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Moving towards transparent and decentralised governance for building sustainable cities in the future.

An Interview with Ms. Sobia Rafiq and Mr. Ankit Bhargava from Sensing Local
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Sobia Rafiq is an Urban Development Professional and a TRUE Advisor with over 10+ years of experience working across various sectors such as Solid Waste Management, Sustainable Mobility, Governance, and Public Space Design. Her commitment to solving complex environmental issues in Indian Cities has led her to work with a variety of actors ranging from city municipalities and state-level government bodies to private organizations and local communities. She is an active advocate for building inclusive and sustainable cities and co-founded Sensing Local (in 2016), where she continues to drive mainstreaming of participatory, data-led, and ground-up city-making.

Ankit Bhargava is an architect and urban planner with over ten years of experience in spatial planning, urban governance, system design, and architecture projects. His core interest is understanding how to disrupt the trajectory of development of Indian cities that invariably perpetuates environmental exploitation and deepens socio-economic inequalities. He is also deeply interested in using systems thinking and participatory processes to unpack complex systems and shape new perspectives that drive systemic change. He is also the co-founder of Sensing Local, which has been set up in 2016.

Firstly, being based in Bangalore, with the lockdowns being lifted, how has your field coped with the pandemic and its post pandemic after effects?

SR: As you're aware, we come from a background of urban planning and a majority of our work deals with the environment. So actually, the COVID situation was quite a boost for, I think, planning altogether. Not only for us as an individual firm, but I think for the sector as a whole with multiple things like The Cycle for Change challenge, Streets for People etc., came about around that time. People moved about and saw the city in a different light, which was devoid of vehicles, devoid of pollution, more of coming and occupying public spaces and using streets as public spaces. So, from a perspective of how the pandemic has been for us as a company, I think it's been a good thing for the sector. Of course, not to say that there have been other issues of managing the pandemic and work and everything, but I think as a whole for the sector, it has been quite a positive spin.

AB: Actually, this whole thing of seeing the Alter City was a huge phenomenon. I mean, the fact that you could see Mount Everest from parts of Bihar was just amazing. It was never possible for people to think of situations where air cleaned up in 15 days over parts of Delhi and Haryana and

the fact that change is possible in an extremely short period of time. A lot of such anthropogenic reactions were visible through the crisis. We also witnessed the arrogance within institutions come down to realise that it was not possible to solve without bringing people together, and without taking each other's help. So, I think these two things were definitely a good thing apart from, obviously, the crisis of it all.

Looking through your website, what catches one's eye is the thought of oneself as an urban living lab. So, in that purview, how important is experimentation and collaboration with various stakeholders to your studio?

SR: I think it's good to have a bit of a context of what a living lab is and where it originated from. The living lab itself was a methodology that was developed at MIT. And the whole idea was to co-create solutions in a real-life setting. That is basically what a living lab does. The usage of a living lab for city development has been fairly new. That's been something that has been caught on in several cities across the world. In India it is just sort of starting off as a thing. We ourselves, as a practice, have been following principles of the living lab, I think unconsciously, almost to an extent. As urban planners, our largest role is consensus building and negotiation, which has been a big part of every project that we've done to

ensure that all stakeholders are included. And it is specifically important, I think, in the Indian context, where you have so much diversity in the way people behave, the way people use spaces, the way cultures exist. So, all of this sort of adds to the need that if you are creating a solution, then that solution cannot be one sided, it cannot be designed for one type of person or one type of user or one type of situation. A lot of our public spaces are multi-use spaces. A lot of them are used by various types of people, So, I think these factors work very well in a living lab situation. So at Sensing Local, we have sort of co-opted the term urban living lab because it has been a very integral part of our own approach and methodology and how we approach planning in the Indian city.

AB: I agree, and I think that's definitely the history of it. Experimentation is extremely critical right now, both for practice as well as for the field, because we are only now focusing on cities. I mean, everyone forgets that before smart cities became a thing, JNNURM, and other projects existed, but the focus: the real financial focus, is not on cities at all. We were still a country in the village, and so, there's a lot of work required to figure out on What are we? How do we want to plan our cities? Who are the people that make up our cities? What do democratic cities look like? All of that is still being figured out. So, anybody who says that we know and can run with it at present is going to make mistakes. A lot of our work has been actually to try to develop processes and methodologies where experimentation can happen in a way that is inclusive and it leads to constructive outcomes.

