

HEALTHCARE IN THE BUILT ENVIRONMENT

Aligning Permitting and Inspections with BIM-IPD

- 1) Different service delivery approach; BIM-IPD Team
- 2) Evolution of the idea; roadblocks hurdled
- 3) Continuing challenges; vestiges of DBB
- 4) Key points for owners

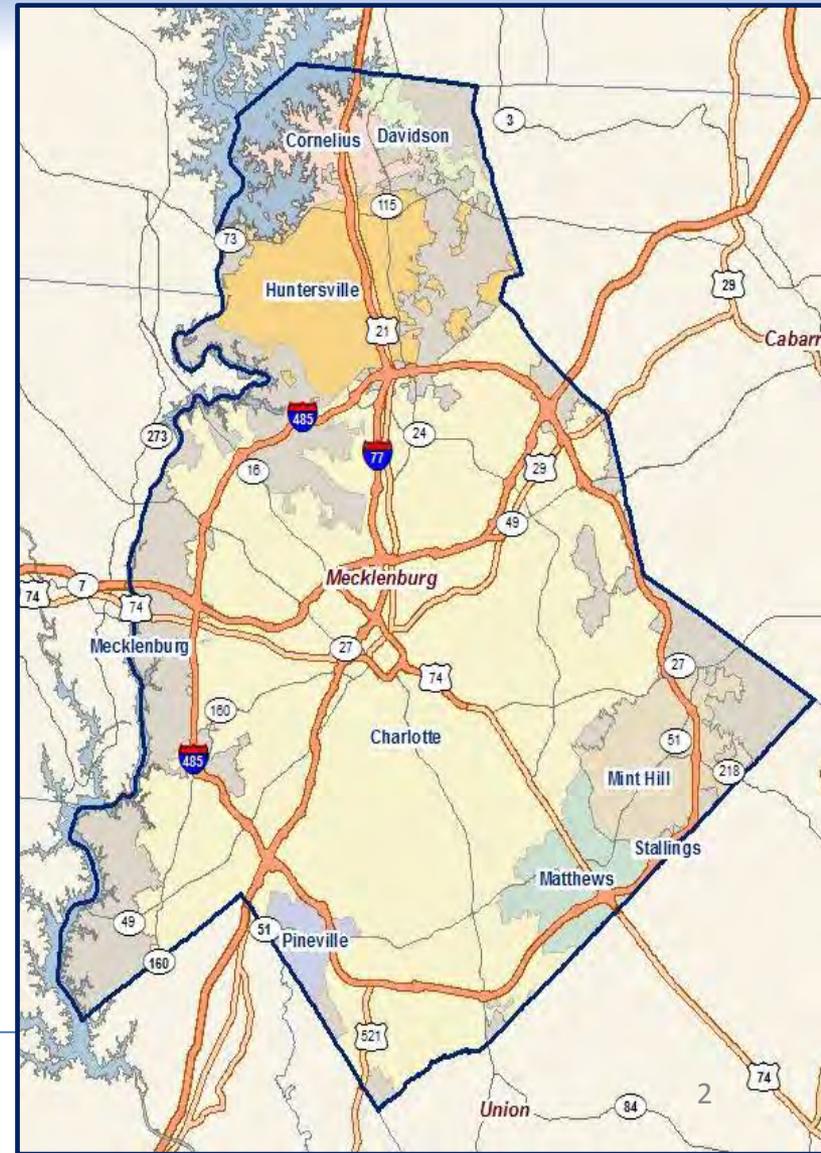


October 27, 2016

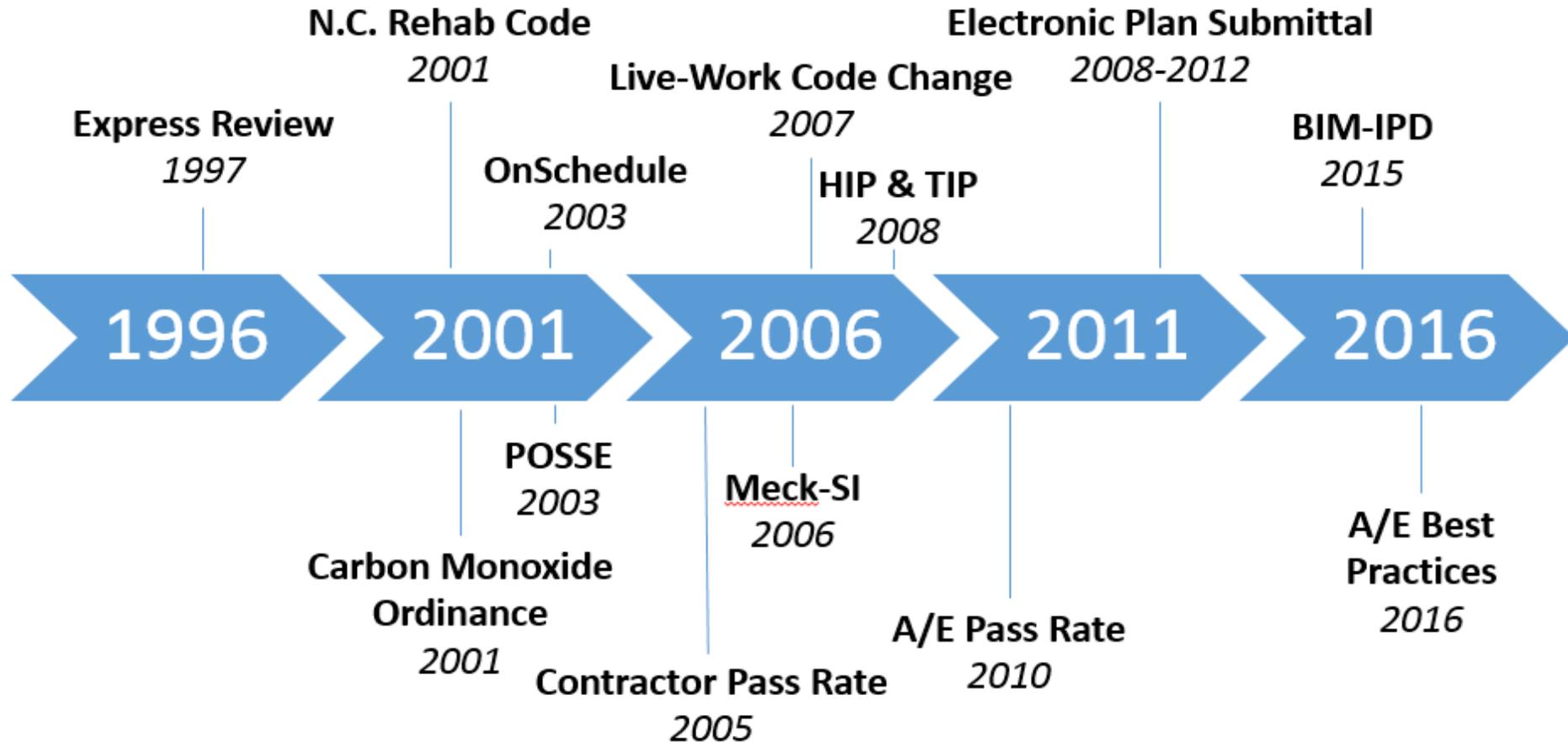
James N. Bartl, AIA, Director
Mecklenburg County Code Enforcement
Charlotte, North Carolina

MECKLENBURG COUNTY CODE ENFORCEMENT

