

Skyline Geology: A Self-Guided Walking Tour of Downtown Houston's Buildings (2018)

HYATT LOOP – 1 MILE (~1 HOUR)



WEDGE INTERNATIONAL – 1415 LOUISIANA



Building Base

Granite (dark pink, felsic-intermediate intrusive igneous)

Probably from South Dakota (very similar to Houston Public Library)

Pegmatite veins dominant

Only the base is granite, the building itself is faux
Pegmatite veins: holocrystalline (roughly), intrusive igneous rock composed of interlocking phaneritic crystals (usually larger than 1")

Observed: potassium feldspar rich veins and dark mineral veins, contains both pyroxene and hornblende, uniformly parallel veins throughout

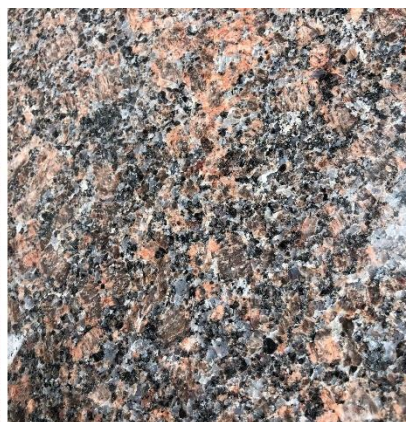
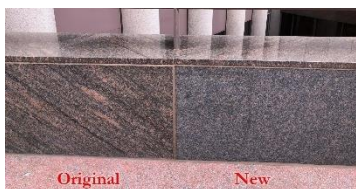
New/Accent

Granite (dark pink, felsic intrusive igneous)

Color matched: Coldspring Carnelian (trade) from Milbank, South Dakota

PreCambrian (~2 gy)

Some building base granite slabs have recently been replaced with more uniform medium grained





granite in a slightly cooler color and with no veins (very easy to spot the difference) and contains quartz, potassium feldspar, plagioclase feldspar, and biotite

Steps

Slate (light grey, low grade metamorphic)
 Maybe faux/porcelain, if so it's well done
 Recent (<5yrs) addition/upgrade to the building

TOTAL PLAZA – 1201 LOUISIANA



Building

Granite (grey felsic-intermediate intrusive igneous)
 Color matched: Coldspring Iridian (trade) from Minnesota
 PreCambrian (1.8-1.75 gy)
 Observed: uniform medium grained granite containing quartz, plagioclase feldspar, hornblende, pyroxene

Fun Fact

The Petroleum Club of Houston occupies the 35th floor of the Total Plaza



1111 LOUISIANA



Building/Pavement

Diabase/ Gabbro (dark grey-black mafic intrusive igneous)
 Observed: small grained but visible to naked eye, alternating polished and unpolished on building and pavement

Fun Fact

In 1995, the building owners added a circle-shaped canopy that is five stories tall, which was designed by Richard Keating who was also the designer of the nearby Wells Fargo Tower





Building/Pavement

Granite (pink, felsic intrusive igneous)
 Spanish Rose or Rosa Porrino granite from Spain
 Carboniferous (359-299my)

Pavement/Accent

Diabase/ Gabbro (dark grey-black mafic intrusive igneous)

Fun Fact

Enterprise Plaza has rose-colored windows to accompany its Spanish Pink granite exterior

