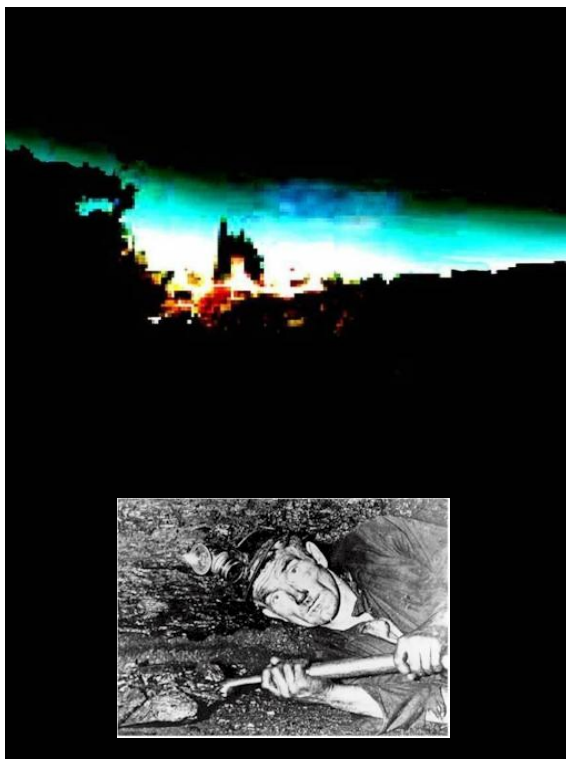
NOTES FROM THE FOXHOLE



Life at the coalface: boundary-barrier, border-membrane

By Ken Bishop

Necessity, who is the mother of invention.

Plato

at the coalface

Someone who is at the coalface is doing the work involved in a job, not talking about it, planning it, or controlling it. A British figure of speech for any worker or manager who is in touch with the day to day processes of the business rather than having ceased to have involvement with the production. It is a way of saying that the person is 'in touch' and appreciates the actualities of the business. Originally used with reference to miners i.e. those who remove coal from the 'face' of the mine, it's now more commonly used to mean any work performed closest to the frontline

From last time, the case was made for *trust* as the basic form of currency in construction administration at the front line of collaboration within a barter style system of information exchange. But, what exactly is this place called the front line of collaboration? What is its nature? Why is it important? How do we participate in it and what is our function?

Charged with the task of conveying design intent within a set of contract documents, design professionals record intent that actually contemplates an allowable measure of legal imperfection and ambiguity. The precise and explicit nuts and bolts of how to achieve design intent is left to the builder. However, builders are charged to follow the contract documents and, in doing so, any defects or insufficiencies present in those documents do not become the responsibility of that builder. As a result, gaps and overlaps in responsibility between designers and constructors emerge, but let's not get ahead of ourselves. This dichotomy often creates a fundamental stalemate in the building process, because what exactly constitutes adequate design intent *and* its deficiency is blurry. These two conflicting realities are often played out in the debate over *design coordination* versus *construction coordination*. The difference between imperfect design documents and an expectation of complete design documents is resolved during construction at the front line of collaboration. It is the folks on the ground, the implementers, who are charged with the task of sorting it all out so that the project gets built without debilitating legal entanglements or unprofitability. This is the nature of our life at the coalface; at the edges of contracted obligation.

Contract Obligation and Process Improvisation

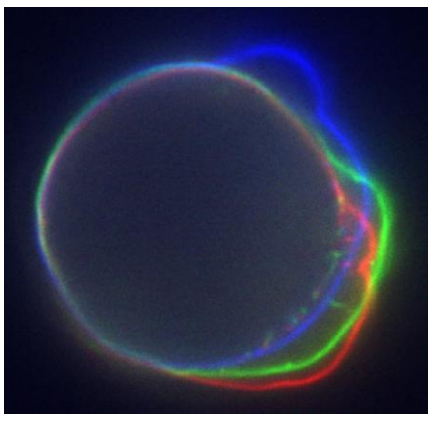
The temperament of contracts is largely single-minded; define responsibility and obligation. This resolute objective serves an obvious and essential function for everyone. However, it simultaneously places a burden on the process as well. **Contracts provide only a skeletal and abstract framework for *process* during construction. They do not anticipate the demands and realities placed upon process by *schedule pressure*.** Contracts do not recognize the accidental, the circumstantial, the expeditious, the conditional, or the contingent. Nor do they do not contemplate urgency, improvisation or nimbleness. They don't provide remedial solutions for imperfect situations in a fast changing project landscape. Contracts simply establish inert process boundaries with limited gates of communication between parties. Contract boundaries have limited porosity. Applied with impunity, contracts create a process straitjacket in the construction environment. They become the court of last resort for process deadlock.

