dates back to even biblical discrepancies of the “Holy Land” and “Promised Lands” of Israel. About the same time in 8th century BCE, the ancient Roman myth marks the birth of Romulus and Remus – sons of Rhea Silvia and Mars, the god of war. Joseph Rykwert in his book *The Idea of a Town* describes the ritual establishment of the city of Rome. “He refers to this rite in even greater detail in the ‘Life of Romulus’, fitted a brazen ploughshare to the plough, and, yoking together a bull and a cow, drove himself a deep line or furrow round the bounds; while the business of all those that followed after was to see that whatever was thrown up should be all turned inwards towards the city and not to let and clod lie outside. With this line they describe the wall and called it by contraction pomeroium – that is, after or besides the wall; and where they designed to make a gate, there they took out the snare, carried the plough over, and left a space; for which reason they consider the whole wall as holy, except where the gates are” (Rykwert, p.29). The ridge of the thrown up dirt thus became the wall that protected the fertile, sacred land within the city bound and the ditch the beginning of the profane – establishing one of the first large scale thresholds created by man. Bernard Rudofsky further explains the need for urban limits. “The very word urbanity is linked to the Latin word urbs meaning walled town. Hence, a town that aspires to being a work of art must be finite as a painting, or a book, or a piece of music” (Rudofsky, p.4). These bounding lines that took the life of Remus, gave life to a city, and set the limits from which they would operate within, are products of lineaments.
Far Left: Jerusalem - The Western Wall; walled cities were part of religious rites; the Holy Land
Left: Porta San Paolo - one of the southern gates of the Aurelian Walls of Rome; 3rd Century
Above: Capitoline Wolf inspired by the legend of the founding of Rome by Romulus and Remus
My father being a contractor has always significantly influenced my understanding of the physical world and the built environment around me. As any child, I fed off the opportunity to get down and dirty while understanding the limits of my physical body and the space I took up. My curiosity only grew as I figured out how things worked and were built. One day as my father began drawing up some rough plans for our next house to send off to an architect for review, he sat me on his lap and allowed me to draw a few straight lines so that I would feel important. I did. Even more clearly engraved in my mind than my contribution of a few thin pencil lines, was the realization of what they represented. While visiting the lot where our future house was to be built, my father began talking to some men about important things way over my head and beyond my eight-year-old comprehension. While playing in the dirt pile and newly dumped gravel, there was a new ditch that caught my eye. I then realized that the ditch I saw was no ordinary ditch. It was the unassuming line that I drew a few months back. It was real. It was the footprint of our house. It was (what I later learn to be) the footer. While I did not know much, I did realize that the lines I drew were not simply lines. They meant more. They carried more significance than simply the raw graphite drawn on the paper. That line had thickness. It had depth. It had meaning.

It was in that moment that I became aware of the way architecture and design communicate and perceive lines. It was my first real experience with the ideal of a lineament and threshold. While the origin of the threshold was born of practicality at the entry of a doorway, its meaning is much grander. The ideal of the threshold applies on various scales: interior/exterior, public/private, urban/rural, etc.
In his treatise, Alberti places particular emphasis on the need to identify and cater to different building types in order for them to be formed appropriately and achieve the ideal beauty. He gives structure to his argument in the prologue: “…first we observed that the building is a form of body, which like any other consists of lineaments and matter, the one the product of thought, the other of Nature; the one requiring the mind and the power of reason, the other dependent on preparation and selection; but we realized that neither on its own would suffice without the hand of the skilled workman to fashion the material according to lineaments” (Alberti, p.5). In just one sentence, Alberti wisely, sets up the complex relationship between lineaments (design), material (Nature), and construction (the craftsman).

Lineaments are thus the products of thought and ideas that create form and design. Lineaments are lines, but more importantly the relationship between lines: “…noted the importance of their lines and their relationship to each other, as the principal sources of beauty…All the intent and purpose of lineaments lies in finding the infallible ways of joining and fitting together those lines” (Alberti, p.5). At this point it imperative to clarify that lineaments and material are completely separate, just as Alberti has separated them in the structure of his treatise. While lineaments are considered the idea of design, it is neither a drawing capturing the idea. Immaterial in nature, lineaments however are not void of meaning, gesture or information. Stephen Parcell simply described this relation this way: “Disegno is associated with the ideal realm of geometry, not with the physical realm. Lineaments come first and are developed independent” (Parcell, p.139).

I like to think of lineaments as the lines that represent the purest and simplest geometry of a design, much like the idea of construction lines or even a modern three-dimensional model viewed in wireframe. On a given construction site, a string line or plumb weight holding a string tight used, as guidelines for masonry or other building materials, are the epitome of lineaments. These lineaments then serve are the basis from which foundations and walls are laid upon. Curtis B. Wayne explains, “In their respective natures, there are really only two kinds of wall – one is, in concept, infinitely thin and planar; the other forms a plastic space and is therefore in concept infinitely thick” (Wayne, p.37). A single lineament embodies both ideas: infinitely thin and plastic and infinitely thick. While independent from material, lineaments should be informed by and construction.

