

Mosaic Centre IPD Workshop

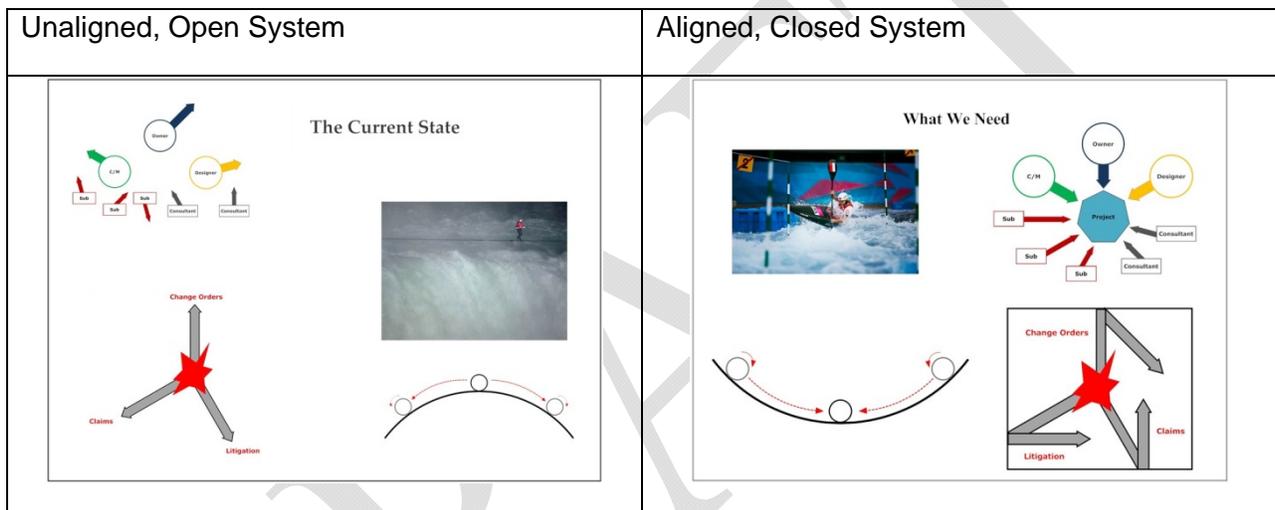
October 17-18, 2013



October 17, 2013

1. Integrated Project Delivery Overview

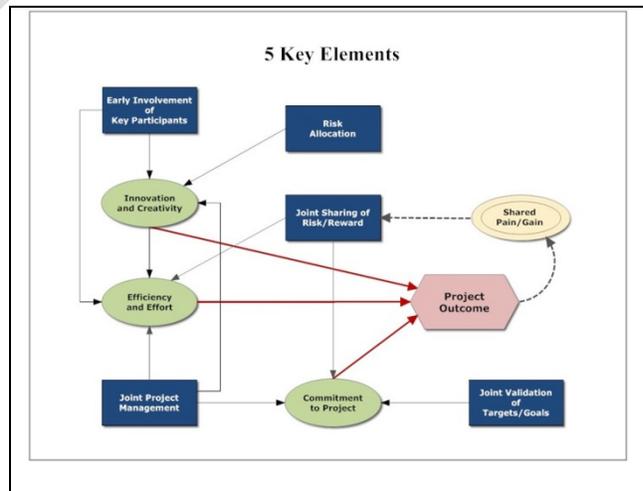
Howard Ashcraft provided an overview of Integrated Project Delivery. At its core, IPD seeks to create alignment among all participants regarding why and how a project will be accomplished. Traditional project delivery, in contrast, incentivizes the parties to maximize their individual outcomes, regardless of the effect on the overall project. Because interests are not aligned, if difficulties arise, individual self-interest tends to pull the project apart. Moreover, because the traditional project structure has "escape hatches", such as change orders, claims and litigation, parties under stress will try to escape the problem by denying responsibility, shifting blame rather than joining in efforts to solve the problem. IPD attempts to optimize the whole, not the parts by creating a shared ownership in project outcome. It restricts the opportunities to "escape" and provides the team with tools to refocus them on solutions, rather than blame.



