

Lean Construction Institute

Building Knowledge in Design and Construction

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opportunity for architects in collaborative delivery

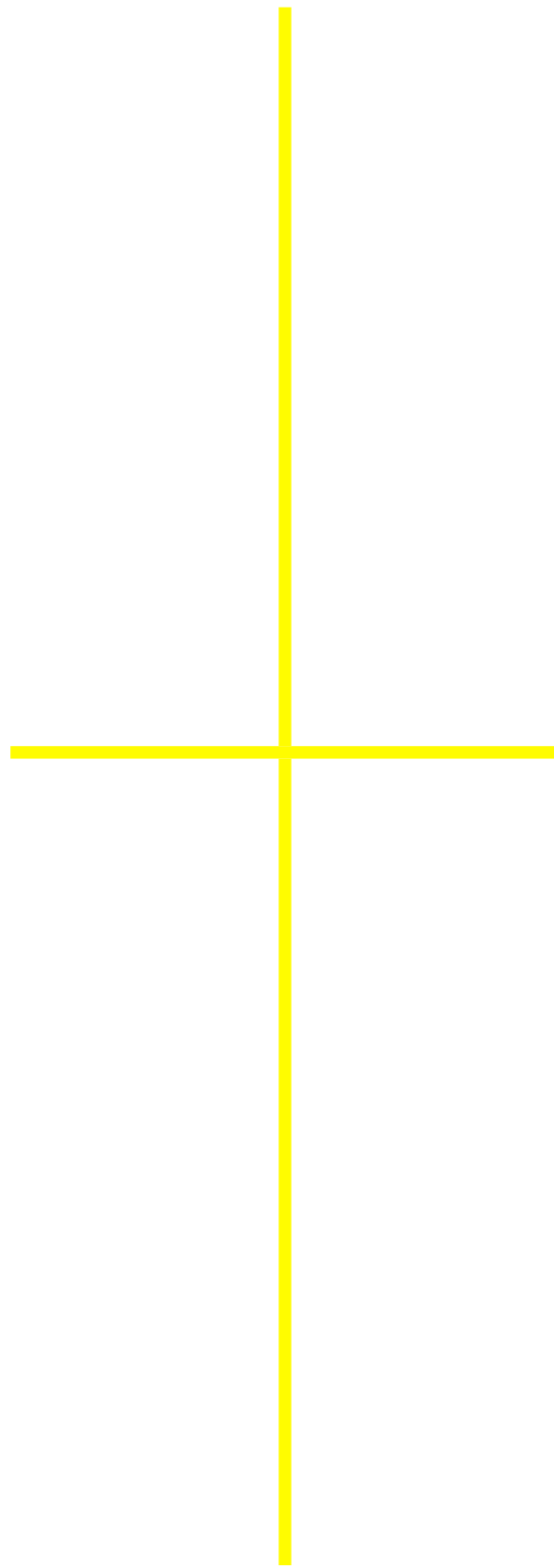
markku allison, aia

Friday, June 19, 2009

start by setting the stage

look at some ideas about the functioning nature of teams

and then look at the role of the architect



Friday, June 19, 2009

or, an alternate title: the difficult negotiation of two bright lines.

let's call them (roughly) responsibility (HSW) and workflow. the bright lines of both responsibility for and execution of work have been controlled by contract and tradition...they've been fairly simple and straightforward: design intent / means and methods...and design / construction



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design



construction

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workflow



construction

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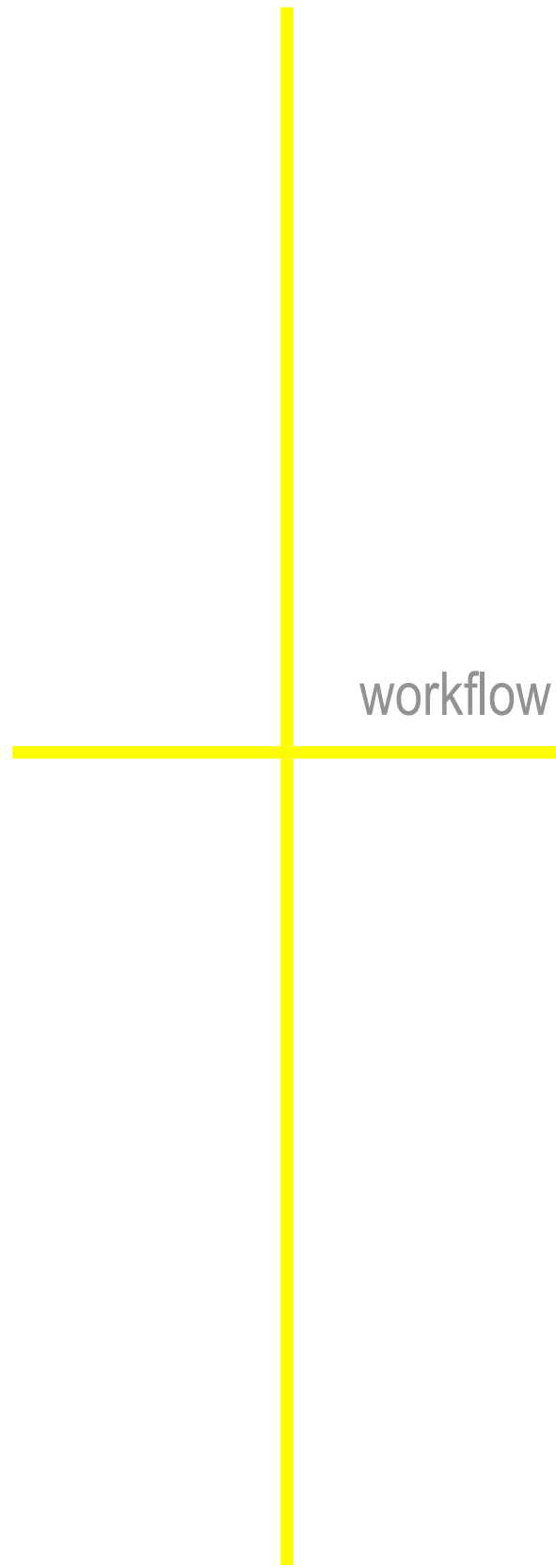
intent