In relation to lineaments and political thresholds, a lineament representing a wall or border simply expresses the need to keep something in and something out, often times expressed by an arbitrary line on a map. “Lineaments emphasize the perimeter rather than the area it encloses…their eventual aim to enclose a figure implies that two sides of the line (or angle) are different, as the inside and outside, thus have many duties for which they are responsible. When correct lineaments have been established they address four criteria: locality, proportion, scale, and composition” (Parcell, 147).

The same controversial wall that literally divided a nation and consequentially the world, sparks two very different reactions.
I would like to compare this relationship to that which Steven Connor draws with smoke and pipes in his piece Paraphernalia – The Curious Lives of Magical Things. He questions the original function of a pipe. “I am not sure whether channels, ditches and pipes were first used to carry things to where they were needed, or to carry them away from where they were offensive…” (Connor, p.153). His question actually juxtaposes a relationship between what was desirable and undesirable at the time; in other words, a line sets up a connection or disconnection between what is wanted and what is not. “Although in principle pipes can allow passage in two directions, in practice pipes tend to convey their contents only in one direction. This is largely because historically pipes have depended upon atmospheric or gravitational pressure for their motive force” (Connor, p.154). While Connor primarily talks about pipes and smoke, in this case of geopolitics the pipes become lines or walls and smoke being populations and urban space. The atmospheric (or political) pressures are evident, even fossilized, in the distinct urban fabrics on each side of the line. The absence of, or break in a line, also communicates specific openings intended for, thought of, or designed for crossing or breaching the lineament – much like when Romulus picked up the plough and carried it across to form a gate.

Right: Process Diagram depicting relationships set up by lineaments and thresholds

United States
first world
desirable
in
prosperity
me
private
legal
American
north
east
heaven
safe
sacred
visible

Mexico
third world
undesirable
out
poverty
you
public
illegal
foreign
south
west
hell
dangerous
profane
invisible
According to Alberti, the architect has to consider three main criteria when turning a lineamental idea of a building into tangible form: lineaments, material and construction. Each step along the way, the process of material selection and construction, no matter how accurate, inevitably strays away from the truest sense of the lineament. While disconnect is inherent, it does not necessitate failure. It is simply a complex relationship. Take for example, the sheer amount of text dedicated to each topic. Alberti dedicates Book I to outline lineaments as the source of design, proportion, harmony and beauty, but in reality the definition and explanation of lineaments within Book I only occupies about three pages. However, in contrast, Book III, which explains how to achieve lineaments in built form, takes up nineteen pages of detailed instruction. That is simply the nature of its complexity. “Alberti is far more circumspect about how beauty and ornament should be harmonized with on another, largely because he finds it ‘extremely difficult’, and ‘at its most ambiguous and involved’ when dealing with buildings. Nevertheless, is was not an inquiry he wished to avoid, as harmony is central to the art of building” (Tavernor, p.43). Again, the achievement of beauty and harmony is the art and mastery of architecture.

CONSTRUCTION AND DISCONNECT

These two illustrations humorously depict the artistry and game behind fencing, in this case alluding to borders and border walls.
The act of giving birth to a lineament in built form is simply projecting lineaments onto the ground. The complex nature and juncture of lineament, material and construction begins to make specific relations within space. This relationship is similar to the Sign and Signified. The drawn lines mean much more than the ink they were made with. In *The Production of Space*, Lefebvre laid out how modern spaces are conceived, initiated and implemented. He introduced the embodiment of modern space according to three interrelated concepts: representations of space, spaces of representation, and spatial practice. (Lefebvre, p.245). The intersection of these interdependent concepts means that there is always tension where each affects and is affected by the other two. This three-part relation is much like dancing a triangular tango, necessitating continued readjustment and shifting to make things work. Not too dissimilar from the relationship between lineaments, material, and construction.

Consider the line I drew as a small child to represent a footer – a relatively simple task. The execution of creating the footer however is much more complex. Referring to foundations, Alberti said, ‘The ancients used to say, ‘Dig until you reach solid ground, and God be with you.’ The ground has many layers...its position ever changing and uncertain” (Alberti, p.63). The lineament of a wall projected on to the earth serves many purposes. The wall naturally has two sides: recto and verso – much like the earlier forms of paper, one being more favorable. As well as a link between two urban spaces laterally, ancient walls linked the heavens and the earth. These walls were held in sacred regard because they represented sacred lineaments.