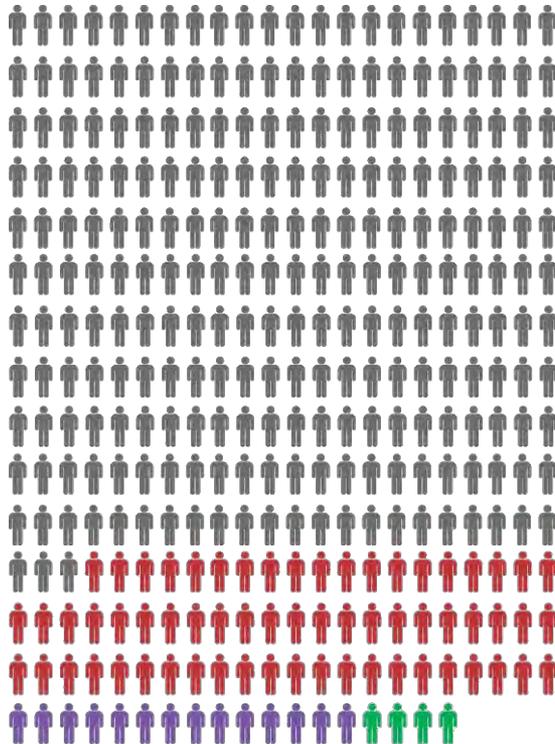
- Largest Code Enforcement authority between Washington, DC and Atlanta
- Jurisdiction includes the City of Charlotte and six surrounding towns
- Fully fee-funded
- 245 full-time staff includes 126 inspectors covering 545 sq. mi.
- In FY16
 - 90,198 permits issued
 - 265,520 inspections performed



TWENTY YEARS OF CHANGE



Process change can SAVE FTE'S



Existing FTE's

FTE's saved by Computronix & other tech solutions



BIM-IPD is...