The first step in alignment is to create a structure that removes dysfunctions, aligns interests, and empowers the team. There are five basic elements to this structure.

a. Early Involvement of Key Participants

In IPD, the team, consisting of owner representatives, architect, key engineers, construction manager, and key building trades is assembled early in the project. Research shows that creativity is enhanced by increasing knowledge, and bringing the team into the project early increases the knowledge available to the designers, before they design. Creativity is also enhanced by a diversity of opinion, which the diverse project team provides. One of the most important research projects of the late 1980s found that the highest performing projects have their team assembled before 20% of the design has occurred.



Early involvement of key participants also increases efficiency because the team can reduce duplicative effort often occurring in traditional projects because parties, such as designers and trades, cannot efficiently exchange information and overlap efforts in developing the final design. Similarly, when the designers know exactly what will be constructed, they can design less conservatively, also reducing waste.

As a general proposition, three types of participants should be within the risk and reward group.

- Any party with a significant financial stake;
- Any party who needs to collaborate closely with other parties; or
- Any party that is the type of participant that has caused significant problems in prior projects,

b. Reduced Liability

In an IPD project, the team members should be working together and exchanging information freely from the outset. But there is a natural reluctance to become involved in others work or to provide work that is not yet complete or coordinated because liability may attach to another's reliance on your incomplete work. IPD reduces this barrier by sharply limiting the ability of team members to claim against each other. Thus, the risk—and the disincentive—to sharing information is reduced. And, research also indicates that while challenge increases performance, fear creates defensiveness. By eliminating or reducing fear, the team can communicate and collaborate more effectively.

The contract contains a broad waiver of liability amongst the risk/reward group with limited "exceptions" known as Allowed Claims. Although the Allowed Claims list appears large—11 allowed claims¹, most are designed to make the business model enforceable. One allowed claims, "Project Performance" was discussed in detail. Project Performance can only be made after Final Completion, thus, they are unrelated to cost and schedule. Project Performance claims allow the owner to recover if the project does not meet functional requirements, such as a roof of window leak arising from negligent design or construction that occurs after the warranty period.

c. Joint Project Management

The IPD team is managed by a Project Management Team consisting of the owner, architect and contractor, which is overseen by a Senior Management Team representing the same parties. Placing management authority close to the project improves the speed of decisions and puts those decisions into the hands of the persons with the best understanding of the situation. Studies on team decision making show that properly managed teams make better decisions than individuals. Moreover, providing the parties with some control over the entire project increases ownership of the entire project and reduces fear, because people fear risks less if they have some control over the situation.

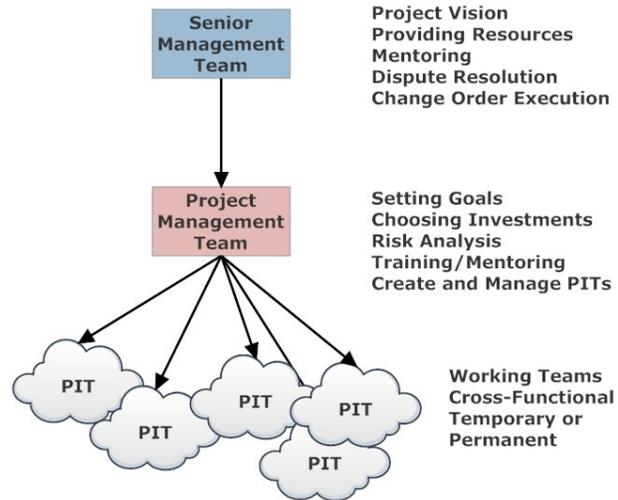
¹ The 11 Allowed claims are 1) Warranty Claims; 2) Project Performance; 3) Reallocation of Third Party Claims; 4) Change Orders that are Unresolved at Project Closeout; 5) Owner Non-Payment; 6) Owner Over-payment; 7) Termination or Suspension Costs; 8) Enforcement of the Indemnity Provisions of the Contract; 9) Intellectual Property; 10) Enforcement of Dispute Resolution Provisions; and 11) Specific Performance of the Contract.