Nonetheless, many argue that contracts do provide inviolate boundaries for each project constituent, prescribing exact responsibilities in the performance of their work. One company's duty ends and another's begins at distinct moments within the process, there is no overlap of responsibility between contracted entities. **At bird's eye view, contractual boundaries appear as clear lines of demarcation; defining the limits of collaboration for people, a simple point of reference across which various factions are not permitted to cross.** There are distinct handoff points for discrete work transactions like submittals and RFI's. Woe unto those who do not observe these legislated barriers say the lawyers, risk managers, hall monitors and other benchwarmers.

At ground level, however, nothing could be further from the truth. Contractual boundaries are understood very differently at close proximity to the action; proximity to the frontline of collaboration. **On a healthy project, unconditional contractual distinctions do not exist for the implementer.** The line separating construction coordination from design coordination is not so crisp. Experienced implementers understand cross-contract collaboration as a matter of routine. They know that contractual obligation is more like a liminal (1) *border* than a static *boundary*. They know that contractual dogma will not get their work done in a constantly changing project environment. And thank the heavens for it, because projects that do not embrace this basic reality (for whatever reason) simply do not go well. Narrow-minded adherence to the boundary-barrier concept of contract doctrine promotes degrading project trajectories. In fact, most of today's justifiable industry criticisms about process waste stem from this very problem, collapse into contractual protectionism at the coalface.

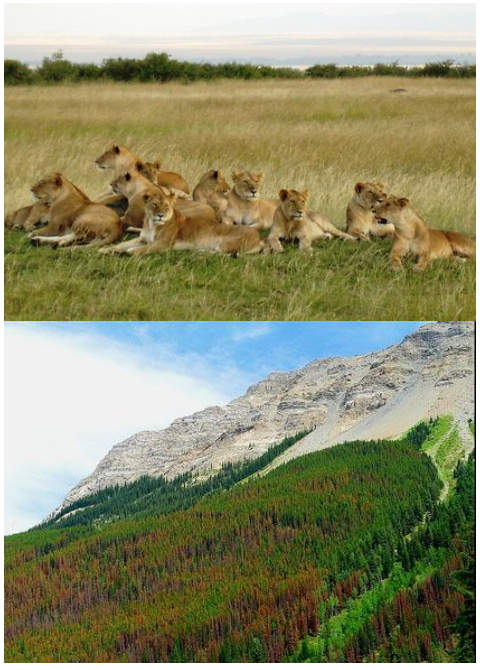
Contract Boundary and Collaborative Border

We need to dig deeper in order to really understand the nature of boundary-barrier versus border. For help in this distinction let's employ a cell membrane analogy by Richard Sennett (2).



"All living things contain two sites of resistance. These are cell walls and cell membranes. Both resist external pressures to keep intact the internal elements of the cell, but they do so in different ways. The cell wall is more purely exclusionary; the membrane permits more fluid and solid exchange. The filter function of these two structures differs in degree, but for the sake of clarity let's exaggerate it: a membrane is a container both resistant and porous.

A homology between cell wall and cell membrane can be found in natural ecologies. An ecological boundary resembles the cell wall, an ecological border the cell membrane. A boundary can be guarded territory, like those established by prides of lions or packs of wolves, a "no-go" zone for others. Or the boundary can be simply an edge where things



end, like the tree line on a mountain that marks the boundary above which trees cannot grow. An ecological border, by contrast, is a site of exchange where organisms become more interactive. The shoreline of a lake is such a border at the edge of water and land organisms can find and feed off many other organisms….An ecological border, like a cell membrane, resists indiscriminant mixture; it contains differences but is porous. The border is an active edge."

