the architectural details of alvaro siza:
  a chorology

by gary p. rohrbacher

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submitted to the department of architecture in partial fulfillment
of requirements for the degree:
master of science in architecture studies
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signature of author:

department of architecture
design technology
8 may 1998

certified by:

peter a testa
associate professor of architecture
thesis supervisor

accepted by:

roy strickland
chairman, smarchs committee
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abstract

A chorology is an analysis of the relationships between the constituent parts of a system or assemblage. Architecture is not only the result of the connection between a vast set of components and their manifold interactions, it is implanted into still broader, working fields of complex affiliations and relations. Essential to understanding the importance of alvaro siza's buildings is to see his architecture as assemblages comprised of many composite, active subsystems. These assemblages engage still larger systems, dynamic and effects producing. In short, the architecture goes beyond the visual, and generates effects in time and space - engaging animate operations that pre-exist the architecture while inciting multiple new dynamic relations. The architecture must be seen as a machine, testing the line between natural and manmade. Not necessarily organic, but self organized, exhibiting the characteristics of self generating systems, or in other words, life.

While a conventional architectural analysis might exhaustively diagram geometric relations, or try to find historical models or precedents to situate the work, this thesis seeks to be critical of the deterministic, historical practice of naming. Instead, opting for a perhaps discursive methodology, which endeavors to understand operative modes that compose the abstract machinic-architectural assemblages of alvaro siza. As a beginning to understanding the complex assemblages of siza, this thesis will specifically examine architectural details, their interrelationships, and affiliations to materials and techniques of construction. Details will be considered as constituent parts of a larger assemblage, and as engaging dynamic criteria (forces, light, program, weather, time, etc.) as a means of conditioning space. By considering the effects which conspire to compose a detail, in conjunction with the effects that are generated, a new understanding of the immeasurable complexity of an architectural assemblage and its' relations to space might be understood.

Affording criteria for testing performance, inciting possibilities for new terms of responsiveness in architectural assemblages, and offering new, germane modes of making, this chorology will examine the affiliative assemblages of the boa nova tea house at leca da palmeira, portugal from 1958 and the teachers training college at setubal, portugal from 1994. The thesis will carefully examine conditioning agents and effects of detail assemblages, their relationships to operative criteria, other details, and space. Instrumental texts include those by deleuze and guattari, fernando pessoa, and peter testa.

thesis supervisor: peter a testa, associate professor of architecture, mit.
readers: alvaro siza, architect, porto
william l porter, professor of architecture, mit.
the architectural details of alvaro siza: a chorology

contents:

5. method

15. boa nova

multiple articulation • coevolution • speed • bifurcations • bistability • dissipative structures • multistabilic oscillations • symmetry breaks • trigger waves • self organization • the smooth and the striated • the flowers and the trees and the mountains and the sun and the moonlight • one or several • bwo • boa nova machine • wasp/orchid • consistency • becoming • segmentarity • reciprocal presupposition • mutability • assemblage (inter,intra, infra) • rhythm and meter • plan • performance • operation • meshworks • simultaneity • monad • protomorphic architectures

45. alvaro siza

nebulous • nonlinear • vibration • relation • perturbation • connectivity • dynamic equilibration • ‘englobing’ • culture • part of everything • movement • space, matter, energy • everyday • letter

60. setubal

supple infrastructure • digital • lineal • mutations • parallax • topology • setubalmachine • lines of flight • deterritorializations • reterritorializations • chorology/chorography • striations/strata • becomings • of the refrain • selection, elimination, extraction • rhythm and meter • consistency/viscosity • components of passage/relay • discursive space • details, subversive and transcendant • rhizome • arborified • intercalary oscillations • interval analyzers • rhythm synchronizers • milieu consolidation • space • time • coexistence • proceedings • successions • reorganizing functions • gathering forces • strange attractors • destratifying transversality • double pincer • conditioning agents • effects • primitave and supple • modern and rigid • operation and representation • composite constructs • limits and bounds • detail • polyvalence • smooth heterogeneity • performance • living machine • vibrations • light

110. observations

position • inclusion • flows of matter and energy • architecturemachine • chorology • feelings • details • boa nova and setubal • relations • space

120. acknowledgements

121. bibliography

124. photography credits
the architectural details of alvaro siza: a chorology

method

1. chorology

what

A chorology is a study of the relationships between the constituent parts of a system. The chorology is typically the extension of a chorography, which is the study of how an area is made up of many smaller parts. This chorology is executed without a chorography. There has been no pre-determined bounds of the systems of relationships at boa nova and setubal.

why

The chorology, in the absence of the chorography was chosen as a method for investigating relationships between and among details at boa nova and setubal for several reasons. First, a bottom up analysis affords the possibility to understand components of an assemblage as having relationships outside of the conventional bounds of that assemblage. Second, the chorology is open, allowing for many possible outcomes. There is even the prospect of finding relationships that do not act to support a bounded ‘whole,’ but act to deter a finite assemblage. These are the attributes of siza’s work that I find most compelling - relationships outside of the envelope, openness, and animated infinite effects. Most importantly, the chorology offers the possibility of understanding space as composed of a constellation of effects producing intensities, or details. The chorology examines relations of matter and energy that conspire to articulate space, rather than starting with a formally ‘defined,’ classically conservative and static geometry as space. Siza’s space is
open, constantly unfolding within and without of the bounds of the structure, his space is not defined statically, but composed dynamically into consistencies and intensities.

**significance, yield**

The chorology as I am defining it is a non-linear investigation. I am not entirely sure what it will yield. I am sure however that there is the prospect of seeing relations between components of the architectural assemblage that transcend formal historical analysis. Many critics and historians immediately discuss Wright and Aalto when considering Siza at Boa Nova. While even Siza states that he was under their influence at the time, and was too young to dominate it, this discussion yields little with respect to understanding the complexity and dynamic operation of the Boa Nova assemblage. Similarly, at Setubal, Frampton questions the tectonic attributes of the architecture. I am not sure of the validity of layering a rigid template over a dynamic construct in order to criticize based upon a historical model of the 'correctness' of assembled components, according to Semper or anyone else. The chorology also operates outside of a rigid architectural context, allowing connections and affiliations to attributes not specifically architectural, such as systems geologic, biological and linguistic etc. Ultimately I believe the chorology will give a glimpse of an intellectual construct employed to make decisions about construction and space, and will make perceptible the enormous efforts that the architect goes through towards an architecture.

**how**

I have decided to execute the chorology in the following manner. First, it necessitates a reconfigured conception of architecture, the production of architecture and
its subsequent construction and effects. the chorology is structured rhizomatically, or smoothly. that is, it is not trying to rigidly define or conclude anything totalizing about the architecture, but is a discursive interrogation. information is not taxonomized or placed into hierarchical relations with other information, but it is seen as a constituent part of a dynamically equilibrated assemblage whose bounds are not exactly known. great effort is concentrated on understanding how components work. both in terms of function and performance. function is a linear operation, a one to one mapping of operation onto an object. performance is non-linear, polyvalent operation across scales and attributes of the assemblage. a tool functions, a machine performs.