In this project there will a Senior Management Team (SMT) that is responsible for:

- Project Vision
- Providing Resources
- Mentoring
- Dispute Resolution
- Change Order Execution

And a Project Management Team (PMT) that is responsible for:

- Setting Goals and Monitoring Achievement;
- Training/Mentoring the Project Implementation Teams (PITs);
- Overall Budget, Schedule and Scope Management; and
- Day to Day Project Management.



The day to day project work is executed in cross-functional teams composed of members from the various companies participating in the project. They teams are not organized around firms, or profession, but around the tasks they will jointly undertake and the problems they will solve. Because of the size of this project, some of the PMT members will undoubtedly serve functions within PITs and will also serve as information conduits between the PMT and the PITs. It is important to emphasize, however, that when acting in the PMT of SMT, the member is acting as a member of an "executive committee for the project" (PMT) or "board of directors for the project" (SMT) and should be making decisions for the good of the Project.

All PMT decisions must be unanimous. If they are unable to reach an agreement, the SMT may decide by majority vote. However, the owner may override the SMT decision, but if the owner's directive results in additional cost or delays the project, the override is grounds for a change order.

d. Joint Validation of Targets

Jointly developing and validating the project objectives and cost model improves ownership of the whole and commitment to the project. And, the process of developing the joint goals builds a common understanding of the purpose and goals of the project—a key step in alignment.

e. Joint Sharing of Risk and Reward

Risk and reward are shared based on overall project outcome. This removes the incentive for selfish action and emphasizes the need for joint, coordinated action. The IPD business model, discussed immediately below, creates a balanced approach to risk and reward. The specific business model for this project is discussed below.

2. The IPD Business Model

The IPD structure for this project will have a single contract among owner, contractor and architect and parallel IPD subcontracts and IPD consulting agreements with trade contractors and consultants that are within the risk/reward group. The business model for all of these parties has the following characteristics.

a. Fixed Profit/Variable Costs

Each party will be paid a fixed amount of profit and the actual amount of costs incurred. Increasing the number of hours worked does

NOT increase the amount of profit, nor does decreasing the number of hours reduce the profit. There is no incentive to increase work—the actual incentive is to work more efficiently to decrease the amount of hours spent—and thus increase the profitability margin. Because variable costs are the largest component of project costs, reducing the variable costs—labor and materials—has a profound effect on project cost.

b. Profit based on project, not individual outcome.

Once the amount of a party's profit is fixed, it is increased or decrease by overall project performance based on agreed targets and metrics.

c. 100% Profit at Risk/Shared Savings

The parties place 100% of their profit at risk based on overall project outcome. However, if the project exceeds expectations, the profit also increases.

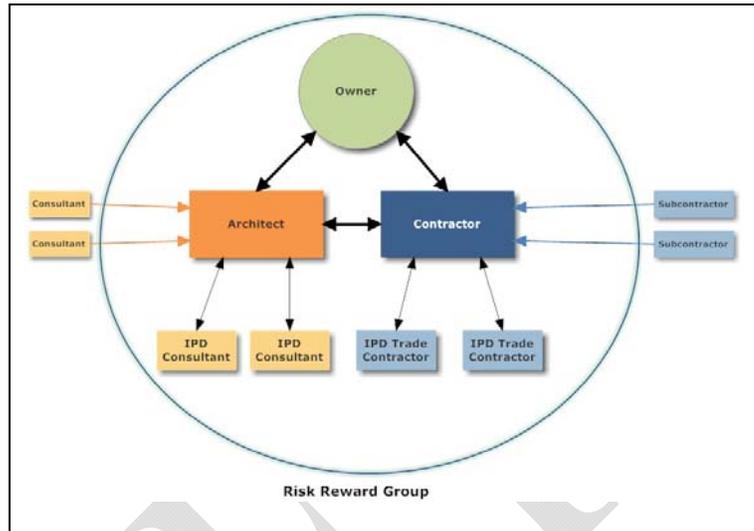
d. No Cap on Costs

There is no GMP. Although the profit is a fixed amount, the costs are what is actually required to design and build the project. This avoids bubbles of contingency within each participants own lump sum or GMP and reduces the tendency to fix blame, or seek an escape clause, whenever a problem arises.

e. Limited Change Orders

There are no change orders on this IPD project unless the change falls within one of the following "buckets."

