Workshop Group 2
Question 6

Discussion:

1) Dispersal of fibers(only synthetic, not steel)
2) Admixtures- helping in workability
3) Microsilica- Helping it to mature it to get it through the first winter
4) Size of aggregate effects design life and design itself
5) Spraying a densifier and having a repellent in the mixture-keep under plastic for a week, spray 2 applications of densifier
6) Micro fiber helps in water infiltration, macro fibers help in for abrasion and toughness
7) Major distress- stopping crystal growth using retarders, making technical paste, engineer the aggregate and the mixture to make sure moisture stays for a week

Answers pertaining to the question:

1) Getting the knowledge out from the industry
2) Emphatic yes, especially in terms of communication and admixtures
3) During construction, issues with pumping: Good plant, intensive QC, plant control, technical mix so requires high amount of control
4) Aggregates- 3/8”, used to be ½”. 10% of it to be sand
5) Mix design improvements-yes, but spreading the best practices already proven in the field
6) From the point of owner, producer and installer must have experience. Its usually not about the producer not knowing how to do, but the reluctance in spending time and money to ensure quality
7) Enforcing the specs
8) Contacting references while choosing contractors during bids, owners taking responsibility
9) Selecting qualified bidders, certified bidders take care of maximum construction problems
10) Yes, research needed to improve some of the processes, and new admixtures to take care of some of the problems, developing industry practices, and writing best practices manuals

Workshop Group 2

Question 51

Discussion:

1) Many owners(cities) want to try, but don't have the expertise. Need to learn from other's experiences. Needing to know what can go wrong, what can make a project fail. That is needed to set up the contract from the owner's perspective.
2) Getting it right during construction is paramount.
3) Where would an owner like to get their information from? Research groups? Industry groups? Both? – A peer reviewed format might be the most appreciated, sharing information among owners is valuable, on the other hand industry help is needed to ensure technical aspects are taken care of.
4) Learning from failures and failed projects to know what to avoid. Making it comfortable to talk about failures and encouraging discussions on it.
5) What will an owner do differently with a Permeable pavement project as compared to something else? – Getting the knowledge, hiring someone to dispense critical information, knowing what can go wrong, gathering experience
6) How to gather the budgets needed to hire the expert? – Having a budget with a fund to learn about the project, to gather knowledge
7) Developing in-house knowledge w.r.t different expertise involved for different projects
8) Having a definition/criteria for failure to assign responsibility – two common are raveling, impermeability- doing mock ups, taking out cores
9) Documentation for owner operation maintenance- made by producers/industry
10) Maintenance usually consist of using vacuums to clean up
11) After installation, check for permeability
12) Out of the different contracting methodologies, what would an owner use for permeable pavements? – 2 stage process, of pre-qualifying and selecting the best bid
13) How to choose between different techinques like pavers, permeable etc?- Use a consultant
14) Focusing on QC is the most important part from the perspective of an owner, needing to know the pitfalls
15) Owners would need a significant number of projects before they can be comfortable about designing/handling it themselves

Workshop Group 2

Question 40

Discussion:

1) Almost any pollutant can be removed with pervious concrete, depending on the aggregate being used in the structure.
2) Zinc has been found to be the most retained in a mock-up
3) Why not have a deeper section of pervious concrete, as we are already digging enough. The incremental cost is low.
4) Incentivizing storm water control at home-level to handle the peak of the stormwater, and the rest could be handled by the infrastructure.