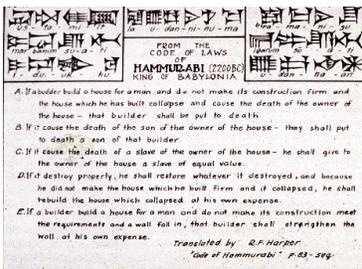


Regulatory structure

Always codes



- It seems from the earliest times, those who design and those who build have been held responsible for the performance of the buildings they make
- This excerpt from the code of Hammurabi (2200 BC) takes the idea of an eye for an eye to ultimate levels.

Costs of no regulation

- Without regulation, business nature being what it is, seeks to optimize profit...historically this optimization has led to thousands of deaths, which were preventable, but governments had not mustered the political will to require the (known) improvements to buildings to save lives.

Our Lady of Angels Elementary
Deaths
93 children
2 teachers

All deaths occurred on the second story. It was served by only one unenclosed stair hot gases and smoke filled the second story.

Iriquois Theater 602 deaths - no
outswinging exit doors
Triangle shirtwaist factory 146
deaths - no panic hardware on doors
Coconut Grove 492 deaths - exits
obscured by design elements

From private to public

- Builders, Engineers & Architects encounter a wide range of regulations in the course of a project.
- Each regulatory layer has its own purpose, limits, and appeals process.

Regulatory layers

Conscience

Federal

State

Local

Private

Private regulations

- Covenants - These are controls placed on the land often at the time of subdividing it. Intent is offering early buyers assurance of quality of subsequent development. In place for 35-40 years, appeal granted by over 95% of owners
 - Area of house, first floor, second floor
 - Number of additional structures on site
 - Number of garage spaces on site
 - Exterior materials
 - Exterior colors
 - Historical style
- Easements - These are usually land dedicated for access of some type. Usually in perpetuity, appealed/revised with contracting parties
 - Access
 - Sewer / Water
 - Gas / Electric / Phone / CATV
 - Drainage

Local regulations

- Zoning
- R.O.W. Easements
- Condemnation
- Adoption of Model Code
- Process Regulations...noise, traffic, erosion

Zoning

- Land use controls
- Restricts land use by function
- Requires protections at use interfaces / conflicts
- Enforced by Planning office
- Appealed to BZA (Board of Zoning Appeals)
- Zoning tools
 - Setbacks
 - Lot coverage %
 - Parking quantities
 - Height restrictions
 - Building area (FAR)
 - Development Densities (units per acre)
 - Exterior lighting & Signage
 - Fence / Screen limits & requirements

By Right & Special Use

- Development conforming to the letter of the zoning law is considered **By Right**, that is there are no public inputs, no public mechanism to prevent the conforming project from proceeding.
- Development not conforming to the letter of the zoning law, having too many deviations for an efficient BZA appeal will often follow a process track for approval called **Special Use**

Special process

- Special Use is a provision of most Zoning law allowing innovation in development not foreseen at the time of the law's implementation.
- Special Use usually
 - Requires more explicit information and commitments from the developing party
 - Requires two to three public meetings, with written notification sent to adjacent landowners
 - Requires explicit review by dept. heads of a town's Fire, Garbage, Police, Traffic & Engineering departments
 - Can be stopped by substantive public opposition
 - Can take 90 to 180 days for approval
 - Limits changes to the design after approval (no take backs)

R.O.W. row row your street

- When a development is being planned, the local government will review the provisions for drainage, water, fire department access, and transportation.
- The local, state, and federal government all require that more width of land be provided than will actually be used for the street paving.
- This gives a governmental right of passage or **Right of Way** for those on the public street... and gives room for sidewalks, fire hydrants, storm & sanitary sewers.... Or the expansion of the width of the street at some point.