Left: The Great Wall of America

More than 600 miles of wall has been constructed along the southern border dividing empty desert and running through cities.
Rykwert helps shed light on the relation of lineaments and political territories. “The spatial strategy of drawing lines therefore is not a political process that delineates internal/external space of Self/Other: strategies also naturalize territorial practices” (Rykwert, p.4). As more people move into cities and a larger portion of the population now lives in planned/designed urban settings, fewer people live in rural settings causing a shift or adjustment in the way we see ourselves. The same idea of Self and Other. Not only was the lineament of a city wall a division of terrestrial property, but also the union of the terrestrial with the celestial. From that time on, walls began to separate men, nations and cultures. They also separated men from the gods. “The safety, and the sacred, untouchable character of the walls was guaranteed by the union of heaven and earth. Anyone crossing over the place where earth and heaven were united was an enemy of the life which that union had guaranteed” (Rykwert, p.135). While the building of the wall was ritual in nature, Rykwert points out again the relation of Self and Other, further classifying Other as a potential enemy. Currently as society continues to globalize, cities begin to meld and people become citizens of the broader international community. Traveling being more accessible and convenient than ever, allows people to move across borders easily and frequently, especially in geographies where state borders and even country borders are relatively small like in Europe. In contrast to the ease of travel between delineated boundaries, countries must reinforce borders to maintain identity.
Hermes was the Greek god of boundaries and was historically represented through a boundary stone, which consisted of a few stacked stones to mark a path or line. Rykwert explains, “Boundary stones are of course vulnerable, because boundaries are” (Rykwert, p.112). This is the time we live in – one of little political or social guarantee. The only difference is we use lines, not stones, which are much easier to erase and adjust than picking up a stone and moving it. The thresholds between nations are as alive as those enforcing and influencing them. “Walls are built and then fall, borders are fortified and then shift, boundaries are demarcated and then transgressed – space and social structures thus are constantly forged, just as they are negotiated and challenged” (Ward, p.2). The walls between nations suffer from the same type of disconnects and complexities as lineaments, material, and construction – as they do also with representations of space, spaces of representation, and spatial practice. This is the fundamental relationship between theory and practice, policy and procedures, Self and Other, Sign and Signified, recto and verso.

Lineaments will change as our identity evolves as a society. Our perception of true harmony, proportion, beauty and ornament will follow. Therefore lines, borders, boundaries, thresholds, ditches, and walls will continue to be changed, adjusted and renegotiated. Borders are living; they are not static. “An early surviving boundary mark found fairly recently on the Athenian agora, did not proclaim: ‘This is the boundary of the agora’ but ‘I am the boundary of agora’”(Rykwert, p.107). This revelation of this profound statement is two fold. First, the stone takes on life. It is not inanimate. It is living, meaning, wherever that stone resides there too the wall delineating agora. Second, it refers to Self and therefore indirectly identifies both Self and Other.
The large scale walls along borders greatly impact the way architectural and urban design approach public and civic spaces for any given design problem or solution. It provokes discourse on the open-ness or closed-ness of geopolitical spaces. The discussion is not only about lines but also about landscapes. It is what gives meaning to the words “Four Corners”, “Mason Dixon”, “International Date Line”, “Equator”, “Berlin Wall”, “Thirty-ninth Parallel” or “Iron Curtain”.

The contradictions, discrepancies, exceptions to the complex network of walls creates unique urban conditions like embassies and consulates that provide some like Julian Assange refuge in foreign land or international airports that provide some like Edward Snowden a political safe haven as it is politically considered no-man’s land. Whether viewed as lack of lineamental convergence or the hyper-superimposition of various lineaments, the problematic reality of the ambiguous walls of these spaces renders them in essence no-man’s-land.
CONCLUSION

While the word “wall” may seem simple and straightforward as a common architectural element we interact with everyday, its spatial and historical significance is much more deeply rooted into our culture and identity than we may think. For every line that is drawn and every wall that is raised, decisions are made as to what they mean and contain. They can be the lines of a footer or lines separating provinces. They can be walls within a home or walls between nations. Each is a unique threshold; but, each necessary by at least one of the two sides of the wall. When spelling out the origin of the social contract amongst men, John Locke described it this way: “Government has no other end but the preservation of property” (Barker, 123). Without a doubt, the complexities of an ever-urbanizing world will simply increase as nations continue to establish sovereignty and geopolitical thresholds.

Walls are not static, but plastic ideas that are dynamic in concept in even their detailed construction. Lineaments are living ideas. Boundaries are living. The materials and skilled craft applied to built walls only aspires to achieve the purest beauty and harmony embedded within a single lineament. The process much like the interminable chase of the Grecian Urn that forces us to read between the lines. A reading between the walls will best orient our relationship to fellow man and with architecture. I think Robert Frost said it best in his poem “Mending Wall”. Good fences make good neighbors.

MENDING WALL

Something there is that doesn’t love a wall, That sends the frozen-ground-swell under it, And spills the upper boulders in the sun; And makes gaps even two can pass abreast.
The work of hunters is another thing: I have seen the boulders out of which they were made.
And there they were, at least in appearance, And they wouldstem the two in a moment.
And on a day we meet to walk the line
And set the wall between us once again.
We keep the wall between us as we go.
To each the boulders that have fallen to each.
And some are large and some are small.
He takes his stand and pushes them all do
To please the yelping dogs. The gaps I mean,
No one has seen them made or heard them made,
But at spring mending-time we find them there.
I let my neighbor know beyond the hill;
And on a day we meet to walk the line
And set the wall between us once again.
We keep the wall between us as we go.
To each the boulders that have fallen to each.
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PART II - BORDER
Reading Between the Lines - Shows the different treatment and priorities of the northern border line and southern border line.

Reading Between the Lines also refers to looking within - looking between the border lines of Canada and Mexico to see where we as citizens of the United States stand.