The resistant container boundary-barrier *separates* while the porous border-membrane *filters*. They are cousins, descendant from a common ancestor – the wall. The medieval castle wall had this same dual function, defense and the preservation of identity as well as commerce and the need for exchange (gates). According to Sennett, structural integrity and uniqueness of the organism is maintained by the cell wall as a boundary-barrier. It is a framework that keeps the cell intact with a unique identity. **The cell boundary-barrier's purpose is to promote an inert division, an unconditional and clear separation or distinction where resistance to the outside is meant to be absolute**. Similarly, in the context of construction administration, contracts provide a framework for a company to maintain a cohesive whole and preserve its identity within a project, while allowing for tightly controlled interaction. Within any project environment, each company's contract is also like a cell wall. It differentiates each company that contributes goods and services to the project, attempting to clarify responsibility and obligation for each unique identity. The job of plumbers is distinct from that of the engineers; builders are distinct from design professionals and so on. That is the theory anyway, at least from a distant viewpoint.

However, what appears from a distance to be an exclusionary wall with limited portals of communication, a contractual boundary-barrier between construction and design coordination, upon closer inspection, is really a "container" that is also porous. This nature of the cell border-membrane is *also* permeable in accordance with the needs of the organism. Some things, like food or waste, are allowed to pass through while other harmful elements are not. **The cell border-membrane's purpose is to promote a relative division, a conditional and ambiguous separation or distinction, where resistance to the outside is meant to be circumstantial**. The membrane resists "indiscriminant mixture" by limiting the type transaction mechanisms. Contracts, in construction, similarly filter how work product is transacted through closely prescribed mechanisms like substitution requests, RFI's and submittals. Contracts represent the most limited form of exchange across a porous border-membrane. While this border-membrane also resists indiscriminate mixing (chaos) and maintains distinctions (identity) it is also porous and permeable allowing people to become interactive. It is, in Sennett's words, a site of exchange, an active edge. If the resistant part can be explained by strict adherence to dogmatic contractualism, then what more can be said about the porous part of this duality?

ELIJAH BY THE BROOK CHERITH.—1 *Kings* xvii. 4.

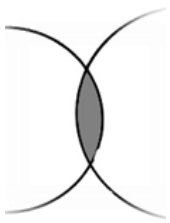
The need for greater information exchange on a project is driven by people operating under schedule pressure, not contractual obligation. With schedule pressure as the impetus, most project constituents want to move the ball forward, by any means necessary. **The need for information free-flow trumps the need for contract boundaries with their limited porosity. Necessity becomes the mother of invention for implementers.** It has been so for a very long time in the world of construction. People of good (and not so good) conscious will collaborate across barriers to solve problems when left to their own devices. They transform traditional barriers into borders out of necessity.

Subcontractors step across contractual lines to help other subcontractors daily. Designers do the same. Constructors and designers also engage in cross-contract collaboration routinely, often venturing into each other's territory in order to solve some problem. **In the real world, the border-membrane is actually far more porous than contracts contemplate.** The relocation of an exterior service door going into an elevator penthouse from a roof due to a steel brace conflict (created by the design team) is most expeditiously accomplished by the trades (after the utility room's services have been coordinated in the field) so as to ensure minimum adverse impact to that utility coordination. The constructors know where best to put the door and they are willing to do so even if it not their contractual obligation to do so. They step across contractual boundaries to do so because it makes sense in this circumstance.

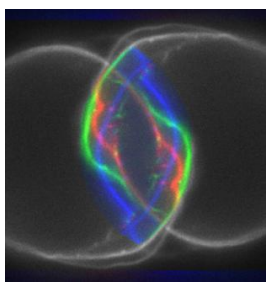
The desire to advance solutions to problems under schedule pressure is what subverts contractual barriers, especially when those theoretical barriers are perceived to have been created and imposed by others not present, and not in touch with the predicaments of the present tasks at hand. **In the realm of pragmatic urgency, porosity of the border-membrane will prevail over the contractual boundary-barrier almost every time.** When these kinds of cross-contract forays are not well understood (usually through inexperience) or when they breakdown or simply cease to occur, the project will tailspin - every time. Contractual barriers hold far less sway at the coalface.