Condemnation...Eminent Domain

- But sometimes the local, state or federal government agency (**even some public utilities...**) hasn't been able to anticipate a project, like a new road or drainage system.
- Most agencies are required to secure appraisals for the needed property and negotiate with the landowner in good faith to purchase the property.
- If negotiations fail, and if the project is deemed to be in the best interest of the greater population, the government reserves the right to put the property through a condemnation process, through which they determine the price to be paid...**and then take the property.**
- This right is termed Eminent Domain.

Model Code Adoption

- Most counties, cities, towns, hamlets... Don't have the technical expertise to write their own building codes. And if they did there would be hundreds of thousands of codes... this would probably act as an inhibitor to real estate development...hmmm.
- To insure some consistency in building practices in a state, the legislature adopts a code written by one of the model code authoring corporations.
- The local municipality then formally adopts the same code, with any revisions the state made, and adds it's own layer of revisions to form the local law governing construction.

Code Authors

- **ICBO** International Conference of Building officials - Authors of the Uniform Building Code (UBC)
- **BOCA** Building Officials and Code Administrators International - Authors of the BOCA Code
- **SBCCI** Southern Building Code Congress International - Authors of the Standard Building Code
- **NFPA** National Fire Protection Association - Authors of NFPA 101 and other life safety regulations.
- **ICC** International Code Council - Authors of the International Building Code, International Residential Code, and related electrical, plumbing & mechanical codes

IBC, Virginia's model code

- The IBC 2000 code, adopted by the Commonwealth is the local code enforced by local municipalities.
- The IBC 2000 code, supercedes and is a compilation of the BOCA, UBC & SBCCI which ceased to be published after the year 2000.
- As of the year 2000, municipalities will begin adoption of the International Building Code and International Residential Code.
- Like all model codes enforced locally, the code can be appealed, and exceptions, exemptions written locally

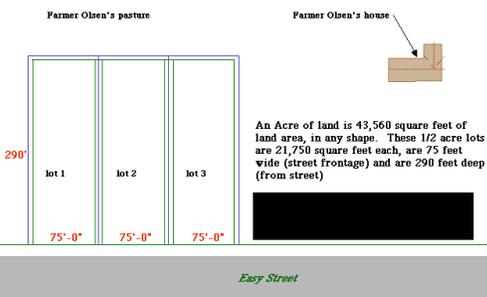
But I had an exemption...

- Exemptions and exceptions can only offer limited protection from the responsibility vested in design and engineering professionals by society.
- In the event of a disaster resulting in injury or loss of life, exemptions offer little or no protection to those responsible.
- The registration of an architect and engineer is a license of trust placed on us by the public. **There are no exemptions** from the responsibility to protect the health, safety, & welfare of the public.

Process regulations

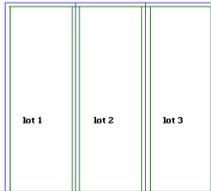
- Municipalities also pass ordinances governing noise, dust, pollution, runoff, and the dumping of construction debris in landfills.
- Generally the builder sees more of these laws than the architect, but erosion control measures, on site toilet & water requirements generally are part of the contract documents prepared by the architect.

How much land is buildable? ¹



Private restrictions Covenants

Farmer Olsen's pasture

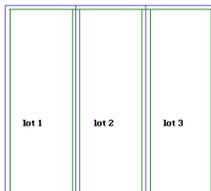


As Farmer Olsen has a really nice house and is thinking of enlarging his subdivision in the future, he wants to protect the value of his land, his house, and his unsold lots. To do this, Farmer Olsen attaches restrictions to the use of the lots when he files his revised deed and title at the county courthouse. These restrictions will remain in effect, usually 35 years or so as an initial step, at which time they automatically extend for a longer period unless a majority of the property owners changes them. These restrictions are commonly known as **Restrictive Covenants**.