AB: Bangalore is a happenstance in many ways for Sobia is born and brought up here, and I have also studied here, so, I have linkages here. So, it's a little bit of a coincidence. But the coincidence only lasts so long. The reason why Bangalore is interesting, compared to other cities, is that it is a city very much in the state of becoming in terms of its identity. We have a legacy of civic movement for 20 plus years and this is radically new, and this gives the foundation to explore a lot of new age governance and decentralization devolution. Also, the city is extremely fractured, like you see it's a plural polycentric city and, in those fractures, what we often talk about is that everything seems to be agreeable - people say yes to everything because it's such a fractured sort of identity with so many different things happening that within the cracks there is opportunity. And so, the government has become very open because of civic activism and active citizens over the last 20 years. The people are ready to do experimentation. One may witness on the other side extremely failed governance and planning systems and an active response because the city has been failing as well. It's one of the fastest growing cities collapsing on itself. So, it's both opportunity and problem at the same time within which these practices are able to blossom in a way.

You referred to the idea of governance and the governing bodies and from your work you do work extensively in collaboration with local governing bodies and so from your experiences do you think the authorities currently are proactive regarding sustainable development or are they lacking?

SR: Let me put this into perspective, on a positive side the government in Bangalore is fairly open and the municipality is fairly accessible compared to most other cities across India. There is a lot that people are able to do in terms of going and working with the government. Yes, we've got a climate action plan that is getting made right now, we have in the past put out solid waste management plans, we've done some level of innovative pilots whether it was the Church Street model etc. So, there's been a lot that has happened: there was a time when BBMP (Bruhat Bengaluru Mahanagara Palike) had looked at installing sensors for air pollution. However, with all of that done I think the biggest issue that we have in the Bangalore government is the fact that it is a flawed government system, because you have a lot of parastatal bodies that actually exist. There's very little coordination between bodies and that's like a whole other problem on its own. But on the other hand, what we see most often is that even though these plans are being made, a lot of times, there is very little capacity in the government to be able to actually see these plans through in an active manner. So yes, the actors outside are allowed and there have been openings into the government to work with them, but the government on its own is not proactive enough to be able to actually chase aspirational targets and visions. So, what is happening is most of the time these plans either become oversimplified, just because of the lack of capacity within the government to actually chase something more aspirational, or they sort of sit on the table and never get implemented. So that I think is one of the biggest issues that we fear as professionals and also as people living and working in Bangalore.

AB: I agree. The rate at which the city has grown, the institutions are not even willing to acknowledge that there are parts in cities that are urbanised, the peripheries are urbanising, and parts of the city lack infrastructure. I see so many of the government officials unwilling to acknowledge that we need to work at a certain speed and urgency and figure out in-between processes. So, it is a little bit of a lack of interest and capacity to tackle the reality for what it is, and completely not taking accountability for the fallouts that are happening because of not working in a certain system. Saying so, it is a lot of business as usual because nobody is held to the neck and as we have said all the parastatal bodies are their own bosses. Ultimately, until you know who is going to hold everything together, you won't have a system. The commissioner can only do so much. Part of the deal is also the whole broken system and part of the deal is that they don't have methods and capacities to deal with this crisis and don't know how to create processes that involve private agencies and civil society to come together to solve these things in unison.

> **Where do you think we as a community, as a group of citizens, are, in regards to respecting the ideas of sustainability and sustainable communities?**

SR: Sustainability is so vast and wide, I think there are various people that are moving to or are becoming conscious about a sustainable lifestyle but the numbers are still fairly small. It has not yet been mainstreamed. I think there's a huge amount of gap in the infrastructure or even policy push, that has not mainstreamed sustainability. And as a community there's only that much that can happen with people being conscious about doing something. So, a very simple example is if we had a very good public transport system in place, and there were enough incentives to actually get people off their vehicles into the bus to actually use it. This will require a huge push financially to set up a good integrated public transport system and also from a perspective of making people change their behaviour which is a long term change which doesn't happen overnight. I don't think that if you're talking about sustainability as a mainstream thing it does not exist yet: it is still very niche, it is still very much also from a perspective where sometimes its based largely on whether it's convenient for a person to do it. So, there are two extremes: one, if I can afford to be sustainable, and the other extreme is the people who will push despite the discomfort i.e., because of holding on to the philosophy of being sustainable or leading a sustainable lifestyle. So their in between is the mass that is not able to do it because it's just simply not convenient enough to adopt a sustainable living. And I think that cannot be changed through just expecting people to change their behaviours on their own. There's a lot that is required whether it is awareness, whether it is the private market changing, whether it is the government policies coming in place, there are so many other important factors such as the very strong aspirations set forth and these aspirations are actually efforts that will drive sustainability to become mainstream.