Definitions from NC Administrative Code Section 106.2.3.1

- **BIM:**

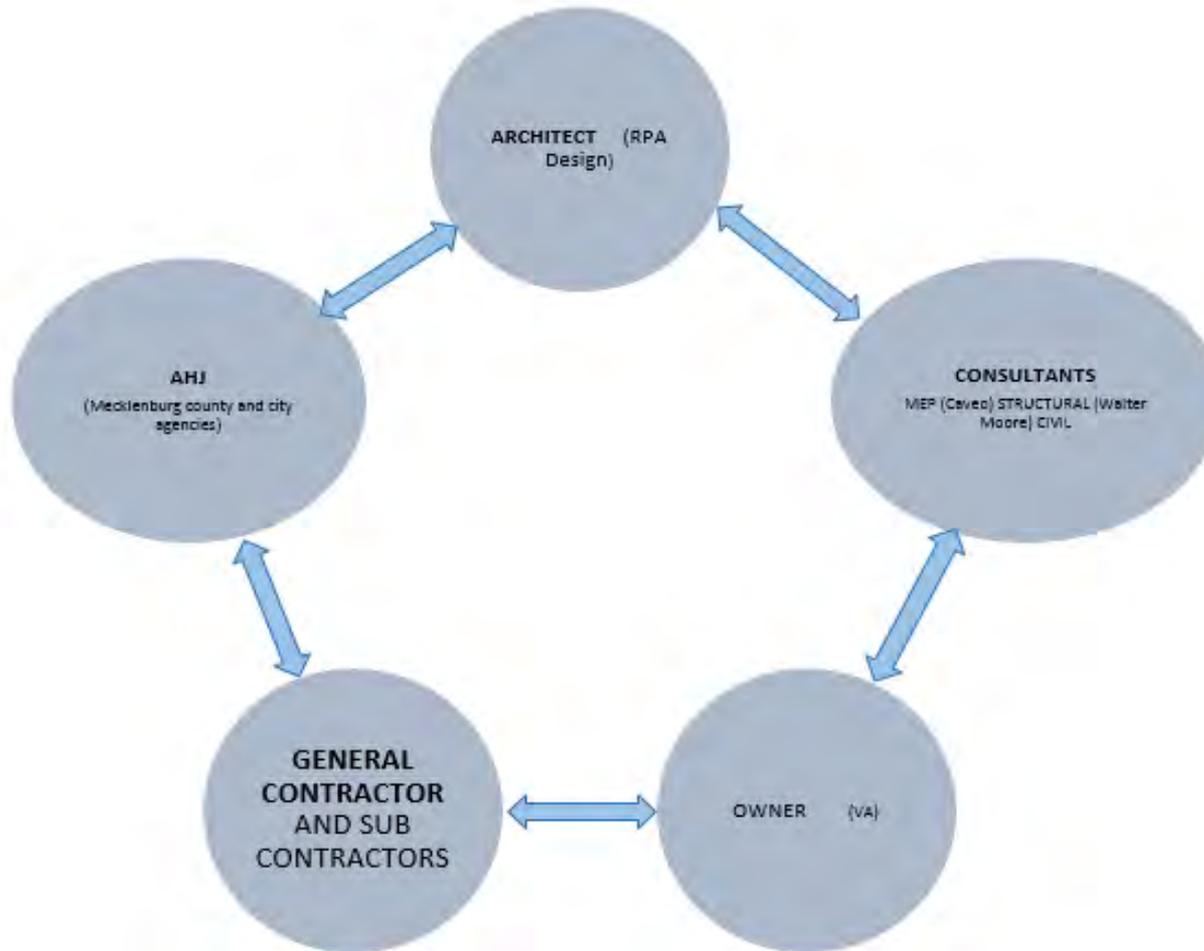
Model based technology linked with a data base of project information, using three dimensional, real time dynamic modeling software, to plan all building construction. The model encompasses building geometry, spatial relationships, geographic information, and quantities and properties of building components.