- Owner Elected Change
- Owner's Directive
- Unforeseen and Differing Site Conditions

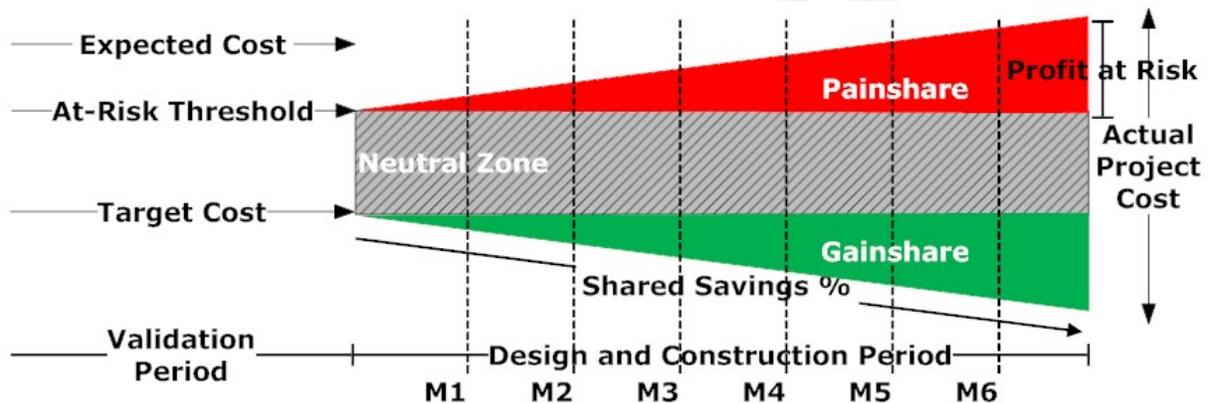


- Post Permit Changes
- Owner's Suspension of the Work
- Reconciliation of Allowance Items
- Permitted Delays, except Force Majeure

Errors and omissions in the design is NOT a ground for a change order. The limit on change orders is balanced by the owner's cost (but not profit) guarantee.

f. Risk Reward Model

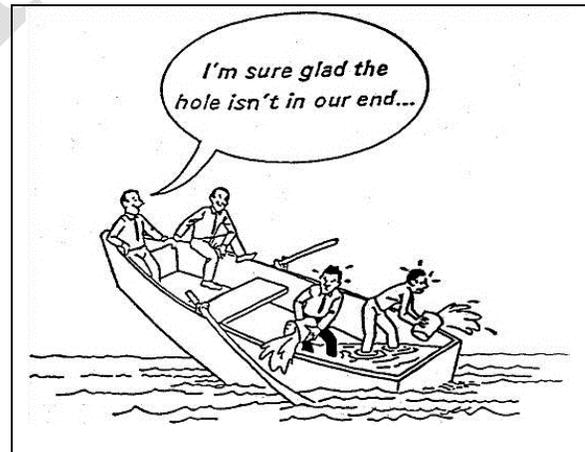
The risk reward model is based on setting an At Risk Threshold (ART), a Target Cost (TC) and



Not to Scale

a shared savings percentage. The ART and TC will be set by amendment. The team tentatively determined that the shared savings percentage will be 60% team, 40% owner.

The Expected Cost is a "best projection" of project cost using good design and construction practices. The ART is set slightly below the Expected Cost to create a moderately aggressive target. If project costs exceed the ART, the team's profit at risk—referred to as the Incentive Compensation Layer or ICL, is reduced dollar for dollar. If the team can deliver the project for less than the Target Cost, then a percentage of the savings (determined by the Shared Savings Percentage) is added to the ICL for distribution to the team. If the actual project cost stays in the neutral zone, the ICL is neither reduced or increased.