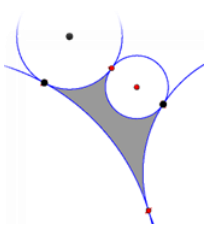
In-between Borders – Free Collaboration Zones

To put a finer point on it, contractual border-membranes may not even be simple lines of demarcation at all. Rather, they might more aptly be understood as borders that temporarily shift to define unique areas or zones; zones of two types. One is a *gap* in responsibility between design and construction coordination discussed above and the other is an overlap or *intersection* of responsibility.

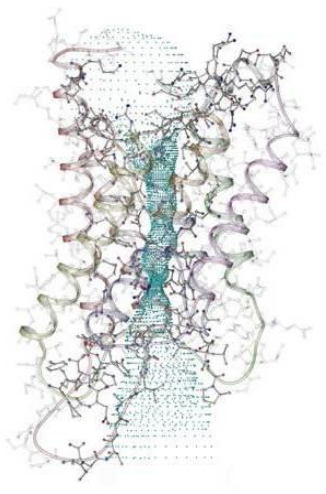


Responsibility Intersection





Responsibility Gap



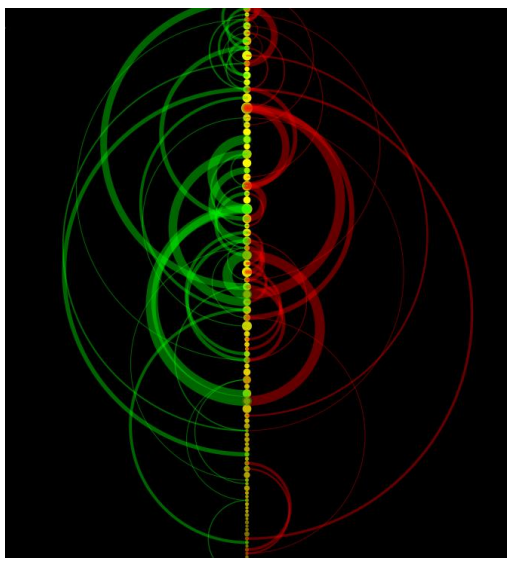
For example, when designers *offer* alternative technical solutions to issues which facilitate expediency to a means and methods problem of constructors we have decisively pushed our contractual border into the forbidden realm of builder means and methods. We have created an intersection, an overlap, of responsibility. Conversely, when designers *accept* an alternative technical solution *from* a builder which facilitates expediency due to constructability or bidding issue, then both parties might convincingly argue that they have each stepped outside of their contractual safe-havens to fill a gap between contractual boundaries.

One thing is certain, contractual perimeters are not as fixed as they appear from a distance. Perimeters become fuzzy, the farther from a contractual center you travel. **Their proximity defines temporary places or zones with x and y (and possibly other) dimensions where contractual and professional obligations overlie in some ambiguous state.** The nature of these zones is neither fixed nor permanent. They shift, adapt, morph and deform depending upon project circumstances. They are influenced by schedule pressure, trust (or the lack thereof), work backlog levels, expediency, negotiation, risk perception, relationships and other conditional factors. Their exact location and shape is therefore often elusive and their permeability thresholds vary, making them potentially strange and sometimes frustrating, especially to the inexperienced, or those who require absolute clarity and definition. They can be ragged and dirty places with nebulous lines containing apparent contradiction, where both rules and their exceptions may apply. Submitted for your approval, Rod Serling might narrate at this point.

The gap zone is less like a line in the sand and more like a space that lays in-between two or more controlled and secure contractual sectors of safe haven, a demilitarized zone, existing beyond the periphery of contractual limits. However, unlike a DMZ, it is *not* a no-man's land or a no-go zone, devoid of interactive life. There is no apparent Checkpoint Charlie through which one passes that signifies entrance to, or exit from this DMZ. On the contrary, it is filled with activity, a nearly free trade zone of barter and exchange between project implementers where the real hard work gets done. It is a zone whose mantra is let's make a deal, with trust as the primary currency and where differences are settled locally according to internally established rules of engagement. Sometimes treasonable collaboration to one's own allegiances is even required to procure a greater good, like when certain submittals are expeditiously used to alter scopes of work through prior agreement of involved parties.