the chorology is conducted based upon a dynamic structural schema ‘tinkered up’ by reading and re-reading a thousand plateaus and other work by deleuze and guattari. it is also dependent upon ten or so years of my experience making buildings. in fact, as siza explains, ‘it starts with a feeling.’ this chorology proceeds by feelings, and the sum total of my experience and acculturation. photographs were taken on several visits to each of the buildings, boa nova and setubal in january of 1998. photographs concentrate on details, a close up view of the building, its materials and techniques of construction. placed along side of these photographs is speculation about the relationships that generated the details and the effects that the details produce. this speculation places formal attributes of the assemblage as equivalent to operational attributes, allowing an entire spectrum of invisible affiliative criteria to emerge. facilitating an understanding of the dynamic relations that conspire to shape space. most importantly, without the imposition of a static ‘whole,’ and a conservative entropic intellectual schema - animated, dynamic properties of space become intelligible.
2. terms

architecture

as stated above, the chorology necessitates a reconfigured conception of architecture, the production of architecture and its subsequent construction and effects. architecture is seen as a smooth proceeding from the architect to the constructed building. the architecture is not attributed solely to the architect but to an assemblage of relations composed by the architect among other attributes. history, time, site, modes of production, collaborators, consultants, society, materials, techniques, and manifold other conditioning factors conspire to produce architectures. no bounds are drawn between the conception and construction of a building. the architectural assemblage is acted upon and begins to produce effects immediately. the assemblage is not linearly derived, nor does it operate conservatively. the process towards architecture involves modes of consolidation, consistency and intensity. from drawings to building. as siza says, a building is never an autonomous thing, it is about relations.

just as no bounds striate the proceeding towards architecture, constructed architecture is not artificially coded into distinct constituent parts. architecture is composed of matter and energy organized into varying consistencies and viscosities. space, components of construction, and site are seen as a smooth heterogeneous mixture, composed by matter, energy and time. architecture coalesces these attributes, consolidating them, articulating changes in consistency and intensity.
Detail

The detail acts as the operative agent that facilitates changes in consistency. The detail is the threshold between matter and energy, and at Boa Nova and Setubal provides a connection to time. The detail is the most dense consolidation of matter and energy in the architectural assemblage, affording rhythmic, provisional articulation of space. The detail at Boa Nova and Setubal is always situated in between, but not only functionally in between its connective attributes, but also performing 'in between' across and through the entire assemblage of relations.

Boa Nova / Setubal

Boa Nova, or Casa de Cha da Boa Nova, is a tea house and restaurant on the Atlantic coast in Leca da Palmeira, Portugal. The tea house was 'almost' Siza's first building and is on a site chosen by the architect Fernando Tavora. Siza explains that as a boy he visited the site of Boa Nova every day in the summer, as he grew up just down the coast in Matosinhos. Boa Nova was built between 1958 and 1963. Construction started when Siza was just twenty-five years old. At the time when Boa Nova was built there was a great deal of time to work, and there was tremendous control over the execution of details. Siza could work closely with craftsmen at the site every day during construction.

The Teachers Training College at Setubal is about an hour's drive south from Lisbon. The school is situated at the edge of the city of Setubal that is a port and industrial town. The school was under construction from 1986, and was completed in 1994. Though this is a long time for today's standards, methods of construction and degree of control have changed dramatically from the time of Boa Nova.
was built by hand, by a small number of craftsmen, setubal by a large modern construction corporation from the north of portugal.

the chorology is intended to transcend, or subvert the disparate formal architectural languages of the two buildings as well as the distance in time between their production. the chorology is intended to prize apart the rigid totalizing conception of the constructs as individual buildings, looking instead to find operative, performance driven affiliations. hoping to learn from the invisible, dynamic, generative criteria that catalyses their constituent systems.

photographs
all of the photographs in this document were taken by me on the several occasions that I visited the buildings in january of 1998. each photograph was intended to show building details in conjunction with site forces that the detail is seen to be responsive to. text is intended to discuss multiple, simultaneous, relations and effects of the depicted detail to the assemblage and beyond.

notation / keys.
notes point out specific attributes of each photograph that are discussed in the text. details are keyed to one another across and through the document according to operative, performance criteria. not formal attributes and affiliations.
pessoa

pessoa’s poetry provided a link between deleuze and guattari and the work of siza. siza has read pessoa and mentions him as an influence. deleuze discusses pessoa in *spinoza, practical philosophy*. the real link for me is the conception of connectedness that pessoa writes about. spinoza too, writes about the singular disposition of all matter, arranged in varying consistencies and densities. pessoa discusses the extraordinary in the ordinary, which is relevant to the work of siza. pessoa operates without arrogance, placing himself on the same plane as all that surrounds him, human, inhuman, living or inanimate. it is not a single poem or text that is specifically important, but the work as a whole provides a feeling that prepares one to approach siza’s work. pessoa says - there is philosophy enough in not writing about anything at all.

deleuze and guattari

*a thousand plateaus* provides the intellectual schema for beginning to understand siza’s work. deleuze encourages one to challenge the ‘fascisms’ that control us², and challenges a historical conservation of vitality³.

manuel delanda

manuel delanda and deleuze and guattari facilitate the understanding of dynamically equilibrated and self organizing systems. delanda discusses the operation of social systems as having the properties of fluid geologic, biological and linguistic structures⁴. further, he provides a model of testing generative and productive relations.
Peter Testa / Tony Fretton

Peter Testa has encouraged the synthesis of theoretical preoccupations with the everyday production of architecture. His essay on Siza’s ‘cosa mentale’ has inspired me to understand the work as inextricably related to Pessoa’s ‘fixed and unalterable essences.’ Without the anthropocentric conception of humanmade vs. natural, further binary distinctions such as living and nonliving, matter and energy can be interrogated. Siza does not place himself at the center and above, as so many architects do, he proposes architecture modestly with tremendous sensitivity and empathy for the living and nonliving that effects and is effected by the complex meshwork of his architecture.

Tony Fretton provided the catalyst for the research that I have conducted for the past five years with these few thought provoking statements. ‘The architect must work confidently from a position of insecurity.’ ‘The architect must work intelligently from a position of unknowing.’ ‘One must be strong in mind and flexible in technique.’ Tony also suggested to me the possibility for a ‘subversive details’ project. In Intermediate Unit Ten at the Architectural Association in 1991, Tony Fretton introduced the unit to Siza by showing the Ocean Bath at Leca da Palmiera.

Alvaro Siza

This thesis in no way tries to determine a method by which Siza works, nor does it presume to know more about the work than Siza does himself. It does try to make a critical distinction between the work of Siza and much of the work that is currently produced. This distinction is thought to exist in the following attributes of his work. First, Siza insists that he proceeds by an open minded investigation and by a feeling
about the site and the building to be. he positions himself within the milieu and time that he is working, not above or at the center. by proceeding in this open, nonlinear, inclusive manner, the possibility for invention and responsiveness over a transcendent range of criteria is made possible. by facilitating multiple dynamic relations across and through his building assemblages, consolidating animate and inanimate attributes, synergistic assemblages emerge. his architecture becomes, and operates as a self organizing system.


4 manuel delanda, *a thousand years of nonlinear history*. 1997 swerve editions, zone books, ny.