The team may choose to distribute part of the potential profit at milestones (shown diagrammatically as M1 through M6), provided pre-conditions to profit release are met and subject to a clawback if excess profit is distributed. If milestone distributions are used, a portion of the prospective profit will be retained until Final Completion.

The team also agreed to establish an ICL adjustment based on schedule. The adjustment will be made in whole months as that reflects the actual effect on the owner.

The business model combined with the IPD project structure creates a closed system. The team must cooperate to succeed, and there are very few opportunities to "escape" the system. Sink or swim, it is done together.

3. Aligned Action

The structure and business model remove impediments to collaboration and create a structure for alignment. But they don't tell the team what to do. For a successful project, alignment must be directly coupled with action. This requires developing a common understanding of the important project values, the specific goals chosen by the team that support the value, the metrics that measure progress or success, the targets the team is shooting for and the tactics they will use to achieve the goals.

Aligned action comes from a clear understanding of why a project is being done and what the team wants to achieve.

Values describe why a project is worth doing. Values can be substantive, such as net zero energy use, or process, such as collaboration. Values are inherently broad and there may be many different goals that respond to a give value. Deciding which goals to pursue, is the next step in alignment.

Goals describe outcomes the team wants to achieve. They are more specific than values and provide a framework for deciding what actions to take.

Metrics are quantitative descriptions of success (outcome metrics) or progress towards success (management metrics) (also referred to as leading and lagging indicators). Where possible, the team should decide what metrics best assist them in managing to achieve the goals.

Targets, expressed in the team agreed metrics, provide a goal to shoot for and a standard against which success is measured. Once a metric is chosen, a target should be established.

Tactics are specific strategies the team will follow to achieve a goal and thus support the value related to that goal. There can be multiple tactics for any goal, just as there can be multiple goals for any value.

An Environmental Example

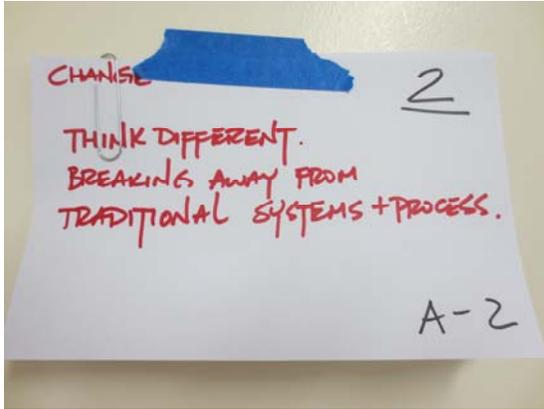


4. Values Exercise

The team worked in groups of 5 or 6 to develop the most important project values. These were discussed, ranged within subgroups, and then arranged and reorganized by pinning values by rank and category on the meeting room wall. The values exercise resulted in a strong alignment on the top values, good alignment on the next most important values and then a series of other values where there was less consensus. :



Importantly, the values were consistent with the goals developed by the team at project inception and are contained in "Success Looks Like This...", the Project Objectives Checklist, and the Mosaic Decision Matrix, which remain the project's true north statements and are attached to this summary. In addition to developing alignment, the values exercise was used to demonstrate idea development and facilitation in a team session, with different project participants serving as table facilitators.



The values will be used to guide the team in decision making. One option is to use a values matrix on any major decision document that grades the decision on its affect (red, yellow, green) on the value.

Where there is a conflict between values, the document should discuss how the conflict will be resolved. If a decision doesn't affect a value, the team should question the necessity of the action.

Guest Experience	√		
Operator Experience			
Cost			√
Schedule			
Quality			
Safety			

5. Additional Contract Issues

a. Dispute Resolution.

If a dispute cannot be decided by the team and is subject to the Allowed Claims it can proceed to dispute resolution. First, the parties must meet and confer with the SMT. Then, the dispute must be mediated by an independent mediator. Finally, the dispute would be resolved through binding arbitration. At present, we are unaware of any IPD project that has gone to dispute resolution. Moreover, although the project governance provisions allow for a vote at the SMT level, voting is very rare because issues are almost always resolved at the PMT level, by consensus.

b. Insurance

Traditional insurance will be used for this project. Design/Build subcontractors, if any, must have professional liability insurance. Design Assist subs, and the CM/GC, must have contractor's professional liability coverage.

c. Warranties

The project will have conventional warranty language requiring repair or replacement of defective work for one year from substantial completion. Warranty work is paid by the sub or subs that performed or provided the defective work.