So…. all of this means exactly what, to us?

The good news in all of this is that no one person or company controls the collaborative zone, there is no central scrutinizer pulling the strings. It is the location of information exchange between people who work at (and beyond) the periphery of contractually prescribed obligations. It is not a physical office, room, or site. It is an environment, like cyber space maybe, where we all do our thing, together; a collective consciousness. For design professionals, it is the place where we contribute by responding to contractor work product in the form of submittals, RFI's, ASI's, meetings, drawing changes and many other mechanisms. It is where we do the heavy lifting, technical work that gets projects built (3).



Next, withdrawal or disengagement from the zone produces stalemate, process stagnation and paralysis as well as degrading project trajectories. We are fully engaged in this place at front line of collaboration as partners with constructors, like it or not. Perhaps that is why trust is of such high value. It is the place where exchange happens with little interference by the risk manager and pundit, however there are profiteers and other pirates present as well. It is also not well understood by outsiders. It is for this reason that beads of sweat most certainly form on the foreheads of those whose proximity to the action is distant, like project potentates and other non-implementer types. They just don't get it.

As the contractor is pulled forward into design, untested new processes serve to further obscure responsibility. If we think the limits of design versus construction coordination are fuzzy in the present regime, just wait and see what unfolds in the new and untested project delivery theories now in vogue. How do people navigate the murky waters of construction under such transient and confusing circumstances?

The answer is neither complicated, nor new. Managing process ambiguity in construction administration requires excellent *situational judgment*, the ability to make decisions in a highly fluid and circumstantial environment, often without the benefit of complete information and always under schedule pressure. Skill with situational judgment relies on experience combined with a keen understanding of trust. Situational judgment, informed by experience determines the required amount of permeability at the front line of collaboration, which makes everyone involved, a gatekeeper. Converting boundaries into borders and barriers into membranes, without erasing them, is the reality at the front line of collaboration.

Perhaps it is this process ambiguity that explains why people experience the front line of collaboration in many ways, each with differing outcomes. Almost all finish construction administration duty with bruises resultant from close quarter high speed interactions. Many emerge professionally victorious, with a well developed acuity in situational judgment skills. Almost all learn what it means to truly collaborate and belong to a true team. Others are irrevocably damaged and suffer degrees of post traumatic stress disorder for construction administration, often forever. Still others behave like a bull in a china shop with varying degrees of success. Some become paralyzed as a deer in headlights – they are often carried out on a stretcher or find their own secret escape hatch through which to flee. Life in the dirty zone of collaboration is cathartic if it is nothing else. One thing is common to all; there are almost always tall tales to tell of the adventure. People are changed by the experience. What doesn't kill you makes you stronger.

Ken Bishop is an architect specializing in construction administration for over 25 years. He has worked in Boston and the San Francisco on a wide variety of project types. Mr. Bishop currently works in the bay area where he is involved in large, complex health-care projects within California. He is a graduate of California Polytechnic State University, San Luis Obispo and attended graduate school at Cornell University. In addition to mentoring young architects with whom he works, he has written on the subject of construction administration. He plays golf regularly, but poorly.

Endnotes:

1. Liminal - An adjective referring to an elusive but sensually rich threshold between two different places or states. From the Latin word līmen, meaning: a threshold.
2. *The Craftsman,* Richard Sennett, 2008, Yale University Press, page 227.
3. The closest analogy in Lean Construction speak is 'the big room' (this idea has been co-opted by the Lean-ers). Unlike this paradigm it does not depend upon physical proximity as its sole requirement for success. It is a place where implementers thrive and hall monitors are generally not welcome. The big room concept recalls a guild studio model (Sennett). However, advanced forms of communication make possible the virtual big room, where physical proximity of collaborators is not necessarily required. What is lost by loss of physical proximity?