this air handling/ventilation shaft also serves as a connection node that accommodates changes in roof plane direction. The shaft facilitates changes in the roof planes height that allow natural light into the restaurant. The shape and positioning of the chimney allows the constantly deflecting roof surfaces to tie into it at varying levels and from different directions. Affiliated with this assemblage are concrete to concrete joints, concrete/stucco composite wall surfaces (a) to wood/concrete/terracotta tile composite roof assemblage (b) connections, and finally glass interfaces with each of the previously mentioned systems.
the composite roof assemblage, composed of concrete slab, timber members, terracotta tiling, and wood sheathing at the underside is disposed to many conditioning agents. Here the assembly splits, accommodating diverse programmatic and enclosure requirements. To the left, there is the entry and its elaborate top-lighting and view framing operations(a). To the right lies the kitchen roof in the foreground, with the dining room clerestory beyond(b). Water shed from the roof is channeled to the bronze gutter and rainspout. The timber fascia is terminated by bronze flashing caps.
the transition from clg. surface to clerestory opening is articulated by complex joint details. there is a progression of differentiation of each of the northern joints while the southern joints remain consistent. some might attribute these details to vernacular artisanry, or the influence of aalto however, they also are operating in a very precise way. these joints allow the extension of the clg. surface across into the opening, registering light and time as it animates the space. the details operate relationally with other clg. surface intersections.
this wood joinery detail (a) accommodates the direction change in the soffit @ the seaward edge of the building. the roof is simultaneously shaped by the rocky site, the force of the sea, the building program, the position of the sun over time, building materials, construction techniques, culture, history and the intentions of the architect and craftsman. this detail is composed by all of these operative criteria, at once effected and producing effects. the detail is the irreducible operative architectural component, operating monadically.
this direction change detail (a) is articulated differently than the other wood soffit direction change joints in the same vicinity. it is constructionally and operationally related to the force articulation details at pier/dgl. intersections. while each is independent and specific, they act simultaneously locally and globally. the constellation of these details acts as one and as several, registering effects, expressing forces, equilibrating dynamically. each appears to have been placed 'in between' the others, while siza acknowledges the effects of aalto and write on his work, there is an operative relationship among these details and a local specificity that transcends any formal affiliations to the work of these other architects.
the individual components of the direction joint assembly details act to quantify movement in all directions. vertically (a), horizontally(b), laterally(c), and in time (a,b,c). when viewed against the sea and as struck by the sun's light they mark the space of the building in time. each of the components of the boa nova assemblage operates to facilitate the relationships between speed and stasis; animate, inanimate. linking these attributes in a complex meshwork of constructed and natural relations.
there is no dualist distinction drawn between the inside (a) and the outside (b). many conventional binary distinctions are blurred at boa nova. inside/outside, natural/manmade, animate/inanimate. the space of boa nova is organized into speeds and consistencies. there are viscosity changes across and through the site, open to flows of matter and energy. in one direction, the differing densities of the tea room, the restaurant and the space of the tidal pools is registered against the smooth continuous underside of the polyvalent roof assembly (c). vertically the density of the rocks shapes the space of the program effecting the responsive roof assemblage as it compresses views and selectively lights the occupied spaces of the building.
the speed of the construct is placed within the more durable, slower moving rocks and against the volatile and awesome intensity of the ocean. the architecture does not set itself above and outside of nature, and suggests that humans are not at the center, but occupy one of many centers.
the rising sun shines directly through the spaces of the tea room, the hall and the restaurant onto the tidal pools and rocky cove at the seaward side of the building. the setting sun reflects off the ocean and rocky coast onto the smooth underside of the multiple acting roof surface. the spaces of boa nova are evolving constantly as this process occurs day after day, year after year.
The apertures in the compound roof surface are determined by a double articulation. One by the position of the horizon relative to the movement of people through the space, the other by the position of the sun and the building in time. One opening compresses a view to the horizon as one enters the building, the other lights the central hall space from above with natural light. This operates to link the occupant with the dynamic forces which operate around and through the building.
the space between the topography (a) of the site and the topology of the roof surface (b) oscillate between the speed of geologic time and the speed of human existence. This multistabilic oscillation calls into question the representational distinctions, artificial and natural, through the operative distinctions of speed and consistency.
great effort is employed in the handling of rainwater, and in shading the building from the hot sun. the roof extends far beyond the building envelope where there is glass, struts at the underside of the eave extend to carry the weight of gutters and scuppers that gently convey rainwater back to the earth. the precision of the roof form is bistabilized by these operations. the form of the roof is made inevitable by its performance over a broad range of criteria. the roof also maintains a remarkable relationship in parallax with the horizon, always moving across the distant edge between the sea and sky.
there are local dramatic contrasts to the extreme sensitivity and responsiveness with which the boa nova tea house occupies its site. the tea house is simultaneously in a pristine natural frontier, and a zone of heavy industry. the tea house operates outside of any artificial distinction between the natural and the humanmade. boa nova constitutes a third possibility between the polarized myths of industry (humanmade) and the sea (nature), the building emerges out of local effects, and precisely acts upon the site and with the site in a synergistic way. boa nova was made before heavy industry occupied the adjacent sites along the northern portuguese coast. this bifurcation across modes of cultural production becomes a research program and ground for experimentation in siza's later work at setubal.
the spaces of the building are organized by sensitivity and feeling towards the site and materials of construction. Transcended boundaries facilitate a symbiosis and a synergy between and among successive spaces. It is through these reterritorializations that a self-organizing assemblage is generated, such that the assemblage outperforms individual parts, and in a way that evolves and is self-sustaining.
'consistency is the same as consolidation, it is the act that produces consolidated aggregates of succession as well as coexistence by means of three factors...

*intercalated elements...*  
*intervals...  
*articulations of superposition.*

deleuze and guattari
'Accordingly, the term we would prefer for this type of evolution is - involution - on the condition that involution is in no way confused with regression. Becoming is involutionary, involution is creative.'

deleuze and guattari

Constellations of details within the building are operatively responsive to multiplicitous site contingencies, the site acts upon and is acted upon by the constructed building assemblage. There is a collective becoming site, and a becoming building along coexistent and dynamically equilibrated performance attributes. The relational assemblage sitebuilding is involutionarily proceeding.
windows slide down to disappear into the .9m concrete wall at the tea room. the glass @ the restaurant slides down completely into the floor to open the space entirely to the ocean. there is no weather seal at the joint between the operable window and the underside of the roof (a). this is made possible by the deep eave and simultaneously articulates unbounded, undifferentiated internal/external space, with differing densities. the absence of a style between the operable windows (b) further conspires to articulate discursive space, as does the choice to slide the windows down - rather than up or sideways.
meter, whether critical or not, assumes a coded form whose unit of measure may vary, but in a noncommunicating milieu, whereas rhythm is the unequal or incommensurable that is always undergoing transcoding. meter is dogmatic, but rhythm is critical, it ties together critical moments, or ties itself together in passing from one milieu to another, it does not operate in homogeneous space time but in heterogeneous blocks."

deleuze and guattari

the gently sloping floor up from the entry (a), the curved plane of the ceiling that opens onto a clerestory (b), the horizontal slot that compresses a view to the ocean, the wood detail cladding at the stair (c) and the handrail of the stair all constitute heterogeneous blocks. these blocks critically tie a rhythmic space inclusive of light, material changes and joint articulations.
space and details at boa nova constantly open onto one another. the process towards architecture, explains siza, must remain open to new informations. this consciously nonlinear, responsive process, is in contradistinction from virtually all other codified modes of making. architecture as taught as a discipline and that has been historicized has been linearized, and made conservative. these architectures work abstractly in a bounded system, always toward some ideal. this ideal, and the conception of architecture as a bounded system yields determinism, and precludes invention. siza strives to operate in reality, and at the speed of everyday life.
an open procedure towards an architecture constitutes an ethical and political position. Inclusive architectures, responsive to flows of information and responsive to local and global conditions over time challenge deterministic, linear modes of making. To achieve this type of liberation of space, and to make architecture with a universal inclusion that deconstructs milieus, siza has overcome the fascism imposed on his youth, and also provides a model towards ferreting out the fascisms that compose each of us. Water is shed gently onto an adjacent stone at boa nova. here the roof plane is less than .1m from the ground.
'architecture, as the art of the abode and the territory, attests to this: there are consolidations that are made afterward, and there are consolidations of the keystone type that are constituent parts of the ensemble. more recently, matters like reinforced concrete have made it possible for the architectural ensemble to free itself from arborescent models employing tree pillars, branch beams, foliage vaults.'