AB: A lot of this from an individual standpoint is a very delicate balance between convenience, comfort, safety, and affordability. And I think too much stress is given on individual change which is by the way a global scam in a way that larger institutions, larger companies, larger processes take no accountability for anything, and everything is burdened onto the individual. The individual can only do so much and their footprint of decision making is small. So, there is general awareness, but yes it could always be more. Where are the larger systems going into this, like public transport? The focus has suddenly shifted on EV buses but there is absolutely no interest to do last mile connectivity. So how can you exist in both worlds at the same time? Ultimately the guy with the largest sort of power to change has to still be involved as the key actor to drive that change. Unfortunately, a lot of institutions are still dependent on saying there isn't enough demand. For example: we remember in June 2020, we released a report on air pollution, which was talking about and looking at all kinds of chemicals and other pollutants in the air, and we were talking to someone in the political space about it and they said, "Oh there's no room for cycling, cycling has been a failure in Jayanagar" and so on. Actually, it is all bad planning in general that led to the failure of the cycle in Jayanagar and six months down the line we had the Cycles for Change challenge, where everyone is suddenly okay with cycling and everyone wants cycling to happen. So, there are extremely false narratives about not enough demand, people are not doing enough. As soon as you put in, as Sobia said, the right incentives in place, plan your way for a pathway for sustainability, where the citizens are not criminalized, it's fine and things will move. The biggest problem is we see citizens as criminals, so they are the people who are always offending everything. So, I think there's a problem with the way democracy in our context is set up, that people who are voting people in power, are the people doing everything wrong unfortunately.

> **In your work with waste management, I have noticed there has been a lot of emphasis on decentralization and a decentralized model, but from your experience do you think that decentralization may in some cases lead to denying of responsibility by the authorities?**

SR: Why would you say that? Decentralization does not mean that it's only at the individual household. Decentralization could mean having the government put up infrastructure at a ward level or at a division level. So, decentralization is not about only a person handling their own waste and not giving any waste to the government, so it's not really a removal of responsibility. The decentralization plan that we have worked with BBMP was to set up dry waste collection centres in every ward and to put up transfer stations, which is a whole different thing. By putting up composting facilities at a ward scale (leaf composting facility), we've not really worked towards individual household level composting because that's completely at the jurisdiction of an individual: if they are able to do it, if it is convenient for them to do it, if they have the space to do it, and if they have the time to do it. So, a city system never gets planned, nor is Bangalore system planned on what an individual's possibility will be to manage their own waste. It is always on a scale of self-organization that we believe can be managed. So, if you look at the waste management system that is here in Bangalore, we have a lot of infrastructure that is there at the ward level, of course, wherever there is land available, and then you move towards constituency level, which is around 7 to 8 wards which is your division level, and then we have them even at zonal level. Finally, if there's only one sort of thing where we have three landfills which are basically at the city level right. So, processing being close to the ward which is within your two to five kilometres or close to the division actually reduces everything. It reduces emissions, it reduces how much time is spent, it optimizes the collection and transportation system, it creates way more jobs, it allows for more value from processing waste, it builds in sensitisation of the public. As a city we were used to throwing our waste outside the boundaries of the city, not really becoming accountable for the waste that we generate within our boundaries. Decentralization, the definition or the perception that people have is not the right one. We have to understand that if we have to process our waste, we need land and land is a rarity in the city. We don't have as much land as we would require for the amount of waste that we actually generate. So, unless we all take responsibility at scales of organization where we know there is land available and manage it at that level, it's going to be very difficult for the city to actually even manage its waste or even find more space to throw it or landfill it,

as unfortunately if we don't segregate, that is where it has to go. And it's not like from there it's disappearing right? it has to be managed there and you're just creating more and more junk land which can't really be utilized much after. So, I think decentralized processing is the only way to go, there is no other way that we have, we cannot be an ignorant society where we continue to throw our waste and send it outside the boundaries it's not an option anymore for us as a city, for a lot of cities that have grown really fast across the world. It's not only Bangalore this is sort of been the way that every city now even in India is being pushed to move towards. Bangalore was one of the forerunners in that aspect of doing it way before Swachh Bharat Abhiyan started, and way before even the municipal rules had mandated this. So yes, it's not an either or.