Middle: The line of demarcation on the U.S.-Mexico border at San Ysidro, Calif.

Above: Southern Border Map showing neighboring U.S. and Mexican states, geographic and political boundaries.
Layered with complexity, a border station provides the opportunity for rich investigation of a more functionally driven program as the basis of the thesis. The grander gestures of a land port of entry explore multiple objectives: navigating very real and very rigid programmatic requirements of a federal facility and an international border crossing, while addressing the political, social, and economic dimensions of the context of the U.S.-Mexico Border.

As the primary federal agency responsible for operating the U.S land ports of entry, Customs and Border Protection has one central mission: maintaining the security of our borders while facilitating trade and travel. As many other law enforcement agencies such as FBI or CIA, the main mission and objectives of CBP oft times obscure or relegate any secondary concern they might have for a port’s design performance aesthetically, or as a public, international space, or as a representation of the cultural, political, and humanitarian ideals of the U.S. Their mission is a continuous struggle to balance the trifecta of travel, trade, and safety.

Typically, the programmatic drivers of a land port of entry are site, pedestrian, officer, and vehicular movement; layered upon officer sight lines, logistical requirements of a port, and safety of officers and visitors. These layered objectives create opportunity to possibly rearrange the combination or order of them to create a more unique experience.

Potential Tenants for a medium – large land port of entry:
- DHS – Department of Homeland Security
- CBP – Customs and Border Protection
- ICE – Immigration and Customs Enforcement
- FDA – Federal Drug Administration
- USDA – U.S. Department of Agriculture
- DOT – Department of Transportation
- GSA – General Services Administration
- FWS – Fish and Wildlife Service
- CDC – Center for Disease Control
- TSA – Transport Security Administration

The pragmatic nature of the border station is what makes it so rich in architectural and urban potential. I did not want to completely reimagine the southern border from a more utopian or fantastical approach disregarding the stringent variables. The theory is rooted on symbolic and tangible corollaries of architectural elements. Lineament. Line. Wall. Door. Gate. Threshold.
SITE INTO SIGHT:

The project in effect is a landscape project. The ports along the southern border are either in larger urban areas, or more often located in remote, powerful landscapes. In either case, the port becomes the door or gate by which commerce and culture are exchanged. It becomes the welcoming or departing handshake to or from the U.S.. The identity of the port as a public building is counter-intuitive – paradoxical even. It must simultaneously fulfill its role as a tool to support CBP’s mission and yet it cannot avoid its responsibility as a federal building to convey our common values.

The anticipation of encountering authority gives weight and significance to all federal buildings. The architecture must embrace and address the anxiety of those that pass, possibly dampening the encounter with cultural interaction. It must communicate the transparency of our system of government with visible, generously scaled public spaces. The chosen program must be a marriage of architecture and infrastructure. Given the nature and location of a land port of entry, they are very site specific. They are on the line.

BORDERS AND BANDAIDS:

Logistically a land port of entry must operate smoothly and seamlessly, but that does not mean that the layered objectives and purpose of the port cannot celebrate the seam, embrace the line, or focus not on the disjoining but adjoining of the border.

This is the essence of the thesis. Can the architecture capture the paradoxical ideals of a land port of entry and its many objectives? Should it, and if so, how?

The proposed design sought to look beyond just the line – but the widening of the line, the experience of the line, and the occupation of the line. It creates a third place that serves as a public plaza hosting and celebrating interaction and exchange of goods and culture. The design sought to look beyond to something more lasting and more grand than politics - but on to the people and the existing culture of Columbus, New Mexico and Puerto Palomas, Chihuahua, Mexico where the lines have been blurred for decades. The exploration was not in redrawing the lines, but better reading between them.
Borders and Bandages

Conceptual Drawing expresses the border as a geopolitical wound. After sketching the border onto rigid insulation, I slowly dripped xylene onto the insulation and watched it erode and eat away at the base. The band-aids on the right represent symbolic and literal bridging across the Rio Grande where a geographical border exists. The incomplete and imposing fence to the left shows how the border fence pulls the land apart where the political border exists.
Conceptual Drawing shows the thickness of a line and its influence at many scales, which can be applied to the southern border.
The above conceptual drawing captures various layered conditions along the southern border. The southern border line is burned onto watercolor paper via a laser cutter symbolizing the imposing political influences. The lighter tea base shows the general distribution of population along the border. The darker ink shows the movement of people across the border.
This mixed collaged combines architectural, political and social elements of walls throughout time. This symbolic wall is made of elements of the Great Wall of China, the Western Wall of Jerusalem, boundary stones, and dotted lines that break for passage. The main gateway shown is that by which Adam and Eve are cast out. Those that look on include Romulus and Remus with the She Wolf, the Cherubim guarding the gate, those erecting the boundary stones, those honoring and memorializing the Western wall of Jerusalem, and the Janus god looking in both directions. The Eye of the Needle leads into the American West. Many American painters focused on the vast, dramatic landscapes of the new frontier which became a symbol of the American Dream.
BORDER COMMENTARY