deleuze and guattari

cement, wood, stone, light and space are consolidations of the keystone type that are constituent parts of the ensemble. this architecture has freed itself from the arborescent model both formally and operationally.
the placement of retaining walls that articulate the sequence of arrival to the restaurant are in direct response to pre-existing topography. the sequence affords views south to matosinhos along the seacoast, directly out to sea through the rocky coast, and finally to the compressed entry of the restaurant under the deep eaves of the roof assembly. this simple nosing detail (b) connects all of these complex direction changes by making a wall (a) simultaneously a step, a barrier that is simultaneously a threshold.
roof surface (a), building enclosure (b) and ground surfaces (c) are synchronized to manifold site forces and to each other. At once each is engaged in multiple dynamic structural and spacial relationships that consolidate the assemblage. Site forces, program and the architect constitute a proto architectural assemblage of relations, materials and technique are a catalyst for self-organization. boa novamachine.
the components that make up the roof assembly are rigid in themselves, though they are detailed in a supple manner. The roof assembly acts as an engine—performing multiple functions simultaneously: shedding water, allowing natural light, creating shade, articulating views, containing space, facilitating flows of matter and energy both above and below its surfaces. Fascia joints (a,b) that facilitate multiple, complex direction changes are inventions that support the operation of the assembly transcendent of functionalism, making the roof assembly machinic.
boa nova - connection @natural/humanmade.
27. boa nova - registration of site effects.
at the southern wall of the tea room there is a complex material change. the compound wall assembly with stucco sheathing (a) joins with a concrete wall/foundation (b) that interfaces with the rocky site and faces the sea. the window system in the concrete assembly sits proud of the concrete face. the window in the composite wall assembly is recessed; the stucco is battered to the underside of the window. this material change is responsive to the conditions that each wall is exposed to. the window system is mutated slightly in each instance to perform water shedding operations most effectively.
"It may be a bit obvious - this has to do with the movement of the rocks outside."

Alvaro Siza

This lap joint (a) provides a dynamic connection at a point, where there would typically be a fixed 'framing' of a view. This technique of allowing for slippage or an open articulation is employed time and again at Boa Nova. Not only does this joint deter the stasis of framing, it opens up the assemblage to relationships with details local and global: the slip of the lap joint relationally ties the detail with the rocks outside. Additionally the detail is synchronized with the force articulation joinery at the pier/door intersections, the curving direction change of the restaurant ceiling and the articulation at the clerestory light openings. This simple lap joint activates a constellation of details, dynamically equilibrating space.
30. force articulation detail@pier. tea room.
the architectural details of alvaro siza: a chorology

the following questions were posed to alvaro siza in a discussion at his office in porto, portugal on Tuesday, January 13, 1998. 12:00pm GMT.

1. Pessoa writes about the unspeakability or unquestionable existence of things. Boa Nova seems to operate in such a way that the architecture is shaped by the fixed and inalterable operations of the place, for example the sun, the sea and the rocks. Could one analyze the building in this way? And can these fixed essences be seen as a catalyst or generative origin for your architecture at Boa Nova?

2. I have been trying to articulate a mode of making that proceeds or becomes, allowing conditioning agents and varied effects to shape the work. A way of working that involves a precise response and a heightened sensitivity to dynamic pre-existent conditions. Rather than formal architectural precedents, this mode of working proceeds by operative precedents, that may or may not be 'architectural.' Do you consider animating your work in this way, by positing the architecture relationally into living assemblages? To what extent do formal architectural precedents effect your work?

3. Can you speak for a moment about the place of details in your work? I am fascinated with the canted columns and the column shape at Setubal, and with the column/cfg. joints and eave detailing at Boa Nova. Would you discuss these and their relationships to other details in each building? And even to each other?

4. Often in your work, spaces open onto other spaces, constantly unfolding into one another. At Boa Nova spaces unfold onto the sea, and at Setubal onto the rolling hills of Andalucia. There is a freedom, a non-determinist discursiveness that is counter to 'classical' definition of static space. A tutor at the architectural association characterizes this aspect of your work as 'democratic.' Would you agree with this? Is there a polemic attached to the way that you make architecture?

5. What place do natural and animate connections occupy in your buildings? How has the architectural language that you employ emerged out of these considerations?

6. Would you discuss the lap joint in the window sill at the northern window at Boa Nova? How was it derived, what is its purpose?

7. Could it be said that you consider architecture without an abstract separation between space, the physical matter of architecture and the environment? It appears that these are seen as continuous, though organized at differing speeds, consistencies and rhythms. What role does the detail play in articulating these?

8. Your work brings to mind certain neorealist work. Joyce goes to great lengths to convey the complexity of the everyday in Ulysses. Rather than create a new abstract reality, your work, with modesty and great sensitivity strives toward articulating the extraordinary in the everyday. It also respects the nonhuman and inanimate and seems to destratify these relations. Is this a consideration as you work? Pessoa may be relevant here.

As we spoke, Siza drew. The following pages are an account of the conversation we had, based on notes that I took that day and the sketches that Siza made as we spoke.
1. q: 
Pessoa speaks about the ‘unspeakability’ or the ‘unquestionable essence of things.’ Boa Nova seems to operate in such a way that the architecture is shaped by the fixed and inalterable operations of the place. For example, the sun, the sea and the rocks. Could one analyze the building in this way? And can these fixed essences serve as a catalyst or generative origin for the architecture?

a: 
No, not so directly. While I remember considering all of these factors, I cannot recall making a decision about a detail so directly. They are always present, always. It begins with a feeling, a feeling about the place and its atmosphere. Inside there is something that you feel but do not understand very well. At Boa Nova, I used to visit there every day as a boy in the summer. The beginning of a project is a kind of nebulous feeling, one must remain open to this, receiving more and more precise information. But this is based on feeling, not a result of analysis. Be open to this feeling, free, open-minded.
2.q: I have been trying to articulate a mode of making that proceeds or becomes, allowing conditioning agents and varied effects to shape the work. A way of working that involves a precise response to a heightened sensitivity to dynamic, pre-existant conditions. Rather than formal architectural precedents, this mode of working relies upon operative precedents, that may or may not be architectural. Do you consider that the buildings you make are living assemblages, posited into animate contexts? To what extent do formal architectural precedents effect your work?

a: The building is never completely autonomous. Relation is the main point in architecture. These are present in the feeling, the atmosphere that one encounters as the project proceeds. The relationship of the work in memory and the general dynamic of a building are influenced one from another. These can be discovered from models and sketches. If one proceeds in an open minded way, memories, studies, education, everything starts coming in. The material production is englobing.
3.q: can you speak for a moment about the place of details in your work? I am fascinated with the canted columns, and the column shape at Setubal, and similarly with the column/cig. joints and eave detailing at Boa Nova. Would you discuss these and their relationship to other details in each building?

a: the splayed columns at Setubal are in conjunction with the guard house a method for the punctuation or ending of the arcades along the courtyard. The guard house is poised like an animal about to pounce into the courtyard. The canted columns serve to end the arcade on the other wing of the plan, as well as being the main entry pavilion to the school. There is a problem whenever you use an arcade, the termination. The canted columns and the separation of the roof serves to end the arcade and also to indicate the turn that happens at this point as you enter the courtyard. The small building is an apparition about to move - an animal. The canted columns are another vibration.
a (cont.):
- the angle of the canted columns is related to the angle of the roof lights in the gym across the courtyard. even though they would never be seen together this sets up a new meaning for the total of the building.
a (cont.):
- in a moment the columns at Setubal are to make less hard, to make another rhythm of movement, another vibration, perturbation. A classical column has the fluting that causes movement as the sun hits it. The columns at Setubal operate in this way, though at two scales, both per column and at the scale of the building.
in plan, especially at boa nova, spaces open onto other spaces, constantly unfolding into adjacent spaces or opening to the landscape and to the sea. there is a freedom of discursiveness that is counter to classical space definition. a tutor of mine once characterized this attribute of your work as 'democratic.' would you agree with this? is their a polemic attached to the way you make architecture? phonecall interrupts.