How in your view can accountability be ensured in the various steps of resegregation? and because accountability is an aspect that even the UN (United Nations) lays special emphasis on.

SR: There are multiple ways of making people accountable. One can go through an incentivization path or one could go through a path where you disincentivize someone. So that would be fine through having large fines slapped on larger companies that are producing products such as plastic. But there are some very critical issues with our waste management system: one of the biggest issues is that as a city we have been paying, through our property tax, we pay for solid waste management and the amount we pay as a part of our property tax is Rs. 30 per household per month. That's nothing and yet we expect, and still rather, we expect that the municipality should manage the ways it should process and that it should give enough manpower to handle the whole waste system. I think it starts from a place right there where the city has been trying to push to increase the SWM (Solid Waste Management) cess and turn it into a user fee, which has been opposed widely by the politicians, largely by our corporators and by certain citizens. But when one sort of puts things in perspective, he/she should question: Where does accountability start? Where do I feel accountable for my own waste? How can I feel accountable for the fact that somebody else is manually handling my waste? How am I accountable as a person to ensure that I clean my waste before I actually send it out? if it is dry waste or packaged boxes, can I just rinse it or can I wash it? because somebody out there is handling it manually. And I think people have an opportunity to go and see dry waste collection centres which are all within one kilometre, two and half, three kilometres of everyone's houses now. Walk in there to see what it is. I think that by becoming personally aware is your first step to being accountable. I think taking that effort to understand how my city's waste is managed, what happens after I put out my waste? Am I putting it out in the right way so that somebody after it goes out of my house is actually able to handle it in the right manner? Or am I doing something wrong? And I think that that is the first step of being accountable, which is completely in our control as individuals. As companies of course you have larger policies, as a municipality you have better monitoring systems- all of these are required to come in place. But if you say, what is it that you and I can do, I think it is a very simple thing. We (Ankit and I) as architects, have done a project related to redesigning dry waste collection centres. We audited Bangalore dry waste collection centres and are building a massive team of interdisciplinary people to come and really rethink what the system actually looks like. Both from a design perspective of the building itself, and moving to simple policy level interventions that can come into streamlining it. But one of the most important things was the infrastructure for waste management. How is the dry waste collection centre designed? What kind of ergonomics needs to be followed? How do you look at systems in terms of flow of waste and space design based on that. I feel so little of this is actually known by architects, there aren't many architects that specialize in designing waste management infrastructure. We don't even look at it, right, so even as professionals, where is our accountability to see how we design this infrastructure which can be used by people in a manner that can make things more efficient. So, I mean accountability when one looks at any system, can come from an individual perspective, then it comes as a professional, or as people who go in as part of living in your house. Then one goes to their office or institution- is your institution following sustainable waste management practices, do you still give plastic bottles to the jurors in college? Are we conscious about that? When one goes to a public place, if they don't find a garbage bin the first instinct is to get it out and throw it! instead,can we just keep it with us in our bag? I think there's a huge sort of notion when we talk about accountability. The perspective that we try to push is, the accountability is you in the organization as well and if there are even two to three people in an organization/ a neighbourhood/ a ward/ a building, they can do massive things to change their waste management system in their own locality. Start with where exactly you stay or where you work or where you study and that's all is required, and that will obviously scale up if everybody did this in their own places of stay, work and study.

Going from land pollution to air pollution which literally affects us with every breath in terms of air quality do you think there is a reluctance in the way of setting stringent environmental standards for pollutants?

AB: We can keep going round and round on standards, technically any amount of pollutant in the air is bad for you, so no matter what WHO says, it's quite irrelevant, and I don't think anybody has been able to actually say that if your PM (Particulate Matter) is 150 versus your PM is 200 you know this is a little bit better, how much better is it actually?. A lot of the standard game is to show that most of the air is not as bad as people think. Yes, any pollutant is bad and that's how my colleagues in the evolution space put it. Obviously, a lot of this is political to say. Where do we set our standards so that we can say that these many cities/areas are having good days or bad days. I feel it is not reluctance, a lot of this is political projection, about how one appears in the global dynamics.