Easy Street

Private restrictions Covenants

Farmer Olsen's pasture



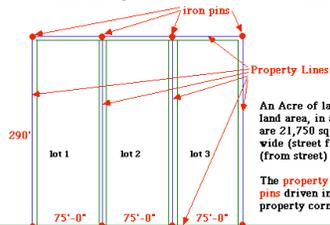
Restrictive Covenants are commonly concerned with minimum floor areas, entrance orientation, accessory structures (sheds, garages) fences, height, number of dwellings per lot, future re-subdivision of lots, and sometimes exterior appearance and materials, design review committees, and construction types (usually specifically pointed at either the acceptability or unacceptability of mobile homes) Unlike zoning ordinances or building codes, covenants are not enforced by the town government, but by the other property owners in the subdivision who file a lawsuit against a covenant violator in civil court.

Easy Street

Subdivision requirements Property pins

Farmer Olsen's pasture

Farmer Olsen's house



An Acre of land is 43,560 square feet of land area, in any shape. These 1/2 acre lots are 21,750 square feet each, are 75 feet wide (street frontage) and are 290 feet deep (from street)

The property lines are marked with iron pins driven into the ground at each property corner by surveyors.

Easy Street

Subdivision requirements

Utility easements...going

Farmer Olsen's pasture Farmer Olsen's house

5 foot easement

5 feet 5 feet 5 feet 5 feet 5 feet 5 feet

lot 1 lot 2 lot 3

Easy Street

In order to approve Farmer Olsen's subdivision request, the Town of Blacksburg must be able to guarantee the utility companies (electric, telephone, gas, cable T.V.) access to each lot in perpetuity. (forever) To do this, the town asks / requires Farmer Olsen to dedicate permanent easements 5 feet wide on all sides of each lot. These easements are dedicated as public utility rights of way (R.O.W.)

Subdivision requirements

Rights of Way...going

Farmer Olsen's pasture Farmer Olsen's house

lot 1 lot 2 lot 3

60 foot wide Right of Way 40 foot wide paved street

Easy Street

The town also requires a right of way be dedicated for the paved street. This Right of Way is often much wider than the actual pavement width to allow room for sidewalks, utilities, and drainage (storm sewers or ditches) Property owners must maintain (mow, shovel snow from) the public R.O.W. and are required to landscape the R.O.W. However, at any time, with no notice, the town could come in and dig up the R.O.W. or widen the street to the R.O.W. limits.

Zoning requirements

Farmer Olsen's pasture Farmer Olsen's house

lot 1 lot 2 lot 3

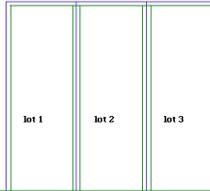
Easy Street

The next level of controls on the land, after covenants, easements, and rights of way, are usually zoning ordinances.

Zoning ordinances are laws originated and adopted by a municipality to control land use, density, lot coverage, building height, and recently water quality, in an effort to protect public health and minimize conflicts (noise, traffic volume, hazardous materials) between residential, commercial, and industrial uses.

Zoning restrictions Allowable use

Farmer Olsen's pasture



Within any use type, such as residential, there are often subtypes. (multifamily, duplex, mobile home) Each subtype has a designation such as R-1A (Residential - 1 family, large lots) and has areas of the town designated on the zoning map for that use (zoning districts). All property falling in that zoning designation must meet the requirements of that zoning district.

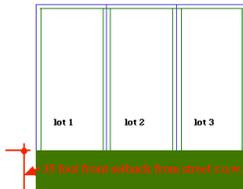
Farmer Brown is requesting his subdivision be changed from being zoned for agricultural use to an R1 district.

Easy Street

Zoning restrictions Setbacks

Farmer Olsen's pasture

Farmer Olsen's house



For this example, the R1 district will require the following:

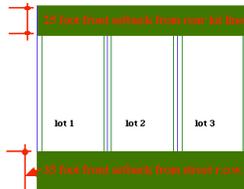
- a 35 foot setback from the street r.o.w.

Easy Street

Zoning restrictions Setbacks 2...going

Farmer Olsen's pasture

Farmer Olsen's house



For this example, the R1 district will require the following:

- a 35 foot setback from the street r.o.w.
- a 25 foot setback from the rear lot property line

Easy Street