in a modern town, a building is less and less important and more and more complex in its relationships to the town. i am looking for the right expression of density in the opinion of the town, not the opinion of architects. the expo in lisbon every architect wanted to be more important than the next. scale is important. it is not the more balanced. in the time of boa nova time and completion allowed for discovery during the process of building. now is very fast and divided. the process of thinking cannot be divided. there is a drama of working today. division working compromises connectivity. the processing of jobs today is such that we cannot plan our lives. things start and stop. then start again.
a(cont.):
- at boa nova there is a completely different situation than at setubal. it is almost my first real building. the choice of the site was not mine, tavora said that the building will be 'here'. and we now know that it is precisely where the building should be. the site is an extremely difficult one. in the days that it was built i had a very long time to work on the design and i was at the site every day. there were fantastic artisans, and there was great control of execution. i do not like the detail at boa nova, it is too excessive. at setubal no detail is more than is necessary. at the time of boa nova aalto and wright were influences, and i was too young to dominate those things that influenced me. but there was great freedom, and artisans could execute changes. it is another context of production than today. there is a division now of the thought and execution. this is bad.
a(cont.):
- in the remodeling of boa nova they wanted air conditioning, so a great part of the work was the design and concealing of air conditioning. at first i thought that the renovation was a chance to change the details that i did not like. but i looked and i said if i change this then i must change this over here, and that over there. and that i would want to change the whole thing. so i realized that even though i may not like some of the details, i recognized that i was thinking globally then, that the details were thought of in a global way. there have to be many, many influences, how to include them, so that they are present in a nebulous kind of way.
a(cont.):
- someone pointed out to me after setubal was built that it was very appropriate because of a local monastery that also has a cloister. while i knew of that building - i never consciously while designing, specifically thought of that building. it is only afterwards that i thought of it when it was brought up to me by someone else. so all of these influences, memories, studies, education, feelings are important. culture is important, but not storage.
5.q: what place do natural and animate connections occupy in your buildings, or in the conception of your buildings. how has the architectural language that you employ emerged out of these considerations?

a: once a friend suggested to me that i make these things because i am ignorant, that i try things because i do not know. i like this characterization because i think that it is true and i want to keep it this way. we are ignorant of a lot of things, it is good to stay ignorant of the rules if we are to stay open to possibilities. there is much we cannot possibly know - if we make what we have already seen - these things are not open to interpretation, to transformation. and cannot become part of everything, the universe.
6.q: would you discuss the lap joint in the window sill at the northern window at boa nova? how was it derived? what is its purpose?

a: you see things (smiles) - you notice what most do not. it may seem a bit obvious but it has to do with the movements of the rocks outside the window.
7.q: could it be said that you consider architecture without an abstract separation between space, matter, and energy? it appears as though these are composed continuously, though at different speeds, consistencies and rhythms, and that details play an important role in changes in viscosity.

a: yes, yes i like this very much.
your work brings to mind certain neorealist work. joyce goes to great lengths to convey the complexity of the everyday in ulysses. rather than create a new abstract reality, your work, with modesty and great sensitivity strives toward articulating the extraordinary in the everyday. it also includes the nonhuman and the inanimate in a way that destratifies these relations. are these observations considerations as you work?, where do you believe the detail would be relevant here? pessoa operates in these ways.
Gory Pickard Rohrbacher

Dear Gory,

I am happy you finished the hard work of "rediscovering" the architecture of Baaloko and Setúbal, and the relation and distance between them.

As you can now understand, we (architects) feel often frustrated with the sensibility that most of our efforts are not perceptible, even if we enjoy ourselves so much (as a matter of fact much of our efforts deal with not being perceptible the effort and finally the author).

Your work reveals the patient way through feeling - understanding - forgetting and feeling fully. To feel a part of. This is a way to progress.

I like your work. It would be beautiful to publish it.

Best wishes.

Alvaro Siza

Greeting to Peter Terzio and William Porter.

4.04.98
the upper ramp (a) leads to a small stair and door at the side of the sculpture studio. the lower ramp (b) leads to the porch at the sculpture studio. circulation is separated and articulated at different speeds. the paving stones are loosely bonded to allow moss to grow in the joints.
The sloped brise-soleil at the southwest wing of the building serves to shade the windows from the hot afternoon sun. The surfaces of the brise-soleil are at varied thicknesses (a, b). The profile at the head of the sun shade (a) is sloped in response to the movement and position of the sun.
this ventilation and weep hole (a) at the sill (b) of the windows combines normally discreet functions in masonry/stucco wall construction. The weep hole sheds moisture and condensation from within the wall (outside of the vapor barrier). The window sill also has water shedding function. this detail uses the window sill to move water from within the structure and without away from the face of the building. the detail also serves to ventilate the cavity, allowing it to dry. this nesting and combination of functionality occurs at all scales throughout the setubal assemblage.
the brise-soleil protects the windows from the sun and also protects the surface of the building from moisture. these drip details (a.k.a. typ.) prevent water from traveling by adhesion back to the surface of the enclosure. the jump in the brise-soleil is a response to the topography of the site and to programmatic requirements that necessitate varying window sizes. details are responsive over a broad range of criteria. once again the thickness of the vertical component and the horizontal component is differentiated, however the materiality is consistent (b).
the dual acting nature of the window sill weep/ventilation
detail (b) is compounded by the material change from stucco
to marble (a). the material change operates as a horizontal
datum to both inside and outside the structure. the datum
responds to the topography of the site and to the topology
of the building. the datum is responsive to the slopes, angles, movement, shadows, cants, and natural light which register their movements against it, animating the inanimate, connecting matter and energy.
at the entry space there are many converging systems of movement. as the path toward the courtyard slopes down away from you there is a stair that allows passage to the upper level of the classroom arcade. the sloping floor is a compound curve that slopes both down and to the left, towards the lower level of the west classroom wing. details conspire to articulate and compose these movements of matter and energy around and through the building. the material change datum (a) serves as a constant against which movement is recorded. the handrail of the upper arcade (b) maintains a constant level, flying overhead of the circulation to the upper level. the column in the center of the space (a) is square, one of several column shapes at the school. the south wall (c) is battered and angled in plan. above there is the slot between the entry pavilion and the classroom wing. a pair of canted and splayed columns separates and connects the structures. all of these activated details form a constellation of intensities that compose space.
there is a specific geometric relationship between the cant and splay of the columns (a) and the slope of the paved ground surface (b). The paving stones allow for the compound curvature and movement of the slope, while providing traction for the students that walk down it. This type of stone paving is frequently found in public spaces and on sidewalks throughout Portugal, but here it operates specifically to accomplish multiplicitous functionality, a supple infrastructure engaged in reciprocal pre-supposition with the animated columns.
these splayed columns \((a, b)\) are multiplicatively, operatively related between and among other columns at setubal. at the same time as they carry loads and forces, these columns are activated, placed into dynamic equilibration both by intercalary oscillation and by engagement with light and conditions of parallax. columns at the arcade, within the building and at the small courtyard work similarly.
the weep/cavity wall ventilation detail (a) also occurs at the classroom door thresholds along the arcade wings; the joint supports a material change, from stucco to stone at the base of the door. Small stainless steel rods capped with a rubber top serve as a door stop (b) for the operable classroom doors. Their presence in the space of the arcade sets up a complex scalar and rhythmic relationship with the columns of the arcade. The non-linear relationship of these details relative to other successive scales of articulation sets up a rhythm as opposed to a conservative, repetitive meter.
Wall surfaces, roof surfaces, interior and exterior, are composite assemblages with stucco sheathing. Here the surface transcends conventional material/function articulation by simultaneously and continuously operating as (a) roof, (b) wall surface and (c) stair enclosure. Components of the building are discreet operationally, but are continuous materially — mutating slightly per polyfunctional requirements.
at the center of the courtyard toward the entry into the building stands a very old cork tree. the building is clearly shaped by the presence and position of this tree. the tree occupies a vital position in the court, where one would conventionally find a classical facade, composed to convey the power of the institution - at setubal there stands a tree. while cork is of significant importance to this region, and to all of portugal, the tree is important beyond representational reasons. the tree's cycle of growth and bark harvesting provides a living, temporal datum along side of the speed of the school's operations.
the shape of the column (a) is derived from the desired effects of the light that moves across them. the columns are alternately directed toward and away from the court. the corresponding columns across the court are directed asymmetrically, charging the space with a vibration of smooth and hard shadows as the day proceeds. the courtyard space operates symmetrically at one scale, but asymmetrically at another, in a similar way the columns manage to operate simultaneously both as square and circular columns do. the manner in which the columns operate with respect to light, is a scalar transformation of the operation of fluting on classical columns. the operation is transformed yet again at the stair enclosure at the closed end of the courtyard.
Light hitting the stair enclosure(a) operates in the same manner as light against the shape of the columns in the arcade. The shape becomes both a line and a surface as the sun creates a light and a dark side. This technique of one as both or many is employed relationally across and through the building assemblages at Setubal.
A variety of dynamic forces act to shape the architecture. Scales of relational structures are operatively tuned to function across a broad range of performance criteria. For example, the entry structure (a) is subject to movement through and around it, it also accommodates flows of circulation from three directions, while visually linking the cork tree in the courtyard to the schools central hall. These operations conspire to articulate the entry structures shape. Similarly, the stair enclosure (b) must respond to conditioning agents as diverse as light across its surface, a floor to floor programmatic link, the physical forces of live loads moving through and passage under into the hall entry. These operational requirements coalesce to generate the architecture, inextricably relating the components with one another, and to their agents of production.
the slot at the clg./wall connection in the main hall marks the center of the courtyard outside. the ceiling slopes and the space tapers gently to the southwest. the oculus is related axially to the tree outside the main entry door and is placed to observe the sunlight that shines through the skylight into the main hall. the skylights geometry is a careful mutation of a circle - as if the same forces that are acting to slope the clg. and taper the space have deformed the skylight. this space connects all of the wings of the building to each other, horizontally and vertically. the space also operates to make connections beyond the buildings boundaries through the oculus and the skylight, relating the space to the tree in the court and opening the space to sunlight.
sloping surfaces (a, b) operate intercalarly. these surfaces are placed 'in between' linking scales, programs, sequences, movement and consistencies. they are both functionally and formally calibrated: they are relationally articulated between successive consistencies, linking and articulating details - changes in matter and energy.
space at Setubal is not 'defined.' Space is shaped by a constellation of effects, dynamic and overlapping. Space is not conservatively ascribed function and form, rather these attributes are engaged in flux with various other conditioning factors. There are not boundaries, but thresholds.