DRAFT

FAST FORWARD

Two years from now when the media is scrambling to get interviews with the design team members of the newly-minted, highly-regarded Mosaic Centre, we will be able to say that **SUCCESS LOOKS LIKE THIS...**

- * We have proven there is **A BETTER WAY** to do sustainable commercial construction ... **BY DESIGN**
- * Our team processes and our final product are **INSPIRING** positive change in the commercial building industry in Canada;
 - o What we have done is easily **REPEATABLE**
 - o We have proven that sustainable construction can be **EFFECTIVE, BEAUTIFUL & AFFORDABLE**
 - o We have advanced the base knowledge in the industry
- * The design & construction team has **SHARED LESSONS** learned in a way that has **ADVANCED** the **KNOWLEDGE** of sustainable building practices in Canada
- * Every member of the team is **PROUD** to have been a part of the experience. We **LEARNED**, we **COLLABORATED** and we had **FUN!**
- * The occupants of the building have **HEALTHY, COMFORTABLE, TOTALLY COOL SPACES** that have resulted in higher **PRODUCTIVITY & PRIDE** in the place they work
- * The Mosaic Centre owners are **THRILLED** to own one of the most **BEAUTIFUL, SUSTAINABLE, HIGH PERFORMANCE** yet **SIMPLE** buildings in Canada...completed **ON TIME & ON BUDGET.**

THE RECIPE

The Mosaic Centre Team aims to be a highly functioning team. We will achieve this by each of us:

- * Embracing the **"WE OVER ME"** mentality;
 - o Collaborating
 - o Understanding each members knowledge & roles
 - o Honoring each other for the strengths we individually bring to the collective
 - o Sharing responsibilities & information
 - o Being unselfish
 - o Pulling on the same rope in the same direction
- * Meeting our individual commitments;
 - o Not over committing ourselves
 - o Setting boundaries & clear expectations for selves/others
- * Admitting our limitations
 - o Saying when we don't know
- * Communicating;
 - o Speaking up when we have something of value to add
 - o Letting others know how we like to be communicated with best



PROJECT GOALS

1. To create an ideal workplace for current and future Mosaic employees
2. To role model the Mosaic Vision “A Better Way ... by Design” in sustainable building
3. To demonstrate that commercial design, construction and operation can be done on standard budgets in an environmentally responsible way without compromising aesthetics

DECISION MATRIX

CRITERIA	RANK * (1-10)
Payback (Complex & Simple Payback)	10
Maintenance (Low Maintenance for Joe building owner)	8
Aesthetics and Architecture (Exterior and Interior)	8
Cost (Initial Cost of Systems – using whole budget approach, not by individual system)	7
Simplicity (Troubleshooting and Repairs)	7
Indoor Environment Quality (Comfort & Health)	7
Product Sustainability & Eco Footprint (Product Lifecycle)	7
Duplicity (Easy and desirable to copy – white elephants not welcome)	5
Flexibility (Ability to Add Capacity or Deconstruct)	5
Certification Straight-up recognition for a job well done	5
Risk (Deviation from Proven Technology)	5
Awesome (Every member of the design team will want a desk in it)	5
Best in class (Just like Tina Turner says ... <i>simply the best</i>)	5

* 1-2 = LOW; 4-5 = MED; 7-8 = HIGH; 10 = RING THE BELL



SUCCESS LOOKS LIKE THIS ...