U.S. Immigration is one of the most controversial current events without any definitive political resolution in sight. With what has been referred to as a broken system, the future of America’s borders and immigration laws will continue to grab headlines in heated debate. The comparison shown here of Wood’s American Gothic and the parody of Mexican-American Gothic shows how Hispanic culture has not only permeated our borders, but our art, pop culture, and has become an integral part of the very political system that’s up in arms about how to react. Just as Wood read between the lines of the gothic style home and portrayed those he thought would inhabit the house, the U.S. must too read between the lines and see itself for what it is becoming.
Harold Dunphy sat on a wall.
Harold Dunphy had a past for...
The Art of the Horizon

I saw the horizon,
the horizon is factor x,
the horizon is what everything encloses,
the horizon divides earth, sea and sky,
the world is unthinkable without the horizon,
the horizon is a boundary where man cannot come,
the horizon exists between the visible and the invisible,
the horizon is not inside or outside the world,
the horizon of art is factor x.

In reality there is no horizon,
I cannot get near the horizon,
I try to push the horizon further away,
al and everything appears within the horizon,
beyond every horizon there is another one,
everybody has his own horizon.
The horizons are within us,
infinity overflows all horizons.

— Dr. Hugo Heyrman
Border Lines

A weight carried by two
Weighs only half as much.

The world on a map looks like the dome of a cow
In a butcher's shop, all those fresh-looking.

Where to cut?

That drawing of the cow is like a jigsaw puzzle,
Nothing just as much here as you see.
All the strange parts fit together.

Which way we look at the drawing
Makes all the difference.
We seem to live in a world of maps.

But in truth we live in a world real
Not of paper and ink but of people.
These lines are our lines. Together.

Let us burn the map until we see clearly.
The border is what joins us.
Not what separates us.

Alberto Ríos

Robert Frost - Mending Wall
PART III-DESIGN
The border towns of Columbus and Puerto Palomas have long blurred the lines of the international border. Everyday more than seven hundred school children cross the border into the United States to attend school. Almost all of the children are U.S. citizens or have permission to study in the U.S. Many of their parents or grandparents are not citizens and live in Puerto Palomas. They cannot enter the U.S. to take their children to school and must see them off at the U.S. Land Port of Entry. Some of the parents are U.S. citizens but choose to live in Mexico because it is cheaper. Some own land in Columbus and pay taxes for an address that allows their children to study in the U.S. Some children were naturalized simply because their mothers crossed the border intentionally while in labor. Palomas only has a limited clinic that offers basic health services. Most childbirth can be performed there; however, many complicated or delicate cases are sent to the nearest hospital, which happens to be in New Mexico.

Both towns are very small: Columbus, pop 2,000; Puerto Palomas, pop. 4,700. The 750 students that cross to the U.S. and back everyday represent a significant percentage of the population. Considering the relatively small port and remote area, the Columbus Land Port of Entry processes its fair share. In addition to the unusually high pedestrian traffic, it processes typical volumes of vehicular traffic for those that go to work, visit family, and even cross over to shop at Duty Free America. The port also handles significant amounts of cargo, mostly produce as semi-trucks line the main road during harvest season, waiting to enter the U.S.

The unique situation must focus on the culture of the people. There is no other border station like it along the northern or southern borders.
Left: On the border looking into Mexico
Right: From Mexico looking towards the border

Parents wait on the border just outside the U.S. LPOE

Left: Layered fences from both sides show different agendas superimposed on one another
Right: Border fence looking into Mexico

Students wait outside to be processed

Left: In the U.S. looking westward along the border
Right: Border fence looking into Mexico

Students wait on the inside to be processed
After being processed, students wait the school bus to take them the 3 miles into Columbus, NM for class. Some 700 students cross the border each day between 6:30 am and 8:30 am and return between 2:00 pm and 4:00 pm.
SITE

Center: On the border. U.S. to the right of the fence, Mexico to the left.

Right: Site plan showing the clustering of the two towns that the distance that separates them.
Having studied the site extensively via census data, maps, news articles, Climate Consultant, historical accounts, geological surveys, and even Google Street View etc., I was still utterly unprepared for what lay ahead. I woke up at 4:30 am to get ready, pack, and hop in the car to make the nearly two-hour journey westward from El Paso, TX to Columbus, NM in time to see the school children cross the border for school in the morning. What started out as a contemplative, serene drive in the dark would soon change. Blindly following the GPS, I was driving through the middle of nowhere, many times just a few hundred yards from the US-Mexico border. The darkness swallowed up the road that my headlight illuminated, but I kept pressing on 70 mph into the dark abyss; it seemed like no man’s land. In the reflection of my rear view mirror I began to see the glow of the rising sun subtly highlight the horizon. And then suddenly everything around me changed and the soft, cool, morning light revealed a gorgeous, dramatic landscape. Rolling hills, adolescent mountains, reservoirs, and lush desert vegetation punctuated the mainly flat, grassy plains. The desert grasslands of New Mexico pleasantly surprised me, as I had previously only known the red, arid deserts of Arizona, Utah, Nevada and Colorado.