A chorology looks at the relationships between these attributes without delimiting the bounds within which they operate. The pier (a), oculus (b), slot (c) and skylight (d) in conjunction with intercalary surfaces are engaged in multiple relations—local, global, cosmic and even across time.
Setubal is organized by provisional space and nested operational structures. This supple organizational schema operates across scales and consistencies. Devices and objects strate smoothed consistent space. Space is discursively articulated, dynamically equilibrated, flows of matter and energy move across and through. A threshold between the café (a) and the hall (b), a stair (nested operational structure c) operates simultaneously to link and differentiate.
this column is detailed to appear leaning toward the viewer in parallax. the half engaged column has a sloped top (a), exposing a surface that would not be seen unless the column is sloping forward. this visual animation of a column is a technique employed time and again at setubal. columns, which generally operate and represent stasis are animated, setting the space into a dynamic equilibrium. columns at setubal are becoming animate.
the philosopher eugene dupreel proposed a theory of con-
solidation: he demonstrated that life went not from a center
to an exteriority but from an exterior to an interior, or rather
from a discreet or fuzzy aggregate to its consolidation: this
implies three things: first, that there is no beginning from
which a linear sequence would derive, but rather
densifications, intensifications, reinforcements, injections,
showerings, like so many intercalary events (‘there is growth
only by intercalation’). second, and this is not a contradic-
tion, there must be an arrangement of intervals, a distribu-
tion of inequalities, such that it is sometimes necessary to
make a hole in order to consolidate. third, there is a
superposition of disparate rhythms, an articulation from
within of an interrhythmicity, with no imposition of meter or
cadence. ‘consolidation is not content to come after. it is
creative.’

deleuze and guattari
each operative structure is arrived at through a complex polyvalent thought procedure: selection, elimination, extraction and relation overlap to simultaneously smooth and striate space. this stair facilitates vertical movement at the south wing. this stair (a) is calibrated as a component of a system of stairs at setubal. each placed carefully in relation to the others, despite consistent functional requirements these operative structures are differentiated one from another formally at the same time that they are linked by performance. as the stair operates as a nested operational structure, the stair is composed by nested operational components. thousands of selections, eliminations, extractions and relations coalesce to condition the stairs operation and form.
sloping surface @ clerestory ceiling (a), sloping surface @ clerestory (b), stone trim @ wall penetration (c), stone/stucco reveal joint (d), horizontal datum change @ opening, stair plinth edge @ floor penetration, handrail/support connection (e), canted support @ handrail (f), rail support / floor connection (g), handrail / wall connection, flush stucco / stone joint (h), fbases @ stone (i), continuously curving handrail (j), riser / run @ stone, riser / run @ stucco, section @ stair, flush joint @ flooring stone (k)...
the precision and completeness of the viewing oculus (a), is set against the deformation and irregularity of the skylight (b), this exists as evidence of continuing research in siza's work that explores relations between and among open 'natural' systems, and closed humanmade systems. the buildings relationship to the constructed nature of its site is made explicit in the detail relationship oculus and skylight. each shape registers the forces that pass through it, sight and sunlight.
a web of decisions effects the extraordinary nature of this window detail (a). the operative shape of the stair, related to the 'becoming dynamic' perturbation of the columns of the arcade, opens up onto the articulation of the window. ordinary detailing of this extraordinarily curved window is transcendent, and begins to show the effects of operative affiliations across systems.
constructed differences across operative consistencies exist in the stairs at setubal. the stair @ the cafe is articulated as an object that rests on the first floor, bearing one up to an opening in the ceiling. the stair adjacent to the hall entry is articulated as an object in section, it is exposed on the outside of the building as a nested operative structure that resides in the space of the arcade. the stairs @ the classroom wings are articulated consistently, as devices within the space of the circulation of each wing. a notch (a) at the first floor cgl corresponds precisely with the stone side (b) of each stair, suggesting a former or future position.
clg. planes are multiplicously activated at setubal. in the ceiling surface at the gym - alternating clg. (a) and voidspaces (the space of clerestories) (b) challenge conventional methods of bringing in light from above. because clerestory structures span the entire width of the gymnasium, and because the first clerestory is aligned with the back wall of the gym, clg. surfaces are suspended in a continuous surface of sunlight. this deterritorializes the space of the gym, opening the sixth side of the space to the light.
this pier at the connection hall of the school tapers from top to bottom. the pier is clad with stone at heights that correspond to cladding on adjacent surfaces. in this elevation the stone is at the height of the nearby door head (b). at the side elevation the flush stone/stucco joint is at the level of the horizontal datum (a) that travels throughout the bldg. the taper and at the same time the varied cladding conspire to incite a twisting motion as the column is viewed obliquely. this operatively links this column to the other 'becoming dynamic, columns at setubal.'
we live in a world populated by structures – a complex mixture of geological, biological, social and linguistic constructions that are nothing but accumulations of materials shaped and hardened by history. immersed as we are in this mixture, we cannot help but interact in a variety of ways with the other historical constructions that surround us, and in these interactions we generate novel combinations, some of which possess emergent properties. in turn, these synergistic combinations, whether of human origin or not, become the raw material for future mixtures. this is how the population of structures inhabiting our planet has acquired its rich variety, as the entry of novel materials into the mix triggers wild proliferations of new forms.