- **IPD:**

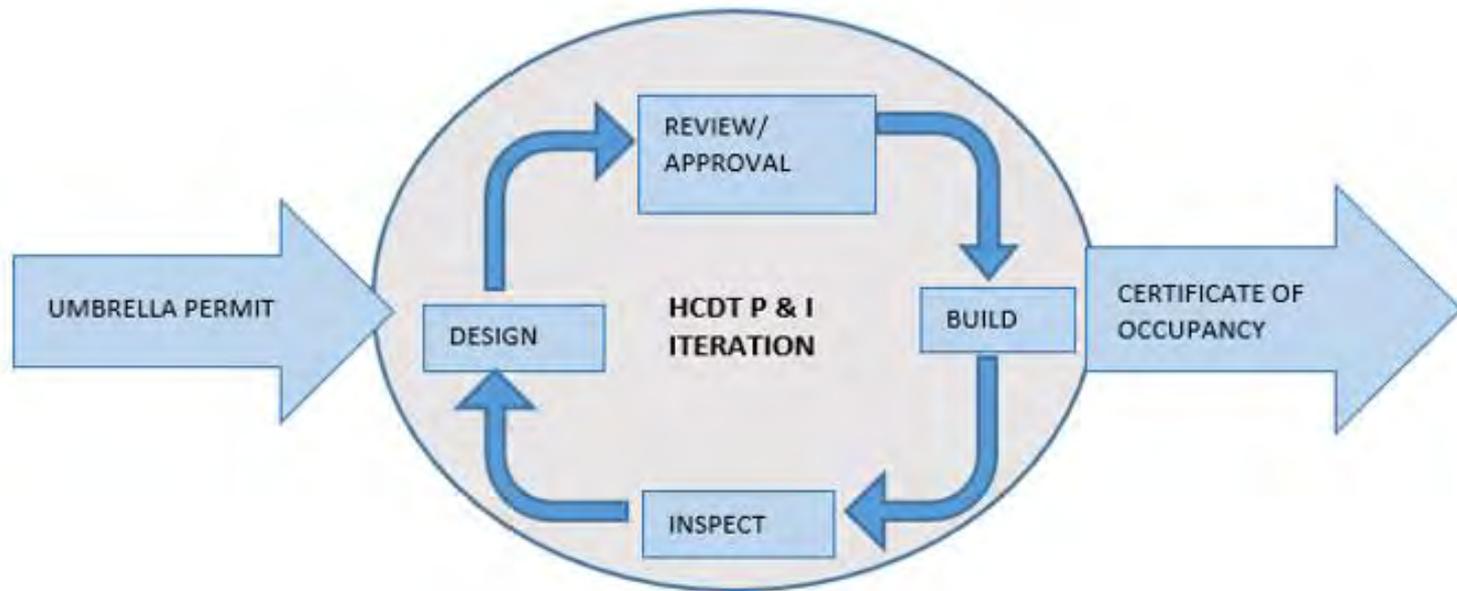
A project delivery method that integrates key participants (owner, Architect, Engineer, contractor, code official, et al), systems, business structures and practices into a process that collaboratively plans and constructs facilities. The collaborative process begins in early design and continues through all phases of design, fabrication and construction.



STAKEHOLDERS



BIM-IPD FLOWCHART



DAVIDSON BEHAVIORAL HEALTH & MORROCROFT ED



BIM-IPD BASIC SUMMARY

of

106.2.3.1

- A project delivery method using 3-D software to virtually construct all building components, by a collaborative team process from design start to construction completion.
- Voluntary for owner, but limited to BIM-IPD projects.
- **Master or “umbrella” permit issued based on code compliance concept.**
- **Code Officials work collaboratively with owner’s team to review details in the model (virtual inspections); concurrence required.**
- Field inspection required.
- Ends with validation document showing the building complies with the code.



BOARD APPROVED CRITERIA FOR AE SEAL USE IN BIM-IPD

- Boards issued two independent criteria sets
 - The NC Board of Architecture issued a *Position Statement* on 9/14/15 (approved by NC B Arch on 9/11/15)
 - The NC Board of Examiners for Engineers and Land Surveyors issued *Project Guidelines* on 10/22/15
 - Language is very similar
 - Copies available at www.meckpermit.com
- Five part criteria on seal use in BIM-IPD
 - 1) Use of Professional Seal on BIM-IPD documents confirming project development
 - 2) Use of Digital Signature on other benchmark documents
 - 3) Collaboration allowed
 - 4) Professional review of others' documents treated as equivalent to shop drawing review
 - 5) Changes during construction; AE allowed to rely on the information of others in the model
- Differences between NC B Arch “position statement” and NCBELS “guidelines”
 - NC B Arch always refers to “Architect”; NC PE Board always refers to “licensee”
 - NC B Arch found BIM-IPD consistent with Board Rules and Laws in NC; statement offers “guidance”
 - NC PE Board placed the Project Guidelines in effect until 10/31/2016, will review before that date



WHAT DOES THE BOARD CRITERIA MEAN?