Moving forward, what in your view are some strategies and innovations that can help us improve our air quality in the contest context of our country?

AB: That's too big, and too many things I think I can talk about in the context of the city - because there's so many different pollutants that contribute to various things across

the city ie., there was a recent emissions inventory that was done by CSTEP(the Centre for Study of Science, Technology and Policy). Emissions inventory basically looks at calculating which are the areas that are producing certain kinds of emissions, what are the types of those areas, what are the types of those emissions and I think there was also a source of pollution study that was done. So, in Bangalore 60 to 70% of the PM 2.5 load is coming from your road and vehicles. So, it's the tailpipe emissions that get resuspended, you know goes up in the air again. So, in Bangalore that is the biggest criminal, however, a lot of the way this is distributed i.e., certain areas are much worse off than other areas. One sees a lot of congested areas in the city where pollution is extremely high especially city areas or industrial areas. There are also a lot of studies that talk about SO2(Sulphur dioxide) levels in the city being quite high because of the way industries are, and then there are brick kilns from outside the city. So, there is a little bit of this industrial pollution that is definitely there, even though we are not as bad as some of the other cities are, however, vehicular pollution is the dominant concern here. Pollution from waste has come down drastically. I think in the last couple of years it used to be much worse, but after vehicles it's actually construction waste and waste in general that is also quite significant.

How do you think we should tackle the conflict between biodiversity in terms of animals in the national parks and urban growth because there is a conflict between them.

AB: Okay I mean there's no real answer here. There are protection zones that obviously need to be created along these at least the well-known biodiverse areas. Biodiversity studies that have been conducted in Netherlands and other Dutch cities where biodiversity is not just defined by national Parks and Wildlife biodiversity, it includes all of your flora fauna and the diversity within your flora everywhere. So, I just want to make a distinction between what you are talking about as national parks and the conflict between animal and human conflict that's happening because of peripheral growth that's happening and therefore it's hitting that, versus the biodiversity as a larger concept which itself is different. Urban growth need not be in conflict with that at all like the lakes and the wetlands. All the wetlands that are being built in lakes are huge epicenters of biodiversity and in fact a lot of thinking and a lot of work has been done on these things. The conflict is different- the conflict is that one is designing these parks often to be mono landscapes incorporating just grass and plants. And so, it's not an urban growth conflict, it's more of an absolute lack of thinking about biodiversity in those various contexts. So, what is perhaps useful is to define is, what is the way biodiversity exists, what are its benefits and what is its value across the entire system, and then perhaps one can break it down more in terms of how conflicts of growth affect that. That might be a slightly more nuanced narrative to take. A lot of these things we've done around NICE Road has been to identify elephant corridors and other kinds of corridors and then be able to put in certain kinds of infrastructure that help control those conflicts. But as I said there is a larger concept that requires investigation into all of these other areas as well - like biodiversity along the street itself is a phenomenon that is not discussed. For example, to grow the same trees along the whole road has no reason for it. The way horticulture often goes about executing the parks

and the development in lakes or the street itself is a huge question that's to be raised. So, it's not just always a growth conflict, it's more of who's involved who's listening and how are these works being done.

How would you describe the idea of your ideal city?

SR: I think I don't know if there is an ideal city. It seems so far away to reach the ideal city- there are good cities, and there are bad cities. I think a good city is where the city really works to provide equal opportunity, accessibility and infrastructure - all of which are basics. So, I think a good city does that to a huge extent, a good city will have a very actively engaging system for citizens to interact, a good city will listen to its citizens and implement things for the citizens, a good city will have lesser corruption, a good city will sort of have a good disaster response system. Every city has its challenges without a doubt, but a good city really aspires to provide that environment where everybody can thrive, whether it is a disabled person, whether it is a blind person, whether it is a child, whether it is a woman, whether it is an elderly person or, whether it is somebody on a wheelchair. I think looking at how everything can tell you right, like if affordability is an aspect for a city can I move from point A to point B within a reasonable amount of money, can I get healthcare that is accessible to me, do I have a place to play, do I have a park that's accessible to me, do I have education accessible to me, and all of this forms its place in how the city is planned. Whether I get clean drinking water, whether I have access to housing and schemes to be able to really improve my own quality of life. So, there's a lot of this that a good city will offer. Sometimes one thing is better than the other or sometimes you have cities that balance it all out and are able to maintain that integrated situation where you have all of these things that are taken care of and there's systems that work well there's with a good governance response system. So, I think my ideal city would be the one that actually works towards better quality of life across multiple parameters for various users of the city, not just a particular type of user or a particular group of users.