manuel delanda
the penetration (a) of the clog, & the cafe stair is a different shape than the stair object (b). The intercalary handrail (c) is placed to mediate between the two. The cafe clerestory (d) is integral to the stair constructionally and operationally. Human movement up the stair is linked to time as the sun moves across the canted wall of the clerestory through the opening, onto the plinth of the stair. The stair, light, movement assembly acts as a destratifying transversality—dynamically equilibrating human movement, light and time.
three spaces connect and separate @ this node of intensity. there are overlapping provisional, multiple articulations of each space. the cafe (a) is delimited by the .5m level change, at the same time the space is put in flux by the .25m slide beyond the court glass into the space of the hall. the hall space (b) is bounded by the glass of the courtyard wall and then opens up into the space of the cafe and the threshold that is occupied by the stair: the courtyard space (c) transcends its bounds by two modes, by the expanses of operable glass that connect it to the building spaces and by the action of extended building components that reach into the court space, challenging the boundary between inside and outside.
taper, material changes conspire to animate (twist) column.
conventional, linear relationships between details and articulations of movement are replaced by nonlinear relationships. Operative alignments supercede the visual. Differentiation is opted for over homogenization. Movement of light and air are accommodated as is human movement.
This stair has a relationship to the other stairs at Setubal, not unlike the relationships that the columns and skylights are engaged in. Operative structures are linked by performance and then exhaustively formally differentiated. Details serve to simultaneously link and differentiate. Details such as the turning up of the horizontal datum, flush conditions at both the bottom (a) and first (b) steps; reveal of the thickness of cladding material (c) and the differentiation of the stone between the stair and the horizontal datum conspire to make this stair both one and one of several.
this threshold box is simultaneously a space of rest and of circulation. the box makes a transition from the space of cars and commuting to the space of the school. it also operates as a meeting place for students on their way both to and from classes. the painted red stucco operates to cleanse perception before entering the white realm of setubal. this heightens sensitivity to the movement of the sun across white surfaces, and stimulates awareness of the subtle material change datum that measures the manifold animated operations of the architecture.
the canted columns change the speed and consistency of the arcade, they are "another vibration." the columns serve to punctuate the architecture and facilitate the turn up the slope and out of the arcaded courtyard. the material change that is waist high as one enters the top of the slope is aligned with the top of the classroom doors at the first floor of the arcade. this flush material change is also articulated at the columns of the arcade and the canted columns. this simultaneously registers the movement of students relative to the architecture and the movement of the architecture against the datum.
the entry pavilion is perhaps the most complex nested operative assemblage at the school. It operates to punctuate the arcade, facilitate entry and exit, respond to the landscape, provide connections to both the first and second floor of the arcade and allow connections across the court. At the same time, the entry pavilion is composed of details that inextricably link it to the "global" construction at Setúbal. The canted columns are geometrically related to the skylights in the gymnasium; they are also linked operationally to the animated columns in the hall and those at the arcade.
This compressed view shows the entry box and its orientation function. The box bears one to a point that is clearly visible prior to the transition. The box travels underneath the spreading branches of two pre-existing trees at the site. It rematerializes at a threshold directly in front of the portal into the entry pavilion and the slot between the pavilion and the south wing. Engagement with the architecture is encouraged, offering experience up to all that effects and is effected by the building.
this small building is poised to leap into the courtyard as described by alvaro siza. this technique of anticipated movement is employed in the organization of the entire setubal assemblage. the combination of dynamic equilibrium with movement of human beings and the passing of time ensures that the assemblage is always in flux, evolving, mutating and working. relationships among details across and through the assemblage conspire to further activate the assemblage.
execution of this type of detail requires enormous coor-
dination and understanding of the buildings mechanical sys-
tems. These systems are increasingly out of the realm of
the architects understanding and are seen as a deterrent to
the execution of design. here siza makes the facilitation of
mechanical systems an opportunity to smooth the dispa-
rate working elements of the building assemblage. this
mechanical ventilation being yet another nested operative
component of the functioning animate, construction.
40. setubal - movement
relationships between operative structures transcends singular functionality. While all of the stairs are linked operationally both functionally and in terms of performance, links are also made across function. For instance, these piers are differentiated in succession (a), relating them to the roof lights in the gymnasium, and the rhythm of the arcade. They visually vibrate the stability of the roof, as the guard house is poised to leap into the cloister. They operate locally as animated columns, but have meaning for the building as a whole.
various simultaneously acting systems engage at setubal. the operation and programmatic requirements of a teaching school revolve within the gently undulating constructed landscape. a zone of heavy industry and a bustling port sustain the families of this region, as does the production of cork. evolving natural systems, weather and time provide another dynamic matrix. the school draws upon all of these facts as conditioning agents, and generative criteria for operative structures that smoothly connect, engage and respond to these regimes of dynamic systems.
rooflights at the gymnasium (a) are nested operative structures: the gymnasium itself has a relationship to the arcade wing that is analogous to that of the shaped stair. at the same time that these skylights act consistently with this organizational schema they are also geometrically affiliated with the canted columns at the entry pavilion. a double articulation (at least) operates as generative criteria, inventing architecture.
despite the enormous complexity of the action of the construct, the building components are quite simply articulated. Emphasis being placed on performance rather than visual complexity, here the rooflight (a) for the lecture hall is turned to receive the morning sun. Edges are simply executed, with minimal flashing exposed and a small parapet. Water from the roof is carried by leaders to the ground (b), or is simply shed via scuppers (c) that penetrate the shallow parapet. The rains of winter splash soil up onto the lower portion of the building, on north and east surfaces mildew grows.
the gymnasium (a) and the auditorium (b) are related to the "H" shaped cloistered classroom wings, in the same way that the roof lights (a') and projectionist booth (b') are related to the gym and auditorium respectively. These relationships are nonlinear in that they are not determined by rigid program/function affiliations, nor do they perpetuate conventional representational spatial hierarchies. Nested operative structures function pluralistically, generally opening space onto other planes of consistency, deterritorializing and destratifying.
the architectural details of alvaro siza: a chorology observations, boa nova / setubal.

1. anthropocentrism

position of the architect.

at boa nova, siza places himself in a complex meshwork of operating systems. the movement of the sun and the moon, the waves on the rocks, wind, the tides - all of these natural, dynamic systems are synergistically engaged by the architecture. only by drawing no distinction between the natural and the humanmade could an architecture so seemlessly engage the movement of the complex array of systems present at boa nova. the movement of people through the site and the building is placed next to the movement of light, water, the tide and the horizon. without arrogance and anthropocentrism, boa nova is responsive to the multifarious effects that compose the architecture.

at setubal, once again siza operates as one of many centers, composed of all of the conditioning agents that shape his architecture. the school is created in a different time than boa nova, but still responds to the fixed and inalterable essences of the setubal peninsula. most notably, the buildings relationship to the knotted cork tree at the center of the large courtyard continues siza's research into relations between the humanmade and the natural.

possibilities of inclusive architectures.

boa nova illustrates the possibilities of proceeding through the design of a building with open mindedness. siza states that the process starts with a feeling and that one must remain as open to new information as possible. he states that the construct is 'englobing.'
and that all of ones experience, acculturation and knowledge is crucial to the process. at boa nova, the architecture is invented out of close attention to the manifold relations of the place. materials and techniques of construction are catalysts for the chrystallization of a responsive accomodation and smooth articulation of the pre-existent site forces coupled with program. by opening up design to polyvalent, dynamic generative criteria, there is the possibility of fostering synergistic relations between the existing and emergent systems becoming architecture.

at setubal, the architecture remains incomplete without the animate properties of the sun, the seasons and the movement of students through and around the building. the tree at the courtyard is a vital, dynamic component of the assemblage, marking time and differentiating experience over seasons and cork harvesting cycles. the organizational schema of the assemblage operates by trans scalar, nested performance structures and systems, rhythmically disposed in provisional, smooth space. the tree, and the sun become contextual and cosmic performance systems of the assemblage.