design

workflow

means and methods

construction



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intent

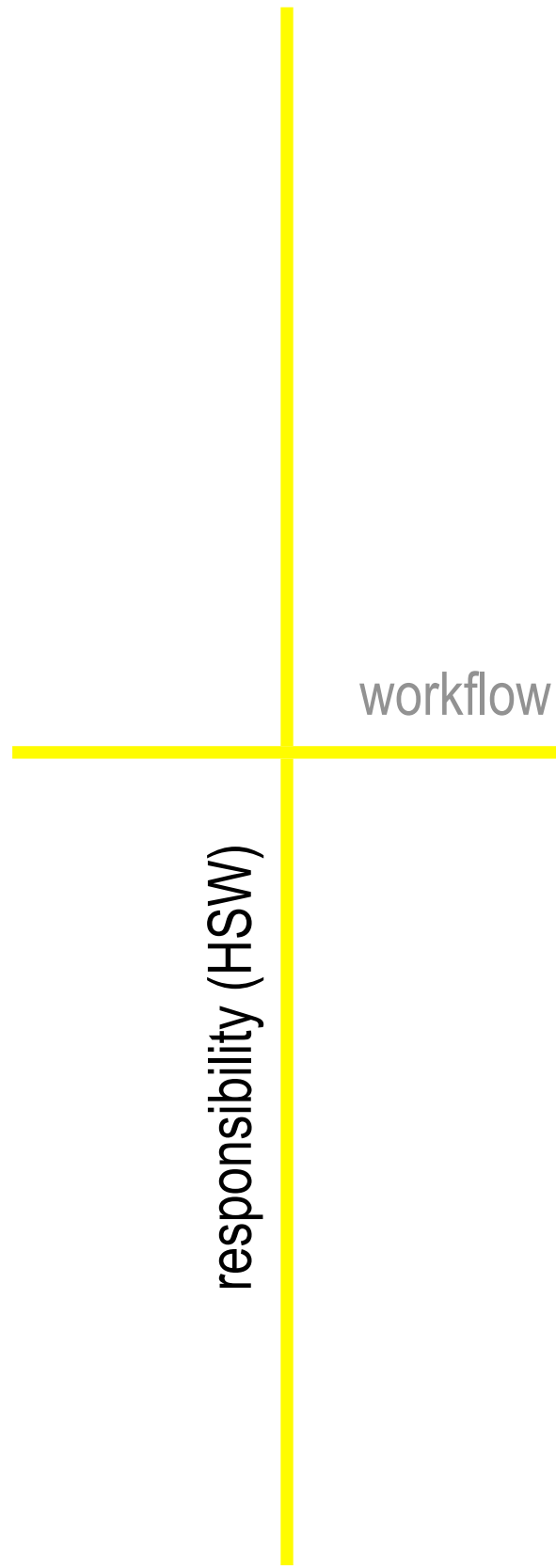
design

workflow

responsibility (HSW)

construction

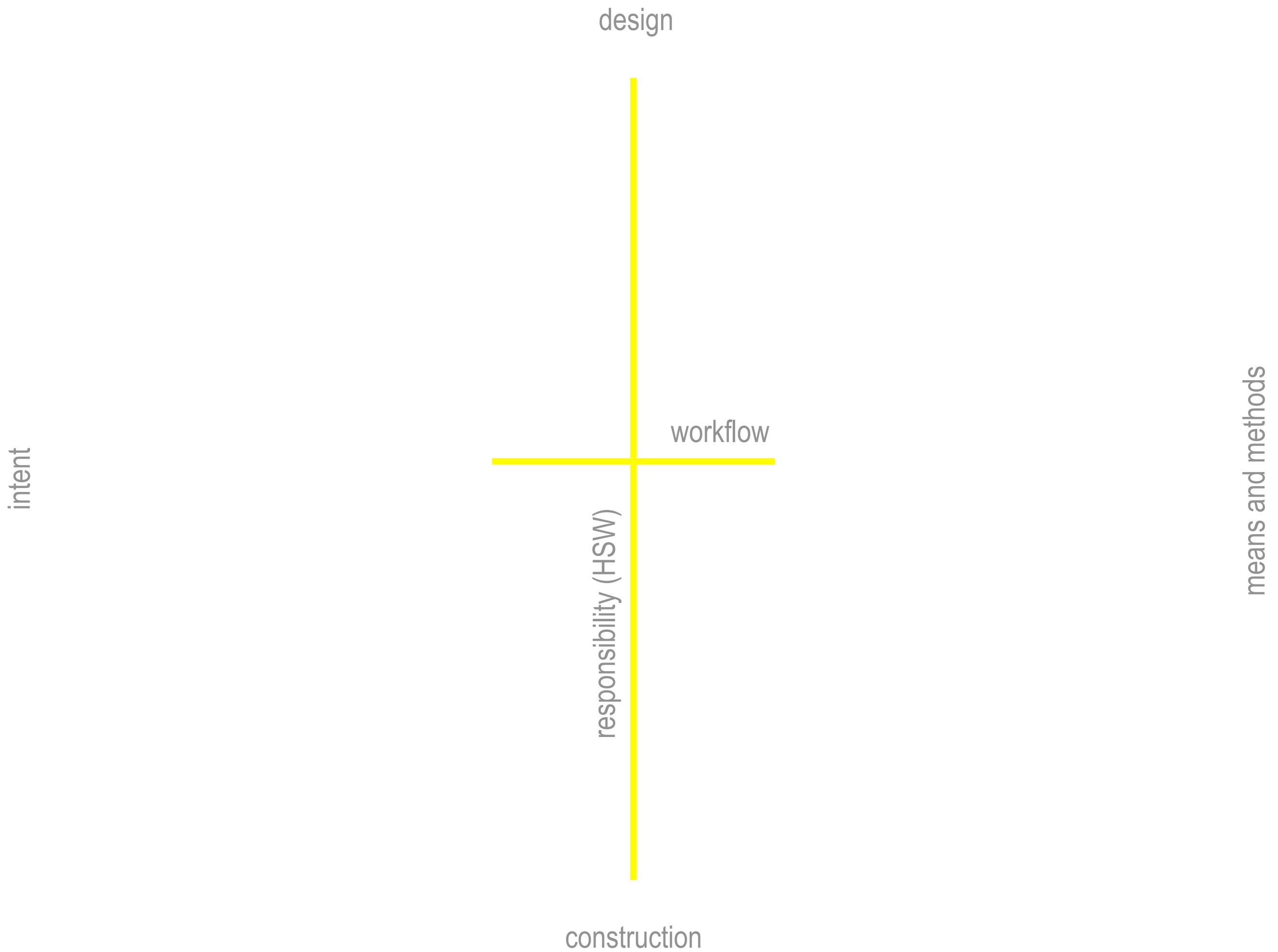
means and methods



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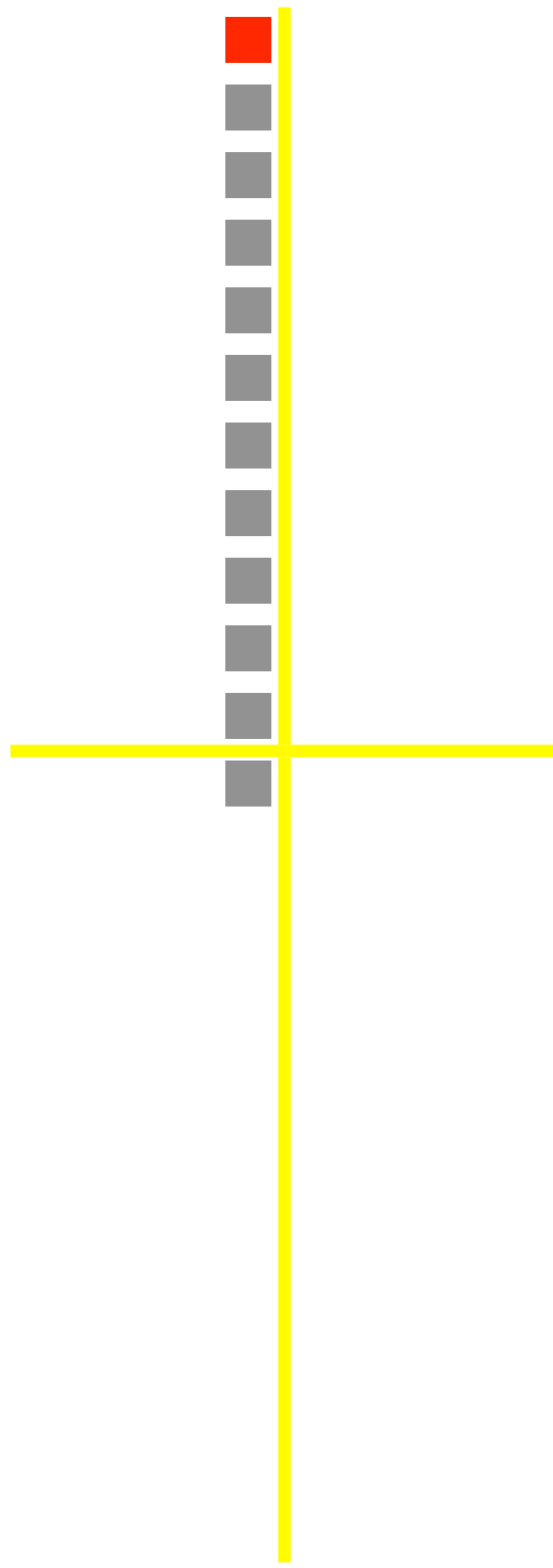
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design