The majestic reveal of the horizon came over me as just that, a revelation. I realized that what ever be proposed must be secondary to, compliment, and integrate into the landscape. I also realized that symbolically, the horizon line and borderline shared many characteristics: present, powerful, influential, yet unattainable, unreadable, and ever changing.

architecture + infrastructure

border line + horizon line
The conceptual images to the right first show the dramatic mountainous landscape of Chihuahuan desert, then shows the play of how a simple yet dramatic gate way could be cut through. This doorway as part of the landscape could also signal a more significant passage. This would be the view from the U.S. looking towards Mexico.

The conceptual images to the left show first show the main street of Puerto Palomas begin to come alive at dawn, then shows the conceptual addition of the earth peeling upward and parting to reveal the doorway across the international border/threshold. This would be the view from Mexico looking towards the U.S.
Proposed concept for a peeling and parting of the landscape to house the joint land port of entry.

Approaching the border into Mexico from the U.S.

Top: Approach peeking into the main public space of the joint land port of entry.
Bottom: Concept drawing of the earth physically and emotionally elevating the experience of border crossing.

Looking from Mexico to the international border.
Conceptual drawings considering the permeability of the border by exploring the existing spacing of the border fence. The various shapes can represent any element of the larger land port of entry complex. Visual breaks, physical breaks, doorways, roadway, masses, od buildings etc.
Most border crossings double up on infrastructure – an aduana complex just south of the international threshold, with the U.S. counterpart usually larger and further set back. Instead of segmenting repetitive functions of two governments that ideally have the same mission for their presence on the border, I sought to consolidate, overlay, share, and arrange the functions so they literally and figuratively face each other. The rearrangement of the functions does not compromise the strict objectives of the federal agencies, but creates an entirely new, more humane experience for those that cross the border on foot, by car, bus or even truck.

The program sought to include the existing, adjacent Duty Free America store as a symbol of the commerce and goods that are exchanged and cross the border, a bi-national plaza and a multi-cultural center laying right on the border.

XX. Right: These diagrams outline the many programmatic functions by type for s, m, l land ports of entry and compare them relatively to one another
These program diagrams begin to spell out the basic, repetitive functions of the mirrored efforts of the U.S. and Mexico to ensure safety, trade, and security.
The program diagrams to the left begin to explore the rearrangement of the same functions around a central plaza, orienting the focus of the land port of entry away from the hard functions and more towards the human interactions that take place.

The program diagram to the right begins to explore in more depth the specific functions of a joint U.S.-Mexico land port of entry and the relation of shared and distinct spaces to one another.
Instead of completely compartmentalizing vehicular, pedestrian, inspection, and school and commercial bus functions, the circulation pattern serves as the driving force to coalesce their layers into closely flowing orders – sometimes parallel, sometimes tangential, and sometimes overlapping. The circulation diagrams deal with the realities of distinct programmatic functions from the most direct pedestrian path to the twisting and turning of cars or semi trucks going through hard secondary inspection, to secure access for border agents and visitors. They address and resolve real turning radii, which varies also according to function. The turning radius of a car is neither the same as a school bus nor a commercial truck with a double trailer.
Here both the program and circulation highlight and thicken the purpose and presence of the international border. Instead of repeating a set of inspection booths on both the U.S. and Mexican territories, a single set of shared inspection booths share the load. Rather than say four dedicated booths on each side, six shared booths can fluctuate and change direction based on the flow of traffic. In the morning when most of the traffic is headed northbound into the U.S., more booths will tend to northbound traffic. In the evening when most of the traffic is headed southbound back to Mexico, the booths have the ability to change direction of traffic in the lane to cater to the need.

The singular moment of primary inspection occurs directly on the line. However, the vehicular circulation acts as an eddy, which revolves around the main public plaza. It creates a heightened sense of liveliness and interaction. It creates a moment of pause, as the cars are forced off the main direction of the grid to veer this way and that way, slowly maneuvering through a complex of raising earth. The forced change of direction forces vehicles to slow down for the security of the joint federal complex, the safety of the pedestrians, and to create a more calming and pleasant experience distracting from the inevitable anxiety of the border checkpoint.

The circulation patterns are inspired by the inefficiencies of an eddy in the flow of water. It creates a moment of linger, pause, interruption and mixing - all of which are typically not seen as desirable. These characteristics set the stage for a safer and more energetic nucleus which houses the public plaza and cultural center.
The general exploration in massing the joint border complex sought to explore the principle facades or faces of the buildings. On the most basic level, paired border stations face away from each other. Even on the few occasions where joint border stations exist (along the northern border, never on the southern), the massing simply clusters the building and the main facades still outward, away from the border. The intention of the peeling of the earth upward and parting is based on the natural phenomenon of gullies. But it also presents an opportunity for the main faces of the complex to be both inward and outward, maybe for just a moment, maybe architectonically, or maybe just symbolically.

Left: A gully is a way that nature creates greater surface area for higher absorption for water run off.
Other than the landscape itself, there are two main materials employed throughout the complex: rammed earth and corten steel. The north-south running facades that cut across the border use rammed earth, to help emphasize that the land is the same on both sides. The east-west running facades that run parallel to the border use corten, to help emphasize that the border is cut through the land. One warm and natural, the other cold and foreign. Both materials appear in local vernacular old and new. Both weather uniquely. However, the corten steel also has the potential to stain concrete below, which is intentional.
PROCESS MODELS
SUSTAINABLE DESIGN APPROACH
active and passive sustainable technologies incorporated into the landscape will help to offset the need to bring in dirt for berming.