**operation and representation.**

at boa nova, as with other siza projects, operation supersedes representation. what the building looks like is an effect of the way that the building works. while most architects are trapped in a game of style, aesthetics and representation, siza invents space and form through a sensitivity and accommodation of the complex systems that he includes as generative criteria for his architecture. operative relations and relations of attributes across and through the building assemblage and time conspire to shape space and crystallize form. representation is a purely human intellectual pursuit, since siza’s buildings are made from a position that draws no hierarchical distinction between human/nonhuman, animate/inanimate attributes, representation is seen as an exclusive endeavor. when representational techniques are employed, they are operating, and are generally representative of attributes outside of architecture.
2. conservation of vitality

exclusion / inclusion of the living / nonliving, human / nonhuman.

at boa nova, the rocky site is included in the conception of the architecture. the geologic speed of the rocks on the site are a vital attribute of the site/building assemblage. there is no predisposed concept that life is exclusive to humans or animals or plants. at boa nova life exists in the relations of the assemblage to systems, both living and nonliving that exist at the site. the connection of the building to the movement of time, coupled with the engagement of the tides animates the assemblage, synergizing relations living/nonliving, human/nonhuman.

at setubal these dualist distinctions living/nonliving, animate/inanimate are further challenged. the architecture is articulated as becoming animate. the vibrations and perturbations of various column assemblies, the arcade at the courtyard and the successive piers at the cafe court for example, operate to animate space. the architecture at setubal is animated by movement of sunlight across its surface, parallax as one moves through space, or by virtual animation by visual properties. these articulations in conjunction with planning objects that are ‘poised’ to leap into the space, or are otherwise placed in flux all conspire to dynamically equilibrate the architectural assemblage. this dynamic equilibration deters the artificial distinction living/nonliving.

3. bounded rational

architecture in a vacuum, friction discounted.

most architecture is conceived statically, often developed primarily in plan and considered a whole unto itself. the bounds of the architectural assemblage are not so well defined.
architecture open to flows of matter and energy.

The architecture at Boa Nova and Setúbal are open, non-conservative systems. Boa Nova and Setúbal are considered in the presence of active systems of movement and flow. Systems not exclusively human or constructed by humans. At Boa Nova the roof surface is shaped by the various forces that engage it and by the topology of the rocky site. These forces include wind, sun, rain, and the movement of people beneath its surface. Program and human circulation are dynamic attributes of the assemblage, in conjunction with pre-existent site forces. The architecture does not stop at the exterior surface of the building envelope but is seen to have effects both local and global. Therefore the construct is carefully posited with respect to dynamic conditions.

At Setúbal, the architecture is designed again with respect to animate criteria.Animate criteria at Setúbal includes the flow of microclimates in and around the three courts, the movement of natural light to articulate the classroom vestibules in each of the classroom wings, and the ever-present flow of students in and around the building. The architecture is also posited dynamically into time, engaging the passage of time and existing in the present rather than statically posited to exist in history.

4. architecturemachine

the tool and the engine.

Siza's architecture operates transcendentally of functionalism. Functionalism is a classically disposed, one to one mapping of function onto a form. A hammer or a screwdriver is functional. The machinic assemblage or architecturemachine has multiple functionality over a broad range of criteria. For example the roof assemblage at Boa Nova operates over manifold functional criteria and across forms. The eaves simultaneously shading the space from the sun, compressing views to the horizon, and organizing the spaces of the assem-
bly. there are many simultaneously acting engines at boa nova, conspiring to perform synergistically over a broad range of operative criteria.

Setubal too, is composed of many nested operative structures that are performing machinically. With combinations of structures that are each doing many different things, overlapping functionality, deterring singular functionality, the degree of complexity of the operative assemblage increases exponentially. Machinically performing operative structures at Setubal include individual columns at the arcade, the assemblage of these columns, the entry pavilion, the stairs etc.

**autocatalytic assemblages.**

Combined machinic assemblages can be placed into relations such that a self generating system emerges. Relationships between the constituent machinic components of boa nova in conjunction with the dynamic, performance attributes of the site conspire to self organization, autocatalysing into a constantly changing, operating assembly. Relations between dynamic components are tuned to propagate spacial effects at boa nova. Connecting the assembly inextricably with its place in space and time. Space is the medium that registers this synergy.

At Setubal, the complexity of the relations between constituent parts of the open assembly is multiplied by the regimes and scales of the operative components. Relations are not only propagated between successive spaces and scales but multiple transversal assemblies of relations operate to conspire to self organization.
top down and bottom up.

through the chorology I was able to see beyond formal relations into a schema of operative criteria for the generation and invention of techniques of construction and the articulation of space. the bottom up disposition of the analysis facilitated an understanding of the relations between constituent components of an assemblage. at boa nova, the details that fascinated me at the outset are no longer seen as isolated incidents of craft or articulation but are seen as vital components in a complex web of intensities that all operate to shape space. the force articulation details at the intersection between the concrete piers and the mahogany underside of the roof assembly serve multiple functions both locally and globally in the assemblage. at the same time that they articulate the forces acting on the joint in the assembly they play a roll in the constellation of details that make space, and they are devices that register the movement of light and other flows of energy through the space. having taken boa nova as a static self contained platonic entity, the multiple functionality of the components of the assembly would not have been as immediately evident.

at setubal, the chorology allowed the understanding of the propagation of becoming animate attributes at various scales and in multiple modes throughout the building. initially a connection between the splayed columns and the rooflight at the gymnasium would have been unthinkable, but through the discovery of operative criteria that seems to be generative in the design of the building, connections across and through scales and systems emerged. the weep/sill assembly detail actually has operative affiliations with the column shape at the arcade and the stair at the cafe in that each combines and consolidates functionality. at the same time that connections across and through systems could be made through operation, differentiation within function or operation could be registered by a close analysis of relationships between details. stairs at setubal are differentiated based on local forces and conditioning agents.
classical and modern.

A distinction can be drawn between two modes of operation, the classical and the modern. This is not to be confused with classicism and modernism which are rigidified representations of the modes discussed here. Classical production proceeds linearly and is dependent upon a fixed linguistic or codified schema. Classical operations operate within a bounded rational that excludes the discursive attributes of existent systems. Classical thinking is a linear proceeding from a fixed point or determined position toward an a priori idealized point.

Modern procedure is non-linear, inclusive and discursive. Modern production includes the possibility for invention, and proceeds in the presence of flows of matter and energy across and through systems. Modern production operates in a destratified plane of relations, towards an architecture of relations.

determinism and democracy.

Any linear procedure that acts in the exclusion of flows of matter and energy is determinist in its exclusivity. A destratified proceduring in the presence of friction and nonconservative system dynamics moves towards democracy.
storage and culture.

6. feelings

   knowledge and sensitivity.

7. details

   connections and bifurcations.

8. boa nova and setubal.


9. relations

   intercalary, simultaneity, constructive, destructive

10. space

    striated and smooth

    closed and open

    inanimate and living.
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the architectural details of alvaro siza: a chorology

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