means and methods

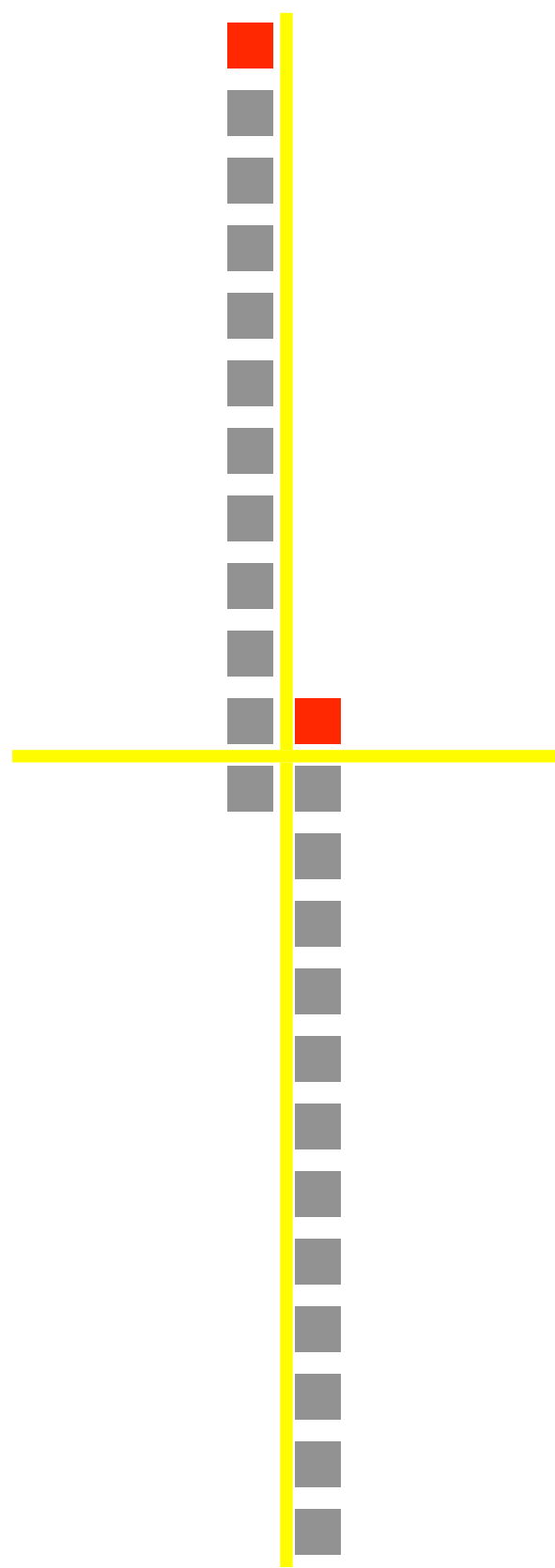
construction

Friday, June 19, 2009

contractually we have worked hard to make this picture as simple as possible, keeping the architect pretty much in the design intent quadrant, while keeping the contractor in the construction / means and methods quadrant