Building

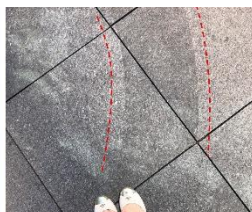
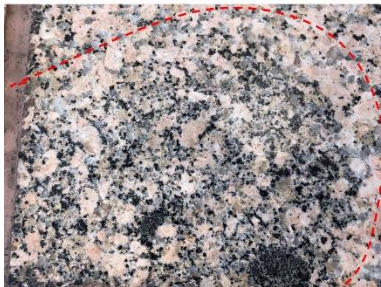
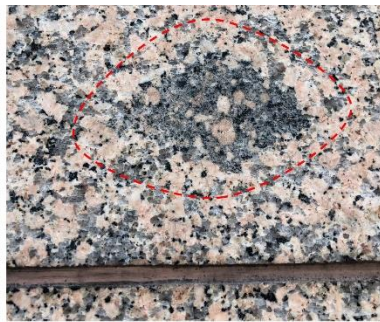
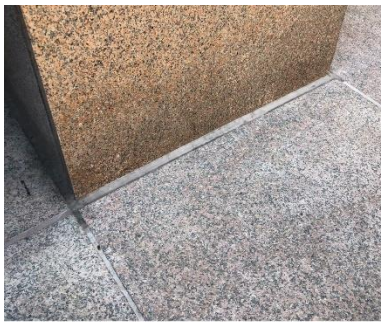
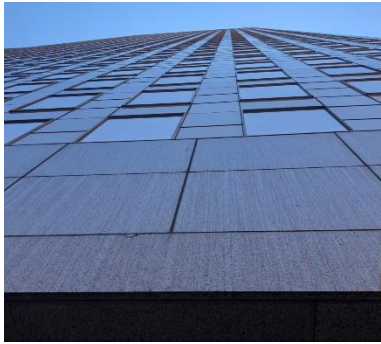
Medium to coarse grained granite with larger porphyritic/poikilitic crystals varying from thumb size to head size

Porphyritic: large microcline phenocrysts

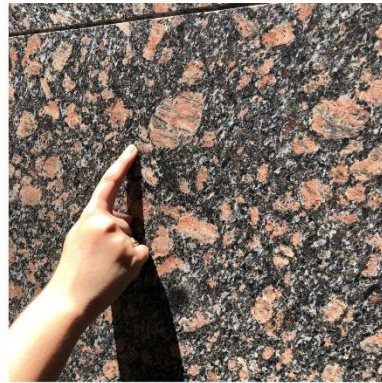
Poikilitic texture: large component crystals contain smaller crystals of other minerals within them

Pavement/Accent

Observed: small grained but visible to naked eye, alternating polished and unpolished on fountain and pavement in arc patterns



HERITAGE PLAZA – 1111 BAGBY



Building Accent

Porphyritic Granodiorite (dark salmon intermediate intrusive igneous)

Pavement

Porphyritic Granodiorite (medium salmon intermediate intrusive igneous)

Fun Fact

The granite feature on the top of Heritage Plaza was designed to imitate a Mayan temple and was inspired by the architect's visit to the Mexican Yucatan Peninsula

Heritage Plaza completed construction in early 1987 and was the last major office building completed in downtown Houston in the midst of the collapse of the Texas markets in the 1980's

Building Accent

Course grained granite with larger porphyritic/poikilitic crystals

Porphyritic: large microcline phenocrysts

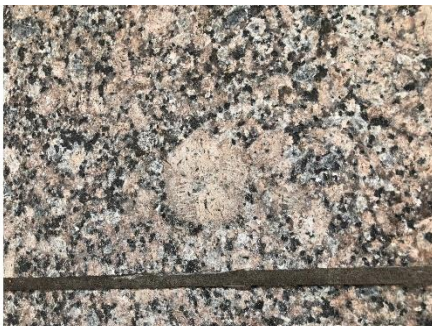
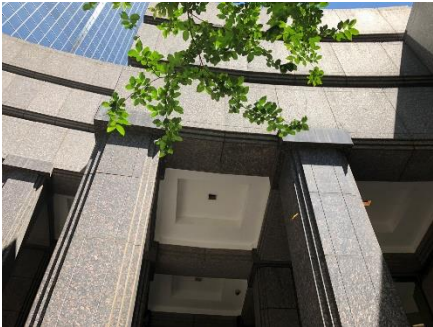
Poikilitic texture: large component crystals contain smaller crystals of other minerals within them

Pavement

Course grained granite with larger porphyritic/poikilitic crystals, lighter in color than on building accent but we concur that they are likely from the same or neighboring quarry

Porphyritic: large microcline phenocrysts

Poikilitic texture: large component crystals contain smaller crystals of other minerals within them