	MUST HAVE	HIGHLY DESIRABLE	WISH LIST
TIMELINE			
Completion by May 2015	☀		
SUSTAINABLE SITE			
Management of construction waste	☀		
Re-use of waste materials	☀		
COMMUNITY			
Open to surrounding communities	☀		
Building to "fit" with community			
RATING AND CERTIFICATIONS			
Passivhaus Commercial rating	☀		
LEED Platinum		☀	
Achieve national, provincial and municipal recognition		☀	
WATER CONSERVATION			
Rain water collection	☀		
Net-zero water		☀	
Native species landscaping – water efficient		☀	
Edible landscaping		☀	
On-site storm water management			☀
ENERGY & ENVIRONMENT			
100 kWh/m2 as the performance target	☀		
Enhanced commissioning for maximum performance	☀		
High efficiency servers and server room design	☀		
Collect real-time performance data	☀		
On-site renewables to equal heat/cool load		☀	
Energy in the architecture – PV in the façade (wind?)		☀	

	MUST HAVE	HIGHLY DESIRABLE	WISH LIST
OCCUPANCY			
90 staff capacity in medium density semi-private offices	☀		
Support tenant organizational cultures	☀		
Architecture to reflect Mosaic core values	☀		
Attract A+ talent for tenants of the building	☀		
Creative, fun and high energy spaces	☀		
Competitive cost for class A space (on 5 year FV model)	☀		
Flexible workspaces – multiple usage scenarios		☀	
Green lease for all tenants		☀	
COMFORT			
Atrium, or internal gardens, and common lobby	☀		
Comfortable working environment	☀		
100% day lighting design (all workstations)	☀		
All workstations w/operable windows	☀		
High air quality	☀		
Globally regulated temperature controls		☀	
EDUCATION			
Support public tours and media outreach	☀		
Visual displays of building energy usage	☀		
Plan to capture processes and progress for public	☀		
How-to manual and web page	☀		
Training of staff for building awareness	☀		
MATERIALS			
Reclaimed or waste materials – brick, fly-ash, steel ...	☀		
Locally available materials	☀		
Sustainably harvested wood	☀		
Durability for extended life		☀	
Recyclable after use upon demolition		☀	
No “Red List” materials			☀

	MUST HAVE	HIGHLY DESIRABLE	WISH LIST
DESIGN PROCESS			
Integrated design approach to meet objectives			
Fully functioning design team			
Pleasant pre-design and construction processes			
Implement BIM as an integrated design tool			
“Every watt counts” design philosophy			
Transfer costs from M & E systems to architecture			
ACCOUSTICS			
Acoustically controlled spaces – privacy and noise			
AESTHETICS			
Architecturally sound and aesthetically pleasing			
FUNDING			
Government funding or third party cost outsourcing			
OTHER			
Maximize building “traffic” by way of parking study			
Parking garage			
Wireless connectivity throughout building			
VoIP phone system			
Location services (WAY)			
Ultra efficient elevator			

SUCCESS LOOKS LIKE THIS ...

- Getting to the point in a fair and enjoyable way
- Openly sharing information
- Creating safety so that we can each feel comfortable to share our ideas & opinions
- Taking responsibility for our actions & words
- ✿ Holding each other responsible
 - Calling each other out when required in a respectful way
- ✿ Being willing to take some risks and try new things
- ✿ Having fun! Let's make this a memorable experience - in a GOOD way!

NOT A F*#KING CHANCE

We, the Mosaic Centre Team, agreed that these are qualities of a dysfunctional team:

- ✿ Overcommitting
- ✿ Overworked
- ✿ Unbridled scope creep
- ✿ Big Egos & Bullying
- ✿ Me first mentality
- ✿ Personal success over team success
- ✿ Too little communication
- ✿ Poor quality communication (not hearing or listening)
- ✿ Lack of collaboration (working in silos)
- ✿ Information hoarding
- ✿ Lack of vision or direction
- ✿ Lack of collective planning
- ✿ Disconnect between perspectives & priorities of team members
- ✿ Silver bullet focus (not open minded to ideas of others)
- ✿ Overly defined roles (resulting in "not my problem" attitudes)
- ✿ Extremely risk averse
- ✿ Stubbornness to consider changing the way things have always been done
- ✿ Don't give a damn
- ✿ Bad attitudes/Bad Energy
- ✿ Getting mired in details
- ✿ Unable to say "I don't know"
- ✿ Lack of trust
- ✿ Short-sightedness
- ✿ Dishonesty