intent

design



means and methods

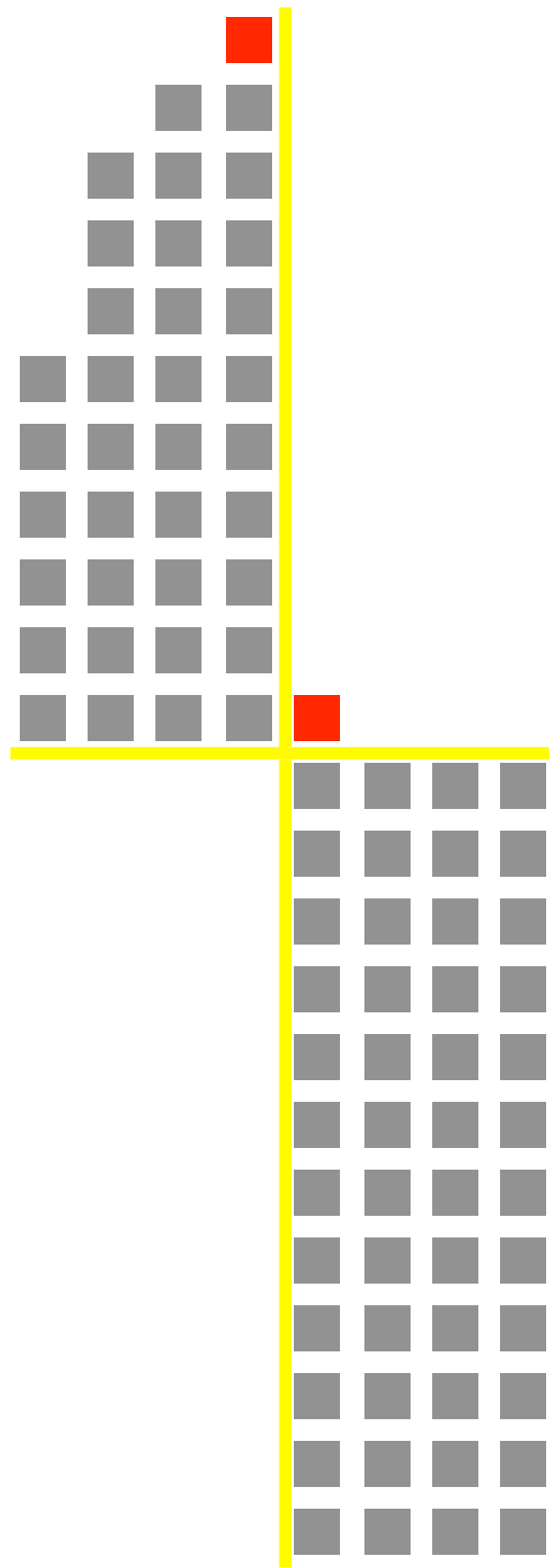
construction

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intent

design



construction

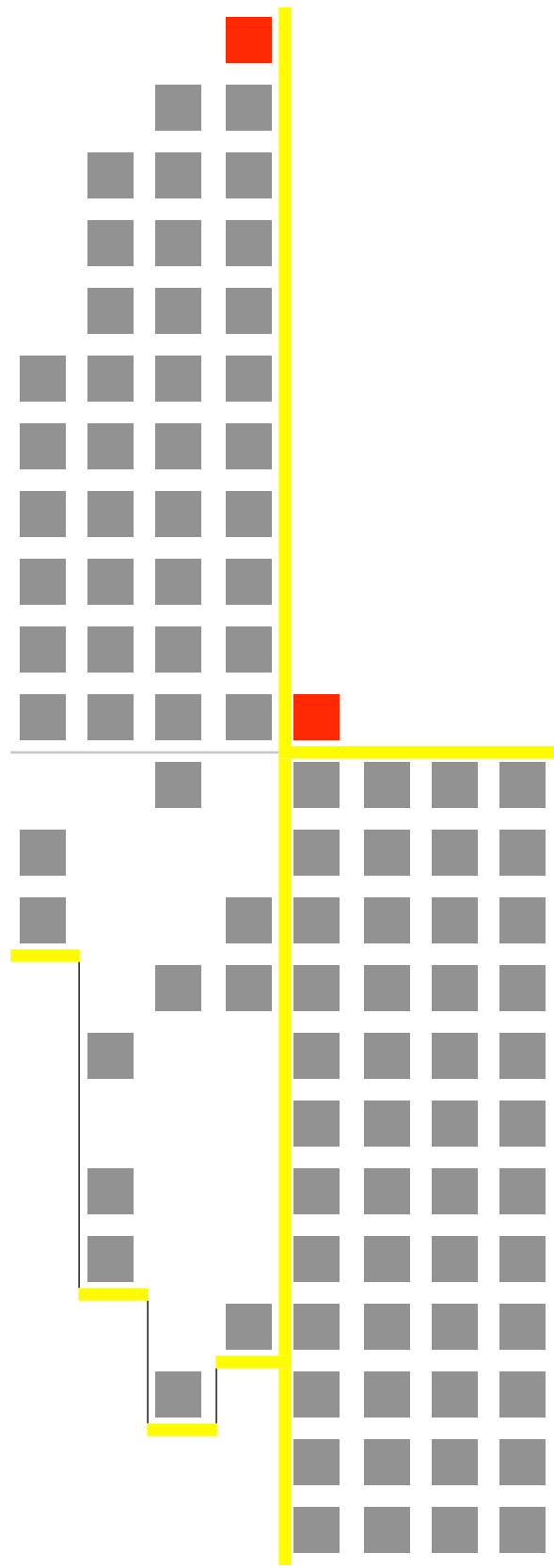
means and methods

Friday, June 19, 2009

as buildings and their systems have become more sophisticated, the number of contributing minds to the design has increased, generally managed by the architect. the same is true on the constructors side, managed by the contractor.

intent

design



means and methods

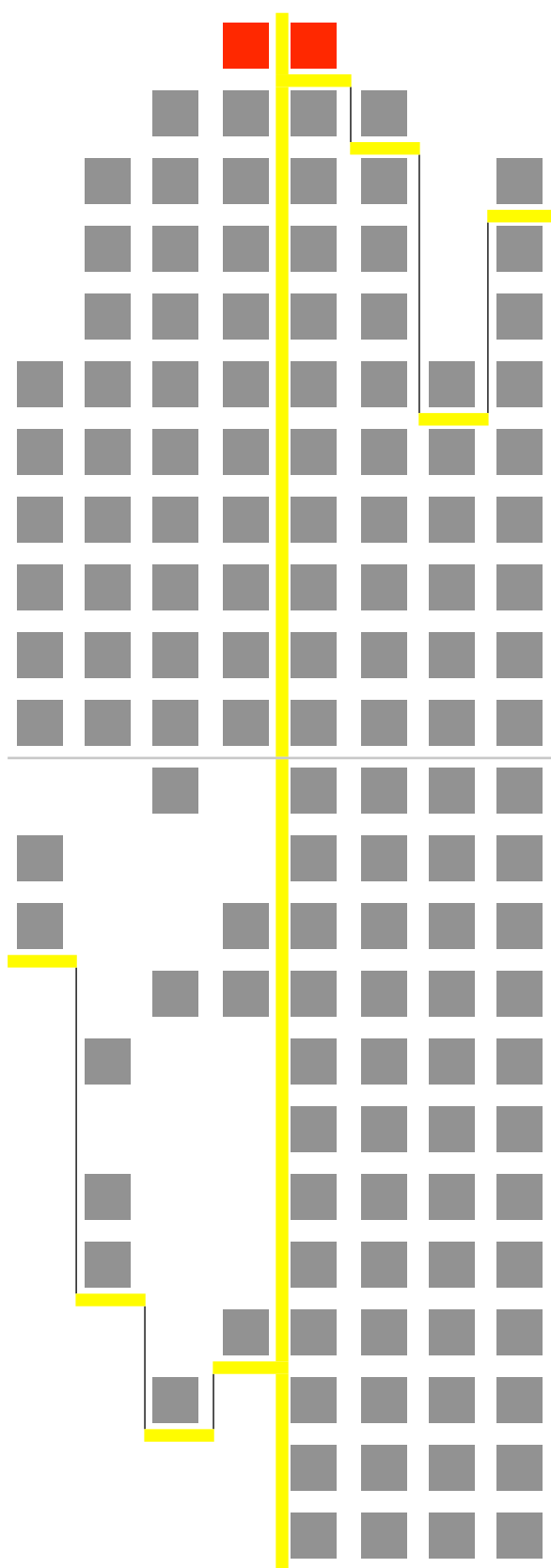
construction

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we must admit that design continues into the construction phase through shop drawings and field changes

design

intent



means and methods

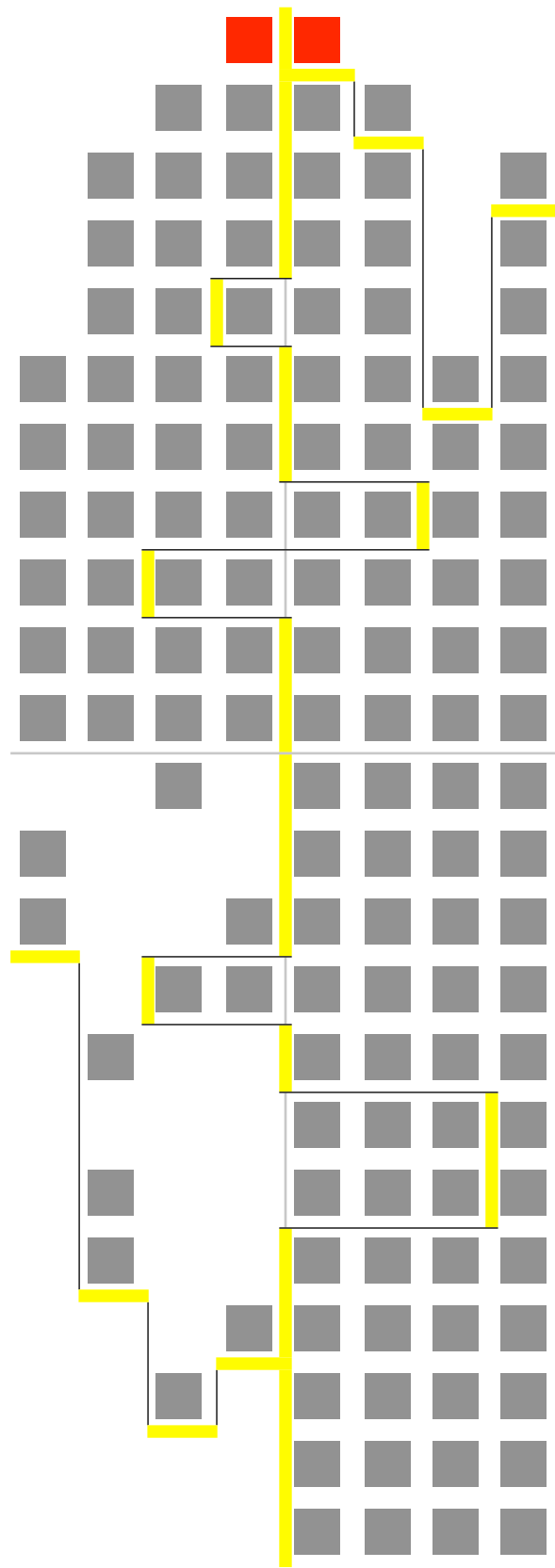
construction

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and design-build and other constructs have allowed earlier constructor participation