- natural ventilation supplementation
- horizontal geothermal loops - buried rather than excavated

incorporated into the landscape while helping to offset the need to bring in dirt for berming.

- shower water
- drinking water
- sink water
- rain water
- plenum space air distribution

- 500,000 gallon total linked cistern
- membrane reactor
- greywater system
- irrigation maintenance
- flush water
U.S.- MEXICO
JOINT
LAND
PORT
OF
ENTRY

Site Plan
N

Left: Existing Columbus, NM U.S. Land Port of Entry
Legend:
1. Bi-national Plaza (Upper zocalo)
2. Bi-national Plaza (Lower zocalo)
3. Vertical Circulation down to Kiva
4. Bus stop
5. Pedestrian Crosswalk
6. U.S. LPOE Main Building
7. Pedestrian Processing
8. Public Restroom
9. Interview Rooms
10. Holding
11. Saly Port
12. Mechanical
13. Loading/Building Service
14. Narcotic Vault/Seizure
15. Employee Parking
16. Kennel
17. Controlled U.S. Employee Entrance
18. Duty Free America Store
19. Controlled Mexican Employee Entrance
20. Federal Office Building
21. Mexicano Aduana - Pedestrian Processing
22. Employee Parking & Entrance
23. Public Restroom
24. POV Primary Inspection Canopy
25. POV Main Building
26. POV Processing
27. POV Interview Rooms/Holding
28. POV Secondary Inspection
29. POV Hard Secondary
30. Vehicle Impound
31. Saly Port
32. CBP Parking & Staging
33. Mechanical/Storage & Future Expansion
34. Bus Primary Inspection Canopy
35. Bus Main Building & Inspection
36. Bus Impound & Staging
37. Commercial/Primary Inspection Canopy
38. Commercial Main Buildings
39. Commercial Scale & VACIS x-ray inspection
40. Commercial Staging & Waiting
41. Commercial Impound
42. Commercial Loading/Unloading Docks
43. CBP Loading Docks
44. CBP Parcel Parking
45. Narcotics, Contraband, & Seizure Processing
Legend:
1. LPOE Main Building Entrance
2. Pedestrian Processing
3. Secondary Screening
4. Sal
5. Public Restrooms
6. School Bus Stop
7. Interview Rooms
8. Holding Cells
9. CBP Offices & Detainee Processing
10. Secondary Pedestrian Processing & Cashier
11. Consulate and Visa services
12. Vertical Circulation to upper LPOE offices
13. Duty Free America
14. Controlled, One-way Entrance into international plaza
15. Pedestrian Crosswalks to international plaza
ANTI-RAMMING DEVICE

ANTI-RAMMING DEVICE

COMMERCIAL PRIMARY CANOPY & BRIDGE CONNECTING COMMERCIAL INSPECTION

COMMERCIAL PRIMARY SECTION

COMMERCIAL PRIMARY INSPECTION CANOPY & BRIDGE

COMMERCIAL HEADHOUSE

BI-DIRECTIONAL/NATIONAL BOOTHS

SKY-BRIDGE CONNECTING COMMERCIAL INSPECTION
x-ray section through commercial primary canopy
Vehicular Primary Inspection Canopy

secondary inspection

main building

POV Primary Inspection Canopy from the border
Pedestrian Processing at POV Maing Building

POV Secondary & Hard Secondary Inspection

POV Primary Inspection Canopy looking toward the U.S.
Looking South toward Joint LPOE & Puerto Palomas, Chihuahua Beyond
In Puerto Palomas, Chihuahua looking North Northwest toward the Joint LPOE and the U.S. beyond.
Just like many other aspects of the design, the facades considered the layered objectives of Customs and Border Protection by integrating various aspects of program, massing, circulation etc, so they are holistically approached and designed. The facade sought to simply convey the architectural elements of wall, door, and gate as membranes, filters, and lenses, that speak much more about why they are there than how they were put there.

One simple grid was developed and manipulated in two different orientations. The horizontal orientation for the more prominent north-south facades and the vertical for the east-west facades, each also appropriate for sun/shade considerations respectively.

Also in the spirit of movement and transit, the perforated metal screens are actually in the pattern of tire treads or shoe treads, depending on their location of the project. Subtle alterations of common materials in this fashion really root this building complex to its specific location and function. There is not other building type quite like a land port of entry. And there is not other land port of entry quite like the Columbus-Palomas Joint Land Port of entry.
East/West Layered Facade Concept

Vertical Fins

Perforated Metal Screens

Base Grid (4’x8’)

All Layers

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Pedestrian Promenade - colonnade & rammed earth walls

Conceptual section through pedestrian promenade

Columns

Void - aperture/screens

Solid - segmented rammed earth walls
The bi-national plaza serves as the nucleus of the project. While the purposes of the land port of entry is primarily manifested through infrastructure, the essence and richness of the project comes to life here at the core. The usually domineering architecture of federal facilities, is dampened here by the landscape that hides the mass of the building, shifting all of the focus architectonically and symbolically to the open, public space. The gradual lifting of the earth pulls people in towards the public plaza where the complex is reduced to four facades. The two principal facades face each other north-south. Mexico looking toward the U.S. and the U.S looking toward Mexico. It sets up a centripetal relation rather than centrifugal. It focuses within...or between the gradient lines of two intersecting cultures.