DOUBLETREE HOTEL – 400 DALLAS



Sign

Marble (dark green metamorphic, medium-grade metamorphism)

“Dirty” marble with fractures and calcite veins

Contains serpentine (green)

Valet

Marble (light green metamorphic, medium-grade metamorphism)

“Dirty” marble with fractures and calcite veins

Contains serpentine (green)



Sign

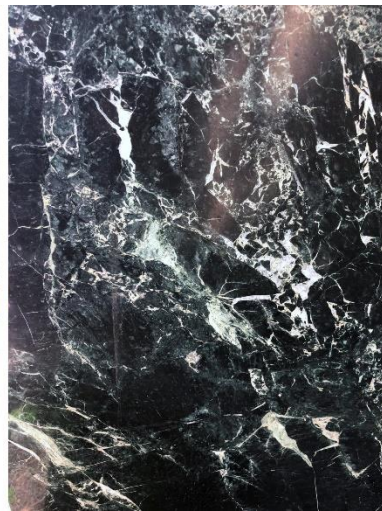
Brecciated marble: broken fragments rolled and rounded by the flow of marble under pressure

Observed: less broken fragments and more calcite veins than in valet area

Valet

Brecciated marble: broken fragments rolled and rounded by the flow of marble under pressure

Observed: more broken fragments and less calcite veins than on sign



HYATT REGENCY – 1200 LOUISIANA



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Valet

Granite (brown felsic intrusive igneous)

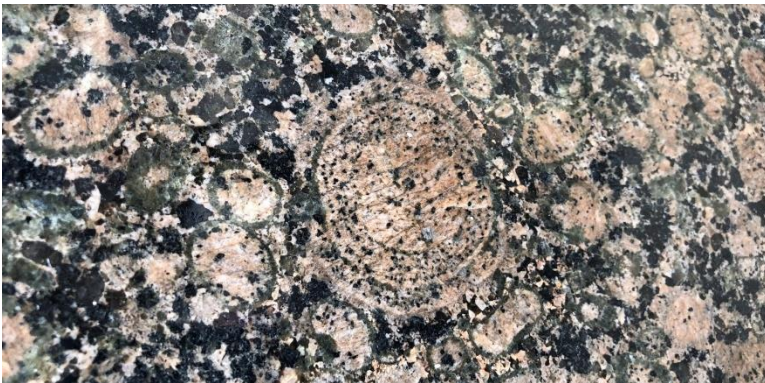
Best guess Baltic Brown (trade) from Southern Finland (likely)

Large palm-size rounded and zoned wiborgite rapakivi poikilitic feldspar crystals

Wiborgite: orthoclase crystals that have plagioclase rims (wiborgite or viborgite type, named after the city of Vyborg)

Rapakivi: large rounded crystals of orthoclase that are surrounded by a rim of oligoclase (a variety of plagioclase)

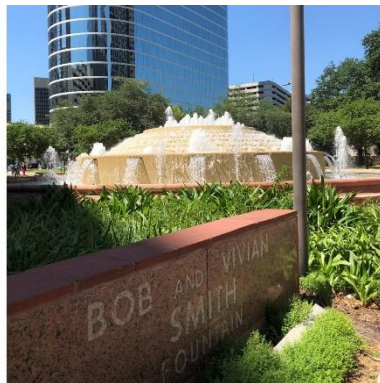
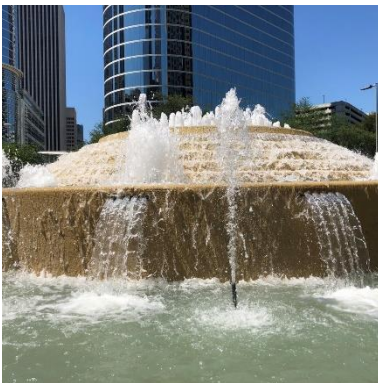
Poikilitic texture: large component crystals contain smaller crystals of other minerals within them



BOB AND VIVIAN SMITH FOUNTAIN



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Fountain

Rhyolite (pink felsic extrusive igneous)

Sign

Granite (pink felsic intrusive igneous)