design

intent

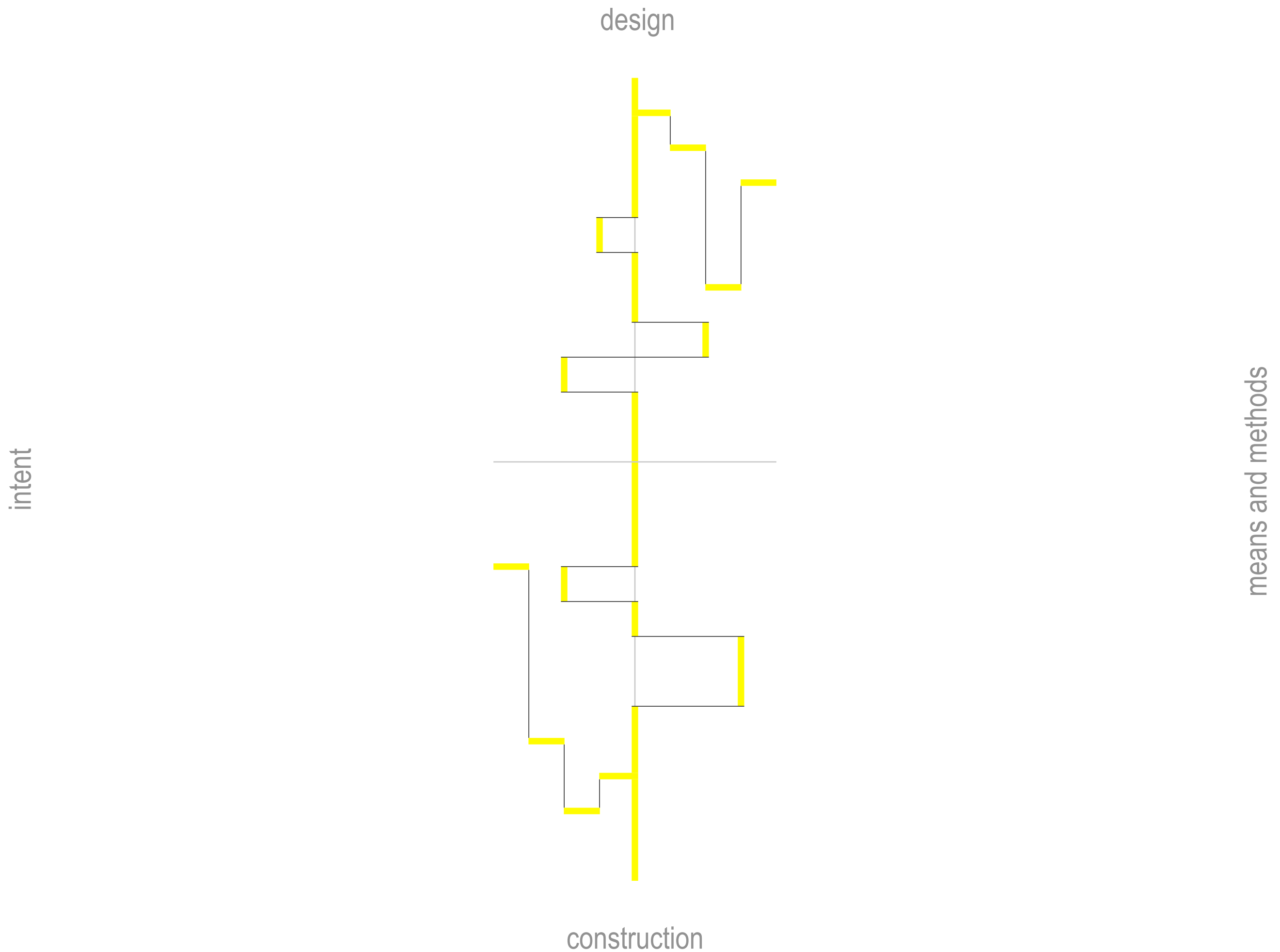


means and methods

construction

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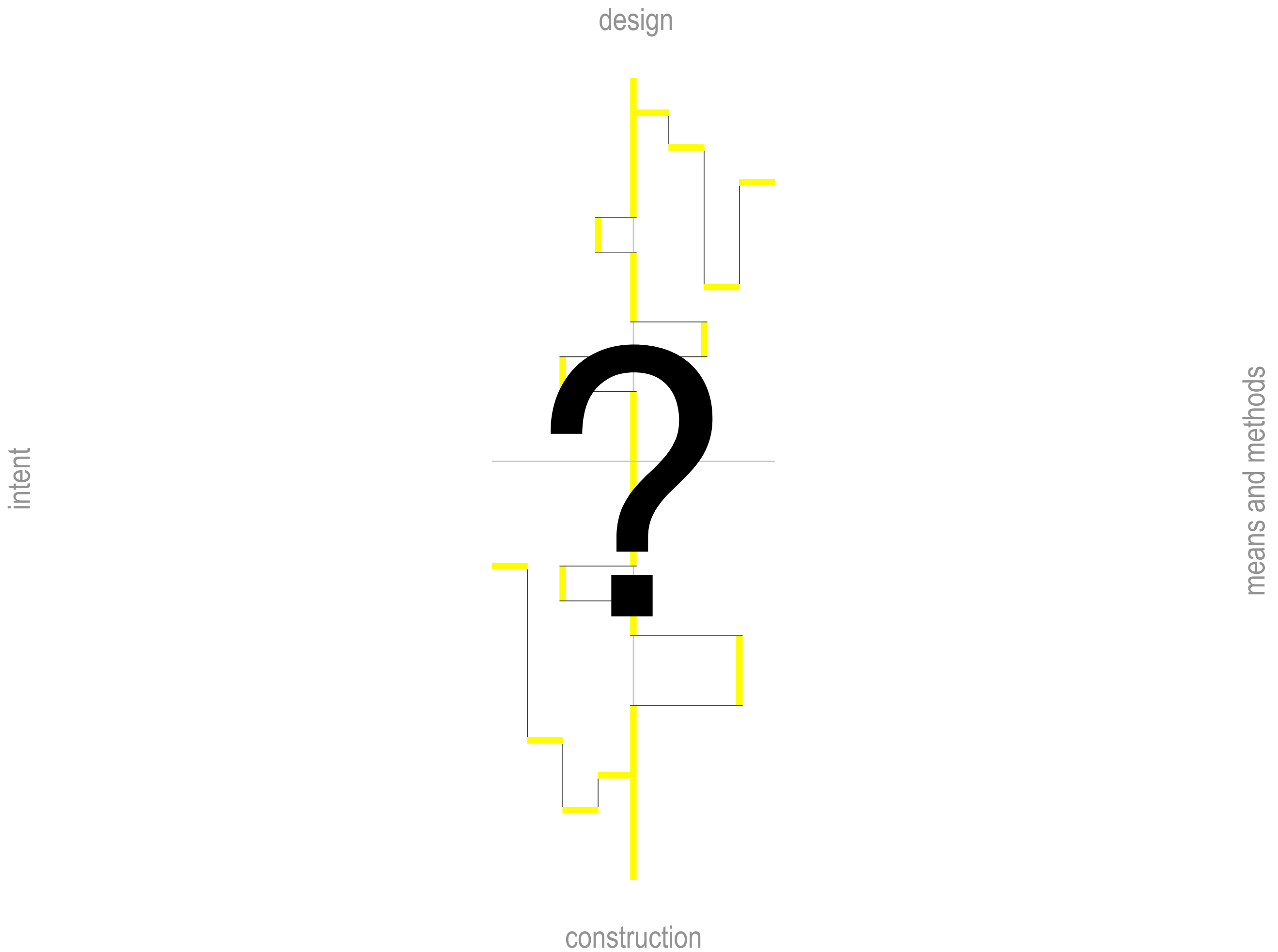
technological and methodological evolution allows those closest to the work to better control and define it (this supports lean practices); it is most effective when deployed by all key stakeholders, early in the process



Friday, June 19, 2009

with the end result of our two bright lines being not so clearly bright but broken and choppy. so...how do we most effectively manage the situation? and what is the role of the architect? we can't examine that until we have a better handle on how a team might get from here to there.

i'm not going to talk too much about the distinction between responsibility (intent / means and methods) or workflow (design to construction)...both are related parts of the same conversation--it's all about what it takes to get from here to there, and some parts will be left to governing bodies to argue and define. i'm interested in how a team actually needs to behave to thread their way through this maze--what principles must they embrace and employ? and what is the architects role within that team?