How do you think technology plays a role in building sustainable cities?

AB: Technology is actually a huge enabler right now for a lot of people that have been working. So, a lot of analogue systems that have been extremely limited in terms of the reach to people in its memory, of how things are handled, paperwork is still remaining on files that nobody knows how to access, they are all black box methods. So, a lot of these analogue methods are highly restrictive in terms of who has the power, where is the chain of command, who can see, how the process is being undertaken and what stage it is at. A lot of where technology is going right now is actually empowering more and more, and bringing transparency and engagement through it all and this is exactly what the Internet did as well through a lot of processes. So just opening up these black boxes and saying I should know if I have made a complaint, where it is on the chain, where are you going to solve it, when is it coming back to me, what did you do and so on. If one looks at it from our perspective, technology is being used really to do data collection which includes the person and the end user within that process which has never happened

before. Otherwise in city making processes in India, because it just wasn't possible, one always saw it as the manpower of the government that could go and do these surveys, but they included highly biased surveys, where one does not know who is being included or excluded and there exists institutional marginalization. Today, a lot of what technology is able to do is make people who are already making the city, able to make claims to the city, and represent themselves because of these various platforms that are getting created and avenues that get created- giving power to many people. Also, a lot of what we're able to do through GIS mapping, a lot of modelling that's happening is really enabling things that were everyday processes that could take a very long time to get automated. So, we are able to do a lot more than what would have happened previously. Speed, transparency, inclusion, democratization all of these words are at least some of the things that I would associate with it. This at the same time technology is building the surveillance economy is its own parallel negative side that has to be watched out for and of course people building those systems and whether they make them inclusive or not. Because of all the work that Sobia and other people have done in the waste management work with the government, we were solely responsible for ensuring that the public data on solid waste management got out and was accessible to the citizens; this was only possible because there were these platforms. The team actually worked with the IT team in BBMP to get it built. So, you know which otherwise would not have happened.

How do you think that the future city should build resilience against man-made and natural calamities?

AB: A lot of this building resilience for the future is listening, and doing planning that is inclusive. And there is a nice podcast that we've been listening to recently which basically said that political cycles are all five years, so why will one ever have long term thinking coming from political cycles. If my vote is always constantly dependent on showing something for a five-year time frame, I'll never think of a 15-year 20-year time frame. So how will I look after the child's interest, who's not even able to speak right now and he might only become vocal in 15 years but how will I look after his future or how will I speak for people who are not even born yet but are going to face an extremely harsh reality because of what we are causing now. So, a lot of this is really looking at inclusion in an extremely widespread manner, looking at age, gender, religion, all of these class differences, and looking at representation in a way that it takes care of all of these things and that we are able to think long-term. So how will you build on this representation is basically the way we build the future if we do not include people in the process, it will all fail one way or another.

SR: I think just to add to that: We had worked on, especially during COVID time with the ward committees. One of the parts of the ward committee was disaster management - which sort of got the ward data committees set up during COVID. If you see Kerala's response to COVID and disasters in general it is very good - the reason being, a decentralized governance system that exists, and a strong response system. We are not in denial that we are going to have more and more climate impacts. We recently had several areas that were affected by floods in Bangalore. It is largely man made and we had a climate situation which was really unprecedented rain that came about. But we didn't have a good enough response system it only will tell us how things go, because if from here if say we were ready with the response system if people knew, where to complain, who to complain, to if they knew how to warn other people, if there were ways to get people out of their homes. There is an issue with flooding in certain areas, if we had a digital database that held the memory of the floods which Ankit keeps also talking about, saying that right now if we had a flooding situation do we have the data regarding where flooding happened? Did we as a city collect that data? No! Will we learn from that experience? I don't think so, there's nothing here that we have set in place or that we know about apart from the fact that the government is blaming the previous government for the flooding that has happened. So as a response to natural or manmade disasters, it is not just about the situation of when the disaster happens but it's how one manages the disaster after it has hit. We will not be able to control natural calamities that will take place, however, the only thing we can do at the moment apart from working towards mitigating it, is adapt. Adaptation means that we should have systems that are going to be good disaster response systems, that are well thought through and that we continue to collect data when things happen, so that we are able to plan better for it and we are able to put in measures to be able to adapt to these situations of climate change. This is the biggest issue and connected very easily to what Ankit is saying is why would the government care about it because they are just working towards their five-year timeline. So, I think there's a massive issue. Of course, there are certain systems that are flawed but there's a massive issue that the government, even despite everything that happened, is not moving towards a system of evidence building and response systems that can help with the next disaster that hits. If we are not able to manage this one, how can we manage the next one better? We don't see that questioning here unfortunately, however, that should be the way that we actually go.