Color matched: Sunset Red Granite from Texas (trade)

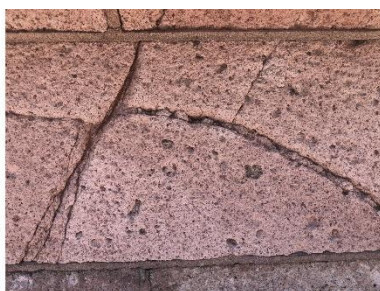
From Granite Mountain near Marble Falls in Texas (assumed)

PreCambrian (>1.37-1.23gy)

Could be same stone as Texas State Capitol Building in Austin

Fountain

Observed: aphanitic texture with few to no visible/distinguishable grains (any visible grains have been weathered out)





Sign

Town Mountain Granite: Coarse-grained, pink, quartz-plagioclase-microcline rock, in part porphyritic with large microcline phenocrysts. Makes up Enchanted Rock granite mass, Gillespie and Llano Counties.

Observed: contains rapakivi and poikilitic feldspars



CHEVRON – 1400 SMITH



Building Base/Pavement/Blocks

Granite/Granodiorite (grey intermediate intrusive igneous)

Color match best guess Coldspring Sierra White from Raymond, California (maybe McGilvray/Knowles?)

Early Cretaceous (111 my)

Landscaping Rocks

Sandstone (transitional sedimentary)

Moss Rock (trade), origin unknown

Fun Fact

Formerly Enron building

Building Base/Pavement

Polished base/blocks and unpolished pavement is granite (quartz 20-60% and plagioclase 10-65%) to granodiorite (quartz 20-60% and plagioclase 65-90%) with uniform medium grained crystals, weathering present

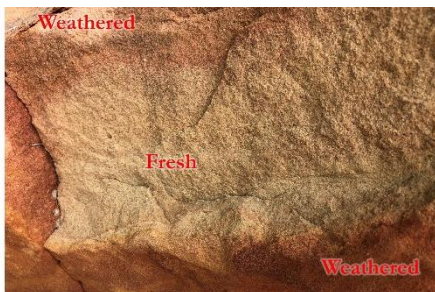


Blocks

Same or similar to building but appears newer with little to no weathering, polished

Landscaping Rocks

Moss Rock: iron rich, well sorted sandstone common as inexpensive landscaping material with weathered surface darker and richer red than fresh unweathered interior



CHEVRON FCU – 1600 SMITH



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Building/Pavement

Granite/Granodiorite (grey intermediate intrusive igneous)

Color match best guess Coldspring Sierra White from Raymond, California (maybe

McGilvray/Knowles?)

Early Cretaceous (111 my)

Building

Unpolished granite (quartz 20-60% and plagioclase 10-65%) to granodiorite (quartz 20-60% and plagioclase 65-90%) with uniform medium grained crystals, little to no weathering present

Pavement

Unpolished granite (quartz 20-60% and plagioclase 10-65%) to granodiorite (quartz 20-60% and plagioclase 65-90%) with uniform medium grained crystals, weathering present and concentrated around tile/block edges

KBR TOWER – 601 JEFFERSON



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Building

Granite/Granodiorite (grey intermediate intrusive igneous)

Color match best guess Coldspring Sierra White from Raymond, California (maybe

McGilvray/Knowles?), contains similar appearance and characteristics as Chevron complex, also

unpolished

Early Cretaceous (111 my)

BEFORE YOU GO

- **Safety**
 - Look up, not at your phone, when navigating downtown
 - Please be mindful of the traffic lights, pedestrian signals, bike lanes, and buses
 - Buses make frequent stops and can sometimes hop curbs
 - Some curbs, pavements, and streets may be uneven
- **Etiquette**
 - Please review the walking guide prior to arriving downtown to maximize time spent on the tour
 - Please be mindful of downtown employees and keep slower pedestrian traffic to the right so they can go about their business
 - Try to walk in pairs if walking around downtown as a group
 - If approached by a homeless person, try to be firm but respectful

REFERENCES

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CONTRIBUTORS

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