- AE's use seal and signature on documents confirming project development
- AE's use electronic signatures on other "benchmark" documents
- AE's may collaborate with other team members in the model
- AE's may review other team members' work in the model, without accepting responsibility for it
- AE's may rely on other team members' work in the model, in preparing changes in construction



VA HEALTHCARE CENTER



DAVIDSON MARTIN SCIENCE ADDITION/RENOVATION



CRESCENT STONEWALL



FENCING W/ VESTIGES OF DESIGN-BID-BUILD

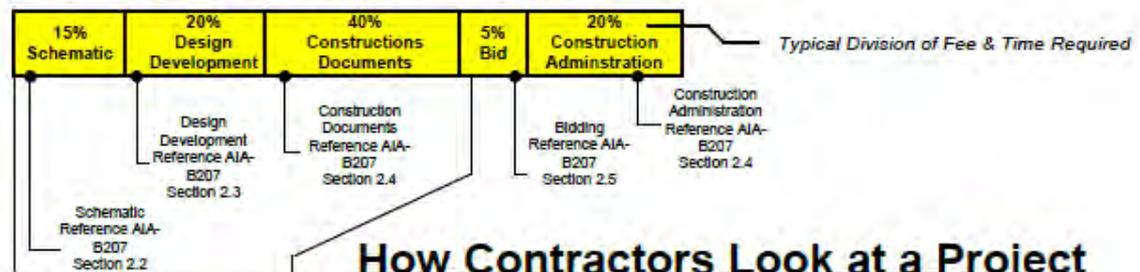
HISTORIC BACKGROUND



HCDT COLLABORATION



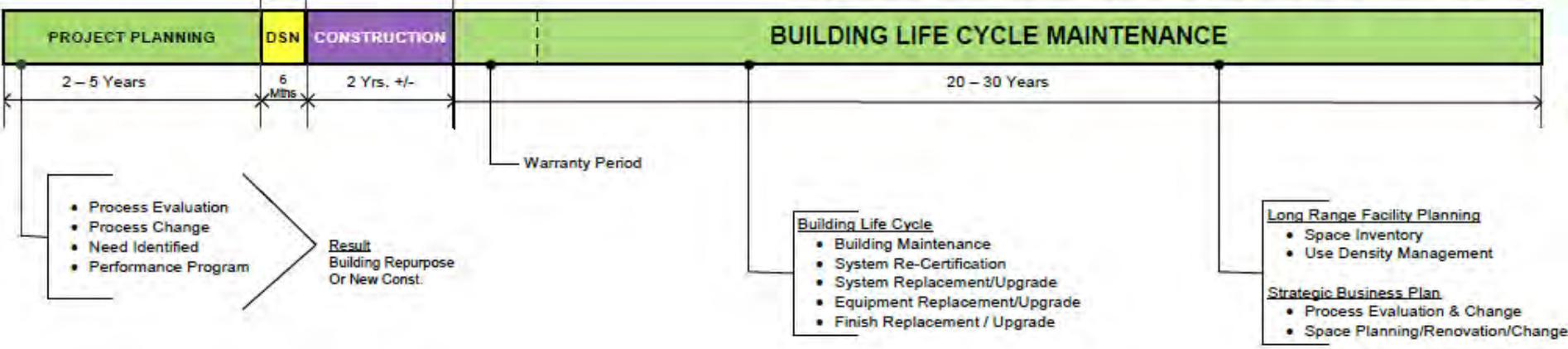
How AE's Look at a Project



How Contractors Look at a Project



How Institutional Owners Look at a Project



KEY POINTS SUGGESTED FOR OWNER CONSIDERATION

- Owners can't assume all AE's & GC's know how to collaborate
- Design-Bid-Build tendencies run very deep
- You are asking them to work with their “historic adversaries”
- Collaborative track record or testing of firm attitude key



CONTACT INFO AND LINKS

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- <http://bit.ly/MeckCodeNIBS>
- <http://bit.ly/MeckCodeBIMIPDArch>
- <http://bit.ly/MeckCodeBIMIPDEng>
- <http://bit.ly/MeckCode20YearsofChange>