How do you think architecture can be used to create or develop cities which are culturally, socially and environmentally sustainable?

SR: I think as architects we are in a very unique position in the sense that we are going to be the people that will be influencing the way the city is made. As architects we diversify into various other fields, whether it is the real estate field, the building field, the planning field, the urban design field, the interior field, the construction field, whichever it may be, as architects it is very important that we understand and become more and more aware about our own contribution to the environment. It is unfortunate that one is not taught about it entirely in college, and we don't realize our own value- to the way the city is made and our own responsibility towards how the city is made, and I think that becomes very important as we move towards a better future. If we as architects don't bring out our own aspirations of how we see the imaginations of the city, there are lots of other people that are making the city based on their own whim and fancy. So, architects have to become in a sense active enough to be able to reclaim their place in designing the city. They also

have to make themselves self-aware of what better can they do in the different fields that they get into towards making a sustainable city. It starts off with a very simple thing of saying that if one is managing construction in a site of whether it's a house or its interior, where is that construction waste going? Is it being utilized in the best manner? Are they using the best materials? It starts from there right up to when somebody is designing a public space - to question if they are including people in designing the space or are they just assuming that it is their design that has to float. So, there are a lot of these things that, we as architects, have to be aware of and I think both even with the way we get educated and we educate ourselves, it's very important to not become ignorant as a professional and as a community of the surrounding that you are in. Architects are very powerful in what they can do. But it's just sort of up to us, as a fraternity, to really make ourselves relevant in this, in the next few years of development, and ensure that we push the notion of sustainable development way better than the previous generations are.

AB: I agree. The only thing I would like to add is that often people talk about the number of buildings and construction that's going to happen in cities in the next 10 years is going to be more than the amount of construction that's already happened. That has to be a call that architects have to understand, and not engage with the 0.1% of the population and these bourgeois activities that most people just end up doing and really understand what is the role in actually engaging with the mainstream. The housing that's coming up if you look at all over the city it's ridiculous not just from a sustainability point of view, but it is unlivable. How do people train themselves to actually engage at scale, in a way that we are not building cities that are ugly and unlivable, is the real challenge actually and needs to be taken on.

> **Finally after listening to all of your thoughts and all of your work, I'm sure students and academicians from across the colleges would like to help out and add to your studio's work, so I would just like to, as a final question ask if there a volunteering system at Sensing local that the students can use?**

AB: Yes, there is. We constantly have people who come and volunteer with us in fact and, I must say also before we hire people, we actually have a one-month volunteering period. We often reinstate because one has to understand what they are getting into. So yes, there is a volunteering system, we have an active program where people from multiple fields come in actually for a variety of periods of time to do that for us - ideally a two to three months' commitment is minimum, because by the time you get in and try to understand what's going on, time is up if it's anything less.

SR: We are also introducing a program called Citizen First- it's a program that we are launching soon. These are actually small workshops that we will be conducting over the next three to four months. This is something we're trying out because we've done some of these sessions before as well. The whole idea about these workshops is threefold- one, the first level of the workshop is our exploration sessions, where we basically expose students professionals' citizens to various governance systems; two, we have a training series that we offer which is largely teaching people digital tools which they can use. These are open-source digital tools which people can use to be able to collect and visualize data. And we have a third type which is co-create where we will be organizing almost four weekend long sessions where a lot of students, young professionals can actually come together with communities in the city to be able to ideate and think about issues in the city. So, we are realizing that there is actually a knowledge gap, for even students and young professionals as well as citizens who want to start working in the civic space. The Citizen First program is largely to help people start that journey of beginning to engage in the civic space and the environment space which otherwise you don't know where to start - it might seem too overwhelming and daunting. I would definitely urge more students as well to start becoming self-aware of their own surroundings and how they can contribute.