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collaboration

Friday, June 19, 2009

evidence is emerging that the solution lies in collaborative approaches.

collaboration is the action of working with someone to produce or create something; the act of working jointly. in the world of project delivery, the corresponding idea would be integrated project delivery, using integrated teams.

behavioral characteristics of integrated teams

Friday, June 19, 2009

that's great--but what exactly does collaboration mean? having a group gather and having a single member orchestrate the simple parceling off and assigning of specific areas of responsibility is NOT collaboration.

true collaboration will require fundamental cultural shifts at the individual team member value-set level. where do we go to find out how to do this? this is an area that's been under-represented in conversations to date.

Principles of Integrated Project Delivery

Mutual Respect and Trust
Mutual Benefit and Reward
Collaborative Innovation and Decision Making
Early Involvement of Key Participants
Early Goal Definition
Intensified Planning
Open Communication
Appropriate Technology
Organization and Leadership

Friday, June 19, 2009

the principles of IPD outlined in AIA's IPD guide are excellent characteristics that define an end-state but don't give us ideas as to how to make the transformation to new behaviors, new cultural values. so how do we get there? where do we look for guidance, examples?

bioteaming manifesto

ken thompson

is an emergent leading expert in the area of virtual enterprise networks, virtual professional communities and virtual teams

robin good

is an online publisher, researcher, and writer on the smart and intelligent use of new media technologies for effective communication.

Friday, June 19, 2009

in several years of poking around on this topic, i continue to return to one resource as seeming exceptionally applicable...a concept called “bio-teaming” from ken thompson and robin good in 2005--two folks who i know nothing about beyond the “bio-teaming manifesto” on leaderless teams they’ve published on the internet. so i’m going to run through a chunk of material i’ve cribbed from their manifesto, which has very free guidelines about its reproduction. i’ve replaced the word “bioteam” with “integrated team” to make the material more germane to our conversations here. then, we’ll talk about the role of the architect in all this.

What is MISSING?

The fundamental thing missing from collaborative teams today is the open recognition of **the dynamic and living nature of the team itself as a separate entity from that of its individual members**. An integrated team is a living entity in and of itself. An integrated team is more than the sum of its members abilities.

We typically treat teams **mechanistically**. We think of teams more like **clocks or engines that are assigned to specific tasks and assignments**. We want the **highest control of them and we want them to be very predictable** in their work behavior. Exactly the opposite of what nature's teams do. Interpretation of the team as a **whole, living entity**, allows a more insightful interpretation of the most efficient courses of team action.

The team is in itself a super-organism and as such it needs to be treated in ways that enhance and support its complex and interconnected nature. If you can see the team as a whole and not as the mere aggregation of the individual parts that make it up, you can discover how much more productive, reliable and efficient a virtual team can be.

from "The Bioteaming Manifesto" by Thompson and Good

Friday, June 19, 2009

thompson and good lay out some ideas about what's missing in our understanding about teams. we'll use these as the basis then for moving on.

“Hidden Beliefs” Of High Performing Teams

Clear and Public Accountability

Trusted Competency

Give and Take

Total Transparency

Shared Glory

Meaningful Mission Value

Outcome Optimism

from “The Bioteaming Manifesto” by Thompson and Good

Leadership zone
Connectivity zone
Execution zone
Organization zone

from "The Bioteaming Manifesto" by Thompson and Good

Leadership Zone

Integrated Team Trait: Treat every team member as a leader

from "The Bioteaming Manifesto" by Thompson and Good

Leadership Zone

Treat every team member as a leader

1: Stop Controlling

Communicate information — not orders.

- **Traditional teams issue orders and use two-way communications widely.**
- Integrated teams provide ‘situational information’ to the team members who are trained to judge themselves what they should do in the best interests of the team. They move exceptionally fast because they mostly use one-way broadcast communications and use two-way communications only when necessary.

from “The Bioteaming Manifesto” by Thompson and Good

Leadership Zone

Treat every team member as a leader

2: Team Intelligence

Mobilize everyone to look for and manage team threats and opportunities.

- **In traditional teams, it's the leader's job to provide most of the "Team Intelligence" — information on potential threats to or opportunities for the team.**
- In an integrated team, it is every team member's responsibility to constantly look out for relevant team intelligence and to ensure it is instantly communicated to all other team members through a small but complete set of message protocols.

from "The Bioteaming Manifesto" by Thompson and Good

Leadership Zone

Treat every team member as a leader

3: Permission Granted

Achieve accountability through transparency not permission.

- Traditional teams protect themselves against member mistakes by establishing layers of permission which must be granted before a team member may take action in certain circumstances. Let's call these "Permission Structures".
- Integrated teams slash down these "Permission Structures" to the absolute bare minimum. **The only permission structures kept in place by an integrated team are those needed to protect the team against the potentially critical mistakes which would threaten the sustainability of the team's own mission.**
- Accountability in integrated teams is achieved through 'team transparency' and 'reputation-based' systems, not through control and hierarchical authorization systems.

from "The Bioteaming Manifesto" by Thompson and Good

Connectivity Zone

Integrated team trait: Connect team members, partners and networks synergistically

from "The Bioteaming Manifesto" by Thompson and Good

Connectivity Zone

Connect team members, partners and networks synergistically

4: Always-On

Provide 24x7 instant in situ message hotlines for all team members

- Traditional teams expect their members to go somewhere, such as their PC, to “get their messages”.
- **Integrated teams ‘take the messages to the team members’** via whichever device suits each individual member best at any particular time in their working day.

from “The Bioteaming Manifesto” by Thompson and Good

Connectivity Zone

Connect team members, partners and networks synergistically

5: Symbiosis

Treat external partners as fully trusted team members

- Traditional teams pay lip-service to team members from external organizations such as customers or suppliers in terms of transparency and trust.
- **Integrated teams pick their partners very carefully but once they have committed to them they treat them identically to their own internal team members by granting them full transparency and trust.**

from "The Bioteaming Manifesto" by Thompson and Good

Connectivity Zone

Connect team members, partners and networks synergistically

6: Cluster

Nurture the team's internal and external networks and connections

- **Traditional Teams don't think about their networks — they believe it's the team leader's job to make sure they have all the necessary resources.**
- Integrated teams pay a lot of attention to the **collective networks** and relationships of each team member. This is to ensure they have adequate “strong ties” to get the work done well and that they can ‘**call in short-notice favours**’ as needed from external parties.
- These networking relationships ensure bioteams have sufficient “weak ties” to quickly receive and identify early warning signals, news, rumours and hard to access information. This helps them to anticipate important changes from the external marketplaces in which they operate.

from “The Bioteaming Manifesto” by Thompson and Good

Execution Zone

Integrated team trait: Experiment, co-operate and learn

from "The Bioteaming Manifesto" by Thompson and Good

7: Swarm

Develop consistent autonomous team member behaviors

- Traditional teams focus on team member individuality as a means of achieving creativity and innovation but neglect the hidden power of consistent member behaviors.
- Integrated teams have discovered that for a team to be really effective it is critical to count on the ability of the team to guarantee a pre-defined set of key tasks in a reliable and systematic fashion. This requires that team members are competent and aware of what the fundamental requirements are and that each one of the team members is willing and capable of attending to these fundamental duties when needed. **Integrated team members take a proactive and responsible interest in anything which might affect the ultimate success of their project whether its within their defined project role or not.**

from "The Bioteaming Manifesto" by Thompson and Good

Execution Zone

Experiment, co-operate and learn

8: Tit-for-Tat

Team members must learn effective biological and interpersonal cooperation strategies

- Traditional teams try to play “Win-Win” and “Collaborate” but don’t actually have any practical strategies or tactics for achieving this. **Traditional teams are not really interested in the real, often raw, basic and undeclared, motivations of their teammates.**
- **Integrated teams realise that “Win-Win” is an outcome, not a strategy,** and use nature’s proven personal collaboration strategies to create the conditions for it to happen. Integrated team personal collaboration strategies also address the “What’s in it for me?” question for each team member.

from “The Bioteaming Manifesto” by Thompson and Good

Execution Zone

Experiment, co-operate and learn

9: Genetic Algorithms

Learn through experimentation, mutation and team review

- Traditional teams believe that analysis is the best way to get things right. Consequently they engage in extensive planning, design and preparation tasks before trying out new things or releasing new products to their customers.
- Integrated teams believe that “live controlled experimentation” is the only way to get things right and that most things won’t work out as planned anyway, no matter how well they are analysed and designed. Bioteams quickly experiment with multiple alternative courses of action, often in parallel and in progressively larger increments to find out what works best. After they have collected sufficient data they build on and methodically apply the most promising results.

from “The Bioteaming Manifesto” by Thompson and Good

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think about lean techniques and connections to set-based design

Organization Zone

Integrated team trait: Establish sustainable self-organization

from "The Bioteaming Manifesto" by Thompson and Good

Organization Zone

Establish sustainable self-organization

10: Self-Organizing Networks

Define the team in terms of ‘network transformations’ — not outputs

- Traditional teams define their goals and roles in terms of the outputs and activities they are expected to produce — i.e. inanimate objects.
- **Integrated teams define their goals and roles in terms of the transformations they intend to make in the people and partners they will engage with — i.e. living things. They are change agents by definition.**

from “The Bioteaming Manifesto” by Thompson and Good

Organization Zone

Establish sustainable self-organization

11: Porous Membranes

Develop team boundaries which are open to energy but closed to waste.

- In a traditional team the leader selects the members and the team effectively becomes “sealed” at the pre-ordained “right size” in terms of members very early in its lifecycle. There is a big focus on full-time members as the team “product engines”.
- **In an integrated team the members select the members and recognize that the “right team size” will only emerge over time no matter what the plan says.**
- Integrated teams keep looking for new, useful team members throughout their team life-span. Integrated teams particularly seek out part-time members, advisors, experts, “jungle-guides” and external allies who can help them just-in-time as necessary.

from “The Bioteaming Manifesto” by Thompson and Good

Organization Zone

Establish sustainable self-organization

12: Emerge

Scale naturally through nature's universal growth and decay cycles

- Traditional teams grow as quick as they can to the agreed size and as per the agreed project schedule.
- **Integrated teams are aware that growth is not something that can be managed or controlled. Integrated team members treat their team like it is a “living thing” and watch for and facilitate natural opportunities for its growth.**

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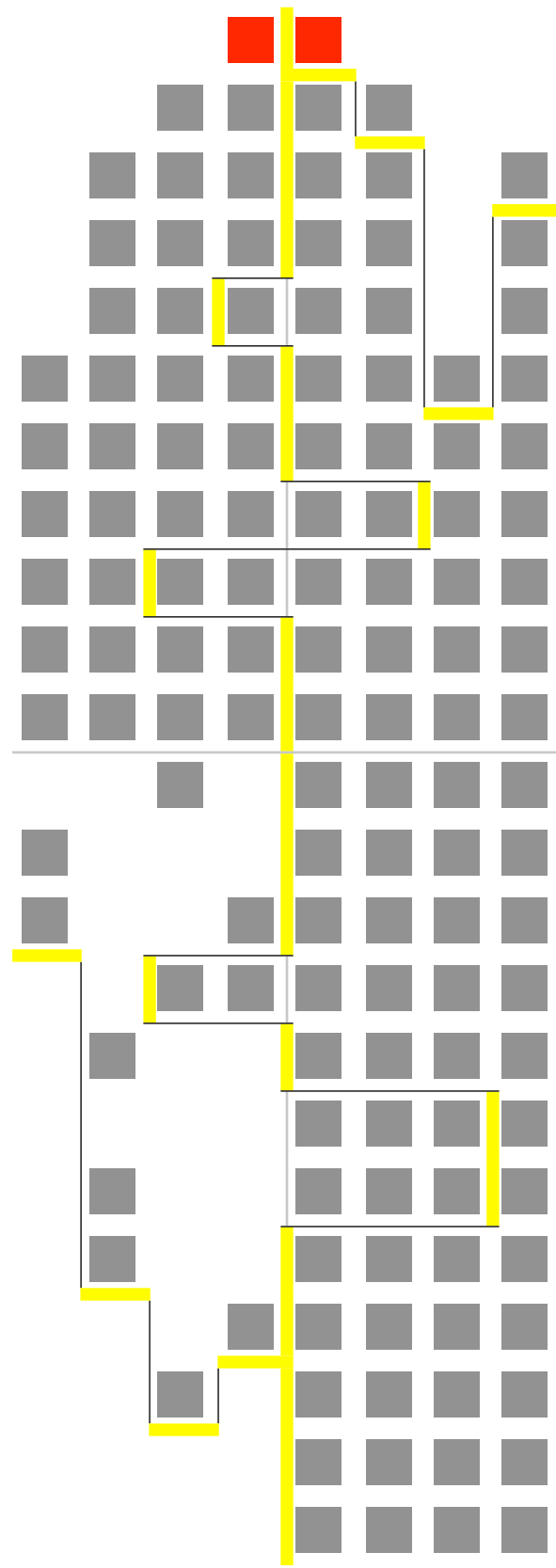
implications for teams

Friday, June 19, 2009

the most significant implication for teams in this view of the world is the factor of TRUST, which begs the question “how can we assemble teams from ground zero to fully functioning deeply trusting integrated teams in short time periods?”

design

intent



means and methods

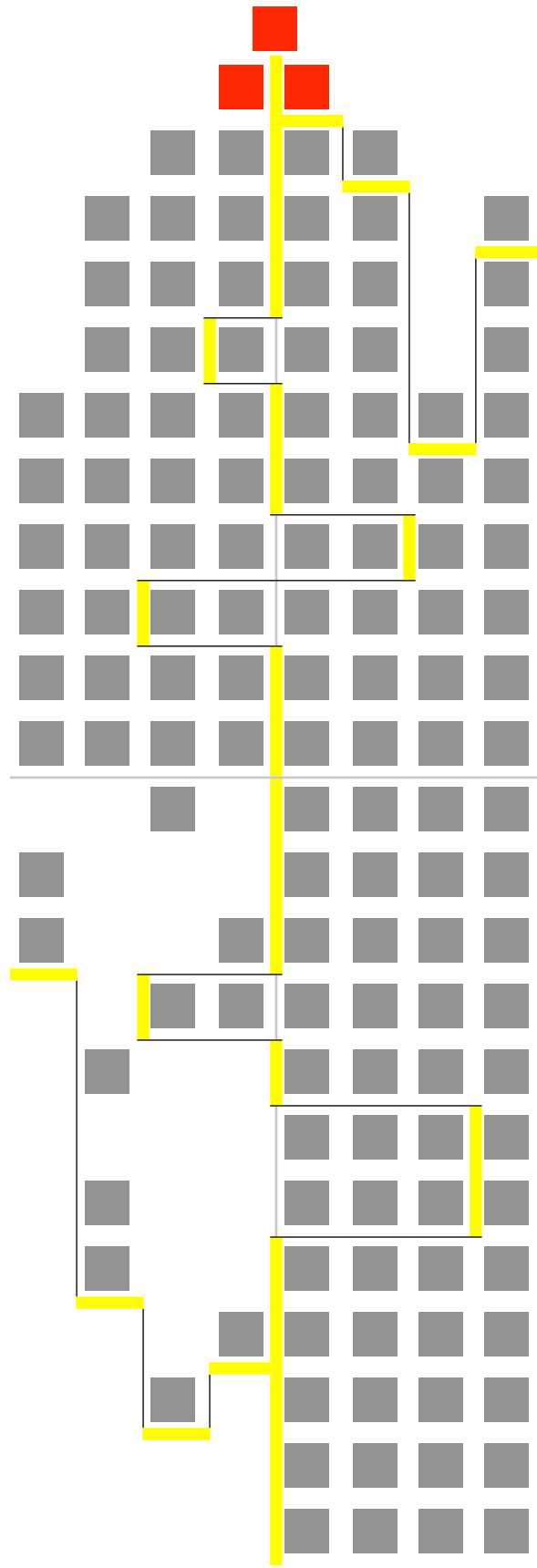
construction

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so after all that we come back to this mess. (and let's add the owner up there.) i believe these guidelines may give teams an excellent chance of better navigating the waters, but what is the architect's role?

intent

design



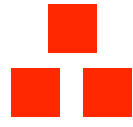
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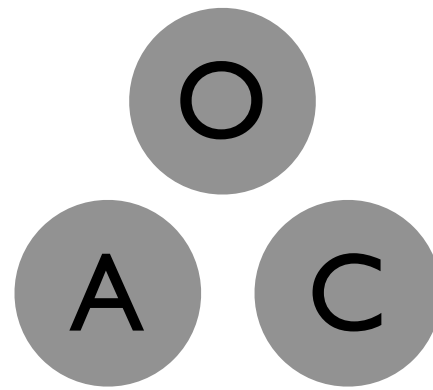
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design

intent



means and methods

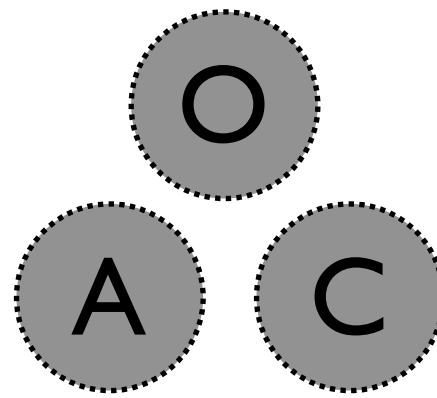
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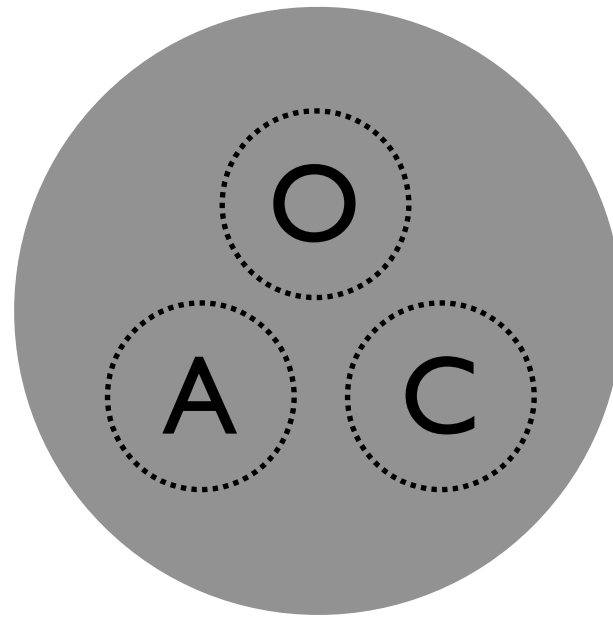
construction

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and we know that in a truly integrated team that we will be one voice within many--all for one and one for all, right?

design

intent



means and methods

construction

Friday, June 19, 2009

and we know that in a truly integrated team that we will be one voice within many--all for one and one for all, right?

leadership paradox

Friday, June 19, 2009

i believe that the self-assertion of leadership or the demanding of acknowledgment in a collaborative and integrated environment is a clear indicator of a non-team player. i also believe we have lost a great deal of respect as a profession among our industry partners by demonstrating this kind of behavior.

i believe we can be perceived as leaders and accrue appropriate benefits without requiring acknowledgment as such. we have a very special skill set; if we simply turn its focus loose on the greatest challenges and GO we will become the leaders we want to be seen as.

we are designers!

Friday, June 19, 2009

what differentiates us? we are holistic thinkers, supreme askers of questions and sensitive listeners--that's what design is, right?--if we focus our attention on asking questions, from obvious to insightful, from mundane to transcendent, with careful listening problems will become concise and clear and directions and solutions will be exposed. we should see ourselves as the chief question asker / careful listener.

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Mutual Benefit and Reward

Collaborative Innovation and Decision Making

Early Involvement of Key Participants

Early Goal Definition

Intensified Planning

Open Communication

Appropriate Technology

Organization and Leadership

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we should focus our attention on the challenge of establishing mutual respect and trust.

Execution Zone

Experiment, co-operate and learn

8: Tit-for-Tat

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- Traditional teams try to play “Win-Win” and “Collaborate” but don’t actually have any practical strategies or tactics for achieving this. Traditional teams are not really interested in the **real, often raw, basic and undeclared, motivations of their teammates.**
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from “The Bioteaming Manifesto” by Thompson and Good

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so this is where we start exercising our talent and focusing our skills. if we--as individuals, as professionals, and as a profession--ask the questions about these issues that guide us to solutions we will facilitate industry transformation and become the leaders we want to be.

we are designers!

greg's
thing

markku's
thing

everybody's
thing

how do you collaborate, really collaborate?

how **do** you understand the real, often raw, basic and undeclared, motivations of your teammates?

how do teams get started, building trust?

three pieces of advice

how do you collaborate, really collaborate?

how do you understand the real, often raw, basic and undeclared, motivations of your teammates?

how do teams get started, building trust?

etc.

etc.

etc.

Snowden's Four Ontologies

Complex
Unknowable
Pattern management
'The Approach'
Matriarchal/Patriarchal
leadership
Probe, sense, respond

Complicated
Knowable
Analytical/Systems thinking
Methodologies
Oligarchic leadership
Sense, analyze, respond

Chaos
Turbulent and unconnected
Charismatic or tyrannical
leadership
Act, sense, respond

Simple
Known
Legitimate best practice
Feudal leadership
Sense, categorise, respond