The plaza offers a welcoming space for parents to wait to see their children off in the morning and then receive them in the comfort of the shade, protected from the high desert afternoon sun. The hardscape pattern coupled with varied landscape of the plaza resembles a Native American or Native Mexican tapestry breathing life, color, texture, and rhythm into the space. The plaza serves to thicken the border line by allowing (at least within the bounds of the plaza) for people to occupy the border, bending its limits to show that it is more than just an arbitrary line imposed on a map. It acts as a true democratic space of two peoples. More than just a place of waiting or congregation, flexible spaces allow for impromptu events. It has ample seating, hard and soft-scaped paths, a small amphitheater, and ample space to host markets and festivals where vendors from both sides can buy and sell goods without having to cross into the other country - but exchange within the border itself.

The term zócalo is taken from the main public plaza in Mexico City for its symbolic reference as a cultural plinth.
PLAZA - LANDSCAPE/HARDSCAPE DETAIL

Zocalo: Bi-national Plaza Plan

1. Pedestrian Crosswalks
2. School Bus Drop Off
3. Zocalo - Lower Plaza
4. Zocalo - Upper Plaza
5. Border Skylight to Kiva below
6. Ramps down into Kiva, Multi-Cultural Center
7. Vertical Circulation into Kiva, Multi-Cultural Center
8. Shaded Waiting Area and Market Space
9. Amphitheater
10. LPOE Canopy and Booth

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granite A
concrete brick pavers travertine

Pattern of Native Tapestry
Local, Durable Materials
A granite
B concrete
C brick pavers
D travertine

Plaza - Landscape/Hardscape Detail

Rock beds help collect and store run-off.

Shaded seating for school children.
Flexible plaza to host bi-national events.
Exchange of goods, culture, and education.

Local, Durable Materials
Pattern of Native Tapestry

Native Plants & Shade Trees
1. Honey Mesquite
2. Mexican Buckeye
3. Desert Willow
4. Arizona Ash
5. Arizona Sycamore

Accent Plants
1. Grama Variations
2. Yucca Variations
3. Harvard Agave
4. Desert Broom
5. Indian Ricegrass

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MINISTRY OF PUBLIC WORKS

INTERNATIONAL PLAZA - LAND/HARDSCAPE DETAIL

DEDICATED CBP/SCHOOL BUS LANE
PEDESTRIAN CROSSWALK
COMMERCIAL DOCK
COMMERCIAL INSPECTION
UPPER ZOCALO
BUS CANOPY

NATIVE DESERT VEGETATION AND XERO-SCAPE
FLEXIBLE PLAZA - BINATIONAL MARKET
WAITING AREA
ROCK BEDS AND SURFACE DRAINAGE

Zocalo - Upper Plaza on the border looking toward POV Primary canopy
Again pulling from indigenous southwestern culture, the kiva is another architectural symbol of community. Unique in its vernacular architectural response, a kiva was simply an underground, circular cultural hall that hosted a myriad of larger events ranging from community gatherings, religious rituals, and even celebrations.

Since most parents of the school children cannot even pass the doors of the existing land port of entry, attending parent-teacher conferences, school plays, or other events is out of the question. Similarly to the kiva, the excavated cultural hall generates an opportunity where parents, students, educators, community leaders or any citizen, can come together. It houses a cultural hall and performance space, exhibition space, classrooms, and meeting rooms. This flexible space is meant to provide an opportunity for casual or formal encounter that does not currently exist.

Much like the plaza above, this multi-cultural space lies directly on the border line...in this case also under it. The only architectural indicator below the surface however, is the long, linear skylight that lies on the border. The void of the actual border creates a poetic play of light and shadow. While the border may be static (even if just for now), the light dances around the room showing that the influence and weight of the threshold remains constantly dynamic. The downward spiraling ramps into the lower kiva also create an eddy of circulation and down play the border line itself bringing citizens of one country across the line into the other but then back into their home country by the time they reach the lower level. It is this precise mixing or cultural, commercial, and cultural symbols that creates a space that is loved and well used.
International Plaza above
Kiva Cultural Center below
NS Section across the border
 1/16" = 1'
NS Section along the border
STAIR DETAIL
1" = 1'
EMBEDDED STACKED GLASS AS RISERS ALLOWS FOR SOFT AMBIENT GLOW
LARGER APERTURES IN SEATING AREA ALLOW MORE GLOW ON THE NORTH SIDE
Kiva: section along the border
Kiva: section crossing the border
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16' 32' 64' 8' 0'
16' 32' 64' 8' 0'
BORDERS & BANDAIDS
READ BETWEEN THE LINES

Works Cited: